GROUP 54D

CONTROLLER AREA NETWORK (CAN)

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GENERAL INFORMATION

M1548310000029

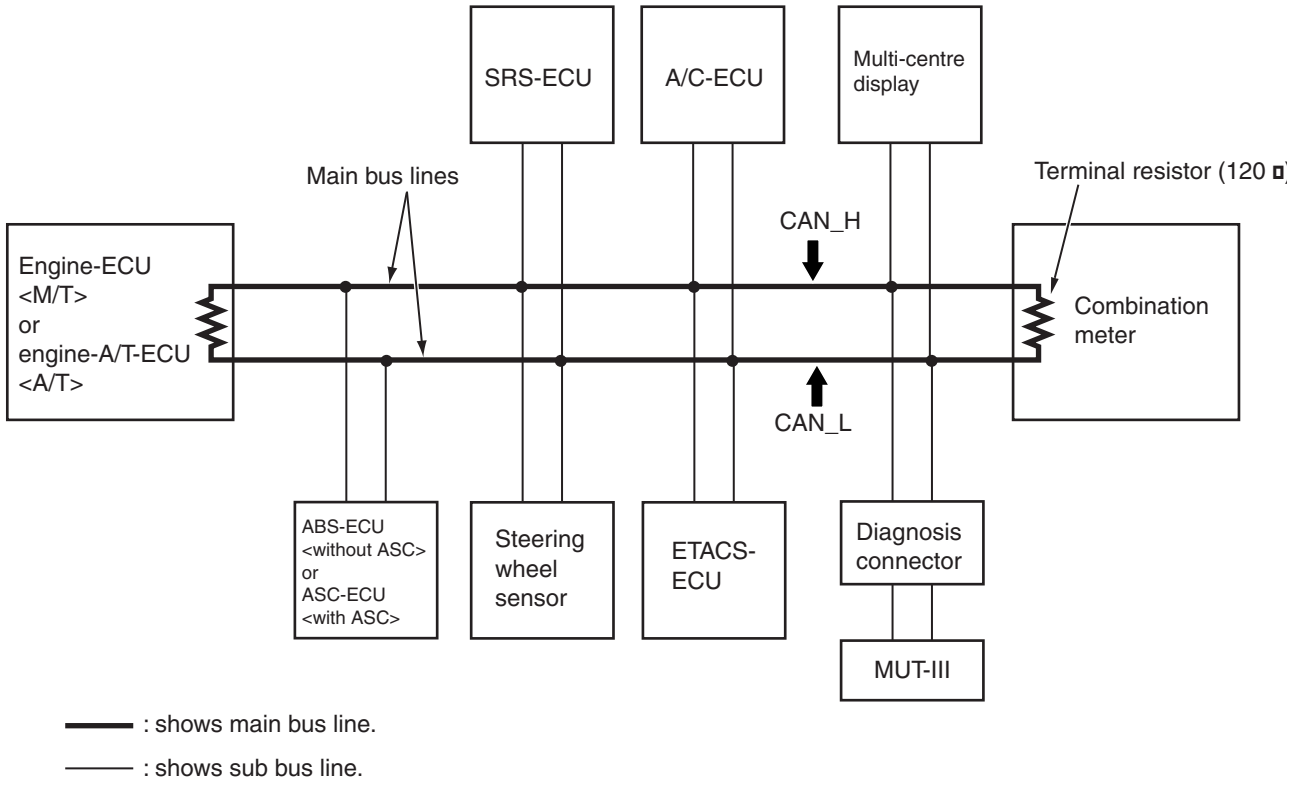
CAN, an abbreviation for Controller Area Network, is an ISO-certified international standard for a serial multiplex communication protocol*1. A communication circuit employing the CAN protocol connects each ECU, and sensor data can be shared among , which enables more reduction in wiring.

*NOTE: *1: The regulations have been decided in detail, from software matters such as the necessary transmission rate for communication, the system, data format, and communication timing control method to hardware matters such as the harness type and length and the resistance values.*

CAN offers the following advantages.

- Transmission rates are much faster than those in conventional communication (up to 1 Mbps), allowing much more data to be sent.
- It is exceptionally immune to noise, and the data obtained from each error detection device is more reliable.
- Each ECU connected via the CAN communicates independently, therefore if the ECU enters damaged mode, communications can be continued in some cases.

STRUCTURE



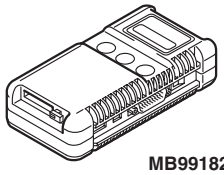
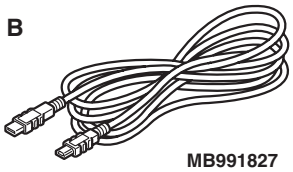
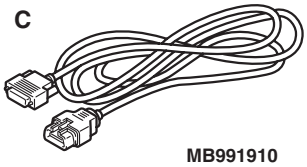
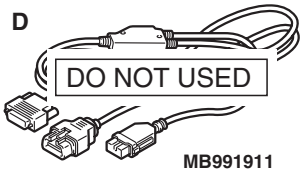
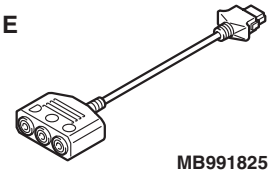
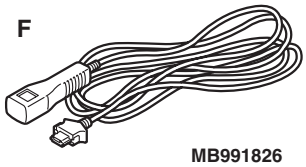
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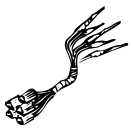
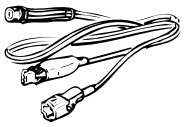
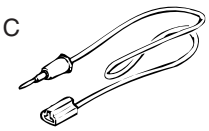
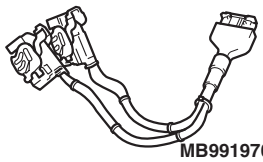
- The CAN bus line consists of two lines, CAN_L and CAN_H (CAN Low and CAN High, respectively), as well as two terminal resistors (A twisted-pair cable, highly resistant to noise, is used for the communications line).
- The CAN bus line connecting the two terminal resistors is the main bus line, and the CAN bus line connecting each ECU is the sub-bus line.
- The terminal resistors are installed in the engine-ECU <M/T> or the engine A/T-ECU <A/T> module and combination meter to stabilize communication signals (The terminal resistance is set at approximately 120 Ω).
- A maximum of eight ECUs are connected in the GRANDIS CAN bus line as follows.
  - Engine-ECU <M/T>
  - Engine-A/T-ECU <A/T>
  - ABS-ECU <Vehicles without ASC>
  - ASC-ECU <Vehicles with ASC>
  - Steering wheel sensor <Vehicles with ASC>

- SRS-ECU
- A/C-ECU
- ETACS-ECU
- Centre display
- Combination meter

SPECIAL TOOL

M1548304200079

Tool	Number	Name	Use
A  MB991824 B  MB991827 C  MB991910 D  MB991911 E  MB991825 F  MB991826 MB991955	MB991955 A: MB991824 B: MB991827 C: MB991910 D: MB991911 E: MB991825 F: MB991826	MUT-III sub-assembly A: Vehicle Communication Interface (V.C.I.) B: MUT-III USB cable C: MUT-III main harness A (Vehicles with CAN communication system) D: MUT-III main harness B (Vehicles without CAN communication system) E: MUT-III measure adapter F: MUT-III trigger harness	CAN bus diagnostics **⚠ CAUTION** **For vehicles with CAN communication, use MUT-III main harness A to send simulated vehicle speed. If you connect MUT-III main harness B instead, the CAN communication does not function correctly.**

Tool	Number	Name	Use
A  B  C  D  MB991223AD	MB991223 A: MB991219 B: MB991220 C: MB991221 D: MB991222	Harness set A: Check harness B: LED harness C: LED harness adapter D: Probe	Continuity check and voltage measurement at harness wire or connector A: For checking connector pin contact pressure B: For checking power supply circuit C: For checking power supply circuit D: For connecting a locally sourced tester
 MB991970	MB991974	ABS check harness	Checking continuity and measuring voltage at ABS-ECU harness-side connector
 MB991997	MB991997	ABS check harness	Checking continuity and measuring voltage at ASC-ECU harness-side connector

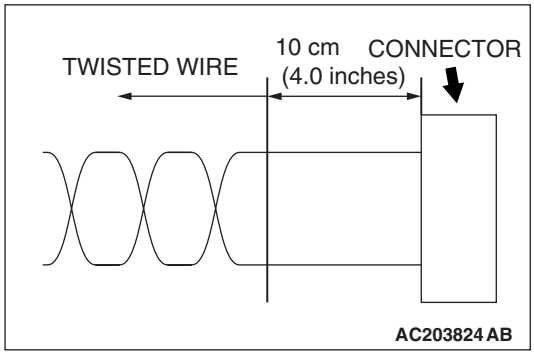
TEST EQUIPMENT

M1548304300076

Test equipment	Name	Use
 AC000019	Digital multimeter	Checking CAN bus circuit (for resistance and voltage measurements)

SERVICE PRECAUTIONS

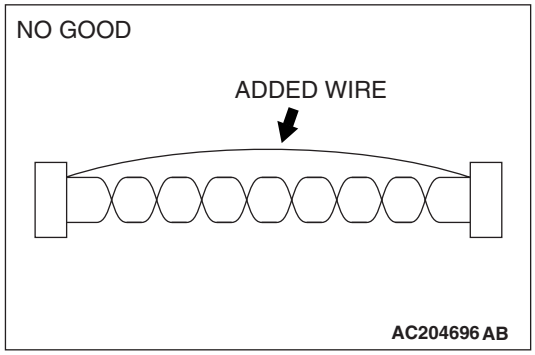
M1548302100065

Warnings in diagnosis section	Details regarding warnings
When servicing an CAN bus line, earth yourself by touching a metal object such as an unpainted water pipe. If you fail to do, a component connected to the CAN bus line may be broken.	–
⚠ CAUTION **A digital multimeter should be used.**	**When measuring resistance value or voltage in CAN bus lines, use a digital multimeter. If not using a digital multimeter, the equipments, which are connected through the CAN communication lines, may be damaged.**
⚠ CAUTION **When measuring the resistance, disconnect the negative battery terminal.**	**Disconnect the negative battery terminal when measuring the resistance value in the CAN bus line. If you fail to do so, the equipments, which are connected through the CAN communication lines, may be damaged.**
⚠ CAUTION **The test wiring harness should be used.**	**Always use the test harness when measuring the voltage or resistance value at the female connector. If you fail to do so, connectors may be damaged.**
⚠ CAUTION **The strand end of the twist wire should be within 10 cm from the connector.**	 **If you repair the wire due to a defective connector or its terminal or harness wire, you should cut the wire so that the strand end of the twist wire should be within 10 cm from the connector as shown. If it exceeds 10 cm, twist the wiring harness just like the original twisted wire. If the strand end exceeds 10 cm (4.0 inches), a communication error may be caused.**
⚠ CAUTION **Strictly observe the specifed wiring harness repair procedure.**	**When you repair a CAN bus line, observe the precautions on how to repair the CAN bus line strictly. Refer to P.54D-9. If a new wire is added or a splice point is modified for the CAN_L or CAN_H line, an error in the CAN communication may be caused.**

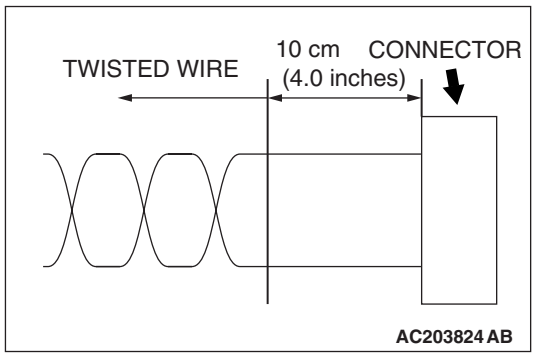
PRECAUTIONS ON HOW TO REPAIR THE CAN BUS LINES

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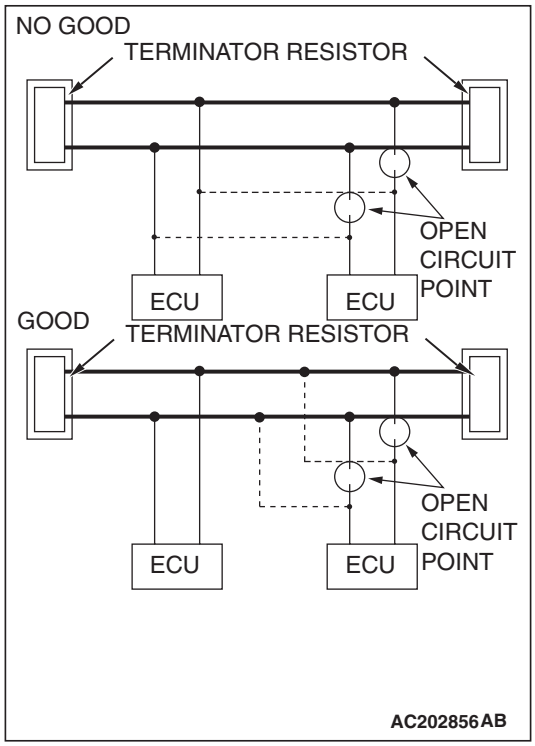
PRECAUTIONS ON HOW TO REPAIR THE CAN BUS LINES



- If the CAN bus line(s) are repaired, renew all the twisted wires between the end connectors. If the wiring harness is partially repaired, or only CAN_L or CAN_H line is repaired, noise suppression is deteriorated, causing a communication error.



- If the connector or wire on the main bus line or the sub-bus wire is replaced, the frayed end of the twisted wire should be within 10 cm from the connector. If it exceeds 10 cm, twist the wiring harness just like the original twisted wire. If the frayed end exceeds 10 cm, noise suppression is deteriorated, causing a communication error.



- If a sub-bus line is repaired, splice a new wire directly into the main bus line. If a new wire is spliced into the sub-bus line, which is connected to another device, the CAN communication will be disabled.

PRECAUTIONS ON HOW TO REPAIR THE TERMINATOR RESISTOR

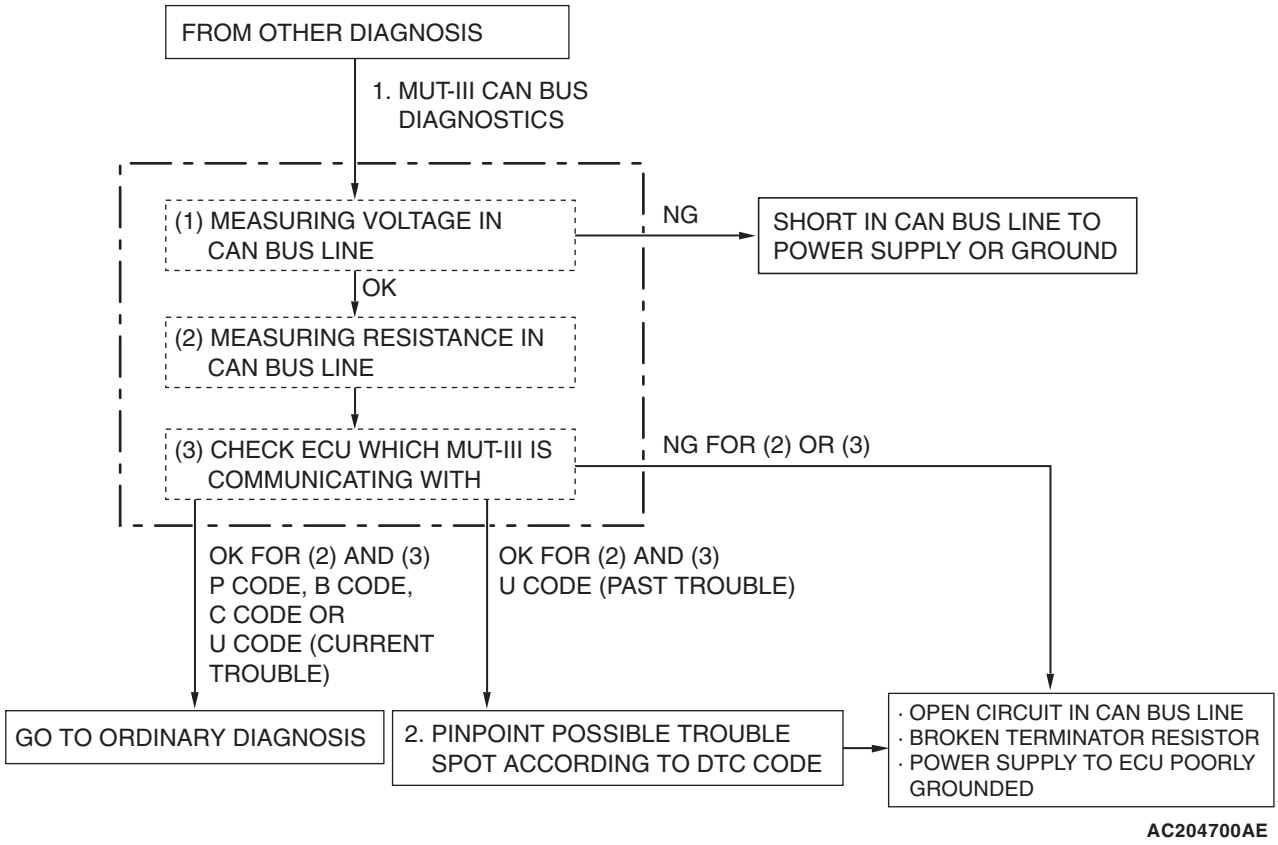
If one-side terminator resistor is broken, the CAN communication will continue although noise suppression is deteriorated. No diagnosis codes may be set even if the terminator resistor was broken. If a damage is found, replace the ECU which incorporates the defective terminator resistor.

EXPLANATION ABOUT THE MUT-III CAN BUS DIAGNOSTICS

M1548300100070

The MUT-III CAN bus diagnostics carries out the three checks below automatically, and then displays current condition of the CAN bus lines according to the check results.

CAN Bus Line Diagnostic Flow



1. MUT-III CAN bus diagnostics

   The MUT-III diagnoses CAN bus lines in accordance with the following strategy.

   NOTE: When the MUT-III carries out the voltage and resistance measurements, it will cease the communication between each of the ECU. If the MUT-III can not cease the communication, it will carry out the voltage measurement.

   (1) Measuring voltage in CAN bus line

   Diagnoses the power supply (such as wires of higher voltage than CAN communication line) and grounding (such as wires of lower voltage than CAN communication line) of CAN bus lines for short circuit by measuring the voltages between the CAN_L line or H line and body earth.

Terminal to be diagnosed	Normal value	Measurement value	Trouble when the measurement value does not meet the normal value	Note
Measuring the voltage between the CAN_L line and body earth	1.0 V or more and 4.0 V or less	Less than 1.0 V	Short to earth of the CAN_L line	If the CAN_L or H line is shorted to earth or power supply, a diagnosis code may not be set.
		More than 4.0 V	Short to power supply of the CAN_L line	
Measuring the voltage between the CAN_H line and body earth	1.0 V or more and 4.0 V or less	Less than 1.0 V	Short to earth of the CAN_H line	
		More than 4.0 V	Short to power supply of the CAN_H line	

   (2) Measuring resistance in CAN bus line

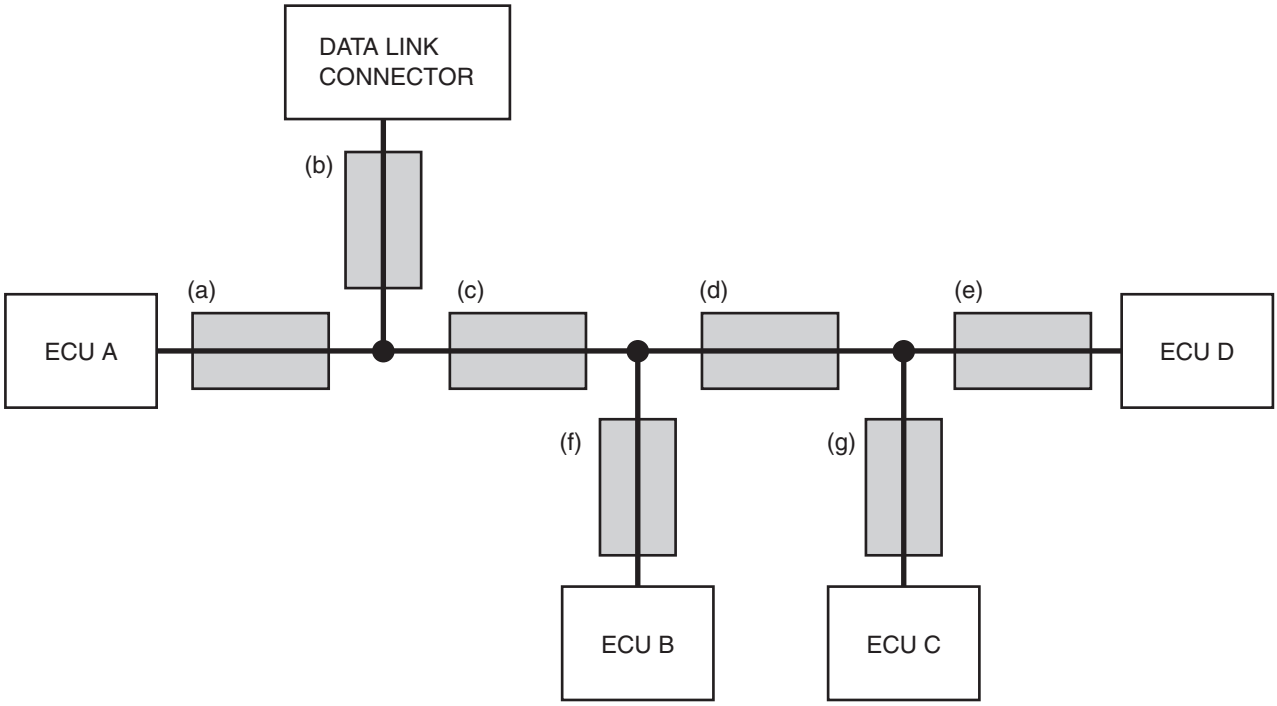
Checks the terminator resistors (incorporated in the combination meter or the engine-A/T-ECU), which are connected to each end of a CAN bus line, for breakage and a CAN bus main line for open circuit by measuring the resistance value between a CAN_L line and H line.

Normal value	Measurement value	Trouble when the measurement value does not meet the normal value	Note
60 ± 10 Ω	120 ± 20 Ω	Trouble in a CAN main line or terminator resistor	If only one terminator resistor is broken at either side, the CAN communication will continue although noise suppression is deteriorated. If a CAN main bus line is open circuit, the CAN communication is suspended at that open circuit point.
	No continuity	Trouble in CAN main bus line or between the diagnosis connector and main bus line	-
	2 Ω or less	CAN bus line (between CAN_L and H lines) is shorted	If a CAN bus line is shorted, all ECUs cease communicating each other (This fail-safe function is called "Bus off").
	Other than above	Poorly engaged connector	-

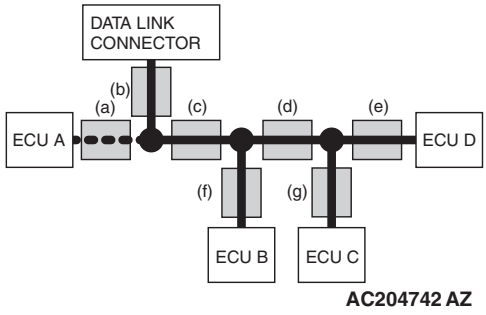
(3) Checking the communication condition of ECUs

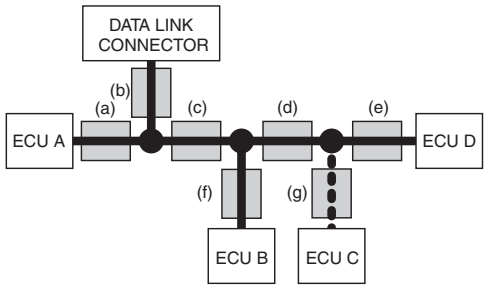
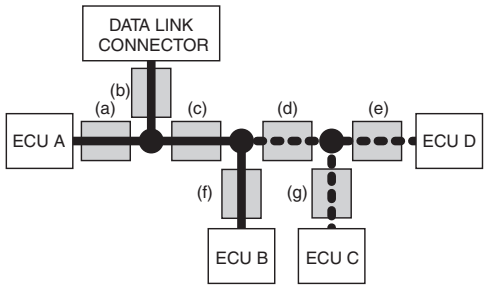
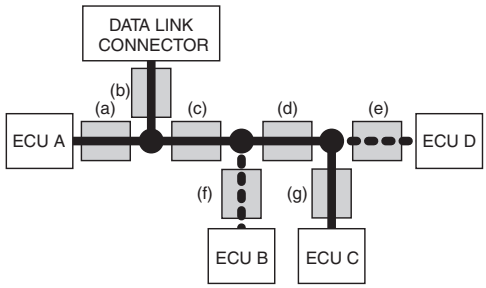
The MUT-III narrows down troubles in circuit by itself. Its strategy are as follows.

REFERENCE CIRCUIT



AC204741 AC

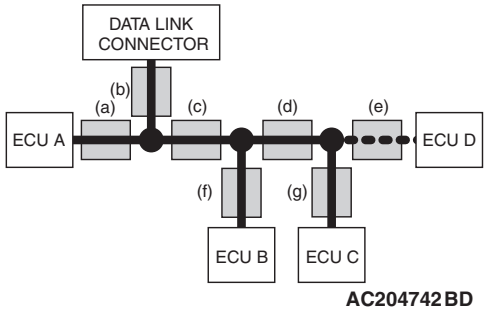
ECU which cannot communicate with the MUT-III	Possible trouble spot	Logic for narrowing down trouble spot	
ECU A	CAN bus line (a) and power supply system to ECU A	ECU A communicates with the MUT-III via CAN bus lines (a) and (b). The MUT-III judges that CAN bus line (b) is normal, because it can communicate with other ECUs. Possible trouble may be present in CAN bus line (a) or the power supply system to ECU A.	 AC204742 AZ

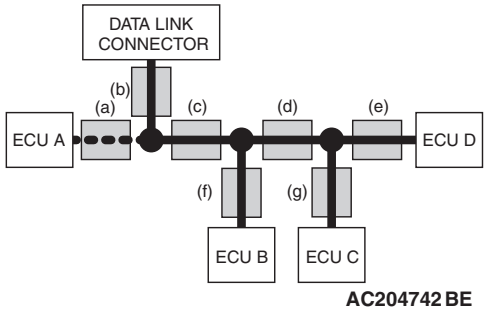
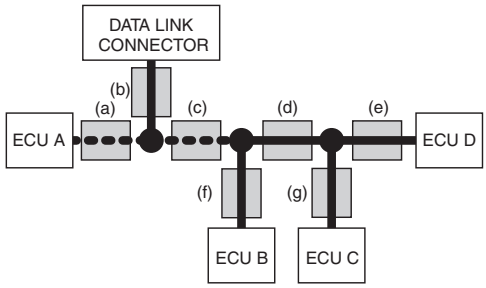
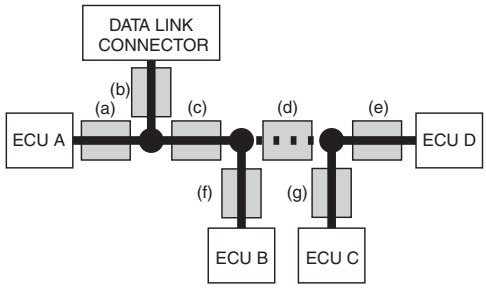
ECU which cannot communicate with the MUT-III	Possible trouble spot	Logic for narrowing down trouble spot	
ECU C	CAN bus line (g) and power supply system to ECU C	ECU C communicates with the MUT-III via CAN bus lines (b), (c), (d) and (g). The MUT-III judges that CAN bus lines (b), (c) and (d) are normal, because it can communicate with ECUs B and D. Possible trouble may be present in CAN bus line (g) or the power supply system to ECU C.	 AC204742BA
ECU C and ECU D	Trouble in CAN bus line (d)	ECUs C ad D communicate with the MUT-III via CAN bus lines (b), (c), (d), (e) and (g). The MUT-III judges that CAN bus lines (b) and (c) are normal, because it can communicate with ECU B. Possible trouble may be present in CAN bus line (d), (e) or (g) or the power supply system to ECU D. CAN bus line (d) is shared by ECUs C and D when they communicate with the MUT-III, so CAN bus line (d) is suspected as ultimate cause. CAN bus line (g) or (e) and power supply systems to ECU C or D are also suspected as second cause.	 AC204742BB
ECU B and ECU D	CAN bus line (e) or (f) or power supply system to ECU B or D	ECUs C ad D communicate with the MUT-III via CAN bus lines (b), (c), (d), (e) and (g). The MUT-III judges that CAN bus lines (b), (c) and (d) are normal, because it can communicate with ECU C. Possible trouble may be present in CAN bus line (f) or (e) or the power supply system to ECU B or D.	 AC204742BC

2. If diagnosis code related to CAN communication is set as past trouble, isolate opens as described below.

   NOTE: If you pinpoint trouble spot according to diagnosis code, you should use time-out diagnosis code. diagnosis code related to failure information is set when the data to be set contains an error, so CAN bus line itself is probably normal.

   NOTE: Time-out diagnosis code codes are stored in each ECU memory individually. Therefore, it is possible that these diagnosis code codes have not been set simultaneously. If the trouble spot can not be found when you diagnose by judging from multiple diagnosis code codes, check the communication lines between each ECU.

Diagnosis code to be set	Possible trouble spot	Logic for narrowing down trouble spot	
Time-out diagnosis code associated with ECU D is stored in ECU A, ECU B and ECU C	Trouble in CAN bus line (e) and power supply system to ECU D	When time-out diagnosis code associated with ECU D is stored in ECU A, B and C, or time-out diagnosis code associated with ECUs A, B and C is stored in ECU D, or "bus off" diagnosis code is stored in ECU D, CAN bus line (e) is suspected. When diagnosis code is not stored in ECU D, the power supply to ECU D is suspected.	 AC204742BD
Time-out diagnosis code associated with ECUs A, B and C is stored in ECU D			
"Bus off" diagnosis code is stored in ECU D			

Diagnosis code to be set	Possible trouble spot	Logic for narrowing down trouble spot	
Time-out diagnosis code associated with ECU A is stored in ECUs B, C and D Time-out diagnosis code associated with ECUs B, C and D is stored in ECU A "Bus off" diagnosis code is stored in ECU A	Trouble in CAN bus line (a) and power supply system to ECU A	When time-out diagnosis code associated with ECU A is stored in ECUs B, C and D, or time-out diagnosis code associated with ECUs B, C and D is stored in ECU A, or "bus off" diagnosis code is stored in ECU A, CAN bus line (a) or (c) is suspected. When diagnosis code is not stored in ECU A, the power supply to ECU A is suspected.	 AC204742 BE  AC204742 BF
Time-out diagnosis code codes associated with ECUs C and D are stored in ECU A and ECU B Time-out diagnosis code codes associated with ECUs A and B are stored in ECU C and ECU D	Trouble in CAN bus line (d)	If time-out diagnosis code codes associated with ECUs C and D are stored in ECUs A and B, or time-out codes associated with ECUs A and B are stored in ECUs C and D, CAN bus line (d) is suspected. CAN bus line (g) or (e) and power supply systems to ECU C or D are also suspected as second cause.	 AC204742 BG

DIAGNOSIS

CAN BUS DIAGNOSTICS TABLE

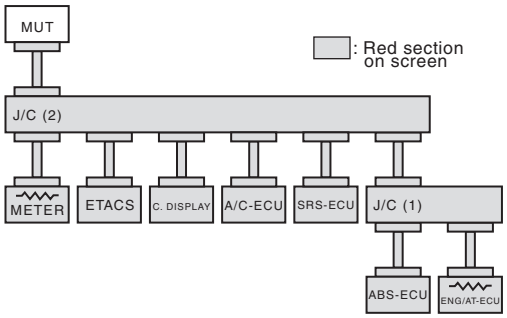
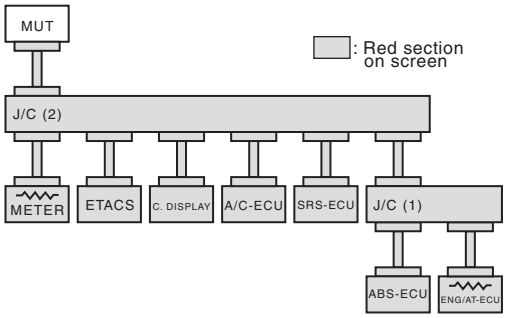
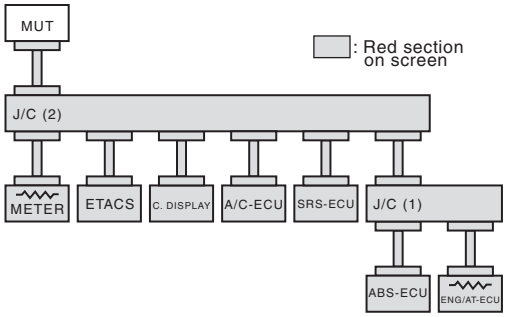
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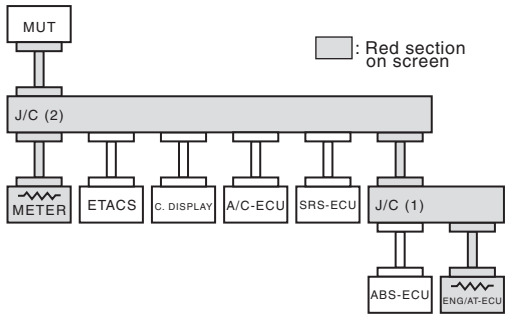
This diagnosis applies only to the CAN bus lines. If a different system is defective, proceed to the applicable diagnosis section for each system. Observe the diagnosis procedure below only when the CAN bus line is defective.

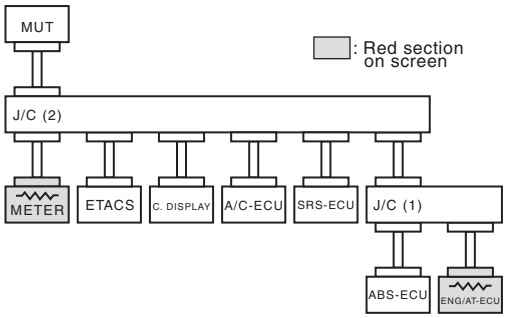
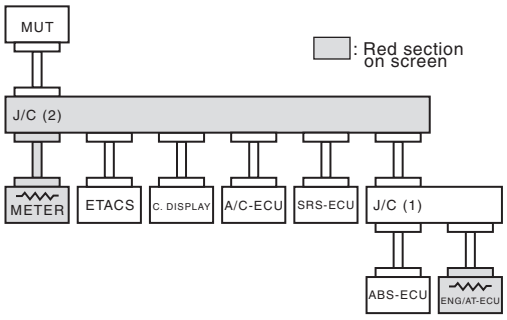
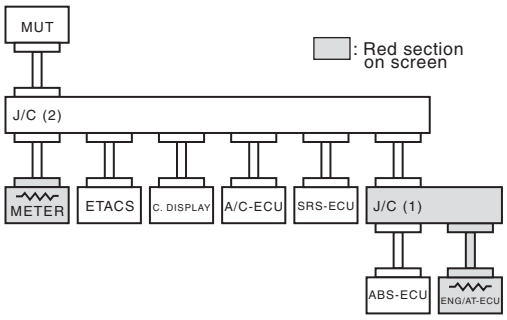
⚠ CAUTION

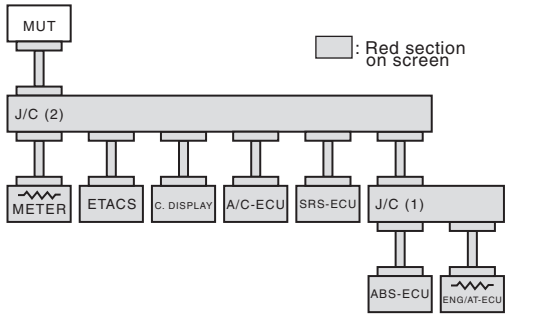
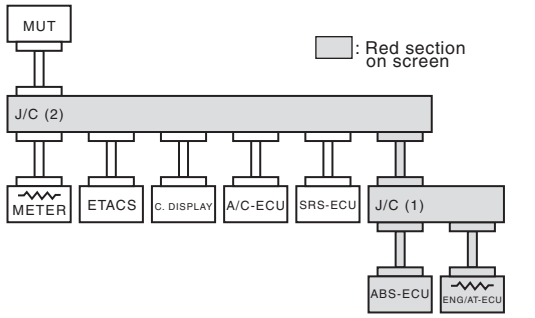
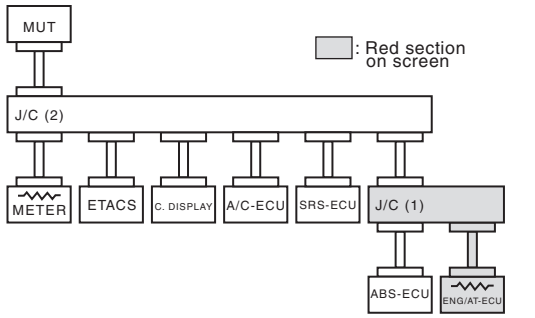
During diagnosis, a diagnosis code associated with another system may be set when the ignition switch is turned on with connector(s) disconnected. After completing the repair, confirm all systems for diagnosis code(s). If diagnosis code(s) are set, erase them all.

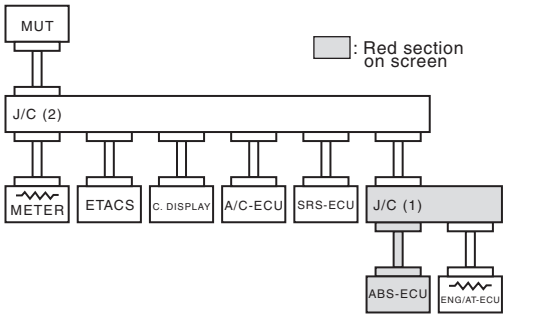
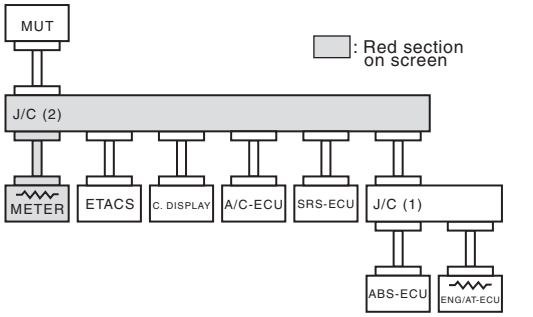
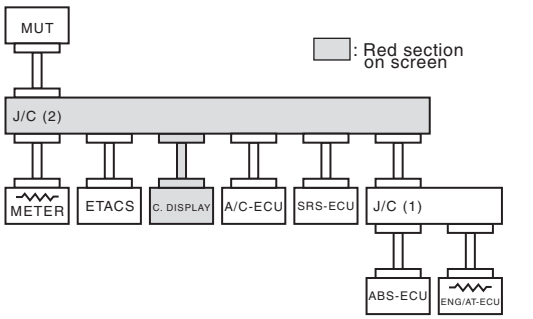
LH DRIVE VEHICLES WITHOUT ASC

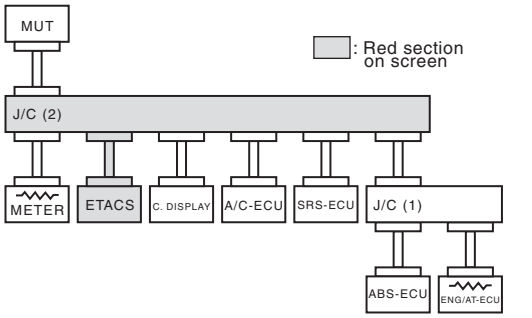
MUT-III SCREEN	DIAGNOSIS DETAILS	REFERENCE PAGE
<Comment> Short circuit to battery in red displayed area is estimated.  AC309837AC	Diagnostic Item 1 Diagnose the CAN bus lines for short to power supply <LH drive vehicles without ASC>	P.54D-46
<Comment> Grounding in red displayed area is estimated.  AC309837AC	Diagnostic Item 5 Diagnose the CAN bus lines for short to earth <LH drive vehicles without ASC>	P.54D-173
<Comment> Short circuit between CAN_H and CAN_L in red displayed area is estimated.  AC309837AC	Diagnostic Item 9 Diagnose the lines between CAN_L and CAN_H for short circuit <LH drive vehicles without ASC>	P.54D-304

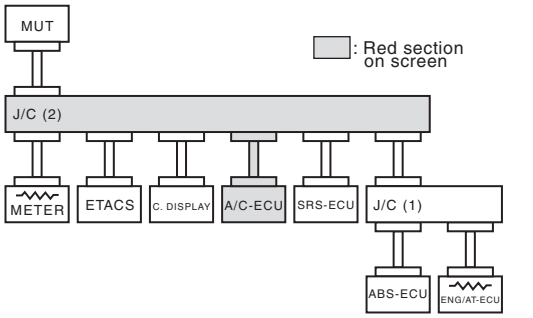
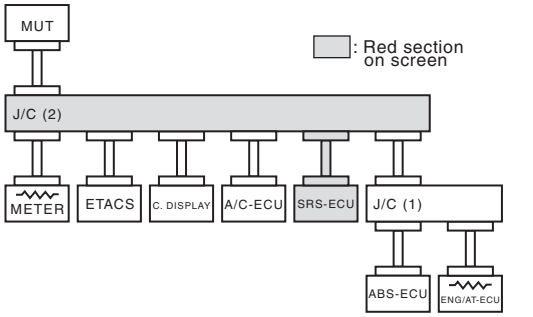
MUT-III SCREEN	DIAGNOSIS DETAILS	REFERENCE PAGE
<Comment> Disconnection in red displayed area is estimated.  AC309837AH	Diagnostic Item 13 Diagnose the terminator resistors at both ends <LH drive vehicles>	P.54D-404

MUT-III SCREEN	DIAGNOSIS DETAILS	REFERENCE PAGE
<Comment> Malfunction of terminating resistance is estimated.  AC309837AD	Diagnostic Item 15 Diagnose the terminator resistor at one end <LH drive vehicles>	P.54D-434
<Comment> Disconnection, loose connection or terminating resistance in red displayed area is estimated.  AC309837AI		
<Comment> Disconnection, loose connection or terminating resistance in red displayed area is estimated.  AC309837AE		

MUT-III SCREEN	DIAGNOSIS DETAILS	REFERENCE PAGE
<Comment> Malfunction in red displayed area is estimated. Please refer to service manual and inspect with 'CAN Detail Diagnosis'.  AC309837AC	Diagnostic Item 17 Diagnose CAN bus lines thoroughly <LH drive vehicles without ASC>	P.54D-452
<Comment> Harness disconnection or loose connection in red displayed area is estimated.  AC309837AJ	Diagnostic Item 21 Diagnose the lines between the joint connectors (CAN1 and CAN2) <LH drive vehicles>	P.54D-552
<Comment> Harness disconnection or loose connection in red displayed area is estimated.  AC309837AF	Diagnostic Item 23 Diagnose the lines from the main bus line to the engine-ECU <M/T> or engine-A/T-ECU <A/T>.	P.54D-562

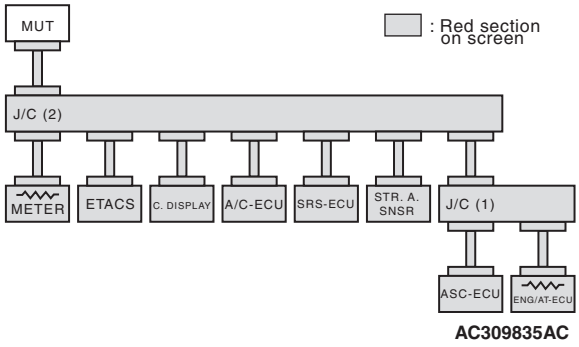
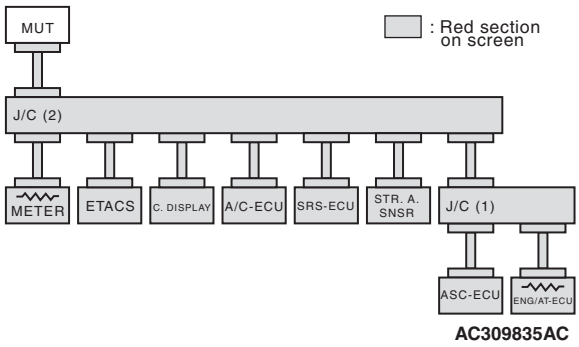
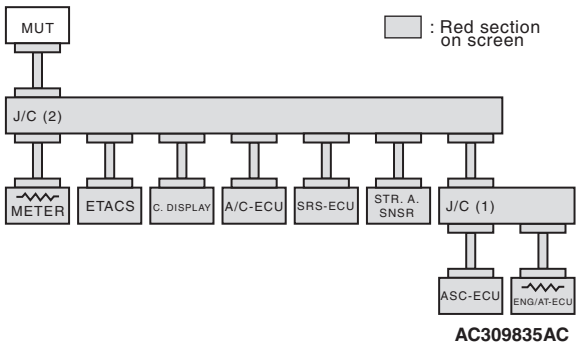
MUT-III SCREEN	DIAGNOSIS DETAILS	REFERENCE PAGE
<Comment> Harness disconnection or loose connection in red displayed area is estimated.  AC309837AK	Diagnostic Item 24 Diagnose the lines between CAN main bus line and the ABS-ECU <Vehicles without ASC>	P.54D-567
<Comment> Harness disconnection or loose connection in red displayed area is estimated.  AC309837AG	Diagnostic Item 26 Diagnose the lines from the main bus line to the combination meter <LH drive vehicles>	P.54D-575
<Comment> Harness disconnection or loose connection in red displayed area is estimated.  AC309837AM	Diagnostic Item 28 Diagnose the lines from the main bus line to the centre display <LH drive vehicles>	P.54D-581

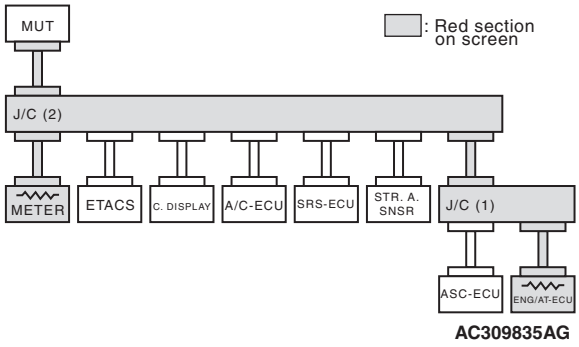
MUT-III SCREEN	DIAGNOSIS DETAILS	REFERENCE PAGE
<Comment> Harness disconnection or loose connection in red displayed area is estimated.  AC309837AL	Diagnostic Item 30 Diagnose the lines from the main bus line to the ETACS-ECU <LH drive vehicles>	P.54D-591

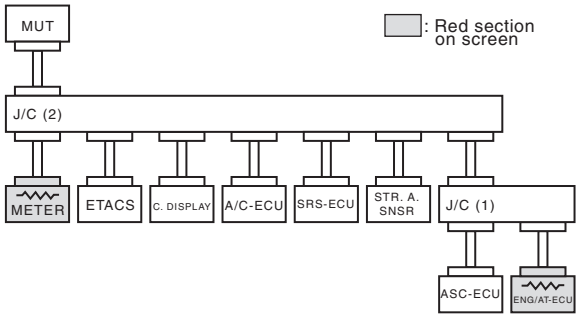
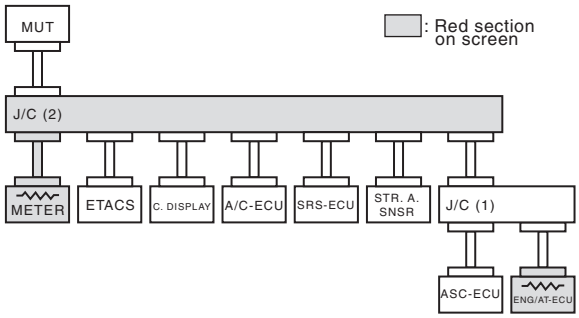
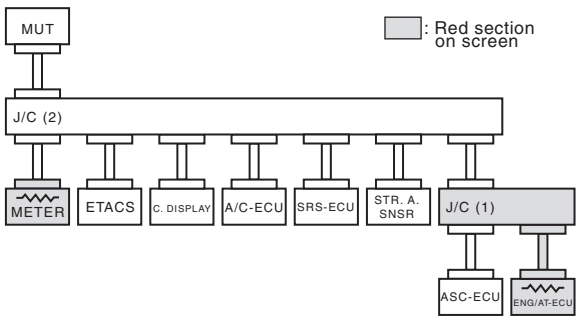
MUT-III SCREEN	DIAGNOSIS DETAILS	REFERENCE PAGE
<Comment> Harness disconnection or loose connection in red displayed area is estimated.  AC309837AO	Diagnostic Item 32 Diagnose the lines from the main bus line to the A/C-ECU <LH drive vehicles>	P.54D-597
<Comment> Harness disconnection or loose connection in red displayed area is estimated.  AC309837AN	Diagnostic Item 34 Diagnose the lines from the main bus line to the SRS-ECU <LH drive vehicles>	P.54D-603
If the screen other than above is shown	Troubles are present at two or more spots. Diagnose CAN bus lines by referring to the trouble spot pinpoint procedures. If the trouble still can not be resolved, refer to diagnostic item 17, Diagnose CAN bus lines thoroughly.	–

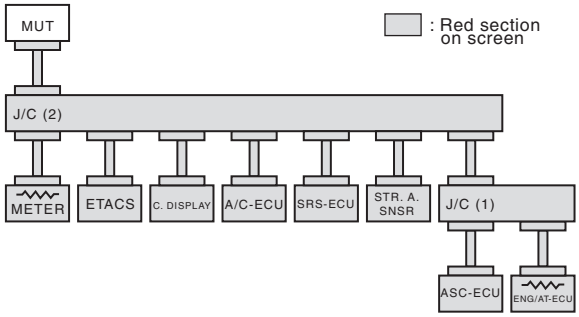
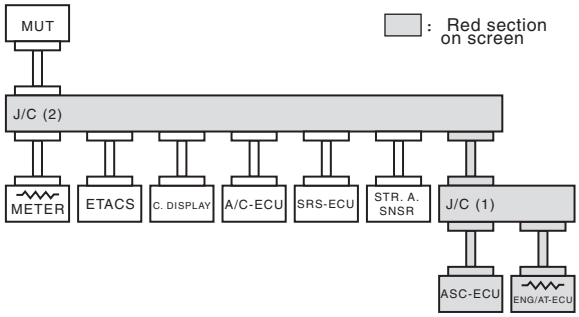
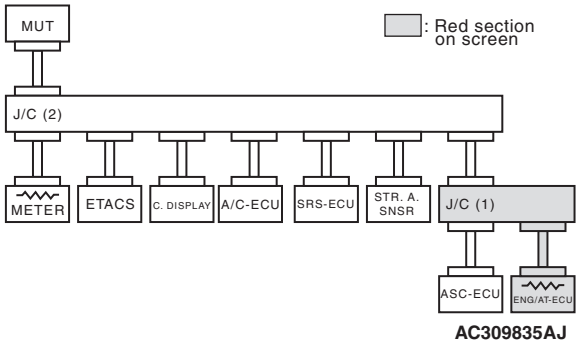
NOTE: If the diagnostic items other than No.17 cannot resolve the trouble, follow diagnostic item 17, Diagnose CAN bus lines thoroughly.

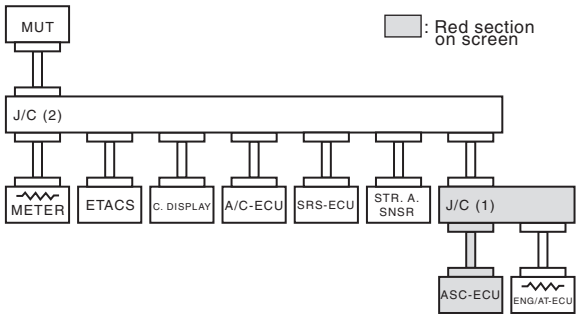
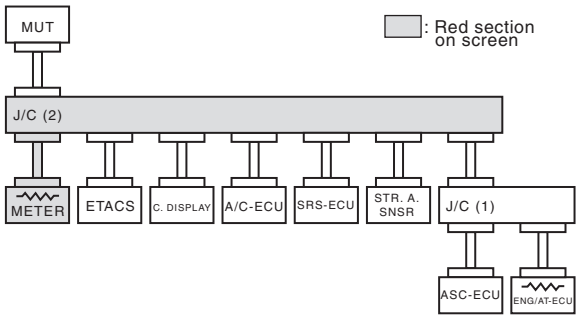
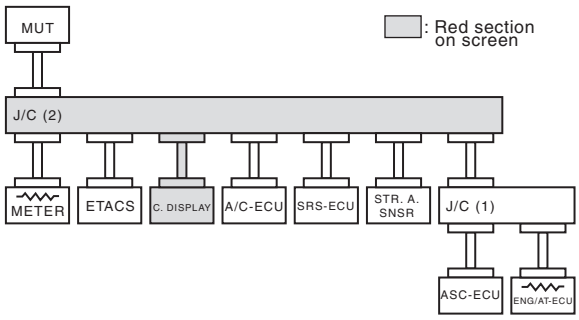
LH DRIVE VEHICLES WITH ASC

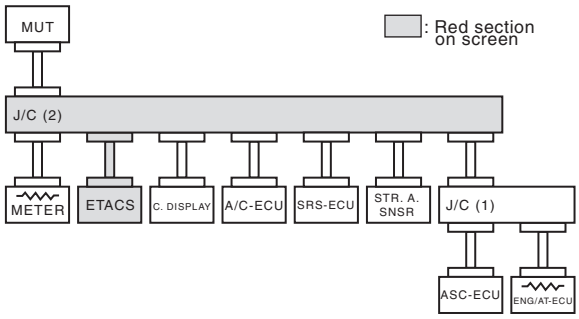
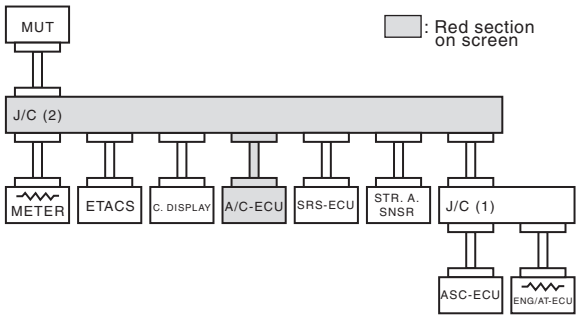
MUT-III SCREEN	DIAGNOSIS DETAILS	REFERENCE PAGE
<Comment> Short circuit to battery in red displayed area is estimated.  AC309835AC	Diagnostic Item 2 Diagnose the CAN bus lines for short to power supply <LH drive vehicles with ASC>	P.54D-77
<Comment> Grounding in red displayed area is estimated.  AC309835AC	Diagnostic Item 6 Diagnose the CAN bus lines for short to earth <LH drive vehicles with ASC>	P.54D-205
<Comment> Short circuit between CAN_H and CAN_L in red displayed area is estimated.  AC309835AC	Diagnostic Item 10 Diagnose the lines between CAN_L and CAN_H for short circuit <LH drive vehicles with ASC>	P.54D-328

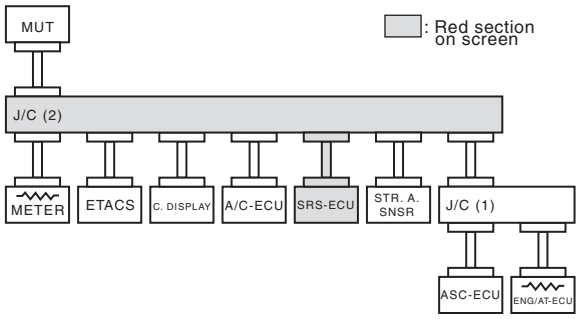
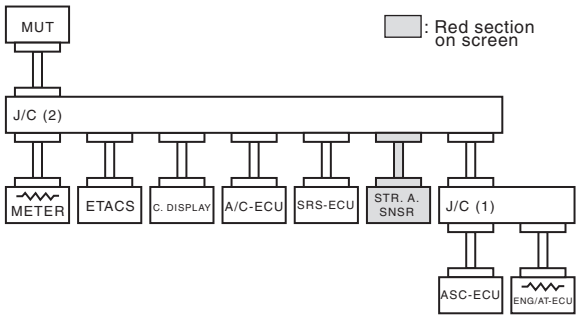
MUT-III SCREEN	DIAGNOSIS DETAILS	REFERENCE PAGE
<Comment> Disconnection in red displayed area is estimated.  AC309835AG	Diagnostic Item 13 Diagnose the terminator resistors at both ends <LH drive vehicles>	P.54D-404

MUT-III SCREEN	DIAGNOSIS DETAILS	REFERENCE PAGE
<Comment> Malfunction of terminating resistance is estimated.  AC309835AH	Diagnostic Item 15 Diagnose the terminator resistor at one end <LH drive vehicles>	P.54D-434
<Comment> Disconnection, loose connection or terminating resistance in red displayed area is estimated.  AC309835AD		
<Comment> Disconnection, loose connection or terminating resistance in red displayed area is estimated.  AC309835AI		

MUT-III SCREEN	DIAGNOSIS DETAILS	REFERENCE PAGE
<Comment> Malfunction in red displayed area is estimated. Please refer to service manual and inspect with 'CAN Detail Diagnosis'.  AC309835AC	Diagnostic Item 18 Diagnose CAN bus lines thoroughly <LH drive vehicles with ASC>	P.54D-476
<Comment> Harness disconnection or loose connection in red displayed area is estimated.  AC309835AE	Diagnostic Item 21 Diagnose the lines between the joint connectors (CAN1 and CAN2) <LH drive vehicles>	P.54D-552
<Comment> Harness disconnection or loose connection in red displayed area is estimated.  AC309835AJ	Diagnostic Item 23 Diagnose the lines from the main bus line to the engine-ECU <M/T> or engine-A/T-ECU <A/T>.	P.54D-562

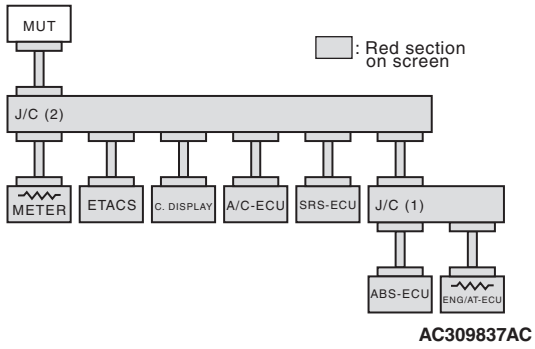
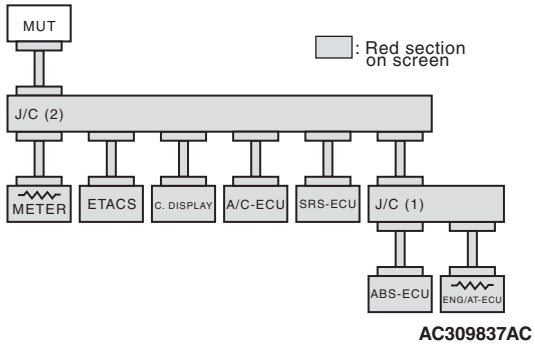
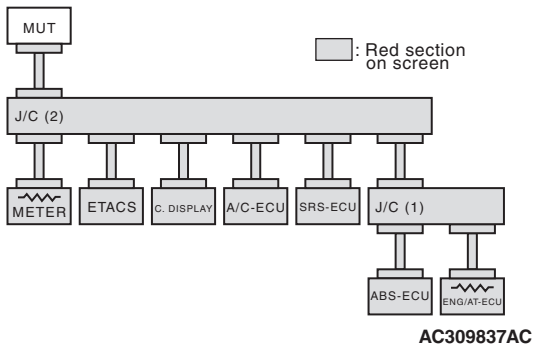
MUT-III SCREEN	DIAGNOSIS DETAILS	REFERENCE PAGE
<Comment> Harness disconnection or loose connection in red displayed area is estimated.  AC309835AF	Diagnostic Item 25 Diagnose the lines between CAN main bus line and the ASC-ECU <Vehicles with ASC>	P.54D-571
<Comment> Harness disconnection or loose connection in red displayed area is estimated.  AC309835AK	Diagnostic Item 26 Diagnose the lines from the main bus line to the combination meter <LH drive vehicles>	P.54D-575
<Comment> Harness disconnection or loose connection in red displayed area is estimated.  AC309835AO	Diagnostic Item 28 Diagnose the lines from the main bus line to the centre display <LH drive vehicles>	P.54D-581

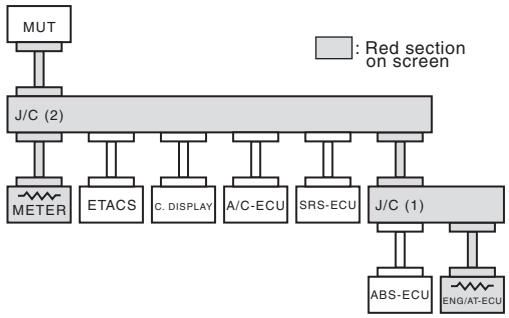
MUT-III SCREEN	DIAGNOSIS DETAILS	REFERENCE PAGE
<Comment> Harness disconnection or loose connection in red displayed area is estimated.  AC309835AL	Diagnostic Item 30 Diagnose the lines from the main bus line to the ETACS-ECU <LH drive vehicles>	P.54D-591
<Comment> Harness disconnection or loose connection in red displayed area is estimated.  AC309835AM	Diagnostic Item 32 Diagnose the lines from the main bus line to the A/C-ECU <LH drive vehicles>	P.54D-597

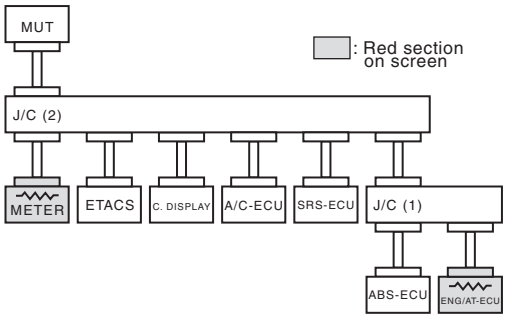
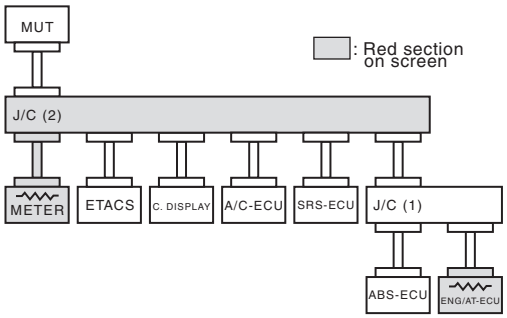
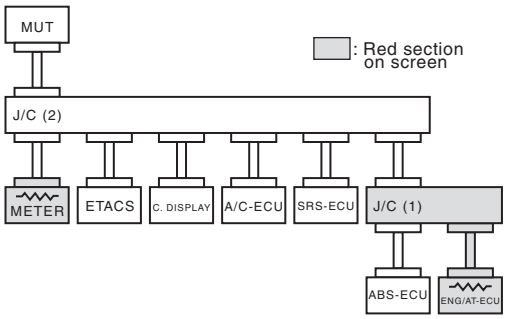
MUT-III SCREEN	DIAGNOSIS DETAILS	REFERENCE PAGE
<Comment> Harness disconnection or loose connection in red displayed area is estimated.  AC309835AP	Diagnostic Item 34 Diagnose the lines from the main bus line to the SRS-ECU <LH drive vehicles>	P.54D-603
<Comment> Harness disconnection or loose connection in red displayed area is estimated.  AC309835AN	Diagnostic Item 36 Diagnose the lines from the main bus line to the steering wheel angle sensor <LH drive vehicles>	P.54D-609
If the screen other than above is shown	Troubles are present at two or more spots. Diagnose CAN bus lines by referring to the trouble spot pinpoint procedures. If the trouble still can not be resolved, refer to diagnostic item 18, Diagnose CAN bus lines thoroughly.	–

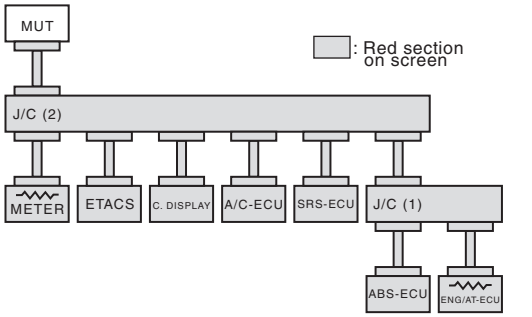
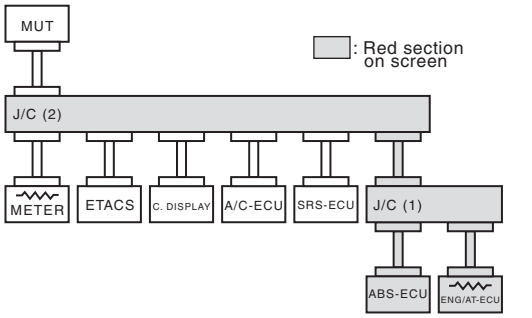
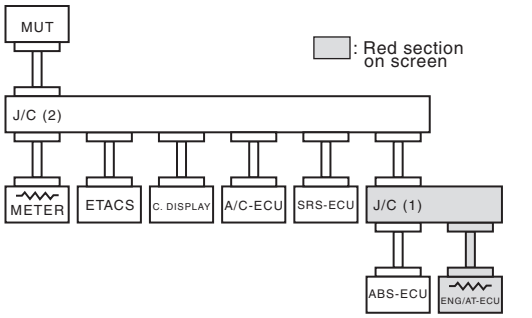
NOTE: If the diagnostic items other than No.18 cannot resolve the trouble, follow diagnostic item 18, Diagnose CAN bus lines thoroughly.

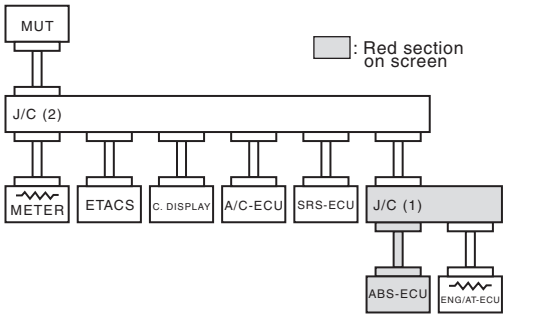
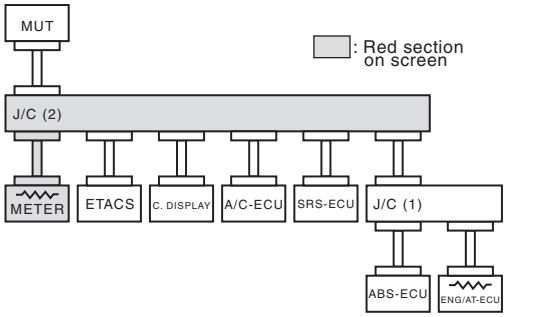
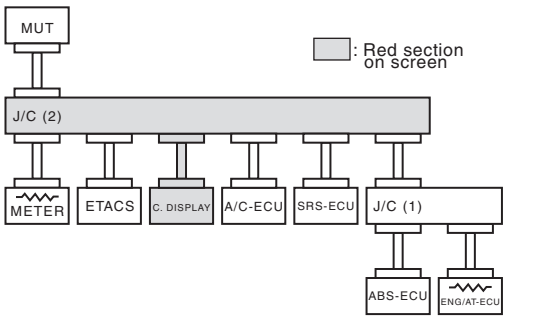
RH DRIVE VEHICLES WITHOUT ASC

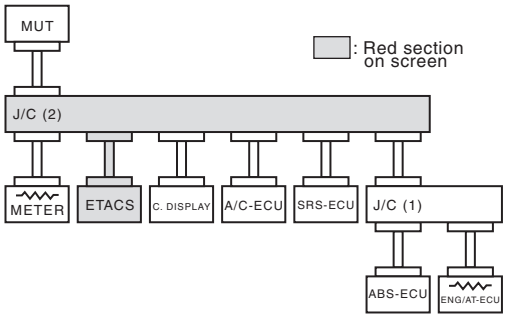
MUT-III SCREEN	DIAGNOSIS DETAILS	REFERENCE PAGE
<Comment> Short circuit to battery in red displayed area is estimated.  AC309837AC	Diagnostic Item 3 Diagnose the CAN bus lines for short to power supply <RH drive vehicles without ASC>	P.54D-110
<Comment> Grounding in red displayed area is estimated.  AC309837AC	Diagnostic Item 7 Diagnose the CAN bus lines for short to earth <RH drive vehicles without ASC>	P.54D-239
<Comment> Short circuit between CAN_H and CAN_L in red displayed area is estimated.  AC309837AC	Diagnostic Item 11 Diagnose the lines between CAN_L and CAN_H for short circuit <RH drive vehicles without ASC>	P.54D-354

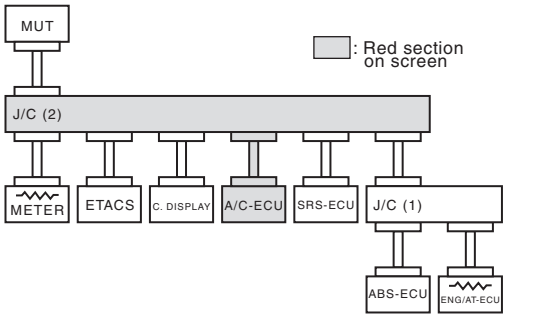
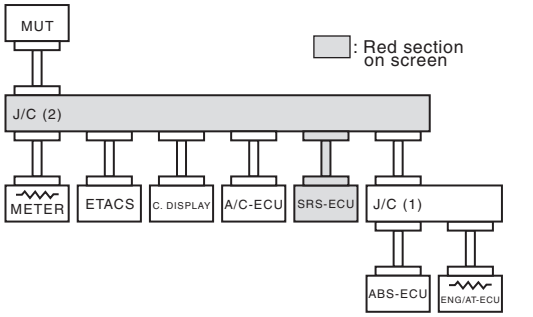
MUT-III SCREEN	DIAGNOSIS DETAILS	REFERENCE PAGE
<Comment> Disconnection in red displayed area is estimated.  AC309837AH	Diagnostic Item 14 Diagnose the terminator resistors at both ends <RH drive vehicles>	P.54D-419

MUT-III SCREEN	DIAGNOSIS DETAILS	REFERENCE PAGE
<Comment> Malfunction of terminating resistance is estimated.  AC309837AD	Diagnostic Item 16 Diagnose the terminator resistor at one end <RH drive vehicles>	P.54D-443
<Comment> Disconnection, loose connection or terminating resistance in red displayed area is estimated.  AC309837AI		
<Comment> Disconnection, loose connection or terminating resistance in red displayed area is estimated.  AC309837AE		

MUT-III SCREEN	DIAGNOSIS DETAILS	REFERENCE PAGE
<Comment> Malfunction in red displayed area is estimated. Please refer to service manual and inspect with 'CAN Detail Diagnosis'.  AC309837AC	Diagnostic Item 19 Diagnose CAN bus lines thoroughly <RH drive vehicles without ASC>	P.54D-502
<Comment> Harness disconnection or loose connection in red displayed area is estimated.  AC309837AJ	Diagnostic Item 22 Diagnose the lines between the joint connectors (CAN1 and CAN2) <RH drive vehicles>	P.54D-557
<Comment> Harness disconnection or loose connection in red displayed area is estimated.  AC309837AF	Diagnostic Item 23 Diagnose the lines from the main bus line to the engine-ECU <M/T> or engine-A/T-ECU <A/T>.	P.54D-562

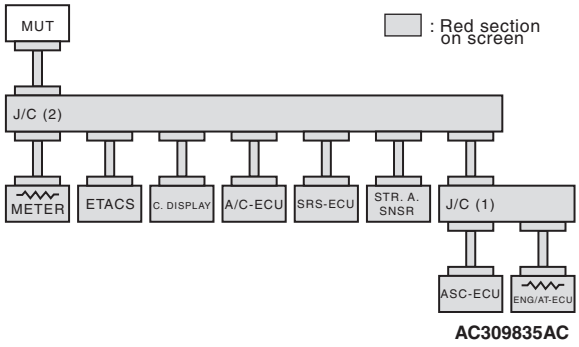
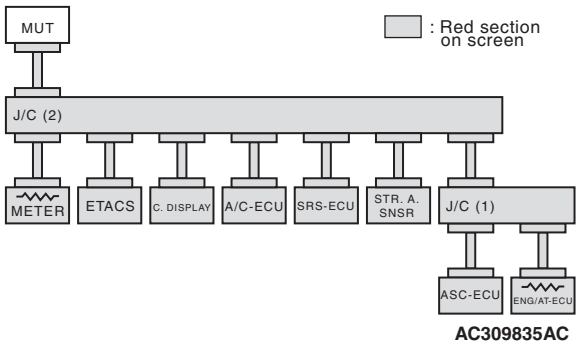
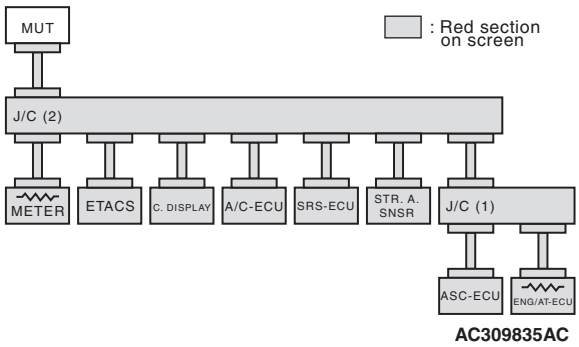
MUT-III SCREEN	DIAGNOSIS DETAILS	REFERENCE PAGE
<Comment> Harness disconnection or loose connection in red displayed area is estimated.  AC309837AK	Diagnostic Item 24 Diagnose the lines between CAN main bus line and the ABS-ECU <Vehicles without ASC>	P.54D-567
<Comment> Harness disconnection or loose connection in red displayed area is estimated.  AC309837AG	Diagnostic Item 27 Diagnose the lines from the main bus line to the combination meter <RH drive vehicles>	P.54D-578
<Comment> Harness disconnection or loose connection in red displayed area is estimated.  AC309837AM	Diagnostic Item 29 Diagnose the lines from the main bus line to the centre display <RH drive vehicles>	P.54D-586

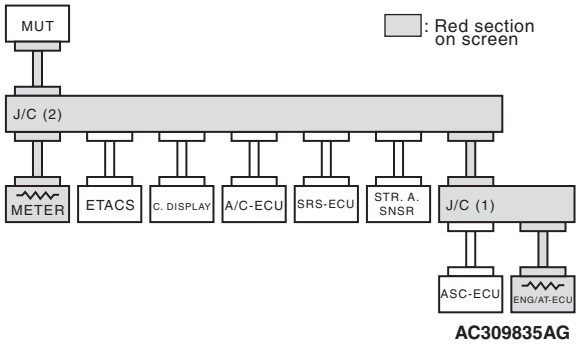
MUT-III SCREEN	DIAGNOSIS DETAILS	REFERENCE PAGE
<Comment> Harness disconnection or loose connection in red displayed area is estimated.  AC309837AL	Diagnostic Item 31 Diagnose the lines from the main bus line to the ETACS-ECU <RH drive vehicles>	P.54D-594

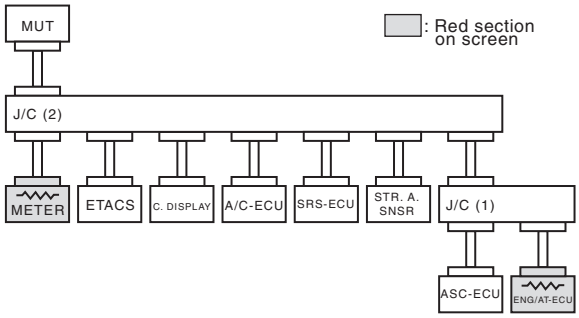
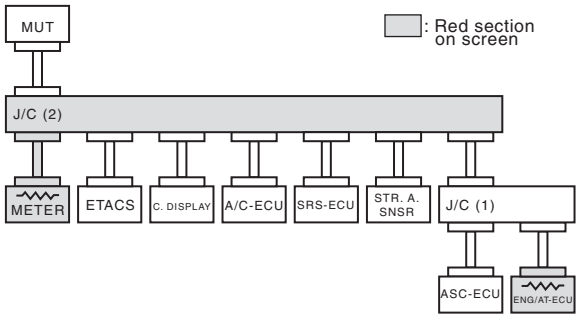
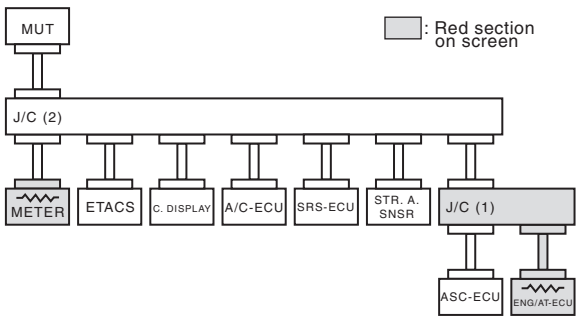
MUT-III SCREEN	DIAGNOSIS DETAILS	REFERENCE PAGE
<Comment> Harness disconnection or loose connection in red displayed area is estimated.  AC309837AO	Diagnostic Item 33 Diagnose the lines from the main bus line to the A/C-ECU <RH drive vehicles>	P.54D-600
<Comment> Harness disconnection or loose connection in red displayed area is estimated.  AC309837AN	Diagnostic Item 35 Diagnose the lines from the main bus line to the SRS-ECU <RH drive vehicles>	P.54D-606
If the screen other than above is shown	Troubles are present at two or more spots. Diagnose CAN bus lines by referring to the trouble spot pinpoint procedures. If the trouble still can not be resolved, refer to diagnostic item 19, Diagnose CAN bus lines thoroughly.	–

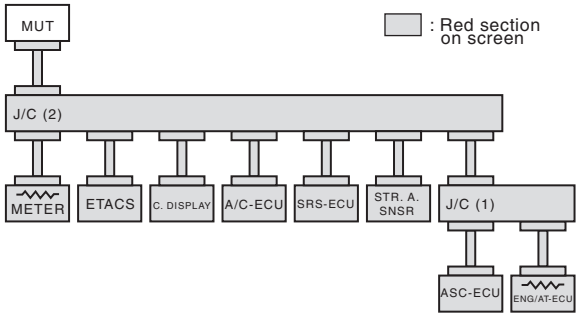
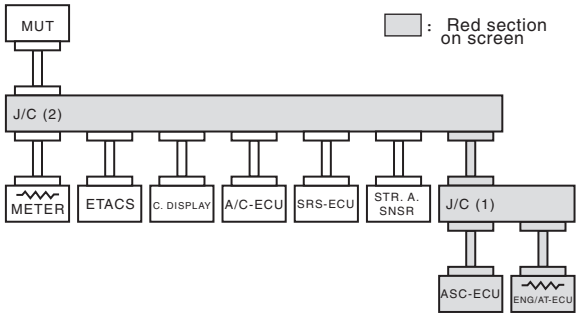
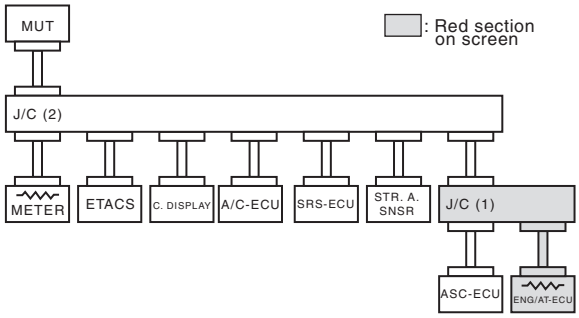
NOTE: If the diagnostic items other than No.19 cannot resolve the trouble, follow diagnostic item 19, Diagnose CAN bus lines thoroughly.

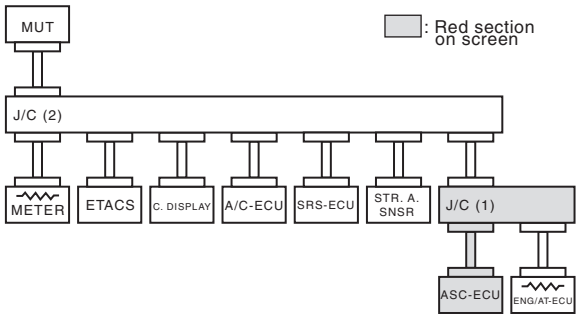
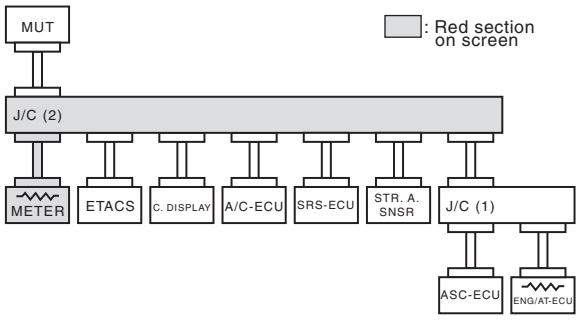
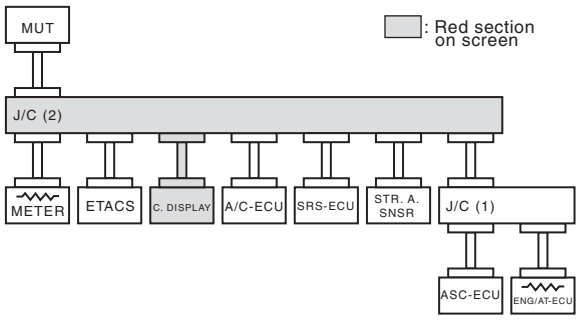
RH DRIVE VEHICLES WITH ASC

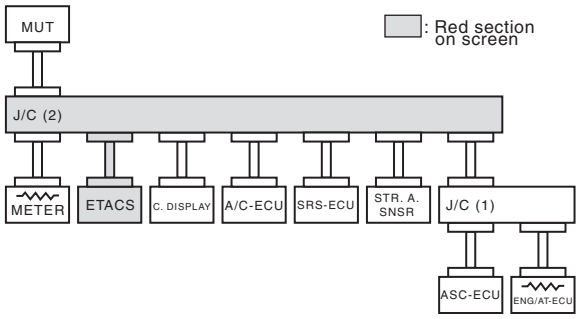
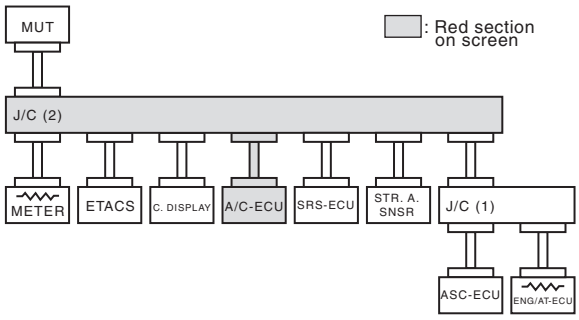
MUT-III SCREEN	DIAGNOSIS DETAILS	REFERENCE PAGE
<Comment> Short circuit to battery in red displayed area is estimated.  AC309835AC	Diagnostic Item 4 Diagnose the CAN bus lines for short to power supply <RH drive vehicles with ASC>	P.54D-140
<Comment> Grounding in red displayed area is estimated.  AC309835AC	Diagnostic Item 8 Diagnose the CAN bus lines for short to earth <RH drive vehicles with ASC>	P.54D-270
<Comment> Short circuit between CAN_H and CAN_L in red displayed area is estimated.  AC309835AC	Diagnostic Item 12 Diagnose the lines between CAN_L and CAN_H for short circuit <RH drive vehicles with ASC>	P.54D-378

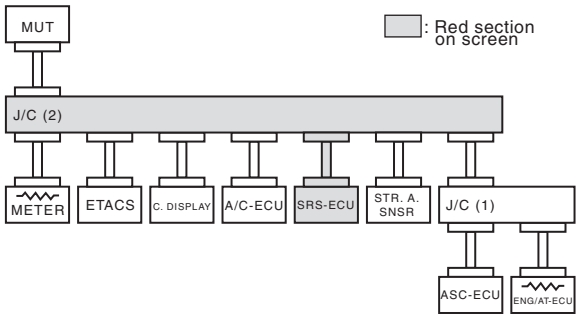
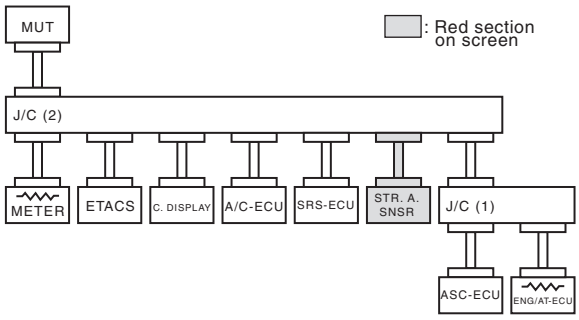
MUT-III SCREEN	DIAGNOSIS DETAILS	REFERENCE PAGE
<Comment> Disconnection in red displayed area is estimated.  AC309835AG	Diagnostic Item 14 Diagnose the terminator resistors at both ends <RH drive vehicles>	P.54D-419

MUT-III SCREEN	DIAGNOSIS DETAILS	REFERENCE PAGE
<Comment> Malfunction of terminating resistance is estimated.  AC309835AH	Diagnostic Item 16 Diagnose the terminator resistor at one end <RH drive vehicles>	P.54D-443
<Comment> Disconnection, loose connection or terminating resistance in red displayed area is estimated.  AC309835AD		
<Comment> Disconnection, loose connection or terminating resistance in red displayed area is estimated.  AC309835AI		

MUT-III SCREEN	DIAGNOSIS DETAILS	REFERENCE PAGE
<Comment> Malfunction in red displayed area is estimated. Please refer to service manual and inspect with 'CAN Detail Diagnosis'.  AC309835AC	Diagnostic Item 20 Diagnose CAN bus lines thoroughly <RH drive vehicles with ASC>	P.54D-526
<Comment> Harness disconnection or loose connection in red displayed area is estimated.  AC309835AE	Diagnostic Item 22 Diagnose the lines between the joint connectors (CAN1 and CAN2) <RH drive vehicles>	P.54D-557
<Comment> Harness disconnection or loose connection in red displayed area is estimated.  AC309835AJ	Diagnostic Item 23 Diagnose the lines from the main bus line to the engine-ECU <M/T> or engine-A/T-ECU <A/T>.	P.54D-562

MUT-III SCREEN	DIAGNOSIS DETAILS	REFERENCE PAGE
<Comment> Harness disconnection or loose connection in red displayed area is estimated.  AC309835AF	Diagnostic Item 25 Diagnose the lines between CAN main bus line and the ASC-ECU <Vehicles with ASC>	P.54D-571
<Comment> Harness disconnection or loose connection in red displayed area is estimated.  AC309835AK	Diagnostic Item 27 Diagnose the lines from the main bus line to the combination meter <RH drive vehicles>	P.54D-578
<Comment> Harness disconnection or loose connection in red displayed area is estimated.  AC309835AO	Diagnostic Item 29 Diagnose the lines from the main bus line to the centre display <RH drive vehicles>	P.54D-586

MUT-III SCREEN	DIAGNOSIS DETAILS	REFERENCE PAGE
<Comment> Harness disconnection or loose connection in red displayed area is estimated.  AC309835AL	Diagnostic Item 31 Diagnose the lines from the main bus line to the ETACS-ECU <RH drive vehicles>	P.54D-594
<Comment> Harness disconnection or loose connection in red displayed area is estimated.  AC309835AM	Diagnostic Item 33 Diagnose the lines from the main bus line to the A/C-ECU <RH drive vehicles>	P.54D-600

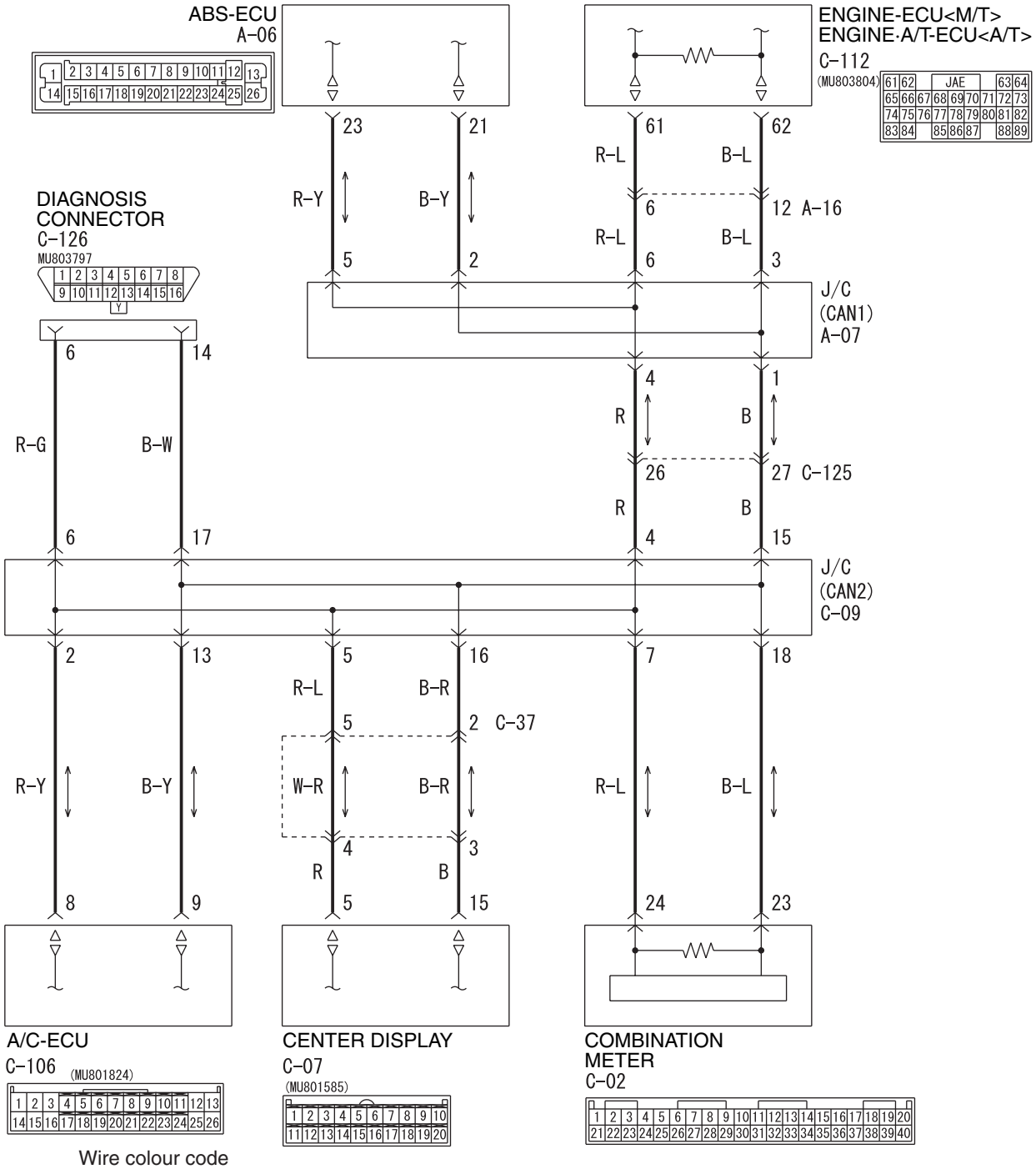
MUT-III SCREEN	DIAGNOSIS DETAILS	REFERENCE PAGE
<Comment> Harness disconnection or loose connection in red displayed area is estimated.  AC309835AP	Diagnostic Item 35 Diagnose the lines from the main bus line to the SRS-ECU <RH drive vehicles>	P.54D-606
<Comment> Harness disconnection or loose connection in red displayed area is estimated.  AC309835AN	Diagnostic Item 37 Diagnose the lines from the main bus line to the steering wheel angle sensor <RH drive vehicles>	P.54D-613
If the screen other than above is shown	Troubles are present at two or more spots. Diagnose CAN bus lines by referring to the trouble spot pinpoint procedures. If the trouble still can not be resolved, refer to diagnostic item 20, Diagnose CAN bus lines thoroughly.	–

NOTE: If the diagnostic items other than No.20 cannot resolve the trouble, follow diagnostic item 20, Diagnose CAN bus lines thoroughly.

CAN BUS DIAGNOSIS

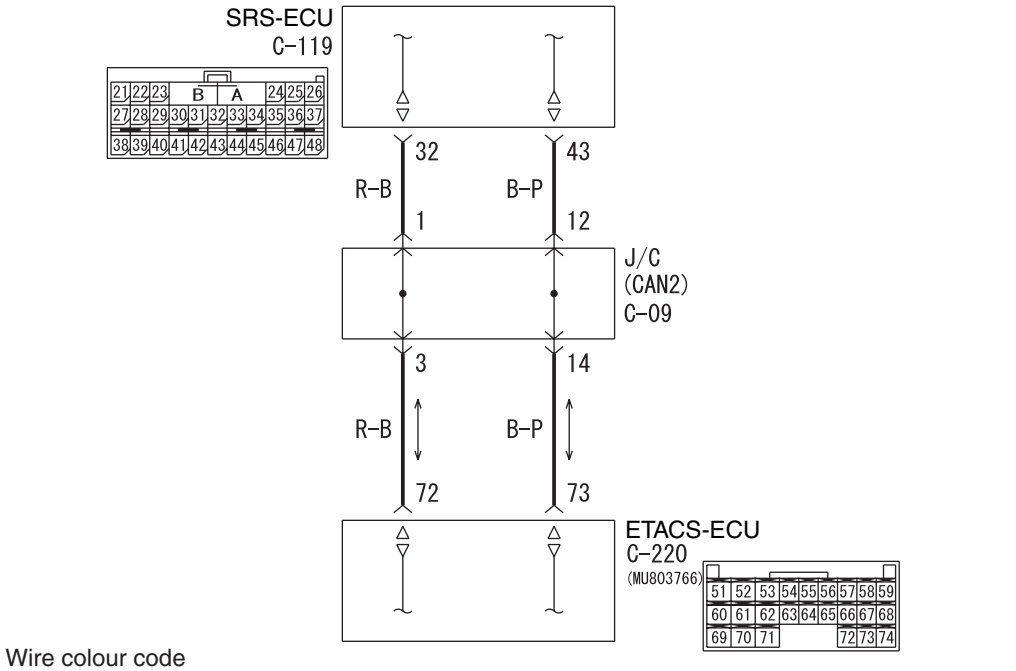
Diagnostic Item 1: Diagnose the CAN bus lines for short to power supply <LH drive vehicles without ASC>

⚠ CAUTION
When servicing a CAN bus line, earth yourself by touching a metal object such as an unpainted water pipe. If you fail to do, a component connected to the CAN bus line may be broken.



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E18AA



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E19AA

TROUBLE JUDGMENT

Short to power supply may be present when the voltage between the CAN bus line (CAN_L or CAN_H) and body earth is more than 4.0 V. In this condition, an abnormal voltage may be measured at CAN_L and CAN_H lines.

COMMENTS ON TROUBLE SYMPTOM

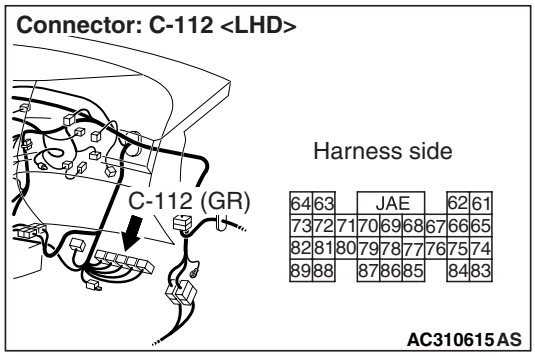
The wiring harness wire or connectors may have loose, corroded, or damage terminals, or terminals pushed back in the connector, or a ECU may be defective.

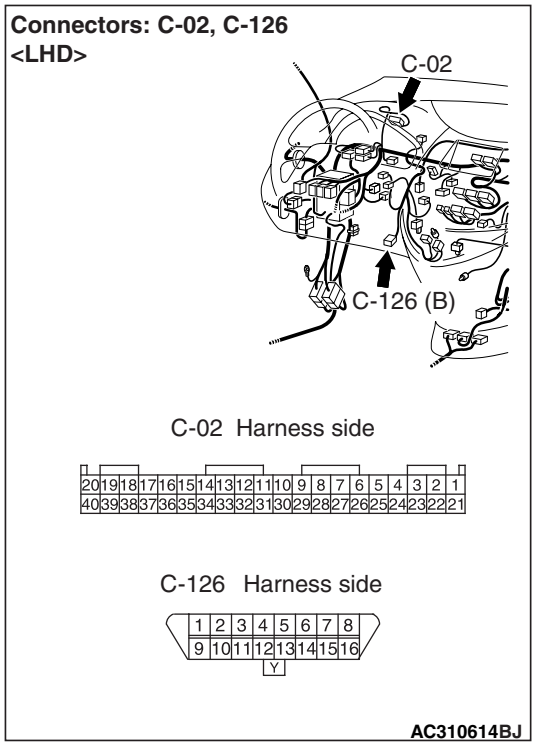
POSSIBLE CAUSES

- Damaged harness wires and connectors
- Malfunction of the ETACS-ECU
- Malfunction of the combination meter
- Malfunction of the A/C-ECU
- Malfunction of the SRS-ECU
- Malfunction of the multi-centre display
- Malfunction of the ABS-ECU
- Malfunction of the engine-ECU <M/T> or engine-A/T-ECU <A/T>

DIAGNOSTIC PROCEDURE

STEP 1. Connector check: C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector, C-02 combination meter connector and C-126 diagnosis connector





⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Are the check result normal?
YES : Go to Step 2 .
NO : Repair the defective connector.

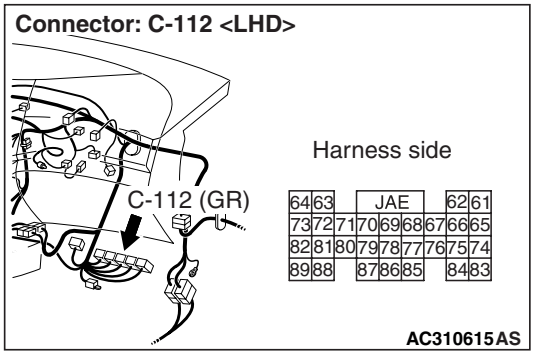
STEP 2. Voltage measurement at the C-126 diagnosis connector.

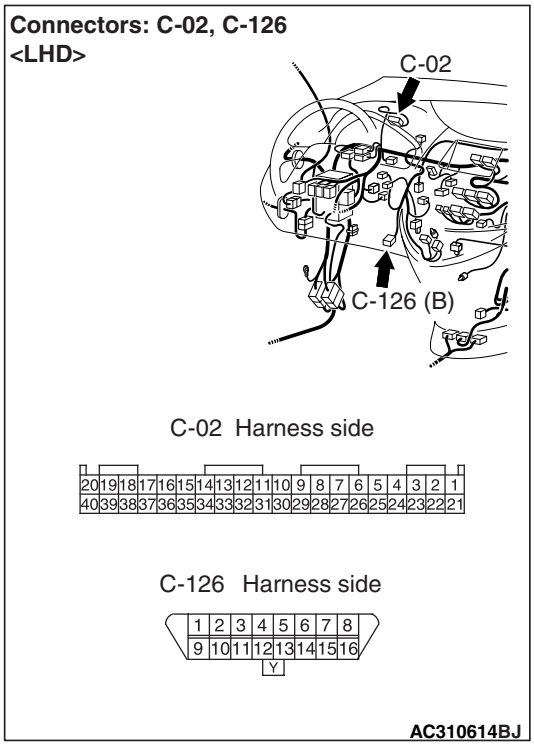
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

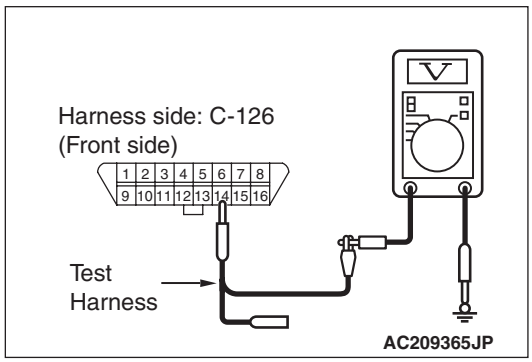
The test wiring harness should be used. For details refer to P.54D-8.





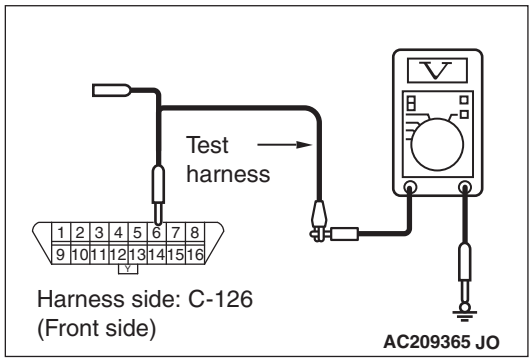
(1) Disconnect the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector and the combination meter connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn

the ignition switch to the ON position.



(3) Voltage between C-126 diagnosis connector terminal No.14 and body earth

OK: 4.0 V or less



(4) Voltage between C-126 diagnosis connector terminal No.6 and body earth

OK: 4.0 V or less

(5) Disconnect the negative battery terminal.

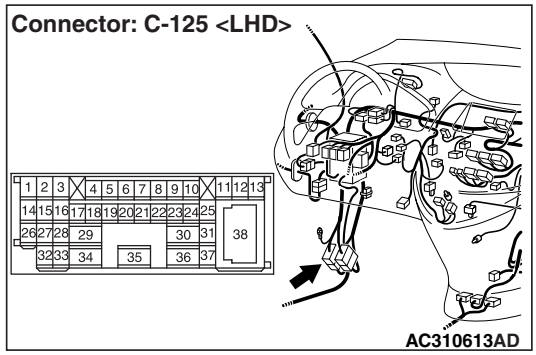
Q: Is the check result normal?

YES <all of the measurement results show 4.0 V or less> : Follow diagnostic Item 17, Diagnose CAN bus lines thoroughly. Refer to P.54D-452.

NO <The voltage between terminal No.14 and body earth is more than 4.0 V> : Go to Step 3 .

NO <The voltage between terminal No.6 and body earth is more than 4.0 V> : Go to Step 28 .

STEP 3. Connector check: C-125 intermediate connector



⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 4 .

NO : Repair the defective connector.

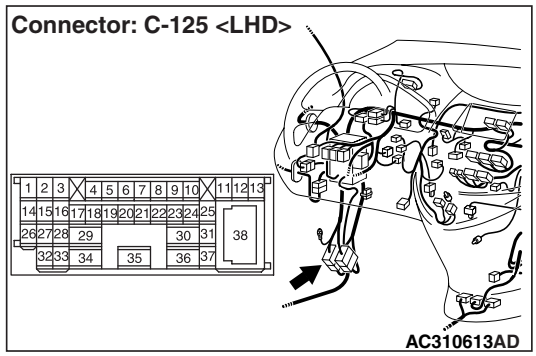
STEP 4. Voltage measurement at the C-125 intermediate connector.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

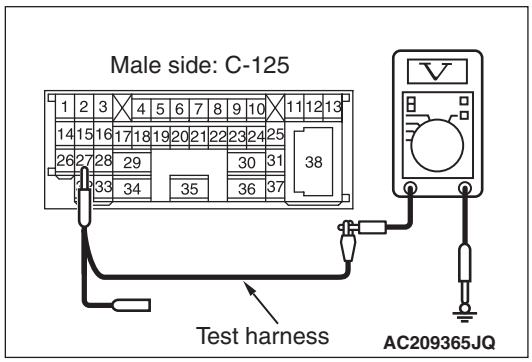
The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the connector, and measure at its male-side intermediate connector (at the front wiring harness side).

(2) Connect the negative battery terminal, and turn

the ignition switch to the ON position.



(3) Voltage between C-125 intermediate connector terminal No.27 and body earth

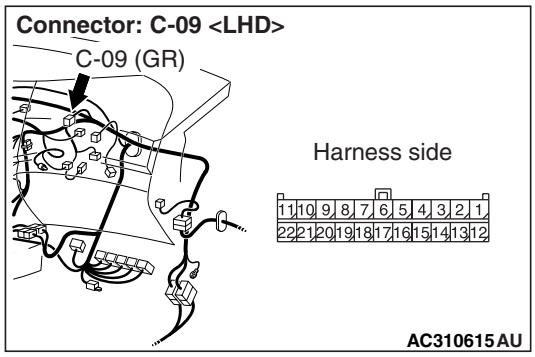
OK: 4.0 V or less

Q: Is the check result normal?

YES : <4.0 V or less> Go to Step 5.

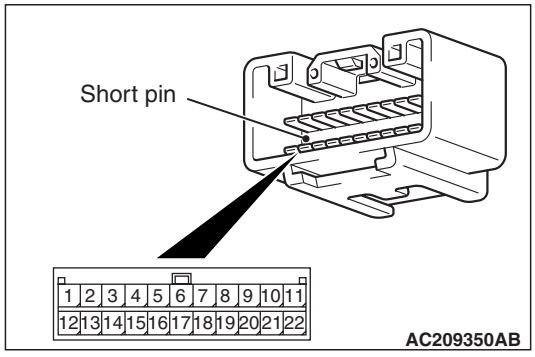
NO : <more than 4.0 V> Go to Step 20.

STEP 5. Connector check: C-09 joint connector (CAN2)



⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.



When checking the joint connector, ensure that its wiring harness side and its short pins are not damaged.

Q: Is the check result normal?

YES : Go to Step 6 .

NO : Repair a defective connector or replace the joint connector.

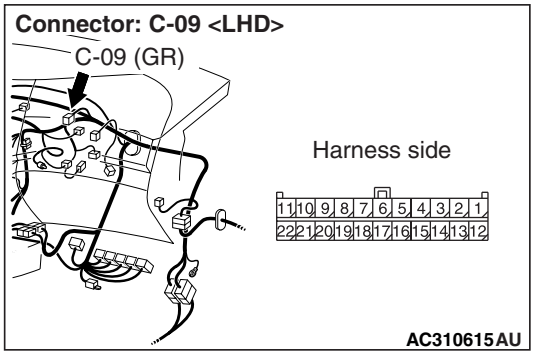
STEP 6. Voltage measurement at C-09 joint connector (CAN2).

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

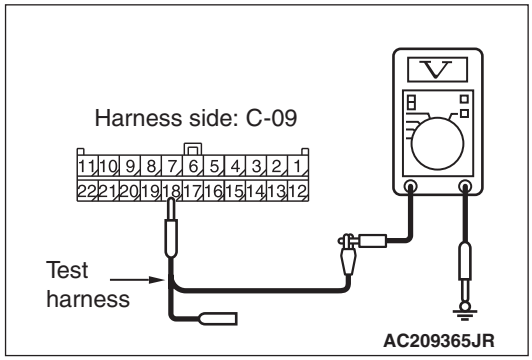
⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



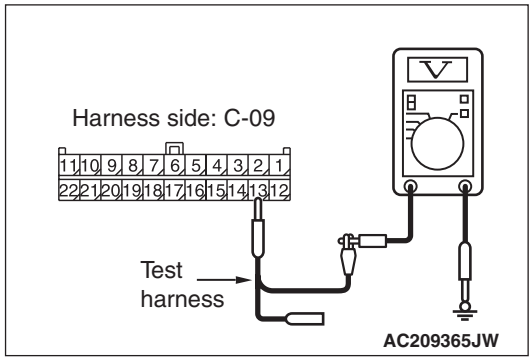
(1) Disconnect the connector, and measure at the wiring harness side.

(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-09 joint connector (CAN2) terminal No.18 and body earth

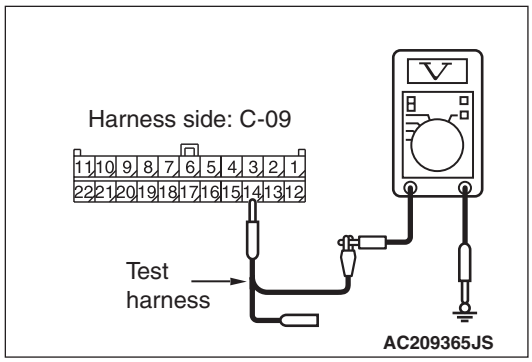
OK: 4.0 V or less



(4) Voltage between C-09 joint connector (CAN2)

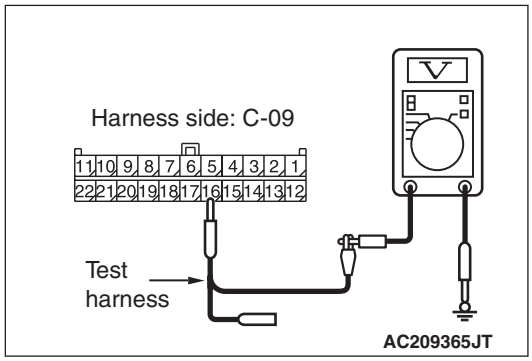
terminal No.13 and body earth

OK: 4.0 V or less



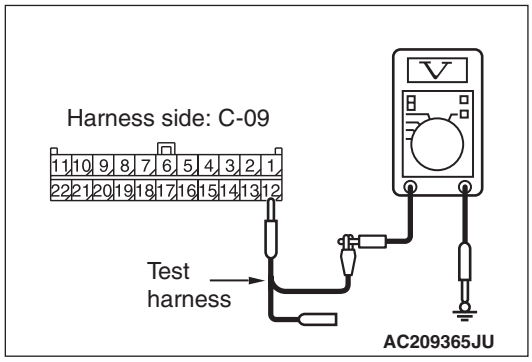
(5) Voltage between C-09 joint connector (CAN2) terminal No.14 and body earth

OK: 4.0 V or less



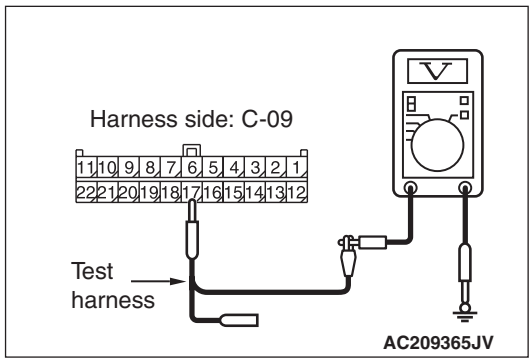
(6) Voltage between C-09 joint connector (CAN2) terminal No.16 and body earth

OK: 4.0 V or less



(7) Voltage between C-09 joint connector (CAN2) terminal No.12 and body earth

OK: 4.0 V or less



(8) Voltage between C-09 joint connector (CAN2) terminal No.17 and body earth

OK: 4.0 V or less

(9) Disconnect the negative battery terminal.

Q: Are the check result normal?

YES <all of the measurement results show 4.0 V or less> : Go to Step 19 .

NO <The voltage between terminal No.18 and body earth is more than 4.0 V> : Go to Step 7 .

NO <The voltage between terminal No.13 and body earth is more than 4.0 V> : Go to Step 8 .

NO <The voltage between terminal No.14 and body earth is more than 4.0 V> : Go to Step 10 .

NO <The voltage between terminal No.16 and body earth is more than 4.0 V> : Go to Step 12 .

NO <The voltage between terminal No.12 and body earth is more than 4.0 V> : Go to Step 16 .

NO <The voltage between terminal No.17 and body earth is more than 4.0 V> : Go to Step 18 .

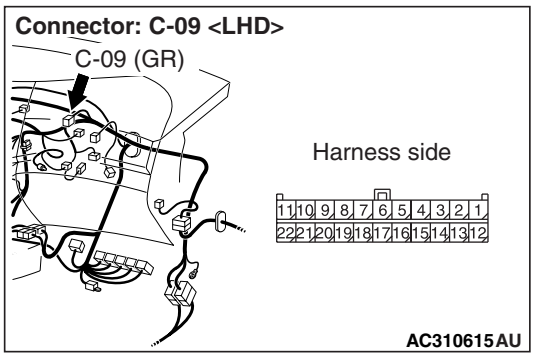
STEP 7. Voltage measurement at C-09 joint connector (CAN2).

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

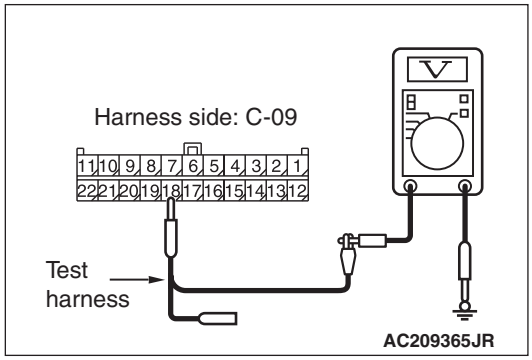
The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the joint connector (CAN2) and the

combination meter connector, and measure at the wiring harness side.

(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-09 joint connector (CAN2) terminal No.18 and body earth

OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

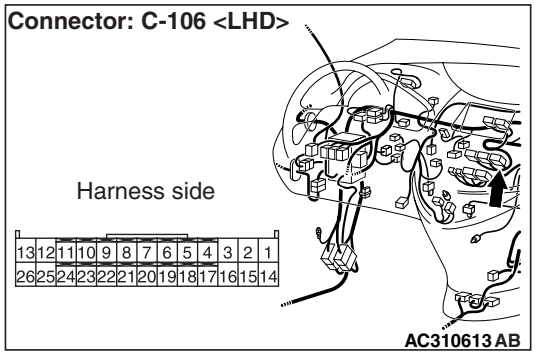
Q: Is the check result normal?

YES : <less than 1.0 V> Follow diagnostic item 17 "Diagnose CAN bus lines thoroughly." Refer to P.54D-452.

NO : <1.0 V or more> Repair the wiring harness between joint connector (CAN2) and the combination meter connector.

STEP 8. Connector check: C-106 A/C-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 9 .

NO : Repair the defective connector.

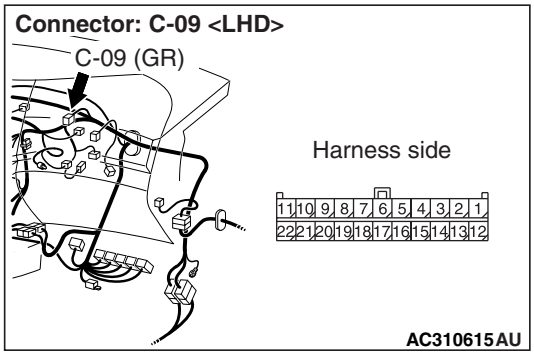
STEP 9. Voltage measurement at C-09 joint connector (CAN2).

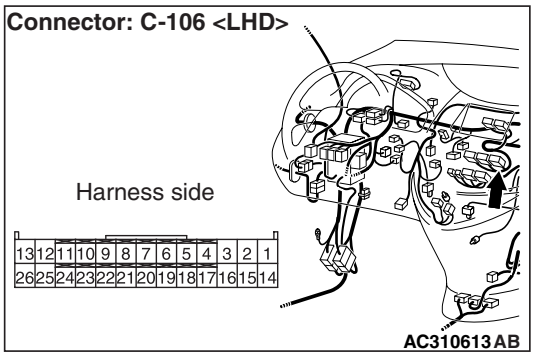
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

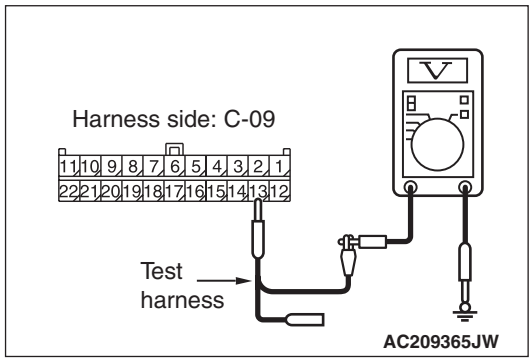
The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN2) and the A/C-ECU connector, and measure at the wiring harness side.

(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-09 joint connector (CAN2)

terminal No.13 and body earth
OK: Less than 1.0 V

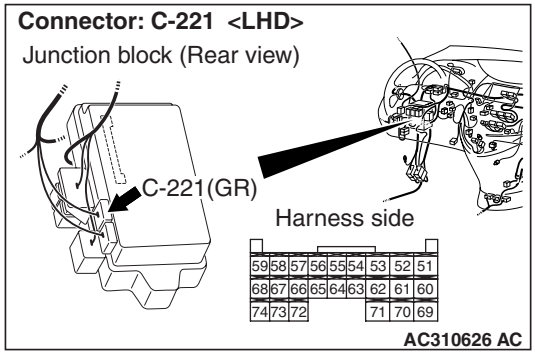
(4) Disconnect the negative battery terminal.

⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <less than 1.0 V> Follow diagnostic item 17 "Diagnose CAN bus lines thoroughly." Refer to P.54D-452.
NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN2) and the A/C-ECU connector.

STEP 10. Connector check: C-221 ETACS-ECU connector

⚠ CAUTION



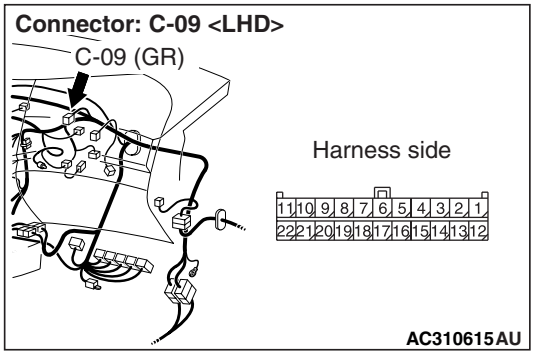
The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

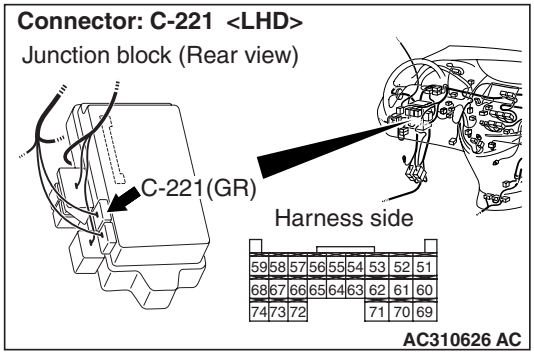
Q: Is the check result normal?
YES : Go to Step 11 .
NO : Repair the defective connector.

STEP 11. Voltage measurement at C-09 joint connector (CAN2).

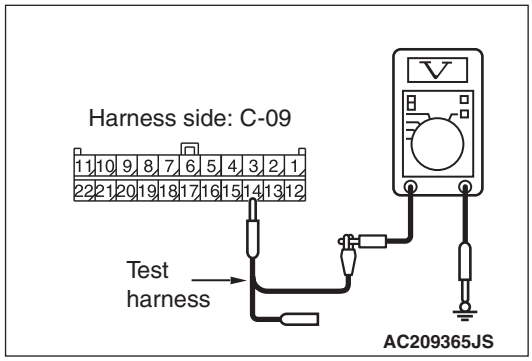
⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN2) and the ETACS-ECU connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-09 joint connector (CAN2)

terminal No.14 and body earth

OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

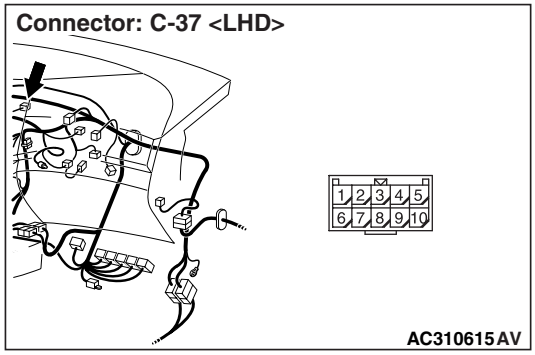
Q: Is the check result normal?

YES : <less than 1.0 V> Follow diagnostic item 17 "Diagnose CAN bus lines thoroughly." Refer to P.54D-452.

NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN2) and the ETACS-ECU connector.

STEP 12. Connector check: C-37 jumper connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Check that the wiring harness of the jumper connector is not damaged.

Q: Is the check result normal?

YES : Go to Step 13 .

NO : Repair the defective connector.

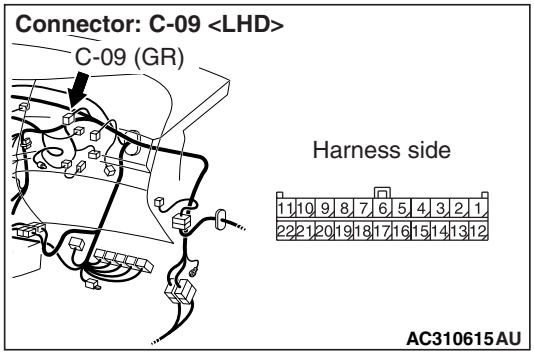
STEP 13. Voltage measurement at the C-09 joint connector (CAN2).

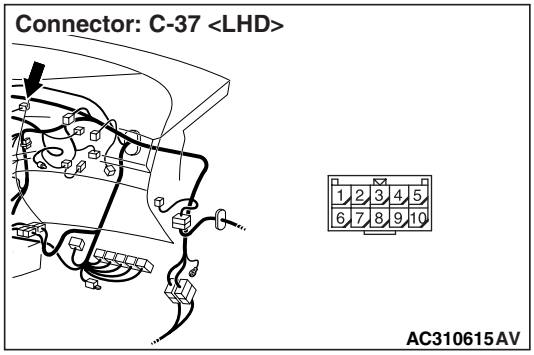
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

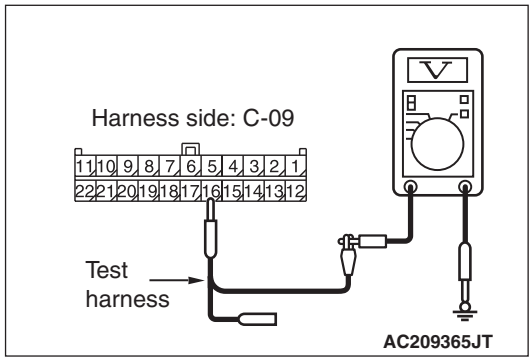
The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN2) and the jumper connector, and measure at the wiring harness side.

(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-09 joint connector (CAN2) terminal No.16 and body earth

OK: Less than 1.0 V

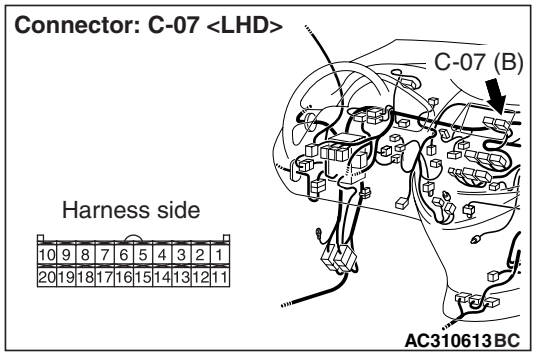
(4) Disconnect the negative battery terminal.

Q: Is the check result normal?

YES : <1.0 V or less> Go to Step 14.
NO : <more than 1.0 V> Repair the wiring harness between the joint connector (CAN2) and the jumper connector.

STEP 14. Connector check: C-07 centre display connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?
YES : Go to Step 15 .
NO : Repair the defective connector.

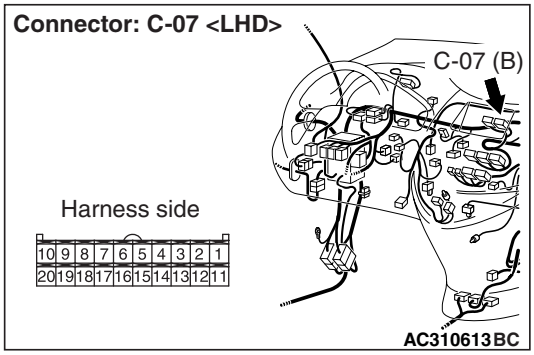
STEP 15. Voltage measurement at the C-37 jumper connector.

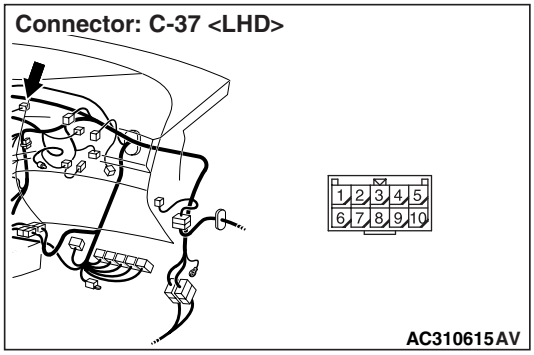
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

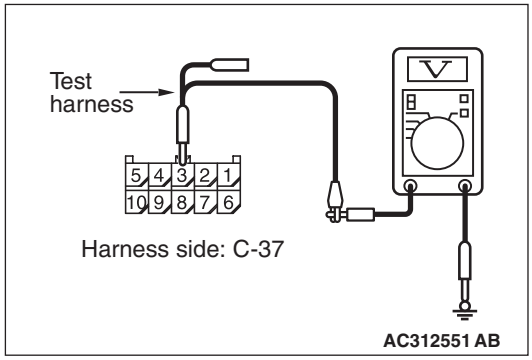
⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the centre display connector and the jumper connector, and measure at the jumper connector (at the centre display side).
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-37 jumper connector terminal

No.3 and body earth
OK: Less than 1.0 V

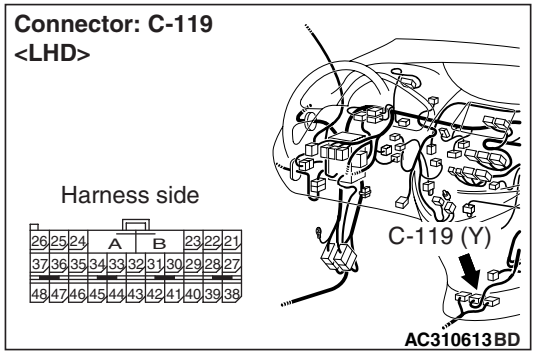
(4) Disconnect the negative battery terminal.

⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <less than 1.0 V> Follow diagnostic item 17 "Diagnose CAN bus lines thoroughly." Refer to P.54D-452.
NO : <1.0 V or more> Repair the wiring harness between the jumper connector and the centre display connector.

STEP 16. Connector check: C-119 SRS-ECU connector

⚠ CAUTION



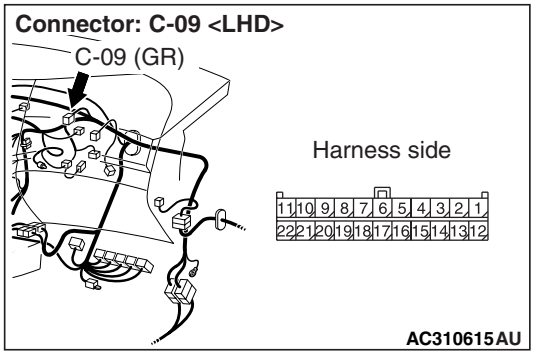
The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

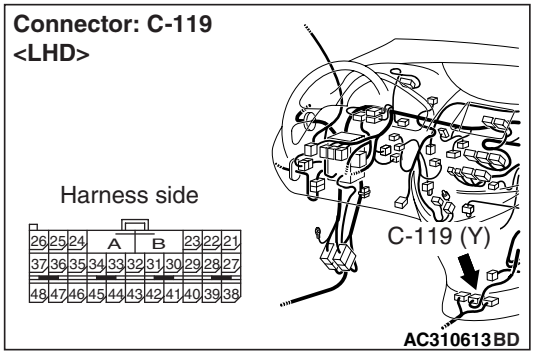
Q: Is the check result normal?
YES : Go to Step 17 .
NO : Repair the defective connector.

STEP 17. Voltage measurement at C-09 joint connector (CAN2).

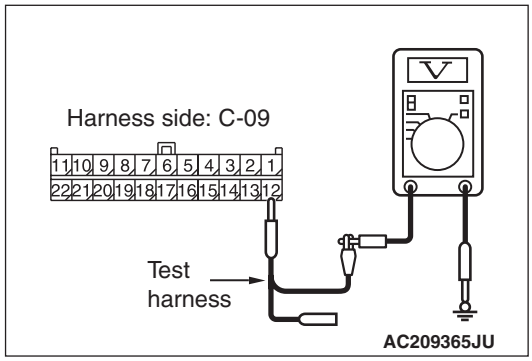
⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN2) and the SRS-ECU connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-09 joint connector (CAN2)

terminal No.12 and body earth
OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

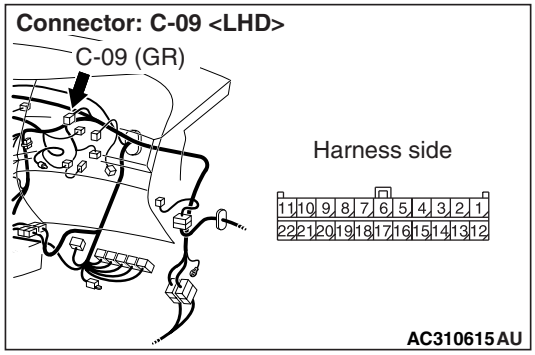
⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <less than 1.0 V> Follow diagnostic item 17 "Diagnose CAN bus lines thoroughly." Refer to P.54D-452.
NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN2) and the SRS-ECU connector.

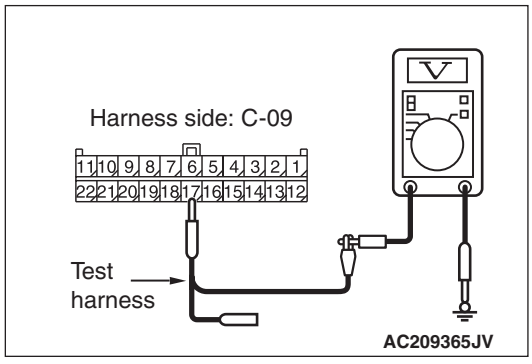
STEP 18. Voltage measurement at C-09 joint connector (CAN2).

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-09 joint connector (CAN2)

terminal No.17 and body earth
OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

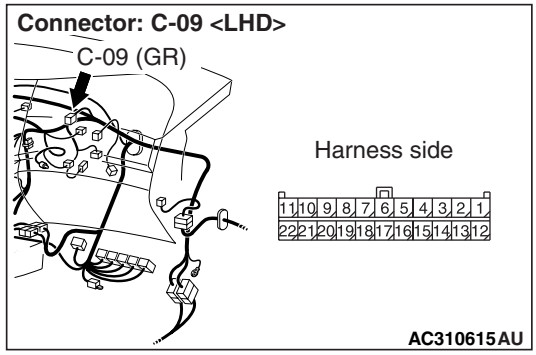
⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <less than 1.0 V> Follow diagnostic item 17 "Diagnose CAN bus lines thoroughly." Refer to P.54D-452.
NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN2) and the diagnosis connector.

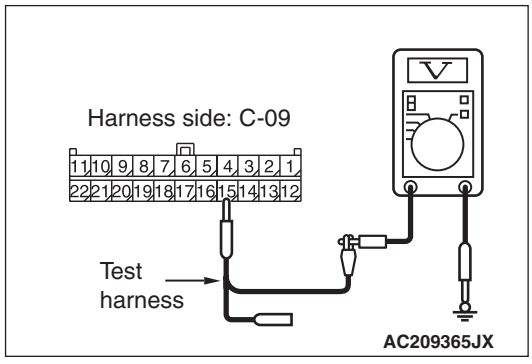
STEP 19. Voltage measurement at C-09 joint connector (CAN2).

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-09 joint connector (CAN2)

terminal No.15 and body earth
OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

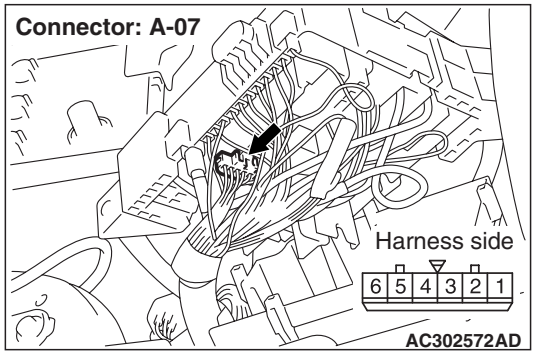
⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <less than 1.0 V> Follow diagnostic item 17 "Diagnose CAN bus lines thoroughly." Refer to P.54D-452.
NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN2) and the intermediate connector.

STEP 20. Connector check: A-07 joint connector (CAN1)

NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

When checking the joint connector, ensure that its wiring harness side is not damaged.

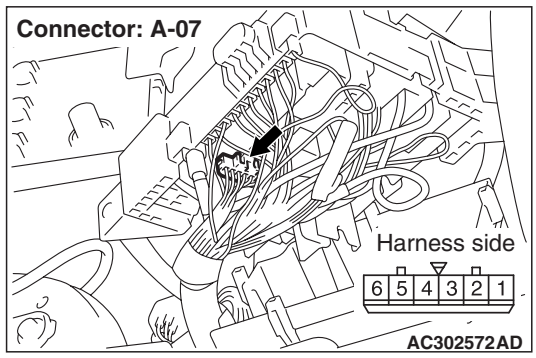
Q: Is the check result normal?
YES : Go to Step 21 .
NO : Repair a defective connector or replace the joint connector (front wiring harness assembly).

STEP 21. Voltage measurement at the A-07 joint connector (CAN1).

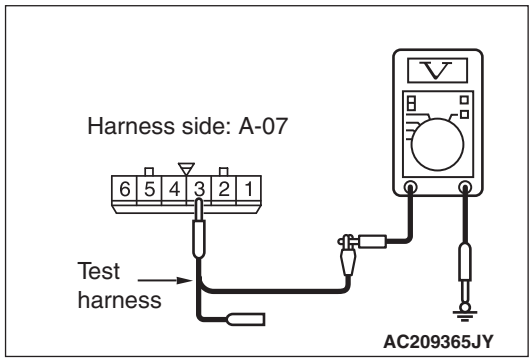
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

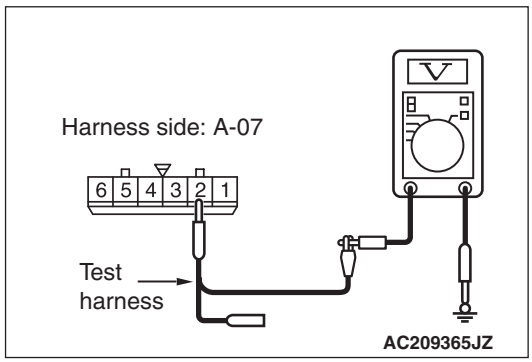
⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between A-07 joint connector (CAN1) terminal No.3 and body earth
OK: 4.0 V or less



(4) Voltage between A-07 joint connector (CAN1)

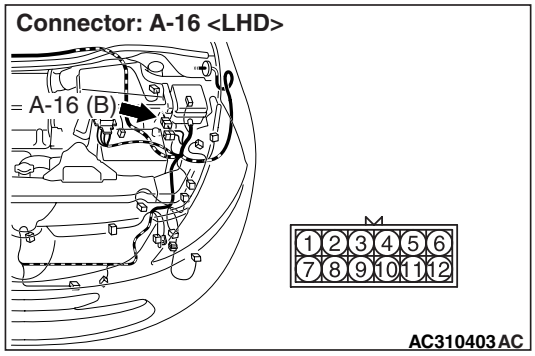
terminal No.2 and body earth
OK: 4.0 V or less

(5) Disconnect the negative battery terminal.

Q: Are the check result normal?
YES <all of the measurement results show 4.0 V or less> : Go to Step 27 .
NO <The voltage between terminal No.3 and body earth is more than 4.0 V> : Go to Step 22 .
NO <The voltage between terminal No.2 and body earth is more than 4.0 V> : Go to Step 25 .

STEP 22. Connector check: A-16 intermediate connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

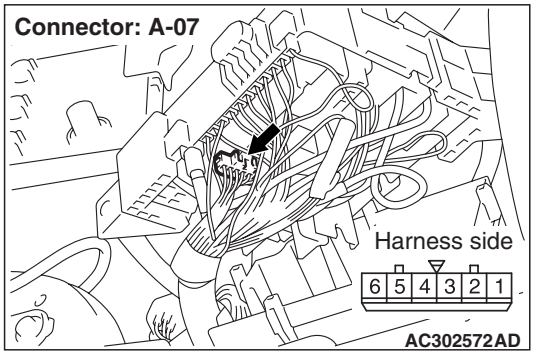
Q: Is the check result normal?
YES : Go to Step 23 .
NO : Repair the defective connector.

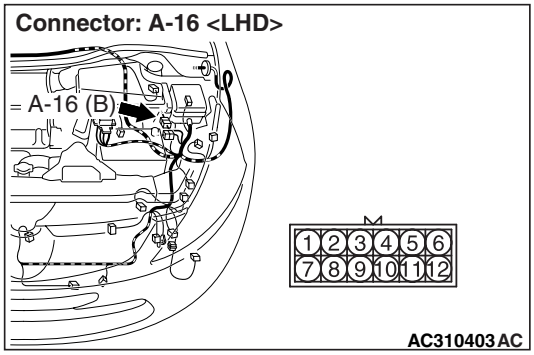
STEP 23. Voltage measurement at the A-07 joint connector (CAN1).

NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

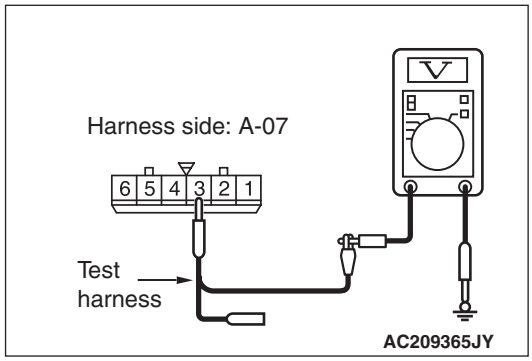
⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN1) and the intermediate connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between A-07 joint connector (CAN1) terminal No.3 and body earth
OK: 1.0 V or less

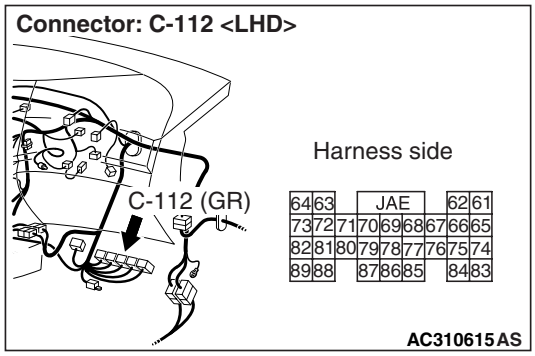
(4) Disconnect the negative battery terminal.

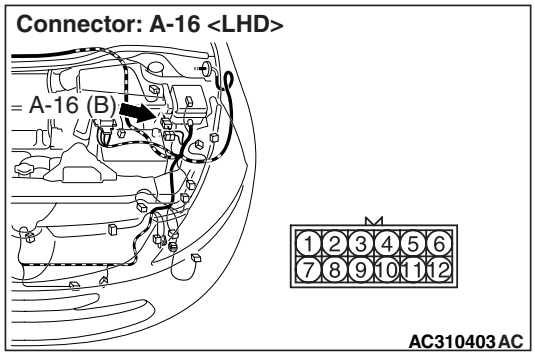
Q: Is the check result normal?
YES : <1.0 V or less> Go to Step 24.
NO : <more than 1.0 V> Repair the wiring harness between the joint connector (CAN1) and the intermediate connector.

STEP 24. Voltage measurement at the A-16 intermediate connector.

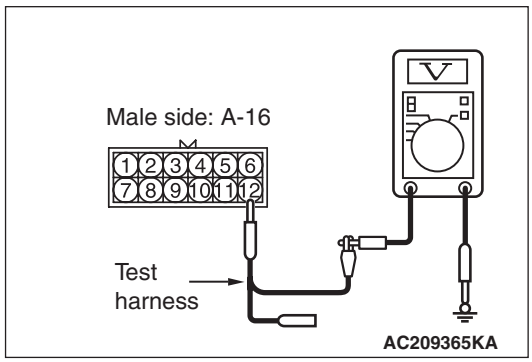
⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector and the intermediate connector, and measure at its male-side intermediate connector (at the control wiring harness side).
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



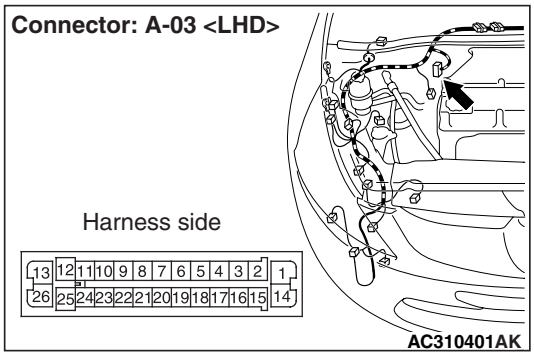
(3) Voltage between A-16 intermediate connector terminal No.12 and body earth
OK: Less than 1.0 V
(4) Disconnect the negative battery terminal.

⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <less than 1.0 V> Follow diagnostic item 17 "Diagnose CAN bus lines thoroughly." Refer to P.54D-452.
NO : <1.0 V or more> Repair the wiring harness between the intermediate connector and the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector.

STEP 25. Connector check: A-03 ABS-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?
YES : Go to Step 26 .
NO : Repair the defective connector.

STEP 26. Voltage measurement at the A-07 joint connector (CAN1).

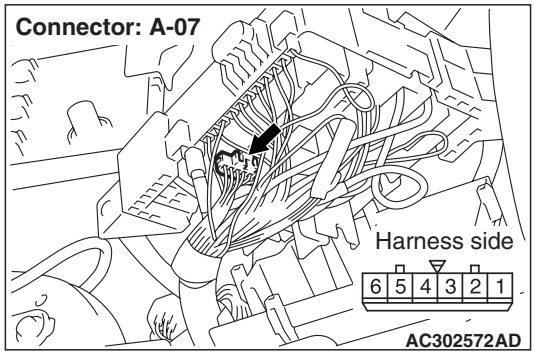
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

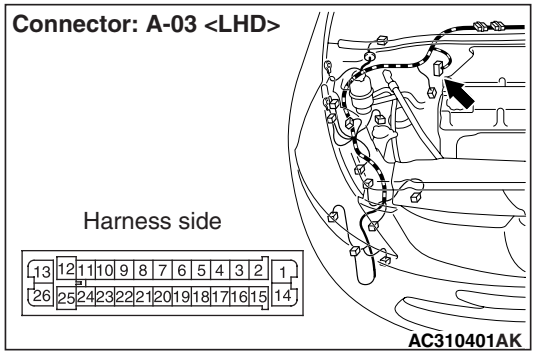
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

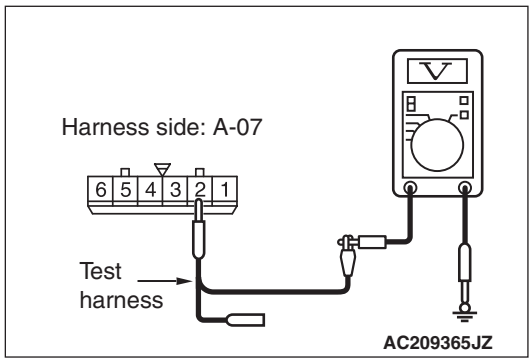
⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN1) and the ABS-ECU connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between A-07 joint connector (CAN1) terminal No.2 and body earth

OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?

YES : <less than 1.0 V> Follow diagnostic item 17 "Diagnose CAN bus lines thoroughly." Refer to P.54D-452.

NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN1) and the ABS-ECU connector.

STEP 27. Voltage measurement at the A-07 joint connector (CAN1).

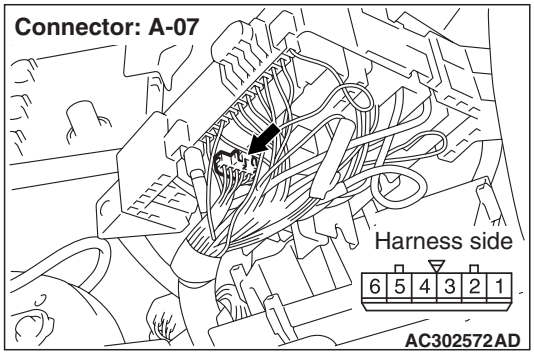
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

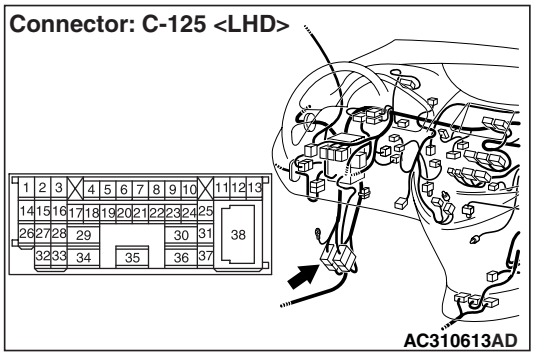
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

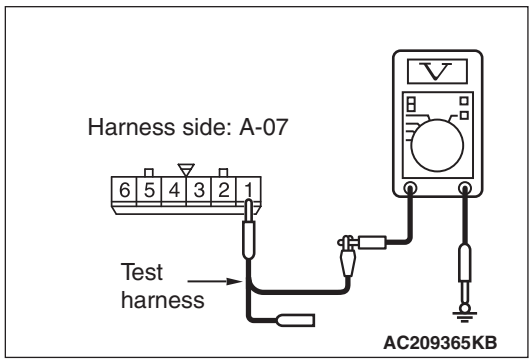
The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN1) and the intermediate connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn

the ignition switch to the ON position.



(3) Voltage between A-07 joint connector (CAN1) terminal No.1 and body earth

OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

⚠ CAUTION

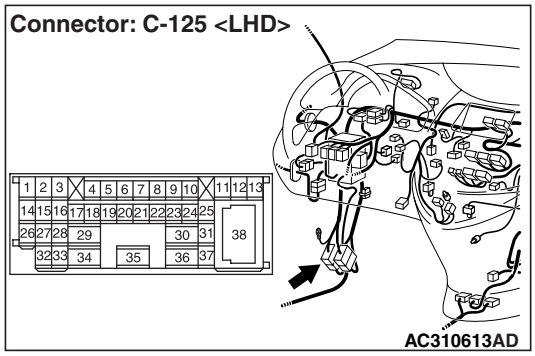
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?

YES : <less than 1.0 V> Follow diagnostic item 17 "Diagnose CAN bus lines thoroughly." Refer to P.54D-452.

NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN1) and the intermediate connector.

STEP 28. Connector check: C-125 intermediate connector



⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 29 .

NO : Repair the defective connector.

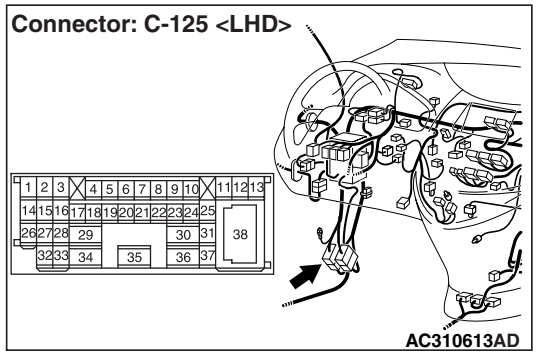
STEP 29. Voltage measurement at the C-125 intermediate connector.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

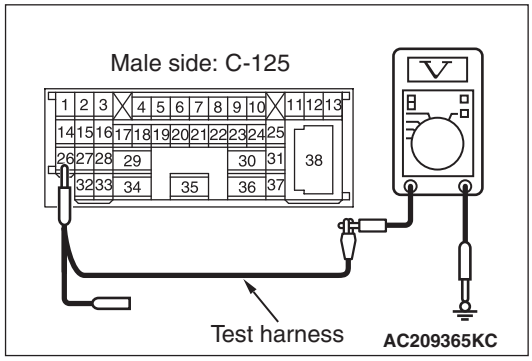
⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the connector, and measure at its male-side intermediate connector (at the front wiring harness side).

(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-125 intermediate connector terminal No.26 and body earth

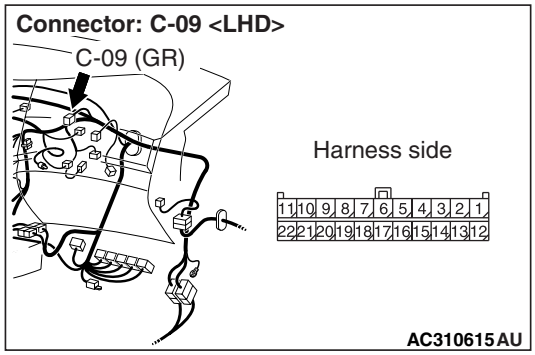
OK: 4.0 V or less

Q: Is the check result normal?

YES : <4.0 V or less> Go to Step 30.

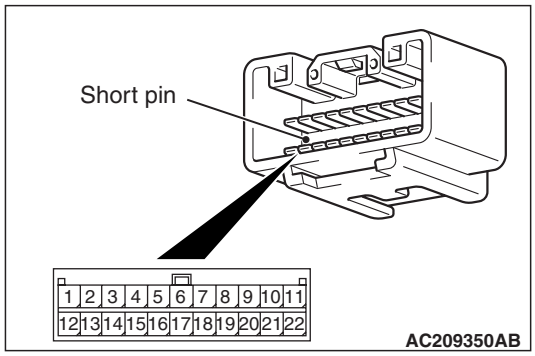
NO : <more than 4.0 V> Go to Step 45.

STEP 30. Connector check: C-09 joint connector (CAN2)



⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.



When checking the joint connector, ensure that its wiring harness side and its short pins are not damaged.

Q: Is the check result normal?

YES : Go to Step 31 .

NO : Repair a defective connector or replace the joint connector.

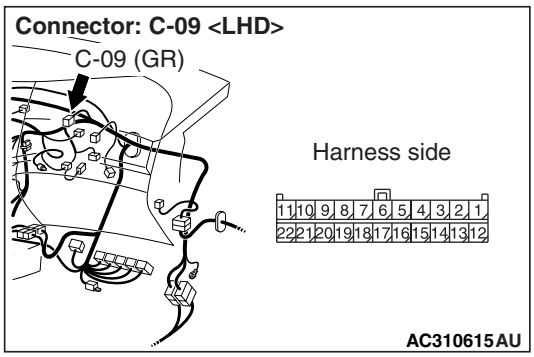
STEP 31. Voltage measurement at C-09 joint connector (CAN2).

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

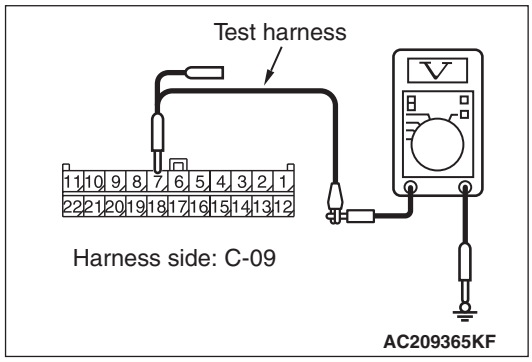
⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



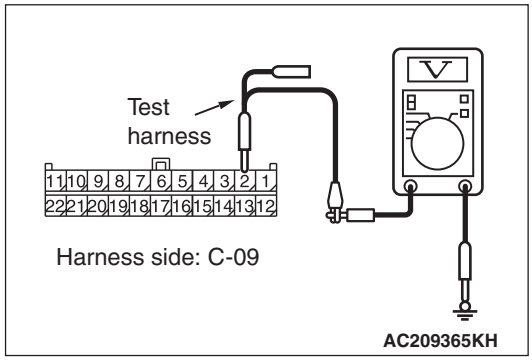
(1) Disconnect the connector, and measure at the wiring harness side.

(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-09 joint connector (CAN2) terminal No.7 and body earth

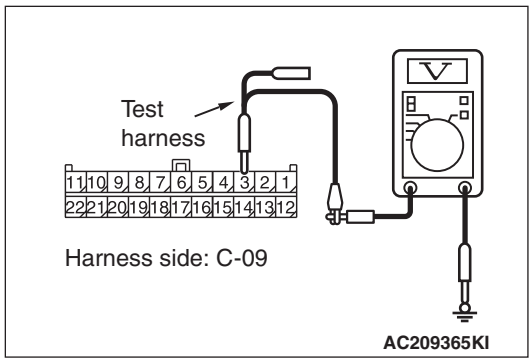
OK: 4.0 V or less



(4) Voltage between C-09 joint connector (CAN2)

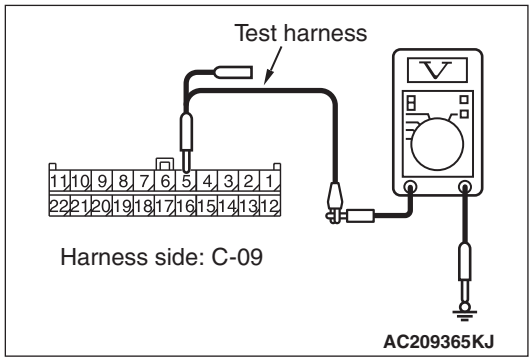
terminal No.2 and body earth

OK: 4.0 V or less



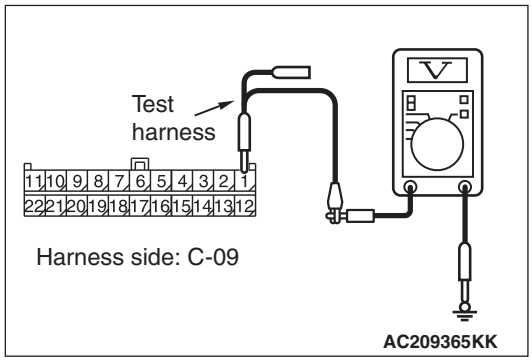
(5) Voltage between C-09 joint connector (CAN2) terminal No.3 and body earth

OK: 4.0 V or less



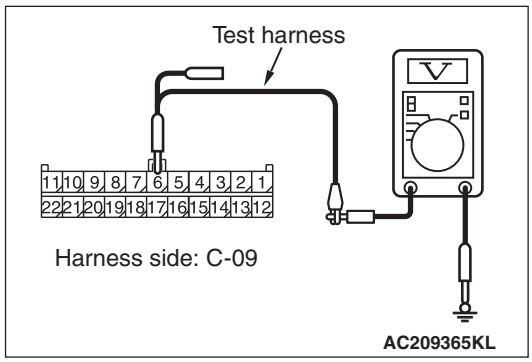
(6) Voltage between C-09 joint connector (CAN2) terminal No.5 and body earth

OK: 4.0 V or less



(7) Voltage between C-09 joint connector (CAN2) terminal No.1 and body earth

OK: 4.0 V or less



(8) Voltage between C-09 joint connector (CAN2) terminal No.6 and body earth

OK: 4.0 V or less

(9) Disconnect the negative battery terminal.

Q: Are the check result normal?

YES <all of the measurement results show 4.0 V or less> : Go to Step 44 .

NO <The voltage between terminal No.7 and body earth is more than 4.0 V> : Go to Step 32 .

NO <The voltage between terminal No.2 and body earth is more than 4.0 V> : Go to Step 33 .

NO <The voltage between terminal No.3 and body earth is more than 4.0 V> : Go to Step 35 .

NO <The voltage between terminal No.5 and body earth is more than 4.0 V> : Go to Step 37 .

NO <The voltage between terminal No.1 and body earth is more than 4.0 V> : Go to Step 41 .

NO <The voltage between terminal No.6 and body earth is more than 4.0 V> : Go to Step 43 .

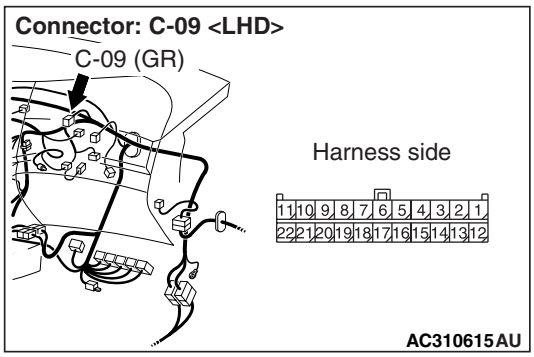
STEP 32. Voltage measurement at C-09 joint connector (CAN2).

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

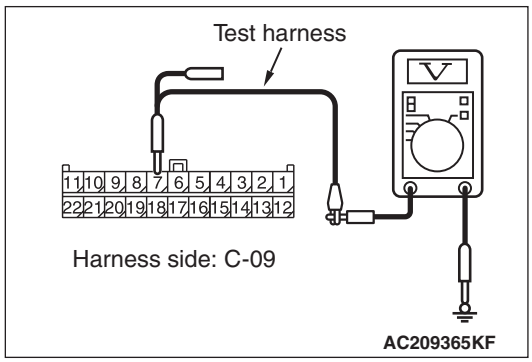
⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the joint connector (CAN2) and the

combination meter connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



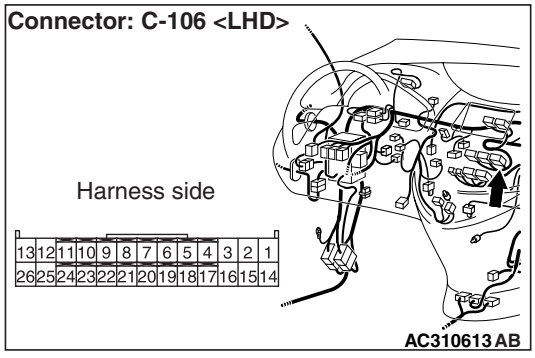
(3) Voltage between C-09 joint connector (CAN2) terminal No.7 and body earth
OK: Less than 1.0 V
(4) Disconnect the negative battery terminal.

⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <less than 1.0 V> Follow diagnostic item 17 "Diagnose CAN bus lines thoroughly." Refer to P.54D-452.
NO : <1.0 V or more> Repair the wiring harness between joint connector (CAN2) and the combination meter connector.

STEP 33. Connector check: C-106 A/C-ECU connector

⚠ CAUTION



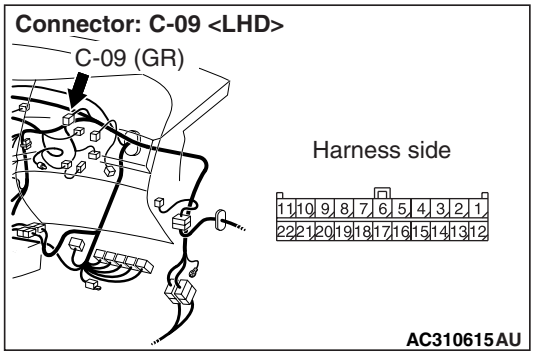
The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

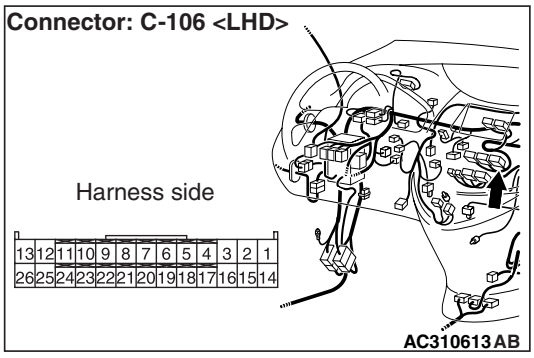
Q: Is the check result normal?
YES : Go to Step 34 .
NO : Repair the defective connector.

STEP 34. Voltage measurement at C-09 joint connector (CAN2).

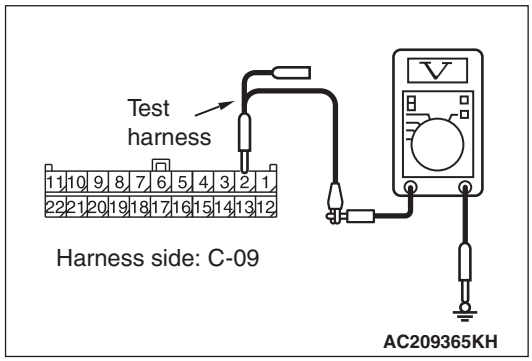
⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN2) and the A/C-ECU connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-09 joint connector (CAN2)

terminal No.2 and body earth
OK: Less than 1.0 V

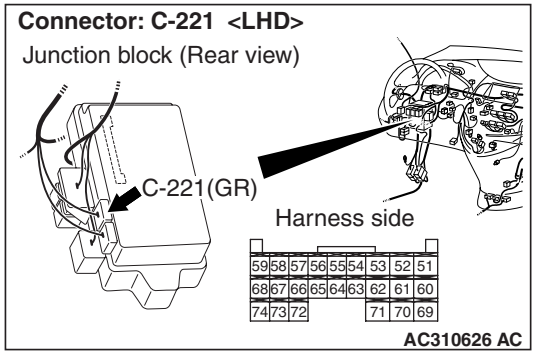
(4) Disconnect the negative battery terminal.

⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <less than 1.0 V> Follow diagnostic item 17 "Diagnose CAN bus lines thoroughly." Refer to P.54D-452.
NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN2) and the A/C-ECU connector.

STEP 35. Connector check: C-221 ETACS-ECU connector

⚠ CAUTION



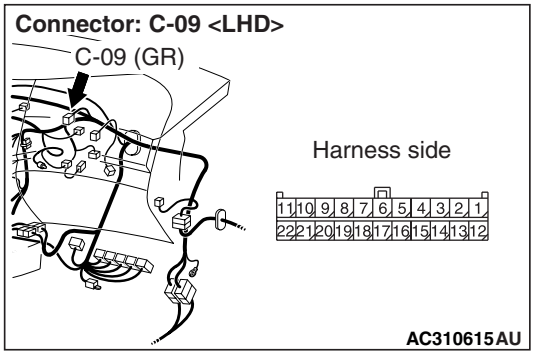
The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

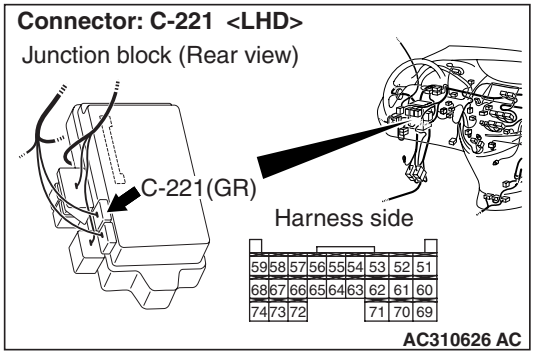
Q: Is the check result normal?
YES : Go to Step 36 .
NO : Repair the defective connector.

STEP 36. Voltage measurement at C-09 joint connector (CAN2).

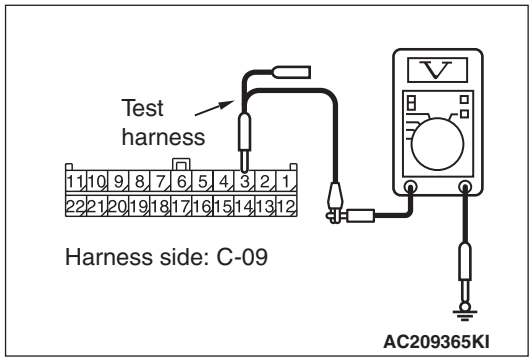
⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN2) and the ETACS-ECU connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-09 joint connector (CAN2)

terminal No.3 and body earth
OK: Less than 1.0 V

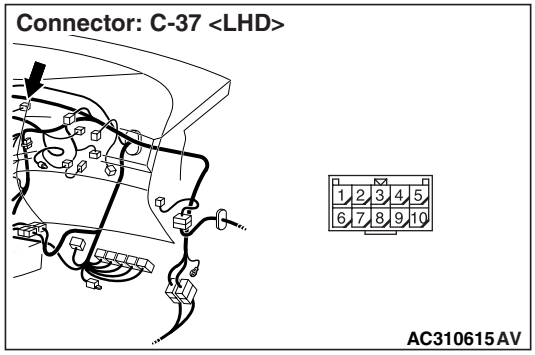
(4) Disconnect the negative battery terminal.

⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <less than 1.0 V> Follow diagnostic item 17 "Diagnose CAN bus lines thoroughly." Refer to P.54D-452.
NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN2) and the ETACS-ECU connector.

STEP 37. Connector check: C-37 jumper connector

⚠ CAUTION



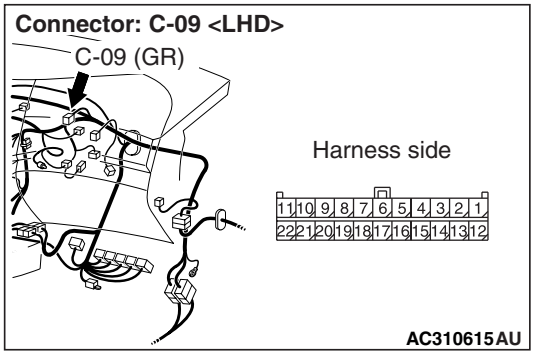
The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.
Check that the wiring harness of the jumper connector is not damaged.

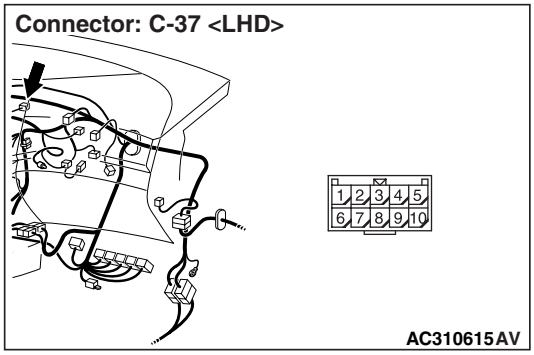
Q: Is the check result normal?
YES : Go to Step 38.
NO : Repair the defective connector.

STEP 38. Voltage measurement at the C-09 joint connector (CAN2).

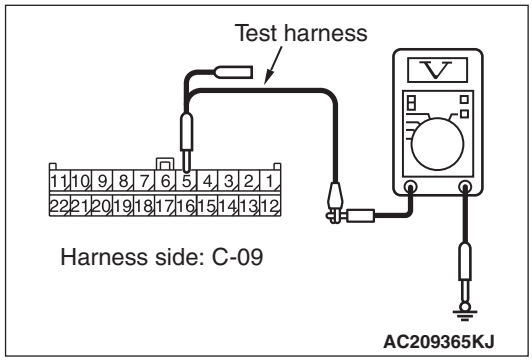
⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN2) and the jumper connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-09 joint connector (CAN2) terminal No.5 and body earth
OK: Less than 1.0 V

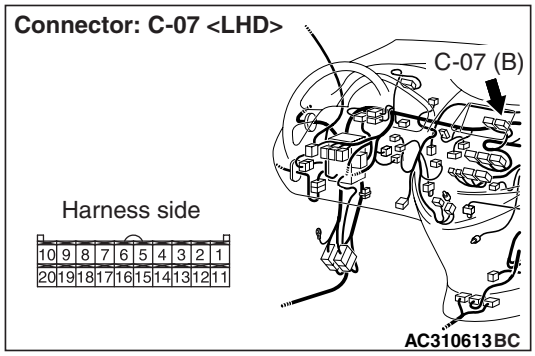
(4) Disconnect the negative battery terminal.

Q: Is the check result normal?

YES : <1.0 V or less> Go to Step 39.
NO : <more than 1.0 V> Repair the wiring harness between the joint connector (CAN2) and the jumper connector.

STEP 39. Connector check: C-07 centre display connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?
YES : Go to Step 40.
NO : Repair the defective connector.

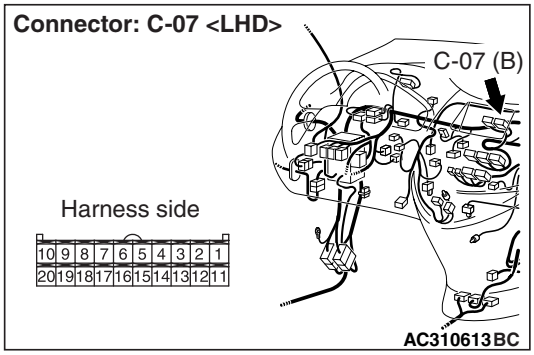
STEP 40. Voltage measurement at the C-37 jumper connector.

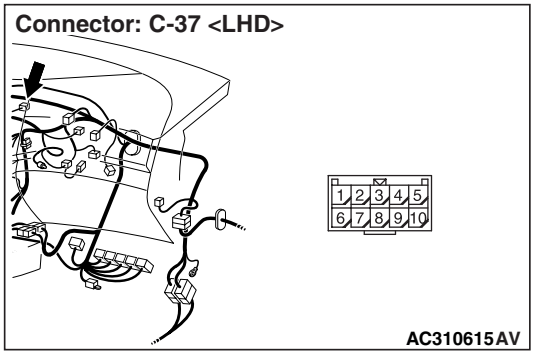
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

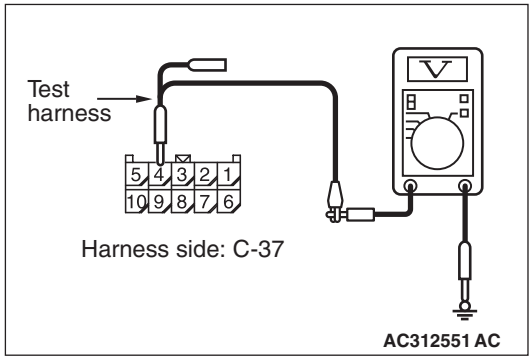
⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the centre display connector and the jumper connector, and measure at the jumper connector (at the centre display side).
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-37 jumper connector terminal

No.4 and body earth
OK: Less than 1.0 V

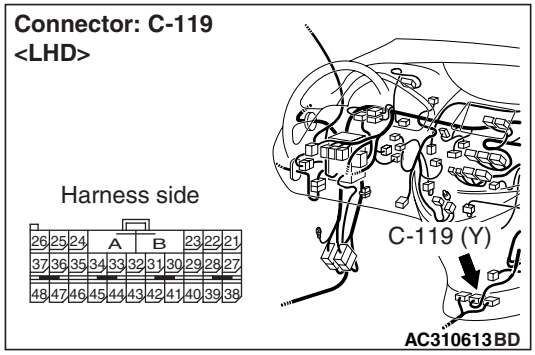
(4) Disconnect the negative battery terminal.

⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <less than 1.0 V> Follow diagnostic item 17 "Diagnose CAN bus lines thoroughly." Refer to P.54D-452.
NO : <1.0 V or more> Repair the wiring harness between the jumper connector and the centre display connector.

STEP 41. Connector check: C-119 SRS-ECU connector

⚠ CAUTION



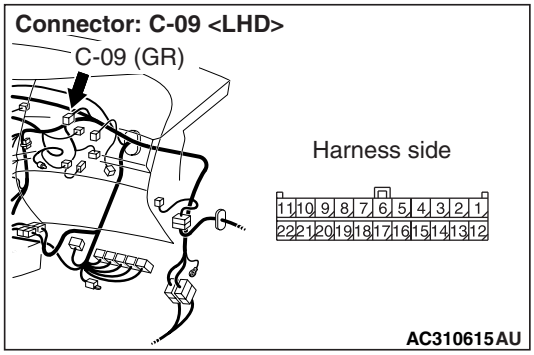
The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

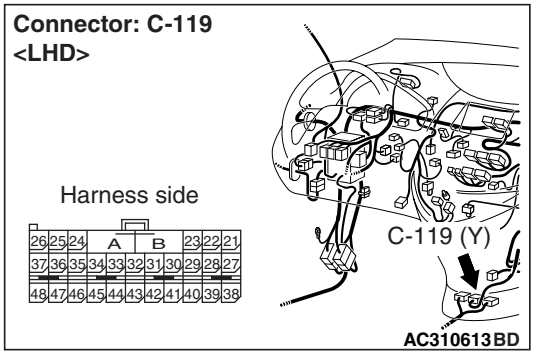
Q: Is the check result normal?
YES : Go to Step 42 .
NO : Repair the defective connector.

STEP 42. Voltage measurement at C-09 joint connector (CAN2).

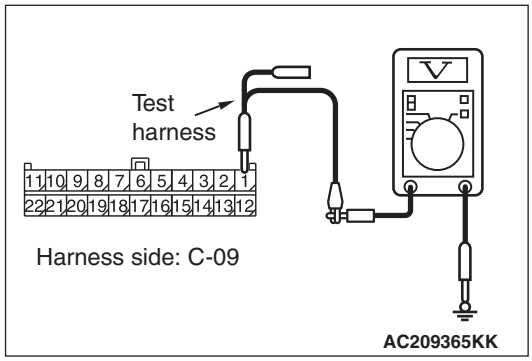
⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN2) and the SRS-ECU connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-09 joint connector (CAN2)

terminal No.1 and body earth
OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <less than 1.0 V> Follow diagnostic item 17 "Diagnose CAN bus lines thoroughly." Refer to P.54D-452.
NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN2) and the SRS-ECU connector.

terminal No.6 and body earth
OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

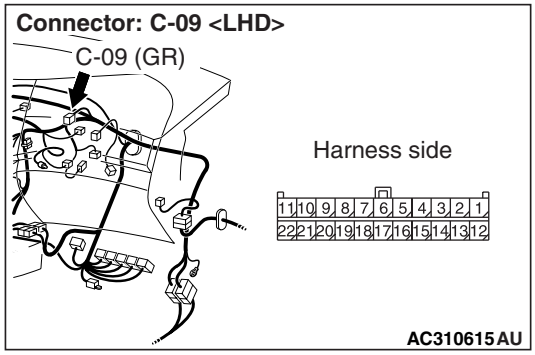
⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <less than 1.0 V> Follow diagnostic item 17 "Diagnose CAN bus lines thoroughly." Refer to P.54D-452.
NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN2) and the diagnosis connector.

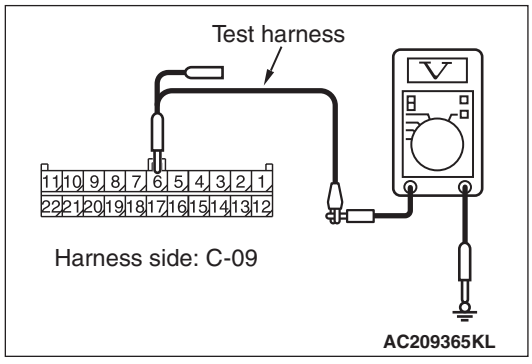
STEP 43. Voltage measurement at C-09 joint connector (CAN2).

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.

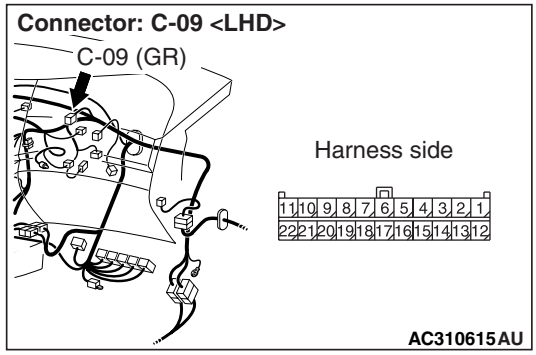


(3) Voltage between C-09 joint connector (CAN2)

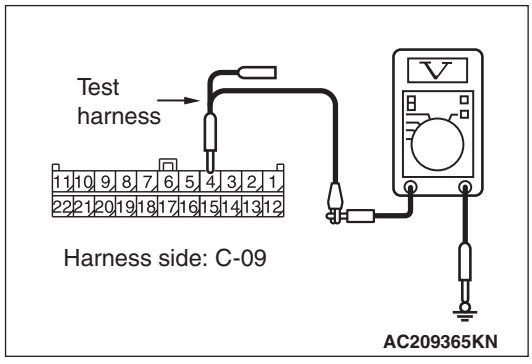
STEP 44. Voltage measurement at C-09 joint connector (CAN2).

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-09 joint connector (CAN2)

terminal No.4 and body earth
OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

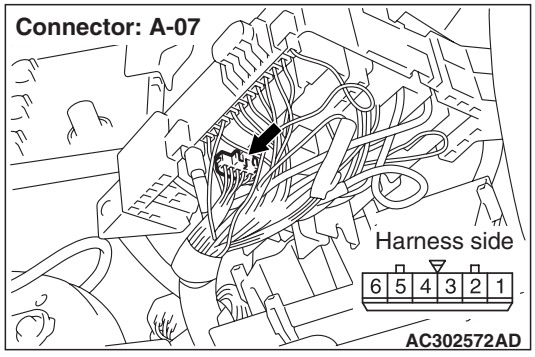
⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <less than 1.0 V> Follow diagnostic item 17 "Diagnose CAN bus lines thoroughly." Refer to P.54D-452.
NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN2) and the intermediate connector.

STEP 45. Connector check: A-07 joint connector (CAN1)

NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

When checking the joint connector, ensure that its wiring harness side is not damaged.

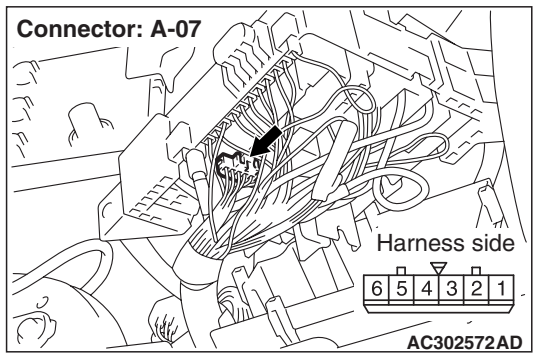
Q: Is the check result normal?
YES : Go to Step 46 .
NO : Repair a defective connector or replace the joint connector (front wiring harness assembly).

STEP 46. Voltage measurement at the A-07 joint connector (CAN1).

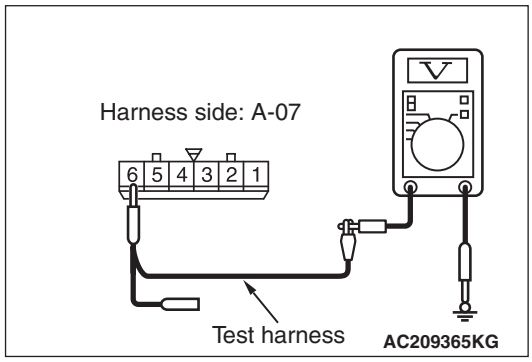
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

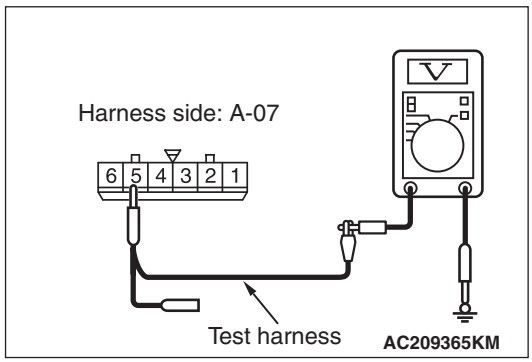
⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between A-07 joint connector (CAN1) terminal No.6 and body earth
OK: 4.0 V or less



(4) Voltage between A-07 joint connector (CAN1)

terminal No.5 and body earth

OK: 4.0 V or less

(5) Disconnect the negative battery terminal.

Q: Are the check result normal?

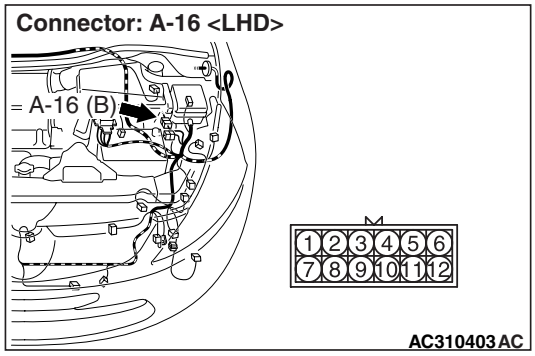
YES <all of the measurement results show 4.0 V or less> : Go to Step 52 .

NO <The voltage between terminal No.6 and body earth is more than 4.0 V> : Go to Step 47 .

NO <The voltage between terminal No.5 and body earth is more than 4.0 V> : Go to Step 50 .

STEP 47. Connector check: A-16 intermediate connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 48 .

NO : Repair the defective connector.

STEP 48. Voltage measurement at the A-07 joint connector (CAN1).

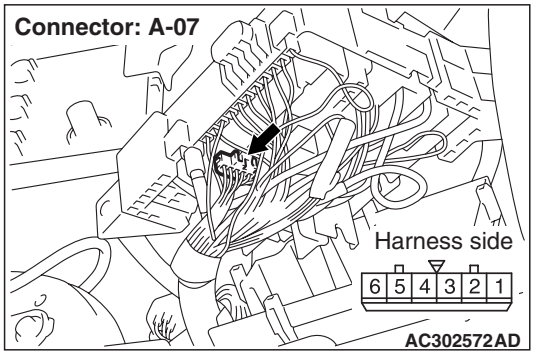
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

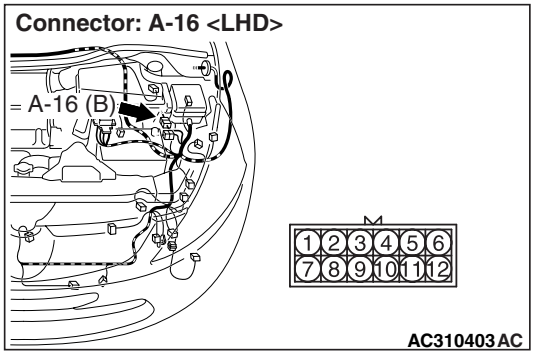
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

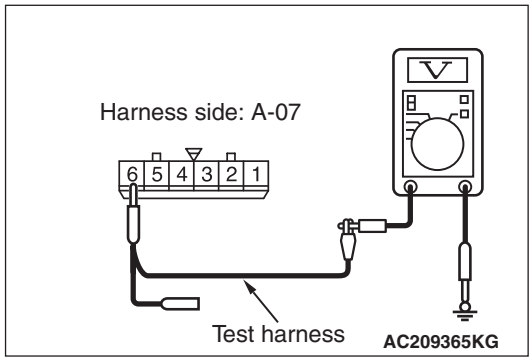
The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN1) and the intermediate connector, and measure at the wiring harness side.

(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between A-07 joint connector (CAN1) terminal No.6 and body earth

OK: 1.0 V or less

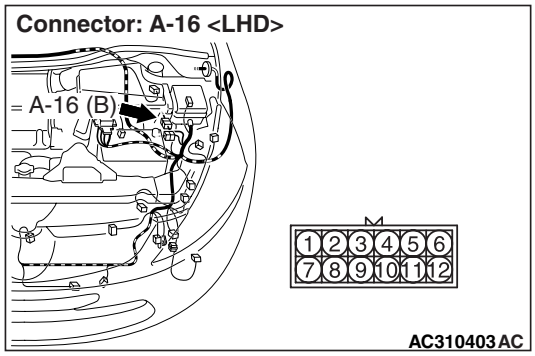
(4) Disconnect the negative battery terminal.

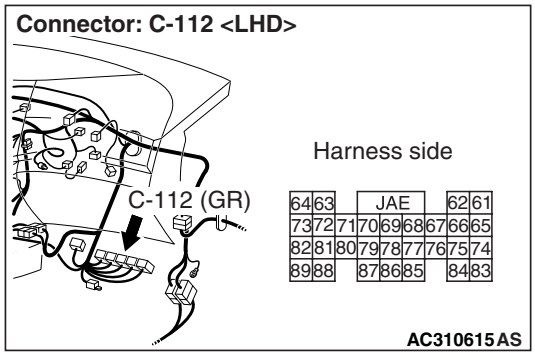
Q: Is the check result normal?
YES : <1.0 V or less> Go to Step 49.
NO : <more than 1.0 V> Repair the wiring harness between the joint connector (CAN1) and the intermediate connector.

STEP 49. Voltage measurement at the A-16 intermediate connector.

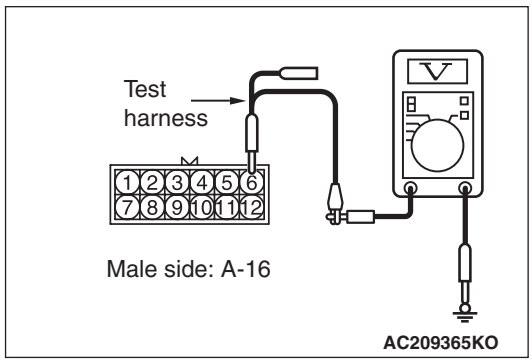
⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector and the intermediate connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



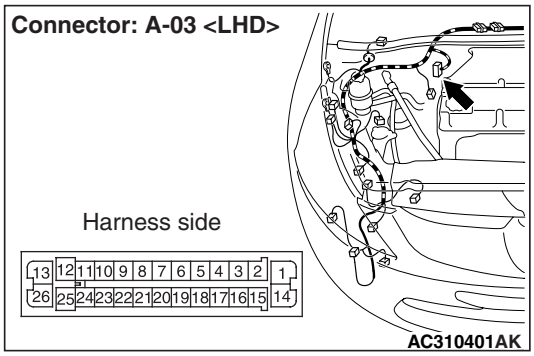
(3) Voltage between A-16 intermediate connector terminal No.6 and body earth
OK: Less than 1.0 V
(4) Disconnect the negative battery terminal.

⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <less than 1.0 V> Follow diagnostic item 17 "Diagnose CAN bus lines thoroughly." Refer to P.54D-452.
NO : <1.0 V or more> Repair the wiring harness between the intermediate connector and the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector.

STEP 50. Connector check: A-03 ABS-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?
YES : Go to Step 51 .
NO : Repair the defective connector.

STEP 51. Voltage measurement at the A-07 joint connector (CAN1).

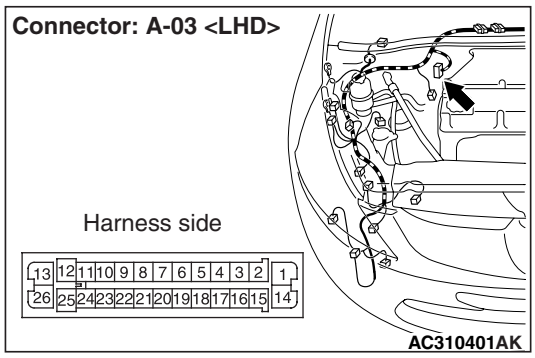
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

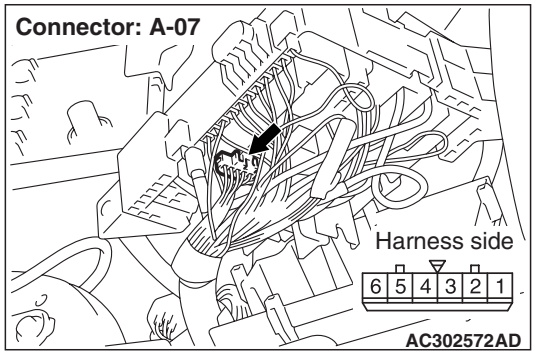
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

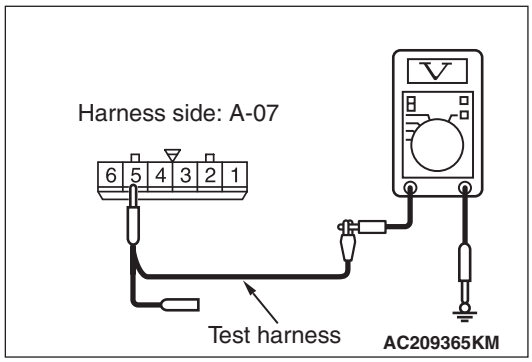
⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN1) and the ABS-ECU connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between A-07 joint connector (CAN1) terminal No.5 and body earth

OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?

YES : <less than 1.0 V> Follow diagnostic item 17 "Diagnose CAN bus lines thoroughly." Refer to P.54D-452.

NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN1) and the ABS-ECU connector.

STEP 52. Voltage measurement at the A-07 joint connector (CAN1).

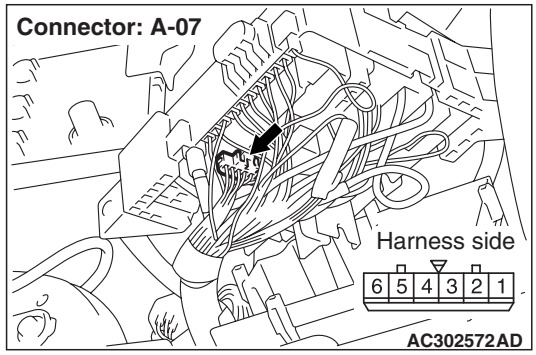
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

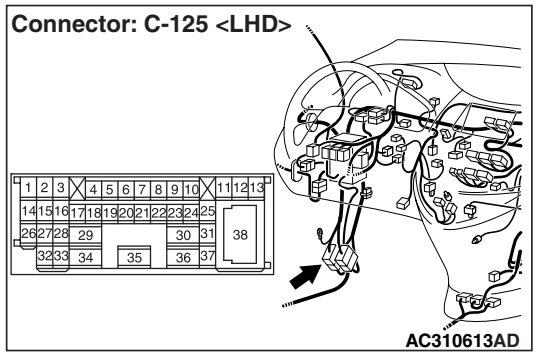
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

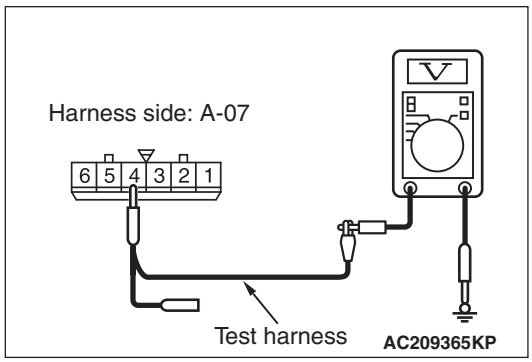
The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN1) and the intermediate connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn

the ignition switch to the ON position.



(3) Voltage between A-07 joint connector (CAN1) terminal No.4 and body earth

OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

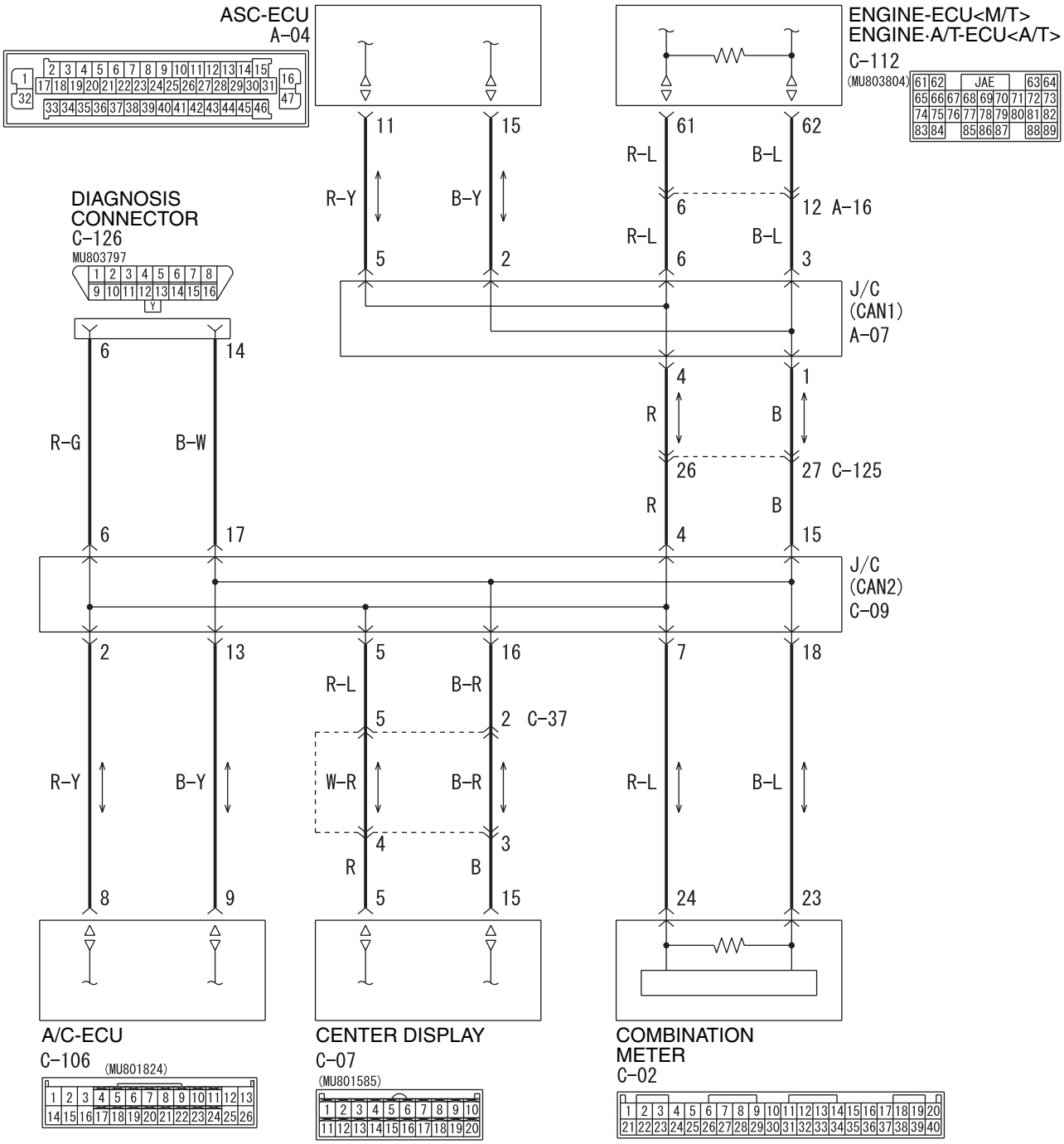
Q: Is the check result normal?

YES : <less than 1.0 V> Follow diagnostic item 17 "Diagnose CAN bus lines thoroughly." Refer to P.54D-452.

NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN1) and the intermediate connector.

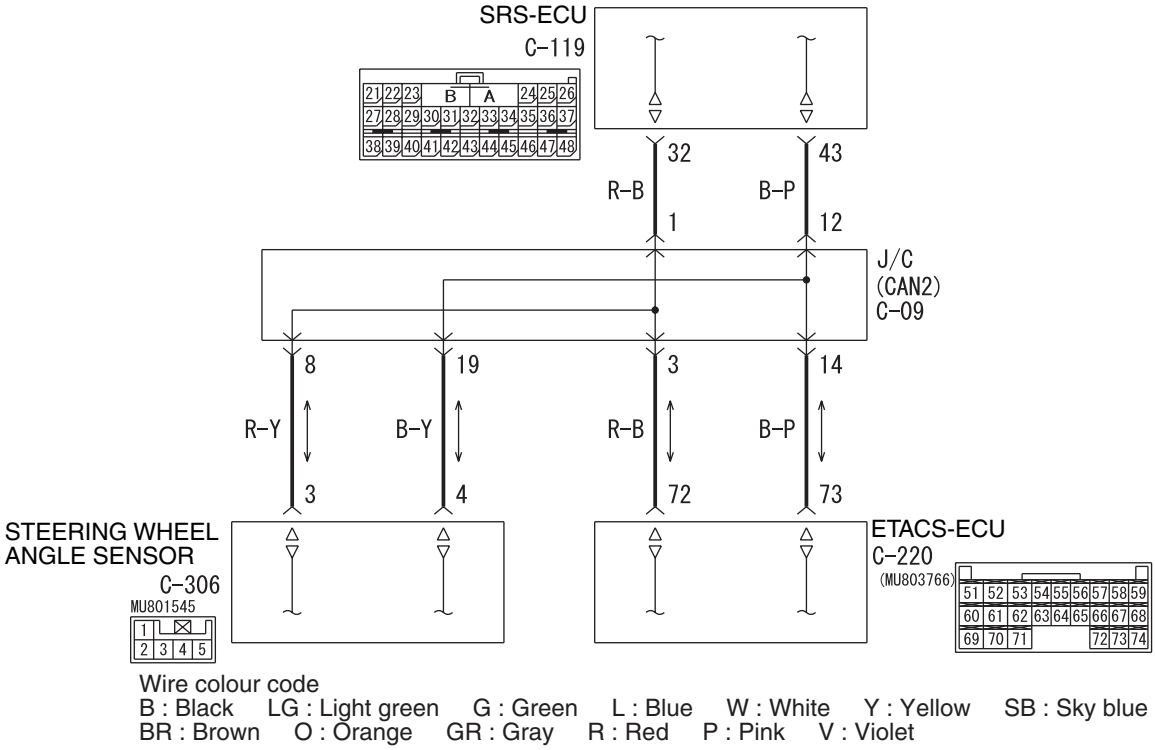
Diagnostic Item 2: Diagnose the CAN bus lines for short to power supply <LH drive vehicles with ASC>

⚠ CAUTION
When servicing a CAN bus line, earth yourself by touching a metal object such as an unpainted water pipe. If you fail to do, a component connected to the CAN bus line may be broken.



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E20AA



W4X54E21AA

TROUBLE JUDGMENT

Short to power supply may be present when the voltage between the CAN bus line (CAN_L or CAN_H) and body earth is more than 4.0 V. In this condition, an abnormal voltage may be measured at CAN_L and CAN_H lines.

COMMENTS ON TROUBLE SYMPTOM

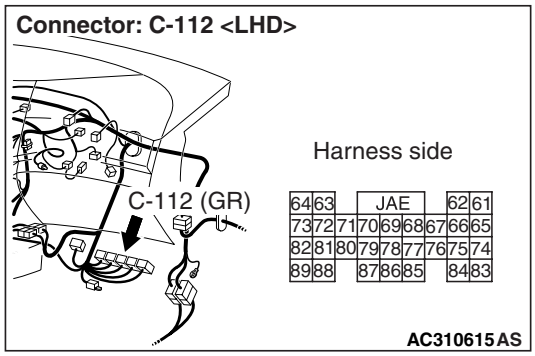
The wiring harness wire or connectors may have loose, corroded, or damage terminals, or terminals pushed back in the connector, or a ECU may be defective.

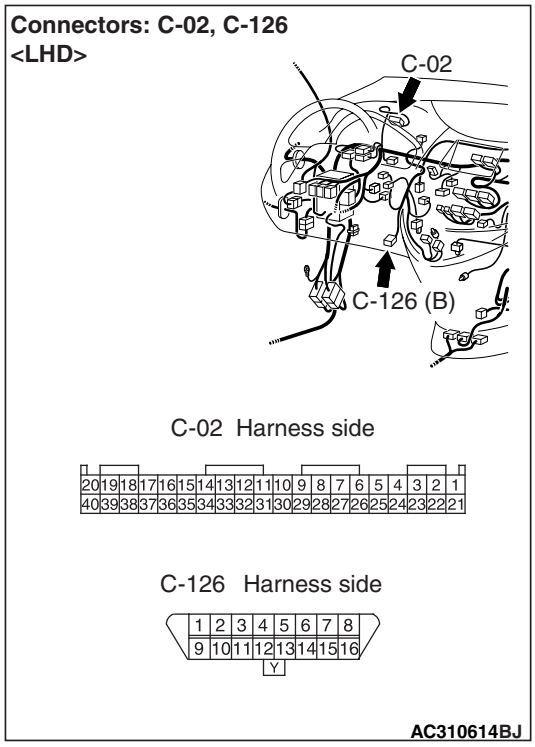
POSSIBLE CAUSES

- Damaged harness wires and connectors
- Malfunction of the ETACS-ECU
- Malfunction of the combination meter
- Malfunction of the A/C-ECU
- Malfunction of the SRS-ECU
- Malfunction of the multi-centre display
- Malfunction of the steering wheel angle sensor
- Malfunction of the ASC-ECU
- Malfunction of the engine-ECU <M/T> or engine-A/T-ECU <A/T>

DIAGNOSTIC PROCEDURE

STEP 1. Connector check: C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector, C-02 combination meter connector and C-126 diagnosis connector





⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Are the check result normal?
YES : Go to Step 2 .
NO : Repair the defective connector.

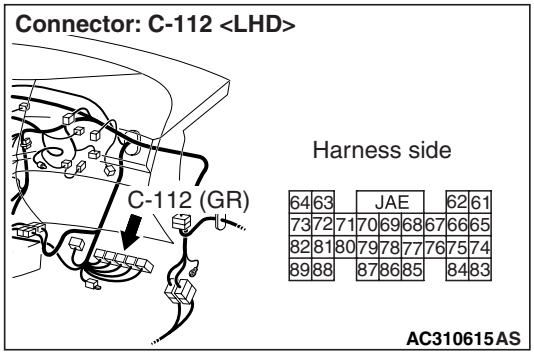
STEP 2. Voltage measurement at the C-126 diagnosis connector.

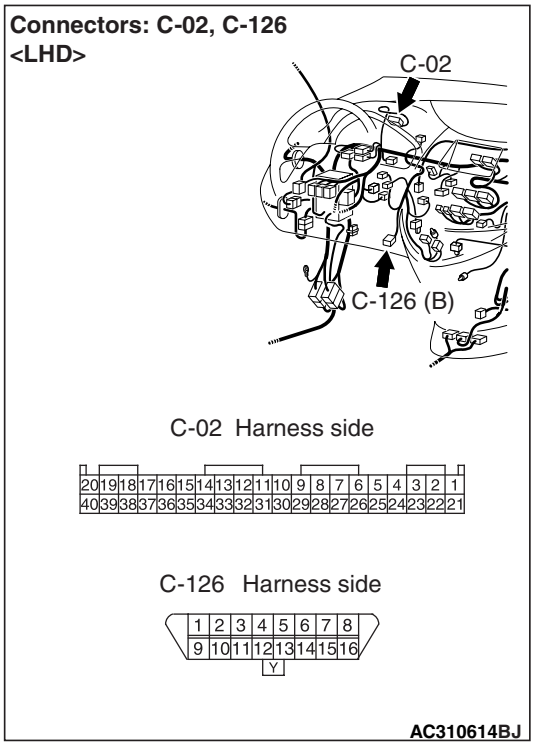
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

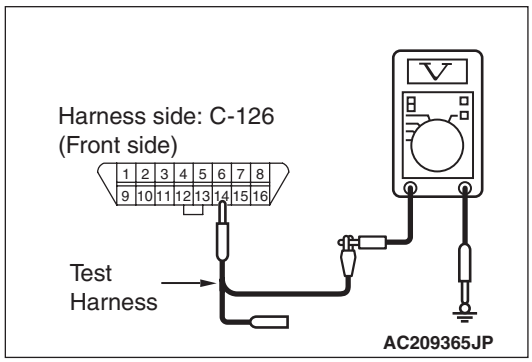
The test wiring harness should be used. For details refer to P.54D-8.





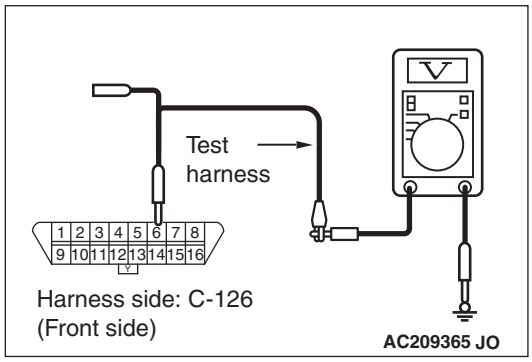
(1) Disconnect the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector and the combination meter connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn

the ignition switch to the ON position.



(3) Voltage between C-126 diagnosis connector terminal No.14 and body earth

OK: 4.0 V or less



(4) Voltage between C-126 diagnosis connector terminal No.6 and body earth

OK: 4.0 V or less

(5) Disconnect the negative battery terminal.

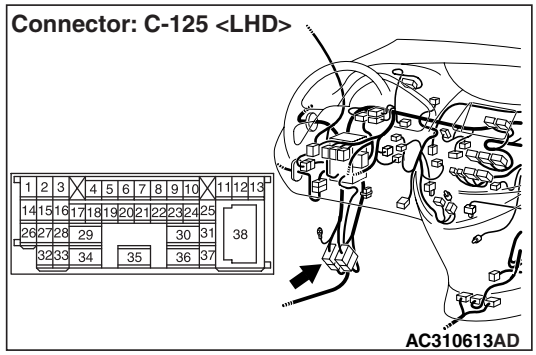
Q: Are the check result normal?

YES <all of the measurement results show 4.0 V or less> : Diagnostic Item 18: Diagnose CAN bus lines thoroughly. Refer to P.54D-476.

NO <The voltage between terminal No.14 and body earth is more than 4.0 V> : Go to Step 3 .

NO <The voltage between terminal No.6 and body earth is more than 4.0 V> : Go to Step 30 .

STEP 3. Connector check: C-125 intermediate connector



⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 4 .

NO : Repair the defective connector.

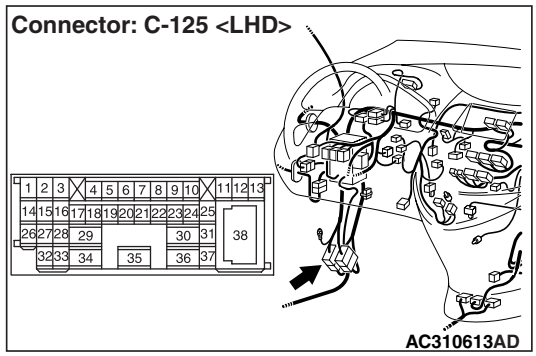
STEP 4. Voltage measurement at the C-125 intermediate connector.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

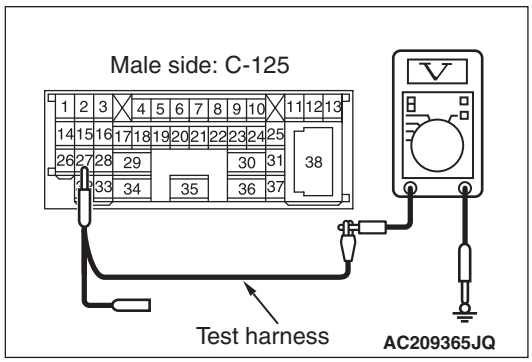
The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the connector, and measure at its male-side intermediate connector (at the front wiring harness side).

(2) Connect the negative battery terminal, and turn

the ignition switch to the ON position.



(3) Voltage between C-125 intermediate connector terminal No.27 and body earth

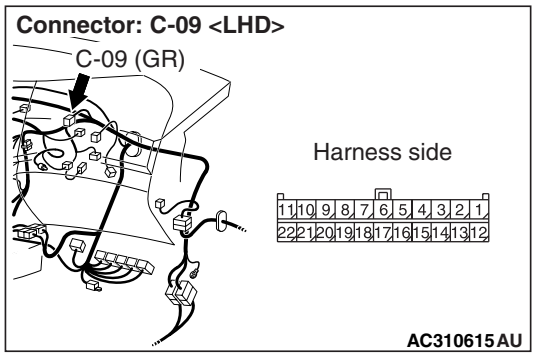
OK: 4.0 V or less

Q: Is the check result normal?

YES : <4.0 V or less> Go to Step 5.

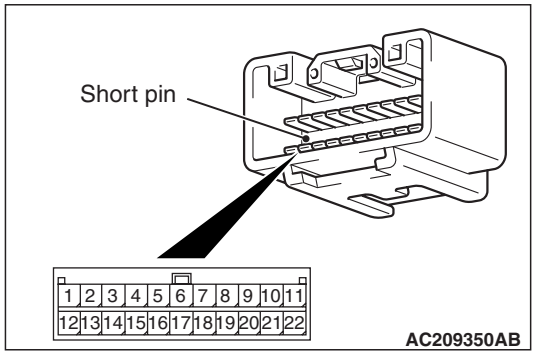
NO : <more than 4.0 V> Go to Step 22.

STEP 5. Connector check: C-09 joint connector (CAN2)



⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.



When checking the joint connector, ensure that its wiring harness side and its short pins are not damaged.

Q: Is the check result normal?

YES : Go to Step 6 .

NO : Repair a defective connector or replace the joint connector.

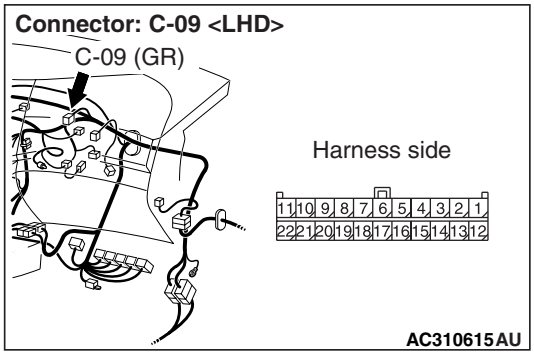
STEP 6. Voltage measurement at C-09 joint connector (CAN2).

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

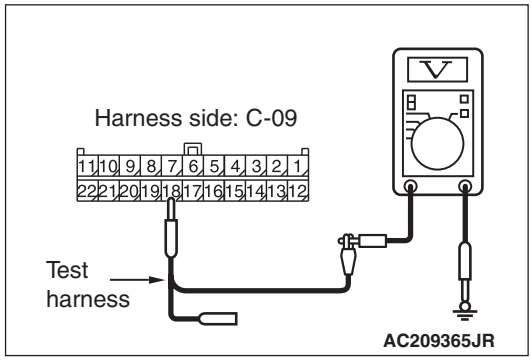
⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



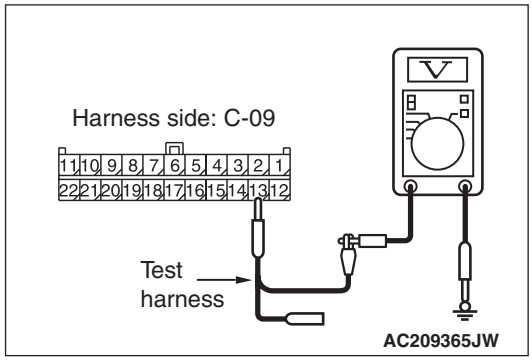
(1) Disconnect the connector, and measure at the wiring harness side.

(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-09 joint connector (CAN2) terminal No.18 and body earth

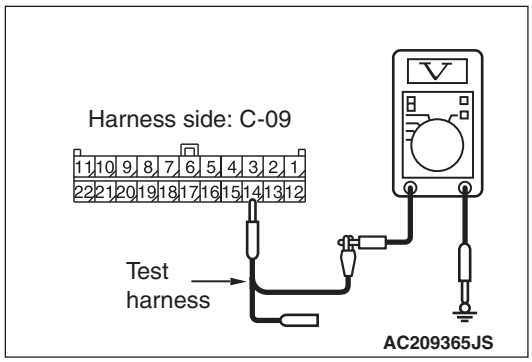
OK: 4.0 V or less



(4) Voltage between C-09 joint connector (CAN2)

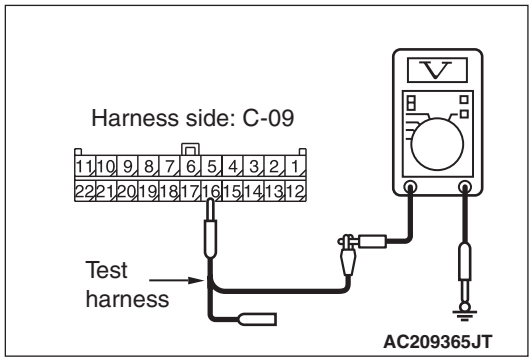
terminal No.13 and body earth

OK: 4.0 V or less



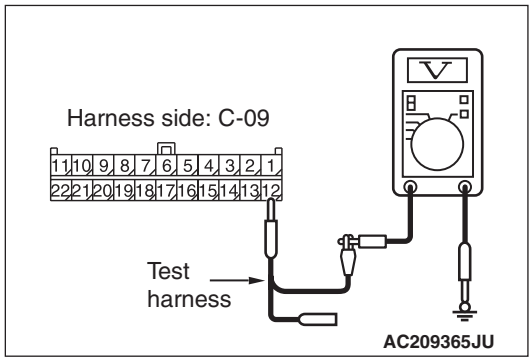
(5) Voltage between C-09 joint connector (CAN2) terminal No.14 and body earth

OK: 4.0 V or less



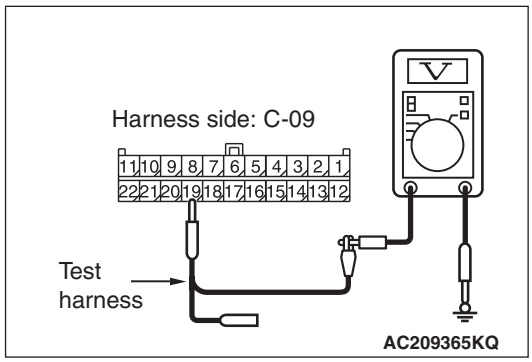
(6) Voltage between C-09 joint connector (CAN2) terminal No.16 and body earth

OK: 4.0 V or less



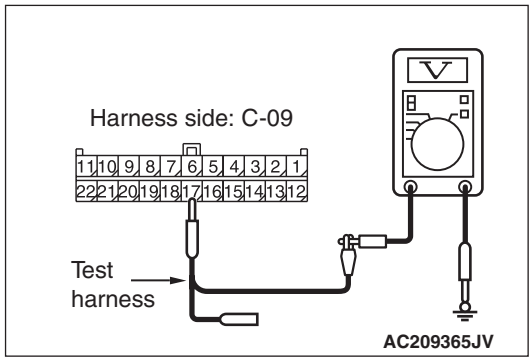
(7) Voltage between C-09 joint connector (CAN2) terminal No.12 and body earth

OK: 4.0 V or less



(8) Voltage between C-09 joint connector (CAN2) terminal No.19 and body earth

OK: 4.0 V or less



(9) Voltage between C-09 joint connector (CAN2) terminal No.17 and body earth

OK: 4.0 V or less

(10)Disconnect the negative battery terminal.

Q: Are the check result normal?

YES <all of the measurement results show 4.0 V or less> : Go to Step 21 .

NO <The voltage between terminal No.18 and body earth is more than 4.0 V> : Go to Step 7 .

NO <The voltage between terminal No.13 and body earth is more than 4.0 V> : Go to Step 8 .

NO <The voltage between terminal No.14 and body earth is more than 4.0 V> : Go to Step 10 .

NO <The voltage between terminal No.16 and body earth is more than 4.0 V> : Go to Step 12 .

NO <The voltage between terminal No.12 and body earth is more than 4.0 V> : Go to Step 16 .

NO <The voltage between terminal No.19 and body earth is more than 4.0 V> : Go to Step 18 .

NO <The voltage between terminal No.17 and body earth is more than 4.0 V> : Go to Step 20 .

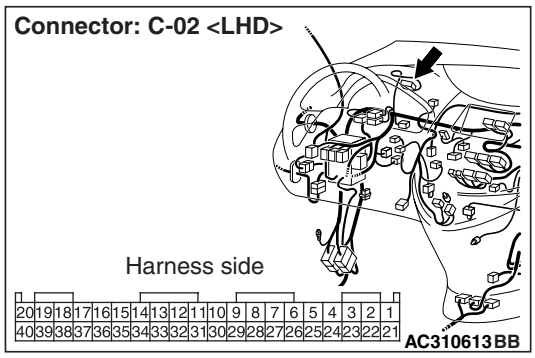
STEP 7. Voltage measurement at C-09 joint connector (CAN2).

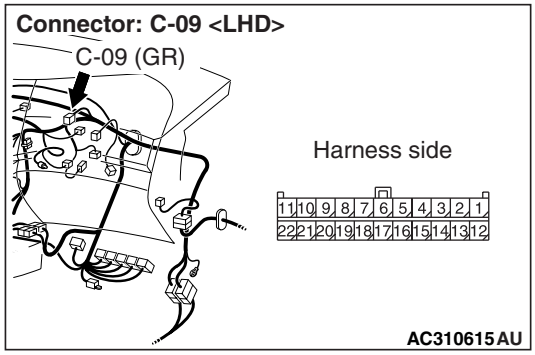
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

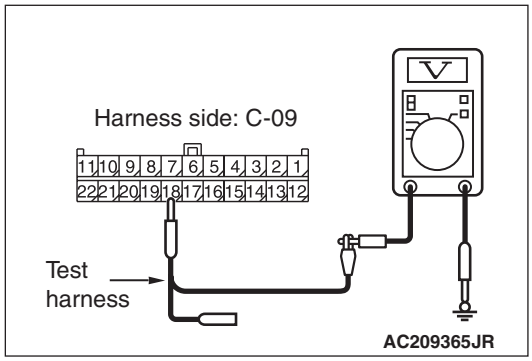
⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN2) and the combination meter connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-09 joint connector (CAN2) terminal No.18 and body earth

OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

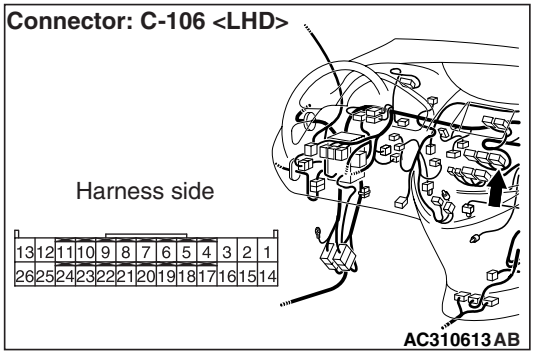
Q: Is the check result normal?

YES : <less than 1.0 V> Follow diagnostic item 18 "Diagnose CAN bus lines thoroughly." Refer to P.54D-476.

NO : <1.0 V or more> Repair the wiring harness between joint connector (CAN2) and the combination meter connector.

STEP 8. Connector check: C-106 A/C-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 9 .

NO : Repair the defective connector.

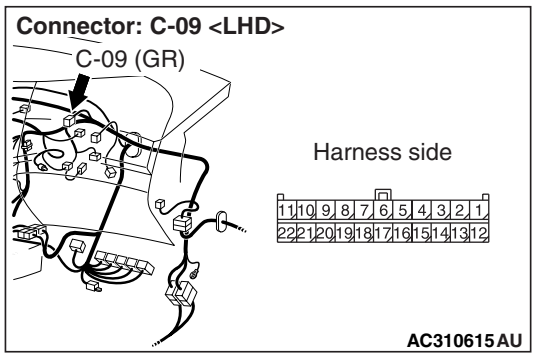
STEP 9. Voltage measurement at C-09 joint connector (CAN2).

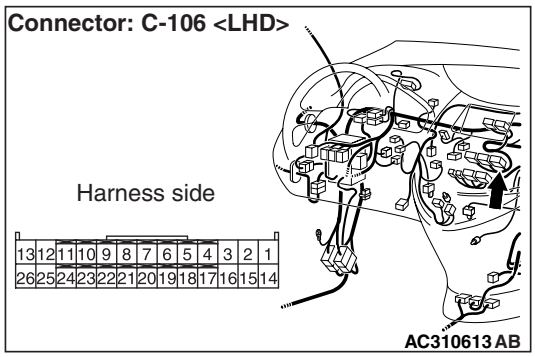
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

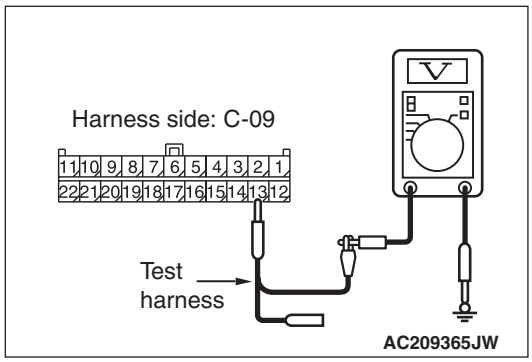
The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN2) and the A/C-ECU connector, and measure at the wiring harness side.

(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-09 joint connector (CAN2) terminal No.13 and body earth

OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

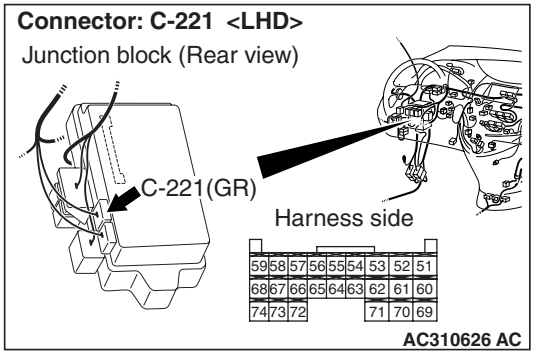
Q: Is the check result normal?

YES : <less than 1.0 V> Follow diagnostic item 18 "Diagnose CAN bus lines thoroughly." Refer to P.54D-476.

NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN2) and the A/C-ECU connector.

STEP 10. Connector check: C-221 ETACS-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 11 .

NO : Repair the defective connector.

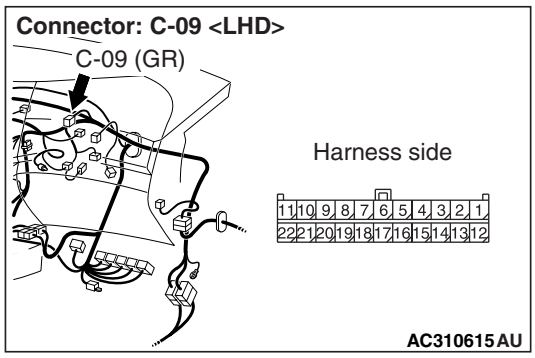
STEP 11. Voltage measurement at C-09 joint connector (CAN2).

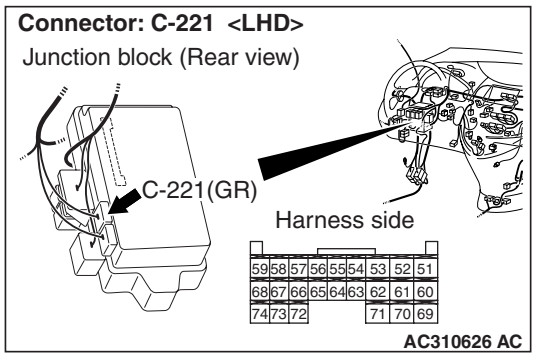
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

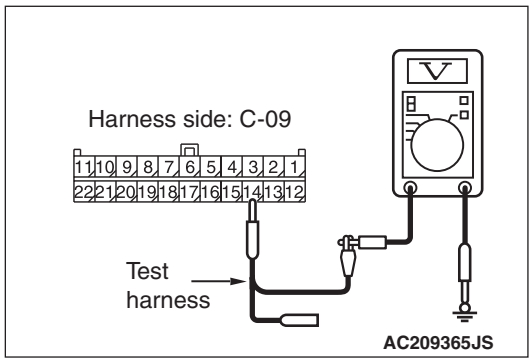
⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN2) and the ETACS-ECU connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-09 joint connector (CAN2) terminal No.14 and body earth

OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

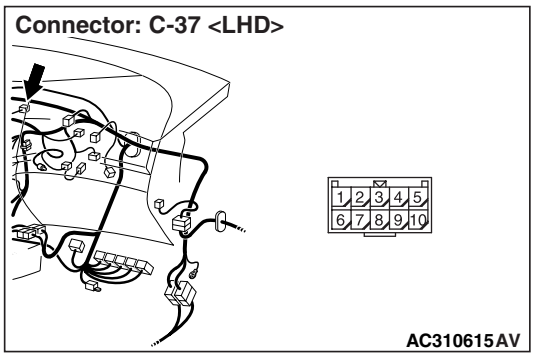
Q: Is the check result normal?

YES : <less than 1.0 V> Follow diagnostic item 18 "Diagnose CAN bus lines thoroughly." Refer to P.54D-476.

NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN2) and the ETACS-ECU connector.

STEP 12. Connector check: C-37 jumper connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Check that the wiring harness of the jumper connector is not damaged.

Q: Is the check result normal?

YES : Go to Step 13 .

NO : Repair the defective connector.

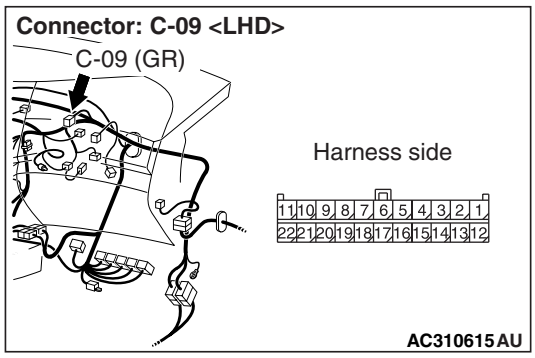
STEP 13. Voltage measurement at the C-09 joint connector (CAN2).

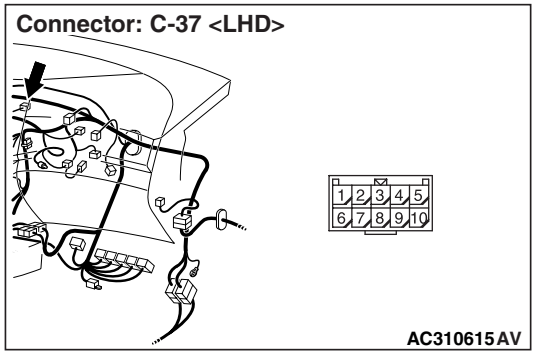
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

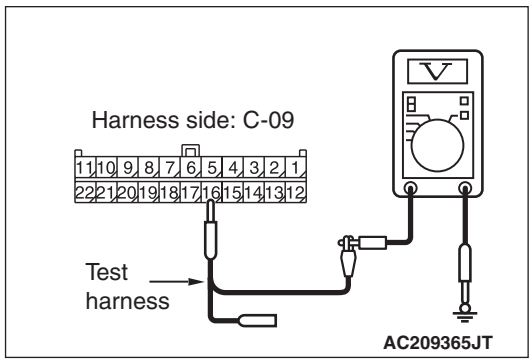
⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN2) and the jumper connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.

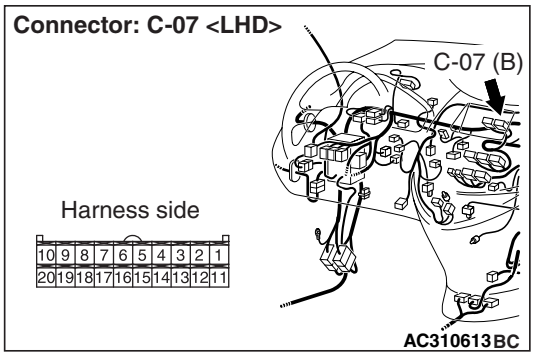


(3) Voltage between C-09 joint connector (CAN2) terminal No.16 and body earth
OK: Less than 1.0 V
(4) Disconnect the negative battery terminal.

Q: Is the check result normal?
YES : <1.0 V or less> Go to Step 14.
NO : <more than 1.0 V> Repair the wiring harness between the joint connector (CAN2) and the jumper connector.

STEP 14. Connector check: C-07 centre display connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?
YES : Go to Step 15 .
NO : Repair the defective connector.

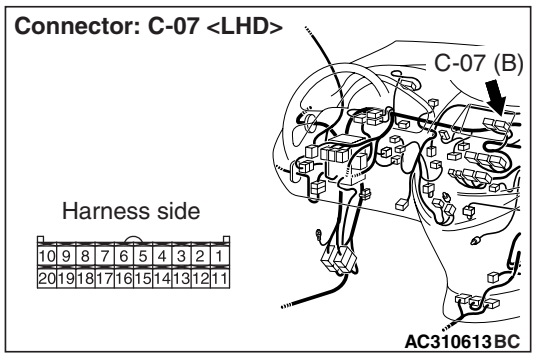
STEP 15. Voltage measurement at the C-37 jumper connector.

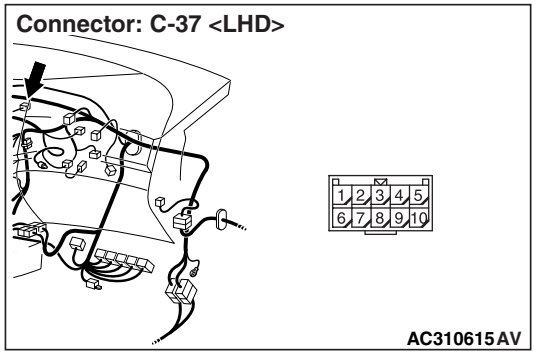
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

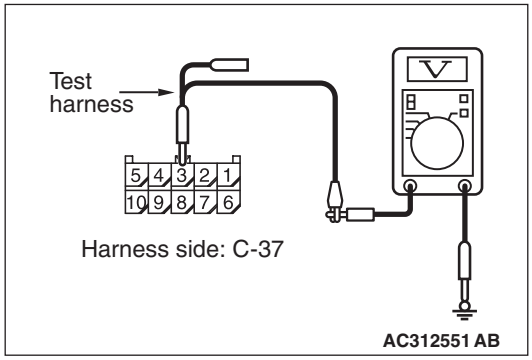
⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the centre display connector and the jumper connector, and measure at the jumper connector (at the centre display side).
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-37 jumper connector terminal No.3 and body earth

OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

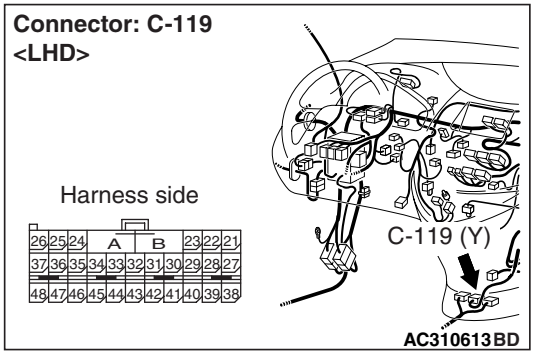
Q: Is the check result normal?

YES : <less than 1.0 V> Follow diagnostic item 18 "Diagnose CAN bus lines thoroughly." Refer to P.54D-476.

NO : <1.0 V or more> Repair the wiring harness between the jumper connector and the centre display connector.

STEP 16. Connector check: C-119 SRS-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 15 .

NO : Repair the defective connector.

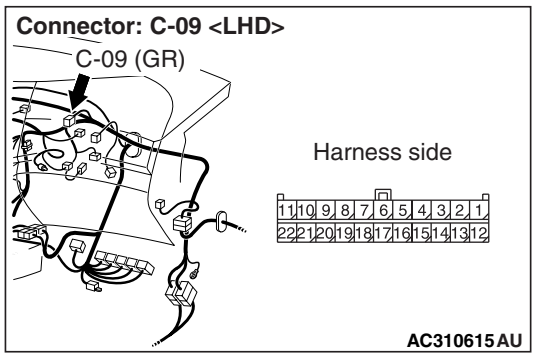
STEP 17. Voltage measurement at C-09 joint connector (CAN2).

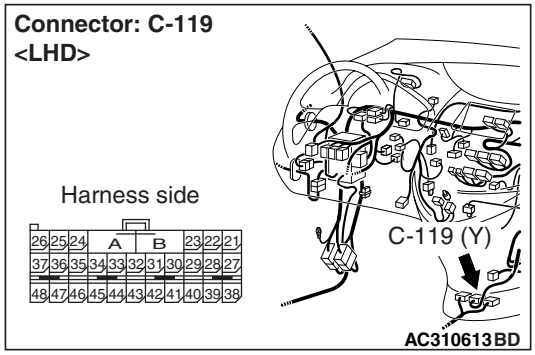
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

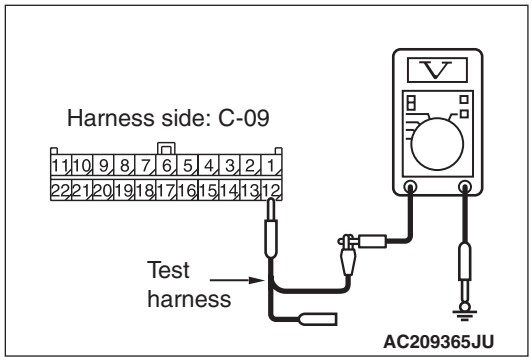
⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN2) and the SRS-ECU connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-09 joint connector (CAN2) terminal No.12 and body earth

OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

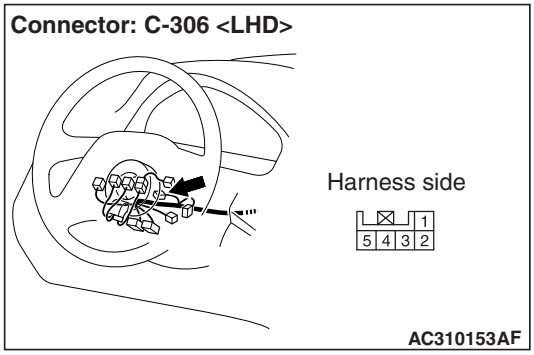
Q: Is the check result normal?

YES : <less than 1.0 V> Follow diagnostic item 18 "Diagnose CAN bus lines thoroughly." Refer to P.54D-476.

NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN2) and the SRS-ECU connector.

STEP 18. Connector check: C-306 steering wheel angle sensor connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 17 .

NO : Repair the defective connector.

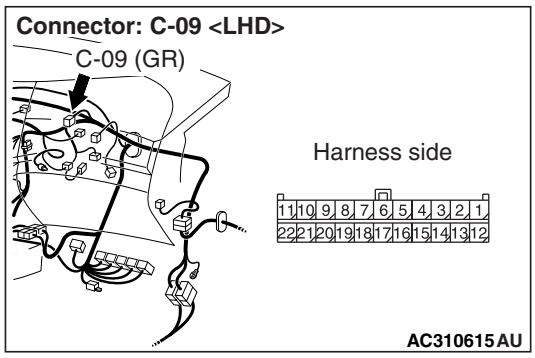
STEP 19. Voltage measurement at C-09 joint connector (CAN2).

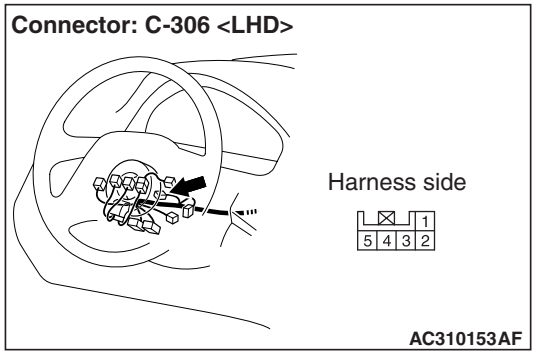
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

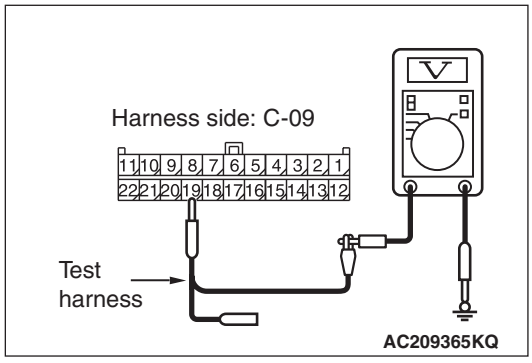
⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN2) and the steering wheel angle sensor connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-09 joint connector (CAN2) terminal No.19 and body earth

OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?

YES : <less than 1.0 V> Follow diagnostic item 18 "Diagnose CAN bus lines thoroughly." Refer to P.54D-476.

NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN2) and the steering wheel angle sensor connector.

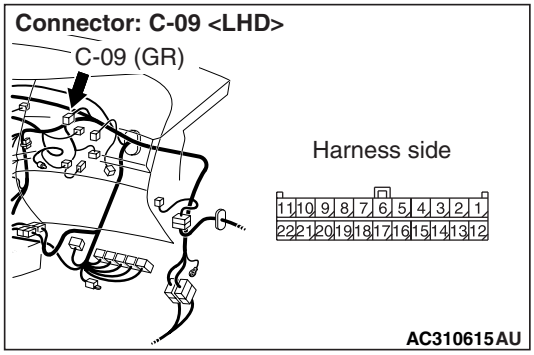
STEP 20. Voltage measurement at C-09 joint connector (CAN2).

⚠ CAUTION

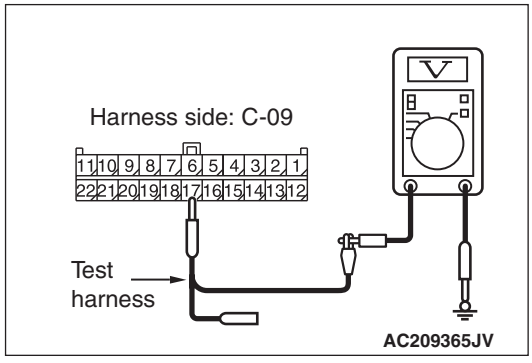
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-09 joint connector (CAN2)

terminal No.17 and body earth
OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

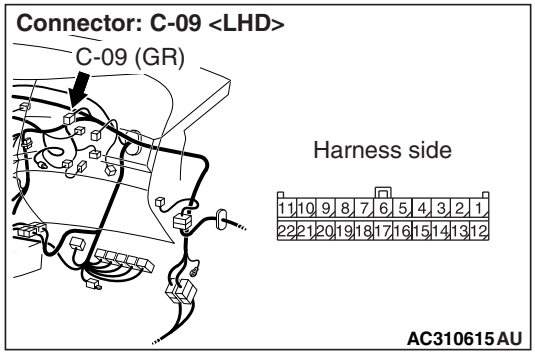
⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <less than 1.0 V> Follow diagnostic item 18 "Diagnose CAN bus lines thoroughly." Refer to P.54D-476.
NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN2) and the diagnosis connector.

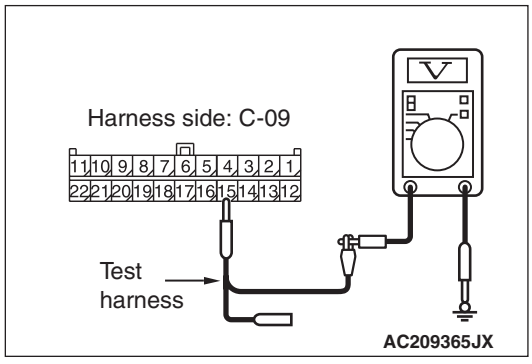
STEP 21. Voltage measurement at C-09 joint connector (CAN2).

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-09 joint connector (CAN2) terminal No.15 and body earth
OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

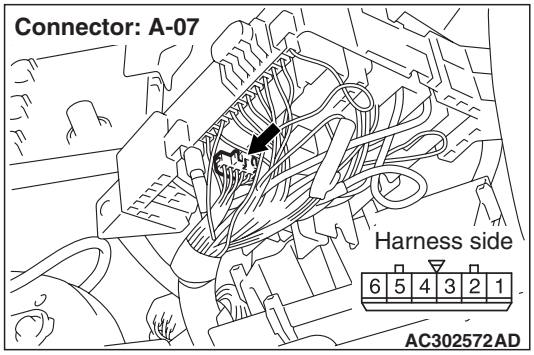
⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <less than 1.0 V> Follow diagnostic item 18 "Diagnose CAN bus lines thoroughly." Refer to P.54D-476.
NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN2) and the intermediate connector.

STEP 22. Connector check: A-07 joint connector (CAN1)

NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.
When checking the joint connector, ensure that its wiring harness side is not damaged.

Q: Is the check result normal?
YES : Go to Step 23 .
NO : Repair a defective connector or replace the joint connector (front wiring harness assembly).

STEP 23. Voltage measurement at the A-07 joint connector (CAN1).

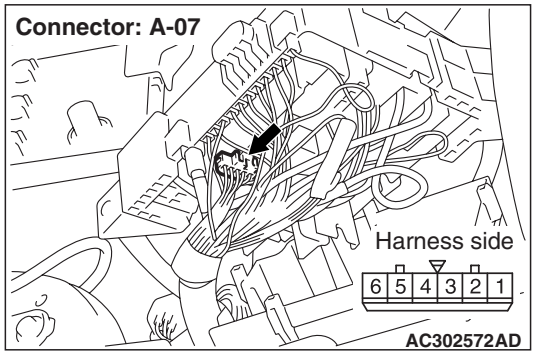
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

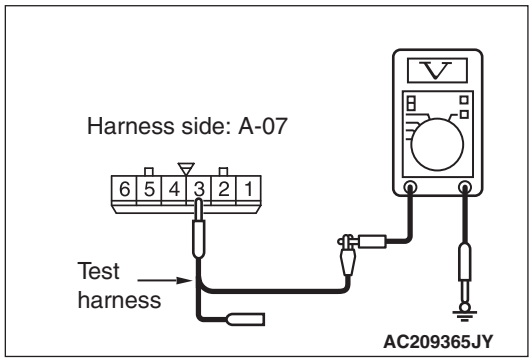
⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



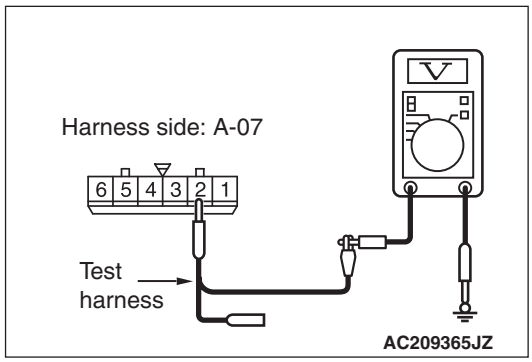
(1) Disconnect the connector, and measure at the wiring harness side.

(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between A-07 joint connector (CAN1) terminal No.3 and body earth

OK: 4.0 V or less



(4) Voltage between A-07 joint connector (CAN1) terminal No.2 and body earth

OK: 4.0 V or less

(5) Disconnect the negative battery terminal.

Q: Are the check result normal?

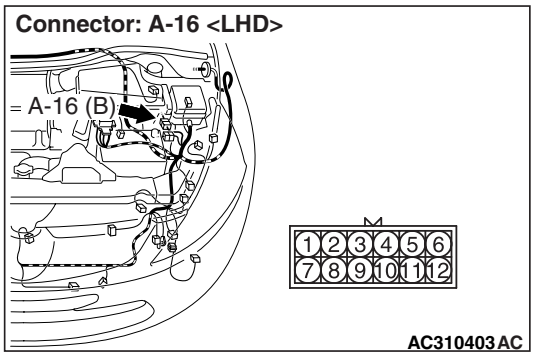
YES <all of the measurement results show 4.0 V or less> : Go to Step 29 .

NO <The voltage between terminal No.3 and body earth is more than 4.0 V> : Go to Step 24 .

NO <The voltage between terminal No.2 and body earth is more than 4.0 V> : Go to Step 27 .

STEP 24. Connector check: A-16 intermediate connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 25 .

NO : Repair the defective connector.

STEP 25. Voltage measurement at the A-07 joint connector (CAN1).

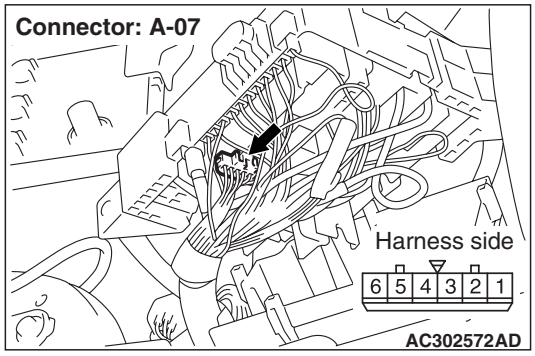
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

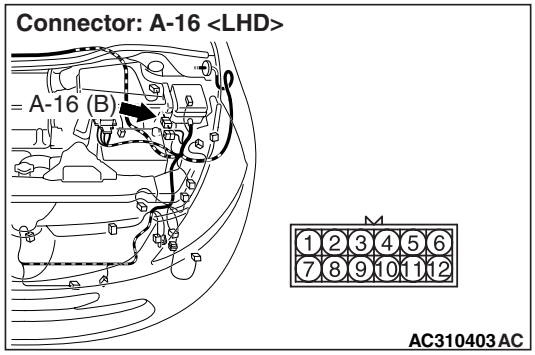
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

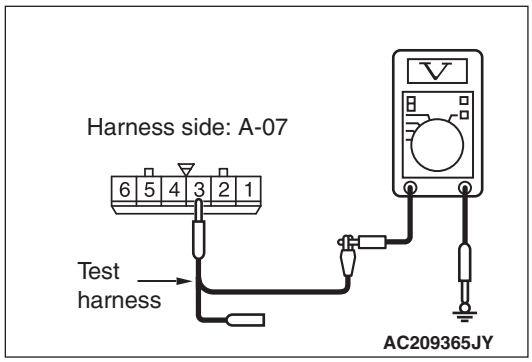
⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN1) and the intermediate connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between A-07 joint connector (CAN1) terminal No.3 and body earth
OK: 1.0 V or less
(4) Disconnect the negative battery terminal.

Q: Is the check result normal?
YES : <1.0 V or less> Go to Step 26.
NO : <more than 1.0 V> Repair the wiring harness between the joint connector (CAN1) and the intermediate connector.

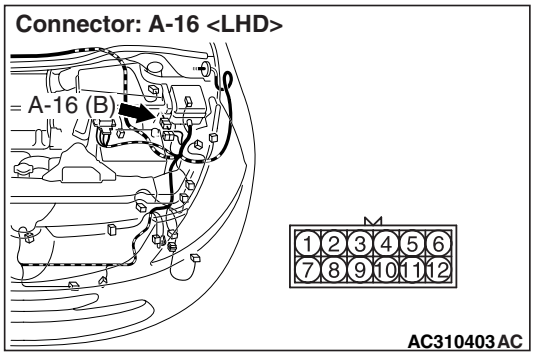
STEP 26. Voltage measurement at the A-16 intermediate connector.

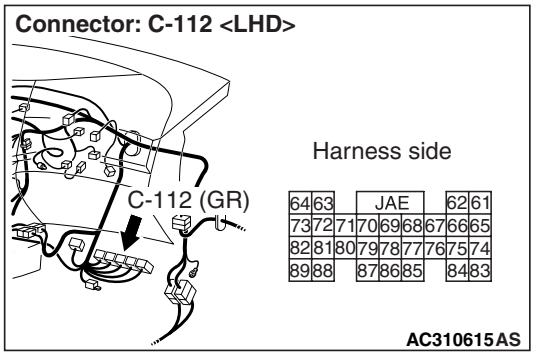
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

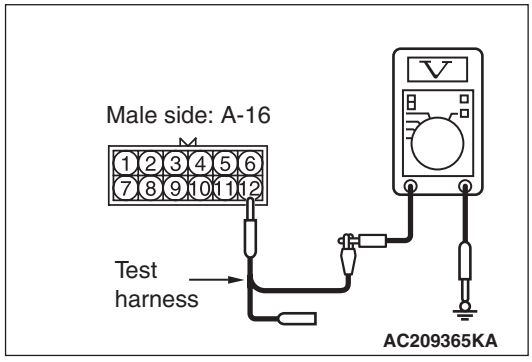
⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector and the intermediate connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between A-16 intermediate connector

terminal No.12 and body earth
OK: Less than 1.0 V

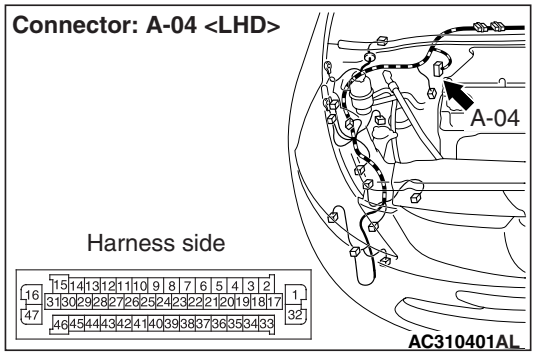
(4) Disconnect the negative battery terminal.

⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <less than 1.0 V> Follow diagnostic item 18 "Diagnose CAN bus lines thoroughly." Refer to P.54D-476.
NO : <1.0 V or more> Repair the wiring harness between the intermediate connector and the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector.

STEP 27. Connector check: A-04 ASC-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

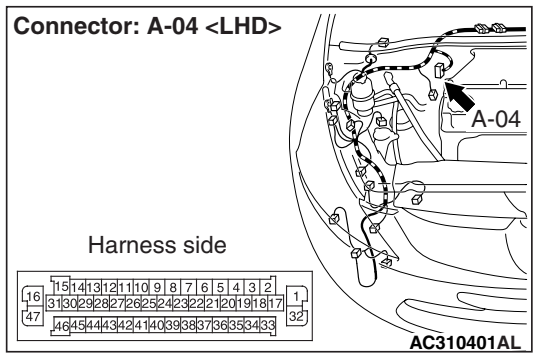
Q: Is the check result normal?
YES : Go to Step 28 .
NO : Repair the defective connector.

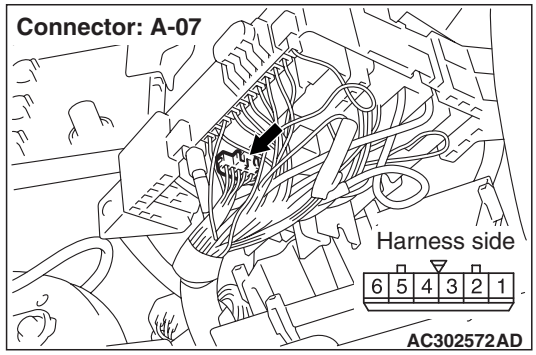
STEP 28. Voltage measurement at the A-07 joint connector (CAN1).

NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

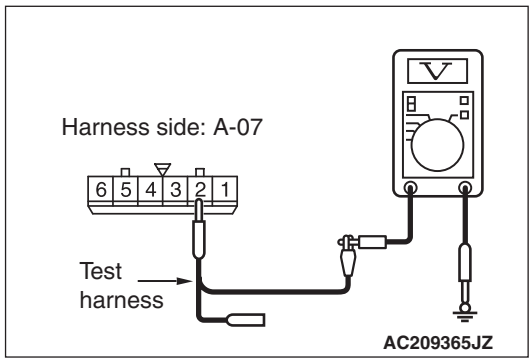
⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN1) and the ASC-ECU connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between A-07 joint connector (CAN1)

terminal No.2 and body earth

OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?

YES : <less than 1.0 V> Follow diagnostic item 18 "Diagnose CAN bus lines thoroughly." Refer to P.54D-476.

NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN1) and the ASC-ECU connector.

STEP 29. Voltage measurement at the A-07 joint connector (CAN1).

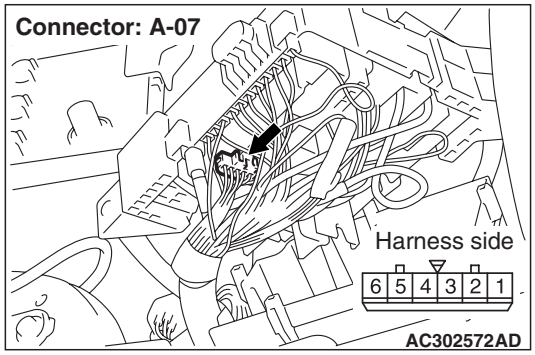
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

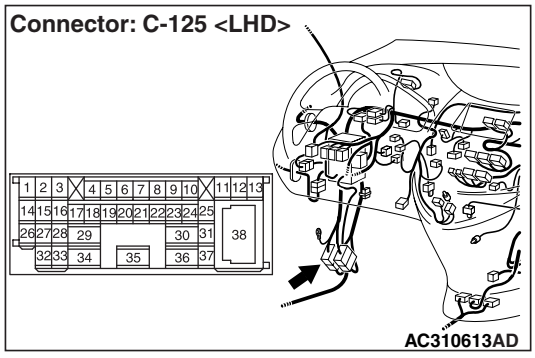
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

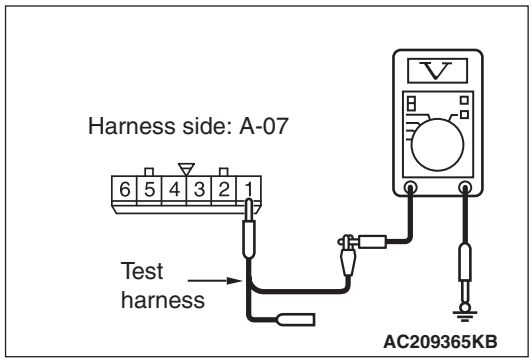
The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN1) and the intermediate connector, and measure at the wiring harness side.

(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between A-07 joint connector (CAN1) terminal No.1 and body earth

OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

⚠ CAUTION

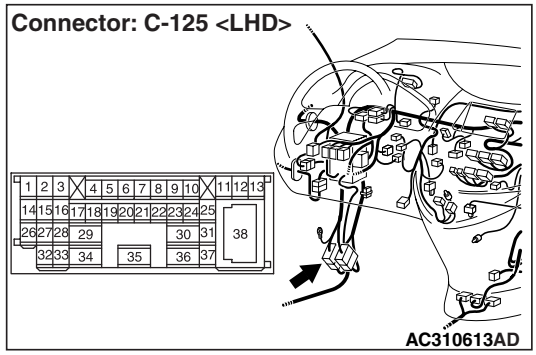
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?

YES : <less than 1.0 V> Follow diagnostic item 18 "Diagnose CAN bus lines thoroughly." Refer to P.54D-476.

NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN1) and the intermediate connector.

STEP 30. Connector check: C-125 intermediate connector



⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 31 .

NO : Repair the defective connector.

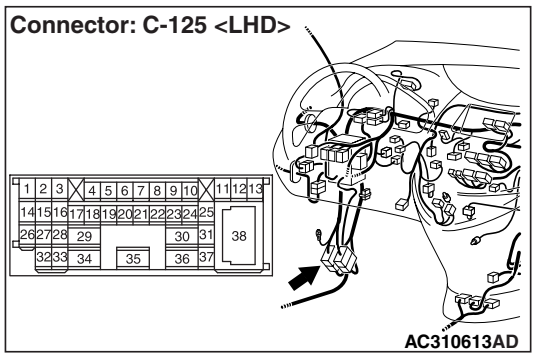
STEP 31. Voltage measurement at the C-125 intermediate connector.

⚠ CAUTION

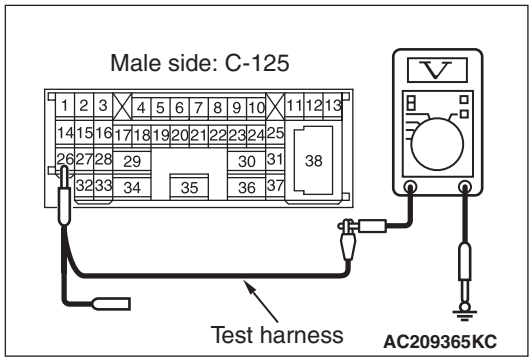
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the connector, and measure at its male-side intermediate connector (at the front wiring harness side).
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



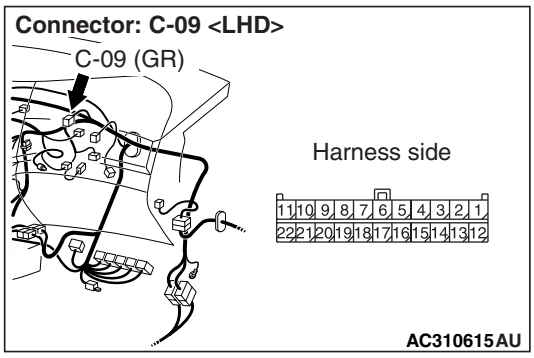
(3) Voltage between C-125 intermediate connector terminal No.26 and body earth

OK: 4.0 V or less

Q: Is the check result normal?

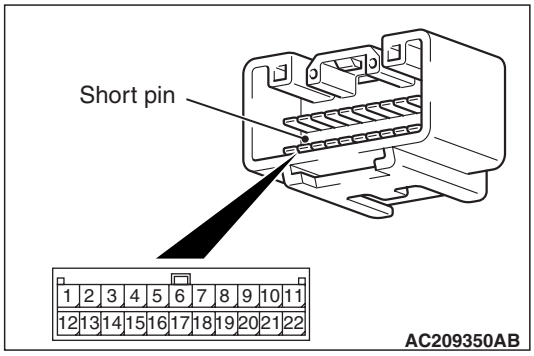
YES : <4.0 V or less> Go to Step 32.
NO : <more than 4.0 V> Go to Step 49.

STEP 32. Connector check: C-09 joint connector (CAN2)



⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.



When checking the joint connector, ensure that its wiring harness side and its short pins are not damaged.

Q: Is the check result normal?

YES : Go to Step 33 .
NO : Repair a defective connector or replace the joint connector.

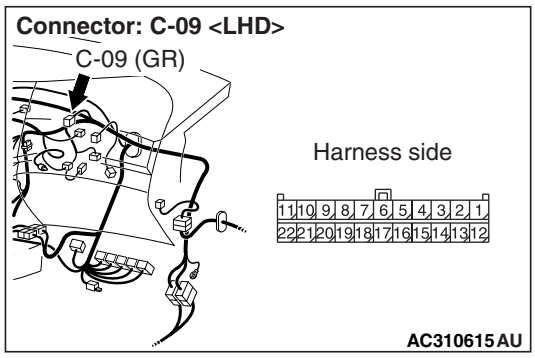
STEP 33. Voltage measurement at C-09 joint connector (CAN2).

⚠ CAUTION

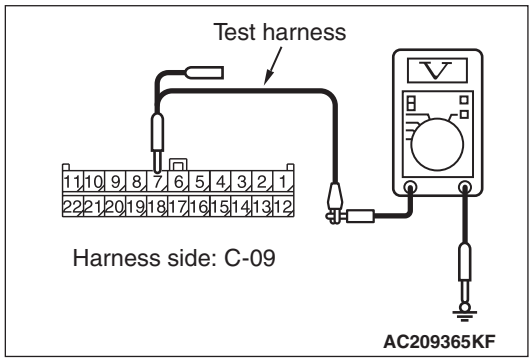
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.

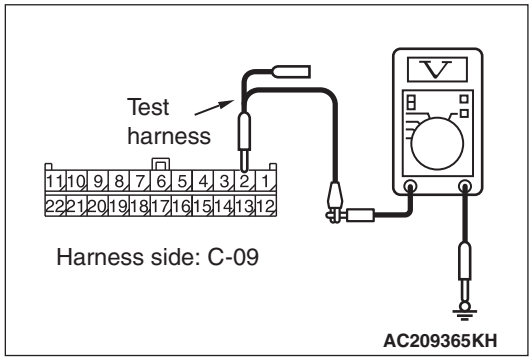


(1) Disconnect the connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



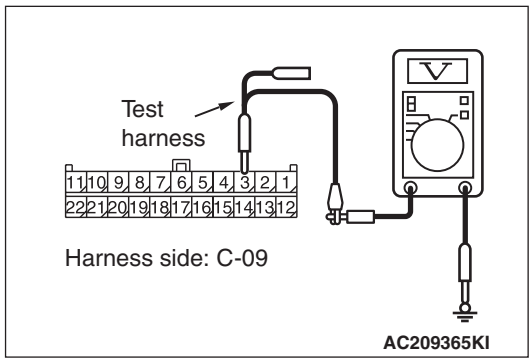
(3) Voltage between C-09 joint connector (CAN2) terminal No.7 and body earth

OK: 4.0 V or less



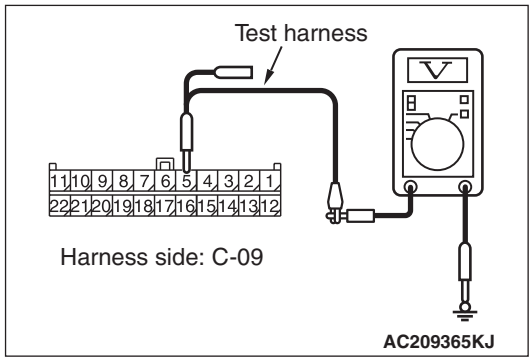
(4) Voltage between C-09 joint connector (CAN2) terminal No.2 and body earth

OK: 4.0 V or less



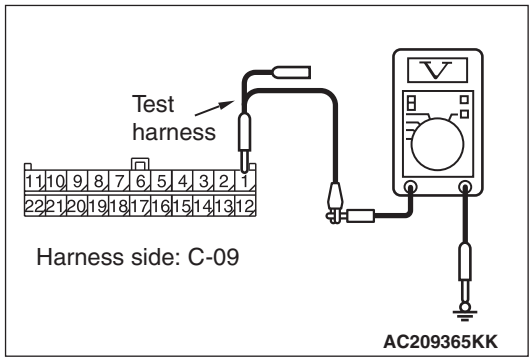
(5) Voltage between C-09 joint connector (CAN2) terminal No.3 and body earth

OK: 4.0 V or less



(6) Voltage between C-09 joint connector (CAN2) terminal No.5 and body earth

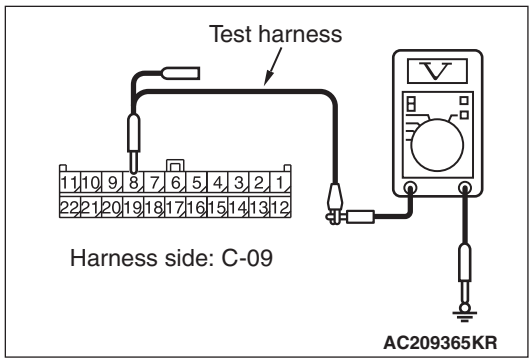
OK: 4.0 V or less



(7) Voltage between C-09 joint connector (CAN2)

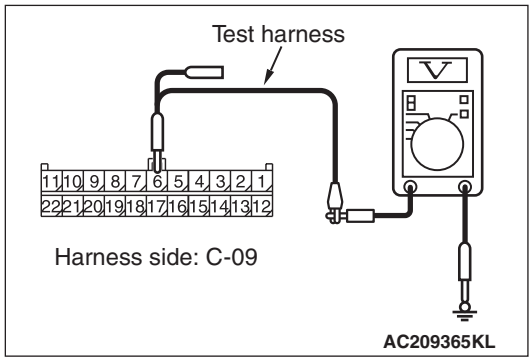
terminal No.1 and body earth

OK: 4.0 V or less



(8) Voltage between C-09 joint connector (CAN2) terminal No.8 and body earth

OK: 4.0 V or less



(9) Voltage between C-09 joint connector (CAN2) terminal No.6 and body earth

OK: 4.0 V or less

(10)Disconnect the negative battery terminal.

Q: Are the check result normal?

YES <all of the measurement results show 4.0 V or less> : Go to Step 48 .

NO <The voltage between terminal No.7 and body earth is more than 4.0 V> : Go to Step 34 .

NO <The voltage between terminal No.2 and body earth is more than 4.0 V> : Go to Step 35 .

NO <The voltage between terminal No.3 and body earth is more than 4.0 V> : Go to Step 37 .

NO <The voltage between terminal No.5 and body earth is more than 4.0 V> : Go to Step 39 .

NO <The voltage between terminal No.1 and body earth is more than 4.0 V> : Go to Step 43 .

NO <The voltage between terminal No.8 and body earth is more than 4.0 V> : Go to Step 45 .

NO <The voltage between terminal No.6 and body earth is more than 4.0 V> : Go to Step 47 .

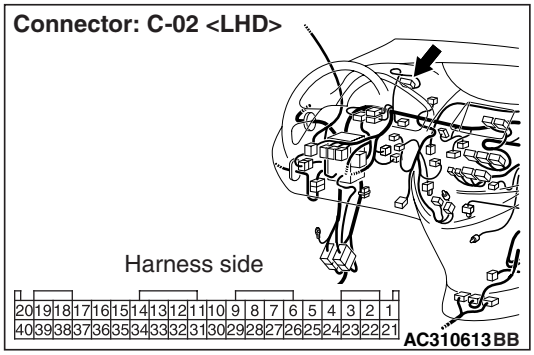
STEP 34. Voltage measurement at C-09 joint connector (CAN2).

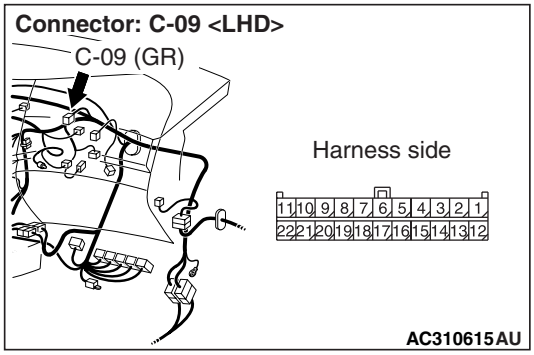
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

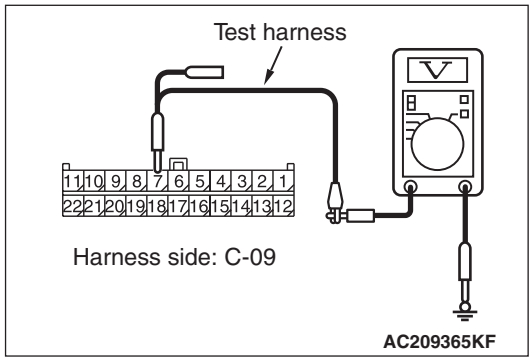
The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN2) and the combination meter connector, and measure at the wiring harness side.

(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-09 joint connector (CAN2)

terminal No.7 and body earth
OK: Less than 1.0 V

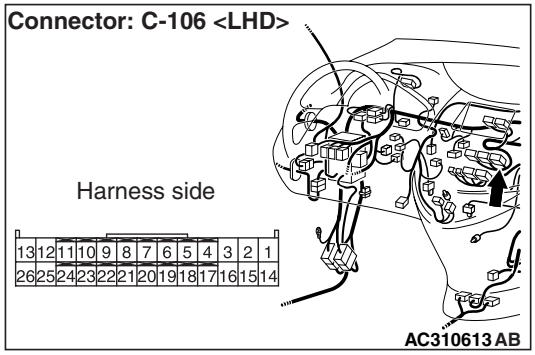
(4) Disconnect the negative battery terminal.

⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <less than 1.0 V> Follow diagnostic item 18 "Diagnose CAN bus lines thoroughly." Refer to P.54D-476.
NO : <1.0 V or more> Repair the wiring harness between joint connector (CAN2) and the combination meter connector.

STEP 35. Connector check: C-106 A/C-ECU connector

⚠ CAUTION



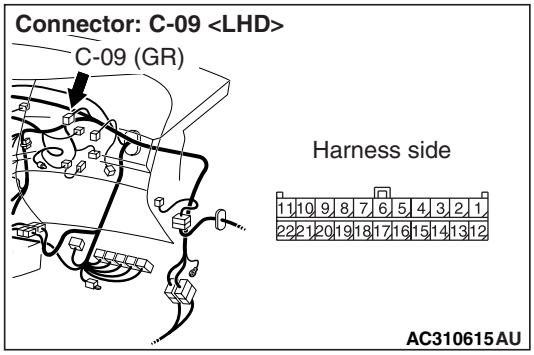
The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

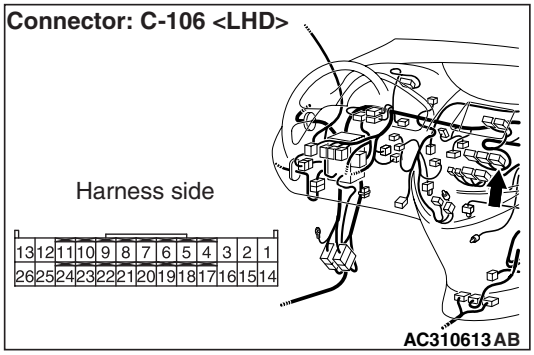
Q: Is the check result normal?
YES : Go to Step 36 .
NO : Repair the defective connector.

STEP 36. Voltage measurement at C-09 joint connector (CAN2).

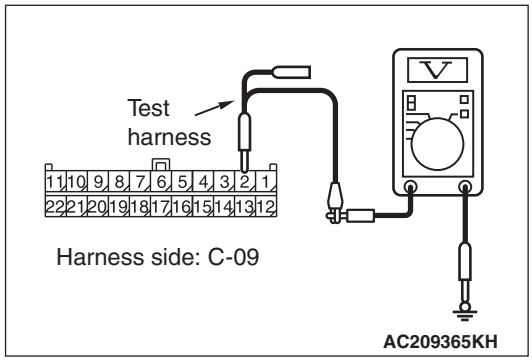
⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN2) and the A/C-ECU connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-09 joint connector (CAN2)

terminal No.2 and body earth
OK: Less than 1.0 V

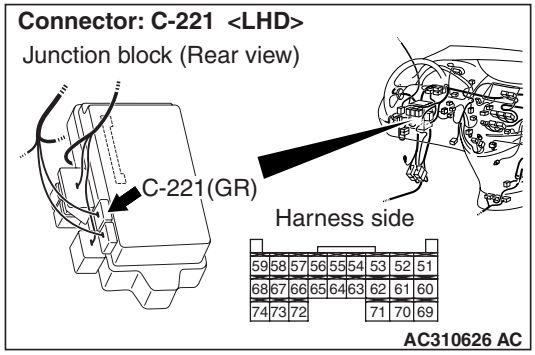
(4) Disconnect the negative battery terminal.

⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <less than 1.0 V> Follow diagnostic item 18 "Diagnose CAN bus lines thoroughly." Refer to P.54D-476.
NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN2) and the A/C-ECU connector.

STEP 37. Connector check: C-221 ETACS-ECU connector

⚠ CAUTION



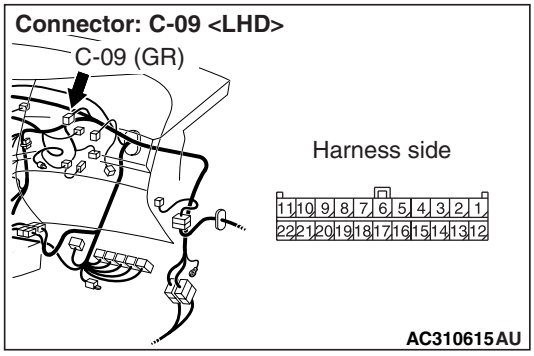
The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

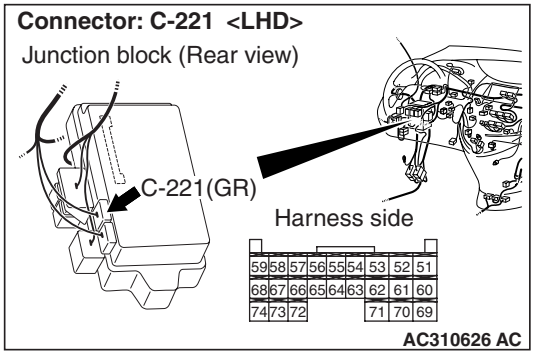
Q: Is the check result normal?
YES : Go to Step 38 .
NO : Repair the defective connector.

STEP 38. Voltage measurement at C-09 joint connector (CAN2).

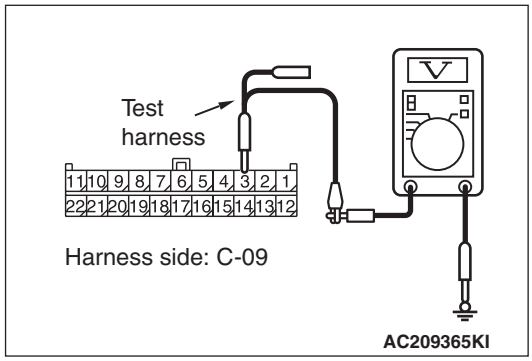
⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN2) and the ETACS-ECU connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-09 joint connector (CAN2)

terminal No.3 and body earth
OK: Less than 1.0 V

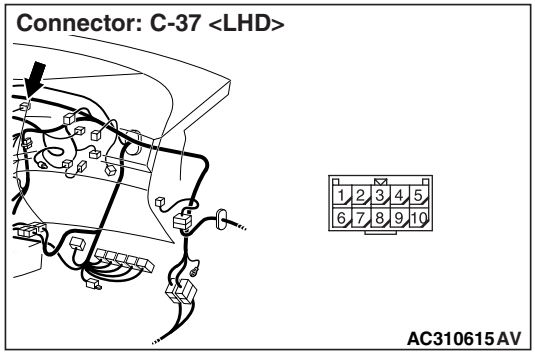
(4) Disconnect the negative battery terminal.

⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <less than 1.0 V> Follow diagnostic item 18 "Diagnose CAN bus lines thoroughly." Refer to P.54D-476.
NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN2) and the ETACS-ECU connector.

STEP 39. Connector check: C-37 jumper connector

⚠ CAUTION



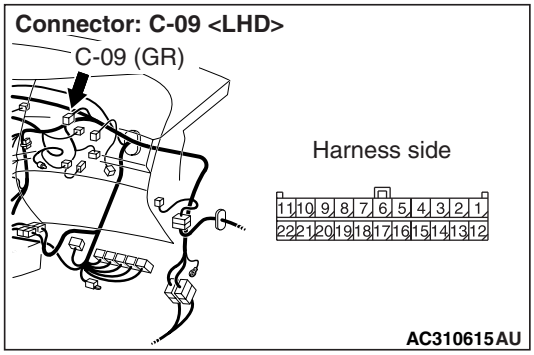
The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.
Check that the wiring harness of the jumper connector is not damaged.

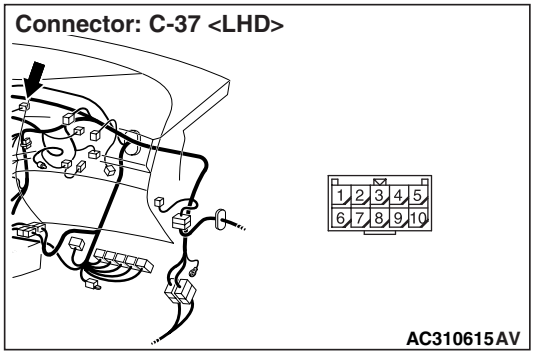
Q: Is the check result normal?
YES : Go to Step 40 .
NO : Repair the defective connector.

STEP 40. Voltage measurement at the C-09 joint connector (CAN2).

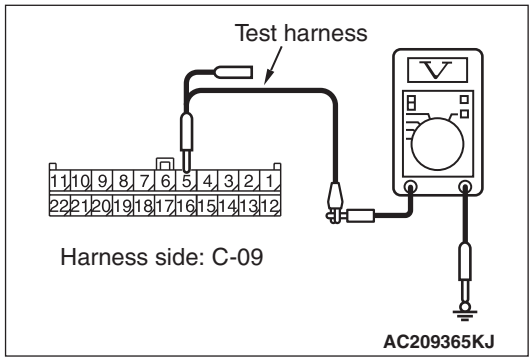
⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN2) and the jumper connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-09 joint connector (CAN2) terminal No.5 and body earth
OK: Less than 1.0 V

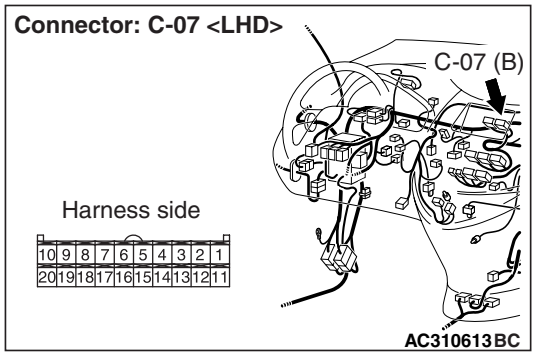
(4) Disconnect the negative battery terminal.

Q: Is the check result normal?

YES : <1.0 V or less> Go to Step 41.
NO : <more than 1.0 V> Repair the wiring harness between the joint connector (CAN2) and the jumper connector.

STEP 41. Connector check: C-07 centre display connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?
YES : Go to Step 42 .
NO : Repair the defective connector.

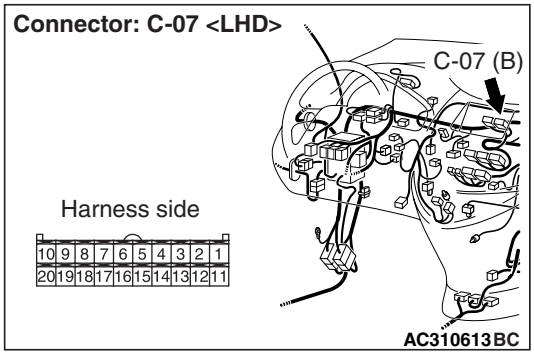
STEP 42. Voltage measurement at the C-37 jumper connector.

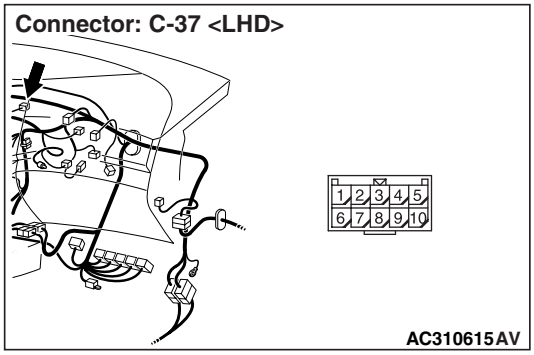
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

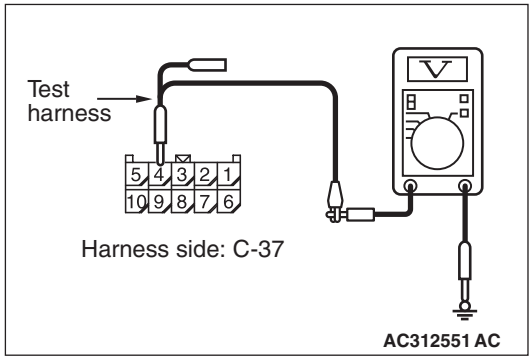
⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the centre display connector and the jumper connector, and measure at the jumper connector (at the centre display side).
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-37 jumper connector terminal

No.4 and body earth
OK: Less than 1.0 V

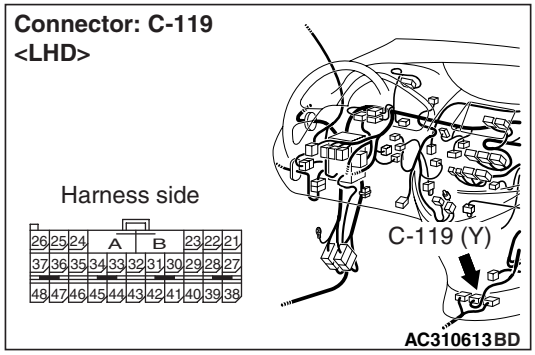
(4) Disconnect the negative battery terminal.

⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <less than 1.0 V> Follow diagnostic item 18 "Diagnose CAN bus lines thoroughly." Refer to P.54D-476.
NO : <1.0 V or more> Repair the wiring harness between the jumper connector and the centre display connector.

STEP 43. Connector check: C-119 SRS-ECU connector

⚠ CAUTION



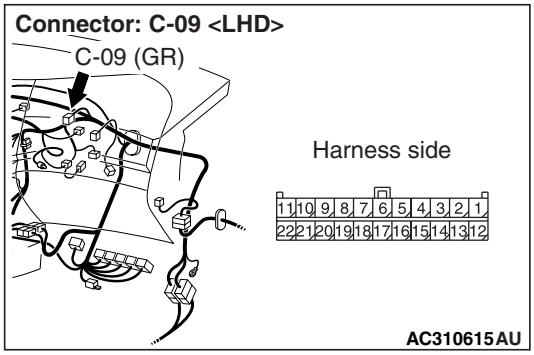
The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

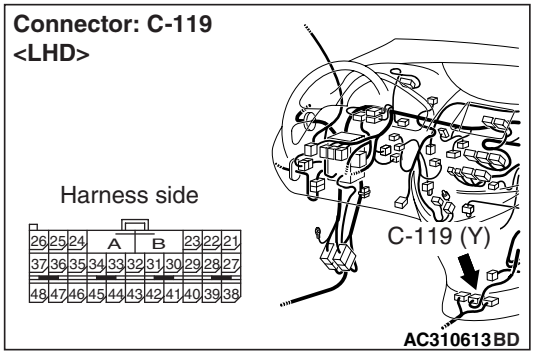
Q: Is the check result normal?
YES : Go to Step 44 .
NO : Repair the defective connector.

STEP 44. Voltage measurement at C-09 joint connector (CAN2).

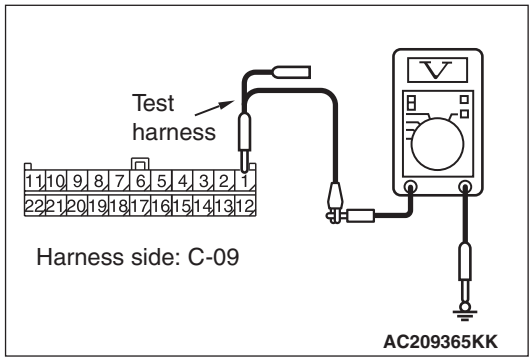
⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN2) and the SRS-ECU connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-09 joint connector (CAN2)

terminal No.1 and body earth
OK: Less than 1.0 V

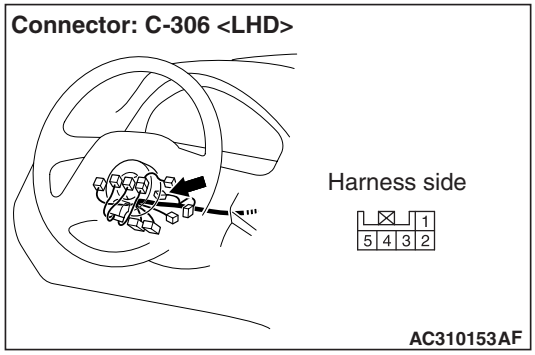
(4) Disconnect the negative battery terminal.

⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <less than 1.0 V> Follow diagnostic item 18 "Diagnose CAN bus lines thoroughly." Refer to P.54D-476.
NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN2) and the SRS-ECU connector.

STEP 45. Connector check: C-306 steering wheel angle sensor connector

⚠ CAUTION



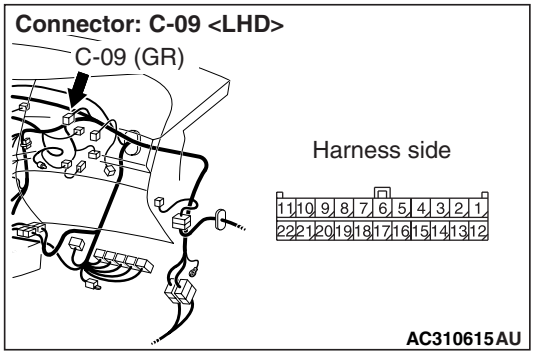
The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

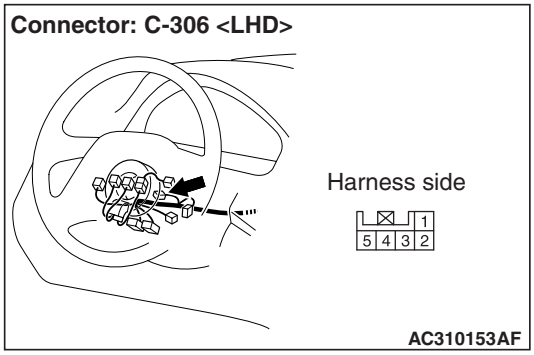
Q: Is the check result normal?
YES : Go to Step 46 .
NO : Repair the defective connector.

STEP 46. Voltage measurement at C-09 joint connector (CAN2).

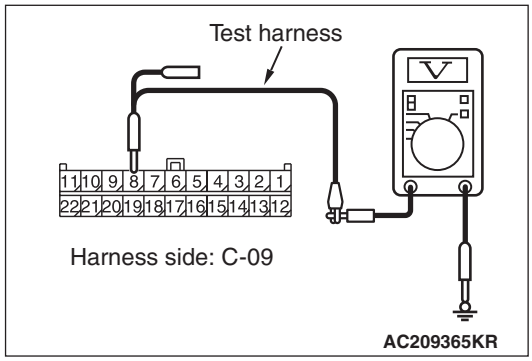
⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN2) and the steering wheel angle sensor connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-09 joint connector (CAN2)

terminal No.8 and body earth
OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <less than 1.0 V> Follow diagnostic item 18 "Diagnose CAN bus lines thoroughly." Refer to P.54D-476.
NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN2) and the steering wheel angle sensor connector.

terminal No.6 and body earth
OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

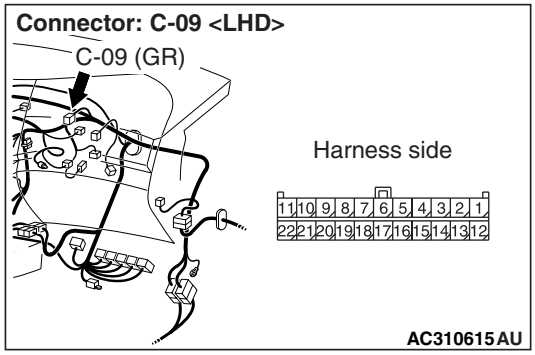
⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <less than 1.0 V> Follow diagnostic item 18 "Diagnose CAN bus lines thoroughly." Refer to P.54D-476.
NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN2) and the diagnosis connector.

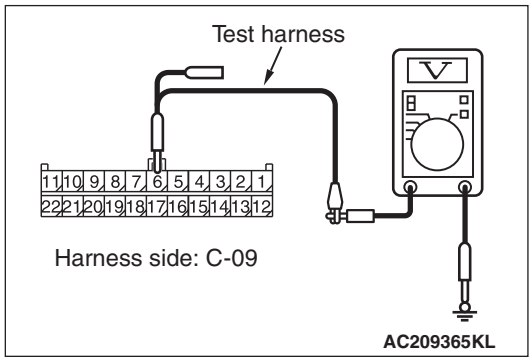
STEP 47. Voltage measurement at C-09 joint connector (CAN2).

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.

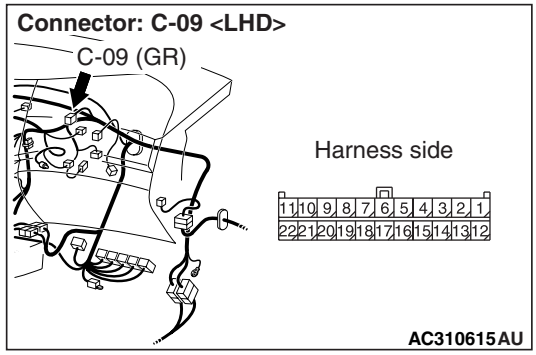


(3) Voltage between C-09 joint connector (CAN2)

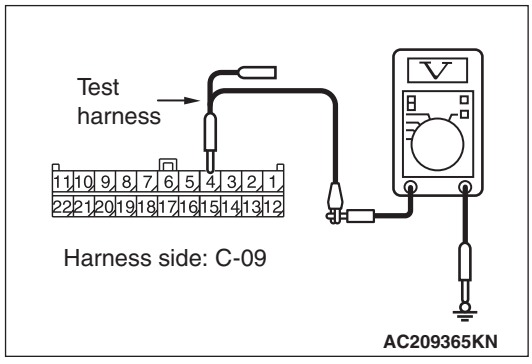
STEP 48. Voltage measurement at C-09 joint connector (CAN2).

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-09 joint connector (CAN2)

terminal No.4 and body earth
OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

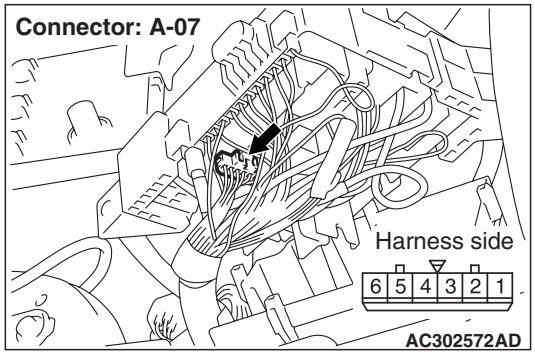
⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <less than 1.0 V> Follow diagnostic item 18 "Diagnose CAN bus lines thoroughly." Refer to P.54D-476.
NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN2) and the intermediate connector.

STEP 49. Connector check: A-07 joint connector (CAN1)

NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

When checking the joint connector, ensure that its wiring harness side is not damaged.

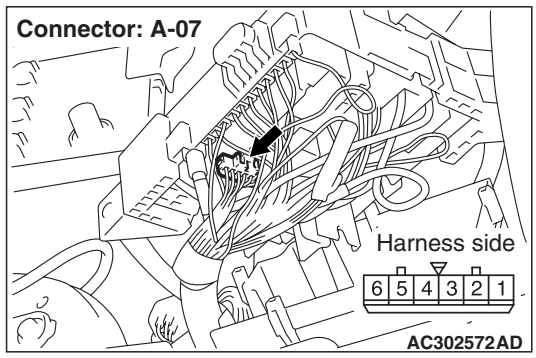
Q: Is the check result normal?
YES : Go to Step 50 .
NO : Repair a defective connector or replace the joint connector (front wiring harness assembly).

STEP 50. Voltage measurement at the A-07 joint connector (CAN1).

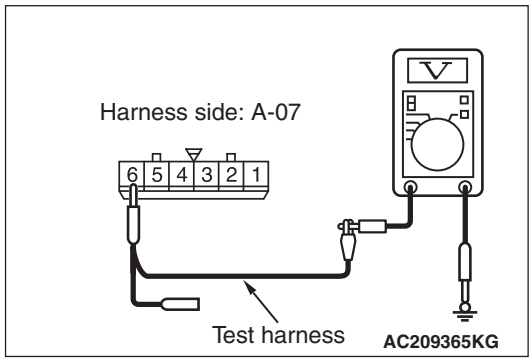
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

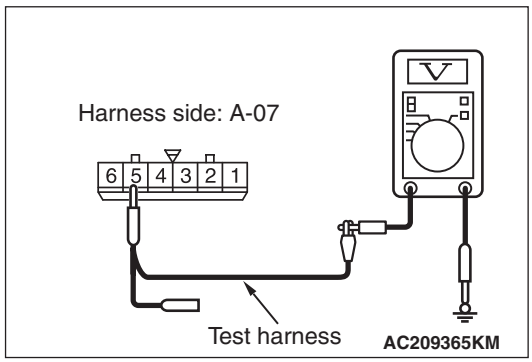
⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between A-07 joint connector (CAN1) terminal No.6 and body earth
OK: 4.0 V or less



(4) Voltage between A-07 joint connector (CAN1)

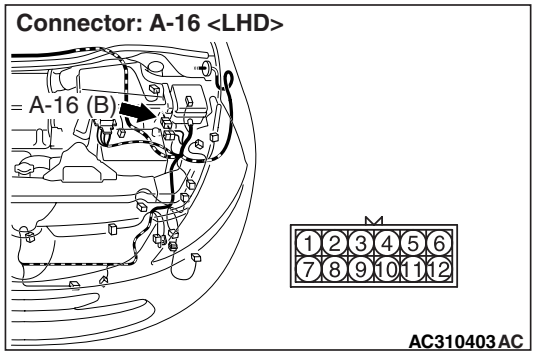
terminal No.5 and body earth
OK: 4.0 V or less

(5) Disconnect the negative battery terminal.

Q: Are the check result normal?
YES <all of the measurement results show 4.0 V or less> : Go to Step 56 .
NO <The voltage between terminal No.6 and body earth is more than 4.0 V> : Go to Step 51 .
NO <The voltage between terminal No.5 and body earth is more than 4.0 V> : Go to Step 54 .

STEP 51. Connector check: A-16 intermediate connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?
YES : Go to Step 52 .
NO : Repair the defective connector.

STEP 52. Voltage measurement at the A-07 joint connector (CAN1).

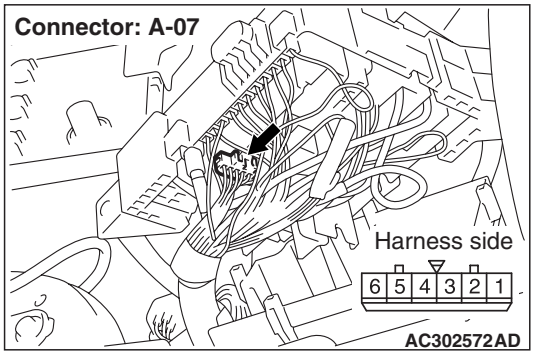
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

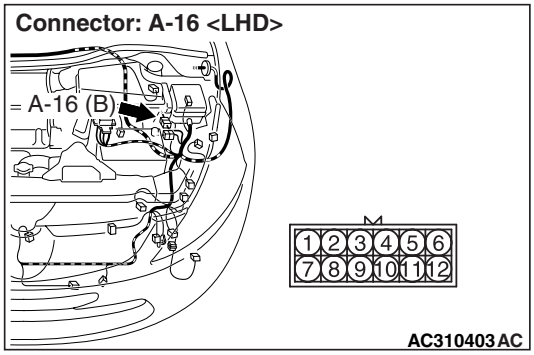
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

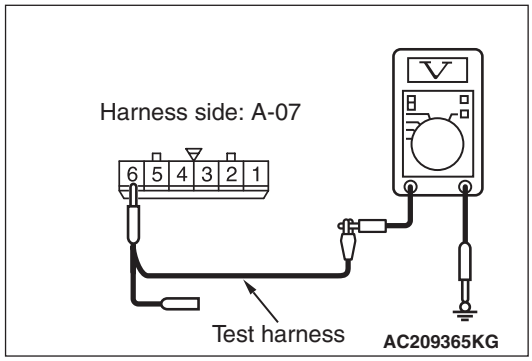
⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN1) and the intermediate connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between A-07 joint connector (CAN1) terminal No.6 and body earth
OK: 1.0 V or less

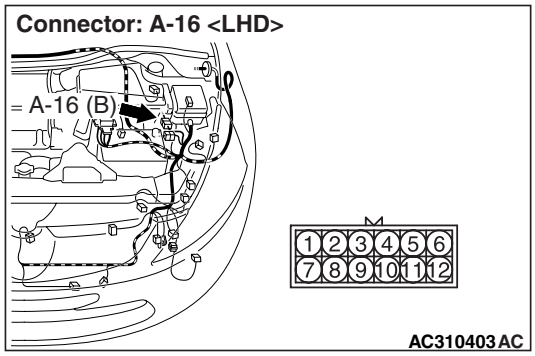
(4) Disconnect the negative battery terminal.

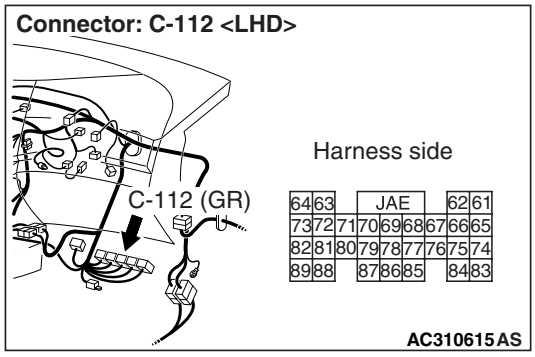
Q: Is the check result normal?
YES : <1.0 V or less> Go to Step 53.
NO : <more than 1.0 V> Repair the wiring harness between the joint connector (CAN1) and the intermediate connector.

STEP 53. Voltage measurement at the A-16 intermediate connector.

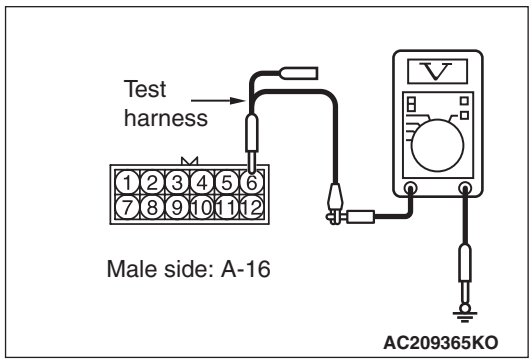
⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector and the intermediate connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



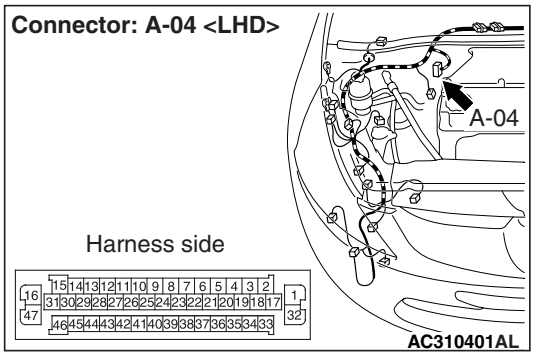
(3) Voltage between A-16 intermediate connector terminal No.6 and body earth
OK: Less than 1.0 V
(4) Disconnect the negative battery terminal.

⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <less than 1.0 V> Follow diagnostic item 18 "Diagnose CAN bus lines thoroughly." Refer to P.54D-476.
NO : <1.0 V or more> Repair the wiring harness between the intermediate connector and the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector.

STEP 54. Connector check: A-04 ASC-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?
YES : Go to Step 55 .
NO : Repair the defective connector.

STEP 55. Voltage measurement at the A-07 joint connector (CAN1).

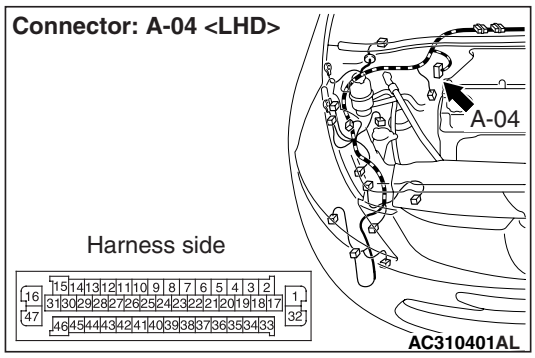
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

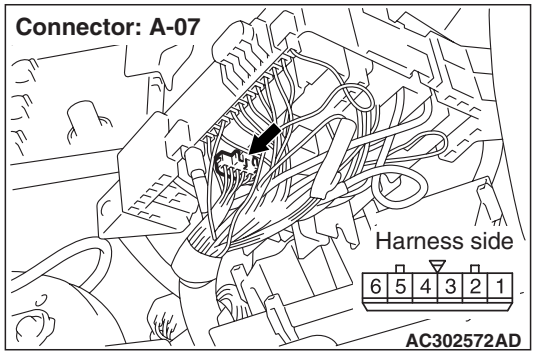
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

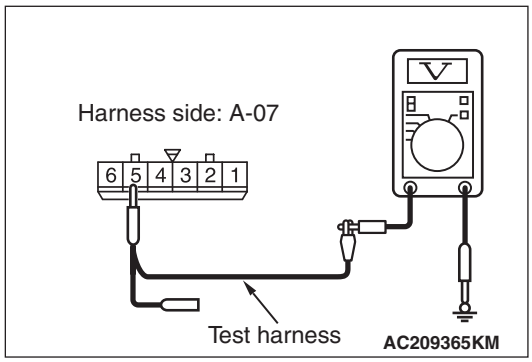
⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN1) and the ASC-ECU connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between A-07 joint connector (CAN1) terminal No.5 and body earth

OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?

YES : <less than 1.0 V> Follow diagnostic item 18 "Diagnose CAN bus lines thoroughly." Refer to P.54D-476.

NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN1) and the ASC-ECU connector.

STEP 56. Voltage measurement at the A-07 joint connector (CAN1).

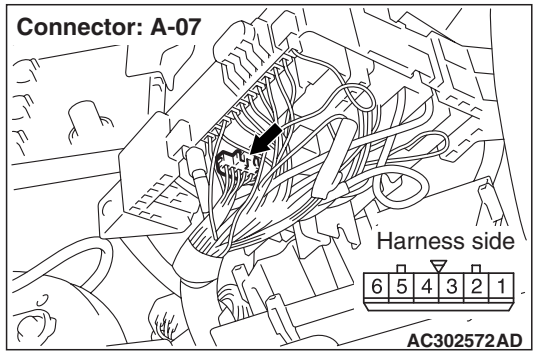
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

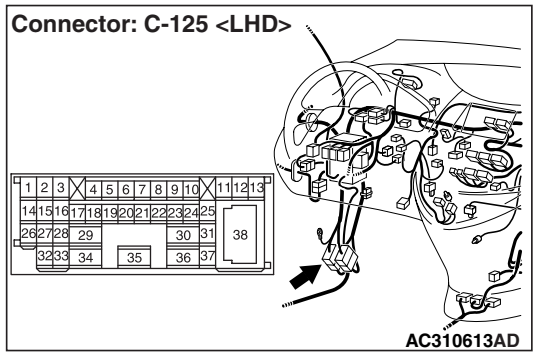
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

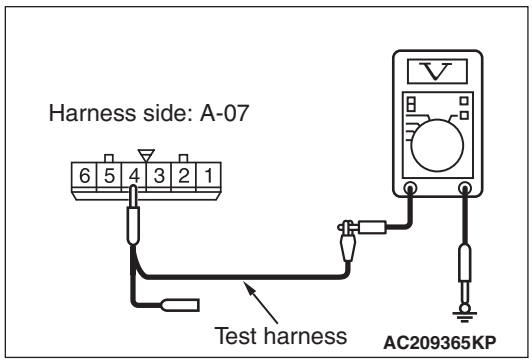
The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN1) and the intermediate connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn

the ignition switch to the ON position.



(3) Voltage between A-07 joint connector (CAN1) terminal No.4 and body earth

OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

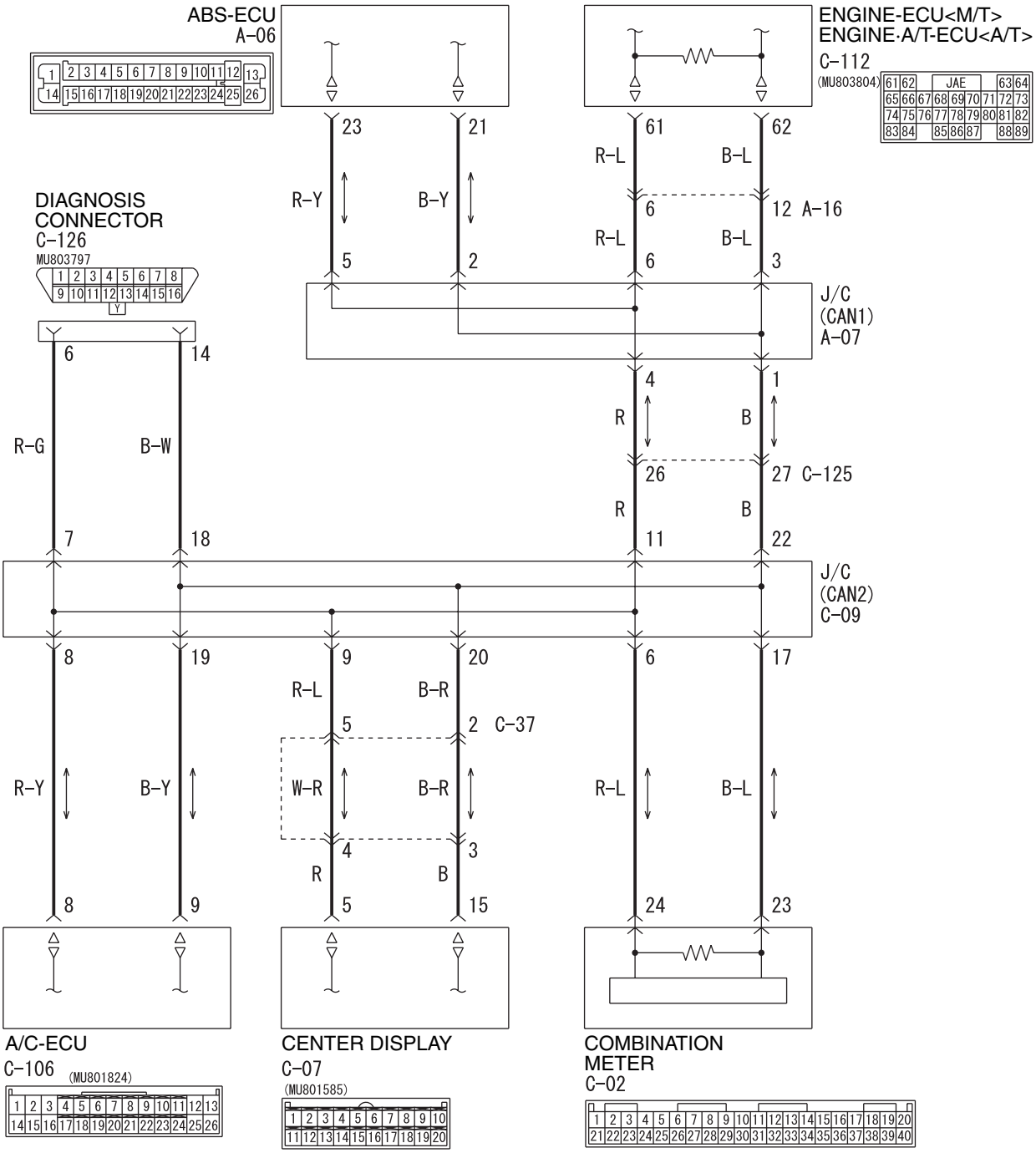
Q: Is the check result normal?

YES : <less than 1.0 V> Follow diagnostic item 18 "Diagnose CAN bus lines thoroughly." Refer to P.54D-476.

NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN1) and the intermediate connector.

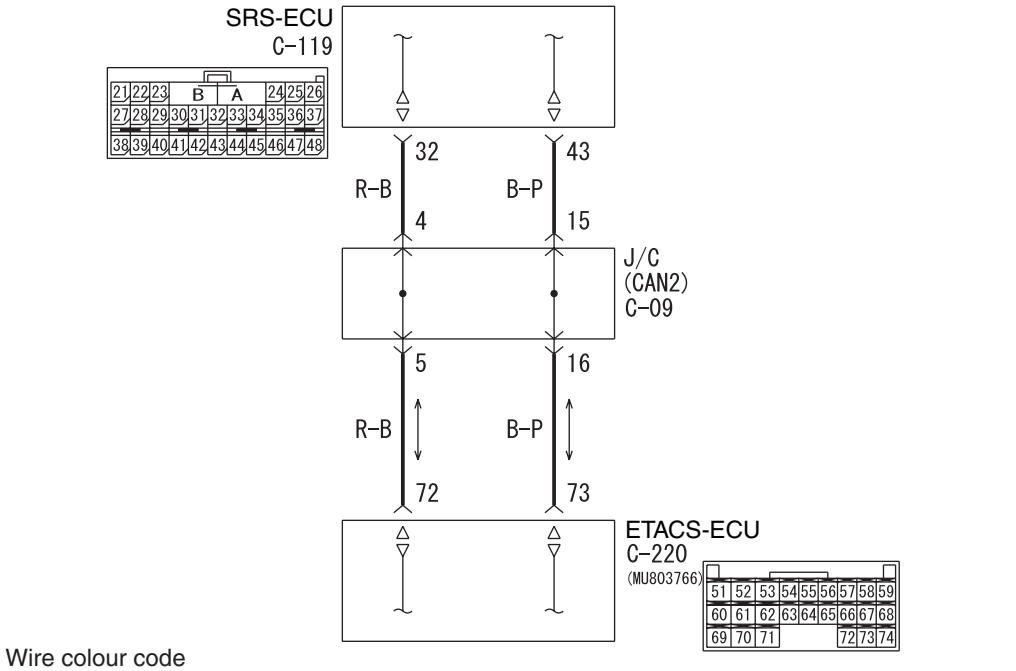
Diagnostic Item 3: Diagnose the CAN bus lines for short to power supply <RH drive vehicles without ASC>

⚠ CAUTION
When servicing a CAN bus line, earth yourself by touching a metal object such as an unpainted water pipe. If you fail to do, a component connected to the CAN bus line may be broken.



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E22AA



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E23AA

TROUBLE JUDGMENT

Short to power supply may be present when the voltage between the CAN bus line (CAN_L or CAN_H) and body earth is more than 4.0 V. In this condition, an abnormal voltage may be measured at CAN_L and CAN_H lines.

COMMENTS ON TROUBLE SYMPTOM

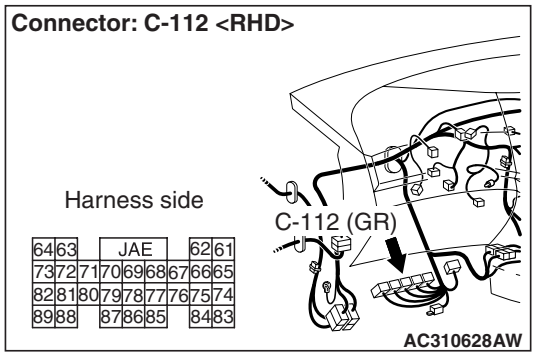
The wiring harness wire or connectors may have loose, corroded, or damage terminals, or terminals pushed back in the connector, or a ECU may be defective.

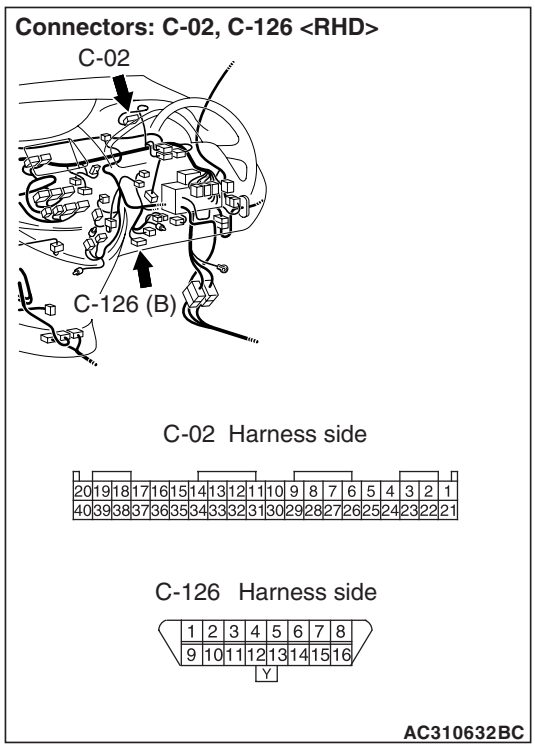
POSSIBLE CAUSES

- Damaged harness wires and connectors
- Malfunction of the ETACS-ECU
- Malfunction of the combination meter
- Malfunction of the A/C-ECU
- Malfunction of the SRS-ECU
- Malfunction of the multi-centre display
- Malfunction of the ABS-ECU
- Malfunction of the engine-ECU <M/T> or engine-A/T-ECU <A/T>

DIAGNOSTIC PROCEDURE

STEP 1. Connector check: C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector, C-02 combination meter connector and C-126 diagnosis connector





⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Are the check result normal?
YES : Go to Step 2 .
NO : Repair the defective connector.

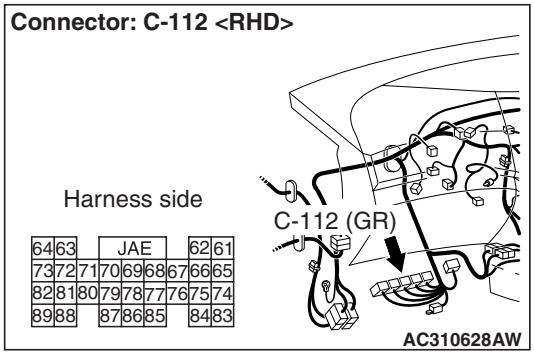
STEP 2. Voltage measurement at the C-126 diagnosis connector.

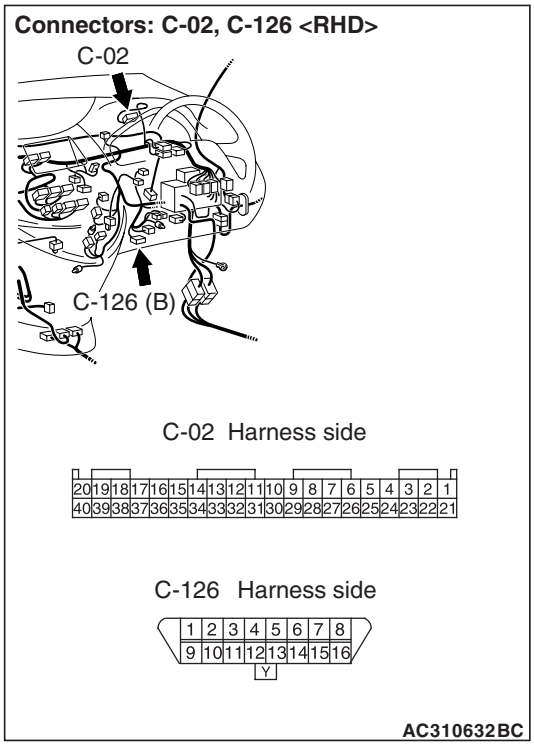
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

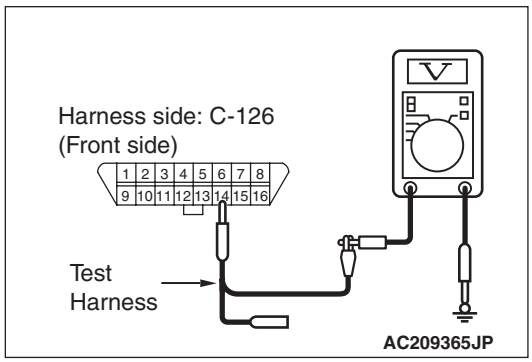
The test wiring harness should be used. For details refer to P.54D-8.





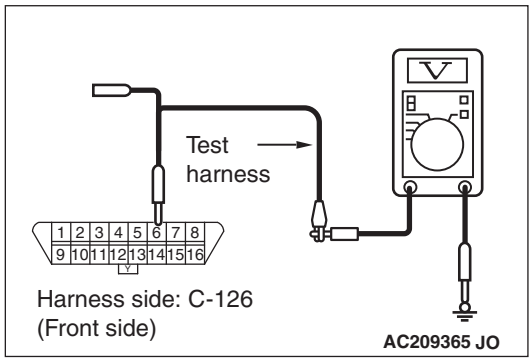
(1) Disconnect the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector and the combination meter connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn

the ignition switch to the ON position.



(3) Voltage between C-126 diagnosis connector terminal No.14 and body earth

OK: 4.0 V or less



(4) Voltage between C-126 diagnosis connector terminal No.6 and body earth

OK: 4.0 V or less

(5) Disconnect the negative battery terminal.

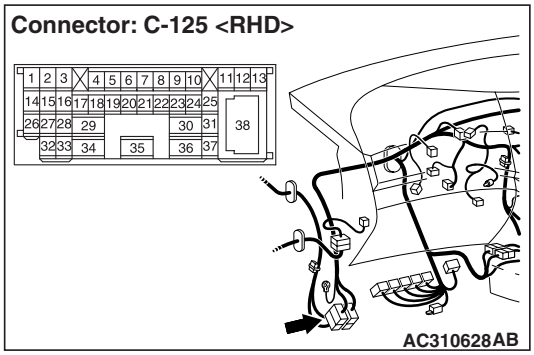
Q: Are the check result normal?

YES <all of the measurement results show 4.0 V or less> : Follow diagnostic item 19, Diagnose CAN bus lines thoroughly. Refer to P.54D-502.

NO <The voltage between terminal No.14 and body earth is more than 4.0 V> : Go to Step 3 .

NO <The voltage between terminal No.6 and body earth is more than 4.0 V> : Go to Step 28 .

STEP 3. Connector check: C-125 intermediate connector



⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 4 .

NO : Repair the defective connector.

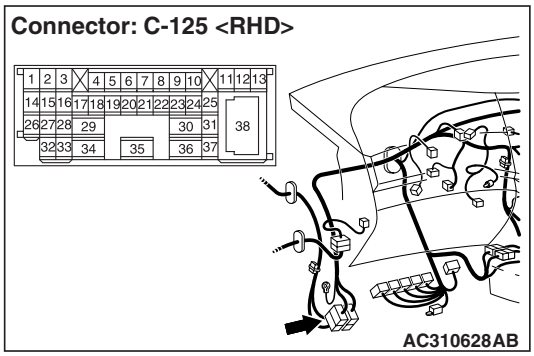
STEP 4. Voltage measurement at the C-125 intermediate connector.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

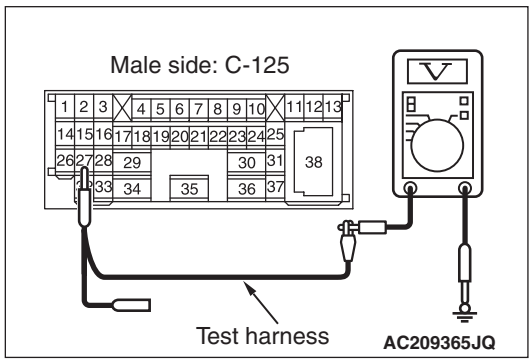
The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the connector, and measure at its male-side intermediate connector (at the front wiring harness side).

(2) Connect the negative battery terminal, and turn

the ignition switch to the ON position.



(3) Voltage between C-125 intermediate connector terminal No.27 and body earth

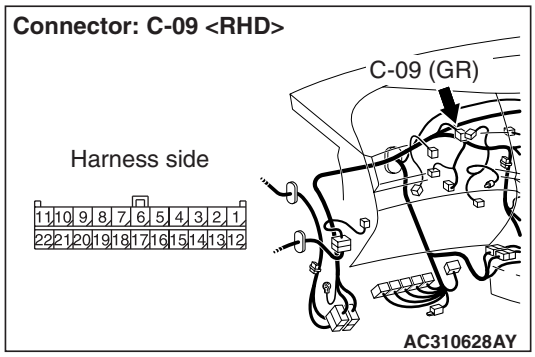
OK: 4.0 V or less

Q: Is the check result normal?

YES : <4.0 V or less> Go to Step 5.

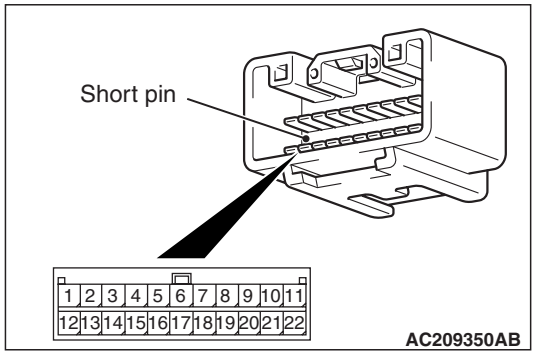
NO : <more than 4.0 V> Go to Step 20.

STEP 5. Connector check: C-09 joint connector (CAN2)



⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.



When checking the joint connector, ensure that its wiring harness side and its short pins are not damaged.

Q: Is the check result normal?

YES : Go to Step 6 .

NO : Repair a defective connector or replace the joint connector.

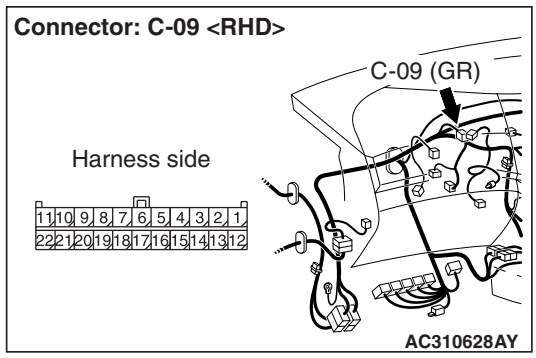
STEP 6. Voltage measurement at C-09 joint connector (CAN2).

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

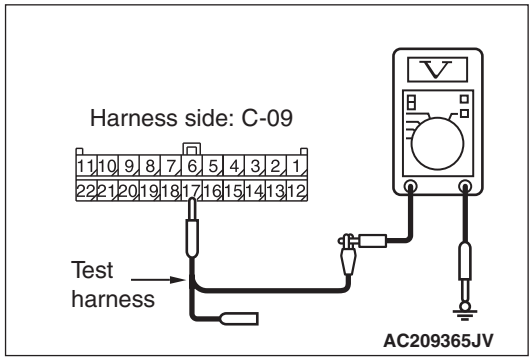
⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



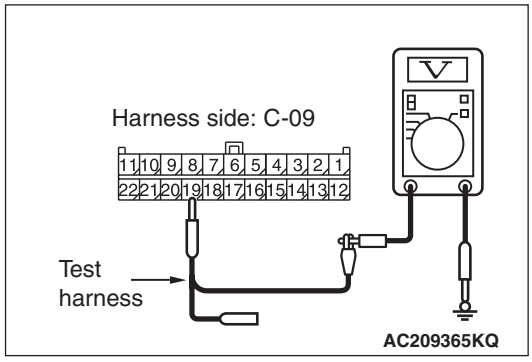
(1) Disconnect the connector, and measure at the wiring harness side.

(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-09 joint connector (CAN2) terminal No.17 and body earth

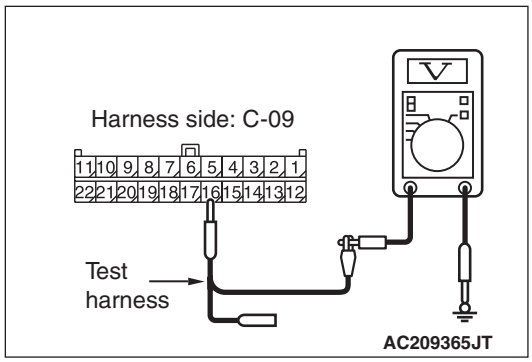
OK: 4.0 V or less



(4) Voltage between C-09 joint connector (CAN2)

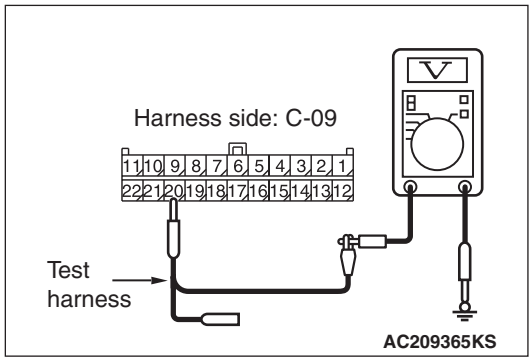
terminal No.19 and body earth

OK: 4.0 V or less



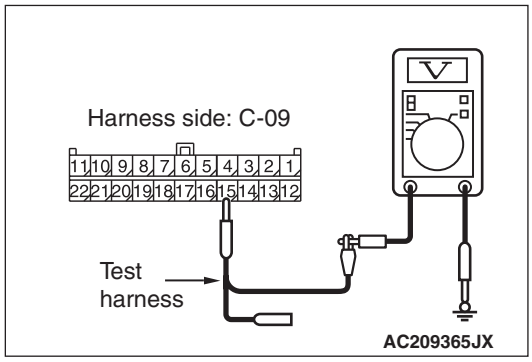
(5) Voltage between C-09 joint connector (CAN2) terminal No.16 and body earth

OK: 4.0 V or less



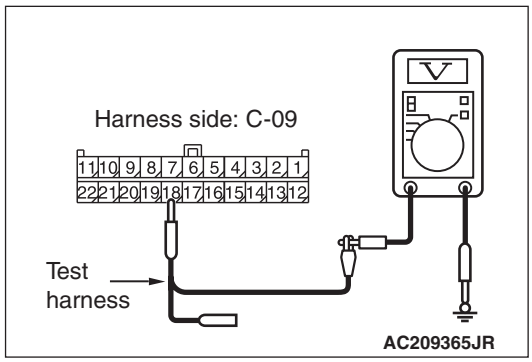
(6) Voltage between C-09 joint connector (CAN2) terminal No.20 and body earth

OK: 4.0 V or less



(7) Voltage between C-09 joint connector (CAN2) terminal No.15 and body earth

OK: 4.0 V or less



(8) Voltage between C-09 joint connector (CAN2) terminal No.18 and body earth

OK: 4.0 V or less

(9) Disconnect the negative battery terminal.

Q: Are the check result normal?

YES <all of the measurement results show 4.0 V or less> : Go to Step 19 .

NO <The voltage between terminal No.17 and body earth is more than 4.0 V> : Go to Step 7 .

NO <The voltage between terminal No.19 and body earth is more than 4.0 V> : Go to Step 8 .

NO <The voltage between terminal No.16 and body earth is more than 4.0 V> : Go to Step 10 .

NO <The voltage between terminal No.20 and body earth is more than 4.0 V> : Go to Step 12 .

NO <The voltage between terminal No.15 and body earth is more than 4.0 V> : Go to Step 16 .

NO <The voltage between terminal No.18 and body earth is more than 4.0 V> : Go to Step 18 .

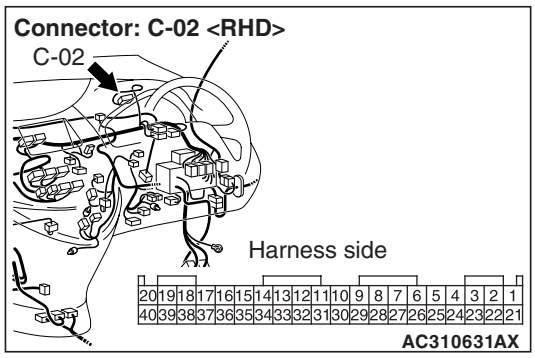
STEP 7. Voltage measurement at C-09 joint connector (CAN2).

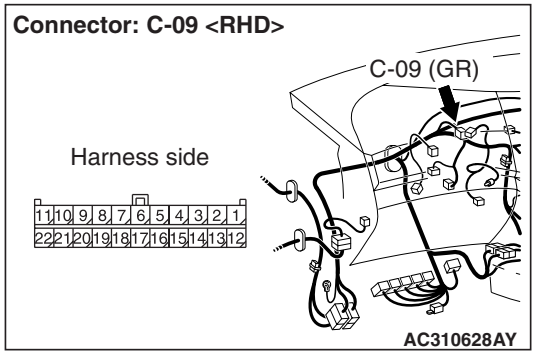
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

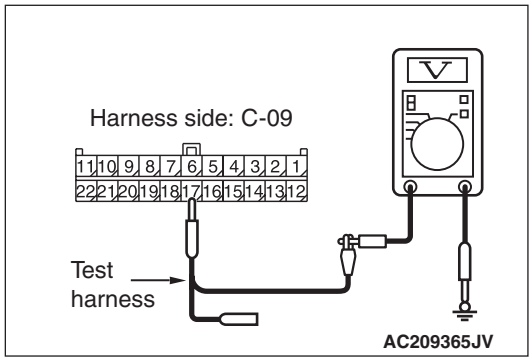
⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN2) and the combination meter connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-09 joint connector (CAN2) terminal No.17 and body earth

OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

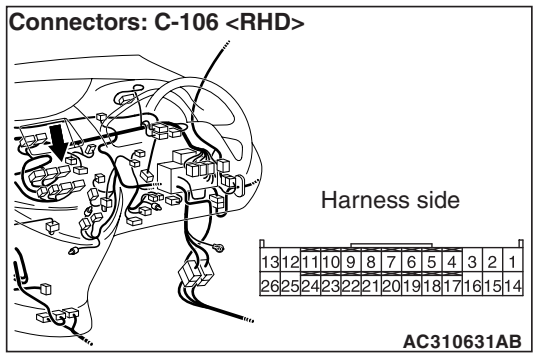
Q: Is the check result normal?

YES : <less than 1.0 V> Follow diagnostic item 19 "Diagnose CAN bus lines thoroughly." Refer to P.54D-502.

NO : <1.0 V or more> Repair the wiring harness between joint connector (CAN2) and the combination meter connector.

STEP 8. Connector check: C-106 A/C-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 9 .

NO : Repair the defective connector.

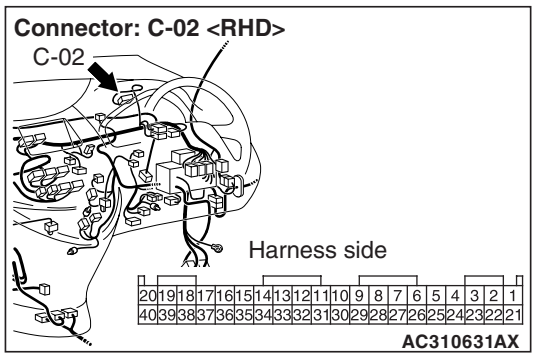
STEP 9. Voltage measurement at C-09 joint connector (CAN2).

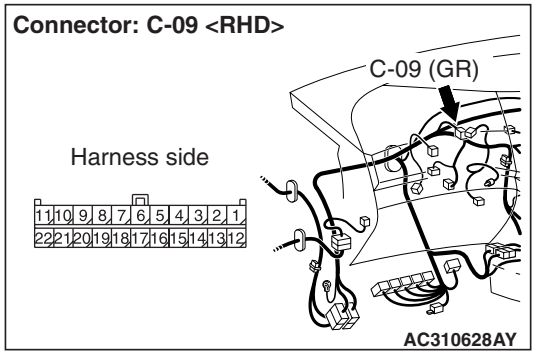
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

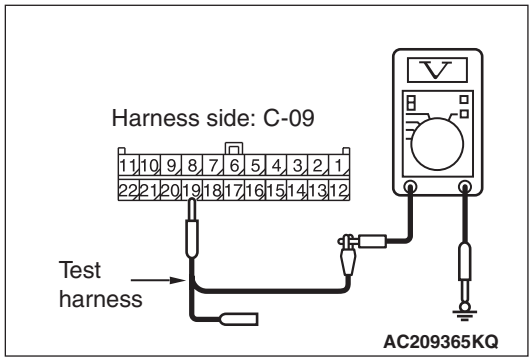
⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN2) and the A/C-ECU connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-09 joint connector (CAN2) terminal No.19 and body earth

OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

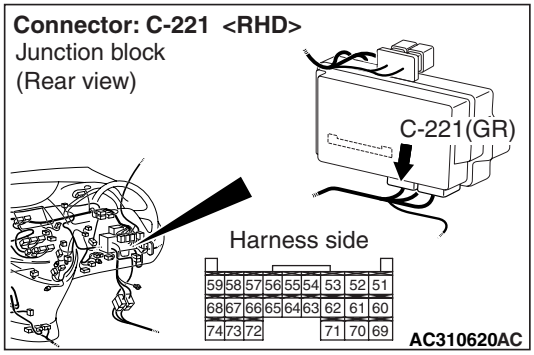
Q: Is the check result normal?

YES : <less than 1.0 V> Follow diagnostic item 19 "Diagnose CAN bus lines thoroughly." Refer to P.54D-502.

NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN2) and the A/C-ECU connector.

STEP 10. Connector check: C-221 ETACS-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 11 .

NO : Repair the defective connector.

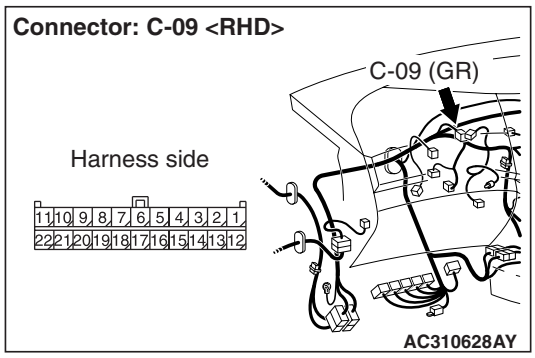
STEP 11. Voltage measurement at C-09 joint connector (CAN2).

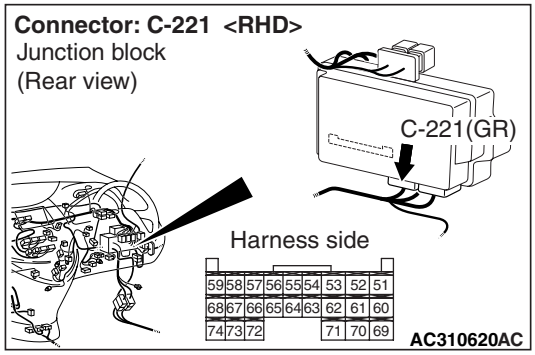
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

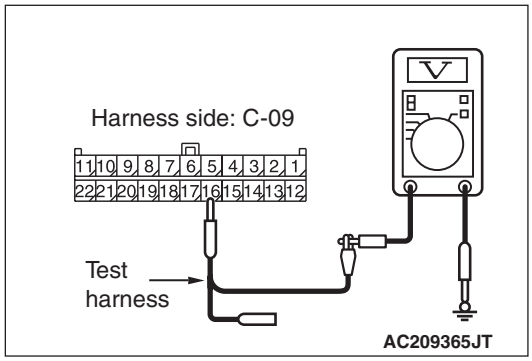
The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN2) and the ETACS-ECU connector, and measure at the wiring harness side.

(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-09 joint connector (CAN2) terminal No.16 and body earth

OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

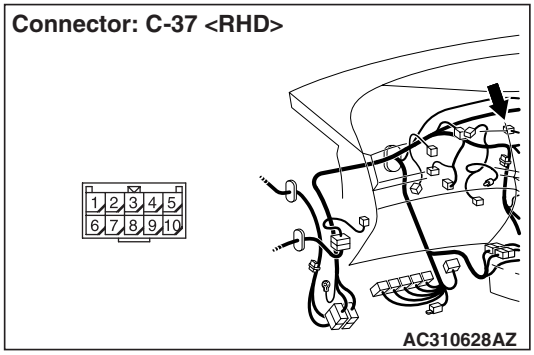
Q: Is the check result normal?

YES : <less than 1.0 V> Follow diagnostic item 19 "Diagnose CAN bus lines thoroughly." Refer to P.54D-502.

NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN2) and the ETACS-ECU connector.

STEP 12. Connector check: C-37 jumper connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Check that the wiring harness of the jumper connector is not damaged.

Q: Is the check result normal?

YES : Go to Step 13 .

NO : Repair the defective connector.

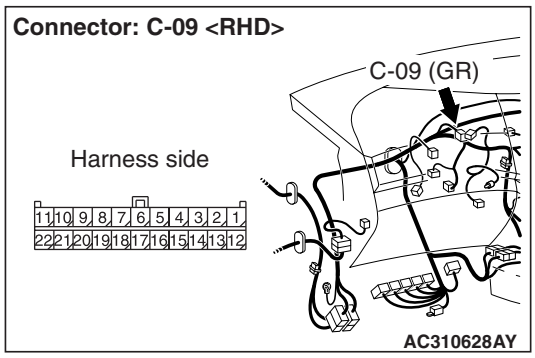
STEP 13. Voltage measurement at the C-09 joint connector (CAN2).

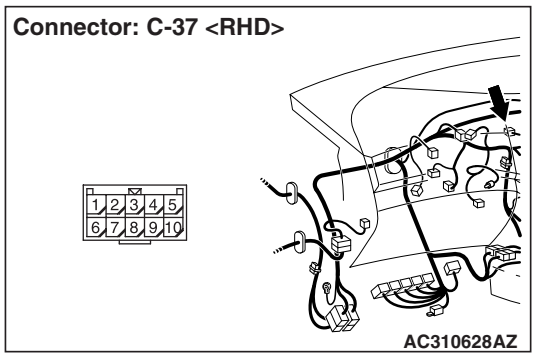
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

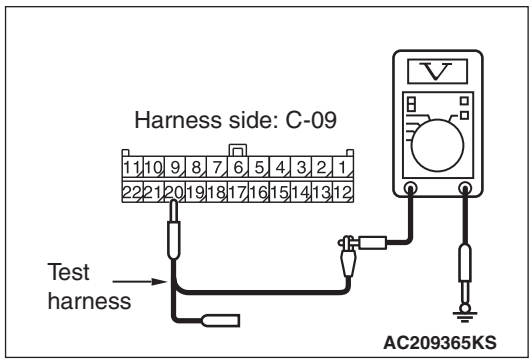
⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN2) and the jumper connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.

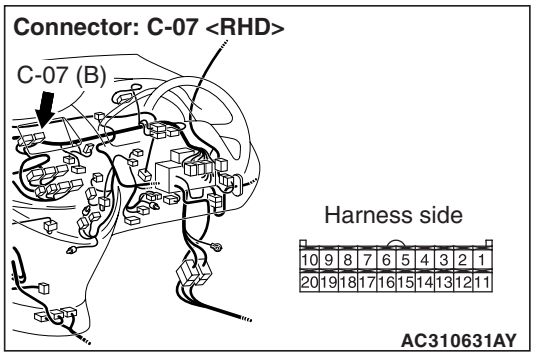


(3) Voltage between C-09 joint connector (CAN2) terminal No.20 and body earth
OK: Less than 1.0 V
(4) Disconnect the negative battery terminal.

Q: Is the check result normal?
YES : <1.0 V or less> Go to Step 14.
NO : <more than 1.0 V> Repair the wiring harness between the joint connector (CAN2) and the jumper connector.

STEP 14. Connector check: C-07 centre display connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?
YES : Go to Step 15 .
NO : Repair the defective connector.

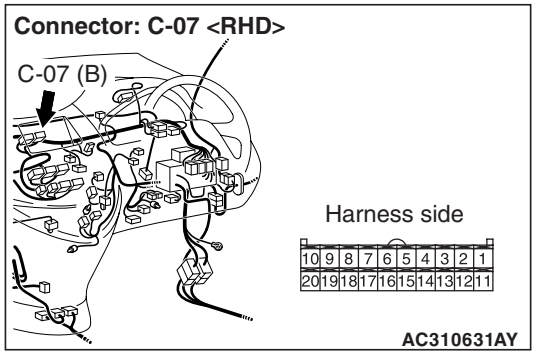
STEP 15. Voltage measurement at the C-37 jumper connector.

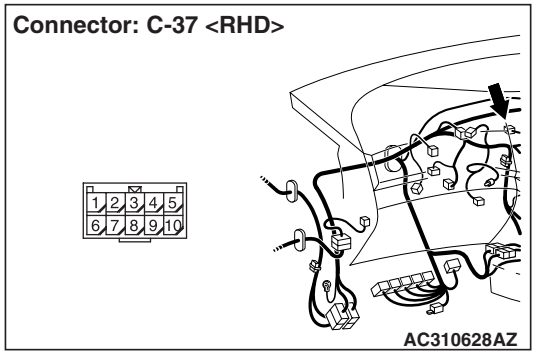
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

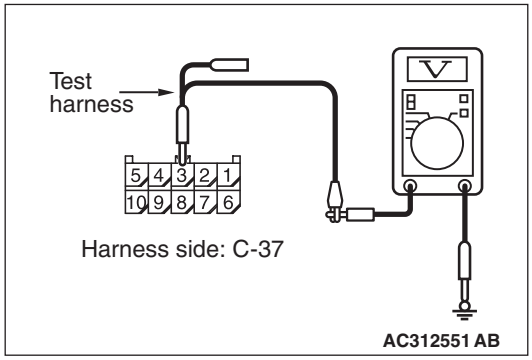
⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the centre display connector and the jumper connector, and measure at the jumper connector (at the centre display side).
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-37 jumper connector terminal No.3 and body earth

OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

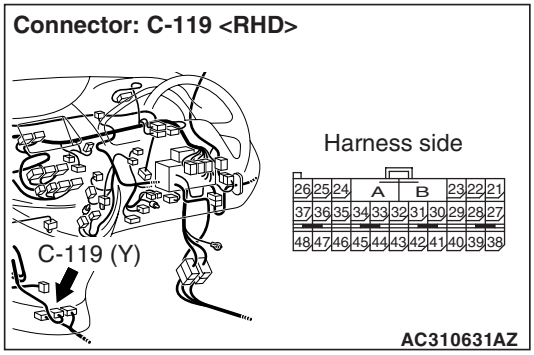
Q: Is the check result normal?

YES : <less than 1.0 V> Follow diagnostic item 19 "Diagnose CAN bus lines thoroughly." Refer to P.54D-502.

NO : <1.0 V or more> Repair the wiring harness between the jumper connector and the centre display connector.

STEP 16. Connector check: C-119 SRS-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 17 .

NO : Repair the defective connector.

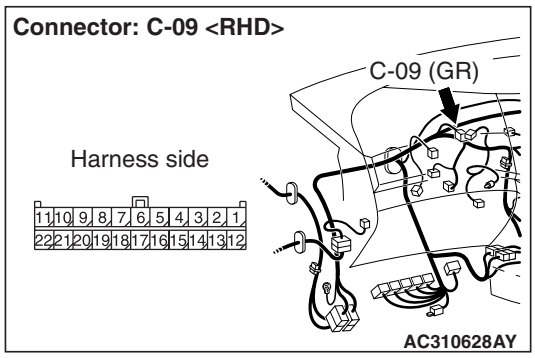
STEP 17. Voltage measurement at C-09 joint connector (CAN2).

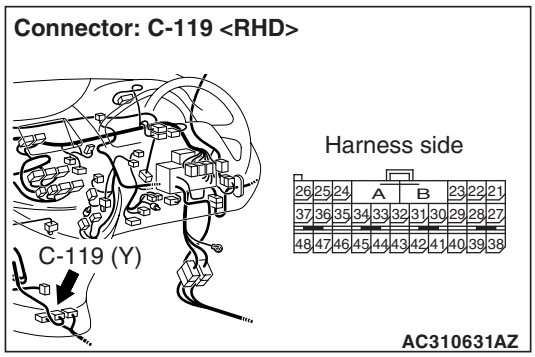
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

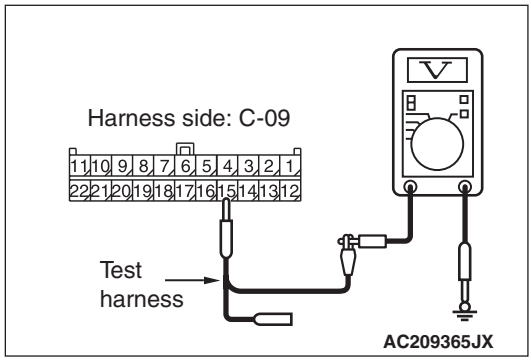
⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN2) and the SRS-ECU connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-09 joint connector (CAN2) terminal No.15 and body earth

OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?

YES : <less than 1.0 V> Follow diagnostic item 19 "Diagnose CAN bus lines thoroughly." Refer to P.54D-502.

NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN2) and the SRS-ECU connector.

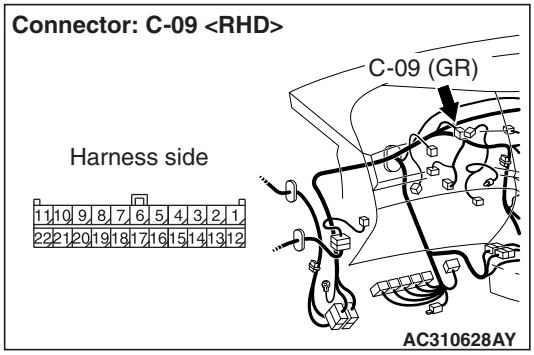
STEP 18. Voltage measurement at C-09 joint connector (CAN2).

⚠ CAUTION

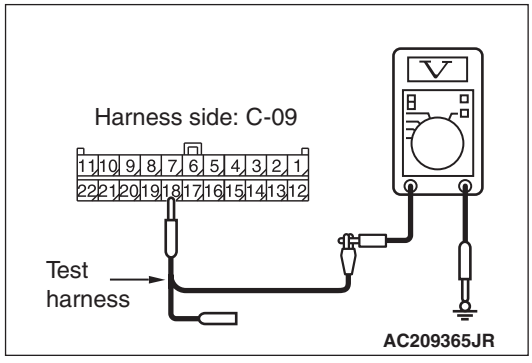
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-09 joint connector (CAN2)

terminal No.18 and body earth
OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <less than 1.0 V> Follow diagnostic item 19 "Diagnose CAN bus lines thoroughly." Refer to P.54D-502.
NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN2) and the diagnosis connector.

terminal No.22 and body earth
OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

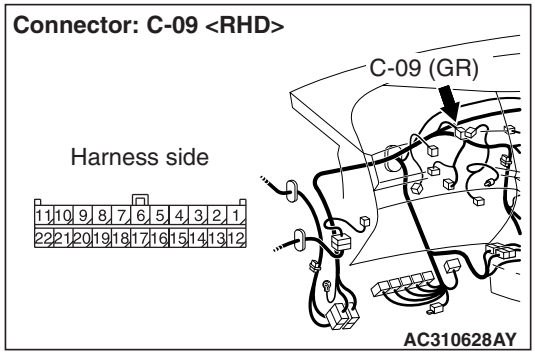
⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <less than 1.0 V> Follow diagnostic item 19 "Diagnose CAN bus lines thoroughly." Refer to P.54D-502.
NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN2) and the intermediate connector.

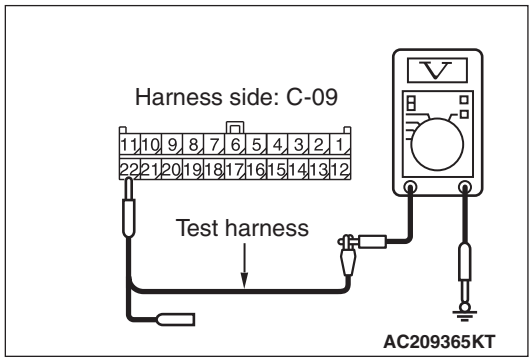
STEP 19. Voltage measurement at C-09 joint connector (CAN2).

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.

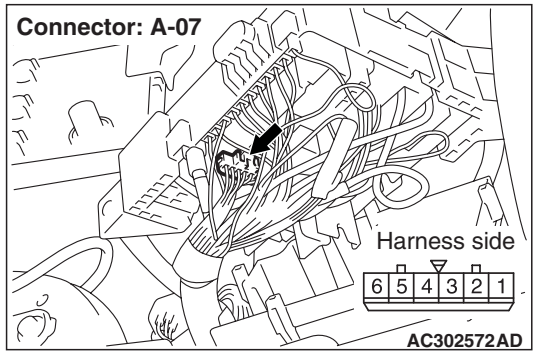


(3) Voltage between C-09 joint connector (CAN2)

STEP 20. Connector check: A-07 joint connector (CAN1)

NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.
When checking the joint connector, ensure that its wiring harness side is not damaged.

Q: Is the check result normal?
YES : Go to Step 21 .
NO : Repair a defective connector or replace the joint connector (front wiring harness assembly).

STEP 21. Voltage measurement at the A-07 joint connector (CAN1).

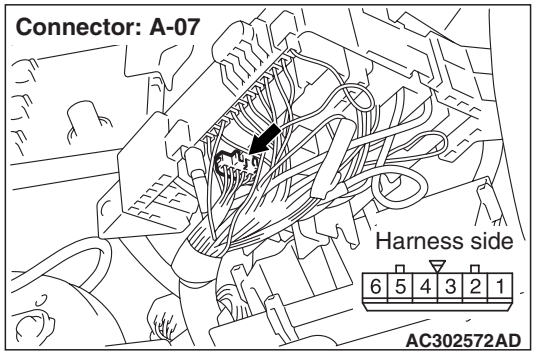
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

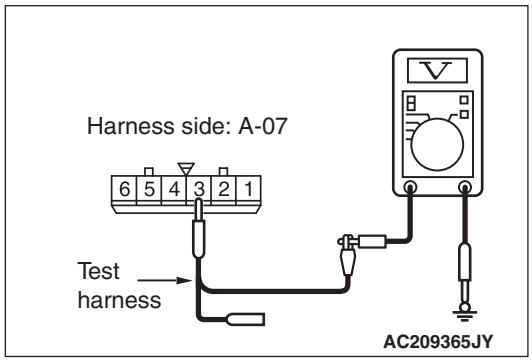
⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



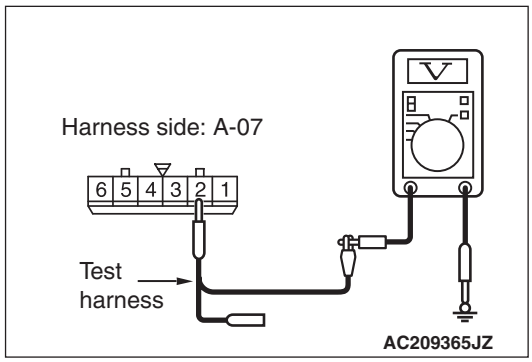
(1) Disconnect the connector, and measure at the wiring harness side.

(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between A-07 joint connector (CAN1) terminal No.3 and body earth

OK: 4.0 V or less



(4) Voltage between A-07 joint connector (CAN1) terminal No.2 and body earth

OK: 4.0 V or less

(5) Disconnect the negative battery terminal.

Q: Are the check result normal?

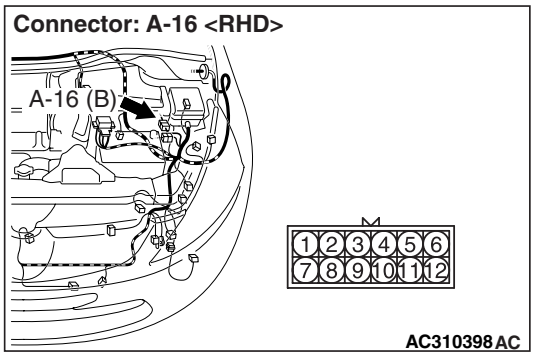
YES <all of the measurement results show 4.0 V or less> : Go to Step 27 .

NO <The voltage between terminal No.3 and body earth is more than 4.0 V> : Go to Step 22 .

NO <The voltage between terminal No.2 and body earth is more than 4.0 V> : Go to Step 25 .

STEP 22. Connector check: A-16 intermediate connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 23 .

NO : Repair the defective connector.

STEP 23. Voltage measurement at the A-07 joint connector (CAN1).

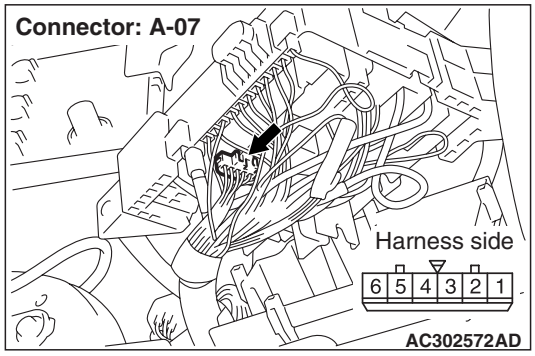
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

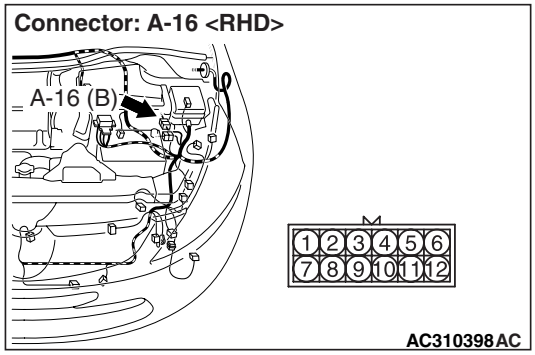
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

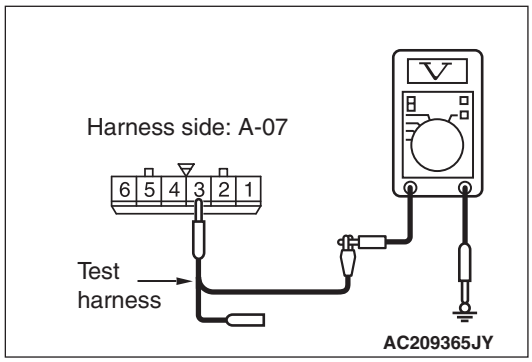
⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN1) and the intermediate connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between A-07 joint connector (CAN1) terminal No.3 and body earth
OK: 1.0 V or less
(4) Disconnect the negative battery terminal.

Q: Is the check result normal?
YES : <1.0 V or less> Go to Step 24.
NO : <more than 1.0 V> Repair the wiring harness between the joint connector (CAN1) and the intermediate connector.

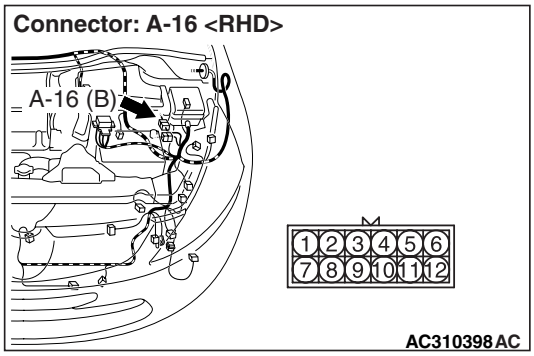
STEP 24. Voltage measurement at the A-16 intermediate connector.

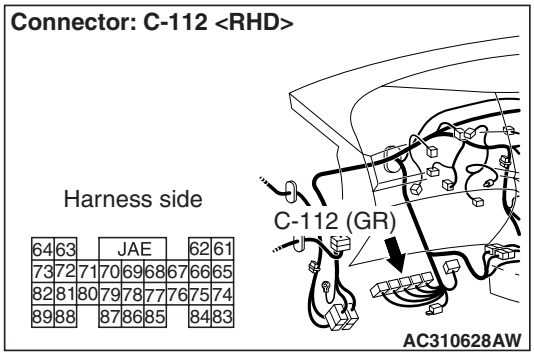
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

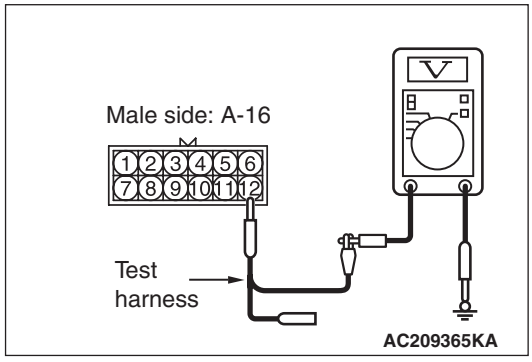
⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector and the intermediate connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between A-16 intermediate connector

terminal No.12 and body earth
OK: Less than 1.0 V

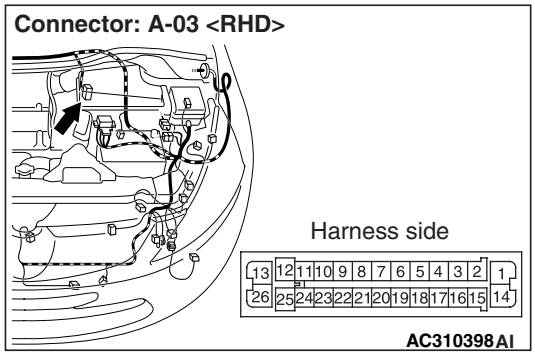
(4) Disconnect the negative battery terminal.

⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <less than 1.0 V> Follow diagnostic item 19 "Diagnose CAN bus lines thoroughly." Refer to P.54D-502.
NO : <1.0 V or more> Repair the wiring harness between the intermediate connector and the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector.

STEP 25. Connector check: A-03 ABS-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

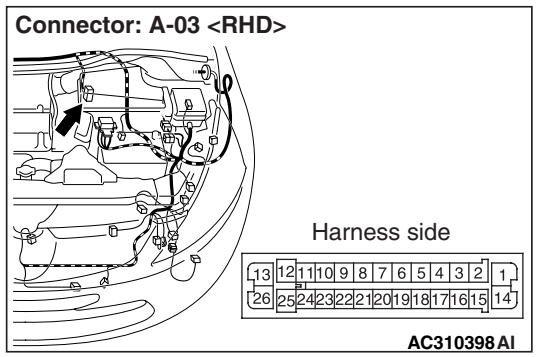
Q: Is the check result normal?
YES : Go to Step 26.
NO : Repair the defective connector.

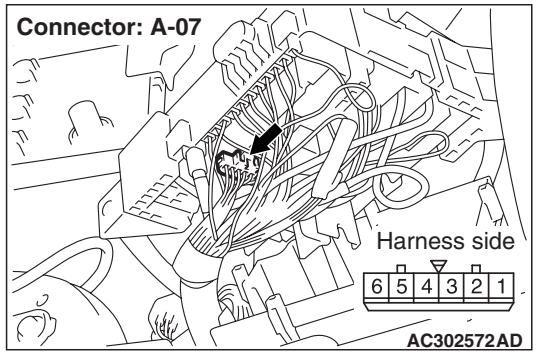
STEP 26. Voltage measurement at the A-07 joint connector (CAN1).

NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

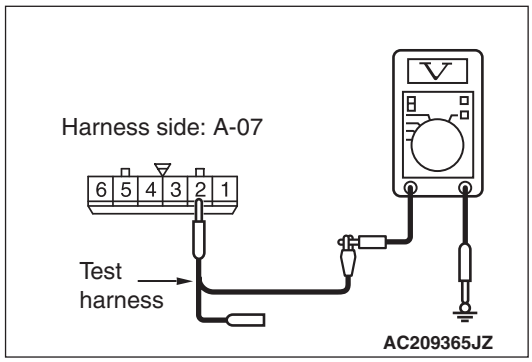
⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN1) and the ABS-ECU connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between A-07 joint connector (CAN1)

terminal No.2 and body earth

OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?

YES : <less than 1.0 V> Follow diagnostic item 19 "Diagnose CAN bus lines thoroughly." Refer to P.54D-502.

NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN1) and the ABS-ECU connector.

STEP 27. Voltage measurement at the A-07 joint connector (CAN1).

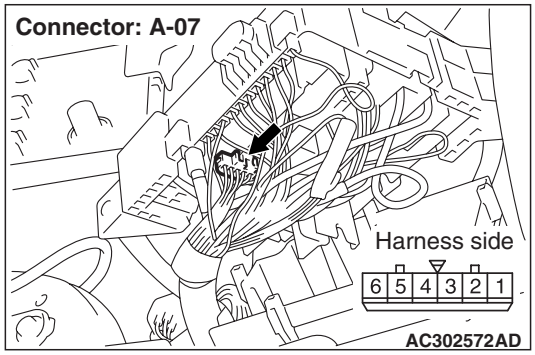
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

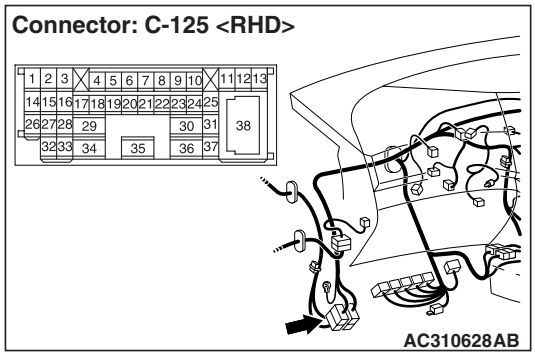
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

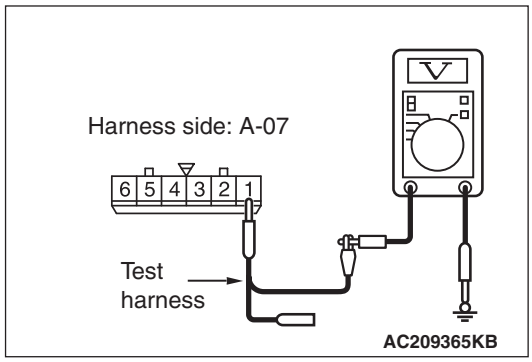
The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN1) and the intermediate connector, and measure at the wiring harness side.

(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between A-07 joint connector (CAN1) terminal No.1 and body earth

OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

⚠ CAUTION

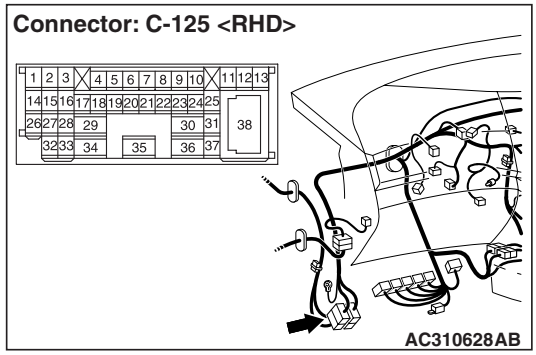
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?

YES : <less than 1.0 V> Follow diagnostic item 19 "Diagnose CAN bus lines thoroughly." Refer to P.54D-502.

NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN1) and the intermediate connector.

STEP 28. Connector check: C-125 intermediate connector



⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 29 .

NO : Repair the defective connector.

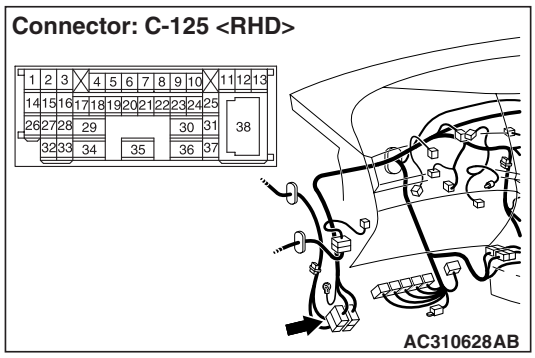
STEP 29. Voltage measurement at the C-125 intermediate connector.

⚠ CAUTION

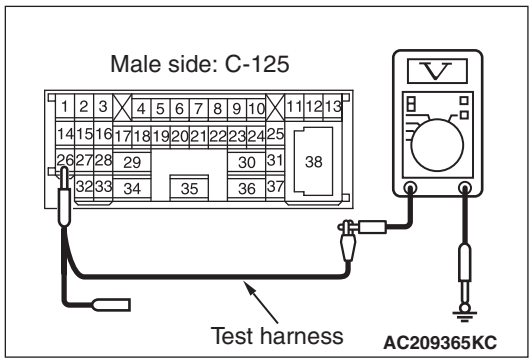
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the connector, and measure at its male-side intermediate connector (at the front wiring harness side).
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



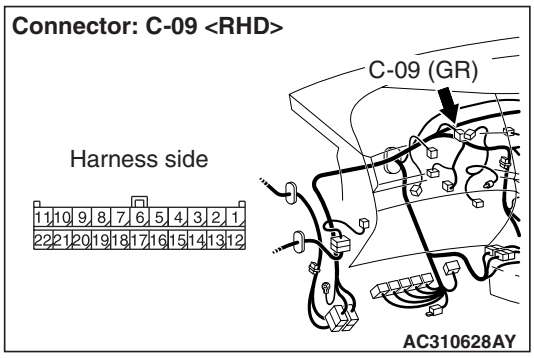
(3) Voltage between C-125 intermediate connector terminal No.26 and body earth

OK: 4.0 V or less

Q: Is the check result normal?

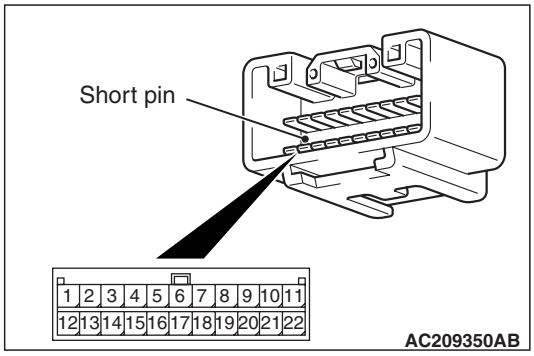
YES : <4.0 V or less> Go to Step 30.
NO : <more than 4.0 V> Go to Step 45.

STEP 30. Connector check: C-09 joint connector (CAN2)



⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.



When checking the joint connector, ensure that its wiring harness side and its short pins are not damaged.

Q: Is the check result normal?

YES : Go to Step 31 .
NO : Repair a defective connector or replace the joint connector.

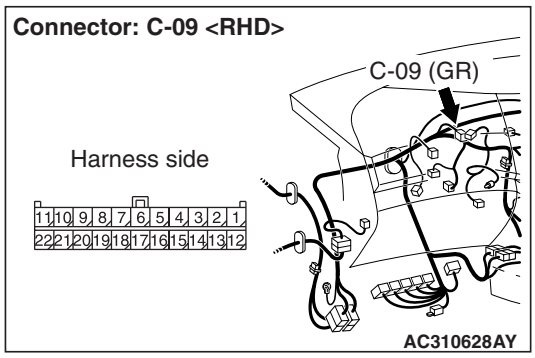
STEP 31. Voltage measurement at C-09 joint connector (CAN2).

⚠ CAUTION

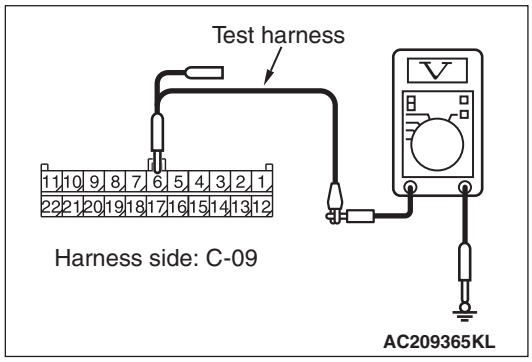
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.

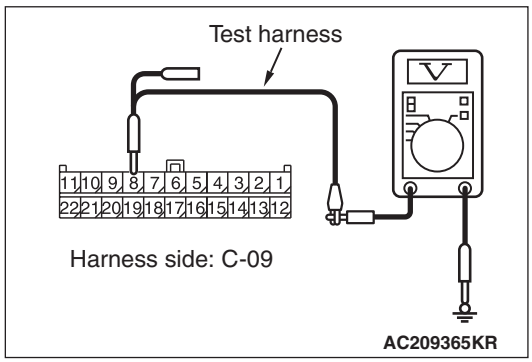


(1) Disconnect the connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



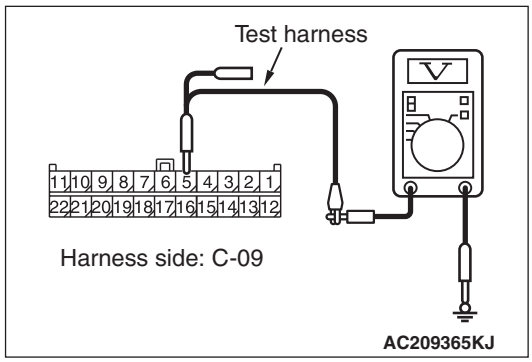
(3) Voltage between C-09 joint connector (CAN2) terminal No.6 and body earth

OK: 4.0 V or less



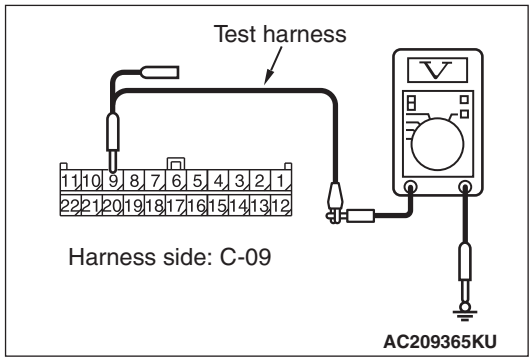
(4) Voltage between C-09 joint connector (CAN2) terminal No.8 and body earth

OK: 4.0 V or less



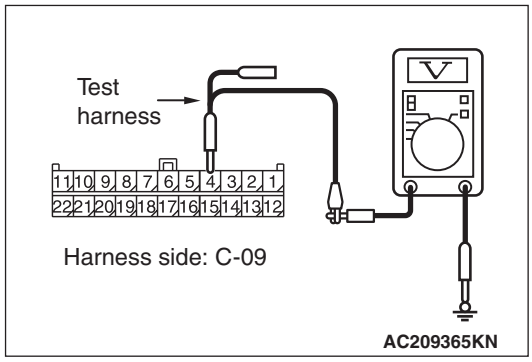
(5) Voltage between C-09 joint connector (CAN2) terminal No.5 and body earth

OK: 4.0 V or less



(6) Voltage between C-09 joint connector (CAN2) terminal No.9 and body earth

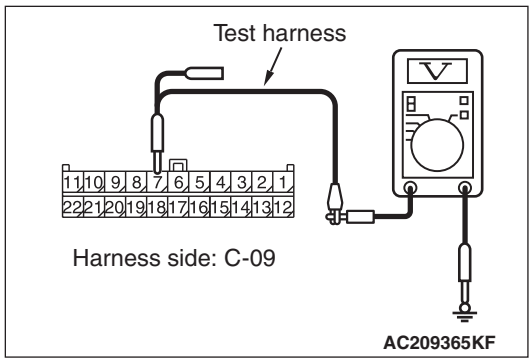
OK: 4.0 V or less



(7) Voltage between C-09 joint connector (CAN2)

terminal No.4 and body earth

OK: 4.0 V or less



(8) Voltage between C-09 joint connector (CAN2) terminal No.7 and body earth

OK: 4.0 V or less

(9) Disconnect the negative battery terminal.

Q: Are the check result normal?

YES <all of the measurement results show 4.0 V or less> : Go to Step 44 .

NO <The voltage between terminal No.6 and body earth is more than 4.0 V> : Go to Step 32 .

NO <The voltage between terminal No.8 and body earth is more than 4.0 V> : Go to Step 33 .

NO <The voltage between terminal No.5 and body earth is more than 4.0 V> : Go to Step 35 .

NO <The voltage between terminal No.9 and body earth is more than 4.0 V> : Go to Step 37 .

NO <The voltage between terminal No.4 and body earth is more than 4.0 V> : Go to Step 41 .

NO <The voltage between terminal No.7 and body earth is more than 4.0 V> : Go to Step 43 .

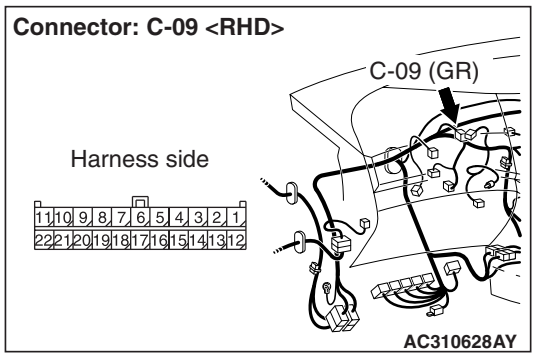
STEP 32. Voltage measurement at C-09 joint connector (CAN2).

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

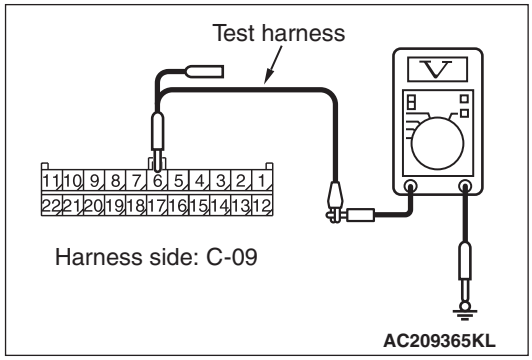
⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the joint connector (CAN2) and the combination meter connector, and measure at the wiring harness side.

(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-09 joint connector (CAN2) terminal No.6 and body earth

OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

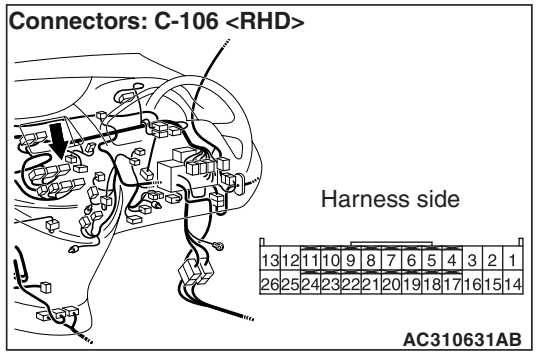
Q: Is the check result normal?

YES : <less than 1.0 V> Follow diagnostic item 19 "Diagnose CAN bus lines thoroughly." Refer to P.54D-502.

NO : <1.0 V or more> Repair the wiring harness between joint connector (CAN2) and the combination meter connector.

STEP 33. Connector check: C-106 A/C-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 34 .

NO : Repair the defective connector.

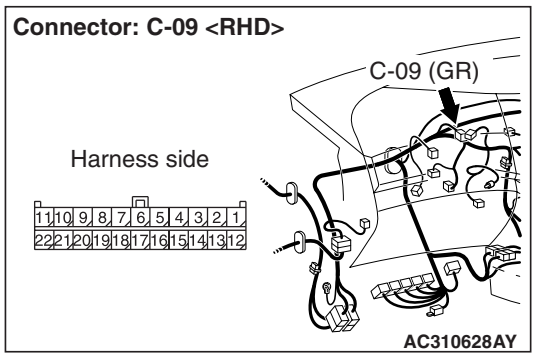
STEP 34. Voltage measurement at C-09 joint connector (CAN2).

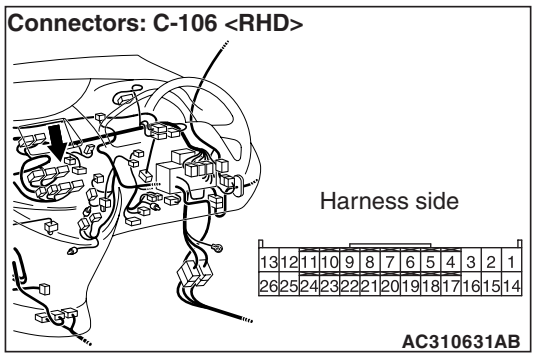
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

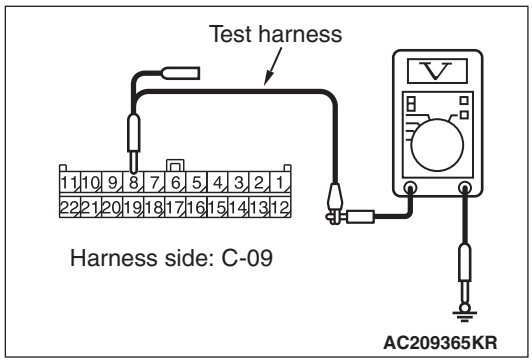
⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN2) and the A/C-ECU connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-09 joint connector (CAN2) terminal No.8 and body earth

OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

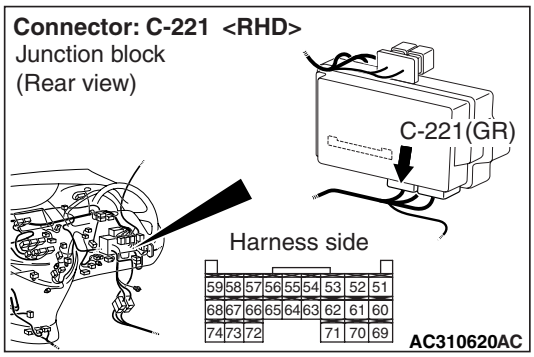
Q: Is the check result normal?

YES : <less than 1.0 V> Follow diagnostic item 19 "Diagnose CAN bus lines thoroughly." Refer to P.54D-502.

NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN2) and the A/C-ECU connector.

STEP 35. Connector check: C-221 ETACS-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 36 .

NO : Repair the defective connector.

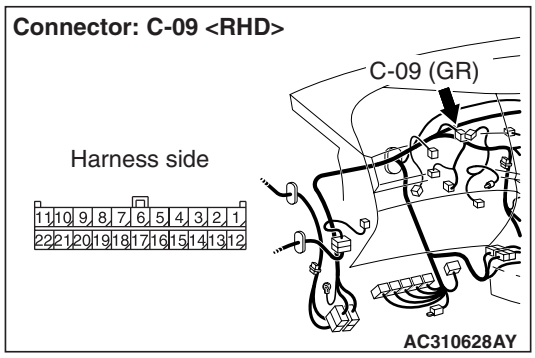
STEP 36. Voltage measurement at C-09 joint connector (CAN2).

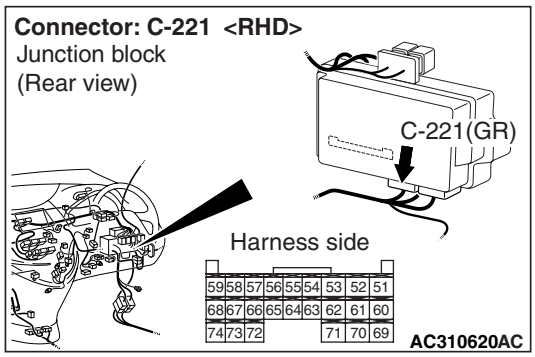
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

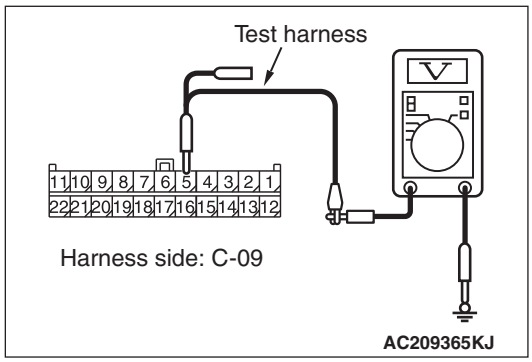
⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN2) and the ETACS-ECU connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-09 joint connector (CAN2) terminal No.5 and body earth

OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

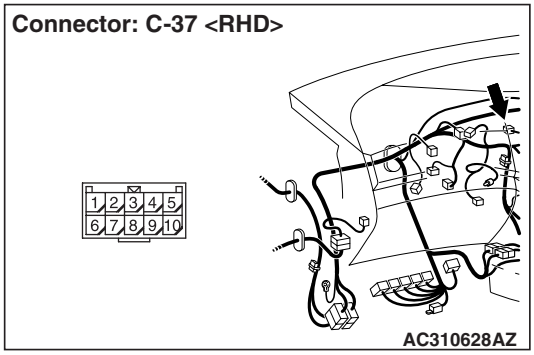
Q: Is the check result normal?

YES : <less than 1.0 V> Follow diagnostic item 19 "Diagnose CAN bus lines thoroughly." Refer to P.54D-502.

NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN2) and the ETACS-ECU connector.

STEP 37. Connector check: C-37 jumper connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Check that the wiring harness of the jumper connector is not damaged.

Q: Is the check result normal?

YES : Go to Step 38 .

NO : Repair the defective connector.

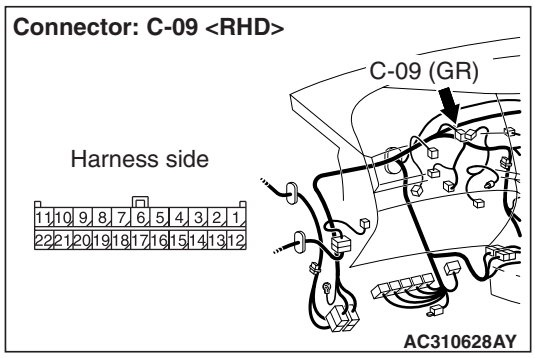
STEP 38. Voltage measurement at the C-09 joint connector (CAN2).

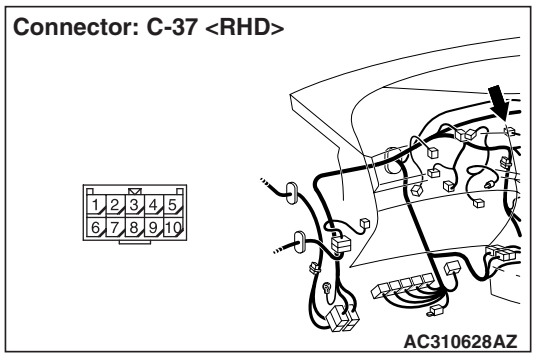
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

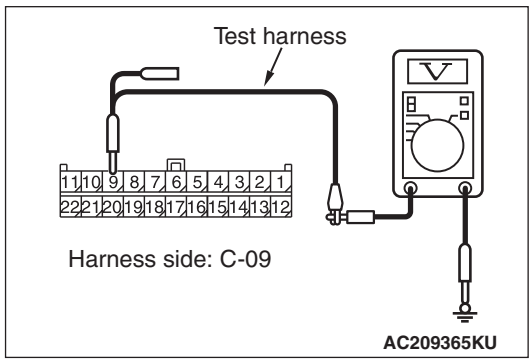
⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN2) and the jumper connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-09 joint connector (CAN2) terminal No.9 and body earth

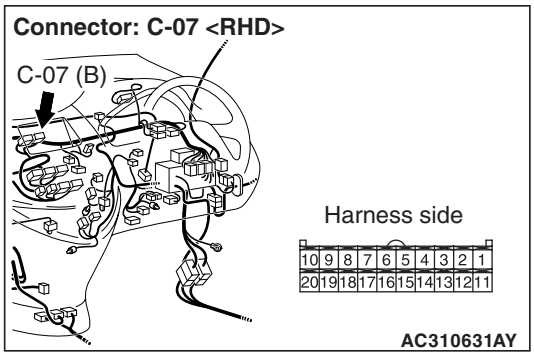
OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

Q: Is the check result normal?
YES : <1.0 V or less> Go to Step 39.
NO : <more than 1.0 V> Repair the wiring harness between the joint connector (CAN2) and the jumper connector.

STEP 39. Connector check: C-07 centre display connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?
YES : Go to Step 40 .
NO : Repair the defective connector.

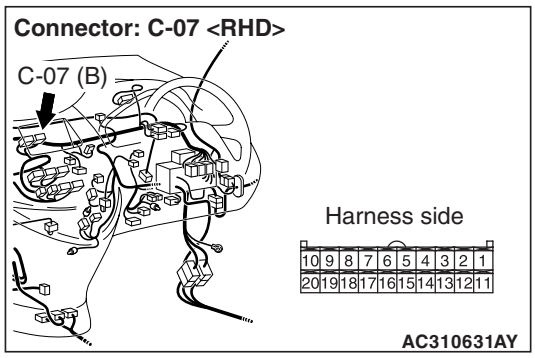
STEP 40. Voltage measurement at the C-37 jumper connector.

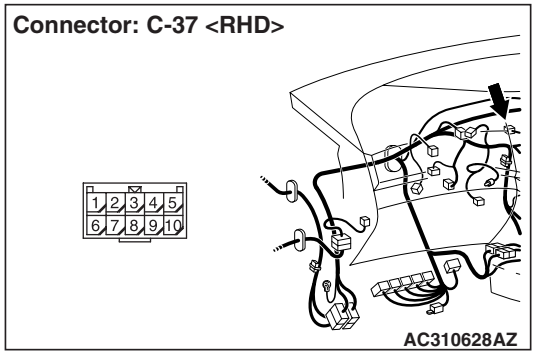
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

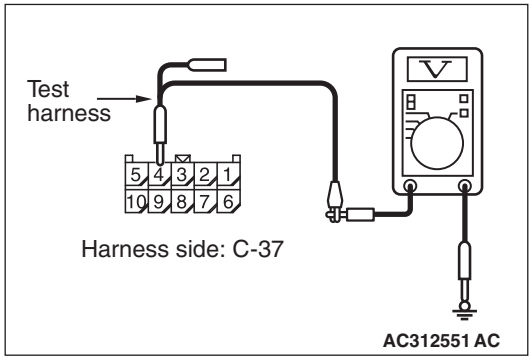
⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the centre display connector and the jumper connector, and measure at the jumper connector (at the centre display side).
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-37 jumper connector terminal No.4 and body earth

OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

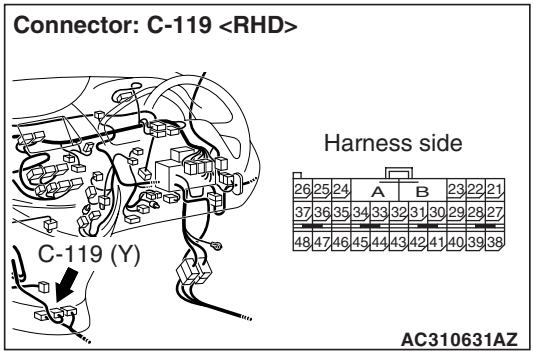
Q: Is the check result normal?

YES : <less than 1.0 V> Follow diagnostic item 19 "Diagnose CAN bus lines thoroughly." Refer to P.54D-502.

NO : <1.0 V or more> Repair the wiring harness between the jumper connector and the centre display connector.

STEP 41. Connector check: C-119 SRS-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 42 .

NO : Repair the defective connector.

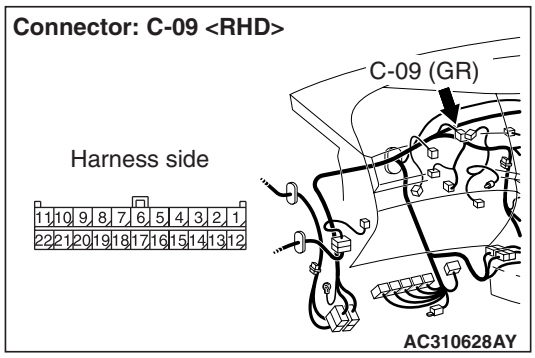
STEP 42. Voltage measurement at C-09 joint connector (CAN2).

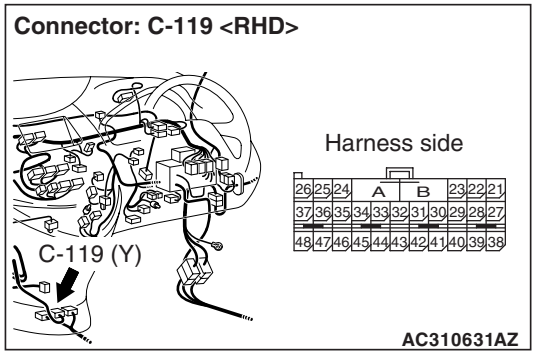
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

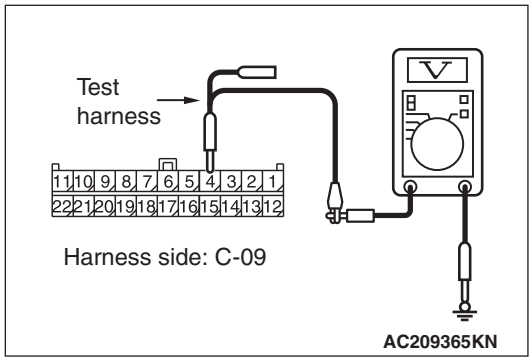
⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN2) and the SRS-ECU connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-09 joint connector (CAN2) terminal No.4 and body earth
OK: Less than 1.0 V
(4) Disconnect the negative battery terminal.

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <less than 1.0 V> Follow diagnostic item 19 "Diagnose CAN bus lines thoroughly." Refer to P.54D-502.
NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN2) and the SRS-ECU connector.

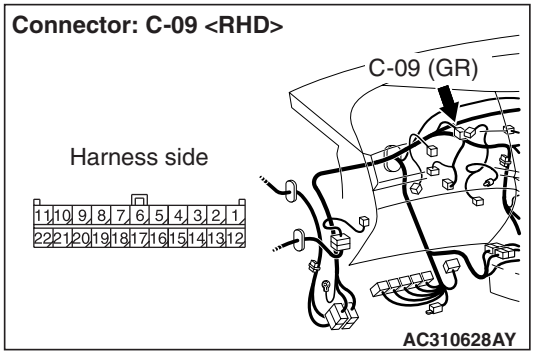
STEP 43. Voltage measurement at C-09 joint connector (CAN2).

⚠ CAUTION

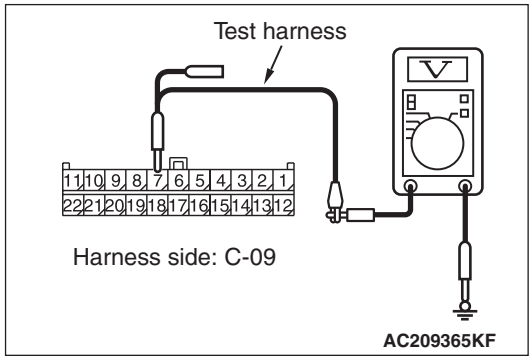
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-09 joint connector (CAN2)

terminal No.7 and body earth
OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

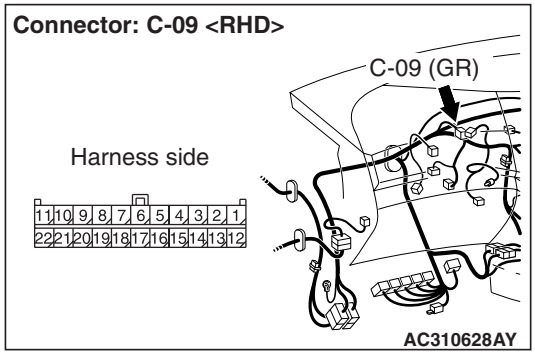
⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <less than 1.0 V> Follow diagnostic item 19 "Diagnose CAN bus lines thoroughly." Refer to P.54D-502.
NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN2) and the diagnosis connector.

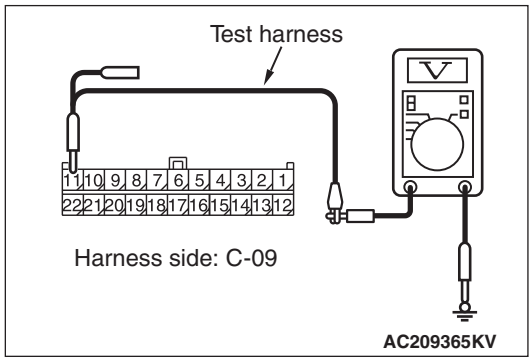
STEP 44. Voltage measurement at C-09 joint connector (CAN2).

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-09 joint connector (CAN2) terminal No.11 and body earth
OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

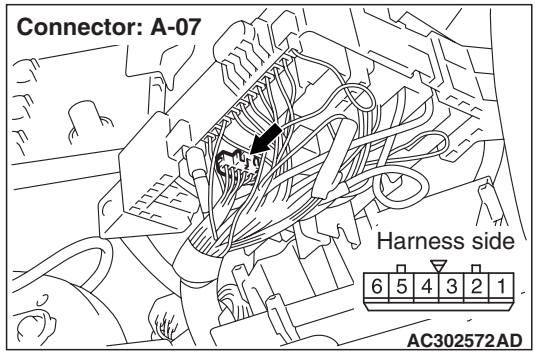
⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <less than 1.0 V> Follow diagnostic item 19 "Diagnose CAN bus lines thoroughly." Refer to P.54D-502.
NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN2) and the intermediate connector.

STEP 45. Connector check: A-07 joint connector (CAN1)

NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.
When checking the joint connector, ensure that its wiring harness side is not damaged.

Q: Is the check result normal?
YES : Go to Step 46 .
NO : Repair a defective connector or replace the joint connector (front wiring harness assembly).

STEP 46. Voltage measurement at the A-07 joint connector (CAN1).

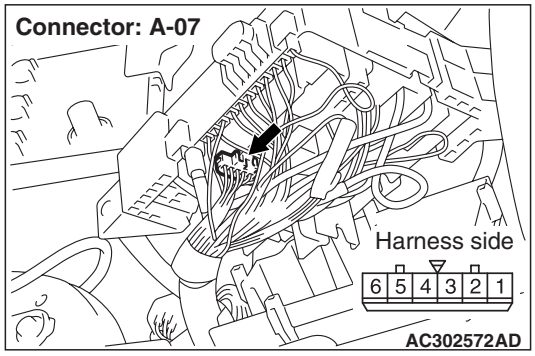
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

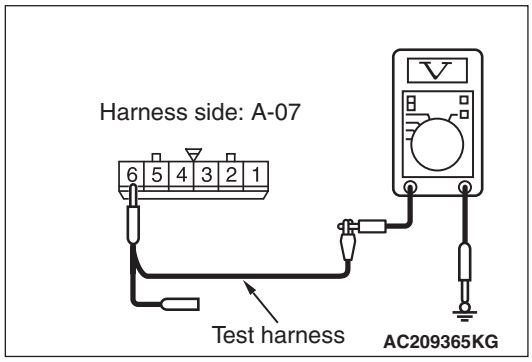
⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



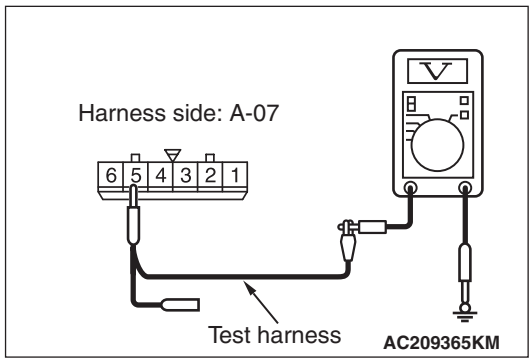
(1) Disconnect the connector, and measure at the wiring harness side.

(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between A-07 joint connector (CAN1) terminal No.6 and body earth

OK: 4.0 V or less



(4) Voltage between A-07 joint connector (CAN1) terminal No.5 and body earth

OK: 4.0 V or less

(5) Disconnect the negative battery terminal.

Q: Are the check result normal?

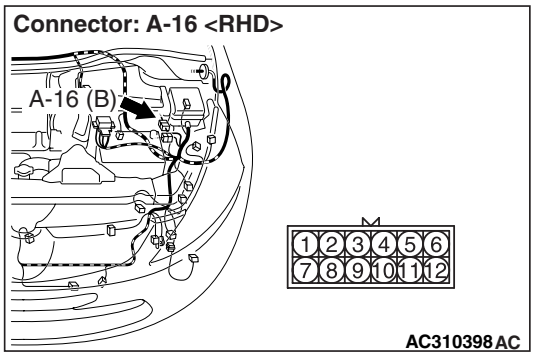
YES <all of the measurement results show 4.0 V or less> : Go to Step 52 .

NO <The voltage between terminal No.6 and body earth is more than 4.0 V> : Go to Step 47 .

NO <The voltage between terminal No.5 and body earth is more than 4.0 V> : Go to Step 48 .

STEP 47. Connector check: A-16 intermediate connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 48 .

NO : Repair the defective connector.

STEP 48. Voltage measurement at the A-07 joint connector (CAN1).

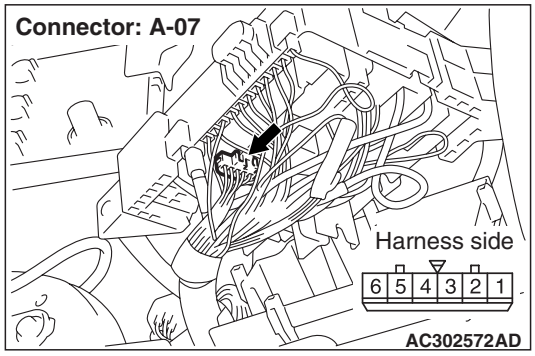
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

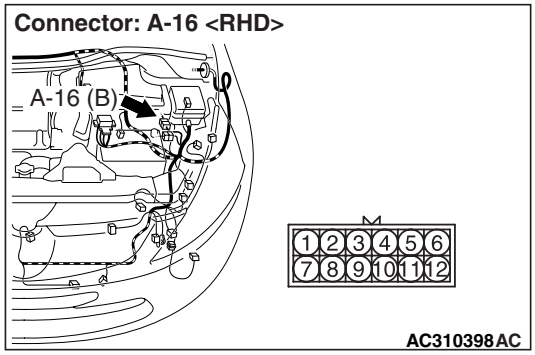
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

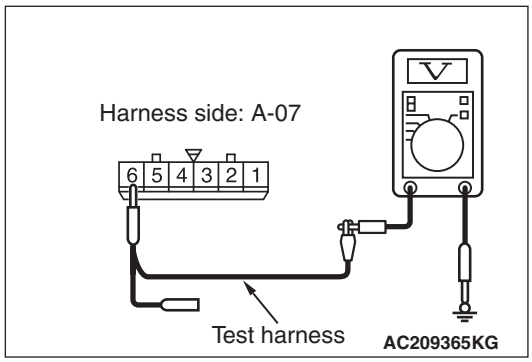
⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN1) and the intermediate connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between A-07 joint connector (CAN1) terminal No.6 and body earth
OK: 1.0 V or less
(4) Disconnect the negative battery terminal.

Q: Is the check result normal?
YES : <1.0 V or less> Go to Step 49.
NO : <more than 1.0 V> Repair the wiring harness between the joint connector (CAN1) and the intermediate connector.

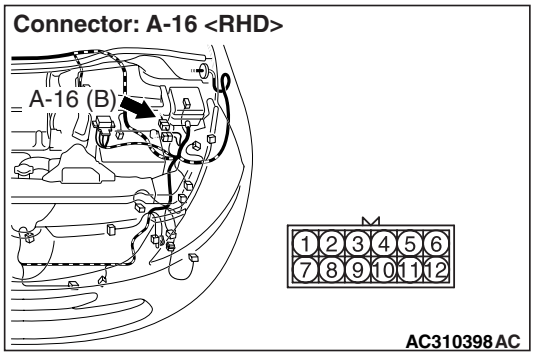
STEP 49. Voltage measurement at the A-16 intermediate connector.

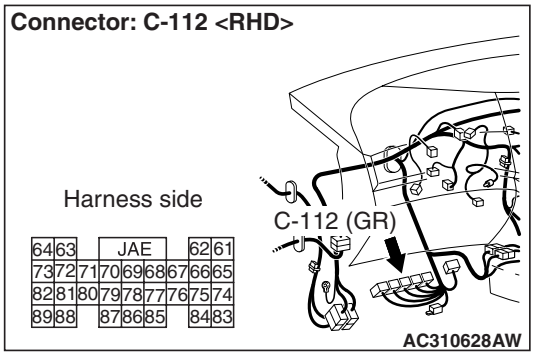
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

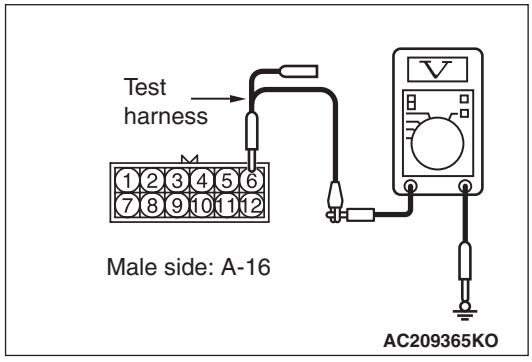
⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect intermediate connector and the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between A-16 intermediate connector

terminal No.6 and body earth
OK: Less than 1.0 V

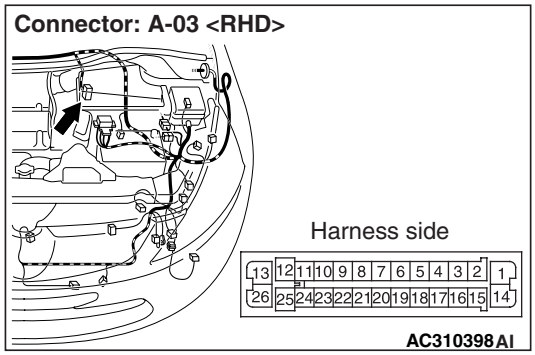
(4) Disconnect the negative battery terminal.

⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <less than 1.0 V> Follow diagnostic item 19 "Diagnose CAN bus lines thoroughly." Refer to P.54D-502.
NO : <1.0 V or more> Repair the wiring harness between the intermediate connector and the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector.

STEP 50. Connector check: A-03 ABS-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

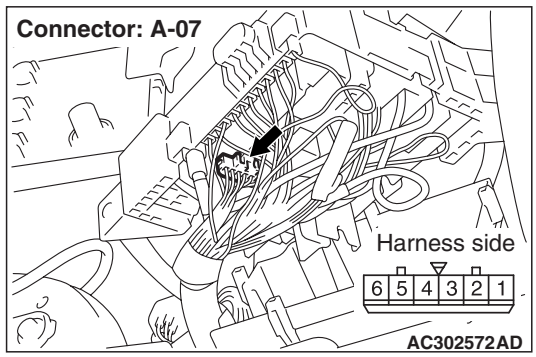
Q: Is the check result normal?
YES : Go to Step 51 .
NO : Repair the defective connector.

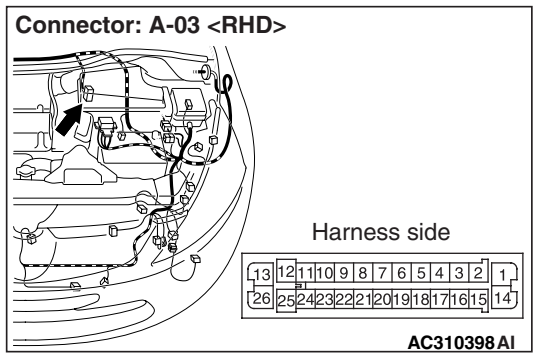
STEP 51. Voltage measurement at the A-07 joint connector (CAN1).

NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

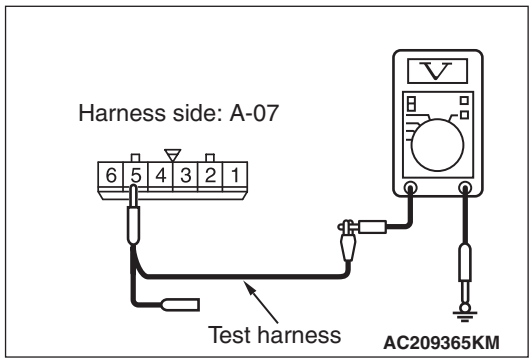
⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN1) and the ABS-ECU connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between A-07 joint connector (CAN1)

terminal No.5 and body earth

OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?

YES : <less than 1.0 V> Follow diagnostic item 19 "Diagnose CAN bus lines thoroughly." Refer to P.54D-502.

NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN1) and the ABS-ECU connector.

STEP 52. Voltage measurement at the A-07 joint connector (CAN1).

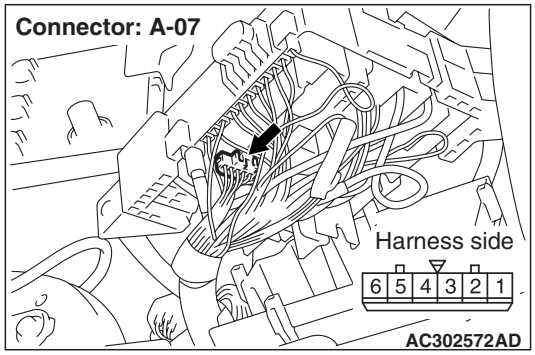
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

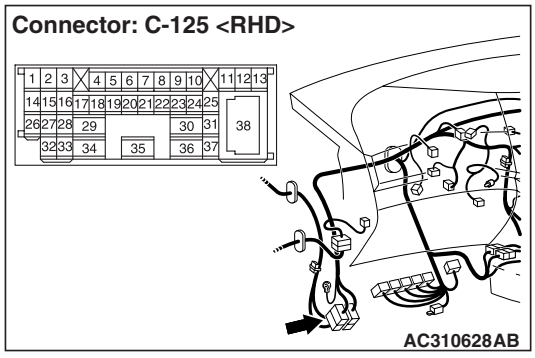
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

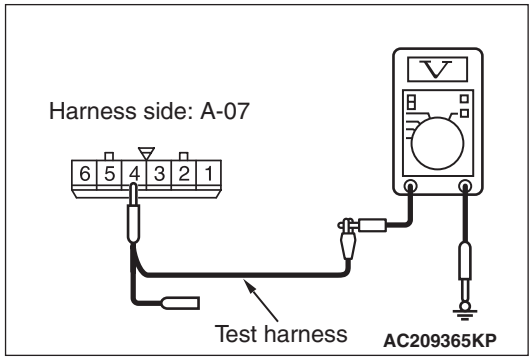
The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN1) and the intermediate connector, and measure at the wiring harness side.

(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between A-07 joint connector (CAN1) terminal No.4 and body earth

OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

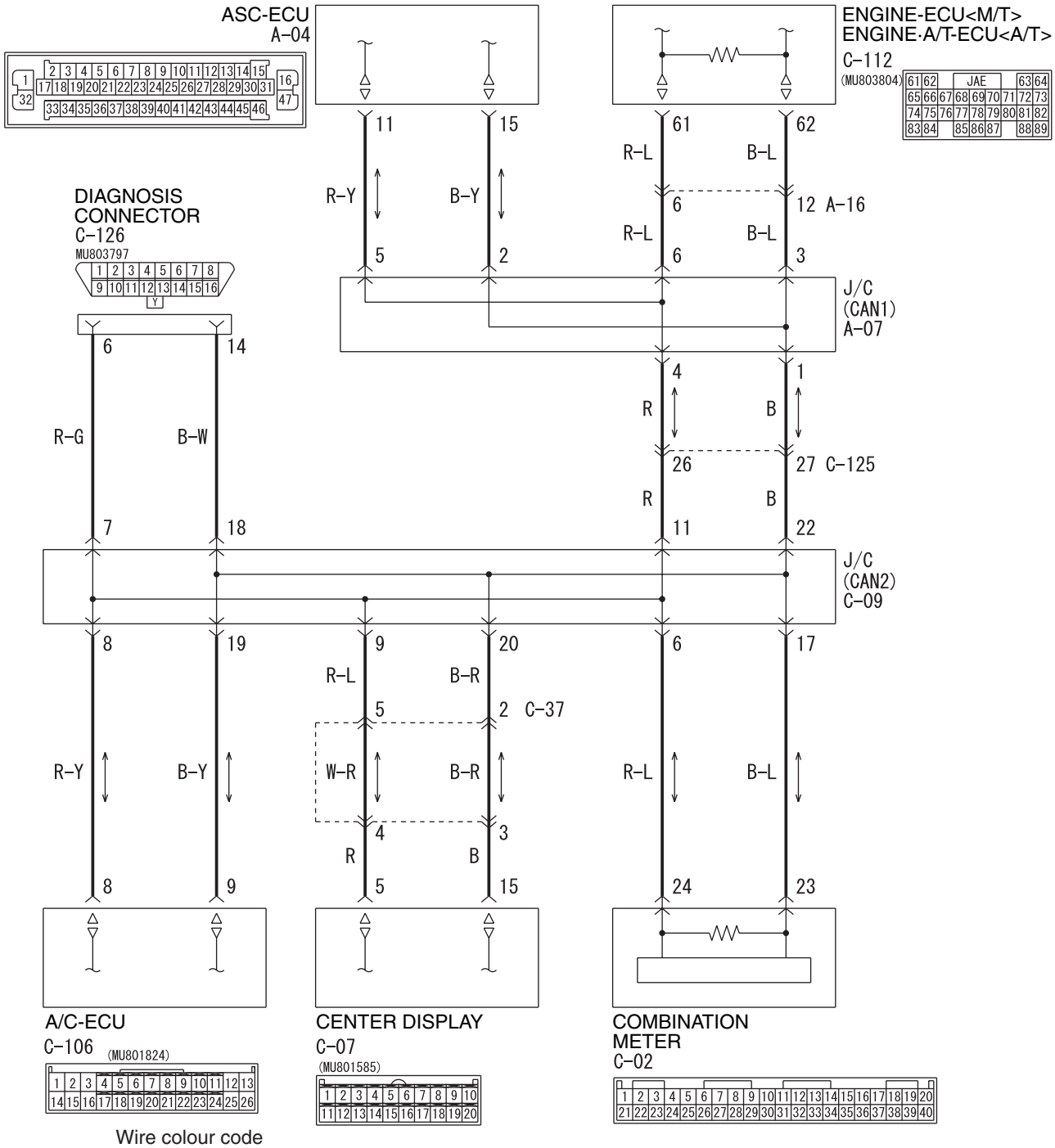
Q: Is the check result normal?

YES : <less than 1.0 V> Follow diagnostic item 19 "Diagnose CAN bus lines thoroughly." Refer to P.54D-502.

NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN1) and the intermediate connector.

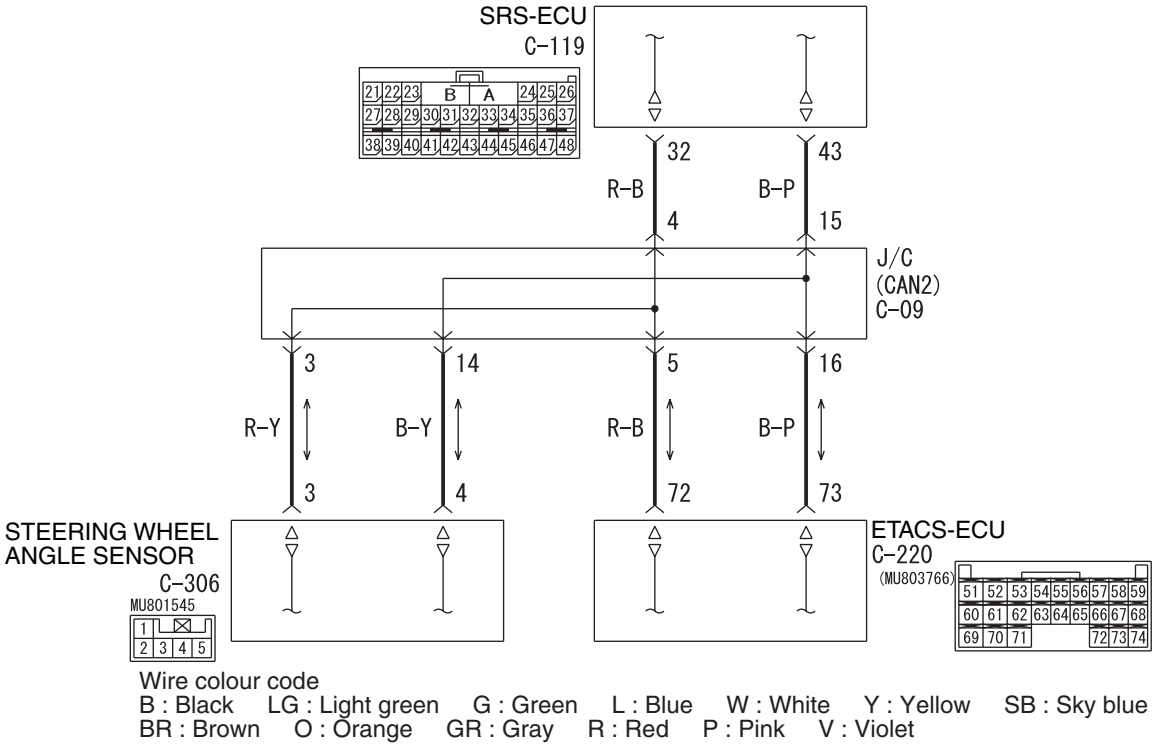
Diagnostic Item 4: Diagnose the CAN bus lines for short to power supply <RH drive vehicles with ASC>

⚠ CAUTION
When servicing a CAN bus line, earth yourself by touching a metal object such as an unpainted water pipe. If you fail to do, a component connected to the CAN bus line may be broken.



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E24AA



W4X54E25AA

TROUBLE JUDGMENT

Short to power supply may be present when the voltage between the CAN bus line (CAN_L or CAN_H) and body earth is more than 4.0 V. In this condition, an abnormal voltage may be measured at CAN_L and CAN_H lines.

COMMENTS ON TROUBLE SYMPTOM

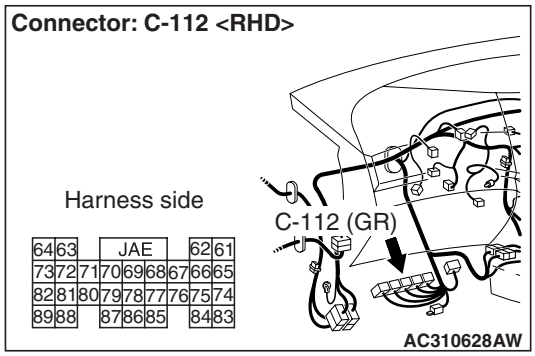
The wiring harness wire or connectors may have loose, corroded, or damage terminals, or terminals pushed back in the connector, or a ECU may be defective.

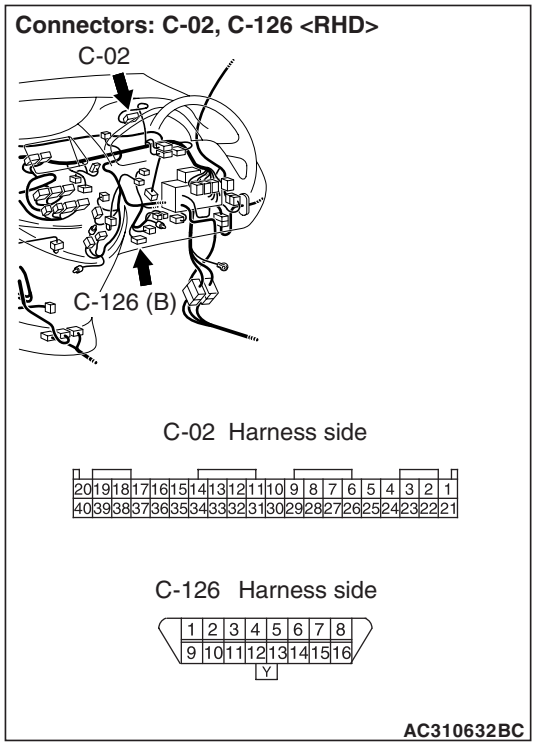
POSSIBLE CAUSES

- Damaged harness wires and connectors
- Malfunction of the ETACS-ECU
- Malfunction of the combination meter
- Malfunction of the A/C-ECU
- Malfunction of the SRS-ECU
- Malfunction of the multi-centre display
- Malfunction of the steering wheel angle sensor
- Malfunction of the ASC-ECU
- Malfunction of the engine-ECU <M/T> or engine-A/T-ECU <A/T>

DIAGNOSTIC PROCEDURE

STEP 1. Connector check: C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector, C-02 combination meter connector and C-126 diagnosis connector





⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Are the check result normal?
YES : Go to Step 2 .
NO : Repair the defective connector.

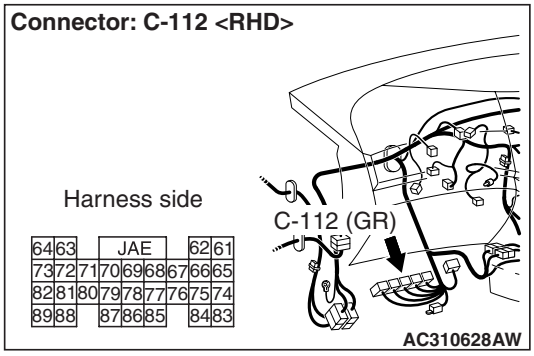
STEP 2. Voltage measurement at the C-126 diagnosis connector.

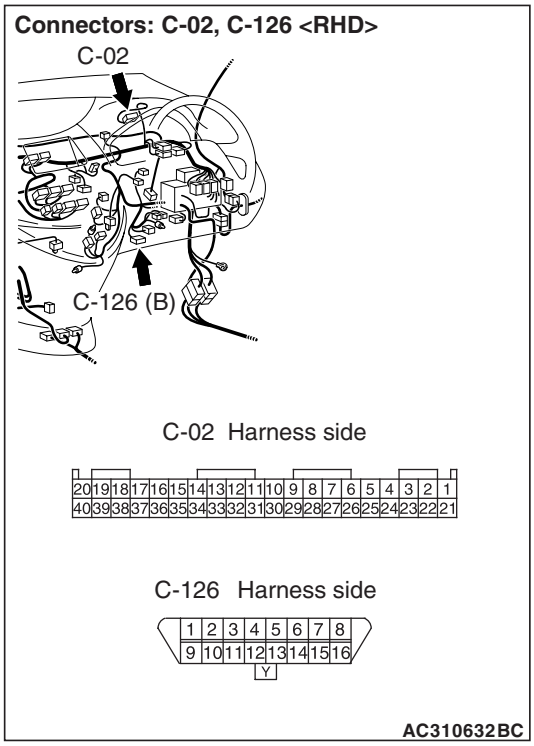
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

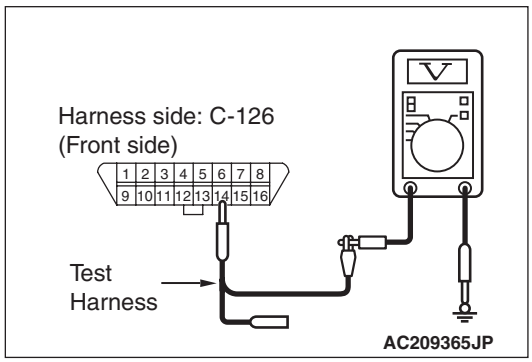
The test wiring harness should be used. For details refer to P.54D-8.





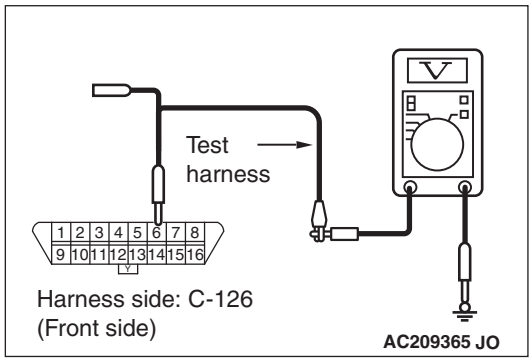
(1) Disconnect the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector and the combination meter connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn

the ignition switch to the ON position.



(3) Voltage between C-126 diagnosis connector terminal No.14 and body earth

OK: 4.0 V or less



(4) Voltage between C-126 diagnosis connector terminal No.6 and body earth

OK: 4.0 V or less

(5) Disconnect the negative battery terminal.

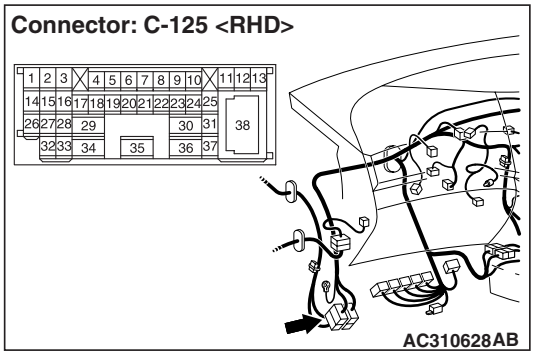
Q: Are the check result normal?

YES <all of the measurement results show 4.0 V or less> : Follow diagnostic item 20, Diagnose CAN bus lines thoroughly. Refer to P.54D-526.

NO <The voltage between terminal No.14 and body earth is more than 4.0 V> : Go to Step 3 .

NO <The voltage between terminal No.6 and body earth is more than 4.0 V> : Go to Step 30 .

STEP 3. Connector check: C-125 intermediate connector



⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 4 .

NO : Repair the defective connector.

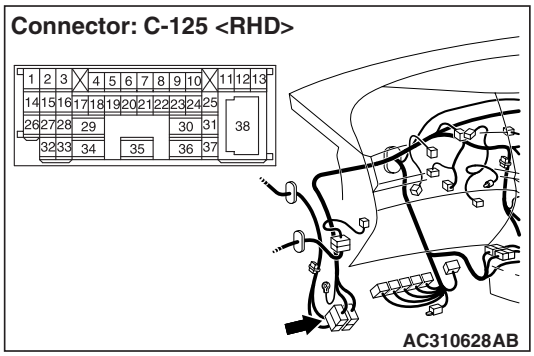
STEP 4. Voltage measurement at the C-125 intermediate connector.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

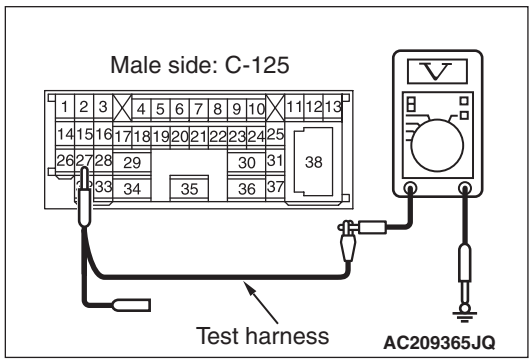
The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the connector, and measure at its male-side intermediate connector (at the front wiring harness side).

(2) Connect the negative battery terminal, and turn

the ignition switch to the ON position.



(3) Voltage between C-125 intermediate connector terminal No.27 and body earth

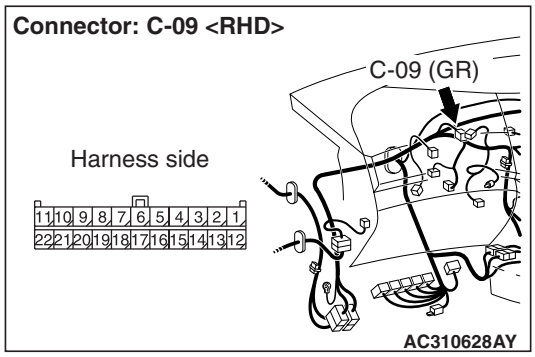
OK: 4.0 V or less

Q: Is the check result normal?

YES : <4.0 V or less> Go to Step 5.

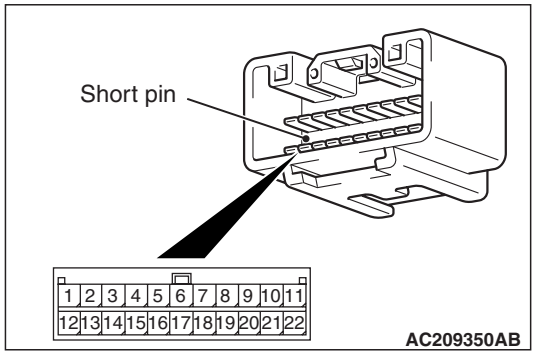
NO : <more than 4.0 V> Go to Step 22.

STEP 5. Connector check: C-09 joint connector (CAN2)



⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.



When checking the joint connector, ensure that its wiring harness side and its short pins are not damaged.

Q: Is the check result normal?

YES : Go to Step 6 .

NO : Repair a defective connector or replace the joint connector.

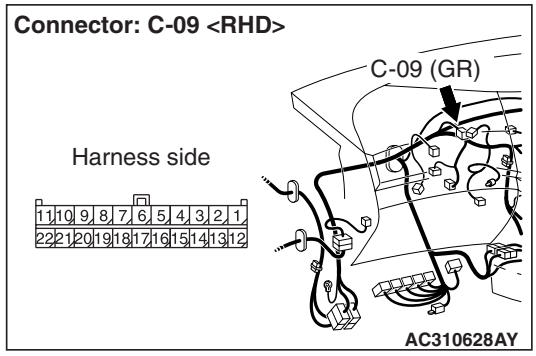
STEP 6. Voltage measurement at C-09 joint connector (CAN2).

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

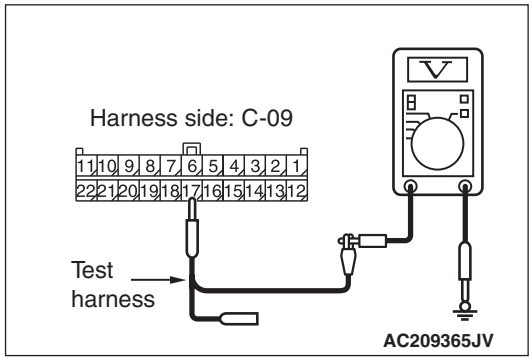
⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



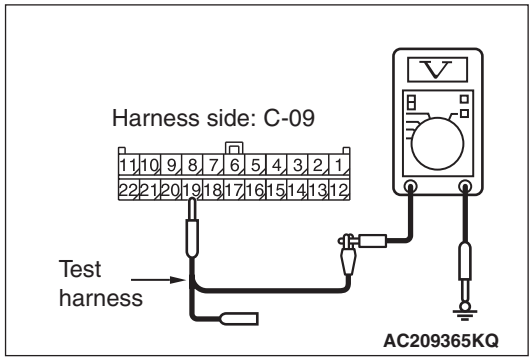
(1) Disconnect the connector, and measure at the wiring harness side.

(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



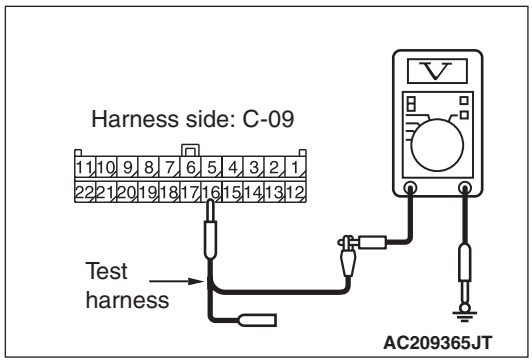
(3) Voltage between C-09 joint connector (CAN2) terminal No.17 and body earth

OK: 4.0 V or less

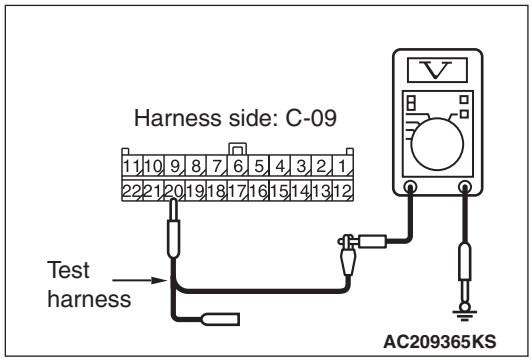


(4) Voltage between C-09 joint connector (CAN2)

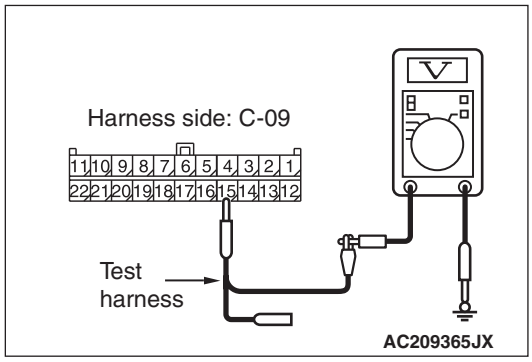
terminal No.19 and body earth
OK: 4.0 V or less



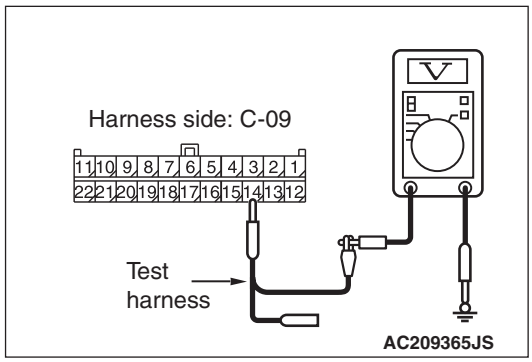
(5) Voltage between C-09 joint connector (CAN2) terminal No.16 and body earth
OK: 4.0 V or less



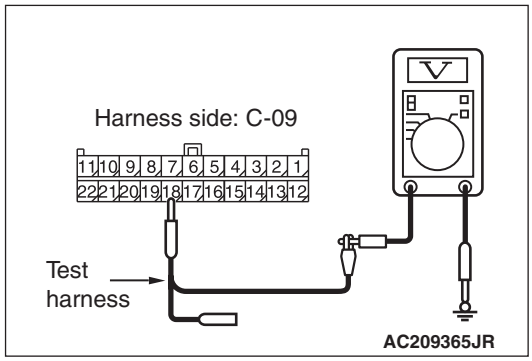
(6) Voltage between C-09 joint connector (CAN2) terminal No.20 and body earth
OK: 4.0 V or less



(7) Voltage between C-09 joint connector (CAN2) terminal No.15 and body earth
OK: 4.0 V or less



(8) Voltage between C-09 joint connector (CAN2) terminal No.14 and body earth
OK: 4.0 V or less



(9) Voltage between C-09 joint connector (CAN2) terminal No.18 and body earth
OK: 4.0 V or less

(10)Disconnect the negative battery terminal.

Q: Are the check result normal?
YES <all of the measurement results show 4.0 V or less> : Go to Step 21 .
NO <The voltage between terminal No.17 and body earth is more than 4.0 V> : Go to Step 7 .
NO <The voltage between terminal No.19 and body earth is more than 4.0 V> : Go to Step 8 .
NO <The voltage between terminal No.16 and body earth is more than 4.0 V> : Go to Step 10 .
NO <The voltage between terminal No.20 and body earth is more than 4.0 V> : Go to Step 12 .
NO <The voltage between terminal No.15 and body earth is more than 4.0 V> : Go to Step 16 .
NO <The voltage between terminal No.14 and body earth is more than 4.0 V> : Go to Step 18 .
NO <The voltage between terminal No.18 and body earth is more than 4.0 V> : Go to Step 20 .

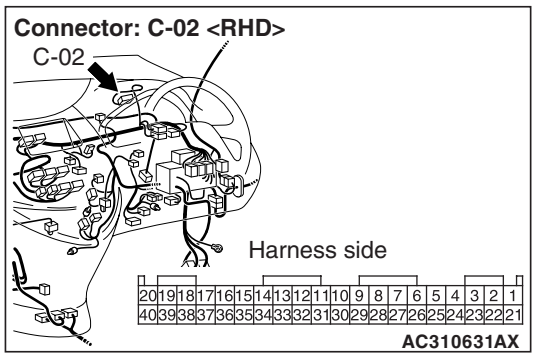
STEP 7. Voltage measurement at C-09 joint connector (CAN2).

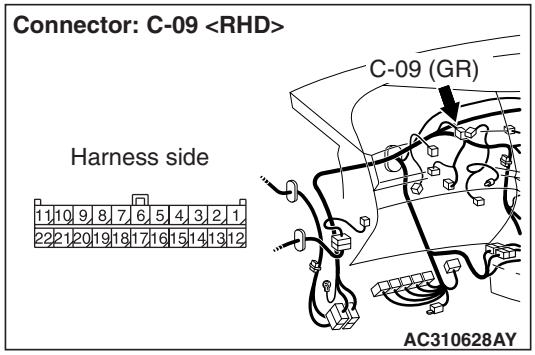
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

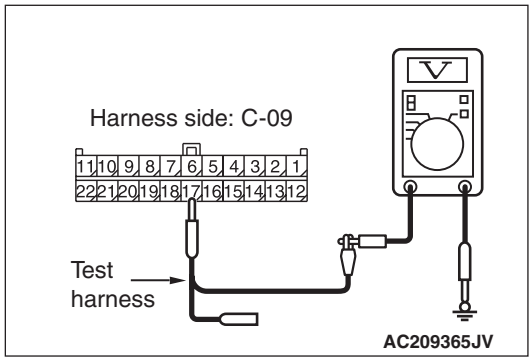
⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN2) and the combination meter connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-09 joint connector (CAN2) terminal No.17 and body earth

OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

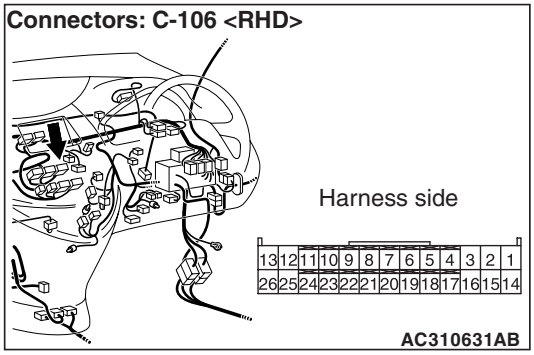
Q: Is the check result normal?

YES : <less than 1.0 V> Follow diagnostic item 20 "Diagnose CAN bus lines thoroughly." Refer to P.54D-526.

NO : <1.0 V or more> Repair the wiring harness between joint connector (CAN2) and the combination meter connector.

STEP 8. Connector check: C-106 A/C-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 9 .

NO : Repair the defective connector.

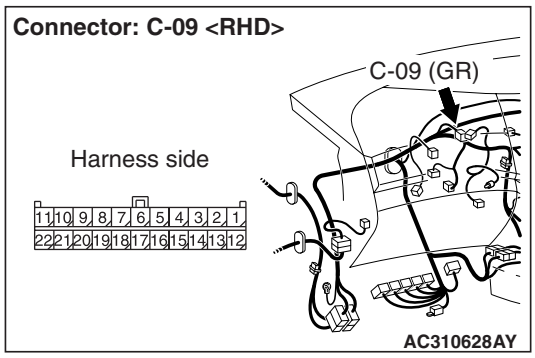
STEP 9. Voltage measurement at C-09 joint connector (CAN2).

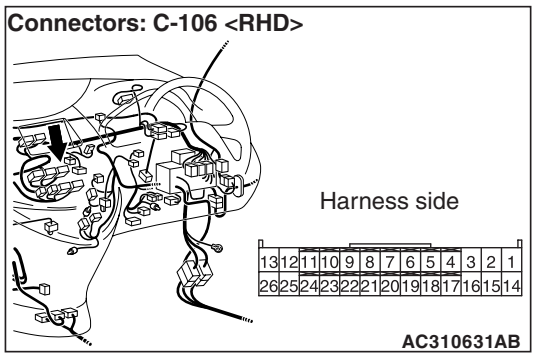
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

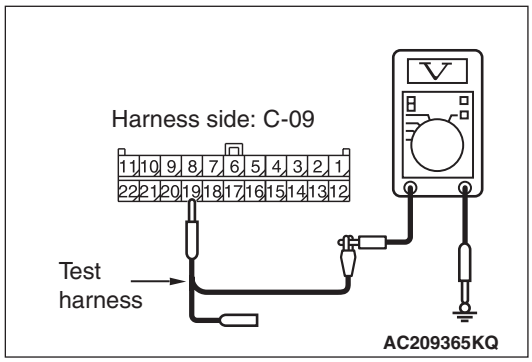
⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN2) and the A/C-ECU connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-09 joint connector (CAN2) terminal No.19 and body earth
OK: Less than 1.0 V
(4) Disconnect the negative battery terminal.

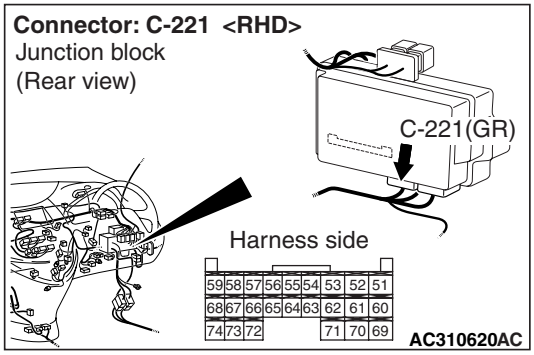
⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <less than 1.0 V> Follow diagnostic item 20 "Diagnose CAN bus lines thoroughly." Refer to P.54D-526.
NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN2) and the A/C-ECU connector.

STEP 10. Connector check: C-221 ETACS-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?
YES : Go to Step 11 .
NO : Repair the defective connector.

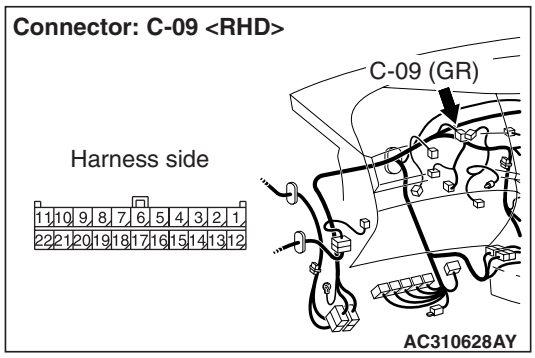
STEP 11. Voltage measurement at C-09 joint connector (CAN2).

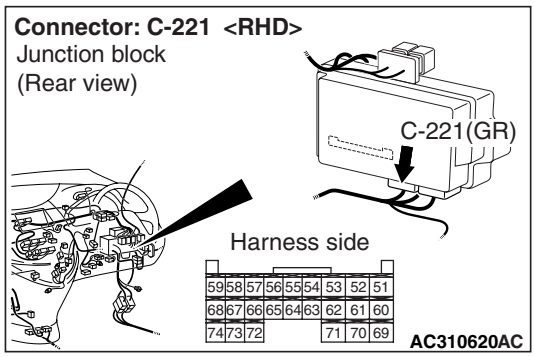
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

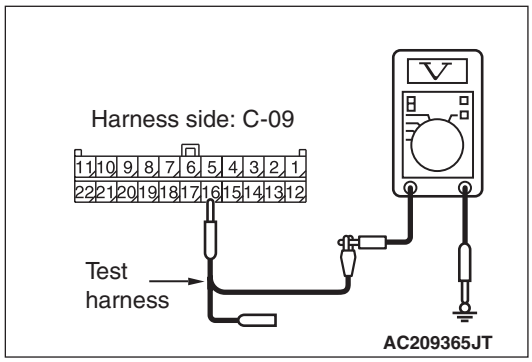
⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN2) and the ETACS-ECU connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-09 joint connector (CAN2) terminal No.16 and body earth

OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

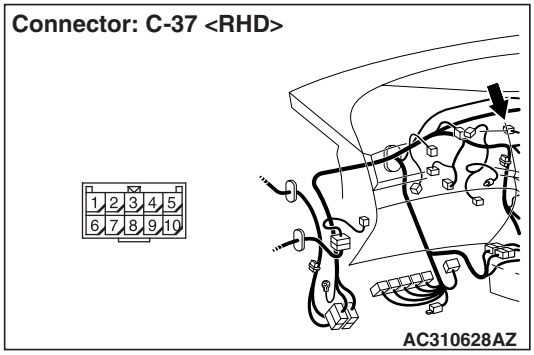
Q: Is the check result normal?

YES : <less than 1.0 V> Follow diagnostic item 20 "Diagnose CAN bus lines thoroughly." Refer to P.54D-526.

NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN2) and the ETACS-ECU connector.

STEP 12. Connector check: C-37 jumper connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Check that the wiring harness of the jumper connector is not damaged.

Q: Is the check result normal?

YES : Go to Step 13 .

NO : Repair the defective connector.

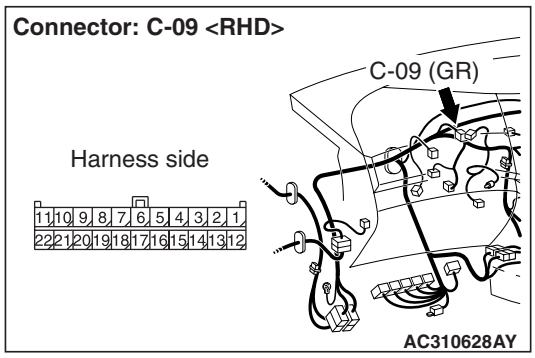
STEP 13. Voltage measurement at the C-09 joint connector (CAN2).

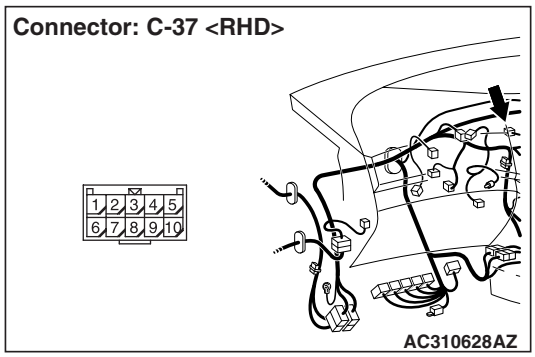
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

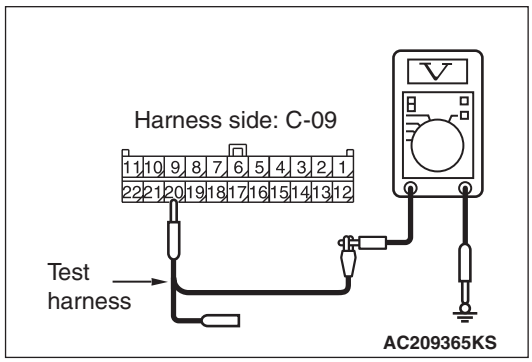
⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN2) and the jumper connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.

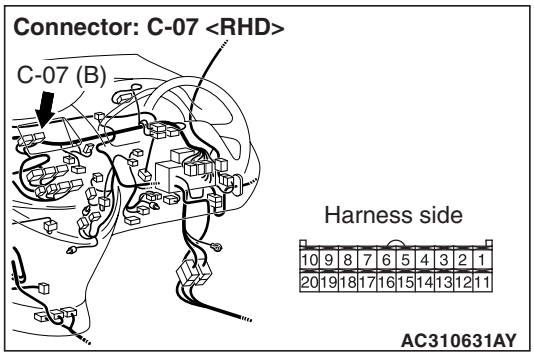


(3) Voltage between C-09 joint connector (CAN2) terminal No.20 and body earth
OK: Less than 1.0 V
(4) Disconnect the negative battery terminal.

Q: Is the check result normal?
YES : <1.0 V or less> Go to Step 14.
NO : <more than 1.0 V> Repair the wiring harness between the joint connector (CAN2) and the jumper connector.

STEP 14. Connector check: C-07 centre display connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?
YES : Go to Step 15 .
NO : Repair the defective connector.

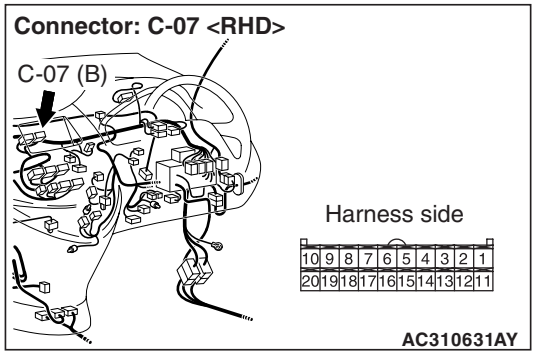
STEP 15. Voltage measurement at the C-37 jumper connector.

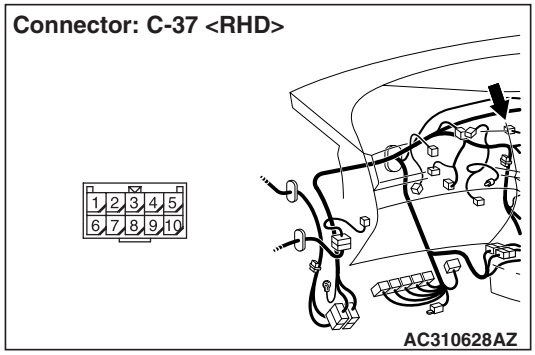
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

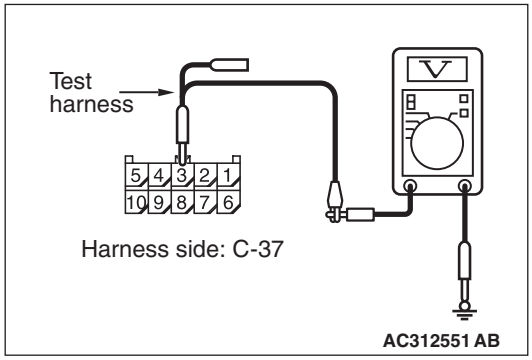
⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the centre display connector and the jumper connector, and measure at the jumper connector (at the centre display side).
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-37 jumper connector terminal No.3 and body earth

OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

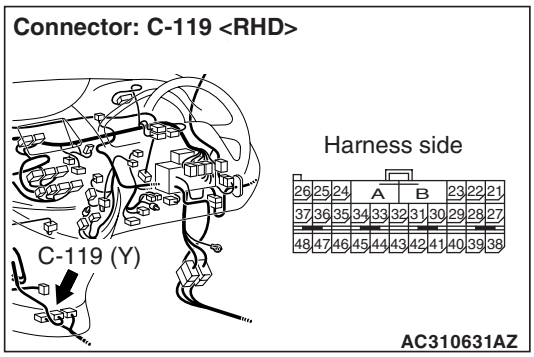
Q: Is the check result normal?

YES : <less than 1.0 V> Follow diagnostic item 20 "Diagnose CAN bus lines thoroughly." Refer to P.54D-526.

NO : <1.0 V or more> Repair the wiring harness between the jumper connector and the centre display connector.

STEP 16. Connector check: C-119 SRS-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 17 .

NO : Repair the defective connector.

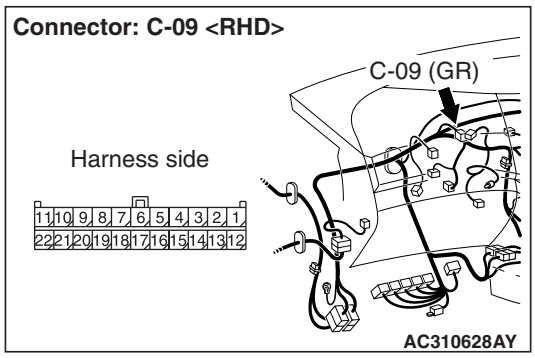
STEP 17. Voltage measurement at C-09 joint connector (CAN2).

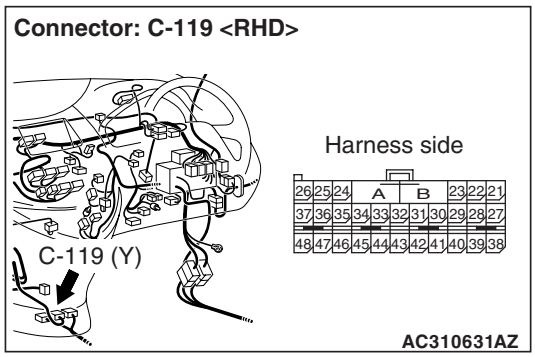
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

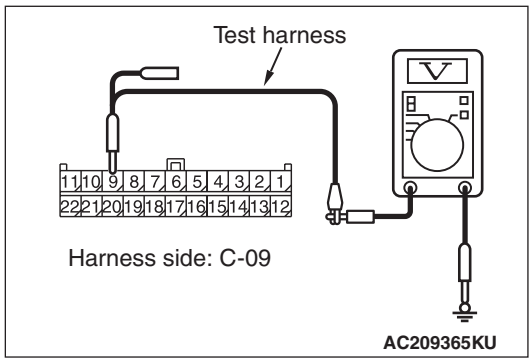
⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN2) and the SRS-ECU connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-09 joint connector (CAN2) terminal No.15 and body earth
OK: Less than 1.0 V
(4) Disconnect the negative battery terminal.

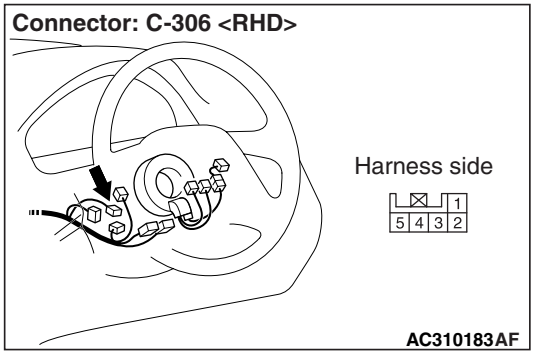
⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <less than 1.0 V> Follow diagnostic item 20 "Diagnose CAN bus lines thoroughly." Refer to P.54D-526.
NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN2) and the SRS-ECU connector.

STEP 18. Connector check: C-306 steering wheel angle sensor connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?
YES : Go to Step 19 .
NO : Repair the defective connector.

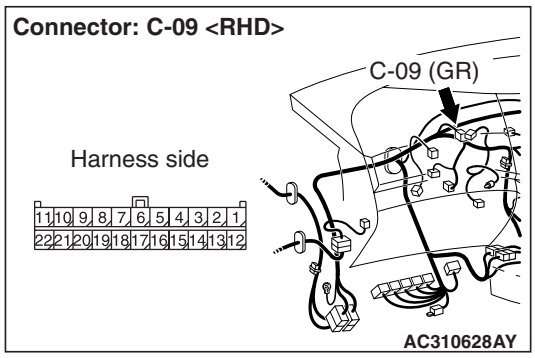
STEP 19. Voltage measurement at C-09 joint connector (CAN2).

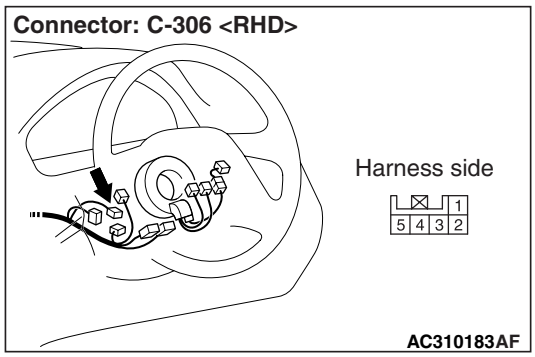
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

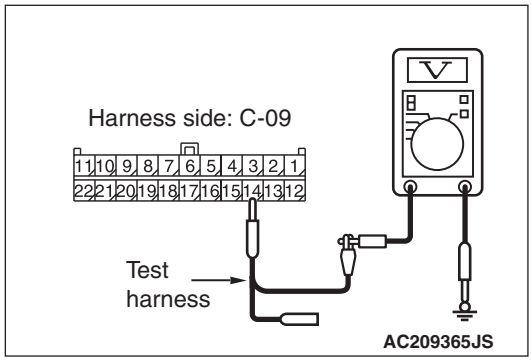
⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN2) and the steering wheel angle sensor connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-09 joint connector (CAN2) terminal No.14 and body earth

OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?

YES : <less than 1.0 V> Follow diagnostic item 20 "Diagnose CAN bus lines thoroughly." Refer to P.54D-526.

NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN2) and the steering wheel angle sensor connector.

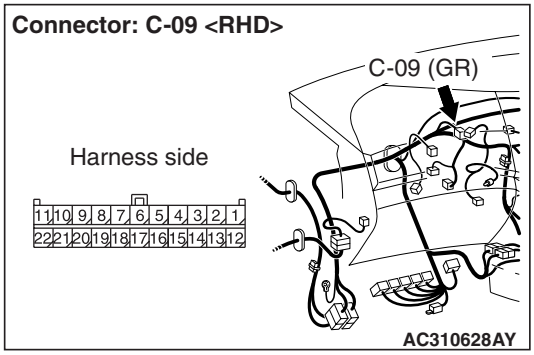
STEP 20. Voltage measurement at C-09 joint connector (CAN2).

⚠ CAUTION

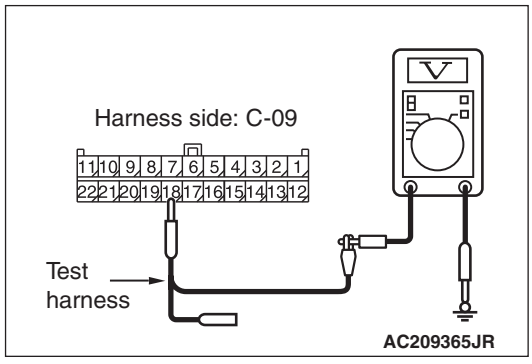
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-09 joint connector (CAN2)

terminal No.18 and body earth
OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

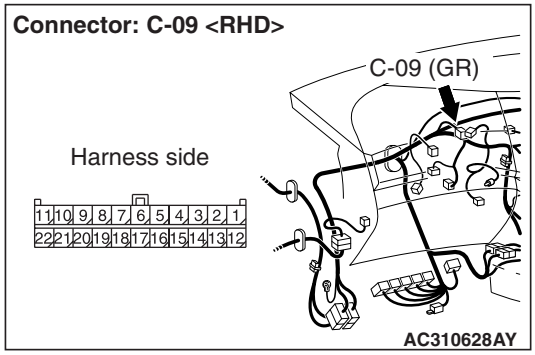
⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <less than 1.0 V> Follow diagnostic item 20 "Diagnose CAN bus lines thoroughly." Refer to P.54D-526.
NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN2) and the diagnosis connector.

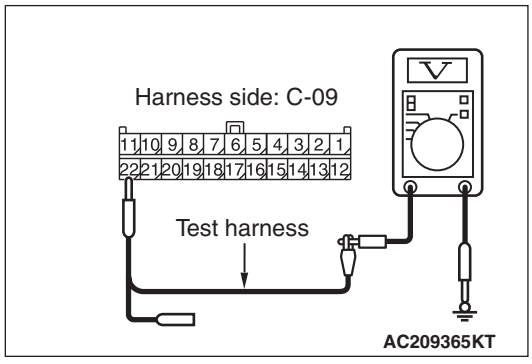
STEP 21. Voltage measurement at C-09 joint connector (CAN2).

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-09 joint connector (CAN2) terminal No.22 and body earth
OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

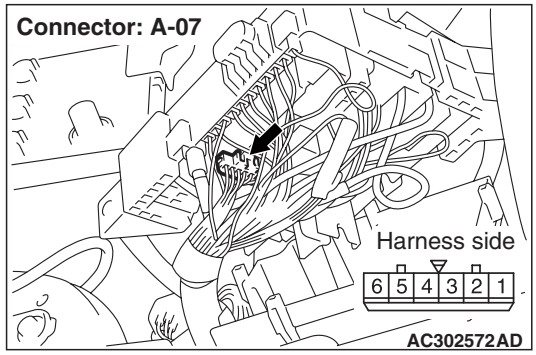
⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <less than 1.0 V> Follow diagnostic item 20 "Diagnose CAN bus lines thoroughly." Refer to P.54D-526.
NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN2) and the intermediate connector.

STEP 22. Connector check: A-07 joint connector (CAN1)

NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.
When checking the joint connector, ensure that its wiring harness side is not damaged.

Q: Is the check result normal?
YES : Go to Step 23.
NO : Repair a defective connector or replace the joint connector (front wiring harness assembly).

STEP 23. Voltage measurement at the A-07 joint connector (CAN1).

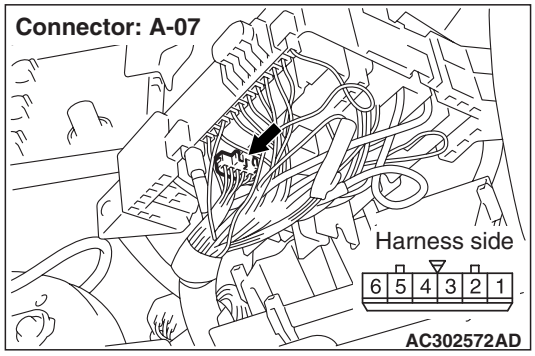
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

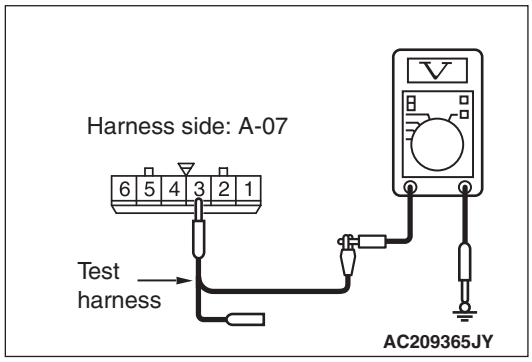
⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



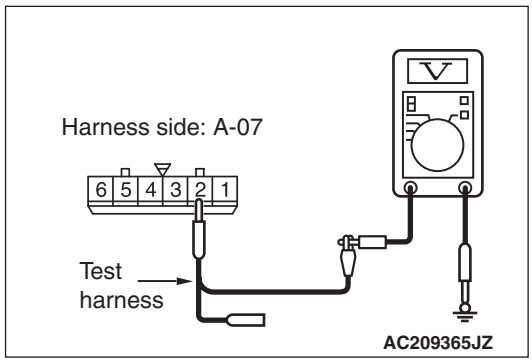
(1) Disconnect the connector, and measure at the wiring harness side.

(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between A-07 joint connector (CAN1) terminal No.3 and body earth

OK: 4.0 V or less



(4) Voltage between A-07 joint connector (CAN1) terminal No.2 and body earth

OK: 4.0 V or less

(5) Disconnect the negative battery terminal.

Q: Are the check result normal?

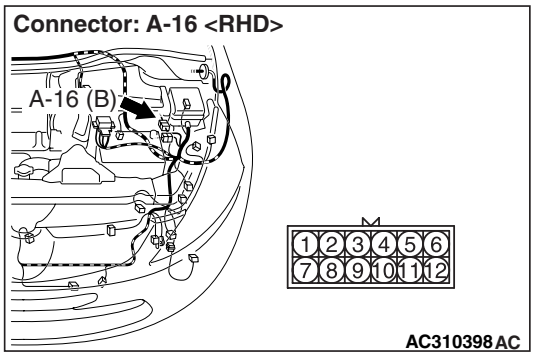
YES <all of the measurement results show 4.0 V or less> : Go to Step 29 .

NO <The voltage between terminal No.3 and body earth is more than 4.0 V> : Go to Step 24 .

NO <The voltage between terminal No.2 and body earth is more than 4.0 V> : Go to Step 27 .

STEP 24. Connector check: A-16 intermediate connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 25 .

NO : Repair the defective connector.

STEP 25. Voltage measurement at the A-07 joint connector (CAN1).

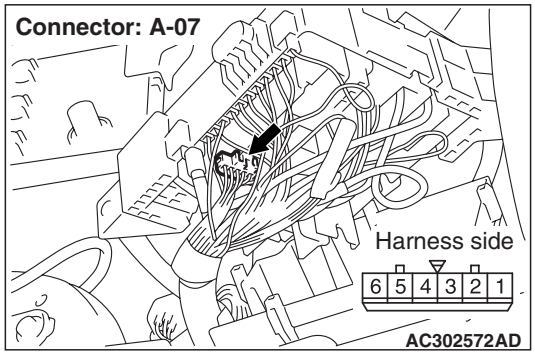
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

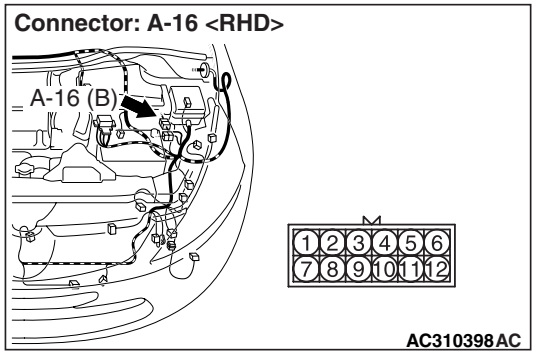
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

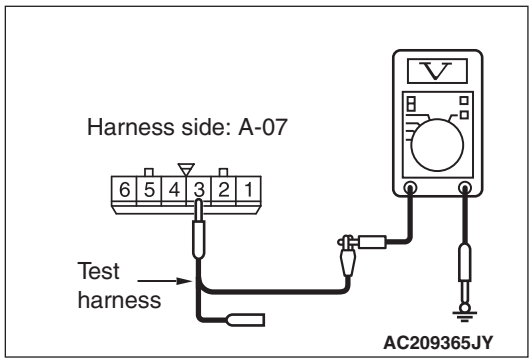
⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN1) and the intermediate connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between A-07 joint connector (CAN1) terminal No.3 and body earth

OK: 1.0 V or less

(4) Disconnect the negative battery terminal.

Q: Is the check result normal?

YES : <1.0 V or less> Go to Step 26.

NO : <more than 1.0 V> Repair the wiring harness between the joint connector (CAN1) and the intermediate connector.

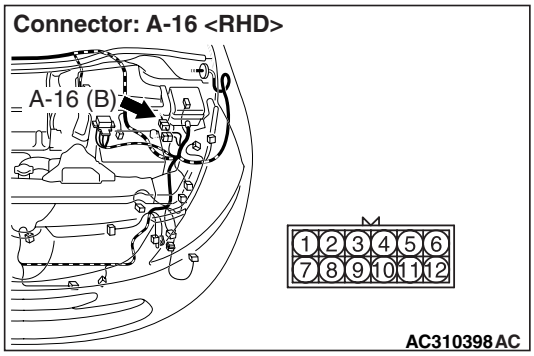
STEP 26. Voltage measurement at the A-16 intermediate connector.

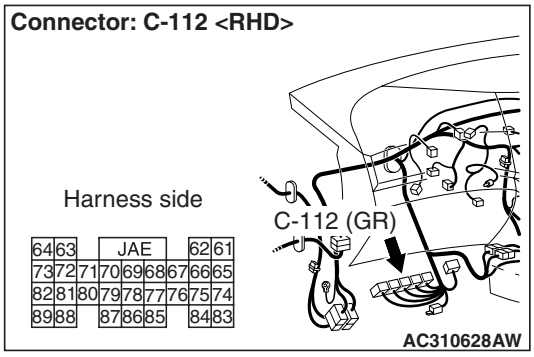
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

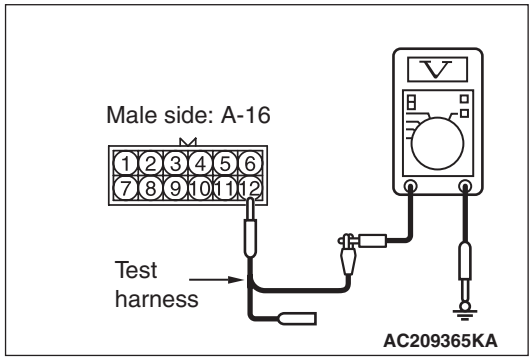
⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector and the intermediate connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between A-16 intermediate connector

terminal No.12 and body earth
OK: Less than 1.0 V

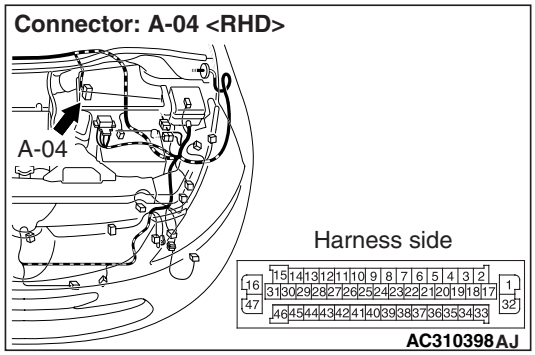
(4) Disconnect the negative battery terminal.

⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <less than 1.0 V> Follow diagnostic item 20 "Diagnose CAN bus lines thoroughly." Refer to P.54D-526.
NO : <1.0 V or more> Repair the wiring harness between the intermediate connector and the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector.

STEP 27. Connector check: A-04 ASC-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

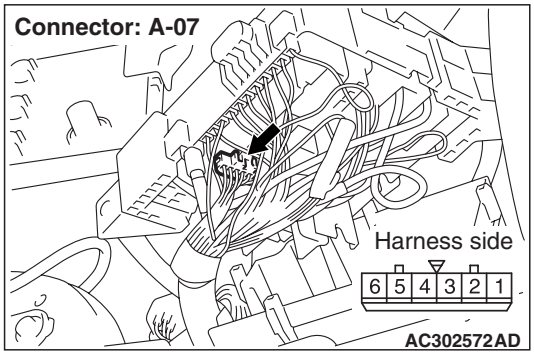
Q: Is the check result normal?
YES : Go to Step 28 .
NO : Repair the defective connector.

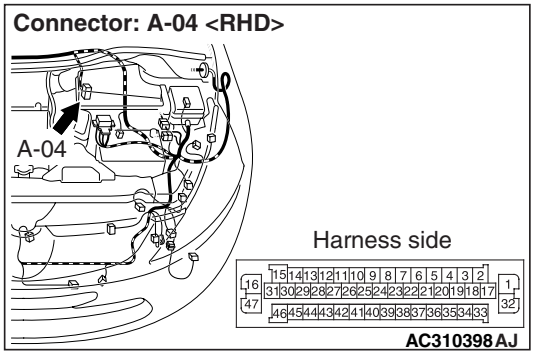
STEP 28. Voltage measurement at the A-07 joint connector (CAN1).

NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

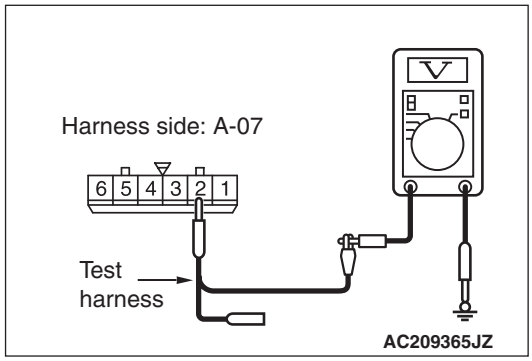
⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN1) and the ASC-ECU connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between A-07 joint connector (CAN1)

terminal No.2 and body earth

OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?

YES : <less than 1.0 V> Follow diagnostic item 20 "Diagnose CAN bus lines thoroughly." Refer to P.54D-526.

NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN1) and the ASC-ECU connector.

STEP 29. Voltage measurement at the A-07 joint connector (CAN1).

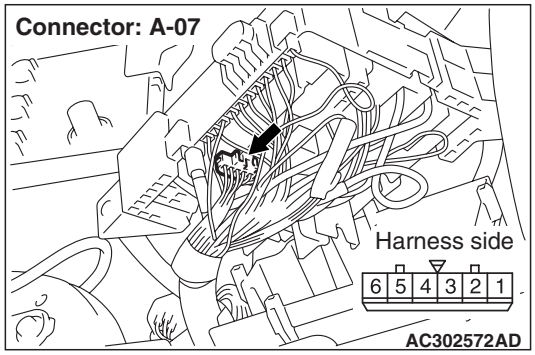
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

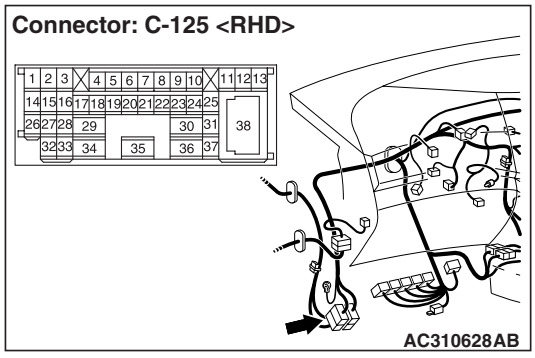
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

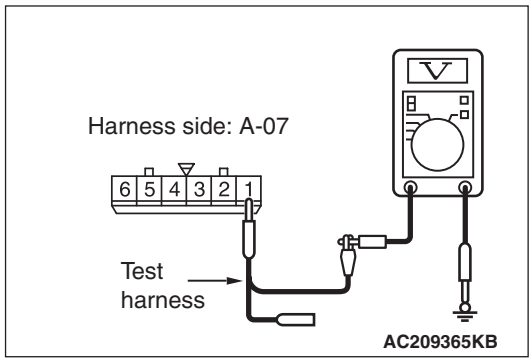
The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN1) and the intermediate connector, and measure at the wiring harness side.

(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between A-07 joint connector (CAN1) terminal No.1 and body earth

OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

⚠ CAUTION

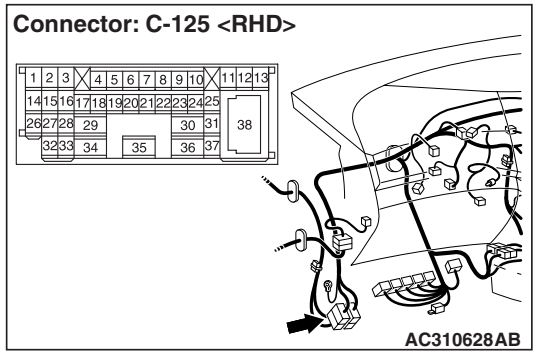
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?

YES : <less than 1.0 V> Follow diagnostic item 20 "Diagnose CAN bus lines thoroughly." Refer to P.54D-526.

NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN1) and the intermediate connector.

STEP 30. Connector check: C-125 intermediate connector



⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 31 .

NO : Repair the defective connector.

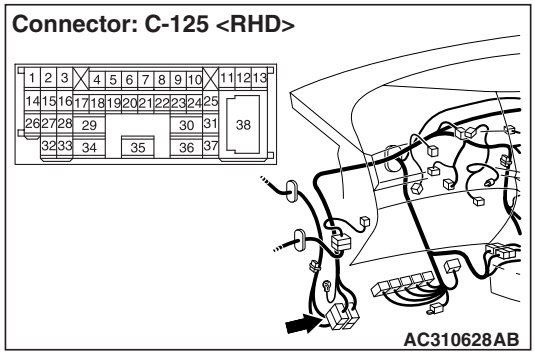
STEP 31. Voltage measurement at the C-125 intermediate connector.

⚠ CAUTION

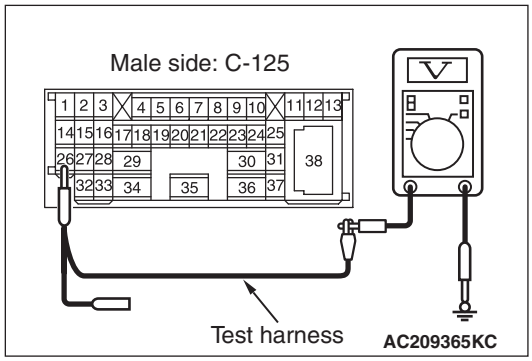
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the connector, and measure at its male-side intermediate connector (at the front wiring harness side).
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



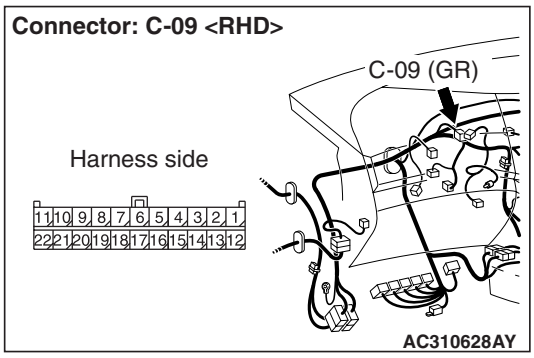
(3) Voltage between C-125 intermediate connector terminal No.26 and body earth

OK: 4.0 V or less

Q: Is the check result normal?

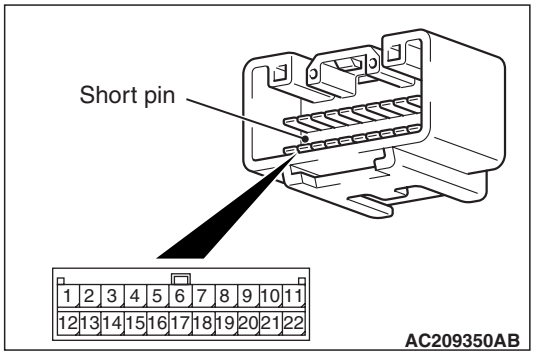
YES : <4.0 V or less> Go to Step 32.
NO : <more than 4.0 V> Go to Step 49.

STEP 32. Connector check: C-09 joint connector (CAN2)



⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.



When checking the joint connector, ensure that its wiring harness side and its short pins are not damaged.

Q: Is the check result normal?

YES : Go to Step 33 .
NO : Repair a defective connector or replace the joint connector.

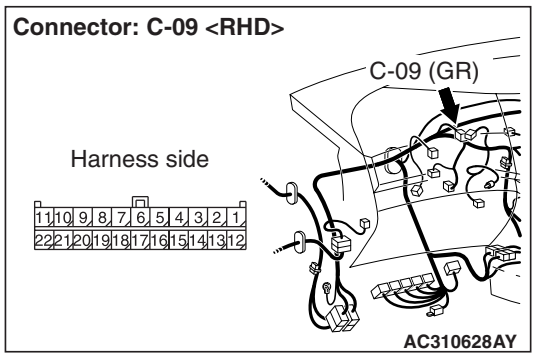
STEP 33. Voltage measurement at C-09 joint connector (CAN2).

⚠ CAUTION

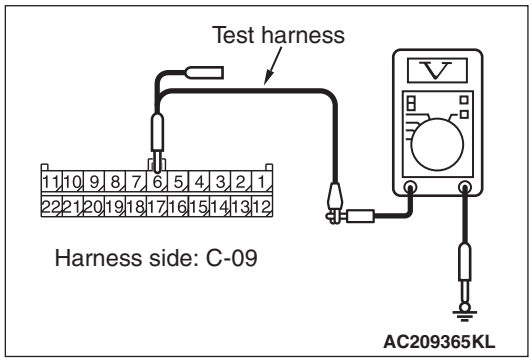
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.

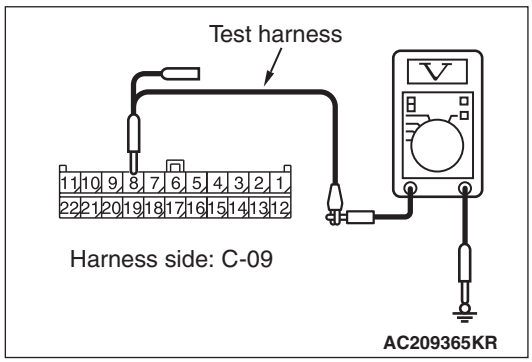


(1) Disconnect the connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



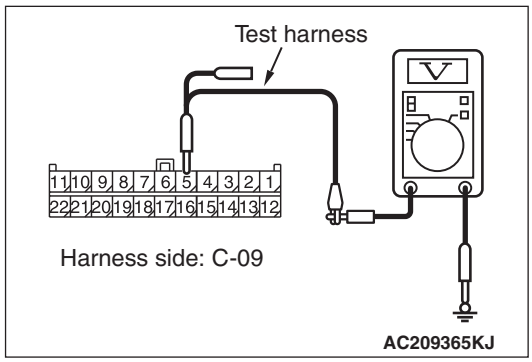
(3) Voltage between C-09 joint connector (CAN2) terminal No.6 and body earth

OK: 4.0 V or less



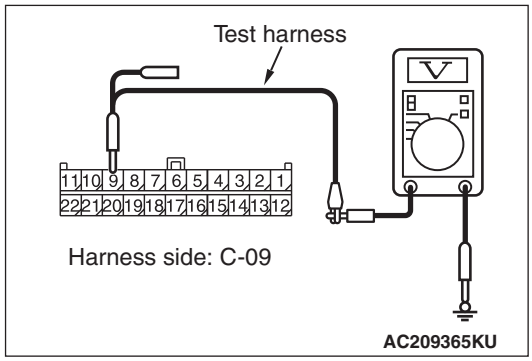
(4) Voltage between C-09 joint connector (CAN2) terminal No.8 and body earth

OK: 4.0 V or less



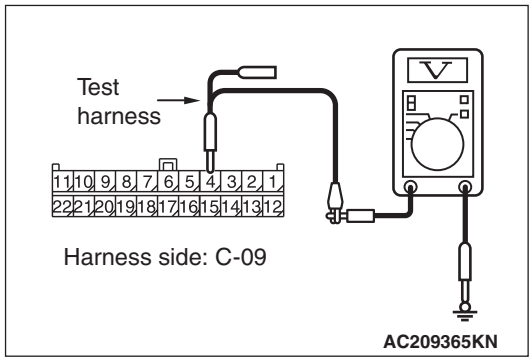
(5) Voltage between C-09 joint connector (CAN2) terminal No.5 and body earth

OK: 4.0 V or less



(6) Voltage between C-09 joint connector (CAN2) terminal No.9 and body earth

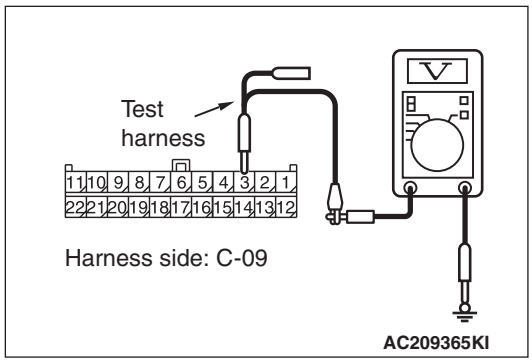
OK: 4.0 V or less



(7) Voltage between C-09 joint connector (CAN2)

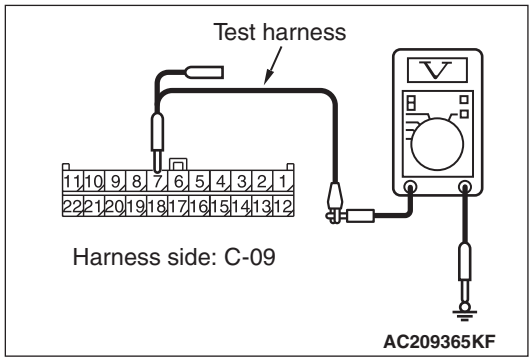
terminal No.4 and body earth

OK: 4.0 V or less



(8) Voltage between C-09 joint connector (CAN2) terminal No.3 and body earth

OK: 4.0 V or less



(9) Voltage between C-09 joint connector (CAN2) terminal No.7 and body earth

OK: 4.0 V or less

(10)Disconnect the negative battery terminal.

Q: Are the check result normal?

YES <all of the measurement results show 4.0 V or less> : Go to Step 48 .

NO <The voltage between terminal No.6 and body earth is more than 4.0 V> : Go to Step 34 .

NO <The voltage between terminal No.8 and body earth is more than 4.0 V> : Go to Step 35 .

NO <The voltage between terminal No.5 and body earth is more than 4.0 V> : Go to Step 37 .

NO <The voltage between terminal No.9 and body earth is more than 4.0 V> : Go to Step 39 .

NO <The voltage between terminal No.4 and body earth is more than 4.0 V> : Go to Step 43 .

NO <The voltage between terminal No.3 and body earth is more than 4.0 V> : Go to Step 45 .

NO <The voltage between terminal No.7 and body earth is more than 4.0 V> : Go to Step 47 .

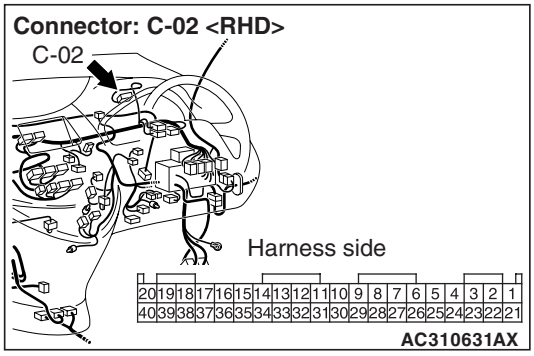
STEP 34. Voltage measurement at C-09 joint connector (CAN2).

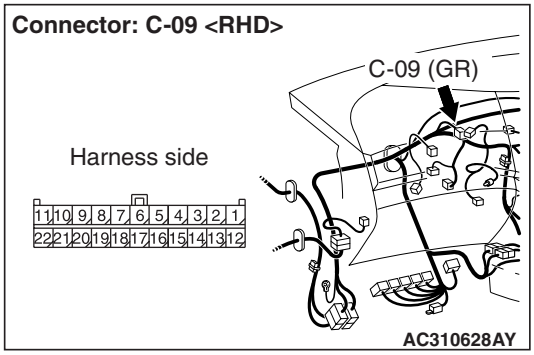
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

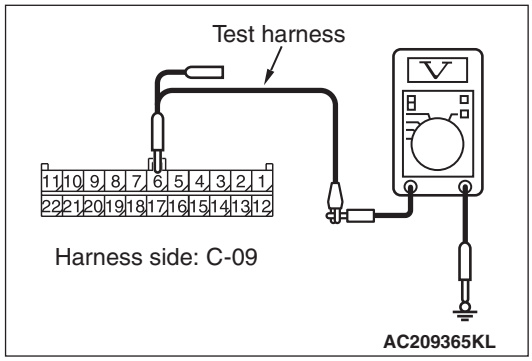
The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN2) and the combination meter connector, and measure at the wiring harness side.

(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-09 joint connector (CAN2)

terminal No.6 and body earth
OK: Less than 1.0 V

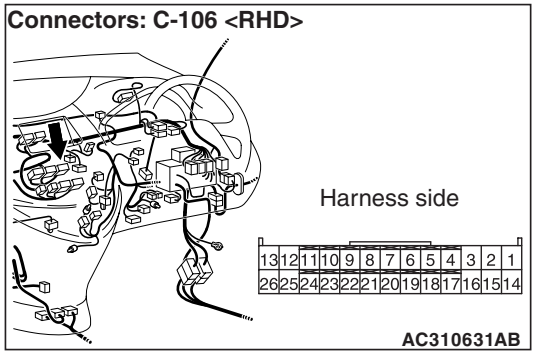
(4) Disconnect the negative battery terminal.

⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <less than 1.0 V> Follow diagnostic item 20 "Diagnose CAN bus lines thoroughly." Refer to P.54D-526.
NO : <1.0 V or more> Repair the wiring harness between joint connector (CAN2) and the combination meter connector.

STEP 35. Connector check: C-106 A/C-ECU connector

⚠ CAUTION



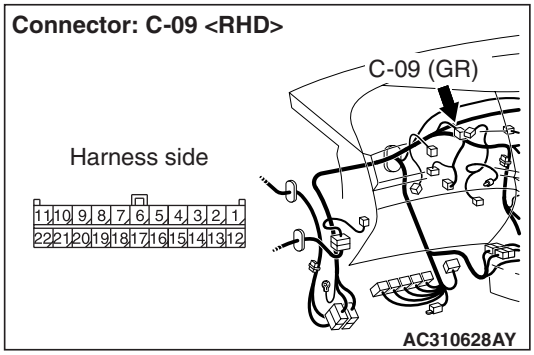
The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

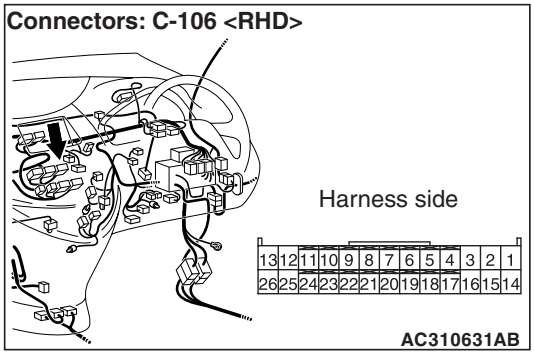
Q: Is the check result normal?
YES : Go to Step 36 .
NO : Repair the defective connector.

STEP 36. Voltage measurement at C-09 joint connector (CAN2).

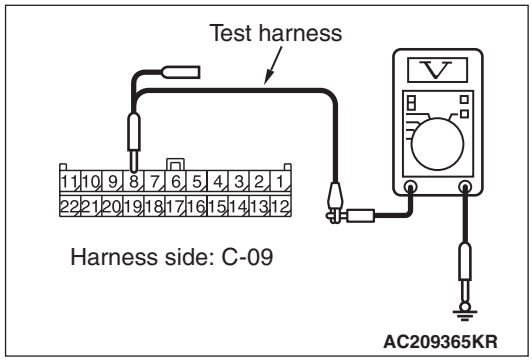
⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN2) and the A/C-ECU connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-09 joint connector (CAN2)

terminal No.8 and body earth
OK: Less than 1.0 V

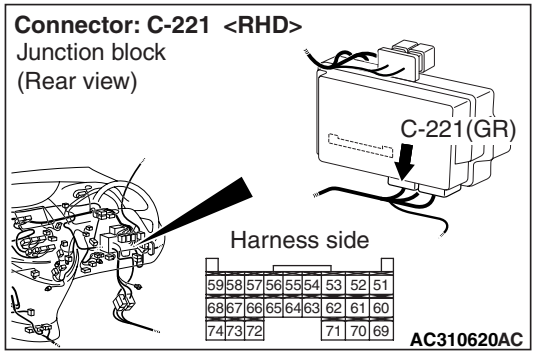
(4) Disconnect the negative battery terminal.

⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <less than 1.0 V> Follow diagnostic item 20 "Diagnose CAN bus lines thoroughly." Refer to P.54D-526.
NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN2) and the A/C-ECU connector.

STEP 37. Connector check: C-221 ETACS-ECU connector

⚠ CAUTION



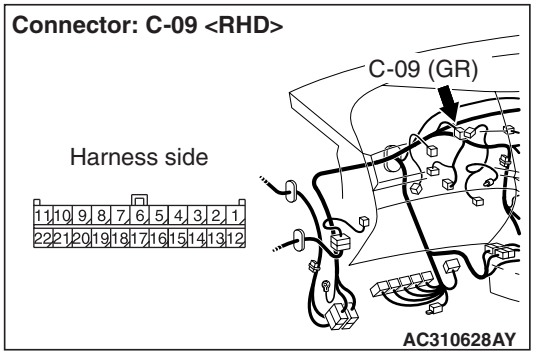
The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

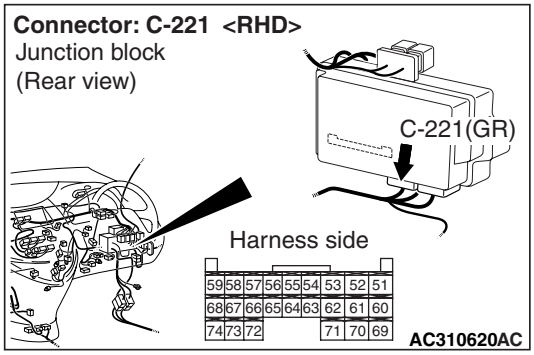
Q: Is the check result normal?
YES : Go to Step 38 .
NO : Repair the defective connector.

STEP 38. Voltage measurement at C-09 joint connector (CAN2).

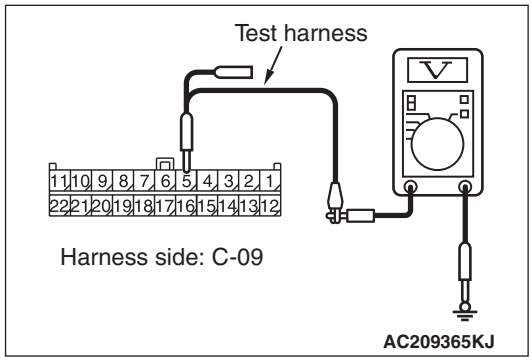
⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN2) and the ETACS-ECU connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-09 joint connector (CAN2)

terminal No.5 and body earth

OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

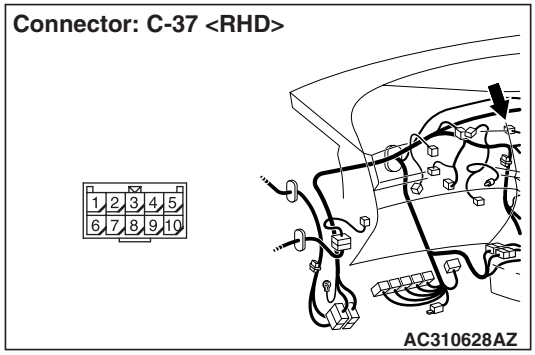
Q: Is the check result normal?

YES : <less than 1.0 V> Follow diagnostic item 20 "Diagnose CAN bus lines thoroughly." Refer to P.54D-526.

NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN2) and the ETACS-ECU connector.

STEP 39. Connector check: C-37 jumper connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Check that the wiring harness of the jumper connector is not damaged.

Q: Is the check result normal?

YES : Go to Step 40 .

NO : Repair the defective connector.

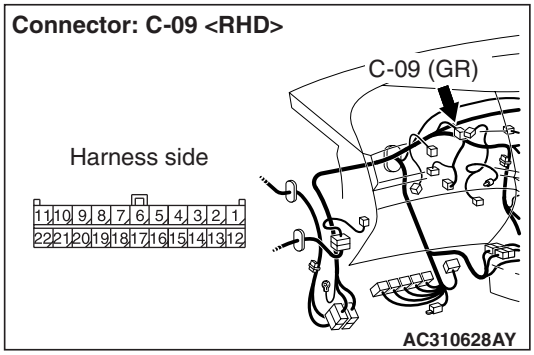
STEP 40. Voltage measurement at the C-09 joint connector (CAN2).

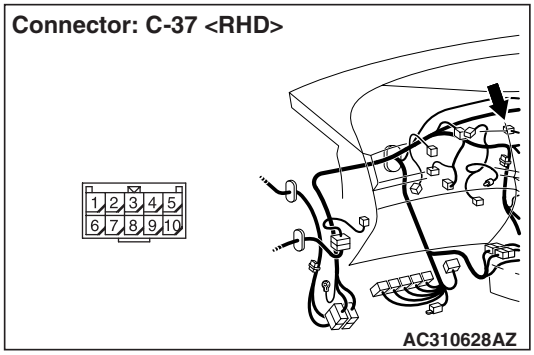
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

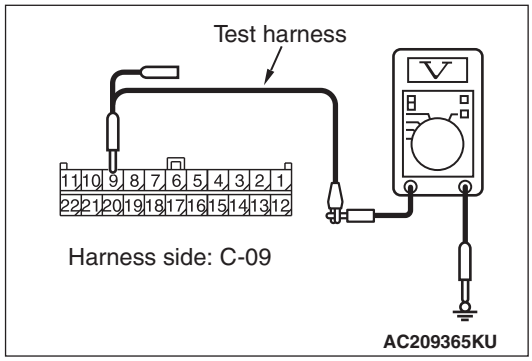
The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN2) and the jumper connector, and measure at the wiring harness side.

(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-09 joint connector (CAN2) terminal No.9 and body earth

OK: Less than 1.0 V

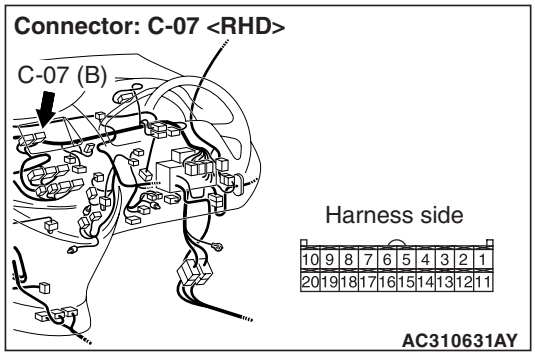
(4) Disconnect the negative battery terminal.

Q: Is the check result normal?

YES : <1.0 V or less> Go to Step 41.
NO : <more than 1.0 V> Repair the wiring harness between the joint connector (CAN2) and the jumper connector.

STEP 41. Connector check: C-07 centre display connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?
YES : Go to Step 42 .
NO : Repair the defective connector.

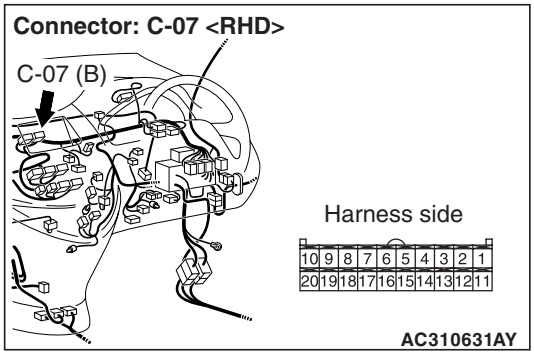
STEP 42. Voltage measurement at the C-37 jumper connector.

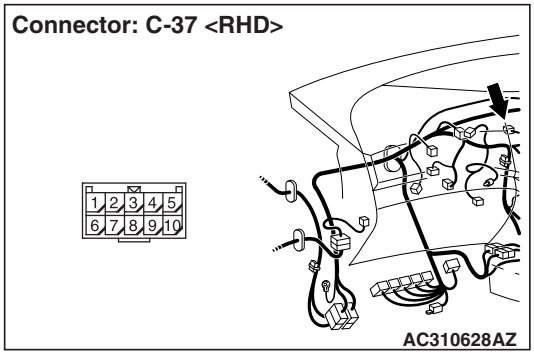
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

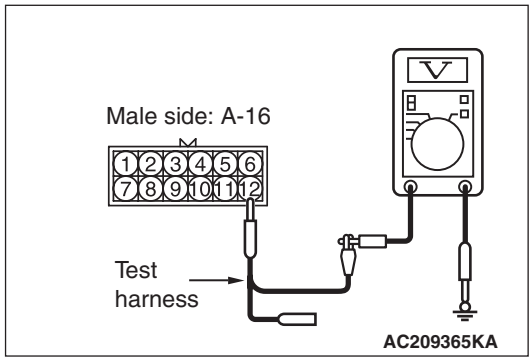
⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the centre display connector and the jumper connector, and measure at the jumper connector (at the centre display side).
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-37 jumper connector terminal

No.4 and body earth
OK: Less than 1.0 V

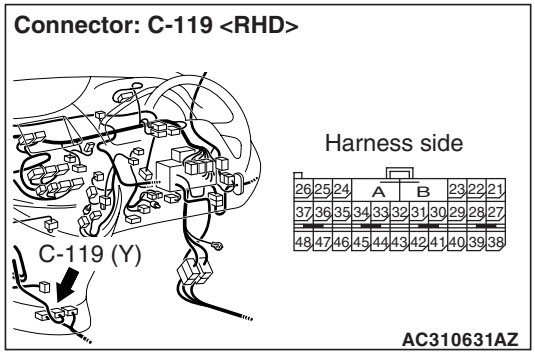
(4) Disconnect the negative battery terminal.

⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <less than 1.0 V> Follow diagnostic item 20 "Diagnose CAN bus lines thoroughly." Refer to P.54D-526.
NO : <1.0 V or more> Repair the wiring harness between the jumper connector and the centre display connector.

STEP 43. Connector check: C-119 SRS-ECU connector

⚠ CAUTION



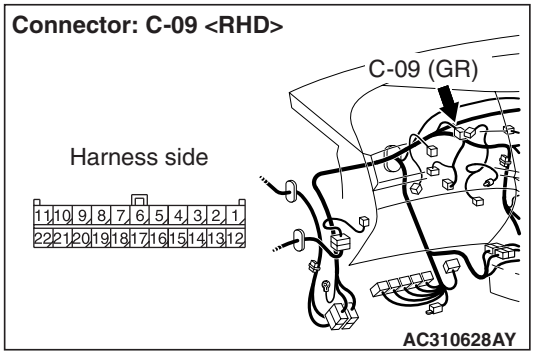
The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

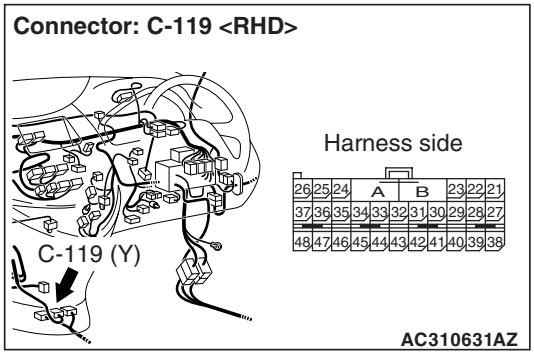
Q: Is the check result normal?
YES : Go to Step 44 .
NO : Repair the defective connector.

STEP 44. Voltage measurement at C-09 joint connector (CAN2).

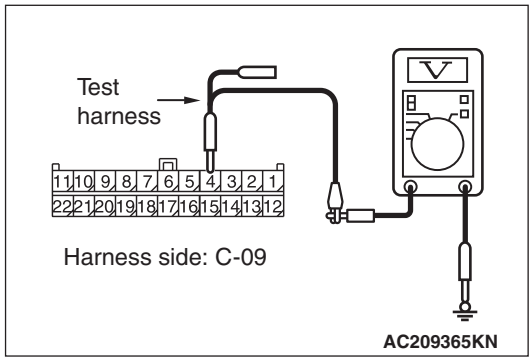
⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN2) and the SRS-ECU connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-09 joint connector (CAN2)

terminal No.4 and body earth
OK: Less than 1.0 V

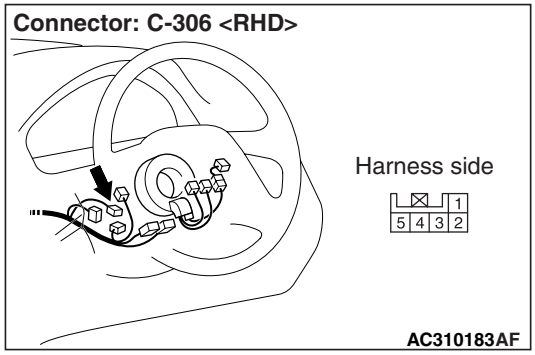
(4) Disconnect the negative battery terminal.

⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <less than 1.0 V> Follow diagnostic item 20 "Diagnose CAN bus lines thoroughly." Refer to P.54D-526.
NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN2) and the SRS-ECU connector.

STEP 45. Connector check: C-306 steering wheel angle sensor connector

⚠ CAUTION



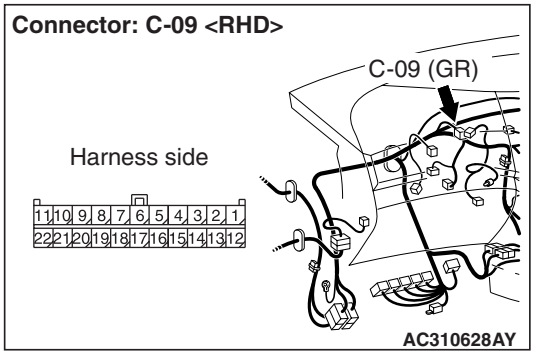
The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

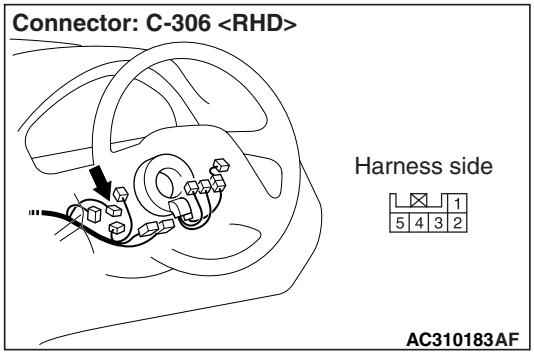
Q: Is the check result normal?
YES : Go to Step 46 .
NO : Repair the defective connector.

STEP 46. Voltage measurement at C-09 joint connector (CAN2).

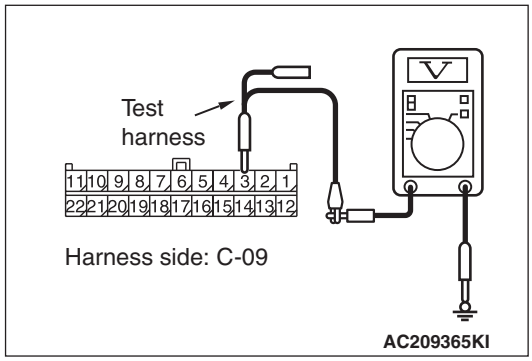
⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN2) and the steering wheel angle sensor connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-09 joint connector (CAN2)

terminal No.3 and body earth
OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <less than 1.0 V> Follow diagnostic item 20 "Diagnose CAN bus lines thoroughly." Refer to P.54D-526.
NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN2) and the steering wheel angle sensor connector.

terminal No.7 and body earth
OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

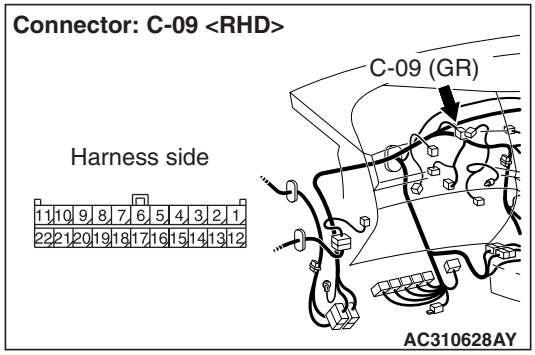
⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <less than 1.0 V> Follow diagnostic item 20 "Diagnose CAN bus lines thoroughly." Refer to P.54D-526.
NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN2) and the diagnosis connector.

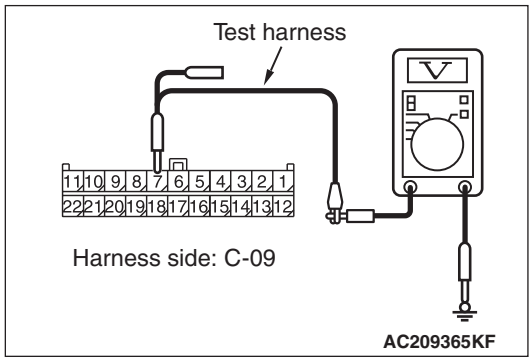
STEP 47. Voltage measurement at C-09 joint connector (CAN2).

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.

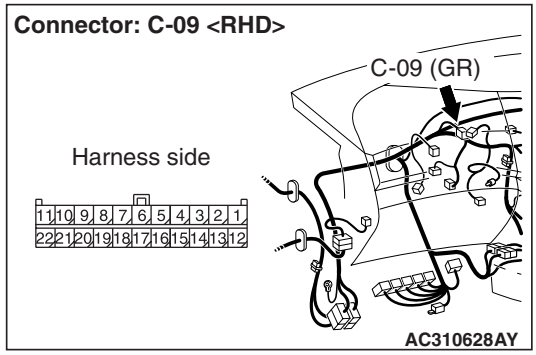


(3) Voltage between C-09 joint connector (CAN2)

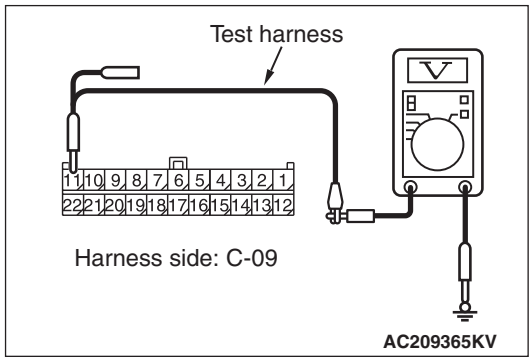
STEP 48. Voltage measurement at C-09 joint connector (CAN2).

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between C-09 joint connector (CAN2)

terminal No.11 and body earth
OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

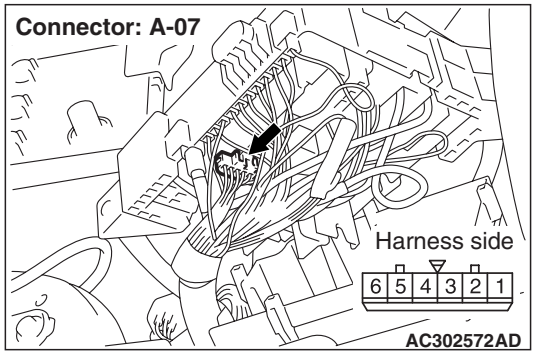
⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <less than 1.0 V> Follow diagnostic item 20 "Diagnose CAN bus lines thoroughly." Refer to P.54D-526.
NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN2) and the intermediate connector.

STEP 49. Connector check: A-07 joint connector (CAN1)

NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

When checking the joint connector, ensure that its wiring harness side is not damaged.

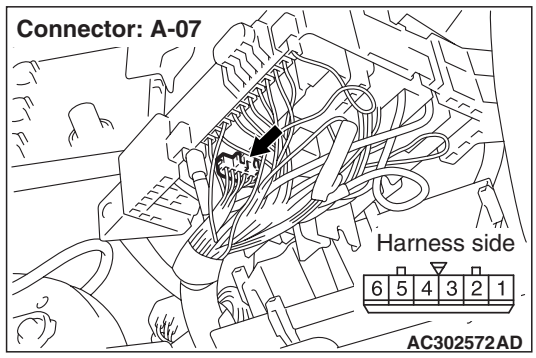
Q: Is the check result normal?
YES : Go to Step 50 .
NO : Repair a defective connector or replace the joint connector (front wiring harness assembly).

STEP 50. Voltage measurement at the A-07 joint connector (CAN1).

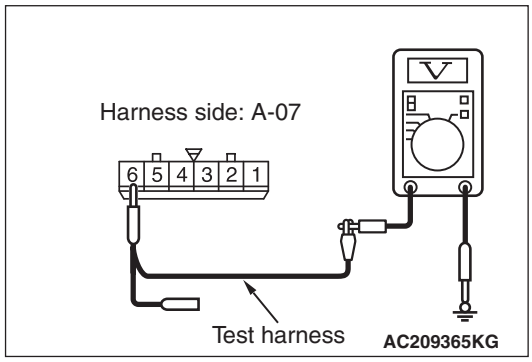
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

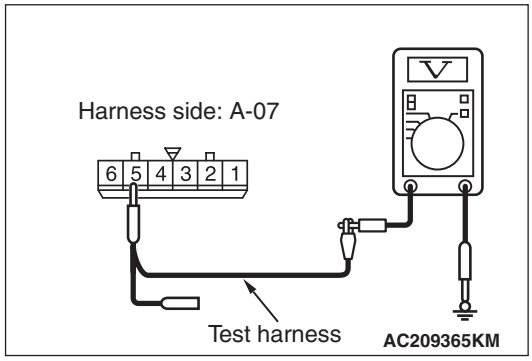
⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between A-07 joint connector (CAN1) terminal No.6 and body earth
OK: 4.0 V or less



(4) Voltage between A-07 joint connector (CAN1)

terminal No.5 and body earth

OK: 4.0 V or less

(5) Disconnect the negative battery terminal.

Q: Are the check result normal?

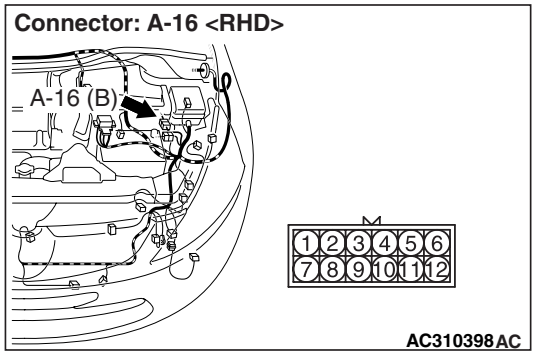
YES <all of the measurement results show 4.0 V or less> : Go to Step 56 .

NO <The voltage between terminal No.6 and body earth is more than 4.0 V> : Go to Step 51 .

NO <The voltage between terminal No.5 and body earth is more than 4.0 V> : Go to Step 54 .

STEP 51. Connector check: A-16 intermediate connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 52 .

NO : Repair the defective connector.

STEP 52. Voltage measurement at the A-07 joint connector (CAN1).

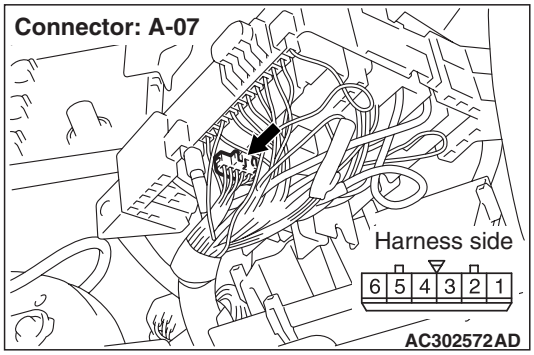
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

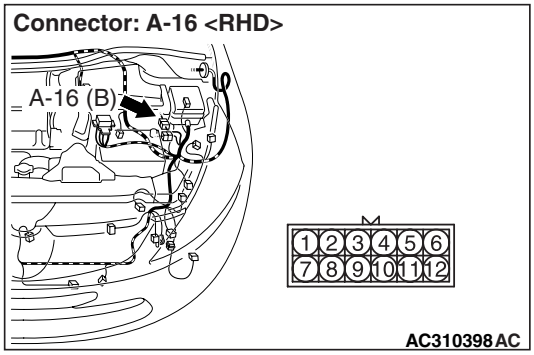
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

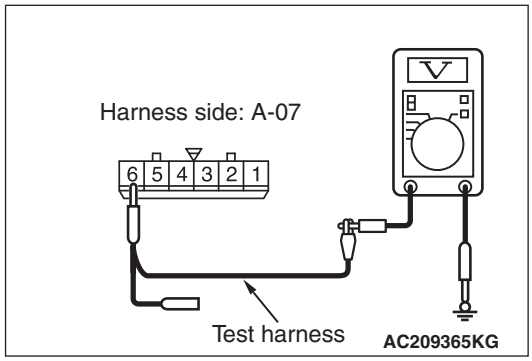
The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN1) and the intermediate connector, and measure at the wiring harness side.

(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between A-07 joint connector (CAN1) terminal No.6 and body earth

OK: 1.0 V or less

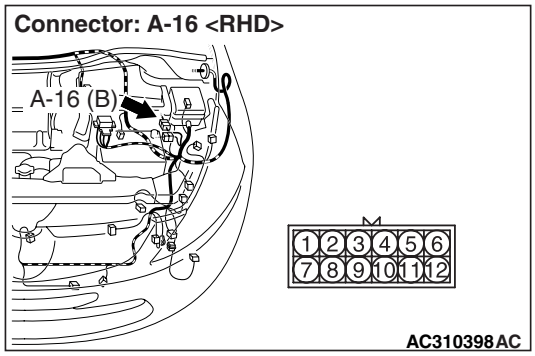
(4) Disconnect the negative battery terminal.

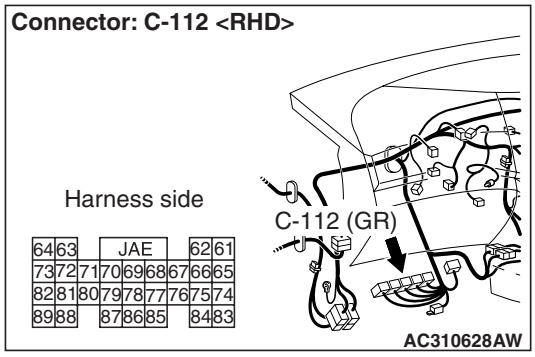
Q: Is the check result normal?
YES : <1.0 V or less> Go to Step 53.
NO : <more than 1.0 V> Repair the wiring harness between the joint connector (CAN1) and the intermediate connector.

STEP 53. Voltage measurement at the A-16 intermediate connector.

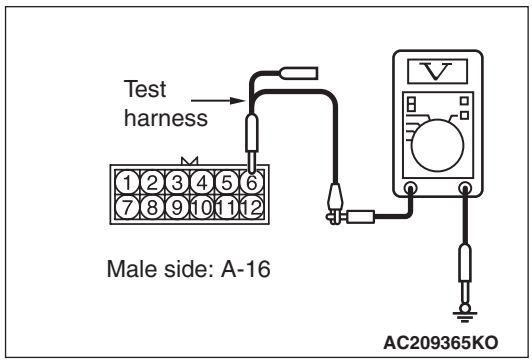
⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector and the intermediate connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



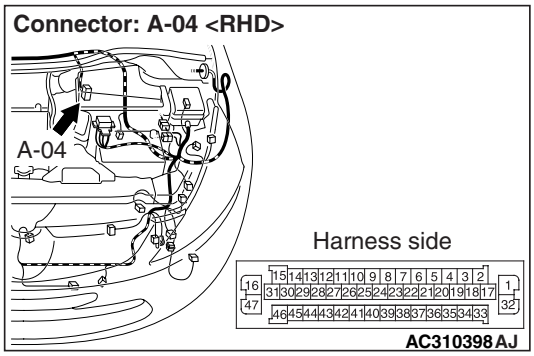
(3) Voltage between A-16 intermediate connector terminal No.6 and body earth
OK: Less than 1.0 V
(4) Disconnect the negative battery terminal.

⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <less than 1.0 V> Follow diagnostic item 20 "Diagnose CAN bus lines thoroughly." Refer to P.54D-526.
NO : <1.0 V or more> Repair the wiring harness between the intermediate connector and the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector.

STEP 54. Connector check: A-04 ASC-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?
YES : Go to Step 55 .
NO : Repair the defective connector.

STEP 55. Voltage measurement at the A-07 joint connector (CAN1).

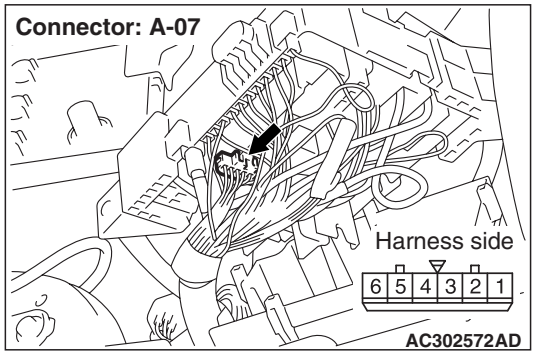
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

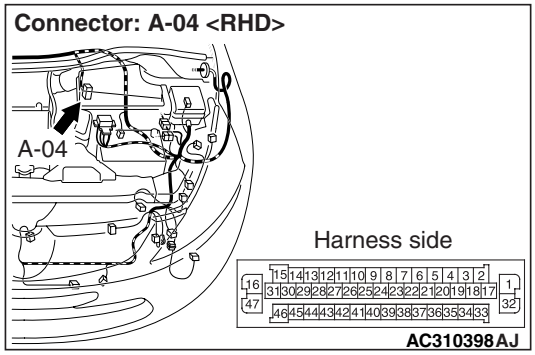
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

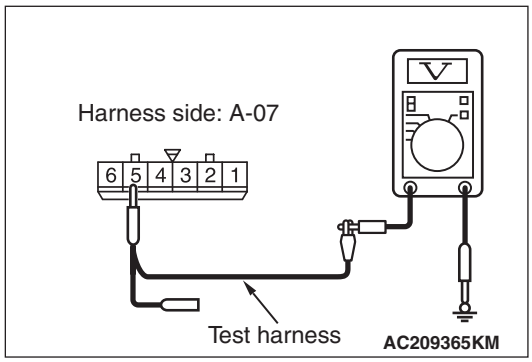
⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN1) and the ASC-ECU connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn the ignition switch to the ON position.



(3) Voltage between A-07 joint connector (CAN1) terminal No.5 and body earth

OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?

YES : <less than 1.0 V> Follow diagnostic item 20 "Diagnose CAN bus lines thoroughly." Refer to P.54D-526.

NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN1) and the ASC-ECU connector.

STEP 56. Voltage measurement at the A-07 joint connector (CAN1).

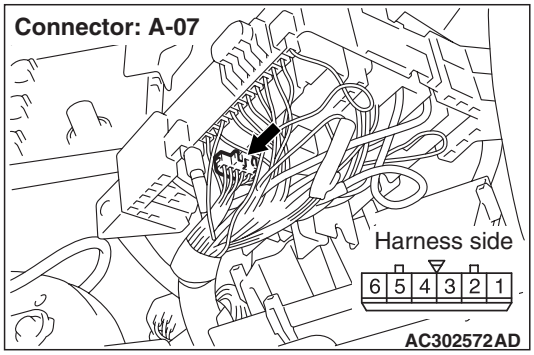
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

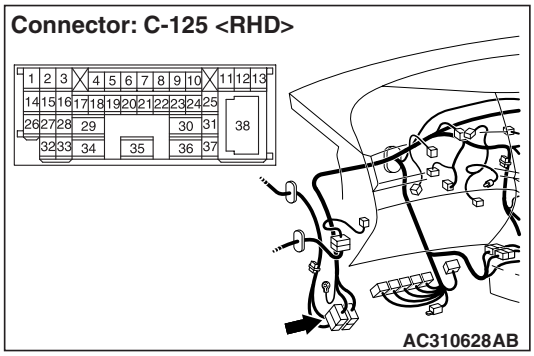
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

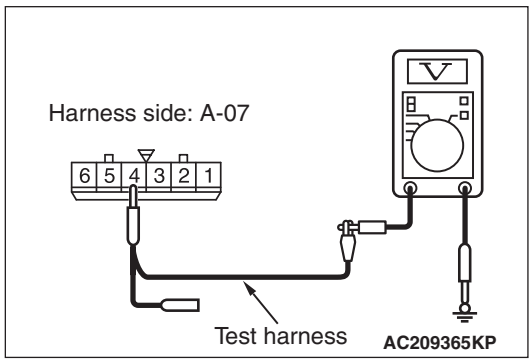
The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN1) and the intermediate connector, and measure at the wiring harness side.
(2) Connect the negative battery terminal, and turn

the ignition switch to the ON position.



(3) Voltage between A-07 joint connector (CAN1) terminal No.4 and body earth

OK: Less than 1.0 V

(4) Disconnect the negative battery terminal.

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?

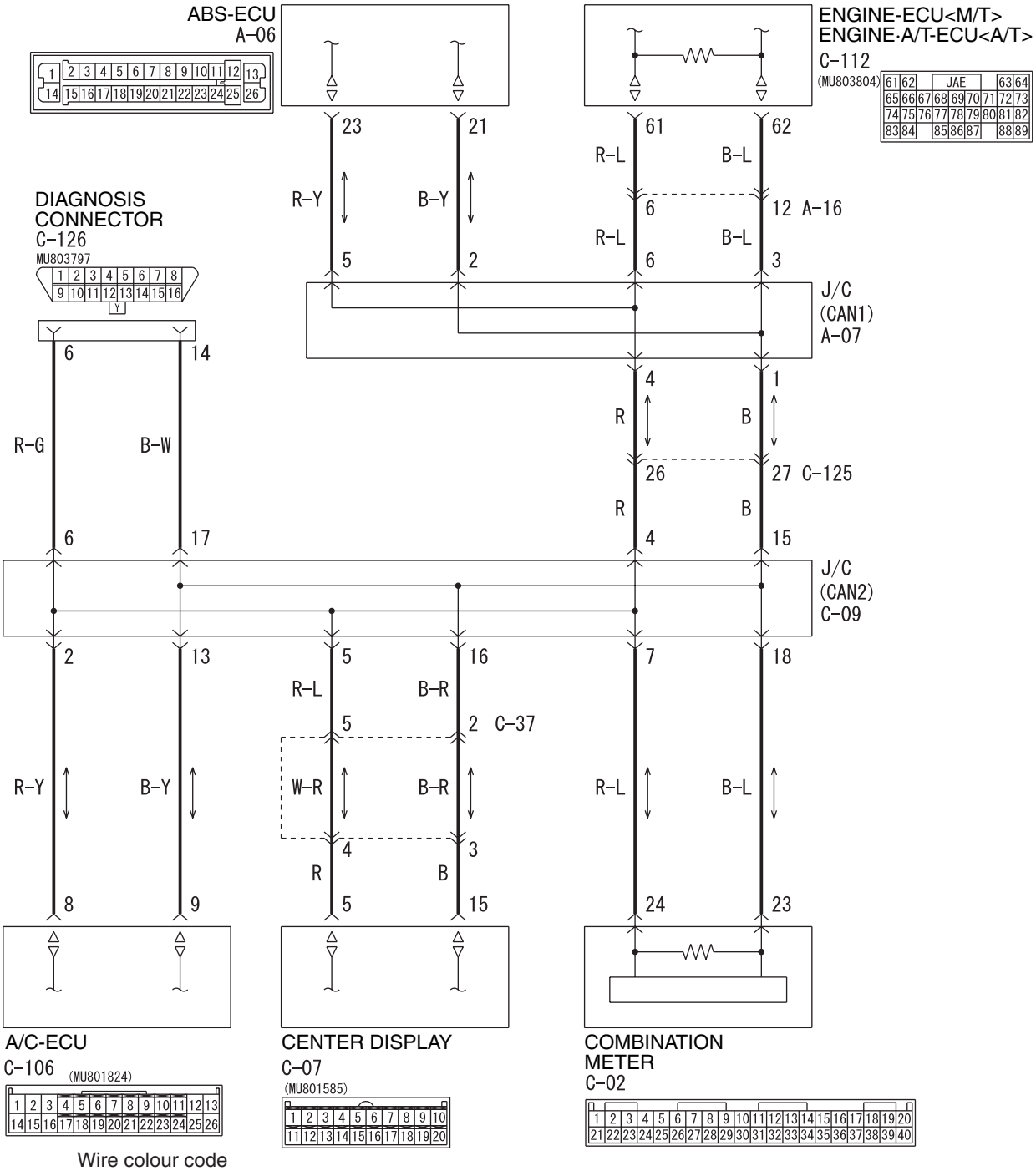
YES : <less than 1.0 V> Follow diagnostic item 20 "Diagnose CAN bus lines thoroughly." Refer to P.54D-526.

NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN1) and the intermediate connector.

Diagnostic Item 5: Diagnose the CAN bus lines for short to earth <LH drive vehicles without ASC>

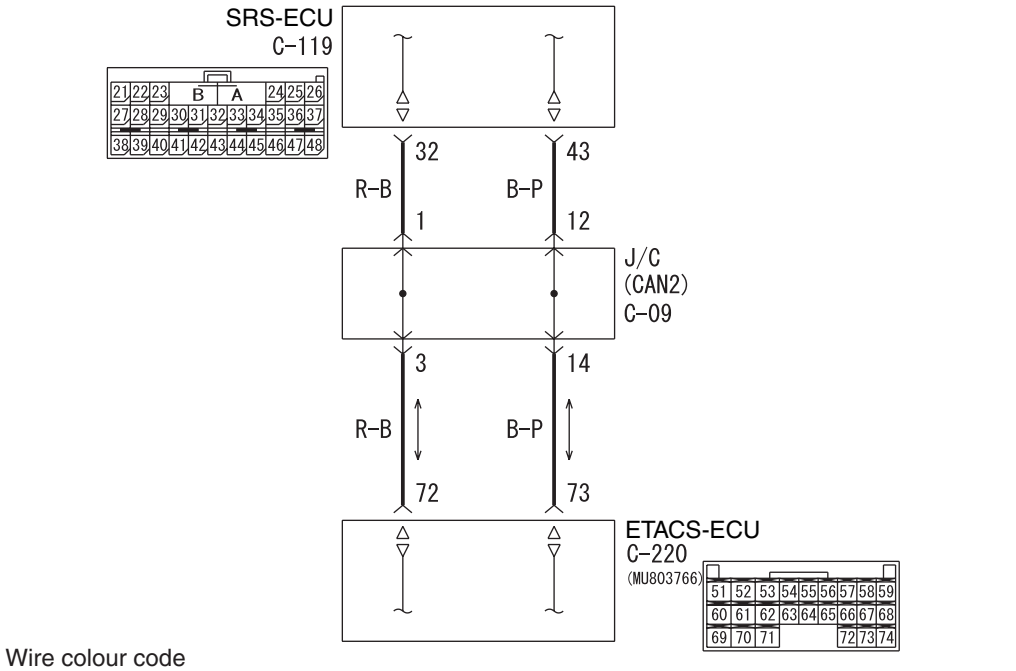
⚠ CAUTION

When servicing a CAN bus line, earth yourself by touching a metal object such as an unpainted water pipe. If you fail to do, a component connected to the CAN bus line may be broken.



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E18AA



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E19AA

TROUBLE JUDGMENT

The CAN bus line has been shorted to earth if the voltage between the CAN bus line (CAN_L or CAN_H) and body earth is less than 1.0 V. In this condition, an abnormal voltage may be measured at CAN_L and CAN_H lines.

COMMENTS ON TROUBLE SYMPTOM

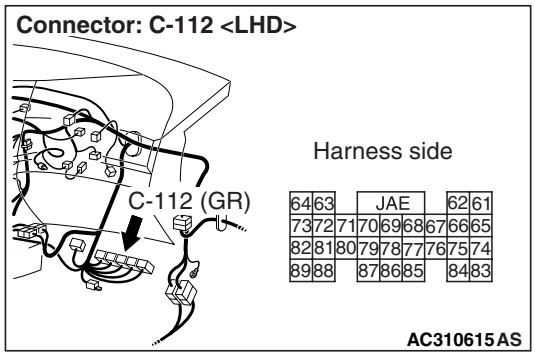
The wiring harness wire or connectors may have loose, corroded, or damage terminals, or terminals pushed back in the connector, or a ECU may be defective.

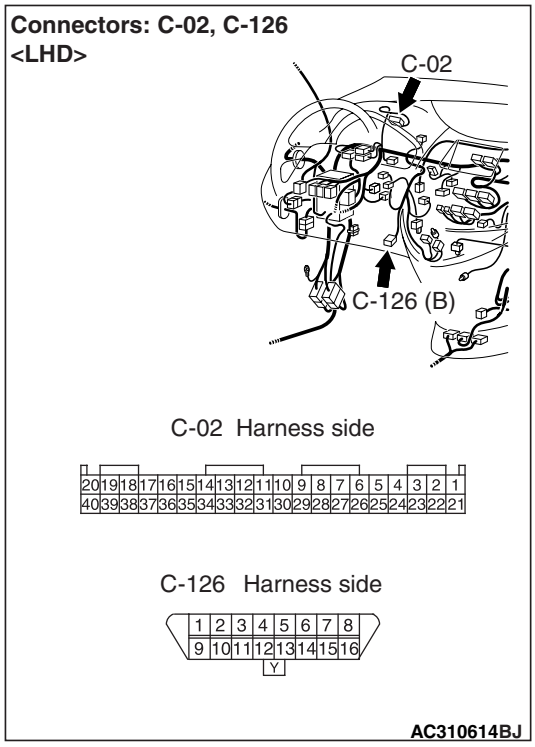
POSSIBLE CAUSES

- Damaged harness wires and connectors
- Malfunction of the ETACS-ECU
- Malfunction of the combination meter
- Malfunction of the A/C-ECU
- Malfunction of the SRS-ECU
- Malfunction of the multi-centre display
- Malfunction of the ABS-ECU
- Malfunction of the engine-ECU <M/T> or engine-A/T-ECU <A/T>

DIAGNOSTIC PROCEDURE

STEP 1. Connector check: C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector, C-02 combination meter connector and C-126 diagnosis connector





⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Are the check result normal?
YES : Go to Step 2 .
NO : Repair the defective connector.

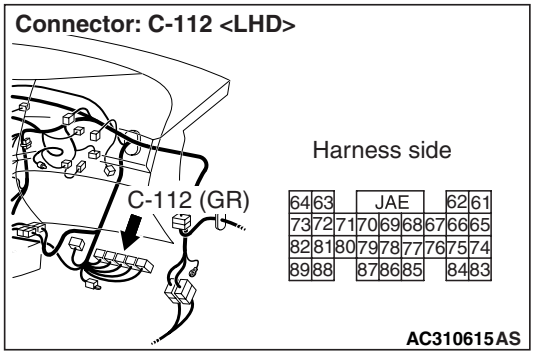
STEP 2. Resistance measurement at the C-126 diagnosis connector.

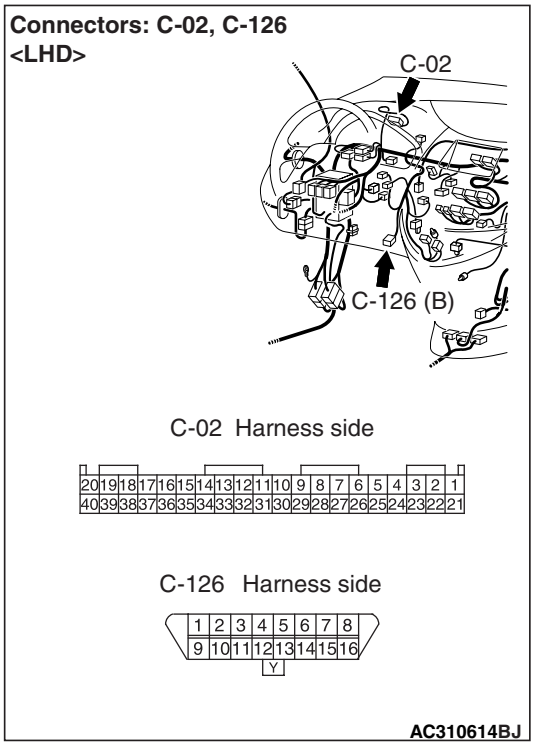
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





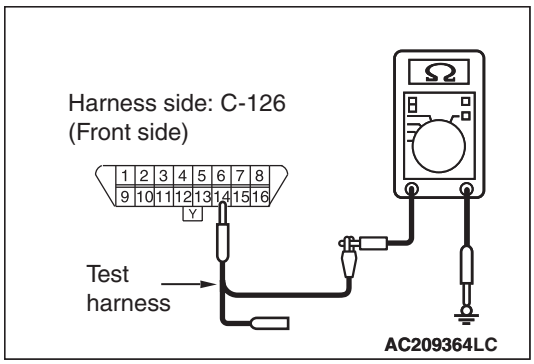
(1) Disconnect the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector and the combination meter connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

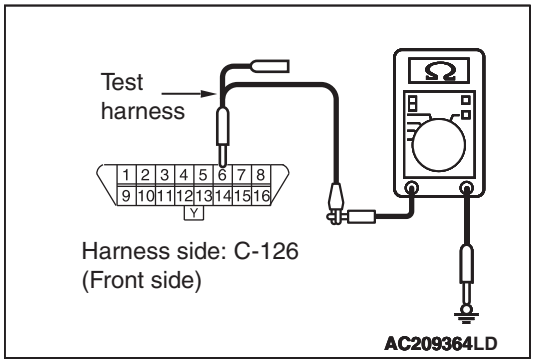
(2) Ensure that the negative battery terminal is

disconnected.



(3) Resistance between C-126 diagnosis connector terminal No.14 and body earth

OK: 1 kΩ or more



(4) Resistance between C-126 diagnosis connector terminal No.6 and body earth

OK: 1 kΩ or more

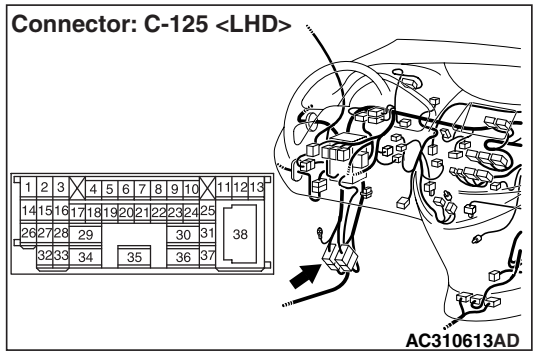
Q: Are the check result normal?

YES <all of the measurement results show 1 kΩ or more> : Follow diagnostic item 17, Diagnose CAN bus lines thoroughly. Refer to P.54D-452.

NO <The resistance between terminal No.14 and body earth is less than 1 kΩ> : Go to Step 3 .

NO <The resistance between terminal No.6 and body earth is less than 1 kΩ> : Go to Step 28 .

STEP 3. Connector check: C-125 intermediate connector



⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 4 .

NO : Repair the defective connector.

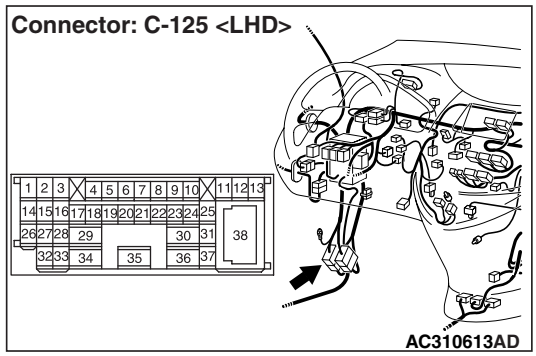
STEP 4. Resistance measurement at the C-125 intermediate connector.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



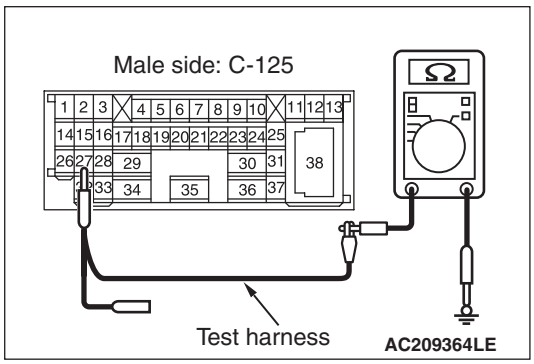
(1) Disconnect the connector, and measure at its male-side intermediate connector (at the front wiring harness side).

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is

disconnected.



(3) Resistance between C-125 intermediate connector terminal No.27 and body earth

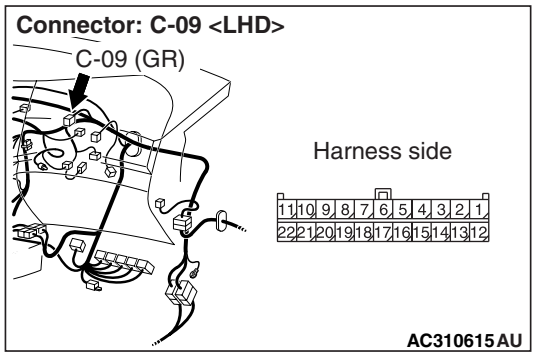
OK: 1 kΩ or more

Q: Is the check result normal?

YES : <1 kΩ or more> Go to Step 5.

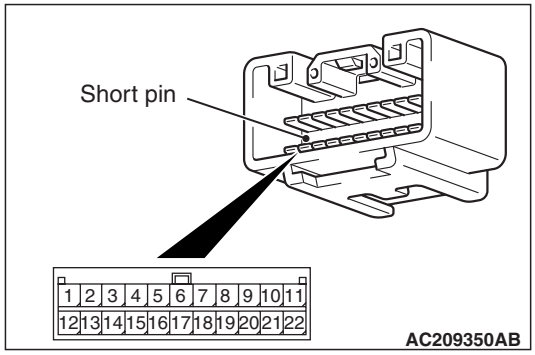
NO : <less than 1 kΩ> Go to Step 20.

STEP 5. Connector check: C-09 joint connector (CAN2)



⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.



When checking the joint connector, ensure that its wiring harness side and its short pins are not damaged.

Q: Is the check result normal?

YES : Go to Step 6 .

NO : Repair a defective connector or replace the joint connector.

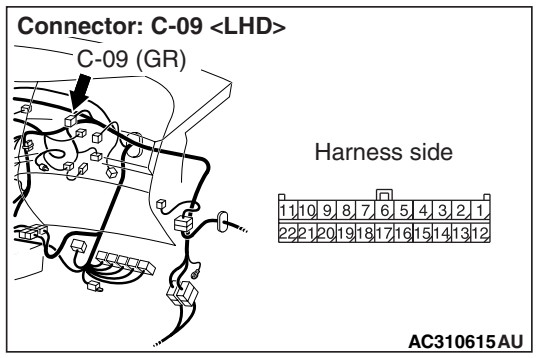
STEP 6. Resistance measurement at C-09 joint connector (CAN2).

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.

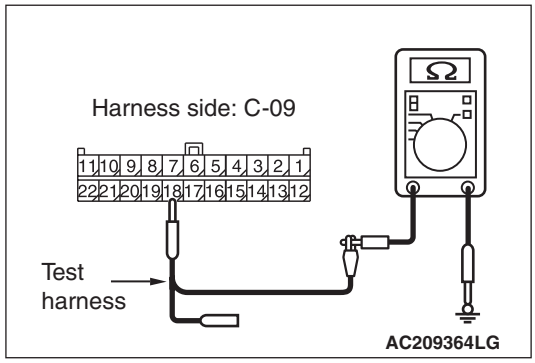


(1) Disconnect the connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

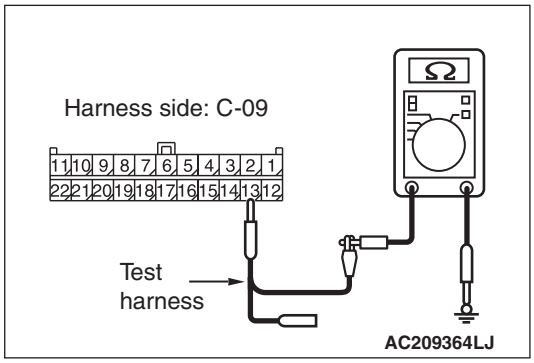
(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2)

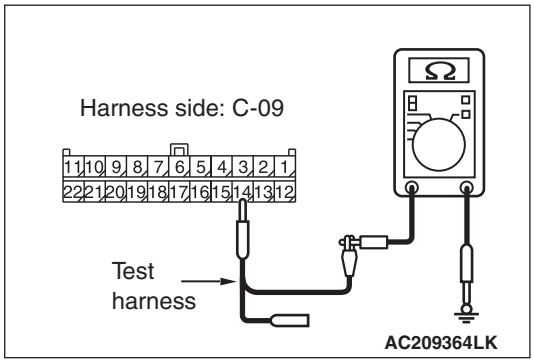
terminal No.18 and body earth

OK: 1 kΩ or more



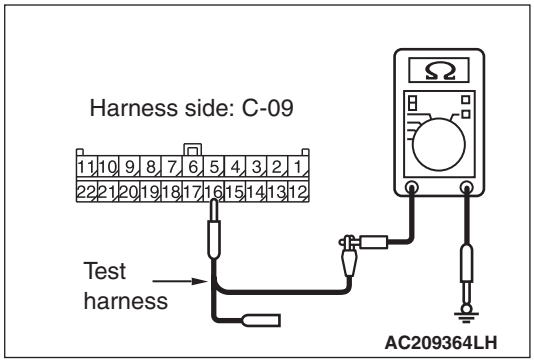
(4) Resistance between C-09 joint connector (CAN2) terminal No.13 and body earth

OK: 1 kΩ or more



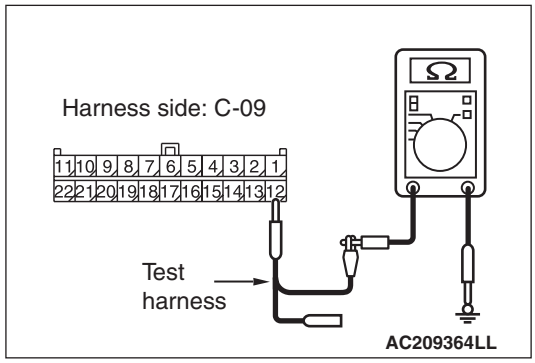
(5) Resistance between C-09 joint connector (CAN2) terminal No.14 and body earth

OK: 1 kΩ or more



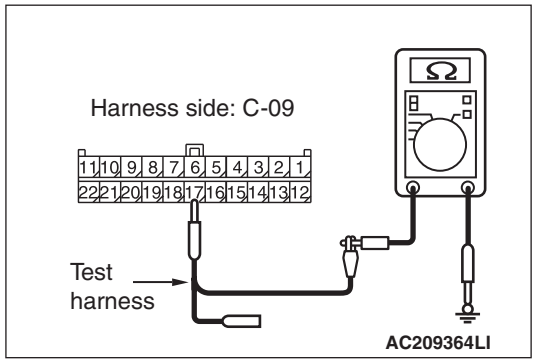
(6) Resistance between C-09 joint connector (CAN2) terminal No.16 and body earth

OK: 1 kΩ or more



(7) Resistance between C-09 joint connector (CAN2) terminal No.12 and body earth

OK: 1 kΩ or more



(8) Resistance between C-09 joint connector (CAN2) terminal No.17 and body earth

OK: 1 kΩ or more

Q: Are the check result normal?

YES <all of the measurement results show 1 kΩ or more> : Go to Step 19 .

NO <The resistance between terminal No.18 and body earth is less than 1 kΩ> : Go to Step 7 .

NO <The resistance between terminal No.13 and body earth is less than 1 kΩ> : Go to Step 8 .

NO <The resistance between terminal No.14 and body earth is less than 1 kΩ> : Go to Step 10 .

NO <The resistance between terminal No.16 and body earth is less than 1 kΩ> : Go to Step 12 .

NO <The resistance between terminal No.12 and body earth is less than 1 kΩ> : Go to Step 16 .

NO <The resistance between terminal No.17 and body earth is less than 1 kΩ> : Go to Step 18 .

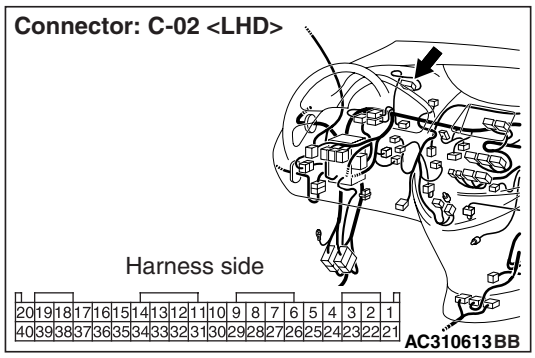
STEP 7. Resistance measurement at C-09 joint connector (CAN2).

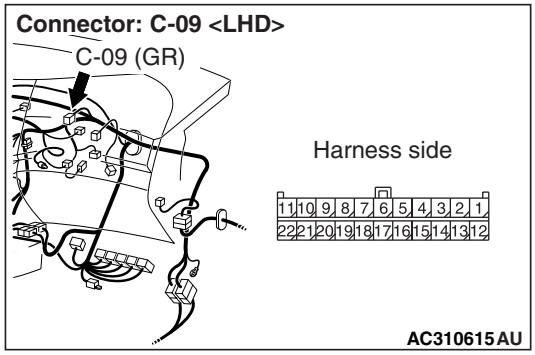
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



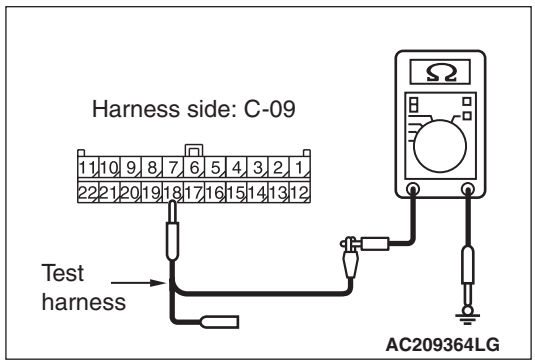


(1) Disconnect the joint connector (CAN2) and the combination meter connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2) terminal No.18 and body earth

OK: 1 kΩ or more

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

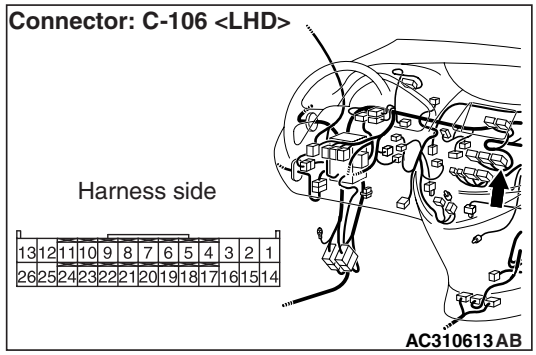
Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 17, Diagnose CAN bus lines thoroughly. Refer to P.54D-452.

NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the combination meter connector.

STEP 8. Connector check: C-106 A/C-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 9 .

NO : Repair the defective connector.

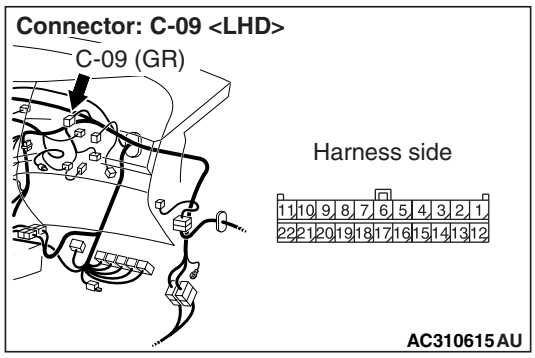
STEP 9. Resistance measurement at C-09 joint connector (CAN2).

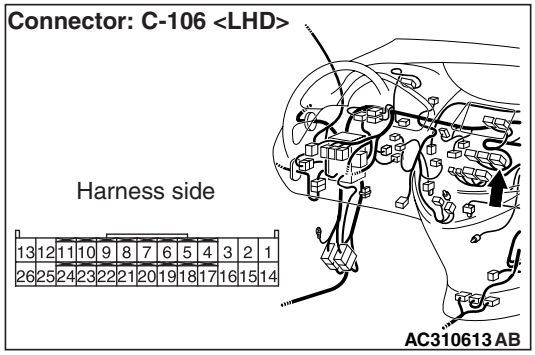
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



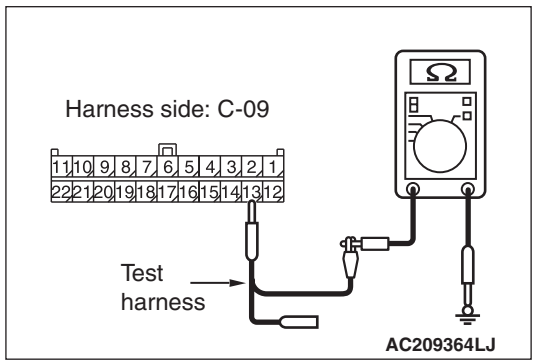


(1) Disconnect the joint connector (CAN2) and the A/C-ECU connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2) terminal No.13 and body earth

OK: 1 kΩ or more

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

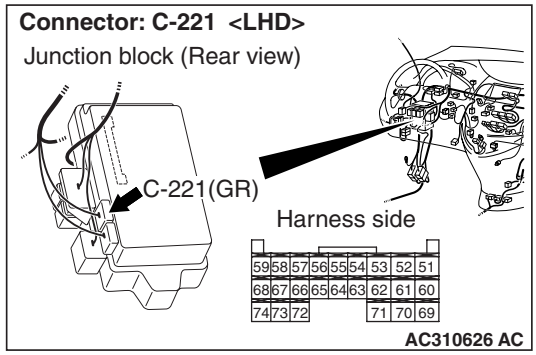
Q: Is the check result normal?

YES : <less than 1.0 V> Follow diagnostic item 17 "Diagnose CAN bus lines thoroughly." Refer to P.54D-452.

NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN2) and the A/C-ECU connector.

STEP 10. Connector check: C-221 ETACS-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 11 .

NO : Repair the defective connector.

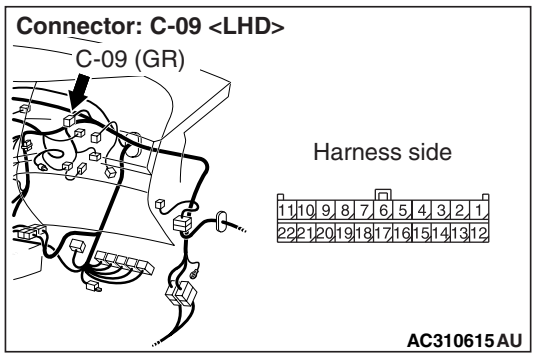
STEP 11. Resistance measurement at C-09 joint connector (CAN2).

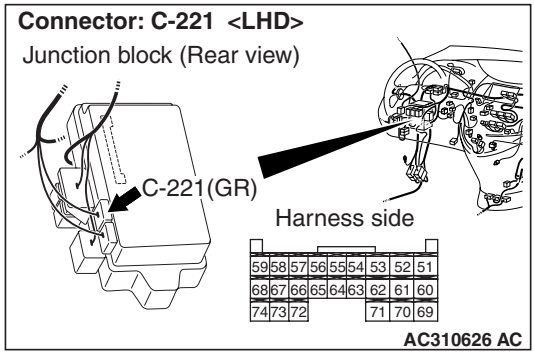
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



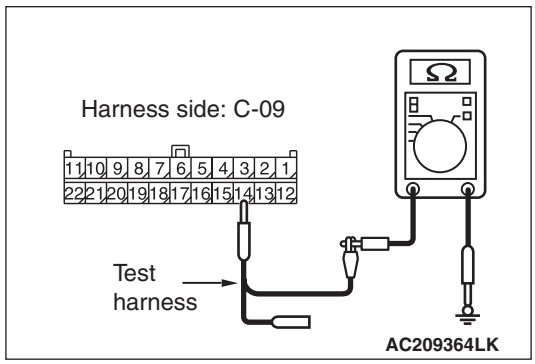


(1) Disconnect the joint connector (CAN2) and the ETACS-ECU connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2) terminal No.14 and body earth

OK: 1 kΩ or more

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

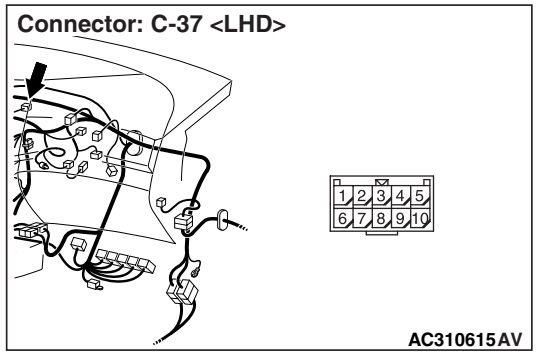
Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 17, Diagnose CAN bus lines thoroughly. Refer to P.54D-452.

NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the ETACS-ECU connector.

STEP 12. Connector check: C-37 jumper connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Check that the wiring harness of the jumper connector is not damaged.

Q: Is the check result normal?

YES : Go to Step 13 .

NO : Repair the defective connector.

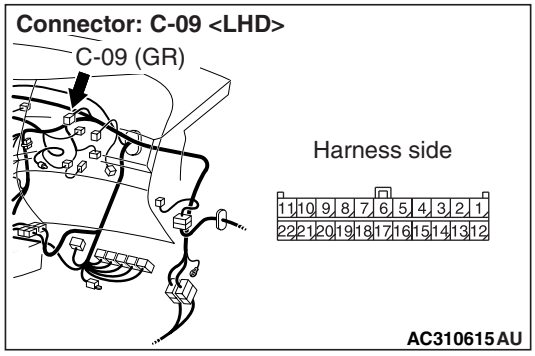
STEP 13. Resistance measurement at the C-09 joint connector (CAN2).

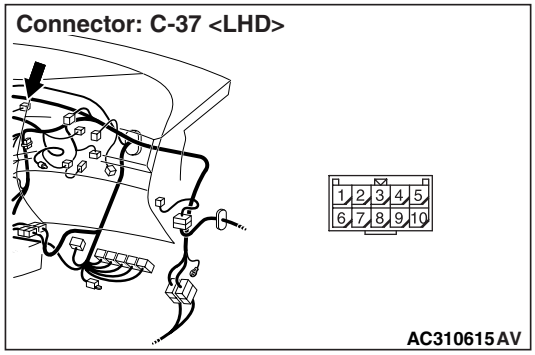
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



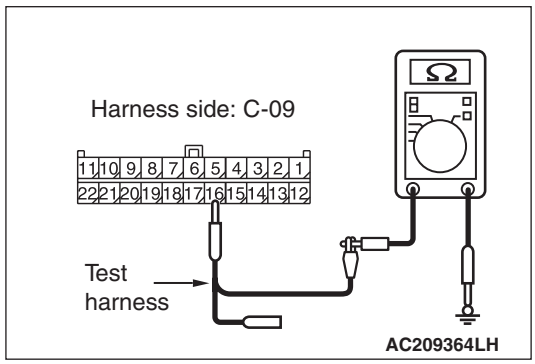


(1) Disconnect the joint connector (CAN2) and the jumper connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2) terminal No.16 and body earth

OK: 1 kΩ or more

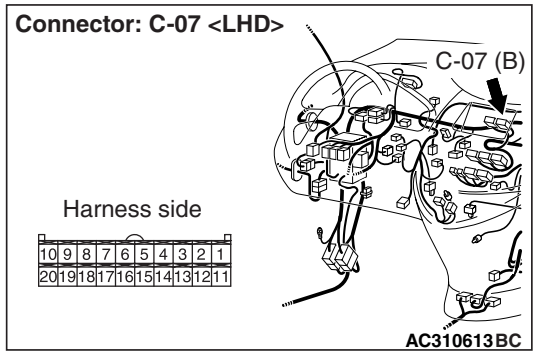
Q: Is the check result normal?

YES : <1 kΩ or more> Go to Step 14.

NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the jumper connector.

STEP 14. Connector check: C-07 centre display connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 15 .

NO : Repair the defective connector.

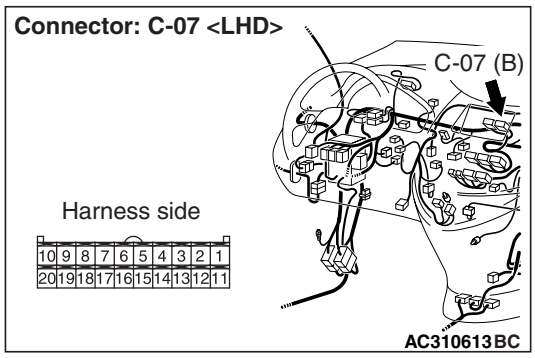
STEP 15. Resistance measurement at the C-37 jumper connector.

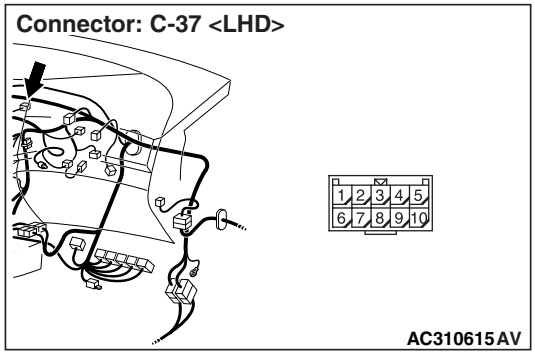
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



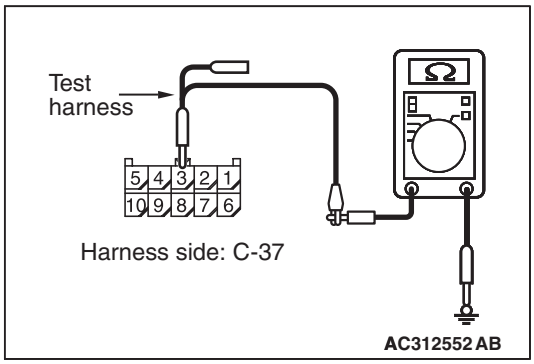


(1) Disconnect the centre display connector and the jumper connector, and measure at the jumper connector (at the centre display side).

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-37 jumper connector terminal No.3 and body earth

OK: 1 kΩ or more

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

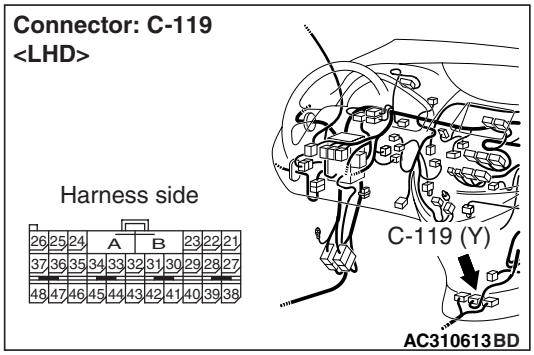
Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 17, Diagnose CAN bus lines thoroughly. Refer to P.54D-452.

NO : <less than 1 Ω> Repair the wiring harness between the jumper connector and the centre display connector.

STEP 16. Connector check: C-119 SRS-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 17 .

NO : Repair the defective connector.

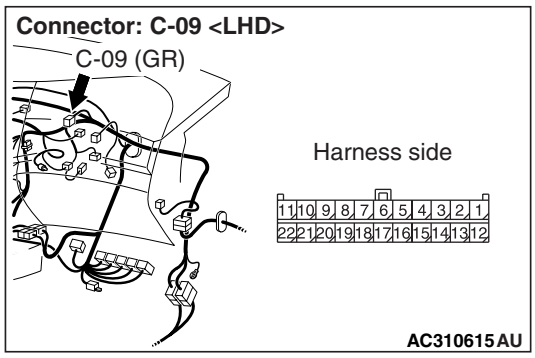
STEP 17. Resistance measurement at C-09 joint connector (CAN2).

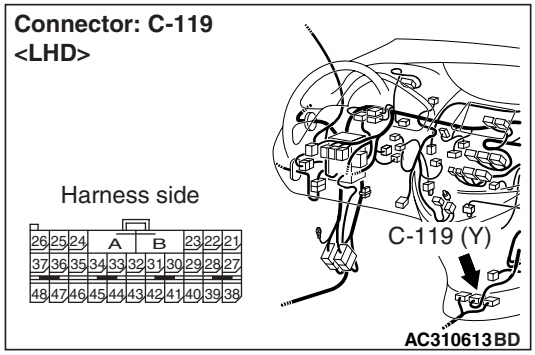
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



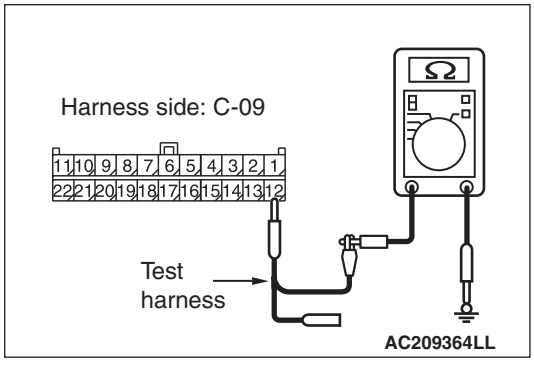


(1) Disconnect the joint connector (CAN2) and the SRS-ECU connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2) terminal No.12 and body earth

OK: 1 kΩ or more

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 17, Diagnose CAN bus lines thoroughly. Refer to P.54D-452.

NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the SRS-ECU connector.

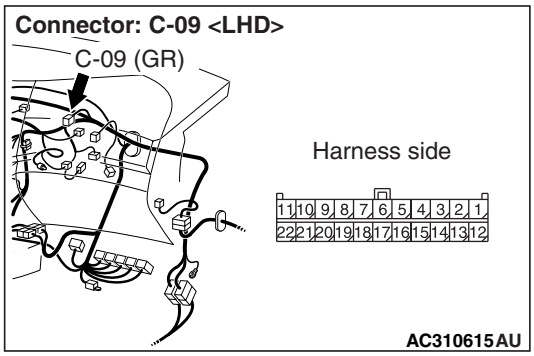
STEP 18. Resistance measurement at C-09 joint connector (CAN2).

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.

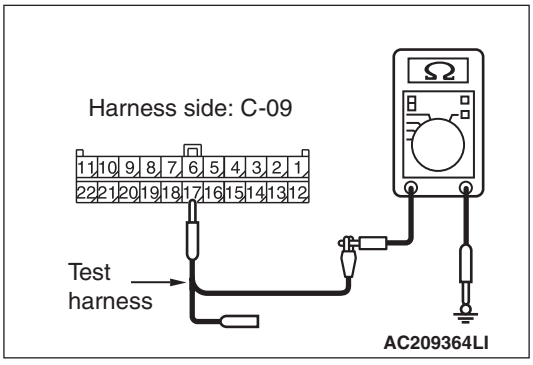


(1) Disconnect the connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2)

terminal No.17 and body earth
OK: 1 kΩ or more

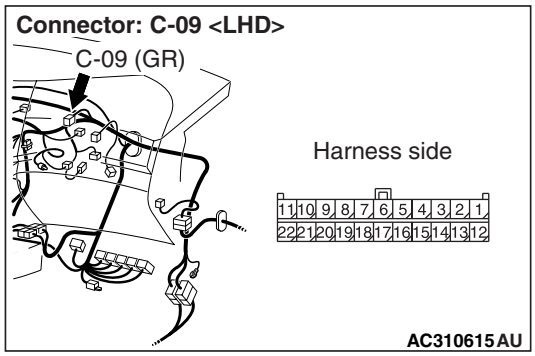
⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <1 kΩ or more> Follow diagnostic item 17, Diagnose CAN bus lines thoroughly. Refer to P.54D-452.
NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the diagnosis connector.

STEP 19. Resistance measurement at C-09 joint connector (CAN2).

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

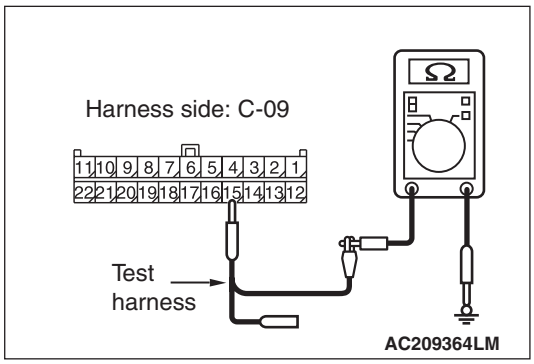
⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the connector, and measure at the wiring harness side.

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2)

terminal No.15 and body earth
OK: 1 kΩ or more

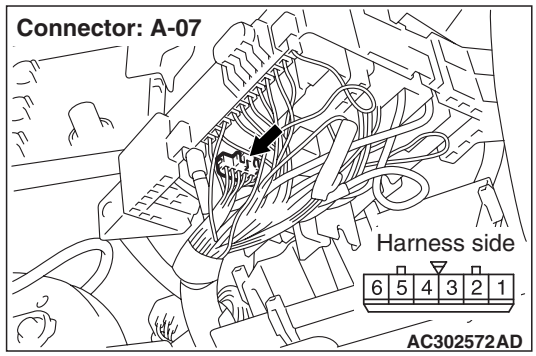
⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <1 kΩ or more> Follow diagnostic item 17, Diagnose CAN bus lines thoroughly. Refer to P.54D-452.
NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the intermediate connector.

STEP 20. Connector check: A-07 joint connector (CAN1)

NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

When checking the joint connector, ensure that its wiring harness side is not damaged.

Q: Is the check result normal?
YES : Go to Step 21 .
NO : Repair a defective connector or replace the joint connector (front wiring harness assembly).

STEP 21. Resistance measurement at the A-07 joint connector (CAN1).

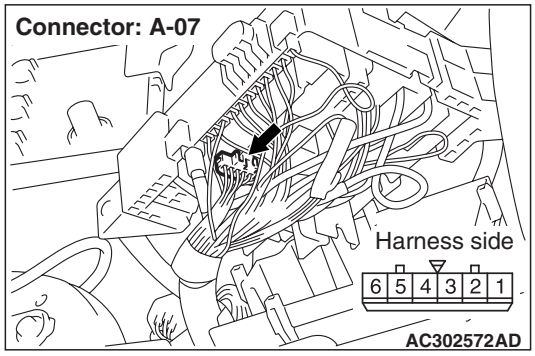
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.

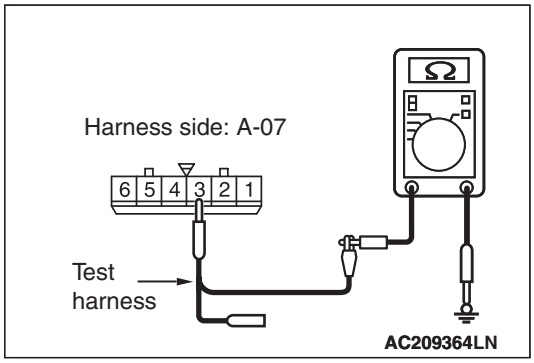


(1) Disconnect the connector, and measure at the wiring harness side.

⚠ CAUTION

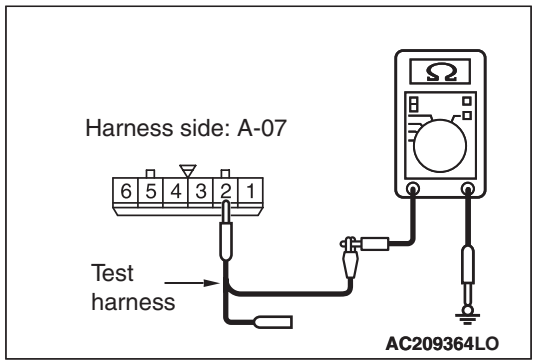
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between A-07 joint connector (CAN1) terminal No.3 and body earth

OK: 1 kΩ or more



(4) Resistance between A-07 joint connector (CAN1) terminal No.2 and body earth

OK: 1 kΩ or more

Q: Are the check result normal?

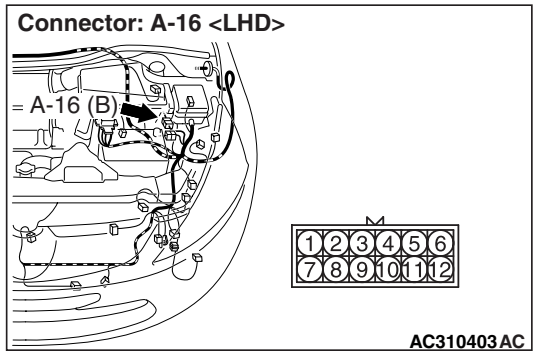
YES <all of the measurement results show 1 kΩ or more> : Go to Step 27 .

NO <The resistance between terminal No.3 and body earth is less than 1 kΩ> : Go to Step 22 .

NO <The resistance between terminal No.2 and body earth is less than 1 kΩ> : Go to Step 25 .

STEP 22. Connector check: A-16 intermediate connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 23 .

NO : Repair the defective connector.

STEP 23. Resistance measurement at the A-07 joint connector (CAN1).

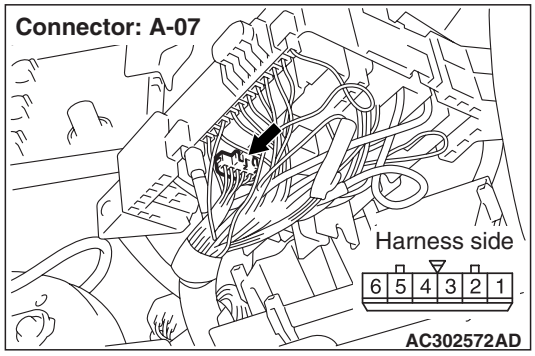
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

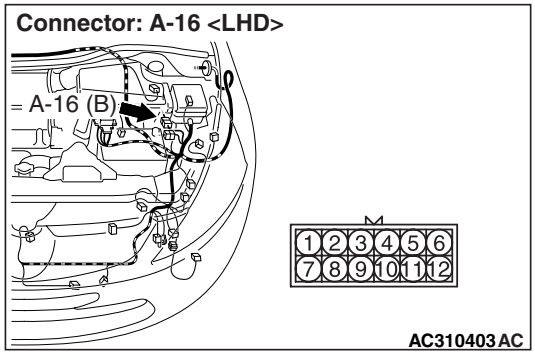
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



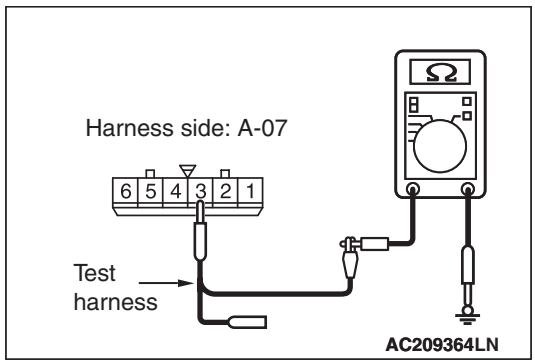


(1) Disconnect the joint connector (CAN1) and the intermediate connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between A-07 joint connector (CAN1) terminal No.3 and body earth

OK: 1 kΩ or more

Q: Is the check result normal?

YES : <1 kΩ or more> Go to Step 24.

NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN1) and the intermediate connector.

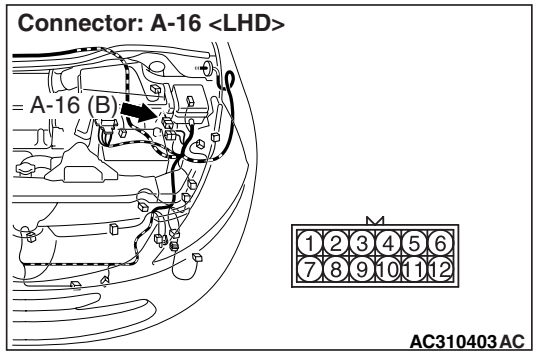
STEP 24. Resistance measurement at the A-16 intermediate connector.

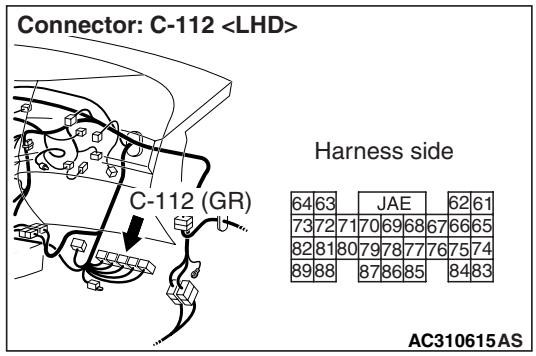
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





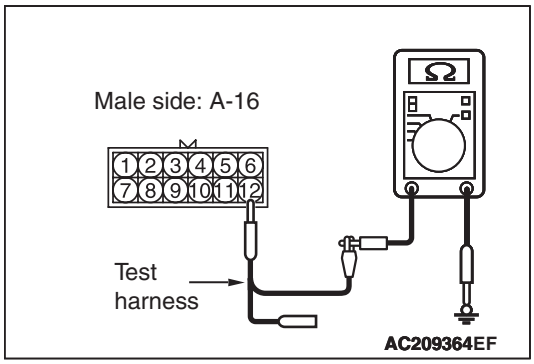
(1) Disconnect the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector and the

intermediate connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between A-16 intermediate connector terminal No.12 and body earth

OK: 1 kΩ or more

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

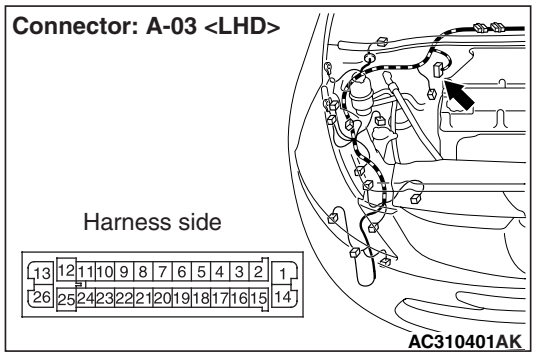
Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 17, Diagnose CAN bus lines thoroughly. Refer to P.54D-452.

NO : <less than 1 Ω> Repair the wiring harness between the intermediate connector and the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector.

STEP 25. Connector check: A-03 ABS-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 26 .

NO : Repair the defective connector.

STEP 26. Resistance measurement at the A-07 joint connector (CAN1).

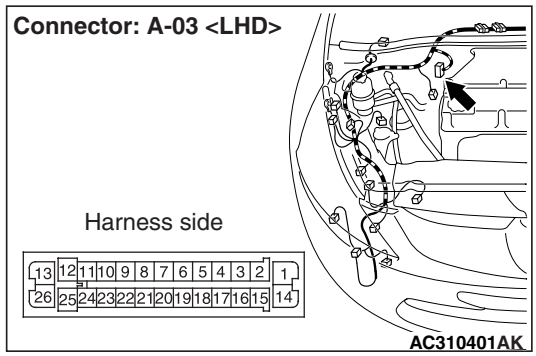
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

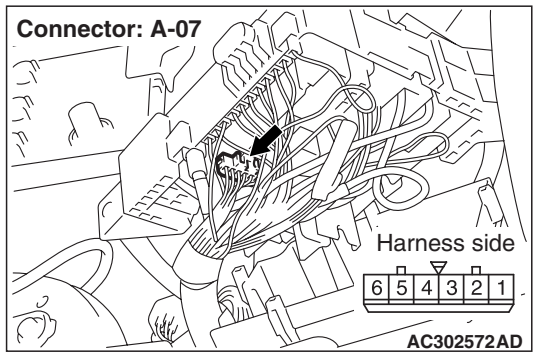
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





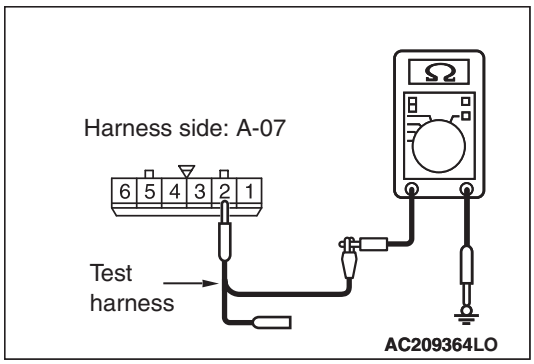
(1) Disconnect the joint connector (CAN1) and the ABS-ECU connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is

disconnected.



(3) Resistance between A-07 joint connector (CAN1) terminal No.2 and body earth

OK: 1 kΩ or more

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 17, Diagnose CAN bus lines thoroughly. Refer to P.54D-452.

NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN1) and the ABS-ECU connector.

STEP 27. Resistance measurement at the A-07 joint connector (CAN1).

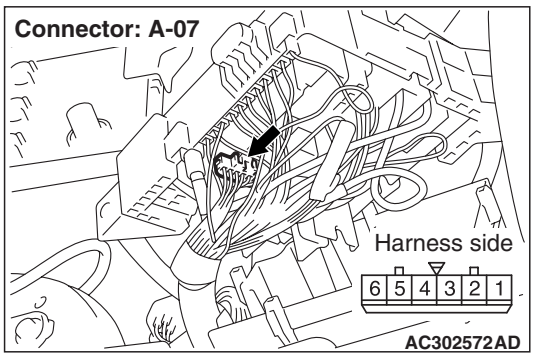
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

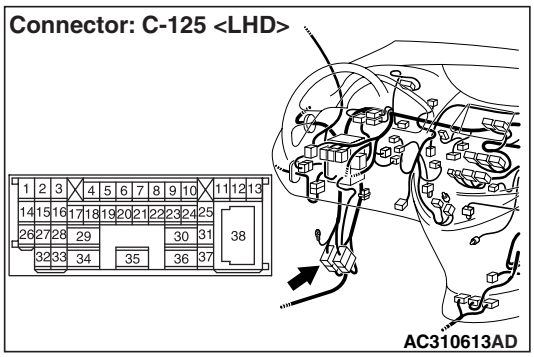
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





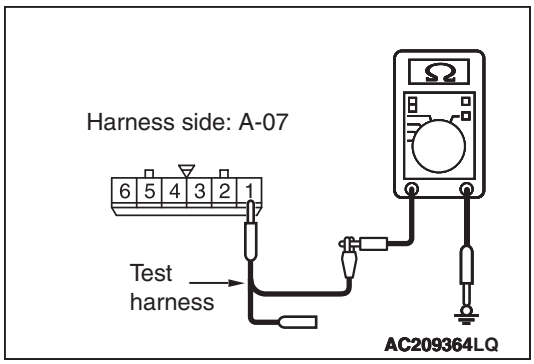
(1) Disconnect the joint connector (CAN1) and the intermediate connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is

disconnected.



(3) Resistance between A-07 joint connector (CAN1) terminal No.1 and body earth

OK: 1 kΩ or more

⚠ CAUTION

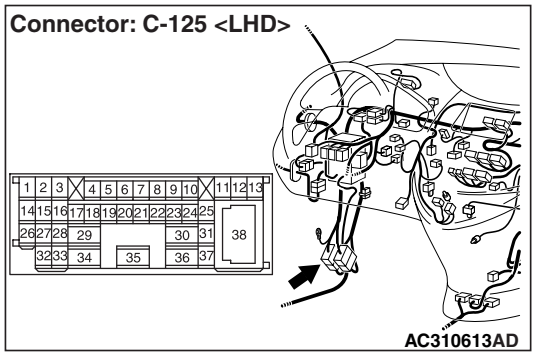
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 17, Diagnose CAN bus lines thoroughly. Refer to P.54D-452.

NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN1) and the intermediate connector.

STEP 28. Connector check: C-125 intermediate connector



⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 29 .

NO : Repair the defective connector.

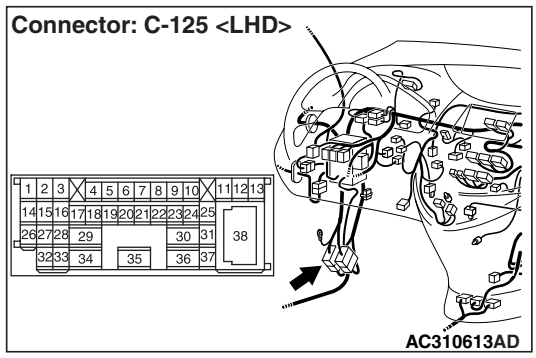
STEP 29. Resistance measurement at the C-125 intermediate connector.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.

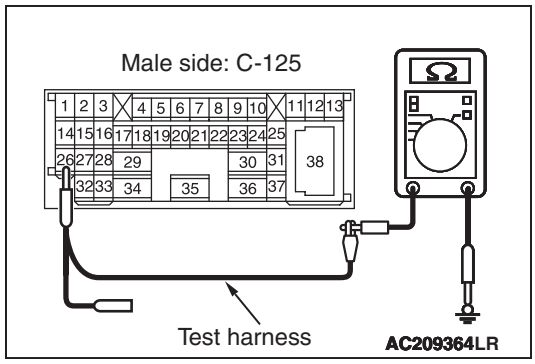


(1) Disconnect the connector, and measure at its male-side intermediate connector (at the front wiring harness side).

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-125 intermediate connector terminal No.26 and body earth

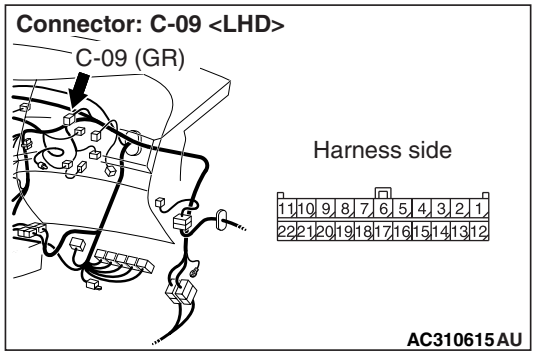
OK: 1 kΩ or more

Q: Is the check result normal?

YES : <1 kΩ or more> Go to Step 30.

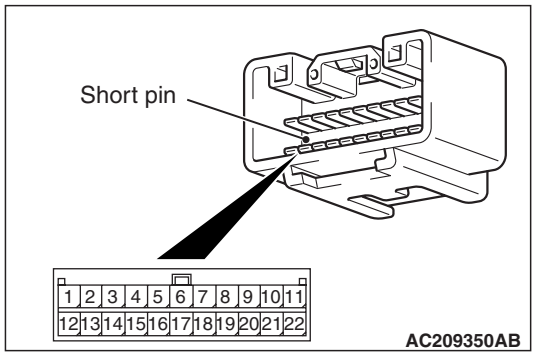
NO : <less than 1 kΩ> Go to Step 45.

STEP 30. Connector check: C-09 joint connector (CAN2)



⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.



When checking the joint connector, ensure that its wiring harness side and its short pins are not damaged.

Q: Is the check result normal?

YES : Go to Step 31 .

NO : Repair a defective connector or replace the joint connector.

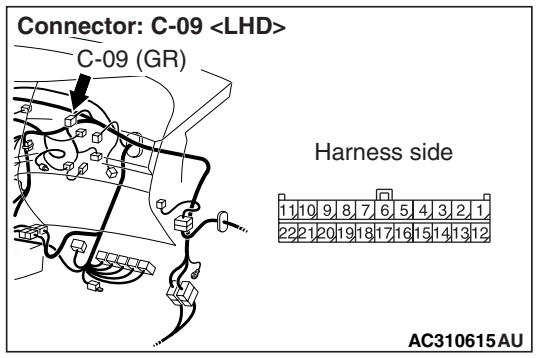
STEP 31. Resistance measurement at C-09 joint connector (CAN2).

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.

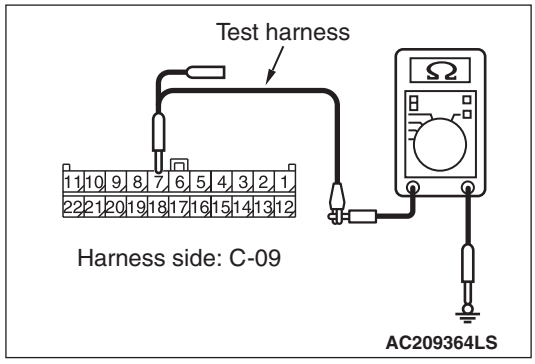


(1) Disconnect the connector, and measure at the wiring harness side.

⚠ CAUTION

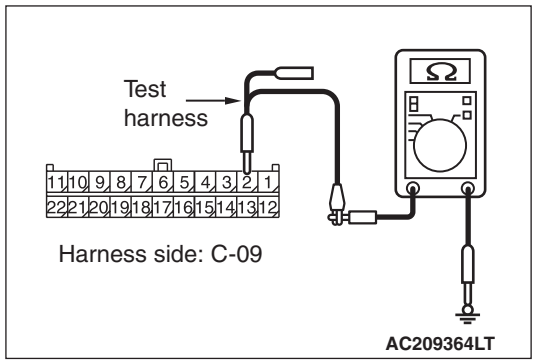
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2) terminal No.7 and body earth

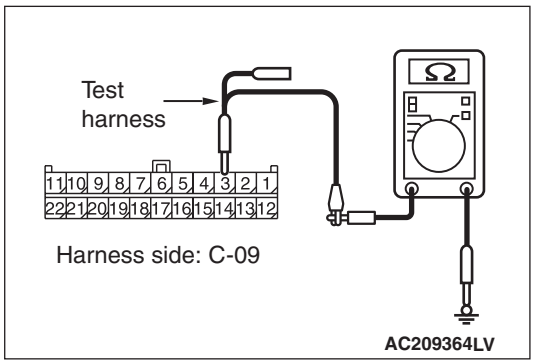
OK: 1 kΩ or more



(4) Resistance between C-09 joint connector (CAN2)

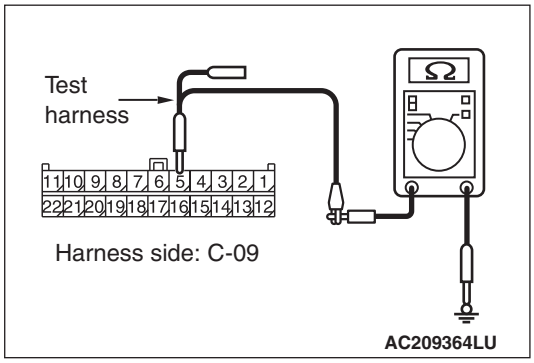
terminal No.2 and body earth

OK: 1 kΩ or more



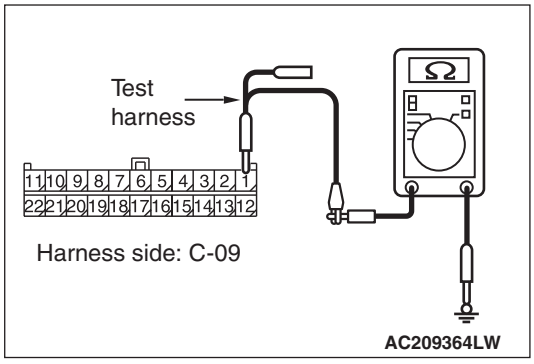
(5) Resistance between C-09 joint connector (CAN2) terminal No.3 and body earth

OK: 1 kΩ or more



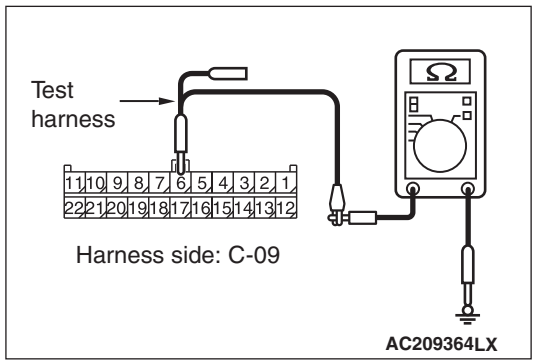
(6) Resistance between C-09 joint connector (CAN2) terminal No.5 and body earth

OK: 1 kΩ or more



(7) Resistance between C-09 joint connector (CAN2) terminal No.1 and body earth

OK: 1 kΩ or more



(8) Resistance between C-09 joint connector (CAN2) terminal No.6 and body earth

OK: 1 kΩ or more

Q: Are the check result normal?

YES <all of the measurement results show 1 kΩ or more> : Go to Step 44 .

NO <The resistance between terminal No.7 and body earth is less than 1 kΩ> : Go to Step 32 .

NO <The resistance between terminal No.2 and body earth is less than 1 kΩ> : Go to Step 33 .

NO <The resistance between terminal No.3 and body earth is less than 1 kΩ> : Go to Step 35 .

NO <The resistance between terminal No.5 and body earth is less than 1 kΩ> : Go to Step 37 .

NO <The resistance between terminal No.1 and body earth is less than 1 kΩ> : Go to Step 41 .

NO <The resistance between terminal No.6 and body earth is less than 1 kΩ> : Go to Step 43 .

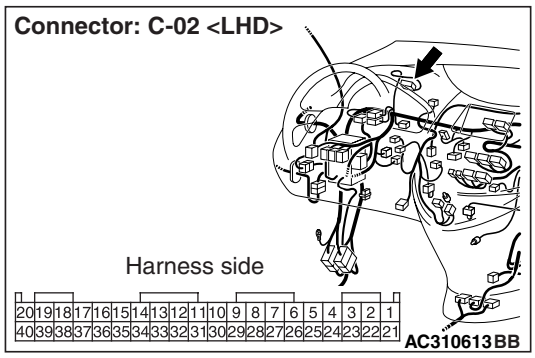
STEP 32. Resistance measurement at C-09 joint connector (CAN2).

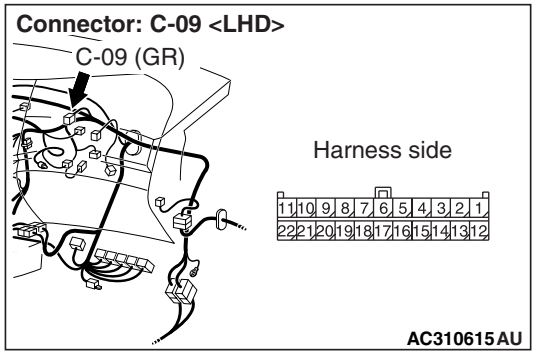
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



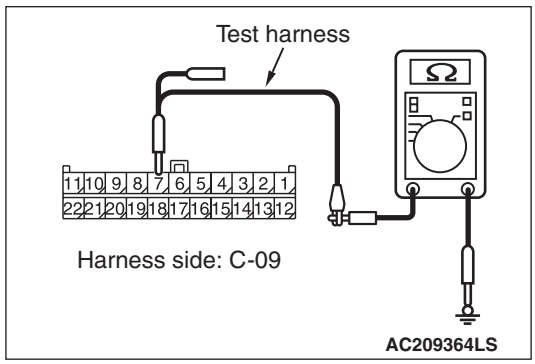


(1) Disconnect the joint connector (CAN2) and the combination meter connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2) terminal No.7 and body earth

OK: 1 kΩ or more

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

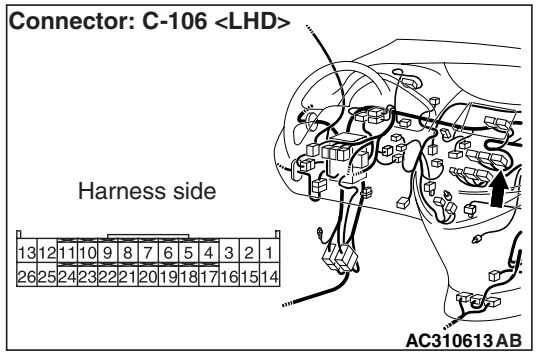
Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 17, Diagnose CAN bus lines thoroughly. Refer to P.54D-452.

NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the combination meter connector.

STEP 33. Connector check: C-106 A/C-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 34 .

NO : Repair the defective connector.

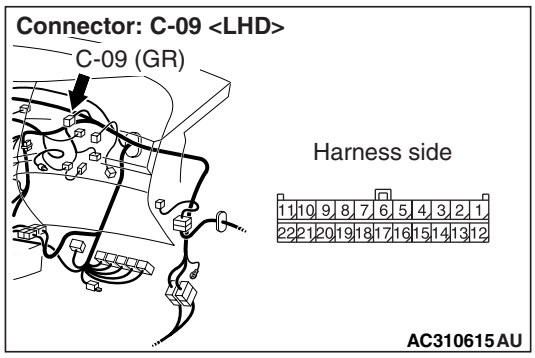
STEP 34. Resistance measurement at C-09 joint connector (CAN2).

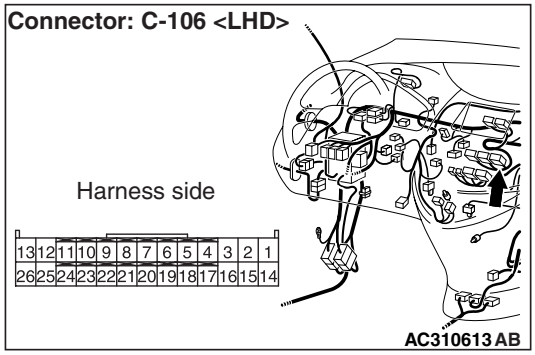
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



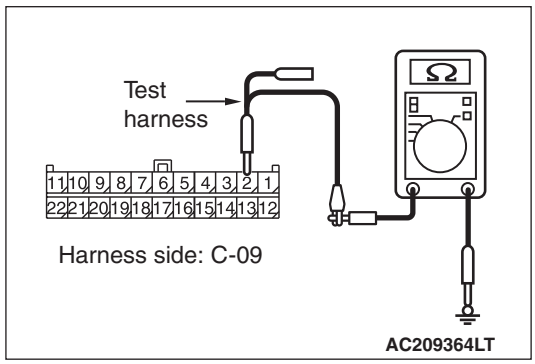


(1) Disconnect the joint connector (CAN2) and the A/C-ECU connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2) terminal No.2 and body earth

OK: 1 kΩ or more

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

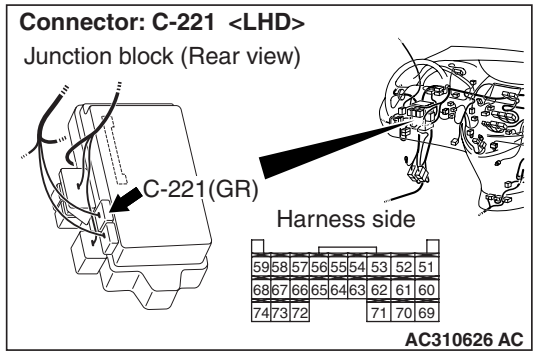
Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 17, Diagnose CAN bus lines thoroughly. Refer to P.54D-452.

NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the A/C-ECU connector.

STEP 35. Connector check: C-221 ETACS-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 36 .

NO : Repair the defective connector.

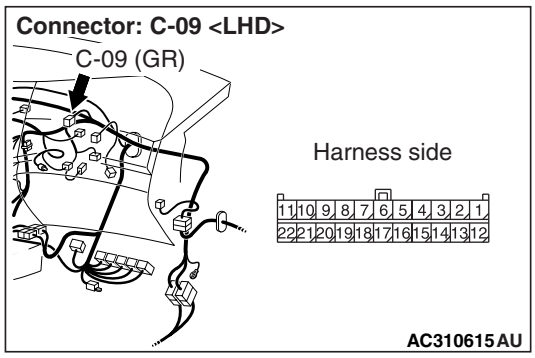
STEP 36. Resistance measurement at C-09 joint connector (CAN2).

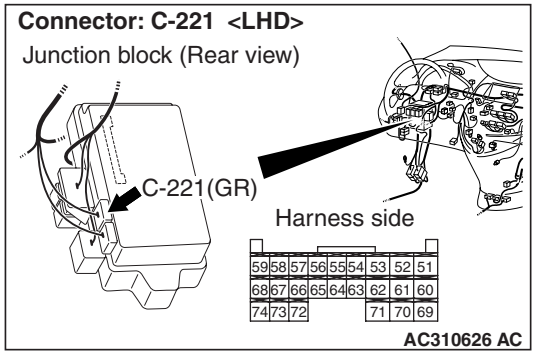
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



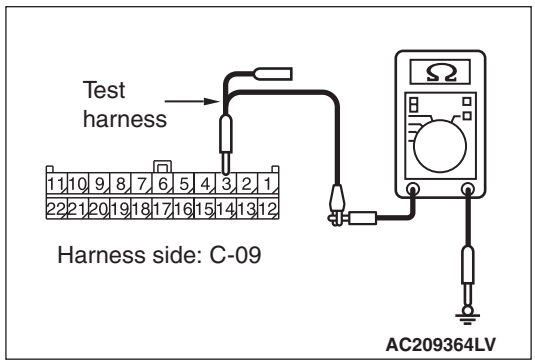


(1) Disconnect the joint connector (CAN2) and the ETACS-ECU connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2) terminal No.3 and body earth

OK: 1 kΩ or more

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

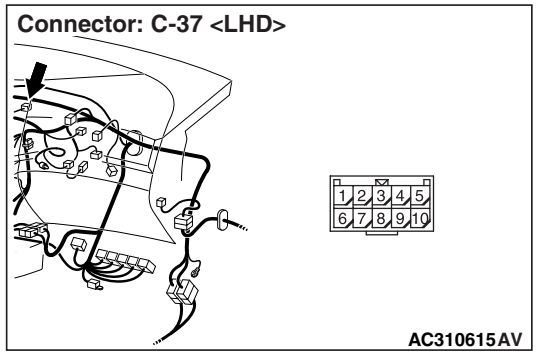
Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 17, Diagnose CAN bus lines thoroughly. Refer to P.54D-452.

NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the ETACS-ECU connector.

STEP 37. Connector check: C-37 jumper connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Check that the wiring harness of the jumper connector is not damaged.

Q: Is the check result normal?

YES : Go to Step 38 .

NO : Repair the defective connector.

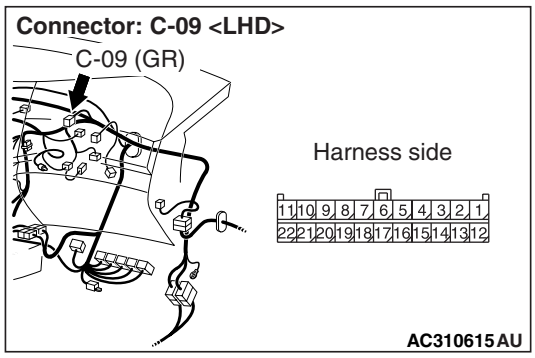
STEP 38. Resistance measurement at the C-09 joint connector (CAN2).

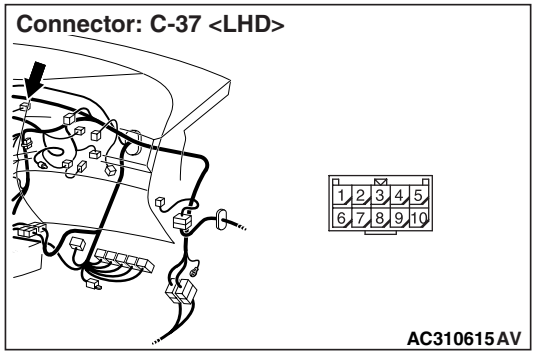
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



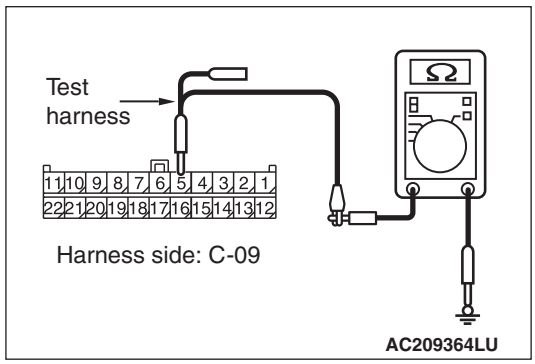


(1) Disconnect the joint connector (CAN2) and the jumper connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2) terminal No.5 and body earth

OK: 1 kΩ or more

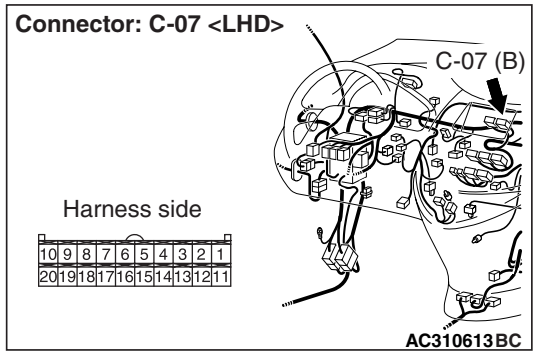
Q: Is the check result normal?

YES : <1 kΩ or more> Go to Step 39.

NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the jumper connector.

STEP 39. Connector check: C-07 centre display connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 40 .

NO : Repair the defective connector.

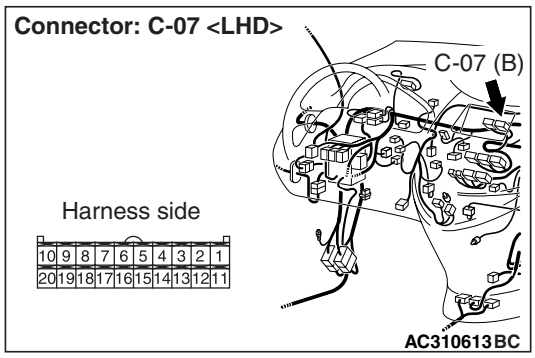
STEP 40. Resistance measurement at the C-37 jumper connector.

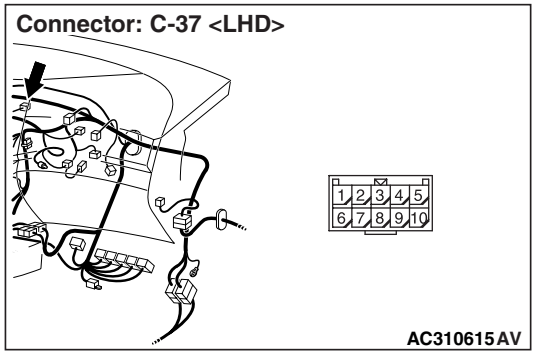
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



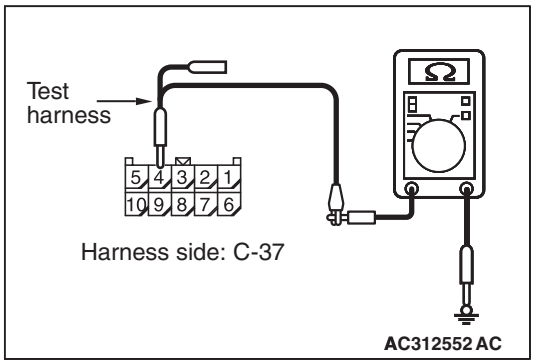


(1) Disconnect the centre display connector and the jumper connector, and measure at the jumper connector (at the centre display side).

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-37 jumper connector terminal No.4 and body earth

OK: 1 kΩ or more

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

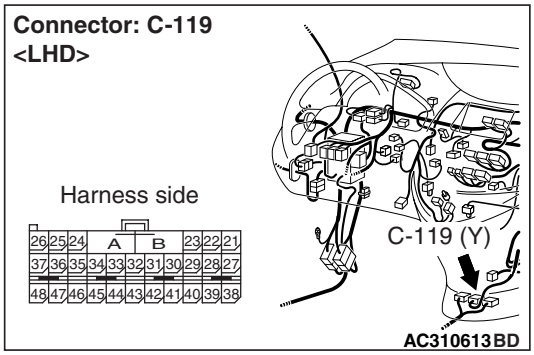
Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 17, Diagnose CAN bus lines thoroughly. Refer to P.54D-452.

NO : <less than 1 Ω> Repair the wiring harness between the jumper connector and the centre display connector.

STEP 41. Connector check: C-119 SRS-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 42 .

NO : Repair the defective connector.

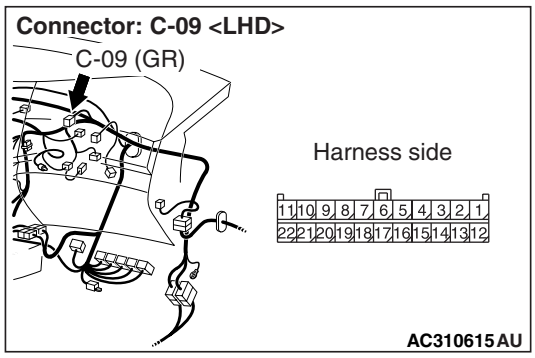
STEP 42. Resistance measurement at C-09 joint connector (CAN2).

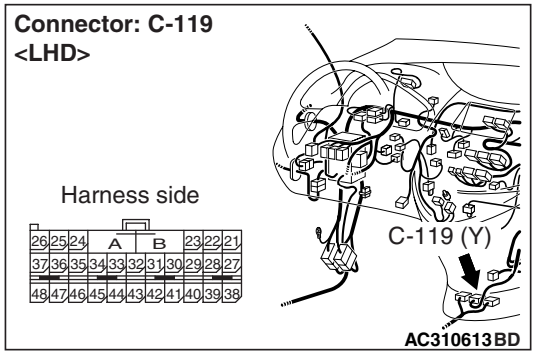
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



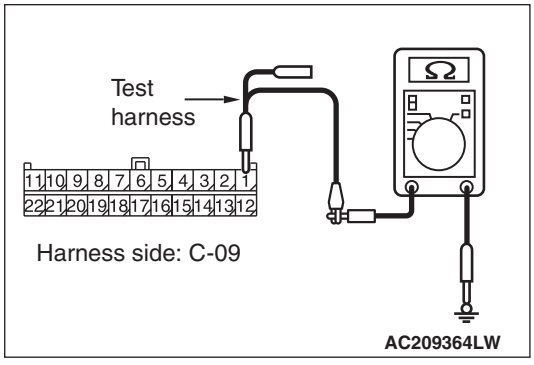


(1) Disconnect the joint connector (CAN2) and the SRS-ECU connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2) terminal No.1 and body earth

OK: 1 kΩ or more

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 17, Diagnose CAN bus lines thoroughly. Refer to P.54D-452.

NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the SRS-ECU connector.

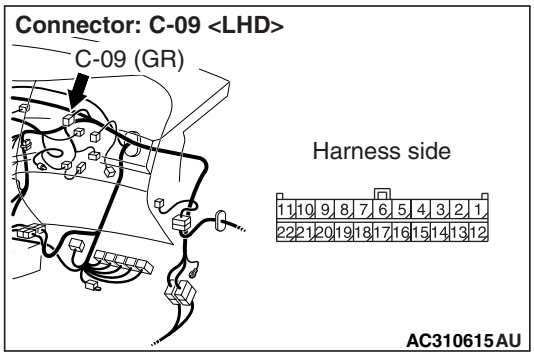
STEP 43. Resistance measurement at C-09 joint connector (CAN2).

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.

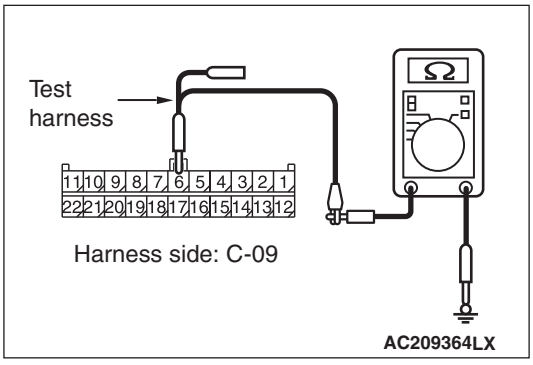


(1) Disconnect the connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2)

terminal No.6 and body earth
OK: 1 kΩ or more

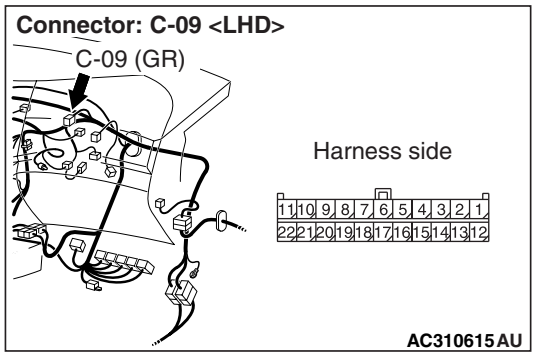
⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <1 kΩ or more> Follow diagnostic item 17, Diagnose CAN bus lines thoroughly. Refer to P.54D-452.
NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the diagnosis connector.

STEP 44. Resistance measurement at C-09 joint connector (CAN2).

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

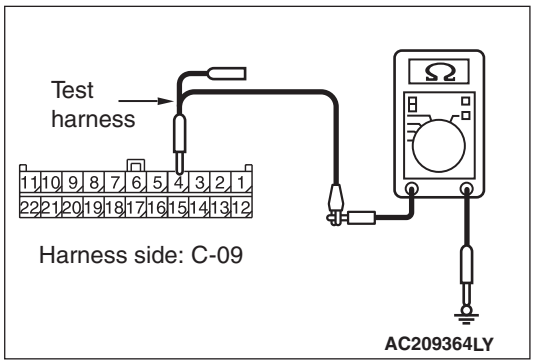
⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the connector, and measure at the wiring harness side.

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2) terminal No.4 and body earth
OK: 1 kΩ or more

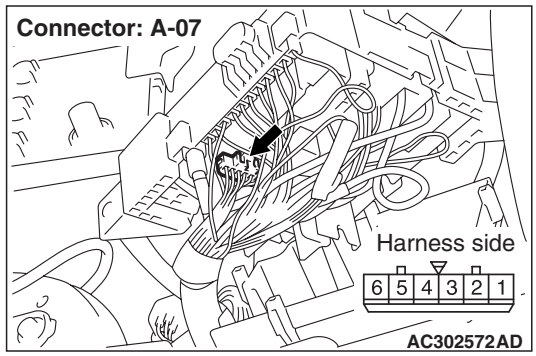
⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <1 kΩ or more> Follow diagnostic item 17, Diagnose CAN bus lines thoroughly. Refer to P.54D-452.
NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the intermediate connector.

STEP 45. Connector check: A-07 joint connector (CAN1)

NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

When checking the joint connector, ensure that its wiring harness side is not damaged.

Q: Is the check result normal?
YES : Go to Step 46 .
NO : Repair a defective connector or replace the joint connector (front wiring harness assembly).

STEP 46. Resistance measurement at the A-07 joint connector (CAN1).

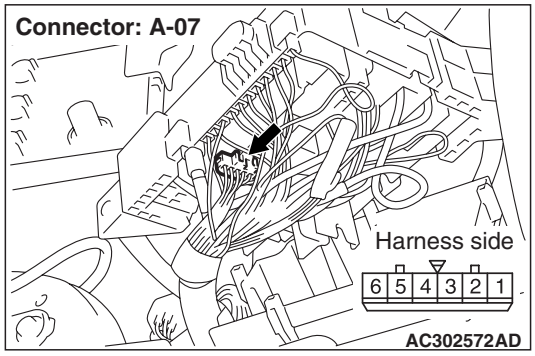
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.

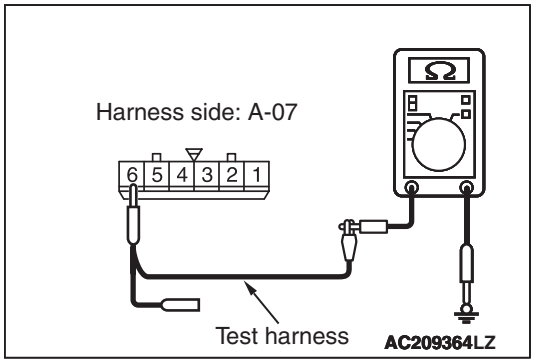


(1) Disconnect the connector, and measure at the wiring harness side.

⚠ CAUTION

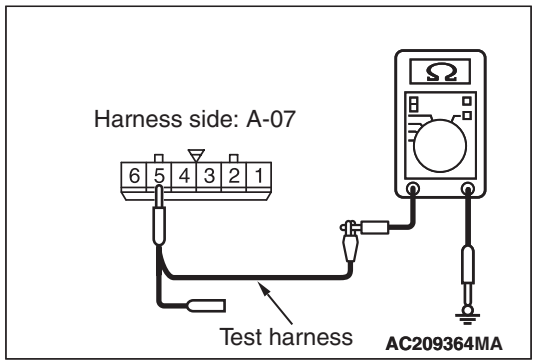
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between A-07 joint connector (CAN1) terminal No.6 and body earth

OK: 1 kΩ or more



(4) Resistance between A-07 joint connector (CAN1) terminal No.5 and body earth

OK: 1 kΩ or more

Q: Are the check result normal?

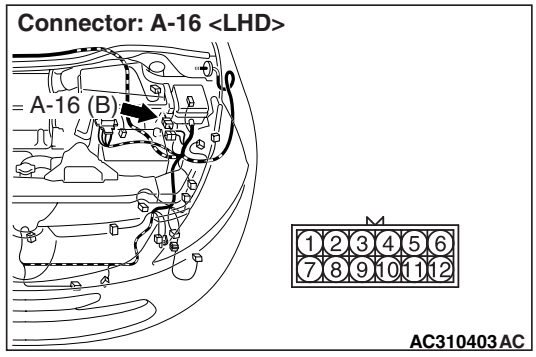
YES <all of the measurement results show 1 kΩ or more> : Go to Step 52 .

NO <The resistance between terminal No.6 and body earth is less than 1 kΩ> : Go to Step 47 .

NO <The resistance between terminal No.5 and body earth is less than 1 kΩ> : Go to Step 50 .

STEP 47. Connector check: A-16 intermediate connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 48 .

NO : Repair the defective connector.

STEP 48. Resistance measurement at the A-07 joint connector (CAN1).

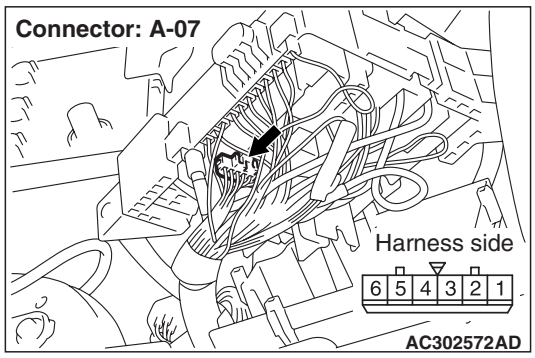
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

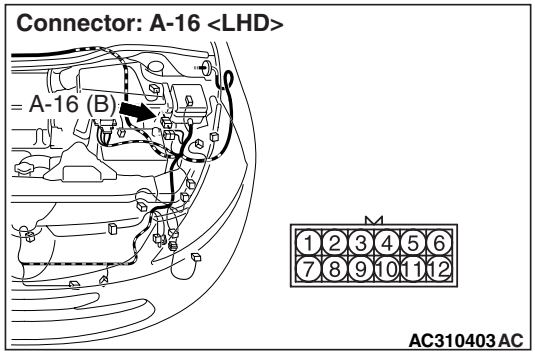
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



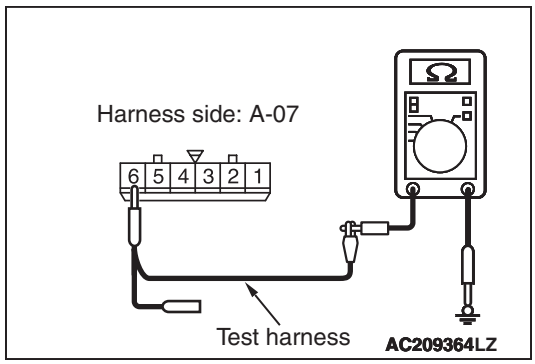


(1) Disconnect the joint connector (CAN1) and the intermediate connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between A-07 joint connector (CAN1) terminal No.6 and body earth

OK: 1 kΩ or more

Q: Is the check result normal?

YES : <1 kΩ or more> Go to Step 49.

NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN1) and the intermediate connector.

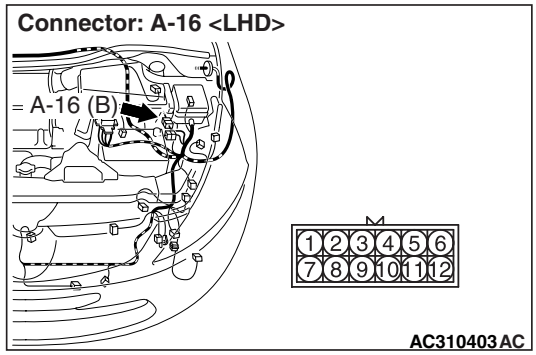
STEP 49. Resistance measurement at the A-16 intermediate connector.

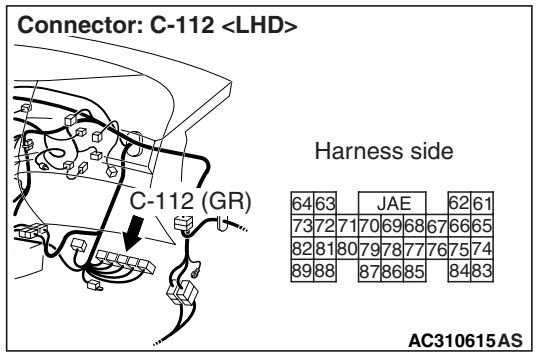
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





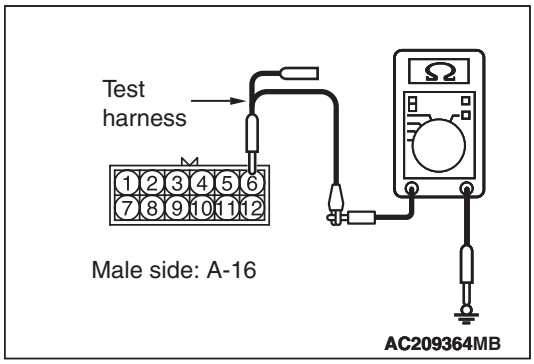
(1) Disconnect the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector and the

intermediate connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between A-16 intermediate connector terminal No.6 and body earth

OK: 1 kΩ or more

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

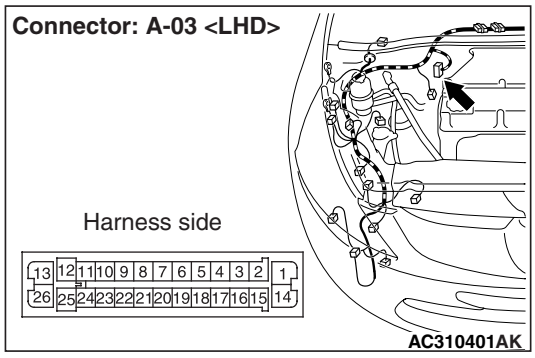
Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 17, Diagnose CAN bus lines thoroughly. Refer to P.54D-452.

NO : <less than 1 Ω> Repair the wiring harness between the intermediate connector and the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector.

STEP 50. Connector check: A-03 ABS-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 51 .

NO : Repair the defective connector.

STEP 51. Resistance measurement at the A-07 joint connector (CAN1).

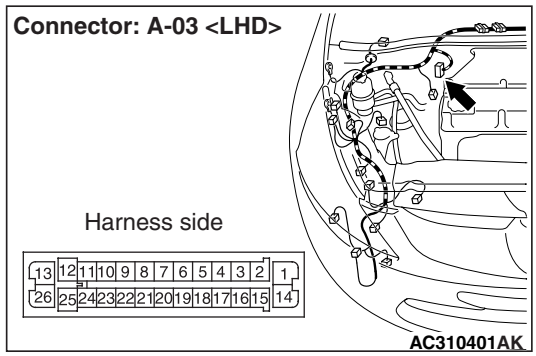
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

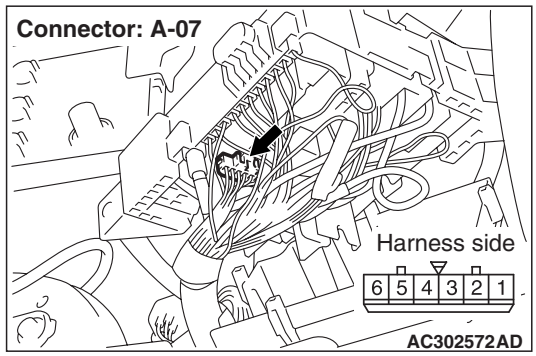
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





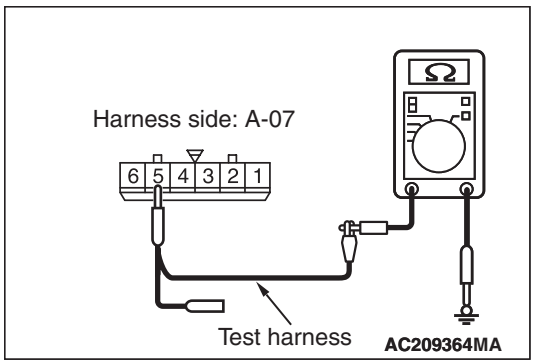
(1) Disconnect the joint connector (CAN1) and the ABS-ECU connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is

disconnected.



(3) Resistance between A-07 joint connector (CAN1) terminal No.5 and body earth

OK: 1 kΩ or more

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 17, Diagnose CAN bus lines thoroughly. Refer to P.54D-452.

NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN1) and the ABS-ECU connector.

STEP 52. Resistance measurement at the A-07 joint connector (CAN1).

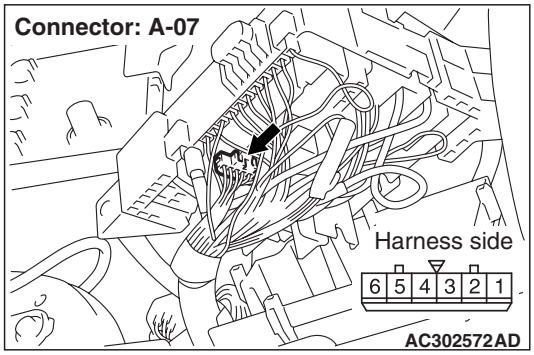
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

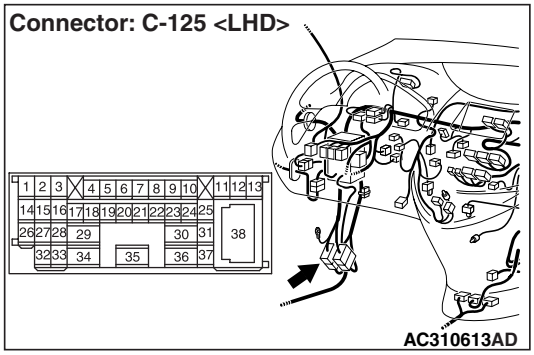
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





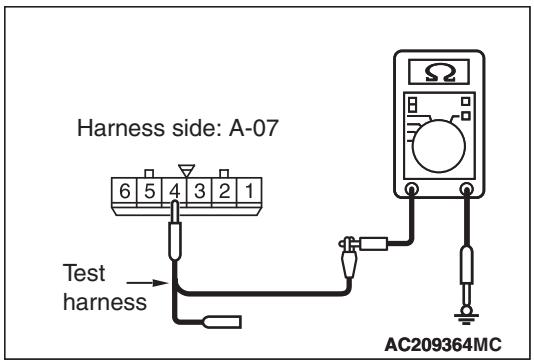
(1) Disconnect the joint connector (CAN1) and the intermediate connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is

disconnected.



(3) Resistance between A-07 joint connector (CAN1) terminal No.4 and body earth

OK: 1 kΩ or more

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?

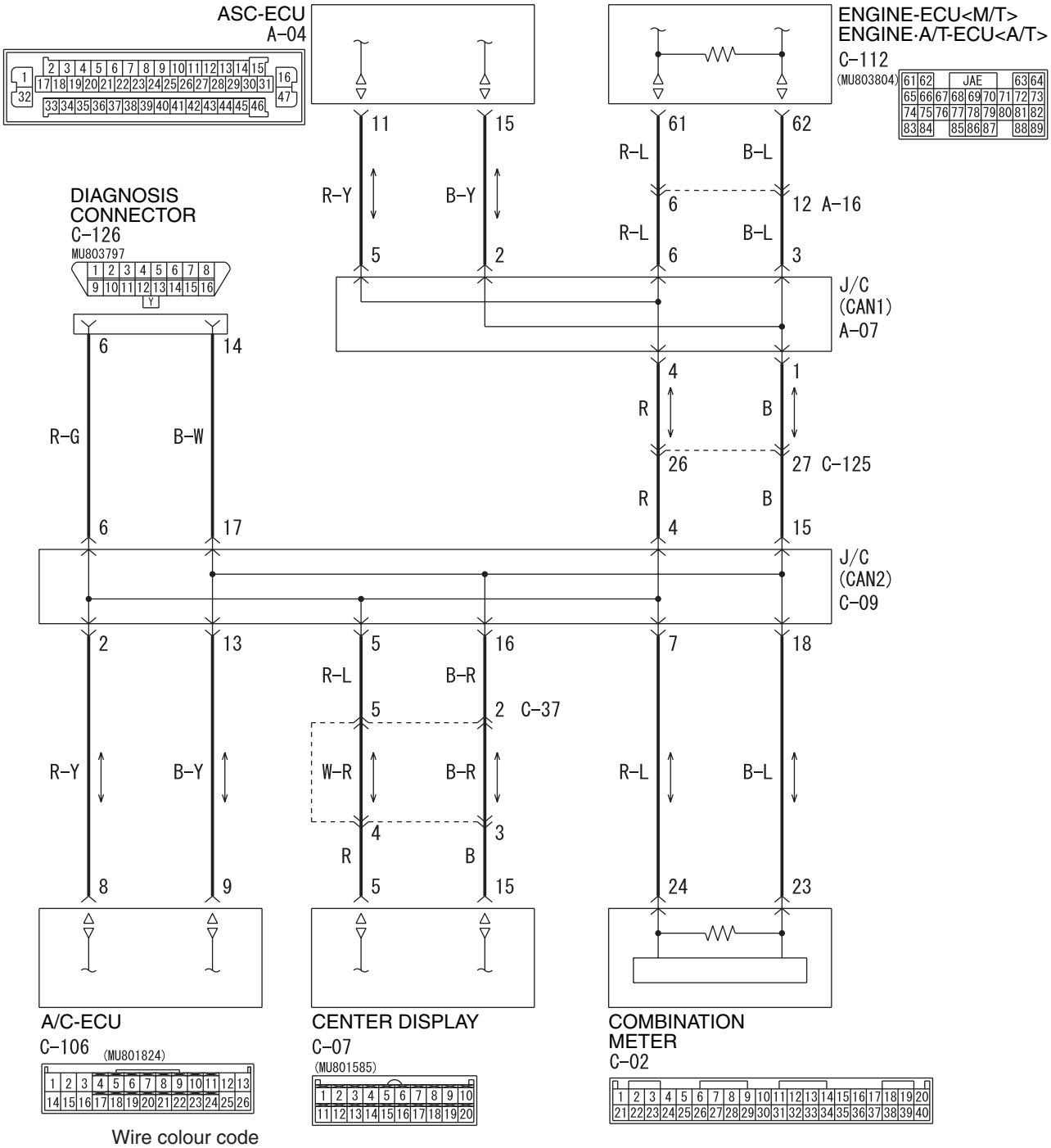
YES : <1 kΩ or more> Follow diagnostic item 17, Diagnose CAN bus lines thoroughly. Refer to P.54D-452.

NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN1) and the intermediate connector.

Diagnostic Item 6: Diagnose the CAN bus lines for short to earth <LH drive vehicles with ASC>

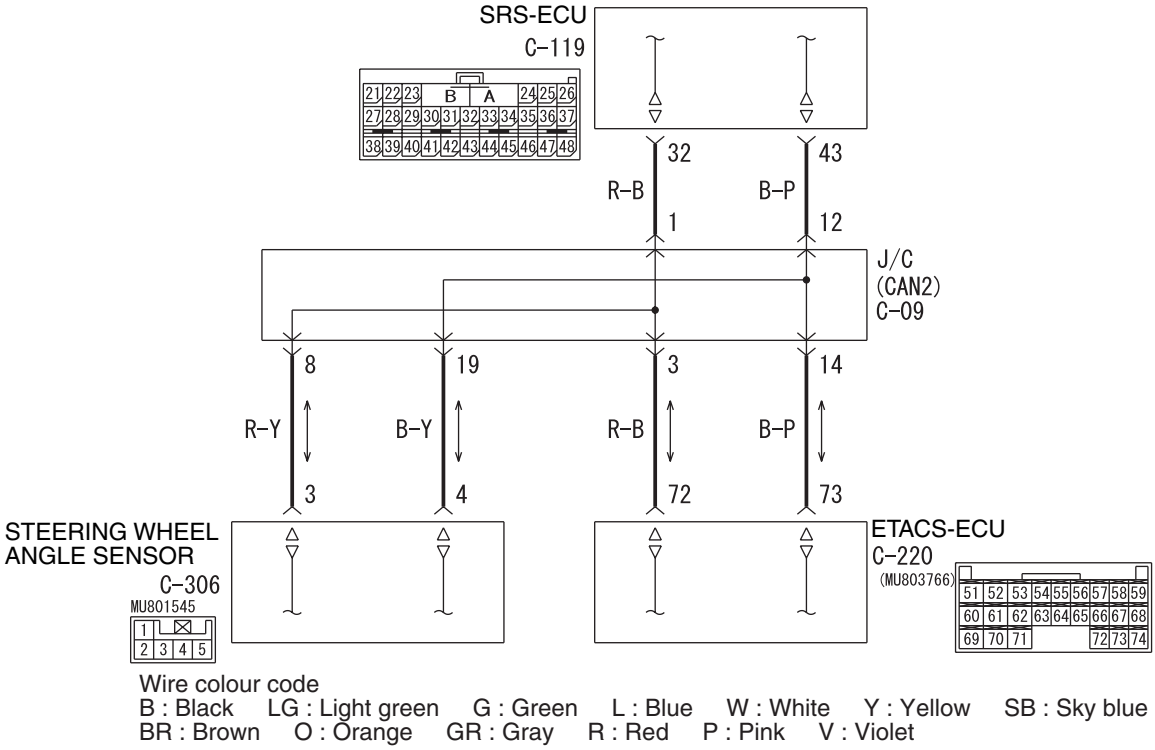
⚠ CAUTION

When servicing a CAN bus line, earth yourself by touching a metal object such as an unpainted water pipe. If you fail to do, a component connected to the CAN bus line may be broken.



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E20AA



W4X54E21AA

TROUBLE JUDGMENT

The CAN bus line has been shorted to earth if the voltage between the CAN bus line (CAN_L or CAN_H) and body earth is less than 1.0 V. In this condition, an abnormal voltage may be measured at CAN_L and CAN_H lines.

COMMENTS ON TROUBLE SYMPTOM

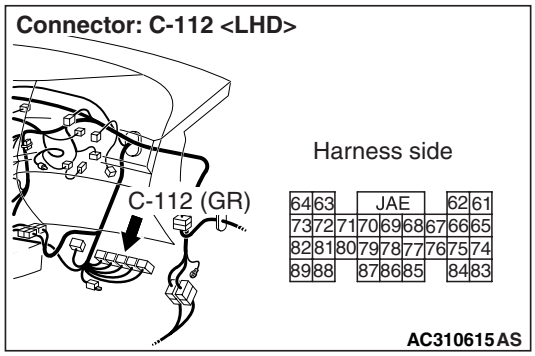
The wiring harness wire or connectors may have loose, corroded, or damage terminals, or terminals pushed back in the connector, or a ECU may be defective.

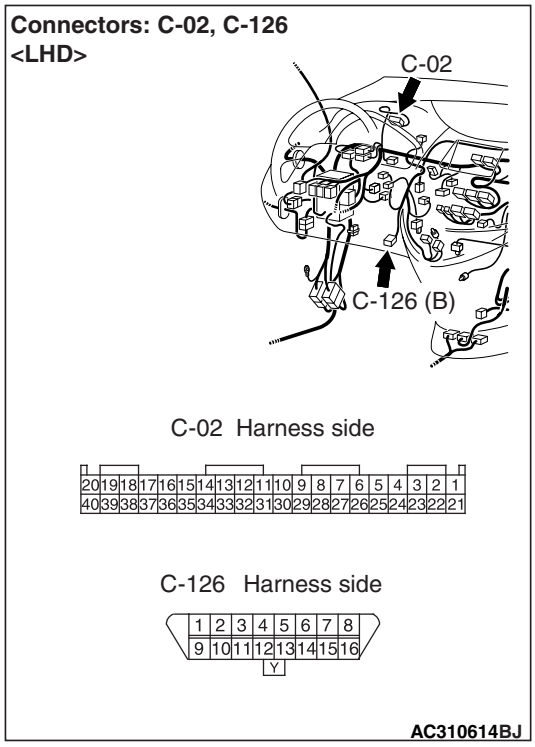
POSSIBLE CAUSES

- Damaged harness wires and connectors
- Malfunction of the ETACS-ECU
- Malfunction of the combination meter
- Malfunction of the A/C-ECU
- Malfunction of the SRS-ECU
- Malfunction of the multi-centre display
- Malfunction of the steering wheel angle sensor
- Malfunction of the ASC-ECU
- Malfunction of the engine-ECU <M/T> or engine-A/T-ECU <A/T>

DIAGNOSTIC PROCEDURE

STEP 1. Connector check: C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector, C-02 combination meter connector and C-126 diagnosis connector





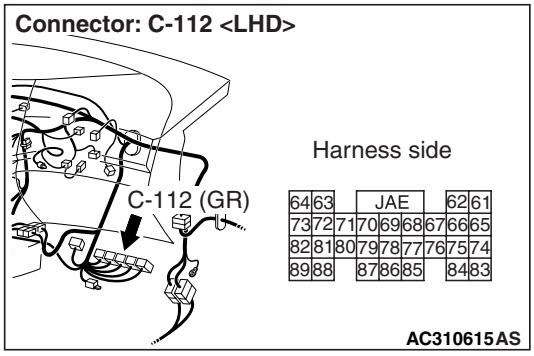
⚠ CAUTION
The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

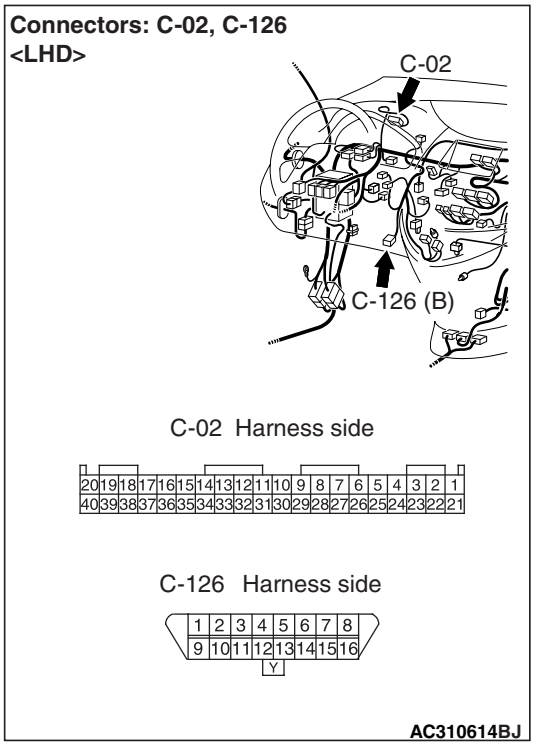
Q: Are the check result normal?
YES : Go to Step 2 .
NO : Repair the defective connector.

STEP 2. Resistance measurement at the C-126 diagnosis connector.

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.



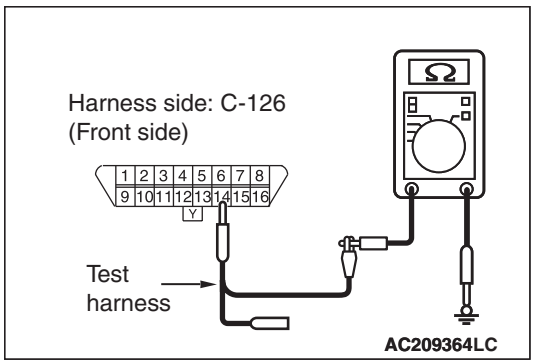


(1) Disconnect the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector and the combination meter connector, and measure at the wiring harness side.

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

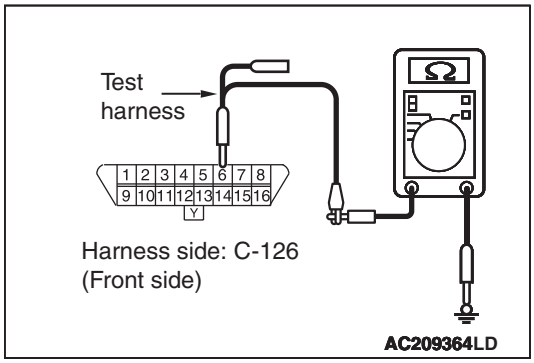
(2) Ensure that the negative battery terminal is

disconnected.



(3) Resistance between C-126 diagnosis connector terminal No.14 and body earth

OK: 1 kΩ or more



(4) Resistance between C-126 diagnosis connector terminal No.6 and body earth

OK: 1 kΩ or more

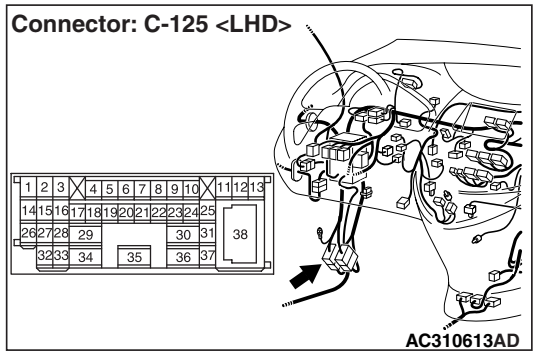
Q: Are the check result normal?

YES <all of the measurement results show 1 kΩ or more> : Follow diagnostic item 18, Diagnose CAN bus lines thoroughly. Refer to P.54D-476.

NO <The resistance between terminal No.14 and body earth is less than 1 kΩ> : Go to Step 3 .

NO <The resistance between terminal No.6 and body earth is less than 1 kΩ> : Go to Step 30 .

STEP 3. Connector check: C-125 intermediate connector



⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 4 .

NO : Repair the defective connector.

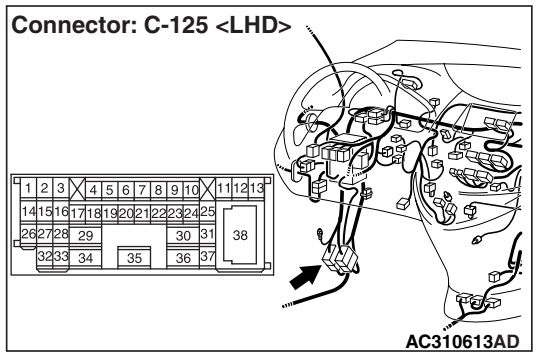
STEP 4. Resistance measurement at the C-125 intermediate connector.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



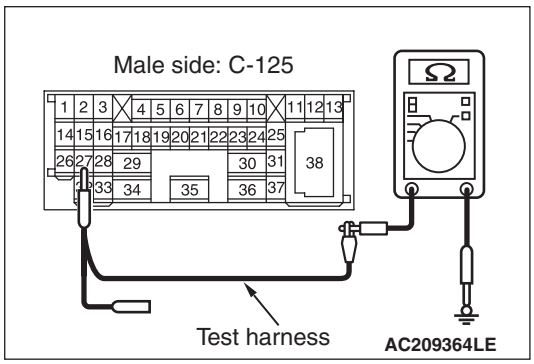
(1) Disconnect the connector, and measure at its male-side intermediate connector (at the front wiring harness side).

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is

disconnected.



(3) Resistance between C-125 intermediate connector terminal No.27 and body earth

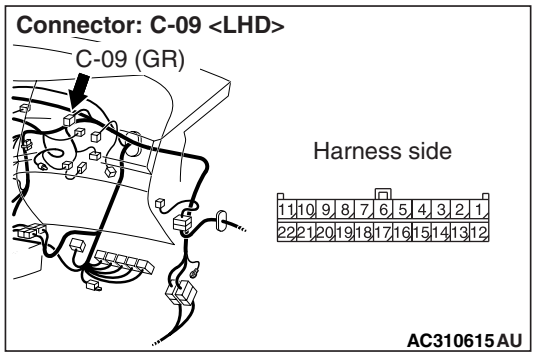
OK: 1 kΩ or more

Q: Is the check result normal?

YES : <1 kΩ or more> Go to Step 5.

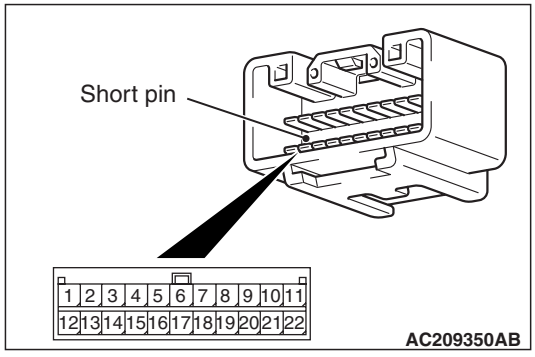
NO : <less than 1 kΩ> Go to Step 22.

STEP 5. Connector check: C-09 joint connector (CAN2)



⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.



When checking the joint connector, ensure that its wiring harness side and its short pins are not damaged.

Q: Is the check result normal?

YES : Go to Step 6 .

NO : Repair a defective connector or replace the joint connector.

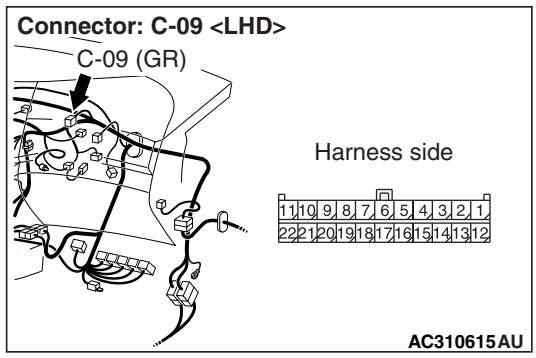
STEP 6. Resistance measurement at C-09 joint connector (CAN2).

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.

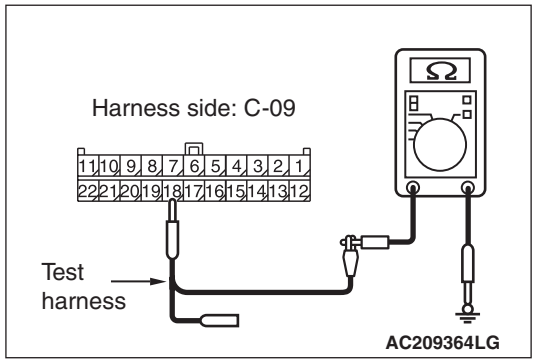


(1) Disconnect the connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

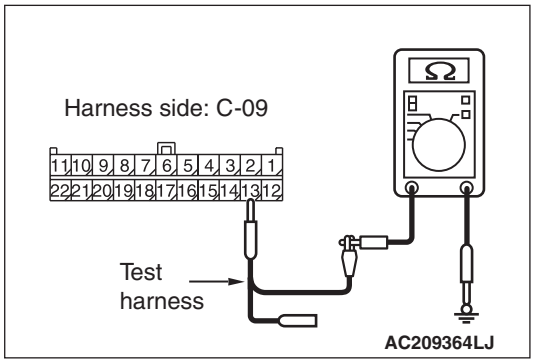
(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2)

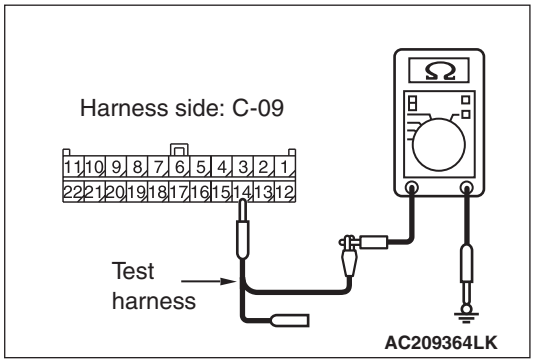
terminal No.18 and body earth

OK: 1 kΩ or more



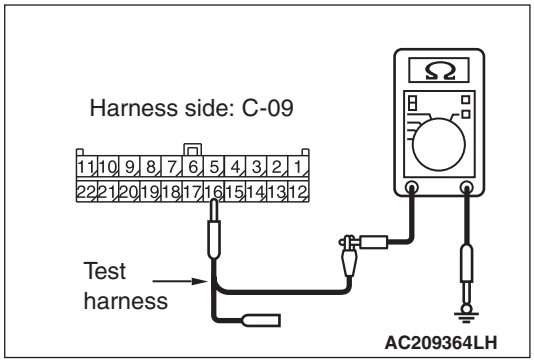
(4) Resistance between C-09 joint connector (CAN2) terminal No.13 and body earth

OK: 1 kΩ or more



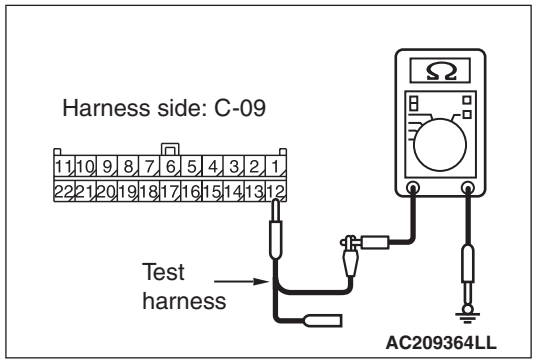
(5) Resistance between C-09 joint connector (CAN2) terminal No.14 and body earth

OK: 1 kΩ or more



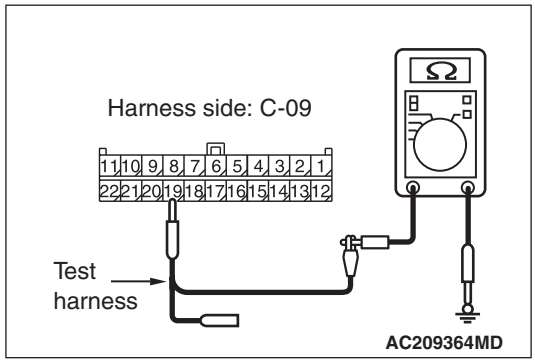
(6) Resistance between C-09 joint connector (CAN2) terminal No.16 and body earth

OK: 1 kΩ or more



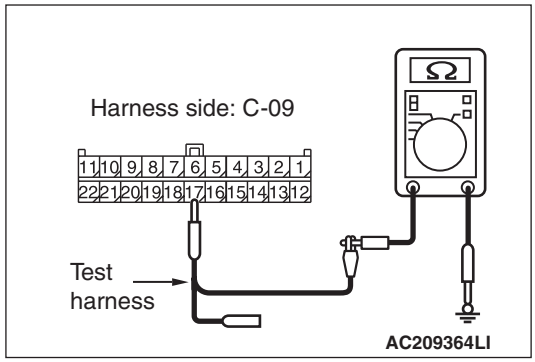
(7) Resistance between C-09 joint connector (CAN2) terminal No.12 and body earth

OK: 1 kΩ or more



(8) Resistance between C-09 joint connector (CAN2) terminal No.19 and body earth

OK: 1 kΩ or more



(9) Resistance between C-09 joint connector (CAN2) terminal No.17 and body earth

OK: 1 kΩ or more

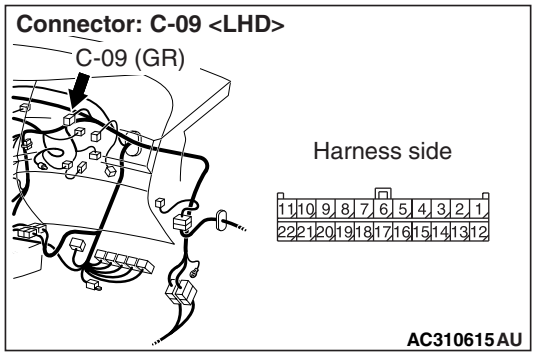
Q: Are the check result normal?

YES <all of the measurement results show 1 kΩ or more> : Go to Step 21 .
NO <The resistance between terminal No.18 and body earth is less than 1 kΩ> : Go to Step 7 .
NO <The resistance between terminal No.13 and body earth is less than 1 kΩ> : Go to Step 8 .
NO <The resistance between terminal No.14 and body earth is less than 1 kΩ> : Go to Step 10 .
NO <The resistance between terminal No.16 and body earth is less than 1 kΩ> : Go to Step 12 .
NO <The resistance between terminal No.12 and body earth is less than 1 kΩ> : Go to Step 16 .
NO <The resistance between terminal No.19 and body earth is less than 1 kΩ> : Go to Step 18 .
NO <The resistance between terminal No.17 and body earth is less than 1 kΩ> : Go to Step 20 .

STEP 7. Resistance measurement at C-09 joint connector (CAN2).

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

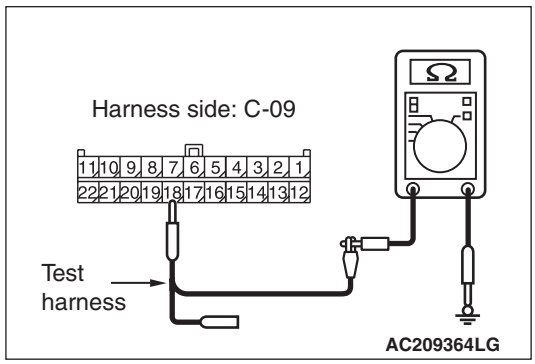
⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the joint connector (CAN2) and the combination meter connector, and measure at the wiring harness side.

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2) terminal No.18 and body earth

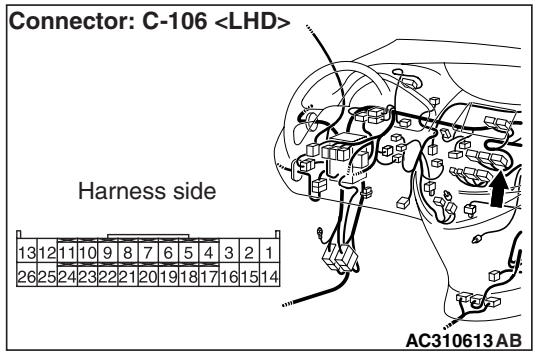
OK: 1 kΩ or more

⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <1 kΩ or more> Follow diagnostic item 18, Diagnose CAN bus lines thoroughly. Refer to P.54D-476.
NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the combination meter connector.

STEP 8. Connector check: C-106 A/C-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?
YES : Go to Step 9 .
NO : Repair the defective connector.

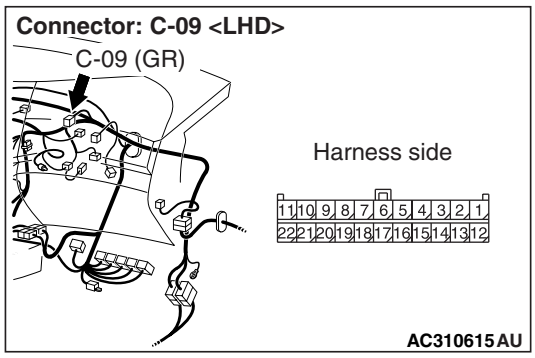
STEP 9. Resistance measurement at C-09 joint connector (CAN2).

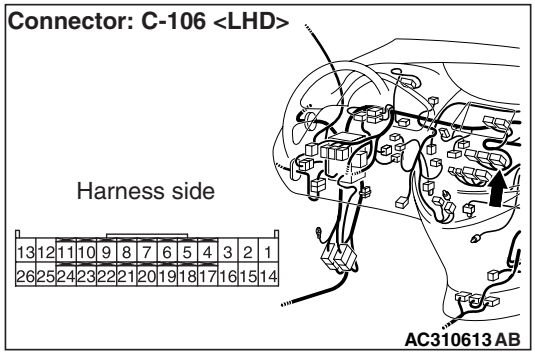
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



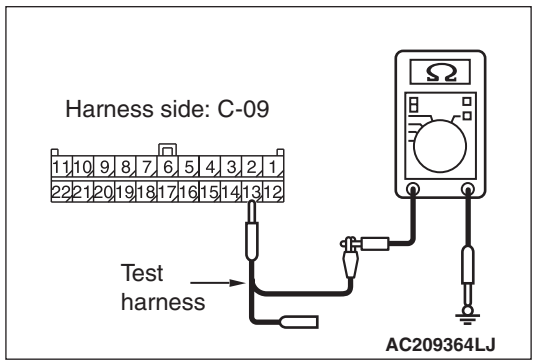


(1) Disconnect the joint connector (CAN2) and the A/C-ECU connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2) terminal No.13 and body earth

OK: 1 kΩ or more

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

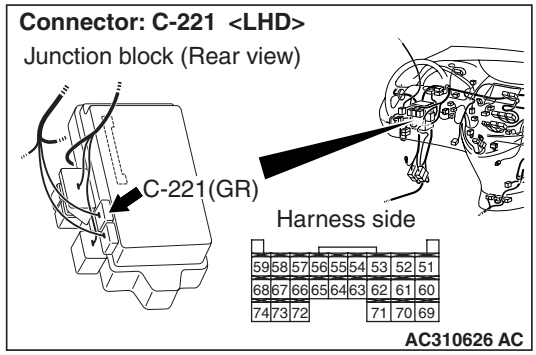
Q: Is the check result normal?

YES : <less than 1.0 V> Follow diagnostic item 18 "Diagnose CAN bus lines thoroughly." Refer to P.54D-476.

NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN2) and the A/C-ECU connector.

STEP 10. Connector check: C-221 ETACS-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 11 .

NO : Repair the defective connector.

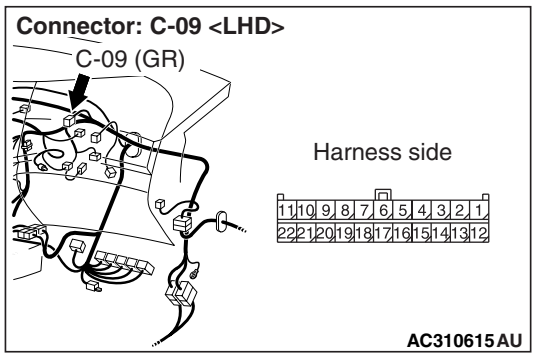
STEP 11. Resistance measurement at C-09 joint connector (CAN2).

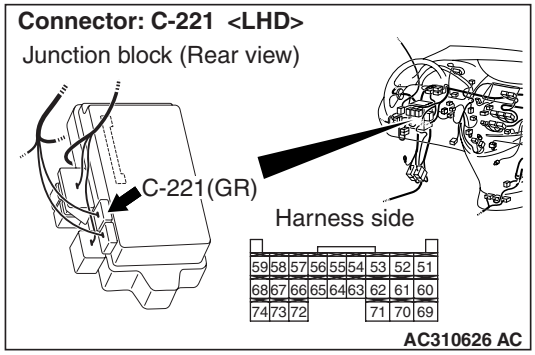
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



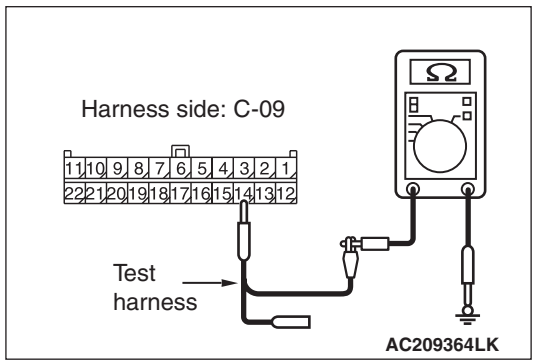


(1) Disconnect the joint connector (CAN2) and the ETACS-ECU connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2) terminal No.14 and body earth

OK: 1 kΩ or more

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

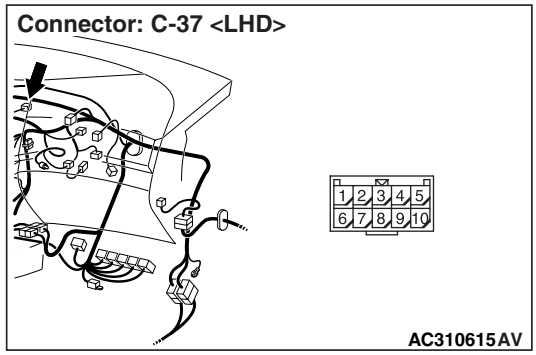
Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 18, Diagnose CAN bus lines thoroughly. Refer to P.54D-476.

NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the ETACS-ECU connector.

STEP 12. Connector check: C-37 jumper connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Check that the wiring harness of the jumper connector is not damaged.

Q: Is the check result normal?

YES : Go to Step 13 .

NO : Repair the defective connector.

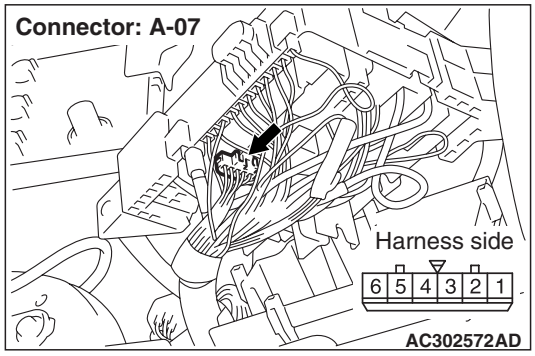
STEP 13. Resistance measurement at the C-09 joint connector (CAN2).

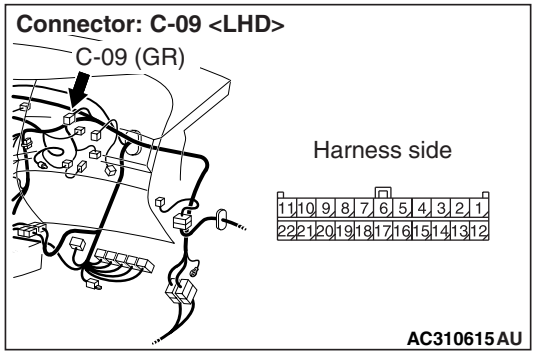
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



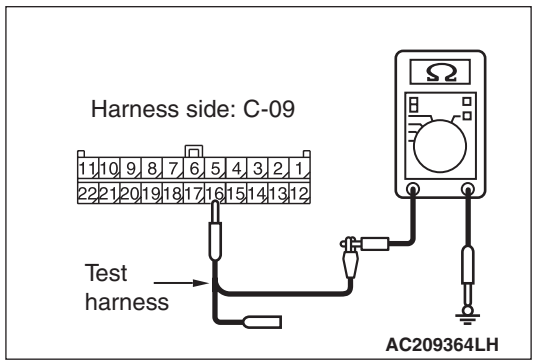


(1) Disconnect the joint connector (CAN2) and the jumper connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2) terminal No.16 and body earth

OK: 1 kΩ or more

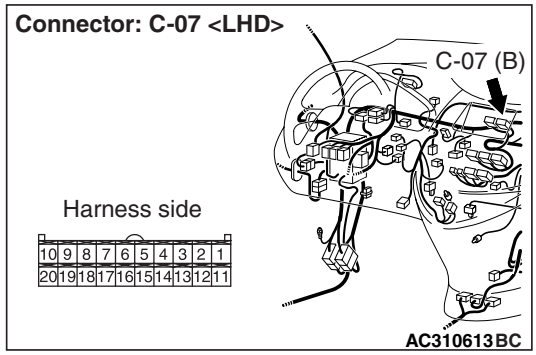
Q: Is the check result normal?

YES : <1 kΩ or more> Go to Step 14.

NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the jumper connector.

STEP 14. Connector check: C-07 centre display connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 15 .

NO : Repair the defective connector.

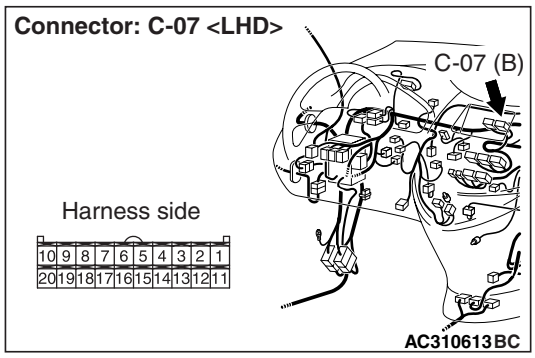
STEP 15. Resistance measurement at the C-37 jumper connector.

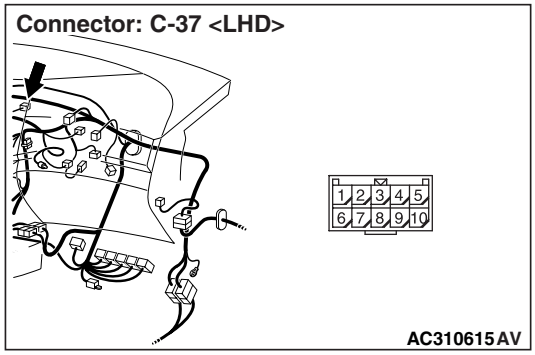
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



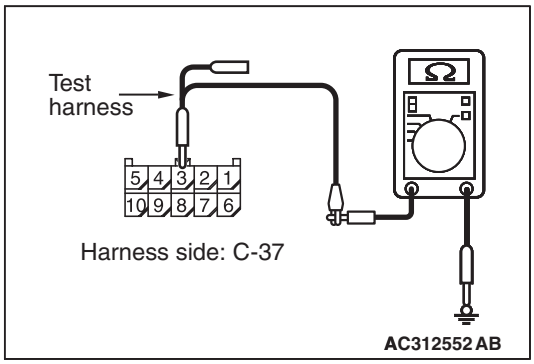


(1) Disconnect the centre display connector and the jumper connector, and measure at the jumper connector (at the centre display side).

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-37 jumper connector terminal No.3 and body earth

OK: 1 kΩ or more

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

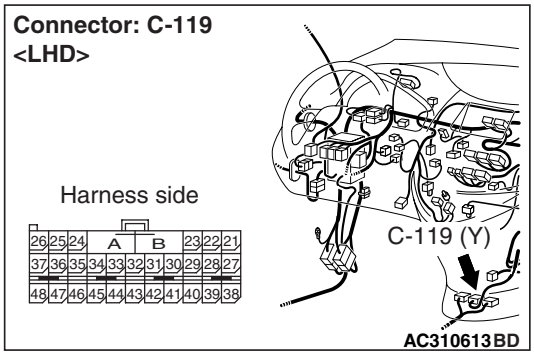
Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 18, Diagnose CAN bus lines thoroughly. Refer to P.54D-476.

NO : <less than 1 Ω> Repair the wiring harness between the jumper connector and the centre display connector.

STEP 16. Connector check: C-119 SRS-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 15 .

NO : Repair the defective connector.

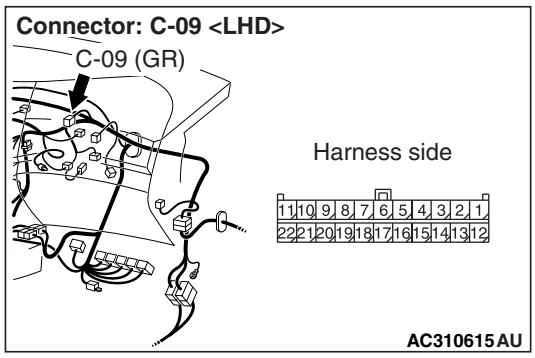
STEP 17. Resistance measurement at C-09 joint connector (CAN2).

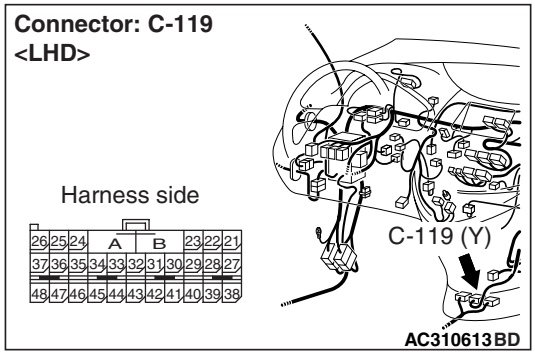
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



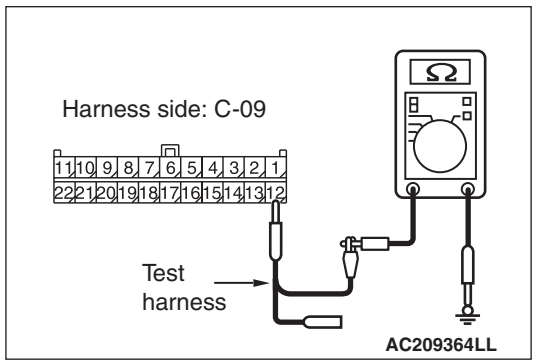


(1) Disconnect the joint connector (CAN2) and the SRS-ECU connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2) terminal No.12 and body earth

OK: 1 kΩ or more

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

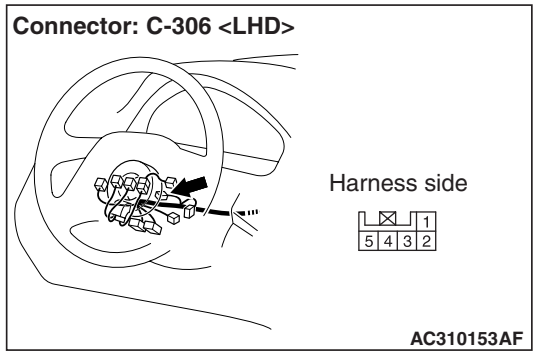
Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 18, Diagnose CAN bus lines thoroughly. Refer to P.54D-476.

NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the SRS-ECU connector.

STEP 18. Connector check: C-306 steering wheel angle sensor connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

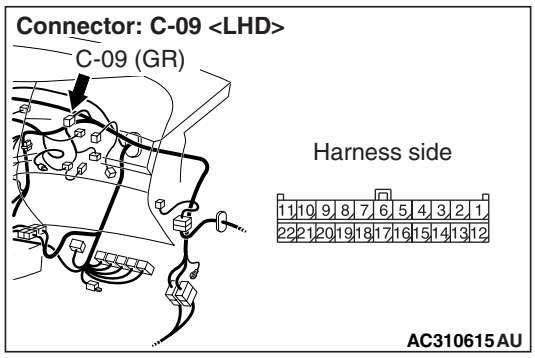
YES : Go to Step 17 .

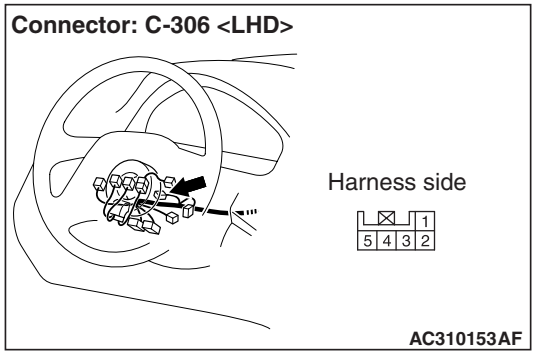
NO : Repair the defective connector.

STEP 19. Resistance measurement at C-09 joint connector (CAN2).

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.

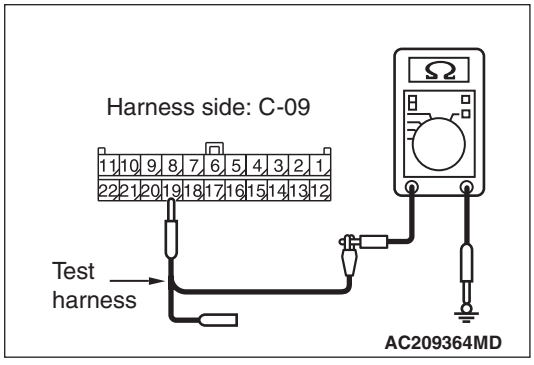




(1) Disconnect the joint connector (CAN2) and the steering wheel angle sensor connector, and measure at the wiring harness side.

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2) terminal No.19 and body earth

OK: 1 kΩ or more

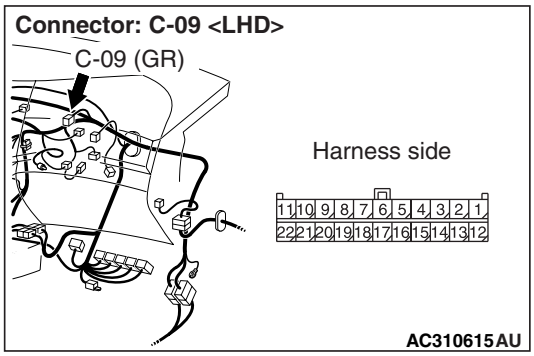
⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <1 kΩ or more> Follow diagnostic item 18, Diagnose CAN bus lines thoroughly. Refer to P.54D-476.
NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the steering angle sensor connector.

STEP 20. Resistance measurement at C-09 joint connector (CAN2).

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

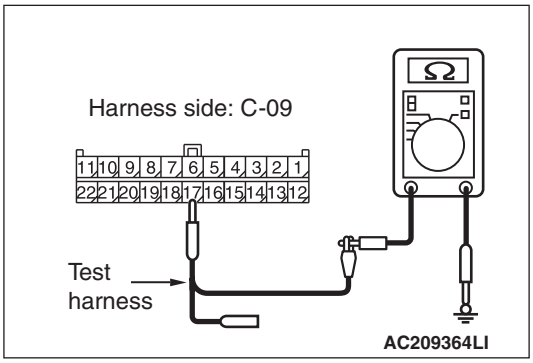
⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the connector, and measure at the wiring harness side.

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2)

terminal No.17 and body earth
OK: 1 kΩ or more

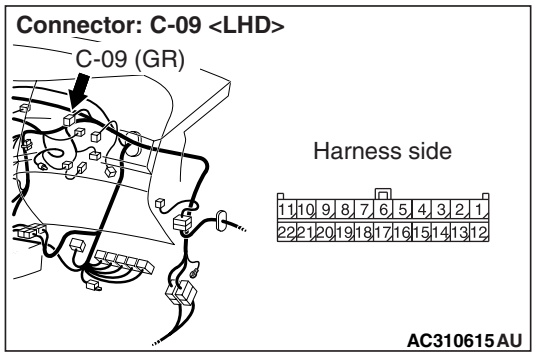
⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <1 kΩ or more> Follow diagnostic item 18, Diagnose CAN bus lines thoroughly. Refer to P.54D-476.
NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the diagnosis connector.

STEP 21. Resistance measurement at C-09 joint connector (CAN2).

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

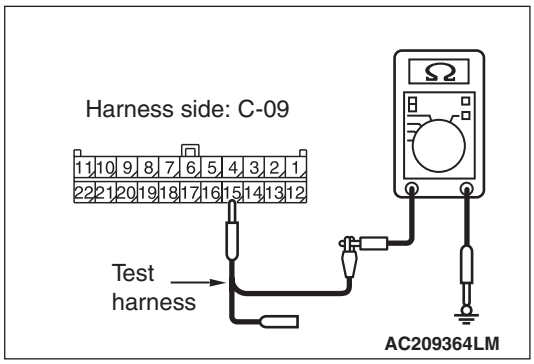
⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the connector, and measure at the wiring harness side.

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2) terminal No.15 and body earth
OK: 1 kΩ or more

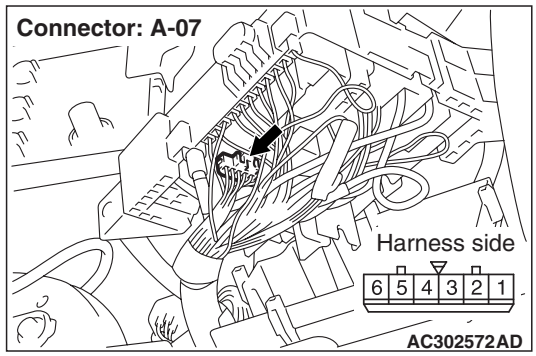
⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <1 kΩ or more> Follow diagnostic item 18, Diagnose CAN bus lines thoroughly. Refer to P.54D-476.
NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the intermediate connector.

STEP 22. Connector check: A-07 joint connector (CAN1)

NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

When checking the joint connector, ensure that its wiring harness side is not damaged.

Q: Is the check result normal?
YES : Go to Step 23 .
NO : Repair a defective connector or replace the joint connector (front wiring harness assembly).

STEP 23. Resistance measurement at the A-07 joint connector (CAN1).

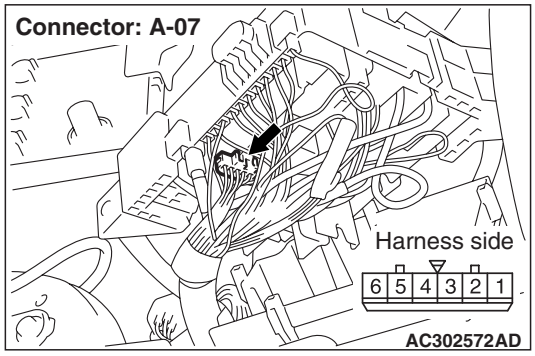
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.

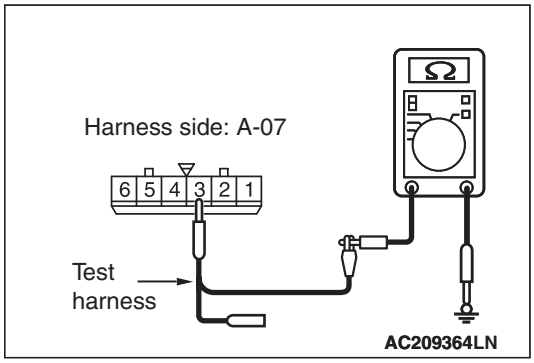


(1) Disconnect the connector, and measure at the wiring harness side.

⚠ CAUTION

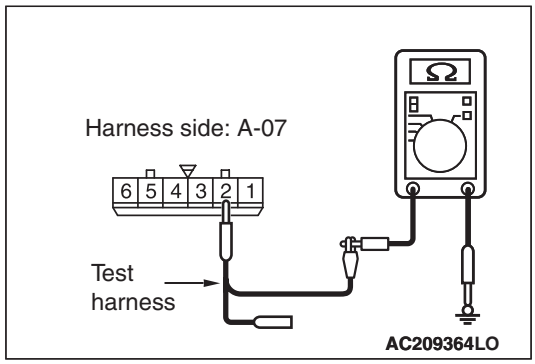
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between A-07 joint connector (CAN1) terminal No.3 and body earth

OK: 1 kΩ or more



(4) Resistance between A-07 joint connector (CAN1) terminal No.2 and body earth

OK: 1 kΩ or more

Q: Are the check result normal?

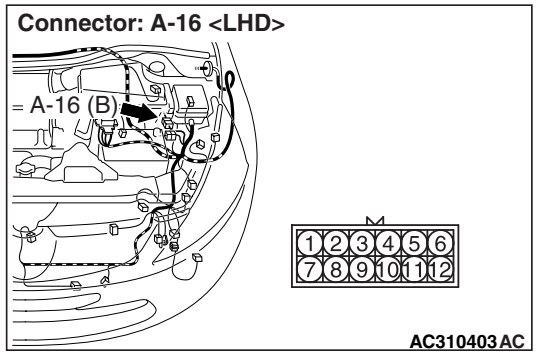
YES <all of the measurement results show 1 kΩ or more> : Go to Step 29 .

NO <The resistance between terminal No.3 and body earth is less than 1 kΩ> : Go to Step 24 .

NO <The resistance between terminal No.2 and body earth is less than 1 kΩ> : Go to Step 27 .

STEP 24. Connector check: A-16 intermediate connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 25 .

NO : Repair the defective connector.

STEP 25. Resistance measurement at the A-07 joint connector (CAN1).

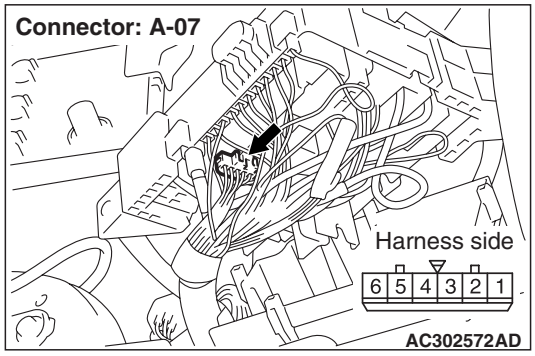
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

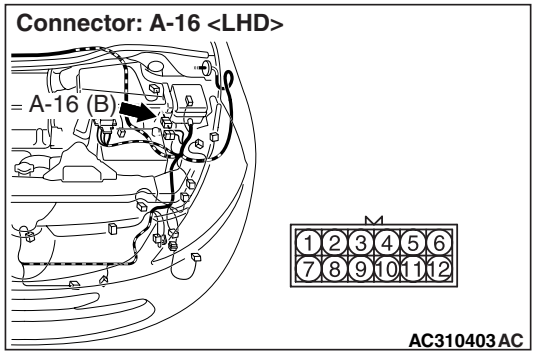
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



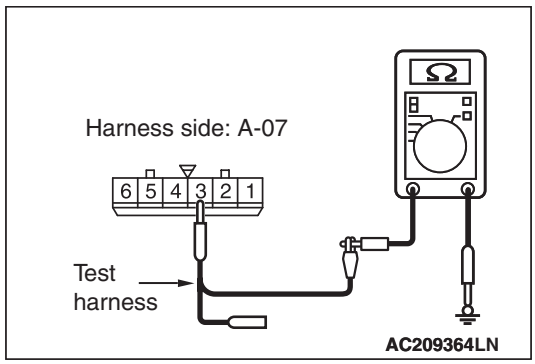


(1) Disconnect the joint connector (CAN1) and the intermediate connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between A-07 joint connector (CAN1) terminal No.3 and body earth

OK: 1 kΩ or more

Q: Is the check result normal?

YES : <1 kΩ or more> Go to Step 26 .

NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN1) and the intermediate connector.

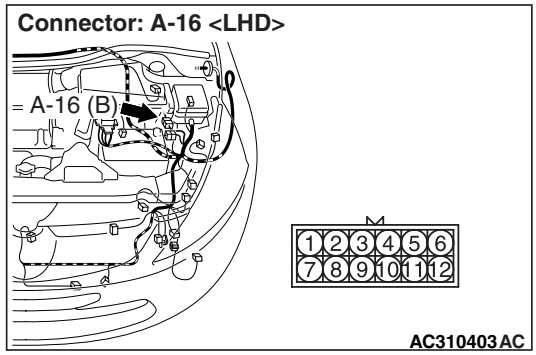
STEP 26. Resistance measurement at the A-16 intermediate connector.

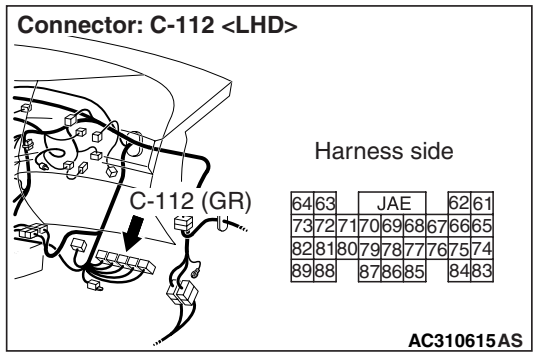
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





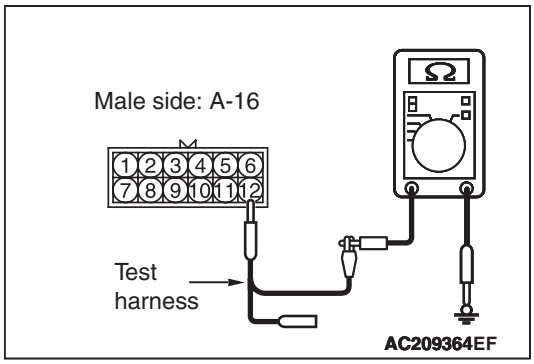
(1) Disconnect the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector and the

intermediate connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between A-16 intermediate connector terminal No.12 and body earth

OK: 1 kΩ or more

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

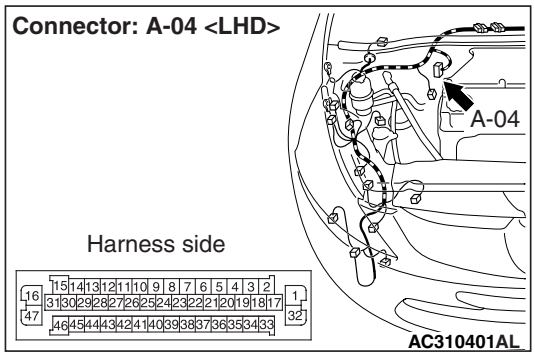
Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 18, Diagnose CAN bus lines thoroughly. Refer to P.54D-476.

NO : <less than 1 Ω> Repair the wiring harness between the intermediate connector and the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector.

STEP 27. Connector check: A-04 ASC-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 28 .

NO : Repair the defective connector.

STEP 28. Resistance measurement at the A-07 joint connector (CAN1).

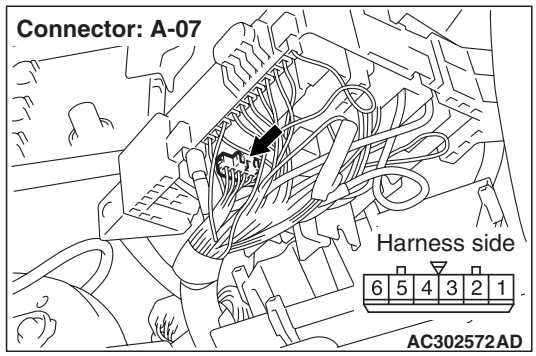
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

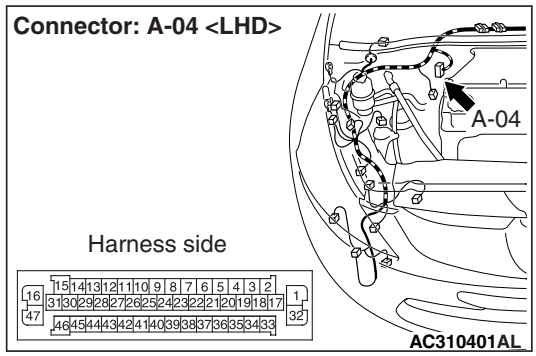
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





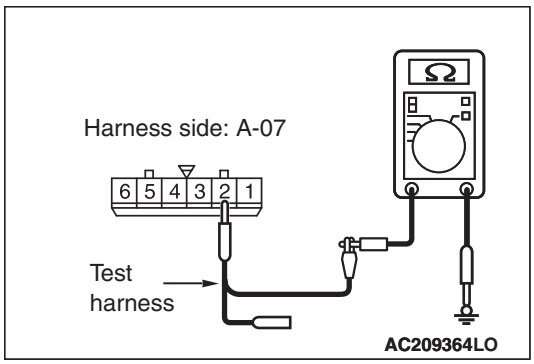
(1) Disconnect the joint connector (CAN1) and the ASC-ECU connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is

disconnected.



(3) Resistance between A-07 joint connector (CAN1) terminal No.2 and body earth

OK: 1 kΩ or more

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 18, Diagnose CAN bus lines thoroughly. Refer to P.54D-476.

NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN1) and the ASC-ECU connector.

STEP 29. Resistance measurement at the A-07 joint connector (CAN1).

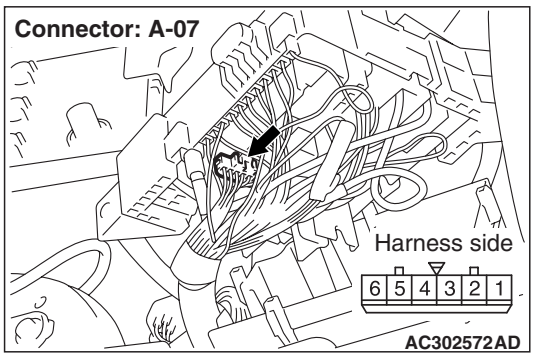
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

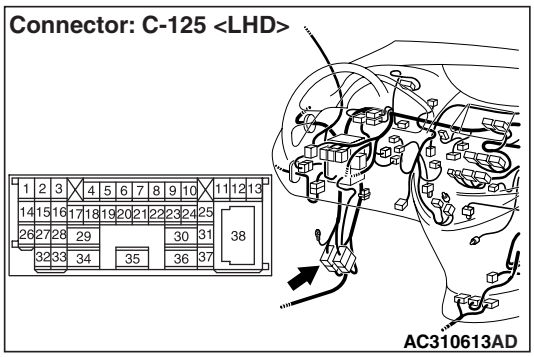
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





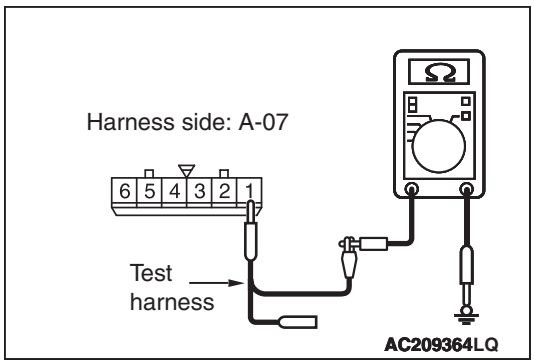
(1) Disconnect the joint connector (CAN1) and the intermediate connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is

disconnected.



(3) Resistance between A-07 joint connector (CAN1) terminal No.1 and body earth

OK: 1 kΩ or more

⚠ CAUTION

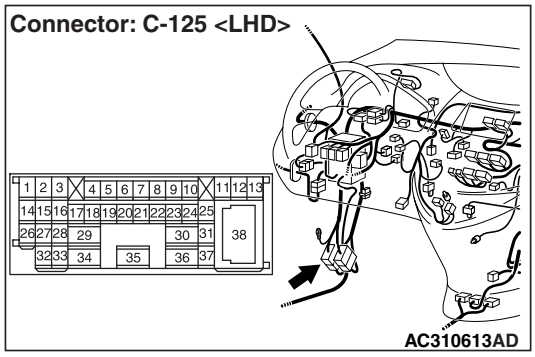
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 18, Diagnose CAN bus lines thoroughly. Refer to P.54D-476.

NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN1) and the intermediate connector.

STEP 30. Connector check: C-125 intermediate connector



⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 31 .

NO : Repair the defective connector.

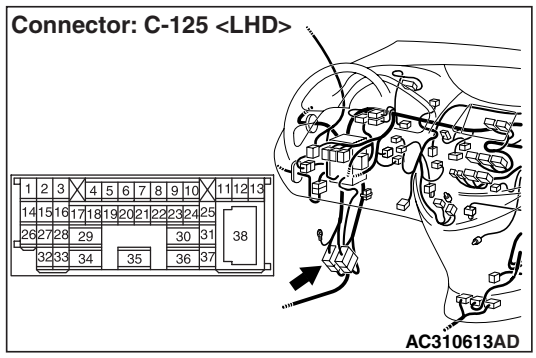
STEP 31. Resistance measurement at the C-125 intermediate connector.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.

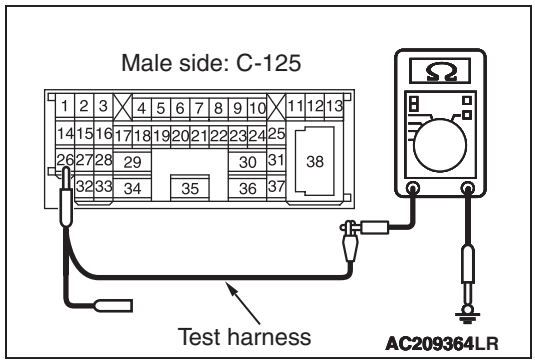


(1) Disconnect the connector, and measure at its male-side intermediate connector (at the front wiring harness side).

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-125 intermediate connector terminal No.26 and body earth

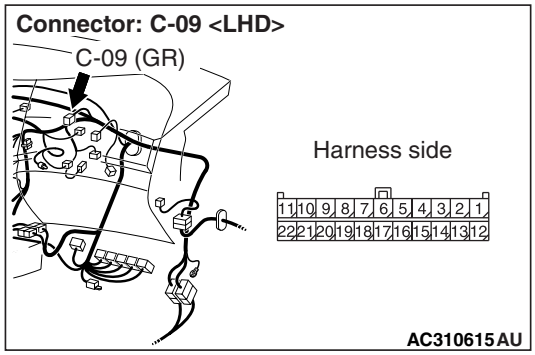
OK: 1 kΩ or more

Q: Is the check result normal?

YES : <1 kΩ or more> Go to Step 32.

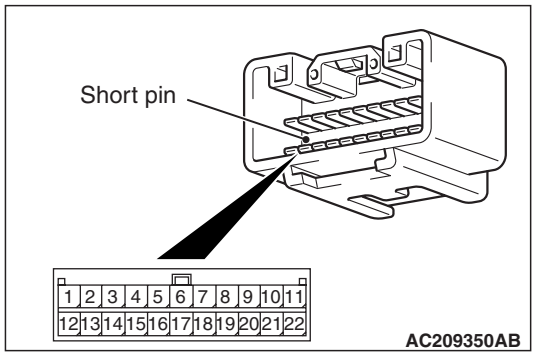
NO : <less than 1 kΩ> Go to Step 49.

STEP 32. Connector check: C-09 joint connector (CAN2)



⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.



When checking the joint connector, ensure that its wiring harness side and its short pins are not damaged.

Q: Is the check result normal?

YES : Go to Step 33 .

NO : Repair a defective connector or replace the joint connector.

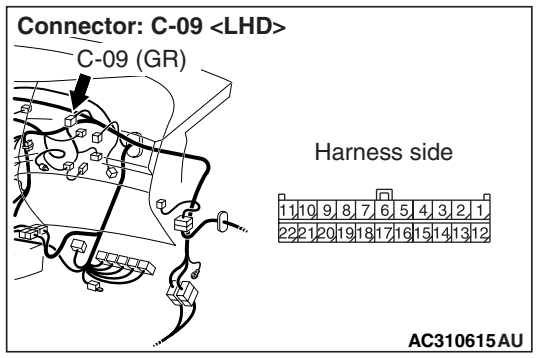
STEP 33. Resistance measurement at C-09 joint connector (CAN2).

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.

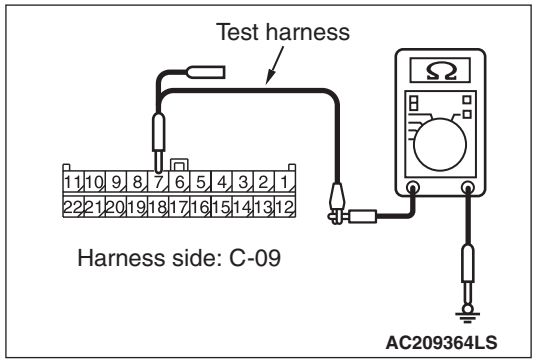


(1) Disconnect the connector, and measure at the wiring harness side.

⚠ CAUTION

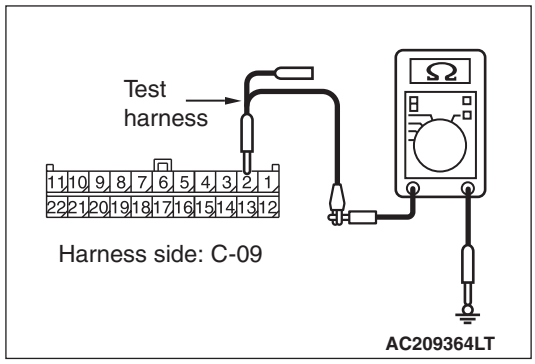
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2) terminal No.7 and body earth

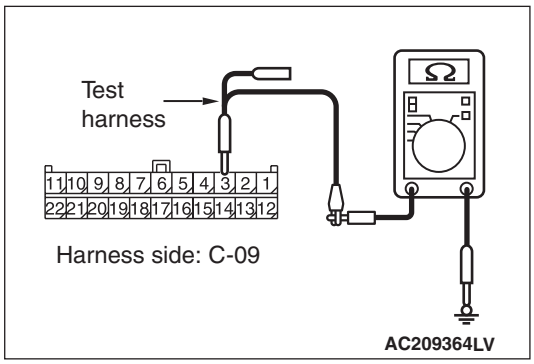
OK: 1 kΩ or more



(4) Resistance between C-09 joint connector (CAN2)

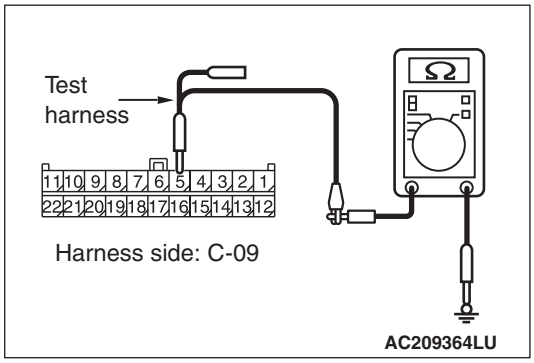
terminal No.2 and body earth

OK: 1 kΩ or more



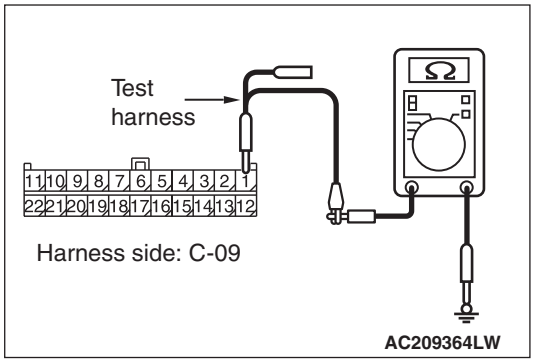
(5) Resistance between C-09 joint connector (CAN2) terminal No.3 and body earth

OK: 1 kΩ or more



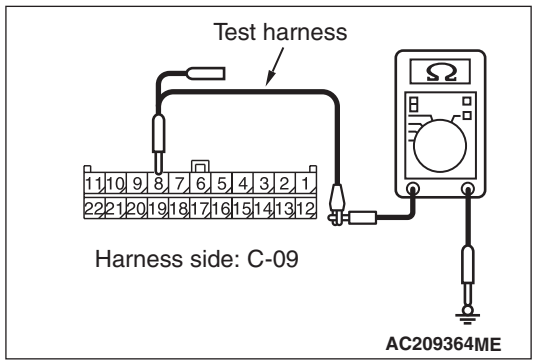
(6) Resistance between C-09 joint connector (CAN2) terminal No.5 and body earth

OK: 1 kΩ or more



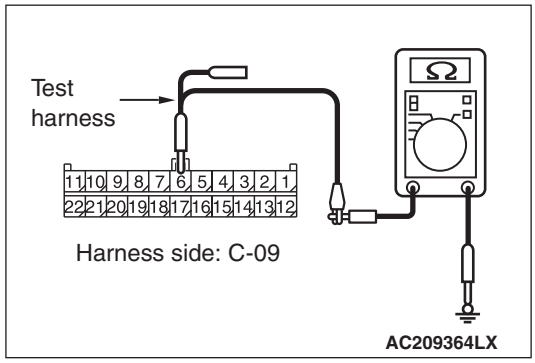
(7) Resistance between C-09 joint connector (CAN2) terminal No.1 and body earth

OK: 1 kΩ or more



(8) Resistance between C-09 joint connector (CAN2) terminal No.8 and body earth

OK: 1 kΩ or more



(9) Resistance between C-09 joint connector (CAN2) terminal No.6 and body earth

OK: 1 kΩ or more

Q: Are the check result normal?

YES <all of the measurement results show 1 kΩ or more> : Go to Step 48 .

NO <The resistance between terminal No.7 and body earth is less than 1 kΩ> : Go to Step 34 .

NO <The resistance between terminal No.2 and body earth is less than 1 kΩ> : Go to Step 35 .

NO <The resistance between terminal No.3 and body earth is less than 1 kΩ> : Go to Step 37 .

NO <The resistance between terminal No.5 and body earth is less than 1 kΩ> : Go to Step 39 .

NO <The resistance between terminal No.1 and body earth is less than 1 kΩ> : Go to Step 43 .

NO <The resistance between terminal No.8 and body earth is less than 1 kΩ> : Go to Step 45 .

NO <The resistance between terminal No.6 and body earth is less than 1 kΩ> : Go to Step 47 .

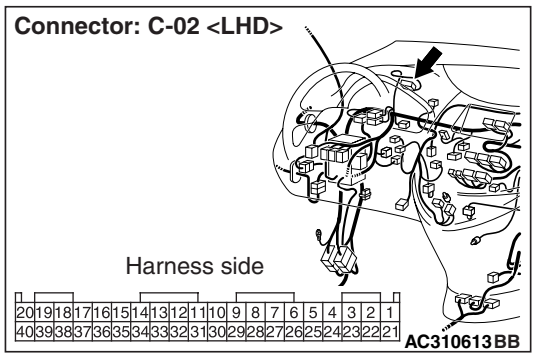
STEP 34. Resistance measurement at C-09 joint connector (CAN2).

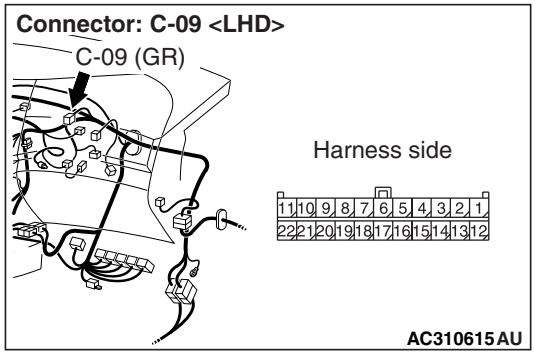
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



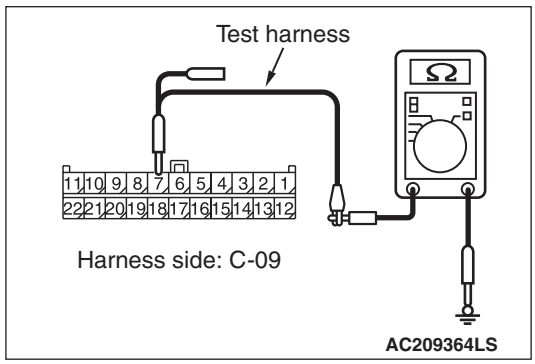


(1) Disconnect the joint connector (CAN2) and the combination meter connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2) terminal No.7 and body earth

OK: 1 kΩ or more

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

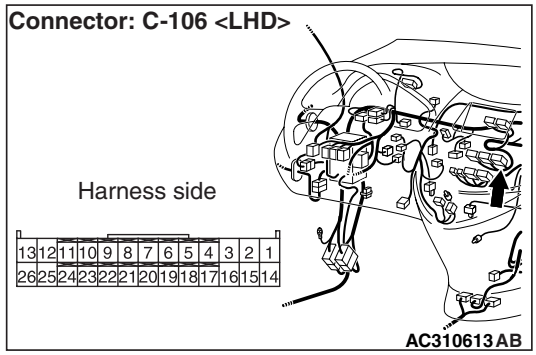
Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 18, Diagnose CAN bus lines thoroughly. Refer to P.54D-476.

NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the combination meter connector.

STEP 35. Connector check: C-106 A/C-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 36 .

NO : Repair the defective connector.

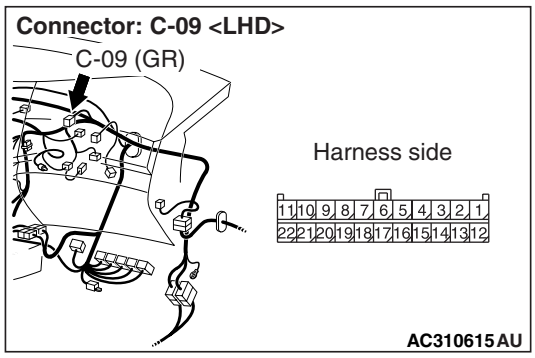
STEP 36. Resistance measurement at C-09 joint connector (CAN2).

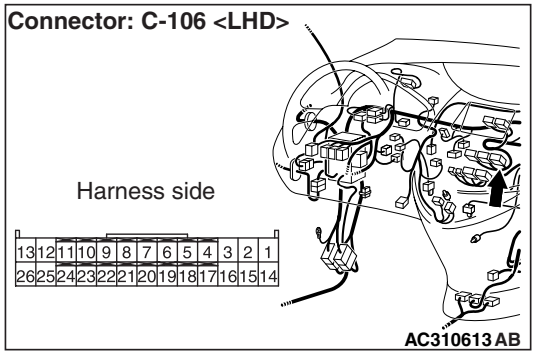
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



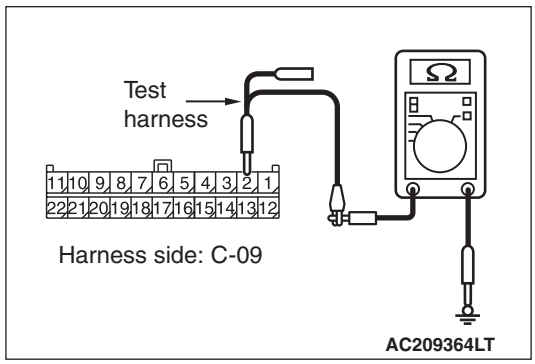


(1) Disconnect the joint connector (CAN2) and the A/C-ECU connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2) terminal No.2 and body earth

OK: 1 kΩ or more

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

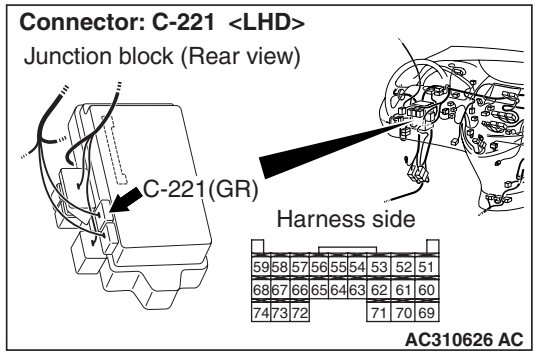
Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 18, Diagnose CAN bus lines thoroughly. Refer to P.54D-476.

NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the A/C-ECU connector.

STEP 37. Connector check: C-221 ETACS-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 38 .

NO : Repair the defective connector.

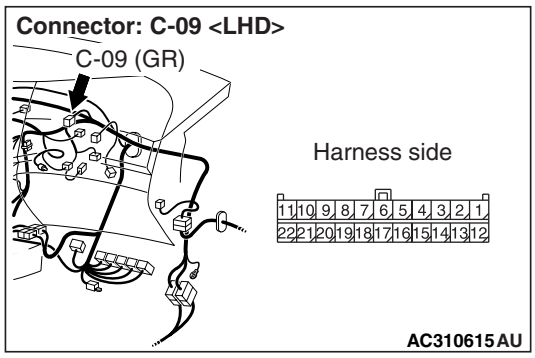
STEP 38. Resistance measurement at C-09 joint connector (CAN2).

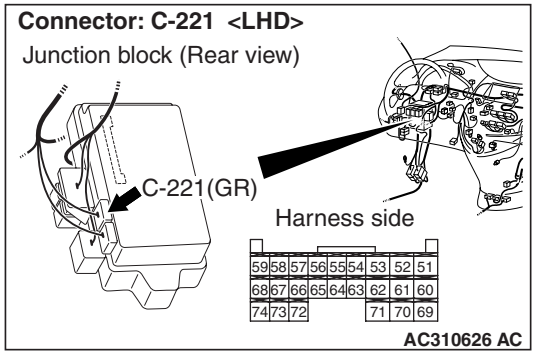
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



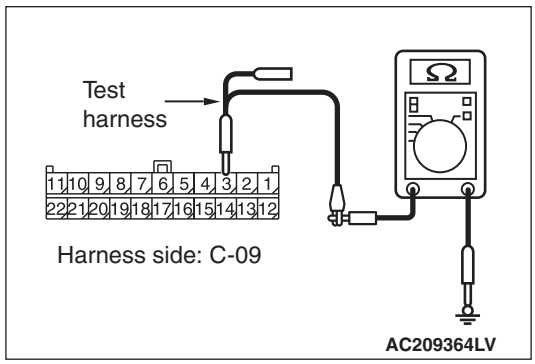


(1) Disconnect the joint connector (CAN2) and the ETACS-ECU connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2) terminal No.3 and body earth

OK: 1 kΩ or more

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

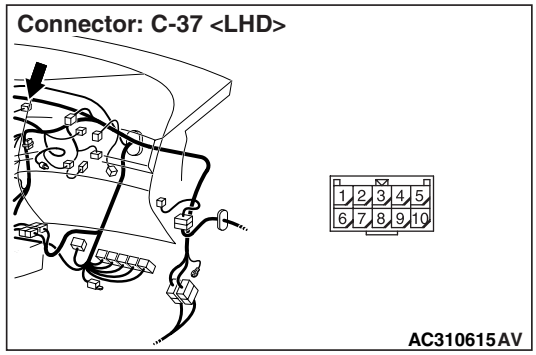
Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 18, Diagnose CAN bus lines thoroughly. Refer to P.54D-476.

NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the ETACS-ECU connector.

STEP 39. Connector check: C-37 jumper connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Check that the wiring harness of the jumper connector is not damaged.

Q: Is the check result normal?

YES : Go to Step 40 .

NO : Repair the defective connector.

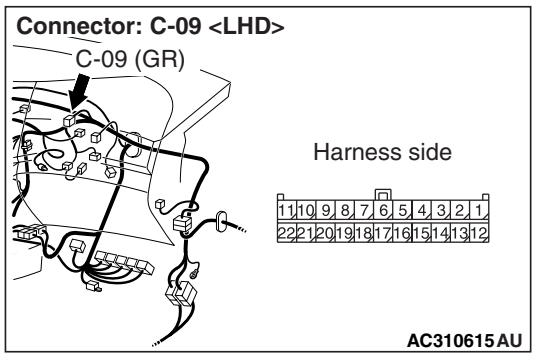
STEP 40. Resistance measurement at the C-09 joint connector (CAN2).

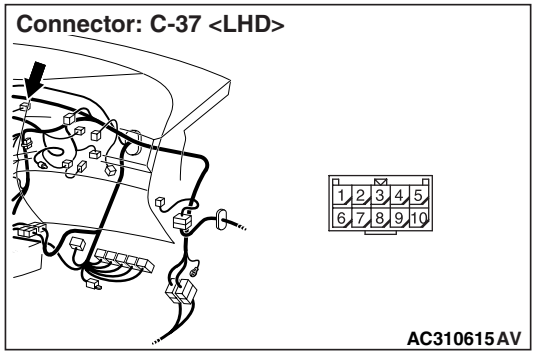
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



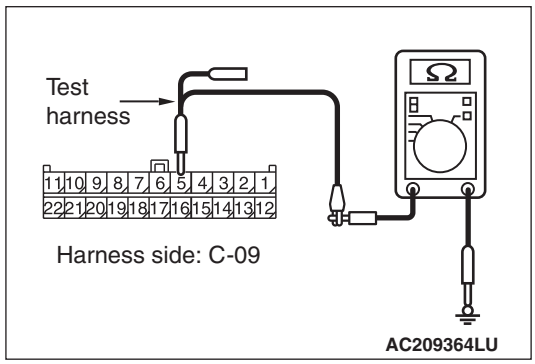


(1) Disconnect the joint connector (CAN2) and the jumper connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2) terminal No.5 and body earth

OK: 1 kΩ or more

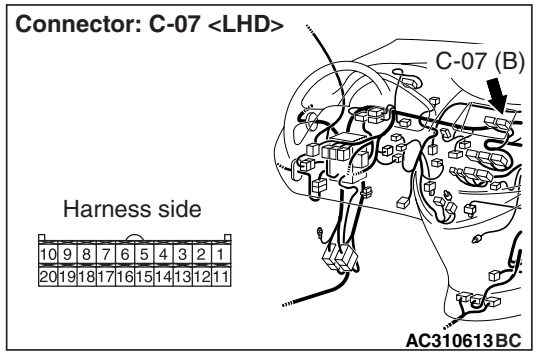
Q: Is the check result normal?

YES : <1 kΩ or more> Go to Step 41.

NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the jumper connector.

STEP 41. Connector check: C-07 centre display connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 42 .

NO : Repair the defective connector.

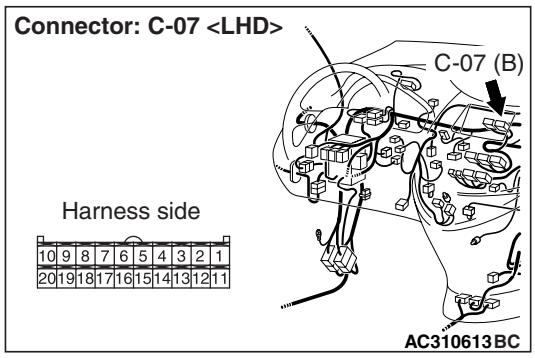
STEP 42. Resistance measurement at the C-37 jumper connector.

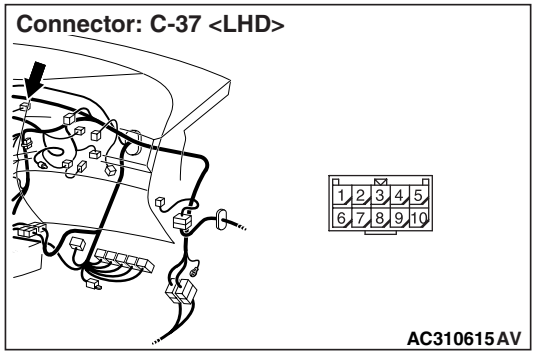
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



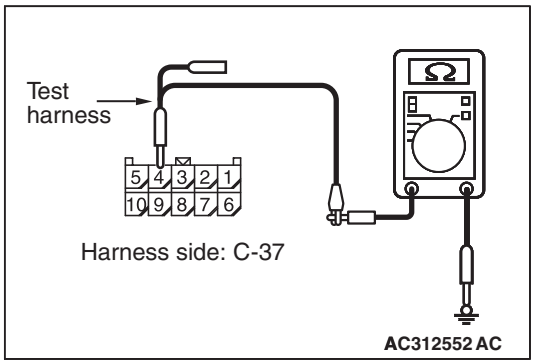


(1) Disconnect the centre display connector and the jumper connector, and measure at the jumper connector (at the centre display side).

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-37 jumper connector terminal No.4 and body earth

OK: 1 kΩ or more

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

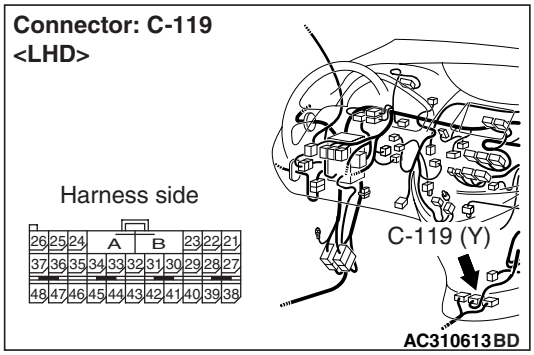
Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 18, Diagnose CAN bus lines thoroughly. Refer to P.54D-476.

NO : <less than 1 Ω> Repair the wiring harness between the jumper connector and the centre display connector.

STEP 43. Connector check: C-119 SRS-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 44 .

NO : Repair the defective connector.

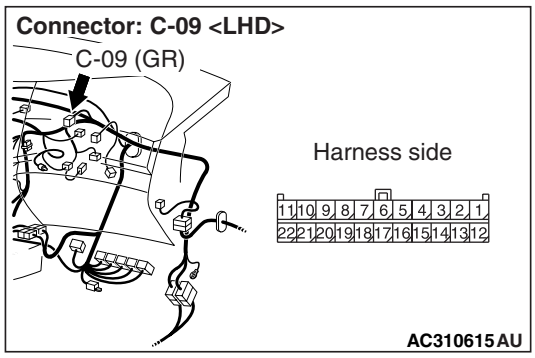
STEP 44. Resistance measurement at C-09 joint connector (CAN2).

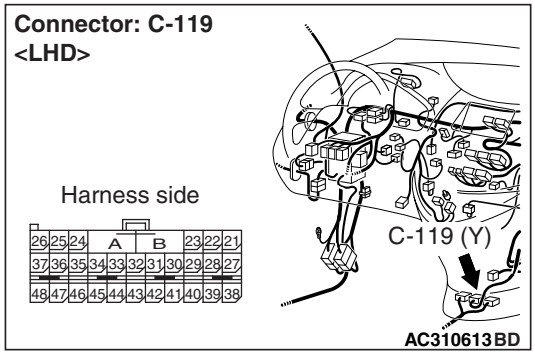
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



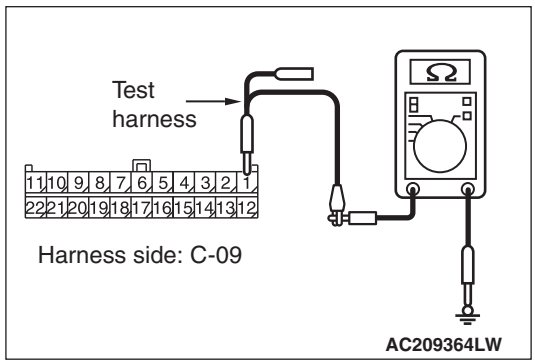


(1) Disconnect the joint connector (CAN2) and the SRS-ECU connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2) terminal No.1 and body earth

OK: 1 kΩ or more

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

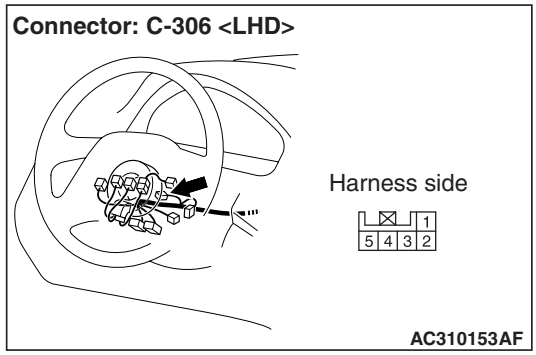
Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 18, Diagnose CAN bus lines thoroughly. Refer to P.54D-476.

NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the SRS-ECU connector.

STEP 45. Connector check: C-306 steering wheel angle sensor connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 46 .

NO : Repair the defective connector.

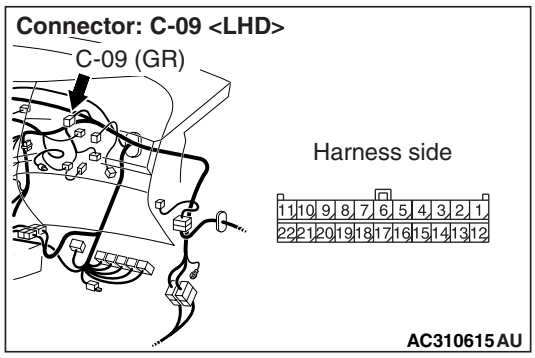
STEP 46. Resistance measurement at C-09 joint connector (CAN2).

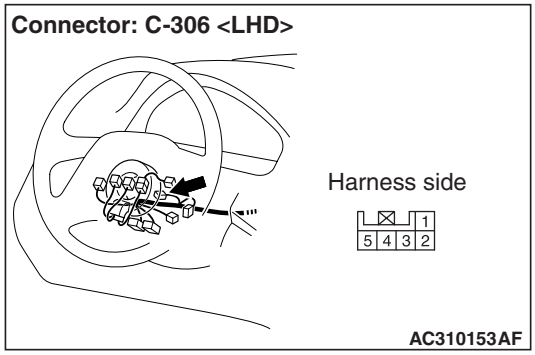
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



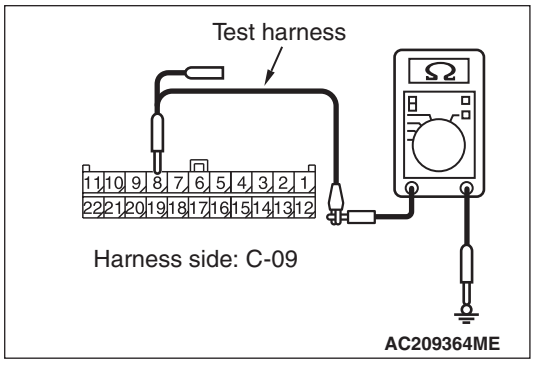


(1) Disconnect the joint connector (CAN2) and the steering wheel angle sensor connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2) terminal No.8 and body earth

OK: 1 kΩ or more

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 18, Diagnose CAN bus lines thoroughly. Refer to P.54D-476.

NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the steering angle sensor connector.

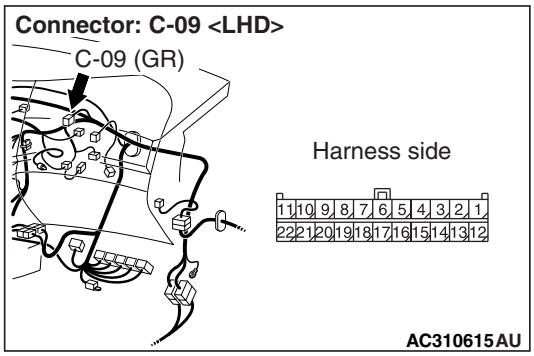
STEP 47. Resistance measurement at C-09 joint connector (CAN2).

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.

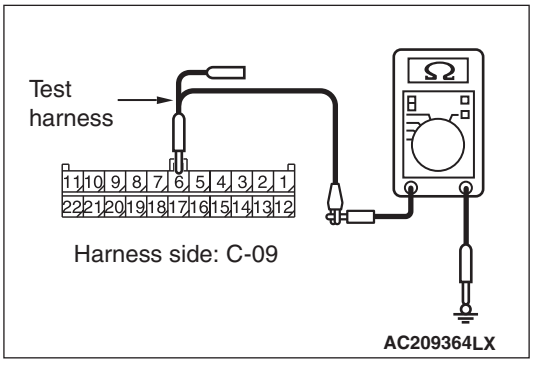


(1) Disconnect the connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2)

terminal No.6 and body earth
OK: 1 kΩ or more

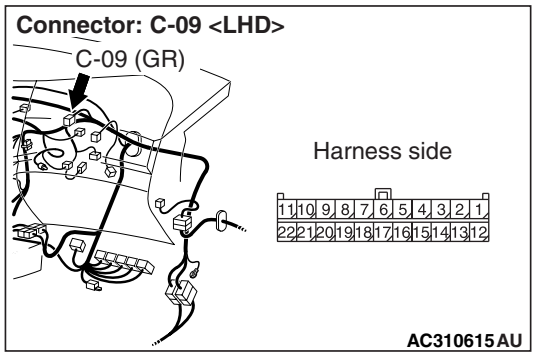
⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <1 kΩ or more> Follow diagnostic item 18, Diagnose CAN bus lines thoroughly. Refer to P.54D-476.
NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the diagnosis connector.

STEP 48. Resistance measurement at C-09 joint connector (CAN2).

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

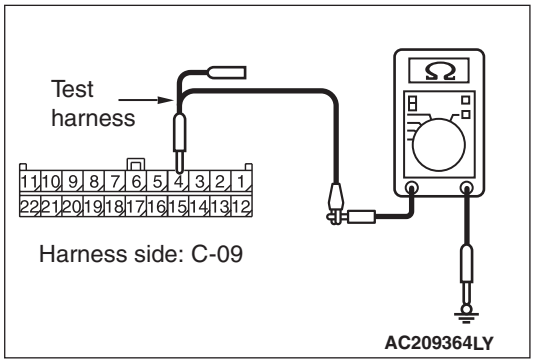
⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the connector, and measure at the wiring harness side.

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2) terminal No.4 and body earth
OK: 1 kΩ or more

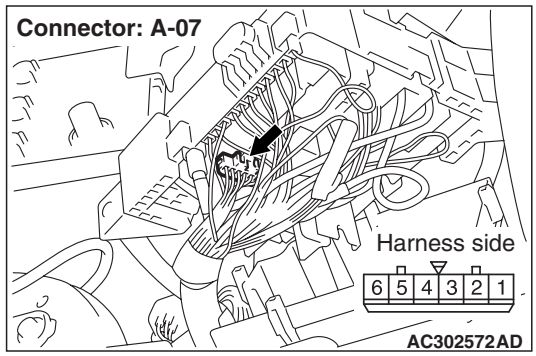
⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <1 kΩ or more> Follow diagnostic item 18, Diagnose CAN bus lines thoroughly. Refer to P.54D-476.
NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the intermediate connector.

STEP 49. Connector check: A-07 joint connector (CAN1)

NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

When checking the joint connector, ensure that its wiring harness side is not damaged.

Q: Is the check result normal?
YES : Go to Step 50 .
NO : Repair a defective connector or replace the joint connector (front wiring harness assembly).

STEP 50. Resistance measurement at the A-07 joint connector (CAN1).

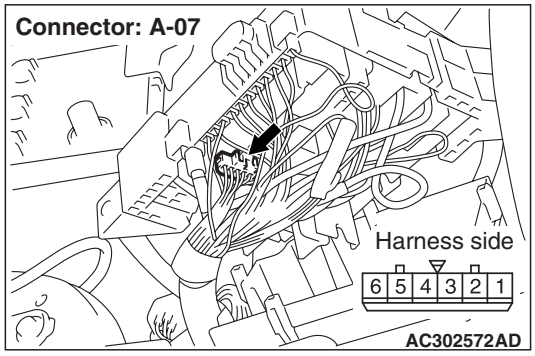
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.

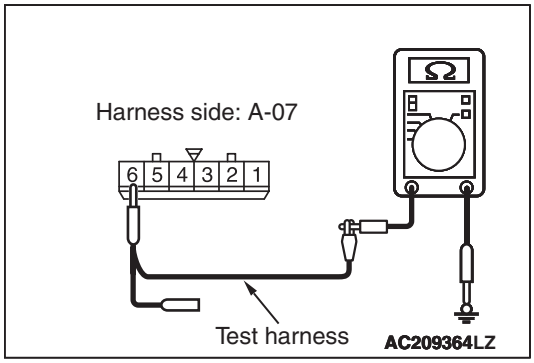


(1) Disconnect the connector, and measure at the wiring harness side.

⚠ CAUTION

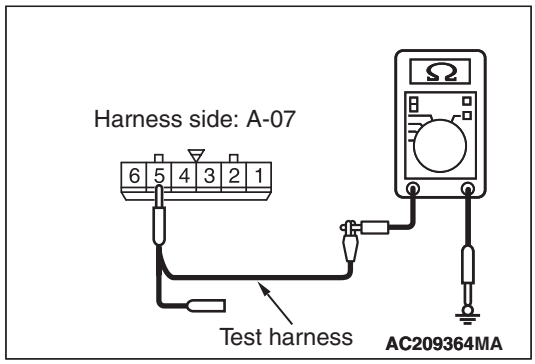
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between A-07 joint connector (CAN1) terminal No.6 and body earth

OK: 1 kΩ or more



(4) Resistance between A-07 joint connector (CAN1) terminal No.5 and body earth

OK: 1 kΩ or more

Q: Are the check result normal?

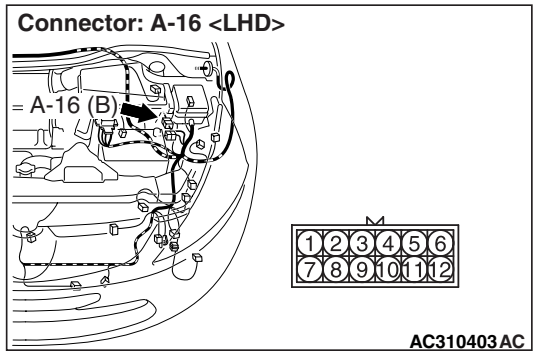
YES <all of the measurement results show 1 kΩ or more> : Go to Step 56 .

NO <The resistance between terminal No.6 and body earth is less than 1 kΩ> : Go to Step 51 .

NO <The resistance between terminal No.5 and body earth is less than 1 kΩ> : Go to Step 54 .

STEP 51. Connector check: A-16 intermediate connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 52 .

NO : Repair the defective connector.

STEP 52. Resistance measurement at the A-07 joint connector (CAN1).

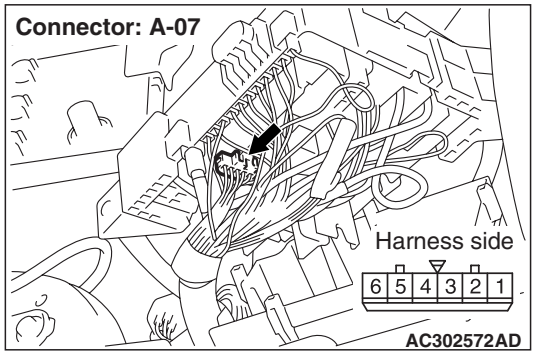
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

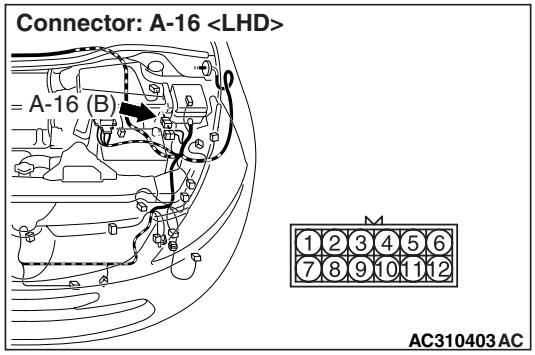
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



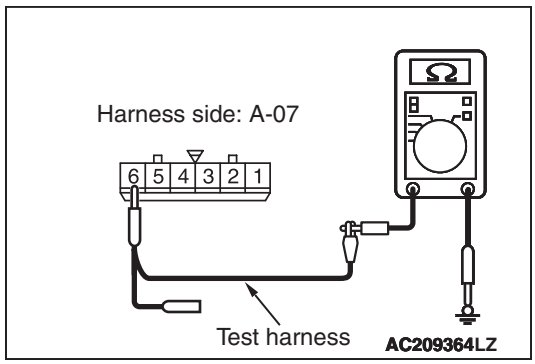


(1) Disconnect the joint connector (CAN1) and the intermediate connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between A-07 joint connector (CAN1) terminal No.6 and body earth

OK: 1 kΩ or more

Q: Is the check result normal?

YES : <1 kΩ or more> Go to Step 53 .

NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN1) and the intermediate connector.

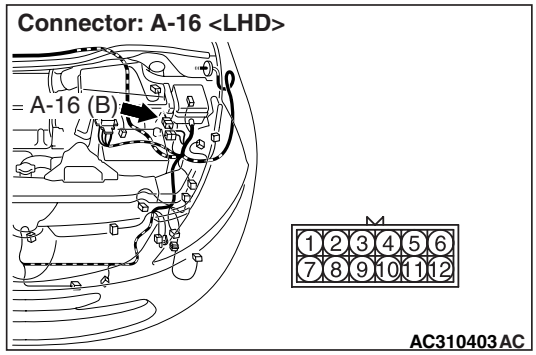
STEP 53. Resistance measurement at the A-16 intermediate connector.

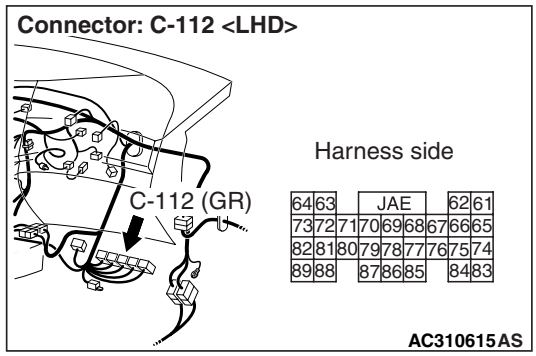
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





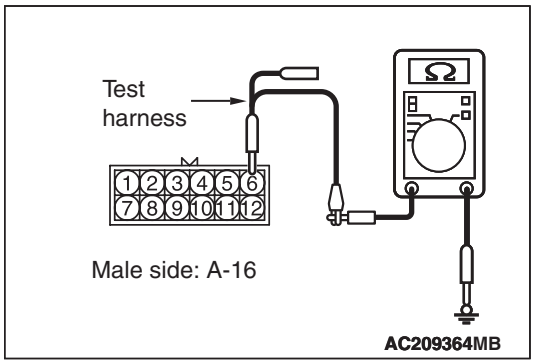
(1) Disconnect the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector and the

intermediate connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between A-16 intermediate connector terminal No.6 and body earth

OK: 1 kΩ or more

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

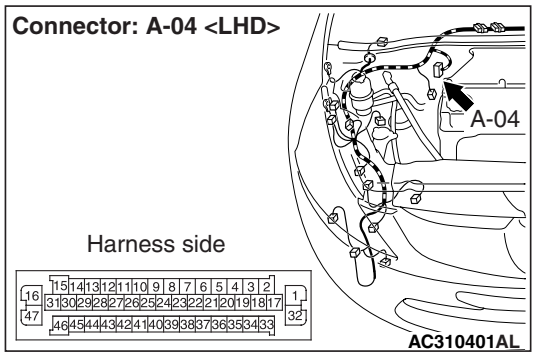
Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 18, Diagnose CAN bus lines thoroughly. Refer to P.54D-476.

NO : <less than 1 Ω> Repair the wiring harness between the intermediate connector and the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector.

STEP 54. Connector check: A-04 ASC-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 55 .

NO : Repair the defective connector.

STEP 55. Resistance measurement at the A-07 joint connector (CAN1).

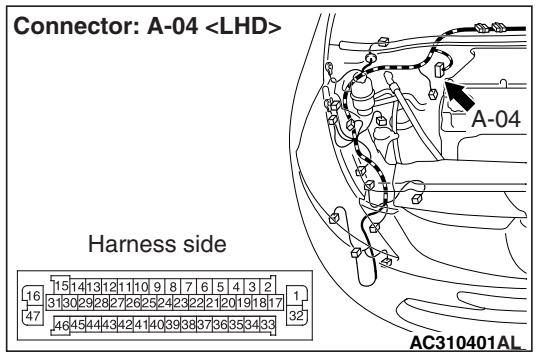
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

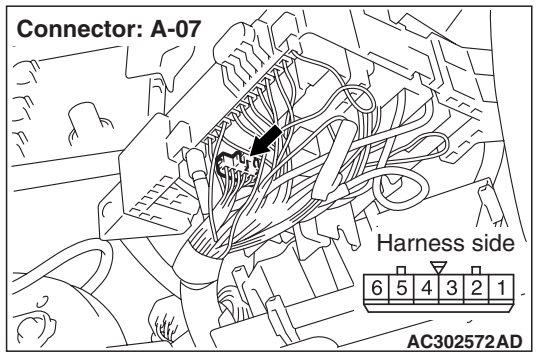
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





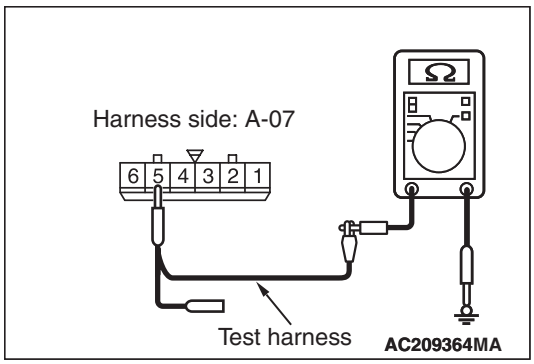
(1) Disconnect the joint connector (CAN1) and the ASC-ECU connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is

disconnected.



(3) Resistance between A-07 joint connector (CAN1) terminal No.5 and body earth

OK: 1 kΩ or more

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 18, Diagnose CAN bus lines thoroughly. Refer to P.54D-476.

NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN1) and the ASC-ECU connector.

STEP 56. Resistance measurement at the A-07 joint connector (CAN1).

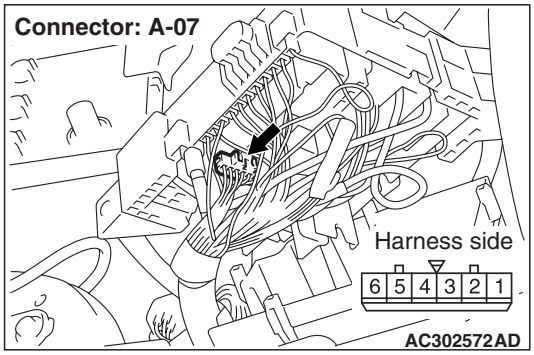
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

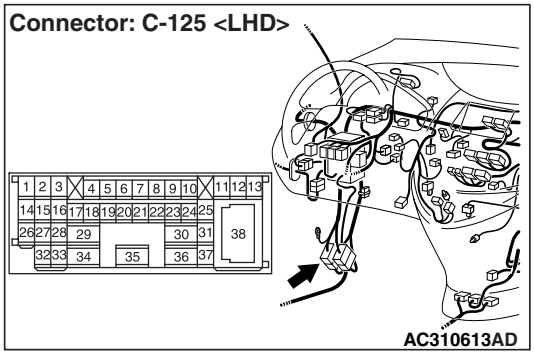
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





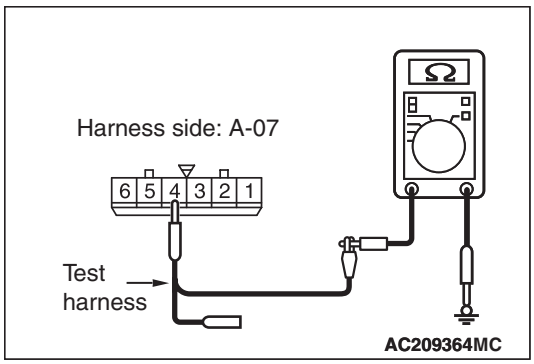
(1) Disconnect the joint connector (CAN1) and the intermediate connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is

disconnected.



(3) Resistance between A-07 joint connector (CAN1) terminal No.4 and body earth

OK: 1 kΩ or more

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?

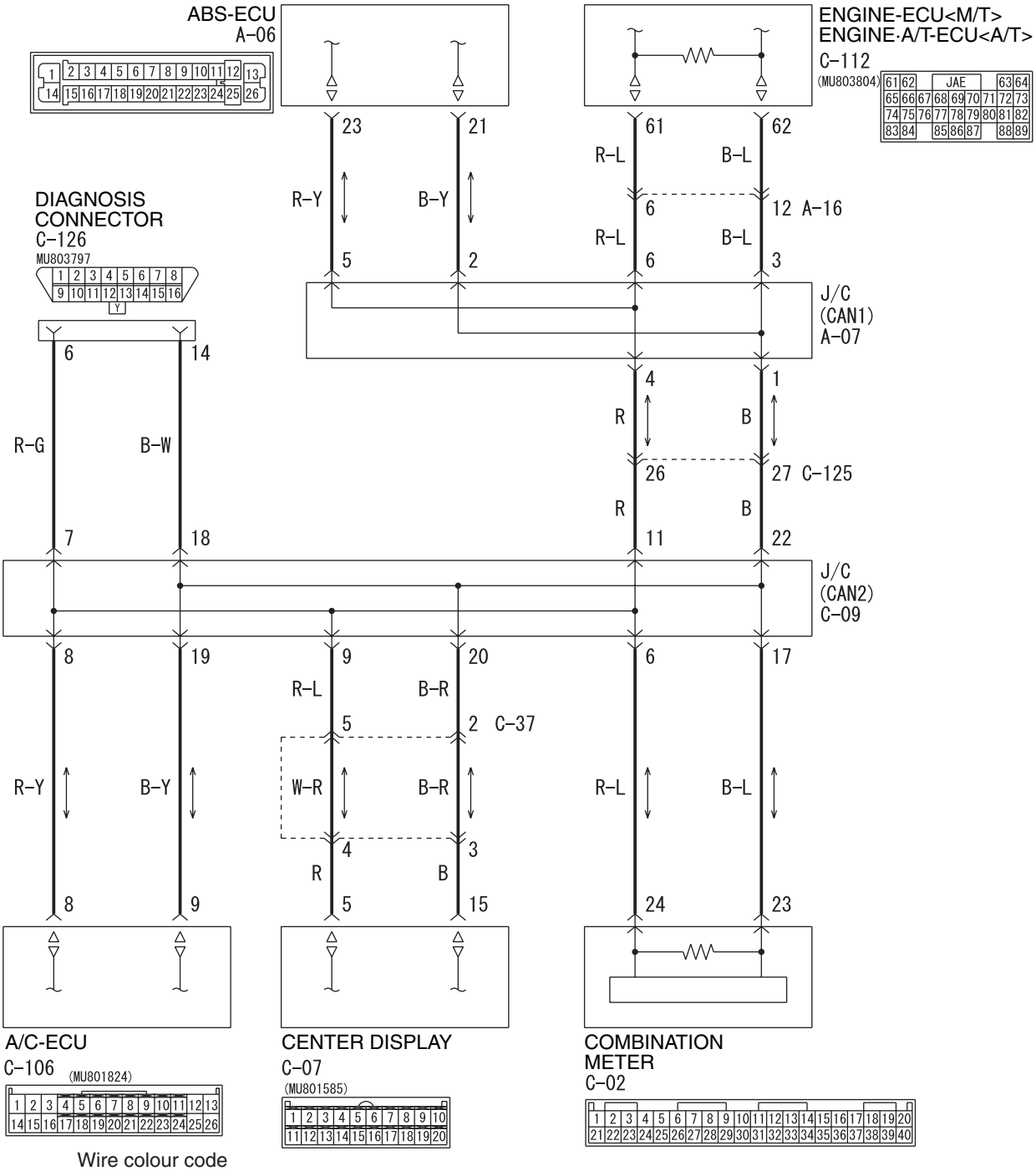
YES : <1 kΩ or more> Follow diagnostic item 18, Diagnose CAN bus lines thoroughly. Refer to P.54D-476.

NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN1) and the intermediate connector.

Diagnostic Item 7: Diagnose the CAN bus lines for short to earth <RH drive vehicles without ASC>

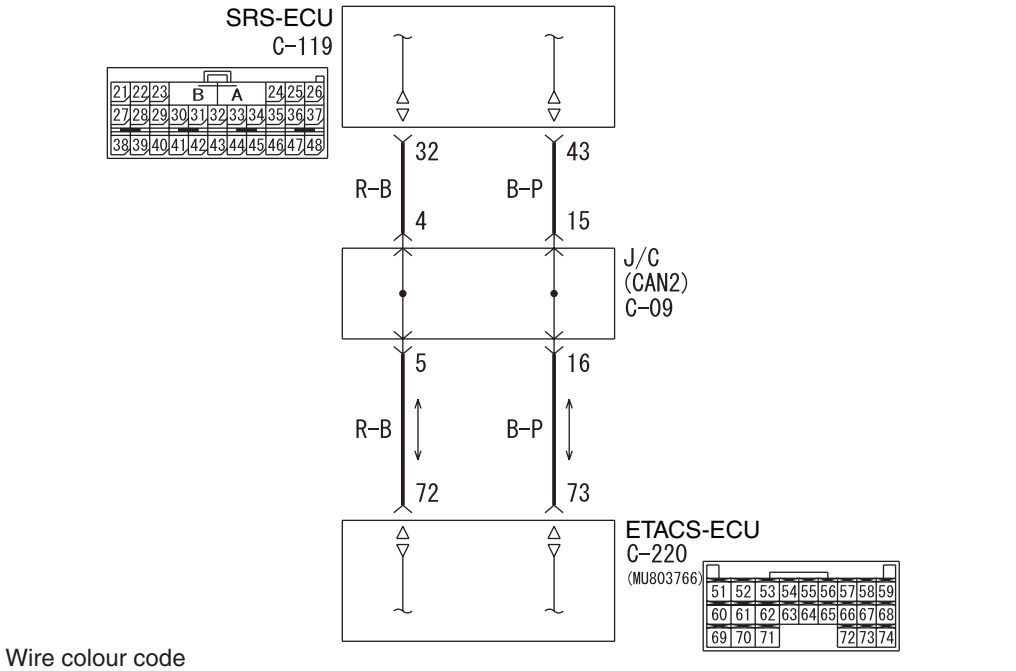
⚠ CAUTION

When servicing a CAN bus line, earth yourself by touching a metal object such as an unpainted water pipe. If you fail to do, a component connected to the CAN bus line may be broken.



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E22AA



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E23AA

TROUBLE JUDGMENT

The CAN bus line has been shorted to earth if the voltage between the CAN bus line (CAN_L or CAN_H) and body earth is less than 1.0 V. In this condition, an abnormal voltage may be measured at CAN_L and CAN_H lines.

COMMENTS ON TROUBLE SYMPTOM

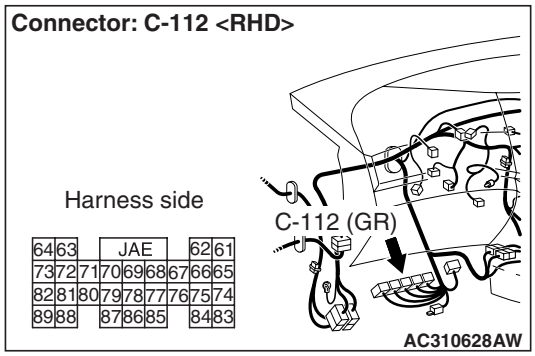
The wiring harness wire or connectors may have loose, corroded, or damage terminals, or terminals pushed back in the connector, or a ECU may be defective.

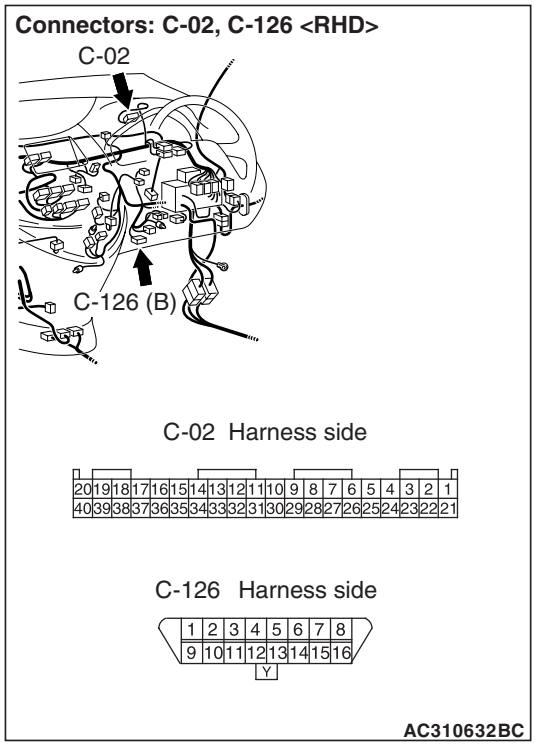
POSSIBLE CAUSES

- Damaged harness wires and connectors
- Malfunction of the ETACS-ECU
- Malfunction of the combination meter
- Malfunction of the A/C-ECU
- Malfunction of the SRS-ECU
- Malfunction of the multi-centre display
- Malfunction of the ABS-ECU
- Malfunction of the engine-ECU <M/T> or engine-A/T-ECU <A/T>

DIAGNOSTIC PROCEDURE

STEP 1. Connector check: C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector, C-02 combination meter connector and C-126 diagnosis connector





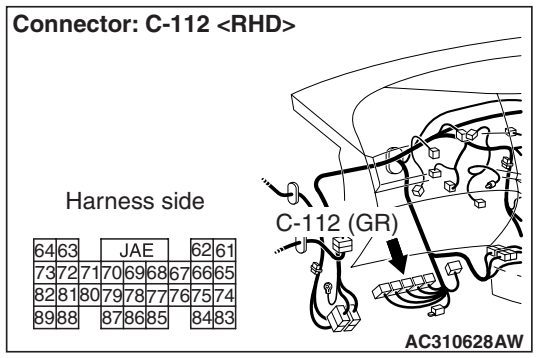
⚠ CAUTION
The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

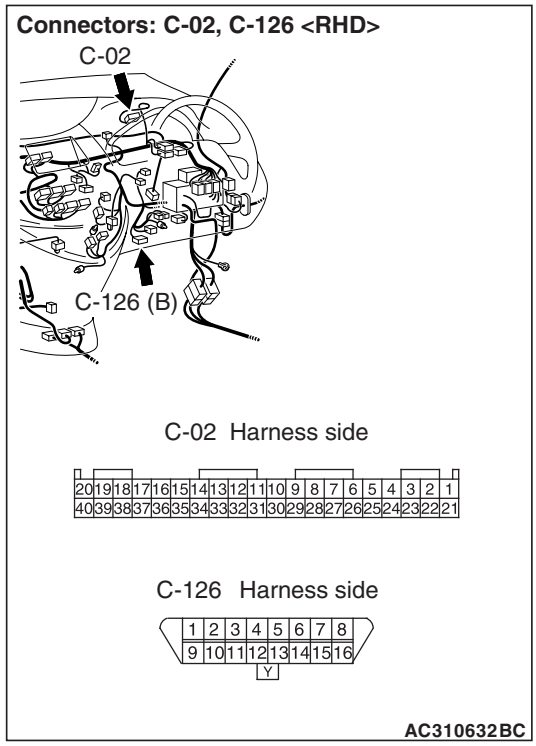
Q: Are the check result normal?
YES : Go to Step 2.
NO : Repair the defective connector.

STEP 2. Resistance measurement at the C-126 diagnosis connector.

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.



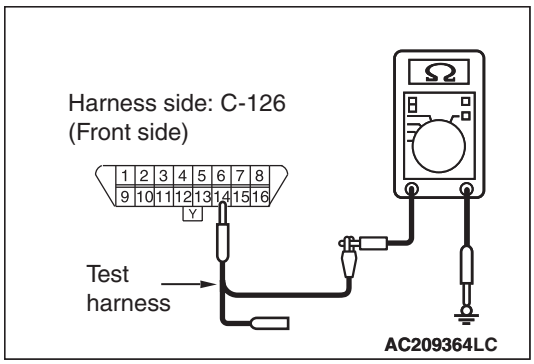


(1) Disconnect the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector and the combination meter connector, and measure at the wiring harness side.

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

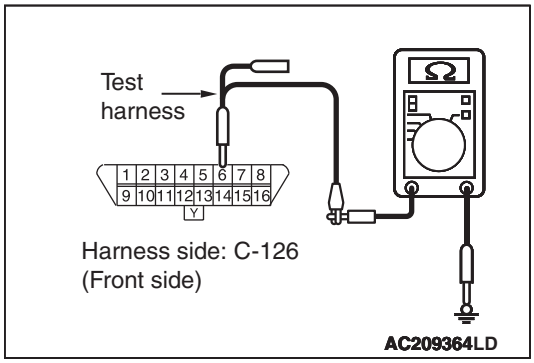
(2) Ensure that the negative battery terminal is

disconnected.



(3) Resistance between C-126 diagnosis connector terminal No.14 and body earth

OK: 1 kΩ or more



(4) Resistance between C-126 diagnosis connector terminal No.6 and body earth

OK: 1 kΩ or more

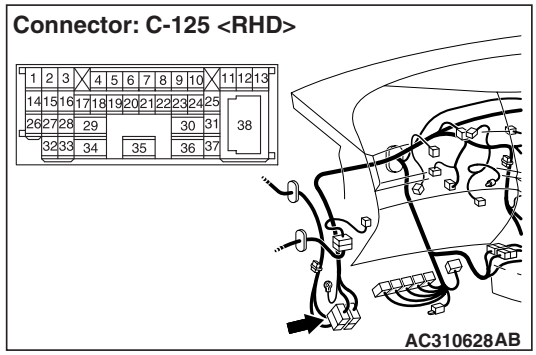
Q: Are the check result normal?

YES <all of the measurement results show 1 kΩ or more> : Follow diagnostic item 19 "Diagnose CAN bus lines thoroughly." Refer to P.54D-502.

NO <The resistance between terminal No.14 and body earth is less than 1 kΩ> : Go to Step 3.

NO <The resistance between terminal No.6 and body earth is less than 1 kΩ> : Go to Step 28.

STEP 3. Connector check: C-125 intermediate connector



⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 4.

NO : Repair the defective connector.

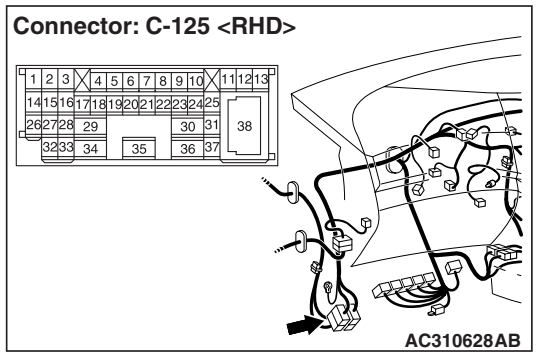
STEP 4. Resistance measurement at the C-125 intermediate connector.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



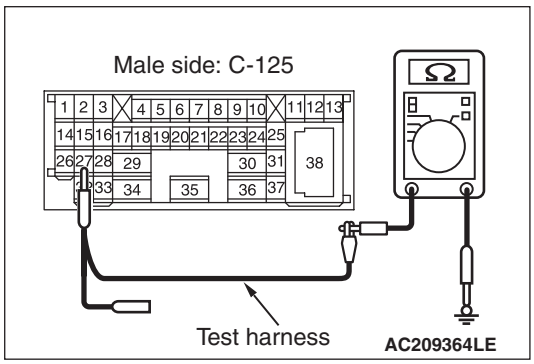
(1) Disconnect the connector, and measure at its male-side intermediate connector (at the front wiring harness side).

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is

disconnected.



(3) Resistance between C-125 intermediate connector terminal No.27 and body earth

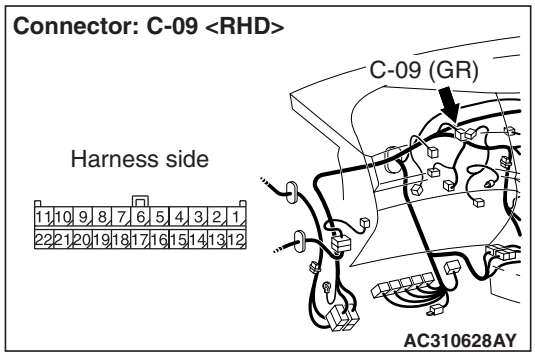
OK: 1 kΩ or more

Q: Is the check result normal?

YES : <1 kΩ or more> Go to Step 5.

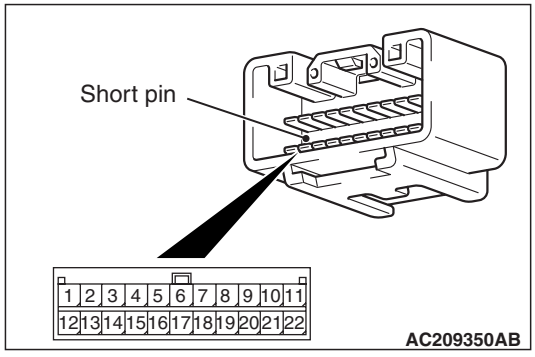
NO : <less than 1 kΩ> Go to Step 20.

STEP 5. Connector check: C-09 joint connector (CAN2)



⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.



When checking the joint connector, ensure that its wiring harness side and its short pins are not damaged.

Q: Is the check result normal?

YES : Go to Step 6.

NO : Repair a defective connector or replace the joint connector.

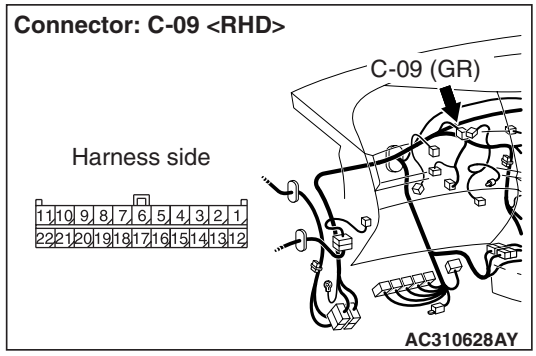
STEP 6. Resistance measurement at C-09 joint connector (CAN2).

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.

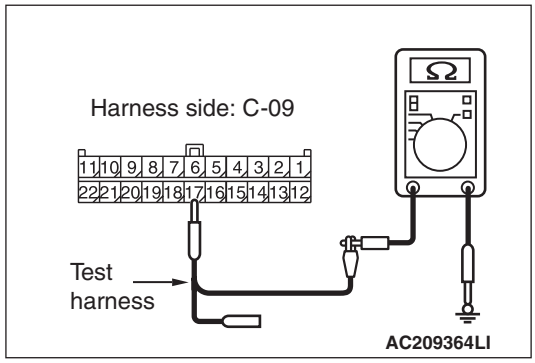


(1) Disconnect the connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

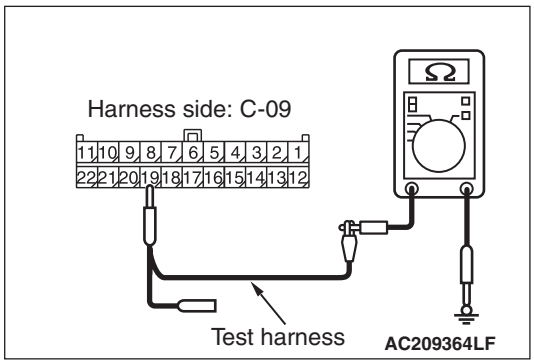
(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2)

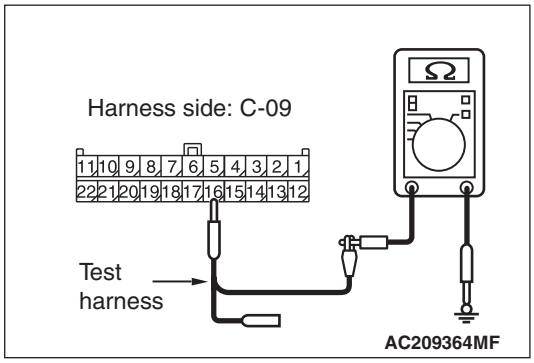
terminal No.17 and body earth

OK: 1 kΩ or more



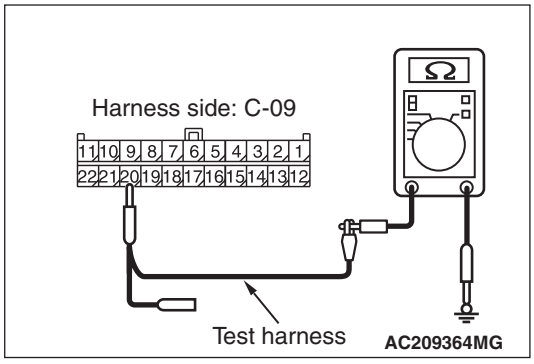
(4) Resistance between C-09 joint connector (CAN2) terminal No.19 and body earth

OK: 1 kΩ or more



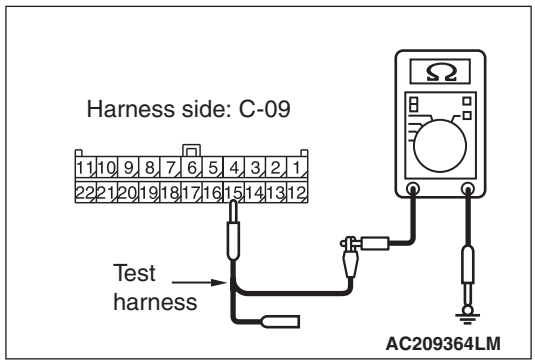
(5) Resistance between C-09 joint connector (CAN2) terminal No.16 and body earth

OK: 1 kΩ or more



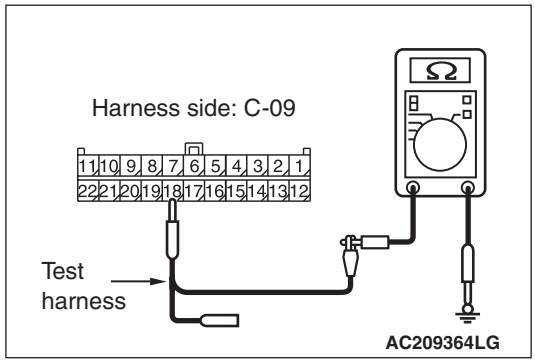
(6) Resistance between C-09 joint connector (CAN2) terminal No.20 and body earth

OK: 1 kΩ or more



(7) Resistance between C-09 joint connector (CAN2) terminal No.15 and body earth

OK: 1 kΩ or more



(8) Resistance between C-09 joint connector (CAN2) terminal No.18 and body earth

OK: 1 kΩ or more

Q: Are the check result normal?

YES <all of the measurement results show 1 kΩ or more> : Go to Step 19.

NO <The resistance between terminal No.17 and body earth is less than 1 kΩ> : Go to Step 7.

NO <The resistance between terminal No.19 and body earth is less than 1 kΩ> : Go to Step 8.

NO <The resistance between terminal No.16 and body earth is less than 1 kΩ> : Go to Step 10.

NO <The resistance between terminal No.20 and body earth is less than 1 kΩ> : Go to Step 12.

NO <The resistance between terminal No.15 and body earth is less than 1 kΩ> : Go to Step 16.

NO <The resistance between terminal No.18 and body earth is less than 1 kΩ> : Go to Step 18.

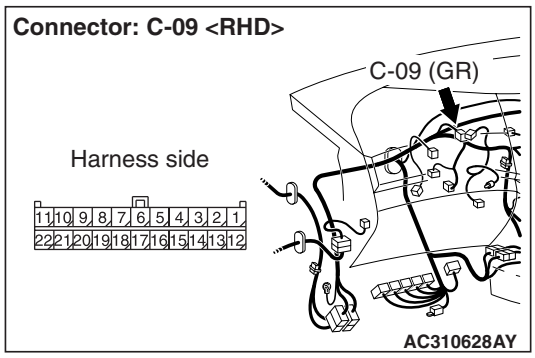
STEP 7. Resistance measurement at C-09 joint connector (CAN2).

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.

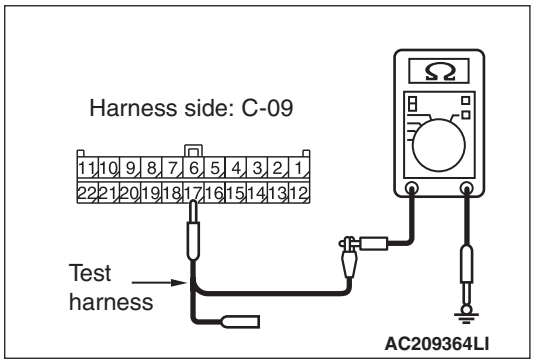


(1) Disconnect the joint connector (CAN2) and the combination meter connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2) terminal No.17 and body earth

OK: 1 kΩ or more

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

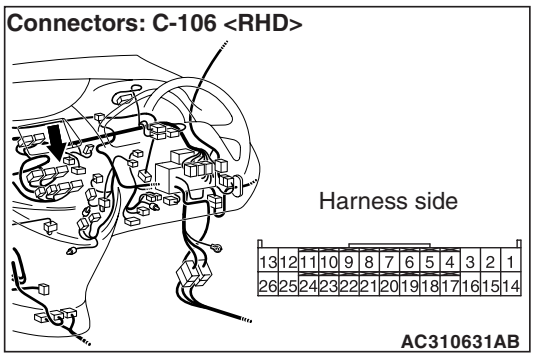
Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 19, Diagnose CAN bus lines thoroughly. Refer to P.54D-502.

NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the combination meter connector.

STEP 8. Connector check: C-106 A/C-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 9.

NO : Repair the defective connector.

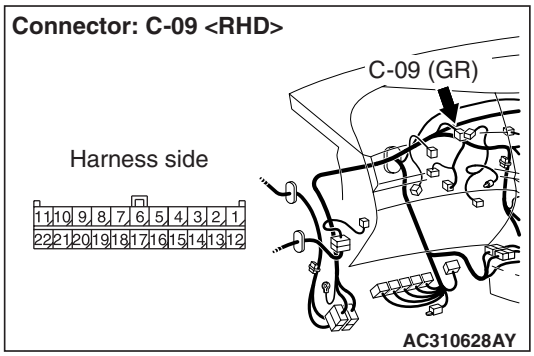
STEP 9. Resistance measurement at C-09 joint connector (CAN2).

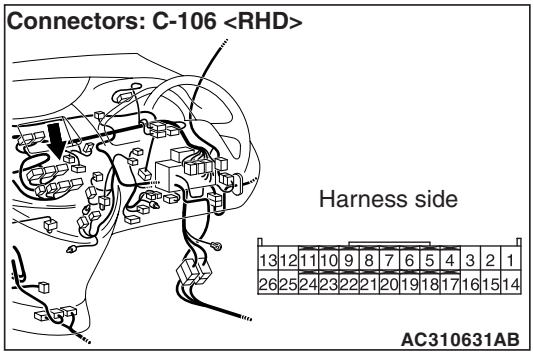
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





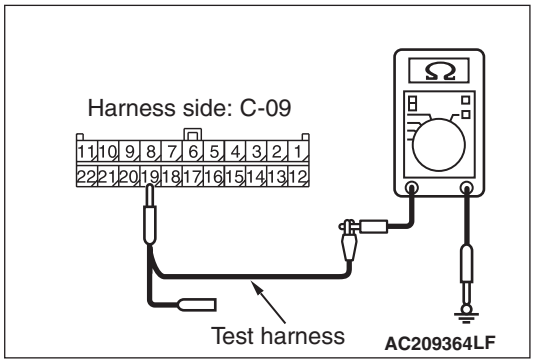
(1) Disconnect the joint connector (CAN2) and the A/C-ECU connector, and measure at the wiring

harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2) terminal No.19 and body earth

OK: 1 kΩ or more

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

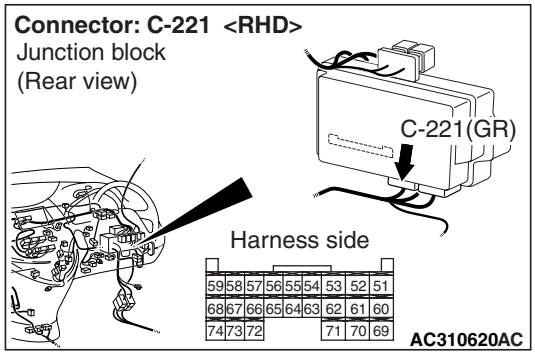
Q: Is the check result normal?

YES : <less than 1.0 V> Follow diagnostic item 19 "Diagnose CAN bus lines thoroughly." Refer to P.54D-502.

NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN2) and the A/C-ECU connector.

STEP 10. Connector check: C-221 ETACS-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 11.

NO : Repair the defective connector.

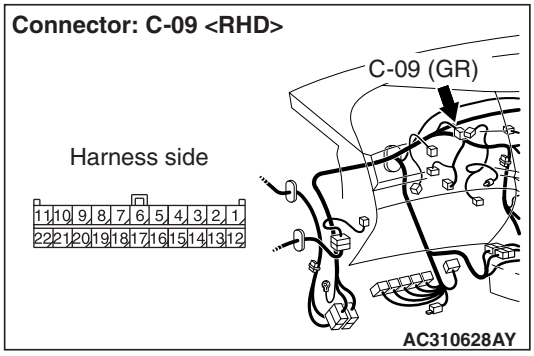
STEP 11. Resistance measurement at C-09 joint connector (CAN2).

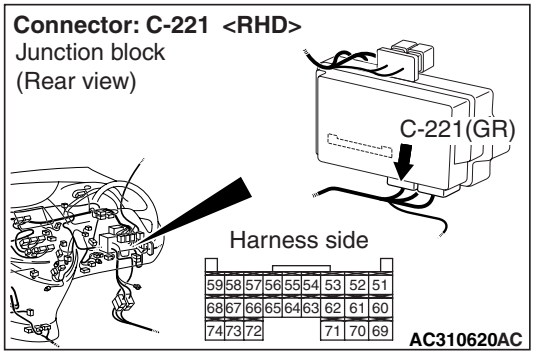
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



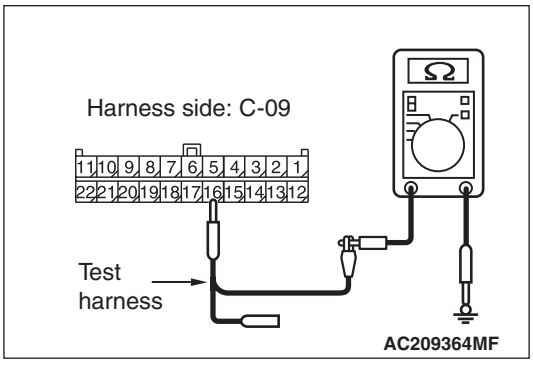


(1) Disconnect the joint connector (CAN2) and the ETACS-ECU connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2)

terminal No.16 and body earth

OK: 1 kΩ or more

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

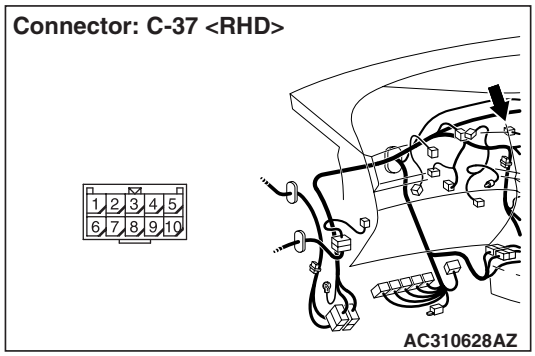
Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 19, Diagnose CAN bus lines thoroughly. Refer to P.54D-502.

NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the ETACS-ECU connector.

STEP 12. Connector check: C-37 jumper connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Check that the wiring harness of the jumper connector is not damaged.

Q: Is the check result normal?

YES : Go to Step 13 .

NO : Repair the defective connector.

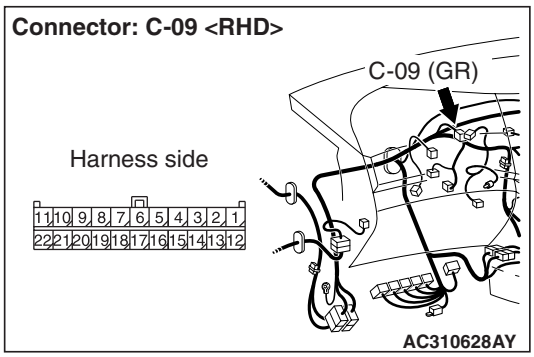
STEP 13. Resistance measurement at the C-09 joint connector (CAN2).

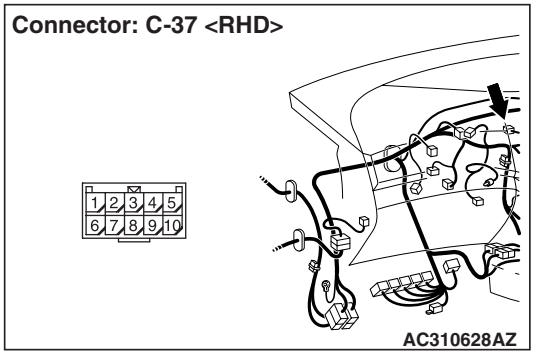
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



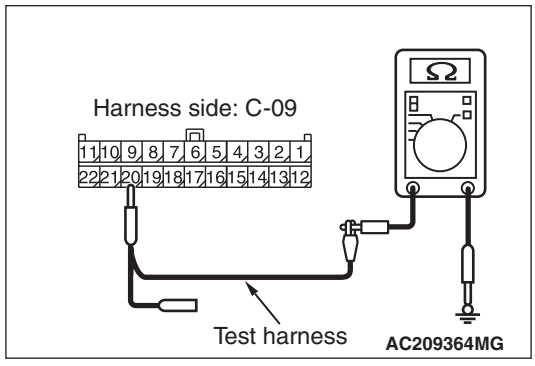


(1) Disconnect the joint connector (CAN2) and the jumper connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



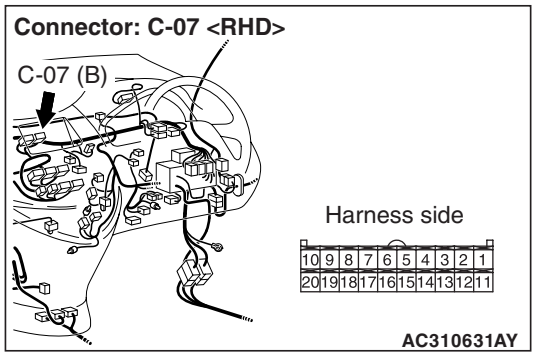
(3) Resistance between C-09 joint connector (CAN2)

terminal No.20 and body earth
OK: 1 kΩ or more

Q: Is the check result normal?
YES : <1 kΩ or more> Go to Step 14.
NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the jumper connector.

STEP 14. Connector check: C-07 centre display connector

⚠ CAUTION



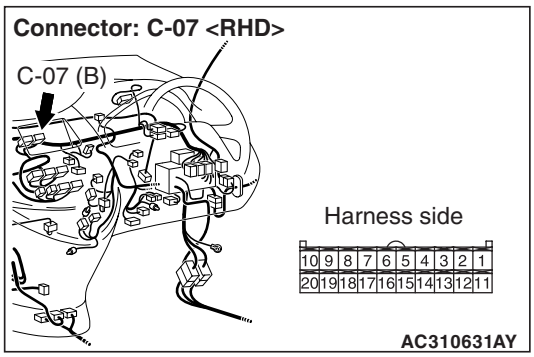
The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

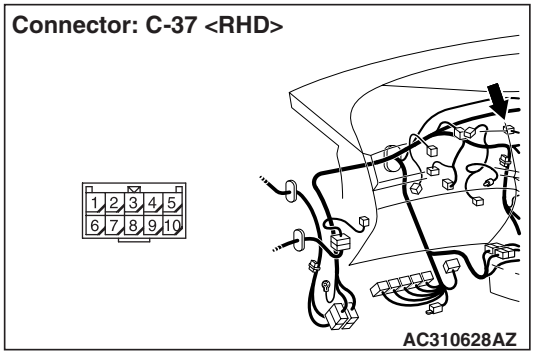
Q: Is the check result normal?
YES : Go to Step 15 .
NO : Repair the defective connector.

STEP 15. Resistance measurement at the C-37 jumper connector.

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.

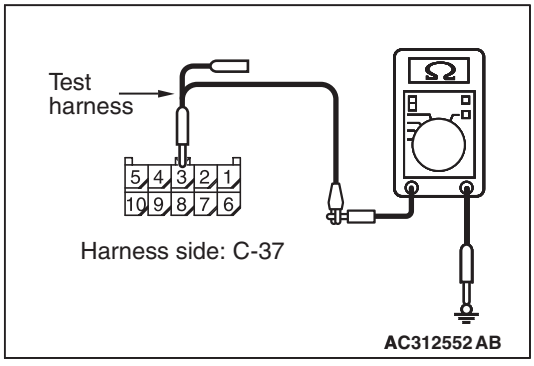




(1) Disconnect the centre display connector and the jumper connector, and measure at the jumper connector (at the centre display side).

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-37 jumper connector

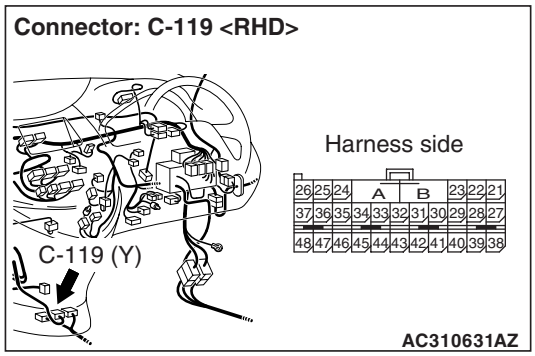
terminal No.3 and body earth
OK: 1 kΩ or more

⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <1 kΩ or more> Follow diagnostic item 19, Diagnose CAN bus lines thoroughly. Refer to P.54D-502.
NO : <less than 1 Ω> Repair the wiring harness between the jumper connector and the centre display connector.

STEP 16. Connector check: C-119 SRS-ECU connector

⚠ CAUTION



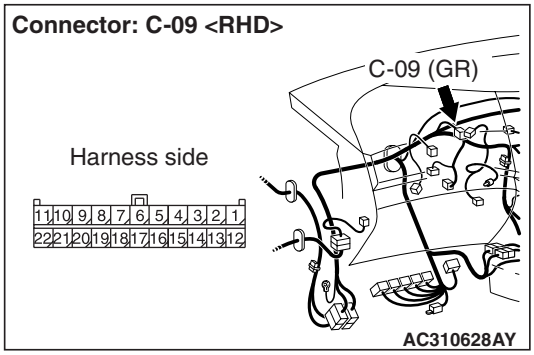
The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

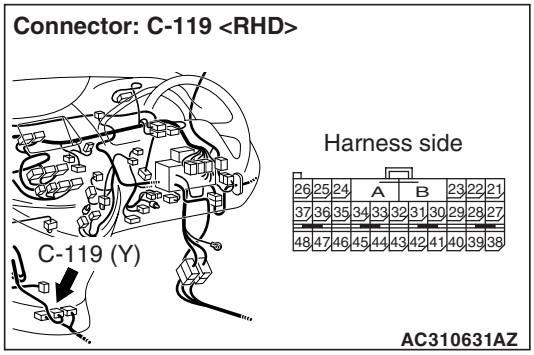
Q: Is the check result normal?
YES : Go to Step 17.
NO : Repair the defective connector.

STEP 17. Resistance measurement at C-09 joint connector (CAN2).

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.

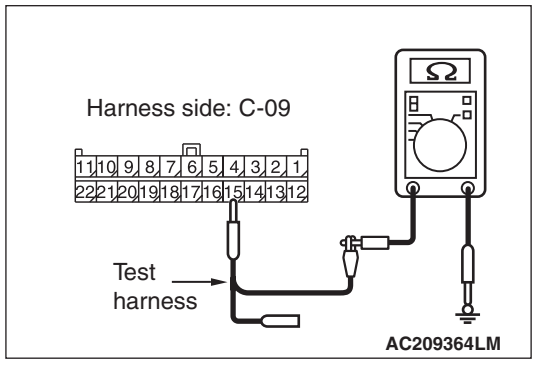




(1) Disconnect the joint connector (CAN2) and the SRS-ECU connector, and measure at the wiring harness side.

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2)

terminal No.15 and body earth
OK: 1 kΩ or more

⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <1 kΩ or more> Follow diagnostic item 19, Diagnose CAN bus lines thoroughly. Refer to P.54D-502.
NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the SRS-ECU connector.

terminal No.18 and body earth
OK: 1 kΩ or more

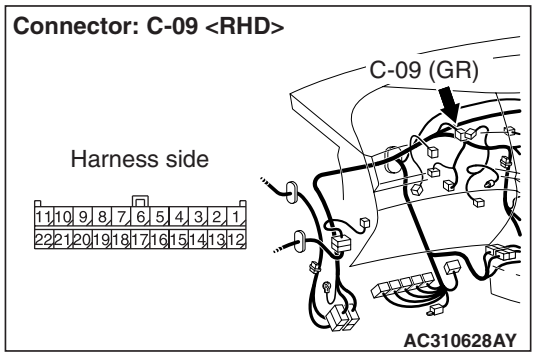
⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <1 kΩ or more> Follow diagnostic item 19, Diagnose CAN bus lines thoroughly. Refer to P.54D-502.
NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the diagnosis connector.

STEP 18. Resistance measurement at C-09 joint connector (CAN2).

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

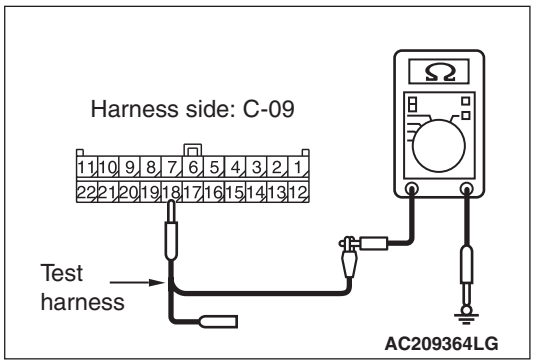
⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the connector, and measure at the wiring harness side.

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.

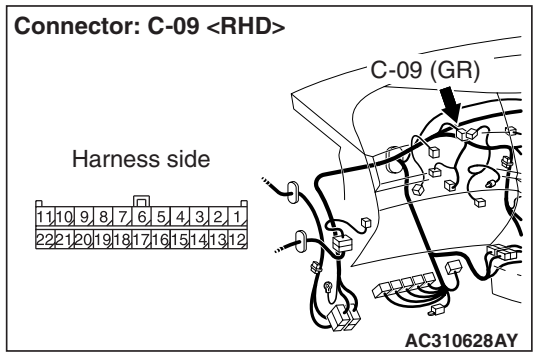


(3) Resistance between C-09 joint connector (CAN2)

STEP 19. Resistance measurement at C-09 joint connector (CAN2).

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

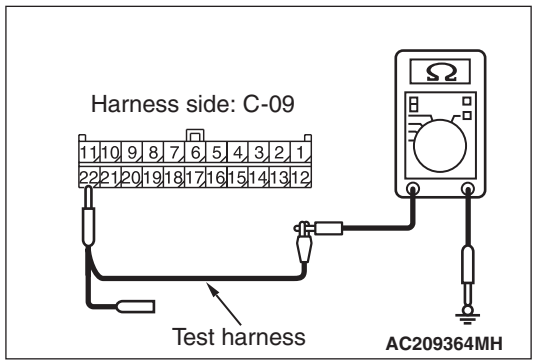
⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the connector, and measure at the wiring harness side.

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2)

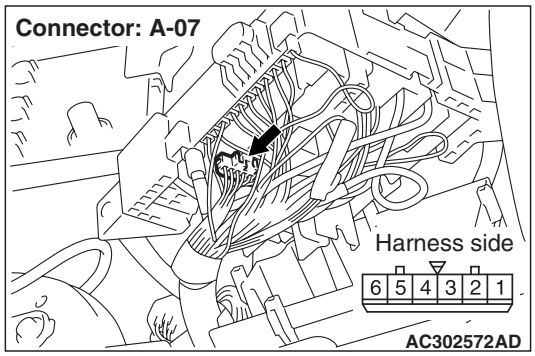
terminal No.22 and body earth
OK: 1 kΩ or more

⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <1 kΩ or more> Follow diagnostic item 19, Diagnose CAN bus lines thoroughly. Refer to P.54D-502.
NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the intermediate connector.

STEP 20. Connector check: A-07 joint connector (CAN1)
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION



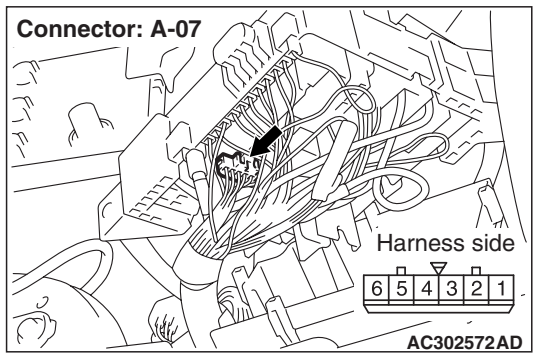
The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.
When checking the joint connector, ensure that its wiring harness side is not damaged.

Q: Is the check result normal?
YES : Go to Step 21.
NO : Repair a defective connector or replace the joint connector (front wiring harness assembly).

STEP 21. Resistance measurement at the A-07 joint connector (CAN1).
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

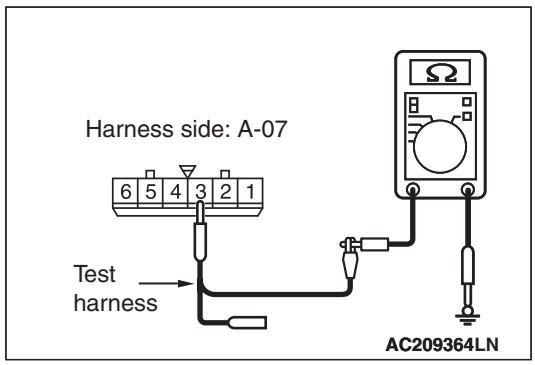
⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the connector, and measure at the wiring harness side.

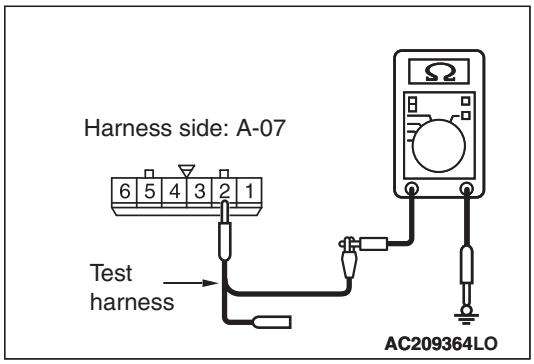
⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between A-07 joint connector (CAN1)

terminal No.3 and body earth
OK: 1 kΩ or more

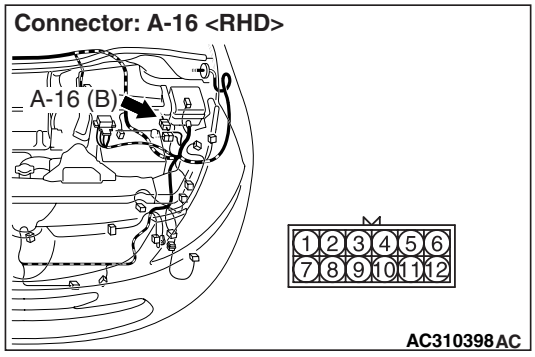


(4) Resistance between A-07 joint connector (CAN1) terminal No.2 and body earth
OK: 1 kΩ or more

Q: Are the check result normal?
YES <all of the measurement results show 1 kΩ or more> : Go to Step 27.
NO <The resistance between terminal No.3 and body earth is less than 1 kΩ> : Go to Step 22.
NO <The resistance between terminal No.2 and body earth is less than 1 kΩ> : Go to Step 25.

STEP 22. Connector check: A-16 intermediate connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

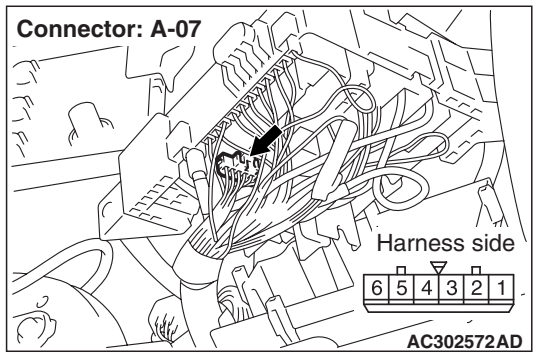
Q: Is the check result normal?
YES : Go to Step 23.
NO : Repair the defective connector.

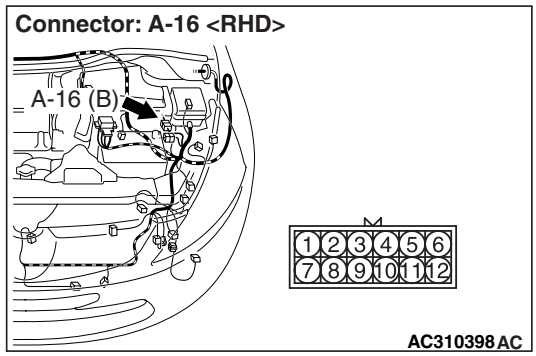
STEP 23. Resistance measurement at the A-07 joint connector (CAN1).

NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.



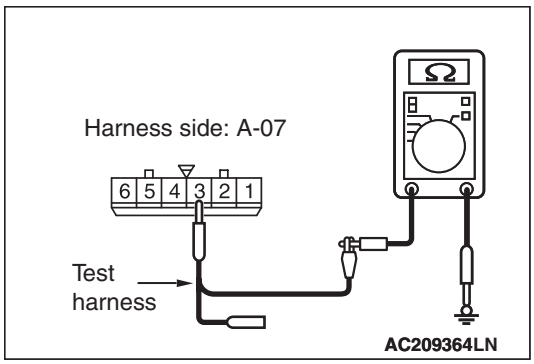


(1) Disconnect the joint connector (CAN1) and the intermediate connector, and measure at the wiring harness side.

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is

disconnected.



(3) Resistance between A-07 joint connector (CAN1) terminal No.3 and body earth

OK: 1 kΩ or more

Q: Is the check result normal?

YES : <1 kΩ or more> Go to Step 24.

NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN1) and the intermediate connector.

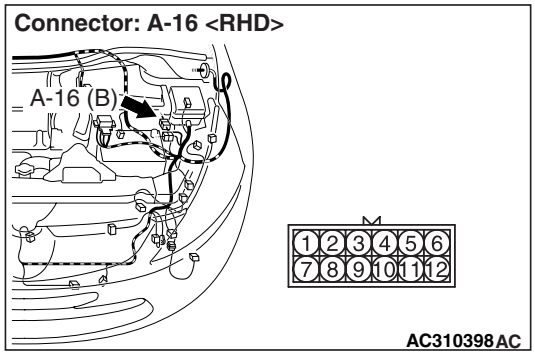
STEP 24. Resistance measurement at the A-16 intermediate connector.

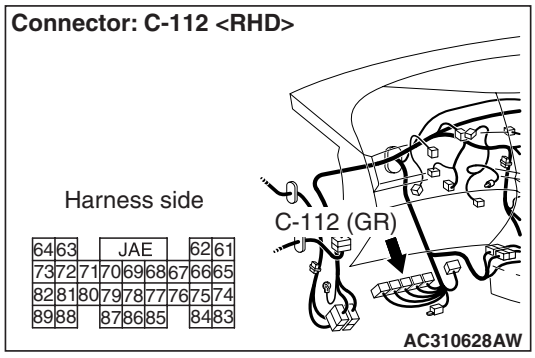
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



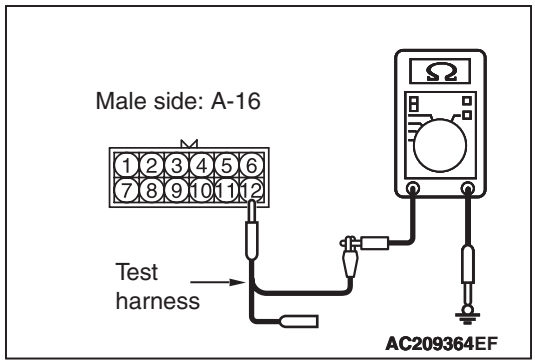


(1) Disconnect the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector and the intermediate connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between A-16 intermediate connector terminal No.12 and body earth

OK: 1 kΩ or more

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

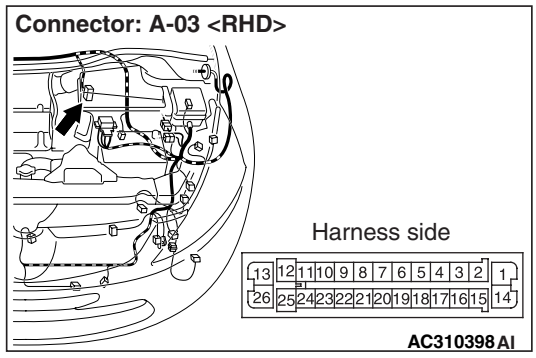
Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 19, Diagnose CAN bus lines thoroughly. Refer to P.54D-502.

NO : <less than 1 Ω> Repair the wiring harness between the intermediate connector and the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector.

STEP 25. Connector check: A-03 ABS-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

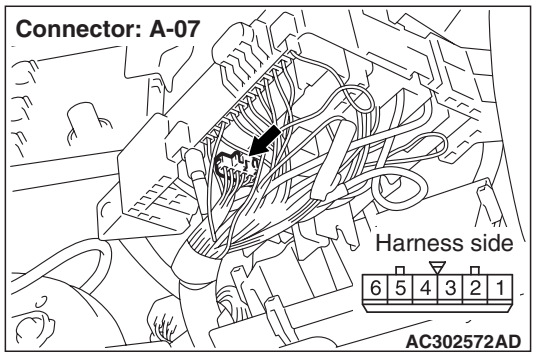
YES : Go to Step 26.
NO : Repair the defective connector.

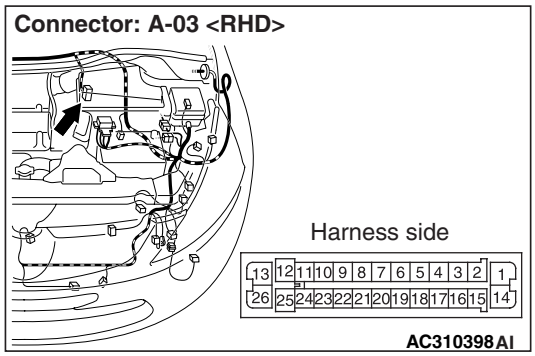
STEP 26. Resistance measurement at the A-07 joint connector (CAN1).

NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.

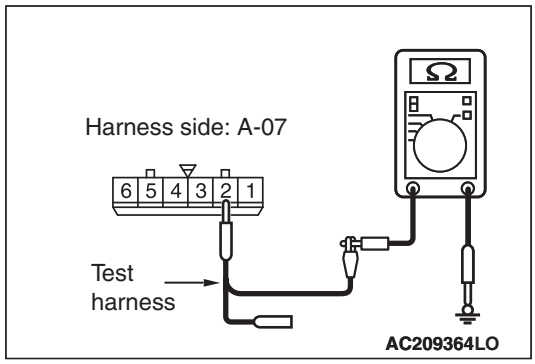




(1) Disconnect the joint connector (CAN1) and the ABS-ECU connector, and measure at the wiring harness side.

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between A-07 joint connector (CAN1) terminal No.2 and body earth

OK: 1 kΩ or more

⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <1 kΩ or more> Follow diagnostic item 19, Diagnose CAN bus lines thoroughly. Refer to P.54D-502.
NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN1) and the ABS-ECU connector.

STEP 27. Resistance measurement at the A-07 joint connector (CAN1).

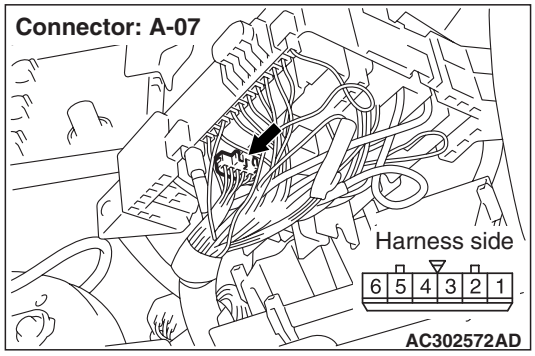
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

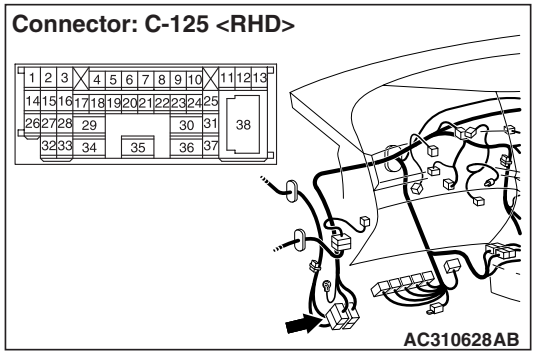
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



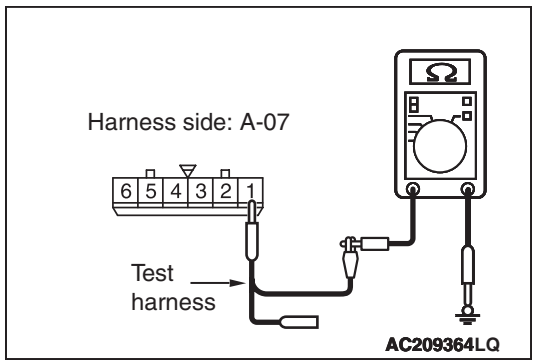


(1) Disconnect the joint connector (CAN1) and the intermediate connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between A-07 joint connector (CAN1) terminal No.1 and body earth

OK: 1 kΩ or more

⚠ CAUTION

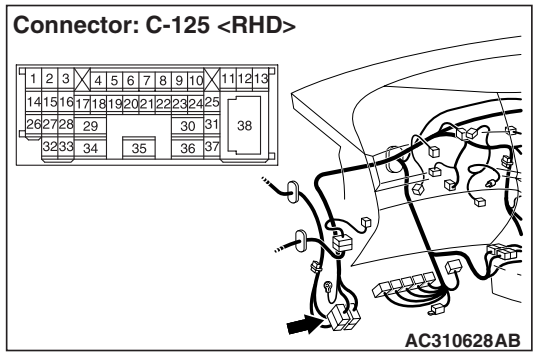
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 19, Diagnose CAN bus lines thoroughly. Refer to P.54D-502.

NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN1) and the intermediate connector.

STEP 28. Connector check: C-125 intermediate connector



⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 29.

NO : Repair the defective connector.

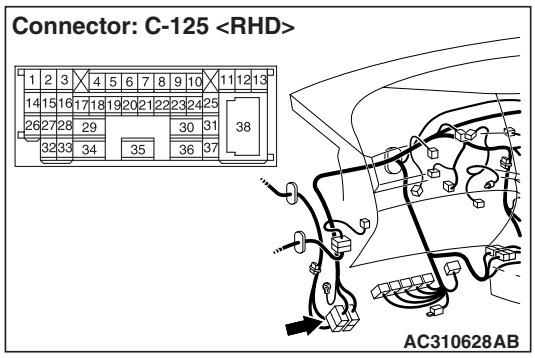
STEP 29. Resistance measurement at the C-125 intermediate connector.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.

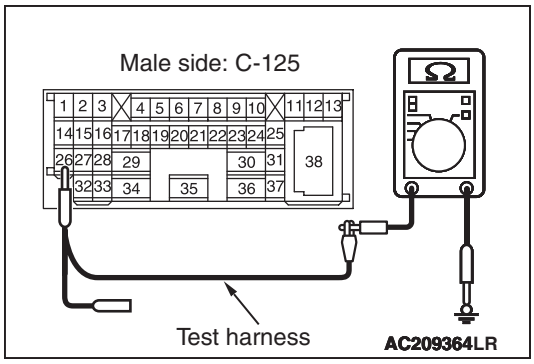


(1) Disconnect the connector, and measure at its male-side intermediate connector (at the front wiring harness side).

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.

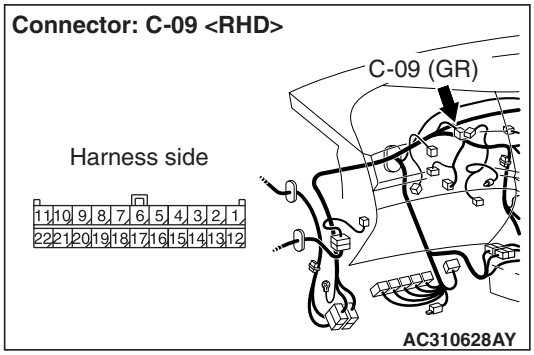


(3) Resistance between C-125 intermediate connector terminal No.26 and body earth

OK: 1 kΩ or more

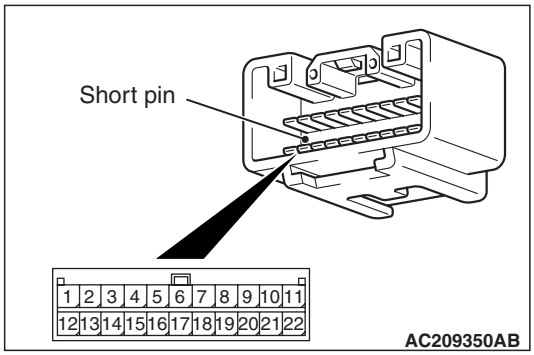
Q: Is the check result normal?
YES : <1 kΩ or more> Go to Step 30.
NO : <less than 1 kΩ> Go to Step 45.

STEP 30. Connector check: C-09 joint connector (CAN2)



⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.



When checking the joint connector, ensure that its wiring harness side and its short pins are not damaged.

Q: Is the check result normal?
YES : Go to Step 31.
NO : Repair a defective connector or replace the joint connector.

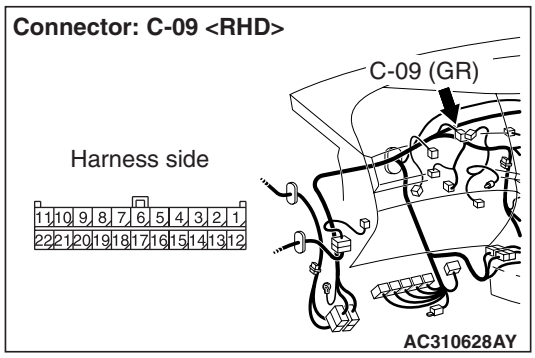
STEP 31. Resistance measurement at C-09 joint connector (CAN2).

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.

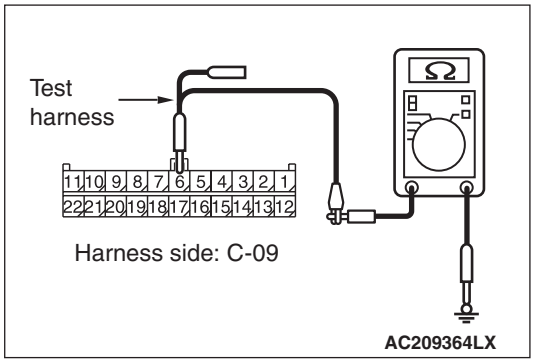


(1) Disconnect the connector, and measure at the wiring harness side.

⚠ CAUTION

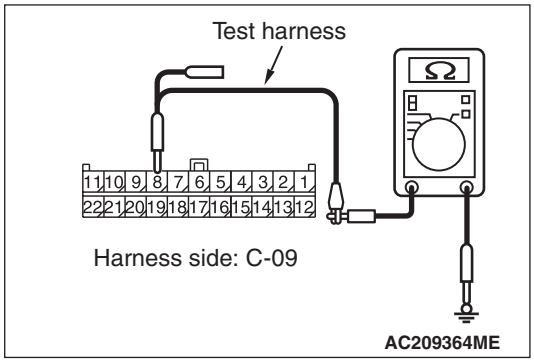
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



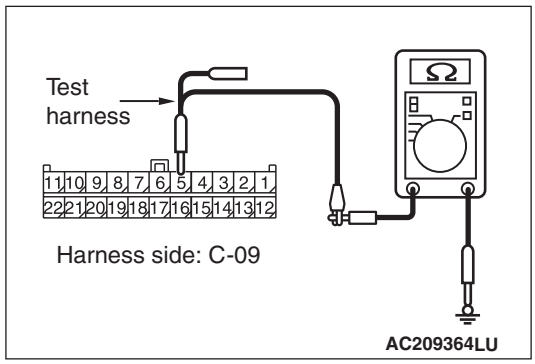
(3) Resistance between C-09 joint connector (CAN2) terminal No.6 and body earth

OK: 1 kΩ or more



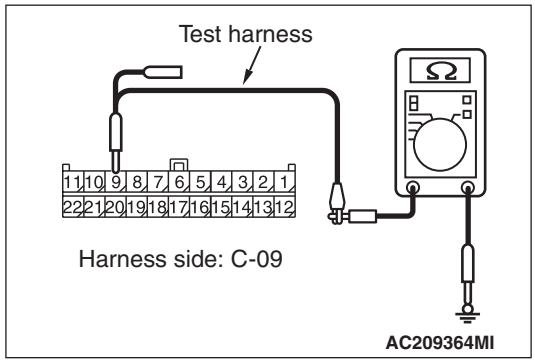
(4) Resistance between C-09 joint connector (CAN2) terminal No.8 and body earth

OK: 1 kΩ or more



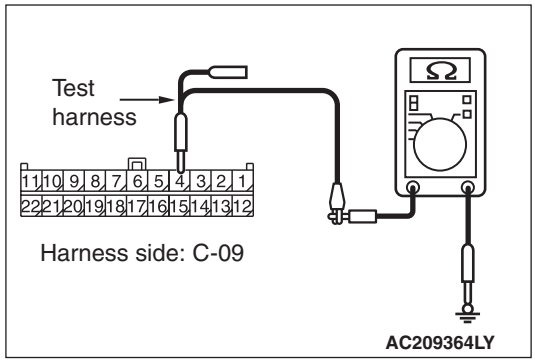
(5) Resistance between C-09 joint connector (CAN2) terminal No.5 and body earth

OK: 1 kΩ or more



(6) Resistance between C-09 joint connector (CAN2) terminal No.9 and body earth

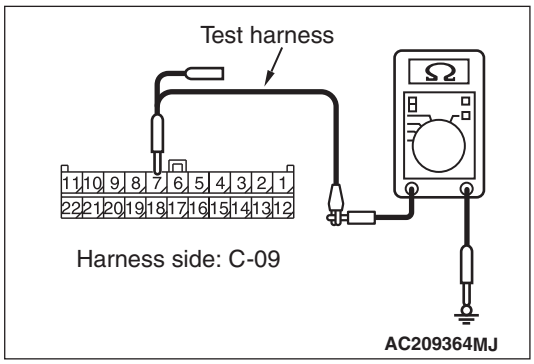
OK: 1 kΩ or more



(7) Resistance between C-09 joint connector (CAN2)

terminal No.4 and body earth

OK: 1 kΩ or more



(8) Resistance between C-09 joint connector (CAN2) terminal No.7 and body earth

OK: 1 kΩ or more

Q: Are the check result normal?

YES <all of the measurement results show 1 kΩ or more> : Go to Step 45.

NO <The resistance between terminal No.6 and body earth is less than 1 kΩ> : Go to Step 32.

NO <The resistance between terminal No.8 and body earth is less than 1 kΩ> : Go to Step 33.

NO <The resistance between terminal No.5 and body earth is less than 1 kΩ> : Go to Step 35.

NO <The resistance between terminal No.9 and body earth is less than 1 kΩ> : Go to Step 37.

NO <The resistance between terminal No.4 and body earth is less than 1 kΩ> : Go to Step 41.

NO <The resistance between terminal No.7 and body earth is less than 1 kΩ> : Go to Step 43.

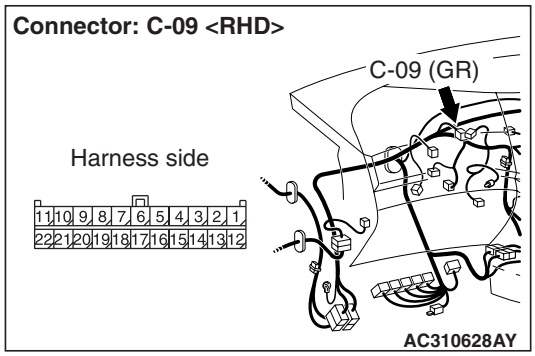
STEP 32. Resistance measurement at C-09 joint connector (CAN2).

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.

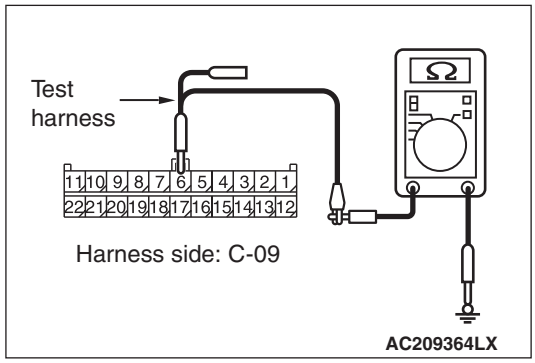


(1) Disconnect the joint connector (CAN2) and the combination meter connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2) terminal No.6 and body earth

OK: 1 kΩ or more

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

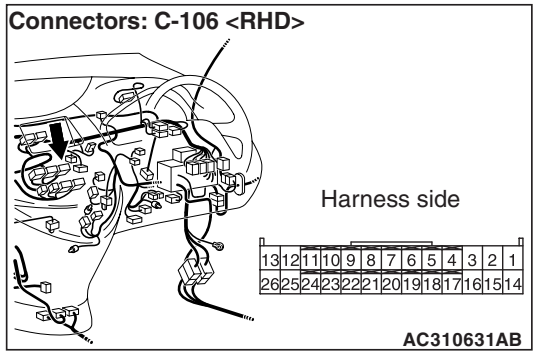
Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 19, Diagnose CAN bus lines thoroughly. Refer to P.54D-502.

NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the combination meter connector.

STEP 33. Connector check: C-106 A/C-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 34.

NO : Repair the defective connector.

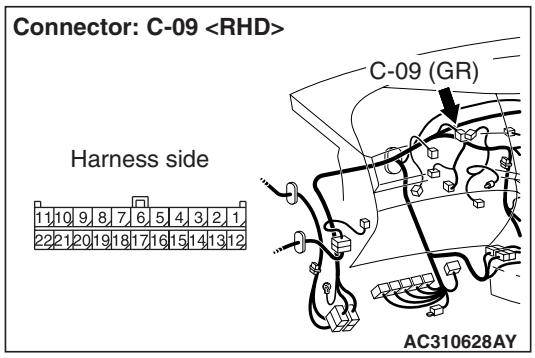
STEP 34. Resistance measurement at C-09 joint connector (CAN2).

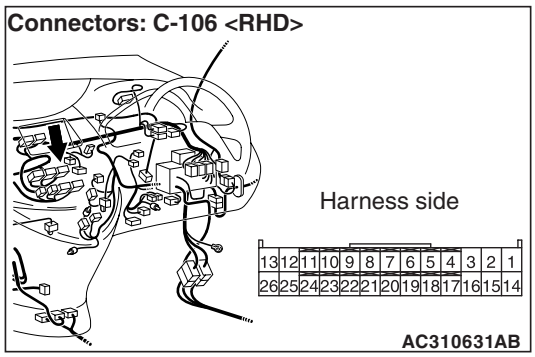
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



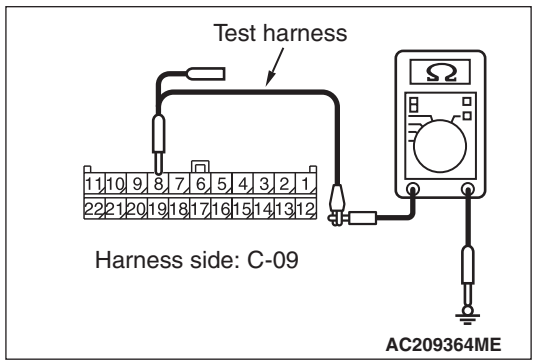


(1) Disconnect the joint connector (CAN2) and the A/C-ECU connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2) terminal No.8 and body earth

OK: 1 kΩ or more

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

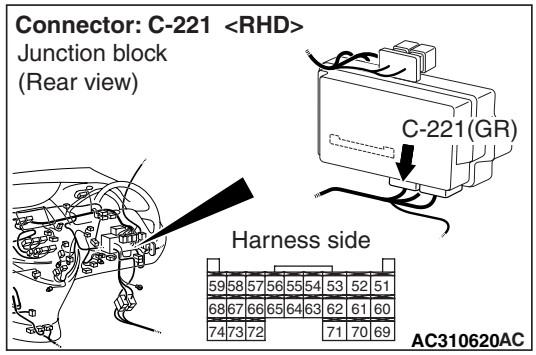
Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 19, Diagnose CAN bus lines thoroughly. Refer to P.54D-502.

NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the A/C-ECU connector.

STEP 35. Connector check: C-221 ETACS-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 36.

NO : Repair the defective connector.

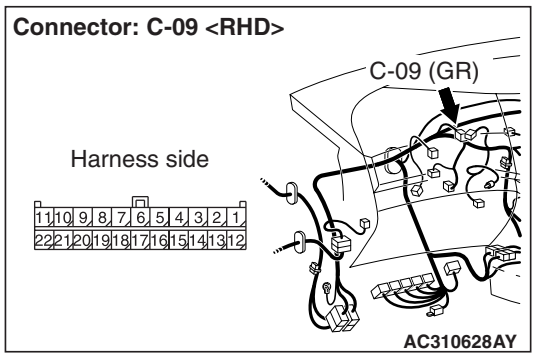
STEP 36. Resistance measurement at C-09 joint connector (CAN2).

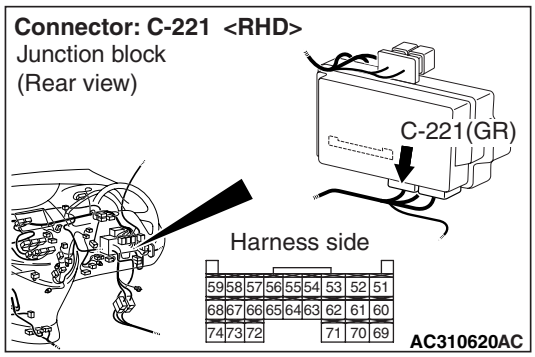
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



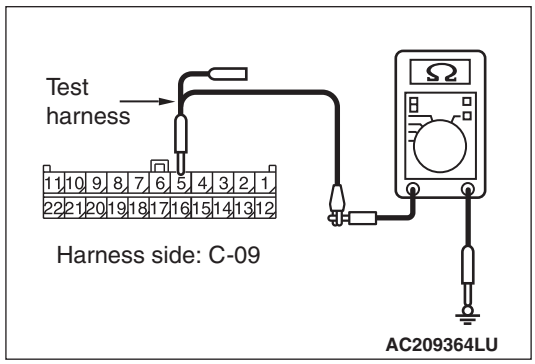


(1) Disconnect the joint connector (CAN2) and the ETACS-ECU connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2) terminal No.5 and body earth

OK: 1 kΩ or more

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

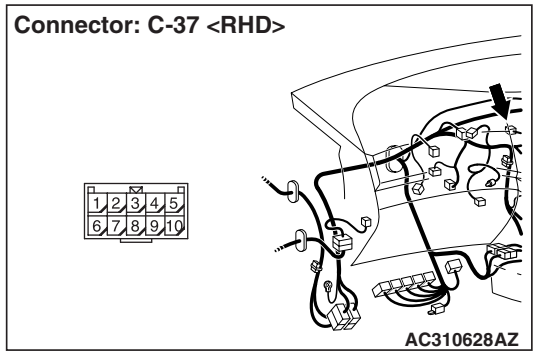
Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 19, Diagnose CAN bus lines thoroughly. Refer to P.54D-502.

NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the ETACS-ECU connector.

STEP 37. Connector check: C-37 jumper connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Check that the wiring harness of the jumper connector is not damaged.

Q: Is the check result normal?

YES : Go to Step 38 .

NO : Repair the defective connector.

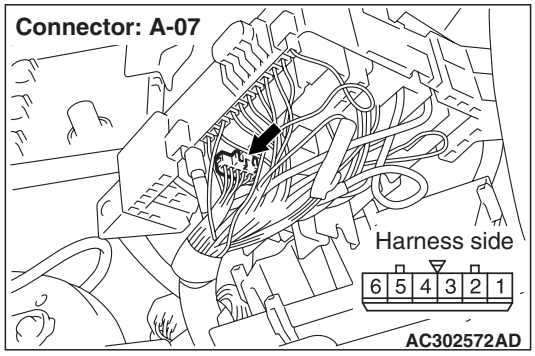
STEP 38. Resistance measurement at the C-09 joint connector (CAN2).

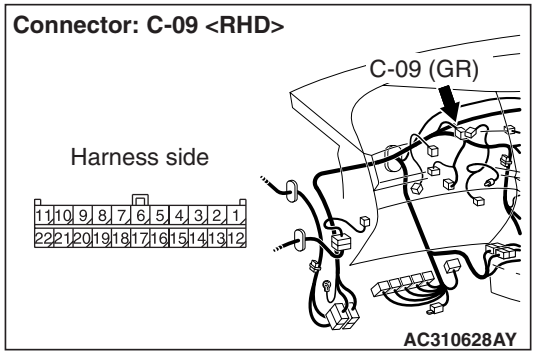
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



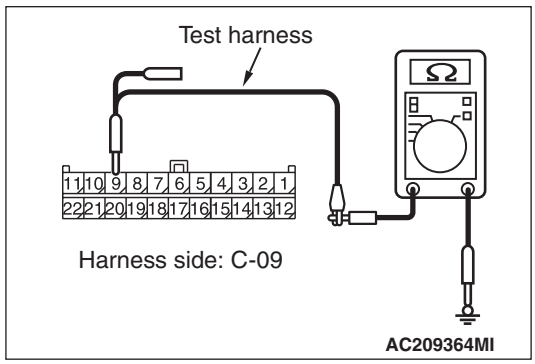


(1) Disconnect the joint connector (CAN2) and the jumper connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2) terminal No.9 and body earth

OK: 1 kΩ or more

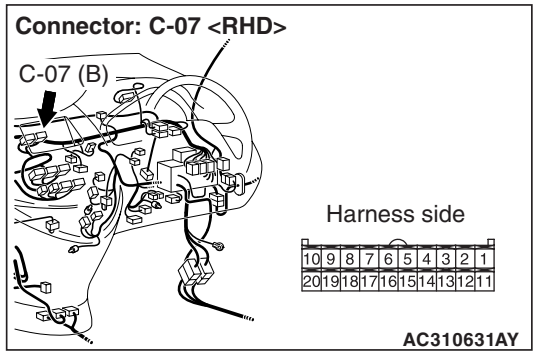
Q: Is the check result normal?

YES : <1 kΩ or more> Go to Step 39.

NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the jumper connector.

STEP 39. Connector check: C-07 centre display connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 40 .

NO : Repair the defective connector.

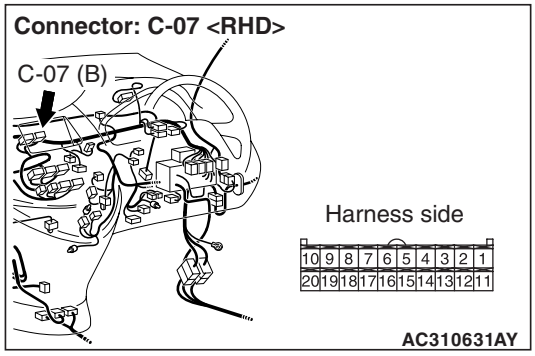
STEP 40. Resistance measurement at the C-37 jumper connector.

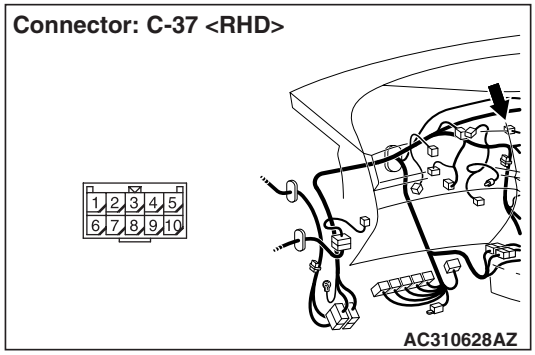
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



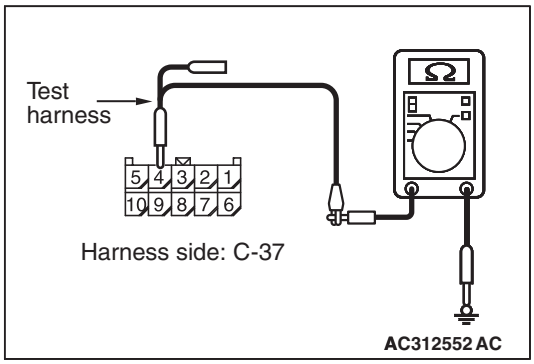


(1) Disconnect the centre display connector and the jumper connector, and measure at the jumper connector (at the centre display side).

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-37 jumper connector terminal No.4 and body earth

OK: 1 kΩ or more

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

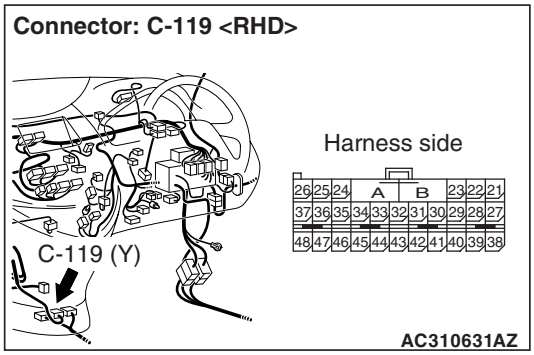
Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 19, Diagnose CAN bus lines thoroughly. Refer to P.54D-502.

NO : <less than 1 Ω> Repair the wiring harness between the jumper connector and the centre display connector.

STEP 41. Connector check: C-119 SRS-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

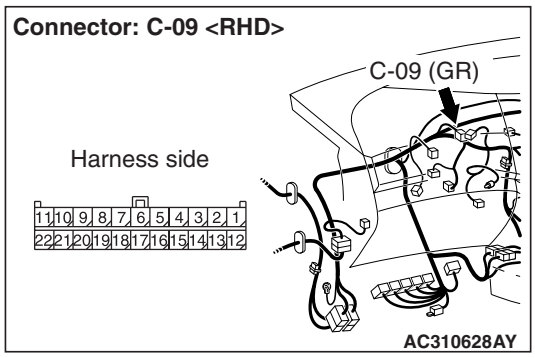
YES : Go to Step 42.

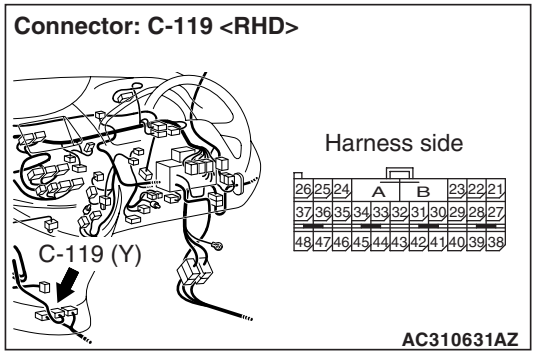
NO : Repair the defective connector.

STEP 42. Resistance measurement at C-09 joint connector (CAN2).

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.

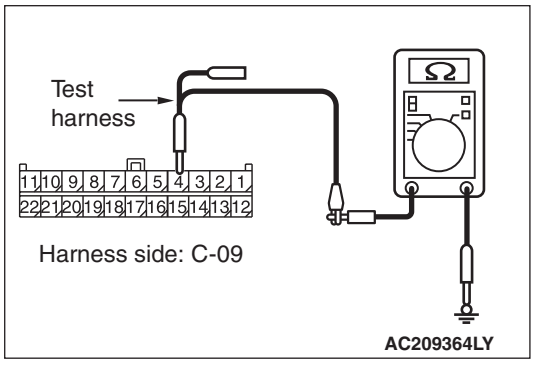




(1) Disconnect the joint connector (CAN2) and the SRS-ECU connector, and measure at the wiring harness side.

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2) terminal No.4 and body earth
OK: 1 kΩ or more

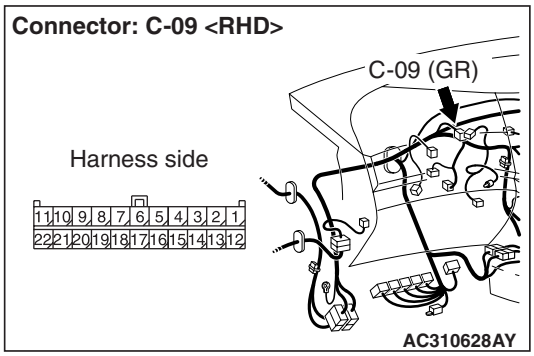
⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <1 kΩ or more> Follow diagnostic item 19, Diagnose CAN bus lines thoroughly. Refer to P.54D-502.
NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the SRS-ECU connector.

STEP 43. Resistance measurement at C-09 joint connector (CAN2).

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

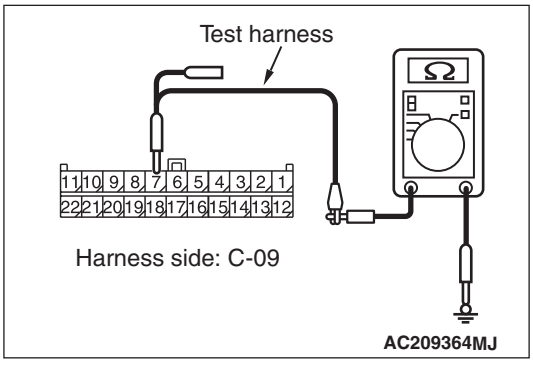
⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the connector, and measure at the wiring harness side.

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2)

terminal No.7 and body earth
OK: 1 kΩ or more

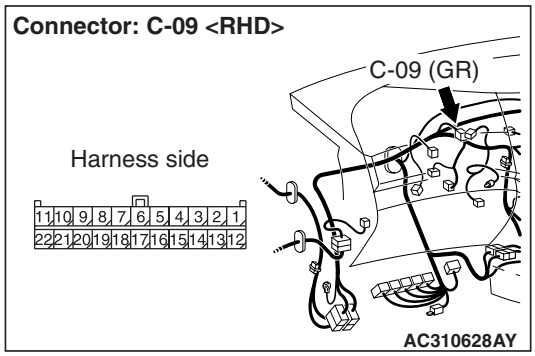
⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <1 kΩ or more> Follow diagnostic item 19, Diagnose CAN bus lines thoroughly. Refer to P.54D-502.
NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the diagnosis connector.

STEP 44. Resistance measurement at C-09 joint connector (CAN2).

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

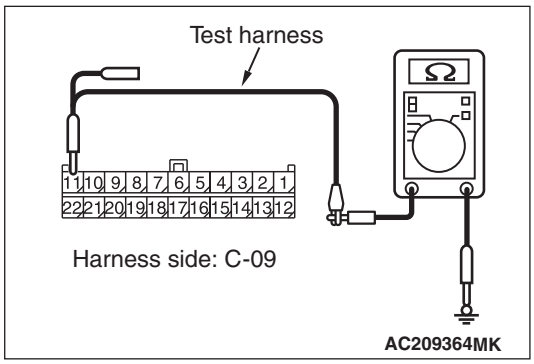
⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the connector, and measure at the wiring harness side.

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2) terminal No.11 and body earth
OK: 1 kΩ or more

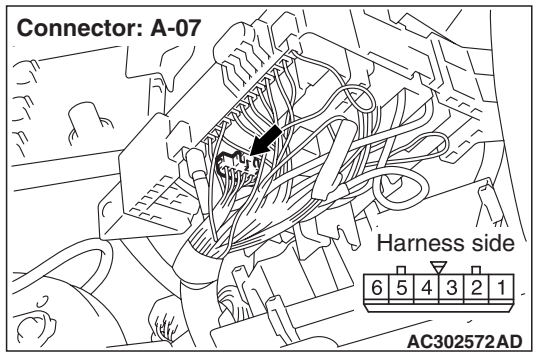
⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <1 kΩ or more> Follow diagnostic item 19, Diagnose CAN bus lines thoroughly. Refer to P.54D-502.
NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the intermediate connector.

STEP 45. Connector check: A-07 joint connector (CAN1)

NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

When checking the joint connector, ensure that its wiring harness side is not damaged.

Q: Is the check result normal?
YES : Go to Step 46.
NO : Repair a defective connector or replace the joint connector (front wiring harness assembly).

STEP 46. Resistance measurement at the A-07 joint connector (CAN1).

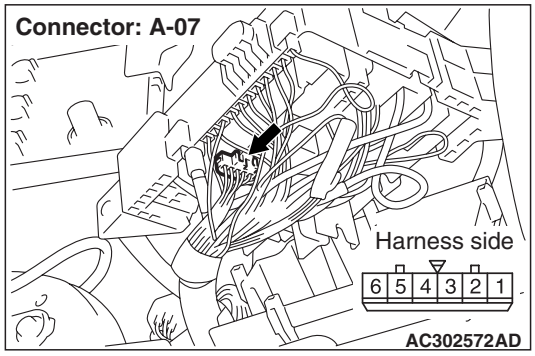
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.

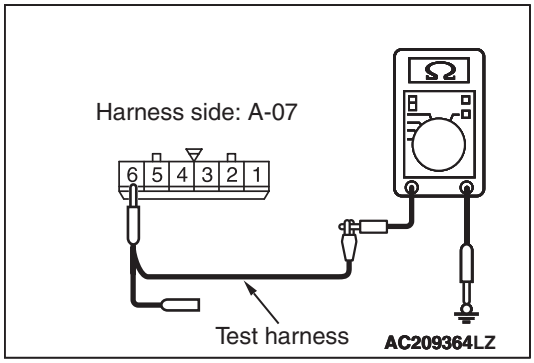


(1) Disconnect the connector, and measure at the wiring harness side.

⚠ CAUTION

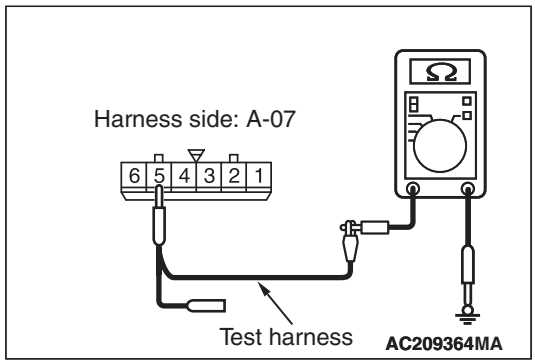
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between A-07 joint connector (CAN1) terminal No.6 and body earth

OK: 1 kΩ or more



(4) Resistance between A-07 joint connector (CAN1) terminal No.5 and body earth

OK: 1 kΩ or more

Q: Are the check result normal?

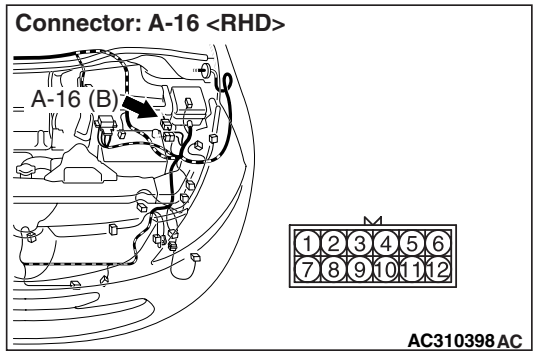
YES <all of the measurement results show 1 kΩ or more> : Go to Step 52.

NO <The resistance between terminal No.6 and body earth is less than 1 kΩ> : Go to Step 47.

NO <The resistance between terminal No.5 and body earth is less than 1 kΩ> : Go to Step 50.

STEP 47. Connector check: A-16 intermediate connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 48.

NO : Repair the defective connector.

STEP 48. Resistance measurement at the A-07 joint connector (CAN1).

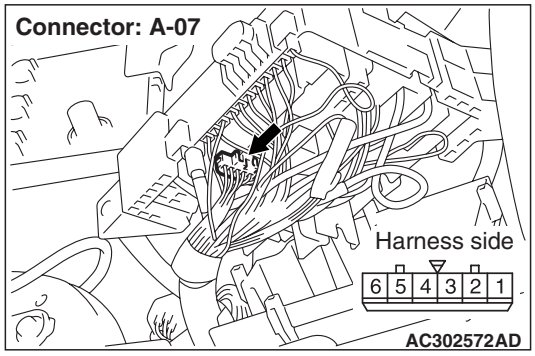
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

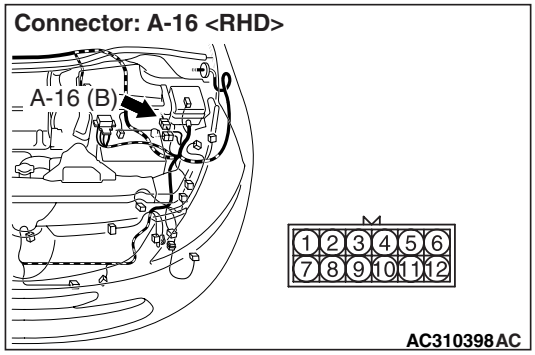
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



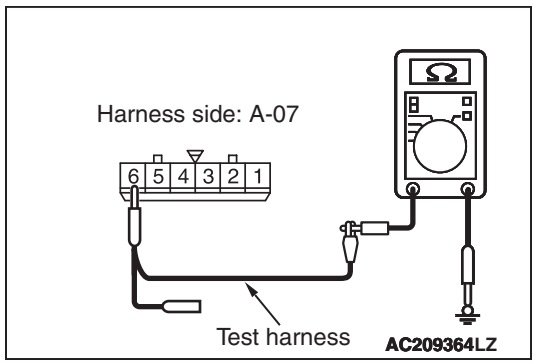


(1) Disconnect the joint connector (CAN1) and the intermediate connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between A-07 joint connector (CAN1) terminal No.6 and body earth

OK: 1 kΩ or more

Q: Is the check result normal?

YES : <1 kΩ or more> Go to Step 49.

NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN1) and the intermediate connector.

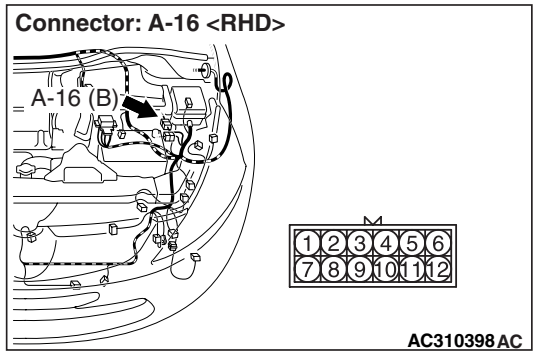
STEP 49. Resistance measurement at the A-16 intermediate connector.

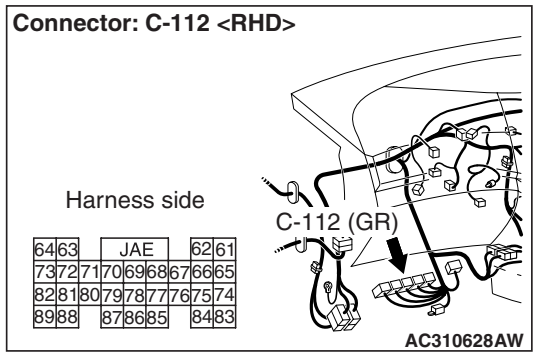
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



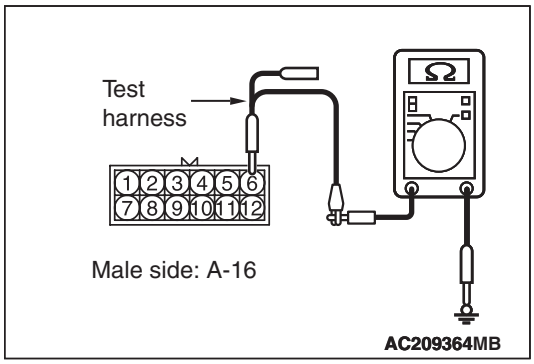


(1) Disconnect the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector and the

intermediate connector, and measure at the wiring harness side.

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between A-16 intermediate connector terminal No.6 and body earth

OK: 1 kΩ or more

⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

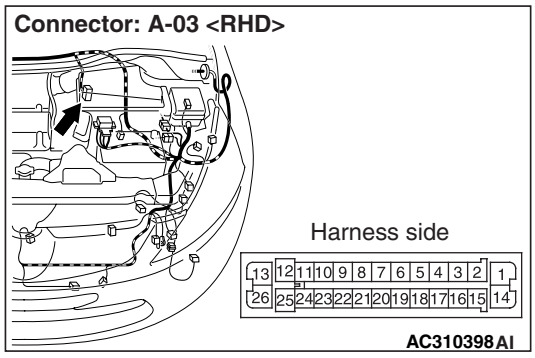
Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 19, Diagnose CAN bus lines thoroughly. Refer to P.54D-502.

NO : <less than 1 Ω> Repair the wiring harness between the intermediate connector and the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector.

STEP 50. Connector check: A-03 ABS-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 51.

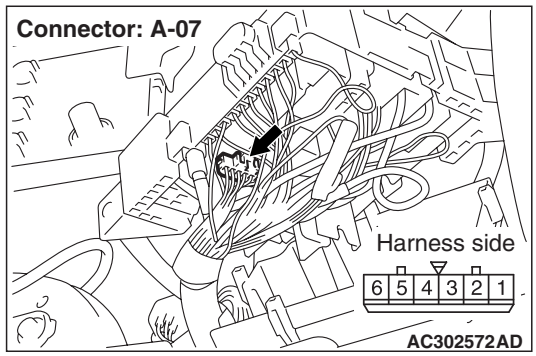
NO : Repair the defective connector.

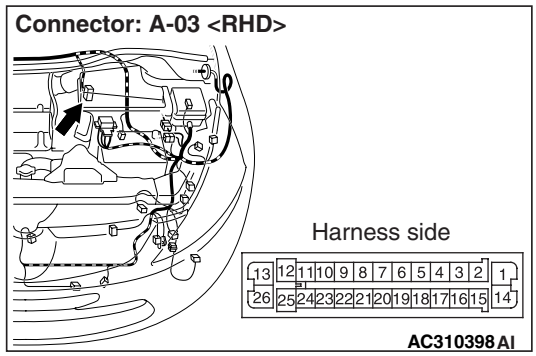
STEP 51. Resistance measurement at the A-07 joint connector (CAN1).

NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.



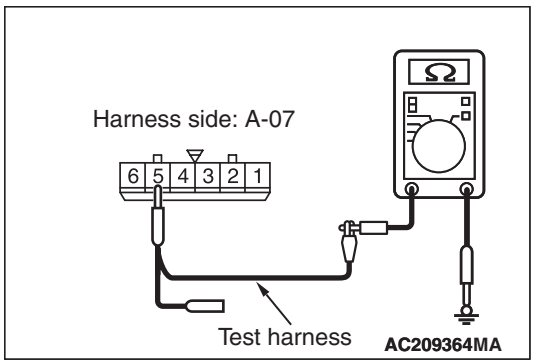


(1) Disconnect the joint connector (CAN1) and the ABS-ECU connector, and measure at the wiring harness side.

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is

disconnected.



(3) Resistance between A-07 joint connector (CAN1) terminal No.5 and body earth

OK: 1 kΩ or more

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 19, Diagnose CAN bus lines thoroughly. Refer to P.54D-502.

NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN1) and the ABS-ECU connector.

STEP 52. Resistance measurement at the A-07 joint connector (CAN1).

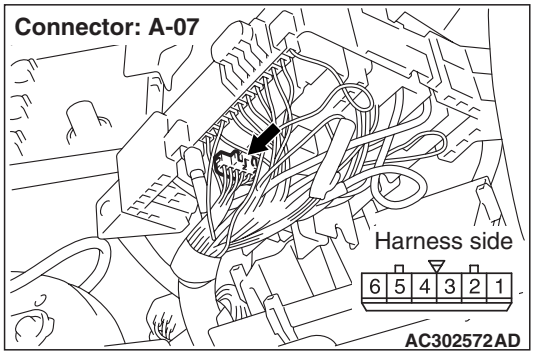
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

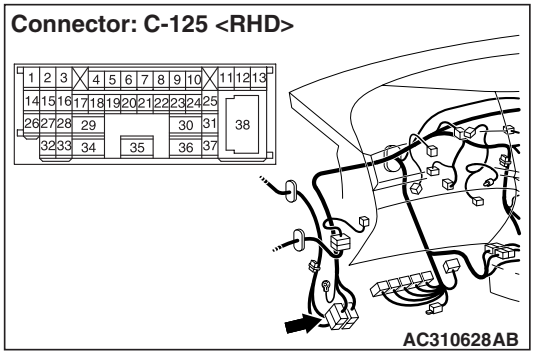
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





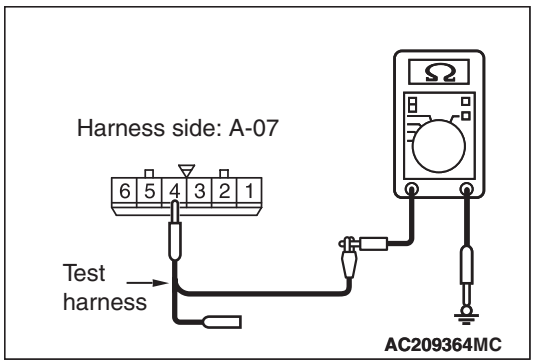
(1) Disconnect the joint connector (CAN1) and the intermediate connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is

disconnected.



(3) Resistance between A-07 joint connector (CAN1) terminal No.4 and body earth

OK: 1 kΩ or more

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?

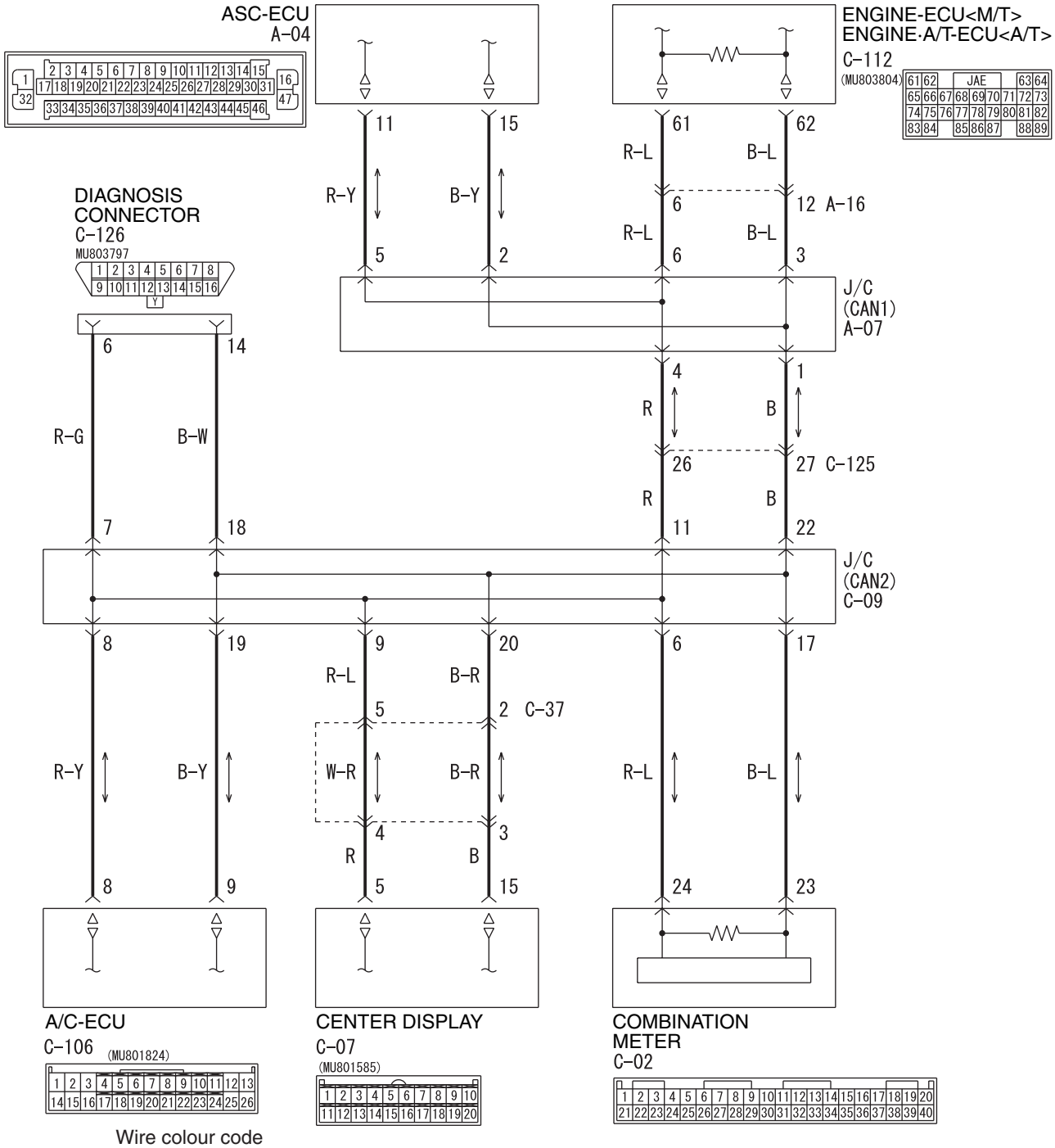
YES : <1 kΩ or more> Follow diagnostic item 19, Diagnose CAN bus lines thoroughly. Refer to P.54D-502.

NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN1) and the intermediate connector.

Diagnostic Item 8: Diagnose the CAN bus lines for short to earth <RH drive vehicles with ASC>

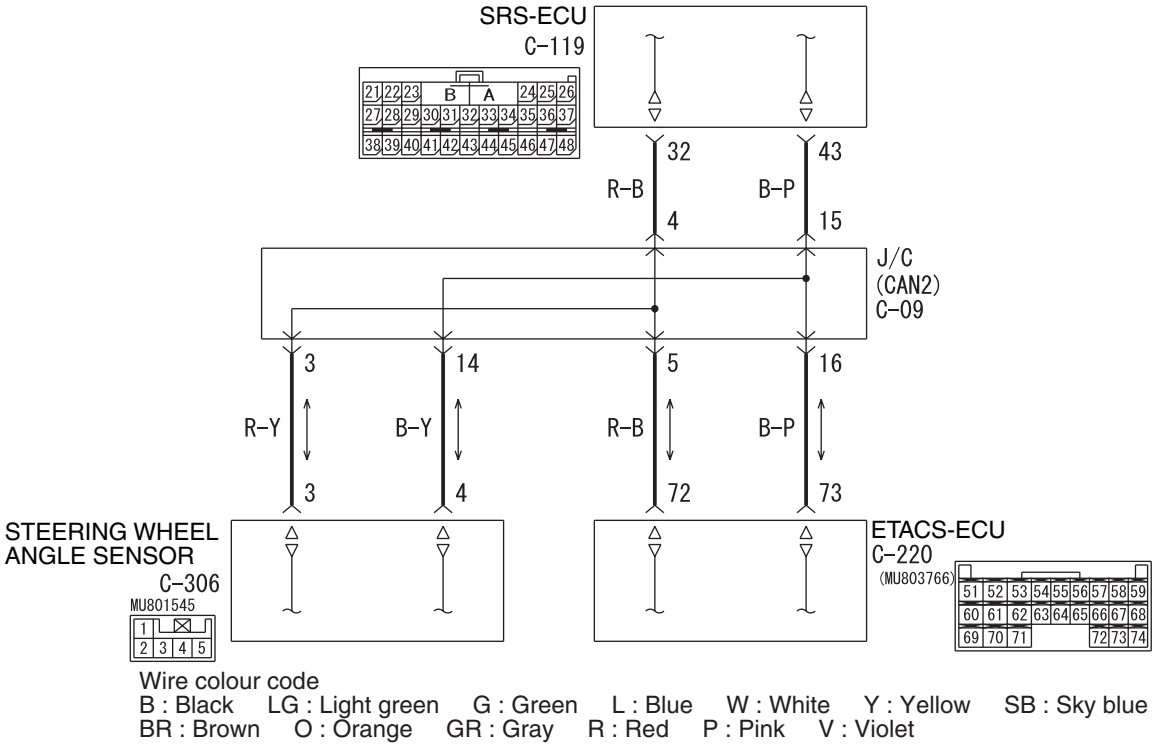
⚠ CAUTION

When servicing a CAN bus line, earth yourself by touching a metal object such as an unpainted water pipe. If you fail to do, a component connected to the CAN bus line may be broken.



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E24AA



W4X54E25AA

TROUBLE JUDGMENT

The CAN bus line has been shorted to earth if the voltage between the CAN bus line (CAN_L or CAN_H) and body earth is less than 1.0 V. In this condition, an abnormal voltage may be measured at CAN_L and CAN_H lines.

COMMENTS ON TROUBLE SYMPTOM

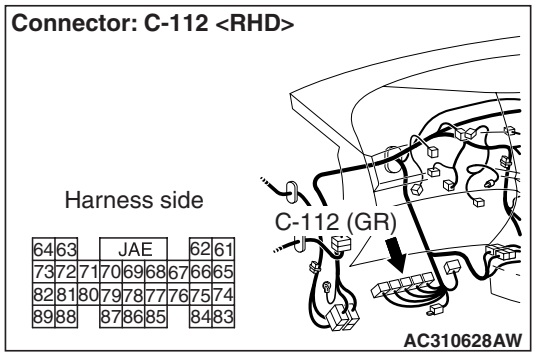
The wiring harness wire or connectors may have loose, corroded, or damage terminals, or terminals pushed back in the connector, or a ECU may be defective.

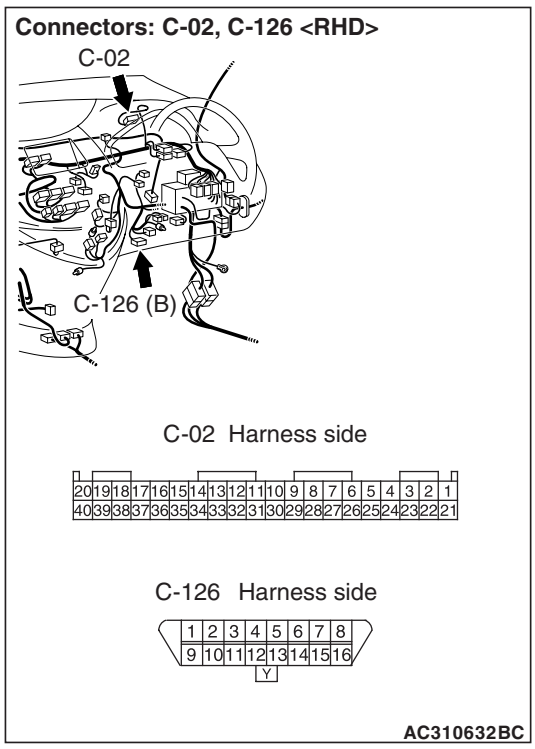
POSSIBLE CAUSES

- Damaged harness wires and connectors
- Malfunction of the ETACS-ECU
- Malfunction of the combination meter
- Malfunction of the A/C-ECU
- Malfunction of the SRS-ECU
- Malfunction of the multi-centre display
- Malfunction of the steering wheel angle sensor
- Malfunction of the ASC-ECU
- Malfunction of the engine-ECU <M/T> or engine-A/T-ECU <A/T>

DIAGNOSTIC PROCEDURE

STEP 1. Connector check: C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector, C-02 combination meter connector and C-126 diagnosis connector





⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Are the check result normal?
YES : Go to Step 2.
NO : Repair the defective connector.

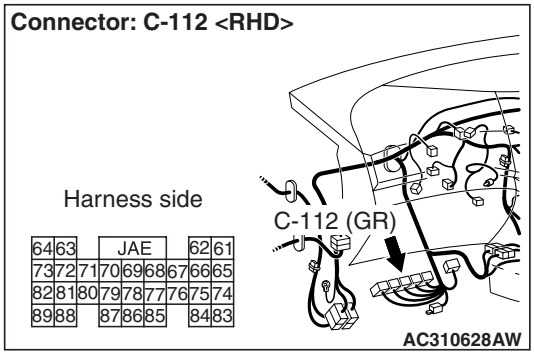
STEP 2. Resistance measurement at the C-126 diagnosis connector.

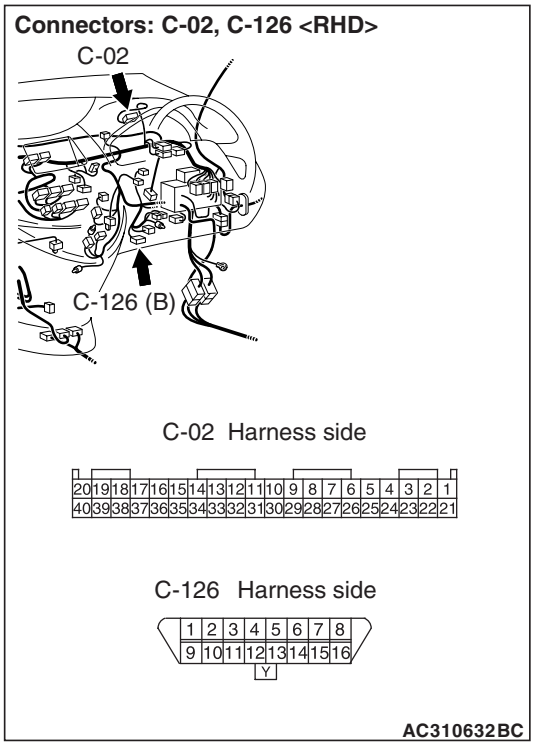
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





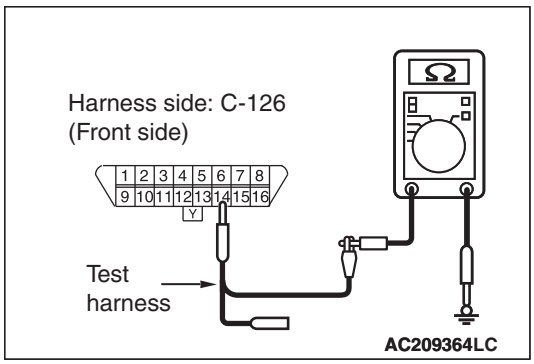
(1) Disconnect the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector and the combination meter connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

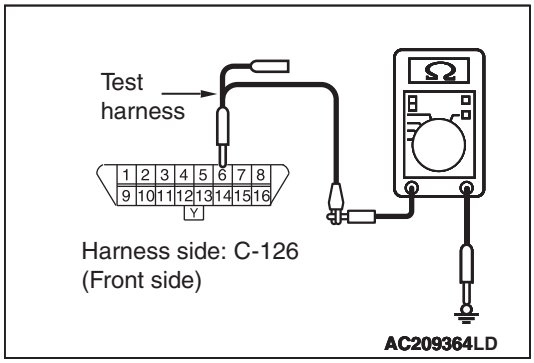
(2) Ensure that the negative battery terminal is

disconnected.



(3) Resistance between C-126 diagnosis connector terminal No.14 and body earth

OK: 1 kΩ or more



(4) Resistance between C-126 diagnosis connector terminal No.6 and body earth

OK: 1 kΩ or more

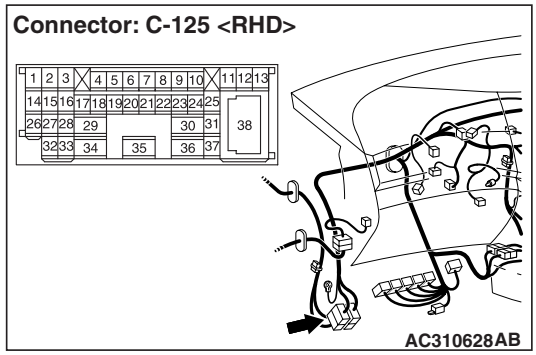
Q: Are the check result normal?

YES <all of the measurement results show 1 kΩ or more> : Follow diagnostic item 20 "Diagnose CAN bus lines thoroughly." Refer to P.54D-526.

NO <The resistance between terminal No.14 and body earth is less than 1 kΩ> : Go to Step 3.

NO <The resistance between terminal No.6 and body earth is less than 1 kΩ> : Go to Step 30.

STEP 3. Connector check: C-125 intermediate connector



⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 4.

NO : Repair the defective connector.

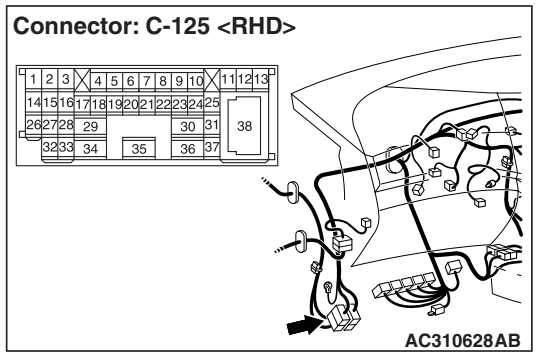
STEP 4. Resistance measurement at the C-125 intermediate connector.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



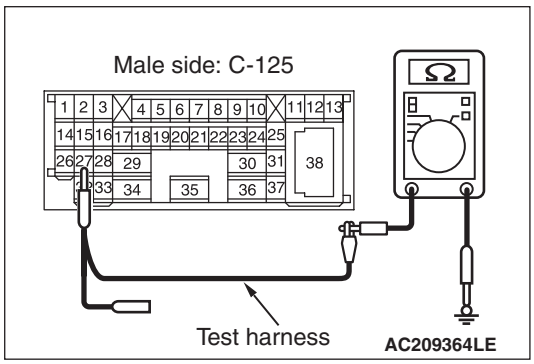
(1) Disconnect the connector, and measure at its male-side intermediate connector (at the front wiring harness side).

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is

disconnected.



(3) Resistance between C-125 intermediate connector terminal No.27 and body earth

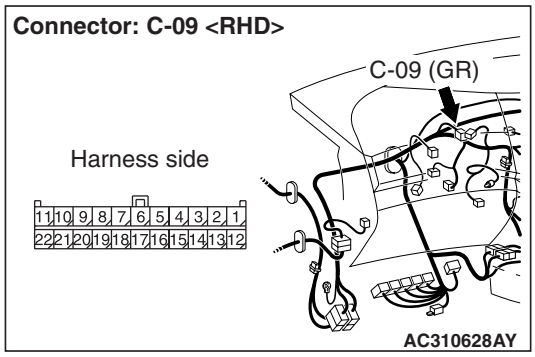
OK: 1 kΩ or more

Q: Is the check result normal?

YES : <1 kΩ or more> Go to Step 5.

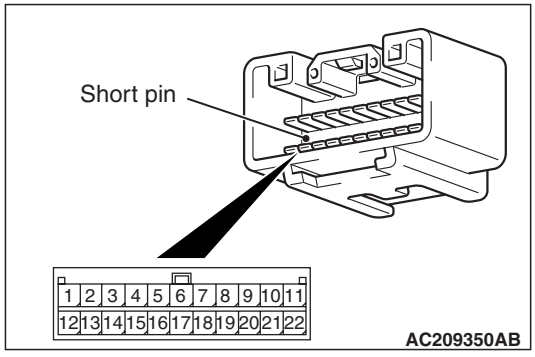
NO : <less than 1 kΩ> Go to Step 22.

STEP 5. Connector check: C-09 joint connector (CAN2)



⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.



When checking the joint connector, ensure that its wiring harness side and its short pins are not damaged.

Q: Is the check result normal?

YES : Go to Step 6.

NO : Repair a defective connector or replace the joint connector.

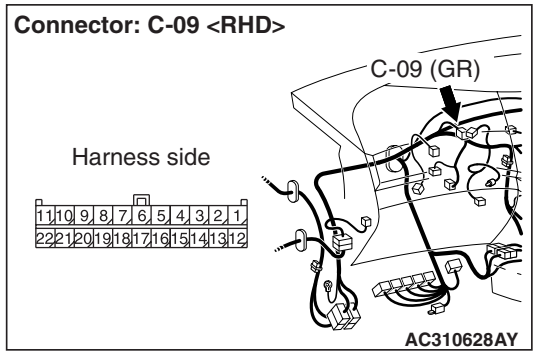
STEP 6. Resistance measurement at C-09 joint connector (CAN2).

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.

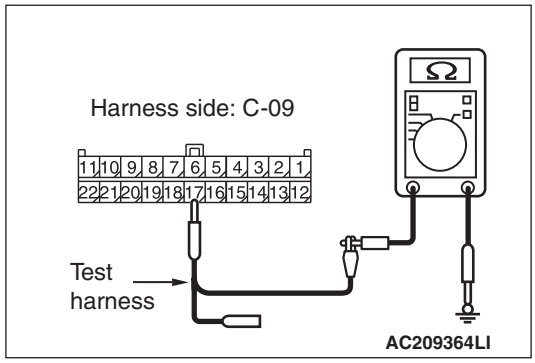


(1) Disconnect the connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

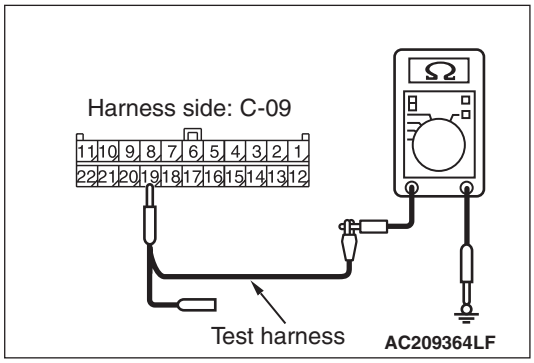
(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2)

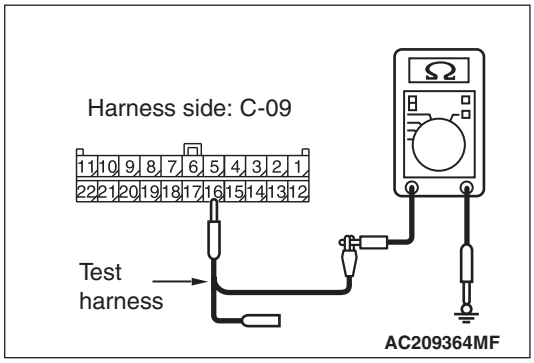
terminal No.17 and body earth

OK: 1 kΩ or more



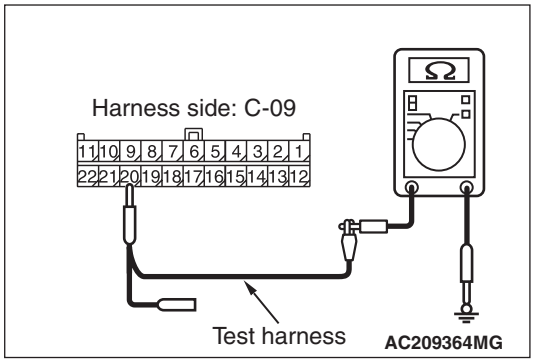
(4) Resistance between C-09 joint connector (CAN2) terminal No.19 and body earth

OK: 1 kΩ or more



(5) Resistance between C-09 joint connector (CAN2) terminal No.16 and body earth

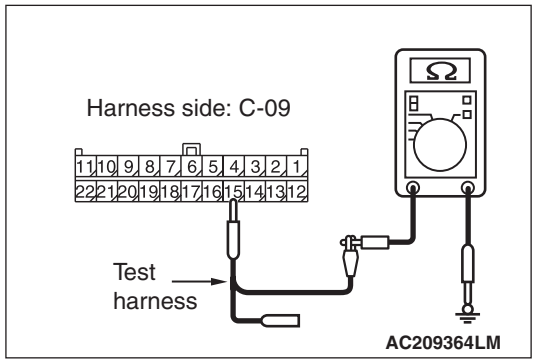
OK: 1 kΩ or more



(6) Resistance between C-09 joint connector (CAN2)

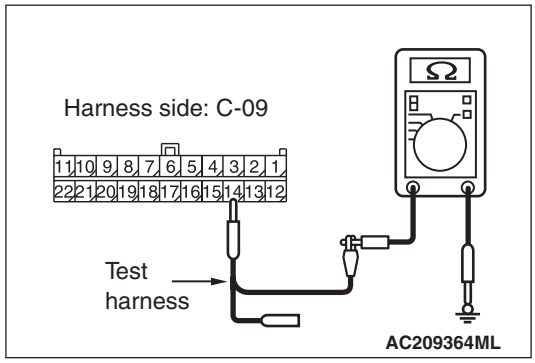
terminal No.20 and body earth

OK: 1 kΩ or more



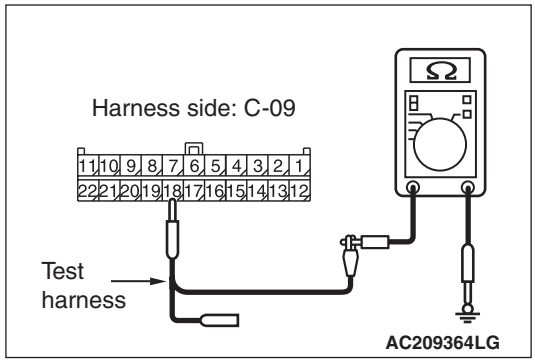
(7) Resistance between C-09 joint connector (CAN2) terminal No.15 and body earth

OK: 1 kΩ or more



(8) Resistance between C-09 joint connector (CAN2) terminal No.14 and body earth

OK: 1 kΩ or more



(9) Resistance between C-09 joint connector (CAN2) terminal No.18 and body earth

OK: 1 kΩ or more

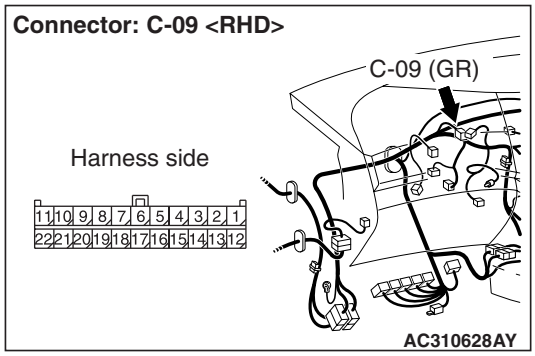
Q: Are the check result normal?

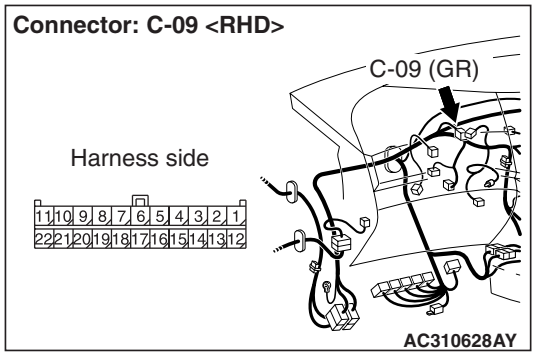
YES <all of the measurement results show 1 kΩ or more> : Go to Step 21.
NO <The resistance between terminal No.17 and body earth is less than 1 kΩ> : Go to Step 7.
NO <The resistance between terminal No.19 and body earth is less than 1 kΩ> : Go to Step 8.
NO <The resistance between terminal No.16 and body earth is less than 1 kΩ> : Go to Step 10.
NO <The resistance between terminal No.20 and body earth is less than 1 kΩ> : Go to Step 12.
NO <The resistance between terminal No.15 and body earth is less than 1 kΩ> : Go to Step 16.
NO <The resistance between terminal No.14 and body earth is less than 1 kΩ> : Go to Step 18.
NO <The resistance between terminal No.18 and body earth is less than 1 kΩ> : Go to Step 20.

STEP 7. Resistance measurement at C-09 joint connector (CAN2).

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.

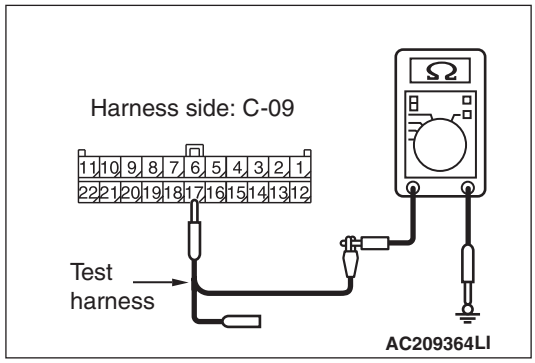




(1) Disconnect the joint connector (CAN2) and the combination meter connector, and measure at the wiring harness side.

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



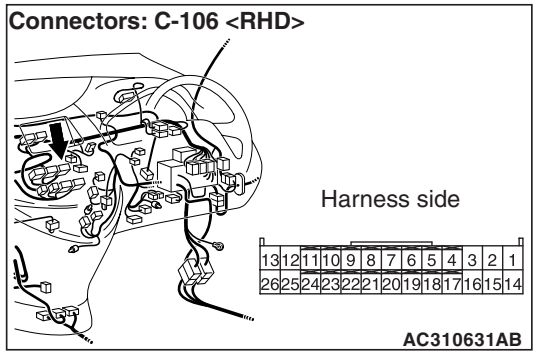
(3) Resistance between C-09 joint connector (CAN2) terminal No.17 and body earth
OK: 1 kΩ or more

⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <1 kΩ or more> Follow diagnostic item 20, Diagnose CAN bus lines thoroughly. Refer to P.54D-526.
NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the combination meter connector.

STEP 8. Connector check: C-106 A/C-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?
YES : Go to Step 9.
NO : Repair the defective connector.

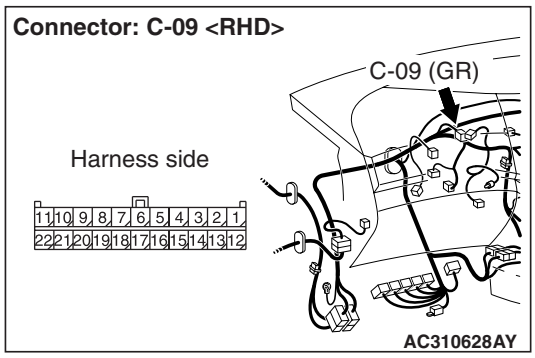
STEP 9. Resistance measurement at C-09 joint connector (CAN2).

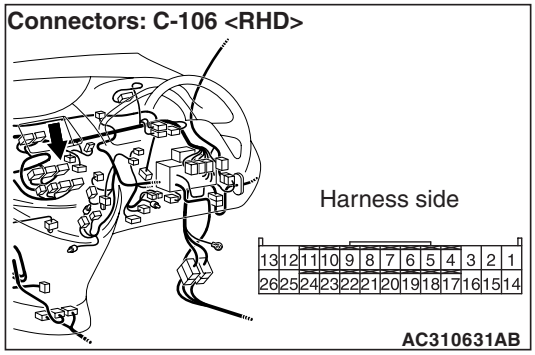
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



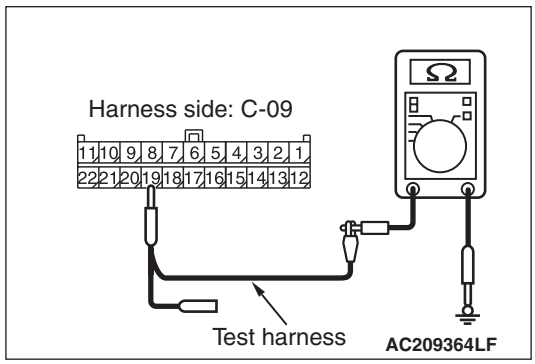


(1) Disconnect the joint connector (CAN2) and the A/C-ECU connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2) terminal No.19 and body earth

OK: 1 kΩ or more

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

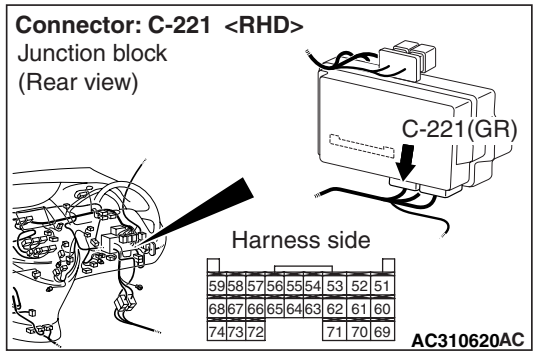
Q: Is the check result normal?

YES : <less than 1.0 V> Follow diagnostic item 20 "Diagnose CAN bus lines thoroughly." Refer to P.54D-526.

NO : <1.0 V or more> Repair the wiring harness between the joint connector (CAN2) and the A/C-ECU connector.

STEP 10. Connector check: C-221 ETACS-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 11.

NO : Repair the defective connector.

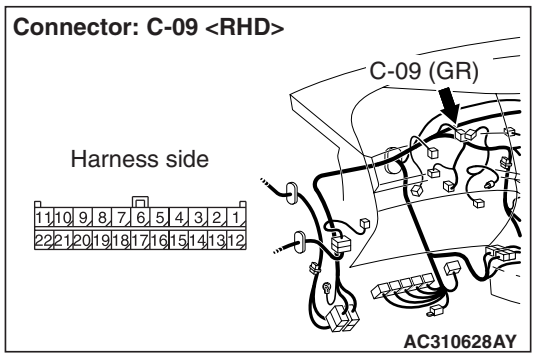
STEP 11. Resistance measurement at C-09 joint connector (CAN2).

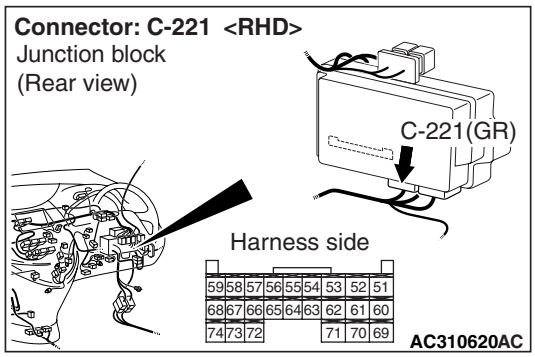
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



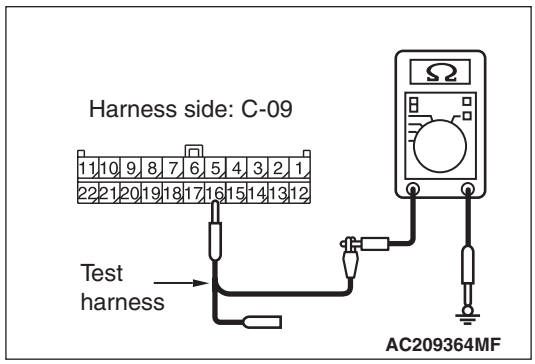


(1) Disconnect the joint connector (CAN2) and the ETACS-ECU connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2) terminal No.16 and body earth

OK: 1 kΩ or more

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

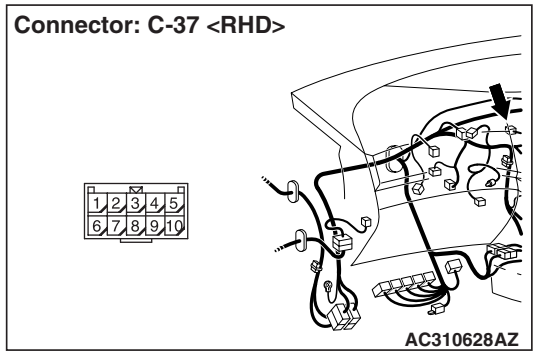
Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 20, Diagnose CAN bus lines thoroughly. Refer to P.54D-526.

NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the ETACS-ECU connector.

STEP 12. Connector check: C-37 jumper connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Check that the wiring harness of the jumper connector is not damaged.

Q: Is the check result normal?

YES : Go to Step 13 .

NO : Repair the defective connector.

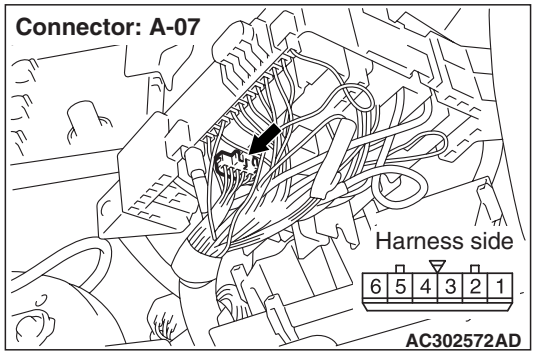
STEP 13. Resistance measurement at the C-09 joint connector (CAN2).

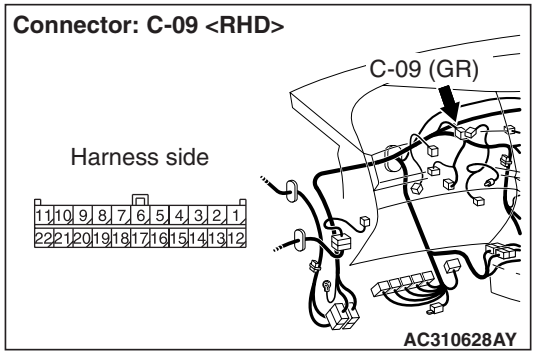
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



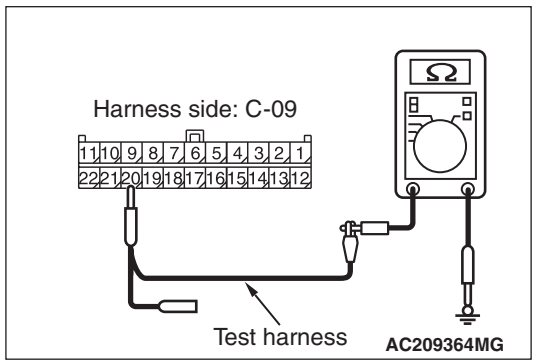


(1) Disconnect the joint connector (CAN2) and the jumper connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2) terminal No.20 and body earth

OK: 1 kΩ or more

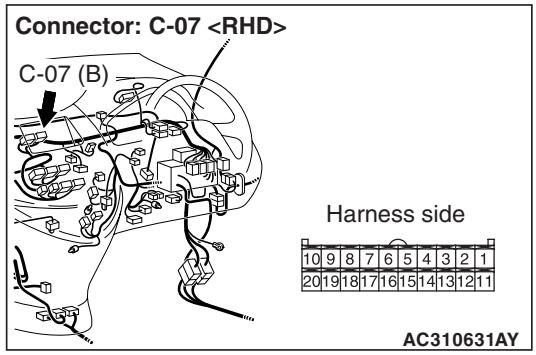
Q: Is the check result normal?

YES : <1 kΩ or more> Go to Step 14.

NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the jumper connector.

STEP 14. Connector check: C-07 centre display connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 15 .

NO : Repair the defective connector.

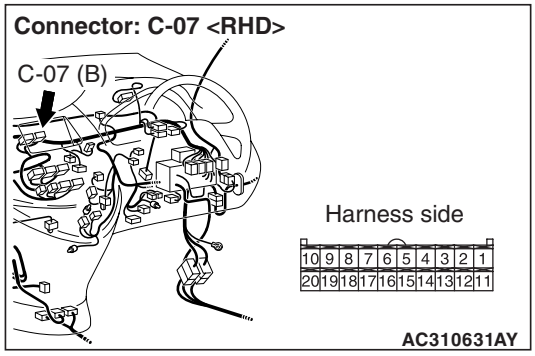
STEP 15. Resistance measurement at the C-37 jumper connector.

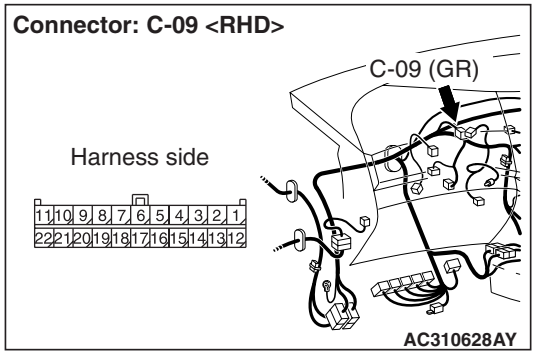
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



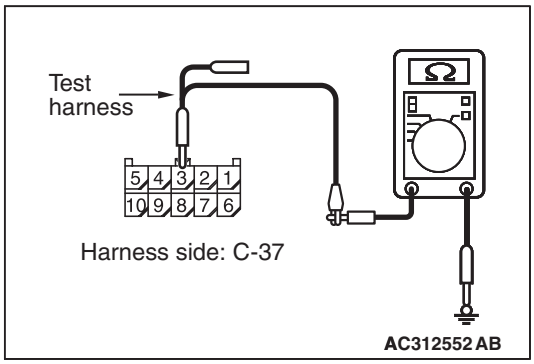


(1) Disconnect the centre display connector and the jumper connector, and measure at the jumper connector (at the centre display side).

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-37 jumper connector terminal No.3 and body earth

OK: 1 kΩ or more

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

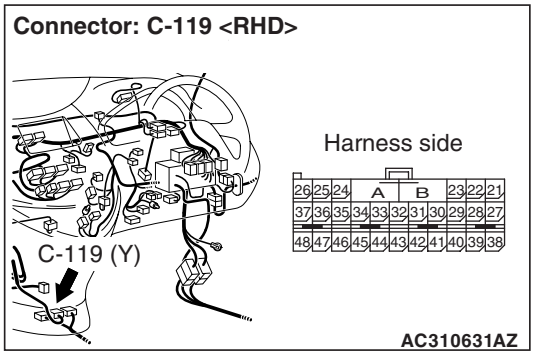
Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 20, Diagnose CAN bus lines thoroughly. Refer to P.54D-526.

NO : <less than 1 Ω> Repair the wiring harness between the jumper connector and the centre display connector.

STEP 16. Connector check: C-119 SRS-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 17.

NO : Repair the defective connector.

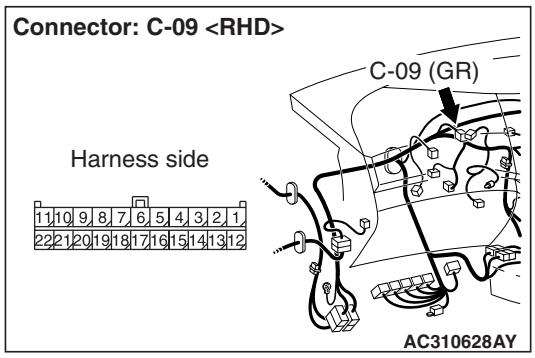
STEP 17. Resistance measurement at C-09 joint connector (CAN2).

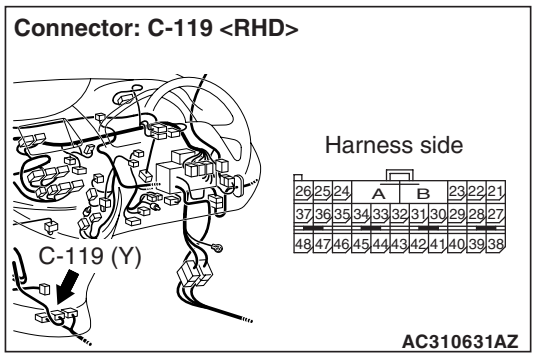
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



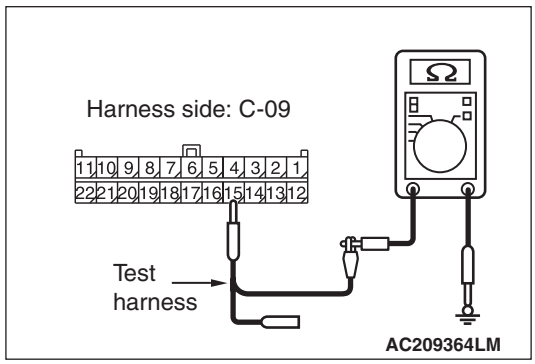


(1) Disconnect the joint connector (CAN2) and the SRS-ECU connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2) terminal No.15 and body earth

OK: 1 kΩ or more

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

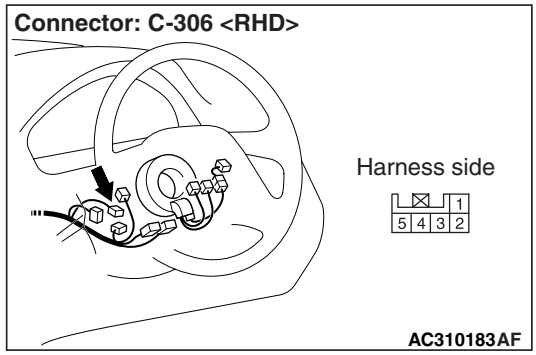
Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 20, Diagnose CAN bus lines thoroughly. Refer to P.54D-526.

NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the SRS-ECU connector.

STEP 18. Connector check: C-306 steering wheel angle sensor connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

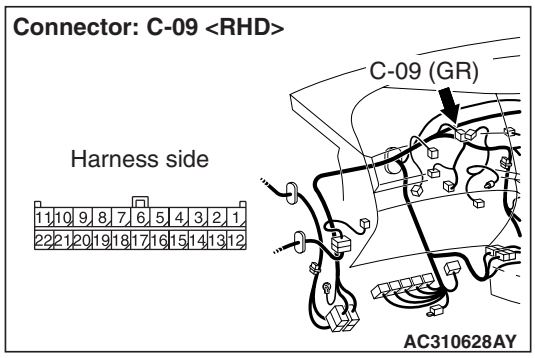
YES : Go to Step 19.

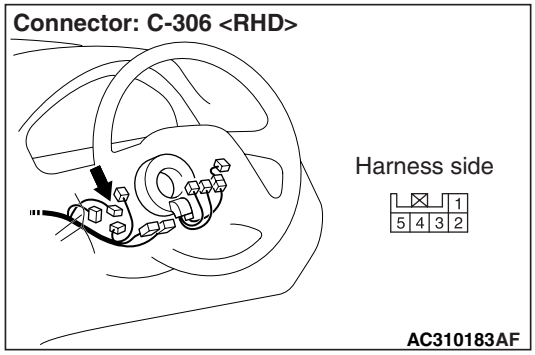
NO : Repair the defective connector.

STEP 19. Resistance measurement at C-09 joint connector (CAN2).

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.

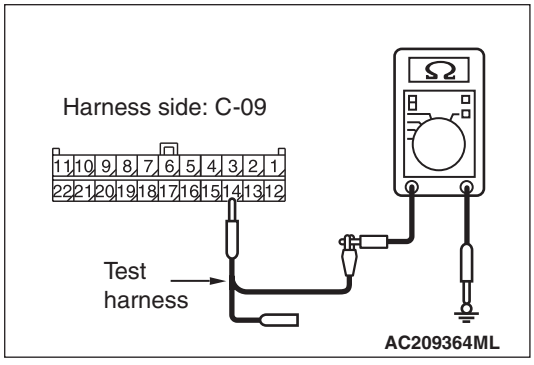




(1) Disconnect the joint connector (CAN2) and the steering wheel angle sensor connector, and measure at the wiring harness side.

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2) terminal No.14 and body earth
OK: 1 kΩ or more

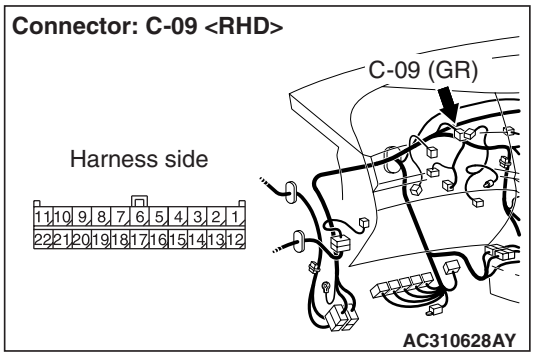
⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <1 kΩ or more> Follow diagnostic item 20, Diagnose CAN bus lines thoroughly. Refer to P.54D-526.
NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the steering angle sensor connector.

STEP 20. Resistance measurement at C-09 joint connector (CAN2).

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

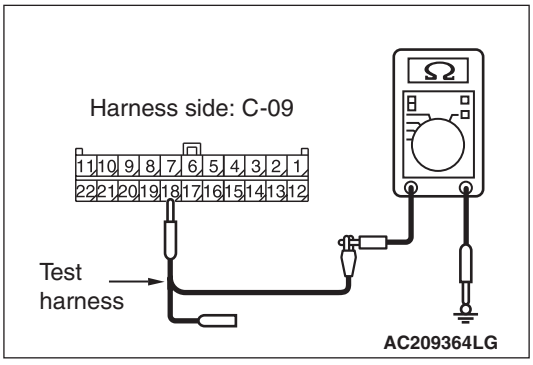
⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the connector, and measure at the wiring harness side.

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2)

terminal No.18 and body earth

OK: 1 kΩ or more

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 20, Diagnose CAN bus lines thoroughly. Refer to P.54D-526.

NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the diagnosis connector.

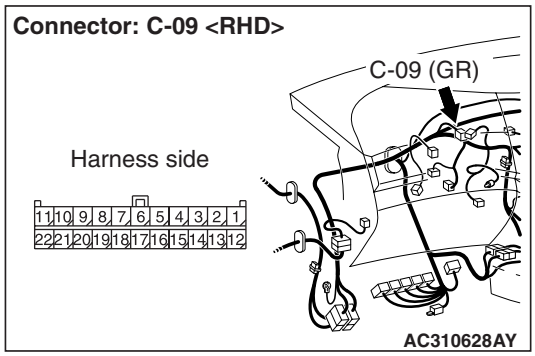
STEP 21. Resistance measurement at C-09 joint connector (CAN2).

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.

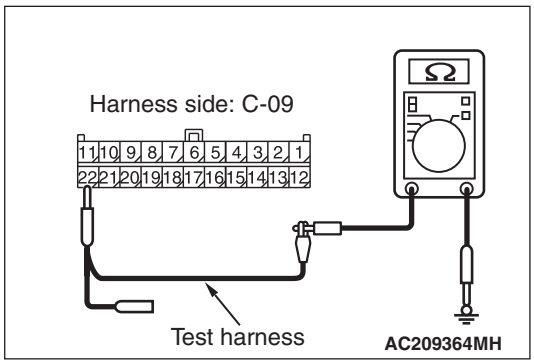


(1) Disconnect the connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2) terminal No.22 and body earth

OK: 1 kΩ or more

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?

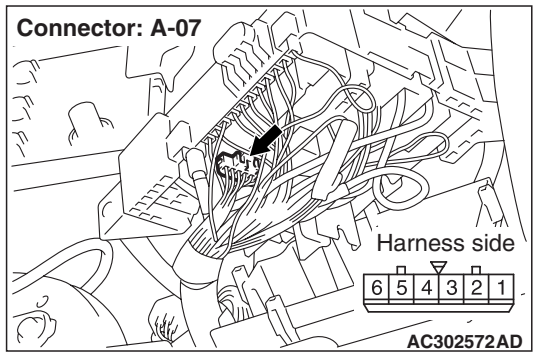
YES : <1 kΩ or more> Follow diagnostic item 20, Diagnose CAN bus lines thoroughly. Refer to P.54D-526.

NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the intermediate connector.

STEP 22. Connector check: A-07 joint connector (CAN1)

NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

When checking the joint connector, ensure that its wiring harness side is not damaged.

Q: Is the check result normal?

YES : Go to Step 23.

NO : Repair a defective connector or replace the joint connector (front wiring harness assembly).

STEP 23. Resistance measurement at the A-07 joint connector (CAN1).

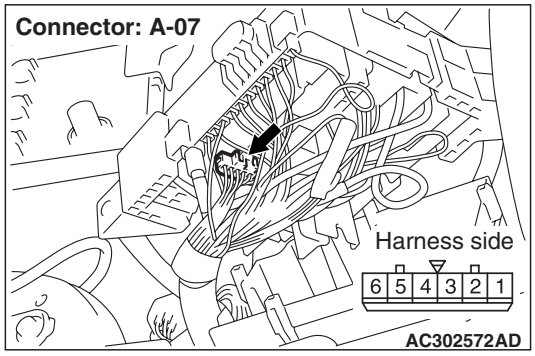
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.

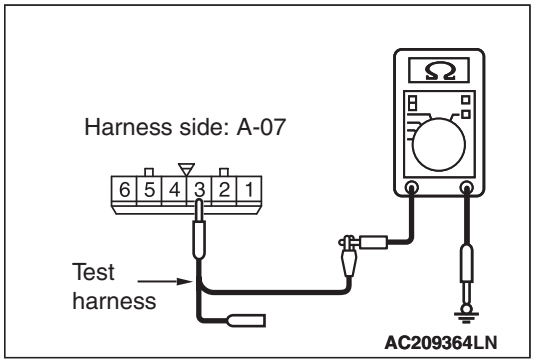


(1) Disconnect the connector, and measure at the wiring harness side.

⚠ CAUTION

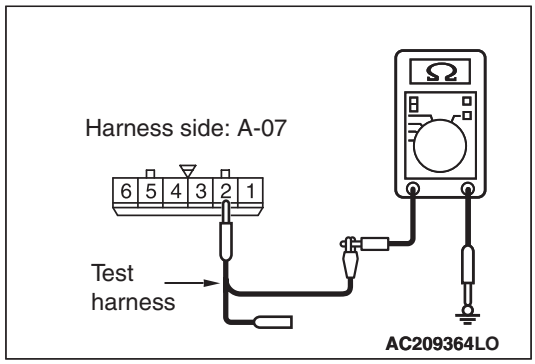
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between A-07 joint connector (CAN1) terminal No.3 and body earth

OK: 1 kΩ or more



(4) Resistance between A-07 joint connector (CAN1) terminal No.2 and body earth

OK: 1 kΩ or more

Q: Are the check result normal?

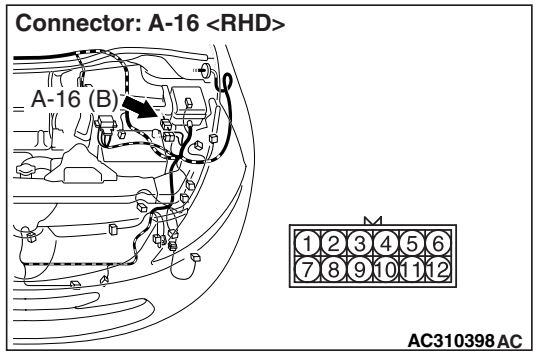
YES <all of the measurement results show 1 kΩ or more> : Go to Step 29.

NO <The resistance between terminal No.3 and body earth is less than 1 kΩ> : Go to Step 24.

NO <The resistance between terminal No.2 and body earth is less than 1 kΩ> : Go to Step 27.

STEP 24. Connector check: A-16 intermediate connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 25.

NO : Repair the defective connector.

STEP 25. Resistance measurement at the A-07 joint connector (CAN1).

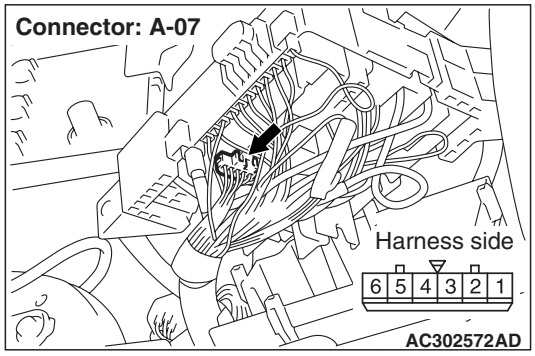
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

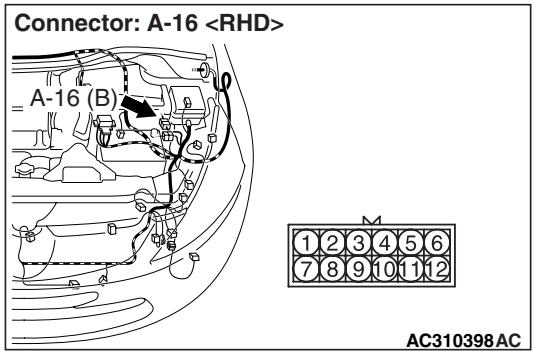
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



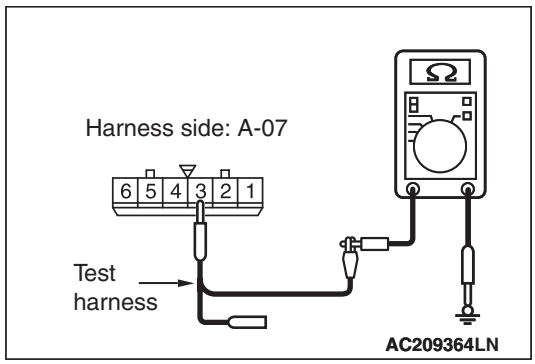


(1) Disconnect the joint connector (CAN1) and the intermediate connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between A-07 joint connector (CAN1) terminal No.3 and body earth

OK: 1 kΩ or more

Q: Is the check result normal?

YES : <1 kΩ or more> Go to Step 26.

NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN1) and the intermediate connector.

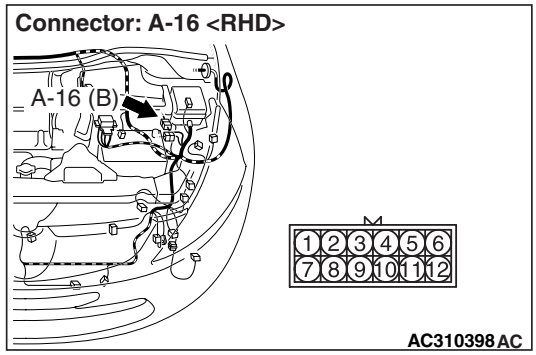
STEP 26. Resistance measurement at the A-16 intermediate connector.

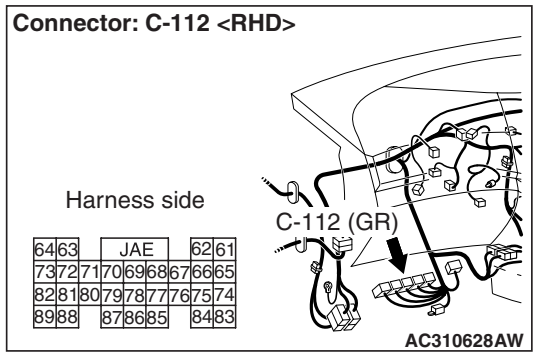
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





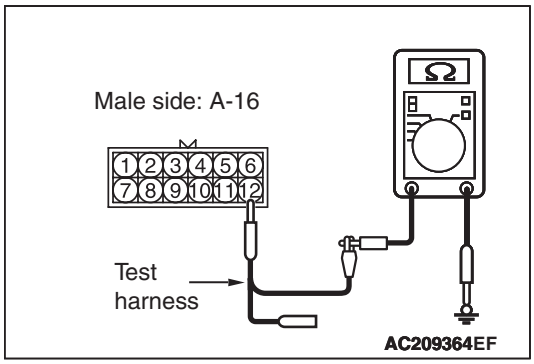
(1) Disconnect the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector and the

intermediate connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between A-16 intermediate connector terminal No.12 and body earth

OK: 1 kΩ or more

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

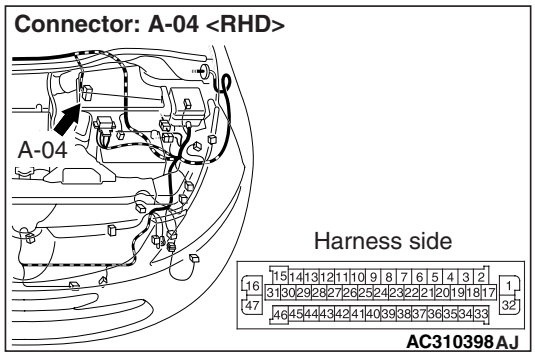
Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 20, Diagnose CAN bus lines thoroughly. Refer to P.54D-526.

NO : <less than 1 Ω> Repair the wiring harness between the intermediate connector and the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector.

STEP 27. Connector check: A-04 ASC-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 28.

NO : Repair the defective connector.

STEP 28. Resistance measurement at the A-07 joint connector (CAN1).

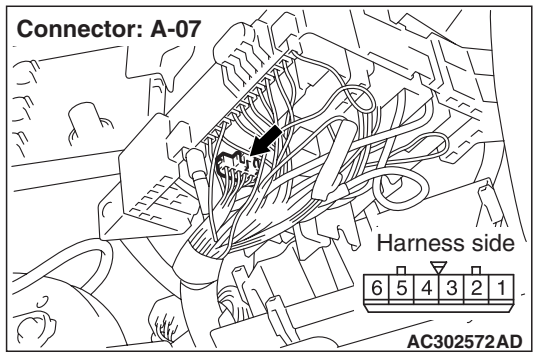
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

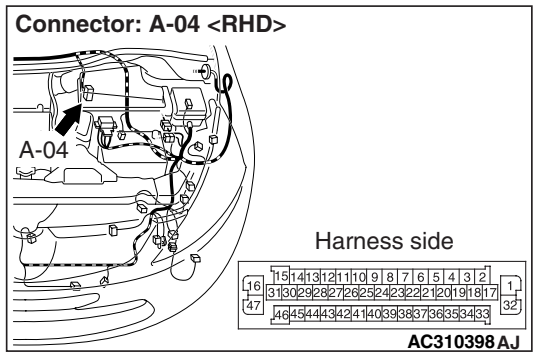
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





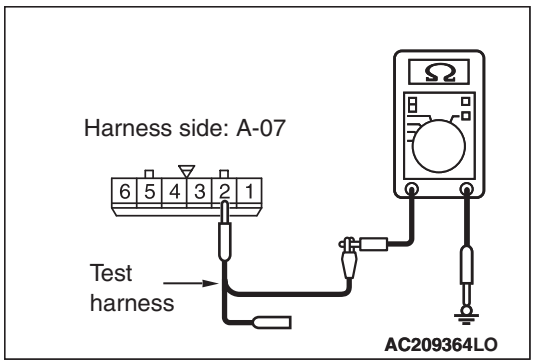
(1) Disconnect the joint connector (CAN1) and the ASC-ECU connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is

disconnected.



(3) Resistance between A-07 joint connector (CAN1) terminal No.2 and body earth

OK: 1 kΩ or more

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 20, Diagnose CAN bus lines thoroughly. Refer to P.54D-526.

NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN1) and the ASC-ECU connector.

STEP 29. Resistance measurement at the A-07 joint connector (CAN1).

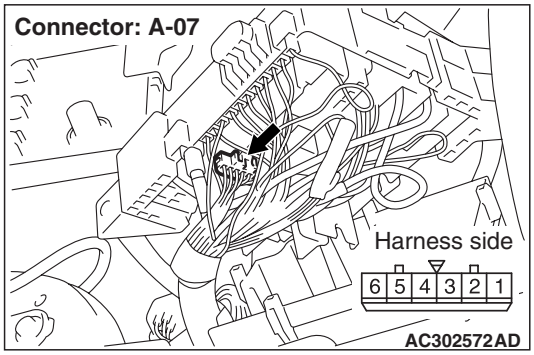
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

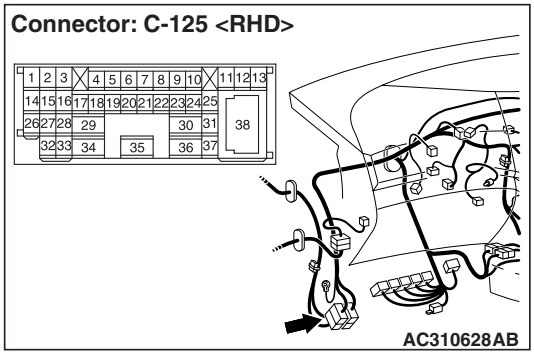
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





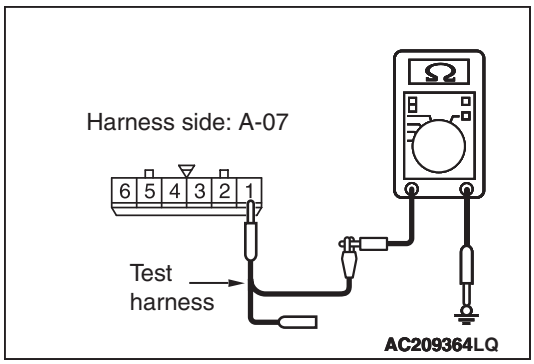
(1) Disconnect the joint connector (CAN1) and the intermediate connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is

disconnected.



(3) Resistance between A-07 joint connector (CAN1) terminal No.1 and body earth

OK: 1 kΩ or more

⚠ CAUTION

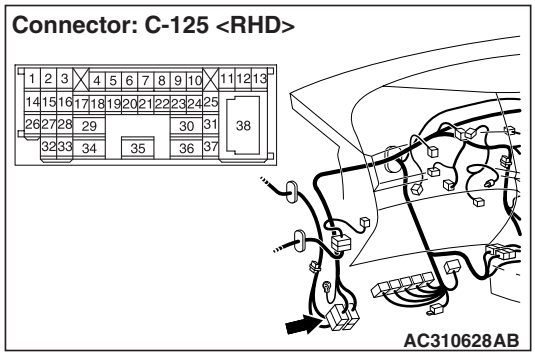
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 20, Diagnose CAN bus lines thoroughly. Refer to P.54D-526.

NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN1) and the intermediate connector.

STEP 30. Connector check: C-125 intermediate connector



⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 31.

NO : Repair the defective connector.

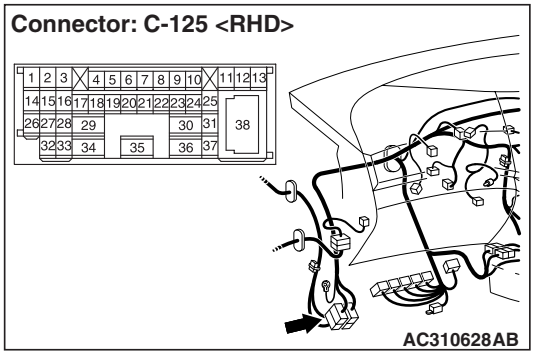
STEP 31. Resistance measurement at the C-125 intermediate connector.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.

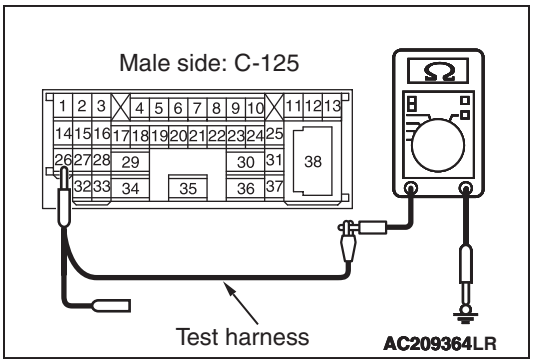


(1) Disconnect the connector, and measure at its male-side intermediate connector (at the front wiring harness side).

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-125 intermediate connector terminal No.26 and body earth

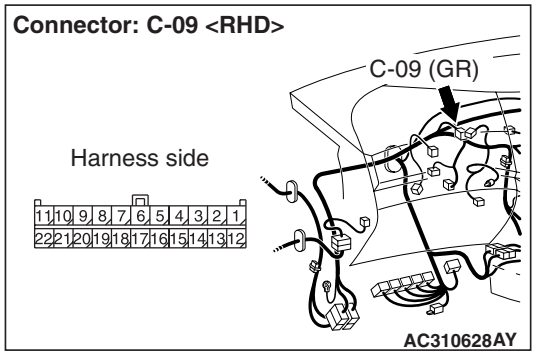
OK: 1 kΩ or more

Q: Is the check result normal?

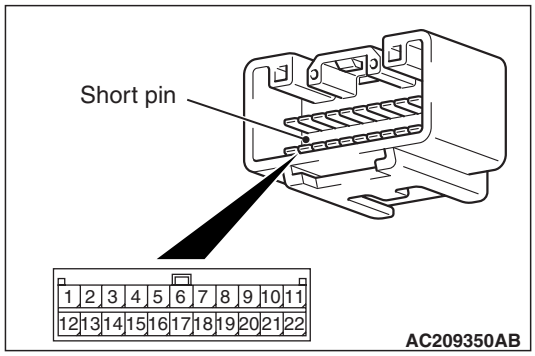
YES : <1 kΩ or more> Go to Step 32.

NO : <less than 1 kΩ> Go to Step 49.

STEP 32. Connector check: C-09 joint connector (CAN2)



⚠ CAUTION
The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.



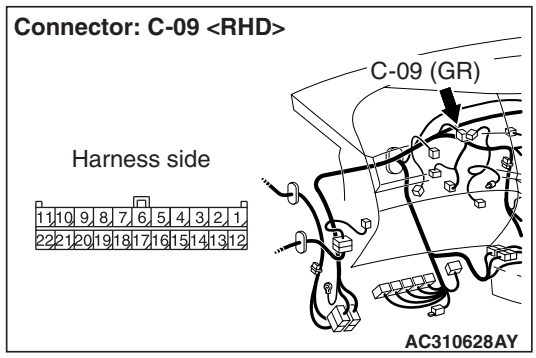
When checking the joint connector, ensure that its wiring harness side and its short pins are not damaged.

Q: Is the check result normal?
YES : Go to Step 33.
NO : Repair a defective connector or replace the joint connector.

STEP 33. Resistance measurement at C-09 joint connector (CAN2).

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

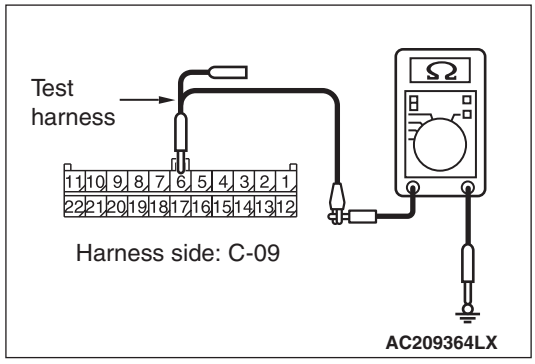
⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.



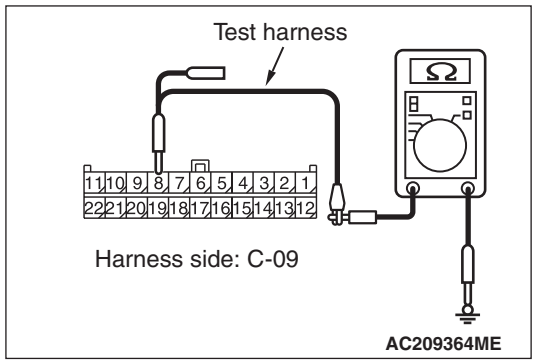
(1) Disconnect the connector, and measure at the wiring harness side.

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



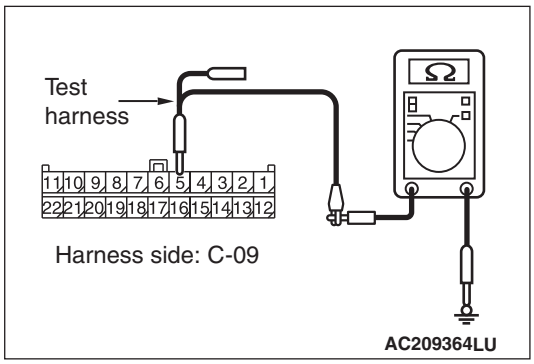
(3) Resistance between C-09 joint connector (CAN2) terminal No.6 and body earth
OK: 1 kΩ or more



(4) Resistance between C-09 joint connector (CAN2)

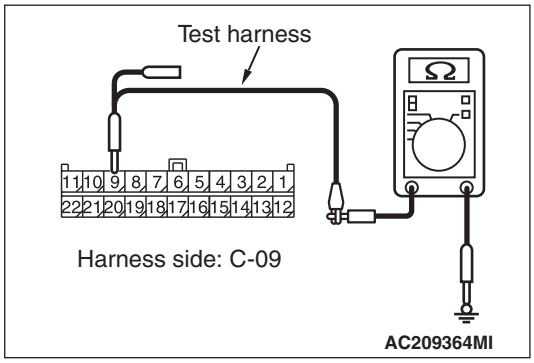
terminal No.8 and body earth

OK: 1 kΩ or more



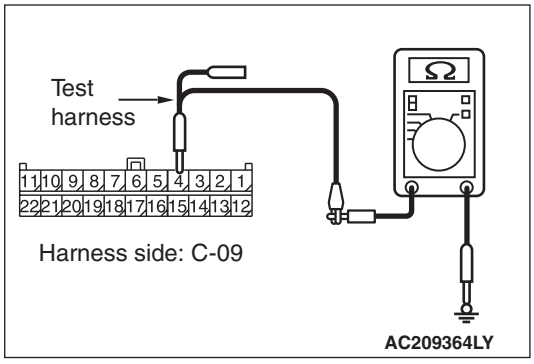
(5) Resistance between C-09 joint connector (CAN2) terminal No.5 and body earth

OK: 1 kΩ or more



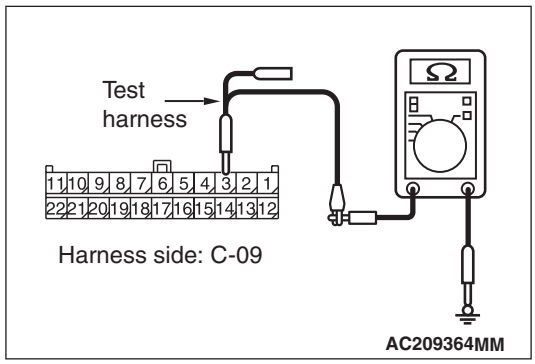
(6) Resistance between C-09 joint connector (CAN2) terminal No.9 and body earth

OK: 1 kΩ or more



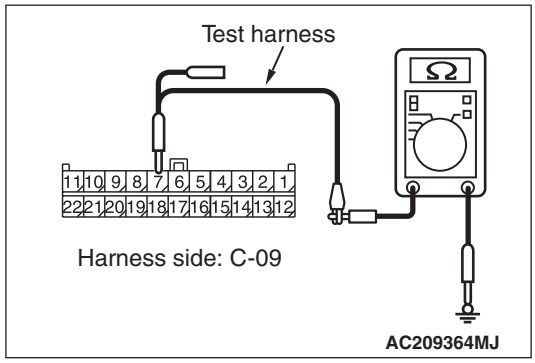
(7) Resistance between C-09 joint connector (CAN2) terminal No.4 and body earth

OK: 1 kΩ or more



(8) Resistance between C-09 joint connector (CAN2) terminal No.3 and body earth

OK: 1 kΩ or more



(9) Resistance between C-09 joint connector (CAN2) terminal No.7 and body earth

OK: 1 kΩ or more

Q: Are the check result normal?

YES <all of the measurement results show 1 kΩ or more> : Go to Step 48.

NO <The resistance between terminal No.6 and body earth is less than 1 kΩ> : Go to Step 34.

NO <The resistance between terminal No.8 and body earth is less than 1 kΩ> : Go to Step 35.

NO <The resistance between terminal No.5 and body earth is less than 1 kΩ> : Go to Step 37.

NO <The resistance between terminal No.9 and body earth is less than 1 kΩ> : Go to Step 39.

NO <The resistance between terminal No.4 and body earth is less than 1 kΩ> : Go to Step 43.

NO <The resistance between terminal No.3 and body earth is less than 1 kΩ> : Go to Step 45.

NO <The resistance between terminal No.7 and body earth is less than 1 kΩ> : Go to Step 47.

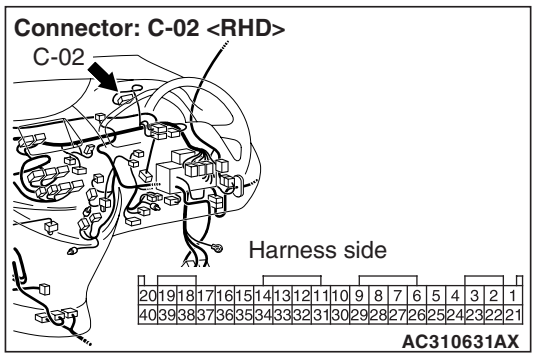
STEP 34. Resistance measurement at C-09 joint connector (CAN2).

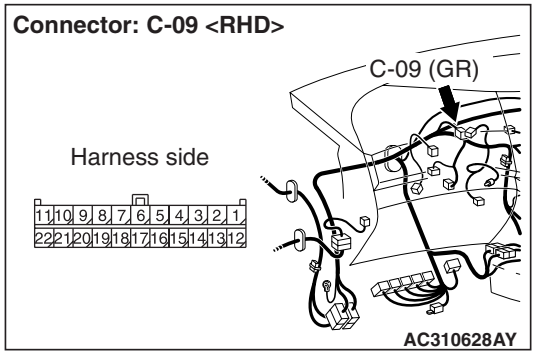
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



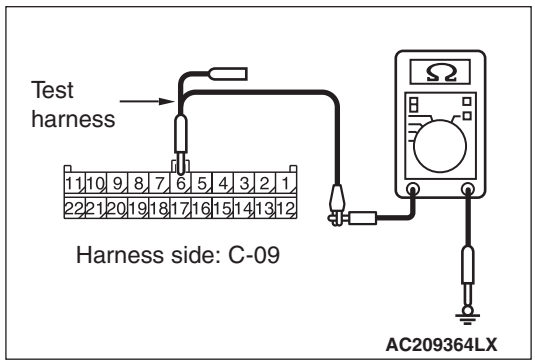


(1) Disconnect the joint connector (CAN2) and the combination meter connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2) terminal No.6 and body earth

OK: 1 kΩ or more

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

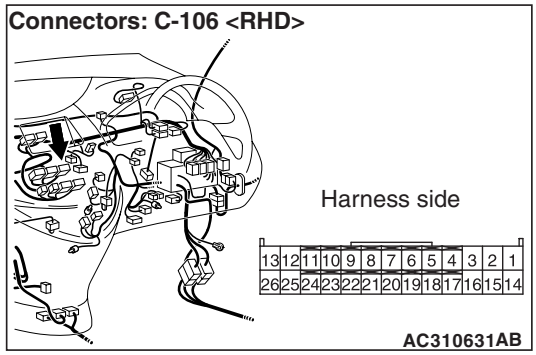
Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 20, Diagnose CAN bus lines thoroughly. Refer to P.54D-526.

NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the combination meter connector.

STEP 35. Connector check: C-106 A/C-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 36.

NO : Repair the defective connector.

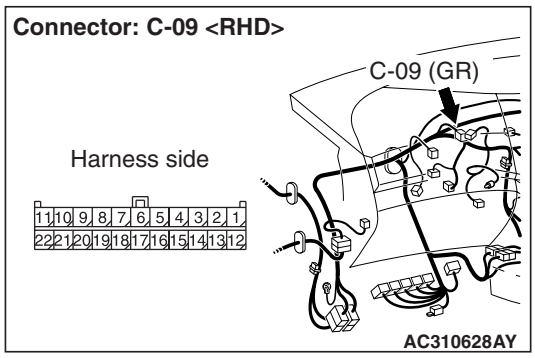
STEP 36. Resistance measurement at C-09 joint connector (CAN2).

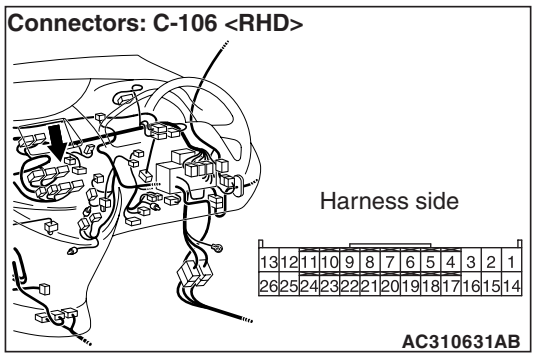
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



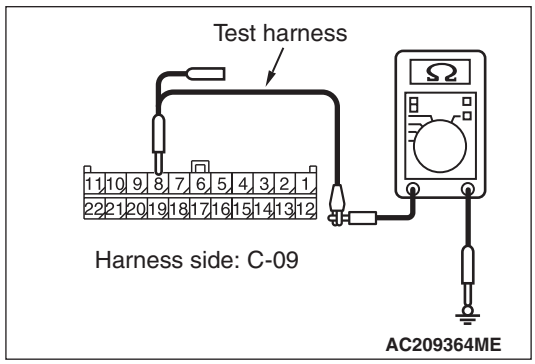


(1) Disconnect the joint connector (CAN2) and the A/C-ECU connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2) terminal No.8 and body earth

OK: 1 kΩ or more

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

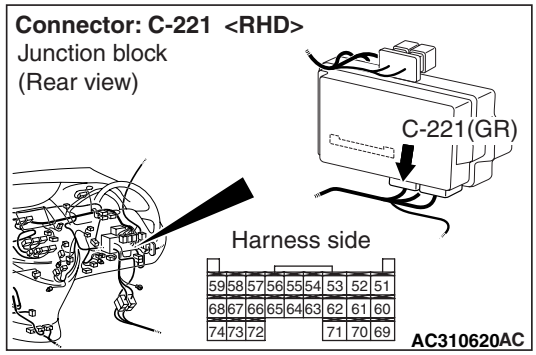
Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 20, Diagnose CAN bus lines thoroughly. Refer to P.54D-526.

NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the A/C-ECU connector.

STEP 37. Connector check: C-221 ETACS-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 38.

NO : Repair the defective connector.

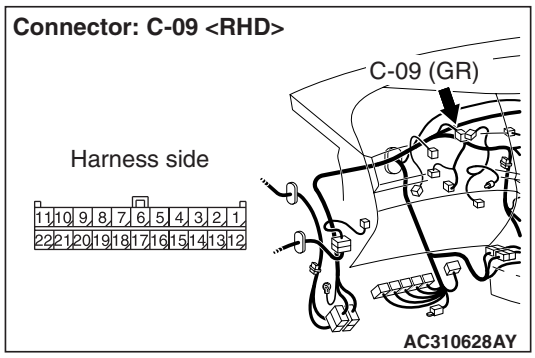
STEP 38. Resistance measurement at C-09 joint connector (CAN2).

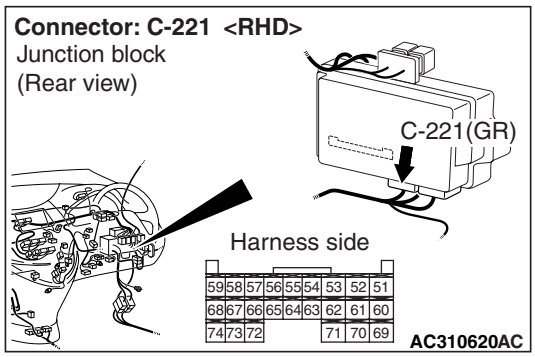
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



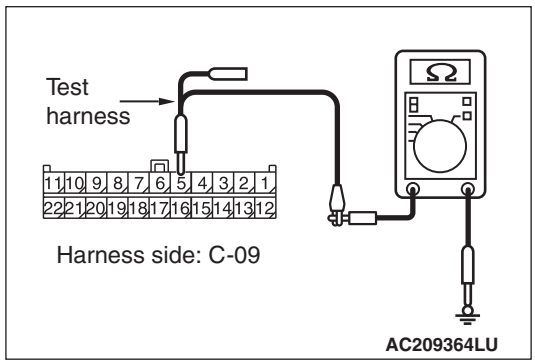


(1) Disconnect the joint connector (CAN2) and the ETACS-ECU connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2) terminal No.5 and body earth

OK: 1 kΩ or more

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

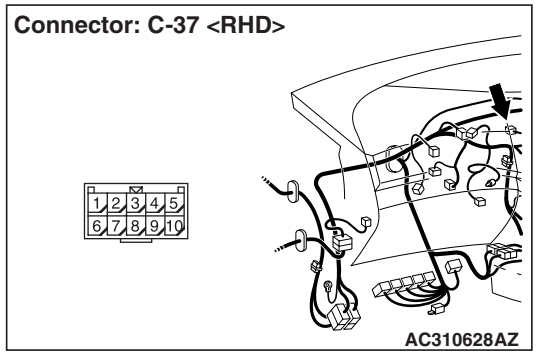
Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 20, Diagnose CAN bus lines thoroughly. Refer to P.54D-526.

NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the ETACS-ECU connector.

STEP 39. Connector check: C-37 jumper connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Check that the wiring harness of the jumper connector is not damaged.

Q: Is the check result normal?

YES : Go to Step 40 .

NO : Repair the defective connector.

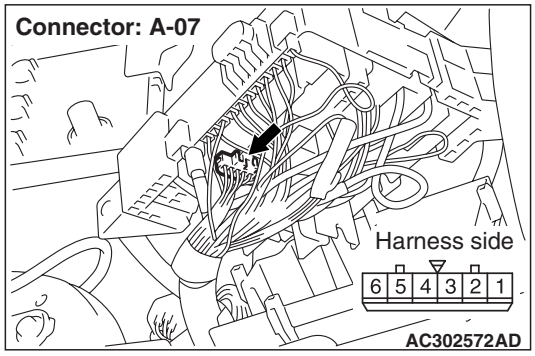
STEP 40. Resistance measurement at the C-09 joint connector (CAN2).

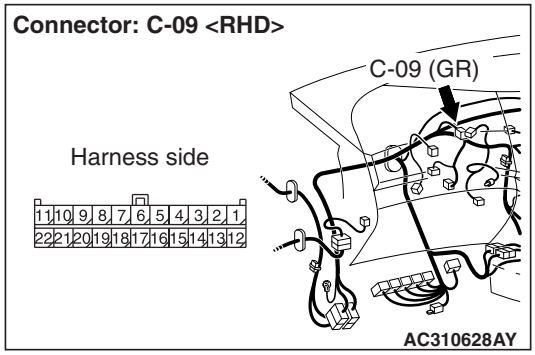
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



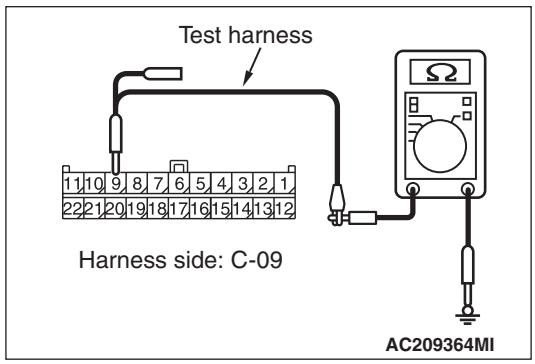


(1) Disconnect the joint connector (CAN2) and the jumper connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2) terminal No.9 and body earth

OK: 1 kΩ or more

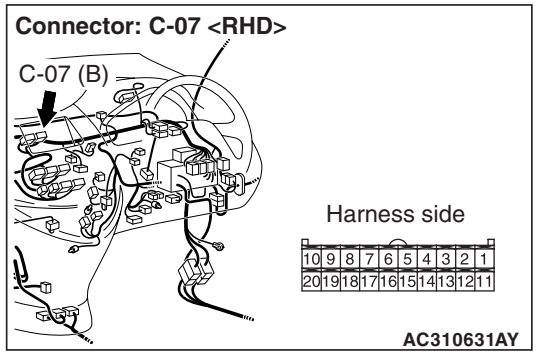
Q: Is the check result normal?

YES : <1 kΩ or more> Go to Step 41.

NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the jumper connector.

STEP 41. Connector check: C-07 centre display connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 42 .

NO : Repair the defective connector.

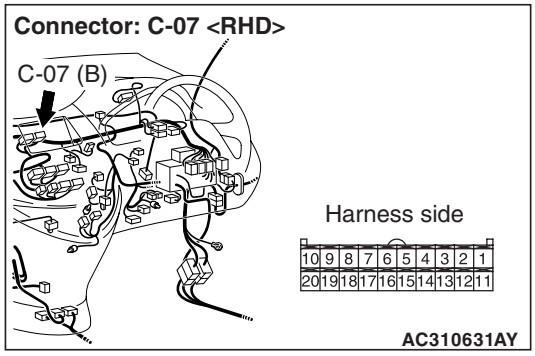
STEP 42. Resistance measurement at the C-37 jumper connector.

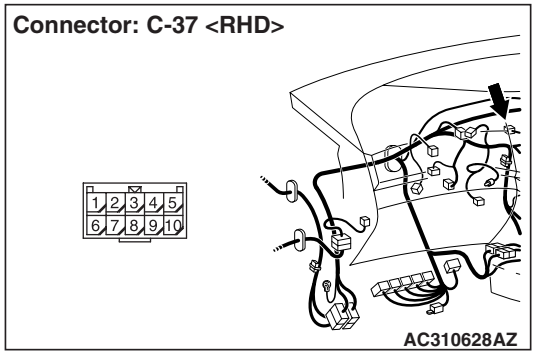
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



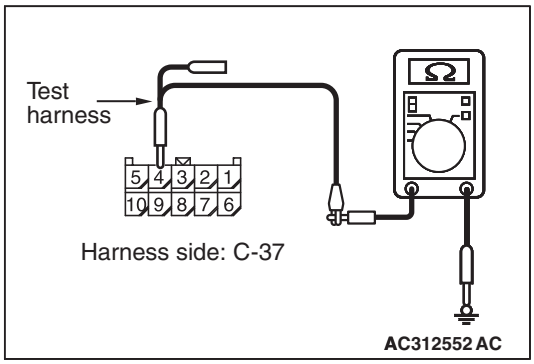


(1) Disconnect the centre display connector and the jumper connector, and measure at the jumper connector (at the centre display side).

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-37 jumper connector terminal No.4 and body earth

OK: 1 kΩ or more

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

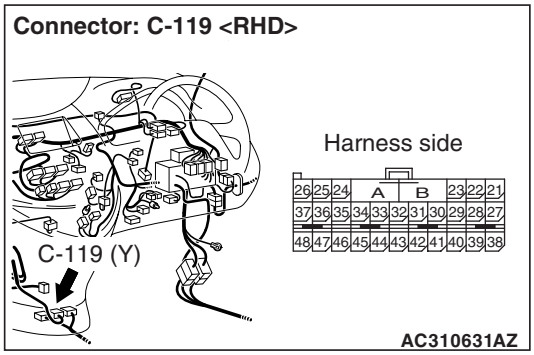
Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 20, Diagnose CAN bus lines thoroughly. Refer to P.54D-526.

NO : <less than 1 Ω> Repair the wiring harness between the jumper connector and the centre display connector.

STEP 43. Connector check: C-119 SRS-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 44.

NO : Repair the defective connector.

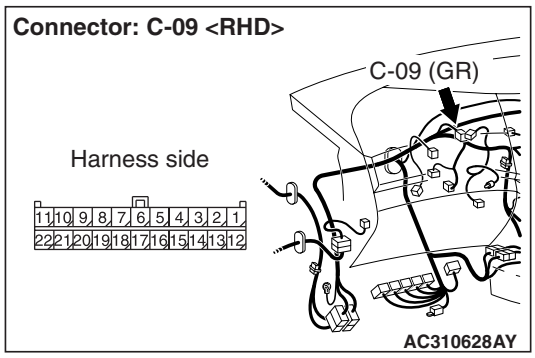
STEP 44. Resistance measurement at C-09 joint connector (CAN2).

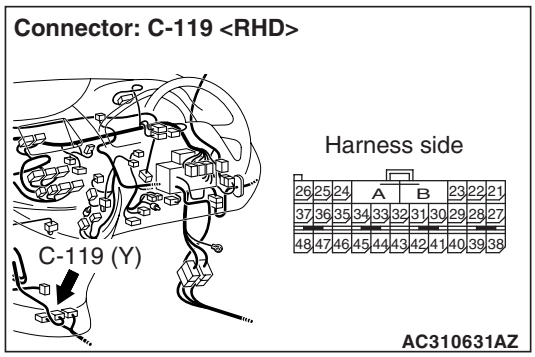
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



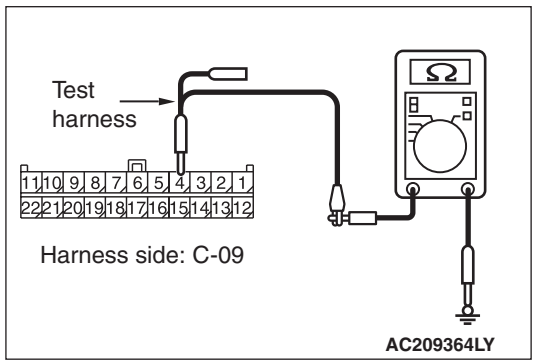


(1) Disconnect the joint connector (CAN2) and the SRS-ECU connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2) terminal No.4 and body earth

OK: 1 kΩ or more

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

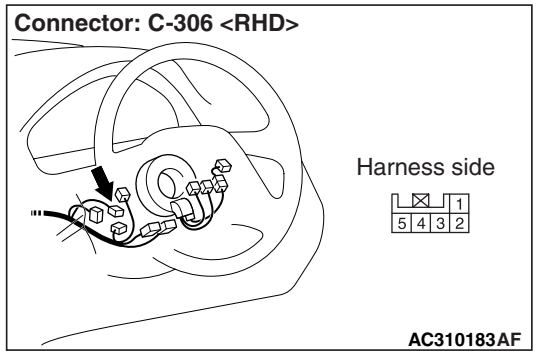
Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 20, Diagnose CAN bus lines thoroughly. Refer to P.54D-526.

NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the SRS-ECU connector.

STEP 45. Connector check: C-306 steering wheel angle sensor connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

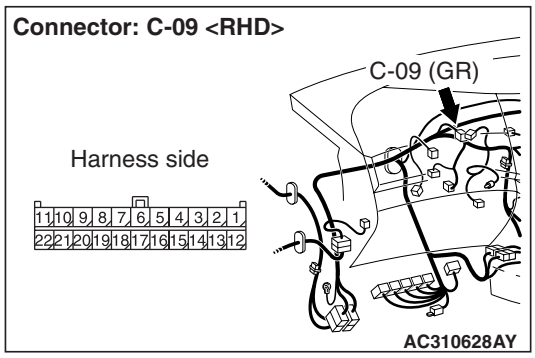
YES : Go to Step 46.

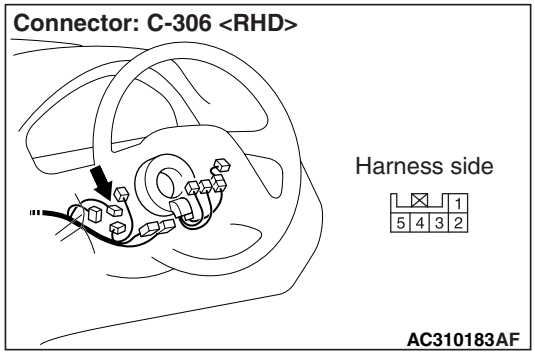
NO : Repair the defective connector.

STEP 46. Resistance measurement at C-09 joint connector (CAN2).

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.

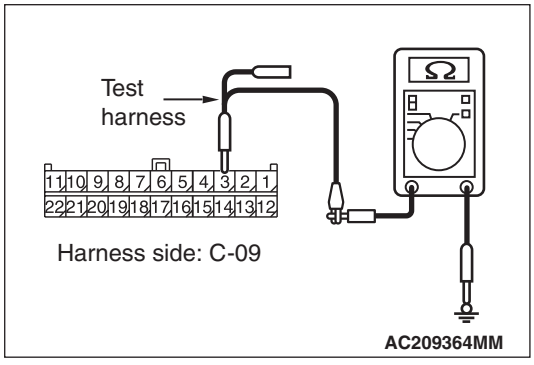




(1) Disconnect the joint connector (CAN2) and the steering wheel angle sensor connector, and measure at the wiring harness side.

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2) terminal No.3 and body earth
OK: 1 kΩ or more

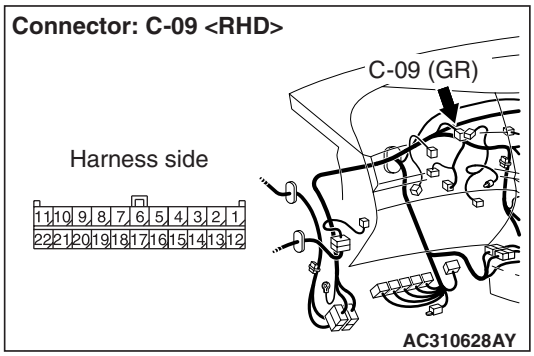
⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <1 kΩ or more> Follow diagnostic item 20, Diagnose CAN bus lines thoroughly. Refer to P.54D-526.
NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the steering angle sensor connector.

STEP 47. Resistance measurement at C-09 joint connector (CAN2).

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

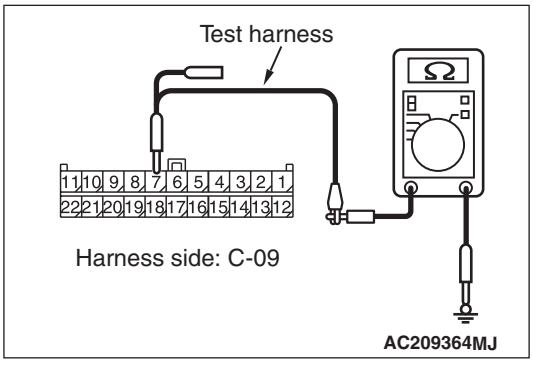
⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the connector, and measure at the wiring harness side.

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2)

terminal No.7 and body earth
OK: 1 kΩ or more

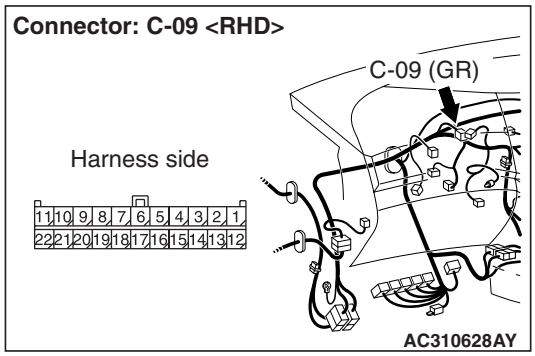
⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <1 kΩ or more> Follow diagnostic item 20, Diagnose CAN bus lines thoroughly. Refer to P.54D-526.
NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the diagnosis connector.

STEP 48. Resistance measurement at C-09 joint connector (CAN2).

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

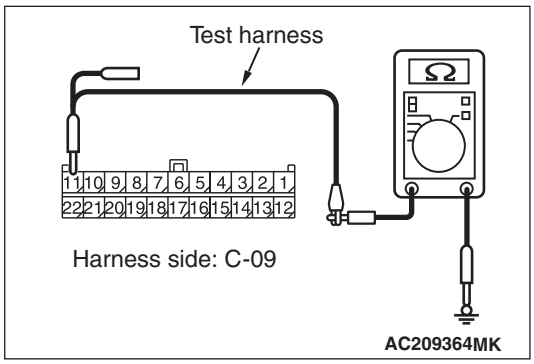
⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the connector, and measure at the wiring harness side.

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between C-09 joint connector (CAN2) terminal No.11 and body earth
OK: 1 kΩ or more

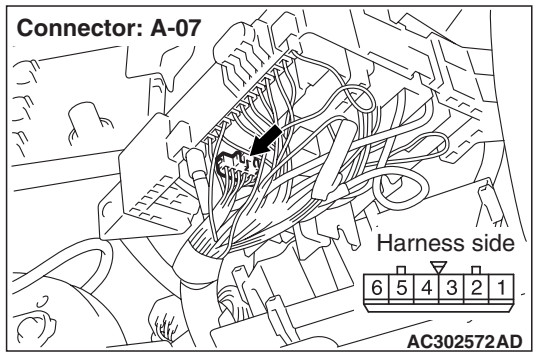
⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <1 kΩ or more> Follow diagnostic item 20, Diagnose CAN bus lines thoroughly. Refer to P.54D-526.
NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the intermediate connector.

STEP 49. Connector check: A-07 joint connector (CAN1)

NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

When checking the joint connector, ensure that its wiring harness side is not damaged.

Q: Is the check result normal?
YES : Go to Step 50.
NO : Repair a defective connector or replace the joint connector (front wiring harness assembly).

STEP 50. Resistance measurement at the A-07 joint connector (CAN1).

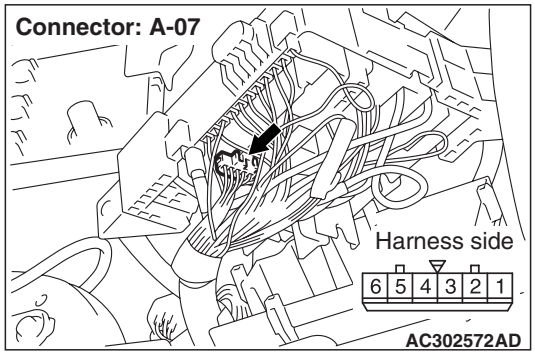
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.

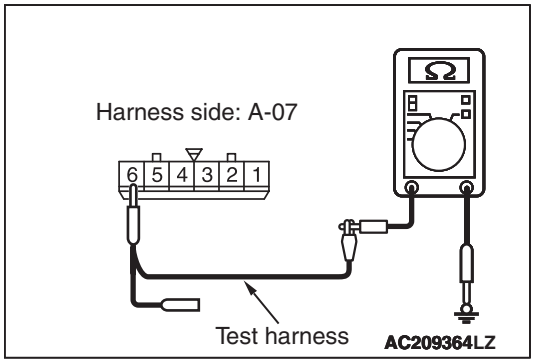


(1) Disconnect the connector, and measure at the wiring harness side.

⚠ CAUTION

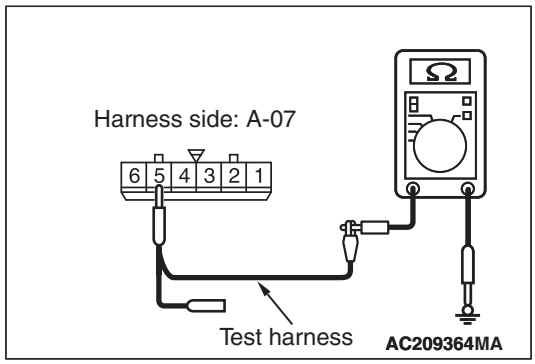
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between A-07 joint connector (CAN1) terminal No.6 and body earth

OK: 1 kΩ or more



(4) Resistance between A-07 joint connector (CAN1) terminal No.5 and body earth

OK: 1 kΩ or more

Q: Are the check result normal?

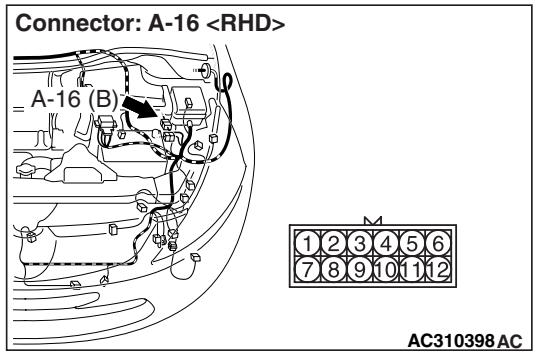
YES <all of the measurement results show 1 kΩ or more> : Go to Step 56.

NO <The resistance between terminal No.6 and body earth is less than 1 kΩ> : Go to Step 51.

NO <The resistance between terminal No.5 and body earth is less than 1 kΩ> : Go to Step 54.

STEP 51. Connector check: A-16 intermediate connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 52.

NO : Repair the defective connector.

STEP 52. Resistance measurement at the A-07 joint connector (CAN1).

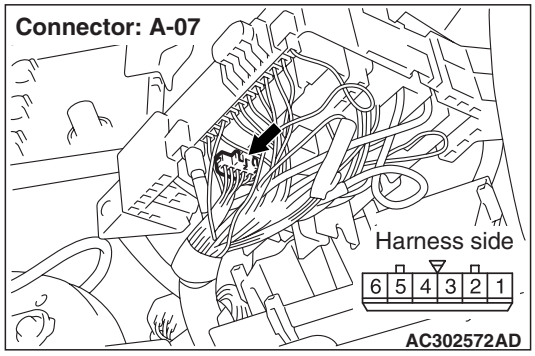
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

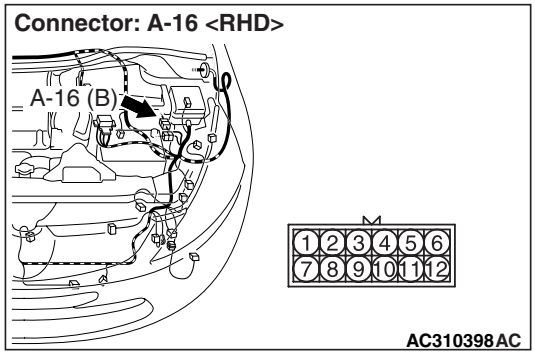
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



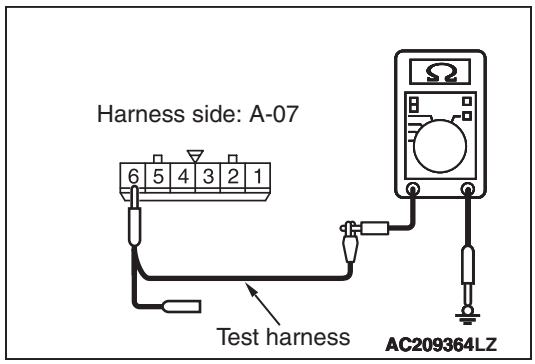


(1) Disconnect the joint connector (CAN1) and the intermediate connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between A-07 joint connector (CAN1) terminal No.6 and body earth

OK: 1 kΩ or more

Q: Is the check result normal?

YES : <1 kΩ or more> Go to Step 53.

NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN1) and the intermediate connector.

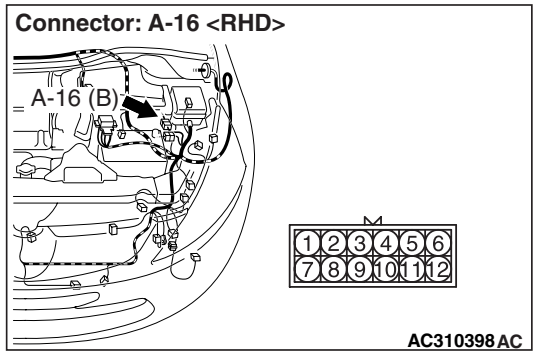
STEP 53. Resistance measurement at the A-16 intermediate connector.

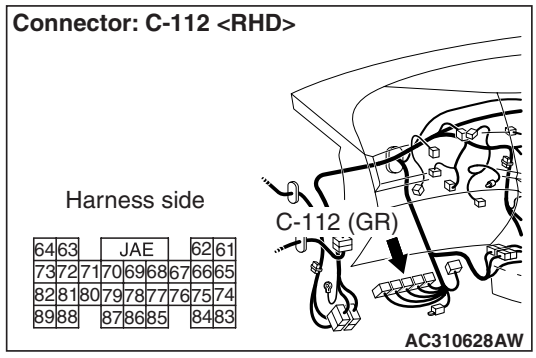
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





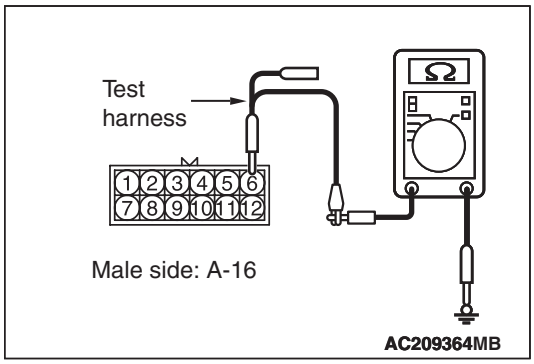
(1) Disconnect the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector and the

intermediate connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is disconnected.



(3) Resistance between A-16 intermediate connector terminal No.6 and body earth

OK: 1 kΩ or more

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

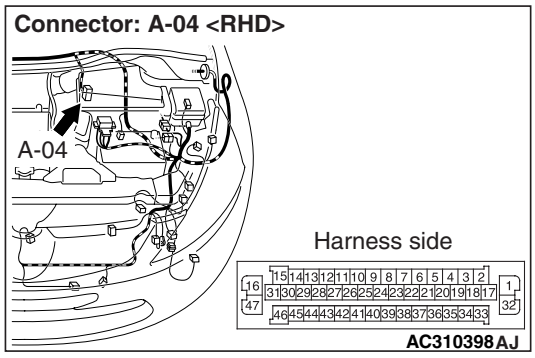
Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 20, Diagnose CAN bus lines thoroughly. Refer to P.54D-526.

NO : <less than 1 Ω> Repair the wiring harness between the intermediate connector and the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector.

STEP 54. Connector check: A-04 ASC-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 55.

NO : Repair the defective connector.

STEP 55. Resistance measurement at the A-07 joint connector (CAN1).

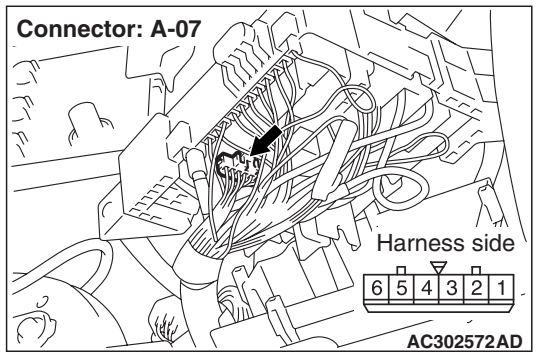
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

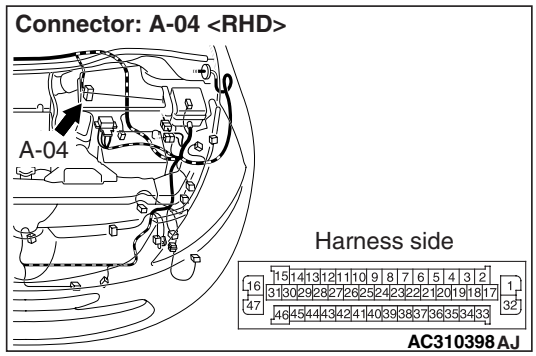
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





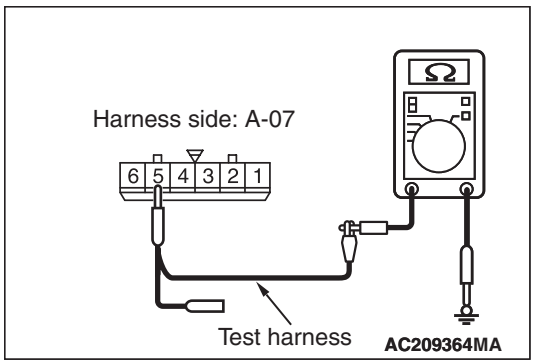
(1) Disconnect the joint connector (CAN1) and the ASC-ECU connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is

disconnected.



(3) Resistance between A-07 joint connector (CAN1) terminal No.5 and body earth

OK: 1 kΩ or more

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 20, Diagnose CAN bus lines thoroughly. Refer to P.54D-526.

NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN1) and the ASC-ECU connector.

STEP 56. Resistance measurement at the A-07 joint connector (CAN1).

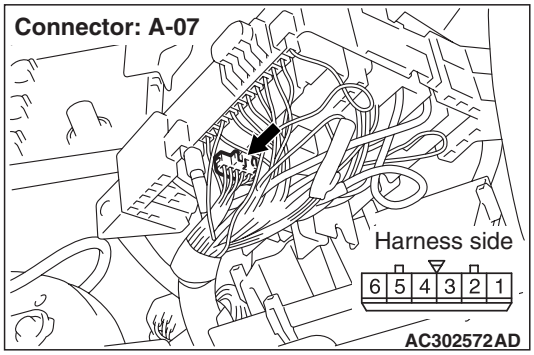
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

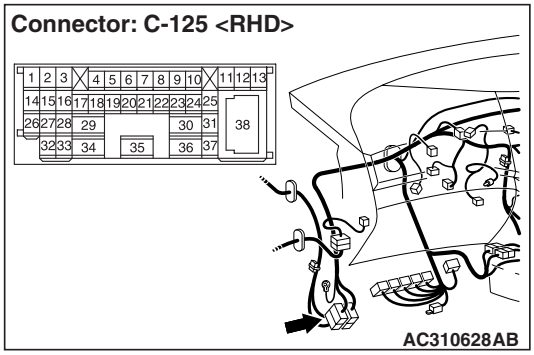
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





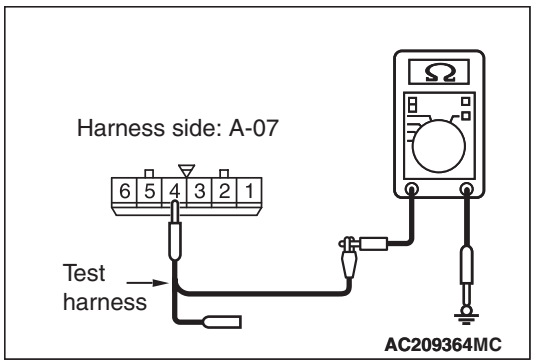
(1) Disconnect the joint connector (CAN1) and the intermediate connector, and measure at the wiring harness side.

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(2) Ensure that the negative battery terminal is

disconnected.



(3) Resistance between A-07 joint connector (CAN1) terminal No.4 and body earth

OK: 1 kΩ or more

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

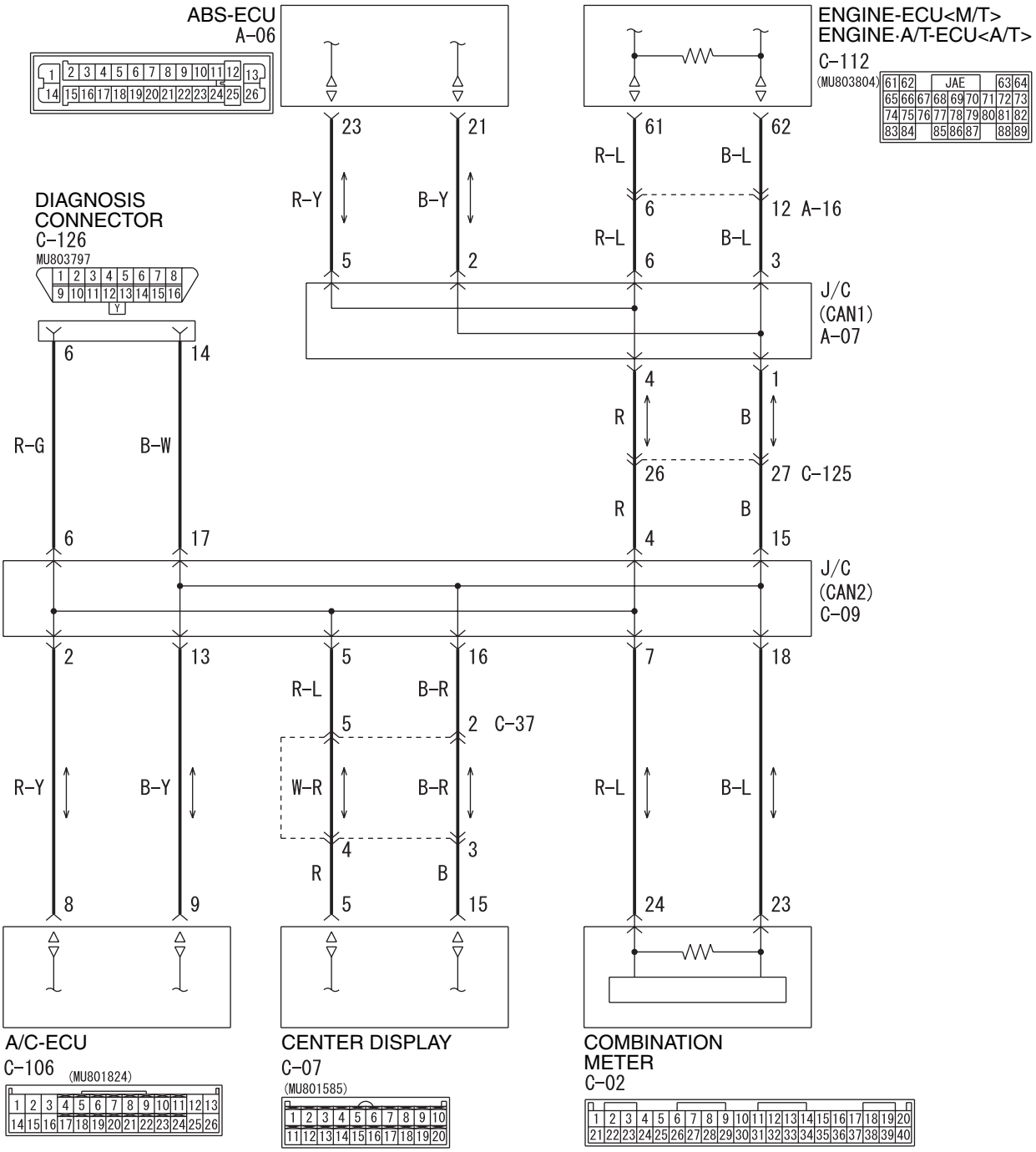
Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 20, Diagnose CAN bus lines thoroughly. Refer to P.54D-526.

NO : <less than 1 kΩ> Repair the wiring harness between the joint connector (CAN1) and the intermediate connector.

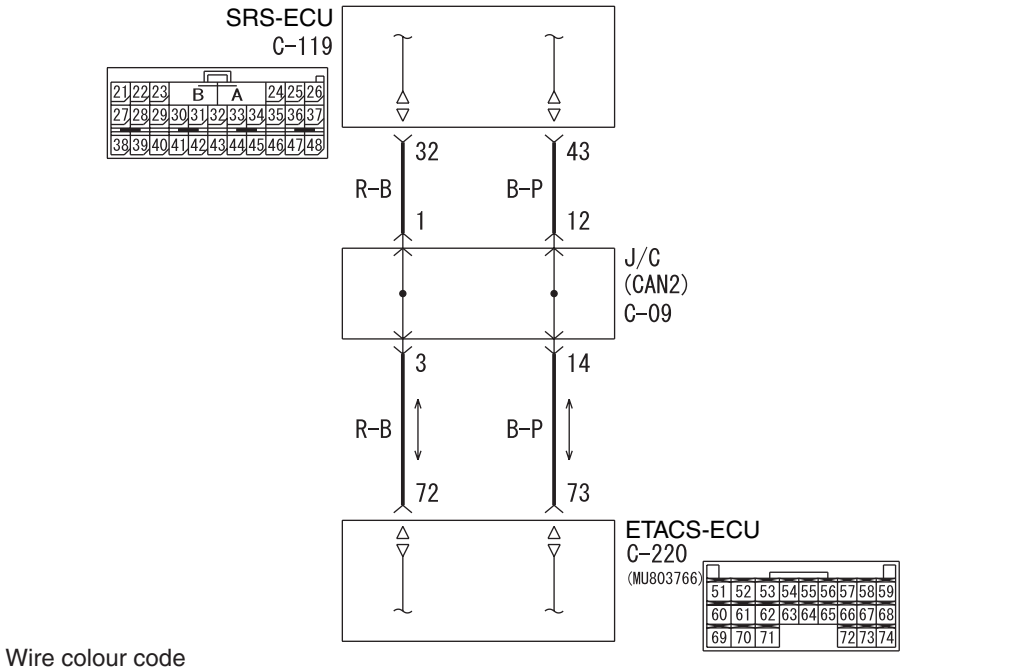
Diagnostic Item 9: Diagnose the lines between CAN_L and CAN_H for short circuit <LH drive vehicles without ASC>

⚠ CAUTION
When servicing a CAN bus line, earth yourself by touching a metal object such as an unpainted water pipe. If you fail to do, a component connected to the CAN bus line may be broken.



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E18AA



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E19AA

TROUBLE JUDGMENT

Short circuit may be present between the CAN_L and H lines when the resistance between the CAN bus lines (CAN_L and H lines) is less than 2 Ω.

COMMENTS ON TROUBLE SYMPTOM

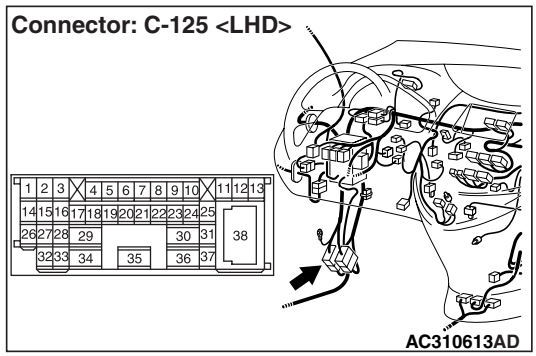
The wiring harness wire or connectors may have loose, corroded, or damage terminals, or terminals pushed back in the connector, or a ECU may be defective.

TROUBLESHOOTING HINTS

- Damaged harness wires and connectors
- Malfunction of the ETACS-ECU
- Malfunction of the combination meter
- Malfunction of the A/C-ECU
- Malfunction of the SRS-ECU
- Malfunction of the multi-centre display
- Malfunction of the ABS-ECU
- Malfunction of the engine-ECU <M/T> or engine-A/T-ECU <A/T>

DIAGNOSTIC PROCEDURE

STEP 1. Connector check: C-125 intermediate connector



⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair the defective connector.

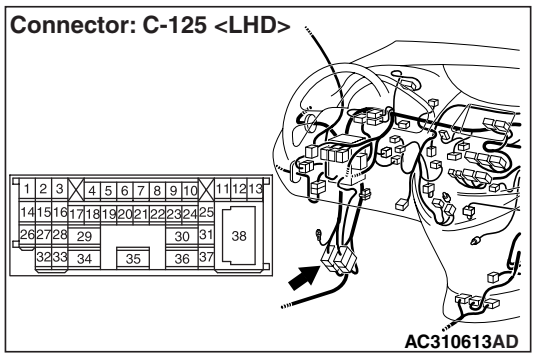
STEP 2. Resistance measurement at the C-125 intermediate connector.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



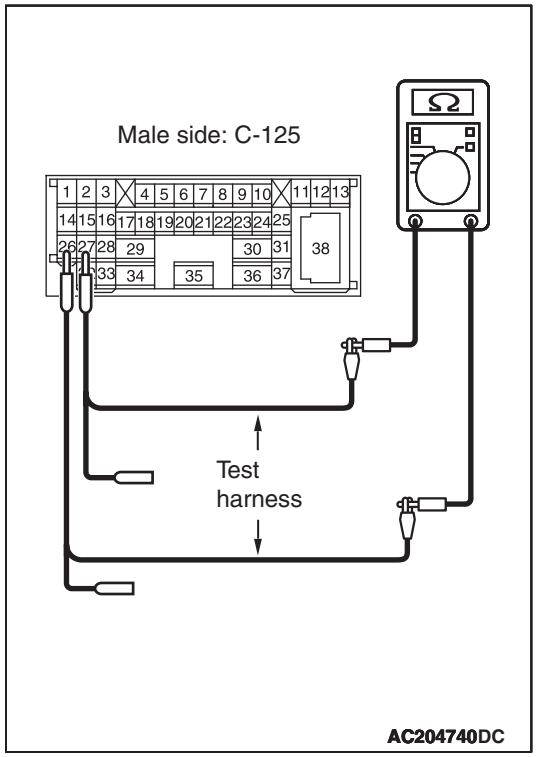
(1) Disconnect the connector, and measure at its male-side intermediate connector (at the front wiring harness side).

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Resistance between C-125 intermediate connector terminal Nos.26 and 27

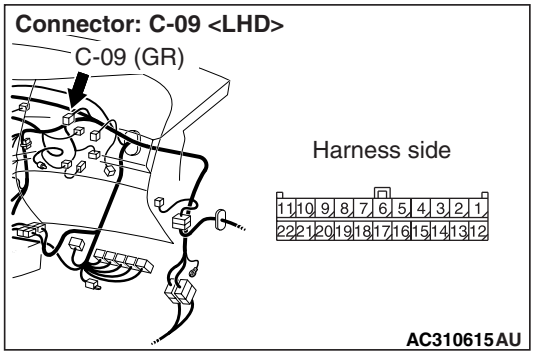
OK: 120± 20 Ω

Q: Is the check result normal?

YES : <Within 120± 20 Ω> Go to Step 3 .

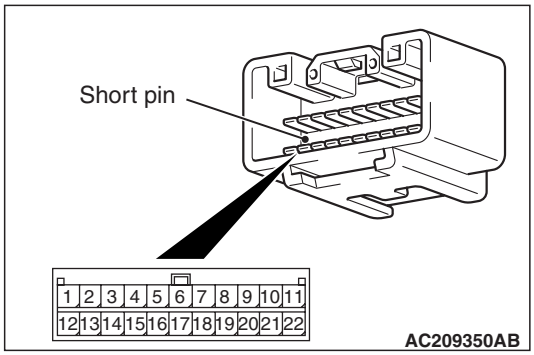
NO : <Not within 120± 20 Ω> Go to Step 26 .

STEP 3. Connector check: C-09 joint connector (CAN2)



⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.



When checking the joint connector, ensure that its wiring harness side and its short pins are not damaged.

Q: Is the check result normal?

YES : Go to Step 4.

NO : Repair a defective connector or replace the joint connector.

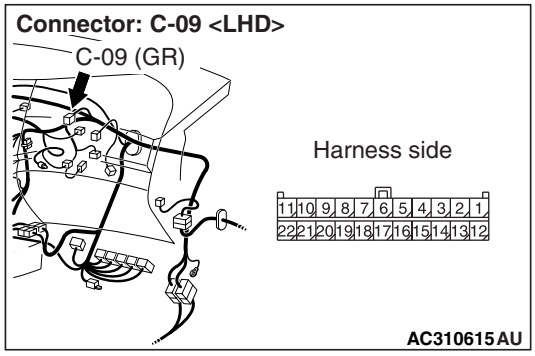
STEP 4. Resistance measurement at C-09 joint connector (CAN2).

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



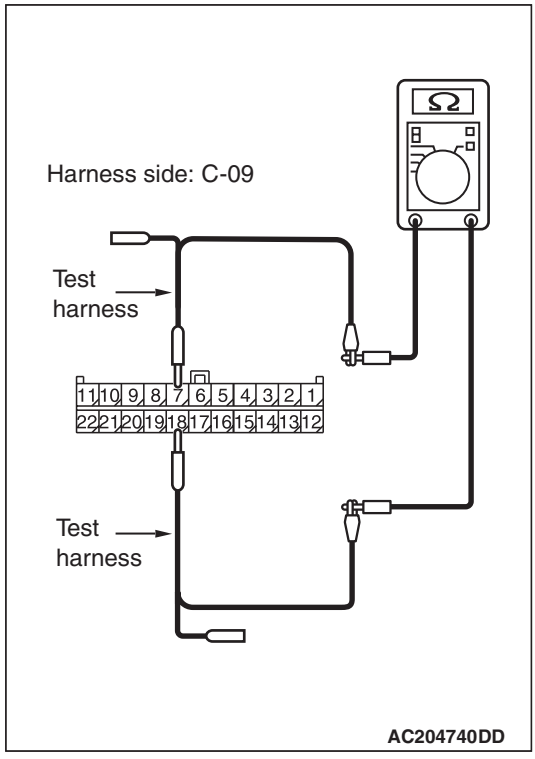
(1) Disconnect the connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

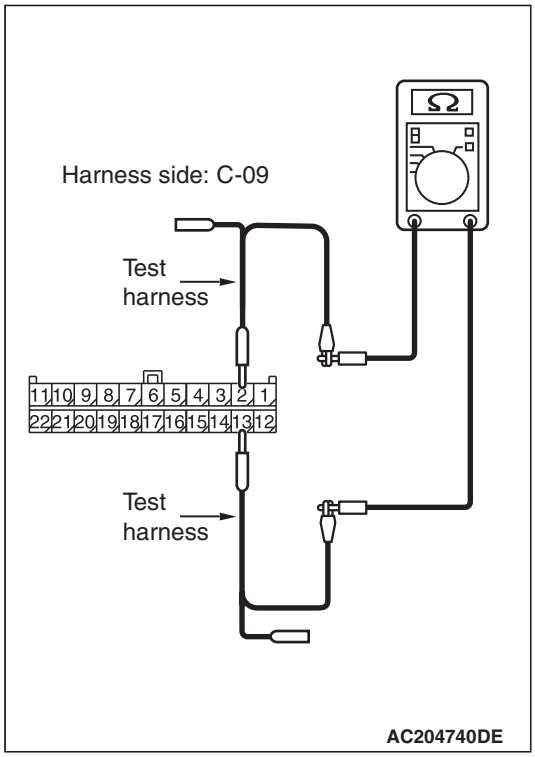
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



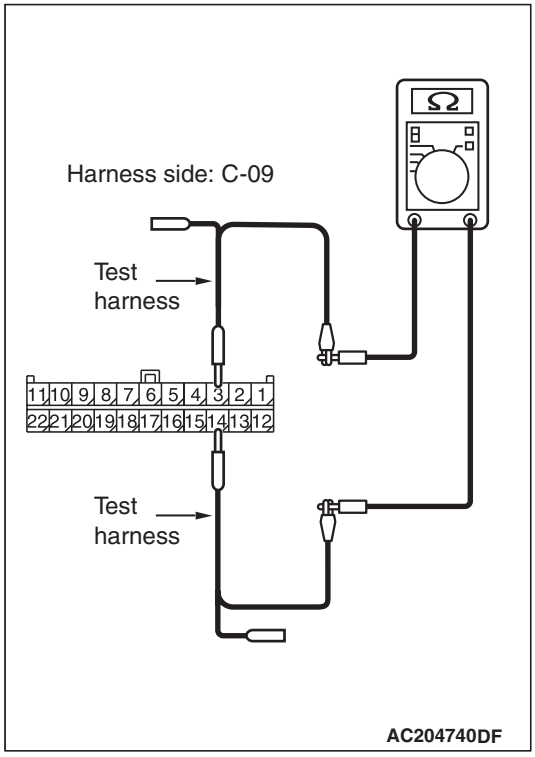
(4) Resistance between C-09 joint connector (CAN2) terminal Nos. 7 and 18

OK: 120± 20 Ω



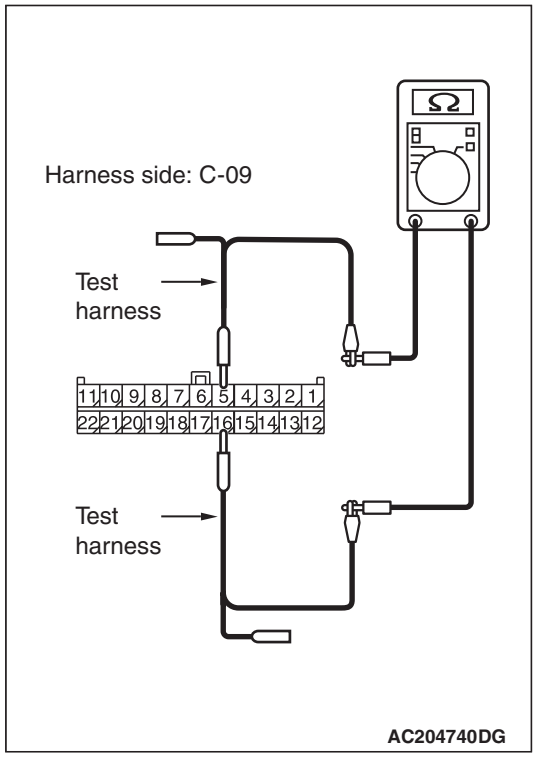
(5) Resistance between C-09 joint connector (CAN2) terminal Nos. 2 and 13

OK: 1 kΩ or more

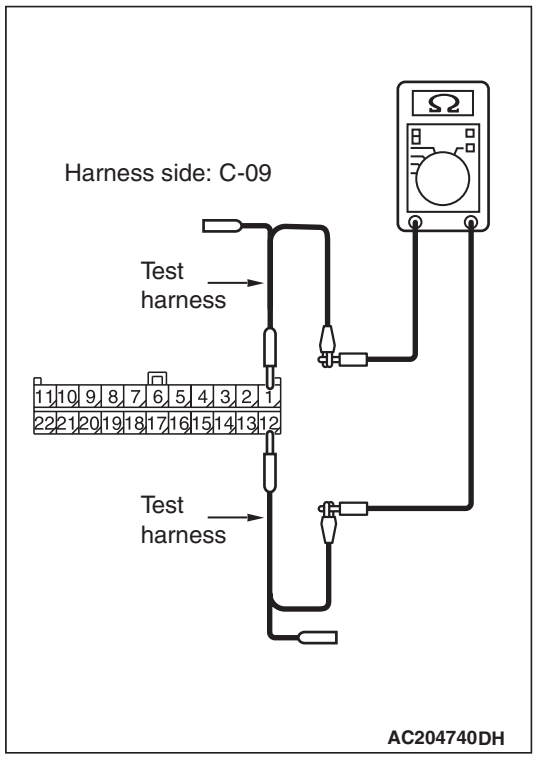


(6) Resistance between C-09 joint connector (CAN2)

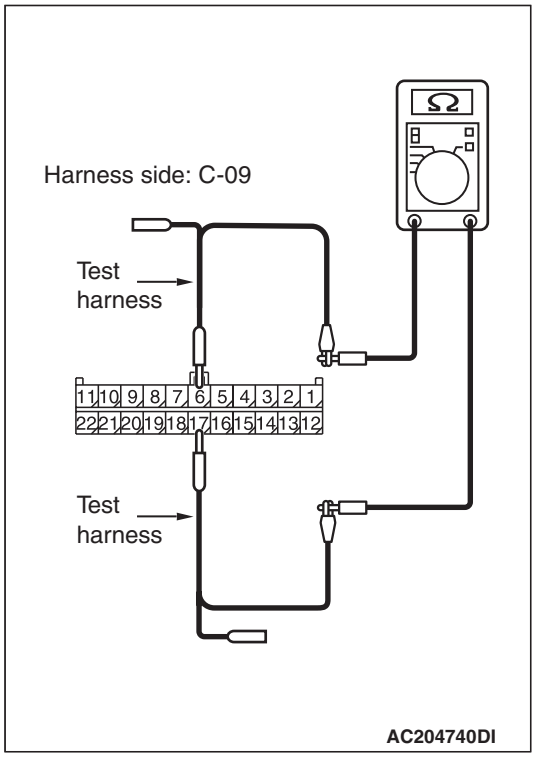
terminal Nos. 3 and 14
OK: 1 kΩ or more



(7) Resistance between C-09 joint connector (CAN2) terminal Nos. 5 and 16
OK: 1 kΩ or more



(8) Resistance between C-09 joint connector (CAN2) terminal Nos. 1 and 12
OK: 1 kΩ or more

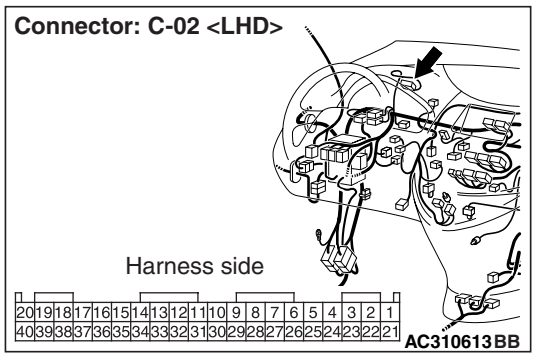


(9) Resistance between C-09 joint connector (CAN2) terminal Nos. 6 and 17
OK: 1 kΩ or more

Q: Are the check result normal?
YES <all of the measurement results are within the normal value> : Go to Step 25.
NO <The resistance between terminal Nos. 7 and 18 is less than 120±20 Ω> : Go to Step 5.
NO <The resistance between terminal Nos. 2 and 13 is less than 1 kΩ> : Go to Step 8.
NO <The resistance between terminal Nos. 3 and 14 is less than 1 kΩ> : Go to Step 11.
NO <The resistance between terminal Nos. 5 and 16 is less than 1 kΩ> : Go to Step 14.
NO <The resistance between terminal Nos. 1 and 12 is less than 1 kΩ> : Go to Step 20.
NO <The resistance between terminal Nos. 6 and 17 is less than 1 kΩ> : Go to Step 23.

STEP 5. Connector check: C-02 combination meter connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?
YES : Go to Step 6.
NO : Repair the defective connector.

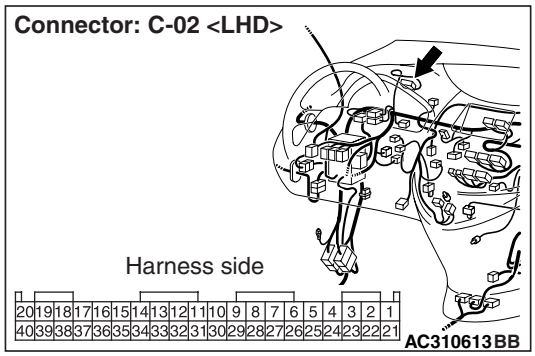
STEP 6. Resistance measurement at C-09 joint connector (CAN2).

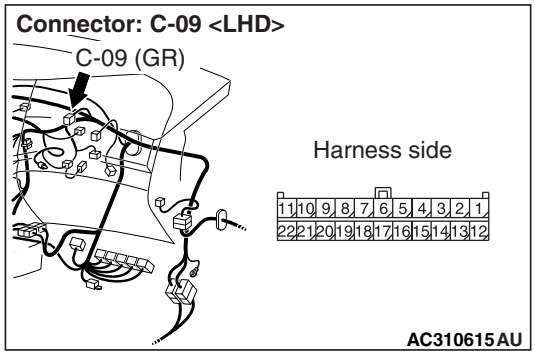
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



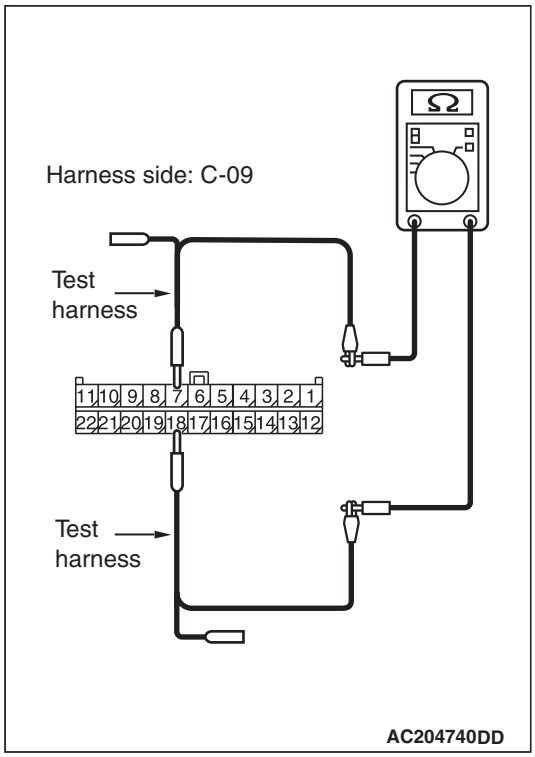


(1) Disconnect the joint connector (CAN2) and the combination meter connector, and measure at the wiring harness side.
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal Nos. 7 and 18

OK: More than 2 Ω

⚠ CAUTION

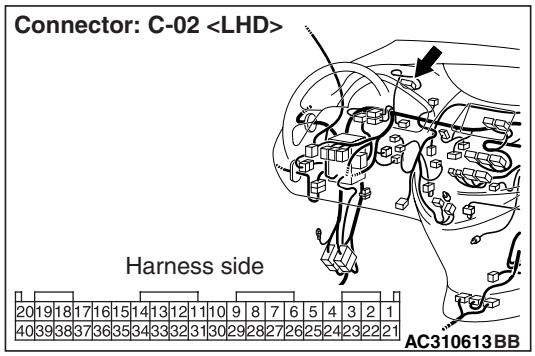
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <More than 2Ω> Go to Step 7.
NO : <2 Ω or less> Repair the wiring harness between joint connector (CAN2) and the combination meter connector.

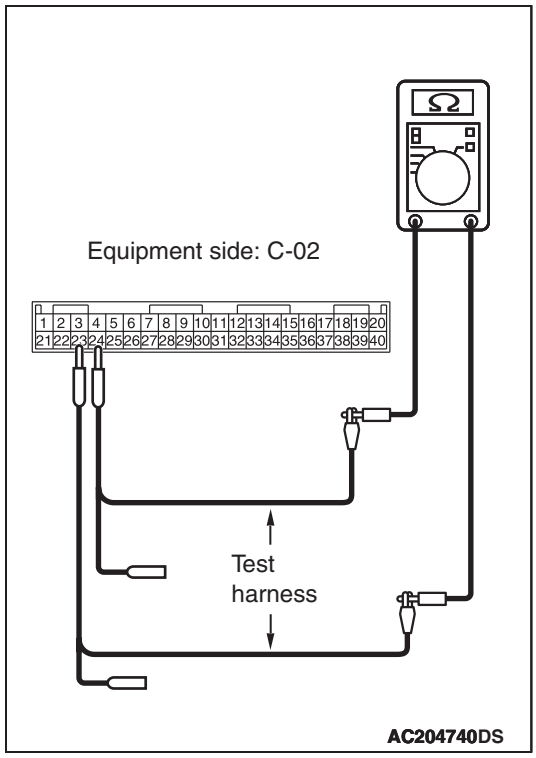
STEP 7. Resistance measurement at C-02 combination meter connector.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.



(1) Remove the combination meter, and measure at the equipment side.



(2) Resistance between C-02 combination meter connector terminal Nos. 23 and 24

OK: 120± 20 Ω

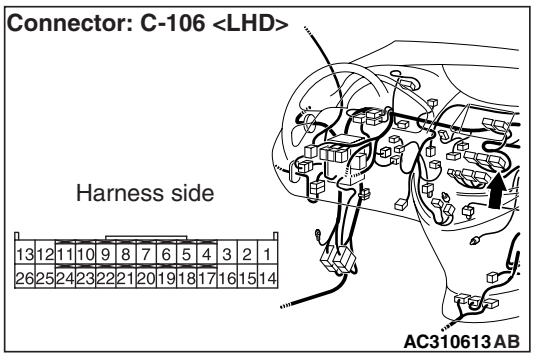
Q: Is the check result normal?

YES : <Within 120± 20 Ω> Follow diagnostic item 17, Diagnose CAN bus lines thoroughly. Refer to P.54D-452.

NO : <Not within 120± 20 Ω> Replace the combination meter.

STEP 8. Connector check: C-106 A/C-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 9.

NO : Repair the defective connector.

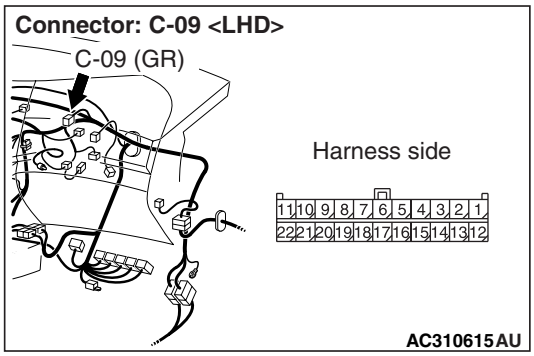
STEP 9. Resistance measurement at C-09 joint connector (CAN2).

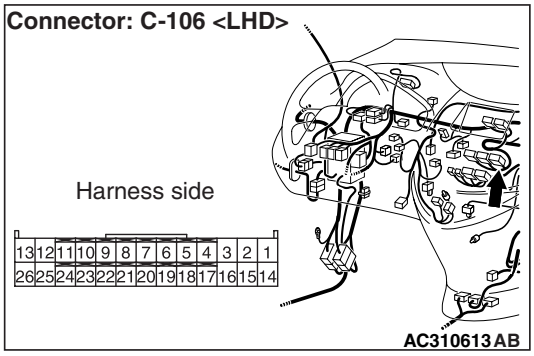
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



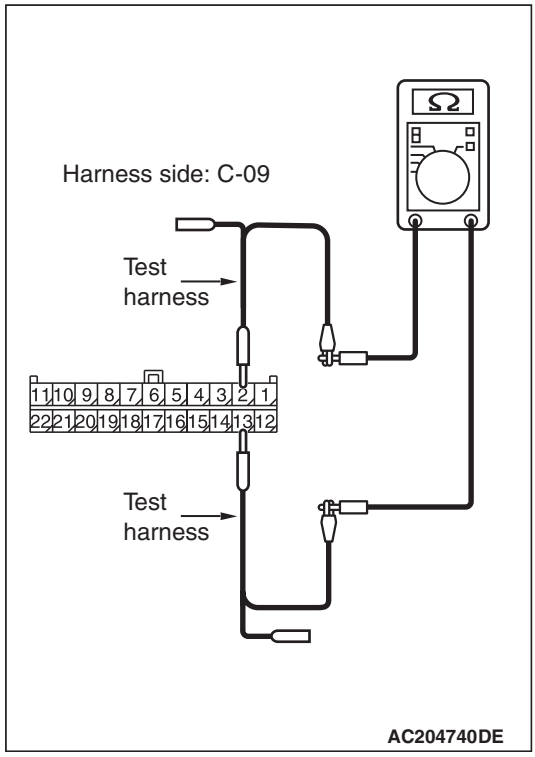


(1) Disconnect the joint connector (CAN2) and the A/C-ECU connector, and measure at the wiring

harness side.
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



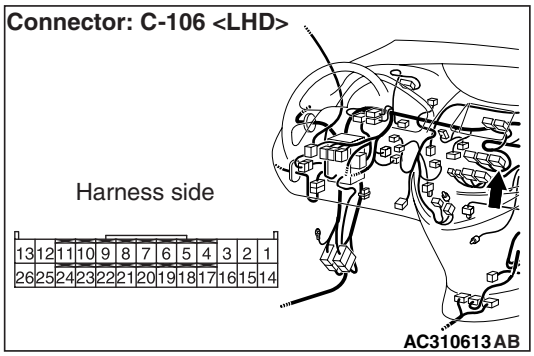
(4) Continuity between C-09 joint connector (CAN2) terminal Nos. 2 and 13
OK: More than 2 Ω

⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

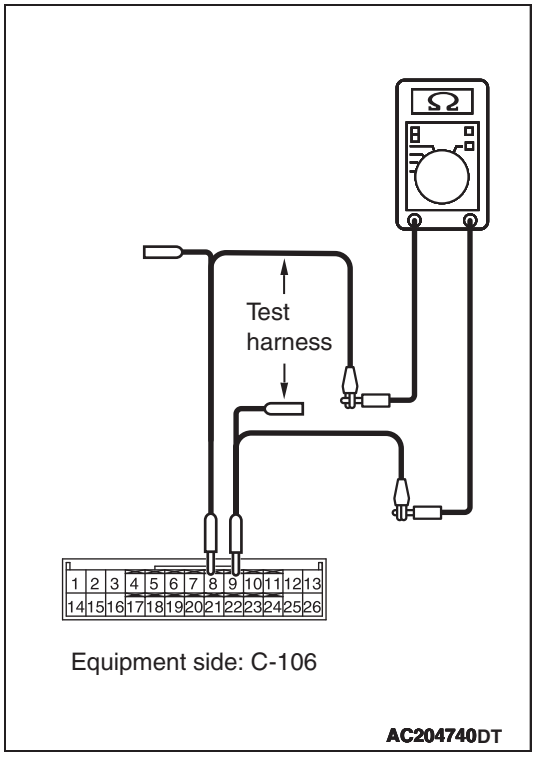
Q: Is the check result normal?
YES : <More than 2 Ω> Go to Step 10.
NO : <2 Ω or less> Repair the wiring harness between joint connector (CAN2) and the A/C-ECU connector.

STEP 10. Resistance measurement at C-106 A/C-ECU connector.

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.



(1) Remove the A/C-ECU, and measure at the equipment side.

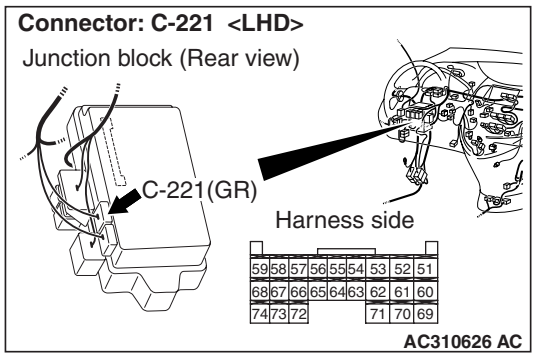


(2) Resistance between C-106 A/C-ECU connector terminal Nos. 8 and 9
OK: 1 kΩ or more

Q: Is the check result normal?
YES : <1 kΩ or more> Follow diagnostic item 17, Diagnose CAN bus lines thoroughly. Refer to P.54D-452.
NO : <Less than 1 kΩ> Replace the A/C-ECU.

STEP 11. Connector check: C-221 ETACS-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?
YES : Go to Step 12.
NO : Repair the defective connector.

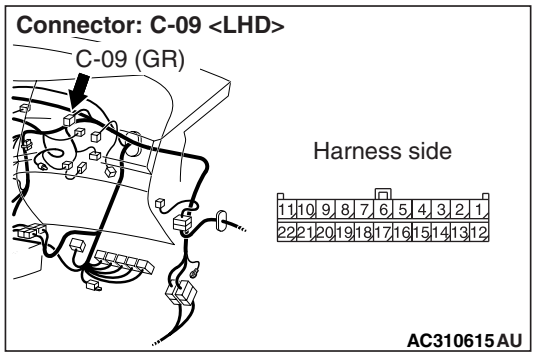
STEP 12. Resistance measurement at C-09 joint connector (CAN2).

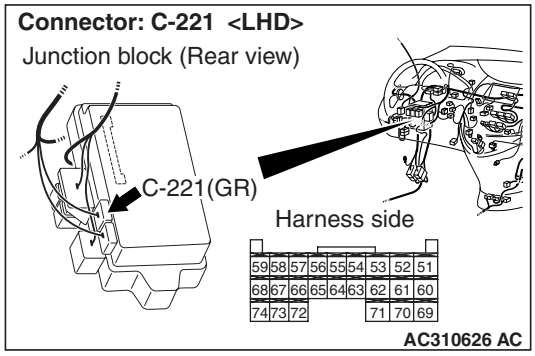
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



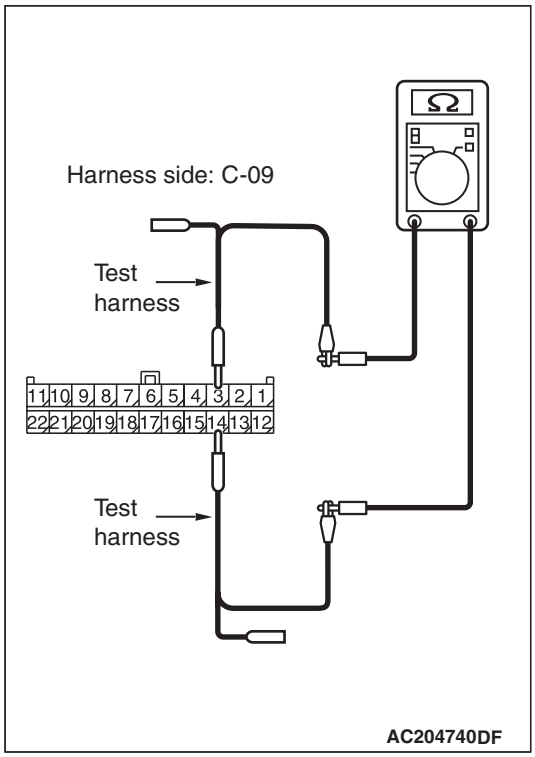


(1) Disconnect the joint connector (CAN2) and the ETACS-ECU connector, and measure at the wiring harness side.
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal Nos. 3 and 14

OK: More than 2 Ω

⚠ CAUTION

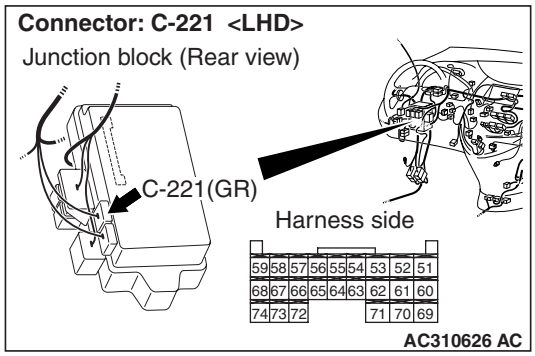
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <More than 2 Ω> Go to Step 13.
NO : <2 Ω or less> Repair the wiring harness between joint connector (CAN2) and the ETACS-ECU connector.

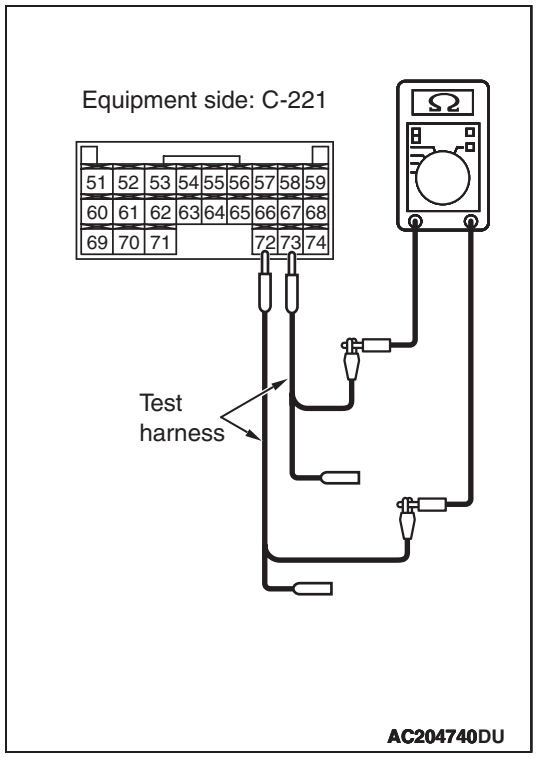
STEP 13. Resistance measurement at C-221 ETACS-ECU connector.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.



(1) Remove the ETACS-ECU, and measure at the equipment side.



(2) Resistance between C-221 ETACS-ECU connector terminal Nos. 72 and 73

OK: 1 kΩ or more

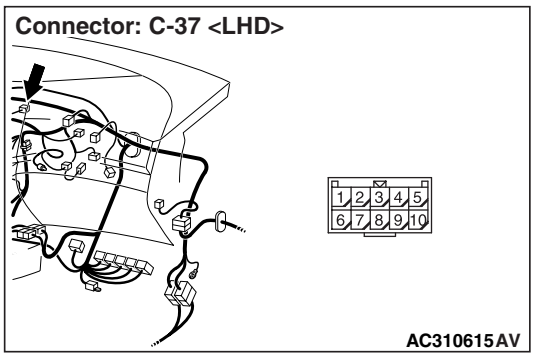
Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 17, Diagnose CAN bus lines thoroughly. Refer to P.54D-452.

NO : <Less than 1 kΩ> Replace the ETACS-ECU.

STEP 14. Connector check: C-37 jumper connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Check that the wiring harness of the jumper connector is not damaged.

Q: Is the check result normal?

YES : Go to Step 15.

NO : Repair the defective connector.

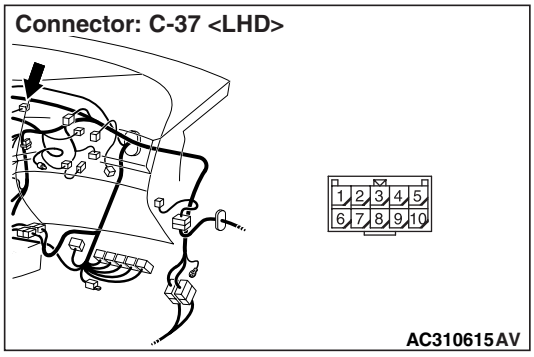
STEP 15. Resistance measurement at the C-37 jumper connector.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the connector, and measure at its jumper connector (at the centre display side).

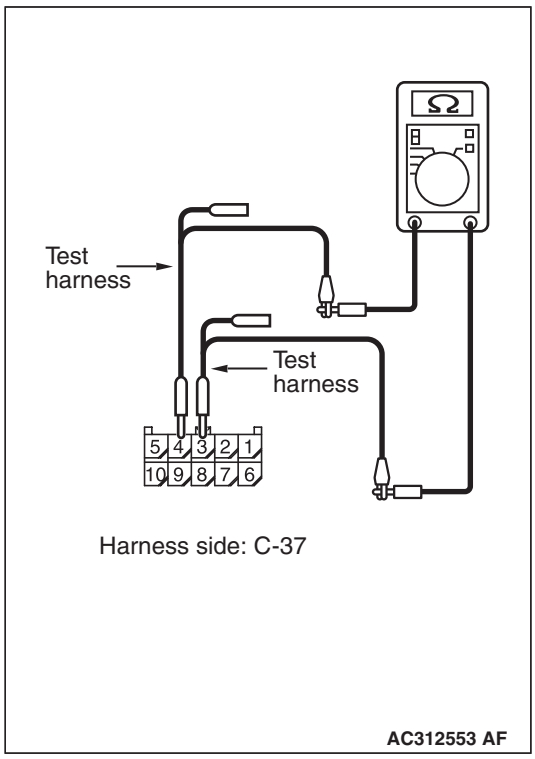
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is

disconnected.



(4) Resistance between C-37 jumper connector terminal Nos. 3 and 4

OK: 1 kΩ or more

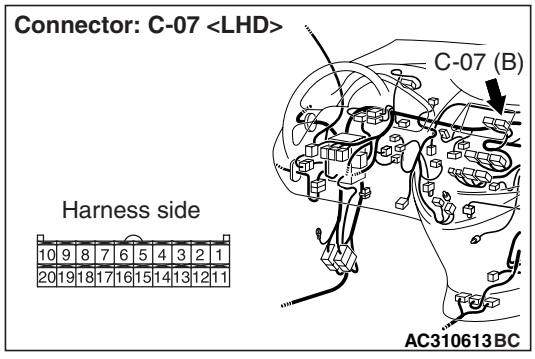
Q: Is the check result normal?

YES : <1 kΩ or more> Go to Step 19 .

NO : <Less than 1 kΩ> Go to Step 16 .

STEP 16. Connector check: C-07 centre display connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 17 .

NO : Repair the defective connector.

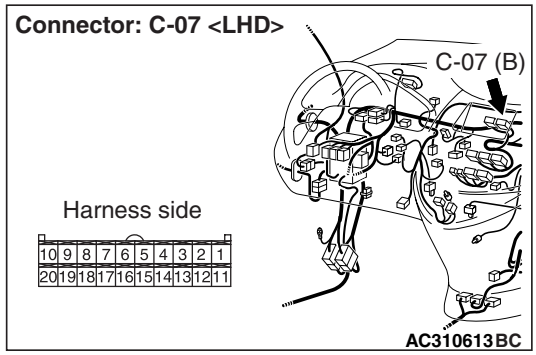
STEP 17. Resistance measurement at the C-37 jumper connector.

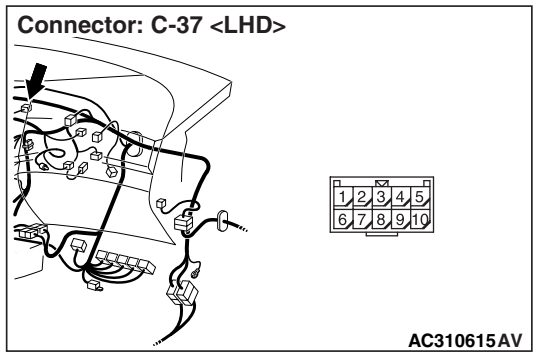
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the centre display connector and the jumper connector, and measure at the jumper connector (at the centre display side).

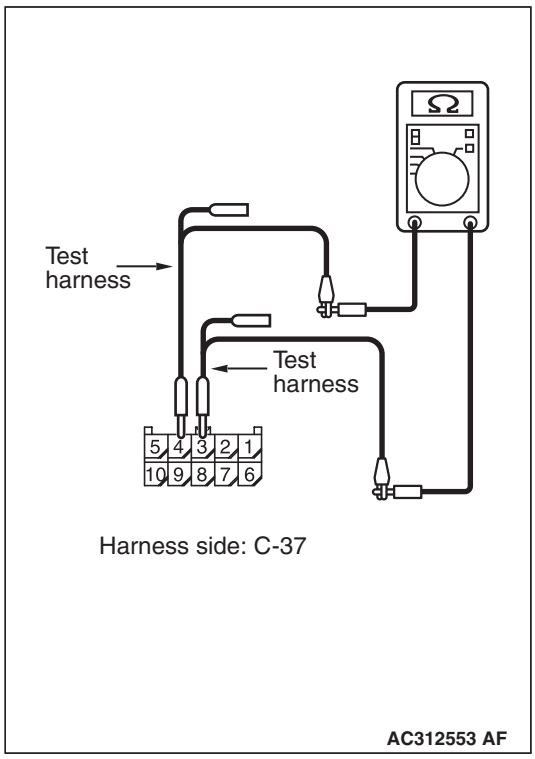
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is

disconnected.



(4) Resistance between C-37 jumper connector terminal Nos. 3 and 4

OK: More than 2 Ω

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?

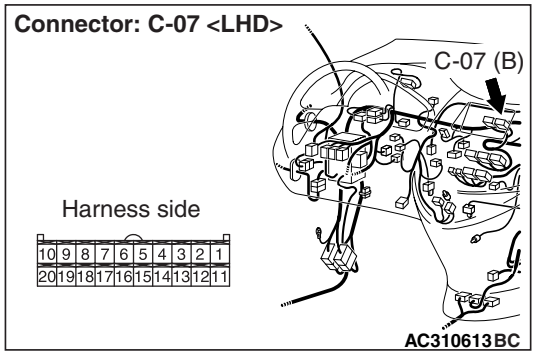
YES : <More than 2 Ω> Go to Step 18.

NO : <2 Ω or less> Repair the wiring harness between the jumper connector and the centre display connector.

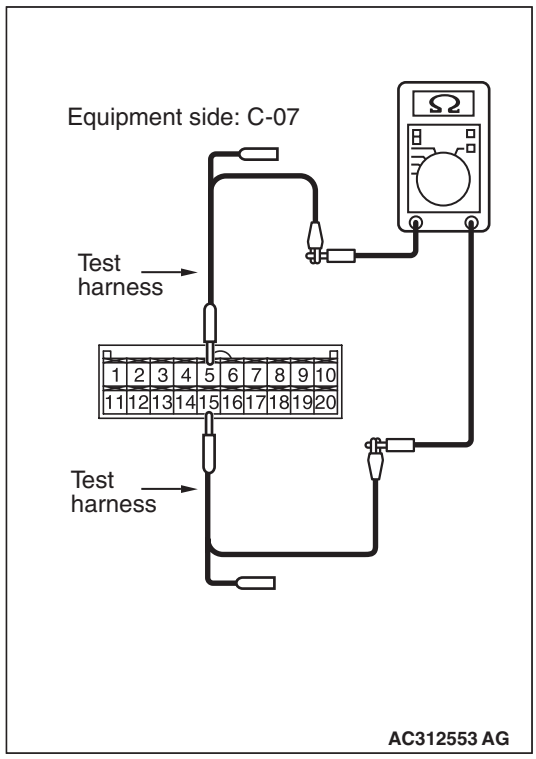
STEP 18. Resistance measurement at C-07 centre display connector.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.



(1) Remove the centre display connector, and measure at the equipment side.



(2) Resistance at C-07 centre display connector terminal Nos. 5 and 15

OK: 1 kΩ or more

Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 17, Diagnose CAN bus lines thoroughly. Refer to P.54D-452.

NO : <Less than 1 kΩ> Replace the centre display connector.

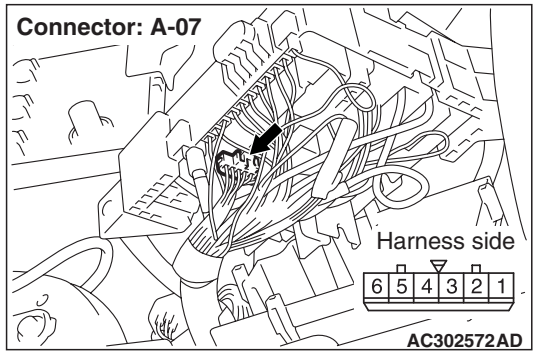
STEP 19. Resistance measurement at the C-09 joint connector (CAN2).

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



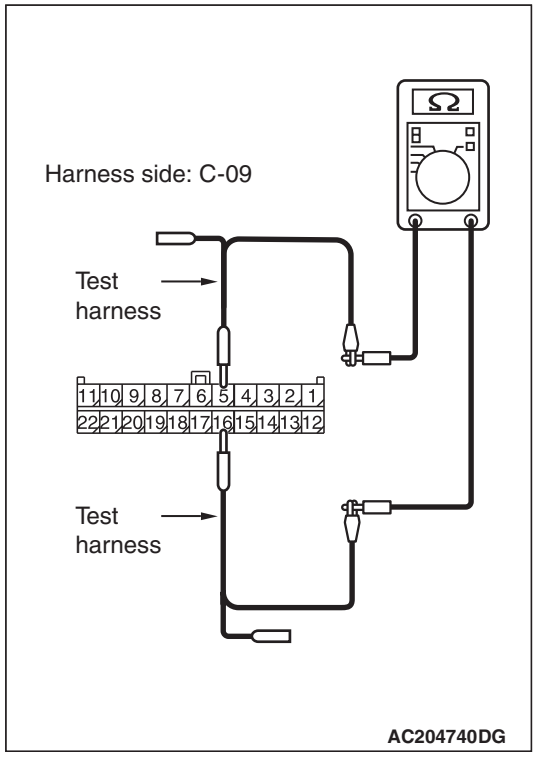
(1) Disconnect the connector, and measure at the

wiring harness side.
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Resistance between C-09 joint connector (CAN2) terminal Nos. 5 and 16

OK: 1 kΩ or more

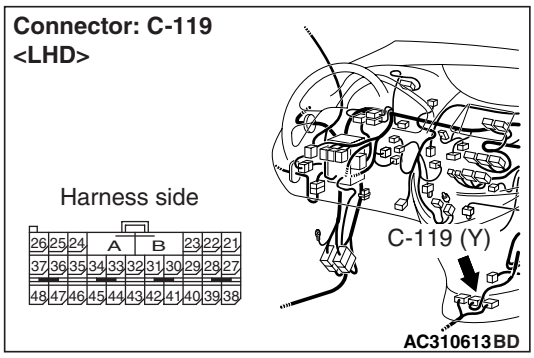
Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 17 "Diagnose CAN bus lines thoroughly." Refer to P.54D-452.

NO : <Less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the jumper connector.

STEP 20. Connector check: C-119 SRS-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 21.

NO : Repair the defective connector.

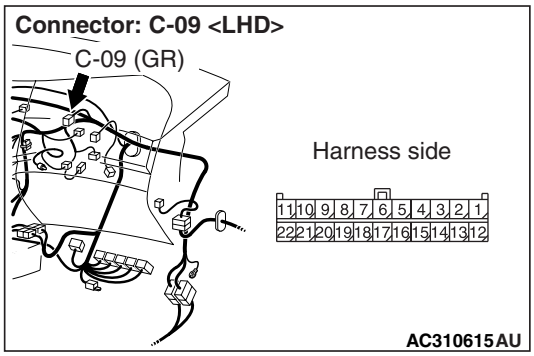
STEP 21. Resistance measurement at C-09 joint connector (CAN2).

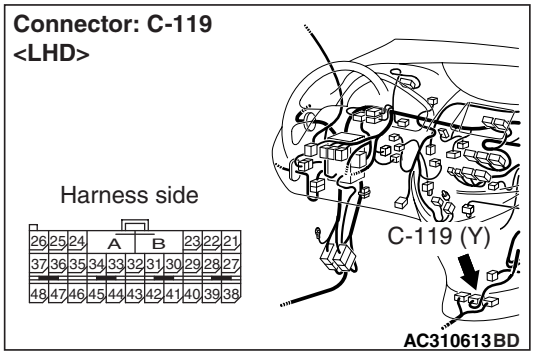
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



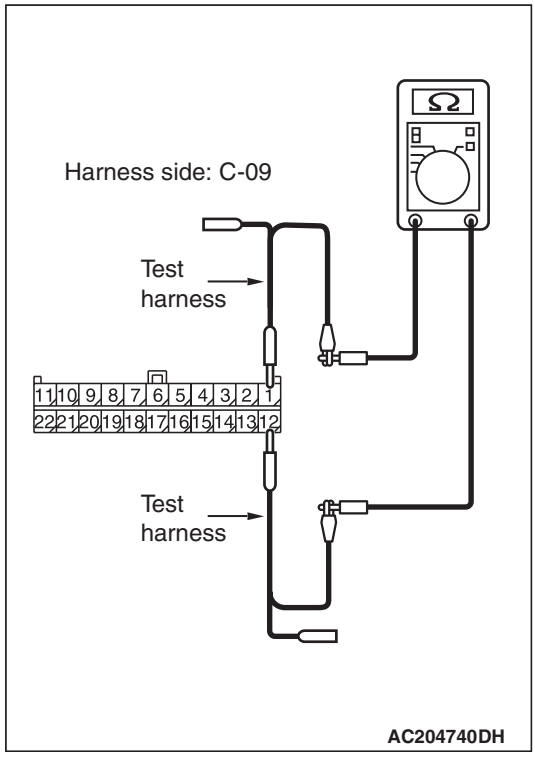


(1) Disconnect the joint connector (CAN2) and the SRS-ECU connector, and measure at the wiring

harness side.
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal Nos. 1 and 12

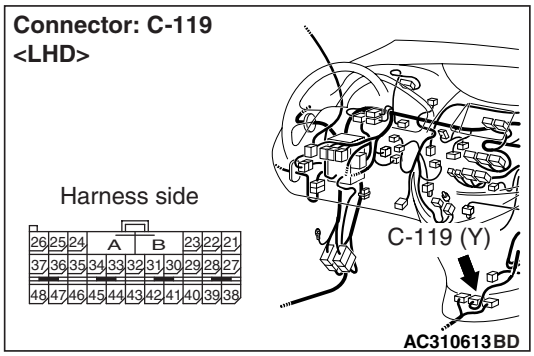
OK: More than 2 Ω

⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

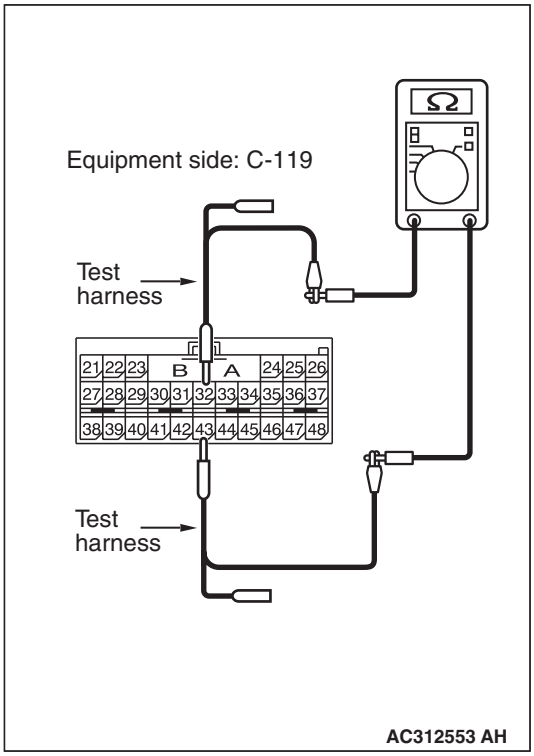
Q: Is the check result normal?
YES : <More than 2 Ω> Go to Step 22.
NO : <2 Ω or less> Repair the wiring harness between joint connector (CAN2) and the SRS-ECU connector.

STEP 22. Resistance measurement at C-119 SRS-ECU connector.

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.



(1) Remove the SRS-ECU, and measure at the equipment side.



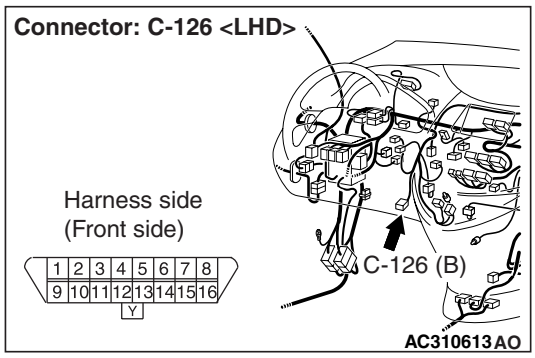
(2) Resistance between C-119 SRS-ECU connector terminal Nos. 32 and 43

OK: 1 kΩ or more

Q: Is the check result normal?
YES : <1 kΩ or more> Follow diagnostic item 17, Diagnose CAN bus lines thoroughly. Refer to P.54D-452.
NO : <Less than 1 kΩ> Replace the SRS-ECU.

STEP 23. Connector check: C-126 diagnosis connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?
YES : Go to Step 24.
NO : Repair the defective connector.

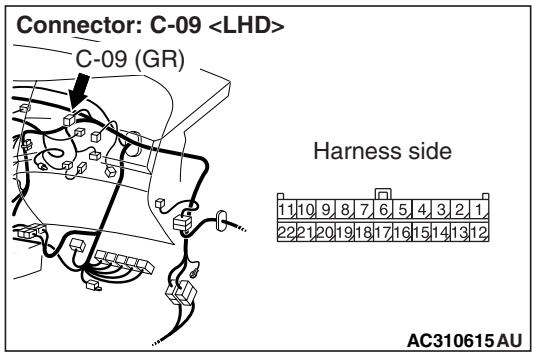
STEP 24. Resistance measurement at C-09 joint connector (CAN2).

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



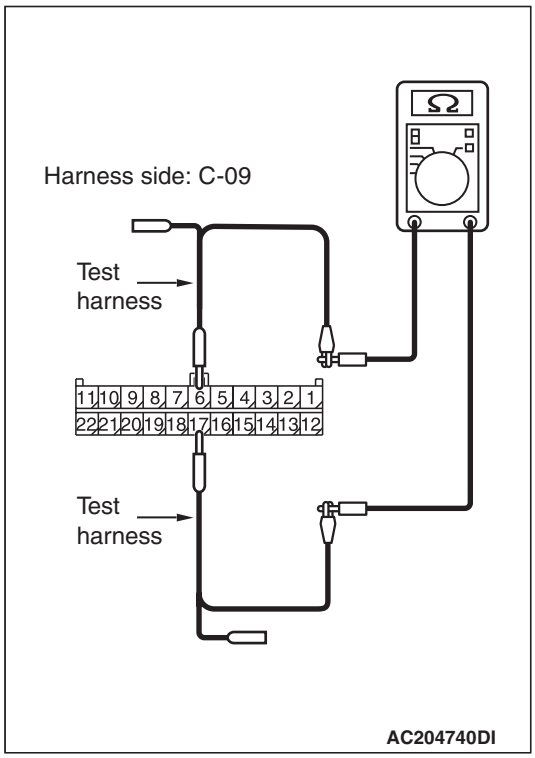
(1) Disconnect the joint connector (CAN2), and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal Nos. 6 and 17

OK: More than 2 Ω

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <2 more than Ω> Follow diagnostic item 17, Diagnose CAN bus lines thoroughly. Refer to P.54D-452.
NO : <2 Ω or less> Repair the wiring harness between joint connector (CAN2) and the diagnosis connector.

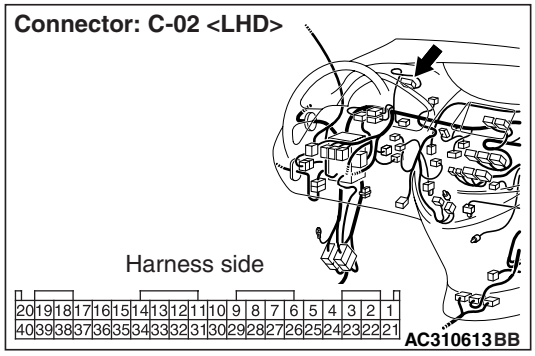
STEP 25. Resistance measurement at C-09 joint connector (CAN2).

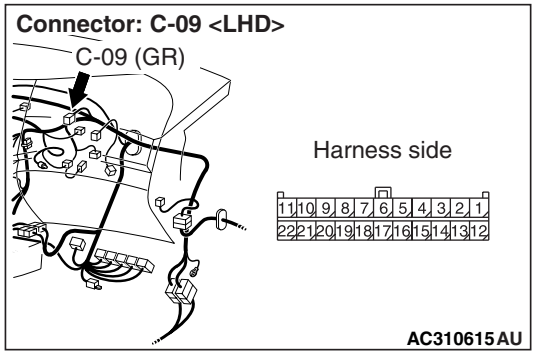
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





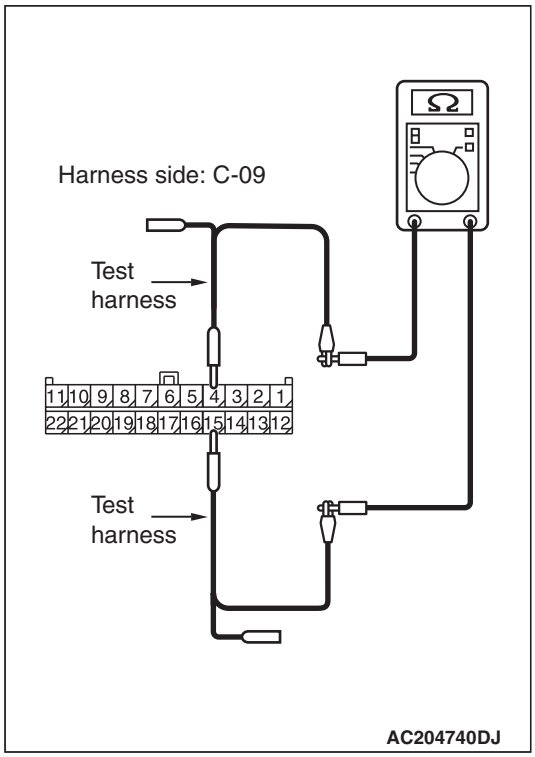
(1) Disconnect the joint connector (CAN2) and the intermediate connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal Nos. 4 and 15

OK: More than 2 Ω

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?

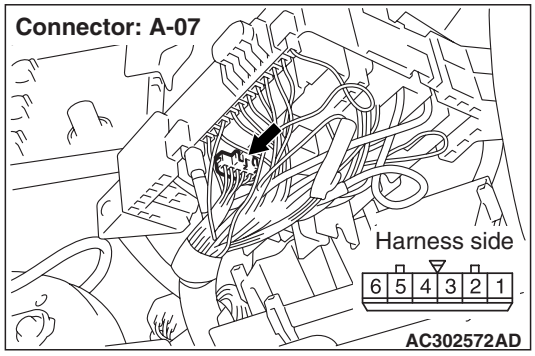
YES : <2 more than Ω> Follow diagnostic item 17, Diagnose CAN bus lines thoroughly. Refer to P.54D-452.

NO : <2 Ω or less> Repair the wiring harness between joint connector (CAN2) and the intermediate connector.

STEP 26. Connector check: A-07 joint connector (CAN1)

NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

When checking the joint connector, ensure that its wiring harness side is not damaged.

Q: Is the check result normal?

YES : Go to Step 27.

NO : Repair a defective connector or replace the joint connector (front wiring harness assembly).

STEP 27. Resistance measurement at the A-07 joint connector (CAN1).

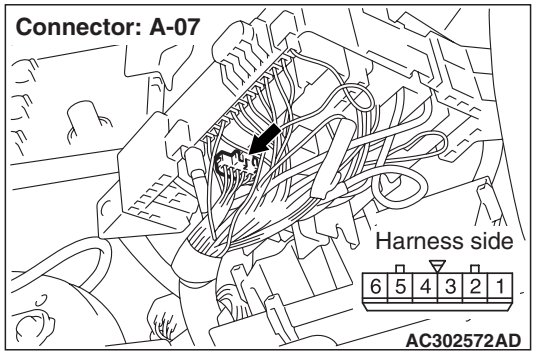
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



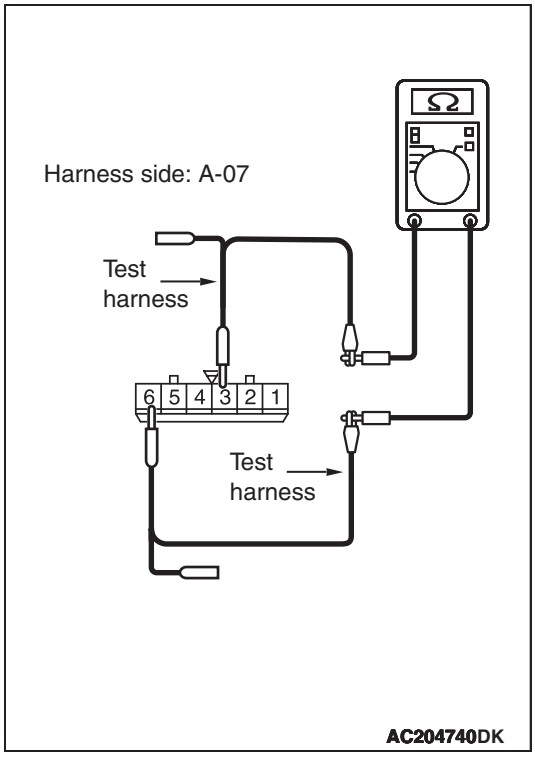
(1) Disconnect the connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

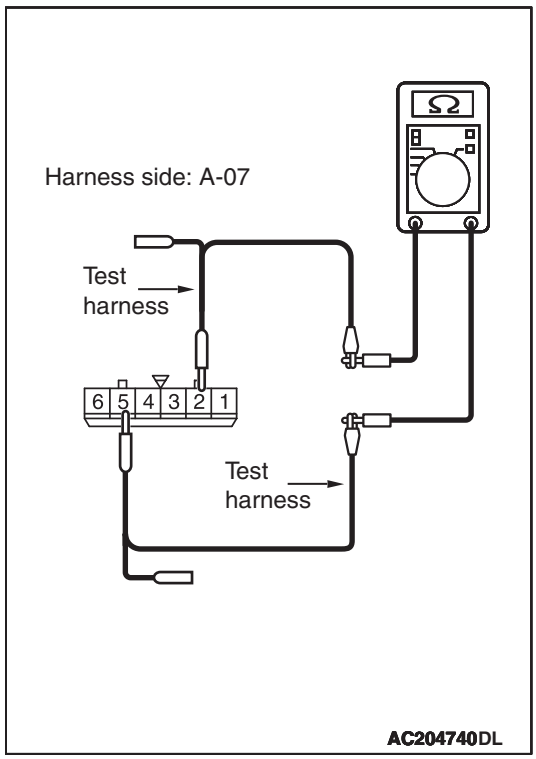
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Resistance between A-07 joint connector (CAN1)

terminal Nos. 3 and 6
OK: 120± 20 Ω

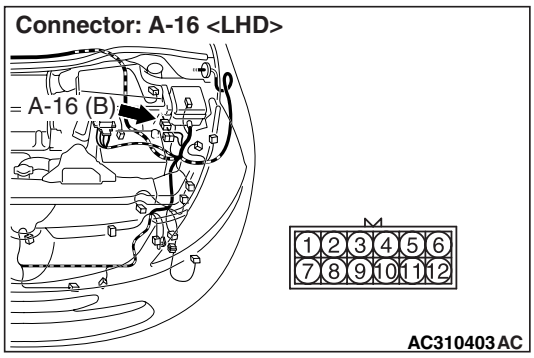


(5) Resistance between A-07 joint connector (CAN1) terminal Nos. 2 and 5
OK: 1 kΩ or more

Q: Are the check result normal?
YES <all of the measurement results are within the normal value> : Go to Step 37.
NO <The resistance between terminal Nos. 3 and 6 is less than 120±20 Ω> : Go to Step 28.
NO <The resistance between terminal Nos. 2 and 5 is less than 1 kΩ> : Go to Step 34.

STEP 28. Connector check: A-16 intermediate connector

⚠ CAUTION



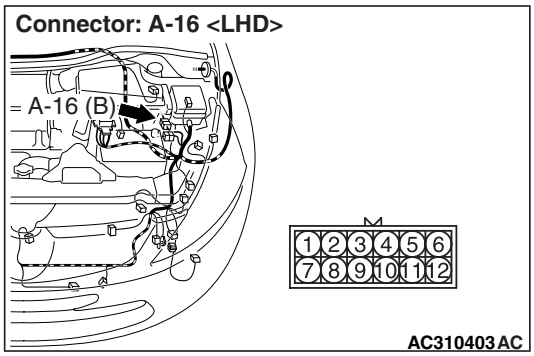
The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?
YES : Go to Step 29.
NO : Repair the defective connector.

STEP 29. Resistance measurement at the A-16 intermediate connector.

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.

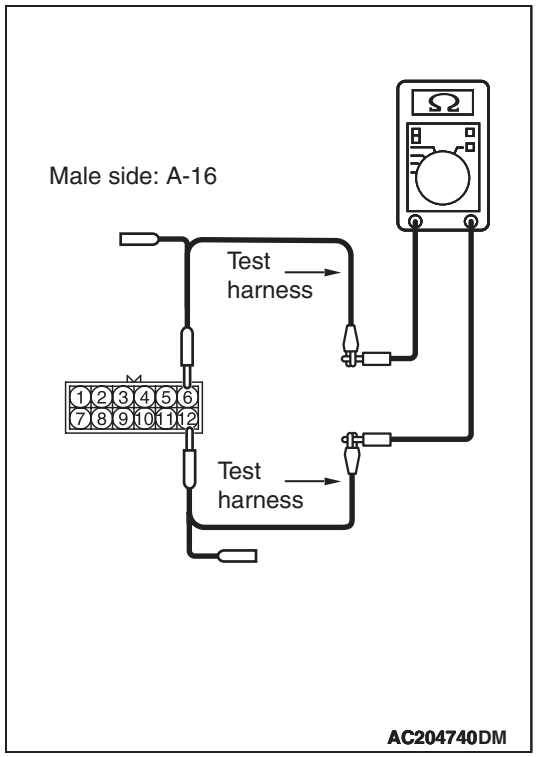


(1) Disconnect the connector, and measure at its male-side intermediate connector (at the control wiring harness side).
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is

disconnected.



(4) Resistance between A-16 intermediate connector terminal Nos. 6 and 12

OK: 120± 20 Ω

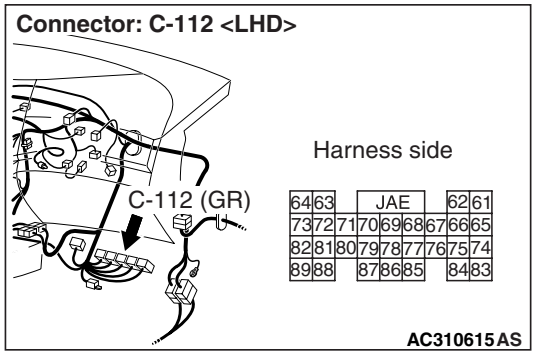
Q: Is the check result normal?

YES : <Within 120± 20 Ω> Go to Step 33 .

NO : <Not within 120± 20 Ω> Go to Step 30 .

STEP 30. Connector check: C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 31.

NO : Repair the defective connector.

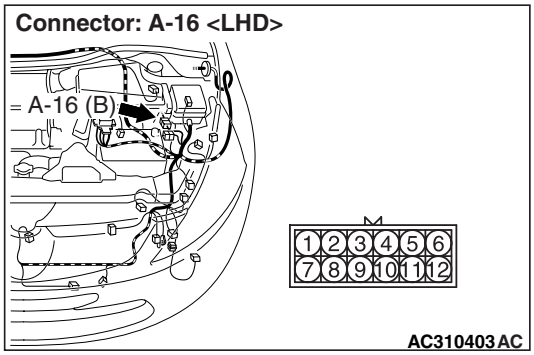
STEP 31. Resistance measurement at the A-16 intermediate connector.

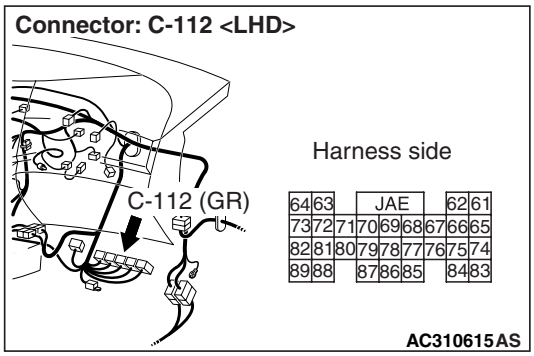
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector and the intermediate connector, and measure at the wiring harness side.

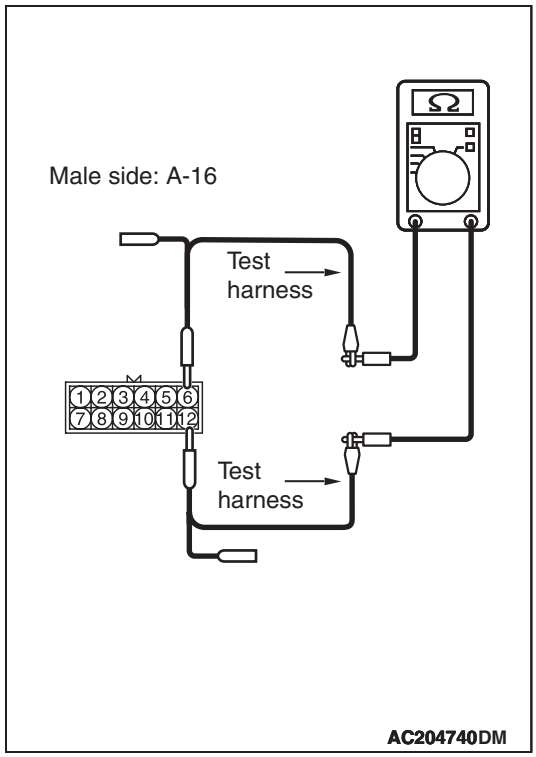
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is

disconnected.



(4) Resistance between A-16 intermediate connector terminal Nos. 6 and 12

OK: More than 2 Ω

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?

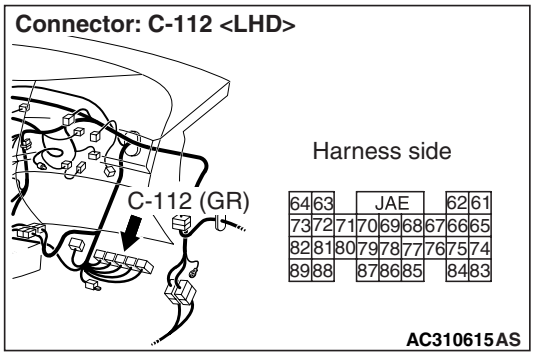
YES : <More than 2 Ω> Go to Step 32.

NO : <2 Ω or less> Repair the wiring harness between the intermediate connector and the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector.

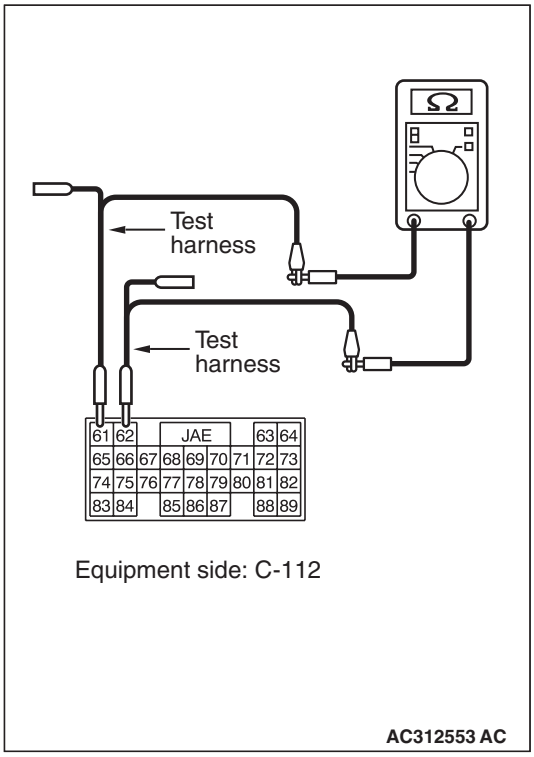
STEP 32. Resistance measurement at C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.



(1) Remove the engine-ECU <M/T> or engine-A/T-ECU <A/T>, and measure at the equipment side.



(2) Resistance at C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector terminal Nos. 61 and 62

OK: 120± 20 Ω

Q: Is the check result normal?

YES : <Within 120± 20 Ω> Follow diagnostic item 17, Diagnose CAN bus lines thoroughly. Refer to P.54D-452.

NO : <Not within 120± 20 Ω> Replace the engine-ECU <M/T> or engine-A/T-ECU <A/T>.

STEP 33. Resistance measurement at the A-07 joint connector (CAN1).

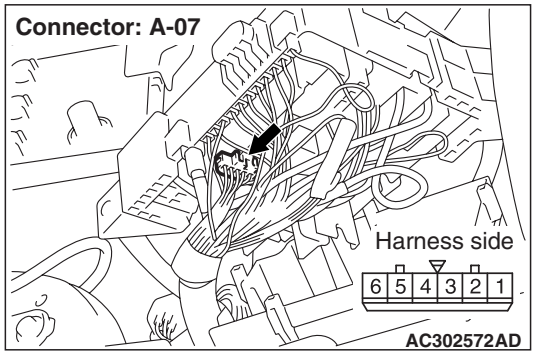
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



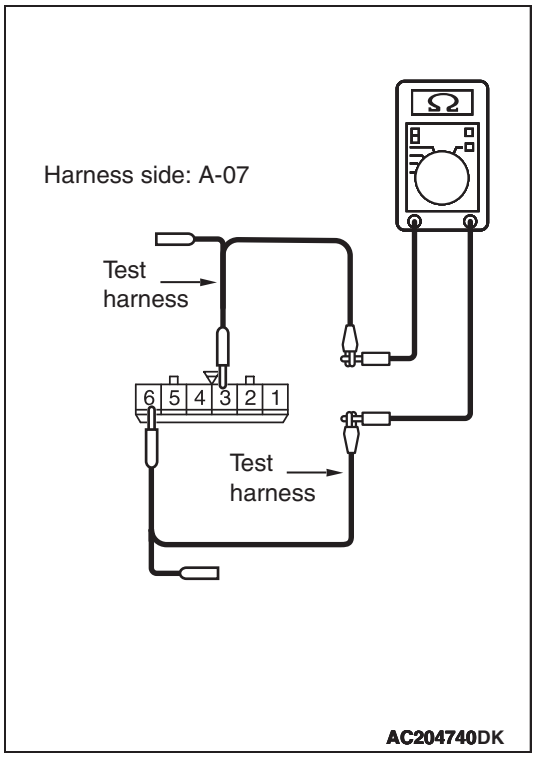
(1) Disconnect the connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Resistance between A-07 joint connector (CAN1) terminal Nos. 3 and 6

OK: 120± 20 Ω

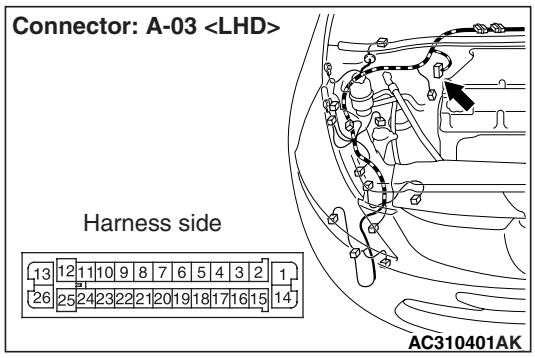
Q: Is the check result normal?

YES : <All the measurement results are within the normal value> Follow diagnostic item 17 "Diagnose CAN bus lines thoroughly." Refer to P.54D-452.

NO : <The resistance between terminal Nos. 3 and 6 measures less than 120 ± 20 Ω> Repair the wiring harness between the joint connector (CAN1) and the intermediate connector.

STEP 34. Connector check: A-03 ABS-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?
YES : Go to Step 35.
NO : Repair the defective connector.

STEP 35. Resistance measurement at the A-07 joint connector (CAN1).

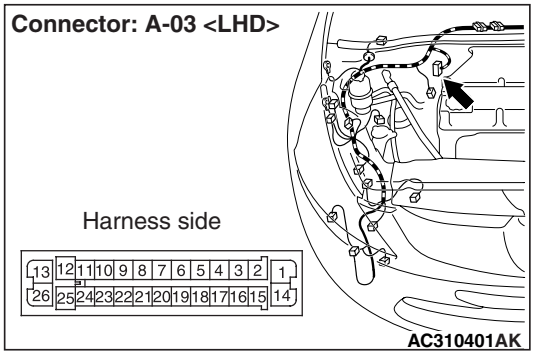
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

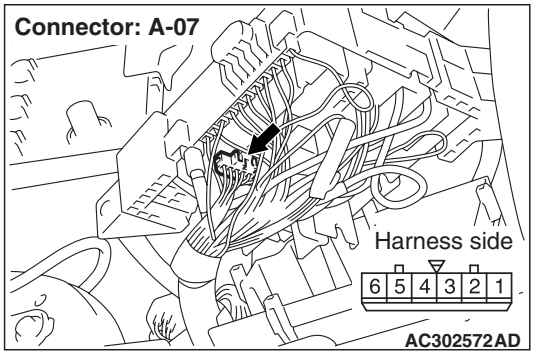
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





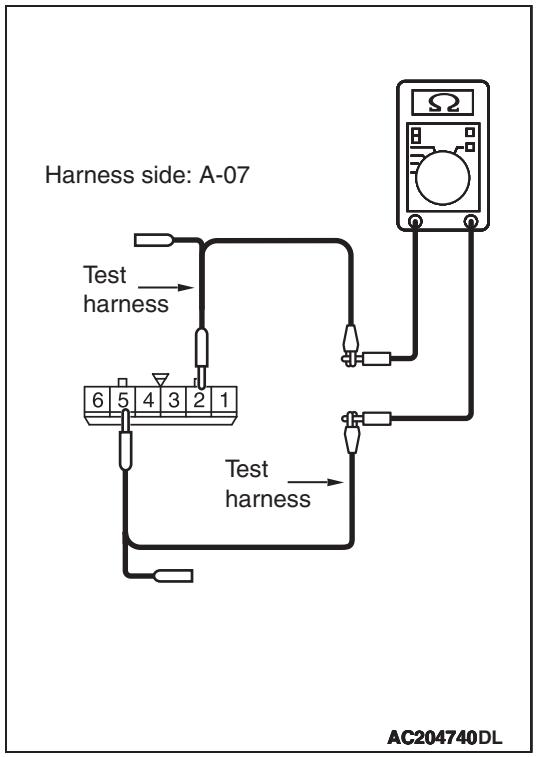
(1) Disconnect the joint connector (CAN1) and the ABS-ECU connector, and measure at the wiring harness side.
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is

disconnected.



(4) Continuity between A-07 joint connector (CAN1) terminal Nos. 2 and 5

OK: More than 2 Ω

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?

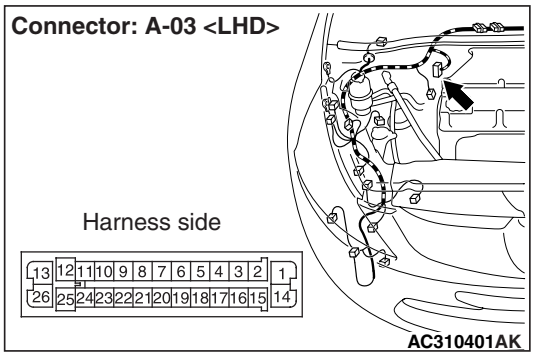
YES : <More than 2 Ω> Go to Step 36.

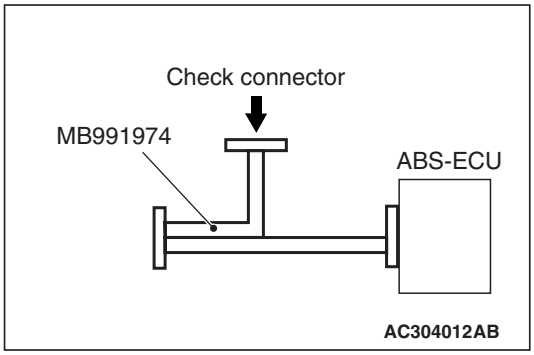
NO : <2 Ω or less> Repair the wiring harness between joint connector (CAN1) and the ABS-ECU connector.

STEP 36. Resistance measurement at A-03 ABS-ECU connector.

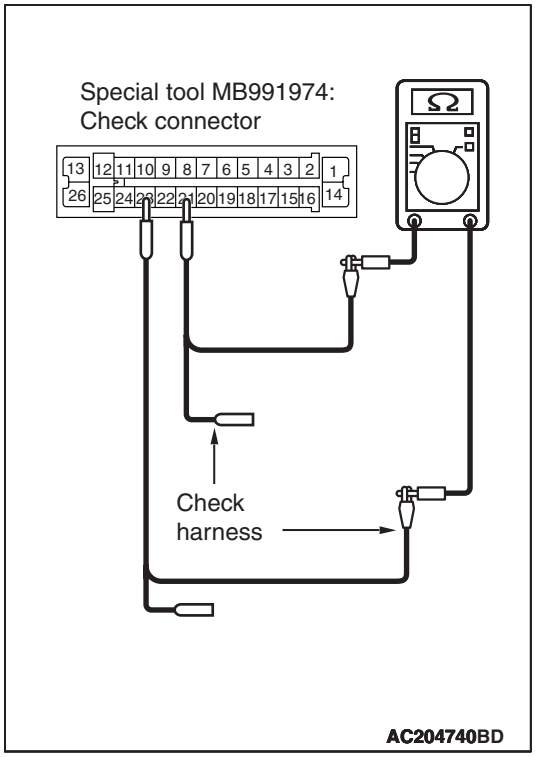
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.





(1) Connect special tool MB991974 to the ABS-ECU connector, and measure by using the check connector (connect the ECU side only).



(2) Resistance between special tool MB991974

check connector terminal Nos. 21 and 23.

OK: 1 kΩ or more

Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 17, Diagnose CAN bus lines thoroughly. Refer to P.54D-452.

NO : <Less than 1 kΩ> Replace the ABS-ECU.

STEP 37. Resistance measurement at the A-07 joint connector (CAN1).

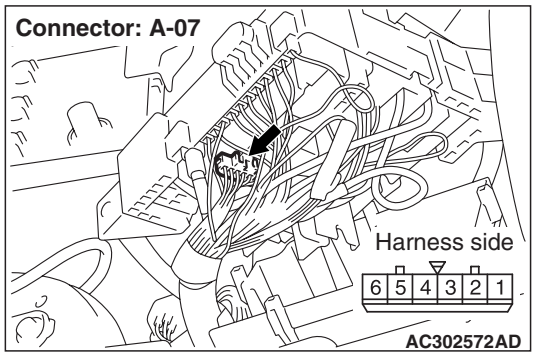
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

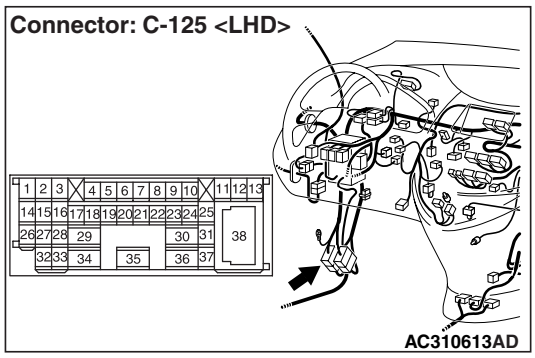
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





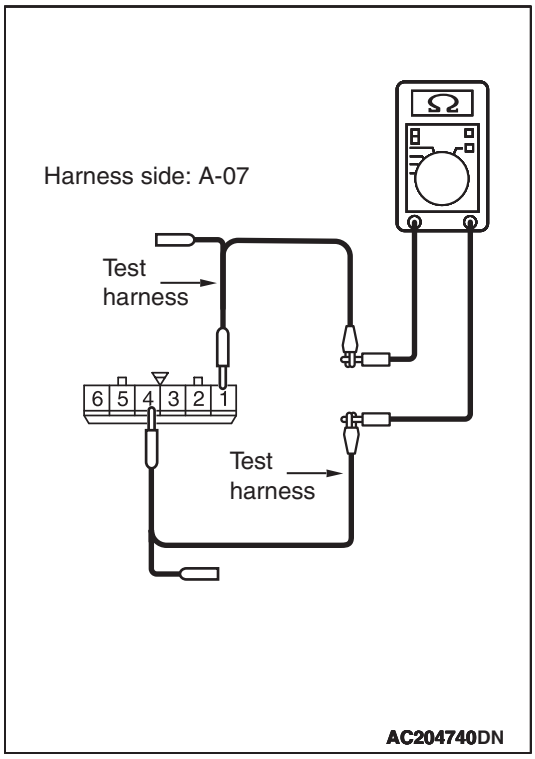
(1) Disconnect the joint connector (CAN1) and the intermediate connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Measure the continuity between A-07 joint connector (CAN1) terminal Nos. 1 and 4.

OK: More than 2 Ω

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

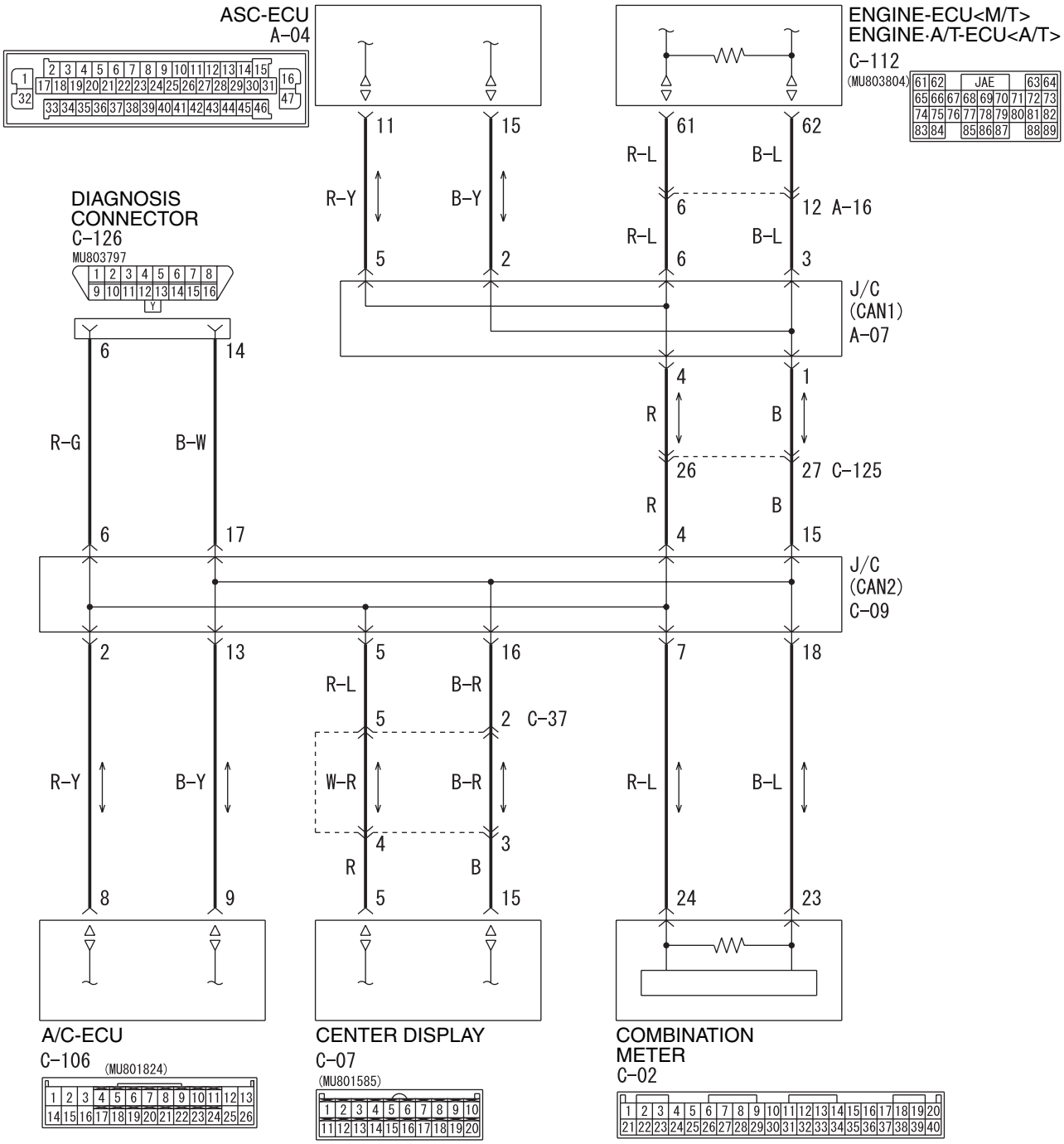
Q: Is the check result normal?

YES : <2 more than Ω> Follow diagnostic item 17, Diagnose CAN bus lines thoroughly. Refer to P.54D-452.

NO : <2 Ω or less> Repair the wiring harness between joint connector (CAN1) and the intermediate connector.

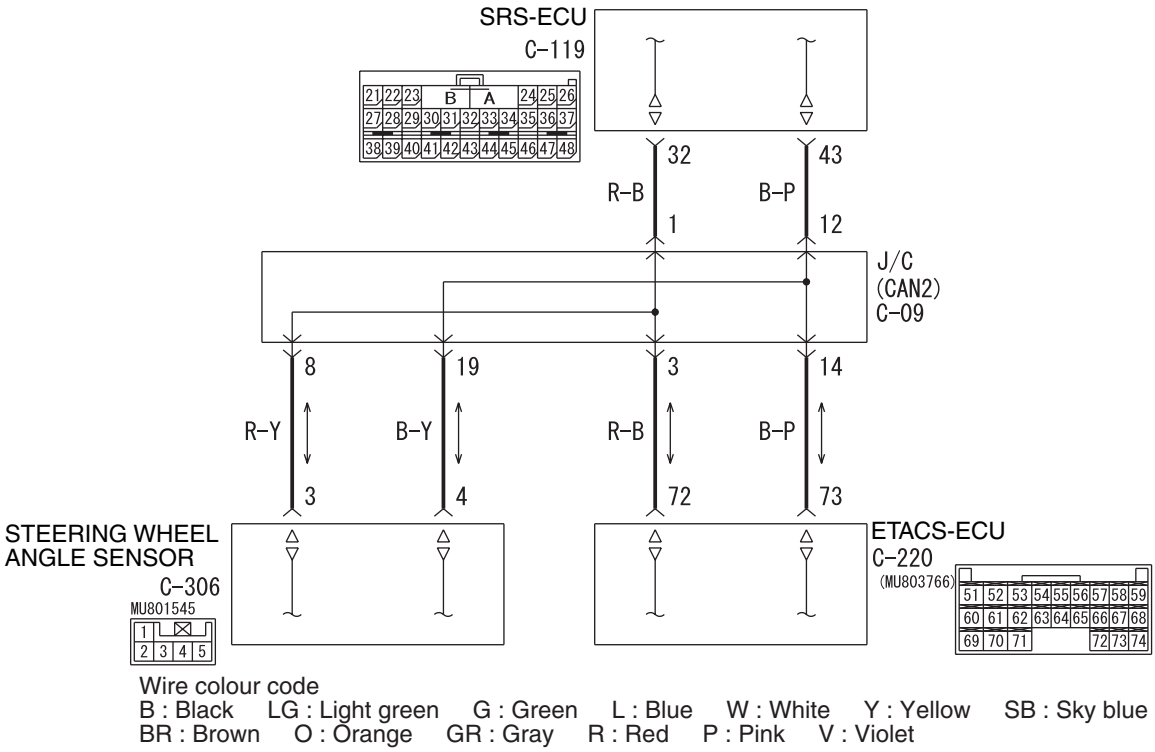
Diagnostic Item 10: Diagnose the lines between CAN_L and CAN_H for short circuit <LH drive vehicles with ASC>

⚠ CAUTION
When servicing a CAN bus line, earth yourself by touching a metal object such as an unpainted water pipe. If you fail to do, a component connected to the CAN bus line may be broken.



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E20AA



W4X54E21AA

TROUBLE JUDGMENT

Short circuit may be present between the CAN_L and H lines when the resistance between the CAN bus lines (CAN_L and H lines) is less than 2 Ω.

COMMENTS ON TROUBLE SYMPTOM

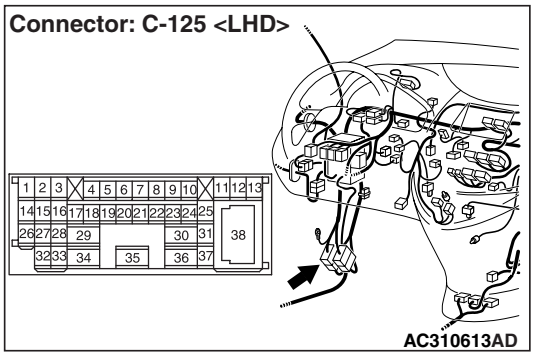
The wiring harness wire or connectors may have loose, corroded, or damage terminals, or terminals pushed back in the connector, or a ECU may be defective.

TROUBLESHOOTING HINTS

- Damaged harness wires and connectors
- Malfunction of the ETACS-ECU
- Malfunction of the combination meter
- Malfunction of the A/C-ECU
- Malfunction of the SRS-ECU
- Malfunction of the multi-centre display
- Malfunction of the steering wheel angle sensor
- Malfunction of the ASC-ECU
- Malfunction of the engine-ECU <M/T> or engine-A/T-ECU <A/T>

DIAGNOSTIC PROCEDURE

STEP 1. Connector check: C-125 intermediate connector



⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Repair the defective connector.

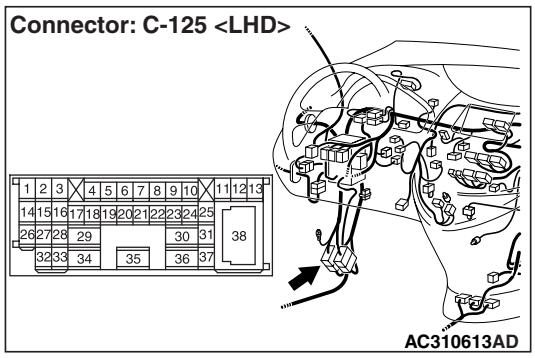
STEP 2. Resistance measurement at the C-125 intermediate connector.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



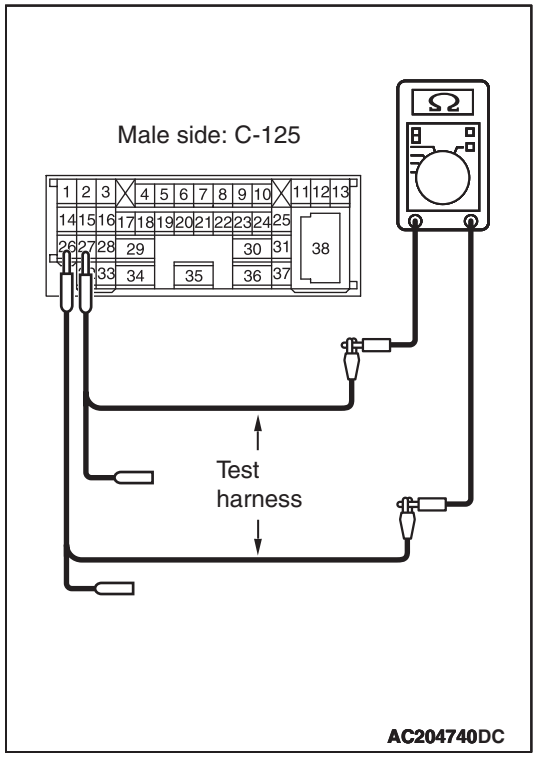
(1) Disconnect the connector, and measure at its male-side intermediate connector (at the front wiring harness side).

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Resistance between C-125 intermediate connector terminal Nos.26 and 27

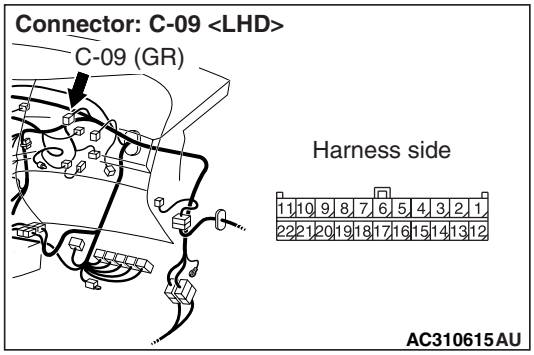
OK: 120± 20 Ω

Q: Is the check result normal?

YES : <Within 120± 20 Ω> Go to Step 3 .

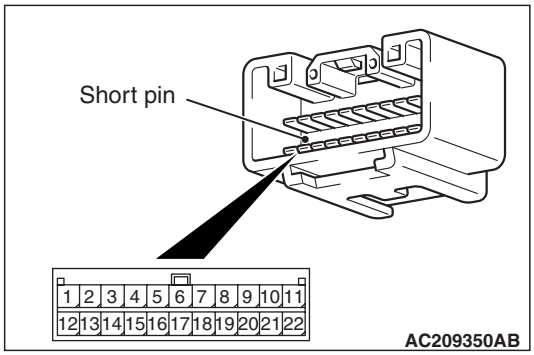
NO : <Not within 120± 20 Ω> Go to Step 29 .

STEP 3. Connector check: C-09 joint connector (CAN2)



⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.



When checking the joint connector, ensure that its wiring harness side and its short pins are not damaged.

Q: Is the check result normal?

YES : Go to Step 4.

NO : Repair a defective connector or replace the joint connector.

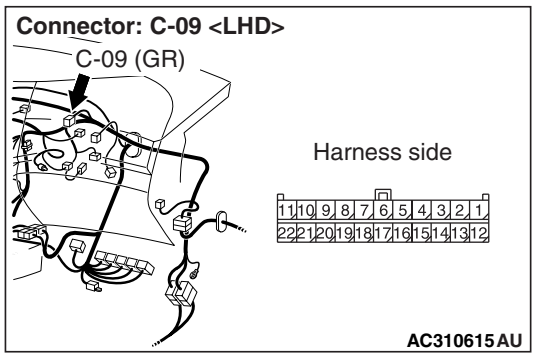
STEP 4. Resistance measurement at C-09 joint connector (CAN2).

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.

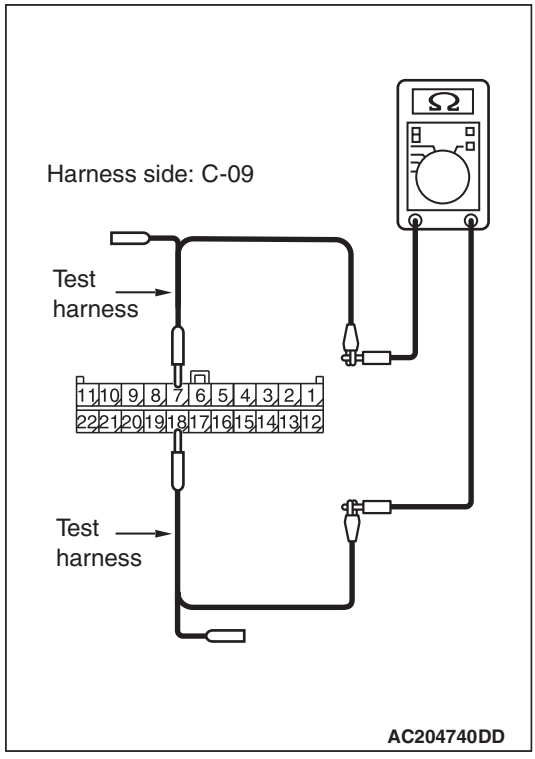


(1) Disconnect the connector, and measure at the wiring harness side.
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

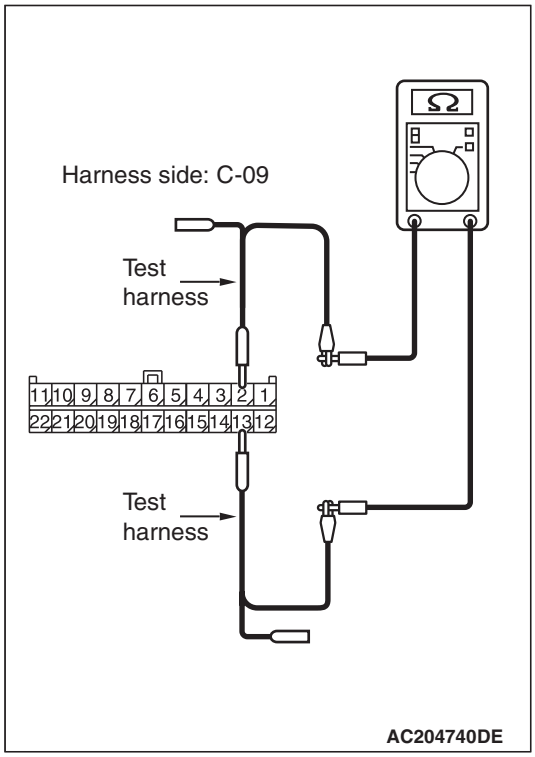
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



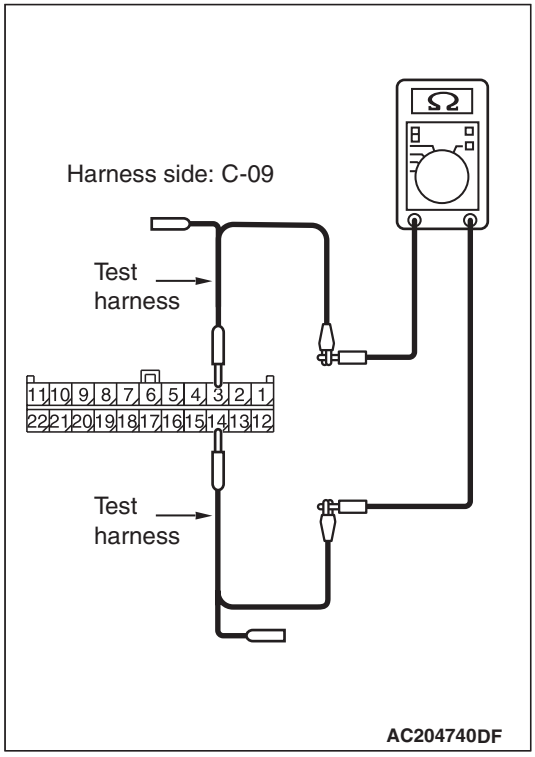
(4) Resistance between C-09 joint connector (CAN2) terminal Nos. 7 and 18

OK: 120± 20 Ω



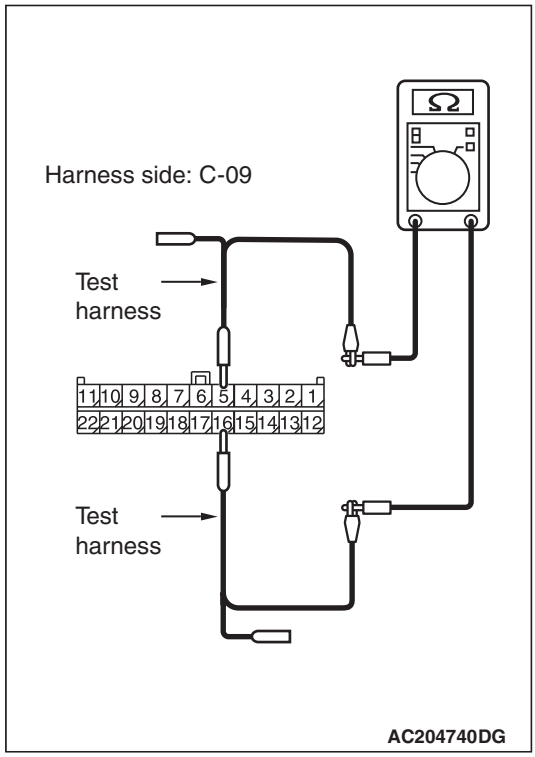
(5) Resistance between C-09 joint connector (CAN2) terminal Nos. 2 and 13

OK: 1 kΩ or more

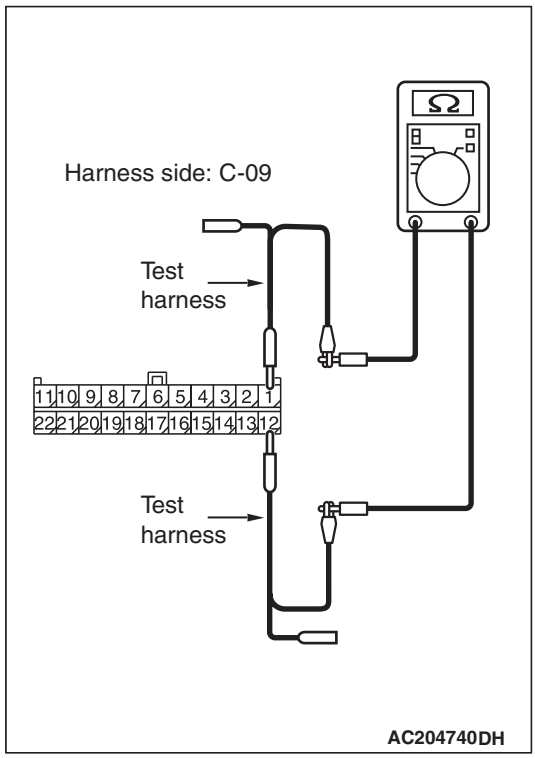


(6) Resistance between C-09 joint connector (CAN2)

terminal Nos. 3 and 14
OK: 1 kΩ or more

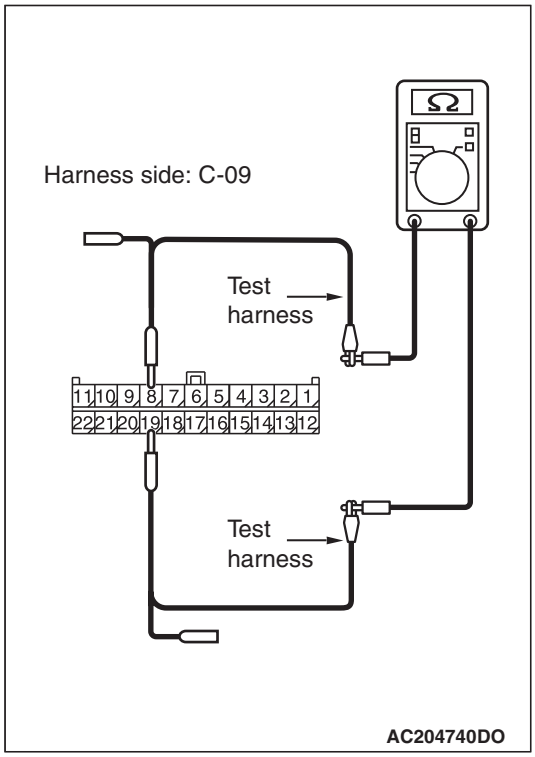


(7) Resistance between C-09 joint connector (CAN2) terminal Nos. 5 and 16
OK: 1 kΩ or more

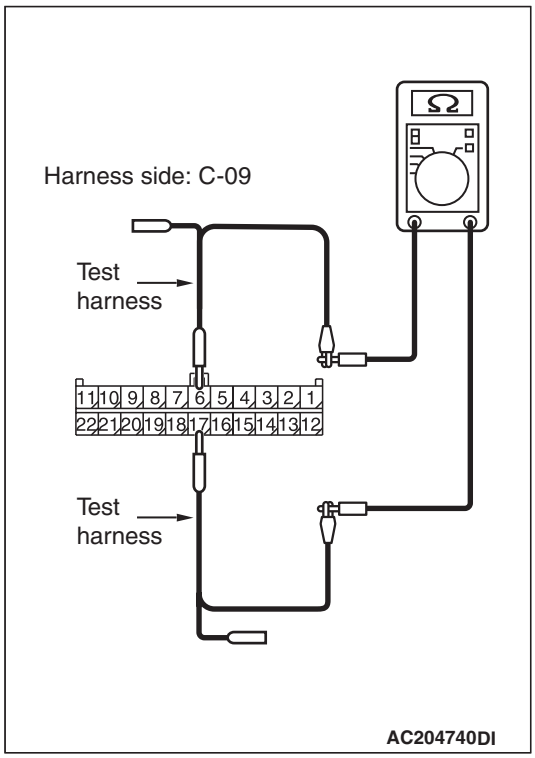


(8) Resistance between C-09 joint connector (CAN2)

terminal Nos. 1 and 12
OK: 1 kΩ or more



(9) Resistance between C-09 joint connector (CAN2) terminal Nos. 8 and 19
OK: 1 kΩ or more



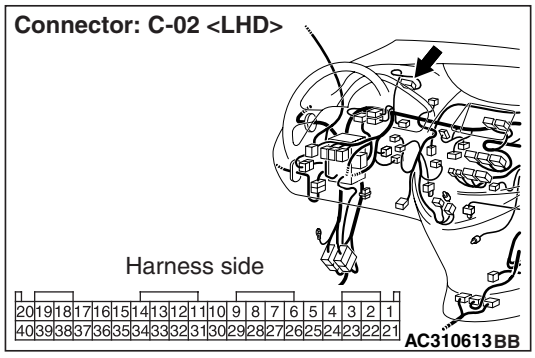
(10)Resistance between C-09 joint connector

(CAN2) terminal Nos. 6 and 17
OK: 1 kΩ or more

Q: Are the check result normal?
YES <all of the measurement results are within the normal value> : Go to Step 29.
NO <The resistance between terminal Nos. 7 and 18 is less than 120±20 Ω> : Go to Step 5.
NO <The resistance between terminal Nos. 2 and 13 is less than 1 kΩ> : Go to Step 8.
NO <The resistance between terminal Nos. 3 and 14 is less than 1 kΩ> : Go to Step 11.
NO <The resistance between terminal Nos. 5 and 16 is less than 1 kΩ> : Go to Step 14.
NO <The resistance between terminal Nos. 1 and 12 is less than 1 kΩ> : Go to Step 20.
NO <The resistance between terminal Nos. 8 and 19 is less than 1 kΩ> : Go to Step 23.
NO <The resistance between terminal Nos. 6 and 17 is less than 1 kΩ> : Go to Step 26.

STEP 5. Connector check: C-02 combination meter connector

⚠ CAUTION



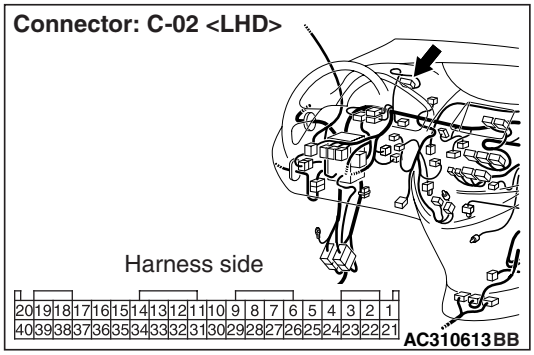
The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

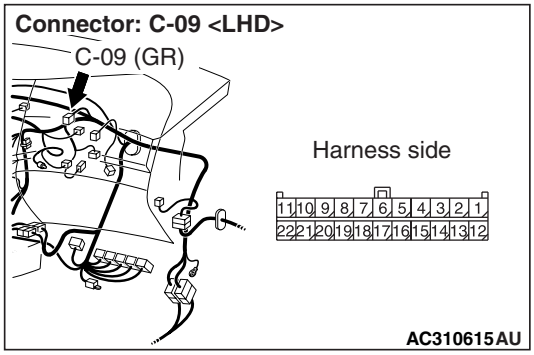
Q: Is the check result normal?
YES : Go to Step 6.
NO : Repair the defective connector.

STEP 6. Resistance measurement at C-09 joint connector (CAN2).

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.



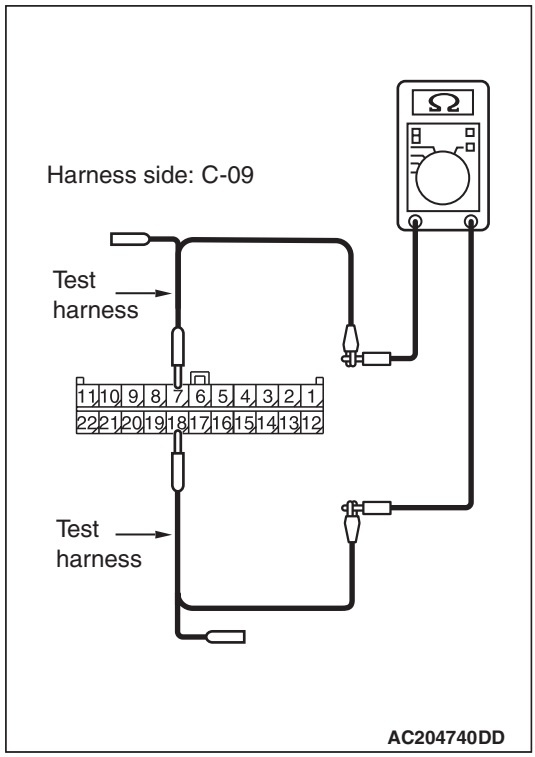


(1) Disconnect the joint connector (CAN2) and the combination meter connector, and measure at the wiring harness side.
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is

disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal Nos. 7 and 18

OK: More than 2 Ω

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?

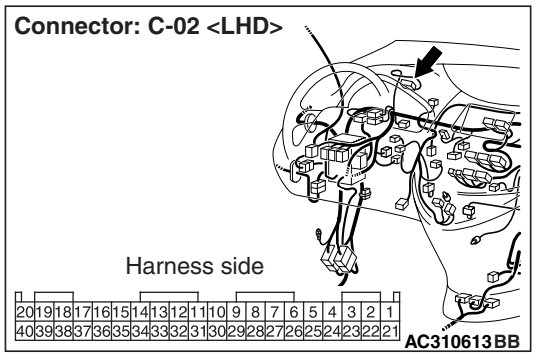
YES : <More than 2 Ω> Go to Step 7.

NO : <2 Ω or less> Repair the wiring harness between joint connector (CAN2) and the combination meter connector.

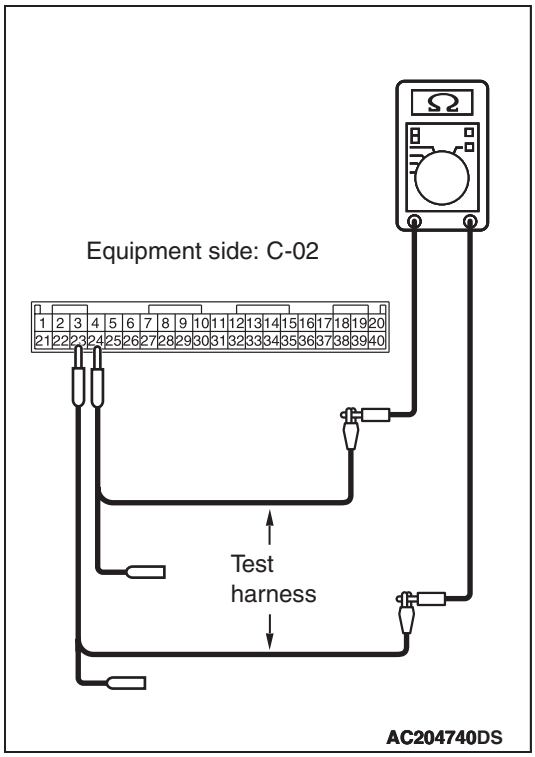
STEP 7. Resistance measurement at C-02 combination meter connector.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.



(1) Remove the combination meter, and measure at the equipment side.



(2) Resistance between C-02 combination meter connector terminal Nos. 23 and 24

OK: 120± 20 Ω

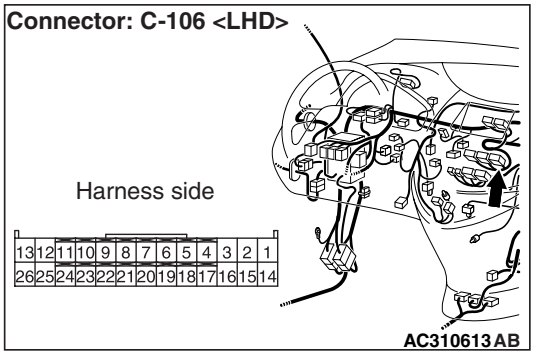
Q: Is the check result normal?

YES : <Within 120± 20 Ω> Follow diagnostic item 18, Diagnose CAN bus lines thoroughly. Refer to P.54D-476.

NO : <Not within 120± 20 Ω> Replace the combination meter.

STEP 8. Connector check: C-106 A/C-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 9.

NO : Repair the defective connector.

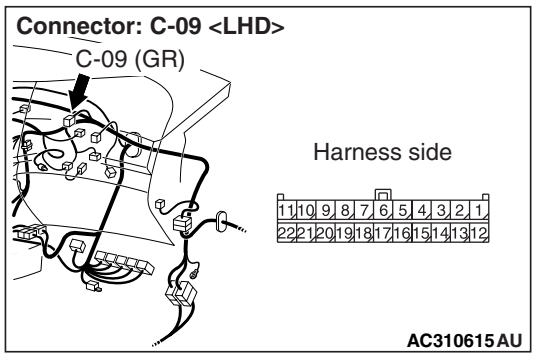
STEP 9. Resistance measurement at C-09 joint connector (CAN2).

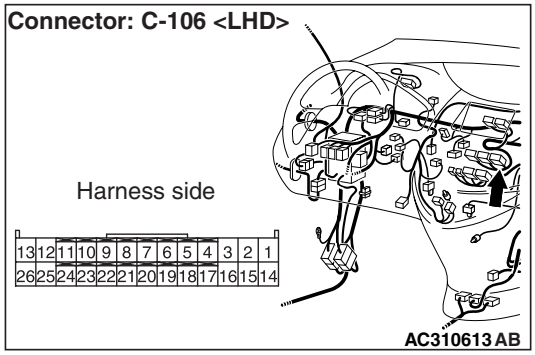
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





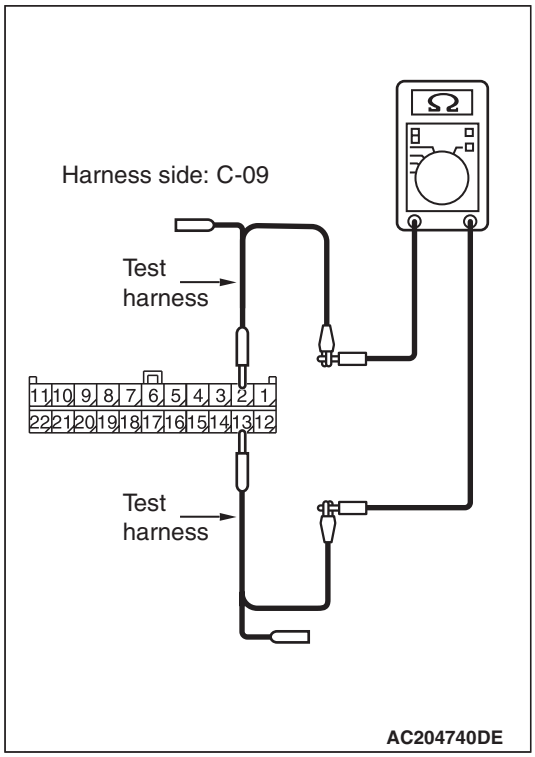
(1) Disconnect the joint connector (CAN2) and the A/C-ECU connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal Nos. 2 and 13

OK: More than 2 Ω

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?

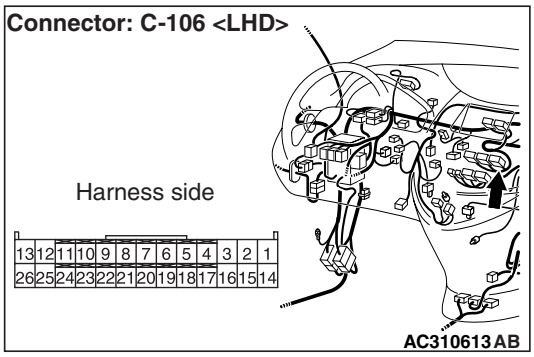
YES : <More than 2 Ω> Go to Step 10.

NO : <2 Ω or less> Repair the wiring harness between joint connector (CAN2) and the A/C-ECU connector.

STEP 10. Resistance measurement at C-106 A/C-ECU connector.

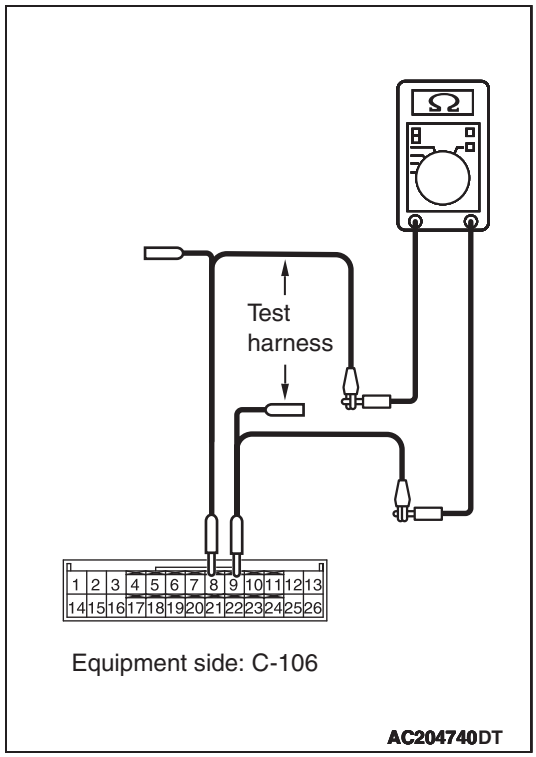
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.



(1) Remove the A/C-ECU, and measure at the

equipment side.



(2) Resistance between C-106 A/C-ECU connector terminal Nos. 8 and 9

OK: 1 kΩ or more

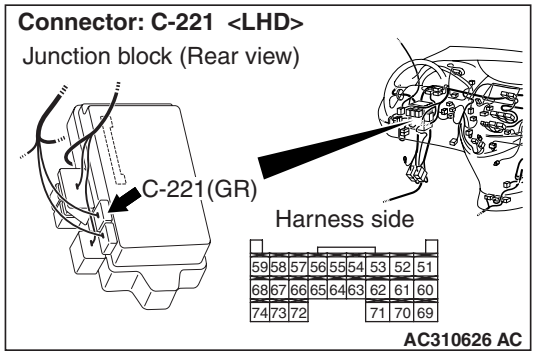
Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 18, Diagnose CAN bus lines thoroughly. Refer to P.54D-476.

NO : <Less than 1 kΩ> Replace the A/C-ECU.

STEP 11. Connector check: C-221 ETACS-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 12.

NO : Repair the defective connector.

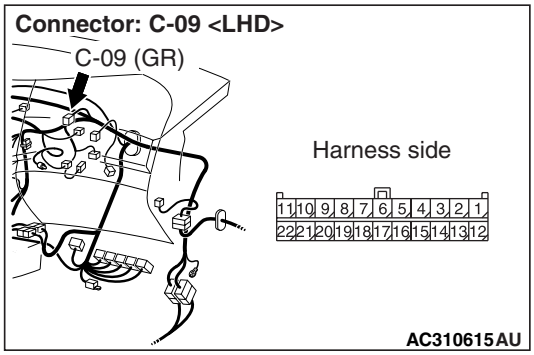
STEP 12. Resistance measurement at C-09 joint connector (CAN2).

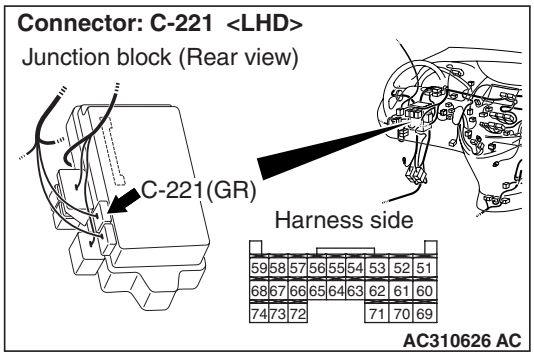
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN2) and the ETACS-ECU connector, and measure at the wiring harness side.

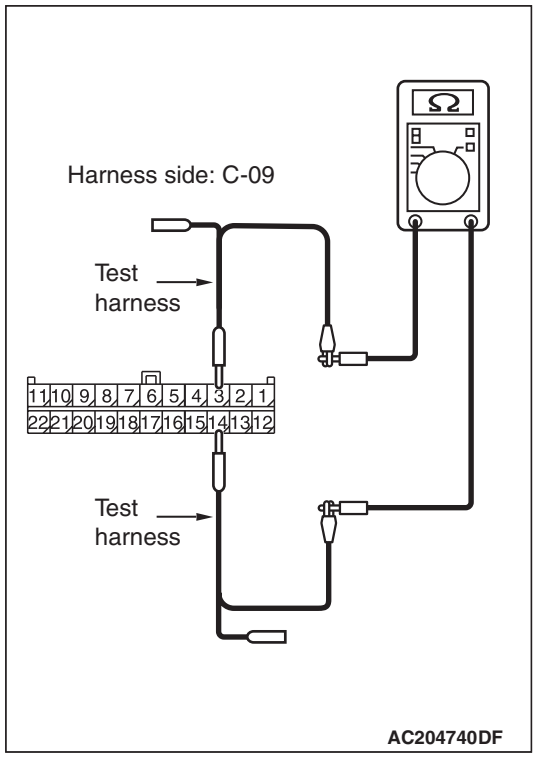
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is

disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal Nos. 3 and 14

OK: More than 2 Ω

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?

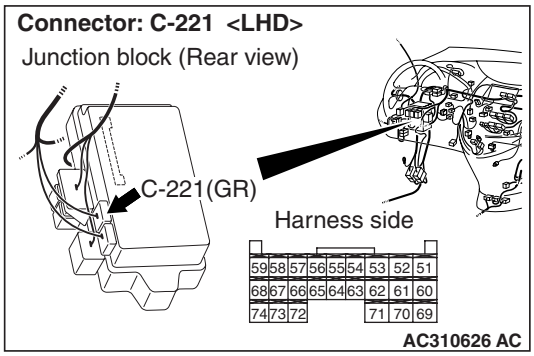
YES : <More than 2 Ω> Go to Step 13.

NO : <2 Ω or less> Repair the wiring harness between joint connector (CAN2) and the ETACS-ECU connector.

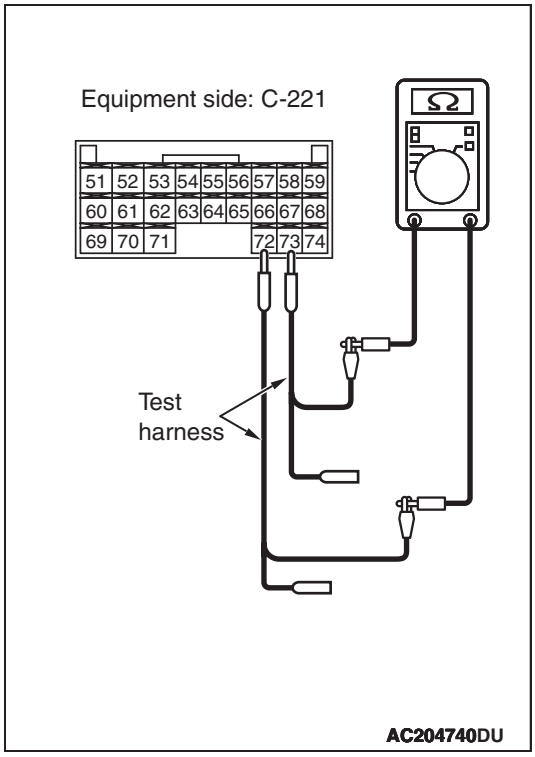
STEP 13. Resistance measurement at C-221 ETACS-ECU connector.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.



(1) Remove the ETACS-ECU, and measure at the equipment side.



(2) Resistance between C-221 ETACS-ECU connector terminal Nos. 72 and 73

OK: 1 kΩ or more

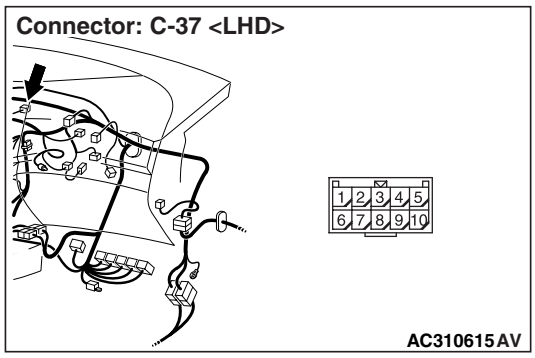
Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 18, Diagnose CAN bus lines thoroughly. Refer to P.54D-476.

NO : <Less than 1 kΩ> Replace the ETACS-ECU.

STEP 14. Connector check: C-37 jumper connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Check that the wiring harness of the jumper connector is not damaged.

Q: Is the check result normal?
YES : Go to Step 15.
NO : Repair the defective connector.

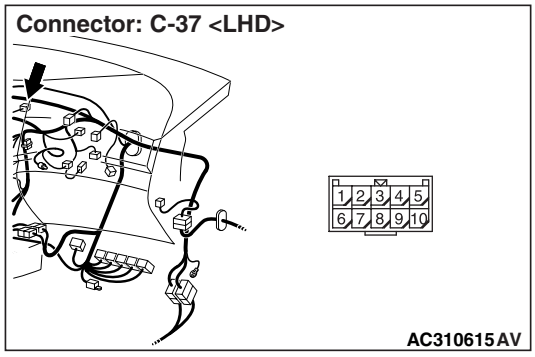
STEP 15. Resistance measurement at the C-37 jumper connector.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.

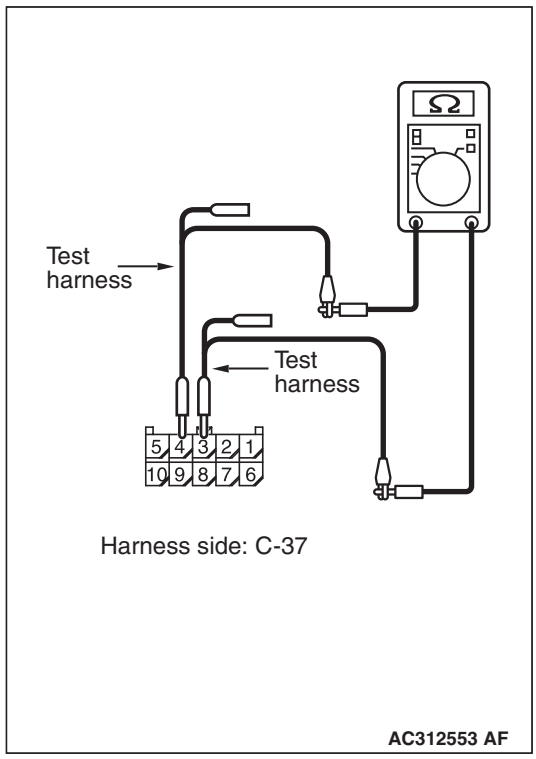


(1) Disconnect the connector, and measure at its jumper connector (at the centre display side).
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.

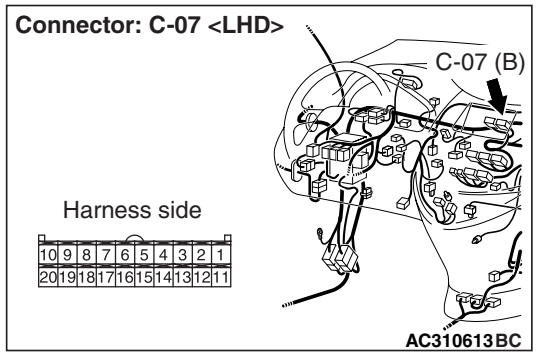


(4) Resistance between C-37 jumper connector terminal Nos. 3 and 4
OK: 1 kΩ or more

Q: Is the check result normal?
YES : <1 kΩ or more> Go to Step 19 .
NO : <Less than 1 kΩ> Go to Step 16 .

STEP 16. Connector check: C-07 centre display connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?
YES : Go to Step 17 .
NO : Repair the defective connector.

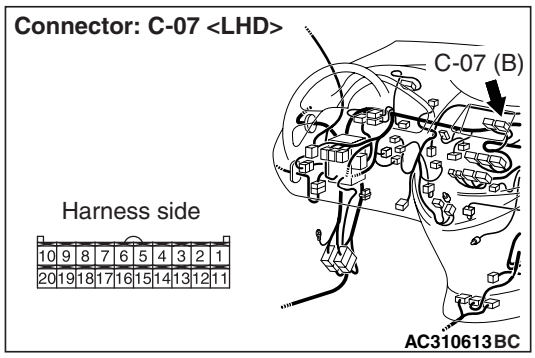
STEP 17. Resistance measurement at the C-37 jumper connector.

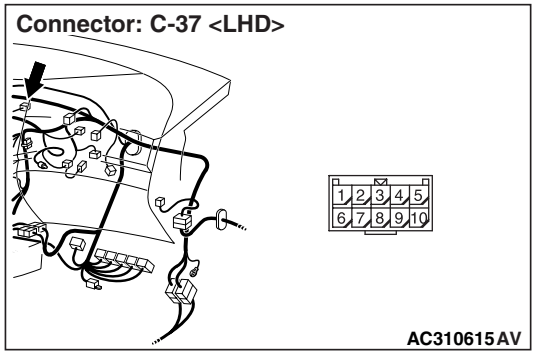
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



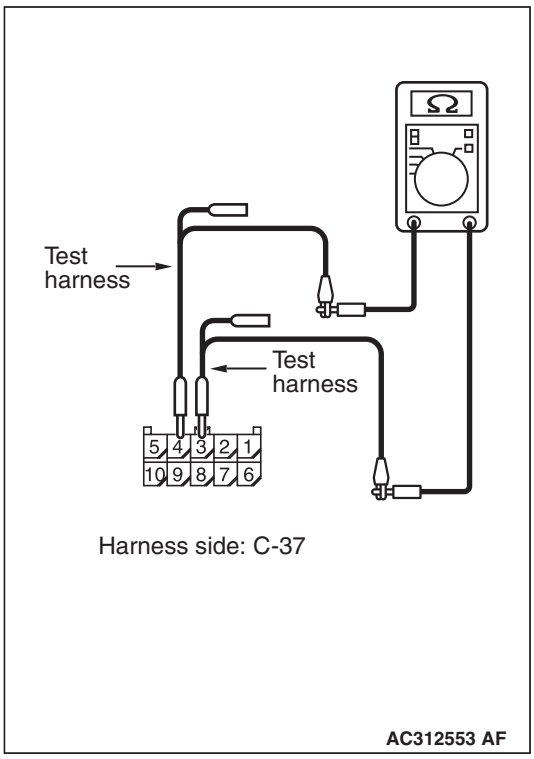


(1) Disconnect the centre display connector and the jumper connector, and measure at the jumper connector (at the centre display side).
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Resistance between C-37 jumper connector terminal Nos. 3 and 4

OK: More than 2 Ω

⚠ CAUTION

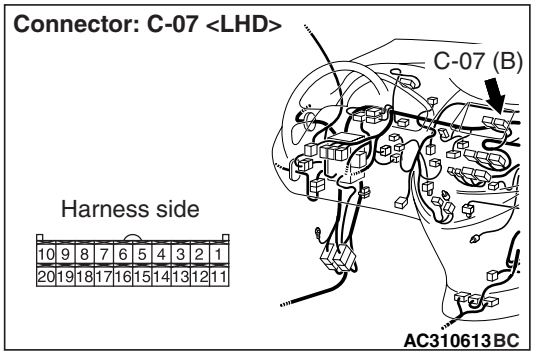
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <More than 2 Ω> Go to Step 18.
NO : <2 Ω or less> Repair the wiring harness between the jumper connector and the centre display connector.

STEP 18. Resistance measurement at C-07 centre display connector.

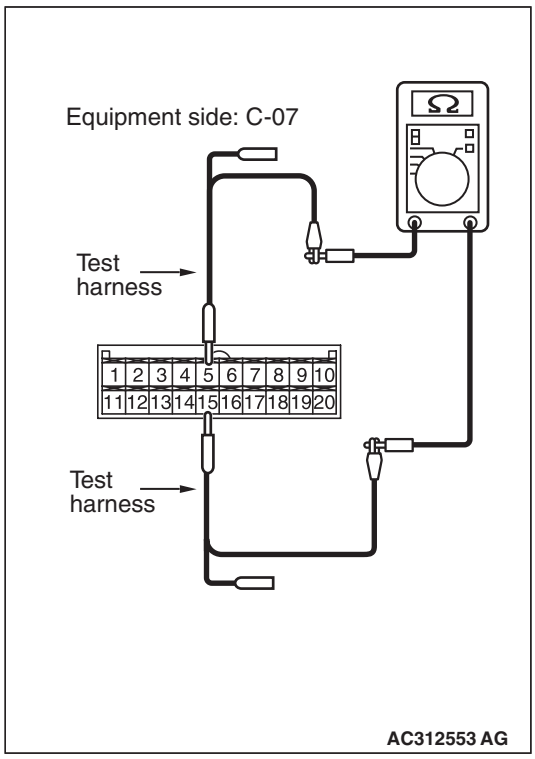
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.



(1) Remove the centre display connector, and

measure at the equipment side.



(2) Resistance at C-07 centre display connector terminal Nos. 5 and 15

OK: 1 kΩ or more

Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 18, Diagnose CAN bus lines thoroughly. Refer to P.54D-476.

NO : <Less than 1 kΩ> Replace the centre display connector.

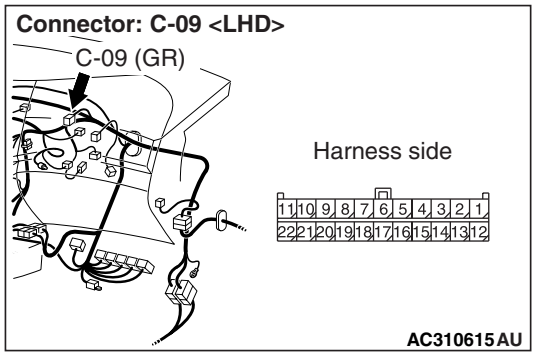
STEP 19. Resistance measurement at the C-09 joint connector (CAN2).

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



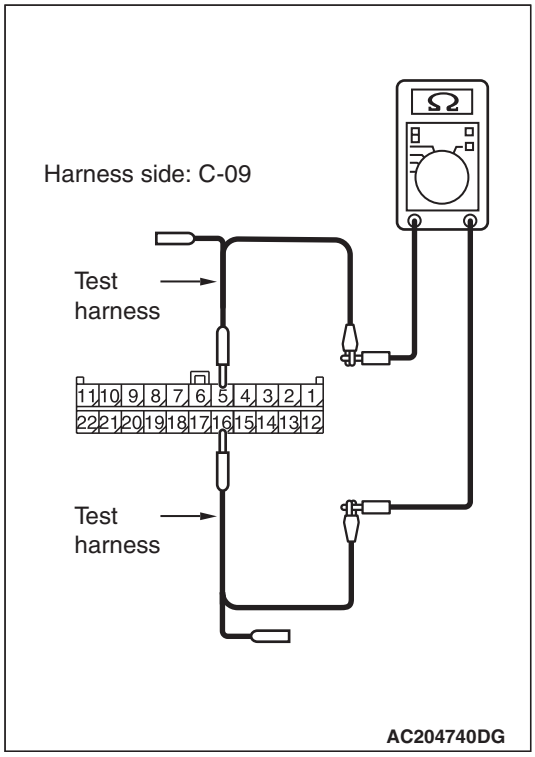
(1) Disconnect the connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Resistance between C-09 joint connector (CAN2) terminal Nos. 5 and 16

OK: 1 kΩ or more

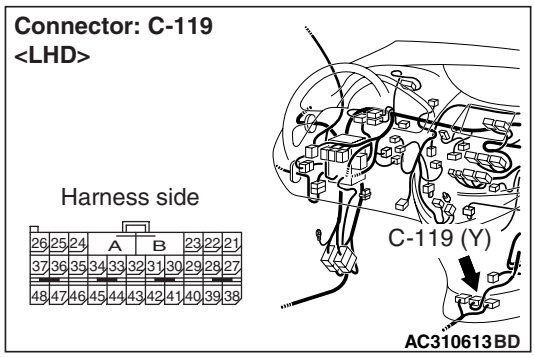
Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 18 "Diagnose CAN bus lines thoroughly." Refer to P.54D-476.

NO : <Less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the jumper connector.

STEP 20. Connector check: C-119 SRS-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?
YES : Go to Step 21.
NO : Repair the defective connector.

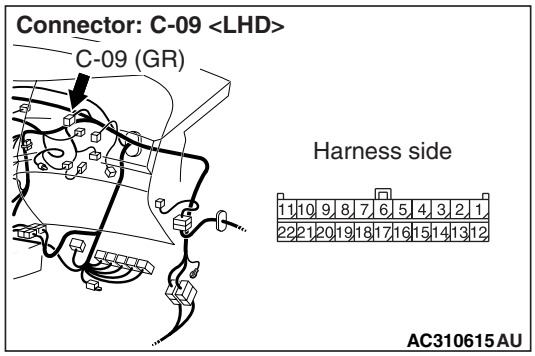
STEP 21. Resistance measurement at C-09 joint connector (CAN2).

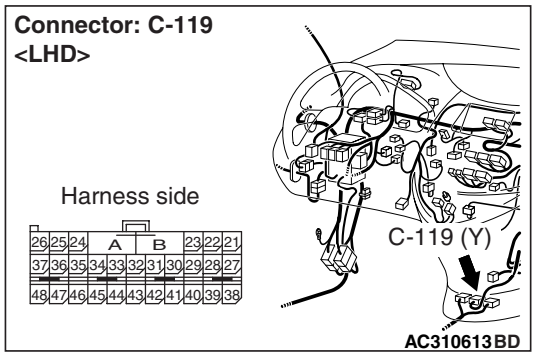
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



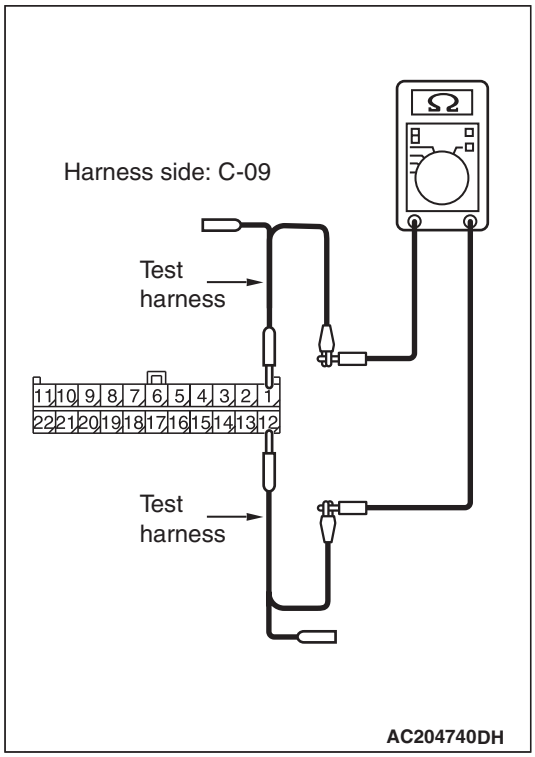


(1) Disconnect the joint connector (CAN2) and the SRS-ECU connector, and measure at the wiring harness side.
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal Nos. 1 and 12

OK: More than 2 Ω

⚠ CAUTION

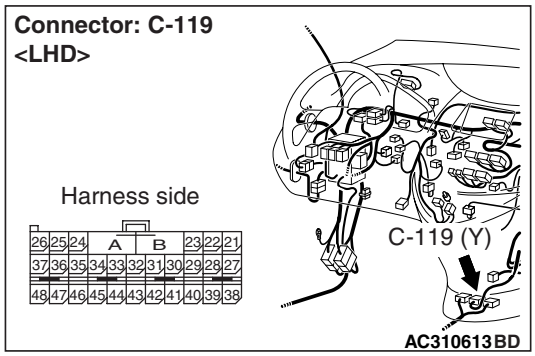
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <More than 2 Ω> Go to Step 22.
NO : <2 Ω or less> Repair the wiring harness between joint connector (CAN2) and the SRS-ECU connector.

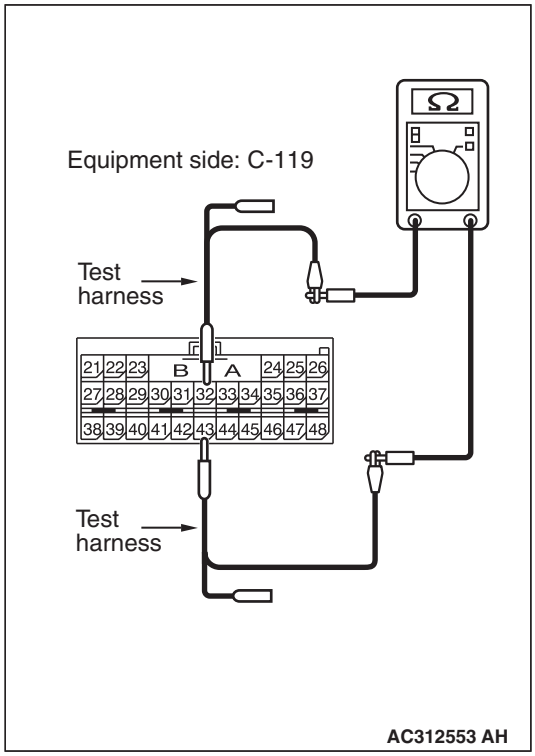
STEP 22. Resistance measurement at C-119 SRS-ECU connector.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.



(1) Remove the SRS-ECU, and measure at the equipment side.



(2) Resistance between C-119 SRS-ECU connector terminal Nos. 32 and 43

OK: 1 kΩ or more

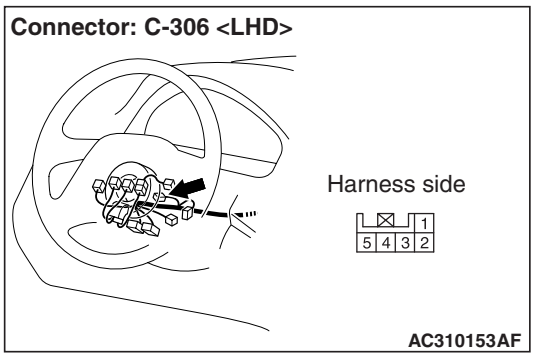
Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 18, Diagnose CAN bus lines thoroughly. Refer to P.54D-476.

NO : <Less than 1 kΩ> Replace the SRS-ECU.

STEP 23. Connector check: C-306 steering wheel angle sensor connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 24.

NO : Repair the defective connector.

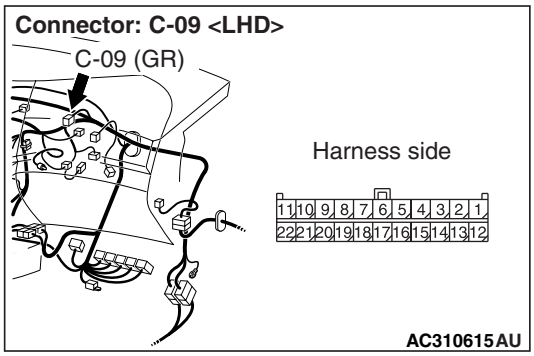
STEP 24. Resistance measurement at C-09 joint connector (CAN2).

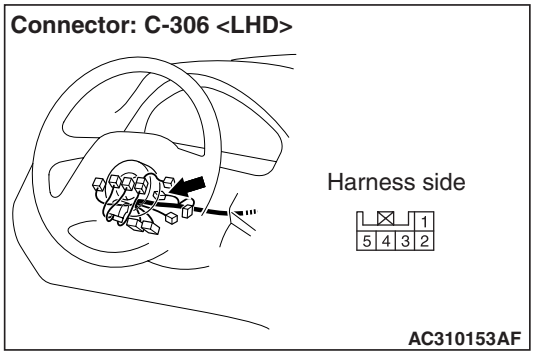
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



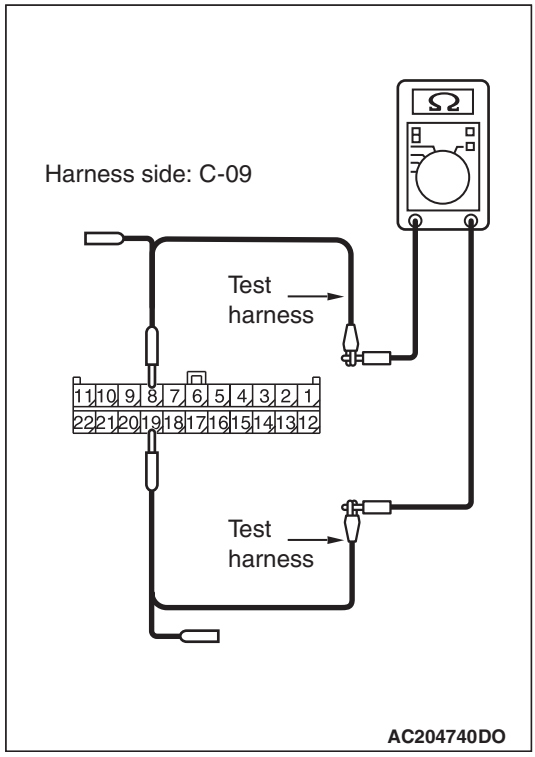


(1) Disconnect the joint connector (CAN2) and the steering wheel angle sensor connector, and

measure at the wiring harness side.
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal Nos. 8 and 19

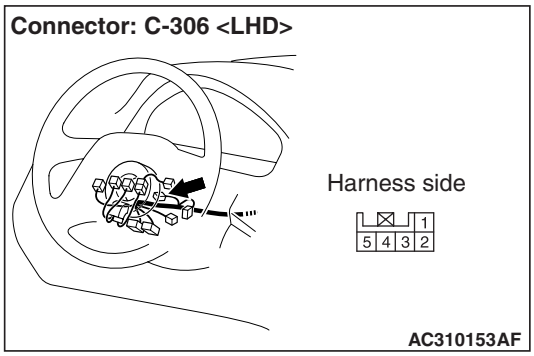
OK: More than 2 Ω

⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

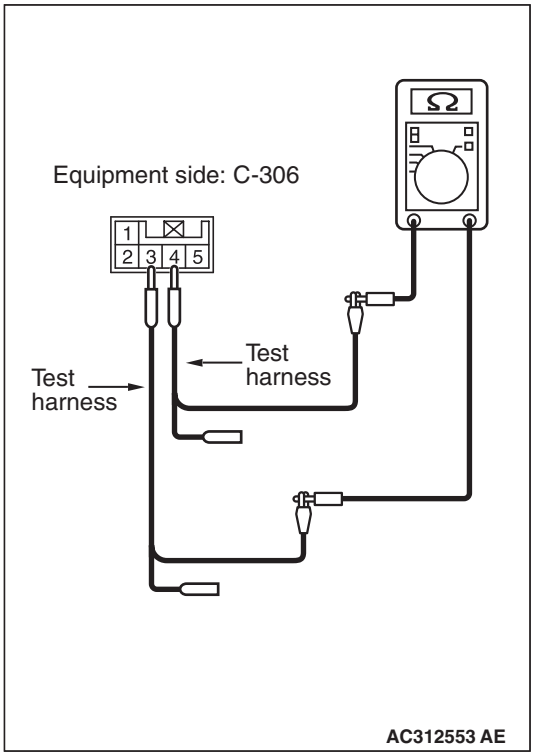
Q: Is the check result normal?
YES : <More than 2 Ω> Go to Step 25.
NO : <2 Ω or less> Repair the wiring harness between joint connector (CAN2) and the steering wheel angle sensor connector.

STEP 25. Resistance measurement at C-306 steering wheel angle sensor connector.

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.



(1) Remove the steering wheel angle sensor, and measure at the equipment side.



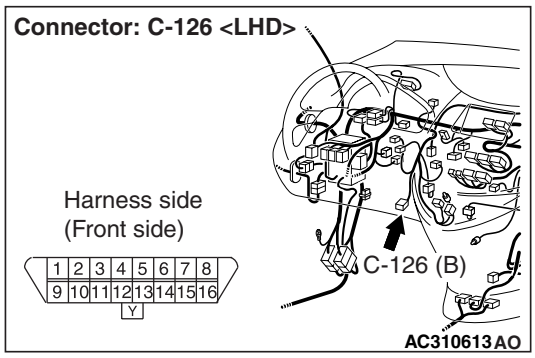
(2) Resistance between C-306 steering wheel angle sensor connector terminal Nos. 3 and 4

OK: 1 kΩ or more

Q: Is the check result normal?
YES : <1 kΩ or more> Follow diagnostic item 18, Diagnose CAN bus lines thoroughly. Refer to P.54D-476.
NO : <Less than 1 kΩ> Replace the steering angle sensor.

STEP 26. Connector check: C-126 diagnosis connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?
YES : Go to Step 27.
NO : Repair the defective connector.

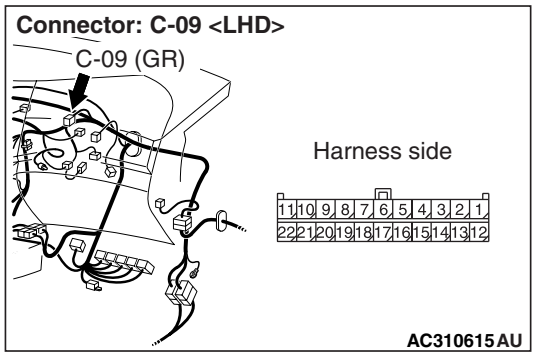
STEP 27. Resistance measurement at C-09 joint connector (CAN2).

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



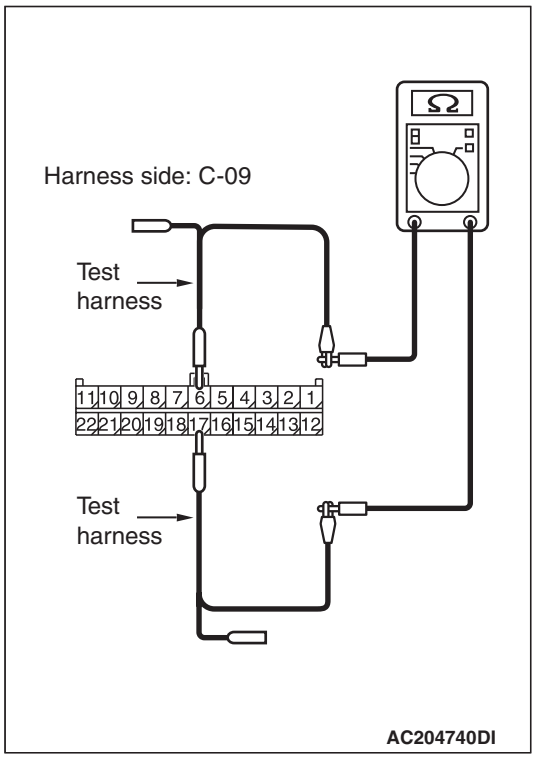
(1) Disconnect the joint connector (CAN2), and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal Nos. 6 and 17

OK: More than 2 Ω

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <2 more than Ω> Follow diagnostic item 18, Diagnose CAN bus lines thoroughly. Refer to P.54D-476.
NO : <2 Ω or less> Repair the wiring harness between joint connector (CAN2) and the diagnosis connector.

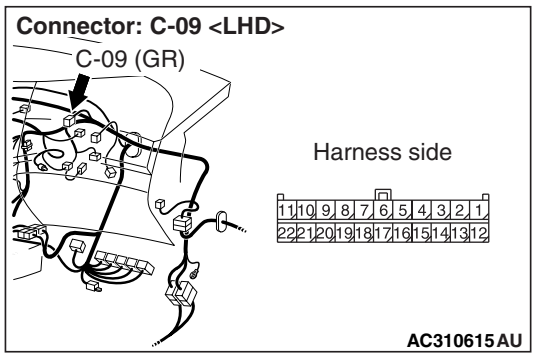
STEP 28. Resistance measurement at C-09 joint connector (CAN2).

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.

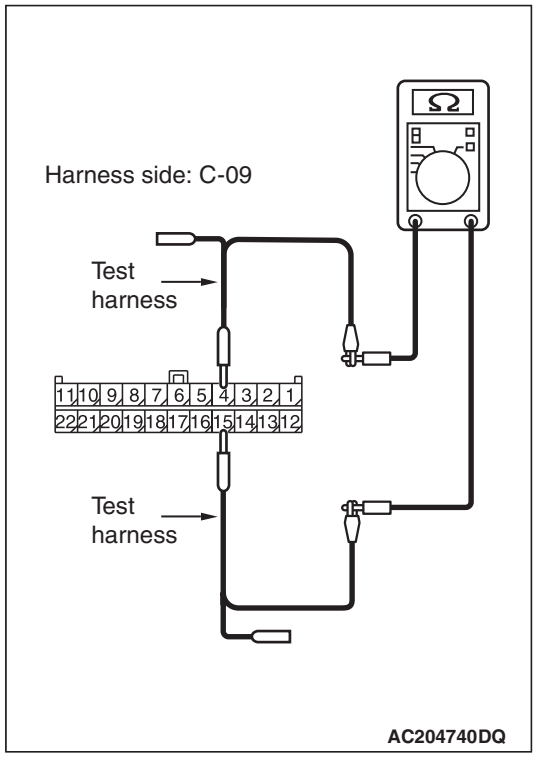


(1) Disconnect the joint connector (CAN2) and the intermediate connector, and measure at the wiring harness side.
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal Nos. 4 and 15

OK: More than 2 Ω

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?

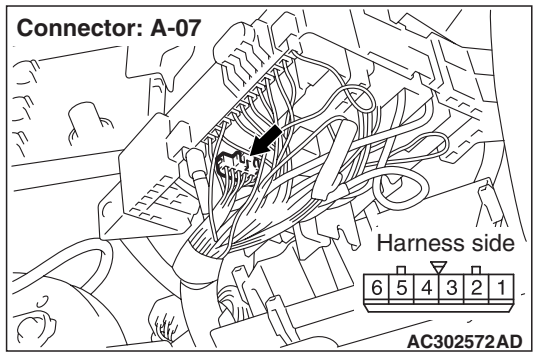
YES : <2 more than Ω> Follow diagnostic item 18, Diagnose CAN bus lines thoroughly. Refer to P.54D-476.

NO : <2 Ω or less> Repair the wiring harness between joint connector (CAN2) and the intermediate connector.

STEP 29. Connector check: A-07 joint connector (CAN1)

NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

When checking the joint connector, ensure that its wiring harness side is not damaged.

Q: Is the check result normal?

YES : Go to Step 30.

NO : Repair a defective connector or replace the joint connector (front wiring harness assembly).

STEP 30. Resistance measurement at the A-07 joint connector (CAN1).

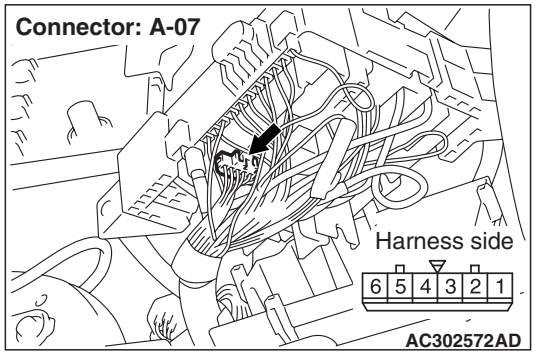
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



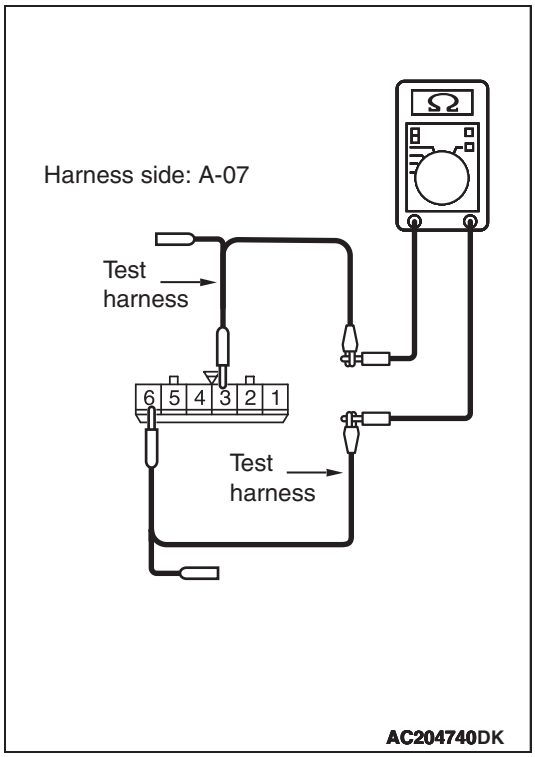
(1) Disconnect the connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

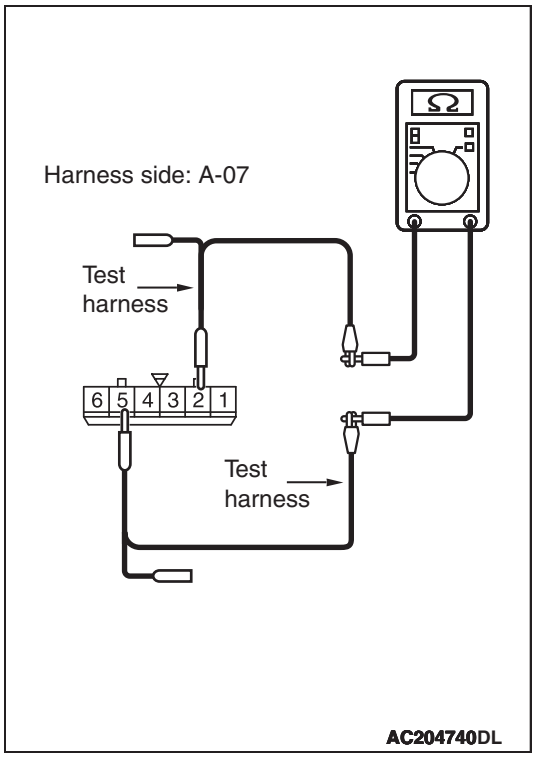
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Resistance between A-07 joint connector (CAN1) terminal Nos. 3 and 6

OK: 120± 20 Ω



(5) Resistance between A-07 joint connector (CAN1) terminal Nos. 2 and 5

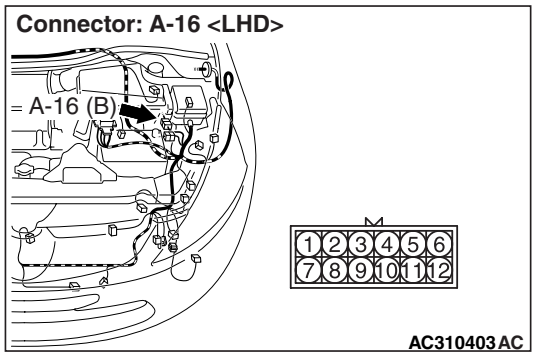
OK: 1 kΩ or more

Q: Are the check result normal?

YES <all of the measurement results are within the normal value> : Go to Step 40.
NO <The resistance between terminal Nos. 3 and 6 is less than 120±20 Ω> : Go to Step 32.
NO <The resistance between terminal Nos. 2 and 5 is less than 1 kΩ> : Go to Step 37.

STEP 31. Connector check: A-16 intermediate connector

⚠ CAUTION



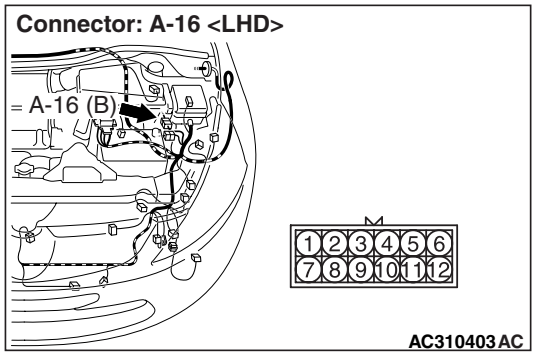
The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?
YES : Go to Step 32.
NO : Repair the defective connector.

STEP 32. Resistance measurement at the A-16 intermediate connector.

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

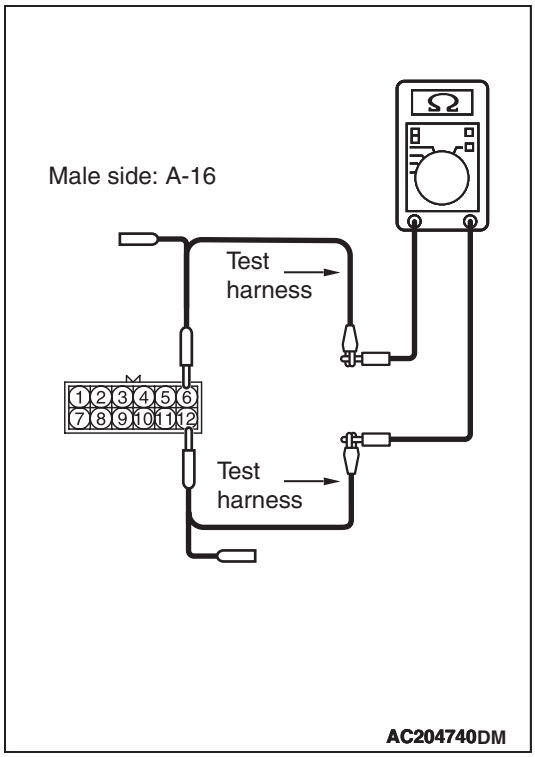
⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the connector, and measure at its male-side intermediate connector (at the control wiring harness side).
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.

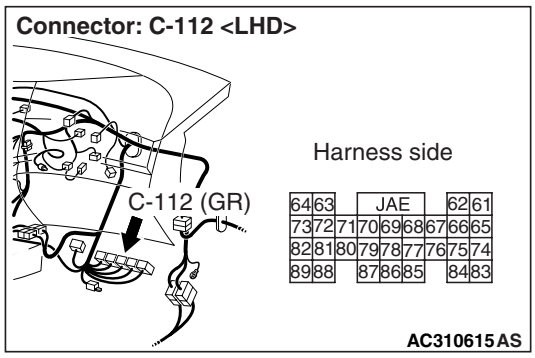


(4) Resistance between A-16 intermediate connector terminal Nos. 6 and 12
OK: 120± 20 Ω

Q: Is the check result normal?
YES : <Within 120± 20 Ω> Go to Step 36 .
NO : <Not within 120± 20 Ω> Go to Step 33 .

STEP 33. Connector check: C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?
YES : Go to Step 34.
NO : Repair the defective connector.

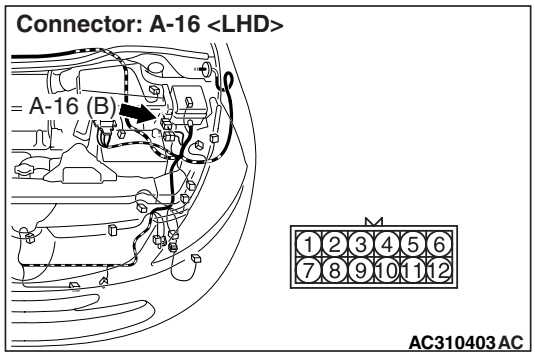
STEP 34. Resistance measurement at the A-16 intermediate connector.

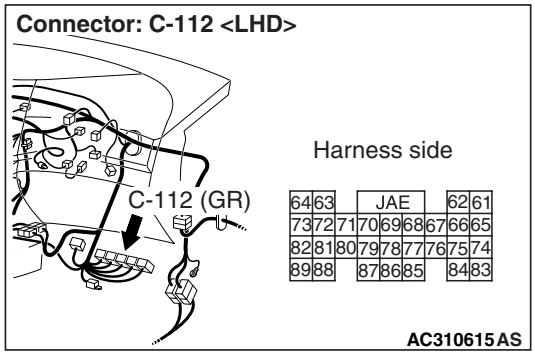
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



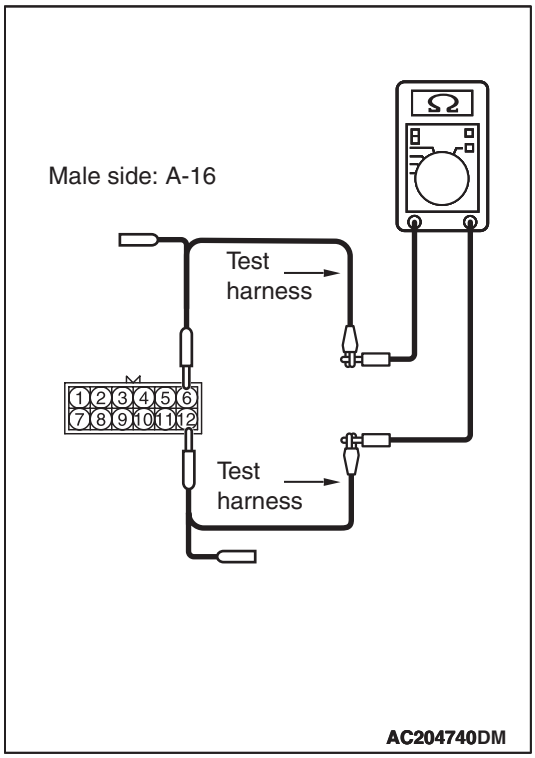


(1) Disconnect the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector and the intermediate connector, and measure at the wiring harness side.
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Resistance between A-16 intermediate connector terminal Nos. 6 and 12
OK: More than 2 Ω

⚠ CAUTION

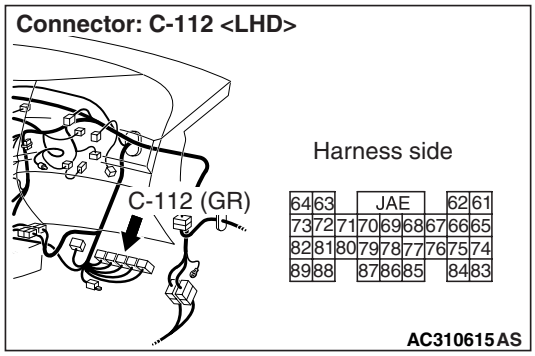
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <More than 2 Ω> Go to Step 35.
NO : <2 Ω or less> Repair the wiring harness between the intermediate connector and the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector.

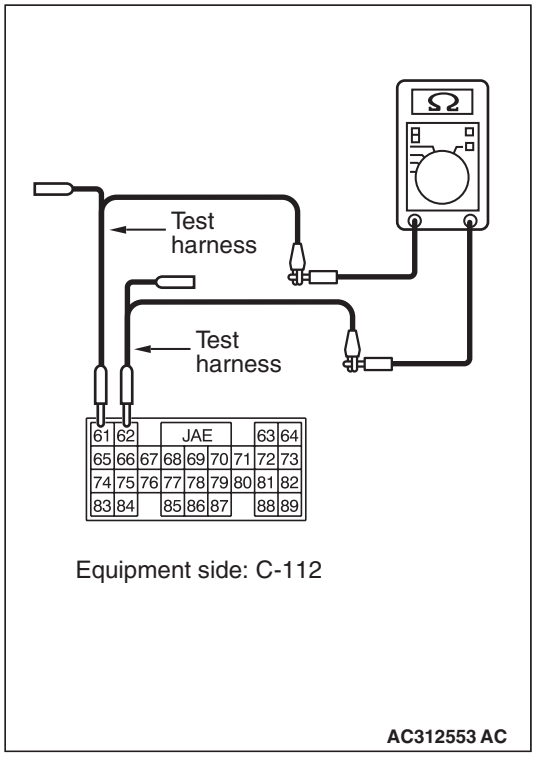
STEP 35. Resistance measurement at C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.



(1) Remove the engine-ECU <M/T> or engine-A/T-ECU <A/T>, and measure at the equipment side.



(2) Resistance at C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector terminal Nos. 61 and 62

OK: 120± 20 Ω

Q: Is the check result normal?

YES : <Within 120± 20 Ω> Follow diagnostic item 18, Diagnose CAN bus lines thoroughly. Refer to P.54D-476.

NO : <Not within 120± 20 Ω> Replace the engine-ECU <M/T> or engine-A/T-ECU <A/T>.

STEP 36. Resistance measurement at the A-07 joint connector (CAN1).

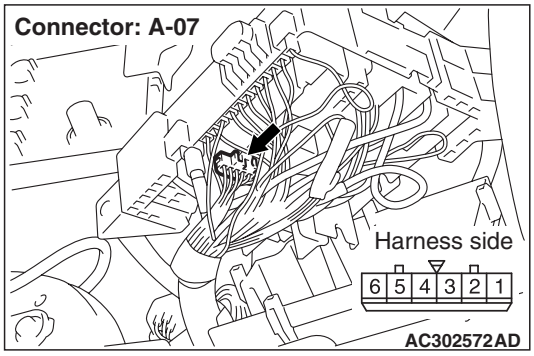
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the connector, and measure at the wiring harness side.

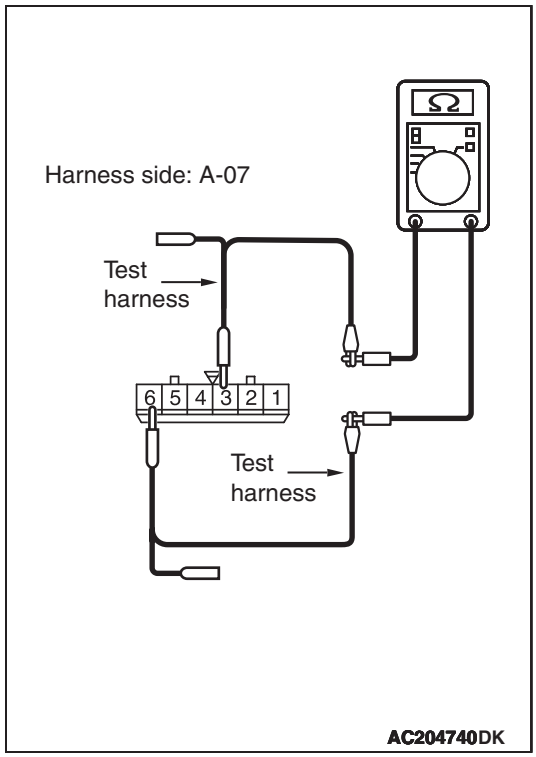
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is

disconnected.



(4) Resistance between A-07 joint connector (CAN1) terminal Nos. 3 and 6

OK: 120± 20 Ω

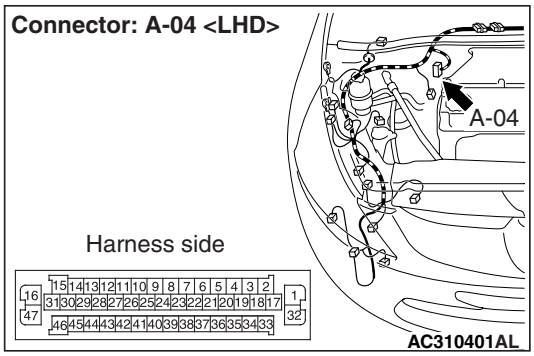
Q: Is the check result normal?

YES : <All the measurement results are within the normal value> Follow diagnostic item 18 "Diagnose CAN bus lines thoroughly." Refer to P.54D-476.

NO : <The resistance between terminal Nos. 3 and 6 measures less than 120 ± 20 Ω> Repair the wiring harness between the joint connector (CAN1) and the intermediate connector.

STEP 37. Connector check: A-04 ASC-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 38.

NO : Repair the defective connector.

STEP 38. Resistance measurement at the A-07 joint connector (CAN1).

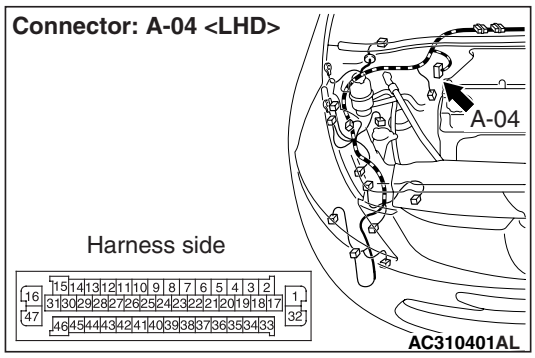
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

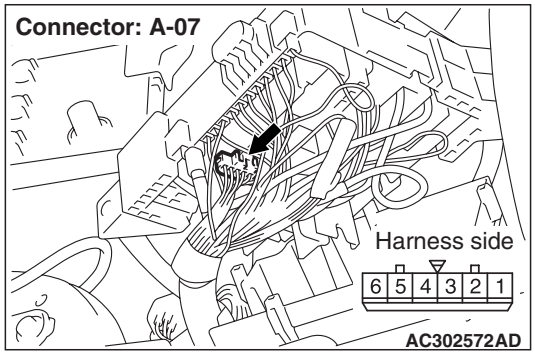
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





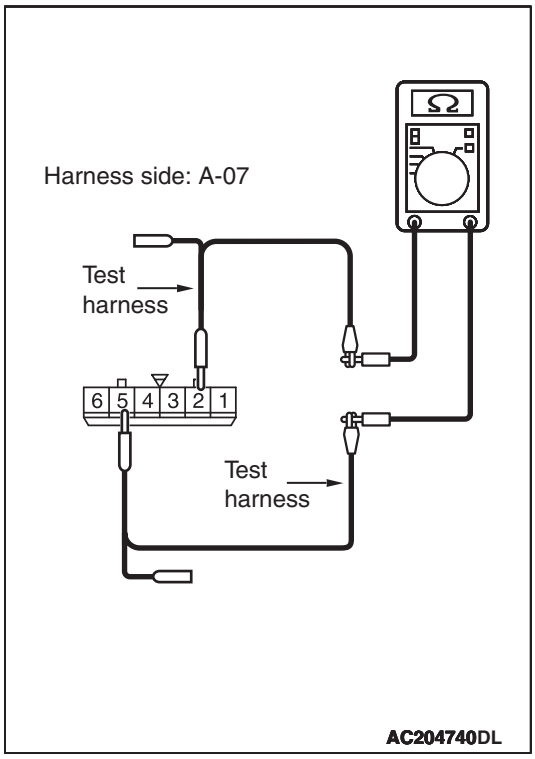
(1) Disconnect the joint connector (CAN1) and the ASC-ECU connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between A-07 joint connector (CAN1) terminal Nos. 2 and 5

OK: More than 2 Ω

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?

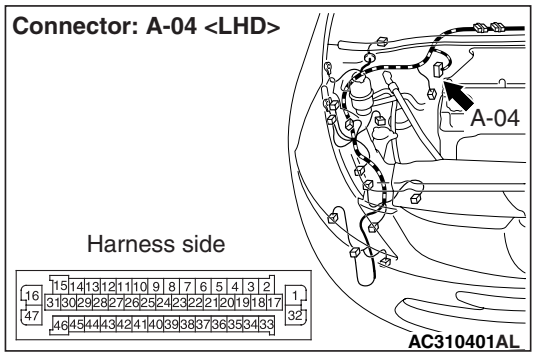
YES : <More than 2 Ω> Go to Step 39.

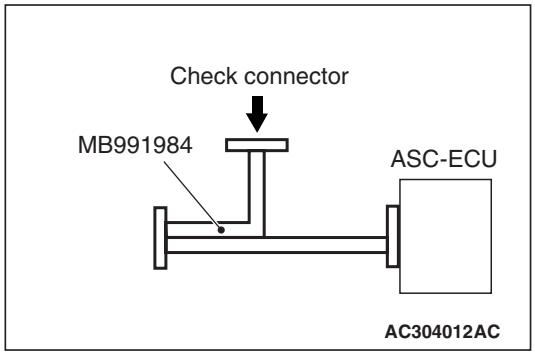
NO : <2 Ω or less> Repair the wiring harness between joint connector (CAN1) and the ASC-ECU connector.

STEP 39. Resistance measurement at A-04 ASC-ECU connector.

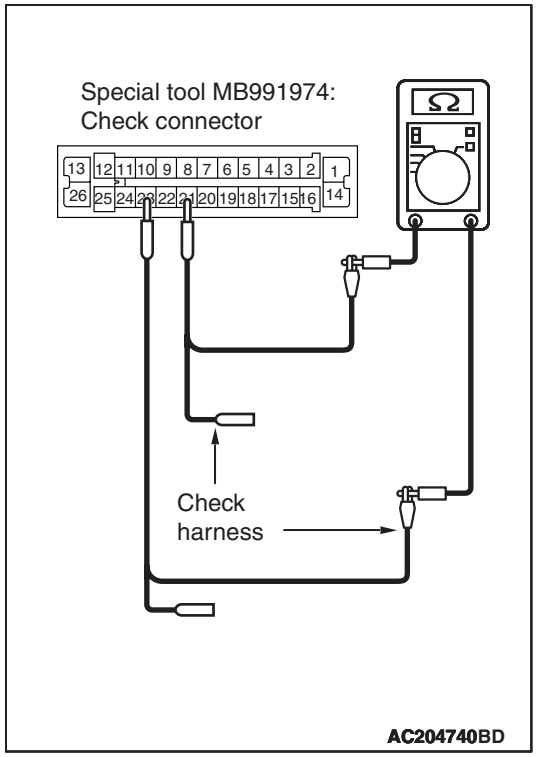
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.





(1) Connect special tool MB991974 to the ASC-ECU connector, and measure by using the check connector (connect the ECU side only).



(2) Resistance between special tool MB991974 check connector terminal Nos. 11 and 15.

OK: 1 kΩ or more

Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 18, Diagnose CAN bus lines thoroughly. Refer to P.54D-476.

NO : <Less than 1 kΩ> Replace the ASC-ECU.

STEP 40. Resistance measurement at the A-07 joint connector (CAN1).

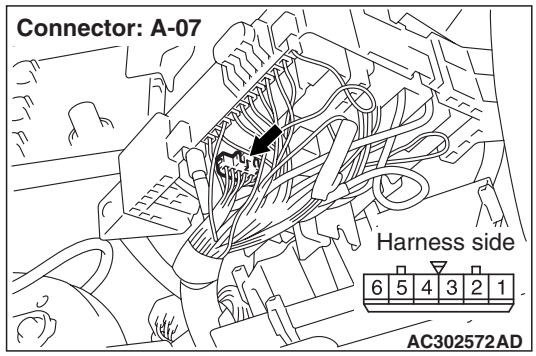
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

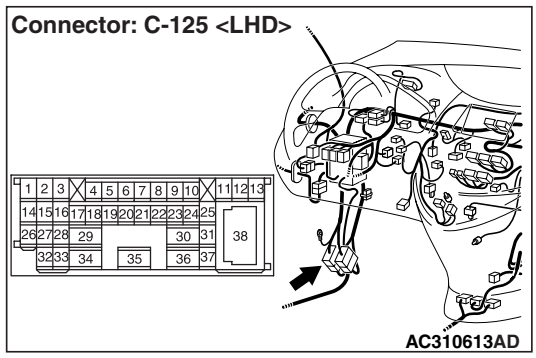
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN1) and the intermediate connector, and measure at the wiring harness side.

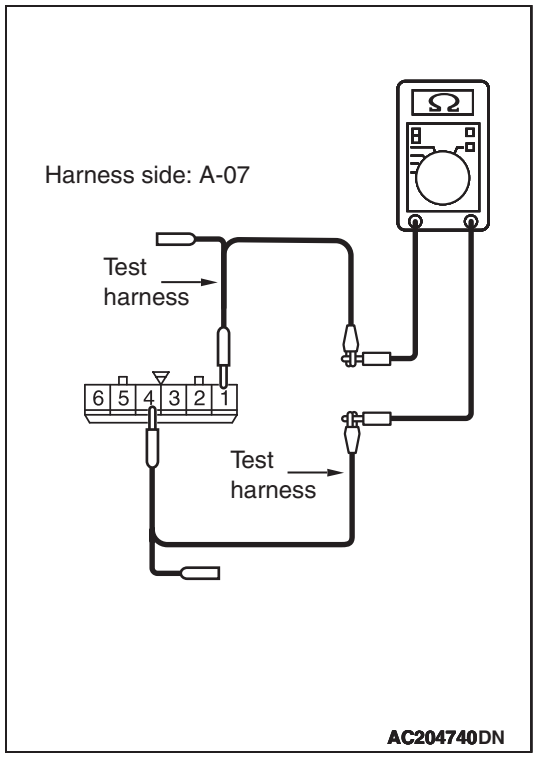
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is

disconnected.



(4) Measure the continuity between A-07 joint connector (CAN1) terminal Nos. 1 and 4.

OK: More than 2 Ω

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

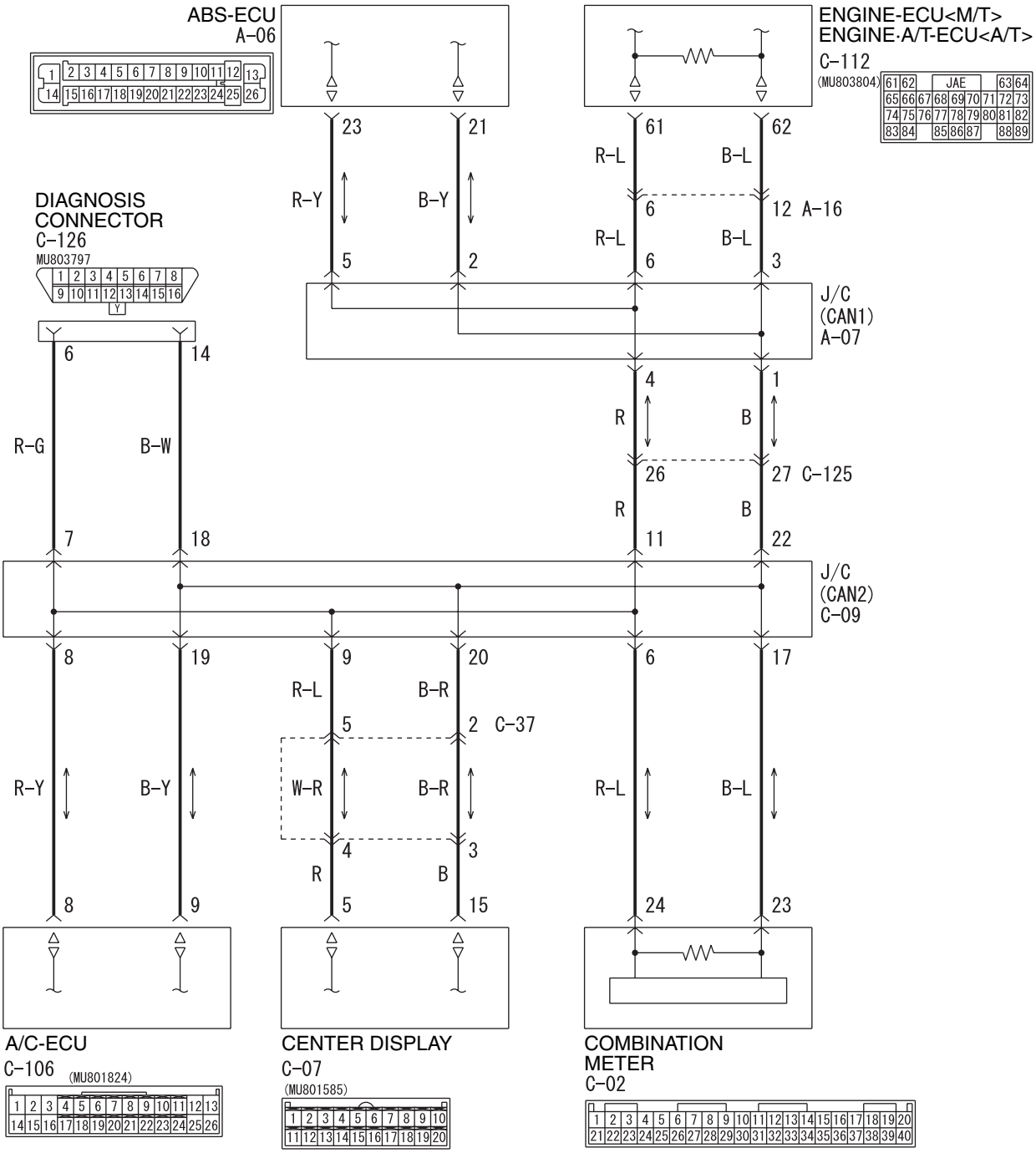
Q: Is the check result normal?

YES : <2 more than Ω> Follow diagnostic item 18, Diagnose CAN bus lines thoroughly. Refer to P.54D-476.

NO : <2 Ω or less> Repair the wiring harness between joint connector (CAN1) and the intermediate connector.

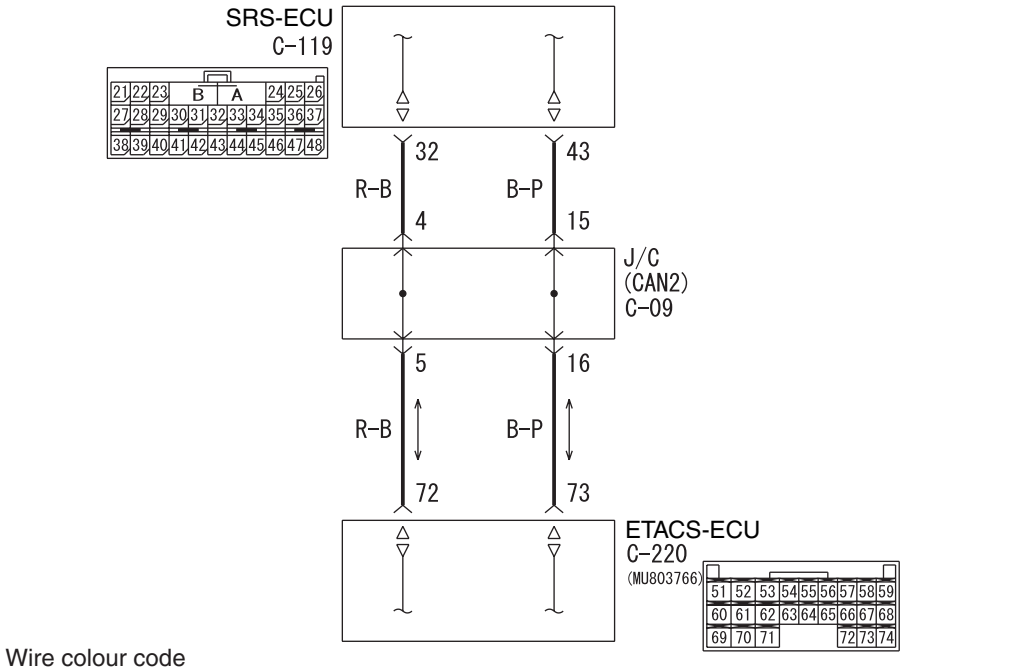
Diagnostic Item 11: Diagnose the lines between CAN_L and CAN_H for short circuit <RH drive vehicles without ASC>

⚠ CAUTION
When servicing a CAN bus line, earth yourself by touching a metal object such as an unpainted water pipe. If you fail to do, a component connected to the CAN bus line may be broken.



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E22AA



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E23AA

TROUBLE JUDGMENT

Short circuit may be present between the CAN_L and H lines when the resistance between the CAN bus lines (CAN_L and H lines) is less than 2 Ω.

COMMENTS ON TROUBLE SYMPTOM

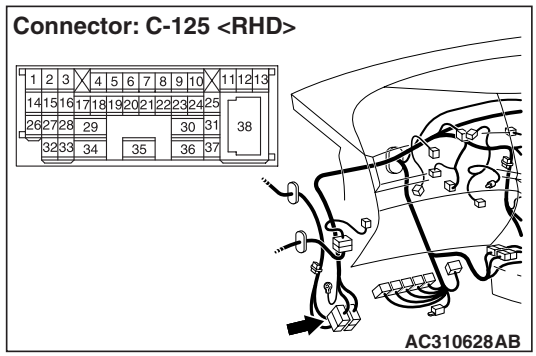
The wiring harness wire or connectors may have loose, corroded, or damage terminals, or terminals pushed back in the connector, or a ECU may be defective.

TROUBLESHOOTING HINTS

- Damaged harness wires and connectors
- Malfunction of the ETACS-ECU
- Malfunction of the combination meter
- Malfunction of the A/C-ECU
- Malfunction of the SRS-ECU
- Malfunction of the multi-centre display
- Malfunction of the ABS-ECU
- Malfunction of the engine-ECU <M/T> or engine-A/T-ECU <A/T>

DIAGNOSTIC PROCEDURE

STEP 1. Connector check: C-125 intermediate connector



⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair the defective connector.

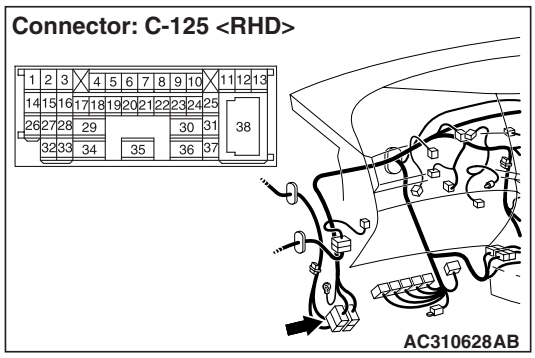
STEP 2. Resistance measurement at the C-125 intermediate connector.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



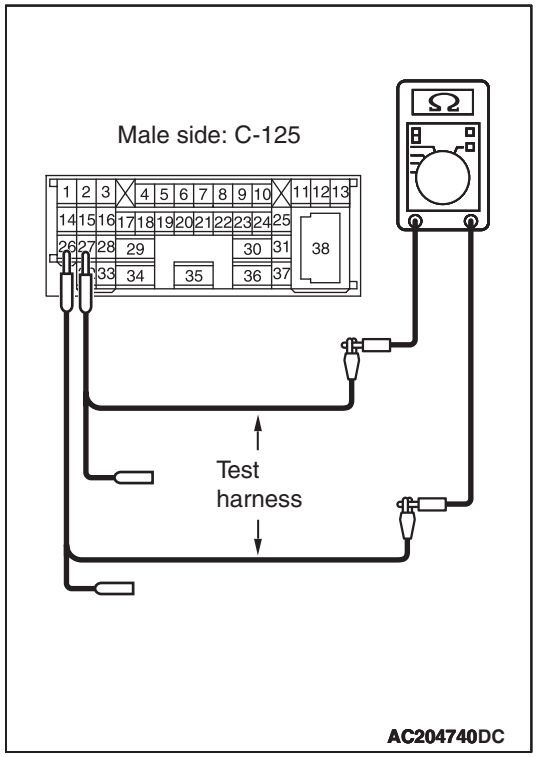
(1) Disconnect the connector, and measure at its male-side intermediate connector (at the front wiring harness side).

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Resistance between C-125 intermediate connector terminal Nos.26 and 27

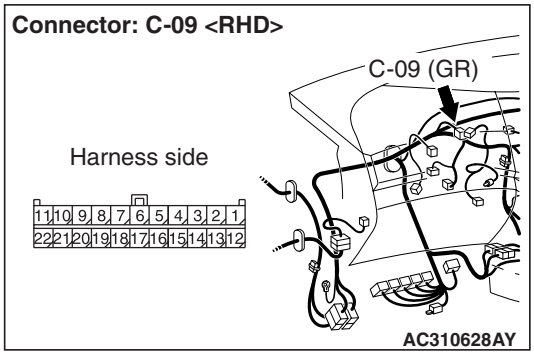
OK: 120± 20 Ω

Q: Is the check result normal?

YES : <Within 120± 20 Ω> Go to Step 3 .

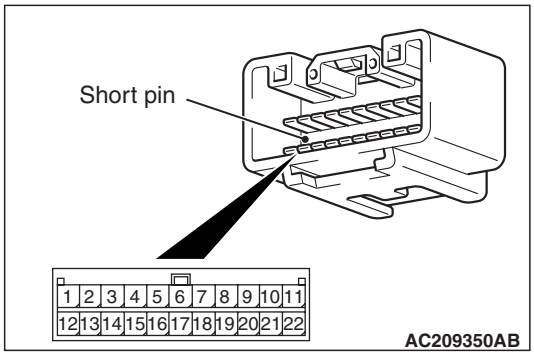
NO : <Not within 120± 20 Ω> Go to Step 26 .

STEP 3. Connector check: C-09 joint connector (CAN2)



⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.



When checking the joint connector, ensure that its wiring harness side and its short pins are not damaged.

Q: Is the check result normal?

YES : Go to Step 4.

NO : Repair a defective connector or replace the joint connector.

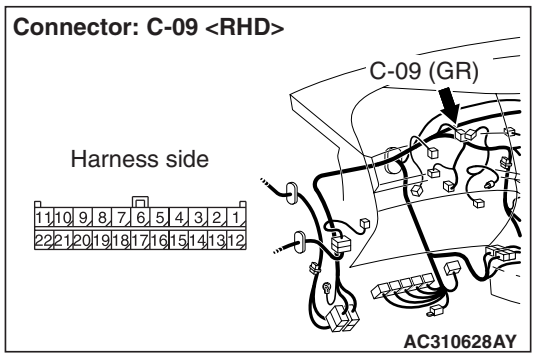
STEP 4. Resistance measurement at C-09 joint connector (CAN2).

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.

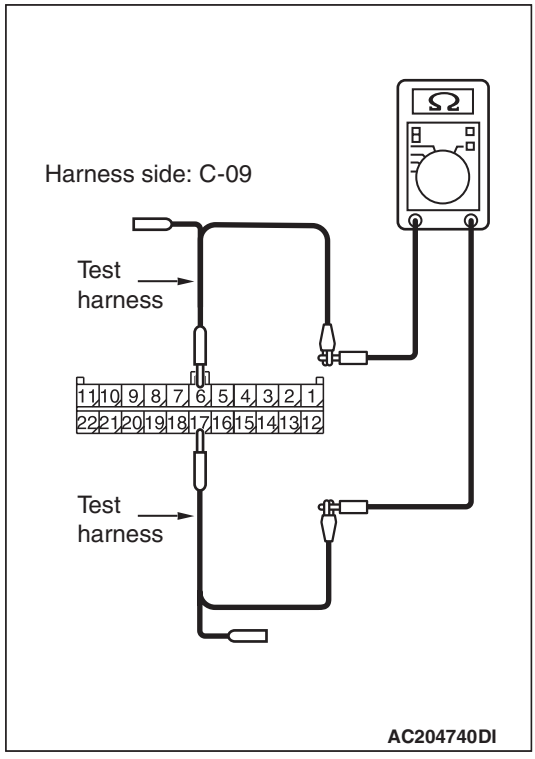


(1) Disconnect the connector, and measure at the wiring harness side.
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

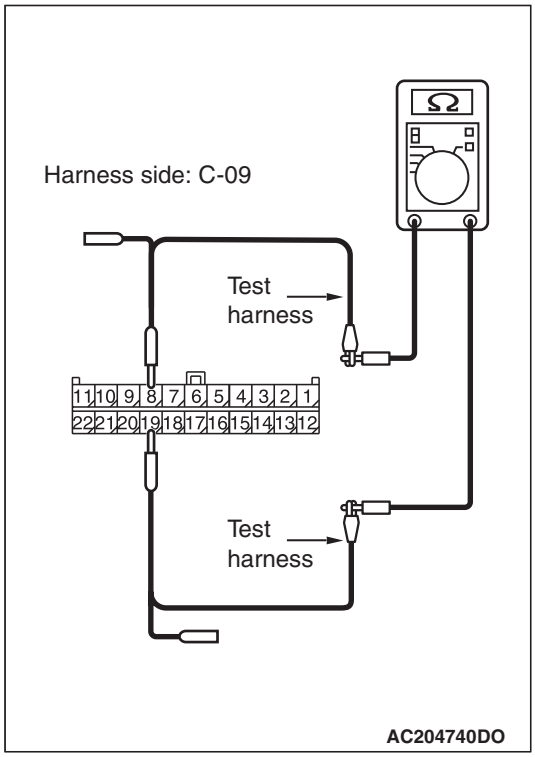
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



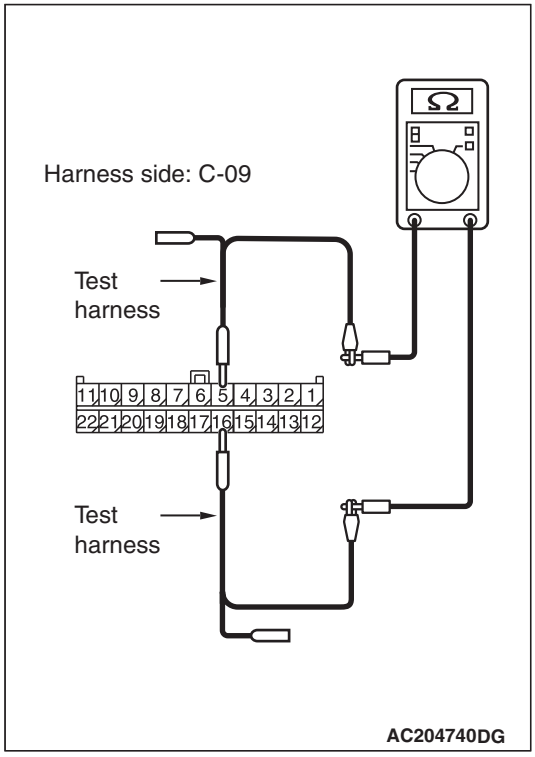
(4) Resistance between C-09 joint connector (CAN2) terminal Nos. 6 and 17

OK: 120± 20 Ω



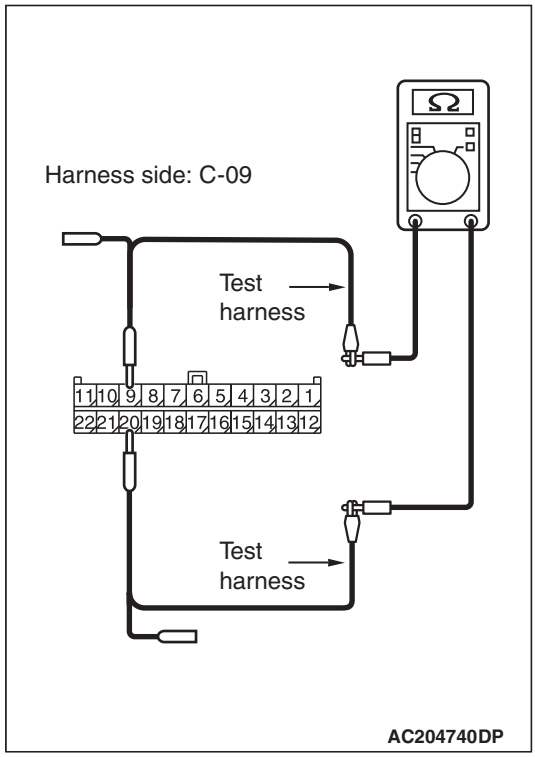
(5) Resistance between C-09 joint connector (CAN2) terminal Nos. 8 and 19

OK: 1 kΩ or more

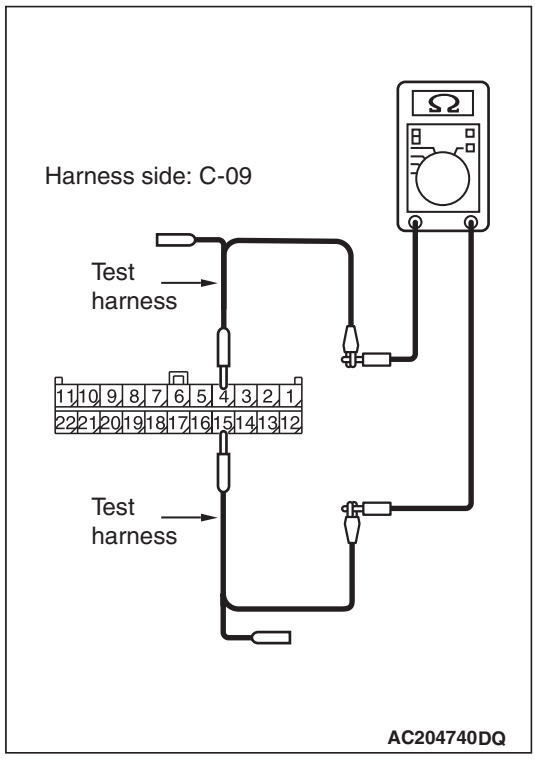


(6) Resistance between C-09 joint connector (CAN2)

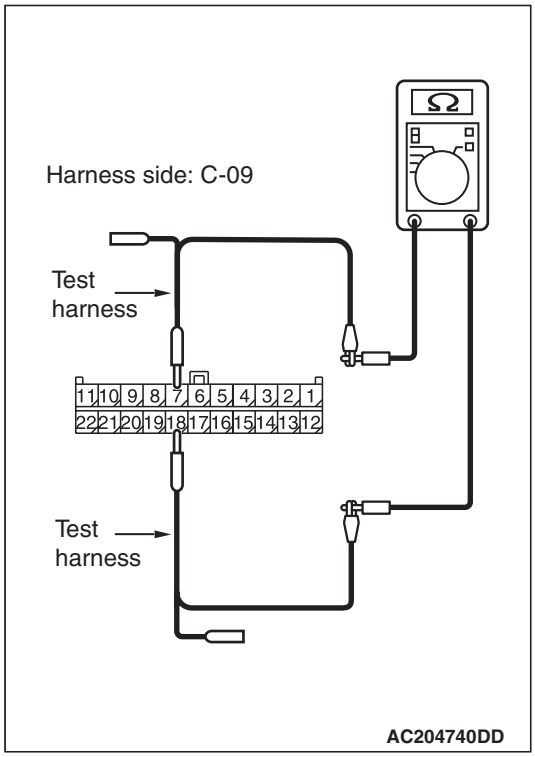
terminal Nos. 5 and 16
OK: 1 kΩ or more



(7) Resistance between C-09 joint connector (CAN2) terminal Nos. 9 and 20
OK: 1 kΩ or more



(8) Resistance between C-09 joint connector (CAN2) terminal Nos. 4 and 15
OK: 1 kΩ or more

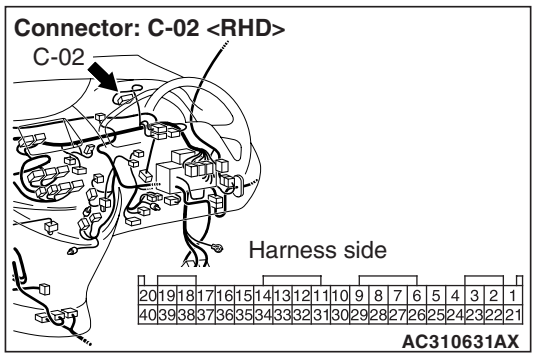


(9) Resistance between C-09 joint connector (CAN2) terminal Nos. 7 and 18
OK: 1 kΩ or more

Q: Are the check result normal?
YES <all of the measurement results are within the normal value> : Go to Step 25.
NO <The resistance between terminal Nos. 6 and 17 is less than 120±20 Ω> : Go to Step 5.
NO <The resistance between terminal Nos. 8 and 19 is less than 1 kΩ> : Go to Step 8.
NO <The resistance between terminal Nos. 5 and 16 is less than 1 kΩ> : Go to Step 11.
NO <The resistance between terminal Nos. 9 and 20 is less than 1 kΩ> : Go to Step 14.
NO <The resistance between terminal Nos. 4 and 15 is less than 1 kΩ> : Go to Step 20.
NO <The resistance between terminal Nos. 7 and 18 is less than 1 kΩ> : Go to Step 23.

STEP 5. Connector check: C-02 combination meter connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?
YES : Go to Step 6.
NO : Repair the defective connector.

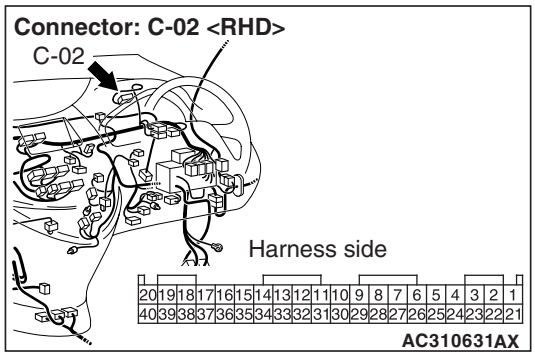
STEP 6. Resistance measurement at C-09 joint connector (CAN2).

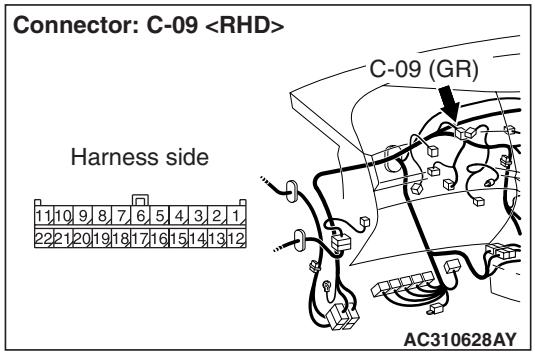
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



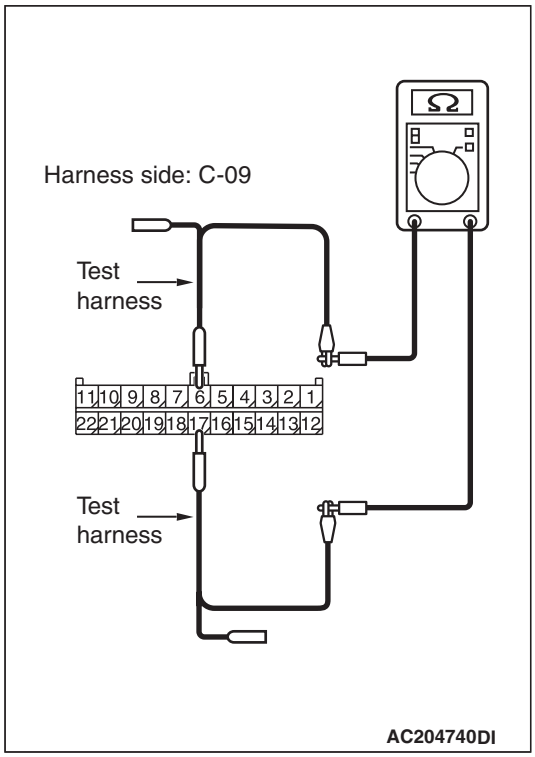


(1) Disconnect the joint connector (CAN2) and the combination meter connector, and measure at the wiring harness side.
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal Nos. 6 and 17

OK: More than 2 Ω

⚠ CAUTION

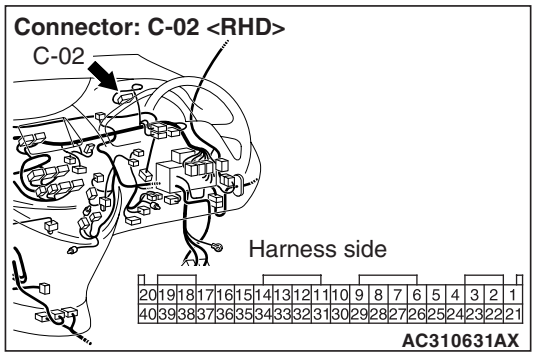
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <More than 2 Ω> Go to Step 7.
NO : <2 Ω or less> Repair the wiring harness between joint connector (CAN2) and the combination meter connector.

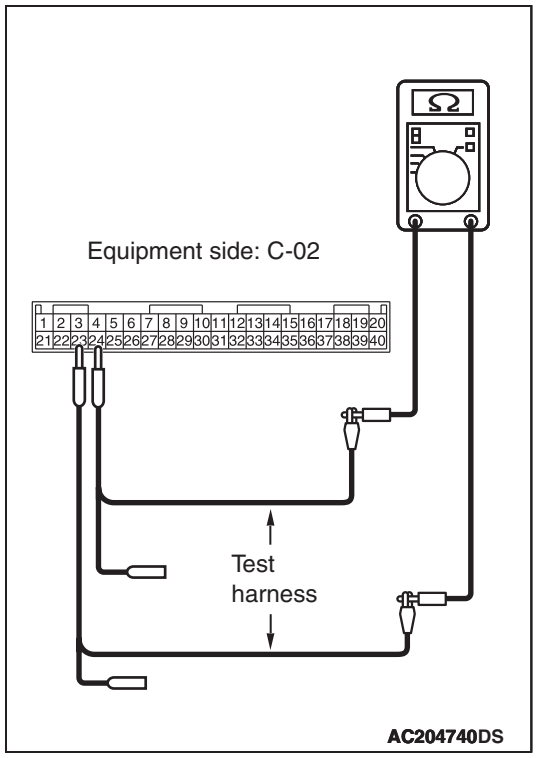
STEP 7. Resistance measurement at C-02 combination meter connector.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.



(1) Remove the combination meter, and measure at the equipment side.



(2) Resistance between C-02 combination meter connector terminal Nos. 23 and 24

OK: 120± 20 Ω

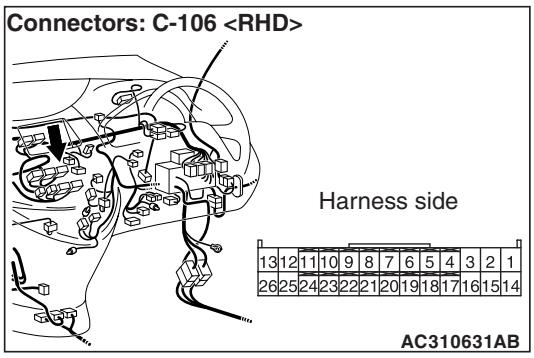
Q: Is the check result normal?

YES : <Within 120± 20 Ω> Follow diagnostic item 19, Diagnose CAN bus lines thoroughly. Refer to P.54D-502.

NO : <Not within 120± 20 Ω> Replace the combination meter.

STEP 8. Connector check: C-106 A/C-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 9.

NO : Repair the defective connector.

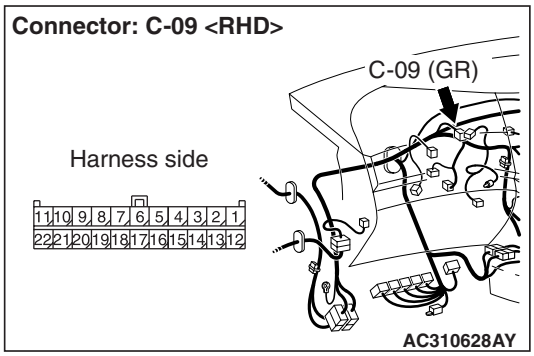
STEP 9. Resistance measurement at C-09 joint connector (CAN2).

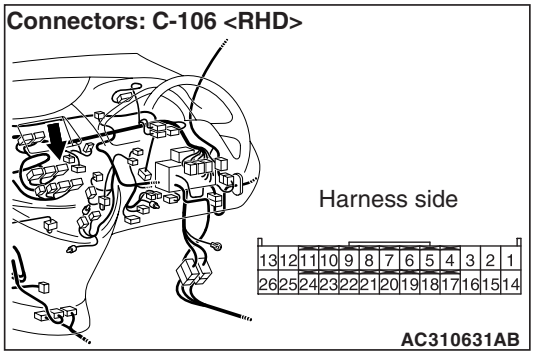
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



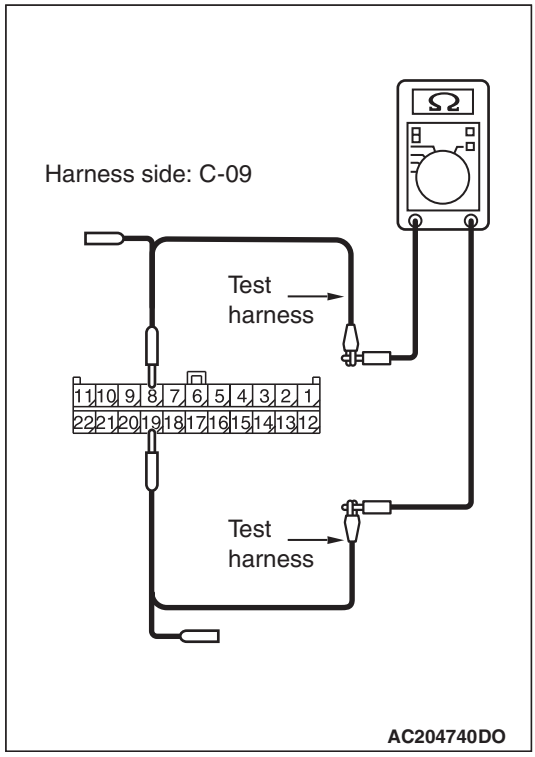


(1) Disconnect the joint connector (CAN2) and the A/C-ECU connector, and measure at the wiring

harness side.
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal Nos. 8 and 19

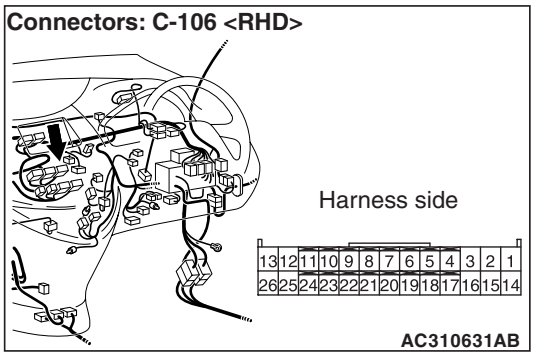
OK: More than 2 Ω

⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

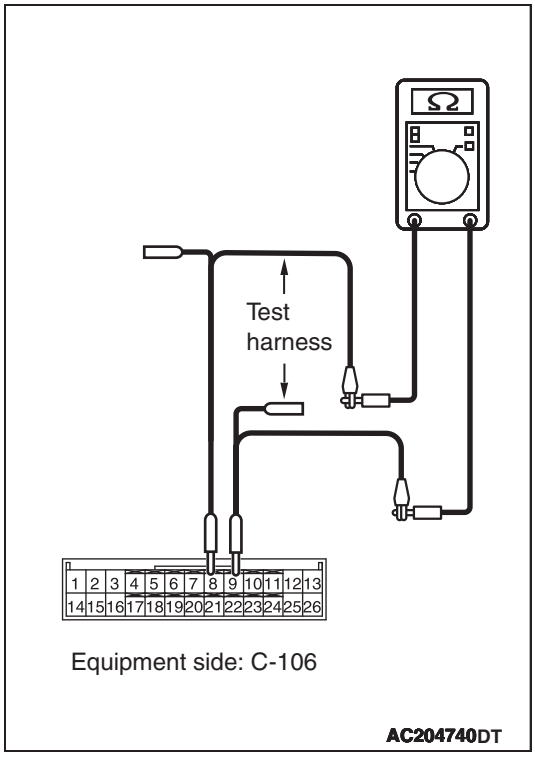
Q: Is the check result normal?
YES : <More than 2 Ω> Go to Step 10.
NO : <2 Ω or less> Repair the wiring harness between joint connector (CAN2) and the A/C-ECU connector.

STEP 10. Resistance measurement at C-106 A/C-ECU connector.

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.



(1) Remove the A/C-ECU, and measure at the equipment side.



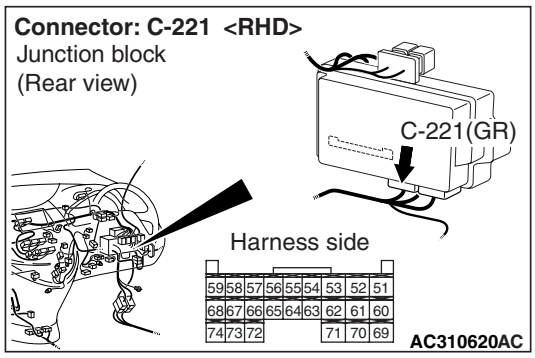
(2) Resistance between C-106 A/C-ECU connector terminal Nos. 8 and 9

OK: 1 kΩ or more

Q: Is the check result normal?
YES : <1 kΩ or more> Follow diagnostic item 19, Diagnose CAN bus lines thoroughly. Refer to P.54D-502.
NO : <Less than 1 kΩ> Replace the A/C-ECU.

STEP 11. Connector check: C-221 ETACS-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?
YES : Go to Step 12.
NO : Repair the defective connector.

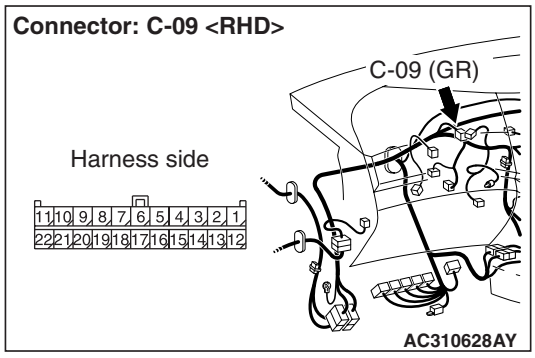
STEP 12. Resistance measurement at C-09 joint connector (CAN2).

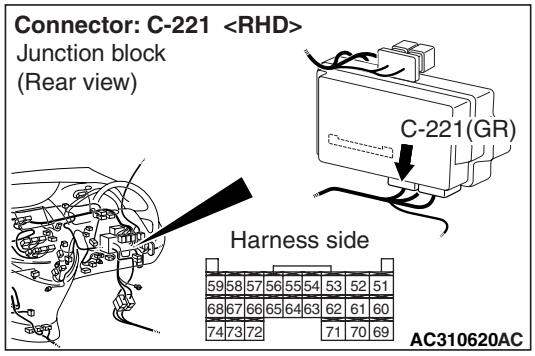
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



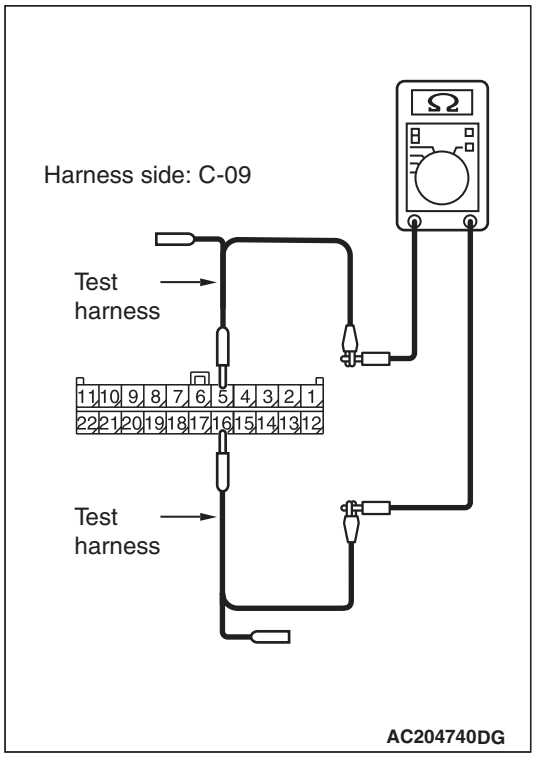


(1) Disconnect the joint connector (CAN2) and the ETACS-ECU connector, and measure at the wiring harness side.
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal Nos. 5 and 16

OK: More than 2 Ω

⚠ CAUTION

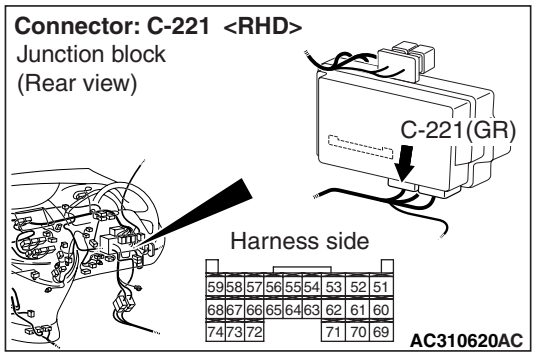
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <More than 2 Ω> Go to Step 13.
NO : <2 Ω or less> Repair the wiring harness between joint connector (CAN2) and the ETACS-ECU connector.

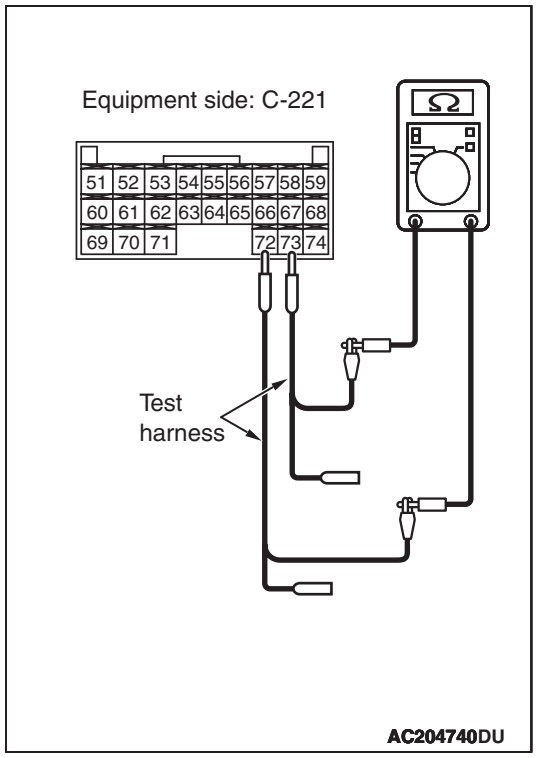
STEP 13. Resistance measurement at C-221 ETACS-ECU connector.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.



(1) Remove the ETACS-ECU, and measure at the equipment side.



(2) Resistance between C-221 ETACS-ECU connector terminal Nos. 72 and 73

OK: 1 kΩ or more

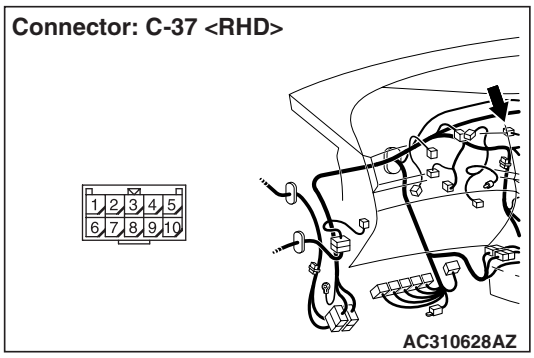
Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 19, Diagnose CAN bus lines thoroughly. Refer to P.54D-502.

NO : <Less than 1 kΩ> Replace the ETACS-ECU.

STEP 14. Connector check: C-37 jumper connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Check that the wiring harness of the jumper connector is not damaged.

Q: Is the check result normal?

YES : Go to Step 15.

NO : Repair the defective connector.

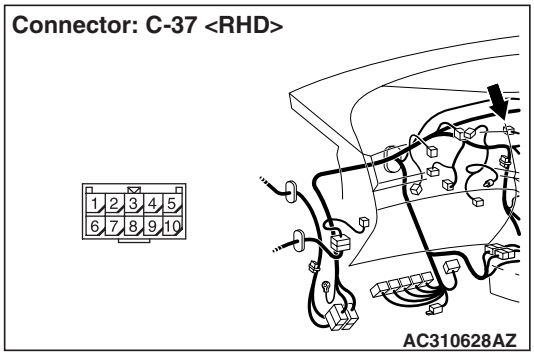
STEP 15. Resistance measurement at the C-37 jumper connector.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the connector, and measure at its jumper connector (at the centre display side).

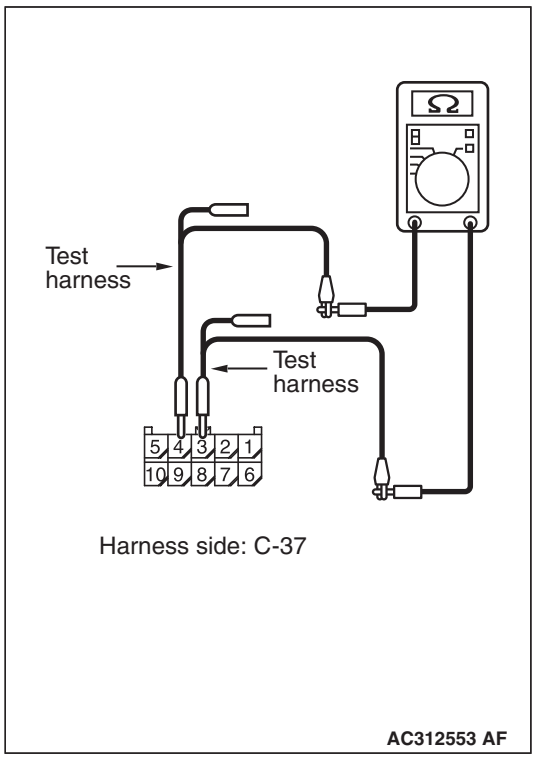
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is

disconnected.



(4) Resistance between C-37 jumper connector terminal Nos. 3 and 4

OK: 1 kΩ or more

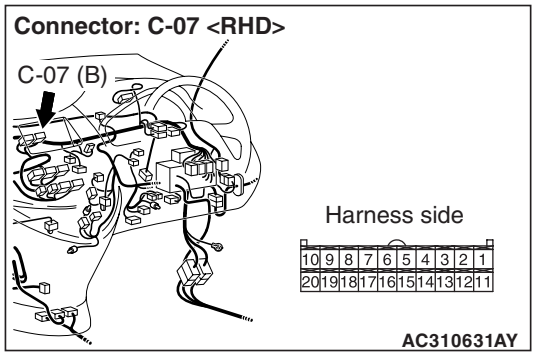
Q: Is the check result normal?

YES : <1 kΩ or more> Go to Step 19 .

NO : <Less than 1 kΩ> Go to Step 16 .

STEP 16. Connector check: C-07 centre display connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 17 .

NO : Repair the defective connector.

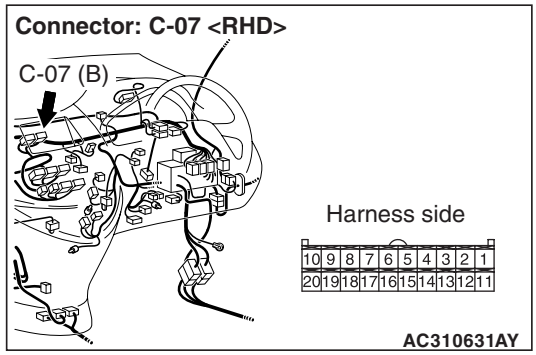
STEP 17. Resistance measurement at the C-37 jumper connector.

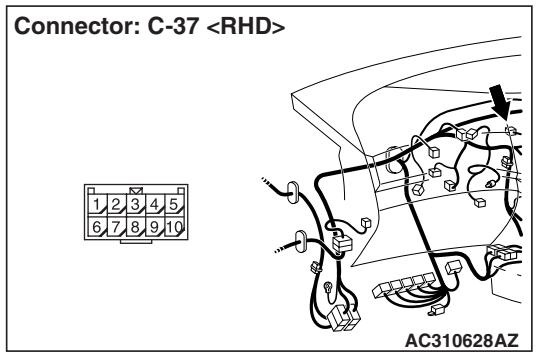
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the centre display connector and the jumper connector, and measure at the jumper connector (at the centre display side).

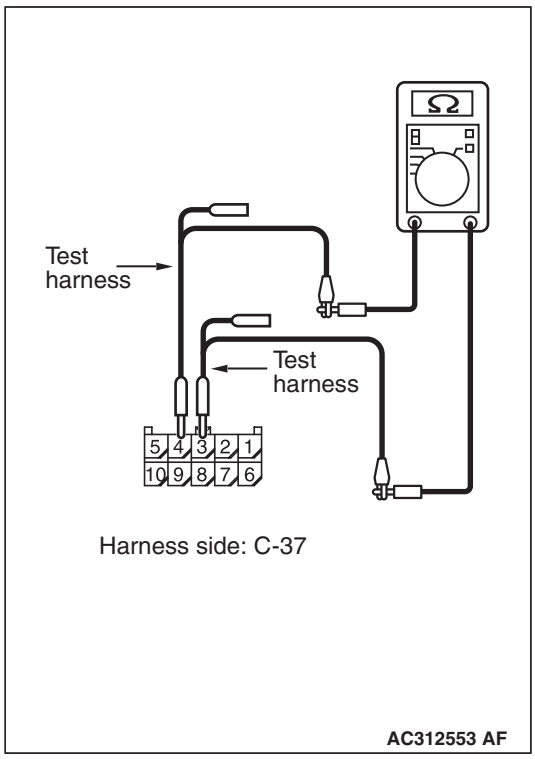
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is

disconnected.



(4) Resistance between C-37 jumper connector terminal Nos. 3 and 4

OK: More than 2 Ω

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?

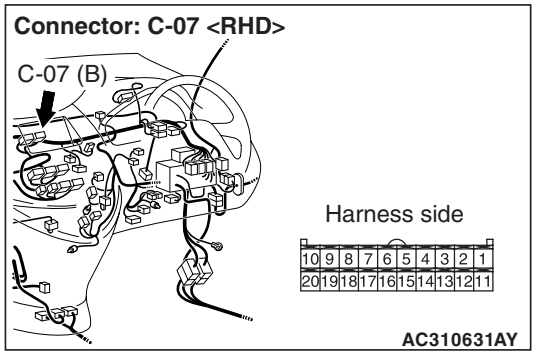
YES : <More than 2 Ω> Go to Step 18.

NO : <2 Ω or less> Repair the wiring harness between the jumper connector and the centre display connector.

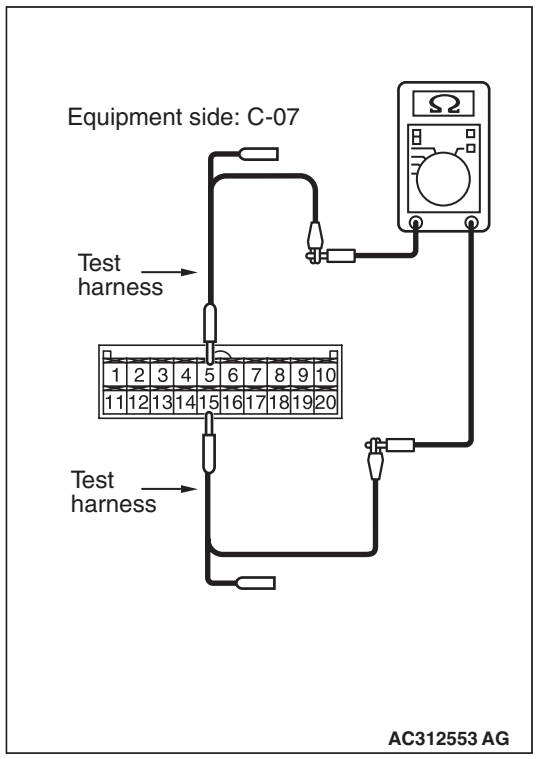
STEP 18. Resistance measurement at C-07 centre display connector.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.



(1) Remove the centre display connector, and measure at the equipment side.



(2) Resistance at C-07 centre display connector terminal Nos. 5 and 15

OK: 1 kΩ or more

Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 19, Diagnose CAN bus lines thoroughly. Refer to P.54D-502.

NO : <Less than 1 kΩ> Replace the centre display connector.

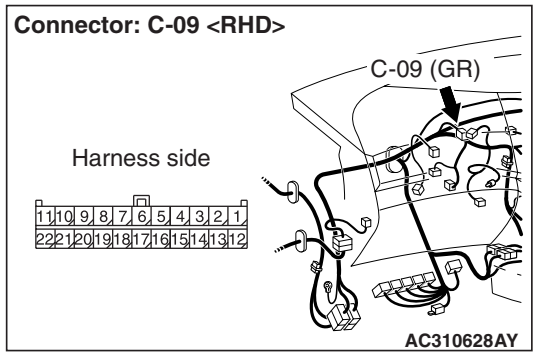
STEP 19. Resistance measurement at the C-09 joint connector (CAN2).

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.

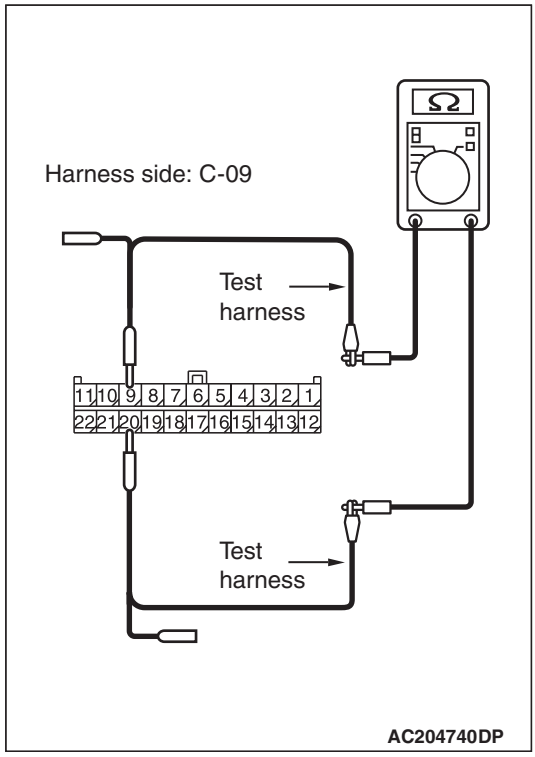


(1) Disconnect the connector, and measure at the

wiring harness side.
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



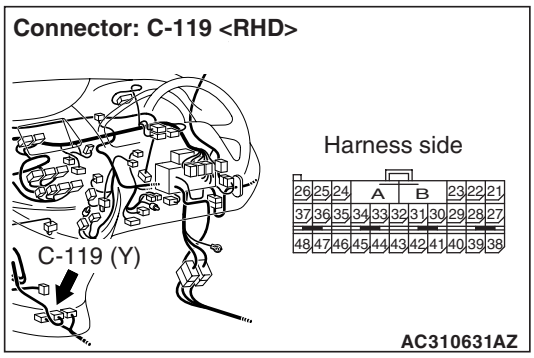
(4) Resistance between C-09 joint connector (CAN2) terminal Nos. 9 and 20

OK: 1 kΩ or more

Q: Is the check result normal?
YES : <1 kΩ or more> Follow diagnostic item 19, Diagnose CAN bus lines thoroughly. Refer to P.54D-502.
NO : <Less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the jumper connector.

STEP 20. Connector check: C-119 SRS-ECU connector

⚠ CAUTION



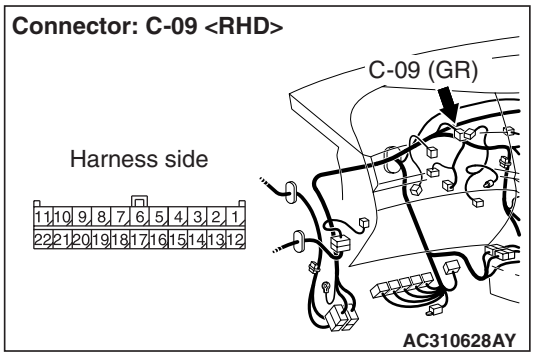
The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

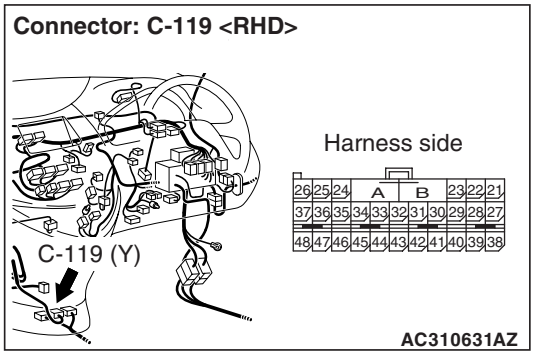
Q: Is the check result normal?
YES : Go to Step 21.
NO : Repair the defective connector.

STEP 21. Resistance measurement at C-09 joint connector (CAN2).

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.



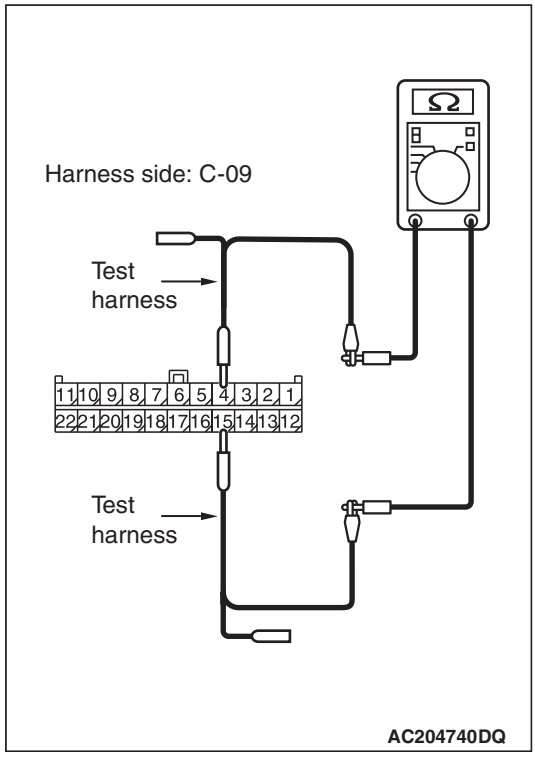


(1) Disconnect the joint connector (CAN2) and the SRS-ECU connector, and measure at the wiring

harness side.
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal Nos. 4 and 15

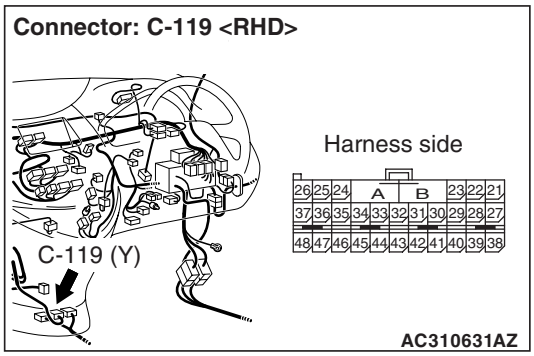
OK: More than 2 Ω

⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

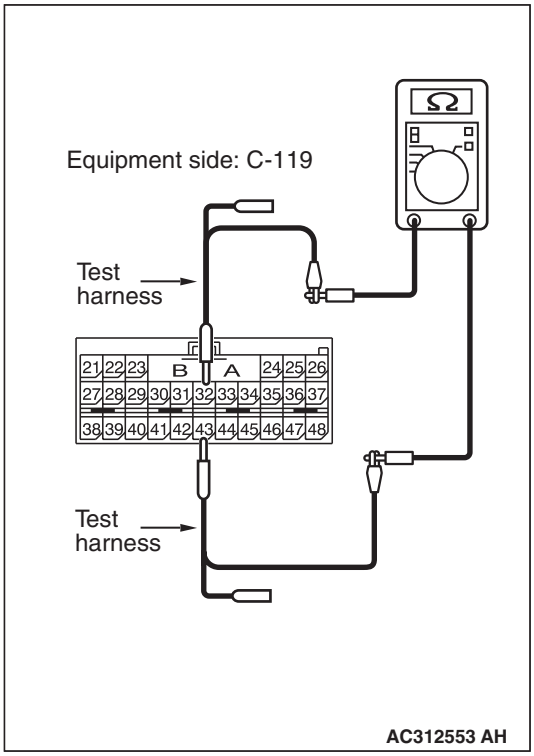
Q: Is the check result normal?
YES : <More than 2 Ω> Go to Step 22.
NO : <2 Ω or less> Repair the wiring harness between joint connector (CAN2) and the SRS-ECU connector.

STEP 22. Resistance measurement at C-119 SRS-ECU connector.

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.



(1) Remove the SRS-ECU, and measure at the equipment side.



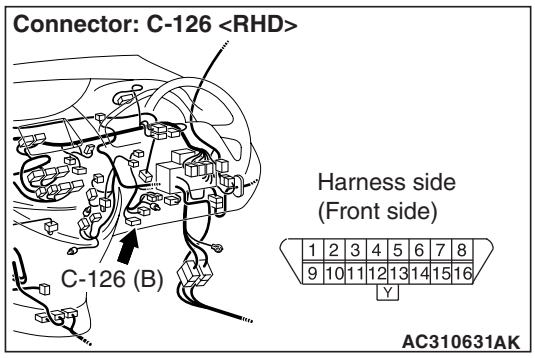
(2) Resistance between C-119 SRS-ECU connector terminal Nos. 32 and 43

OK: 1 kΩ or more

Q: Is the check result normal?
YES : <1 kΩ or more> Follow diagnostic item 19, Diagnose CAN bus lines thoroughly. Refer to P.54D-502.
NO : <Less than 1 kΩ> Replace the SRS-ECU.

STEP 23. Connector check: C-126 diagnosis connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?
YES : Go to Step 24.
NO : Repair the defective connector.

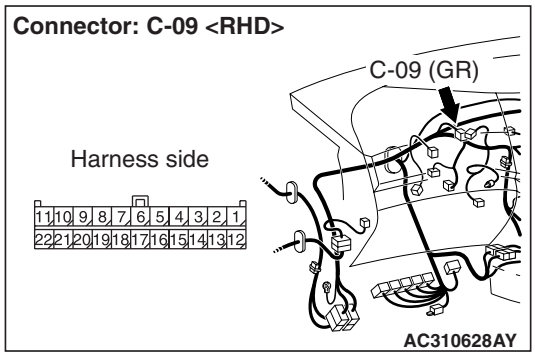
STEP 24. Resistance measurement at C-09 joint connector (CAN2).

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



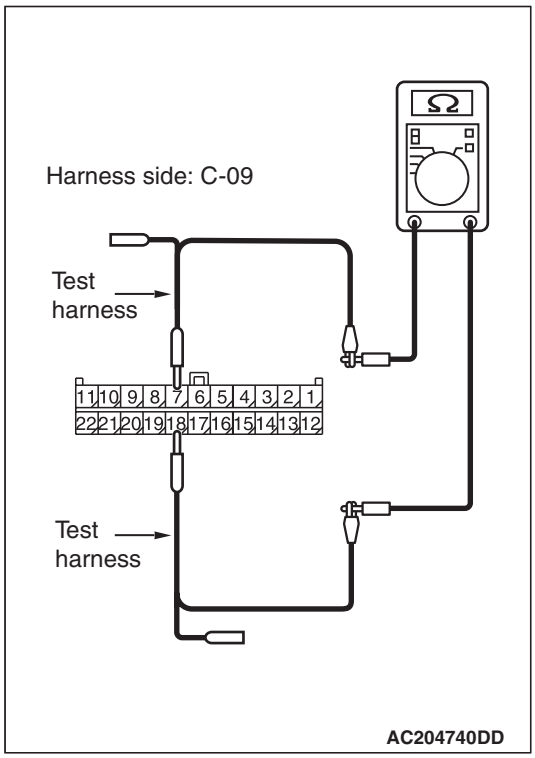
(1) Disconnect the joint connector (CAN2), and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal Nos. 7 and 18

OK: More than 2 Ω

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <2 more than Ω> Follow diagnostic item 19, Diagnose CAN bus lines thoroughly. Refer to P.54D-502.
NO : <2 Ω or less> Repair the wiring harness between joint connector (CAN2) and the diagnosis connector.

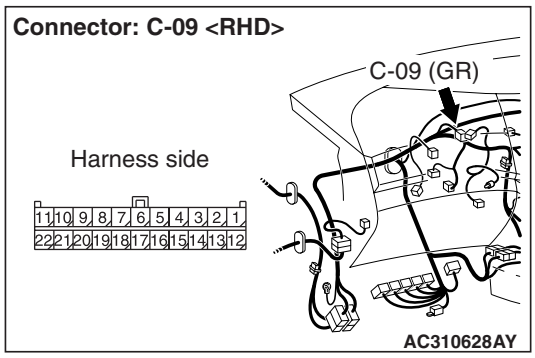
STEP 25. Resistance measurement at C-09 joint connector (CAN2).

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.

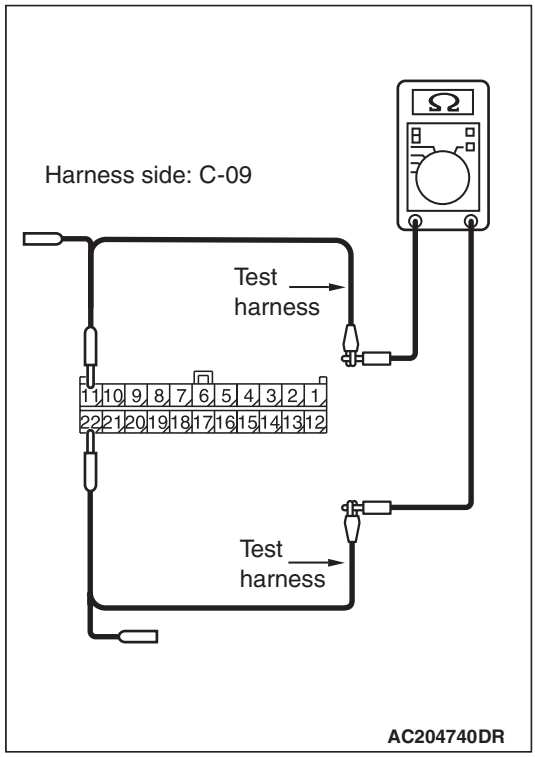


(1) Disconnect the joint connector (CAN2) and the intermediate connector, and measure at the wiring harness side.
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal Nos. 11 and 22

OK: More than 2 Ω

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?

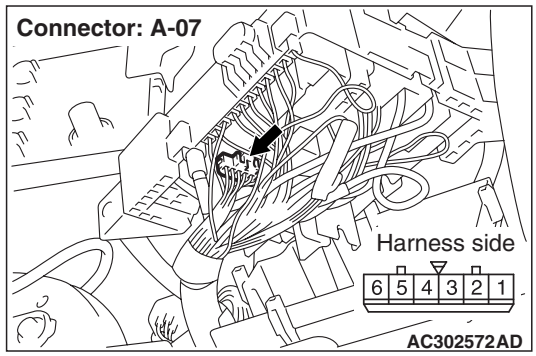
YES : <2 more than Ω> Follow diagnostic item 19, Diagnose CAN bus lines thoroughly. Refer to P.54D-502.

NO : <2 Ω or less> Repair the wiring harness between joint connector (CAN2) and the intermediate connector.

STEP 26. Connector check: A-07 joint connector (CAN1)

NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

When checking the joint connector, ensure that its wiring harness side is not damaged.

Q: Is the check result normal?

YES : Go to Step 27.

NO : Repair a defective connector or replace the joint connector (front wiring harness assembly).

STEP 27. Resistance measurement at the A-07 joint connector (CAN1).

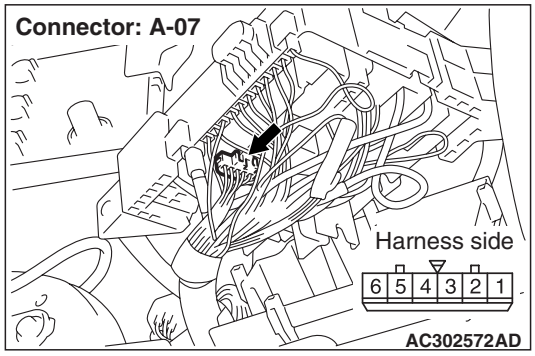
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



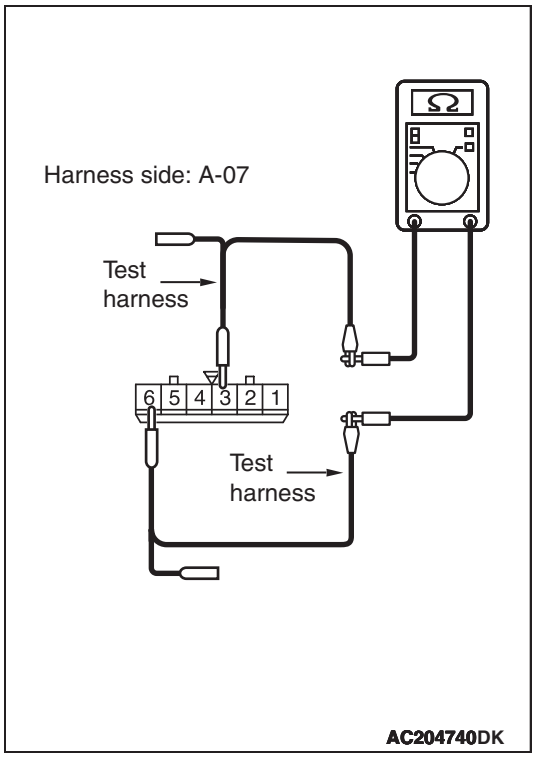
(1) Disconnect the connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

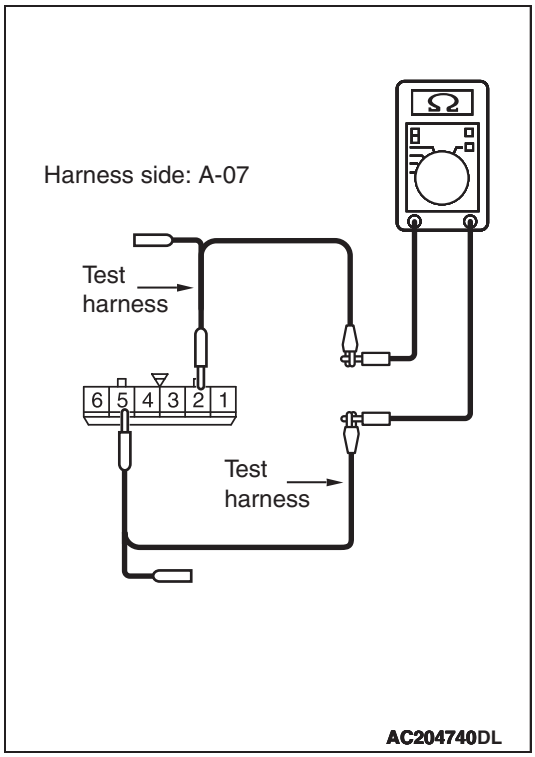
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Resistance between A-07 joint connector (CAN1) terminal Nos. 3 and 6

OK: 120± 20 Ω



(5) Resistance between A-07 joint connector (CAN1) terminal Nos. 2 and 5

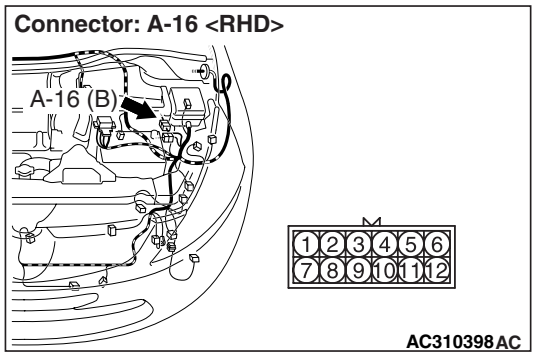
OK: 1 kΩ or more

Q: Are the check result normal?

YES <all of the measurement results are within the normal value> : Go to Step 37.
NO <The resistance between terminal Nos. 3 and 6 is less than 120±20 Ω> : Go to Step 28.
NO <The resistance between terminal Nos. 2 and 5 is less than 1 kΩ> : Go to Step 34.

STEP 28. Connector check: A-16 intermediate connector

⚠ CAUTION



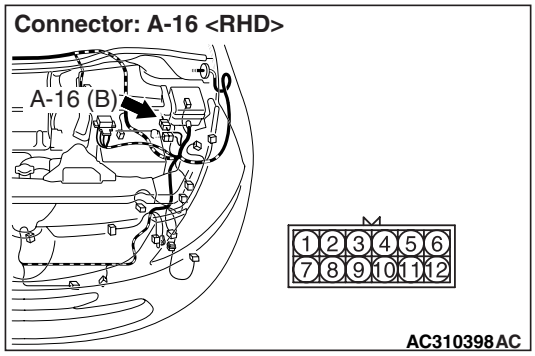
The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?
YES : Go to Step 29.
NO : Repair the defective connector.

STEP 29. Resistance measurement at the A-16 intermediate connector.

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

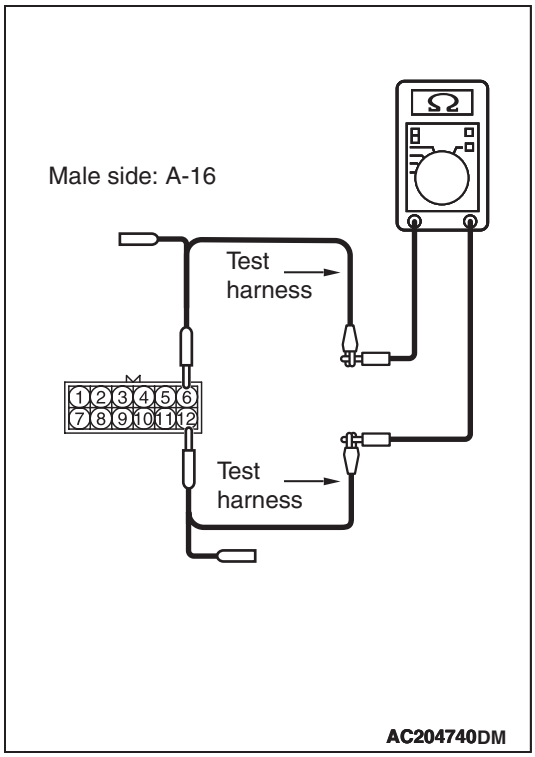
⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the connector, and measure at its male-side intermediate connector (at the control wiring harness side).
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.

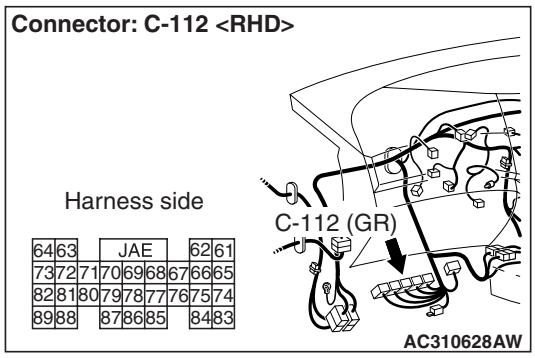


(4) Resistance between A-16 intermediate connector terminal Nos. 6 and 12
OK: 120± 20 Ω

Q: Is the check result normal?
YES : <Within 120± 20 Ω> Go to Step 33 .
NO : <Not within 120± 20 Ω> Go to Step 30.

STEP 30. Connector check: C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?
YES : Go to Step 31.
NO : Repair the defective connector.

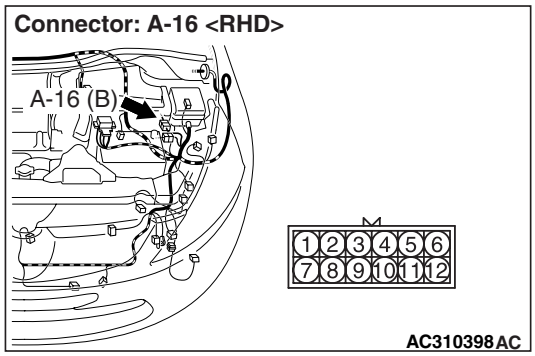
STEP 31. Resistance measurement at the A-16 intermediate connector.

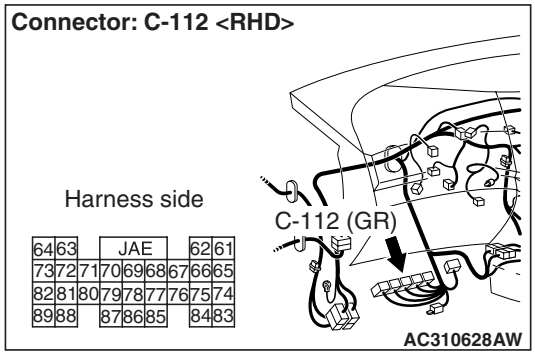
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



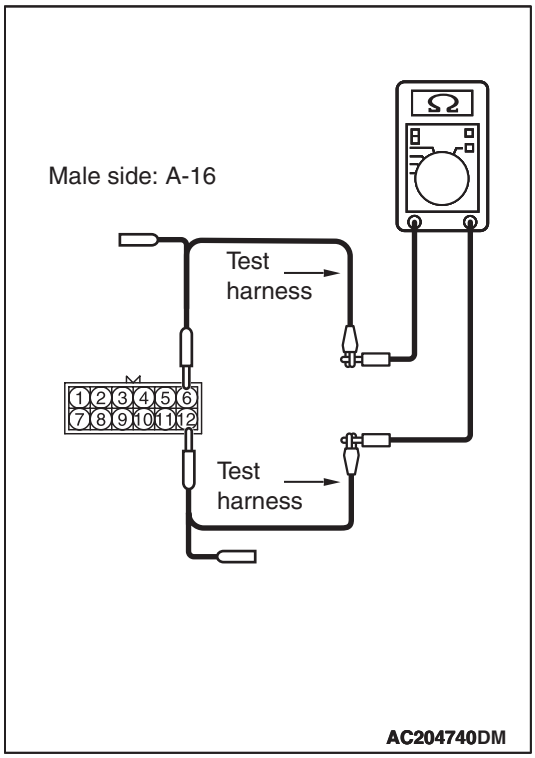


(1) Disconnect the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector and the intermediate connector, and measure at the wiring harness side.
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Resistance between A-16 intermediate connector terminal Nos. 6 and 12
OK: More than 2 Ω

⚠ CAUTION

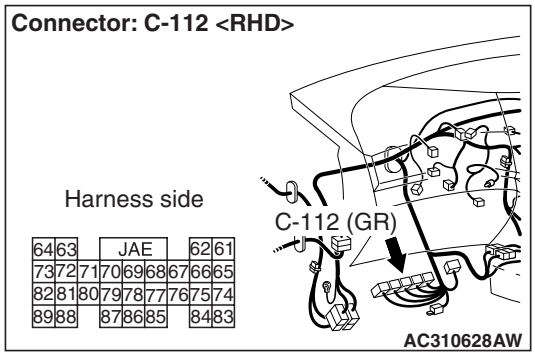
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <More than 2 Ω> Go to Step 32.
NO : <2 Ω or less> Repair the wiring harness between the intermediate connector and the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector.

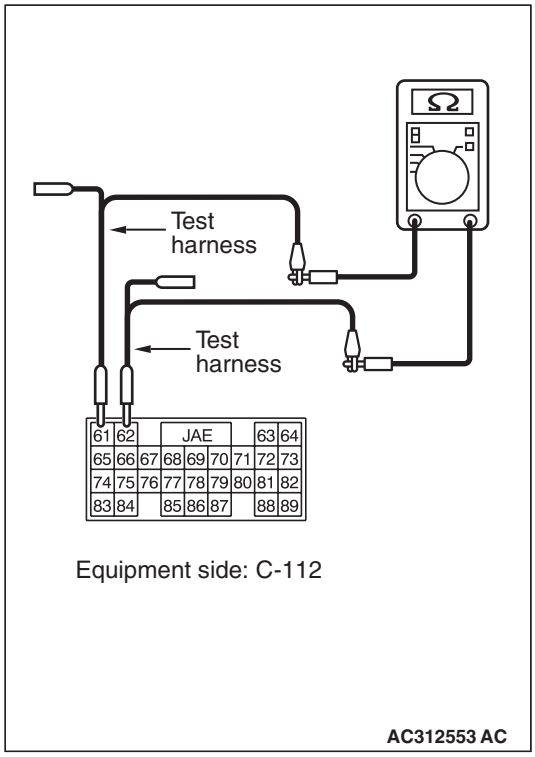
STEP 32. Resistance measurement at C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.



(1) Remove the engine-ECU <M/T> or engine-A/T-ECU <A/T>, and measure at the equipment side.



(2) Resistance at C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector terminal Nos. 61 and 62

OK: 120± 20 Ω

Q: Is the check result normal?

YES : <Within 120± 20 Ω> Follow diagnostic item 19, Diagnose CAN bus lines thoroughly. Refer to P.54D-502.

NO : <Not within 120± 20 Ω> Replace the engine-ECU <M/T> or engine-A/T-ECU <A/T>.

STEP 33. Resistance measurement at the A-07 joint connector (CAN1).

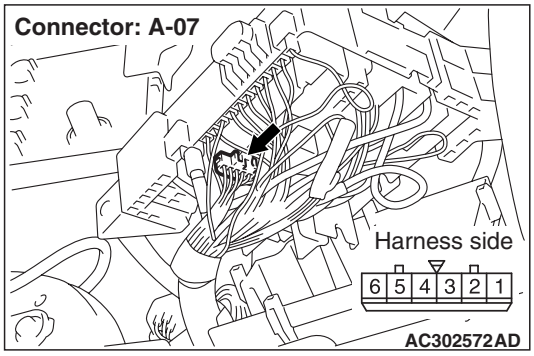
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the connector, and measure at the wiring harness side.

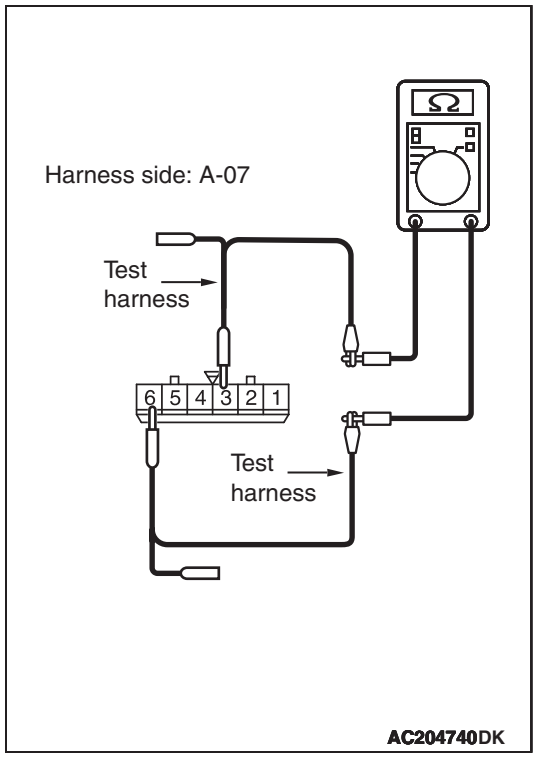
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is

disconnected.



(4) Resistance between A-07 joint connector (CAN1) terminal Nos. 3 and 6

OK: 120± 20 Ω

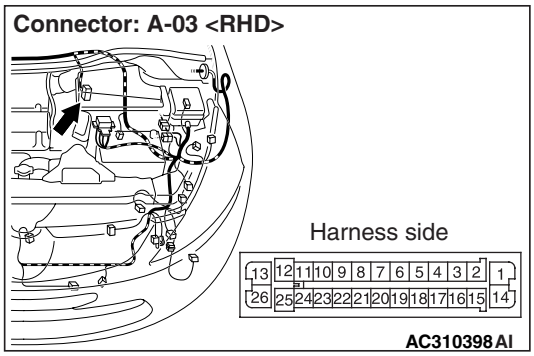
Q: Is the check result normal?

YES : <All the measurement results are within the normal value> Follow diagnostic item 19 "Diagnose CAN bus lines thoroughly." Refer to P.54D-502.

NO : <The resistance between terminal Nos. 3 and 6 measures less than 120 ± 20 Ω> Repair the wiring harness between the joint connector (CAN1) and the intermediate connector.

STEP 34. Connector check: A-03 ABS-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 35.

NO : Repair the defective connector.

STEP 35. Resistance measurement at the A-07 joint connector (CAN1).

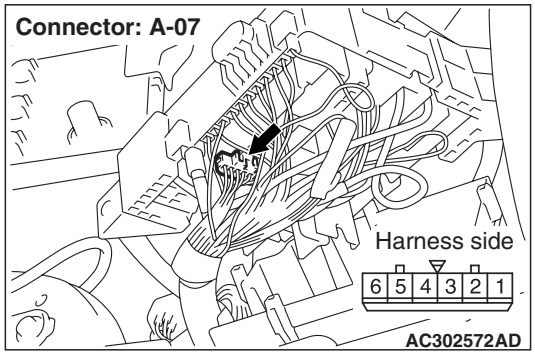
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

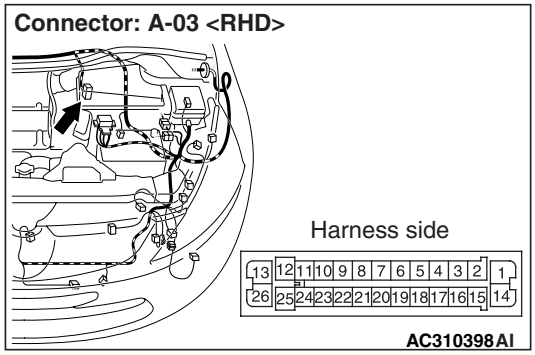
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





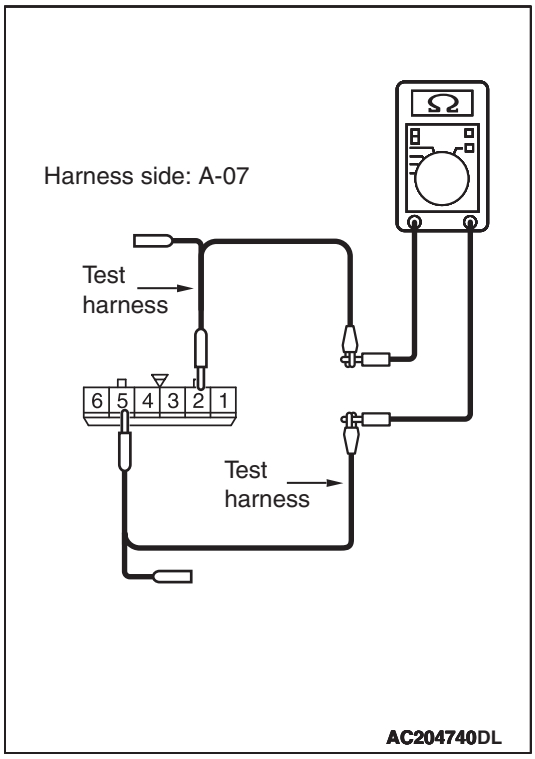
(1) Disconnect the joint connector (CAN1) and the ABS-ECU connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between A-07 joint connector (CAN1) terminal Nos. 2 and 5

OK: More than 2 Ω

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?

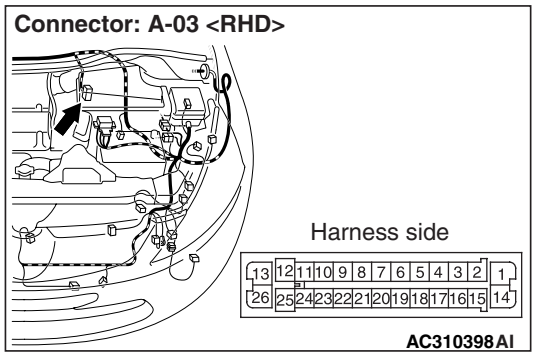
YES : <More than 2 Ω> Go to Step 36.

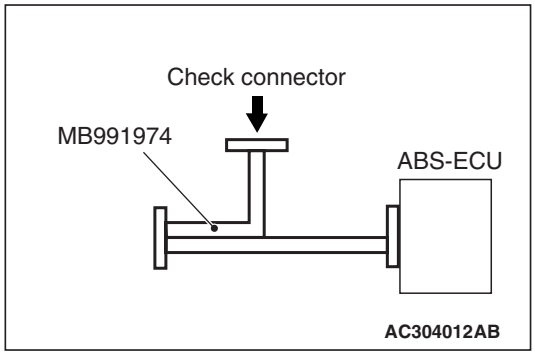
NO : <2 Ω or less> Repair the wiring harness between joint connector (CAN1) and the ABS-ECU connector.

STEP 36. Resistance measurement at A-03 ABS-ECU connector.

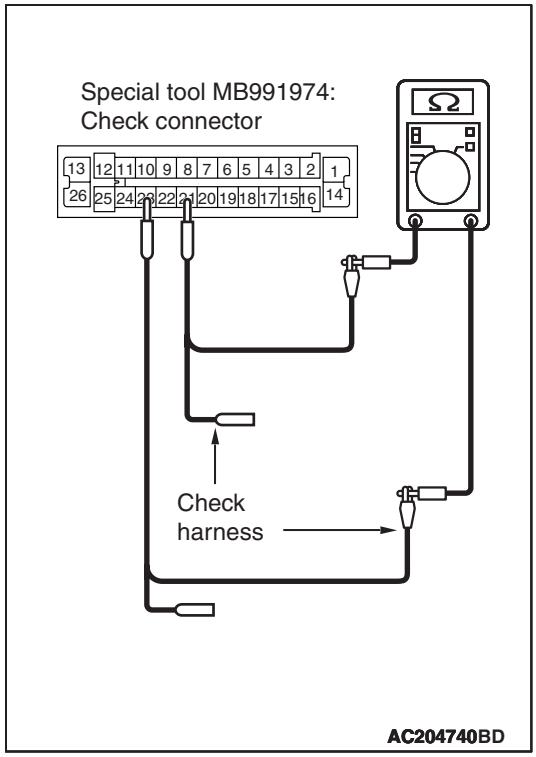
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.





(1) Connect special tool MB991974 to the ABS-ECU connector, and measure by using the check connector (connect the ECU side only).



(2) Resistance between special tool MB991974 check connector terminal Nos. 21 and 23.

OK: 1 kΩ or more

Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 19, Diagnose CAN bus lines thoroughly. Refer to P.54D-502.

NO : <Less than 1 kΩ> Replace the ABS-ECU.

STEP 37. Resistance measurement at the A-07 joint connector (CAN1).

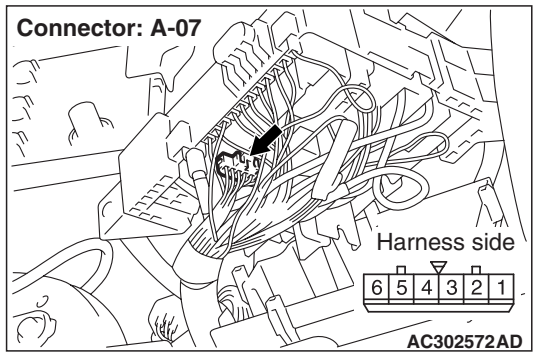
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

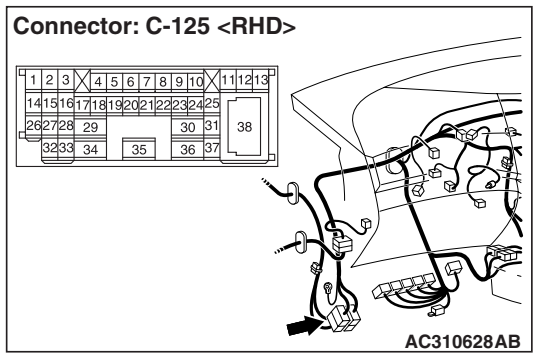
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN1) and the intermediate connector, and measure at the wiring harness side.

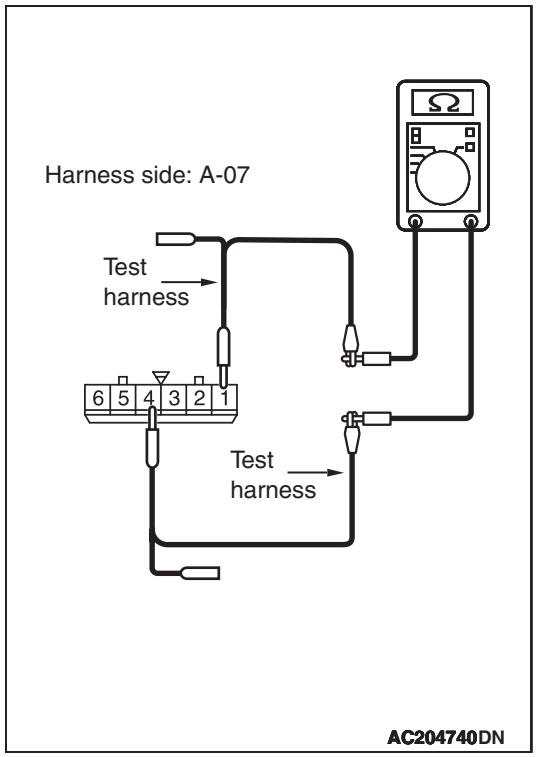
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is

disconnected.



(4) Measure the continuity between A-07 joint connector (CAN1) terminal Nos. 1 and 4.

OK: More than 2 Ω

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

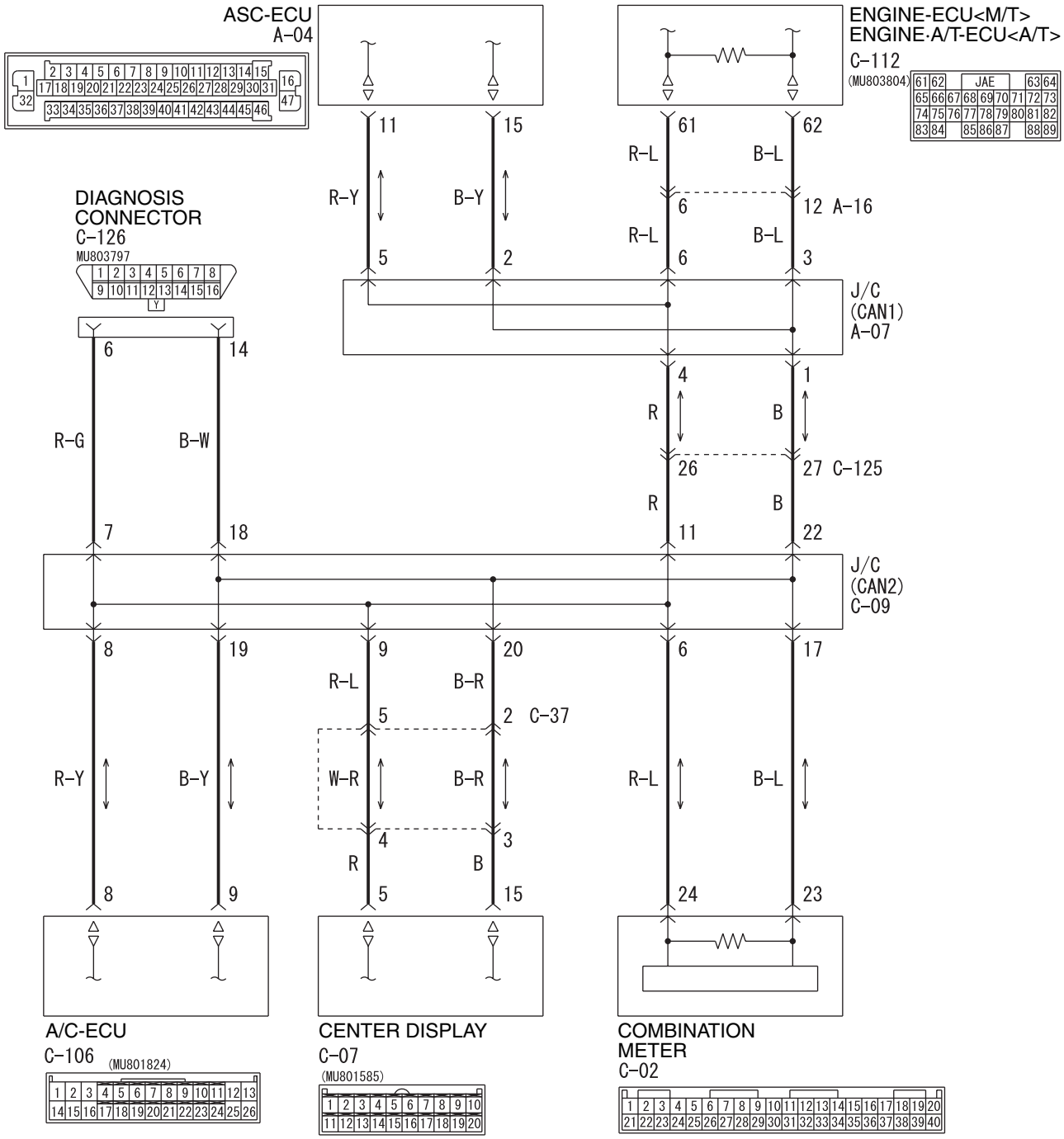
Q: Is the check result normal?

YES : <2 more than Ω> Follow diagnostic item 19, Diagnose CAN bus lines thoroughly. Refer to P.54D-502.

NO : <2 Ω or less> Repair the wiring harness between joint connector (CAN1) and the intermediate connector.

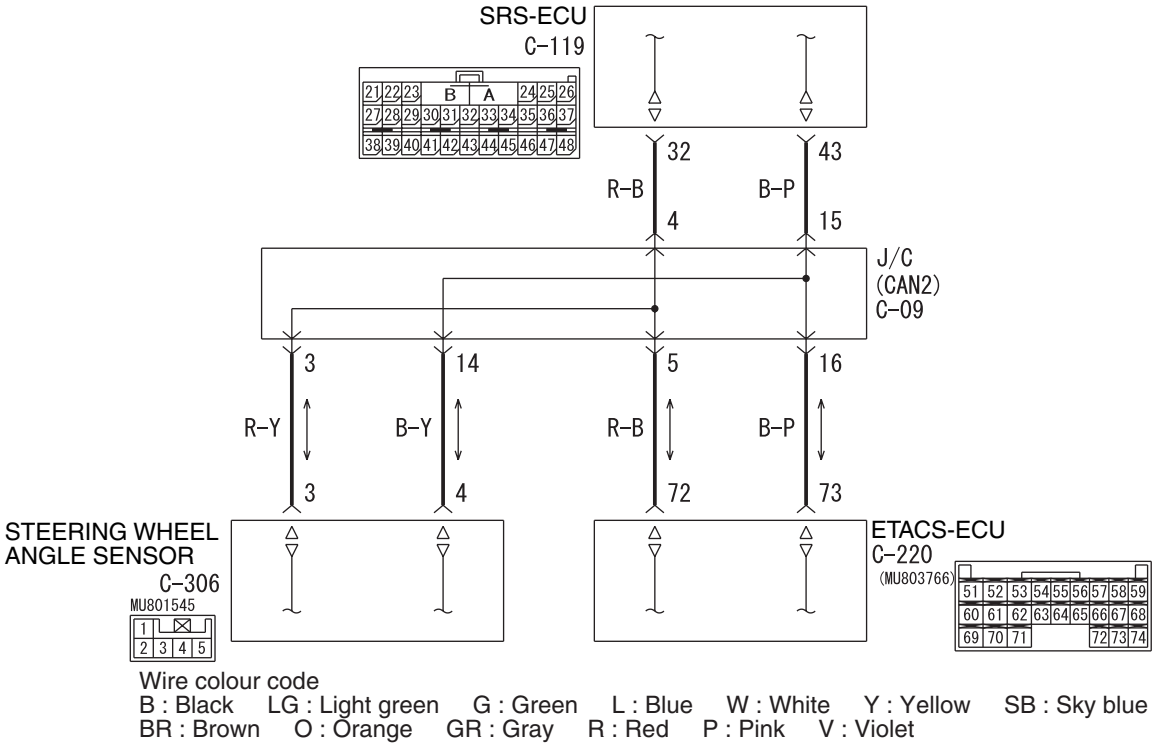
Diagnostic Item 12: Diagnose the lines between CAN_L and CAN_H for short circuit <RH drive vehicles with ASC>

⚠ CAUTION
When servicing a CAN bus line, earth yourself by touching a metal object such as an unpainted water pipe. If you fail to do, a component connected to the CAN bus line may be broken.



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E24AA



W4X54E25AA

TROUBLE JUDGMENT

Short circuit may be present between the CAN_L and H lines when the resistance between the CAN bus lines (CAN_L and H lines) is less than 2 Ω.

COMMENTS ON TROUBLE SYMPTOM

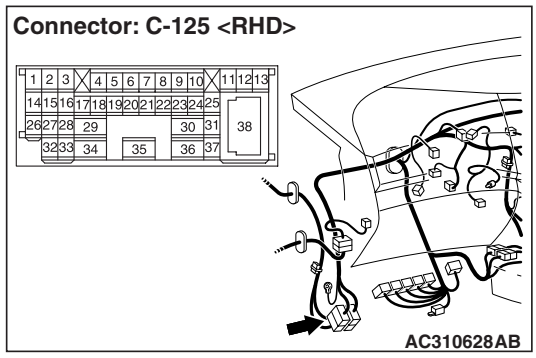
The wiring harness wire or connectors may have loose, corroded, or damage terminals, or terminals pushed back in the connector, or a ECU may be defective.

TROUBLESHOOTING HINTS

- Damaged harness wires and connectors
- Malfunction of the ETACS-ECU
- Malfunction of the combination meter
- Malfunction of the A/C-ECU
- Malfunction of the SRS-ECU
- Malfunction of the multi-centre display
- Malfunction of the steering wheel angle sensor
- Malfunction of the ASC-ECU
- Malfunction of the engine-ECU <M/T> or engine-A/T-ECU<A/T>

DIAGNOSTIC PROCEDURE

STEP 1. Connector check: C-125 intermediate connector



⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair the defective connector.

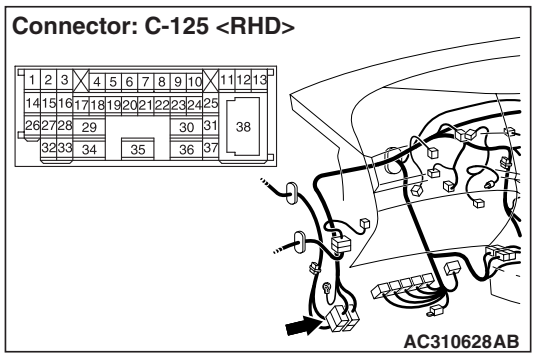
STEP 2. Resistance measurement at the C-125 intermediate connector.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



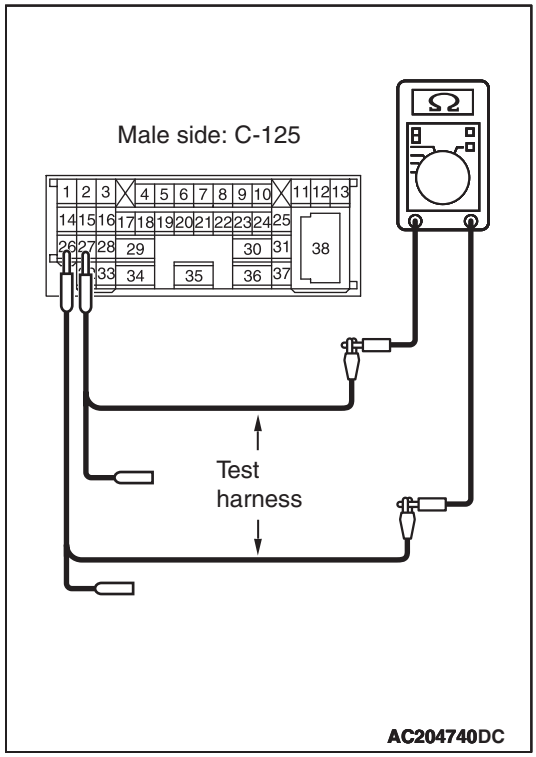
(1) Disconnect the connector, and measure at its male-side intermediate connector (at the front wiring harness side).

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Resistance between C-125 intermediate connector terminal Nos.26 and 27

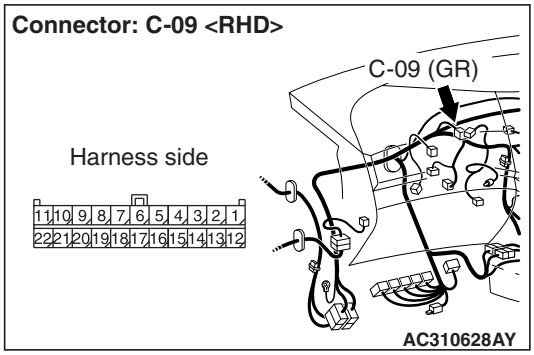
OK: 120± 20 Ω

Q: Is the check result normal?

YES : <Within 120± 20 Ω> Go to Step 3 .

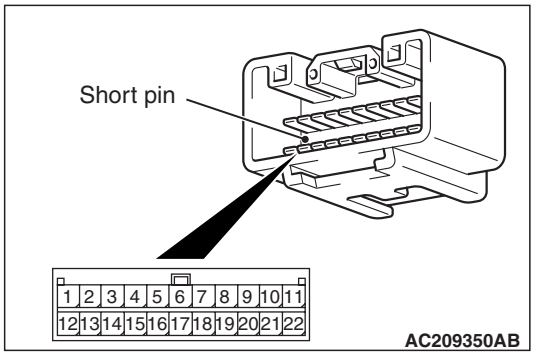
NO : <Not within 120± 20 Ω> Go to Step 29 .

STEP 3. Connector check: C-09 joint connector (CAN2)



⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.



When checking the joint connector, ensure that its wiring harness side and its short pins are not damaged.

Q: Is the check result normal?

YES : Go to Step 4.

NO : Repair a defective connector or replace the joint connector.

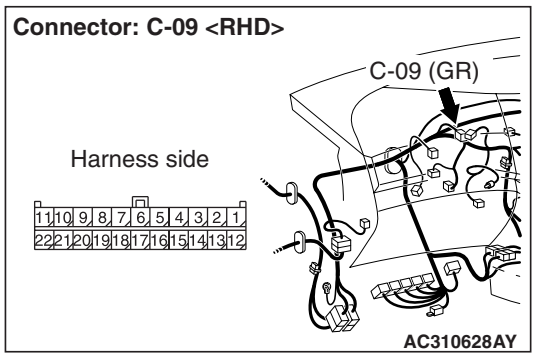
STEP 4. Resistance measurement at C-09 joint connector (CAN2).

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.

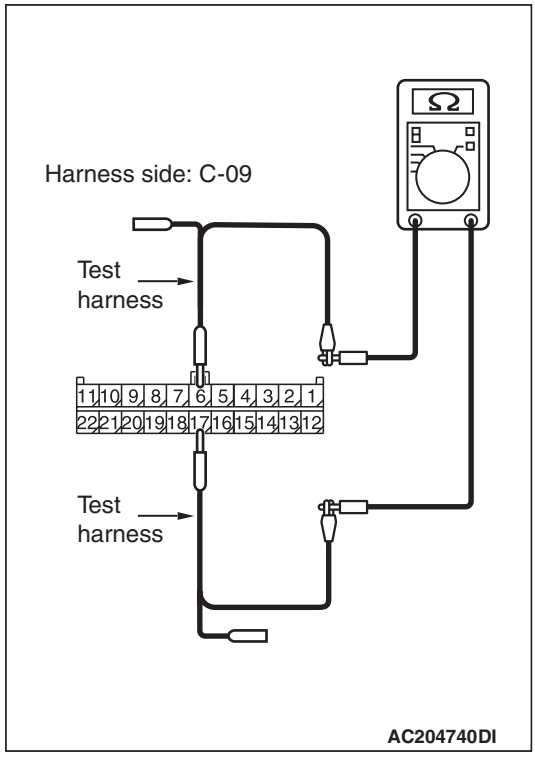


(1) Disconnect the connector, and measure at the wiring harness side.
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

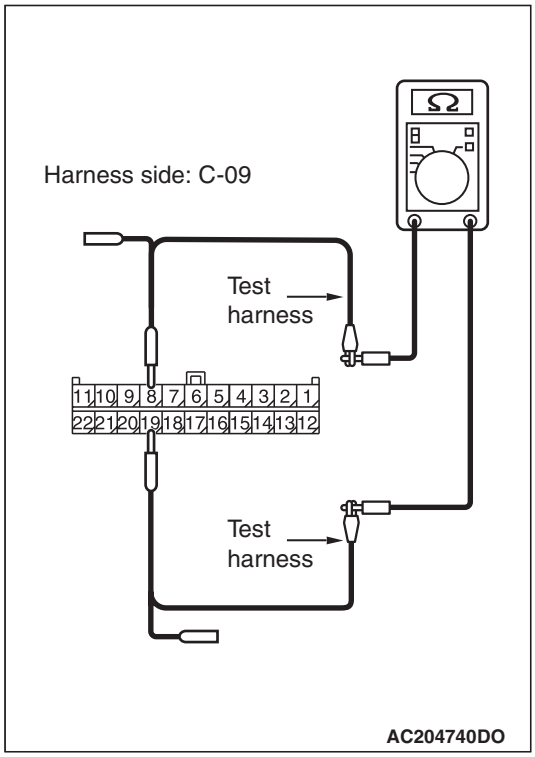
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



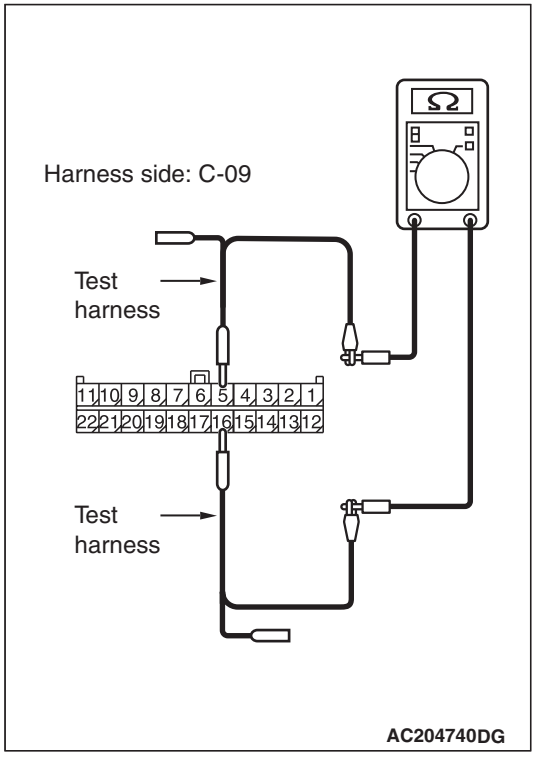
(4) Resistance between C-09 joint connector (CAN2) terminal Nos. 6 and 17

OK: 120± 20 Ω



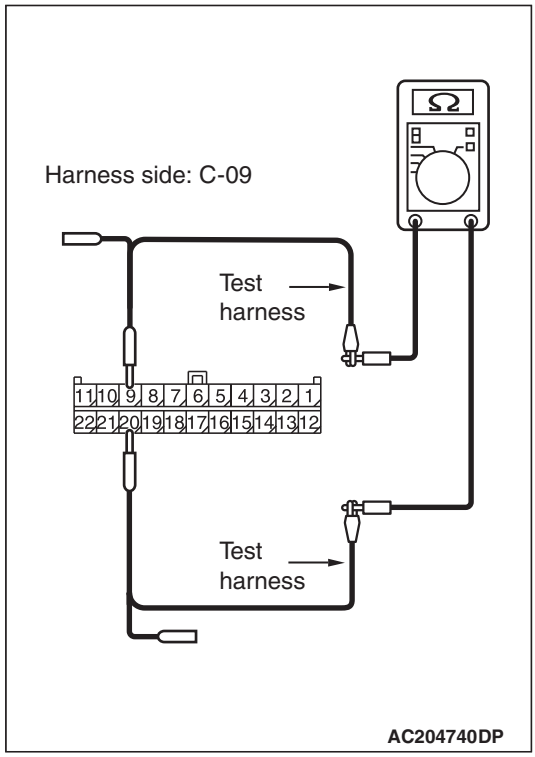
(5) Resistance between C-09 joint connector (CAN2) terminal Nos. 8 and 19

OK: 1 kΩ or more

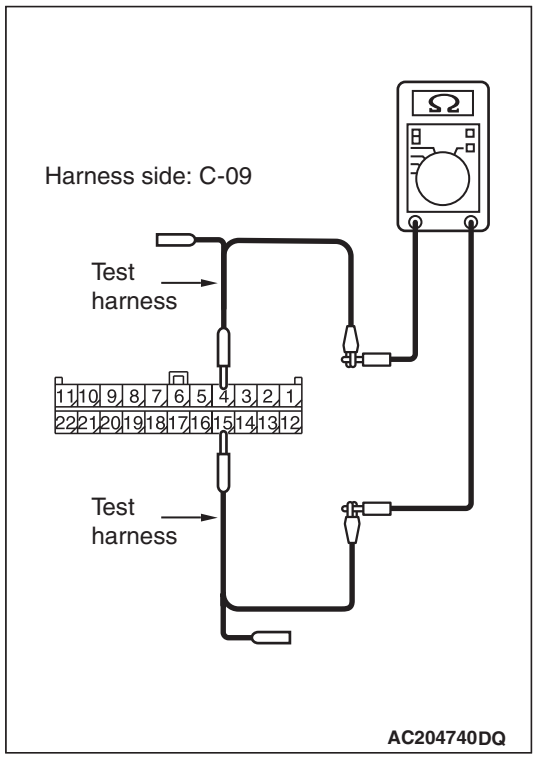


(6) Resistance between C-09 joint connector (CAN2)

terminal Nos. 5 and 16
OK: 1 kΩ or more

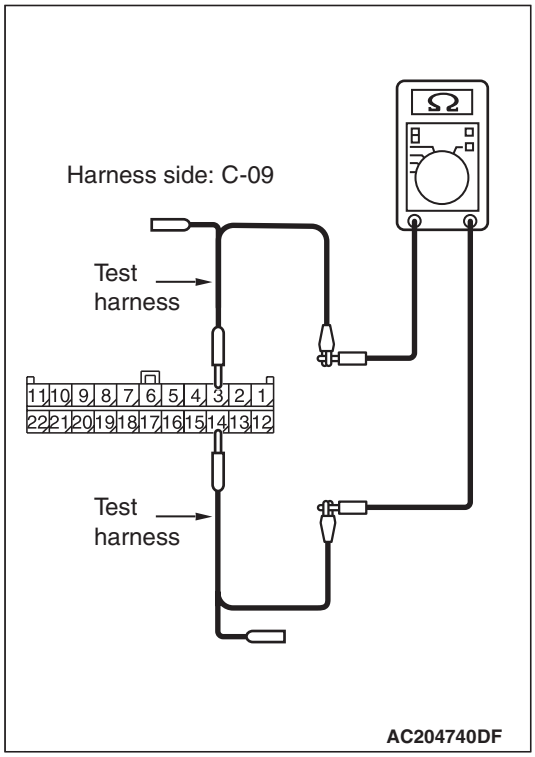


(7) Resistance between C-09 joint connector (CAN2) terminal Nos. 9 and 20
OK: 1 kΩ or more

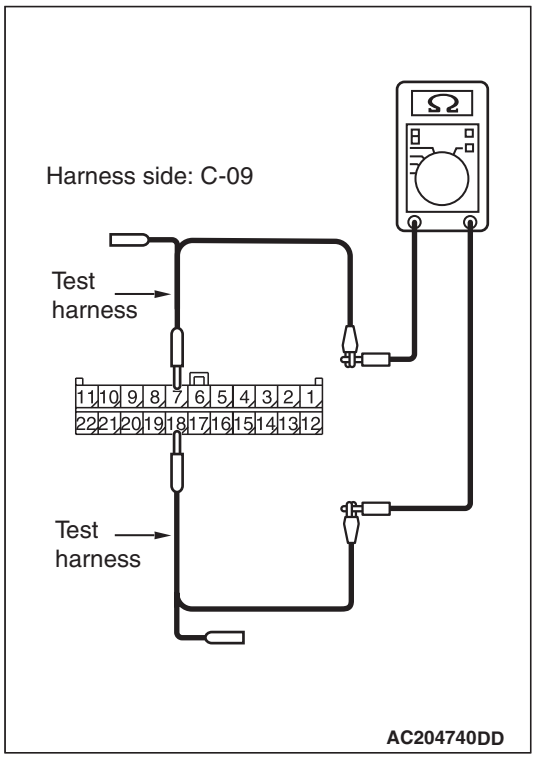


(8) Resistance between C-09 joint connector (CAN2)

terminal Nos. 4 and 15
OK: 1 kΩ or more



(9) Resistance between C-09 joint connector (CAN2) terminal Nos. 3 and 14
OK: 1 kΩ or more



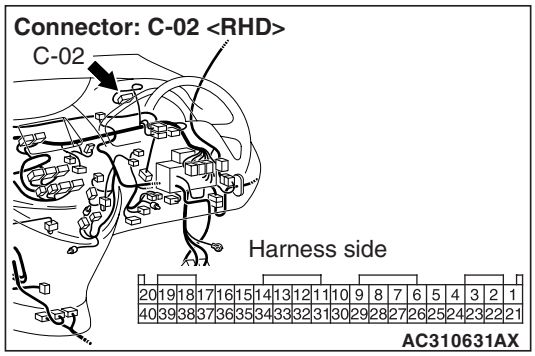
(10)Resistance between C-09 joint connector

(CAN2) terminal Nos. 7 and 18
OK: 1 kΩ or more

Q: Are the check result normal?
YES <all of the measurement results are within the normal value> : Go to Step 28.
NO <The resistance between terminal Nos. 6 and 17 is less than 120±20 Ω> : Go to Step 5.
NO <The resistance between terminal Nos. 8 and 19 is less than 1 kΩ> : Go to Step 8.
NO <The resistance between terminal Nos. 5 and 16 is less than 1 kΩ> : Go to Step 11.
NO <The resistance between terminal Nos. 9 and 20 is less than 1 kΩ> : Go to Step 14.
NO <The resistance between terminal Nos. 4 and 15 is less than 1 kΩ> : Go to Step 20.
NO <The resistance between terminal Nos. 3 and 14 is less than 1 kΩ> : Go to Step 23.
NO <The resistance between terminal Nos. 7 and 18 is less than 1 kΩ> : Go to Step 26.

STEP 5. Connector check: C-02 combination meter connector

⚠ CAUTION



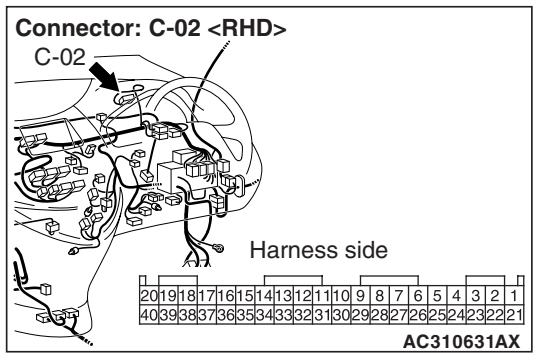
The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

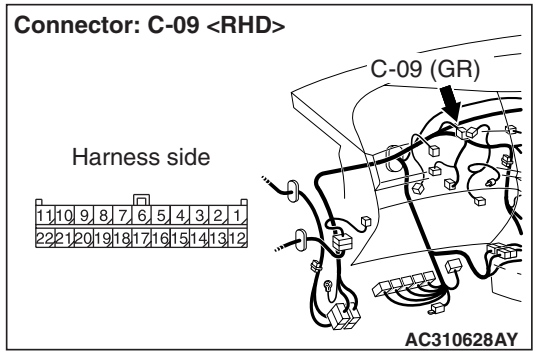
Q: Is the check result normal?
YES : Go to Step 6.
NO : Repair the defective connector.

STEP 6. Resistance measurement at C-09 joint connector (CAN2).

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.



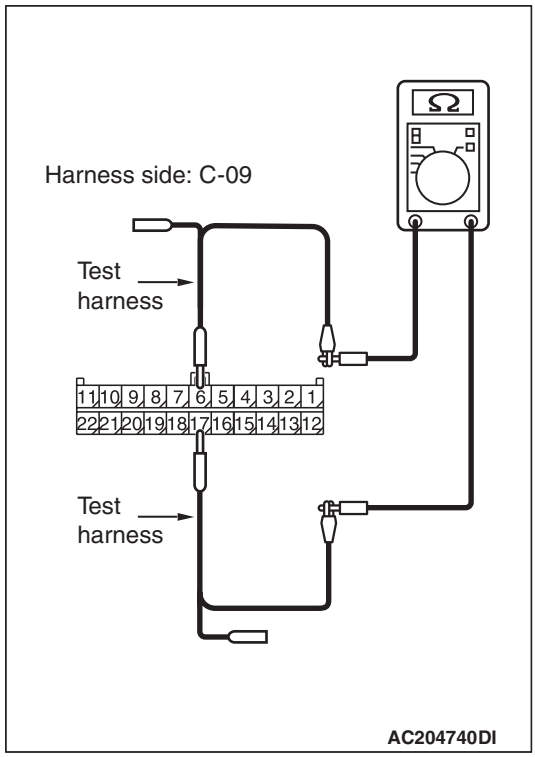


(1) Disconnect the joint connector (CAN2) and the combination meter connector, and measure at the wiring harness side.
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is

disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal Nos. 6 and 17

OK: More than 2 Ω

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?

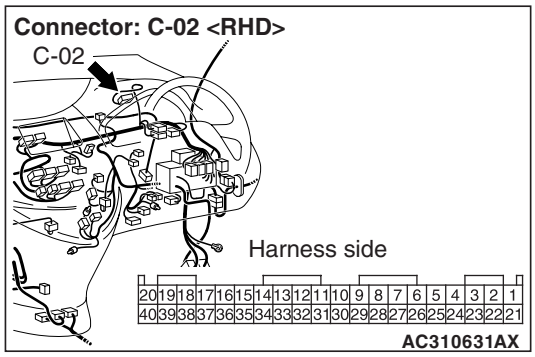
YES : <More than 2 Ω> Go to Step 7.

NO : <2 Ω or less> Repair the wiring harness between joint connector (CAN2) and the combination meter connector.

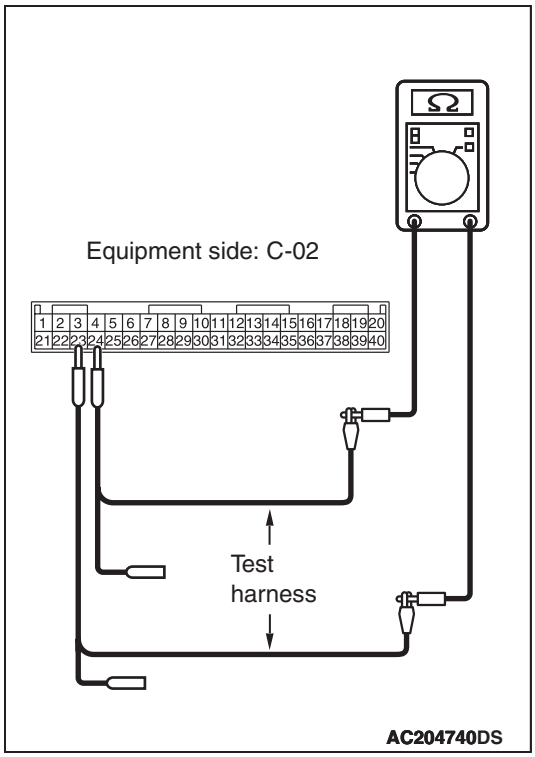
STEP 7. Resistance measurement at C-02 combination meter connector.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.



(1) Remove the combination meter, and measure at the equipment side.



(2) Resistance between C-02 combination meter connector terminal Nos. 23 and 24

OK: 120± 20 Ω

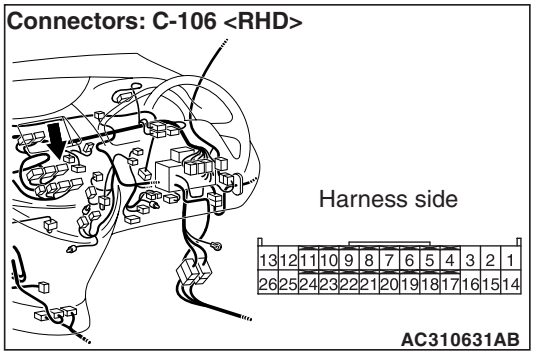
Q: Is the check result normal?

YES : <Within 120± 20 Ω> Follow diagnostic item 20, Diagnose CAN bus lines thoroughly. Refer to P.54D-526.

NO : <Not within 120± 20 Ω> Replace the combination meter.

STEP 8. Connector check: C-106 A/C-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 9.

NO : Repair the defective connector.

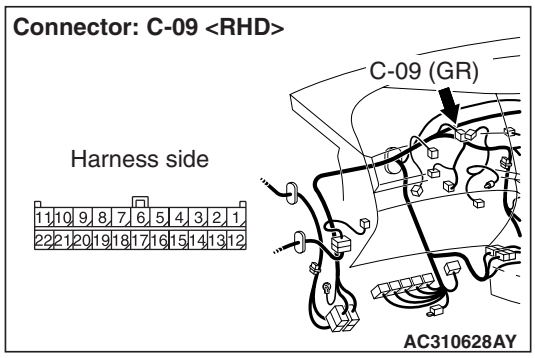
STEP 9. Resistance measurement at C-09 joint connector (CAN2).

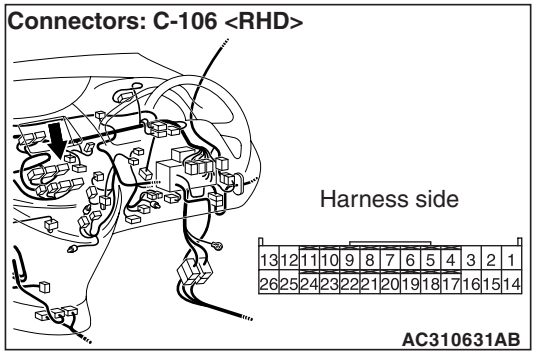
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





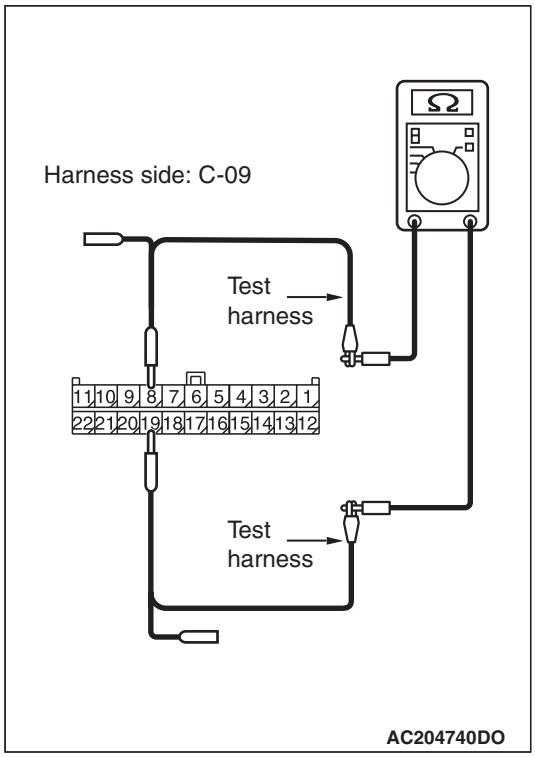
(1) Disconnect the joint connector (CAN2) and the A/C-ECU connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal Nos. 8 and 19

OK: More than 2 Ω

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?

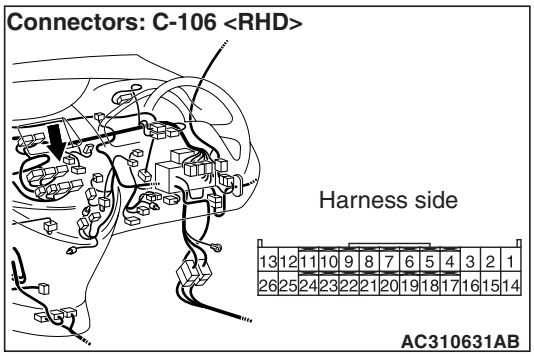
YES : <More than 2 Ω> Go to Step 10.

NO : <2 Ω or less> Repair the wiring harness between joint connector (CAN2) and the A/C-ECU connector.

STEP 10. Resistance measurement at C-106 A/C-ECU connector.

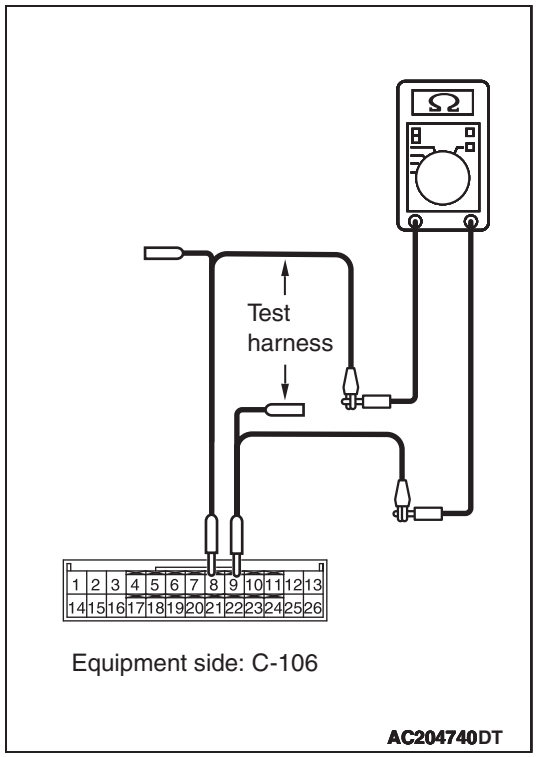
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.



(1) Remove the A/C-ECU, and measure at the

equipment side.



(2) Resistance between C-106 A/C-ECU connector terminal Nos. 8 and 9

OK: 1 kΩ or more

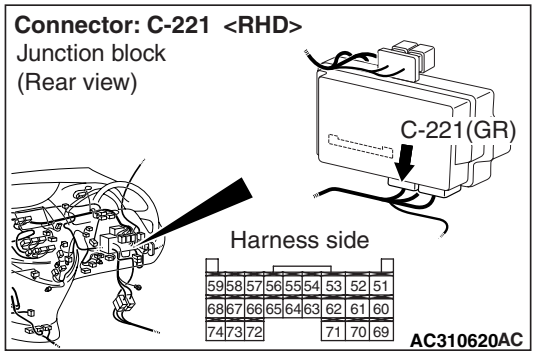
Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 20, Diagnose CAN bus lines thoroughly. Refer to P.54D-526.

NO : <Less than 1 kΩ> Replace the A/C-ECU.

STEP 11. Connector check: C-221 ETACS-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 12.

NO : Repair the defective connector.

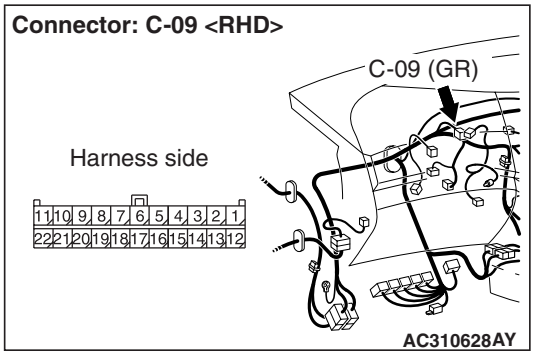
STEP 12. Resistance measurement at C-09 joint connector (CAN2).

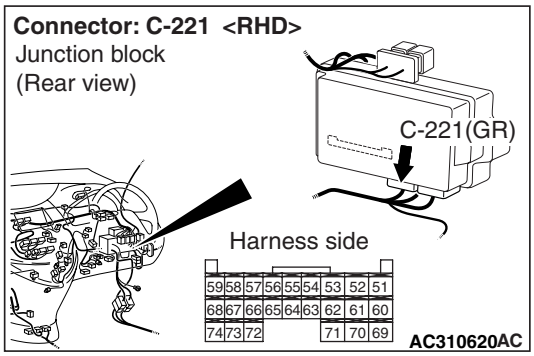
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN2) and the ETACS-ECU connector, and measure at the wiring harness side.

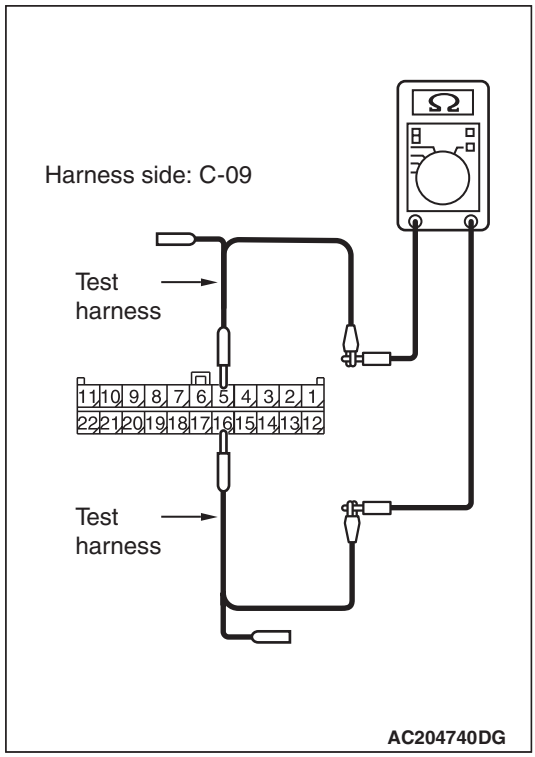
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is

disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal Nos. 5 and 16

OK: More than 2 Ω

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?

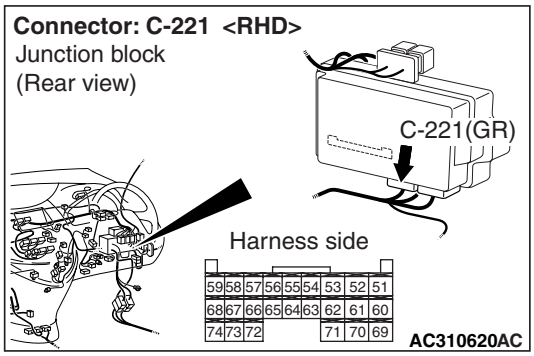
YES : <More than 2 Ω> Go to Step 13.

NO : <2 Ω or less> Repair the wiring harness between joint connector (CAN2) and the ETACS-ECU connector.

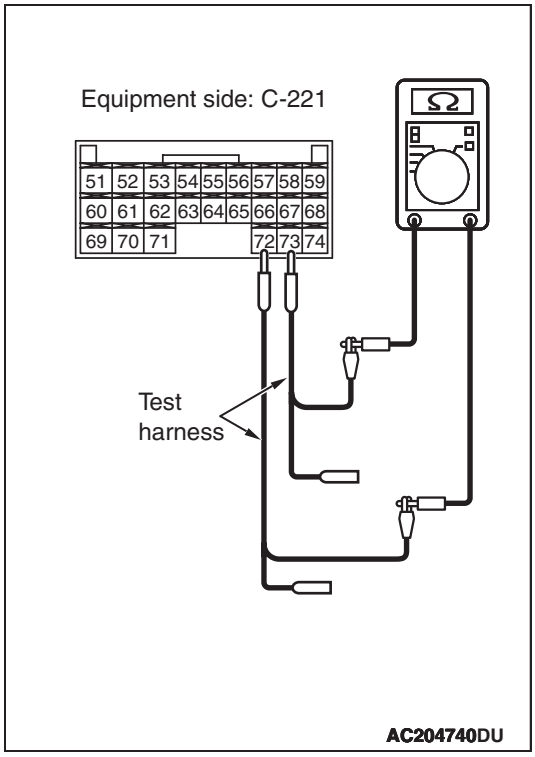
STEP 13. Resistance measurement at C-221 ETACS-ECU connector.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.



(1) Remove the ETACS-ECU, and measure at the equipment side.



(2) Resistance between C-221 ETACS-ECU connector terminal Nos. 72 and 73

OK: 1 kΩ or more

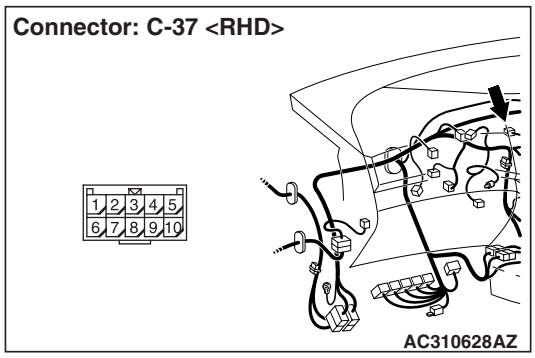
Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 20, Diagnose CAN bus lines thoroughly. Refer to P.54D-526.

NO : <Less than 1 kΩ> Replace the ETACS-ECU.

STEP 14. Connector check: C-37 jumper connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Check that the wiring harness of the jumper connector is not damaged.

Q: Is the check result normal?
YES : Go to Step 15.
NO : Repair the defective connector.

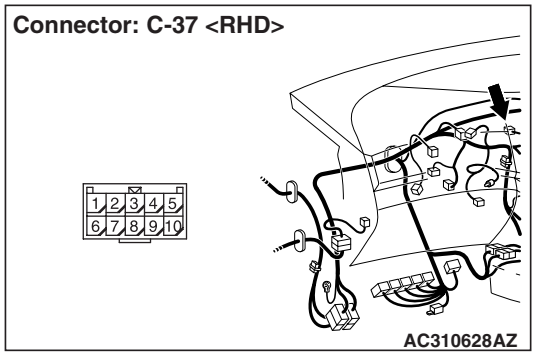
STEP 15. Resistance measurement at the C-37 jumper connector.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.

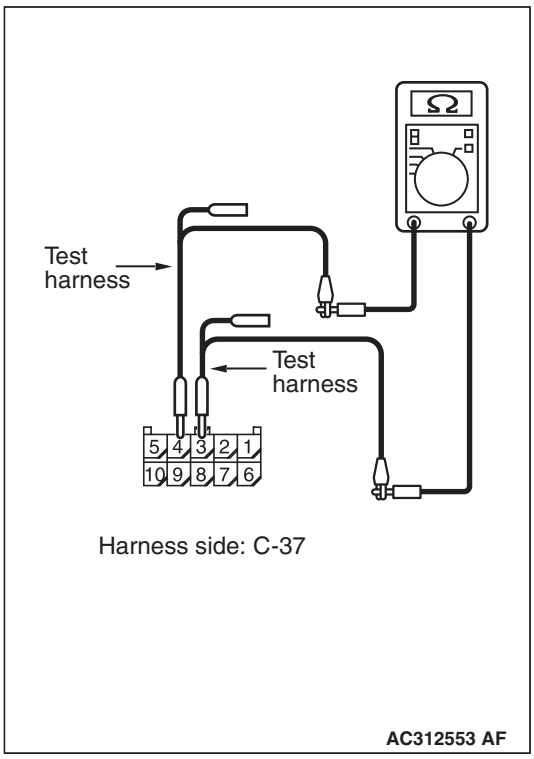


(1) Disconnect the connector, and measure at its jumper connector (at the centre display side).
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.

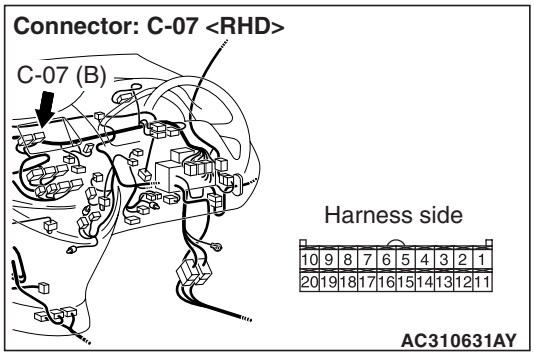


(4) Resistance between C-37 jumper connector terminal Nos. 3 and 4
OK: 1 kΩ or more

Q: Is the check result normal?
YES : <1 kΩ or more> Go to Step 19 .
NO : <Less than 1 kΩ> Go to Step 16 .

STEP 16. Connector check: C-07 centre display connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?
YES : Go to Step 17 .
NO : Repair the defective connector.

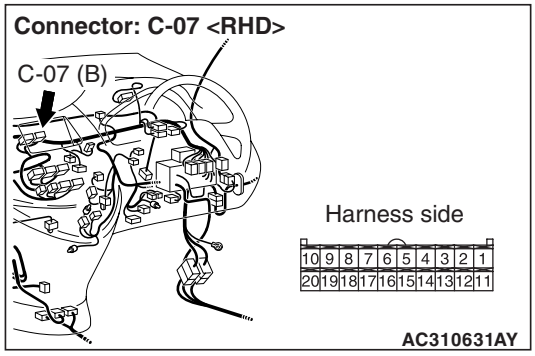
STEP 17. Resistance measurement at the C-37 jumper connector.

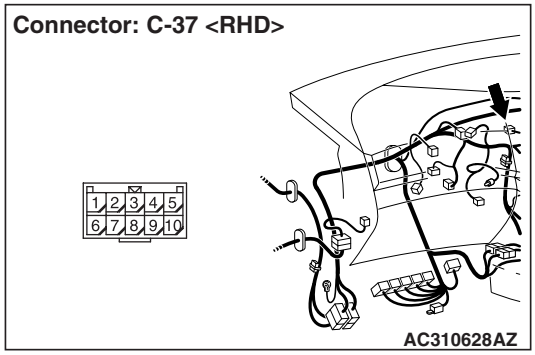
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



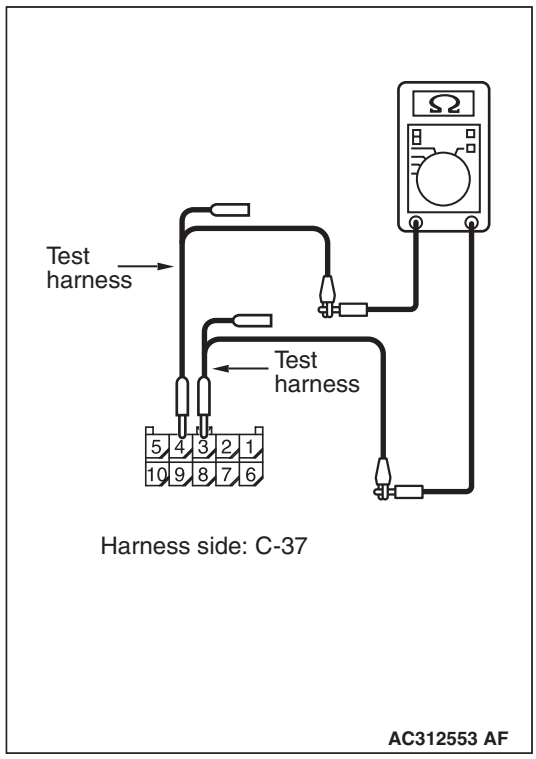


(1) Disconnect the centre display connector and the jumper connector, and measure at the jumper connector (at the centre display side).
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Resistance between C-37 jumper connector terminal Nos. 3 and 4

OK: More than 2 Ω

⚠ CAUTION

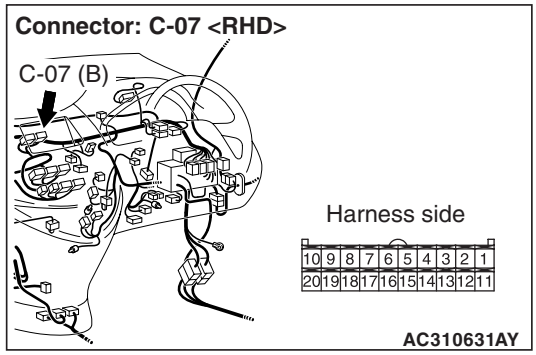
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <More than 2 Ω> Go to Step 18.
NO : <2 Ω or less> Repair the wiring harness between the jumper connector and the centre display connector.

STEP 18. Resistance measurement at C-07 centre display connector.

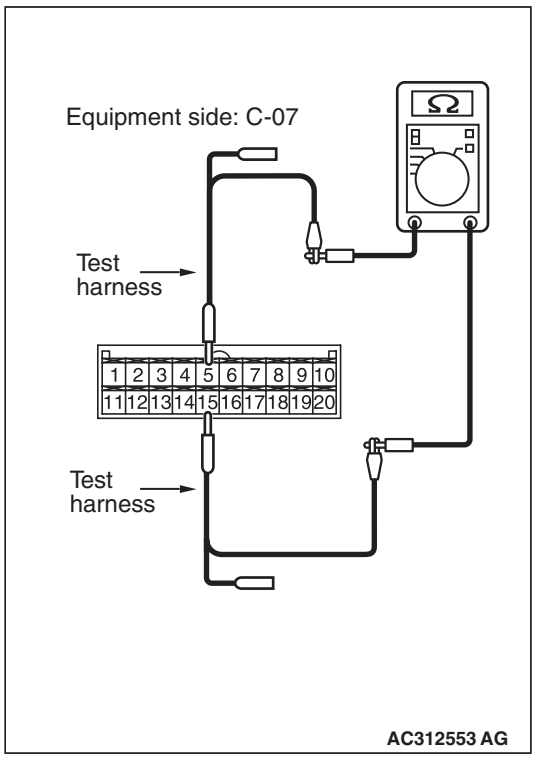
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.



(1) Remove the centre display connector, and

measure at the equipment side.



(2) Resistance at C-07 centre display connector terminal Nos. 5 and 15

OK: 1 kΩ or more

Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 20, Diagnose CAN bus lines thoroughly. Refer to P.54D-526.

NO : <Less than 1 kΩ> Replace the centre display connector.

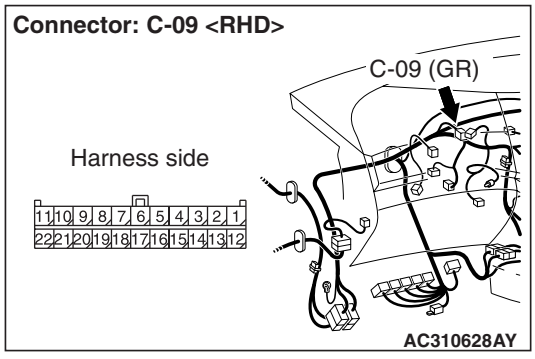
STEP 19. Resistance measurement at the C-09 joint connector (CAN2).

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



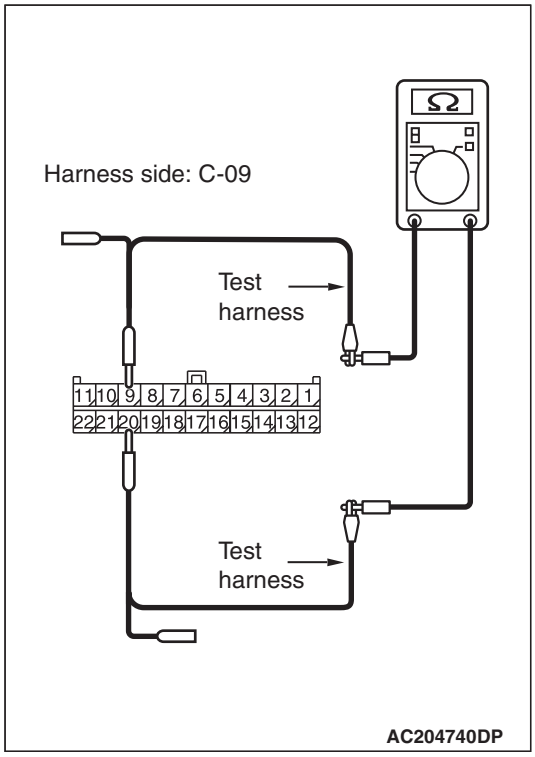
(1) Disconnect the connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Resistance between C-09 joint connector (CAN2) terminal Nos. 9 and 20

OK: 1 kΩ or more

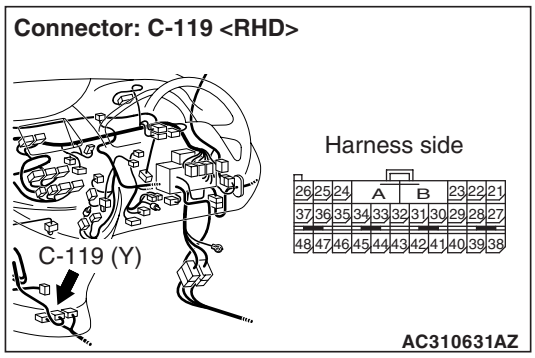
Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 20 "Diagnose CAN bus lines thoroughly." Refer to P.54D-526.

NO : <Less than 1 kΩ> Repair the wiring harness between the joint connector (CAN2) and the jumper connector.

STEP 20. Connector check: C-119 SRS-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?
YES : Go to Step 21.
NO : Repair the defective connector.

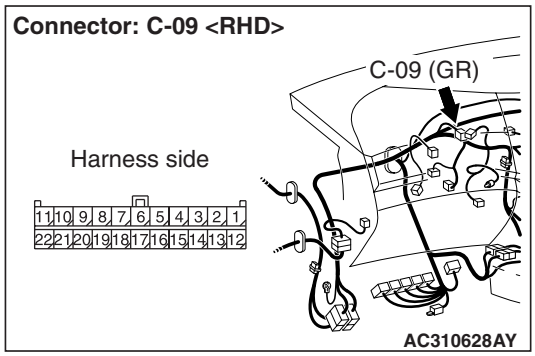
STEP 21. Resistance measurement at C-09 joint connector (CAN2).

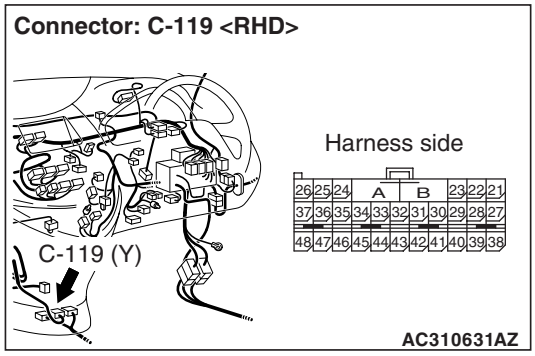
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



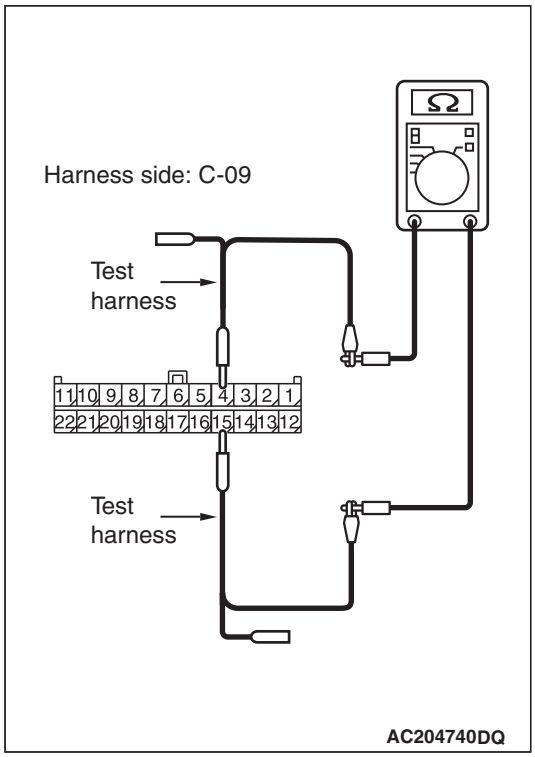


(1) Disconnect the joint connector (CAN2) and the SRS-ECU connector, and measure at the wiring harness side.
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal Nos. 4 and 15

OK: More than 2 Ω

⚠ CAUTION

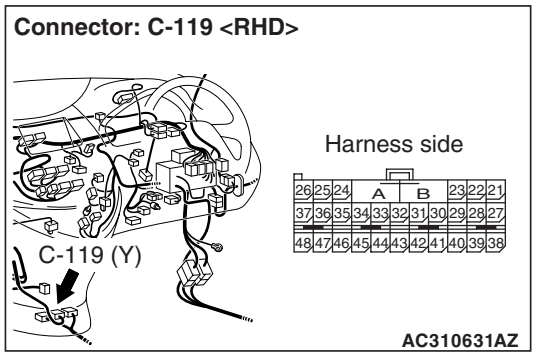
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <More than 2 Ω> Go to Step 22.
NO : <2 Ω or less> Repair the wiring harness between joint connector (CAN2) and the SRS-ECU connector.

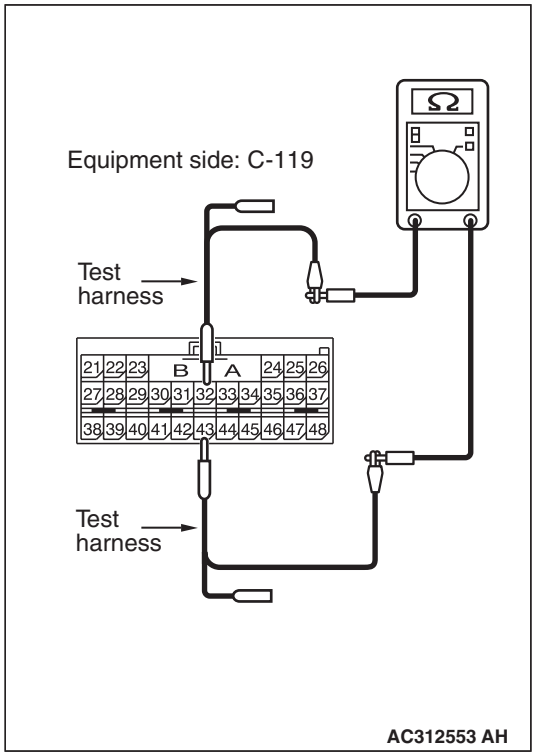
STEP 22. Resistance measurement at C-119 SRS-ECU connector.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.



(1) Remove the SRS-ECU, and measure at the equipment side.



(2) Resistance between C-119 SRS-ECU connector terminal Nos. 32 and 43

OK: 1 kΩ or more

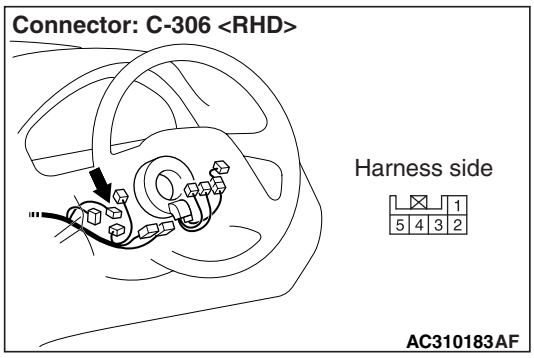
Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 20, Diagnose CAN bus lines thoroughly. Refer to P.54D-526.

NO : <Less than 1 kΩ> Replace the SRS-ECU.

STEP 23. Connector check: C-306 steering wheel angle sensor connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 24.

NO : Repair the defective connector.

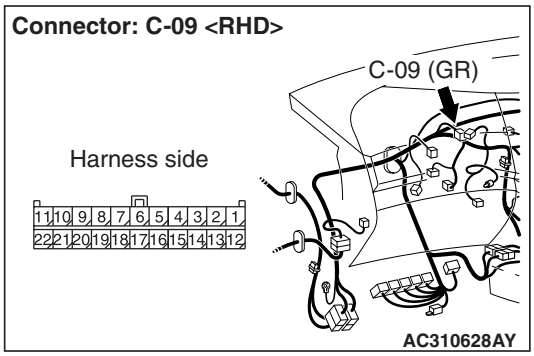
STEP 24. Resistance measurement at C-09 joint connector (CAN2).

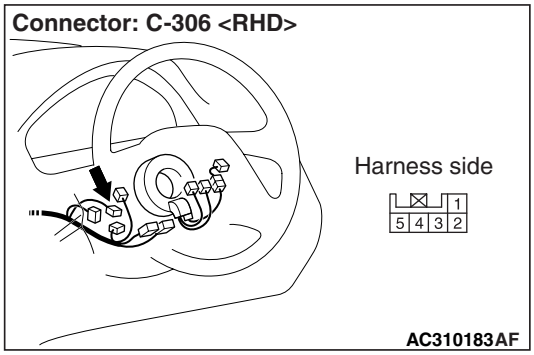
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



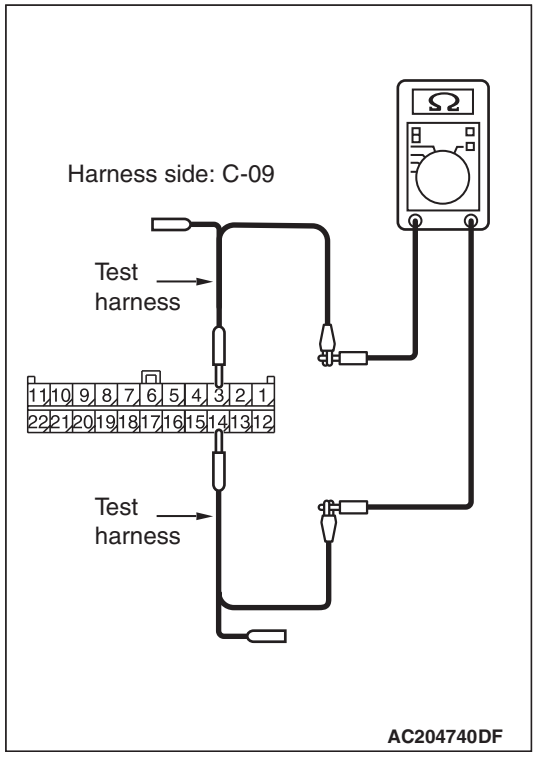


(1) Disconnect the joint connector (CAN2) and the steering wheel angle sensor connector, and

measure at the wiring harness side.
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal Nos. 3 and 14

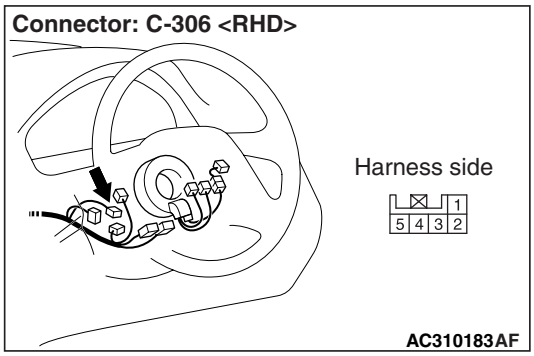
OK: More than 2 Ω

⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

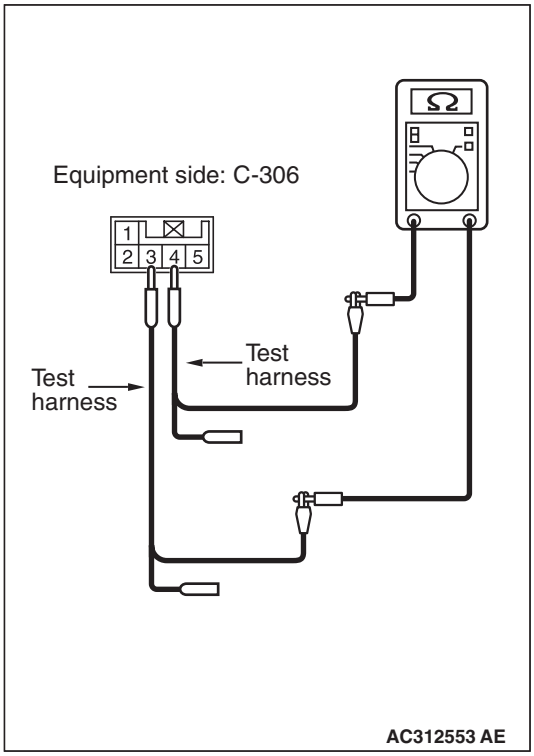
Q: Is the check result normal?
YES : <More than 2 Ω> Go to Step 25.
NO : <2 Ω or less> Repair the wiring harness between joint connector (CAN2) and the steering wheel angle sensor connector.

STEP 25. Resistance measurement at C-306 steering wheel angle sensor connector.

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.



(1) Remove the steering wheel angle sensor, and measure at the equipment side.



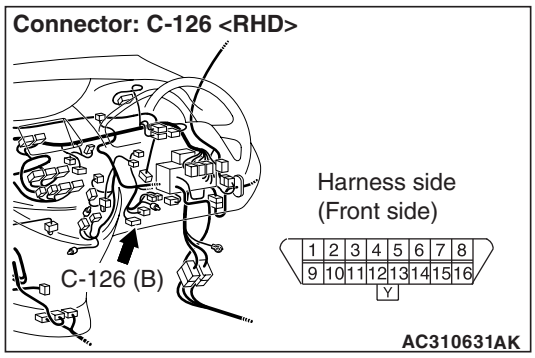
(2) Resistance between C-306 steering wheel angle sensor connector terminal Nos. 3 and 4

OK: 1 kΩ or more

Q: Is the check result normal?
YES : <1 kΩ or more> Follow diagnostic item 20, Diagnose CAN bus lines thoroughly. Refer to P.54D-526.
NO : <Less than 1 kΩ> Replace the steering angle sensor.

STEP 26. Connector check: C-126 diagnosis connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?
YES : Go to Step 27.
NO : Repair the defective connector.

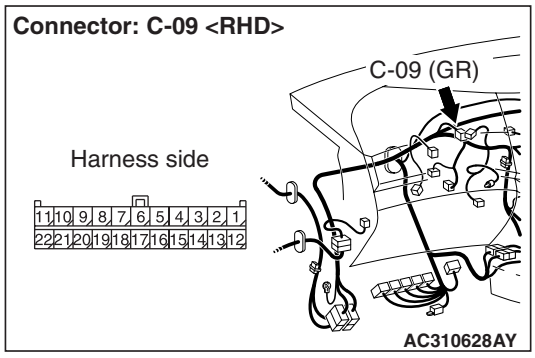
STEP 27. Resistance measurement at C-09 joint connector (CAN2).

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



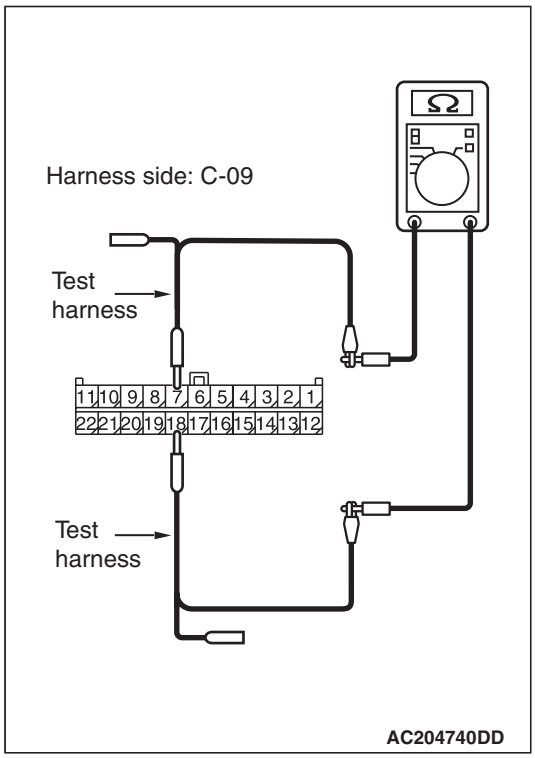
(1) Disconnect the joint connector (CAN2), and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal Nos. 7 and 18

OK: More than 2 Ω

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <2 more than Ω> Follow diagnostic item 20, Diagnose CAN bus lines thoroughly. Refer to P.54D-526.
NO : <2 Ω or less> Repair the wiring harness between joint connector (CAN2) and the diagnosis connector.

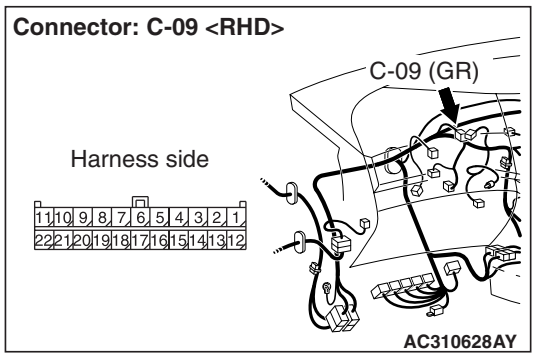
STEP 28. Resistance measurement at C-09 joint connector (CAN2).

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.

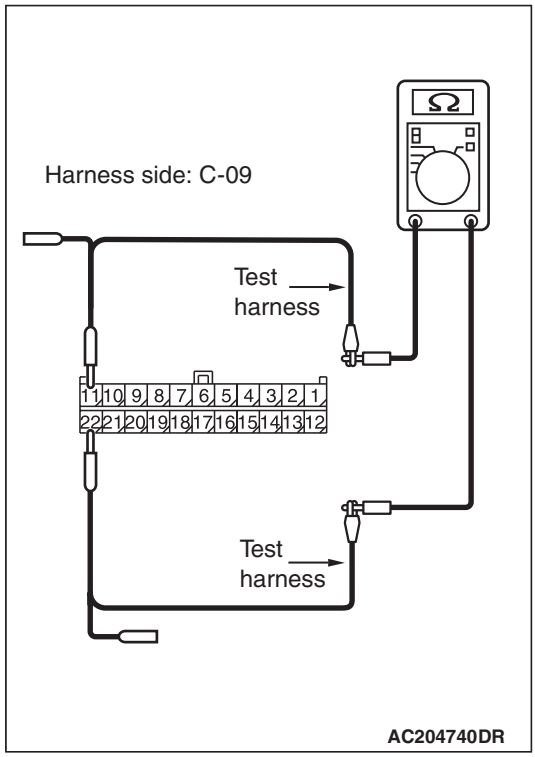


(1) Disconnect the joint connector (CAN2) and the intermediate connector, and measure at the wiring harness side.
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal Nos. 11 and 22

OK: More than 2 Ω

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?

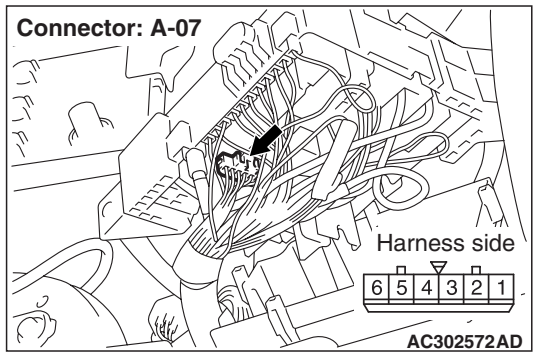
YES : <2 more than Ω> Follow diagnostic item 20, Diagnose CAN bus lines thoroughly. Refer to P.54D-526.

NO : <2 Ω or less> Repair the wiring harness between joint connector (CAN2) and the intermediate connector.

STEP 29. Connector check: A-07 joint connector (CAN1)

NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

When checking the joint connector, ensure that its wiring harness side is not damaged.

Q: Is the check result normal?

YES : Go to Step 27.

NO : Repair a defective connector or replace the joint connector (front wiring harness assembly).

STEP 30. Resistance measurement at the A-07 joint connector (CAN1).

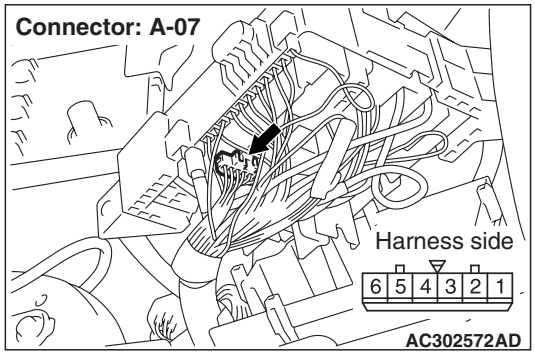
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



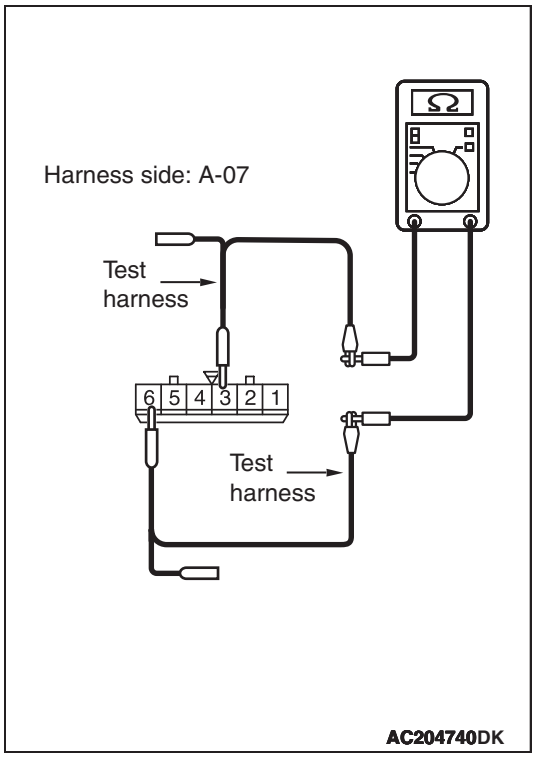
(1) Disconnect the connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

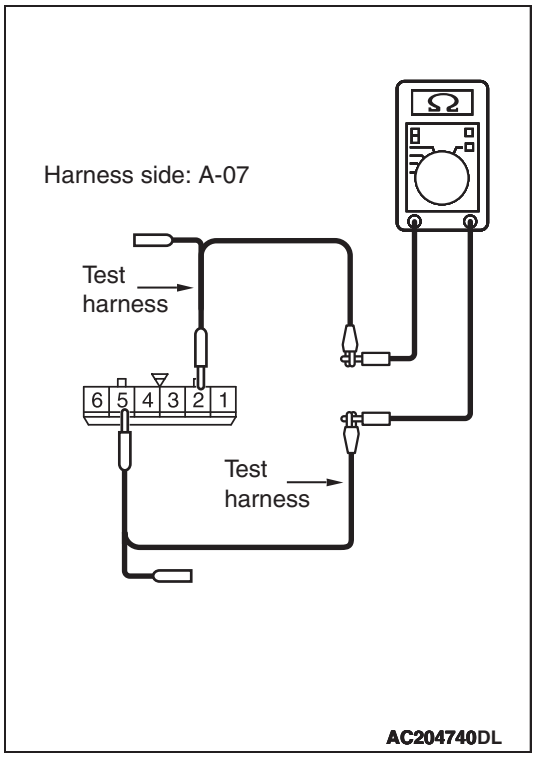
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Resistance between A-07 joint connector (CAN1) terminal Nos. 3 and 6

OK: 120± 20 Ω



(5) Resistance between A-07 joint connector (CAN1) terminal Nos. 2 and 5

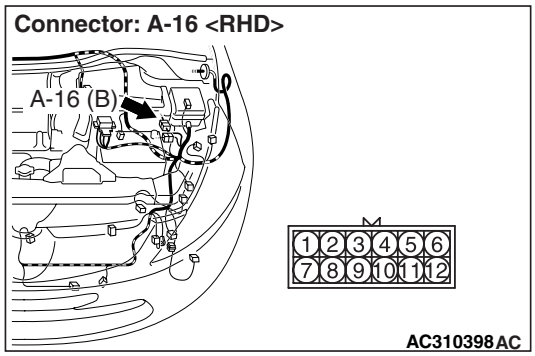
OK: 1 kΩ or more

Q: Are the check result normal?

YES <all of the measurement results are within the normal value> : Go to Step 40.
NO <The resistance between terminal Nos. 3 and 6 is less than 120±20 Ω> : Go to Step 31.
NO <The resistance between terminal Nos. 2 and 5 is less than 1 kΩ> : Go to Step 37.

STEP 31. Connector check: A-16 intermediate connector

⚠ CAUTION



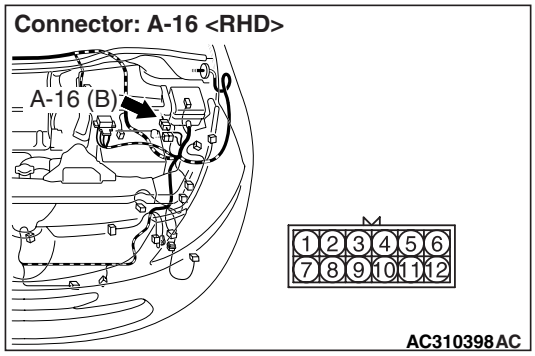
The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?
YES : Go to Step 32.
NO : Repair the defective connector.

STEP 32. Resistance measurement at the A-16 intermediate connector.

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

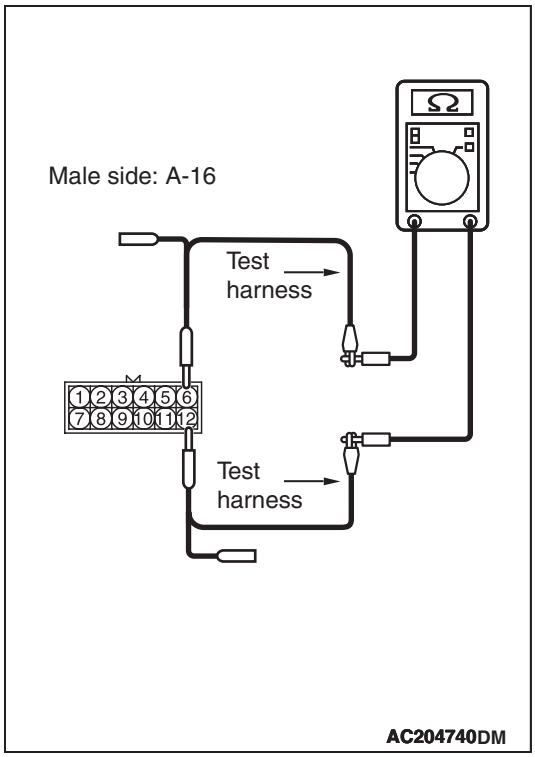
⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the connector, and measure at its male-side intermediate connector (at the control wiring harness side).
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.

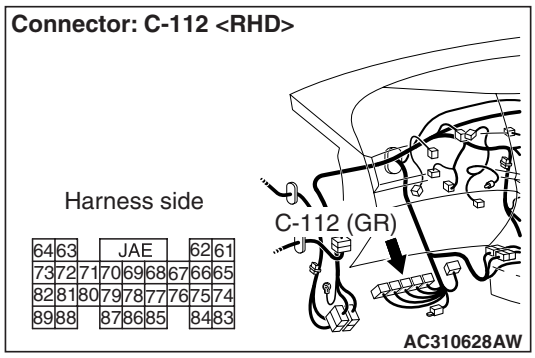


(4) Resistance between A-16 intermediate connector terminal Nos. 6 and 12
OK: 120± 20 Ω

Q: Is the check result normal?
YES : <Within 120± 20 Ω> Go to Step 36 .
NO : <Not within 120± 20 Ω> Go to Step 33.

STEP 33. Connector check: C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?
YES : Go to Step 34.
NO : Repair the defective connector.

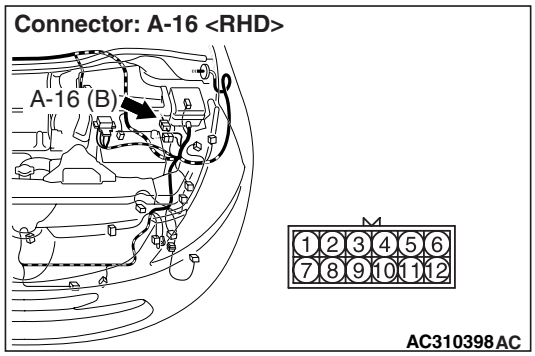
STEP 34. Resistance measurement at the A-16 intermediate connector.

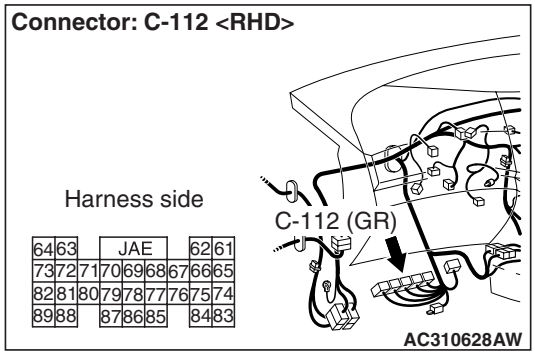
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



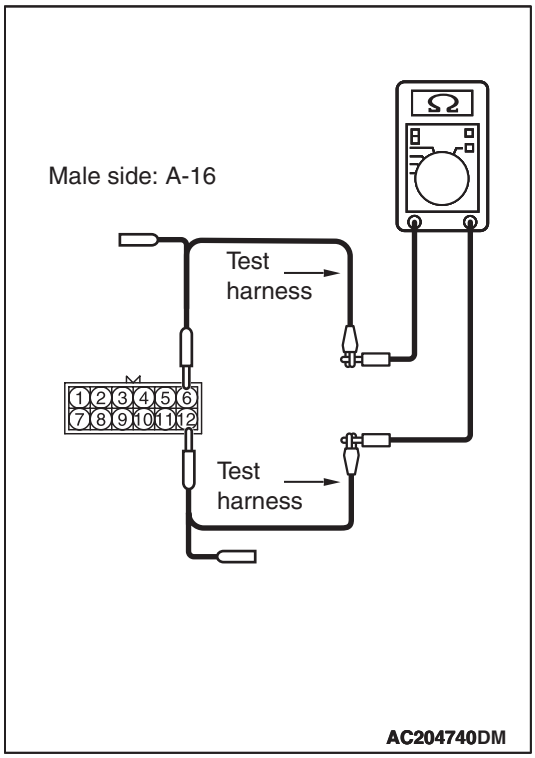


(1) Disconnect the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector and the intermediate connector, and measure at the wiring harness side.
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Resistance between A-16 intermediate connector terminal Nos. 6 and 12
OK: More than 2 Ω

⚠ CAUTION

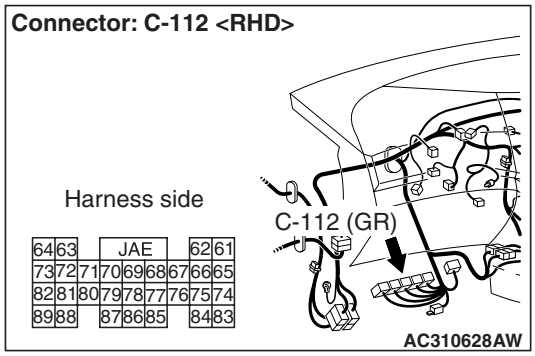
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?
YES : <More than 2 Ω> Go to Step 35.
NO : <2 Ω or less> Repair the wiring harness between the intermediate connector and the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector.

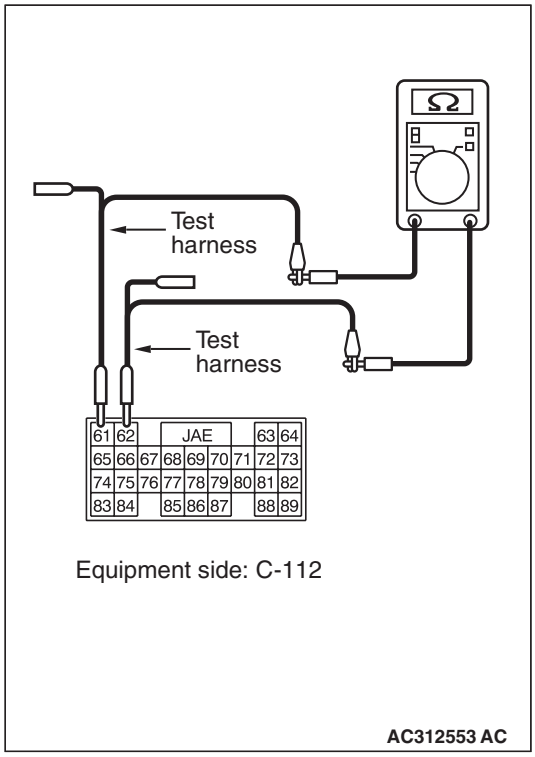
STEP 35. Resistance measurement at C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.



(1) Remove the engine-ECU <M/T> or engine-A/T-ECU <A/T>, and measure at the equipment side.



(2) Resistance at C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector terminal Nos. 61 and 62

OK: 120± 20 Ω

Q: Is the check result normal?

YES : <Within 120± 20 Ω> Follow diagnostic item 20, Diagnose CAN bus lines thoroughly. Refer to P.54D-526.

NO : <Not within 120± 20 Ω> Replace the engine-ECU <M/T> or engine-A/T-ECU <A/T>.

STEP 36. Resistance measurement at the A-07 joint connector (CAN1).

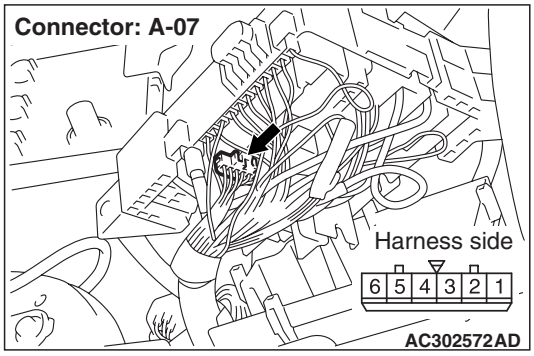
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the connector, and measure at the wiring harness side.

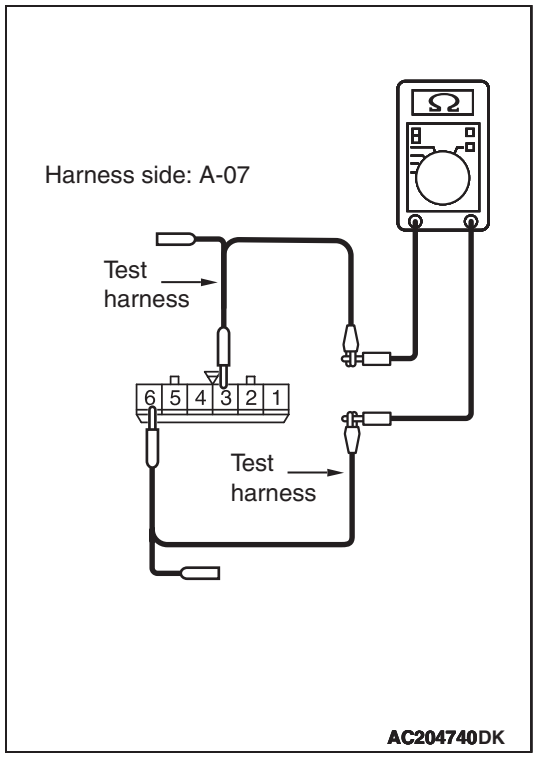
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is

disconnected.



(4) Resistance between A-07 joint connector (CAN1) terminal Nos. 3 and 6

OK: 120± 20 Ω

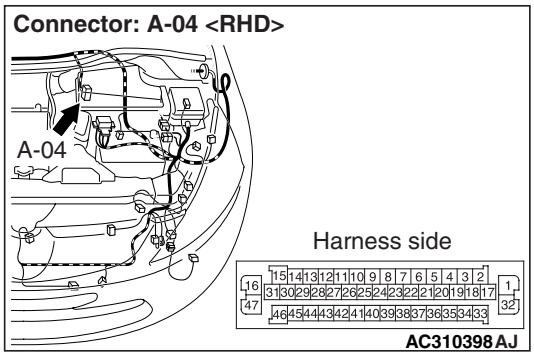
Q: Is the check result normal?

YES : <All the measurement results are within the normal value> Follow diagnostic item 20 "Diagnose CAN bus lines thoroughly." Refer to P.54D-526.

NO : <The resistance between terminal Nos. 3 and 6 measures less than 120 ± 20 Ω> Repair the wiring harness between the joint connector (CAN1) and the intermediate connector.

STEP 37. Connector check: A-04 ASC-ECU connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 38.

NO : Repair the defective connector.

STEP 38. Resistance measurement at the A-07 joint connector (CAN1).

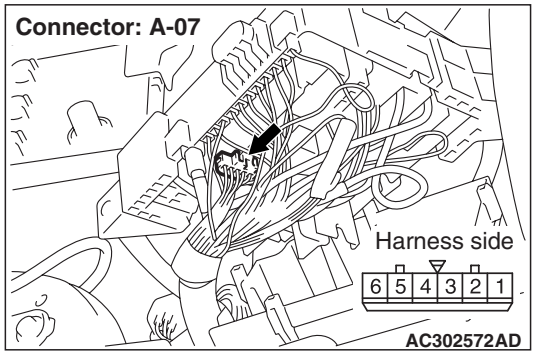
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

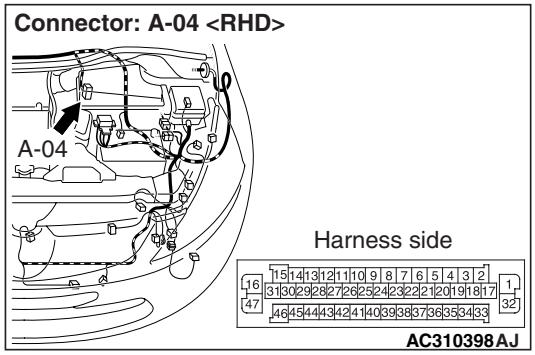
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





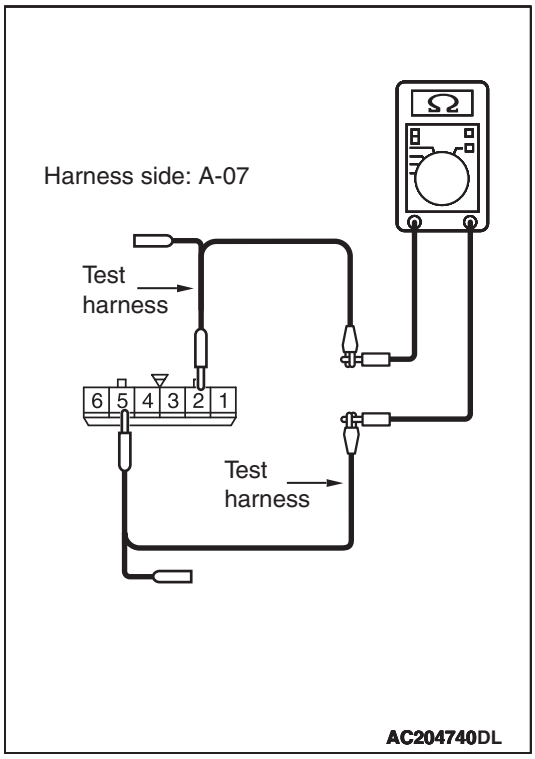
(1) Disconnect the joint connector (CAN1) and the ASC-ECU connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between A-07 joint connector (CAN1) terminal Nos. 2 and 5

OK: More than 2 Ω

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Is the check result normal?

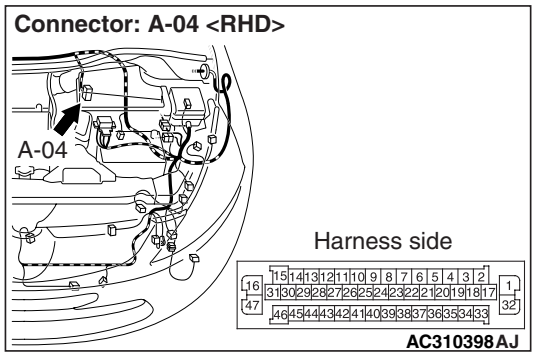
YES : <More than 2 Ω> Go to Step 39.

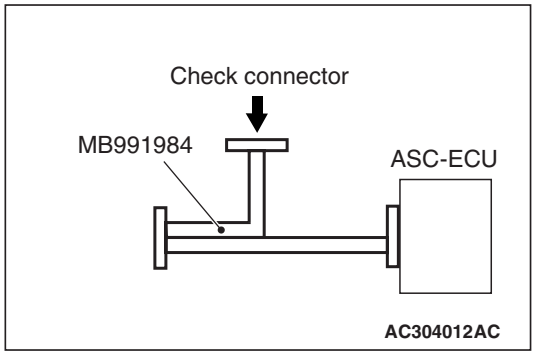
NO : <2 Ω or less> Repair the wiring harness between joint connector (CAN1) and the ASC-ECU connector.

STEP 39. Resistance measurement at A-04 ASC-ECU connector.

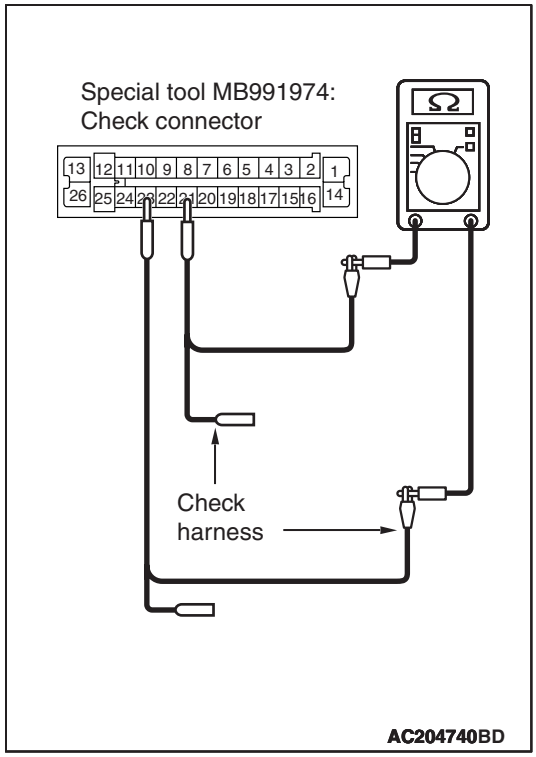
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.





(1) Connect special tool MB991974 to the ASC-ECU connector, and measure by using the check connector (connect the ECU side only).



(2) Resistance between special tool MB991974 check connector terminal Nos. 11 and 15.

OK: 1 kΩ or more

Q: Is the check result normal?

YES : <1 kΩ or more> Follow diagnostic item 20, Diagnose CAN bus lines thoroughly. Refer to P.54D-526.

NO : <Less than 1 kΩ> Replace the ASC-ECU.

STEP 40. Resistance measurement at the A-07 joint connector (CAN1).

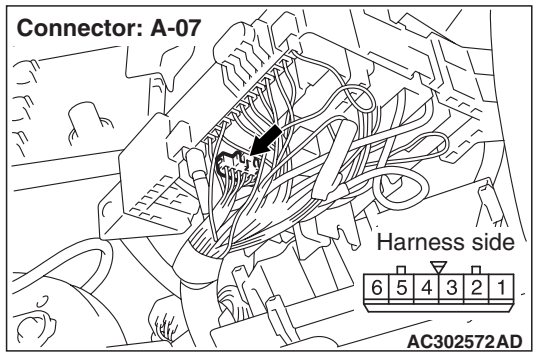
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

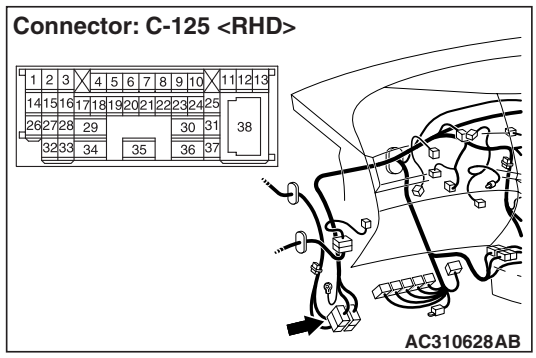
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN1) and the intermediate connector, and measure at the wiring harness side.

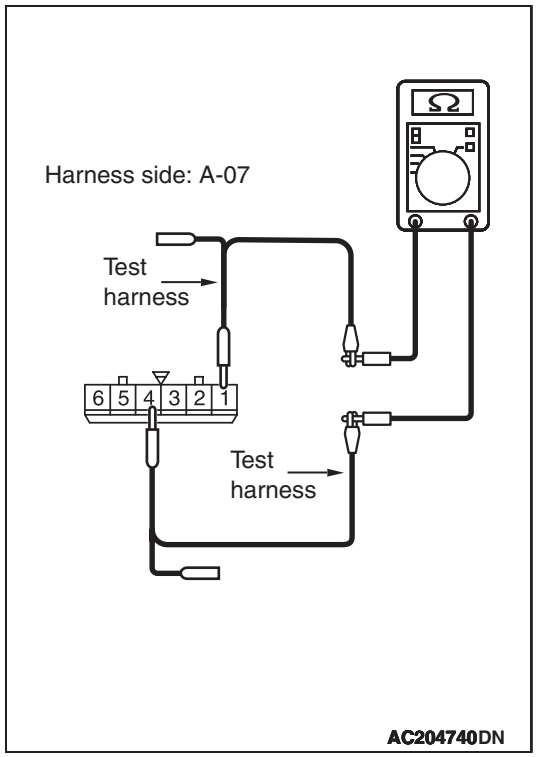
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is

disconnected.



(4) Measure the continuity between A-07 joint connector (CAN1) terminal Nos. 1 and 4.

OK: More than 2 Ω

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

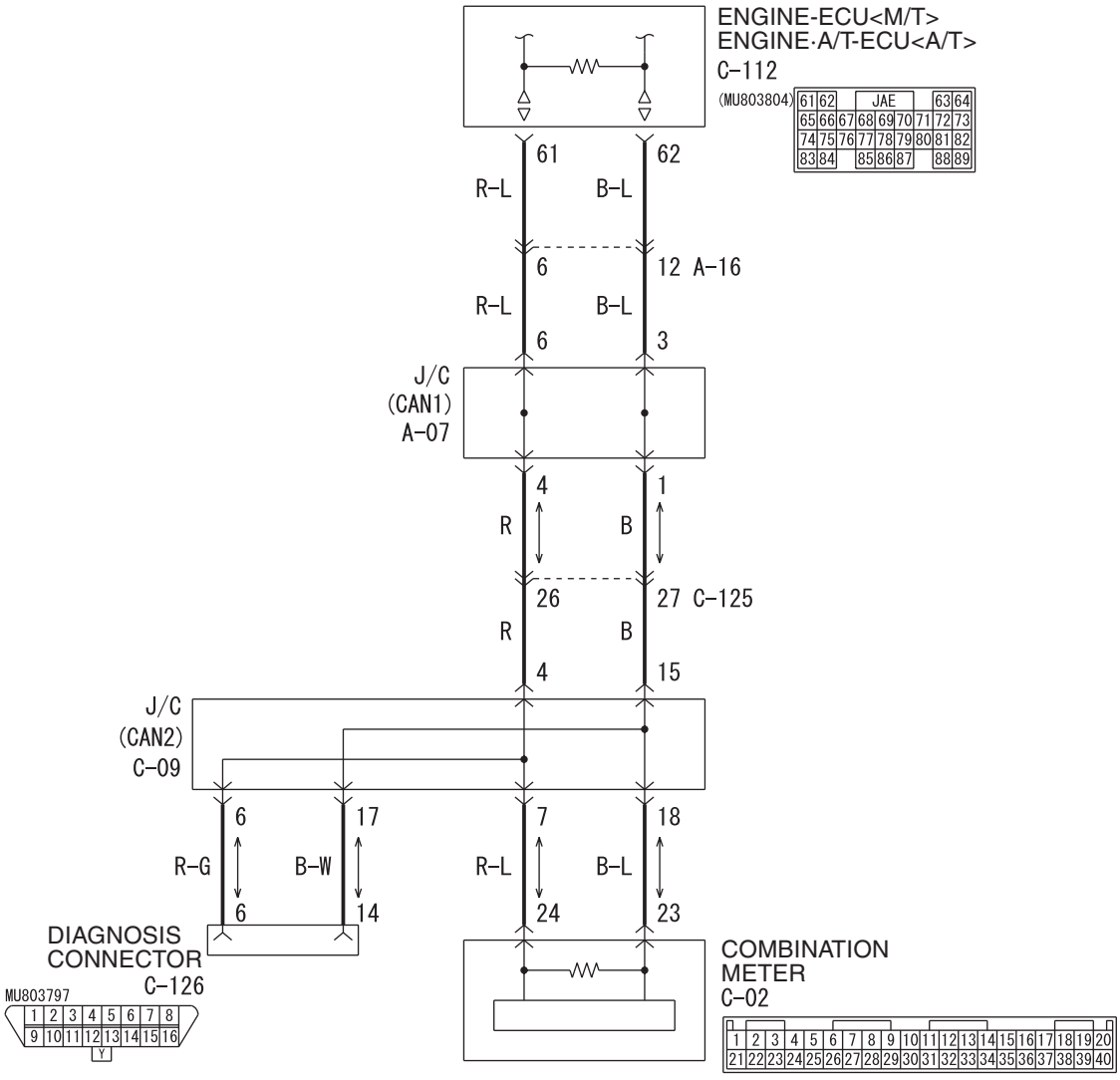
Q: Is the check result normal?

YES : <2 more than Ω> Follow diagnostic item 20, Diagnose CAN bus lines thoroughly. Refer to P.54D-526.

NO : <2 Ω or less> Repair the wiring harness between joint connector (CAN1) and the intermediate connector.

Diagnostic Item 13: Diagnose the terminator resistors at both ends <LH drive vehicles>

⚠ CAUTION
When servicing a CAN bus line, earth yourself by touching a metal object such as an unpainted water pipe. If you fail to do, a component connected to the CAN bus line may be broken.



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E10AA

TROUBLE JUDGMENT

If the resistance between the CAN bus lines (CAN_L and CAN_H) is infinite, the terminator resistors in the CAN bus lines are broken, or there is an open circuit in the wiring harness from the diagnosis connector to the terminator resistors.

COMMENTS ON TROUBLE SYMPTOM

The CAN bus line harness wires or connectors may be damaged (open circuit may be present on CAN_L or CAN_H line between the diagnosis connector and CAN main bus lines, or CAN main bus lines may be open at both sides), or the combination meter and the engine-ECU <M/T> or engine-A/T-ECU <A/T> may be defective.

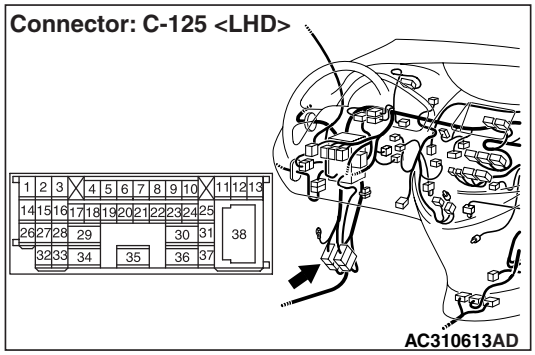
TROUBLESHOOTING HINTS

- Damaged harness wires and connectors
- Malfunction of the combination meter
- Malfunction of the engine-ECU <M/T> or engine-A/T-ECU <A/T>

DIAGNOSTIC PROCEDURE

STEP 1. Connector check: C-125 intermediate connector

⚠ CAUTION



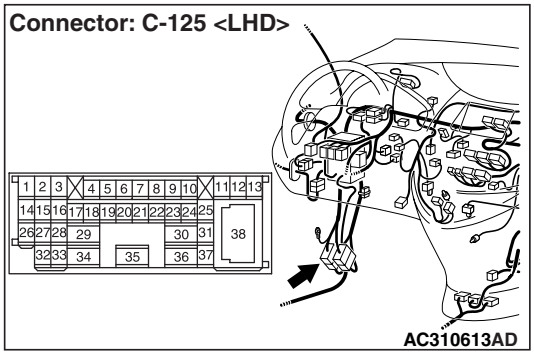
The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?
YES : Go to Step 2 .
NO : Repair the connector, and then go to Step 2.

STEP 2. Resistance measurement at the C-125 intermediate connector.

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

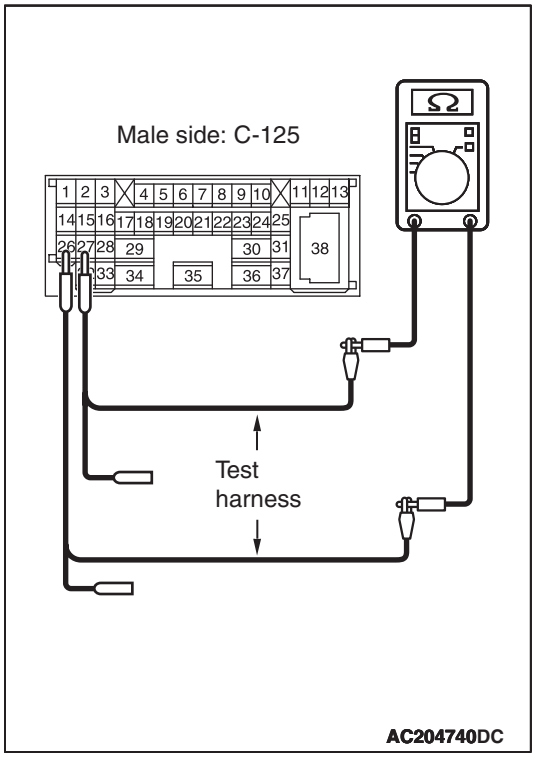
⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the connector, and measure at its female-side intermediate connector (at the instrument panel wiring harness side).
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



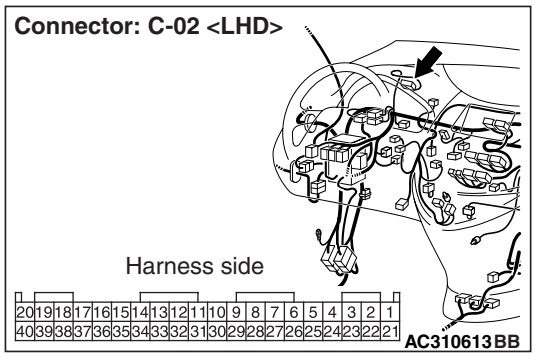
(4) Resistance between C-125 intermediate

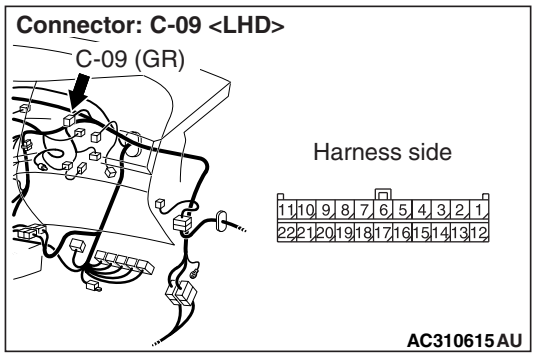
connector terminal Nos.26 and 27
OK: 120 ± 20 Ω

Q: Is the check result normal?
YES : <Within 120 ± 20 Ω> Go to Step 8 .
NO : <Not within 120 ± 20 Ω> Go to Step 3 .

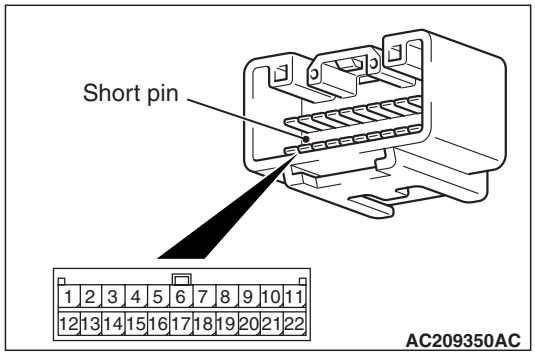
STEP 3. Connector check: C-09 joint connector (CAN2) and C-02 combination meter connector

⚠ CAUTION





The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.



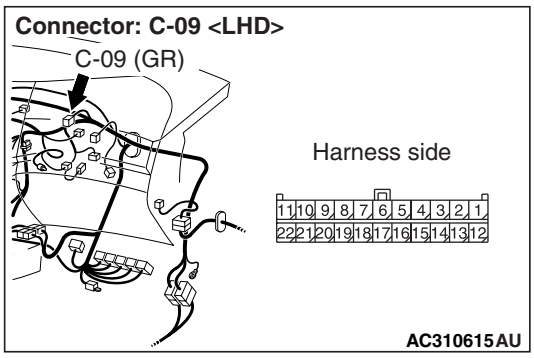
When checking the joint connector, ensure that its wiring harness side is not damaged.

Q: Are the check result normal?
YES : Go to Step 4.
NO : Repair the connector, or replace the joint connector. Then go to Step 2.

STEP 4. Resistance measurement at C-09 joint connector (CAN2).

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

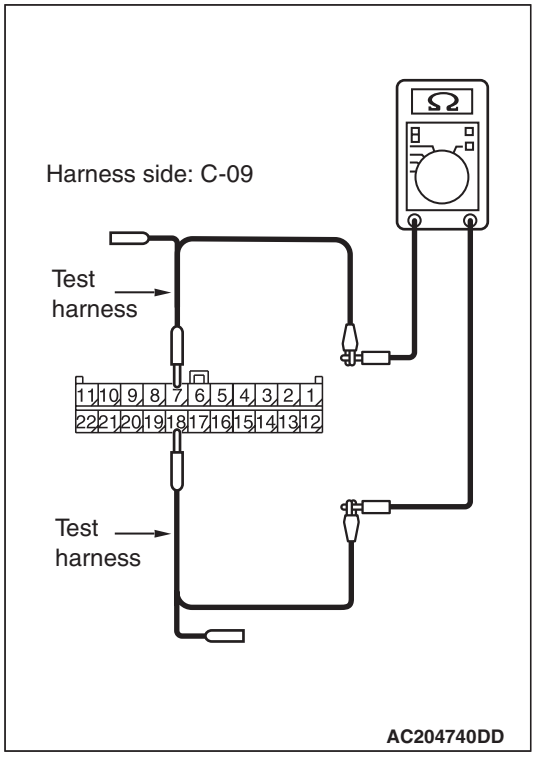
⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the connector, and measure at the wiring harness side.
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Resistance between C-09 joint connector (CAN2)

terminal Nos. 7 and 18

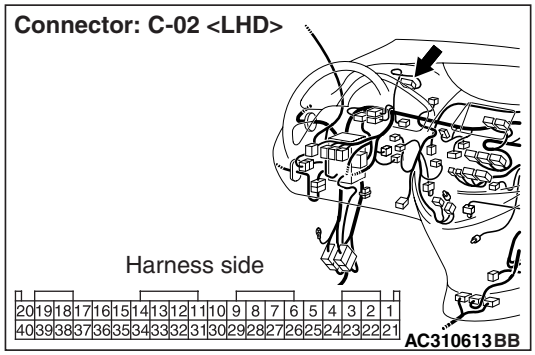
OK: 120± 20 Ω

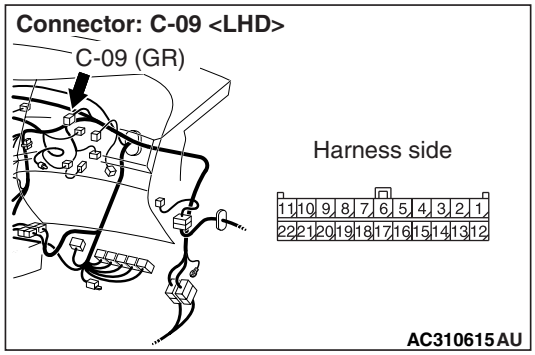
Q: Is the check result normal?
YES : <Within 120± 20 Ω> Go to Step 7 .
NO : <Not within 120± 20 Ω> Go to Step 5 .

STEP 5. Resistance measurement at C-09 joint connector (CAN2) and C-02 combination meter connector.

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.

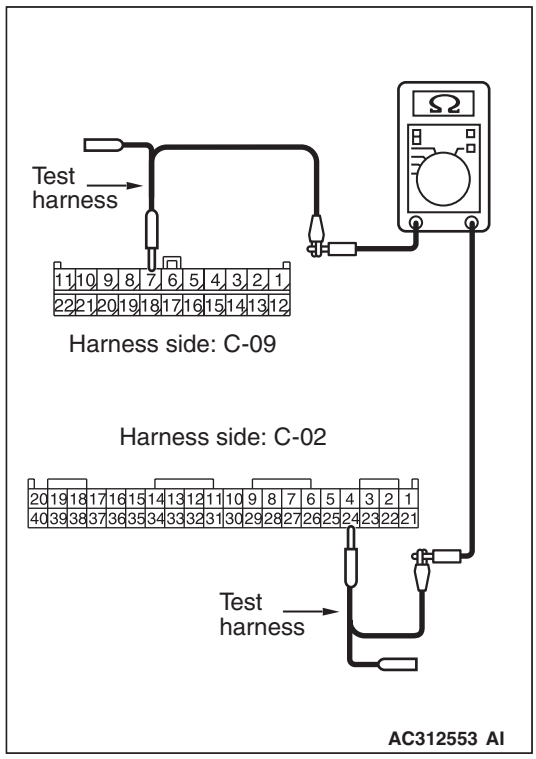




(1) Disconnect the joint connector (CAN2) and the combination meter connector, and measure at the wiring harness side.
(2) Ignition switch: OFF (LOCK)

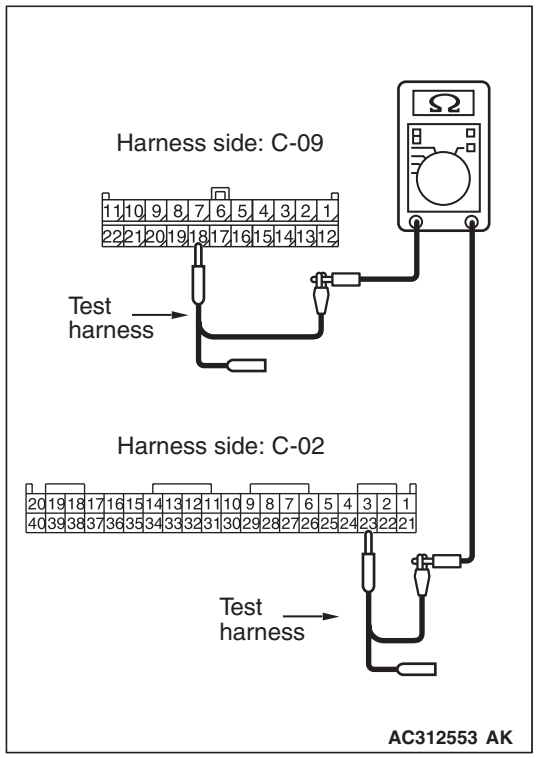
⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal No.7 and C-02 combination meter connector terminal No.24

OK: 2 Ω or less



(5) Continuity between C-09 joint connector (CAN2) terminal No.18 and C-02 combination meter

connector terminal No.23

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Are the check result normal?

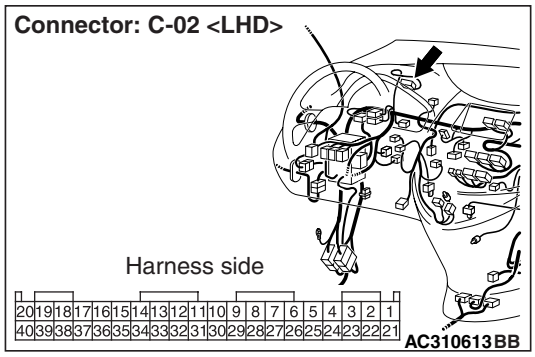
YES : <All the voltages measure 2 Ω or less> Go to Step 6 .

NO : <Either or all of the voltages measure more than 2 Ω> Repair the wiring harness between joint connector (CAN2) and the combination meter connector, and then go to Step 2.

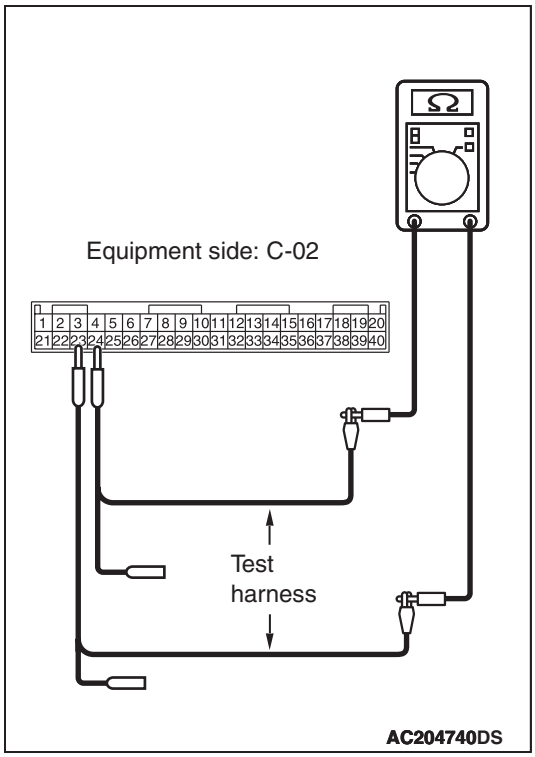
STEP 6. Resistance measurement at C-02 combination meter connector.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.



(1) Remove the combination meter, and measure at the equipment side.



(2) Resistance between C-02 combination meter connector terminal Nos. 23 and 24

OK: 120± 20 Ω

Q: Is the check result normal?

YES : <Within 120± 20 Ω> Go to Step 2 .

NO : <Not within 120± 20 Ω> Replace the combination meter, and then go to Step 2.

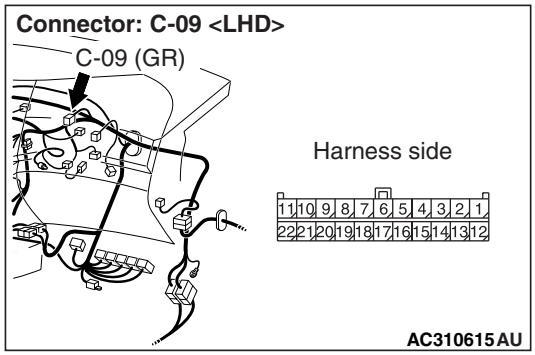
STEP 7. Resistance measurement at C-125 intermediate connector and C-09 joint connector (CAN2).

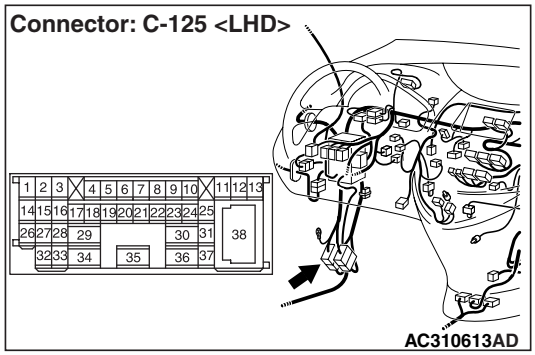
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





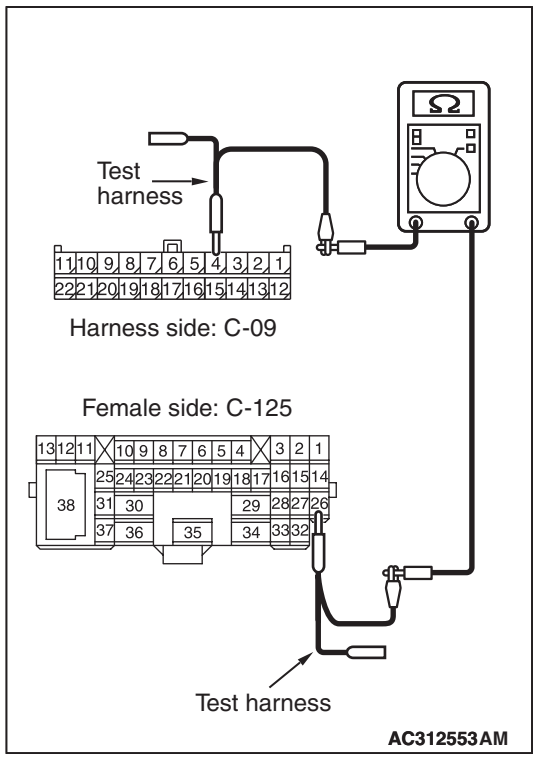
(1) Disconnect the joint connector (CAN2) and the intermediate connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

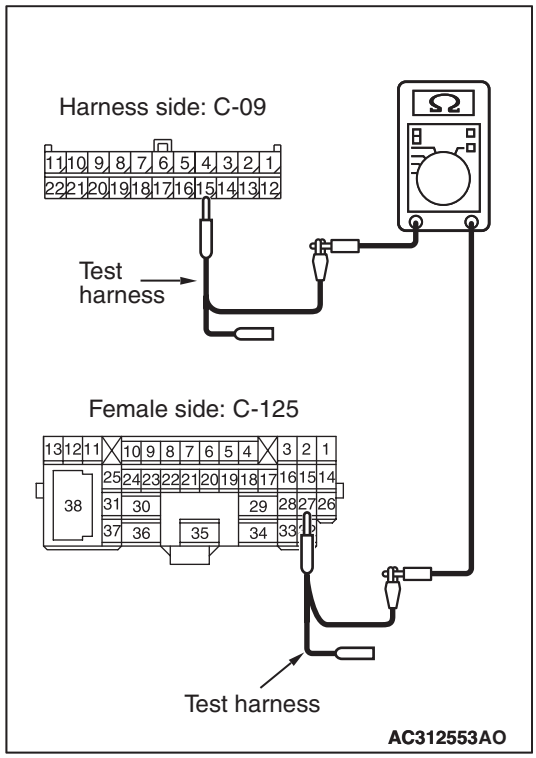
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-125 intermediate connector terminal No.26 and C-09 joint connector (CAN2) terminal No.4

OK: 2 Ω or less



(5) Continuity between C-125 intermediate connector terminal No.27 and C-09 joint

connector (CAN2) terminal No.15

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Are the check result normal?

YES : <All the voltages measure 2 Ω or less> Go to Step 2 .

NO : <Either or all of the voltages measure more than 2 Ω> Repair the wiring harness between joint connector (CAN2) and the intermediate connector, and then go to Step 2.

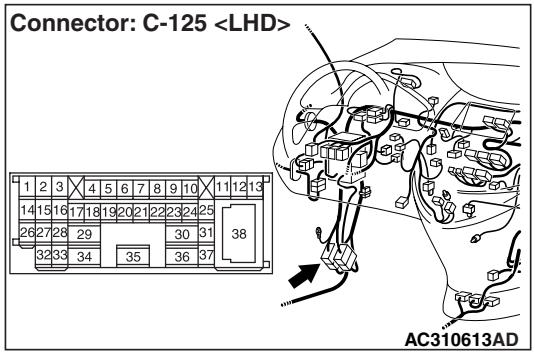
STEP 8. Resistance measurement at the C-125 intermediate connector.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



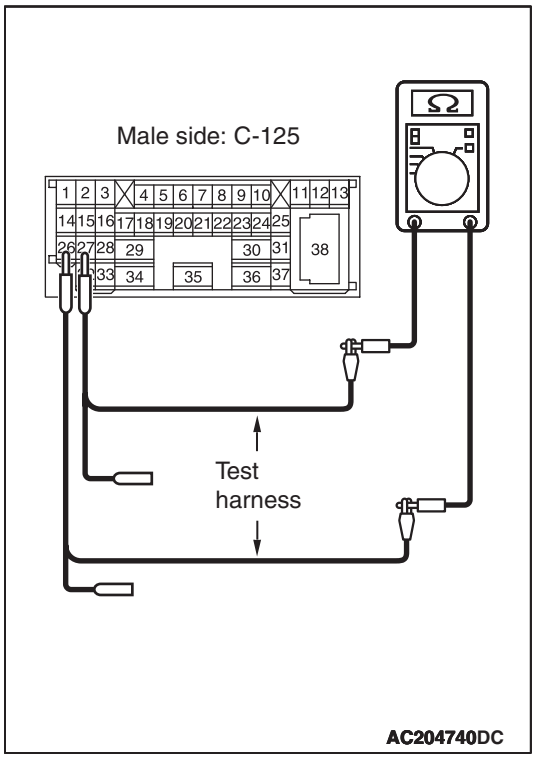
(1) Disconnect the connector, and measure at its male-side intermediate connector (at the front wiring harness side).

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Resistance between C-125 intermediate connector terminal Nos.26 and 27

OK: 120± 20 Ω

Q: Is the check result normal?

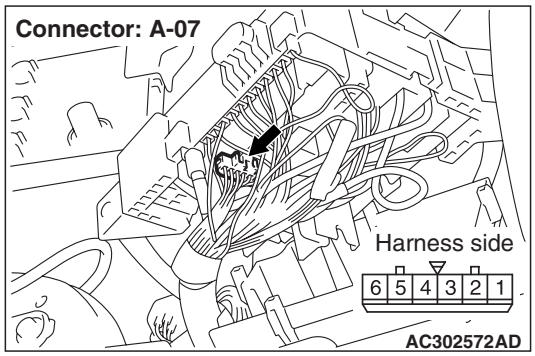
YES : <Within 120± 20 Ω> Go to Step 16 .

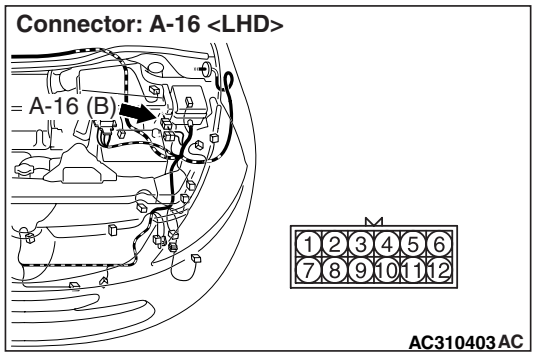
NO : <Not within 120± 20 Ω> Go to Step 9 .

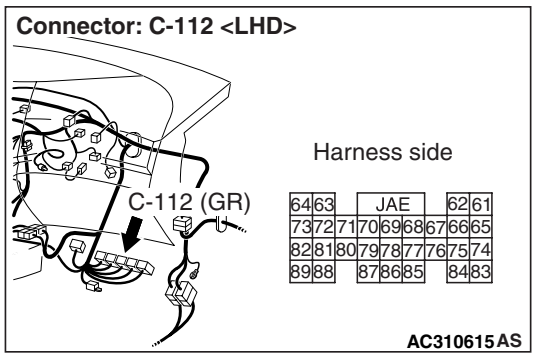
STEP 9. Connector check: A-07 joint connector (CAN1), A-16 intermediate connector and C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector

NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION







The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

When checking the joint connector, ensure that its wiring harness side is not damaged.

Q: Are the check result normal?

YES : Go to Step 10.

NO : Repair the connector, or replace the joint connector (front wiring harness assembly). Then go to Step 8.

STEP 10. Resistance measurement at the A-07 joint connector (CAN1).

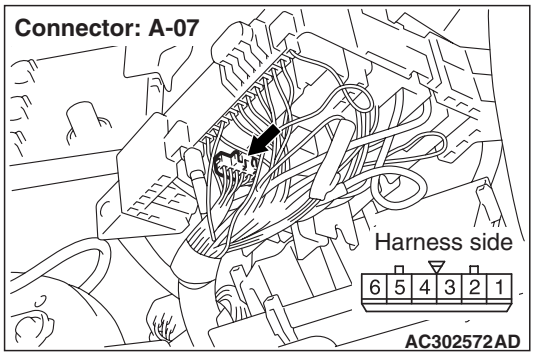
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the connector, and measure at the wiring harness side.

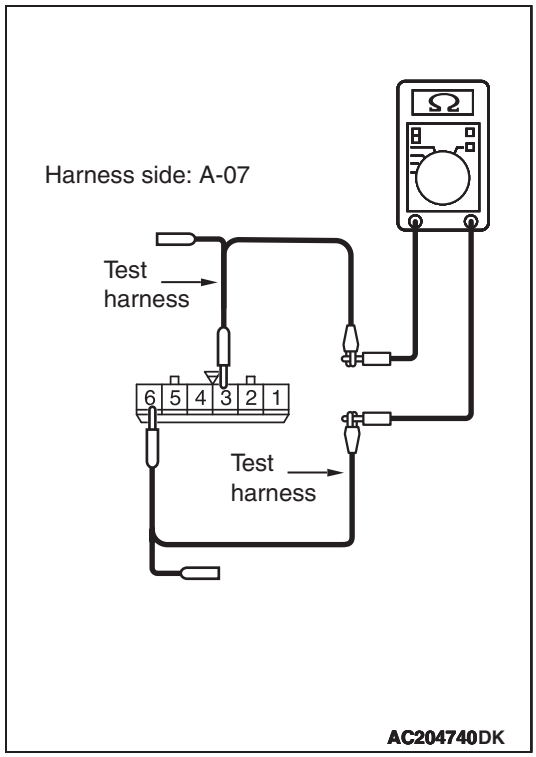
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is

disconnected.



(4) Resistance between A-07 joint connector (CAN1) terminal Nos. 3 and 6

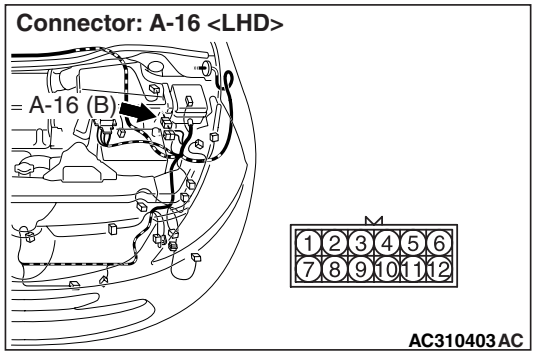
OK: 120 ± 20 Ω

Q: Is the check result normal?
YES : <Within 120 ± 20 Ω> Go to Step 15 .
NO : <Not within 120 ± 20 Ω> Go to Step 11 .

STEP 11. Resistance measurement at the A-16 intermediate connector.

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.

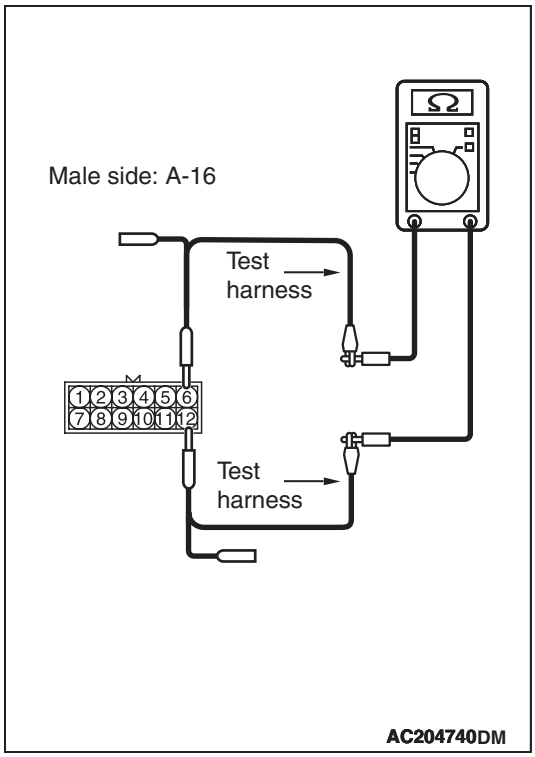


(1) Disconnect the connector, and measure at its male-side intermediate connector (at the control wiring harness side).

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Resistance between A-16 intermediate connector terminal Nos.6 and 12

OK: 120 ± 20 Ω

Q: Is the check result normal?
YES : <Within 120 ± 20 Ω> Go to Step 12 .
NO : <Not within 120 ± 20 Ω> Go to Step 13 .

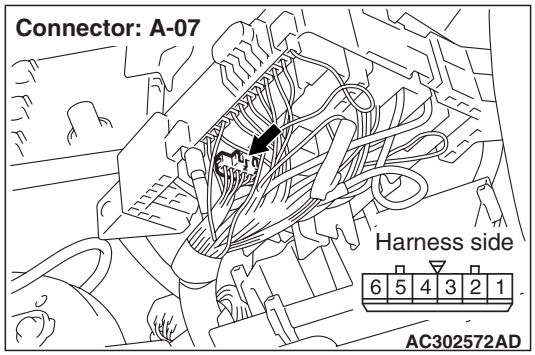
STEP 12. Resistance measurement at A-07 joint connector (CAN1) and A-16 intermediate connector.

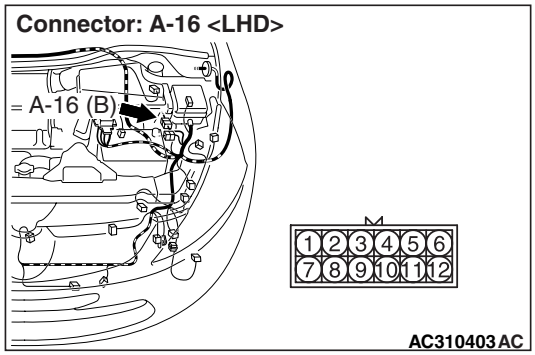
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





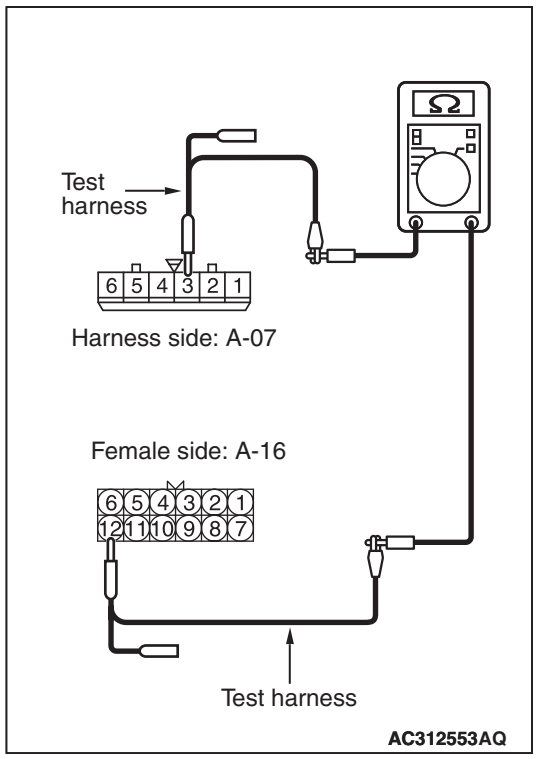
(1) Disconnect the joint connector (CAN1) and the intermediate connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

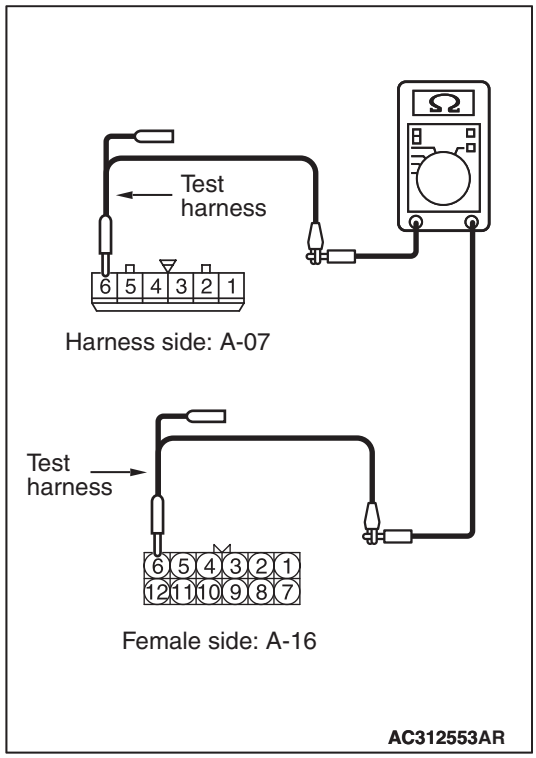
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between A-07 joint connector (CAN1) terminal No.3 and A-16 intermediate connector terminal No.12

OK: 2 Ω or less



(5) Continuity between A-07 joint connector (CAN1) terminal No.6 and A-16 intermediate connector

terminal No.6

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Are the check result normal?

YES : <All the voltages measure 2 Ω or less> Go to Step 8 .

NO : <Either or all of the voltages measure more than 2 Ω> Repair the wiring harness between joint connector (CAN1) and the intermediate connector, and then go to Step 8.

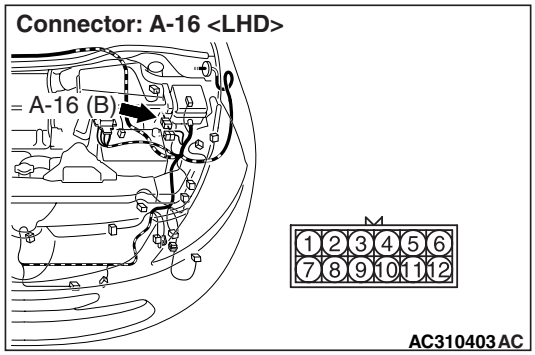
STEP 13. Resistance measurement at A-16 intermediate connector and C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector.

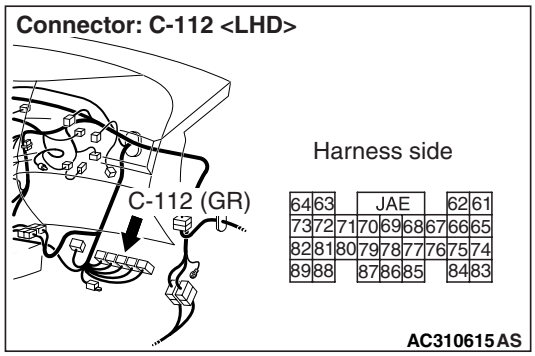
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





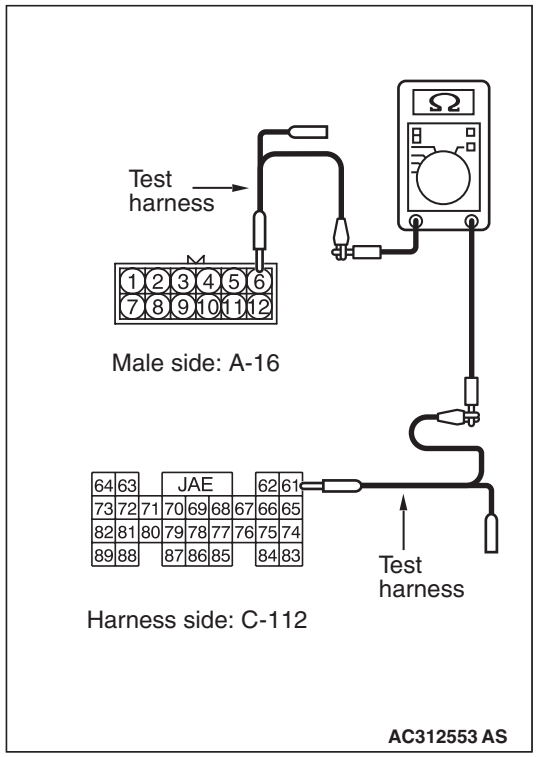
(1) Disconnect the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector and the intermediate connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

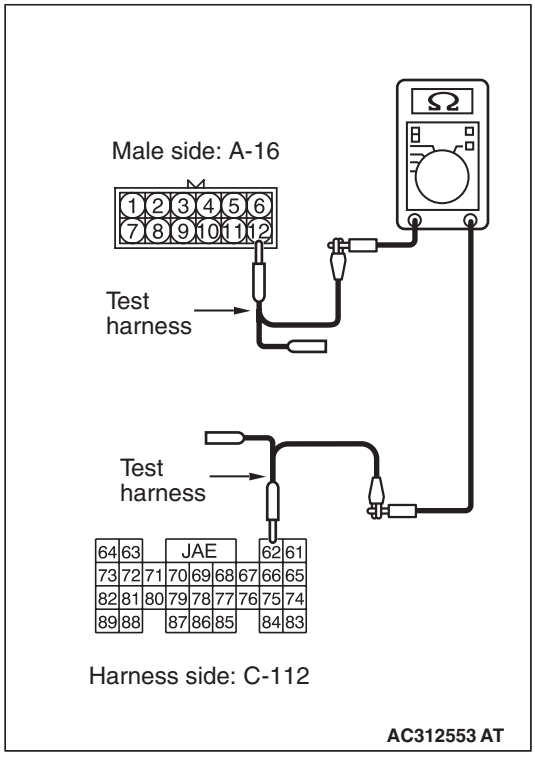
(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between A-16 intermediate connector terminal No.6 and C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector terminal

No.61.

OK: 2 Ω or less



(5) Continuity between A-16 intermediate connector terminal No.12 and C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector terminal No.62.

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Are the check result normal?

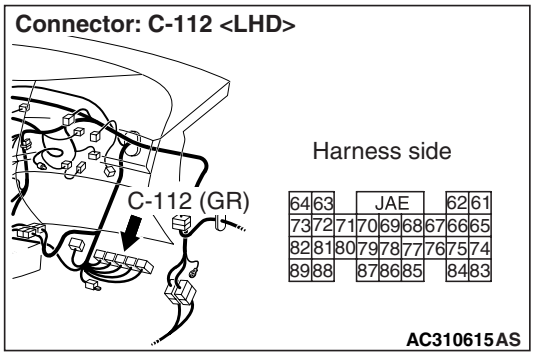
YES : <All the voltages measure 2 Ω or less> Go to Step 14 .

NO : <Either or all of the voltages measure more than 2 Ω> Repair the wiring harness between the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector and the intermediate connector, and then go to Step 8.

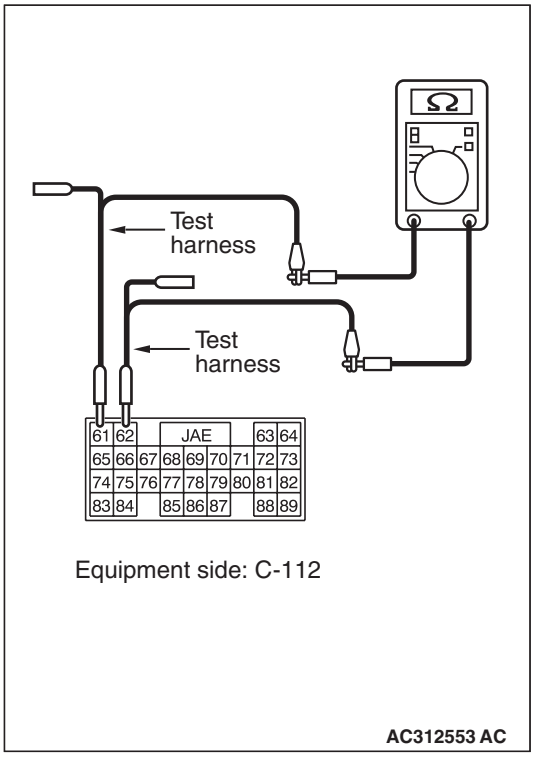
STEP 14. Resistance measurement at C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.



(1) Remove the engine-ECU <M/T> or engine-A/T-ECU <A/T>, and measure at the equipment side.



(2) Resistance at C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector terminal Nos. 61 and 62

OK: 120± 20 Ω

Q: Is the check result normal?

YES : <Within 120± 20 Ω> Go to Step 8 .

NO : <Not within 120± 20 Ω> Replace the engine-ECU <M/T> or engine-A/T-ECU <A/T>, and then go to Step 8.

STEP 15. Resistance measurement at C-125 intermediate connector and A-07 joint connector (CAN1).

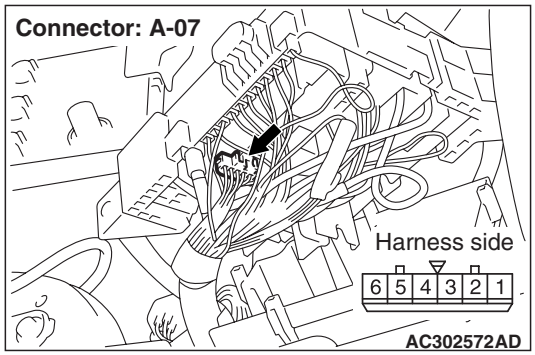
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

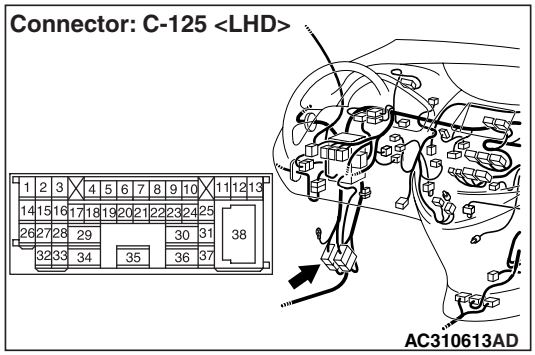
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





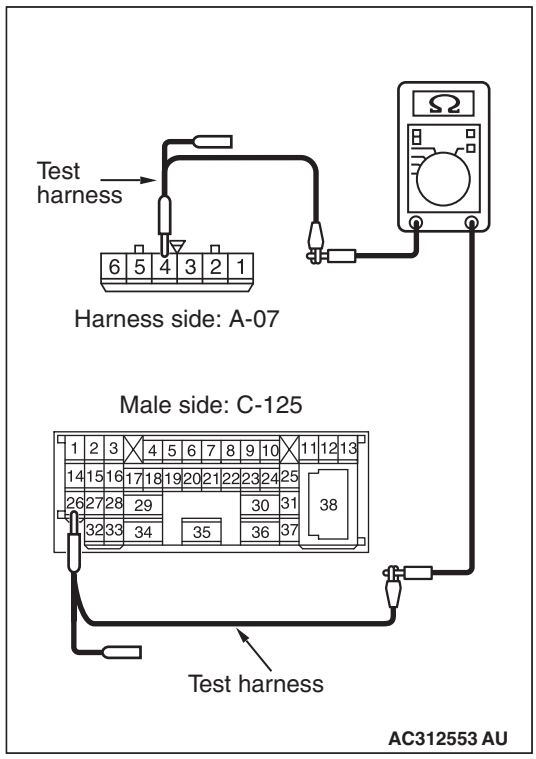
(1) Disconnect the joint connector (CAN1) and the intermediate connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

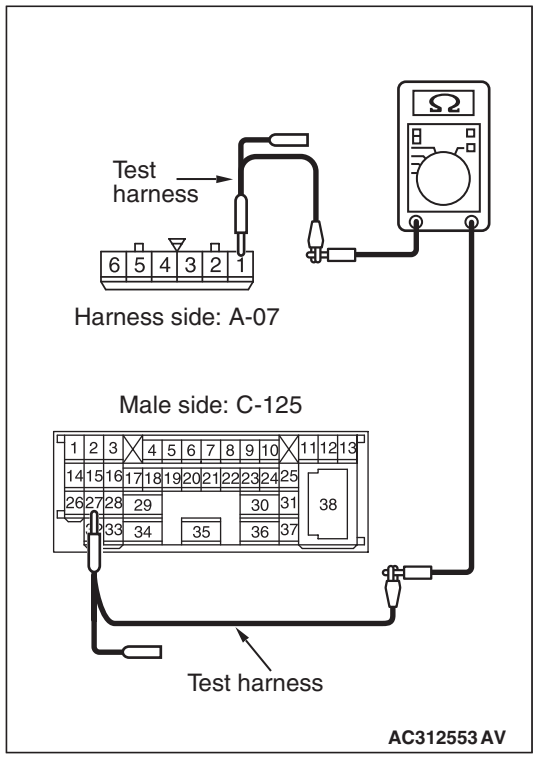
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-125 intermediate connector terminal No.26 and A-07 joint connector (CAN1) terminal No.4

OK: 2 Ω or less



(5) Continuity between C-125 intermediate connector terminal No.27 and A-07 joint

connector (CAN1) terminal No.1

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

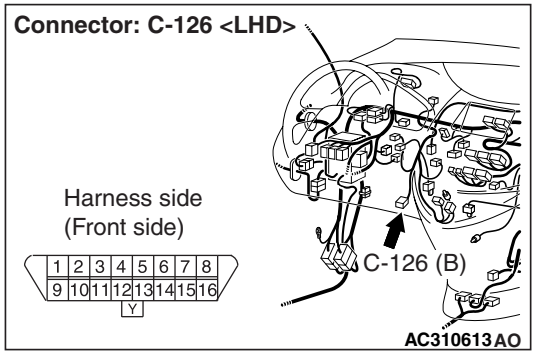
Q: Are the check result normal?

YES : <All the voltages measure 2 Ω or less> Go to Step 8 .

NO : <Either or all of the voltages measure more than 2 Ω> Repair the wiring harness between joint connector (CAN1) and the intermediate connector, and then go to Step 8.

STEP 16. Connector check: C-126 diagnosis connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 17.

NO : Repair the connector, or replace the joint connector. Then go to Step 17.

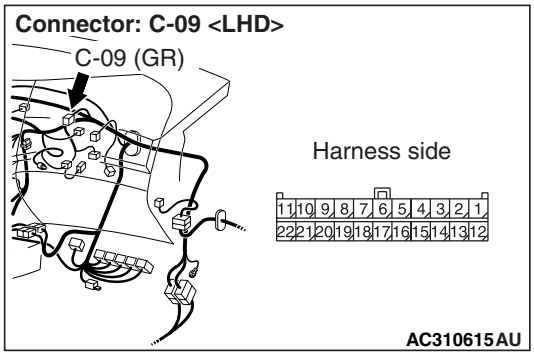
STEP 17. Resistance measurement at C-09 joint connector (CAN2) and C-126 diagnosis connector.

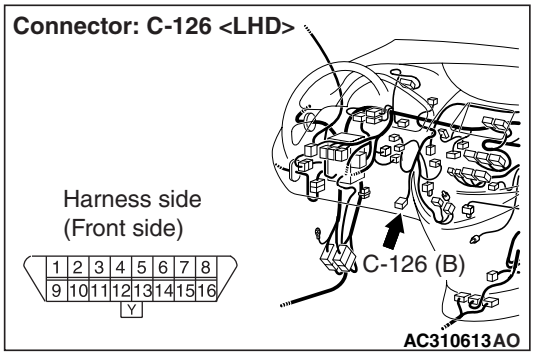
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN2) and the diagnosis connector, and measure at the wiring harness side.

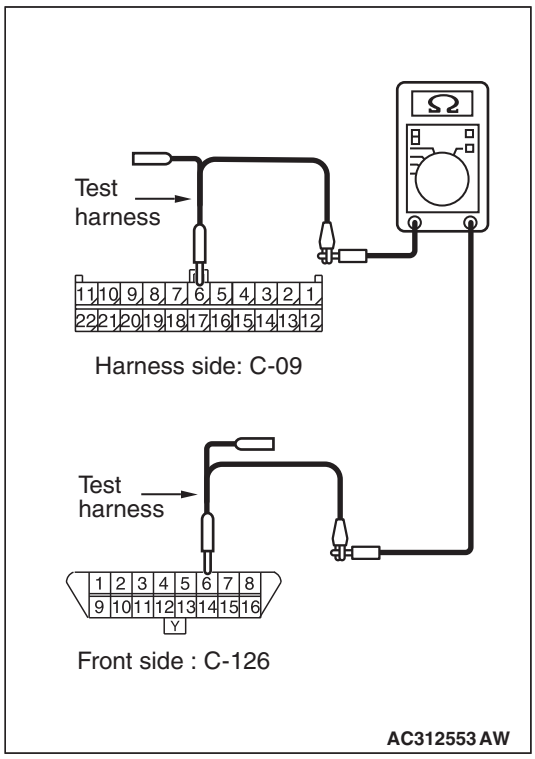
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

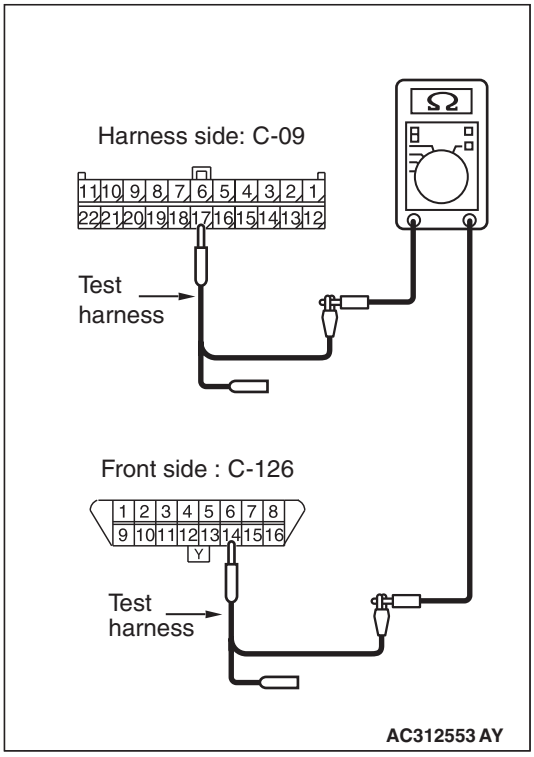
(3) Ensure that the negative battery terminal is

disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal No.6 and C-126 diagnosis connector terminal No.6

OK: 2 Ω or less



(5) Continuity between C-09 joint connector (CAN2) terminal No.17 and C-126 diagnosis connector terminal No.14

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Are the check result normal?

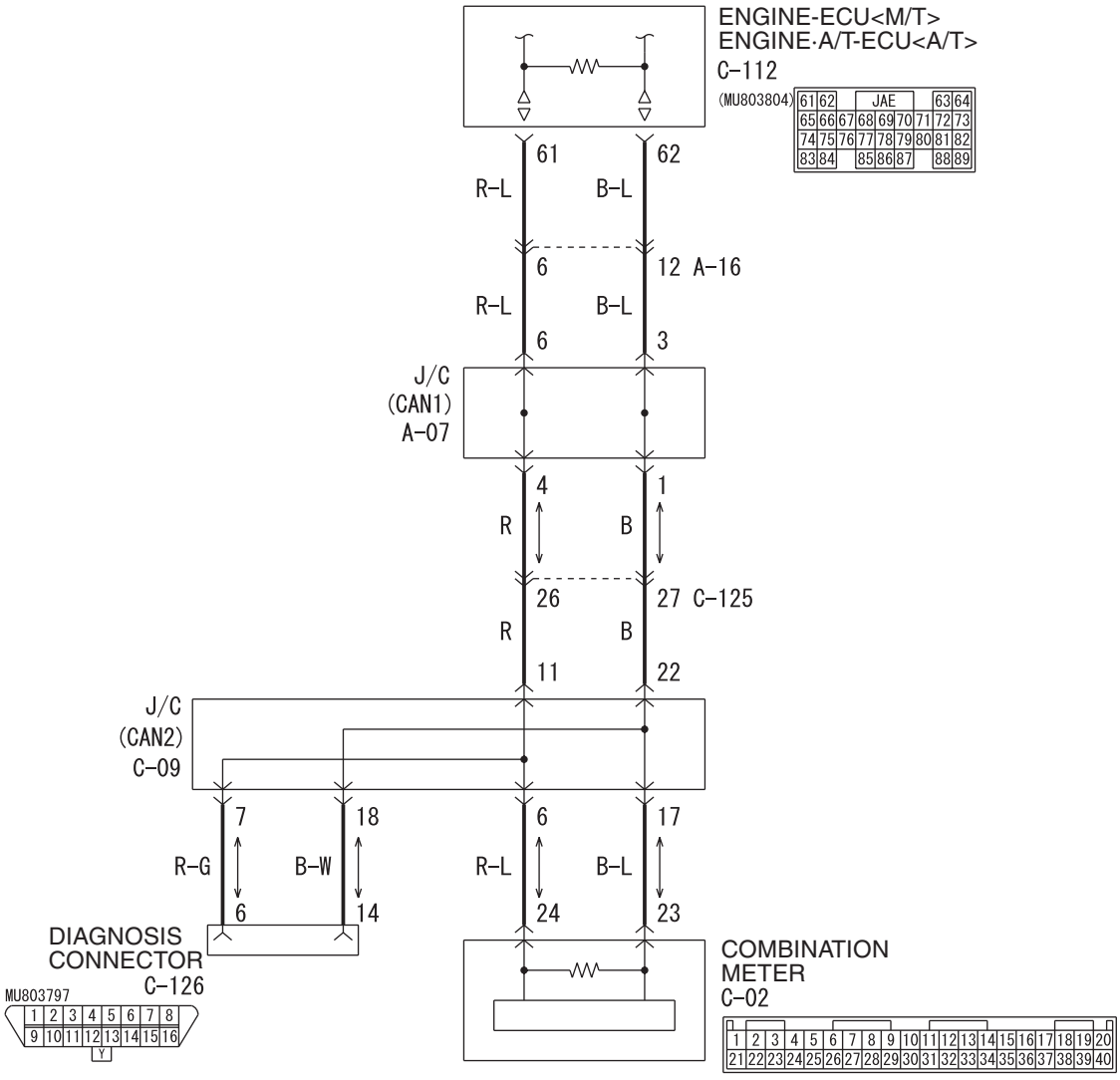
YES <all the resistances measure 2 Ω or less:
When any repair done> : Retest the system.

YES <all the resistances measure 2 Ω or less:
When no repair done> : Diagnose CAN bus lines thoroughly. Refer to P.54D-16.

<Either of the resistances measures more than 2 Ω or all the resistances measure more than 2 Ω> :
Repair the wiring harness between joint connector (CAN2) and the diagnosis connector.

Diagnostic Item 14: Diagnose the terminator resistors at both ends <RH drive vehicles>

⚠ CAUTION
When servicing a CAN bus line, earth yourself by touching a metal object such as an unpainted water pipe. If you fail to do, a component connected to the CAN bus line may be broken.



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E11AA

TROUBLE JUDGMENT

If the resistance between the CAN bus lines (CAN_L and CAN_H) is infinite, the terminator resistors in the CAN bus lines are broken, or there is an open circuit in the wiring harness from the diagnosis connector to the terminator resistors.

COMMENTS ON TROUBLE SYMPTOM

The CAN bus line harness wires or connectors may be damaged (open circuit may be present on CAN_L or CAN_H line between the diagnosis connector and CAN main bus lines, or CAN main bus lines may be open at both sides), or the combination meter and the engine-ECU <M/T> or engine-A/T-ECU <A/T> may be defective.

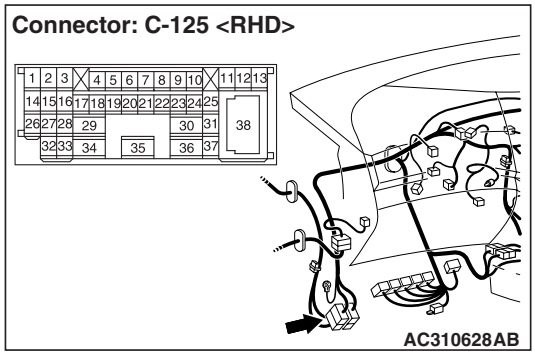
TROUBLESHOOTING HINTS

- Damaged harness wires and connectors
- Malfunction of the combination meter
- Malfunction of the engine-ECU <M/T> or engine-A/T-ECU <A/T>

DIAGNOSTIC PROCEDURE

STEP 1. Connector check: C-125 intermediate connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?
YES : Go to Step 2 .
NO : Repair the connector, and then go to Step 2.

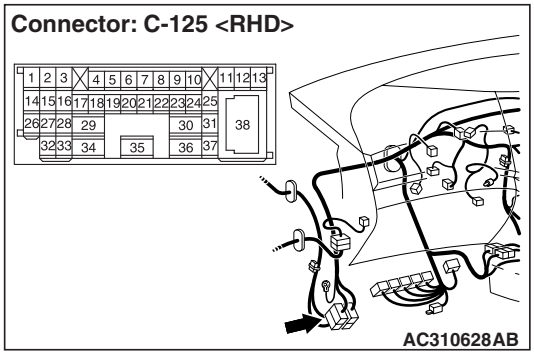
STEP 2. Resistance measurement at the C-125 intermediate connector.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.

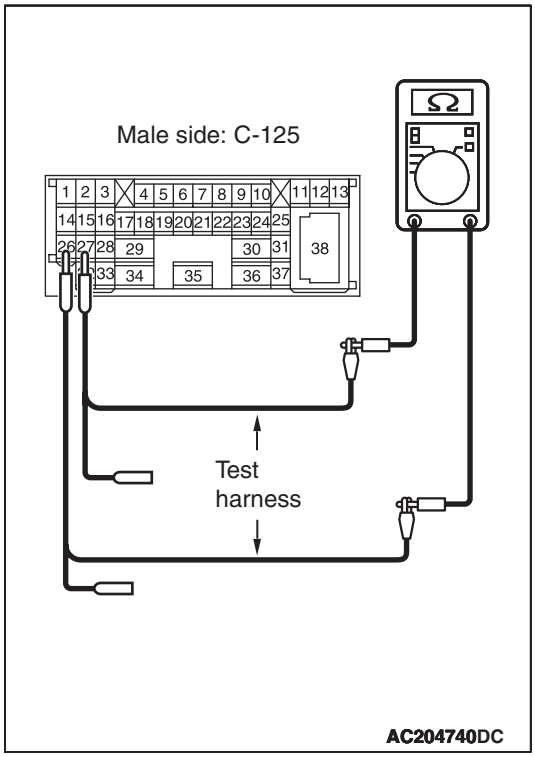


(1) Disconnect the connector, and measure at its female-side intermediate connector (at the instrument panel wiring harness side).
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



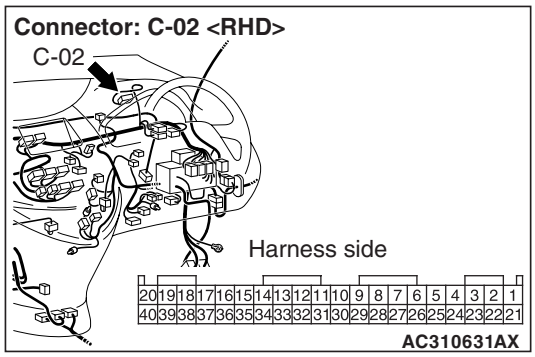
(4) Resistance between C-125 intermediate

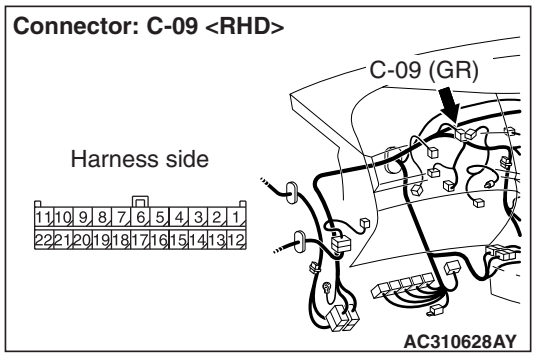
connector terminal Nos.26 and 27
OK: 120± 20 Ω

Q: Is the check result normal?
YES : <Within 120± 20 Ω> Go to Step 8 .
NO : <Not within 120± 20 Ω> Go to Step 3 .

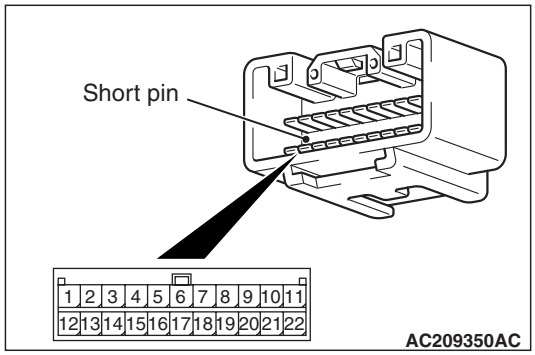
STEP 3. Connector check: C-09 joint connector (CAN2) and C-02 combination meter connector

⚠ CAUTION





The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.



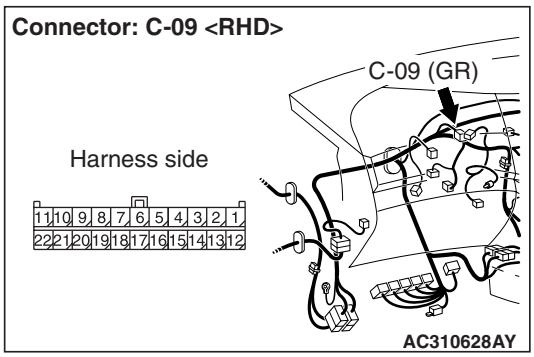
When checking the joint connector, ensure that its wiring harness side is not damaged.

Q: Are the check result normal?
YES : Go to Step 4.
NO : Repair the connector, or replace the joint connector. Then go to Step 2.

STEP 4. Resistance measurement at C-09 joint connector (CAN2).

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

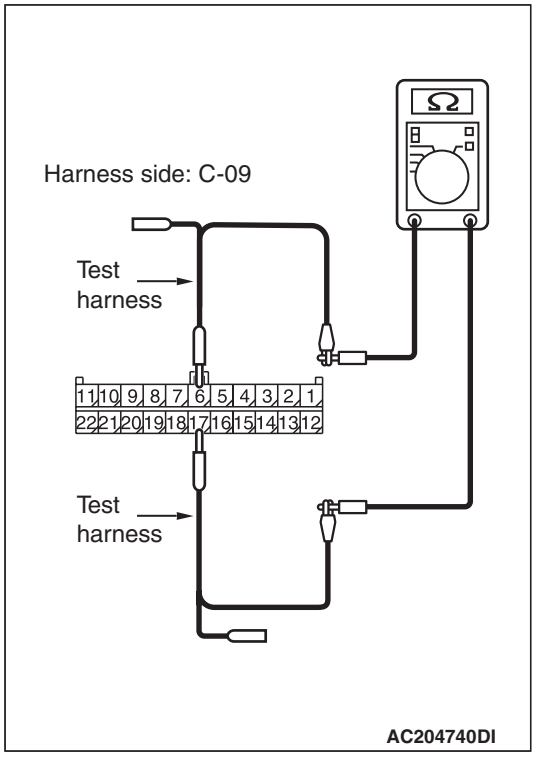
⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the connector, and measure at the wiring harness side.
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Resistance between C-09 joint connector (CAN2)

terminal Nos. 6 and 17

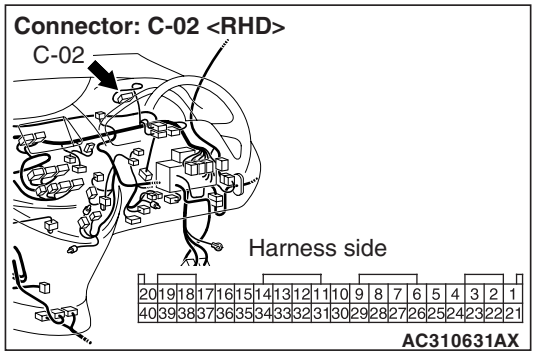
OK: 120 ± 20 Ω

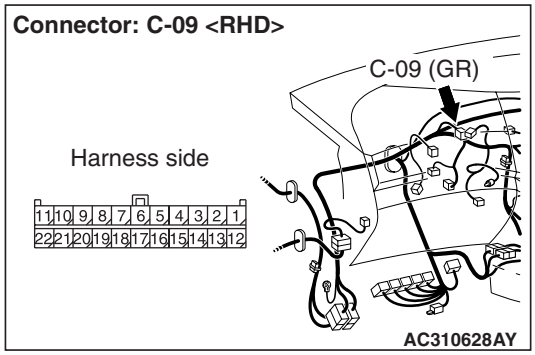
Q: Is the check result normal?
YES : <Within 120 ± 20 Ω> Go to Step 7 .
NO : <Not within 120 ± 20 Ω> Go to Step 5 .

STEP 5. Resistance measurement at C-09 joint connector (CAN2) and C-02 combination meter connector.

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.

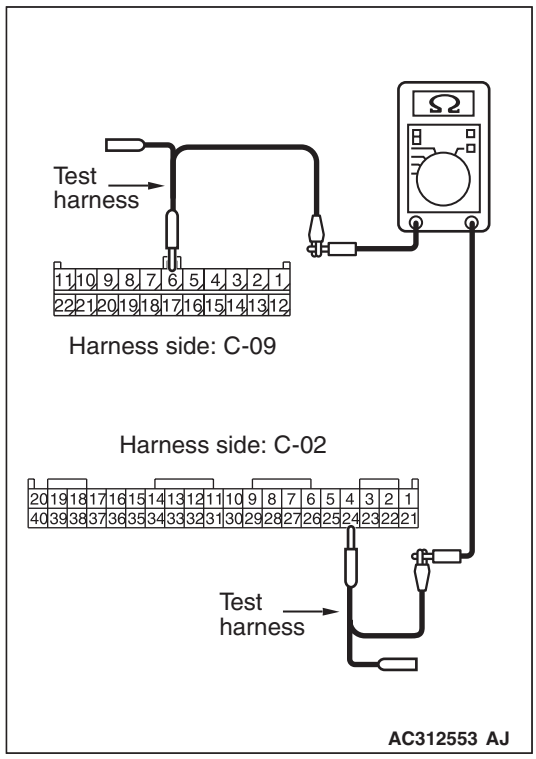




(1) Disconnect the joint connector (CAN2) and the combination meter connector, and measure at the wiring harness side.
(2) Ignition switch: OFF (LOCK)

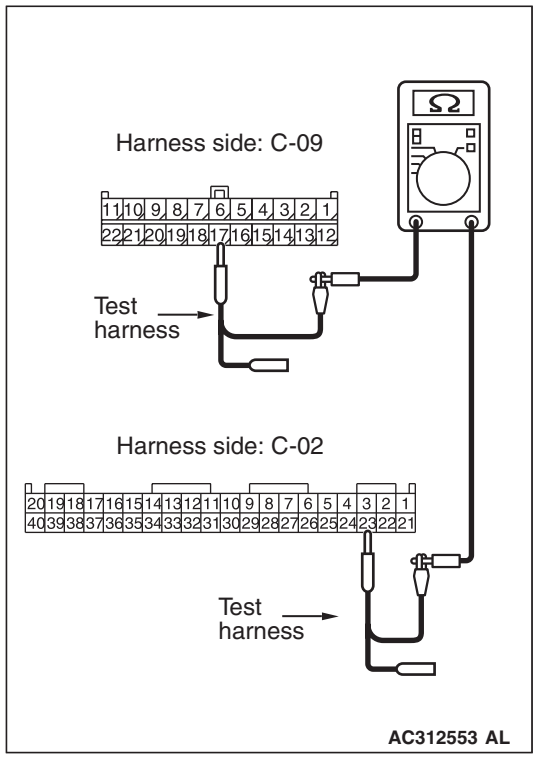
⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal No.6 and C-02 combination meter connector terminal No.24

OK: 2 Ω or less



(5) Continuity between C-09 joint connector (CAN2) terminal No.17 and C-02 combination meter

connector terminal No.23

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Are the check result normal?

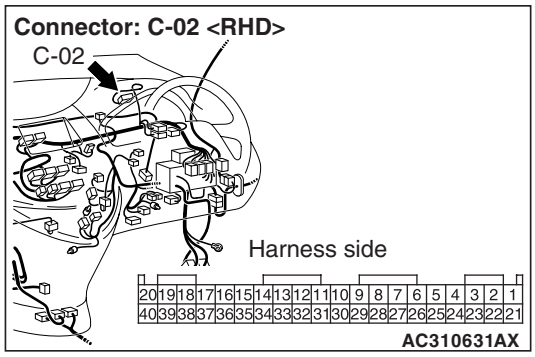
YES : <All the voltages measure 2 Ω or less> Go to Step 6 .

NO : <Either or all of the voltages measure more than 2 Ω> Repair the wiring harness between joint connector (CAN2) and the combination meter connector, and then go to Step 2.

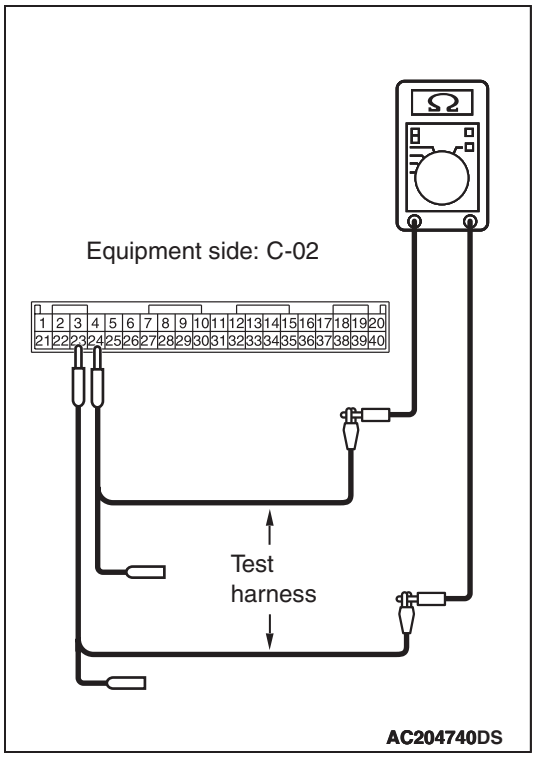
STEP 6. Resistance measurement at C-02 combination meter connector.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.



(1) Remove the combination meter, and measure at the equipment side.



(2) Resistance between C-02 combination meter connector terminal Nos. 23 and 24

OK: 120± 20 Ω

Q: Is the check result normal?

YES : <Within 120± 20 Ω> Go to Step 2 .

NO : <Not within 120± 20 Ω> Replace the combination meter, and then go to Step 2.

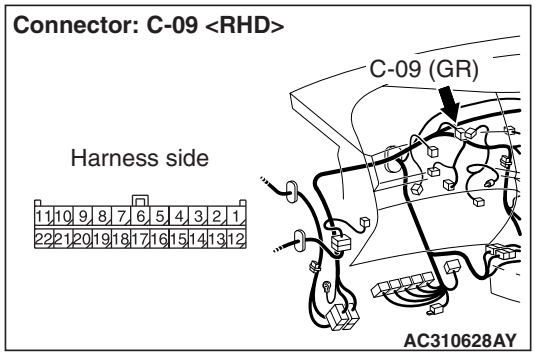
STEP 7. Resistance measurement at C-125 intermediate connector and C-09 joint connector (CAN2).

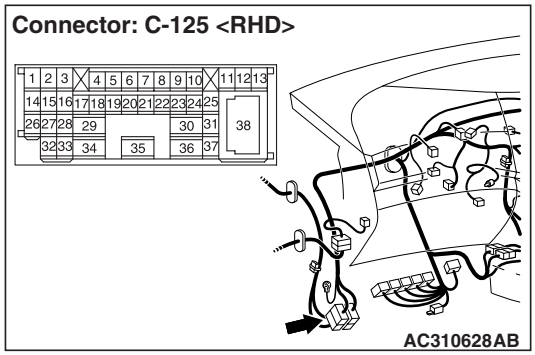
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





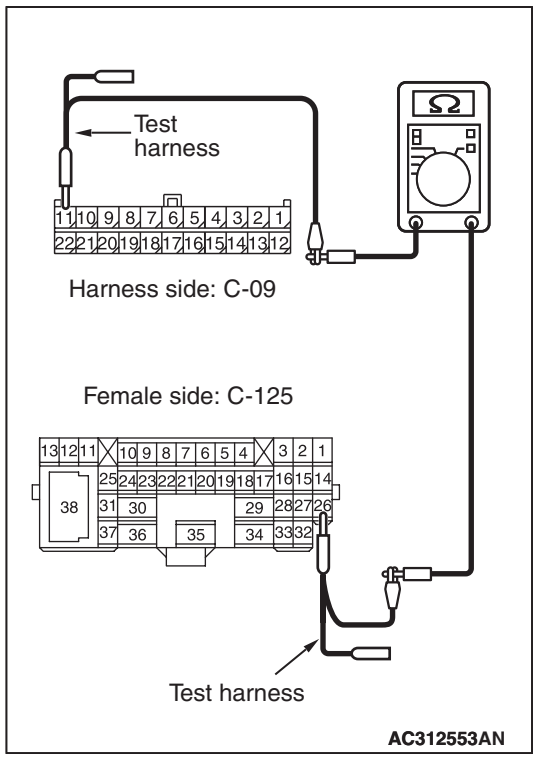
(1) Disconnect the joint connector (CAN2) and the intermediate connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

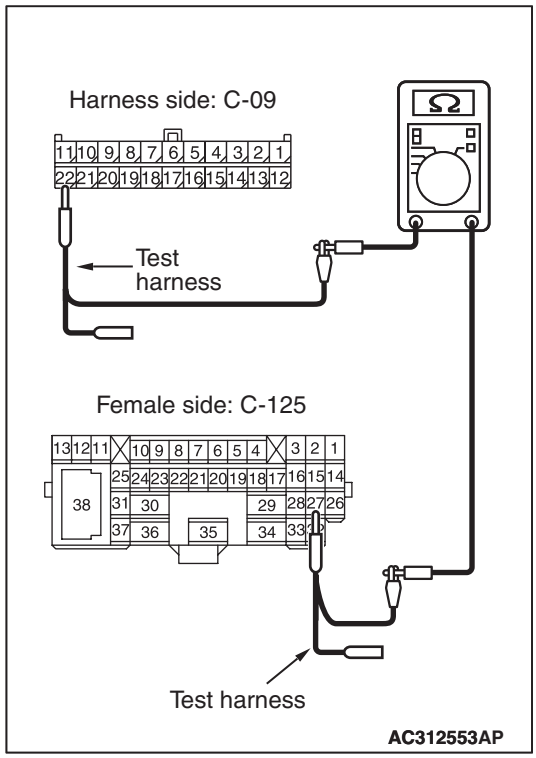
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-125 intermediate connector terminal No.26 and C-09 joint connector (CAN2) terminal No.11

OK: 2 Ω or less



(5) Continuity between C-125 intermediate connector terminal No.27 and C-09 joint

connector (CAN2) terminal No.22

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Are the check result normal?

YES : <All the voltages measure 2 Ω or less> Go to Step 2 .

NO : <Either or all of the voltages measure more than 2 Ω> Repair the wiring harness between joint connector (CAN2) and the intermediate connector, and then go to Step 2.

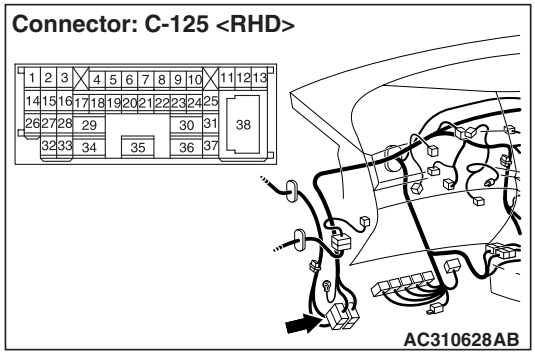
STEP 8. Resistance measurement at the C-125 intermediate connector.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



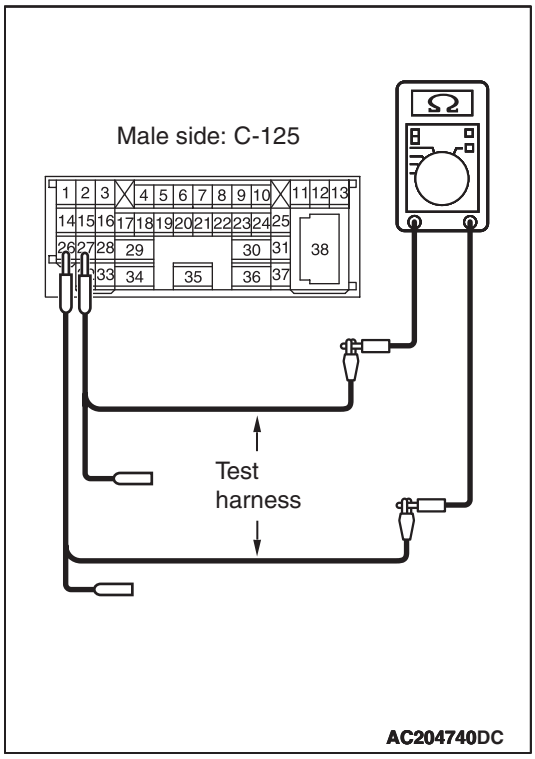
(1) Disconnect the connector, and measure at its male-side intermediate connector (at the front wiring harness side).

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Resistance between C-125 intermediate connector terminal Nos.26 and 27

OK: 120± 20 Ω

Q: Is the check result normal?

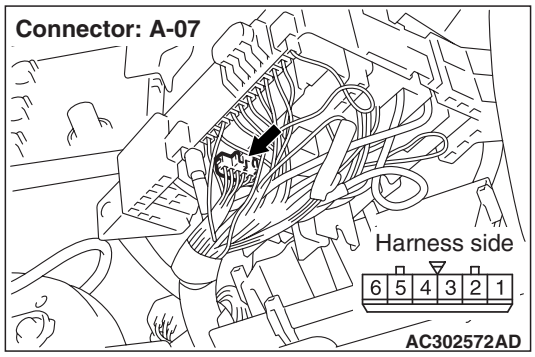
YES : <Within 120± 20 Ω> Go to Step 16 .

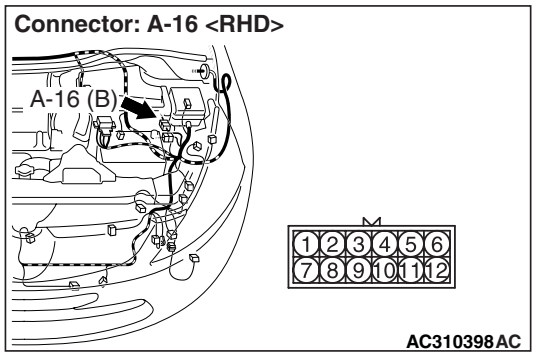
NO : <Not within 120± 20 Ω> Go to Step 9 .

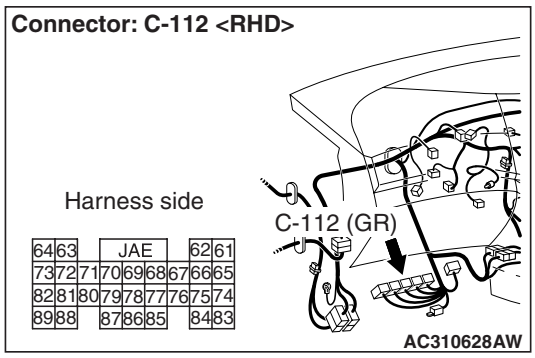
STEP 9. Connector check: A-07 joint connector (CAN1), A-16 intermediate connector and C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector

NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION







The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

When checking the joint connector, ensure that its wiring harness side is not damaged.

Q: Are the check result normal?

YES : Go to Step 10.

NO : Repair the connector, or replace the joint connector (front wiring harness assembly). Then go to Step 8.

STEP 10. Resistance measurement at the A-07 joint connector (CAN1).

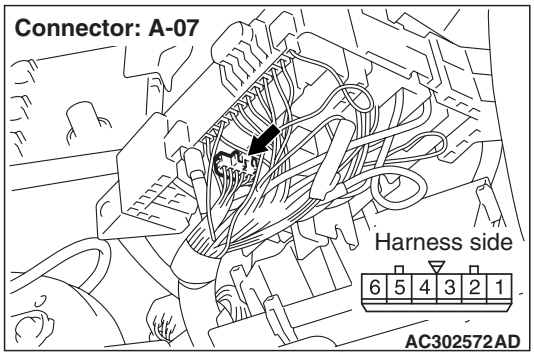
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the connector, and measure at the wiring harness side.

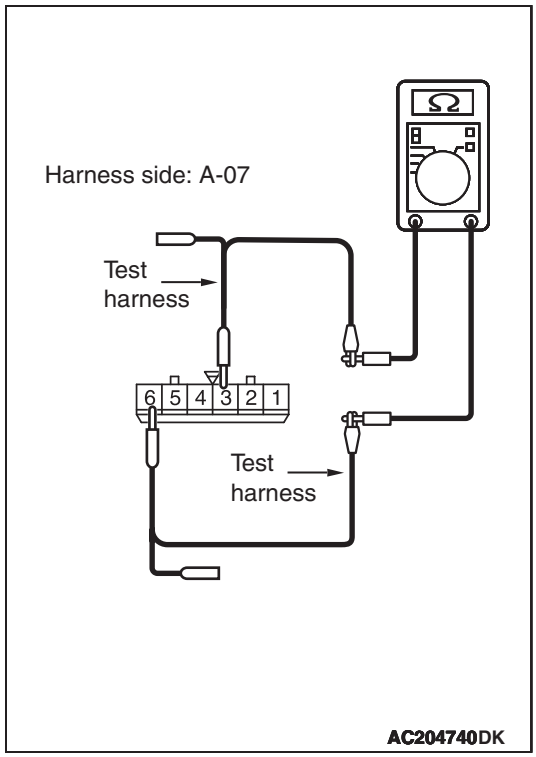
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is

disconnected.



(4) Resistance between A-07 joint connector (CAN1) terminal Nos. 3 and 6

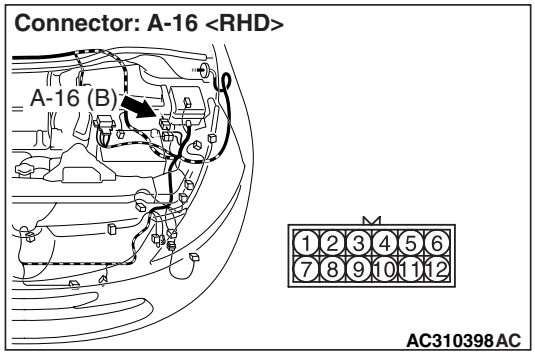
OK: 120± 20 Ω

Q: Is the check result normal?
YES : <Within 120± 20 Ω> Go to Step 15 .
NO : <Not within 120± 20 Ω> Go to Step 11 .

STEP 11. Resistance measurement at the A-16 intermediate connector.

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.

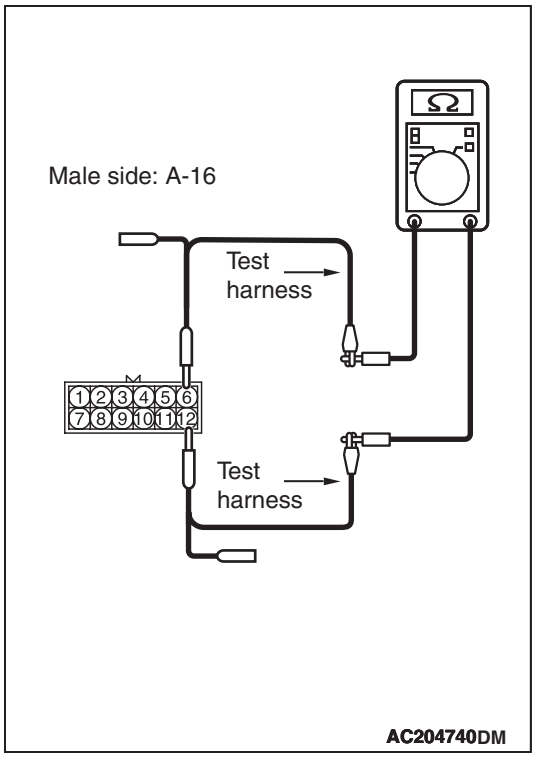


(1) Disconnect the connector, and measure at its male-side intermediate connector (at the control wiring harness side).

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Resistance between A-16 intermediate connector terminal Nos. 6 and 12

OK: 120± 20 Ω

Q: Is the check result normal?
YES : <Within 120± 20 Ω> Go to Step 12 .
NO : <Not within 120± 20 Ω> Go to Step 13 .

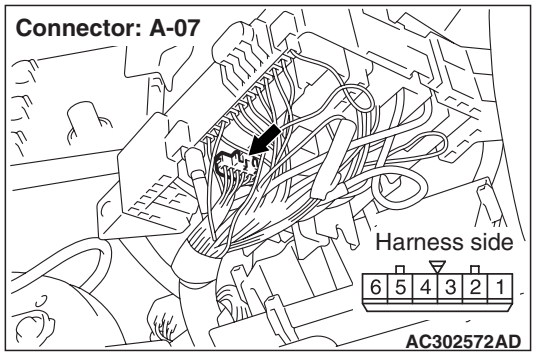
STEP 12. Resistance measurement at A-07 joint connector (CAN1) and A-16 intermediate connector.

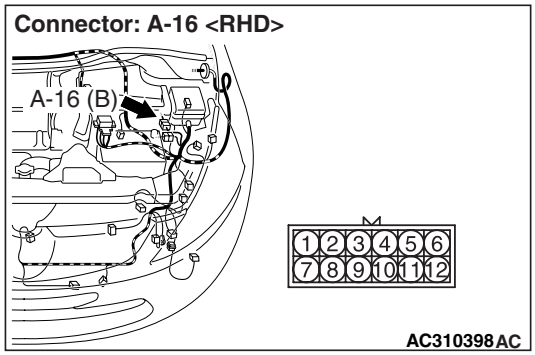
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





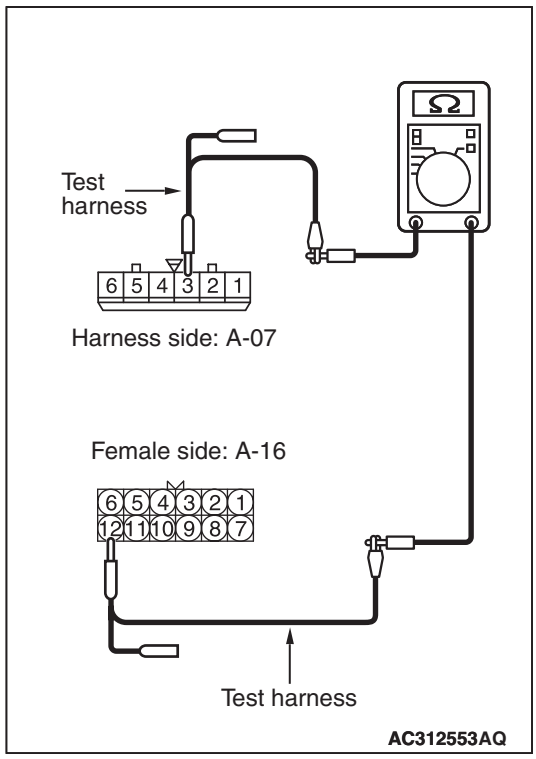
(1) Disconnect the joint connector (CAN1) and the intermediate connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

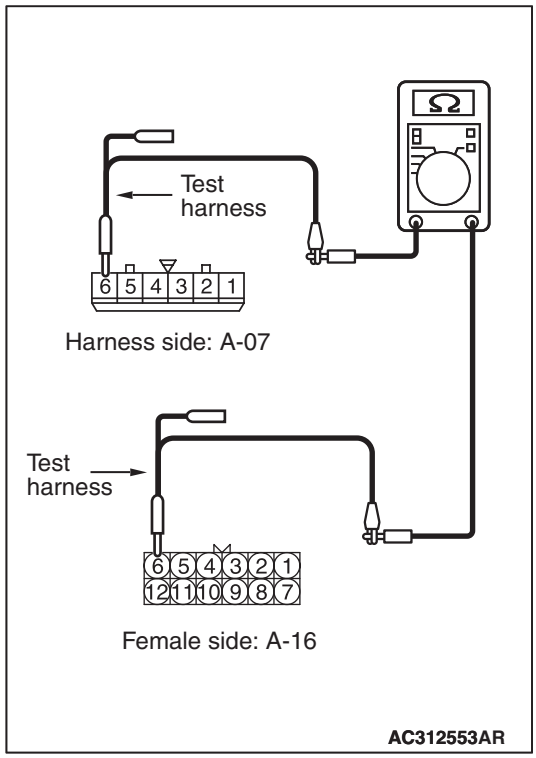
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between A-07 joint connector (CAN1) terminal No.3 and A-16 intermediate connector terminal No.12

OK: 2 Ω or less



(5) Continuity between A-07 joint connector (CAN1) terminal No.6 and A-16 intermediate connector

terminal No.6

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Are the check result normal?

YES : <All the voltages measure 2 Ω or less> Go to Step 8 .

NO : <Either or all of the voltages measure more than 2 Ω> Repair the wiring harness between joint connector (CAN1) and the intermediate connector, and then go to Step 8.

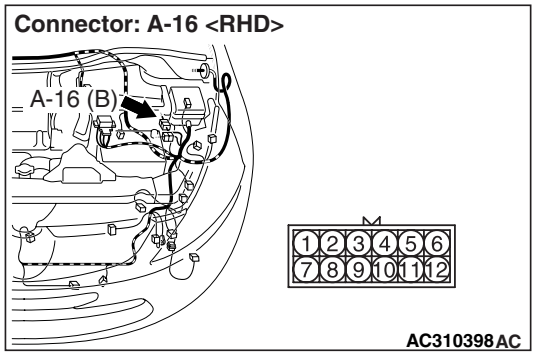
STEP 13. Resistance measurement at A-16 intermediate connector and C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector.

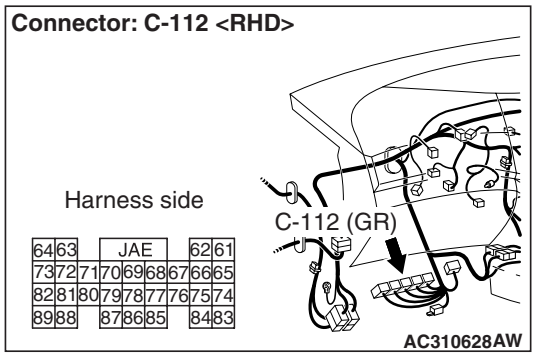
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





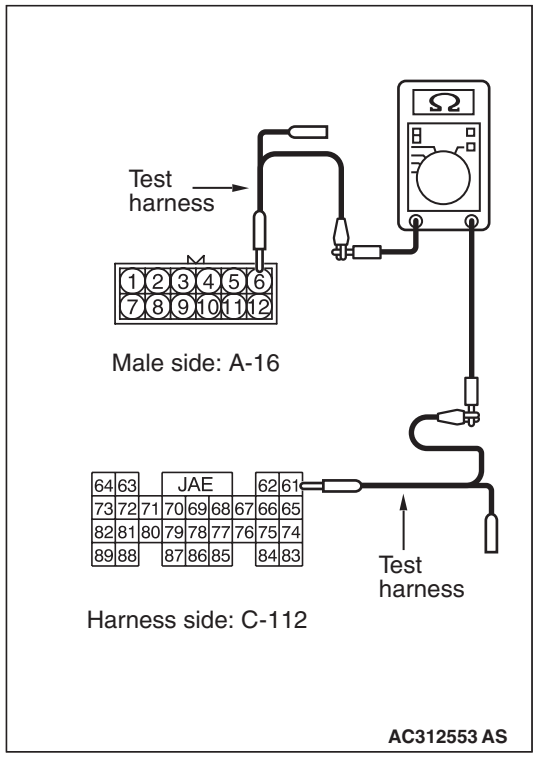
(1) Disconnect the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector and the intermediate connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

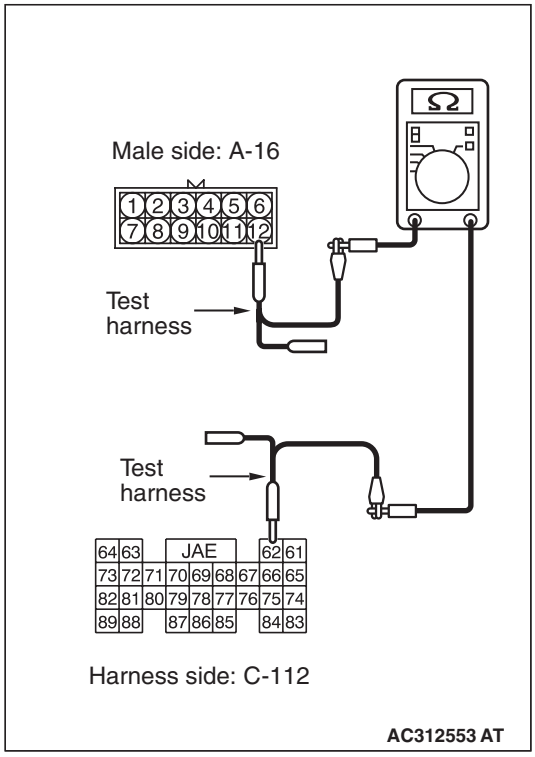
(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between A-16 intermediate connector terminal No.6 and C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector terminal

No.61.

OK: 2 Ω or less



(5) Continuity between A-16 intermediate connector terminal No.12 and C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector terminal No.62.

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Are the check result normal?

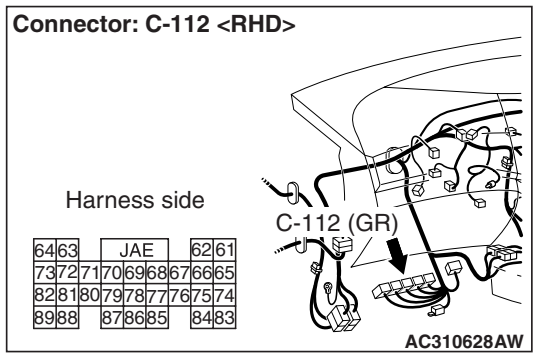
YES : <All the voltages measure 2 Ω or less> Go to Step 14 .

NO : <Either or all of the voltages measure more than 2 Ω> Repair the wiring harness between the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector and the intermediate connector, and then go to Step 8.

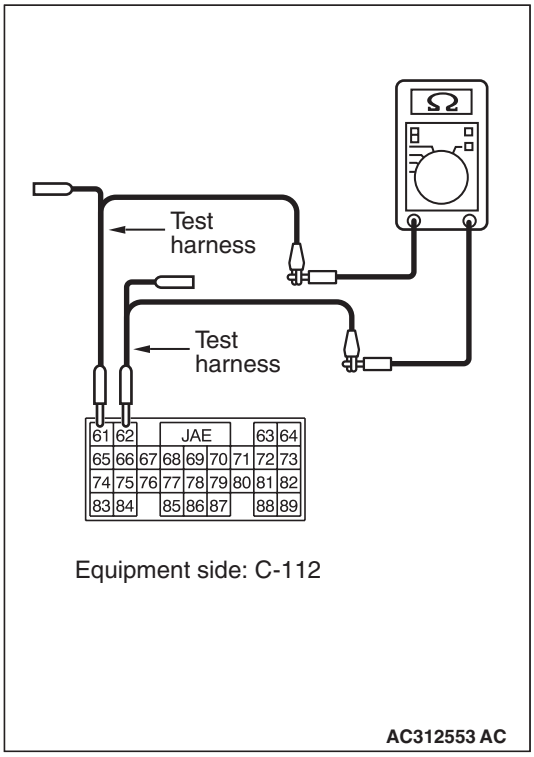
STEP 14. Resistance measurement at C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.



(1) Remove the engine-ECU <M/T> or engine-A/T-ECU <A/T>, and measure at the equipment side.



(2) Resistance at C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector terminal Nos. 61 and 62

OK: 120± 20 Ω

Q: Is the check result normal?

YES : <Within 120± 20 Ω> Go to Step 8 .

NO : <Not within 120± 20 Ω> Replace the engine-ECU <M/T> or engine-A/T-ECU <A/T>, and then go to Step 8.

STEP 15. Resistance measurement at C-125 intermediate connector and A-07 joint connector (CAN1).

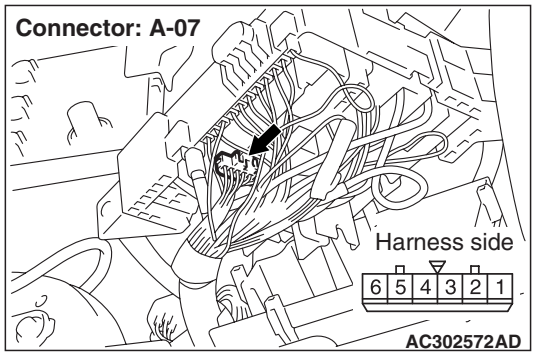
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

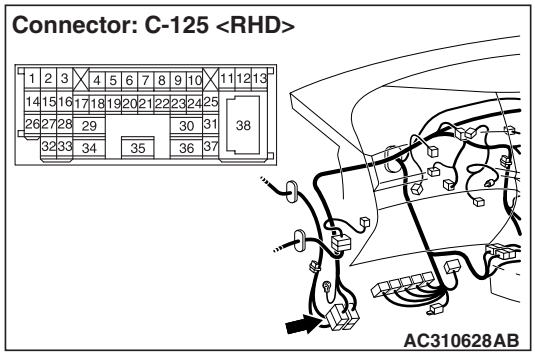
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





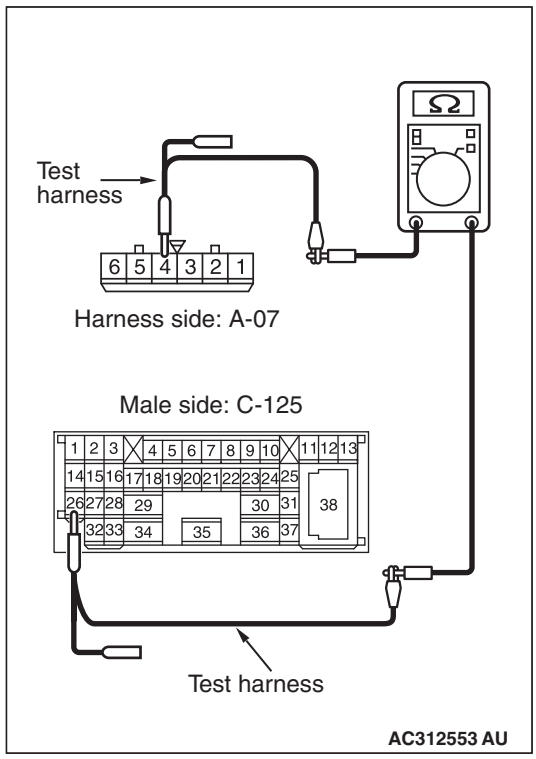
(1) Disconnect the joint connector (CAN1) and the intermediate connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

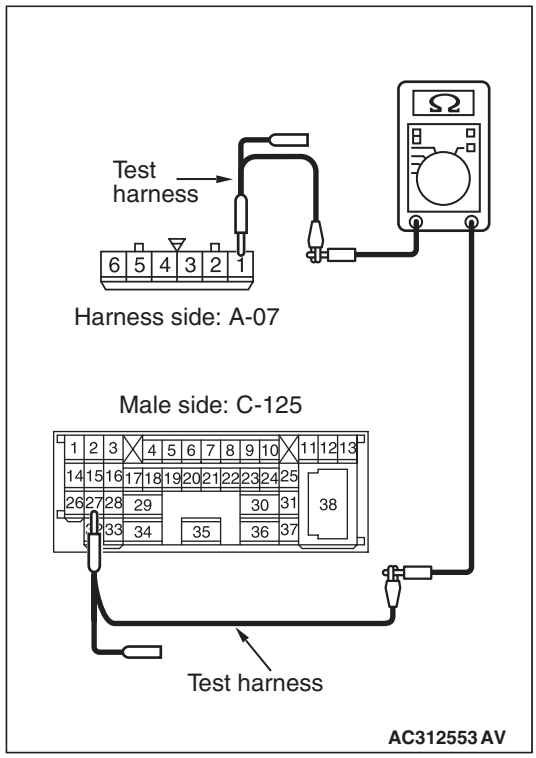
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-125 intermediate connector terminal No.26 and A-07 joint connector (CAN1) terminal No.4

OK: 2 Ω or less



(5) Continuity between C-125 intermediate connector terminal No.27 and A-07 joint

connector (CAN1) terminal No.1

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

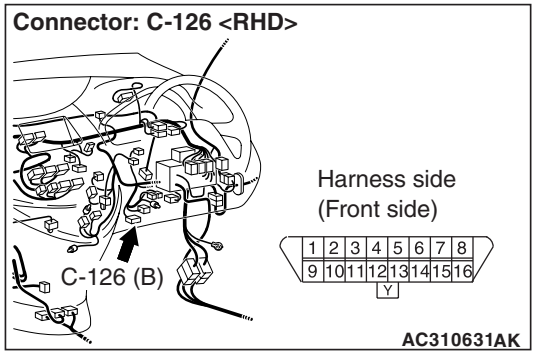
Q: Are the check result normal?

YES : <All the voltages measure 2 Ω or less> Go to Step 8 .

NO : <Either or all of the voltages measure more than 2 Ω> Repair the wiring harness between joint connector (CAN1) and the intermediate connector, and then go to Step 8.

STEP 16. Connector check: C-126 diagnosis connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 17.

NO : Repair the connector, or replace the joint connector. Then go to Step 17.

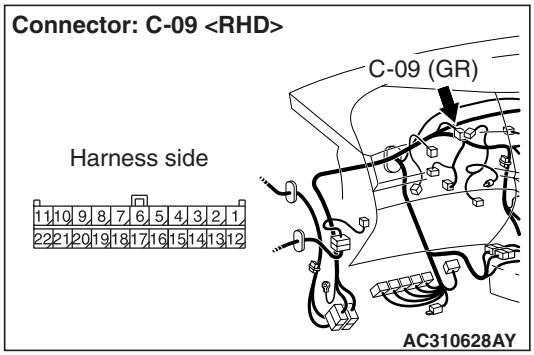
STEP 17. Resistance measurement at C-09 joint connector (CAN2) and C-126 diagnosis connector.

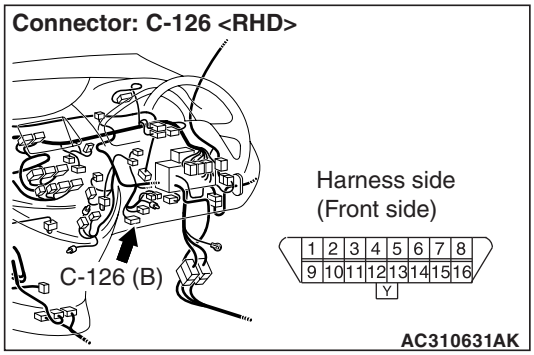
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN2) and the diagnosis connector, and measure at the wiring harness side.

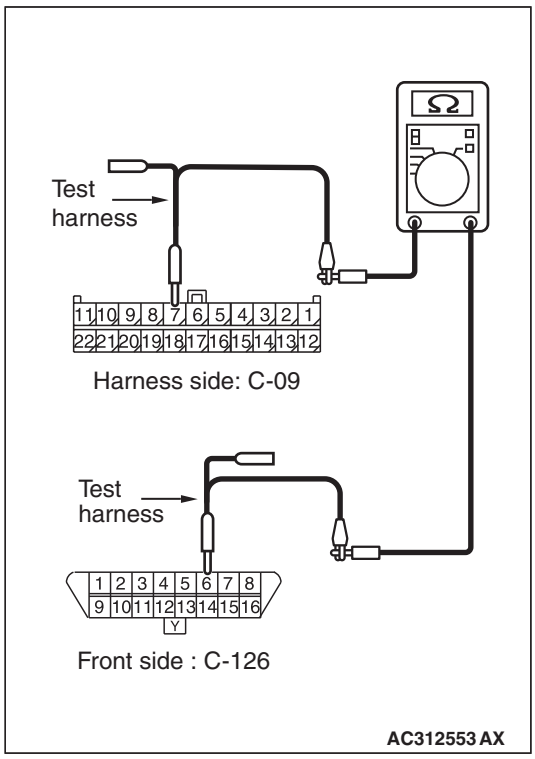
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

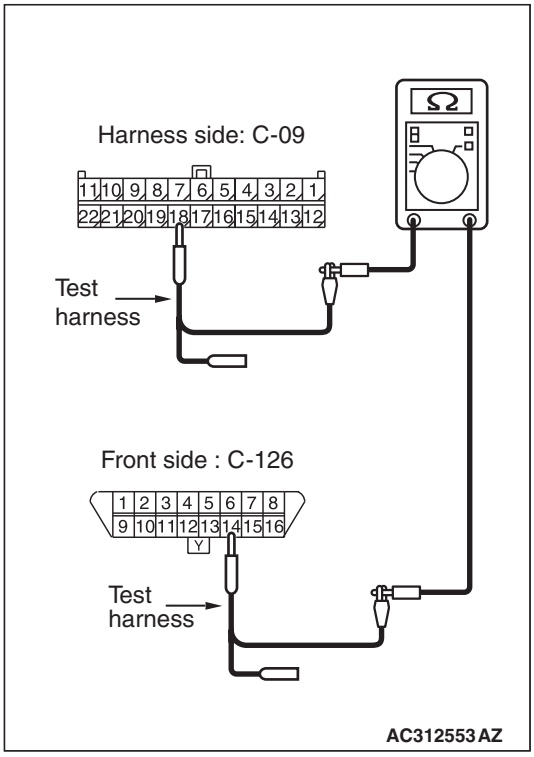
(3) Ensure that the negative battery terminal is

disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal No.7 and C-126 diagnosis connector terminal No.6

OK: 2 Ω or less



(5) Continuity between C-09 joint connector (CAN2) terminal No.18 and C-126 diagnosis connector terminal No.14

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Are the check result normal?

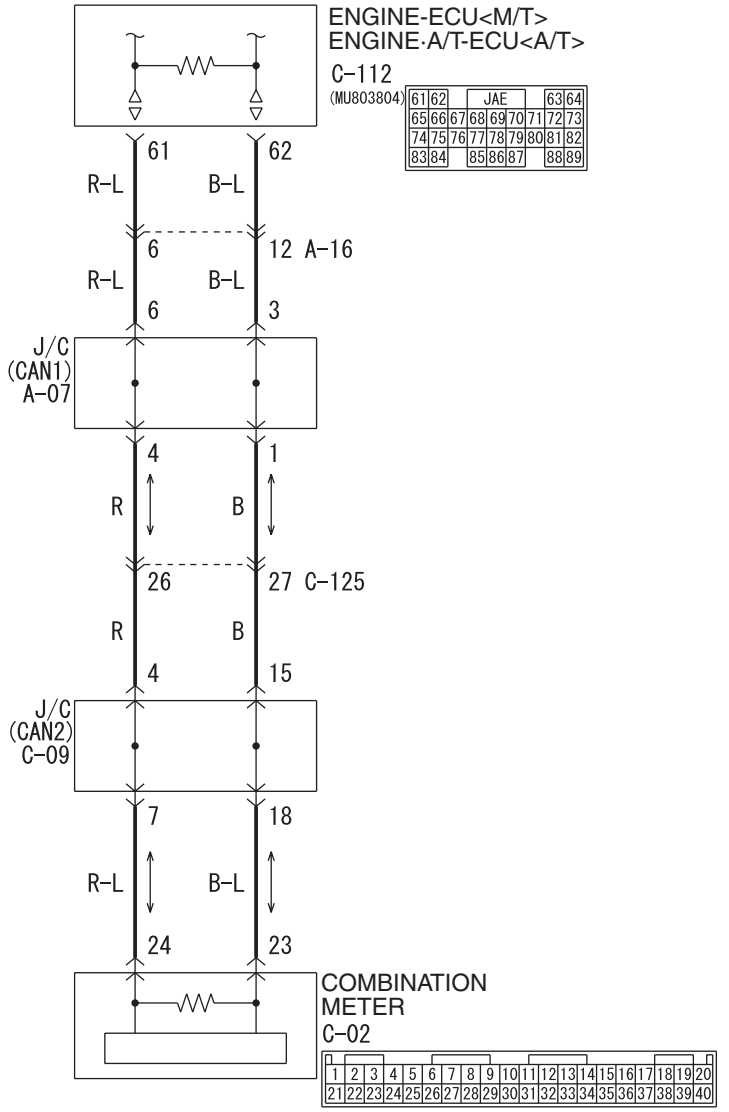
YES <all the resistances measure 2 Ω or less: When any repair done> : Retest the system.

YES <all the resistances measure 2 Ω or less: When no repair done> : Diagnose CAN bus lines thoroughly P.54D-16. Refer to .

<Either of the resistances measures more than 2 Ω or all the resistances measure more than 2 Ω> : Repair the wiring harness between joint connector (CAN2) and the diagnosis connector.

Diagnostic Item 15: Diagnose the terminator resistor at one end <LH drive vehicles>

⚠ CAUTION
When servicing a CAN bus line, earth yourself by touching a metal object such as an unpainted water pipe. If you fail to do, a component connected to the CAN bus line may be broken.



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E16AA

TROUBLE JUDGMENT

The terminator resistor at one end of CAN bus lines is damaged when the resistance between the CAN bus lines (CAN_L and H lines) is 120 ± 20 Ω.

COMMENTS ON TROUBLE SYMPTOM

The wiring harness wire or connectors may have loose, corroded, or damage terminals, or terminals pushed back in the connector, or the combination meter or the engine-A/T-ECU may be defective.

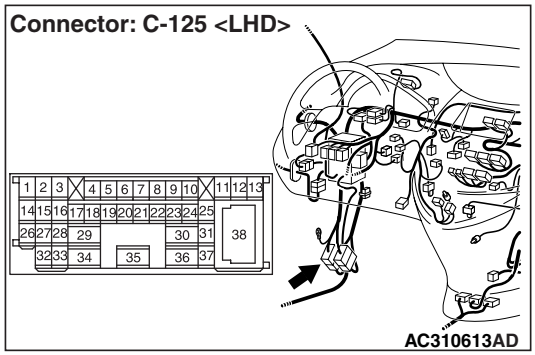
TROUBLESHOOTING HINTS

- Damaged harness wires and connectors
- Malfunction of the combination meter
- Malfunction of the engine-ECU <M/T> or engine-A/T-ECU <A/T>

DIAGNOSTIC PROCEDURE

STEP 1. Connector check: C-125 intermediate connector

⚠ CAUTION



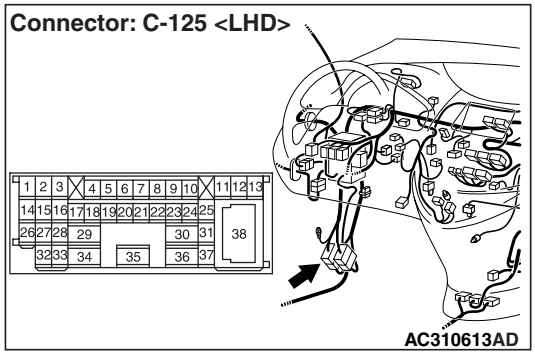
The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?
YES : Go to Step 2 .
NO : Repair the defective connector.

STEP 2. Resistance measurement at the C-125 intermediate connector.

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

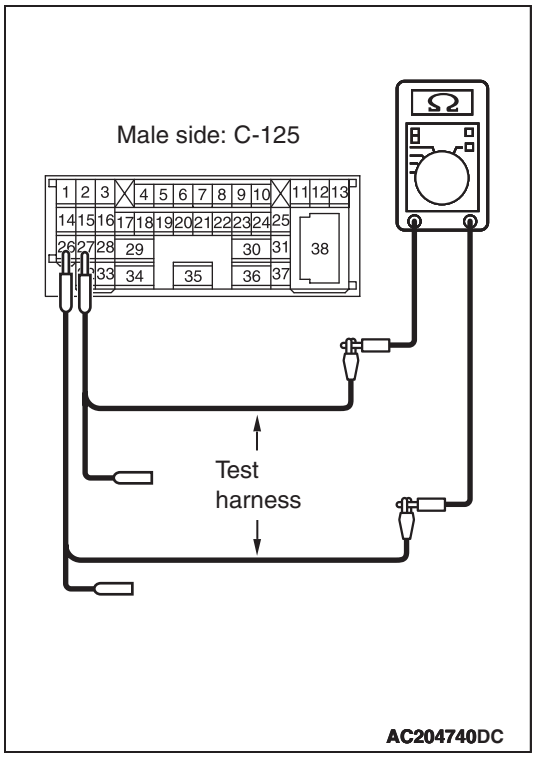
⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the connector, and measure at its male-side connector (at the front wiring harness side).
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.

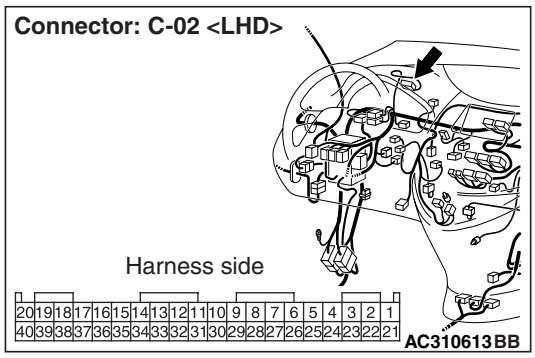


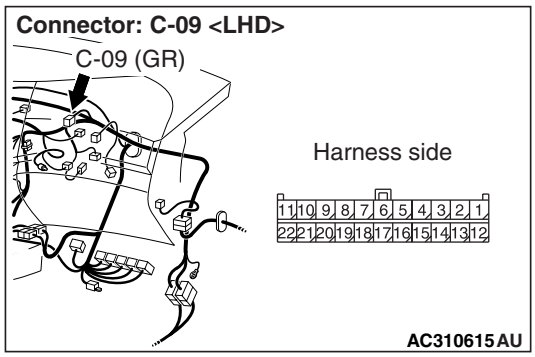
(4) Resistance between C-125 intermediate connector terminal Nos.26 and 27
OK: 120± 20 Ω

Q: Is the check result normal?
YES : <Within 120± 20 Ω> Go to Step 3 .
NO : <120± 20 Ω not within> Go to Step 7 .

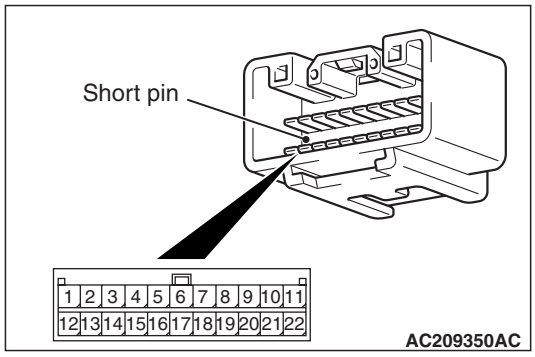
STEP 3. Connector check: C-09 joint connector (CAN2) and C-02 combination meter connector

⚠ CAUTION





The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.



When checking the joint connector, ensure that its wiring harness side is not damaged.

Q: Are the check results normal?
YES : Go to Step 4 .
NO : Repair the connector, or replace the joint connector.

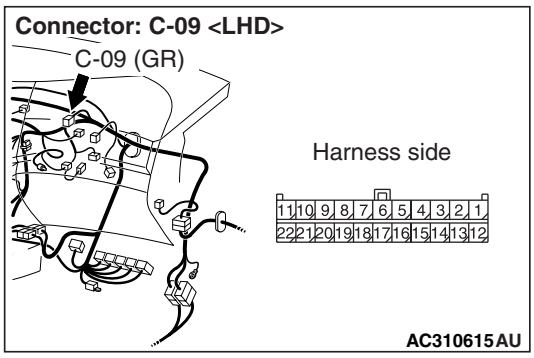
STEP 4. Resistance measurement at C-09 joint connector (CAN2).

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.

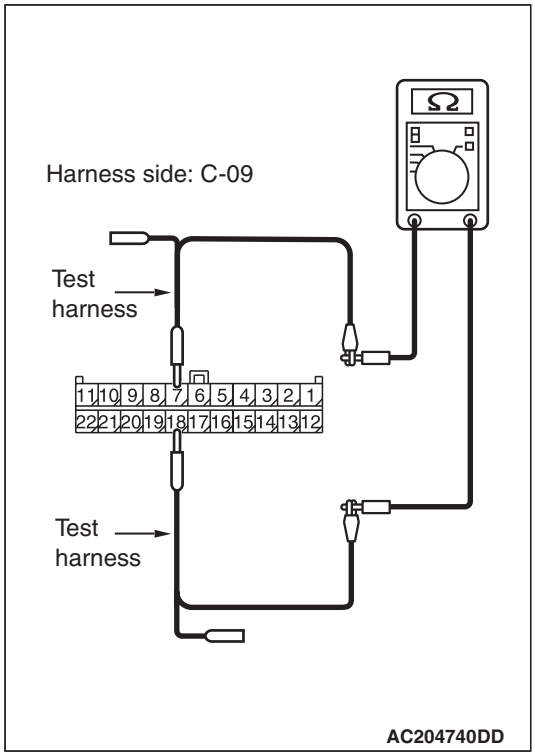


(1) Disconnect the connector, and measure at the wiring harness side.
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Resistance between C-09 joint connector (CAN2)

terminal Nos. 7 and 18

OK: 120± 20 Ω

Q: Is the check result normal?

YES : <120± 20 within Ω> Diagnose CAN bus lines thoroughly. Refer to P.54D-16.

NO : <120± 20 Ω not within> Go to Step 5 .

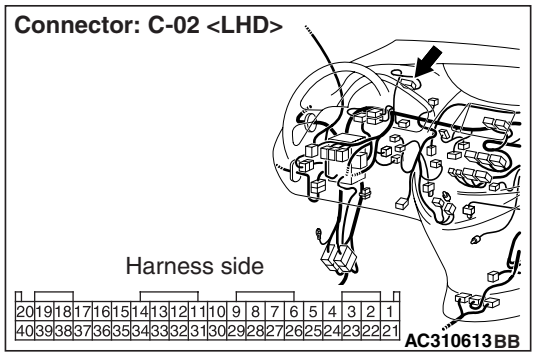
STEP 5. Resistance measurement at C-09 joint connector (CAN2) and C-02 combination meter connector.

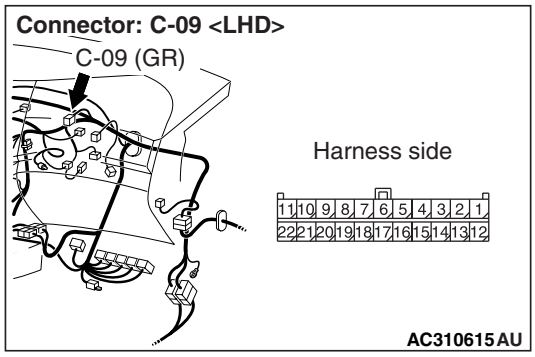
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





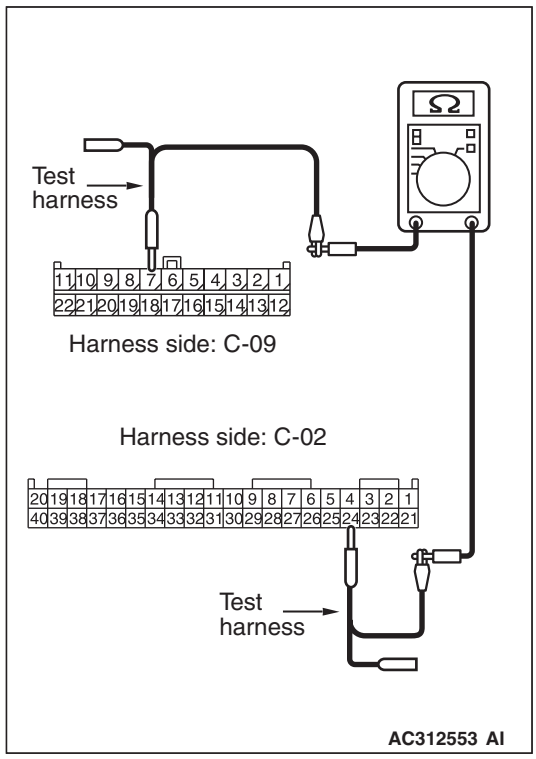
(1) Disconnect the joint connector (CAN2) and the combination meter connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

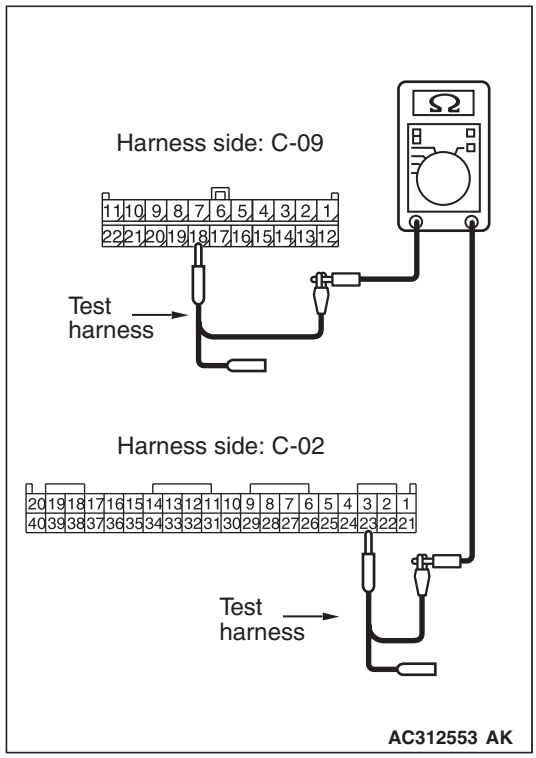
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal No.7 and C-02 combination meter connector terminal No.24

OK: 2 Ω or less



(5) Continuity between C-09 joint connector (CAN2) terminal No.18 and C-02 combination meter

connector terminal No.23

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Are the check results normal?

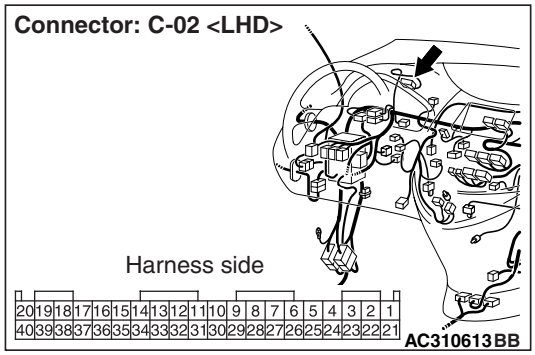
YES : <All the voltages measure 2 Ω or less> Go to Step 6 .

NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between joint connector (CAN2) and the combination meter connector.

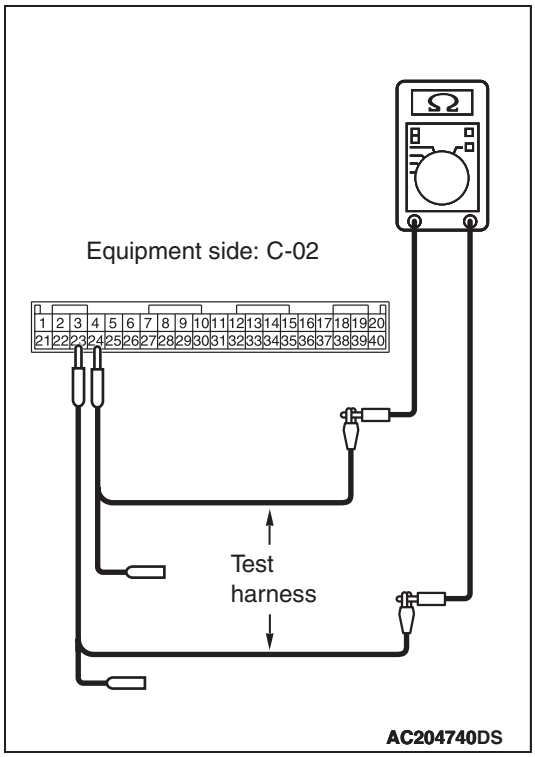
STEP 6. Resistance measurement at C-02 combination meter connector.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.



(1) Remove the combination meter, and measure at the equipment side.



(2) Resistance between C-02 combination meter connector terminal Nos. 23 and 24

OK: 120± 20 Ω

Q: Is the check result normal?

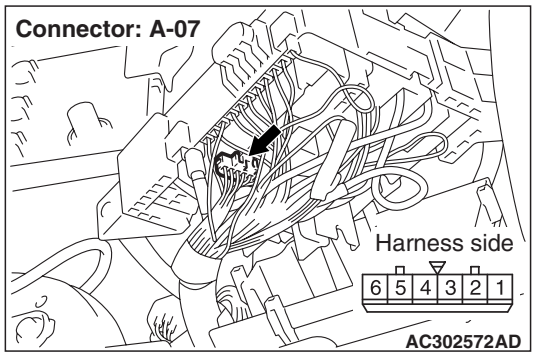
YES : <120± 20 within Ω> Diagnose CAN bus lines thoroughly. Refer to P.54D-16.

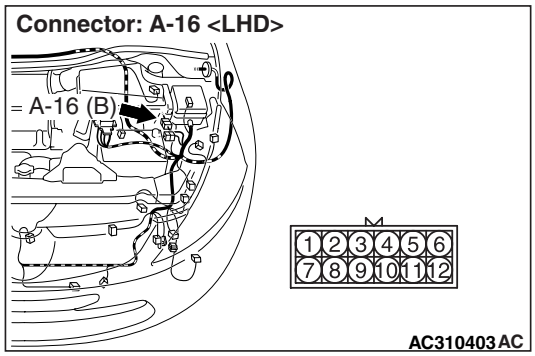
NO : <120± 20 not within Ω> Replace the combination meter.

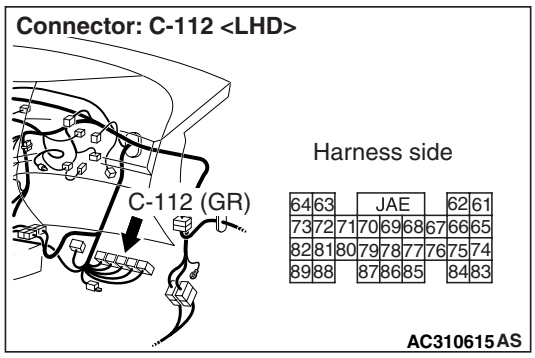
STEP 7. Connector check: A-07 joint connector (CAN1), A-16 intermediate connector and C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector

NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION







The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

When checking the joint connector, ensure that its wiring harness side is not damaged.

Q: Are the check results normal?

YES : Go to Step 8 .

NO : Repair the connector, or replace the joint connector (front wiring harness assembly).

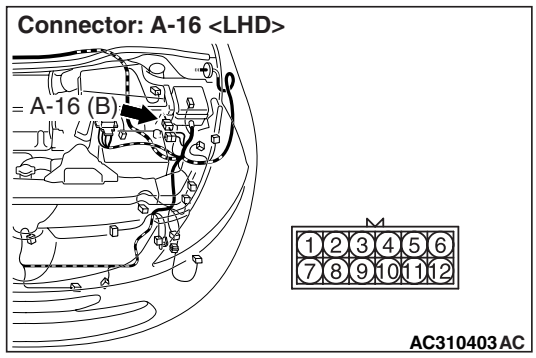
STEP 8. Resistance measurement at the A-16 intermediate connector.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



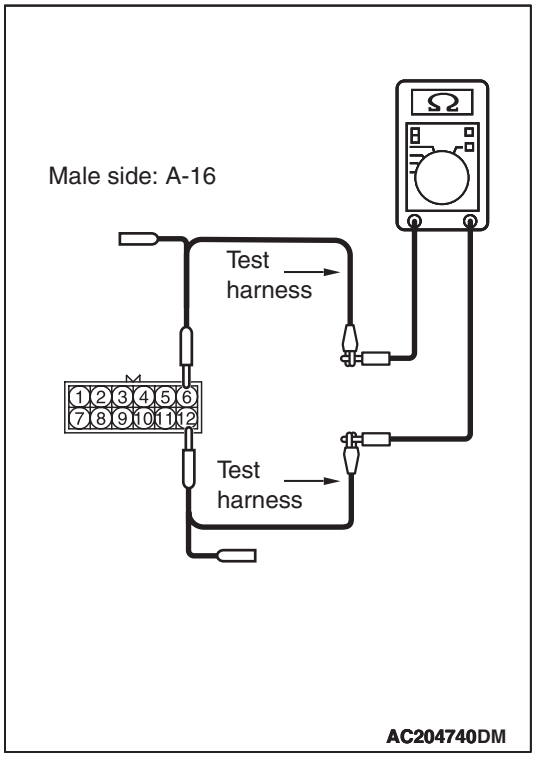
(1) Disconnect the connector, and measure at its male-side intermediate connector (at the control wiring harness side).

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Resistance between A-16 intermediate connector

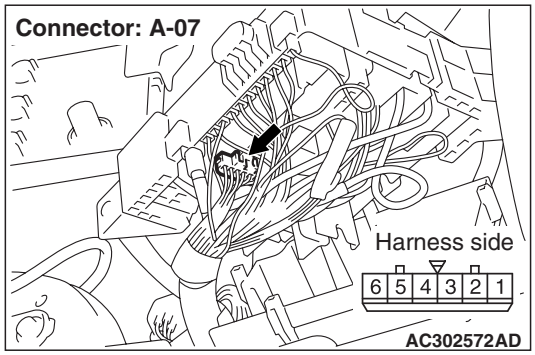
terminal Nos. 6 and 12
OK: 120± 20 Ω

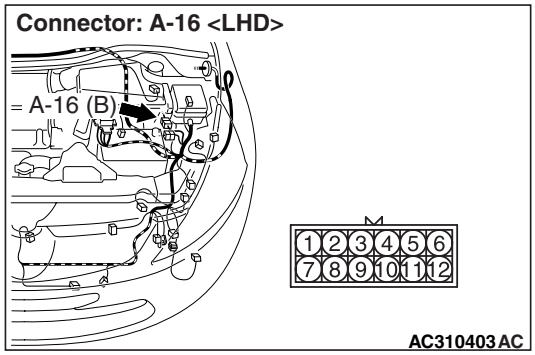
Q: Is the check result normal?
YES : <Within 120± 20 Ω> Go to Step 9 .
NO : <120± 20 Ω not within> Go to Step 10 .

STEP 9. Resistance measurement at A-07 joint connector (CAN1) and A-16 intermediate connector.

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.

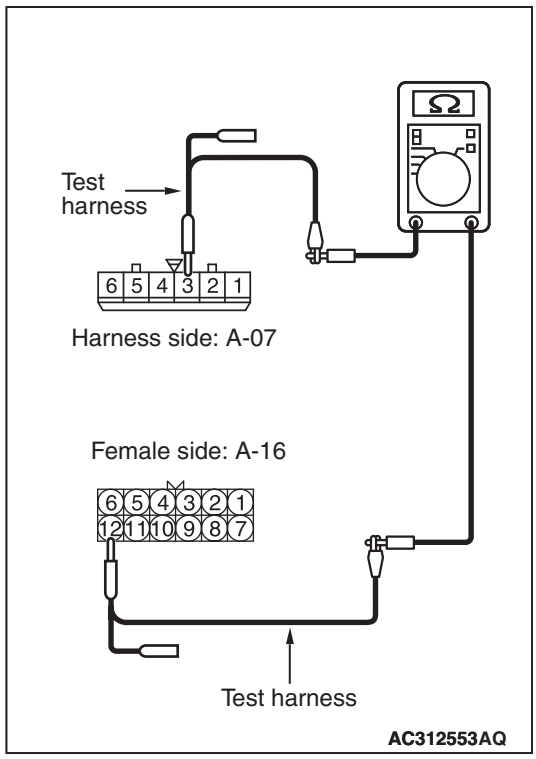




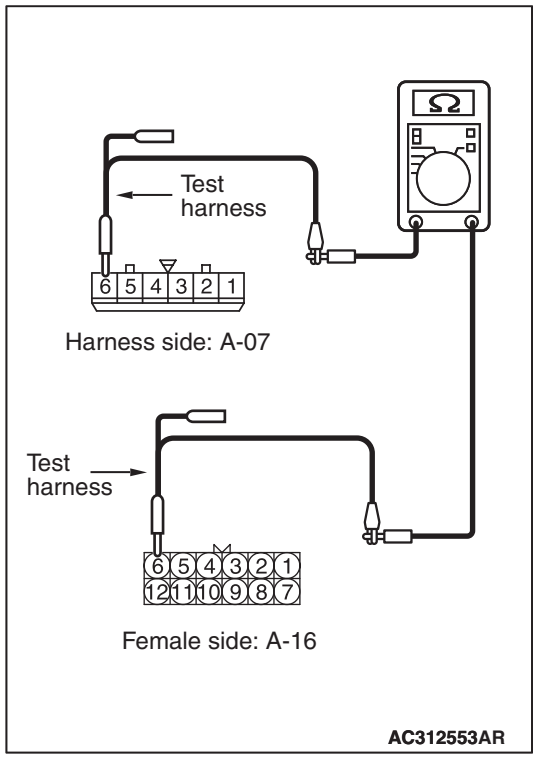
(1) Disconnect the joint connector (CAN1) and the intermediate connector, and measure at the wiring harness side.
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between A-07 joint connector (CAN1) terminal No.3 and A-16 intermediate connector terminal No.12
OK: 2 Ω or less



(5) Continuity between A-07 joint connector (CAN1) terminal No.6 and A-16 intermediate connector

terminal No.6

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Are the check results normal?

YES : <All the voltages measure 2 V or less> Diagnose CAN bus lines thoroughly. Refer to P.54D-16.

NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between joint connector (CAN1) and the intermediate connector.

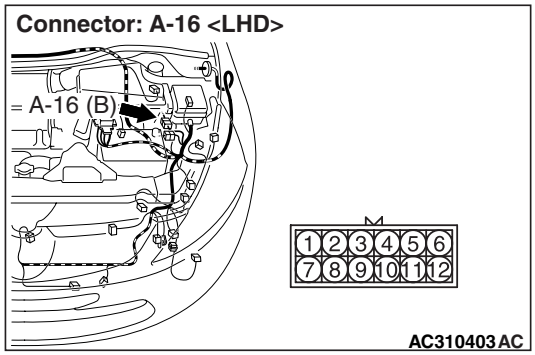
STEP 10. Resistance measurement at A-16 intermediate connector and C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector.

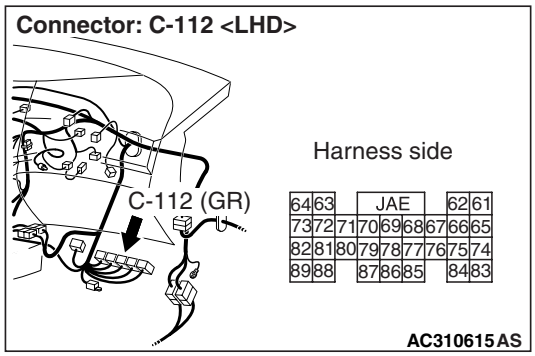
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





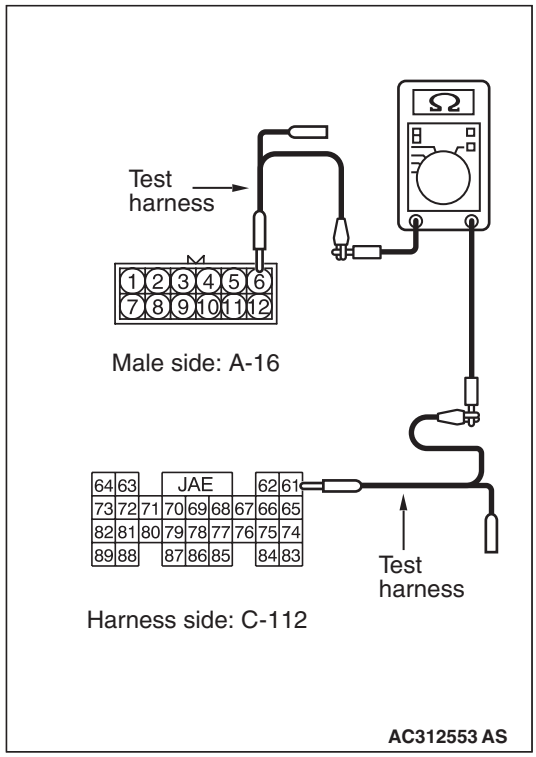
(1) Disconnect the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector and the intermediate connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

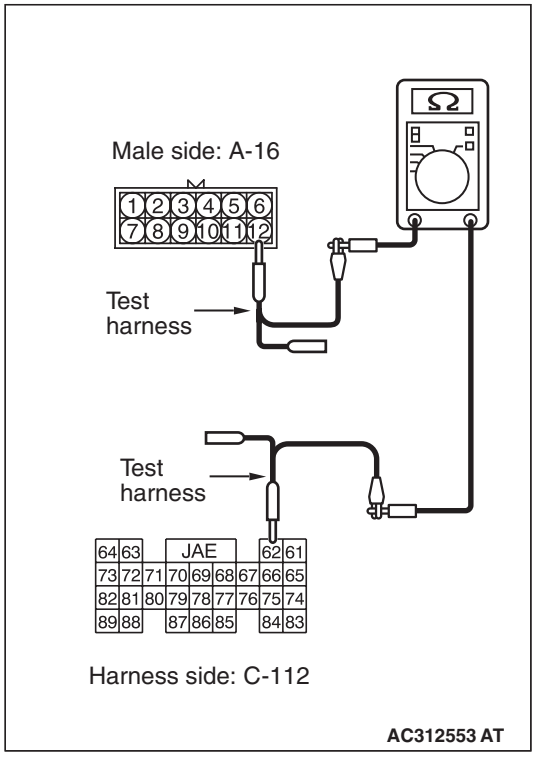
(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between A-16 intermediate connector terminal No.6 and C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector terminal

No.61.

OK: 2 Ω or less



(5) Continuity between A-16 intermediate connector terminal No.12 and C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector terminal No.62.

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Are the check results normal?

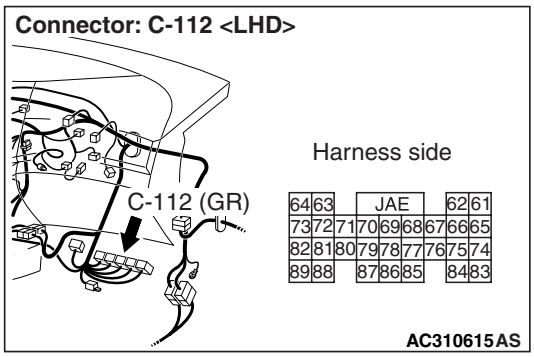
YES : <All the voltages measure 2 Ω or less> Go to Step 11 .

NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector and the intermediate connector.

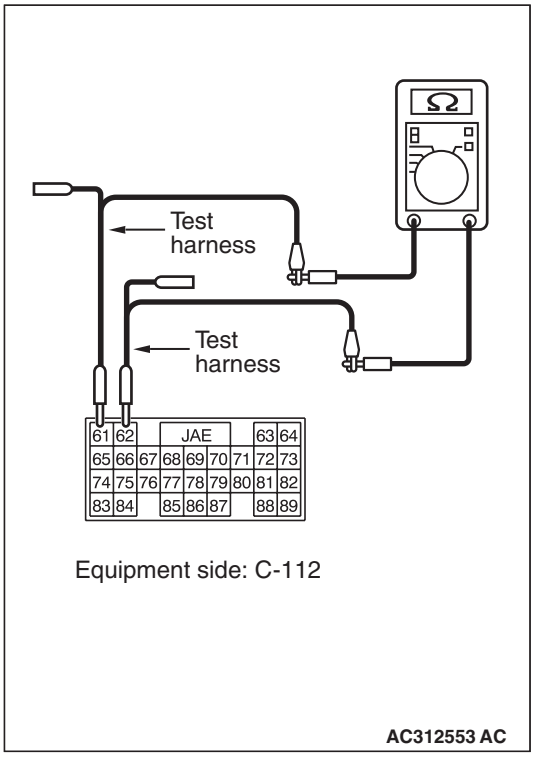
STEP 11. Resistance measurement at C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.



(1) Remove the engine-ECU <M/T> or engine-A/T-ECU <A/T>, and measure at the equipment side.



(2) Resistance at C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector terminal Nos. 61 and 62

OK: 120± 20 Ω

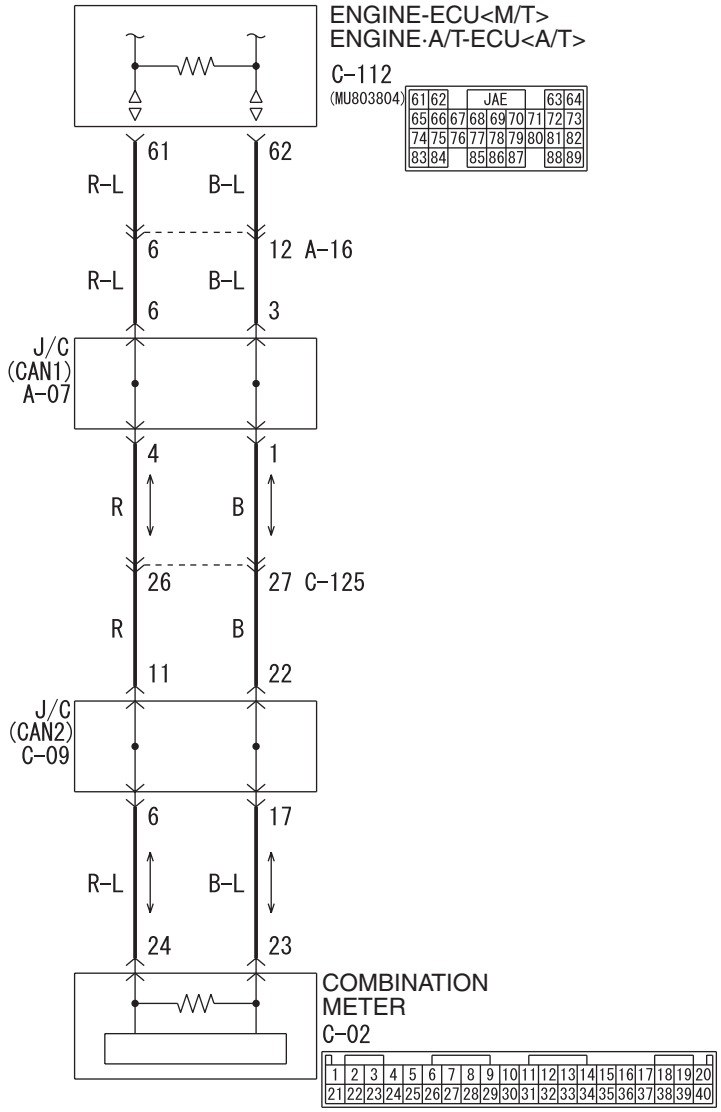
Q: Is the check result normal?

YES : <120± 20 within Ω> Diagnose CAN bus lines thoroughly. Refer to P.54D-16.

NO : <120± 20 Ω not within> Replace the engine-ECU <M/T> or engine-A/T-ECU <A/T>.

Diagnostic Item 16: Diagnose the terminator resistor at one end <RH drive vehicles>

⚠ CAUTION
When servicing a CAN bus line, earth yourself by touching a metal object such as an unpainted water pipe. If you fail to do, a component connected to the CAN bus line may be broken.



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E17AA

TROUBLE JUDGMENT

The terminator resistor at one end of CAN bus lines is damaged when the resistance between the CAN bus lines (CAN_L and H lines) is 120 ± 20 Ω.

COMMENTS ON TROUBLE SYMPTOM

The wiring harness wire or connectors may have loose, corroded, or damage terminals, or terminals pushed back in the connector, or the combination meter or the engine-A/T-ECU may be defective.

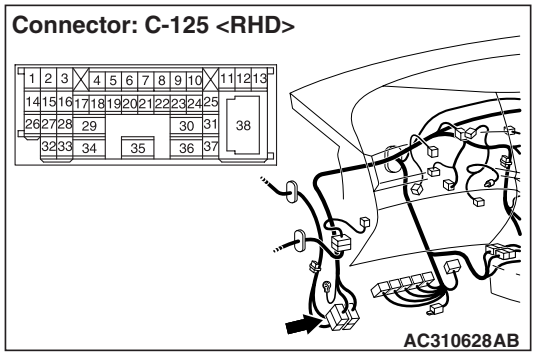
TROUBLESHOOTING HINTS

- Damaged harness wires and connectors
- Malfunction of the combination meter
- Malfunction of the engine-ECU <M/T> or engine-A/T-ECU <A/T>

DIAGNOSTIC PROCEDURE

STEP 1. Connector check: C-125 intermediate connector

⚠ CAUTION



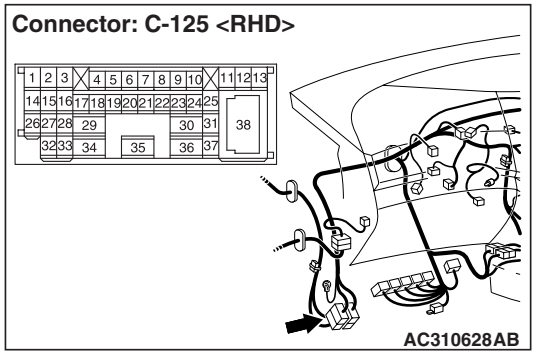
The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?
YES : Go to Step 2 .
NO : Repair the defective connector.

STEP 2. Resistance measurement at the C-125 intermediate connector.

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

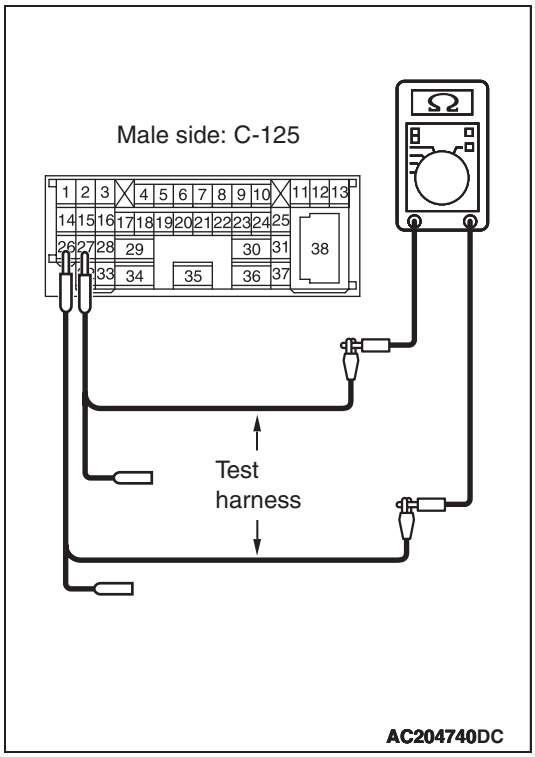
⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.



(1) Disconnect the connector, and measure at its male-side connector (at the front wiring harness side).
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.

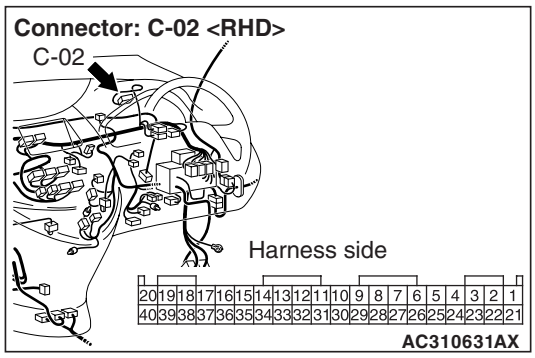


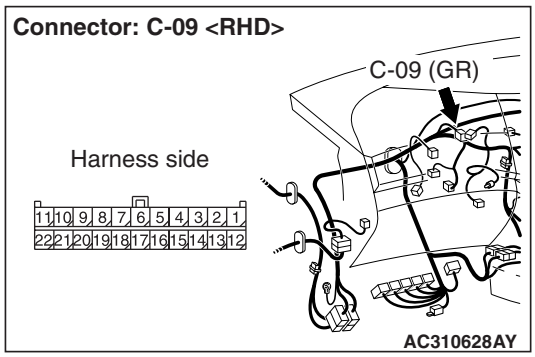
(4) Resistance between C-125 intermediate connector terminal Nos.26 and 27
OK: 120± 20 Ω

Q: Is the check result normal?
YES : <Within 120± 20 Ω> Go to Step 3 .
NO : <120± 20 Ω not within> Go to Step 7 .

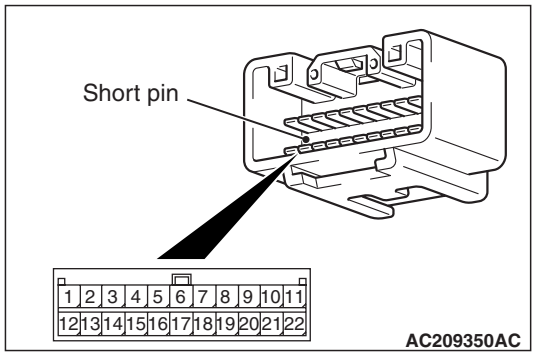
STEP 3. Connector check: C-09 joint connector (CAN2) and C-02 combination meter connector

⚠ CAUTION





The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.



When checking the joint connector, ensure that its wiring harness side is not damaged.

Q: Are the check results normal?
YES : Go to Step 4 .
NO : Repair the connector, or replace the joint connector.

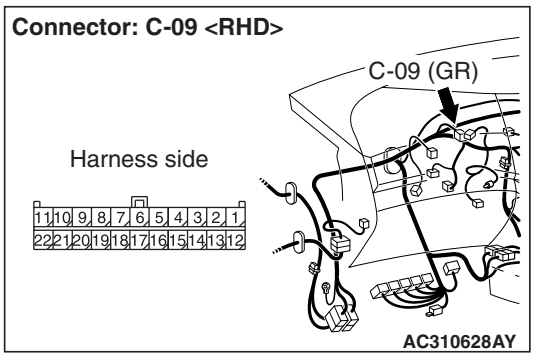
STEP 4. Resistance measurement at C-09 joint connector (CAN2).

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.

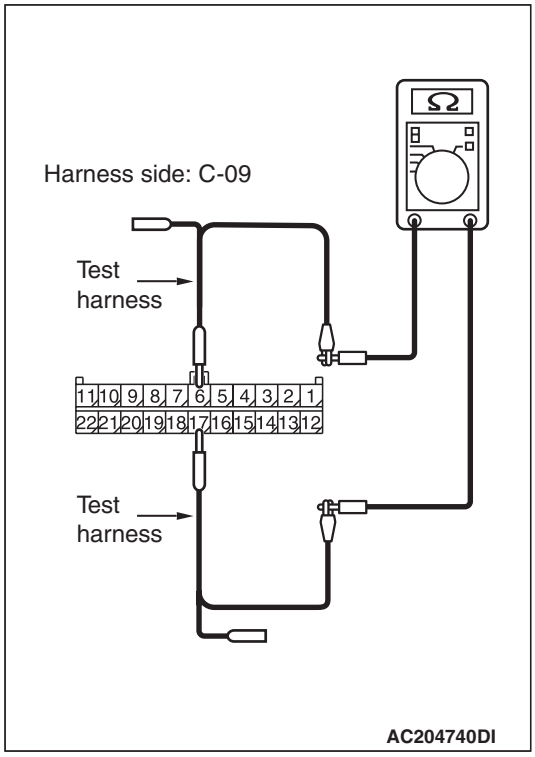


(1) Disconnect the connector, and measure at the wiring harness side.
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Resistance between C-09 joint connector (CAN2)

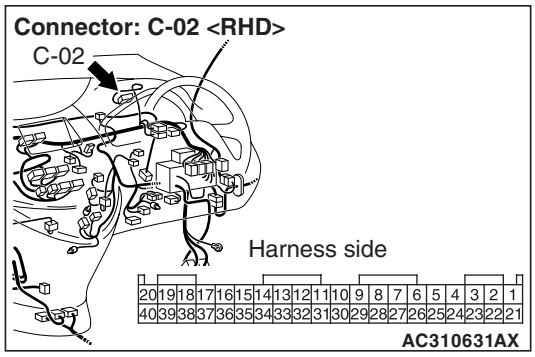
terminal Nos. 6 and 17
OK: 120± 20 Ω

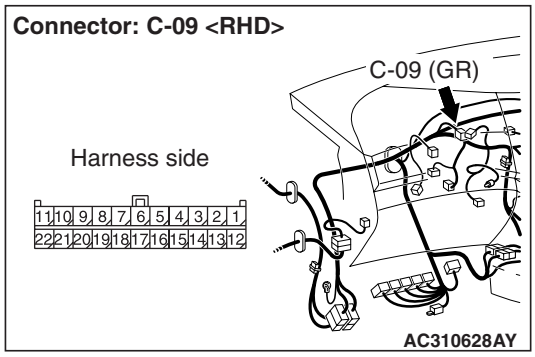
Q: Is the check result normal?
YES : <120± 20 within Ω> Diagnose CAN bus lines thoroughly. Refer to P.54D-16.
NO : <120± 20 Ω not within> Go to Step 5 .

STEP 5. Resistance measurement at C-09 joint connector (CAN2) and C-02 combination meter connector.

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.

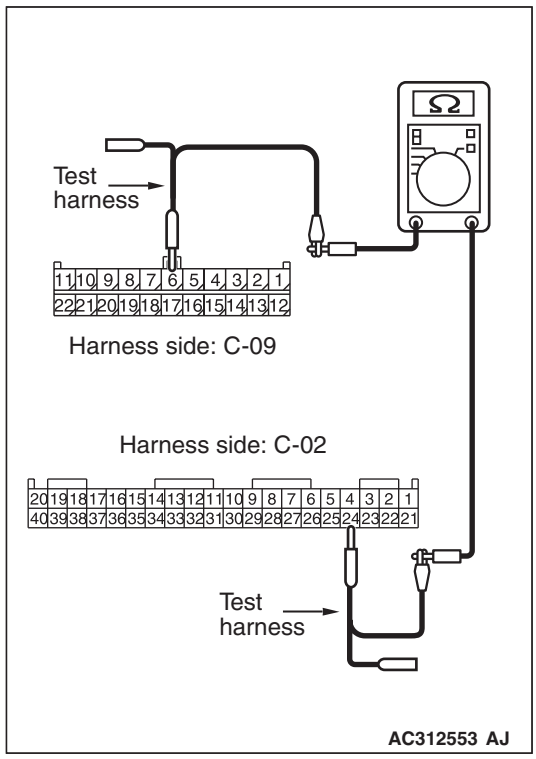




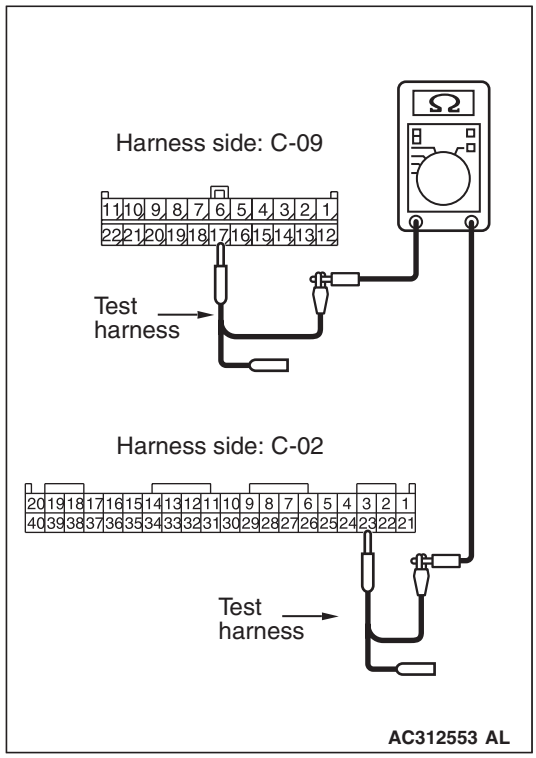
(1) Disconnect the joint connector (CAN2) and the combination meter connector, and measure at the wiring harness side.
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal No.6 and C-02 combination meter connector terminal No.24
OK: 2 Ω or less



(5) Continuity between C-09 joint connector (CAN2) terminal No.17 and C-02 combination meter

connector terminal No.23

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Are the check results normal?

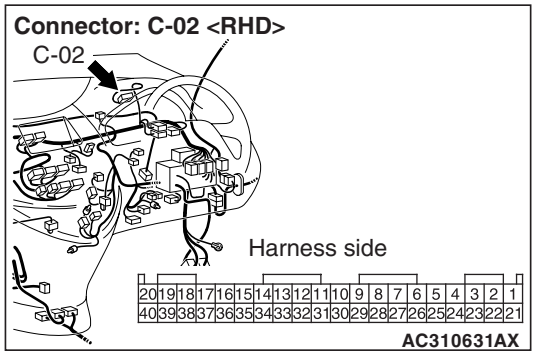
YES : <All the voltages measure 2 Ω or less> Go to Step 6 .

NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between joint connector (CAN2) and the combination meter connector.

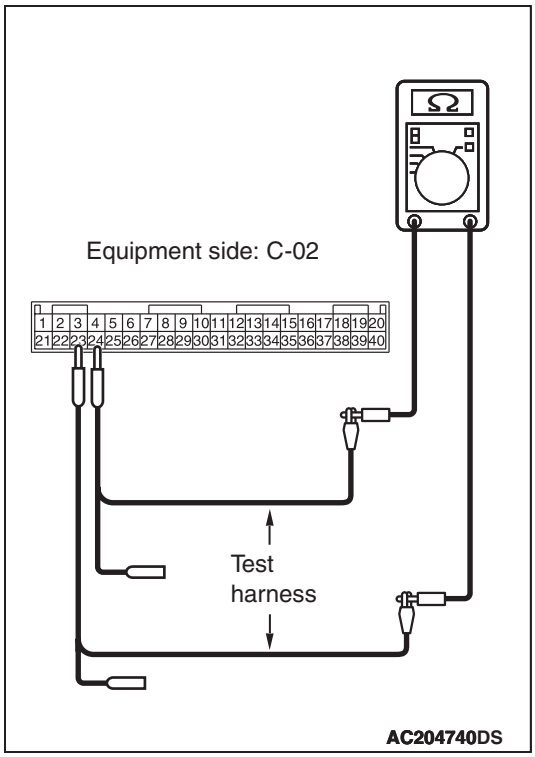
STEP 6. Resistance measurement at C-02 combination meter connector.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.



(1) Remove the combination meter, and measure at the equipment side.



(2) Resistance between C-02 combination meter connector terminal Nos. 23 and 24

OK: 120± 20 Ω

Q: Is the check result normal?

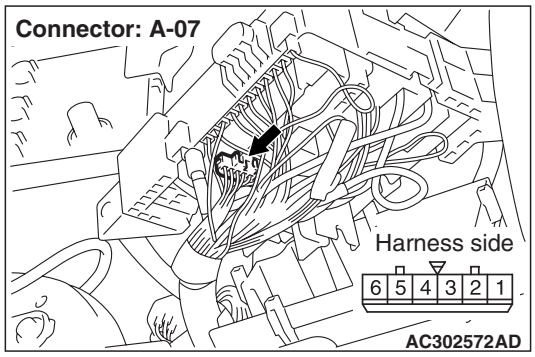
YES : <120± 20 within Ω> Diagnose CAN bus lines thoroughly. Refer to P.54D-16.

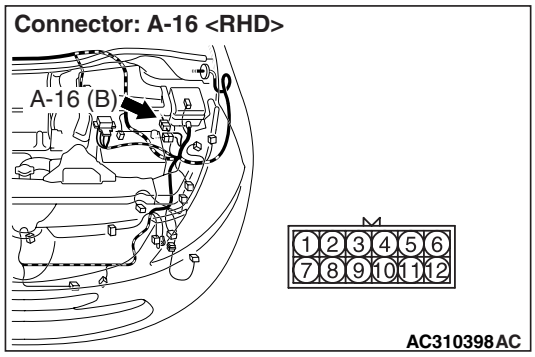
NO : <120± 20 not within Ω> Replace the combination meter.

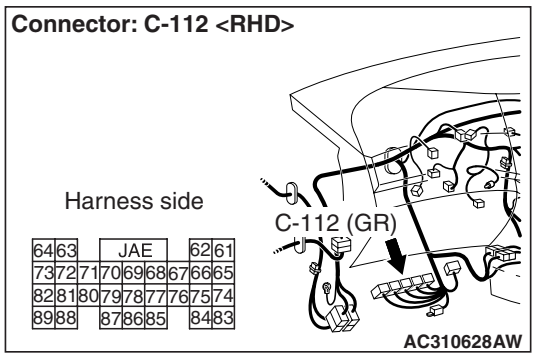
STEP 7. Connector check: A-07 joint connector (CAN1), A-16 intermediate connector and C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector

NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION







The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

When checking the joint connector, ensure that its wiring harness side is not damaged.

Q: Are the check results normal?

YES : Go to Step 8 .

NO : Repair the connector, or replace the joint connector (front wiring harness assembly).

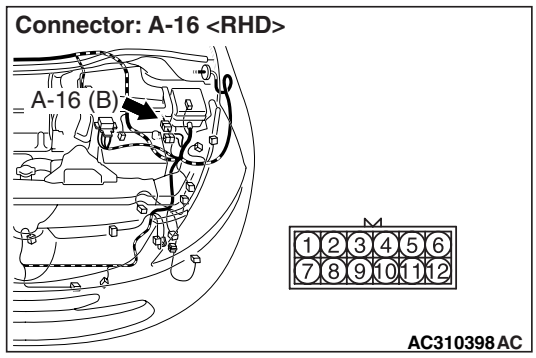
STEP 8. Resistance measurement at the A-16 intermediate connector.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



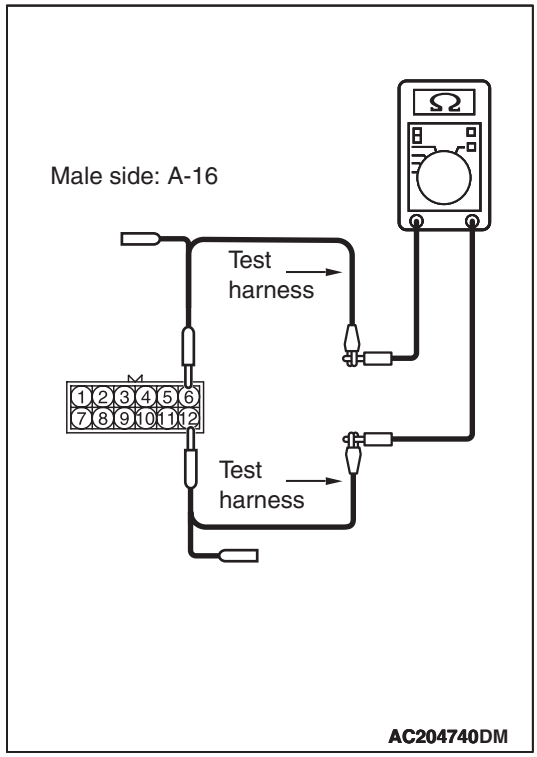
(1) Disconnect the connector, and measure at its male-side intermediate connector (at the control wiring harness side).

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Resistance between A-16 intermediate connector

terminal Nos. 6 and 12

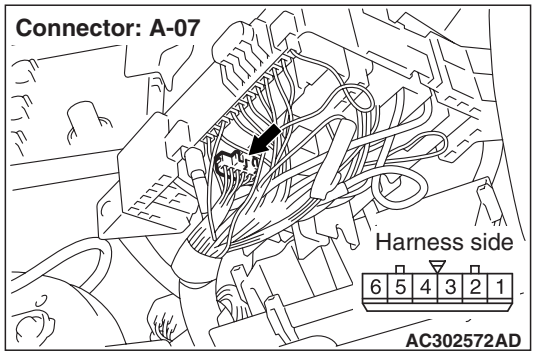
OK: 120± 20 Ω

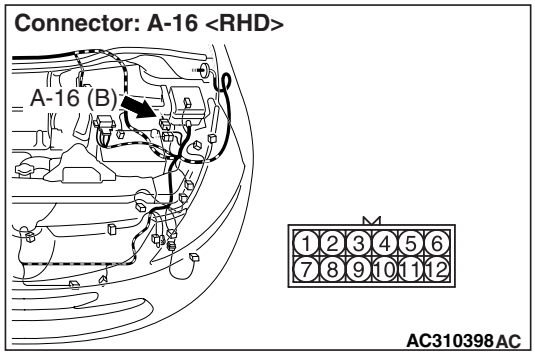
Q: Is the check result normal?
YES : <Within 120± 20 Ω> Go to Step 9 .
NO : <120± 20 Ω not within> Go to Step 10 .

STEP 9. Resistance measurement at A-07 joint connector (CAN1) and A-16 intermediate connector.

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.

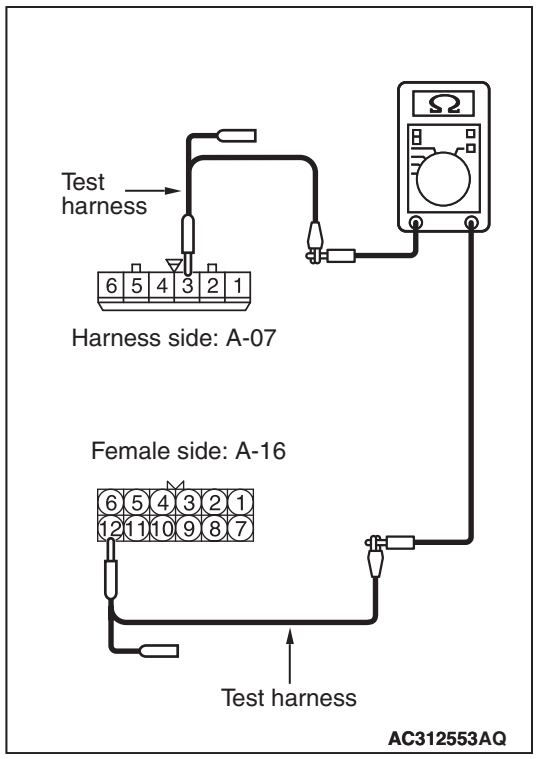




(1) Disconnect the joint connector (CAN1) and the intermediate connector, and measure at the wiring harness side.
(2) Ignition switch: OFF (LOCK)

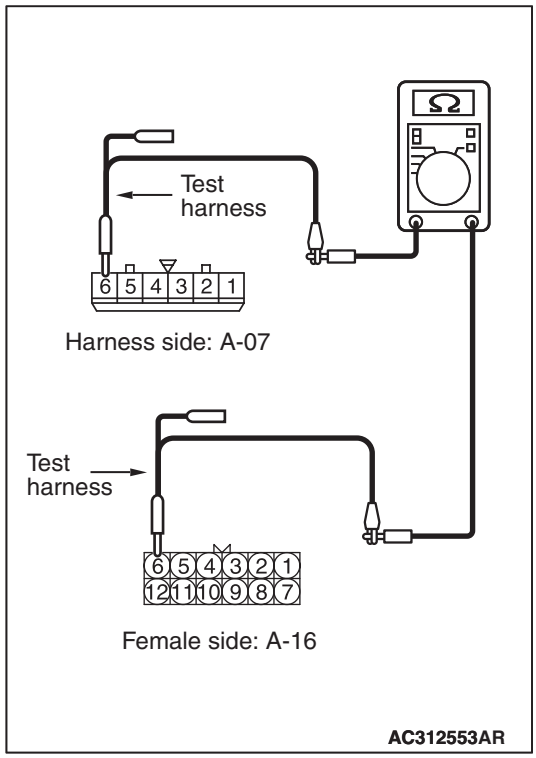
⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between A-07 joint connector (CAN1) terminal No.3 and A-16 intermediate connector terminal No.12

OK: 2 Ω or less



(5) Continuity between A-07 joint connector (CAN1) terminal No.6 and A-16 intermediate connector

terminal No.6

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Are the check results normal?

YES : <All the voltages measure 2 V or less> Diagnose CAN bus lines thoroughly by referring to P.54D-16.

NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between joint connector (CAN1) and the intermediate connector.

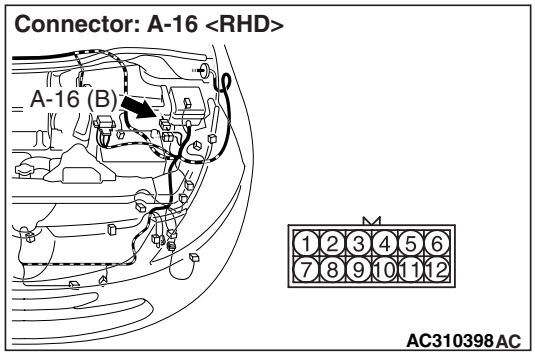
STEP 10. Resistance measurement at A-16 intermediate connector and C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector.

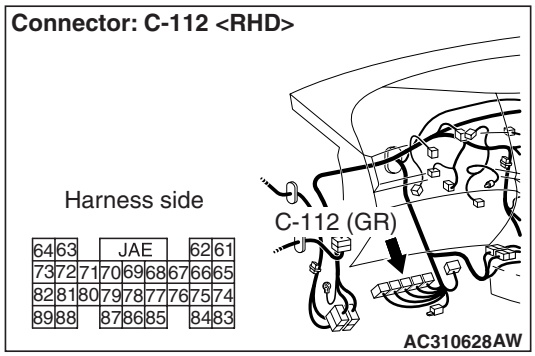
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





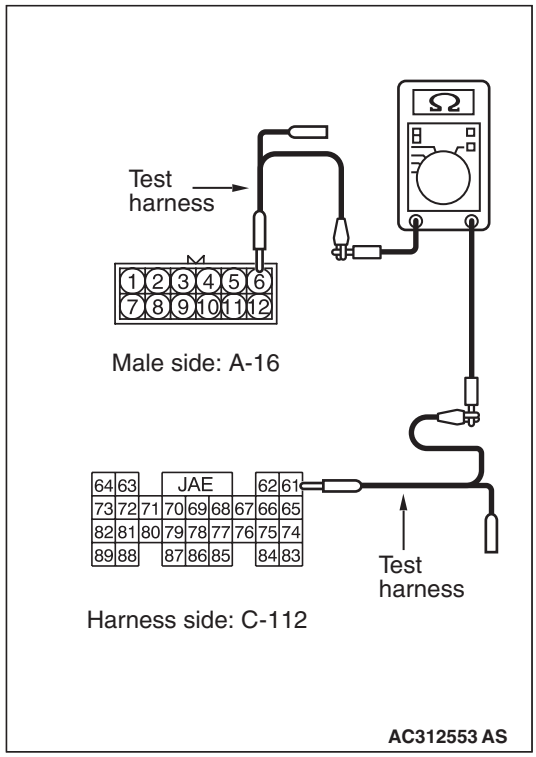
(1) Disconnect the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector and the intermediate connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

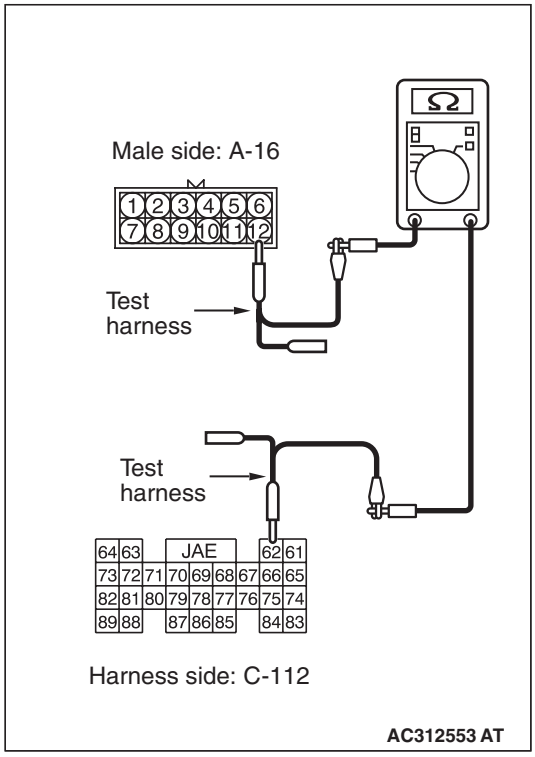
(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between A-16 intermediate connector terminal No.6 and C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector terminal

No.61.

OK: 2 Ω or less



(5) Continuity between A-16 intermediate connector terminal No.12 and C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector terminal No.62.

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Are the check results normal?

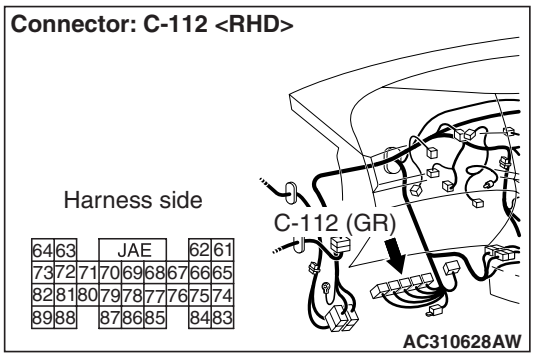
YES : <All the voltages measure 2 Ω or less> Go to Step 11 .

NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector and the intermediate connector.

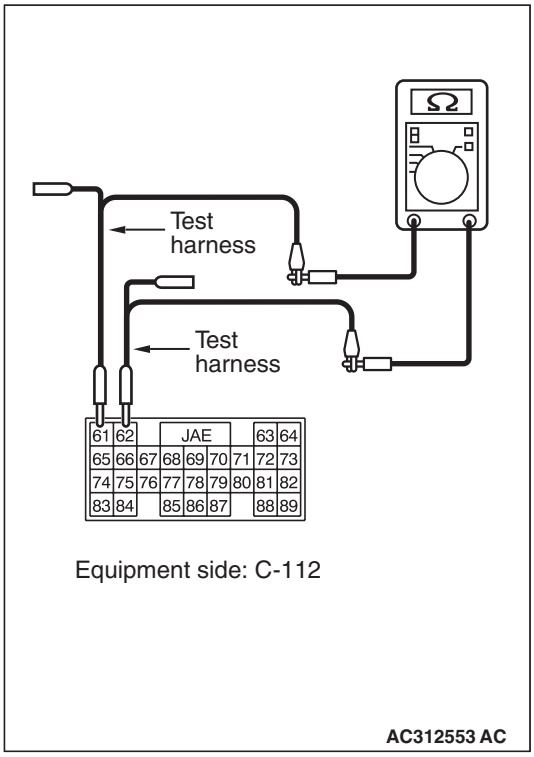
STEP 11. Resistance measurement at C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.



(1) Remove the engine-ECU <M/T> or engine-A/T-ECU <A/T>, and measure at the equipment side.



(2) Resistance at C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector terminal Nos. 61 and 62

OK: 120± 20 Ω

Q: Is the check result normal?

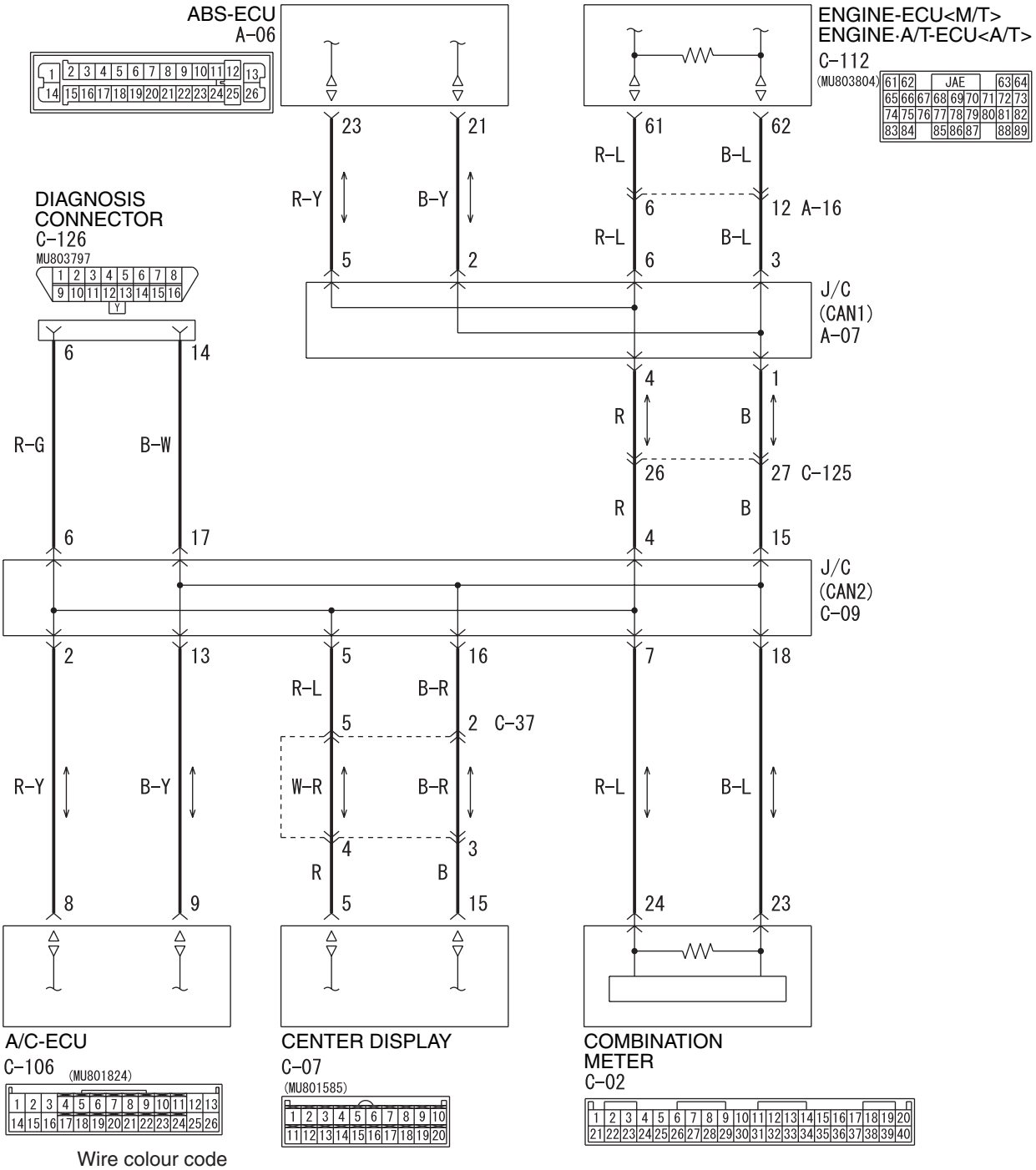
YES : <120± 20 within Ω> Diagnose CAN bus lines thoroughly. Refer to P.54D-16.

NO : <120± 20 Ω not within> Replace the engine-ECU <M/T> or engine-A/T-ECU <A/T>.

Diagnostic Item 17: Diagnose CAN bus lines thoroughly <LH drive vehicles without ASC>

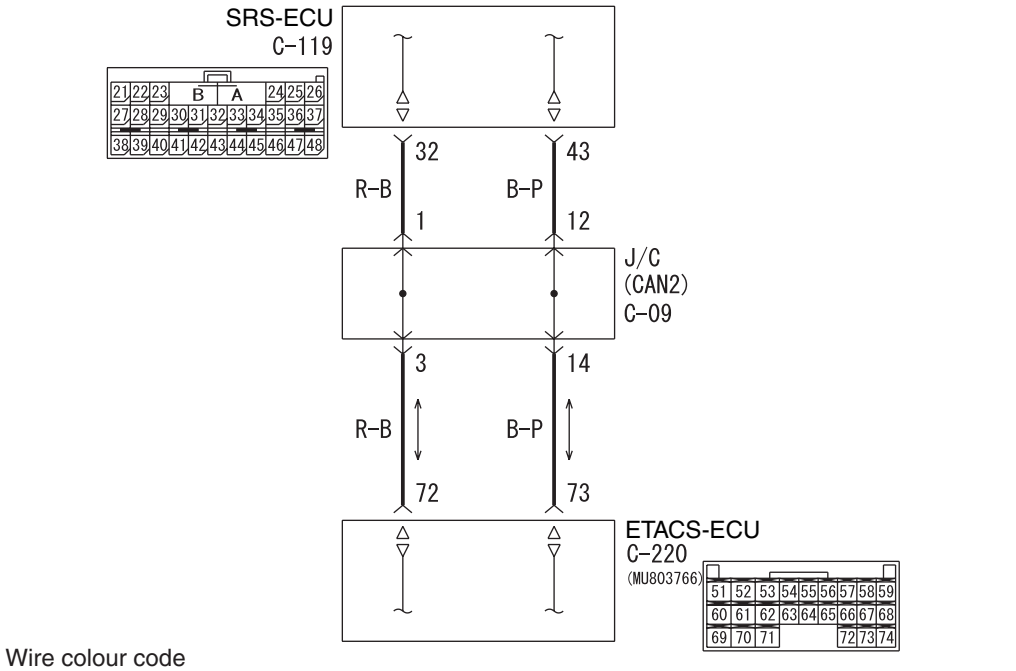
⚠ CAUTION

When servicing a CAN bus line, earth yourself by touching a metal object such as an unpainted water pipe. If you fail to do, a component connected to the CAN bus line may be broken.



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E18AA



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E19AA

TROUBLE JUDGMENT

If the MUT-III can not received signals from ECUs, CAN bus line connector(s) are broken or an open circuit has occurred.

COMMENTS ON TROUBLE SYMPTOM

The CAN bus line wire or connectors may have loose, corroded, or damage terminals, or terminals pushed back in the connector.

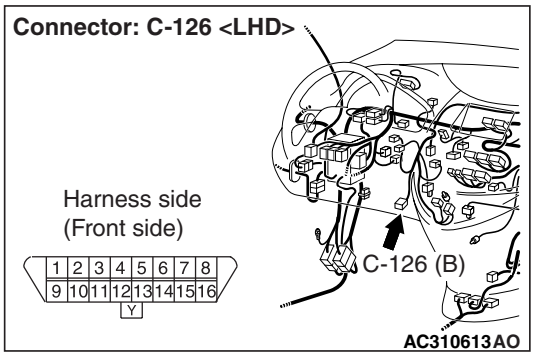
POSSIBLE CAUSES

- Damaged harness wires and connectors
- Malfunction of the ETACS-ECU
- Malfunction of the combination meter
- Malfunction of the A/C-ECU
- Malfunction of the SRS-ECU
- Malfunction of the multi-centre display
- Malfunction of the ABS-ECU
- Malfunction of the engine-ECU <M/T> or engine-A/T-ECU <A/T>

DIAGNOSTIC PROCEDURE

STEP 1. Connector check: C-126 diagnosis connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?
YES : Go to Step 2 .
NO : Repair the defective connector.

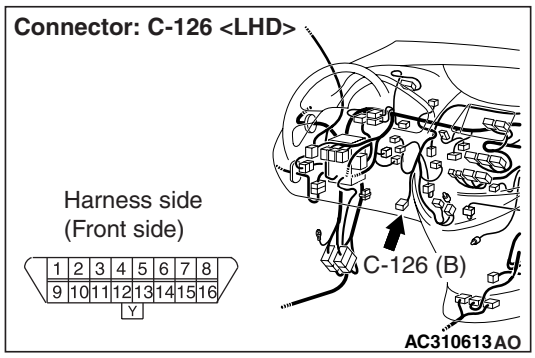
STEP 2. Resistance measurement at the C-126 diagnosis connector.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.

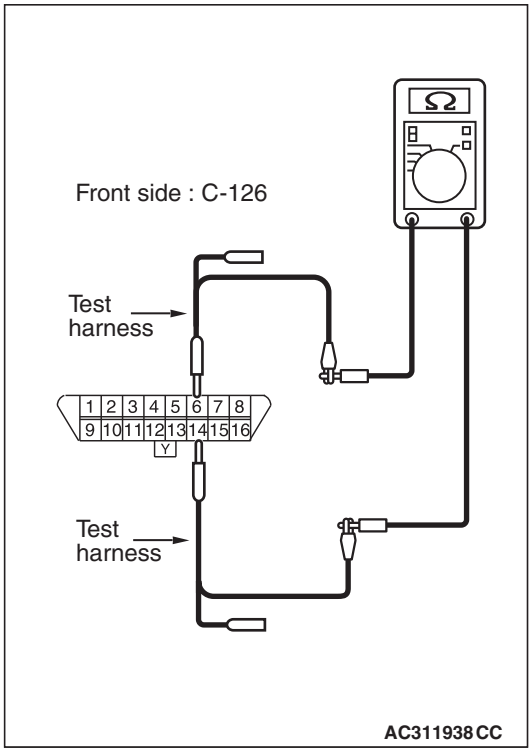


(1) Measure at the diagnosis connector wiring harness side.
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-126 diagnosis connector terminal Nos. 6 and 14

Q: How much resistance is measured?

2 Ω or less : Diagnose the lines between the CAN_L and H for short circuit. Refer to P.54D-304.

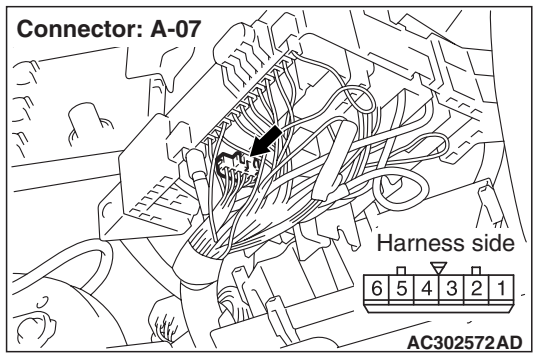
No continuity : Diagnose the terminator resistors at both ends. Refer to P.54D-404.

More than 2 Ω (i.e. continuity exists) : Go to Step 3 .

STEP 3. Connector check: A-07 joint connector (CAN1)

NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

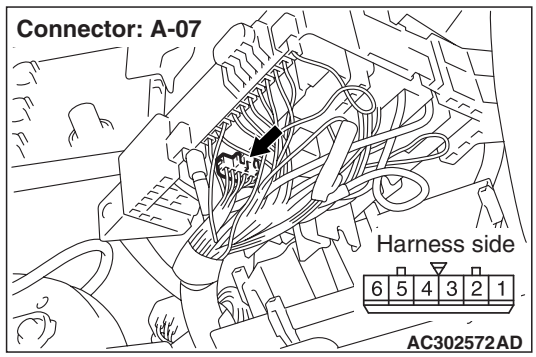
When checking the joint connector, ensure that its wiring harness side is not damaged.

Q: Is the check result normal?

YES : Go to Step 4 .

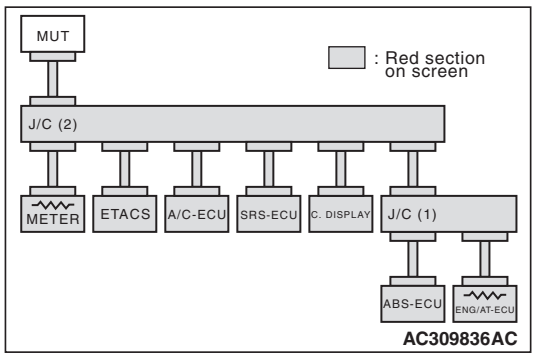
NO : Repair a defective connector or replace the joint connector (front wiring harness assembly).

STEP 4. MUT-III CAN bus diagnostics (A-07 joint connector (CAN1)



(1) Disconnect the joint connector (CAN1), and

check by using the MUT-III.



(2) Check that the MUT-III indications correspond to the illustration.

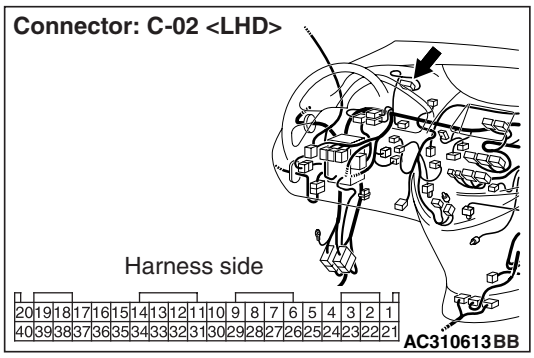
Q: Is the check result normal?

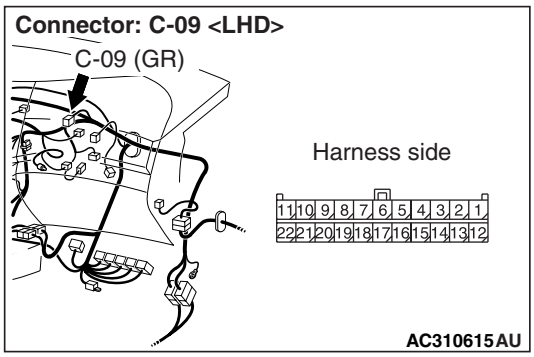
YES : <MUT-III indications correspond to the illustration> Go to Step 22 .

NO : <MUT-III indications do not correspond to the illustration> Go to Step 5 .

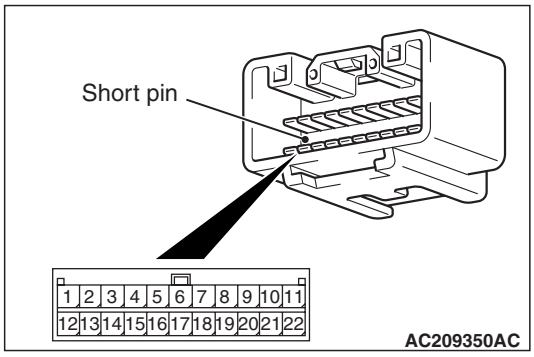
STEP 5. Connector check: C-09 joint connector (CAN2) and C-02 combination meter connector

⚠ CAUTION





The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.



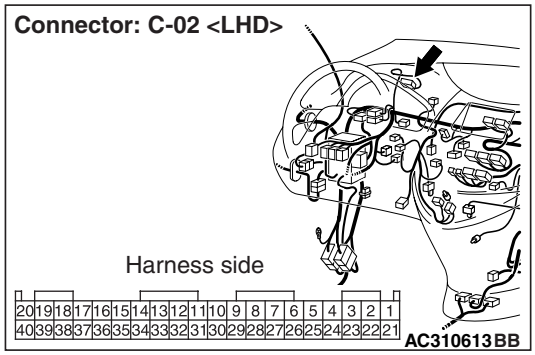
When checking the joint connector, ensure that its wiring harness side is not damaged.

Q: Is the check result normal?

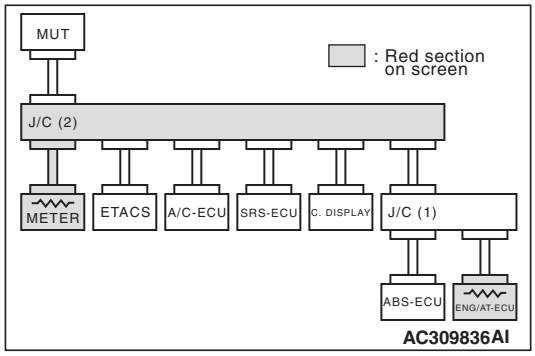
YES : Go to Step 6 .

NO : Repair a defective connector or replace the joint connector.

STEP 6. MUT-III CAN bus diagnostics (C-02 combination meter connector disconnected)



(1) Disconnect the combination meter connector, and diagnose by using the MUT-III.



(2) Check that the MUT-III indications correspond to the illustration.

Q: Is the check result normal?

YES : <MUT-III indications correspond to the illustration> Go to Step 7 .

NO : <MUT-III indications do not correspond to the illustration> Go to Step 8 .

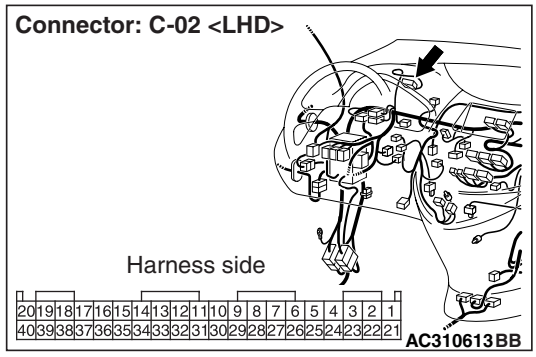
STEP 7. Resistance measurement at C-09 joint connector (CAN2) and C-02 combination meter connector.

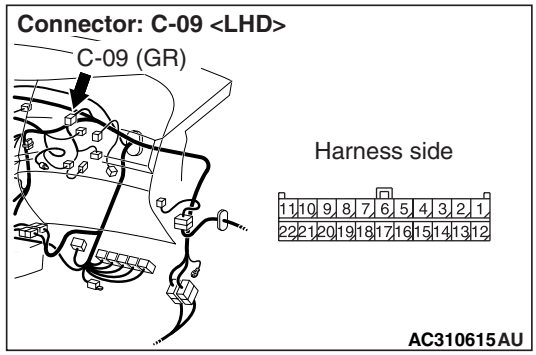
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN2) and the combination meter connector, and measure at the wiring harness side.

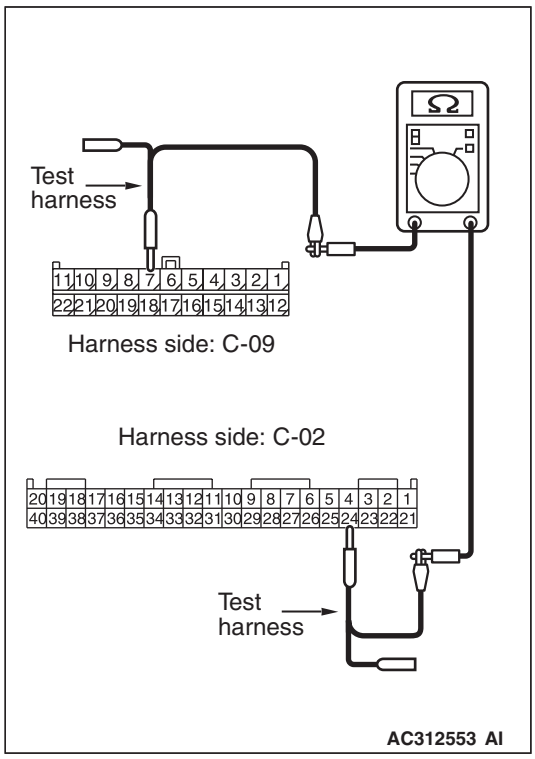
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

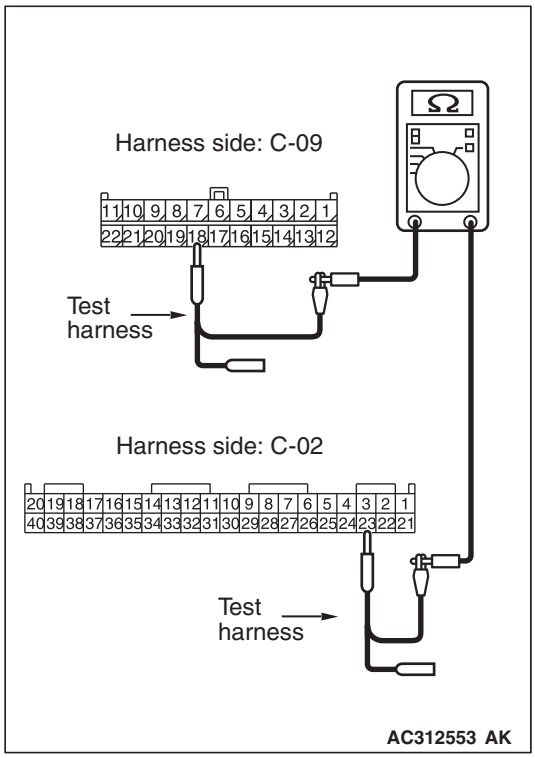
(3) Ensure that the negative battery terminal is

disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal No.7 and C-02 combination meter connector terminal No.24

OK: 2 Ω or less



(5) Continuity between C-09 joint connector (CAN2) terminal No.18 and C-02 combination meter connector terminal No.23

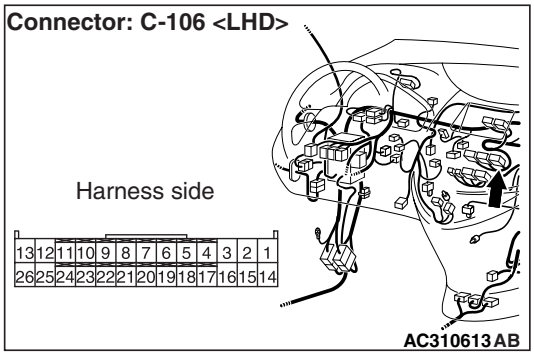
OK: 2 Ω or less

⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Are the check results normal?
YES : <All the resistances measure 2 Ω or less> Power supply to the combination meter may be suspected. Diagnose the combination meter. Refer to P.54A-55.
NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between joint connector (CAN2) and the combination meter connector.

STEP 8. Connector check: C-106 A/C-ECU connector

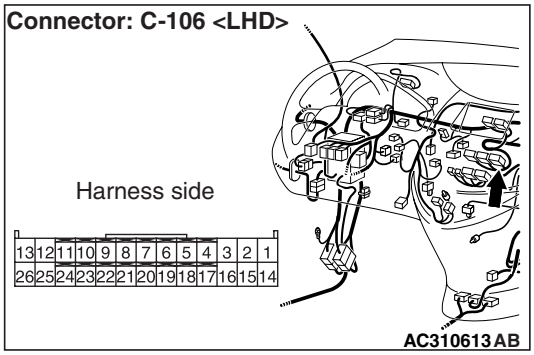
⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

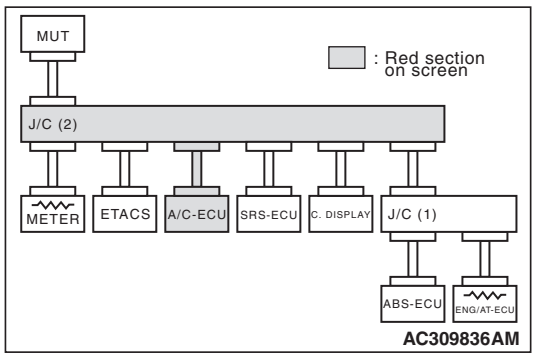
Q: Is the check result normal?
YES : Go to Step 9 .
NO : Repair the defective connector.

STEP 9. MUT-III CAN bus diagnostics (C-106 A/C-ECU connector disconnected)



(1) Disconnect the A/C-ECU connector, and

diagnose by using the MUT-III.



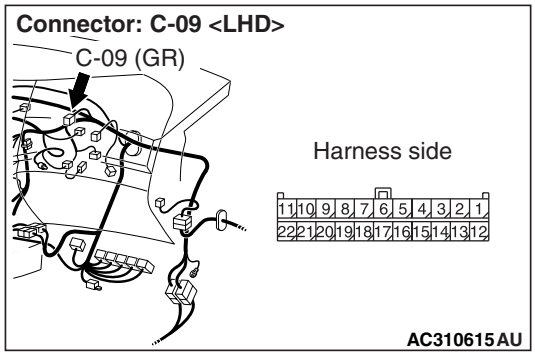
(2) Check that the MUT-III indications correspond to the illustration.

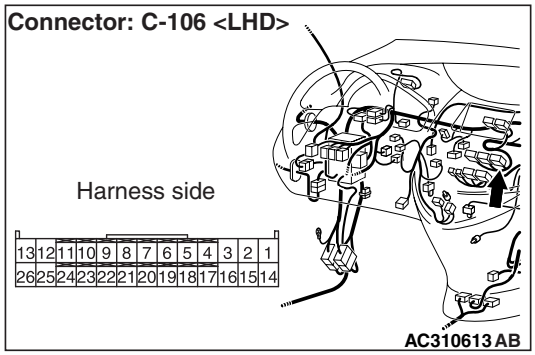
Q: Is the check result normal?
YES : <MUT-III indications correspond to the illustration> Go to Step 10 .
NO : <MUT-III indications do not correspond to the illustration> Go to Step 11 .

STEP 10. Resistance measurement at C-09 joint connector (CAN2) and C-106 A/C-ECU connector.

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.



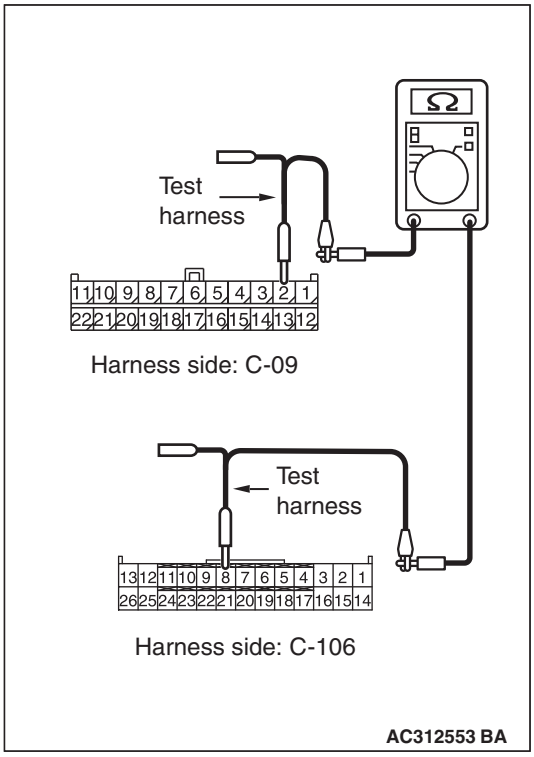


(1) Disconnect the joint connector (CAN2) and the A/C-ECU connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

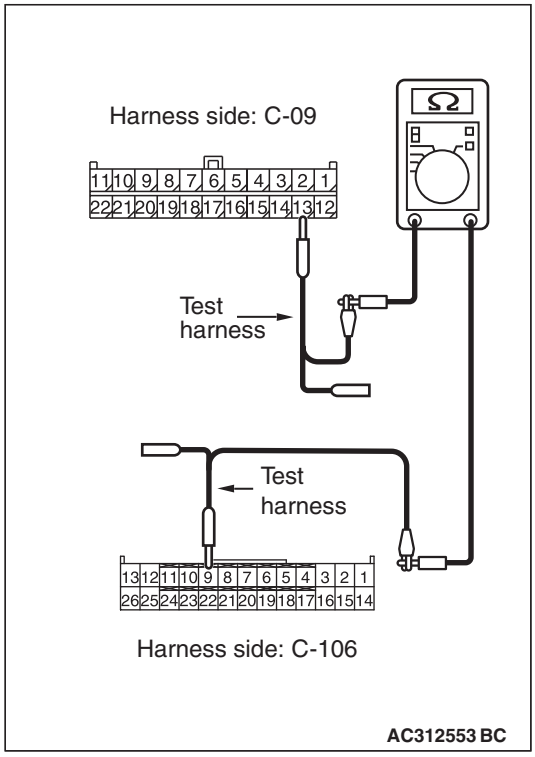
(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal No.2 and C-106 A/C-ECU connector

terminal No.8

OK: 2 Ω or less



(5) Continuity between C-09 joint connector (CAN2) terminal No.13 and C-106 A/C-ECU connector terminal No.9

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

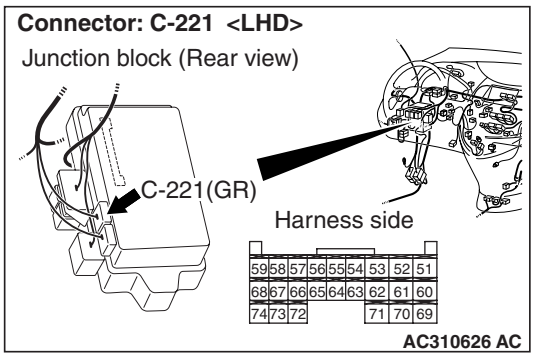
Q: Are the check results normal?

YES : <All the resistances measure 2 Ω or less> Power supply to the A/C-ECU may be suspected. Diagnose the air conditioner system. Refer to P.55-174.

NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between the joint connector (CAN2) and the A/C-ECU connector.

STEP 11. Connector check: C-221 ETACS-ECU connector

⚠ CAUTION



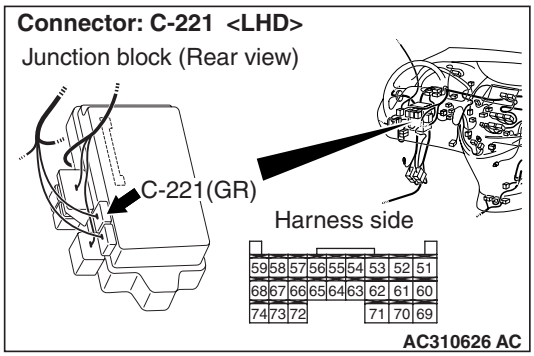
The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

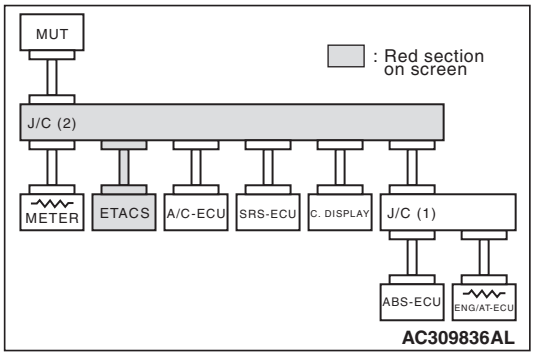
YES : Go to Step 12 .

NO : Repair the defective connector.

STEP 12. MUT-III CAN bus diagnostics (C-221 ETACS-ECU connector disconnected)



(1) Disconnect the ETACS-ECU connector, and diagnose by using the MUT-III.



(2) Check that the MUT-III indications correspond to the illustration.

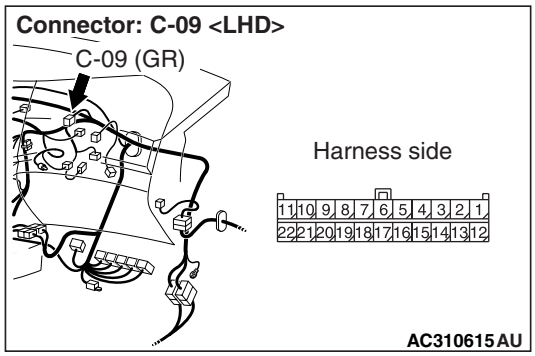
Q: Is the check result normal?

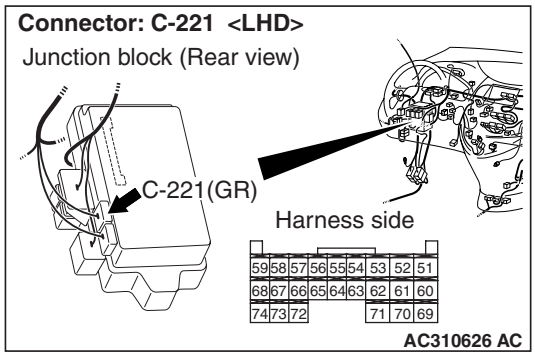
YES : <MUT-III indications correspond to the illustration> Go to Step 13 .
NO : <MUT-III indications do not correspond to the illustration> Go to Step 14 .

STEP 13. Resistance measurement at C-09 joint connector (CAN2) and C-221 ETACS-ECU connector.

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.

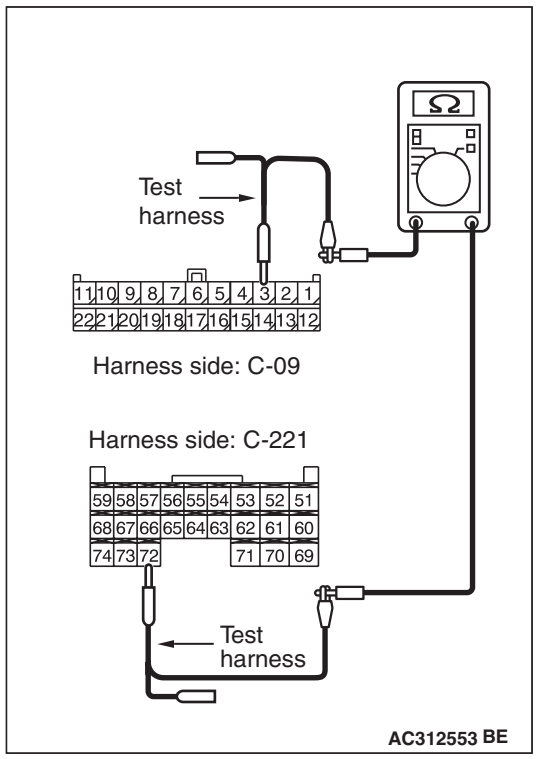




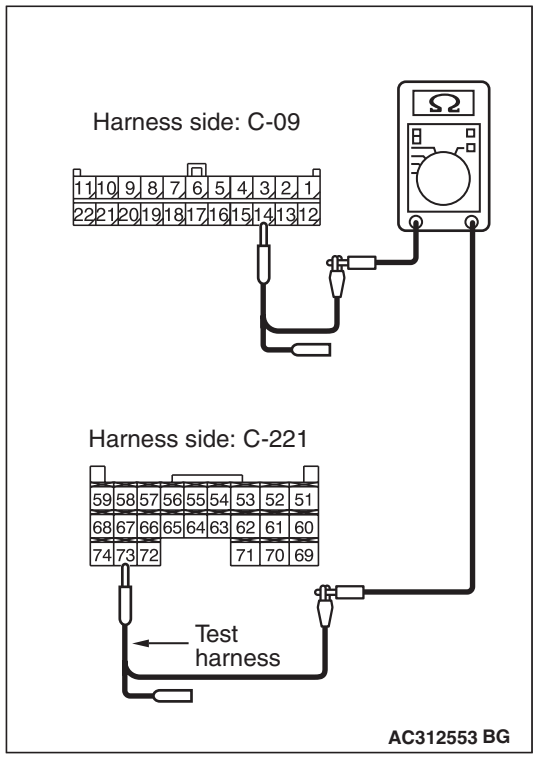
(1) Disconnect the joint connector (CAN2) and the ETACS-ECU connector, and measure at the wiring harness side.
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal No.3 and C-221 ETACS-ECU connector terminal No.72
OK: 2 Ω or less



(5) Continuity between C-09 joint connector (CAN2) terminal No.14 and C-221 ETACS-ECU

connector terminal No.73

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

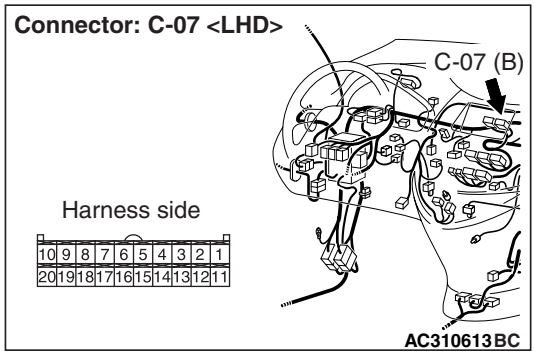
Q: Are the check results normal?

YES : <All the resistances measure 2 Ω or less> Power supply to the ETACS-ECU may be suspected. Diagnose the SWS. Refer to P.54B-87.

NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between the joint connector (CAN2) and the ETACS-ECU connector.

STEP 14. Connector check: C-07 centre display connector

⚠ CAUTION



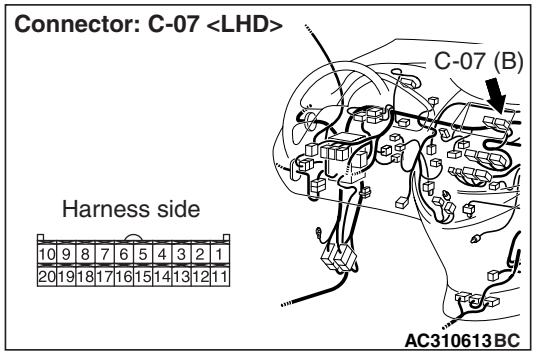
The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

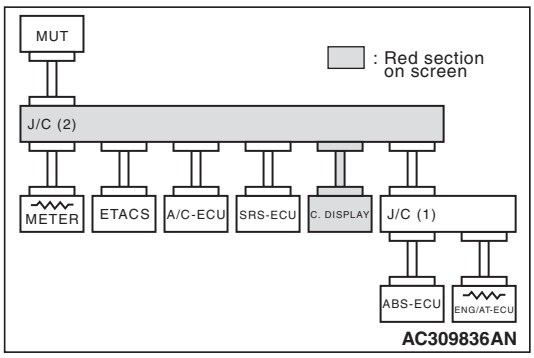
YES : Go to Step 15 .

NO : Repair the defective connector.

STEP 15. MUT-III CAN bus diagnostics (C-07 centre display connector disconnected)



(1) Disconnect the centre display connector, and diagnose by using the MUT-III.



(2) Check that the MUT-III indications correspond to the illustration.

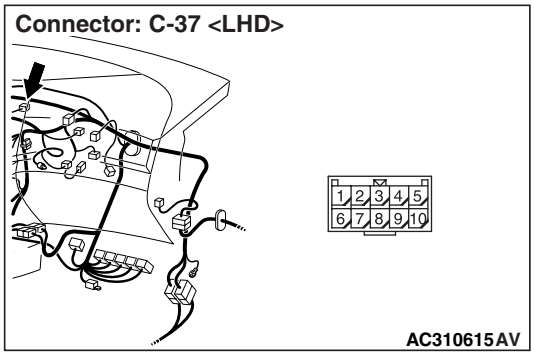
Q: Is the check result normal?

YES : <MUT-III indications correspond to the illustration> Go to Step 16 .

NO : <MUT-III indications do not correspond to the illustration> Go to Step 27 .

STEP 16. Connector check: C-37 jumper connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Check that the wiring harness of the jumper connector is not damaged.

Q: Is the check result normal?

YES : Go to Step 17 .

NO : Repair the defective connector.

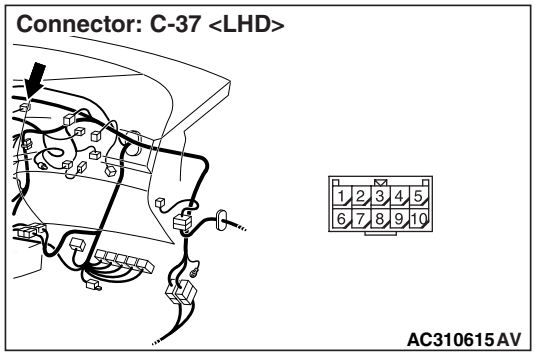
STEP 17. Resistance measurement at C-37 jumper connector and C-09 joint connector (CAN2).

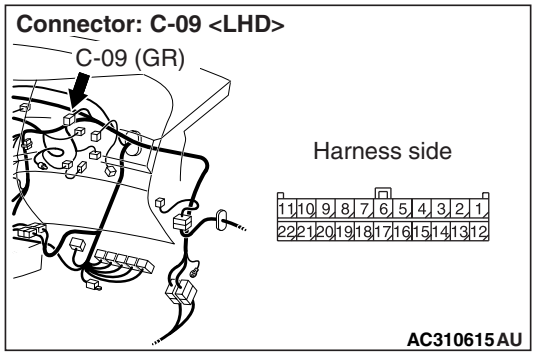
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





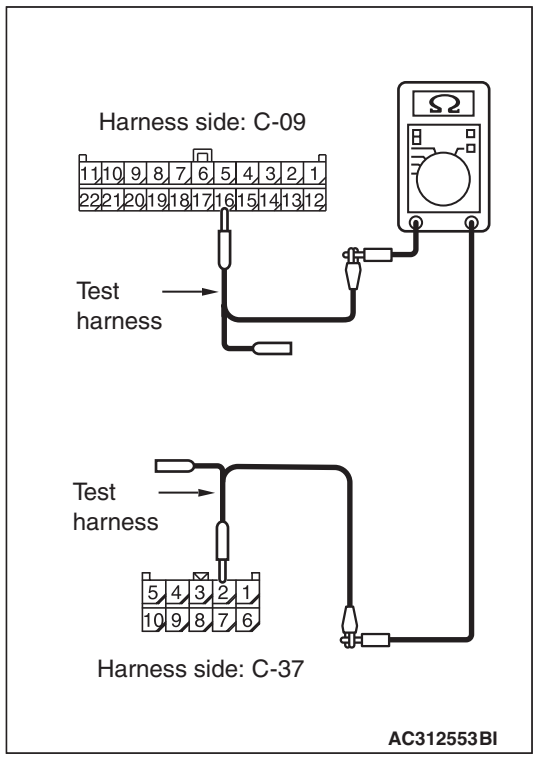
(1) Disconnect the joint connector (CAN2) and the jumper connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

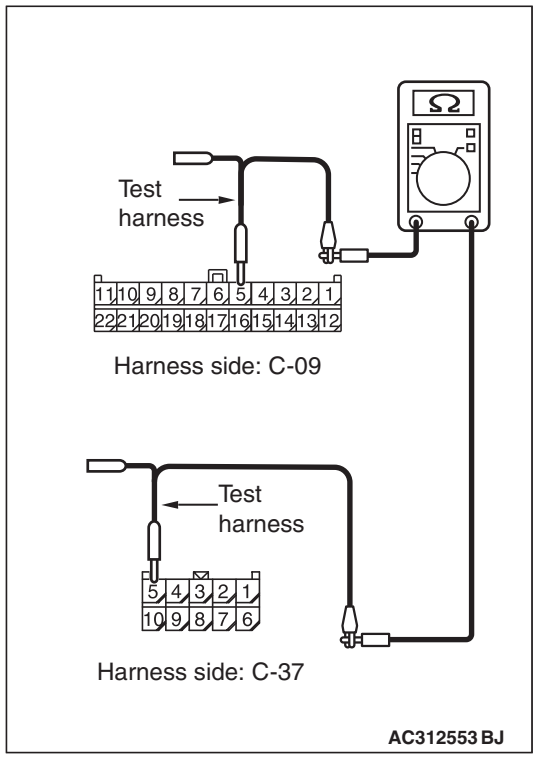
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-37 jumper connector terminal No.2 and C-09 joint connector (CAN2) terminal No.16

OK: 2 Ω or less



(5) Continuity between C-37 jumper connector terminal No.5 and C-09 joint connector (CAN2)

terminal No.5

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Are the check results normal?

YES : <All the voltages measure 2 Ω or less> Go to Step 18 .

NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between joint connector (CAN2) and the jumper connector.

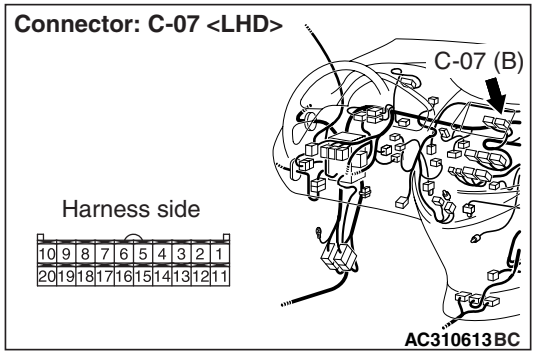
STEP 18. Resistance measurement at C-37 jumper connector and C-07 centre display connector.

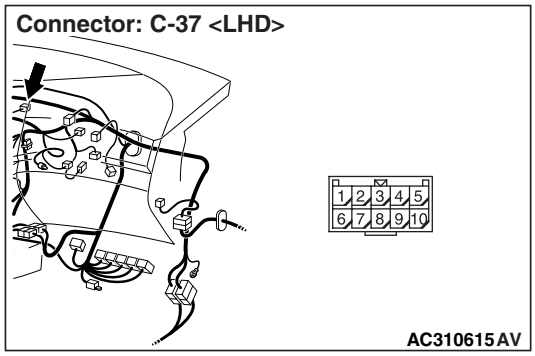
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





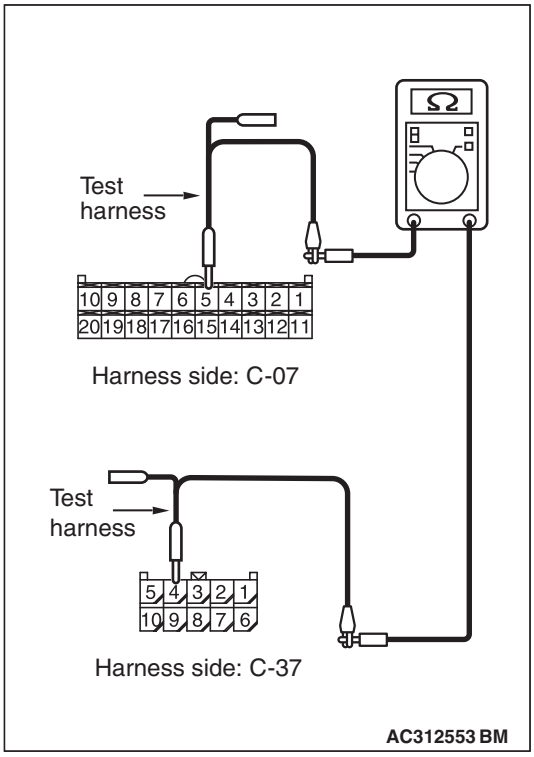
(1) Disconnect the centre display connector and the jumper connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

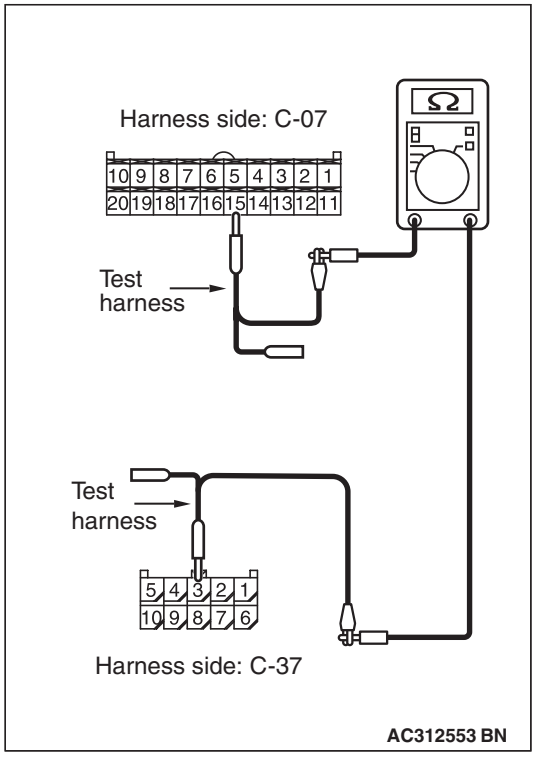
(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-37 jumper connector terminal No.4 and C-07 centre display connector

terminal No.5.

OK: 2 Ω or less



(5) Continuity between C-37 jumper connector terminal No.3 and C-07 centre display connector terminal No.15.

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

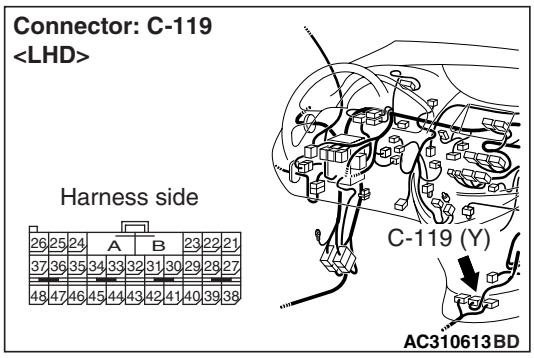
Q: Are the check results normal?

YES : <All the resistances measure 2 Ω or less> Power supply to the centre display may be suspected. Diagnose the centre display system. Refer to P.54A-161.

NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between the centre display connector and the jumper connector.

STEP 19. Connector check: C-119 SRS-ECU connector

⚠ CAUTION



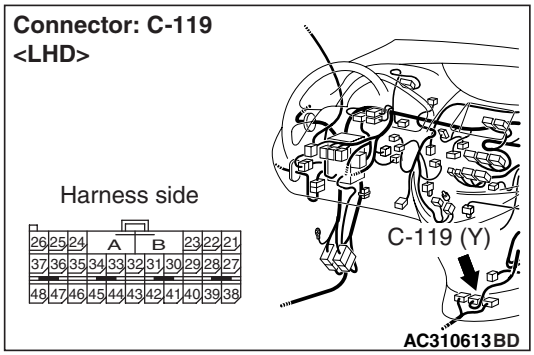
The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

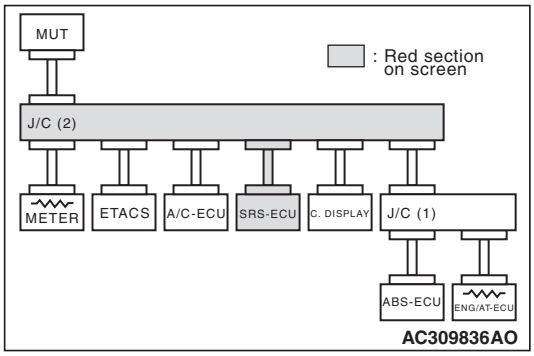
YES : Go to Step 20 .

NO : Repair the defective connector.

STEP 20. MUT-III CAN bus diagnostics (C-119 SRS-ECU connector disconnected)



(1) Disconnect the SRS-ECU connector, and diagnose by using the MUT-III.



(2) Check that the MUT-III indications correspond to the illustration.

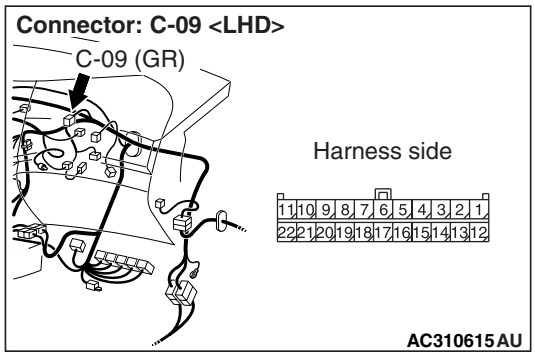
Q: Is the check result normal?

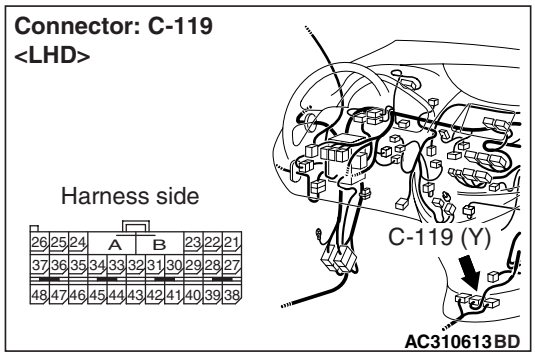
YES : <MUT-III indications correspond to the illustration> Go to Step 21 .
NO : <MUT-III indications do not correspond to the illustration> Go to Step 31 .

STEP 21. Resistance measurement at C-09 joint connector (CAN2) and C-119 SRS-ECU connector.

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.

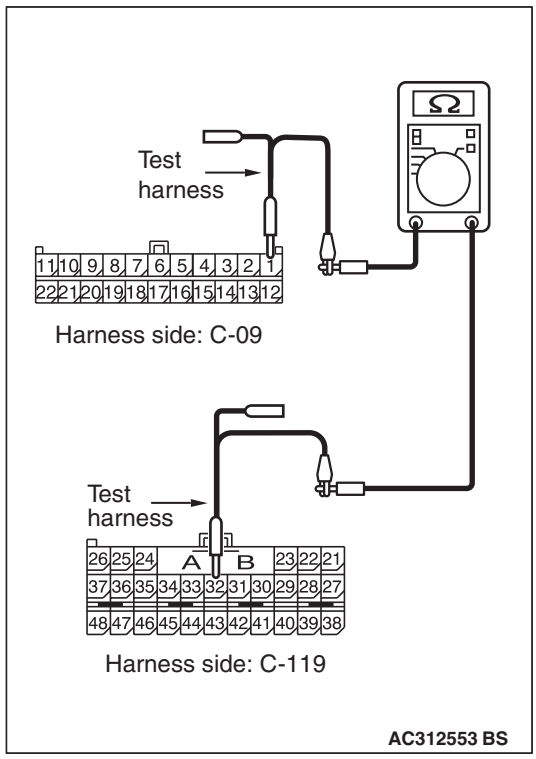




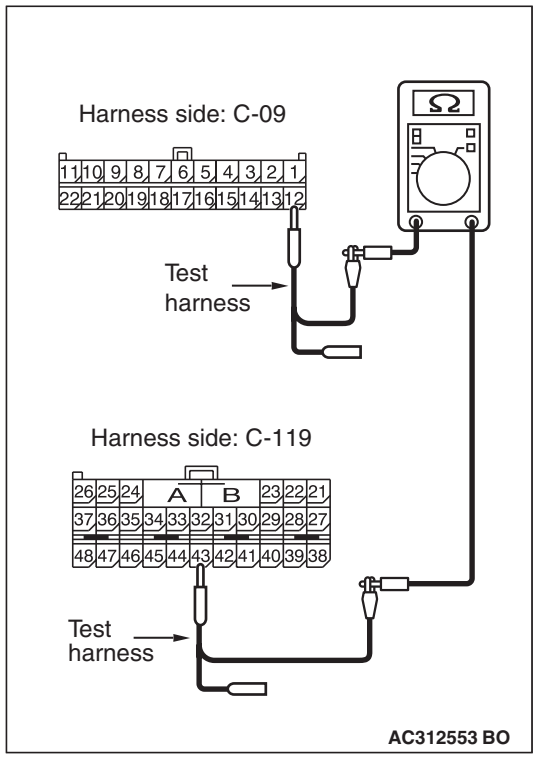
(1) Disconnect the joint connector (CAN2) and the SRS-ECU connector, and measure at the wiring harness side.
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal No.1 and C-119 SRS-ECU connector terminal No.32
OK: 2 Ω or less



(5) Continuity between C-09 joint connector (CAN2) terminal No.12 and C-119 SRS-ECU connector

terminal No.43

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

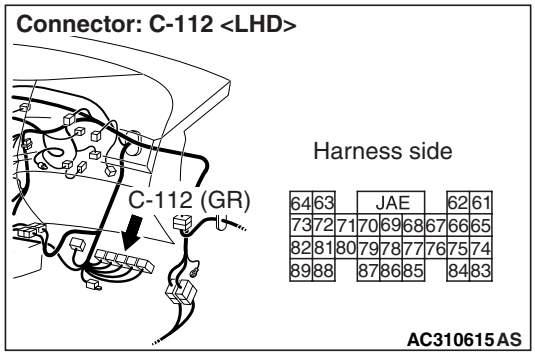
Q: Are the check results normal?

YES : <All the resistances measure 2 Ω or less> Power supply to the SRS-ECU may be suspected. Diagnose the SRS system. Refer to P.52B-201.

NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between the joint connector (CAN2) and the SRS-ECU connector.

STEP 22. Connector check: C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector

⚠ CAUTION



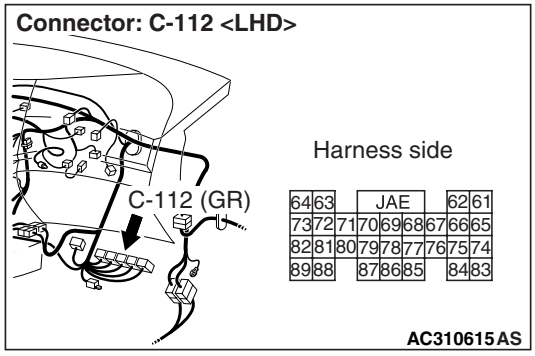
The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

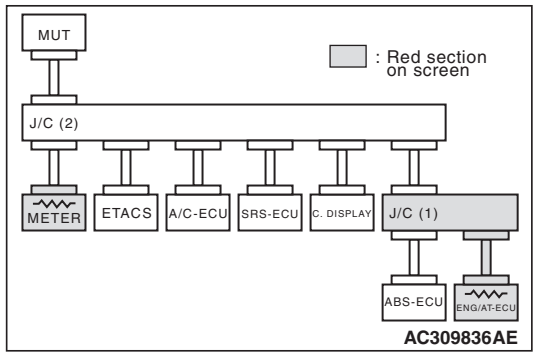
YES : Go to Step 23 .

NO : Repair the defective connector.

STEP 23. MUT-III CAN bus diagnostics (C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector disconnected)



(1) Disconnect the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector, and diagnose by using the MUT-III.



(2) Check that the MUT-III indications correspond to the illustration.

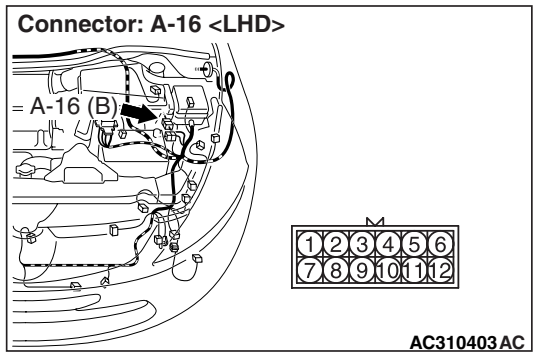
Q: Is the check result normal?

YES : <MUT-III indications correspond to the illustration> Go to Step 24 .

NO : <MUT-III indications do not correspond to the illustration> Go to Step 27 .

STEP 24. Connector check: A-16 intermediate connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 25 .

NO : Repair the defective connector.

STEP 25. Resistance measurement at A-16 intermediate connector and A-07 joint connector (CAN1).

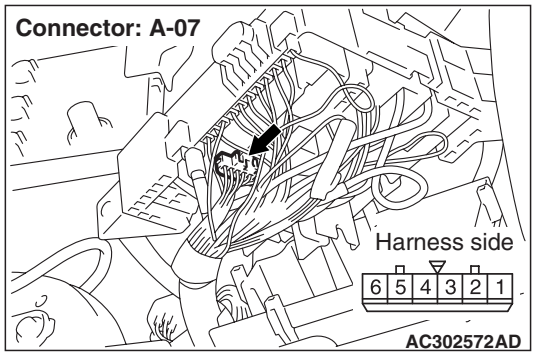
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

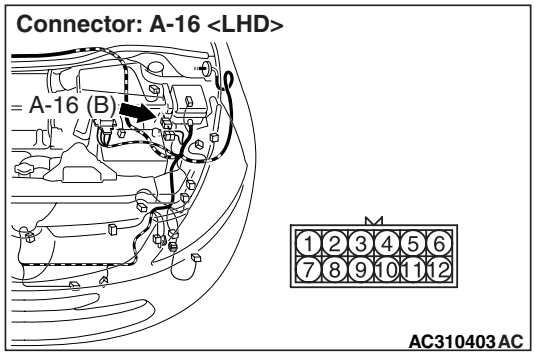
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





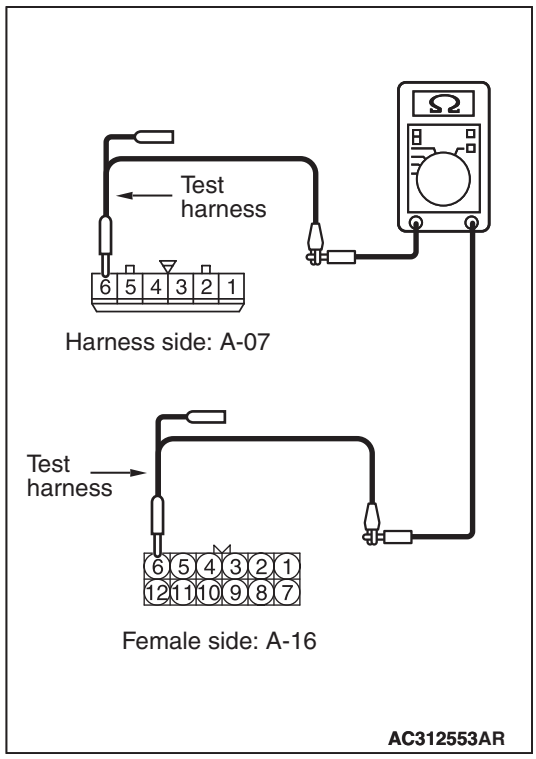
(1) Disconnect the joint connector (CAN1) and the intermediate connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

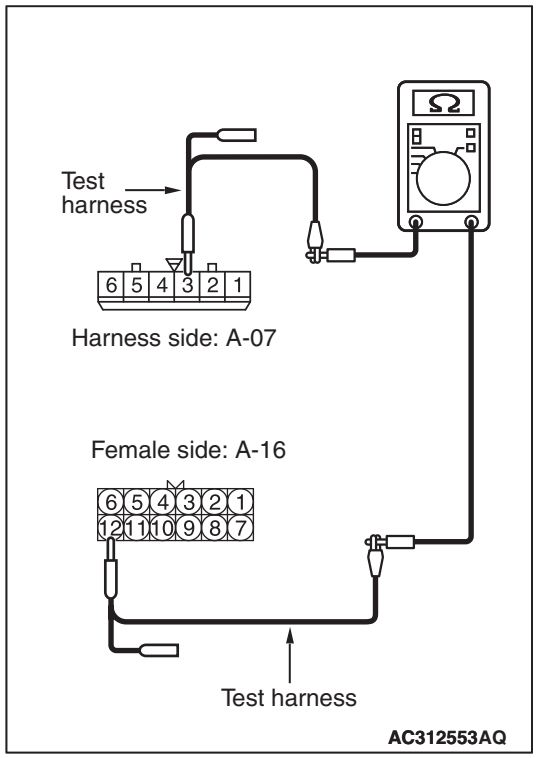
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between A-16 intermediate connector terminal No.6 and A-07 joint connector (CAN1) terminal No.6

OK: 2 Ω or less



(5) Continuity between A-16 intermediate connector terminal No.12 and A-07 joint connector (CAN1)

terminal No.3

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Are the check results normal?

YES : <All the voltages measure 2 Ω or less> Go to Step 26 .

NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between joint connector (CAN1) and the intermediate connector.

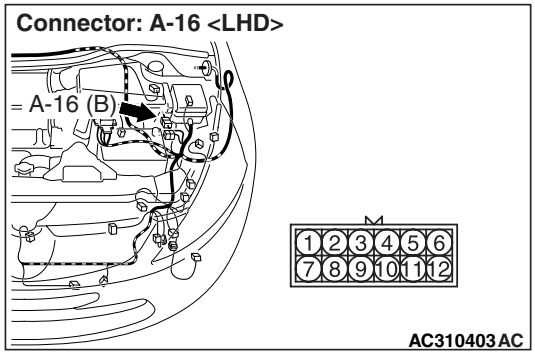
STEP 26. Resistance measurement at A-16 intermediate connector and C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector.

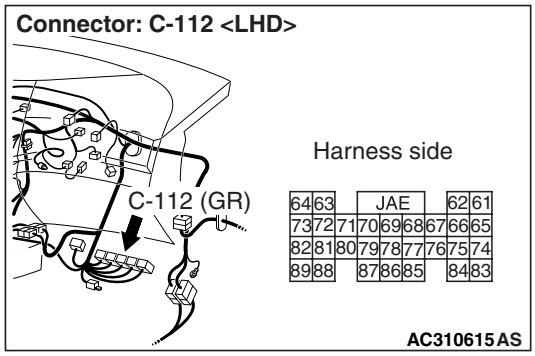
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





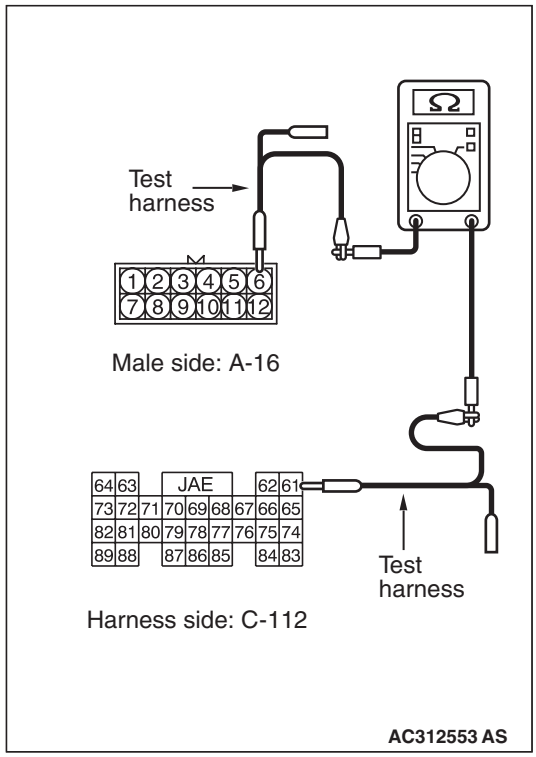
(1) Disconnect the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector and the intermediate connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

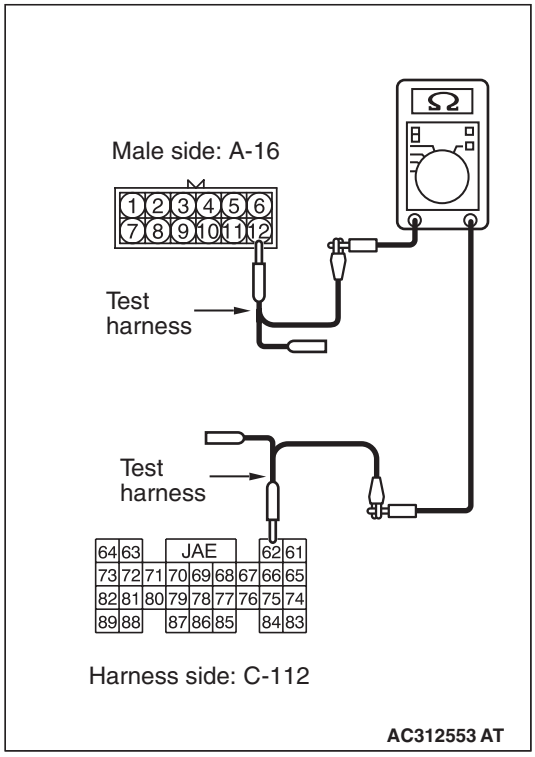
(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between A-16 intermediate connector terminal No.6 and C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector terminal

No.61.

OK: 2 Ω or less



(5) Continuity between A-16 intermediate connector terminal No.12 and C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector terminal No.62.

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

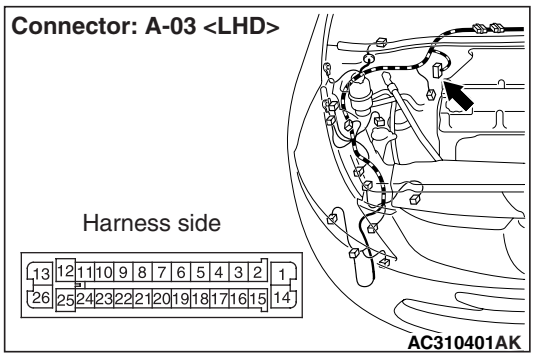
Q: Are the check results normal?

YES : <All the resistances measure 2 Ω or less> Power supply to the engine-ECU <M/T> or engine-A/T-ECU <A/T> may be suspected. Diagnose the engine control system. Refer to P.13A-321.

NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector and the joint connector (CAN1).

STEP 27. Connector check: A-03 ABS-ECU connector

⚠ CAUTION



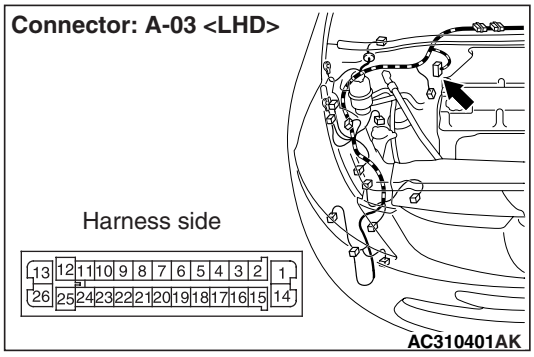
The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

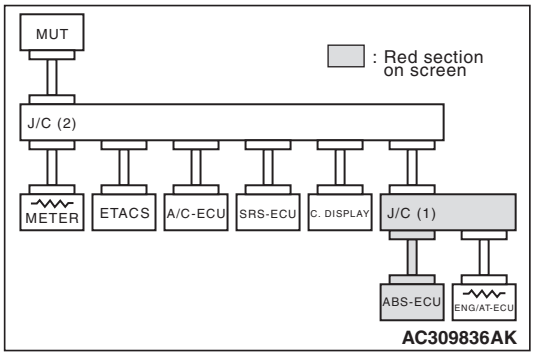
YES : Go to Step 28 .

NO : Repair the defective connector.

STEP 28. MUT-III CAN bus diagnostics (A-03 ABS-ECU connector disconnected)



(1) Disconnect the ABS-ECU connector, and diagnose by using the MUT-III.



(2) Check that the MUT-III indications correspond to the illustration.

Q: Is the check result normal?

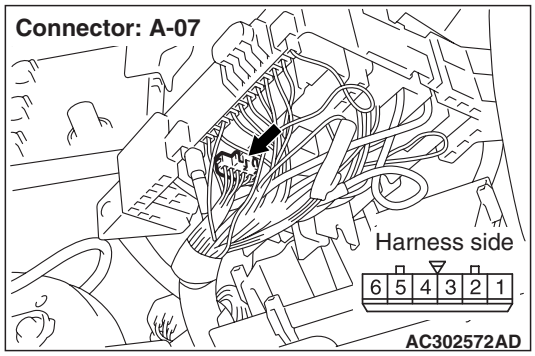
YES : <MUT-III indications correspond to the illustration> Go to Step 29 .
NO : <MUT-III indications do not correspond to the illustration> Go to Step 30 .

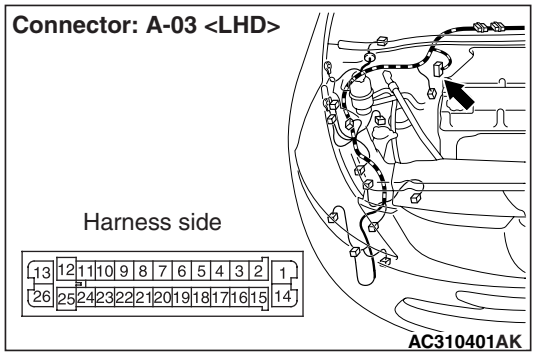
STEP 29. Resistance measurement at A-07 joint connector (CAN1) and A-03 ABS-ECU connector.

NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.

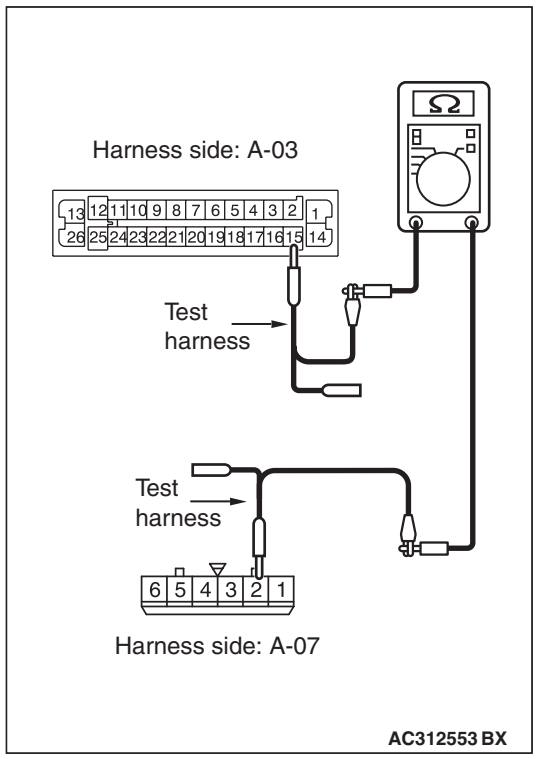




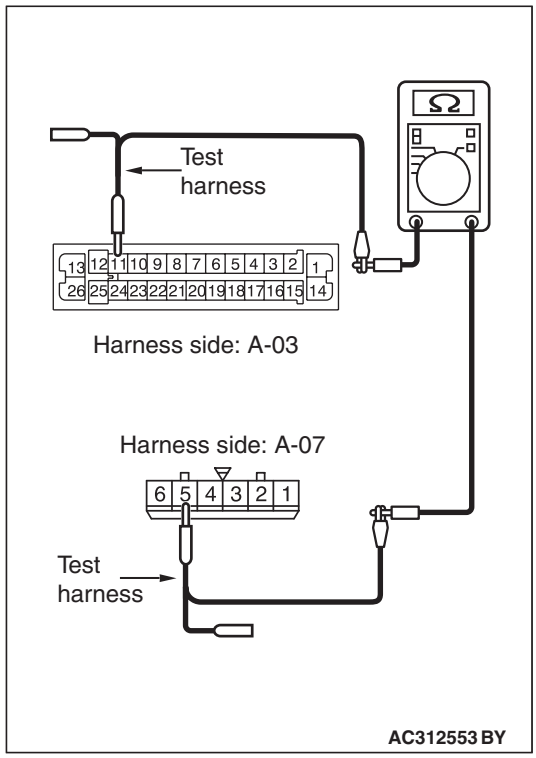
(1) Disconnect the joint connector (CAN1) and the ABS-ECU connector, and measure at the wiring harness side.
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between A-07 joint connector (CAN1) terminal No.2 and A-03 ABS-ECU connector terminal No.15
OK: 2 Ω or less



(5) Continuity between A-07 joint connector (CAN1) terminal No.5 and A-03 ABS-ECU connector

terminal No.11

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

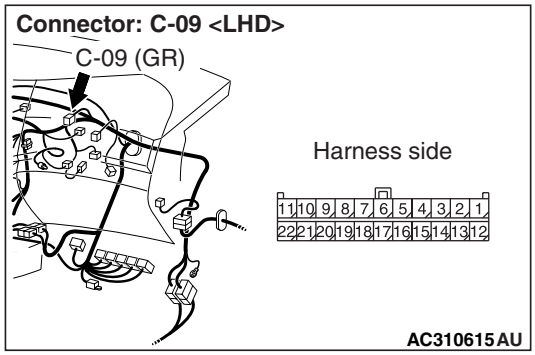
Q: Are the check results normal?

YES : <All the resistances measure 2 Ω or less> Power supply to the ABS-ECU may be suspected. Diagnose the ABS system. Refer to P.35B-65.

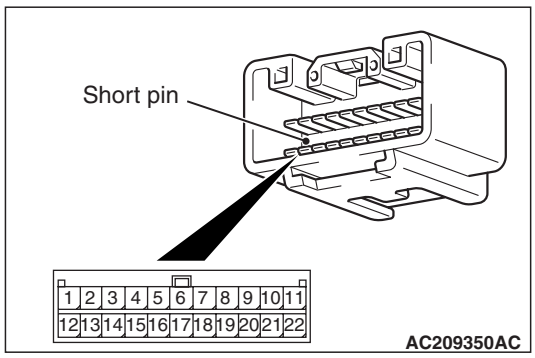
NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between the joint connector (CAN1) and the ABS-ECU connector.

STEP 30. Connector check: C-09 joint connector (CAN2)

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.



When checking the joint connector, ensure that its wiring harness side is not damaged.

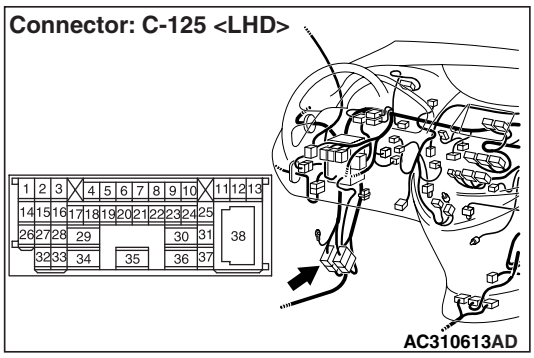
Q: Is the check result normal?

YES : Go to Step 31 .

NO : Repair a defective connector or replace the joint connector.

STEP 31. Connector check: C-125 intermediate connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 32 .

NO : Repair the defective connector.

STEP 32. Resistance measurement at C-125 intermediate connector and A-07 joint connector (CAN1).

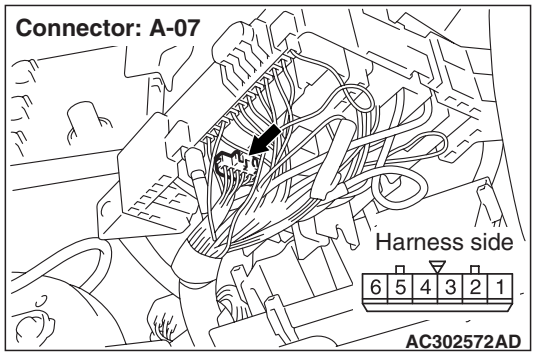
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

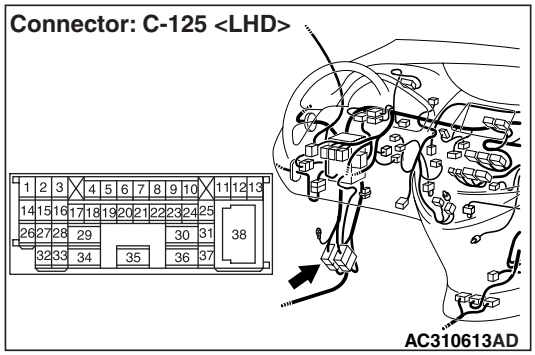
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





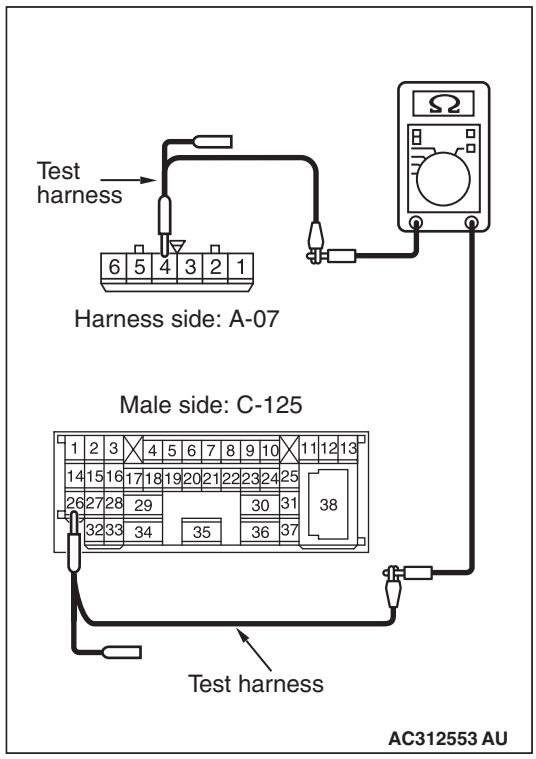
(1) Disconnect the joint connector (CAN1) and the intermediate connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

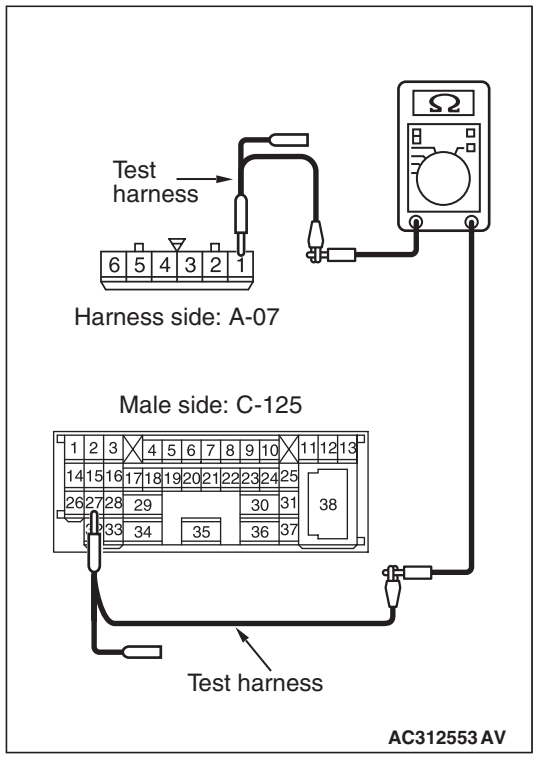
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-125 intermediate connector terminal No.26 and A-07 joint connector (CAN1) terminal No.4

OK: 2 Ω or less



(5) Continuity between C-125 intermediate connector terminal No.27 and A-07 joint

connector (CAN1) terminal No.1

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Are the check results normal?

YES : <All the voltages measure 2 Ω or less> Go to Step 33 .

NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between joint connector (CAN1) and the intermediate connector.

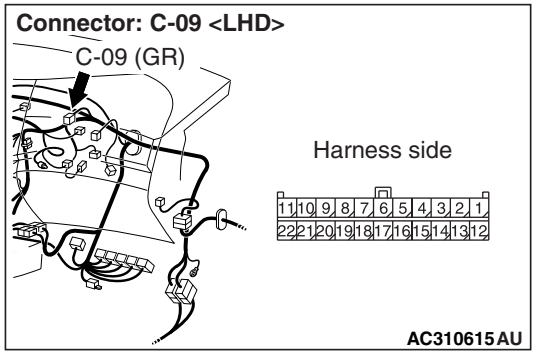
STEP 33. Resistance measurement at C-125 intermediate connector and C-09 joint connector (CAN2).

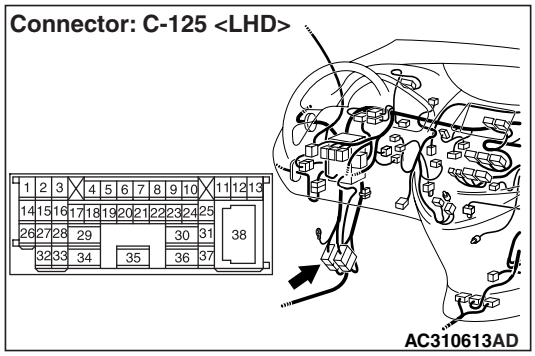
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





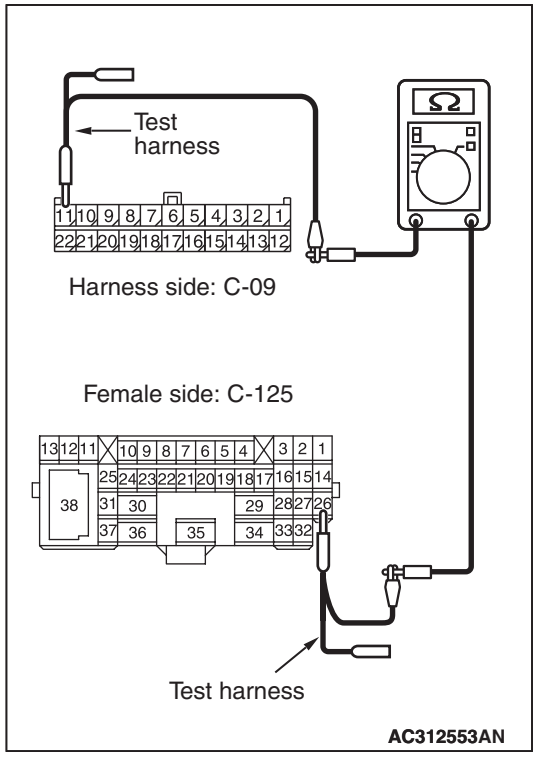
(1) Disconnect the joint connector (CAN2) and the intermediate connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

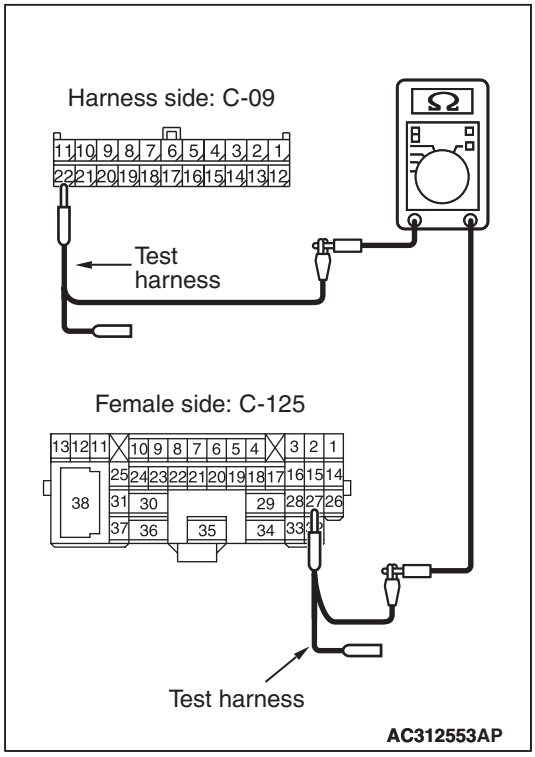
(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-125 intermediate connector terminal No.26 and C-09 joint

connector (CAN2) terminal No.11

OK: 2 Ω or less



(5) Continuity between C-125 intermediate connector terminal No.27 and C-09 joint connector (CAN2) terminal No.22

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Are the check results normal?

YES : <All the voltages measure 2 Ω or less> Go to Step 34 .

NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between joint connector (CAN2) and the intermediate connector.

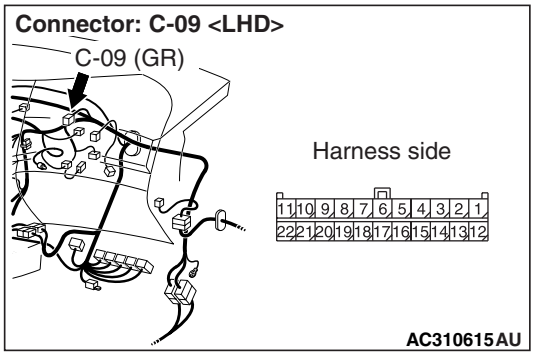
STEP 34. Resistance measurement at C-09 joint connector (CAN2) and C-126 diagnosis connector.

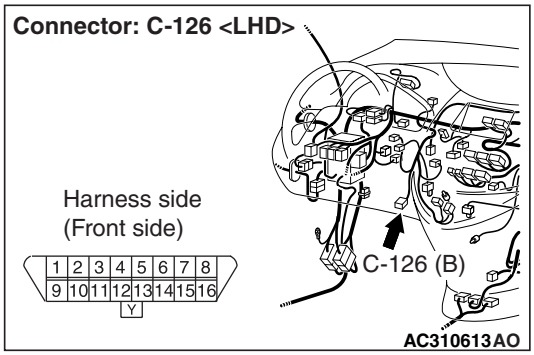
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the connector, and measure at the wiring harness side.

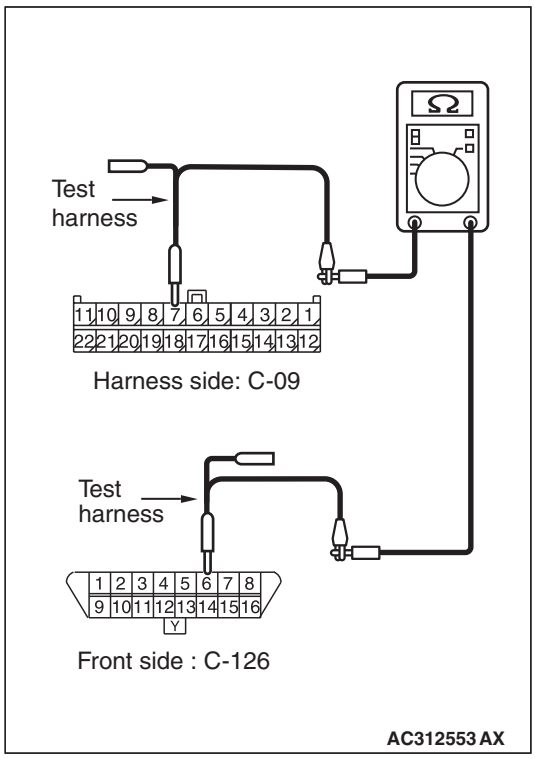
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

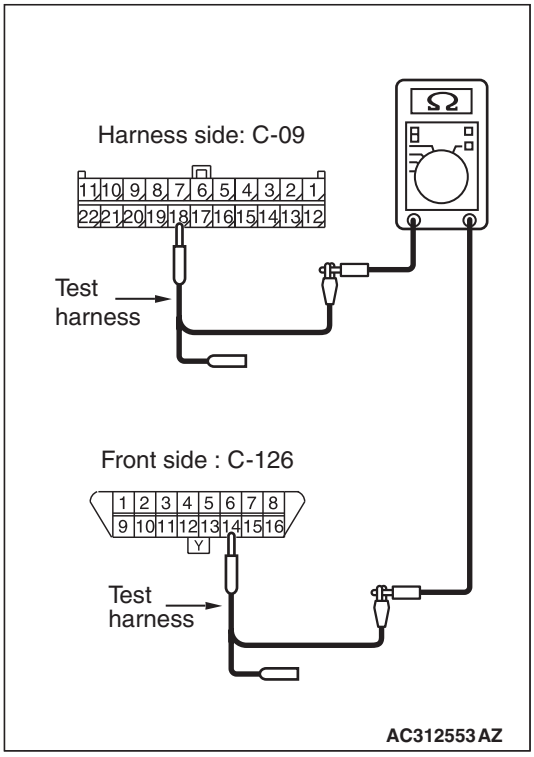
(3) Ensure that the negative battery terminal is

disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal No.7 and C-126 diagnosis connector terminal No.6

OK: 2 Ω or less



(5) Continuity between C-09 joint connector (CAN2) terminal No.18 and C-126 diagnosis connector terminal No.14

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Are the check results normal?

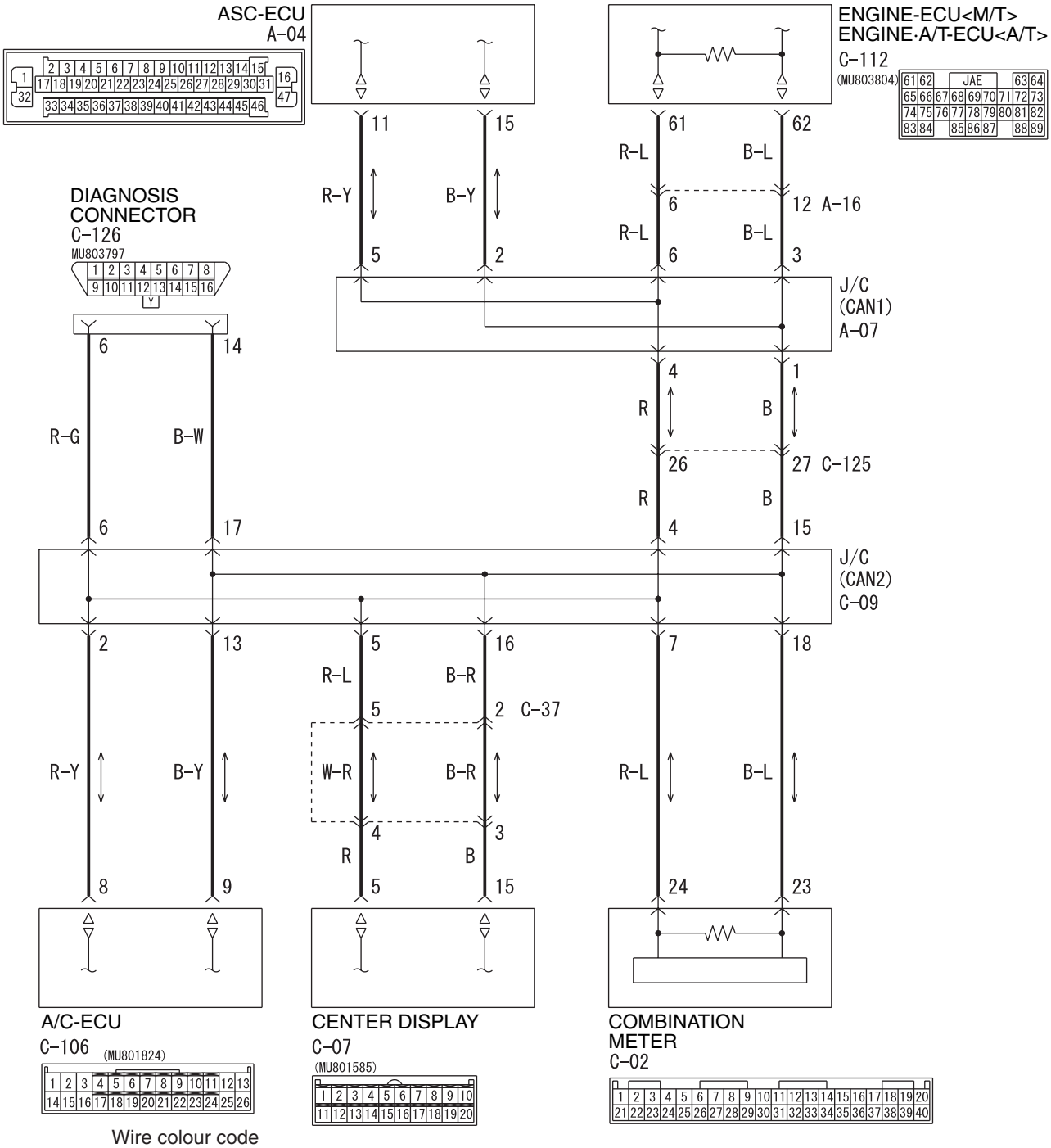
YES : <All the resistances measure 2 Ω or less> Diagnostics item 9: Diagnose shorts between CAN_L and H lines. Refer to P.54D-304.

NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between joint connector (CAN1) and the diagnosis connector.

Diagnostic Item 18: Diagnose CAN bus lines thoroughly <LH drive vehicles with ASC>

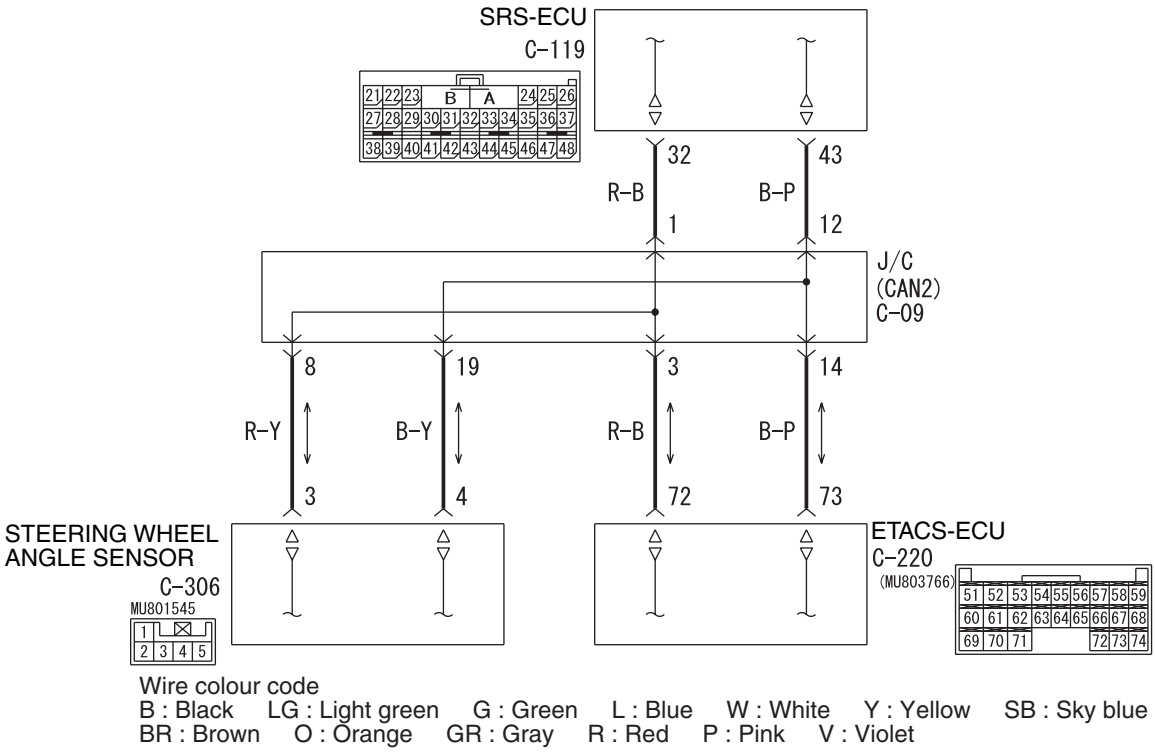
⚠ CAUTION

When servicing a CAN bus line, earth yourself by touching a metal object such as an unpainted water pipe. If you fail to do, a component connected to the CAN bus line may be broken.



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E20AA



W4X54E21AA

TROUBLE JUDGMENT

If the MUT-III can not received signals from ECUs, CAN bus line connector(s) are broken or an open circuit has occurred.

COMMENTS ON TROUBLE SYMPTOM

The CAN bus line wire or connectors may have loose, corroded, or damage terminals, or terminals pushed back in the connector.

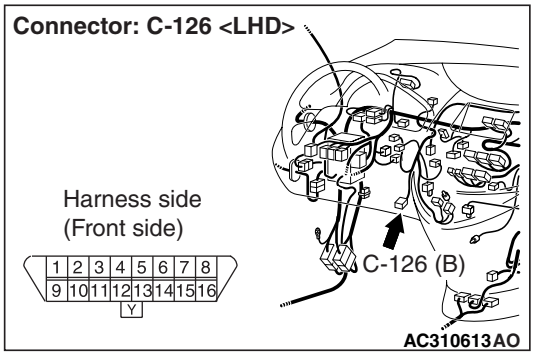
POSSIBLE CAUSES

- Damaged harness wires and connectors
- Malfunction of the ETACS-ECU
- Malfunction of the combination meter
- Malfunction of the A/C-ECU
- Malfunction of the SRS-ECU
- Malfunction of the multi-centre display
- Malfunction of the steering wheel angle sensor
- Malfunction of the ASC-ECU
- Malfunction of the engine-ECU <M/T> or engine-A/T-ECU <A/T>

DIAGNOSTIC PROCEDURE

STEP 1. Connector check: C-126 diagnosis connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?
YES : Go to Step 2 .
NO : Repair the defective connector.

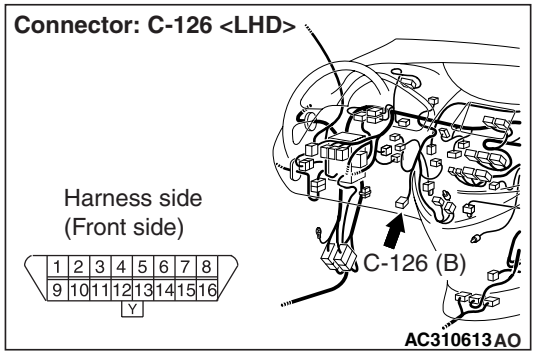
STEP 2. Resistance measurement at the C-126 diagnosis connector.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.

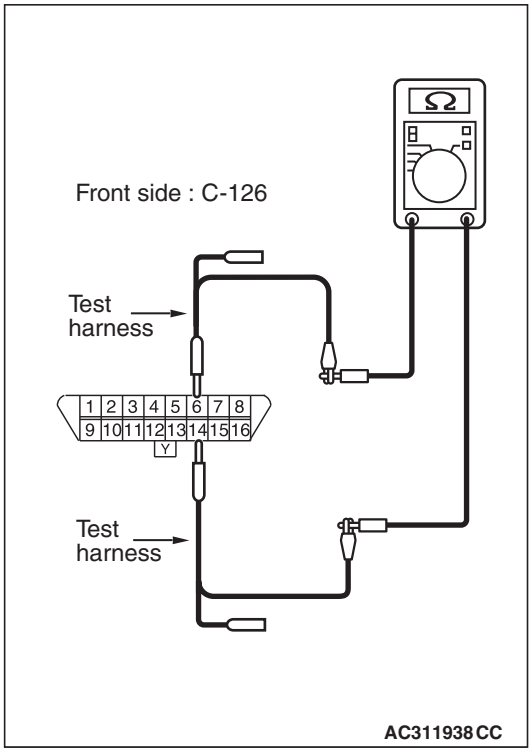


(1) Measure at the diagnosis connector wiring harness side.
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-126 diagnosis connector terminal Nos. 6 and 14

Q: How much resistance is measured?

2 Ω or less : Diagnose the lines between the CAN_L and H for short circuit. Refer to P.54D-328.

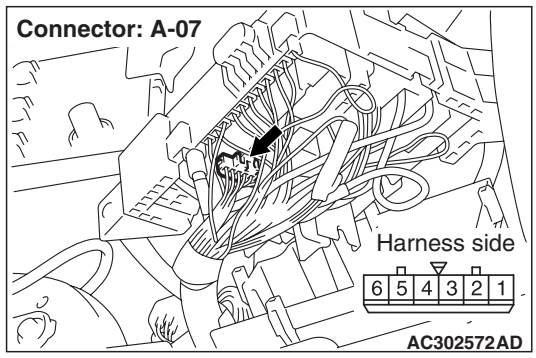
No continuity : Diagnose the terminator resistors at both ends. Refer to P.54D-404.

More than 2 Ω (i.e. continuity exists) : Go to Step 3 .

STEP 3. Connector check: A-07 joint connector (CAN1)

NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

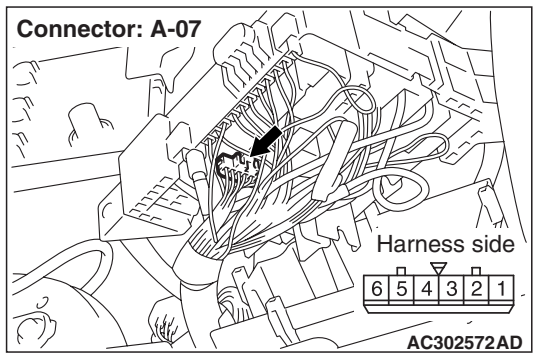
When checking the joint connector, ensure that its wiring harness side is not damaged.

Q: Is the check result normal?

YES : Go to Step 4 .

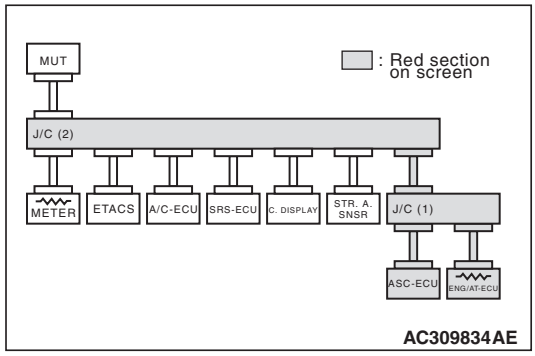
NO : Repair a defective connector or replace the joint connector (front wiring harness assembly).

STEP 4. MUT-III CAN bus diagnostics [A-07 joint connector (CAN1)]



(1) Disconnect the joint connector (CAN1), and

check by using the MUT-III.



(2) Check that the MUT-III indications correspond to the illustration.

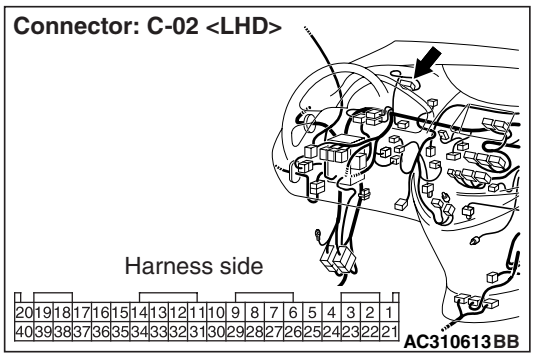
Q: Is the check result normal?

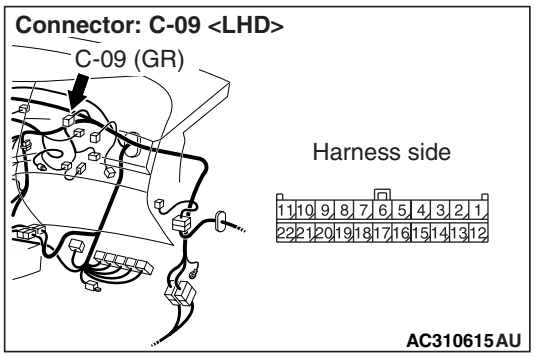
YES : <MUT-III indications correspond to the illustration> Go to Step 25 .

NO : <MUT-III indications do not correspond to the illustration> Go to Step 5 .

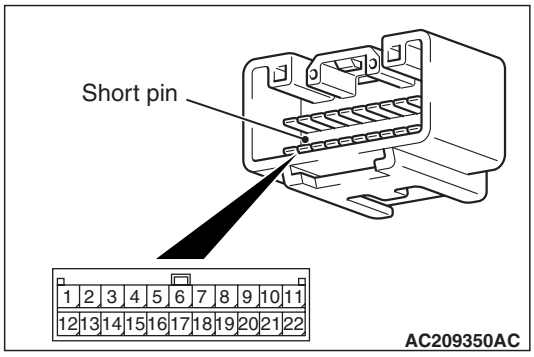
STEP 5. Connector check: C-09 joint connector (CAN2) and C-02 combination meter connector

⚠ CAUTION





The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.



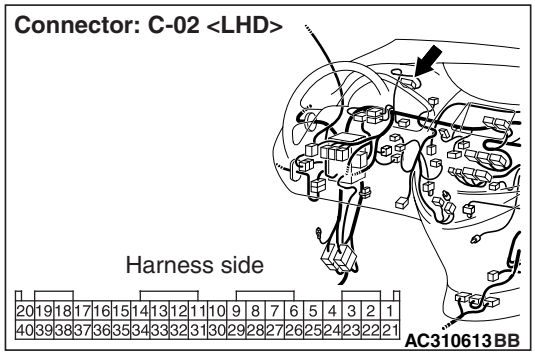
When checking the joint connector, ensure that its wiring harness side is not damaged.

Q: Is the check result normal?

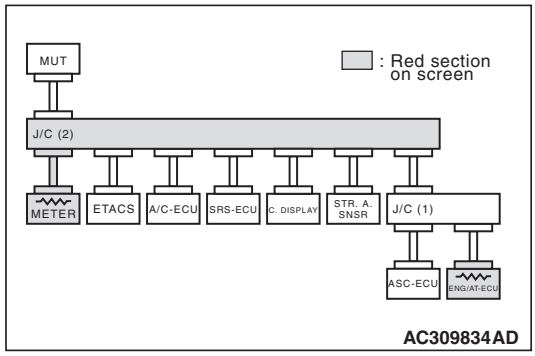
YES : Go to Step 6 .

NO : Repair a defective connector or replace the joint connector.

STEP 6. MUT-III CAN bus diagnostics (C-02 combination meter connector disconnected)



(1) Disconnect the combination meter connector, and diagnose by using the MUT-III.



(2) Check that the MUT-III indications correspond to the illustration.

Q: Is the check result normal?

YES : <MUT-III indications correspond to the illustration> Go to Step 7 .

NO : <MUT-III indications do not correspond to the illustration> Go to Step 8 .

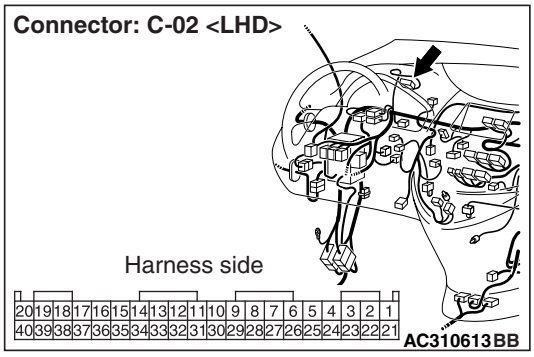
STEP 7. Resistance measurement at C-09 joint connector (CAN2) and C-02 combination meter connector.

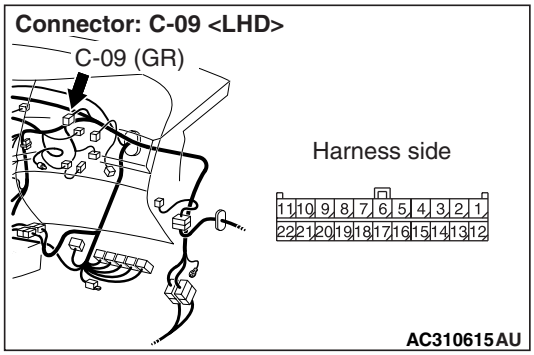
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN2) and the combination meter connector, and measure at the wiring harness side.

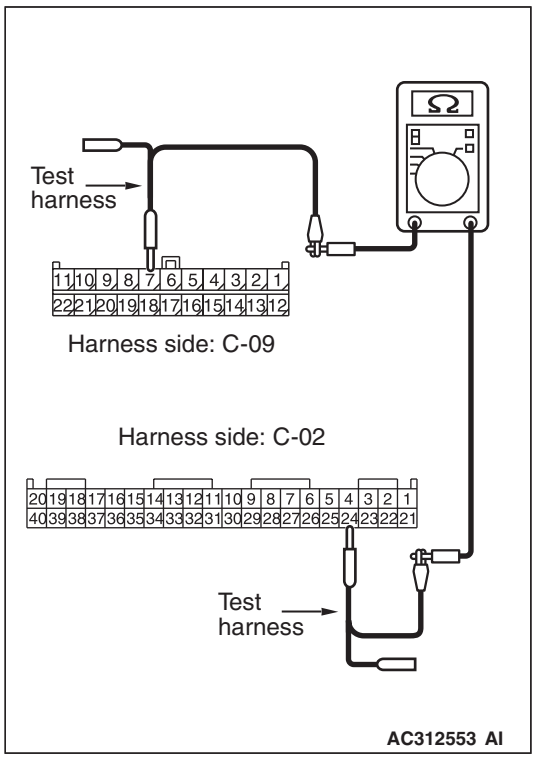
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

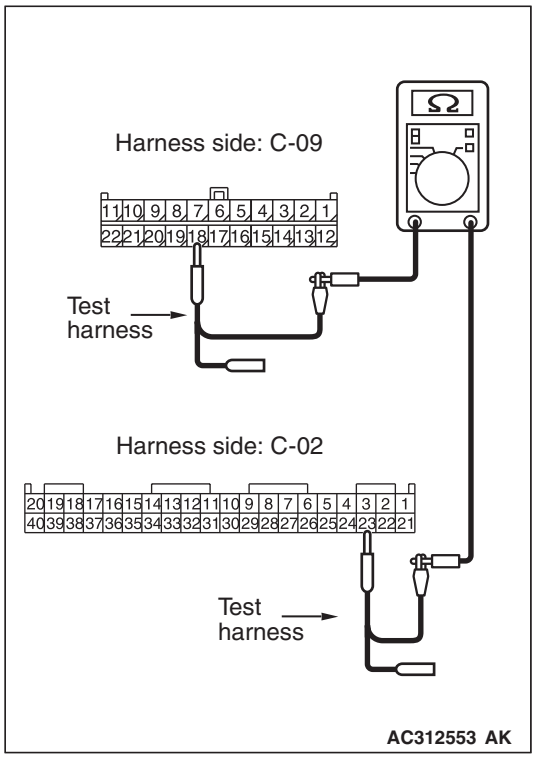
(3) Ensure that the negative battery terminal is

disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal No.7 and C-02 combination meter connector terminal No.24

OK: 2 Ω or less



(5) Continuity between C-09 joint connector (CAN2) terminal No.18 and C-02 combination meter connector terminal No.23

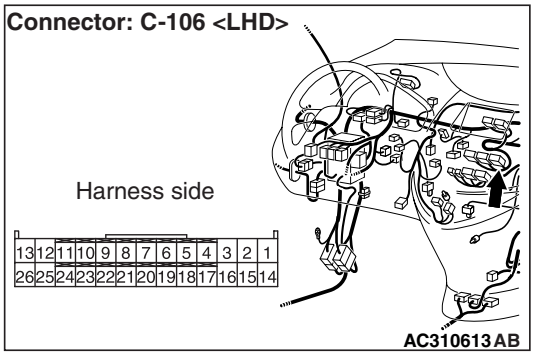
OK: 2 Ω or less

⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Are the check results normal?
YES : <All the resistances measure 2 Ω or less> Power supply to the combination meter may be suspected. Diagnose the combination meter. Refer to P.54A-55.
NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between joint connector (CAN2) and the combination meter connector.

STEP 8. Connector check: C-106 A/C-ECU connector

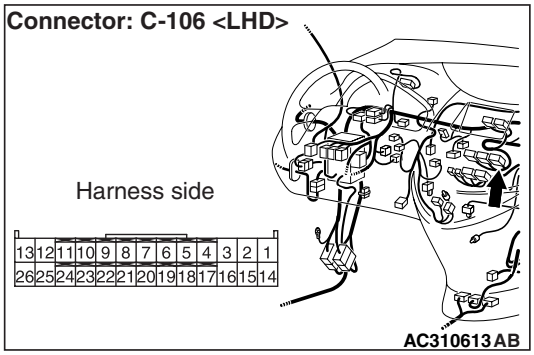
⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

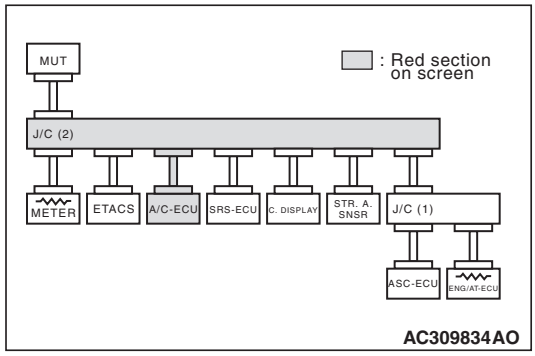
Q: Is the check result normal?
YES : Go to Step 9 .
NO : Repair the defective connector.

STEP 9. MUT-III CAN bus diagnostics (C-106 A/C-ECU connector disconnected)



(1) Disconnect the A/C-ECU connector, and

diagnose by using the MUT-III.



(2) Check that the MUT-III indications correspond to the illustration.

Q: Is the check result normal?

YES : <MUT-III indications correspond to the illustration> Go to Step 10 .

NO : <MUT-III indications do not correspond to the illustration> Go to Step 11 .

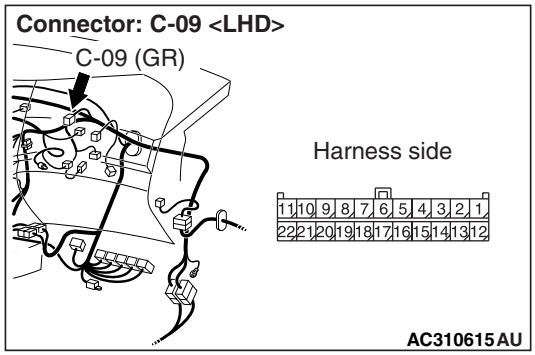
STEP 10. Resistance measurement at C-09 joint connector (CAN2) and C-106 A/C-ECU connector.

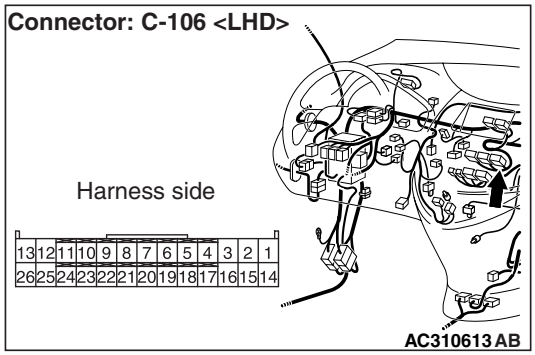
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





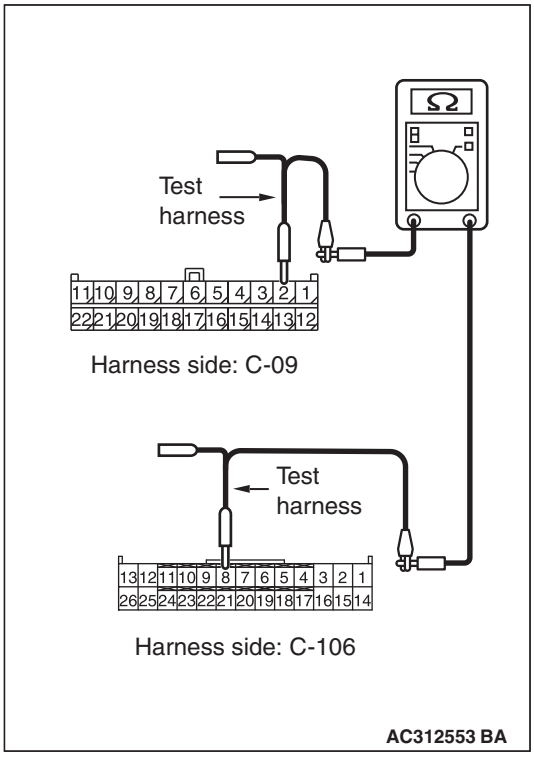
(1) Disconnect the joint connector (CAN2) and the A/C-ECU connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

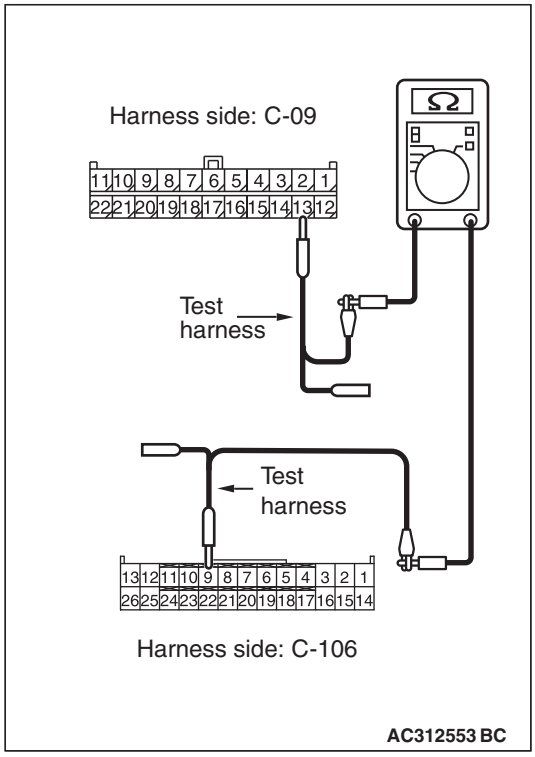
(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal No.2 and C-106 A/C-ECU connector

terminal No.8

OK: 2 Ω or less



(5) Continuity between C-09 joint connector (CAN2) terminal No.13 and C-106 A/C-ECU connector terminal No.9

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

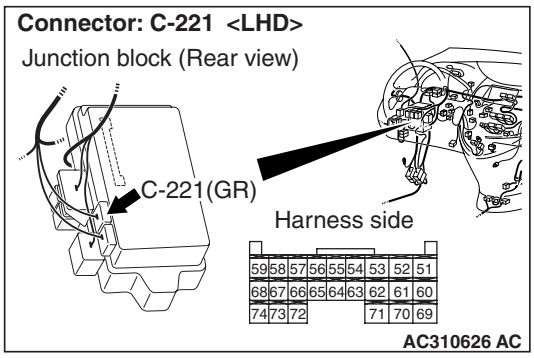
Q: Are the check results normal?

YES : <All the resistances measure 2 Ω or less> Power supply to the A/C-ECU may be suspected. Diagnose the air conditioner system. Refer to P.55-178.

NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between the joint connector (CAN2) and the A/C-ECU connector.

STEP 11. Connector check: C-221 ETACS-ECU connector

⚠ CAUTION



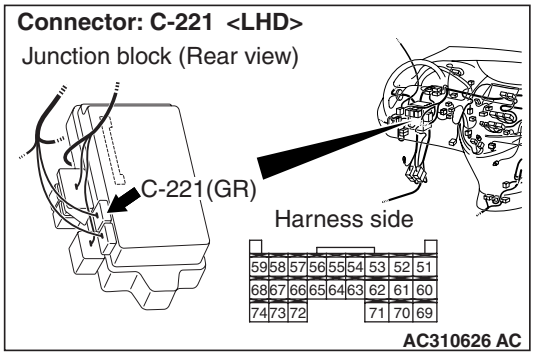
The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

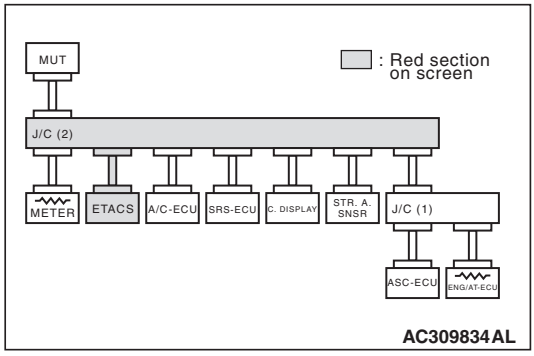
YES : Go to Step 12 .

NO : Repair the defective connector.

STEP 12. MUT-III CAN bus diagnostics (C-221 ETACS-ECU connector disconnected)



(1) Disconnect the ETACS-ECU connector, and diagnose by using the MUT-III.



(2) Check that the MUT-III indications correspond to the illustration.

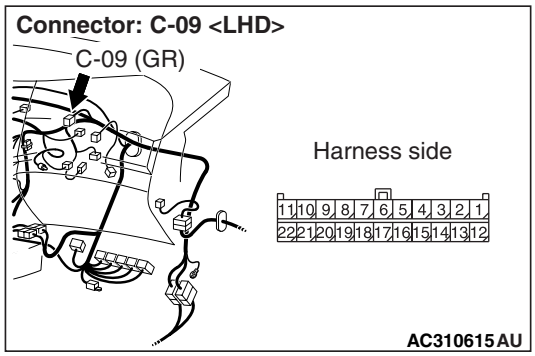
Q: Is the check result normal?

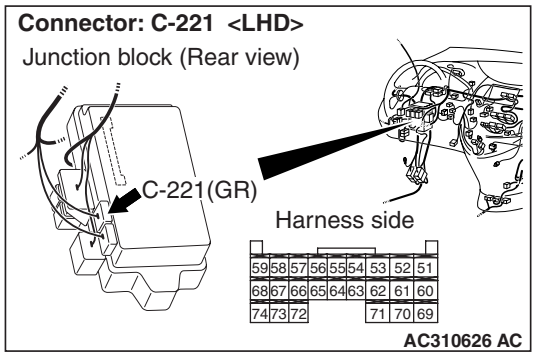
YES : <MUT-III indications correspond to the illustration> Go to Step 13 .
NO : <MUT-III indications do not correspond to the illustration> Go to Step 14 .

STEP 13. Resistance measurement at C-09 joint connector (CAN2) and C-221 ETACS-ECU connector.

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.

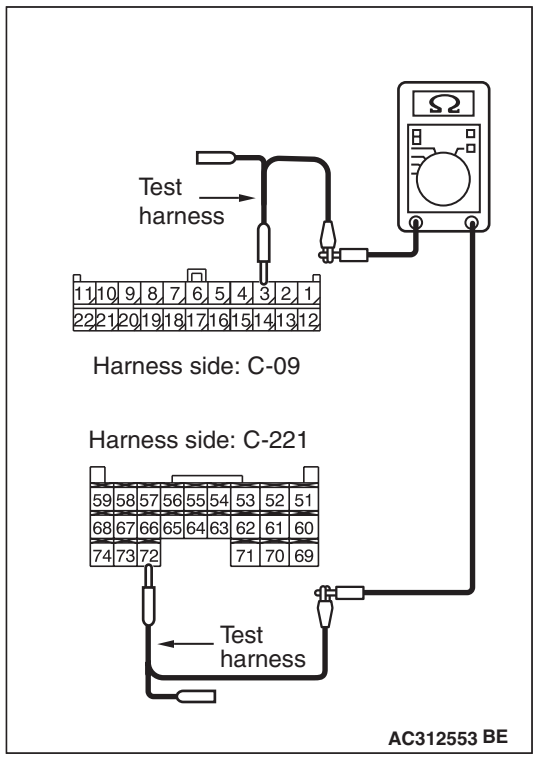




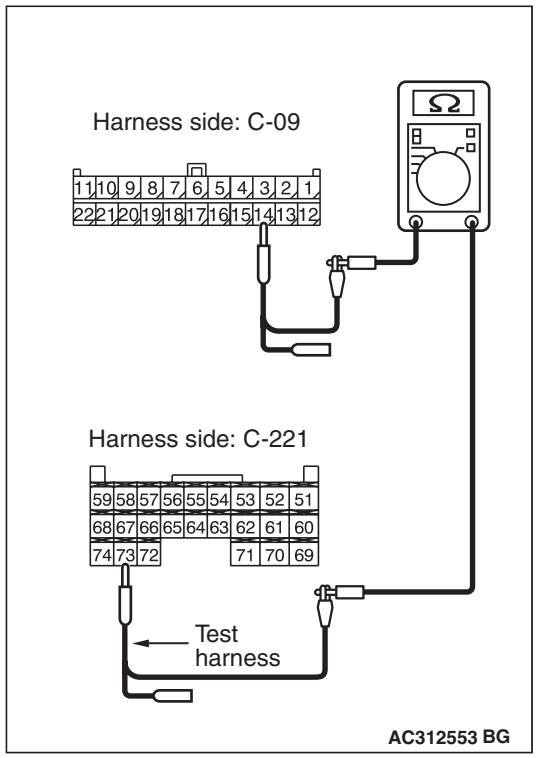
(1) Disconnect the joint connector (CAN2) and the ETACS-ECU connector, and measure at the wiring harness side.
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal No.3 and C-221 ETACS-ECU connector terminal No.72
OK: 2 Ω or less



(5) Continuity between C-09 joint connector (CAN2) terminal No.14 and C-221 ETACS-ECU

connector terminal No.73

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

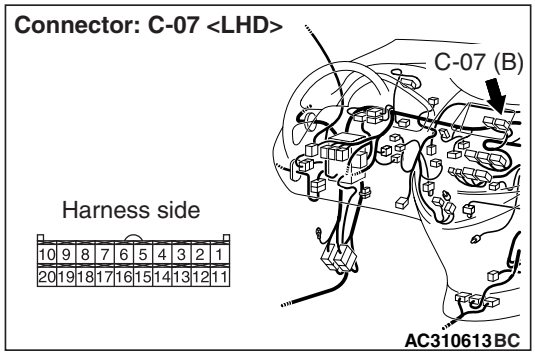
Q: Are the check results normal?

YES : <All the resistances measure 2 Ω or less> Power supply to the ETACS-ECU may be suspected. Diagnose the SWS. Refer to P.54B-87.

NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between the joint connector (CAN2) and the ETACS-ECU connector.

STEP 14. Connector check: C-07 centre display connector

⚠ CAUTION



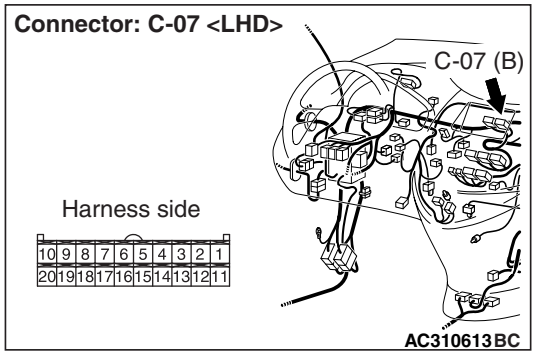
The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

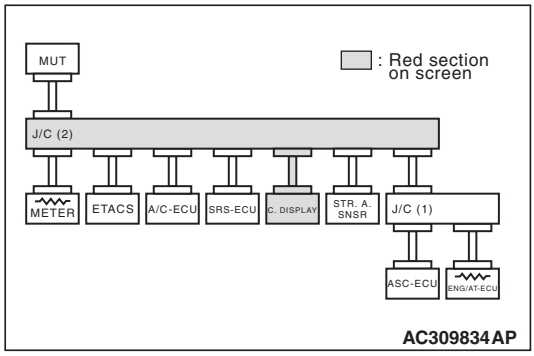
YES : Go to Step 15 .

NO : Repair the defective connector.

STEP 15. MUT-III CAN bus diagnostics (C-07 centre display connector disconnected)



(1) Disconnect the centre display connector, and diagnose by using the MUT-III.



(2) Check that the MUT-III indications correspond to the illustration.

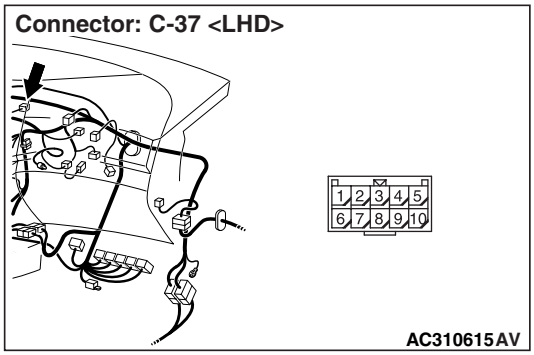
Q: Is the check result normal?

YES : <MUT-III indications correspond to the illustration> Go to Step 16 .

NO : <MUT-III indications do not correspond to the illustration> Go to Step 27 .

STEP 16. Connector check: C-37 jumper connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Check that the wiring harness of the jumper connector is not damaged.

Q: Is the check result normal?

YES : Go to Step 17 .

NO : Repair the defective connector.

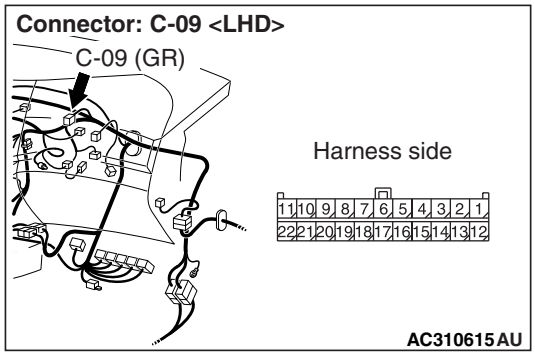
STEP 17. Resistance measurement at C-37 jumper connector and C-09 joint connector (CAN2).

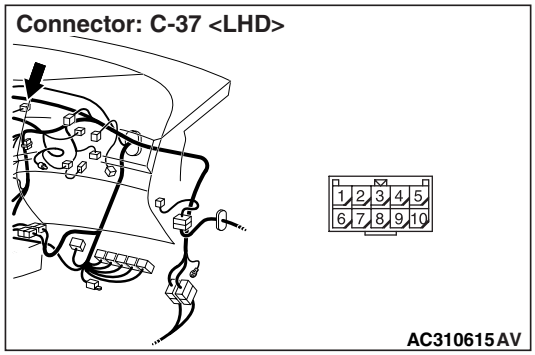
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





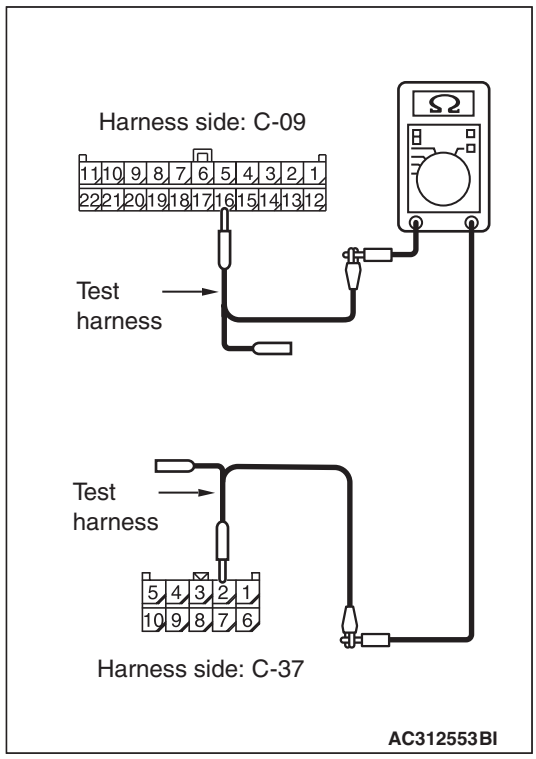
(1) Disconnect the joint connector (CAN2) and the jumper connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

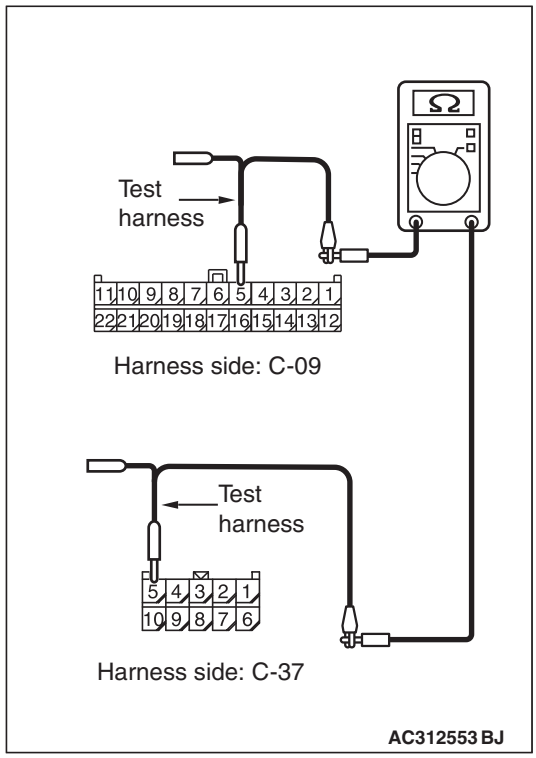
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-37 jumper connector terminal No.2 and C-09 joint connector (CAN2) terminal No.16

OK: 2 Ω or less



(5) Continuity between C-37 jumper connector terminal No.5 and C-09 joint connector (CAN2)

terminal No.5

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Are the check results normal?

YES : <All the voltages measure 2 Ω or less> Go to Step 18 .

NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between joint connector (CAN2) and the jumper connector.

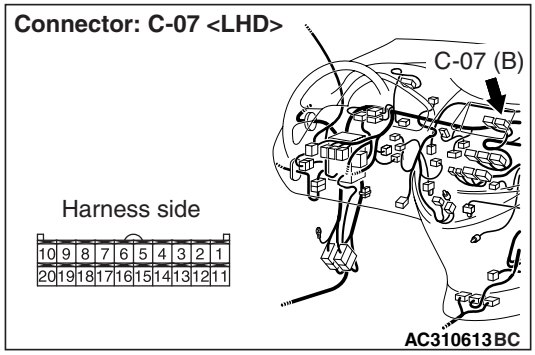
STEP 18. Resistance measurement at C-37 jumper connector and C-07 centre display connector.

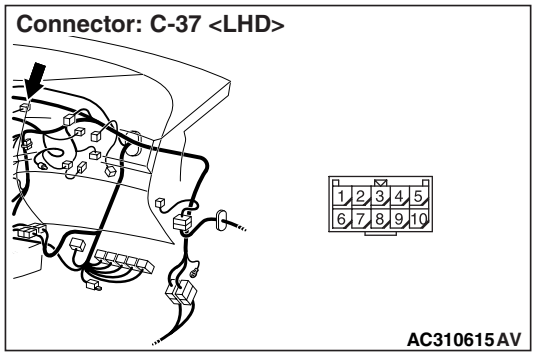
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





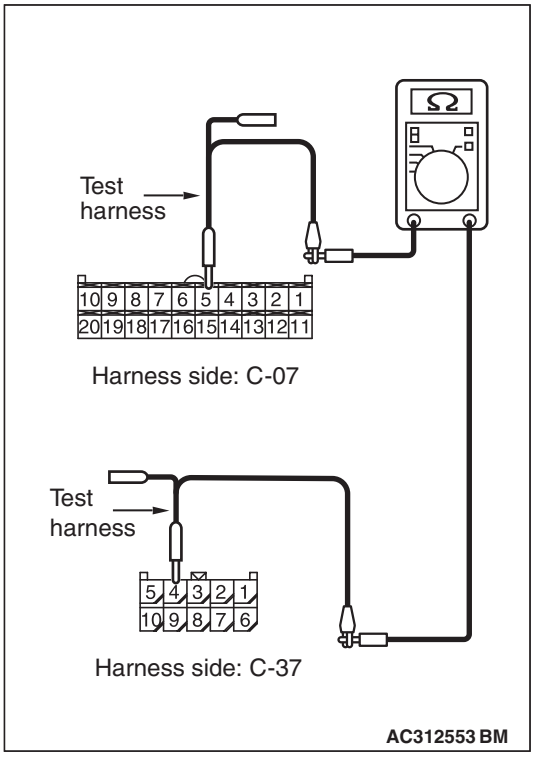
(1) Disconnect the centre display connector and the jumper connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

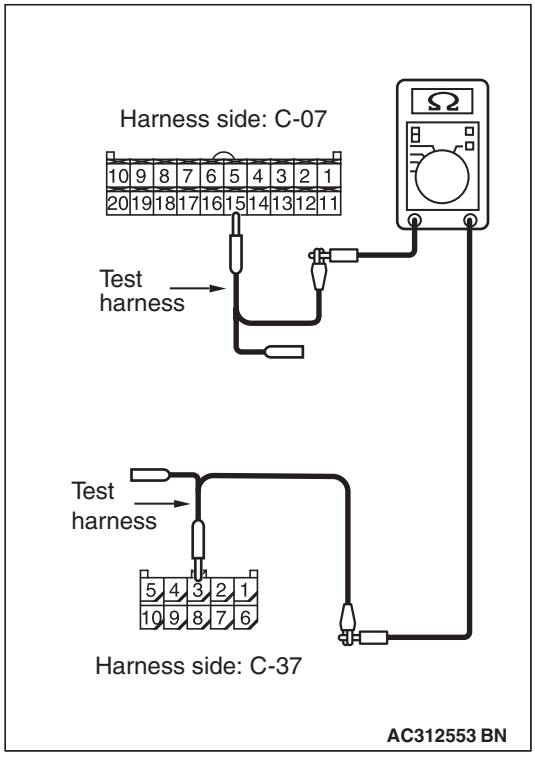
(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-37 jumper connector terminal No.4 and C-07 centre display connector

terminal No.5.

OK: 2 Ω or less



(5) Continuity between C-37 jumper connector terminal No.3 and C-07 centre display connector terminal No.15.

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

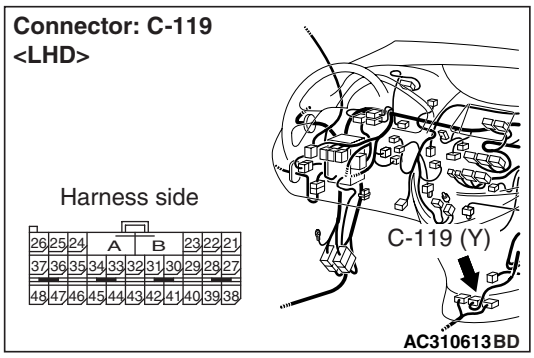
Q: Are the check results normal?

YES : <All the resistances measure 2 Ω or less> Power supply to the centre display may be suspected. Diagnose the centre display system. Refer to P.54A-161.

NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between the centre display connector and the jumper connector.

STEP 19. Connector check: C-119 SRS-ECU connector

⚠ CAUTION



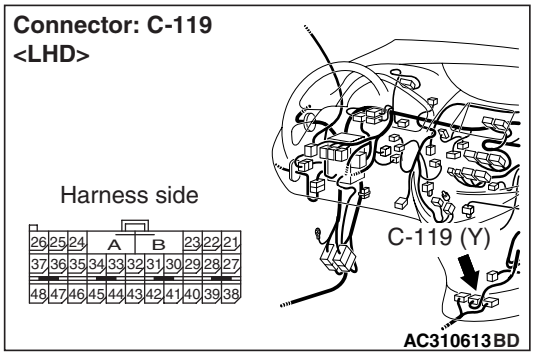
The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

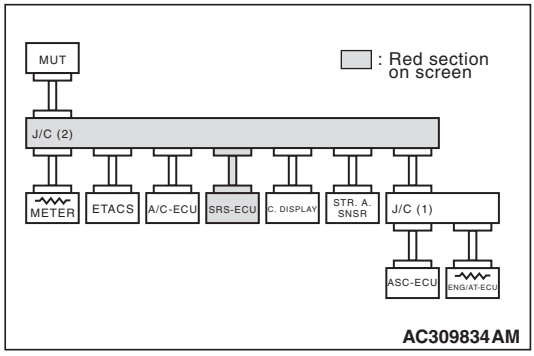
YES : Go to Step 20 .

NO : Repair the defective connector.

STEP 20. MUT-III CAN bus diagnostics (C-119 SRS-ECU connector disconnected)



(1) Disconnect the SRS-ECU connector, and diagnose by using the MUT-III.



(2) Check that the MUT-III indications correspond to the illustration.

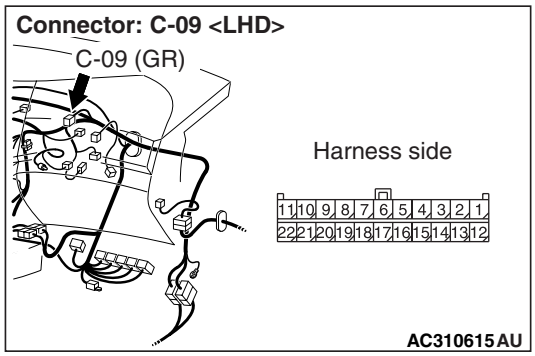
Q: Is the check result normal?

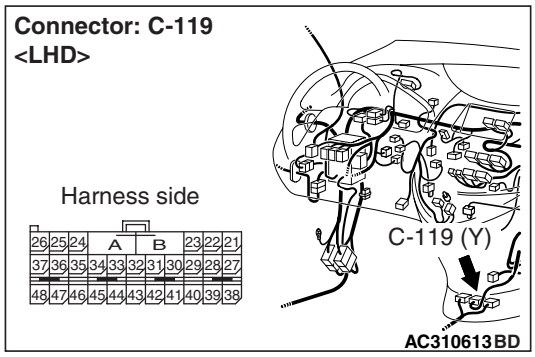
YES : <MUT-III indications correspond to the illustration> Go to Step 21 .
NO : <MUT-III indications do not correspond to the illustration> Go to Step 22 .

STEP 21. Resistance measurement at C-09 joint connector (CAN2) and C-119 SRS-ECU connector.

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.

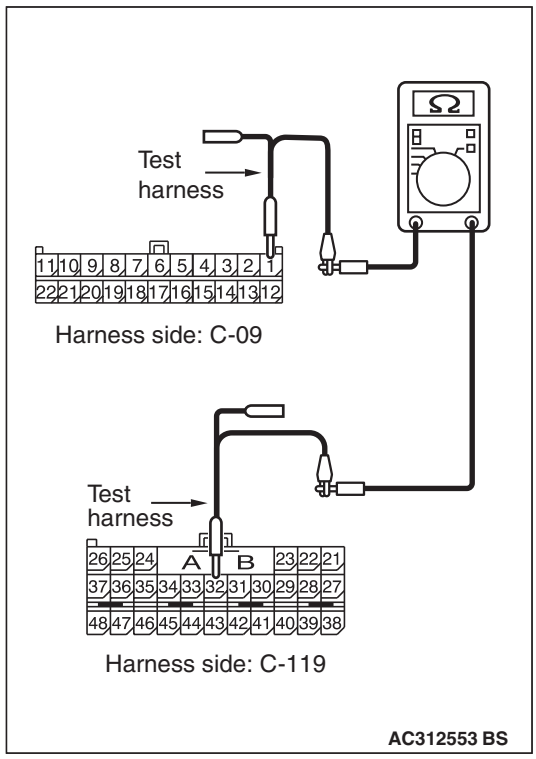




(1) Disconnect the joint connector (CAN2) and the SRS-ECU connector, and measure at the wiring harness side.
(2) Ignition switch: OFF (LOCK)

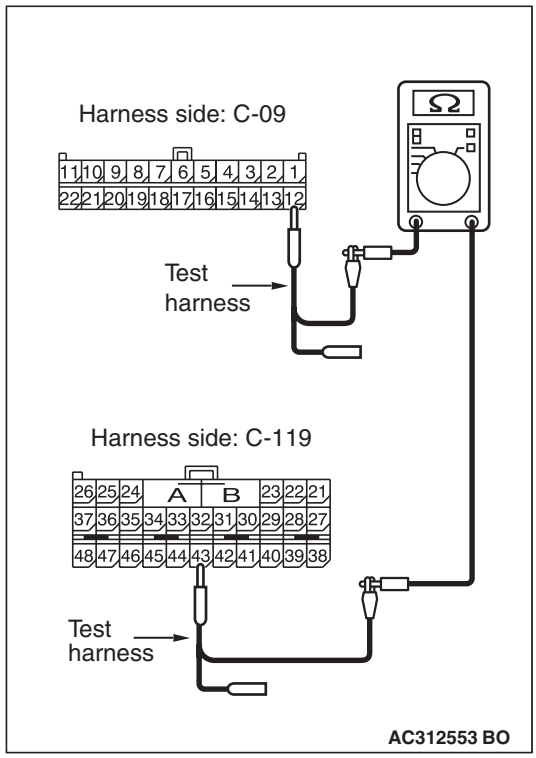
⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal No.1 and C-119 SRS-ECU connector terminal No.32

OK: 2 Ω or less



(5) Continuity between C-09 joint connector (CAN2) terminal No.12 and C-119 SRS-ECU connector

terminal No.43

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

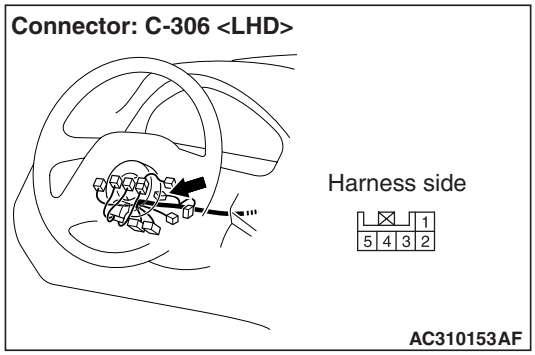
Q: Are the check results normal?

YES : <All the resistances measure 2 Ω or less> Power supply to the SRS-ECU may be suspected. Diagnose the SRS system. Refer to P.52B-201.

NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between the joint connector (CAN2) and the SRS-ECU connector.

STEP 22. Connector check: C-306 steering wheel angle sensor connector

⚠ CAUTION



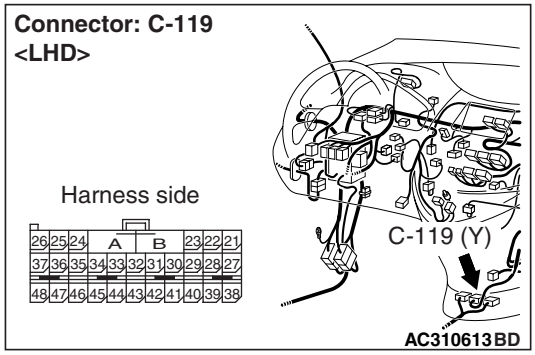
The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

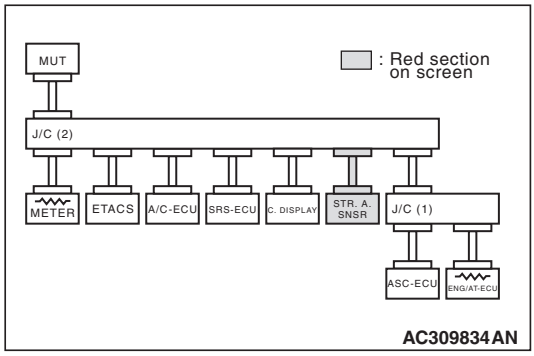
YES : Go to Step 23 .

NO : Repair the defective connector.

STEP 23. MUT-III CAN bus diagnostics (C-119 steering wheel angle sensor connector disconnected)



(1) Disconnect the steering wheel angle sensor connector, and diagnose by using the MUT-III.



(2) Check that the MUT-III indications correspond to the illustration.

Q: Is the check result normal?

YES : <MUT-III indications correspond to the illustration> Go to Step 24 .

NO : <MUT-III indications do not correspond to the illustration> Go to Step 34 .

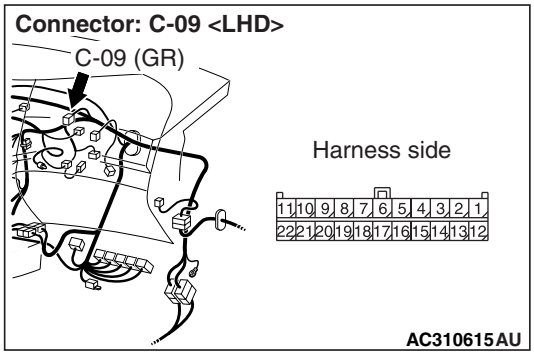
STEP 24. Resistance measurement at C-09 joint connector (CAN2) and C-306 steering wheel angle sensor connector.

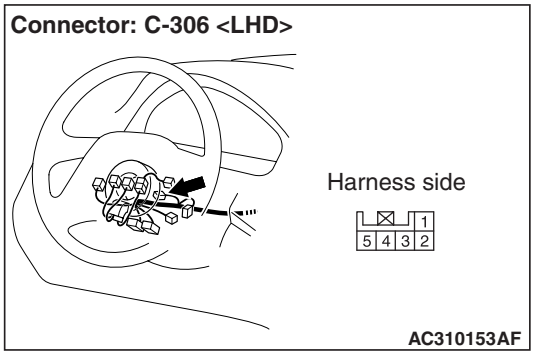
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





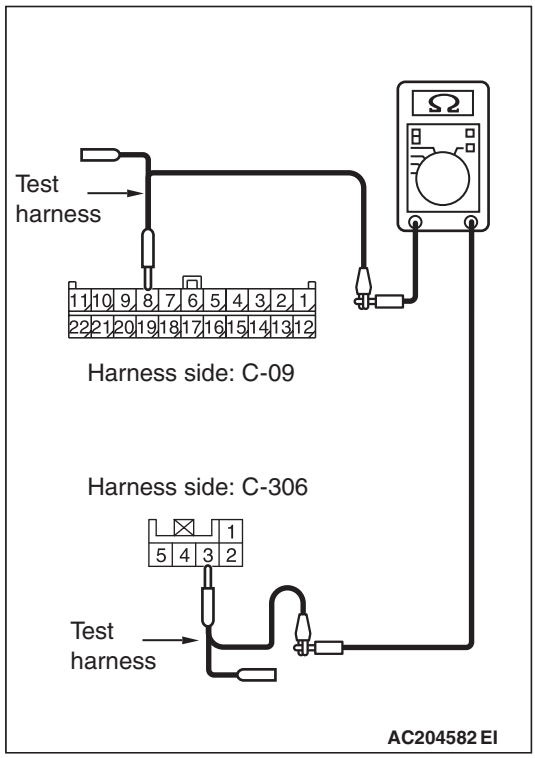
(1) Disconnect the joint connector (CAN2) and the steering wheel angle sensor connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

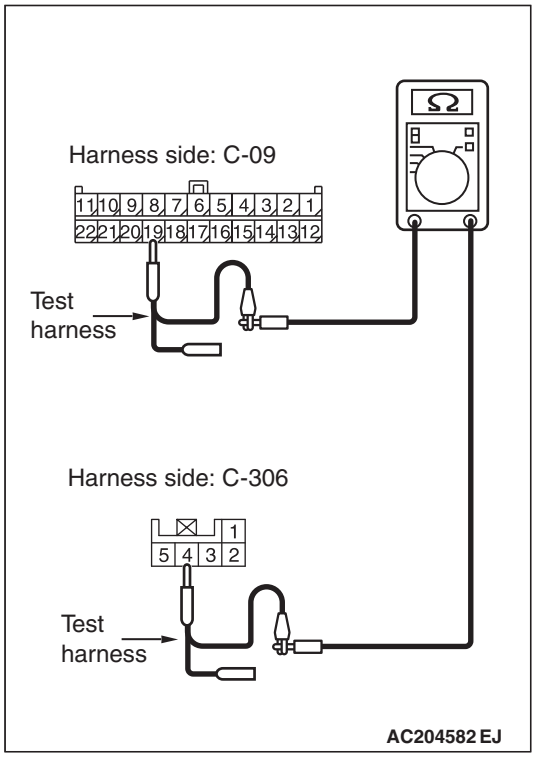
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal No.8 and C-306 steering wheel angle sensor connector terminal No.3

OK: 2 Ω or less



(5) Continuity between C-09 joint connector (CAN2) terminal No.19 and C-306 steering wheel angle sensor connector terminal No.4

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

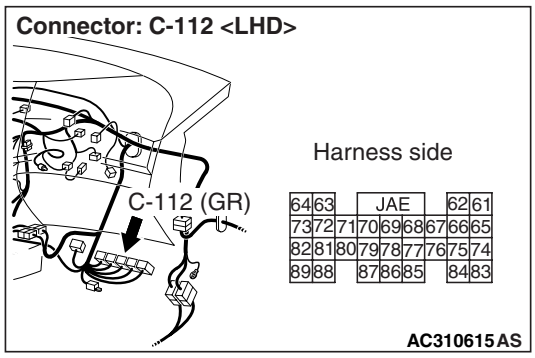
Q: Are the check results normal?

YES : <All the resistances measure 2 Ω or less> Power supply to the steering wheel angle sensor may be suspected. Diagnose the ASC system. Refer to P.35C-135.

NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between the joint connector (CAN2) and the steering wheel angle sensor connector.

STEP 25. Connector check: C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector

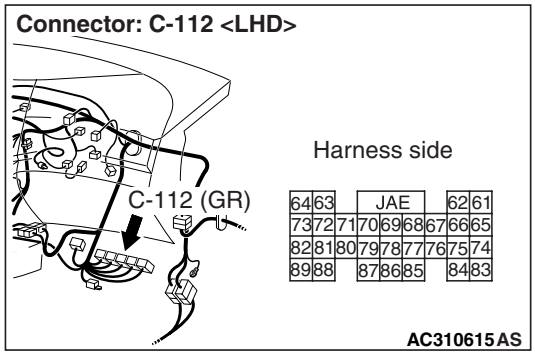
⚠ CAUTION



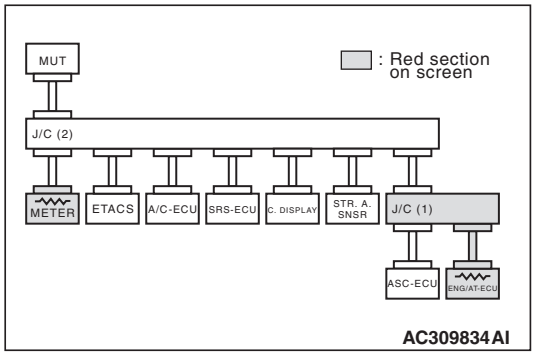
The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?
YES : Go to Step 26 .
NO : Repair the defective connector.

STEP 26. MUT-III CAN bus diagnostics (C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector disconnected)



(1) Disconnect the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector, and diagnose by using the MUT-III.

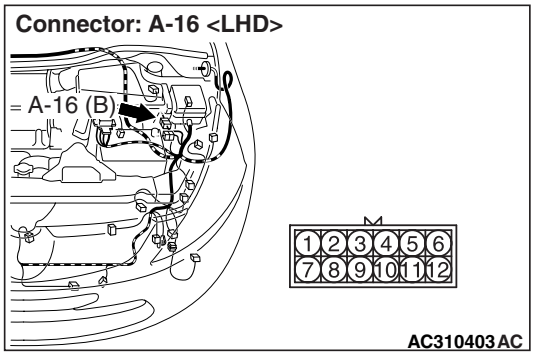


(2) Check that the MUT-III indications correspond to the illustration.

Q: Is the check result normal?
YES : <MUT-III indications correspond to the illustration> Go to Step 27 .
NO : <MUT-III indications do not correspond to the illustration> Go to Step 30 .

STEP 27. Connector check: A-16 intermediate connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?
YES : Go to Step 28 .
NO : Repair the defective connector.

STEP 28. Resistance measurement at A-16 intermediate connector and A-07 joint connector (CAN1).

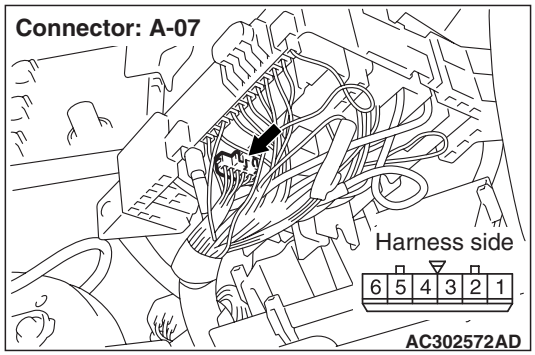
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

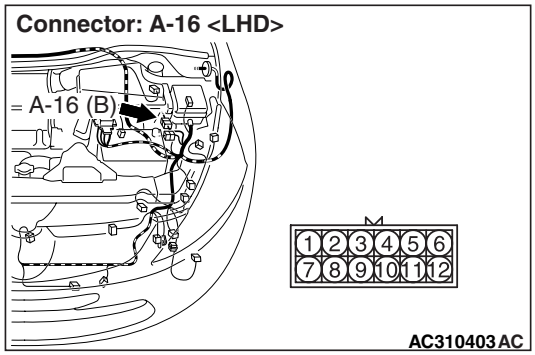
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





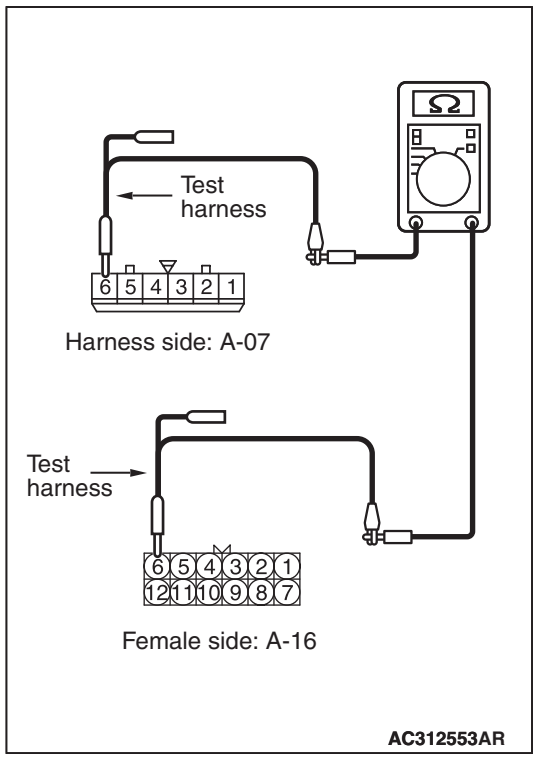
(1) Disconnect the joint connector (CAN1) and the intermediate connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

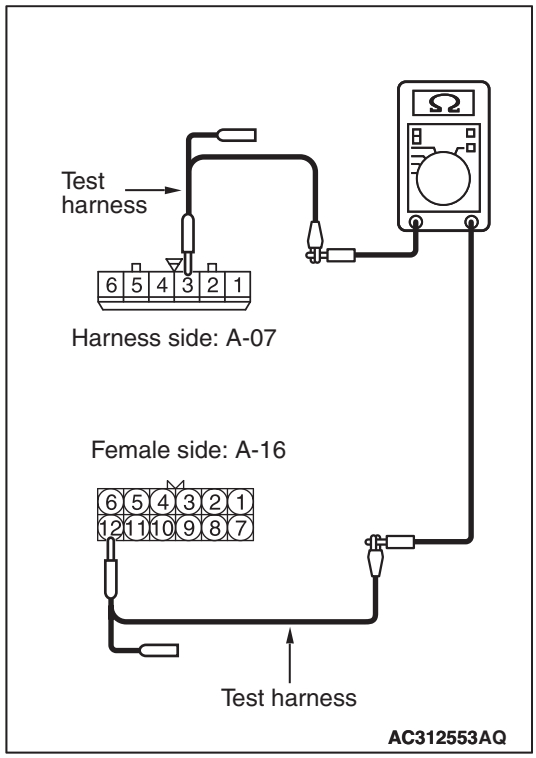
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between A-16 intermediate connector terminal No.6 and A-07 joint connector (CAN1) terminal No.6

OK: 2 Ω or less



(5) Continuity between A-16 intermediate connector terminal No.12 and A-07 joint connector (CAN1)

terminal No.3

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Are the check results normal?

YES : <All the voltages measure 2 Ω or less> Go to Step 29 .

NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between joint connector (CAN1) and the intermediate connector.

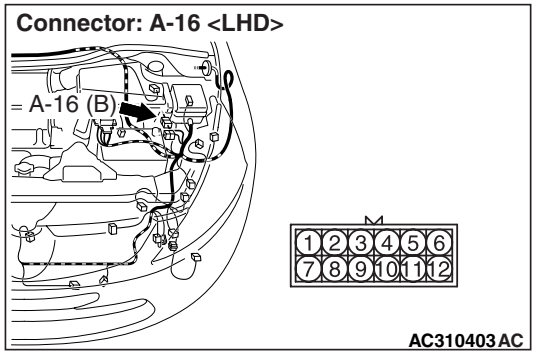
STEP 29. Resistance measurement at A-16 intermediate connector and C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector.

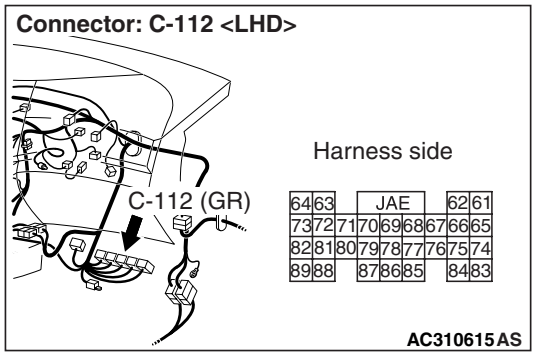
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





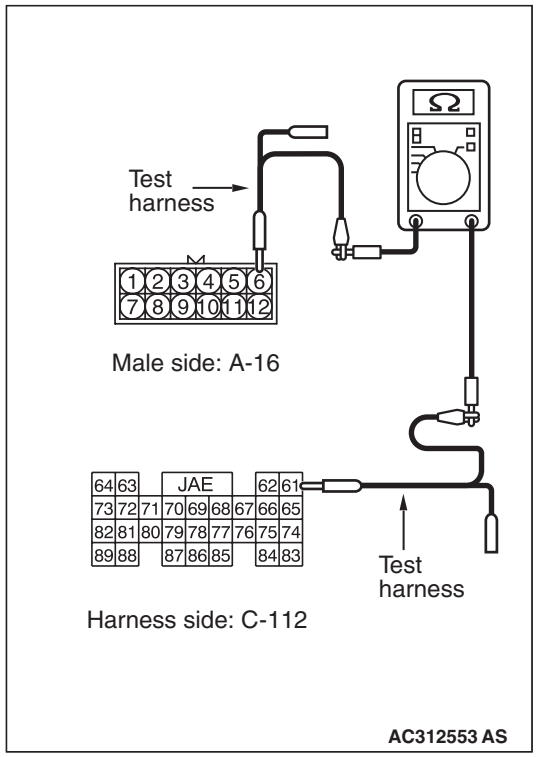
(1) Disconnect the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector and the intermediate connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

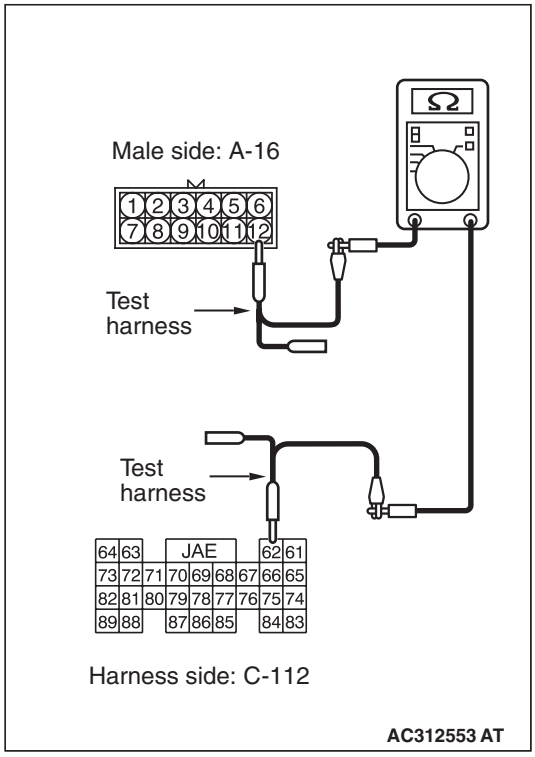
(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between A-16 intermediate connector terminal No.6 and C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector terminal

No.61.

OK: 2 Ω or less



(5) Continuity between A-16 intermediate connector terminal No.12 and C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector terminal No.62.

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

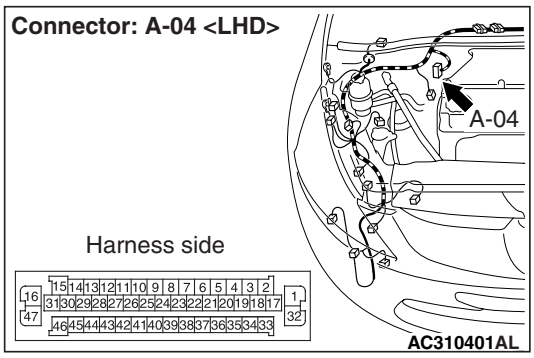
Q: Are the check results normal?

YES : <All the resistances measure 2 Ω or less> Power supply to the engine-ECU <M/T> or engine-A/T-ECU <A/T> may be suspected. Diagnose the engine control system. Refer to P.13A-321.

NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector and the joint connector (CAN1).

STEP 30. Connector check: A-04 ASC-ECU connector

⚠ CAUTION



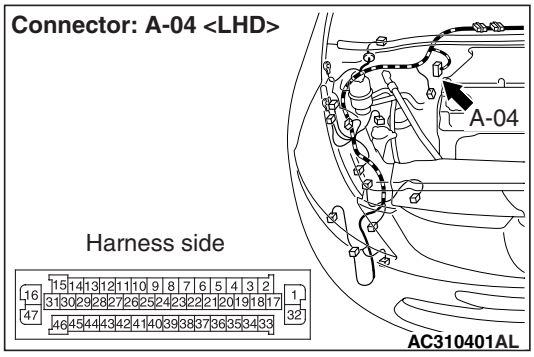
The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

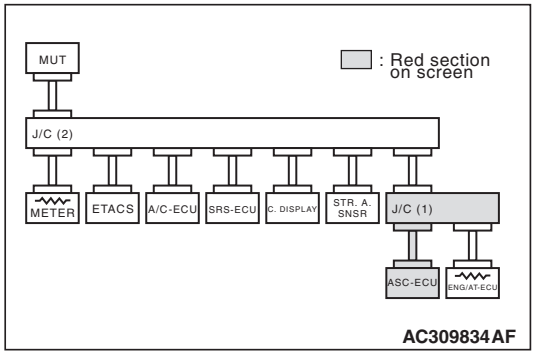
YES : Go to Step 31 .

NO : Repair the defective connector.

STEP 31. MUT-III CAN bus diagnostics (A-04 ASC-ECU connector disconnected)



(1) Disconnect the ASC-ECU connector, and diagnose by using the MUT-III.



(2) Check that the MUT-III indications correspond to the illustration.

Q: Is the check result normal?

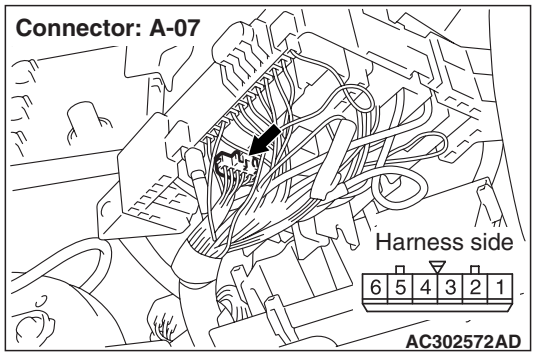
YES : <MUT-III indications correspond to the illustration> Go to Step 32 .
NO : <MUT-III indications do not correspond to the illustration> Go to Step 33 .

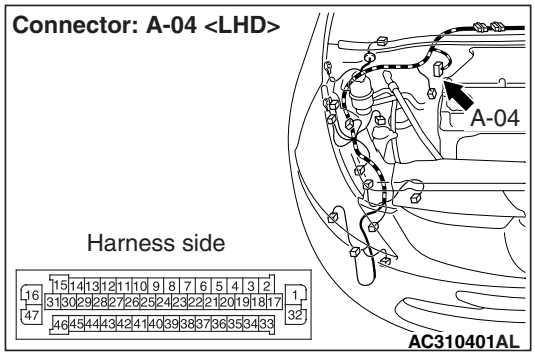
STEP 32. Resistance measurement at A-07 joint connector (CAN1) and A-04 ASC-ECU connector.

NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.

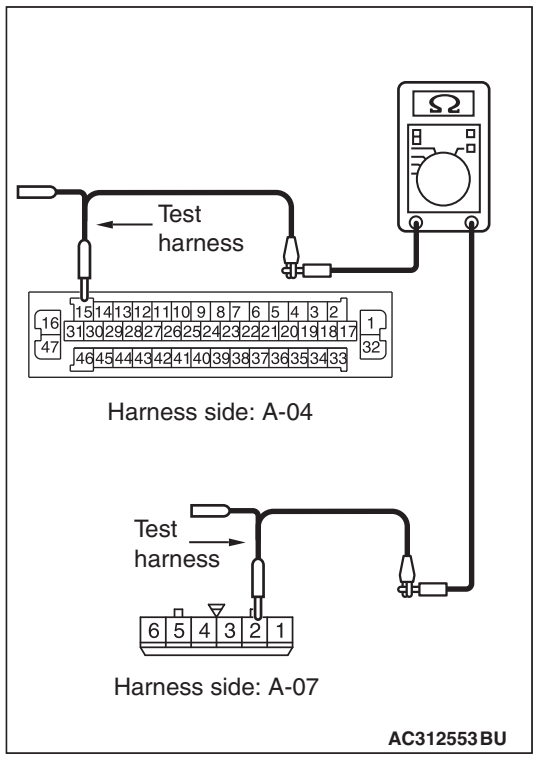




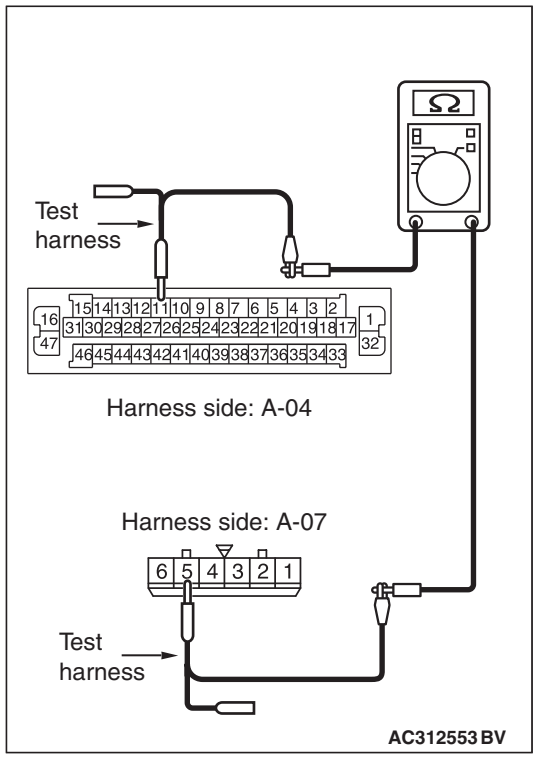
(1) Disconnect the joint connector (CAN1) and the ASC-ECU connector, and measure at the wiring harness side.
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between A-07 joint connector (CAN1) terminal No.2 and A-04 ASC-ECU connector terminal No.15
OK: 2 Ω or less



(5) Continuity between A-07 joint connector (CAN1) terminal No.5 and A-04 ASC-ECU connector

terminal No.11

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

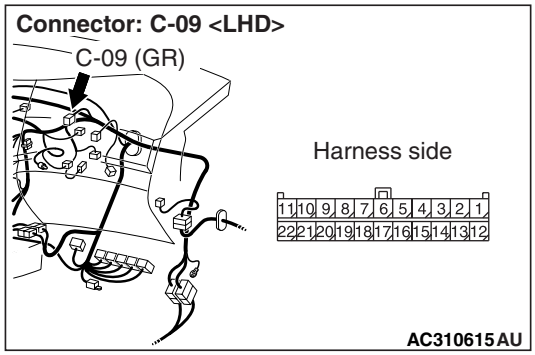
Q: Are the check results normal?

YES : <All the resistances measure 2 Ω or less> Power supply to the ASC-ECU may be suspected. Diagnose the ASC system. Refer to P.35C-129.

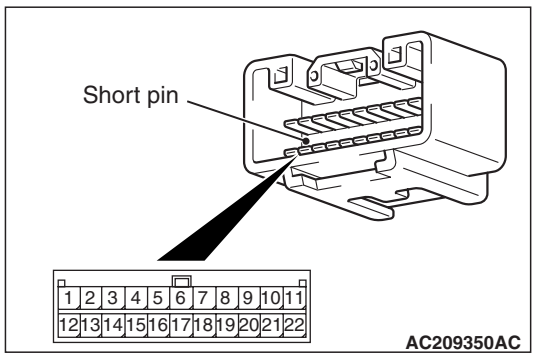
NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between the joint connector (CAN1) and the ASC-ECU connector.

STEP 33. Connector check: C-09 joint connector (CAN2)

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.



When checking the joint connector, ensure that its wiring harness side is not damaged.

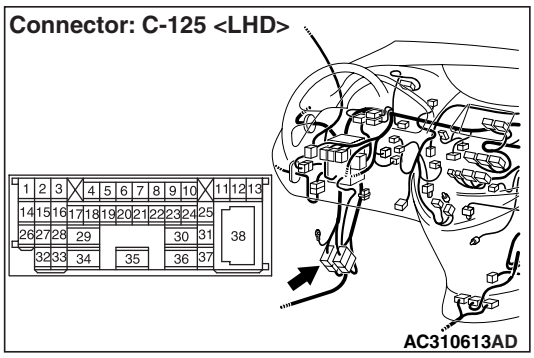
Q: Is the check result normal?

YES : Go to Step 34 .

NO : Repair a defective connector or replace the joint connector.

STEP 34. Connector check: C-125 intermediate connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 35 .

NO : Repair the defective connector.

STEP 35. Resistance measurement at C-125 intermediate connector and A-07 joint connector (CAN1).

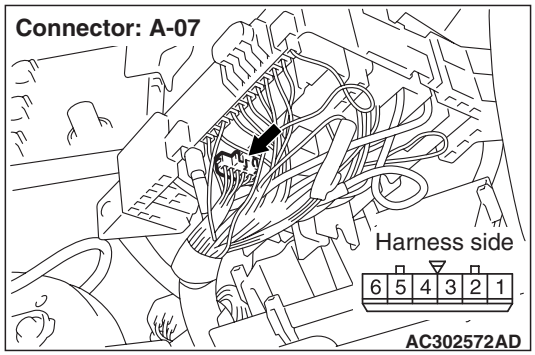
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

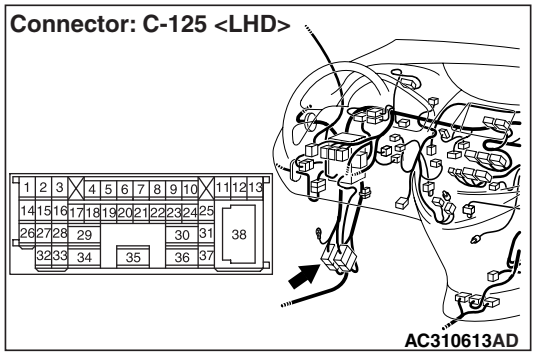
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





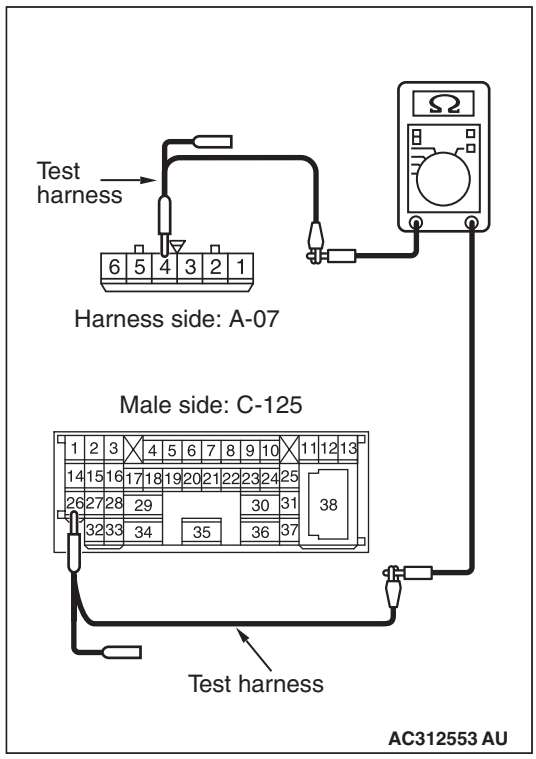
(1) Disconnect the joint connector (CAN1) and the intermediate connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

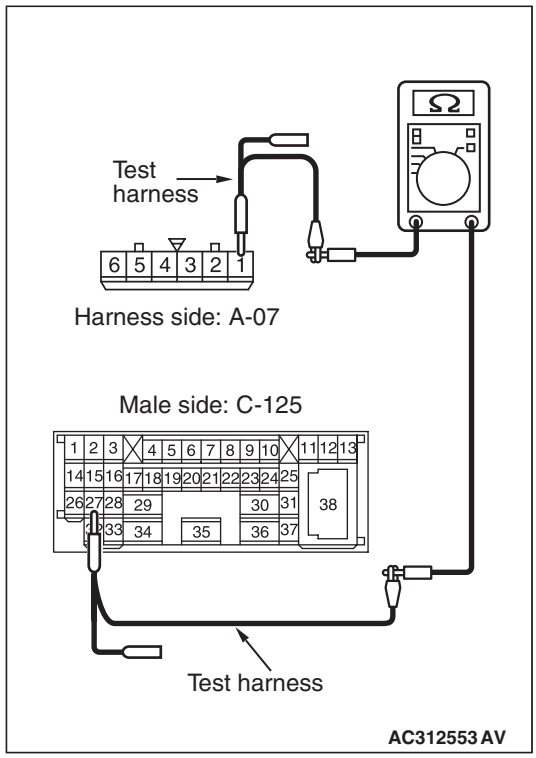
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-125 intermediate connector terminal No.26 and A-07 joint connector (CAN1) terminal No.4

OK: 2 Ω or less



(5) Continuity between C-125 intermediate connector terminal No.27 and A-07 joint

connector (CAN1) terminal No.1

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Are the check results normal?

YES : <All the voltages measure 2 Ω or less> Go to Step 36 .

NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between joint connector (CAN1) and the intermediate connector.

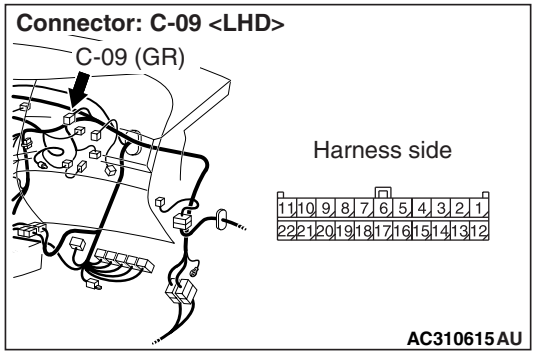
STEP 36. Resistance measurement at C-125 intermediate connector and C-09 joint connector (CAN2).

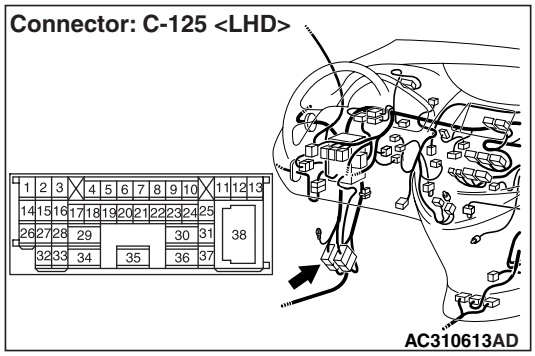
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





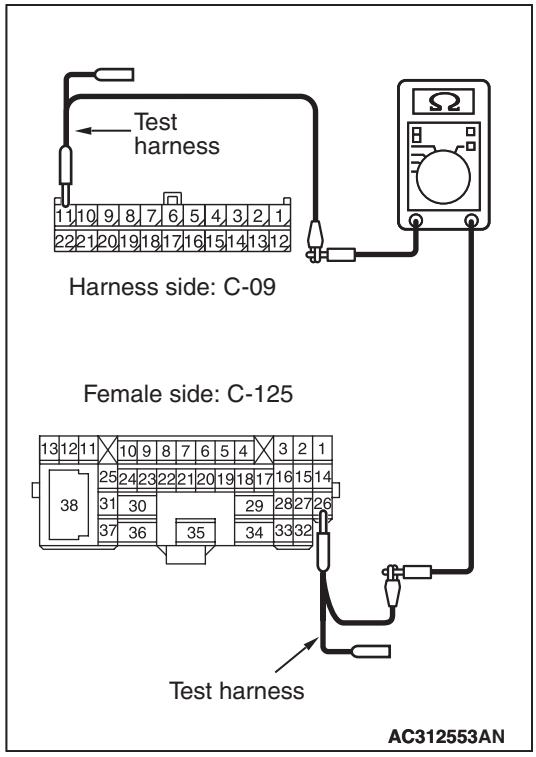
(1) Disconnect the joint connector (CAN2) and the intermediate connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

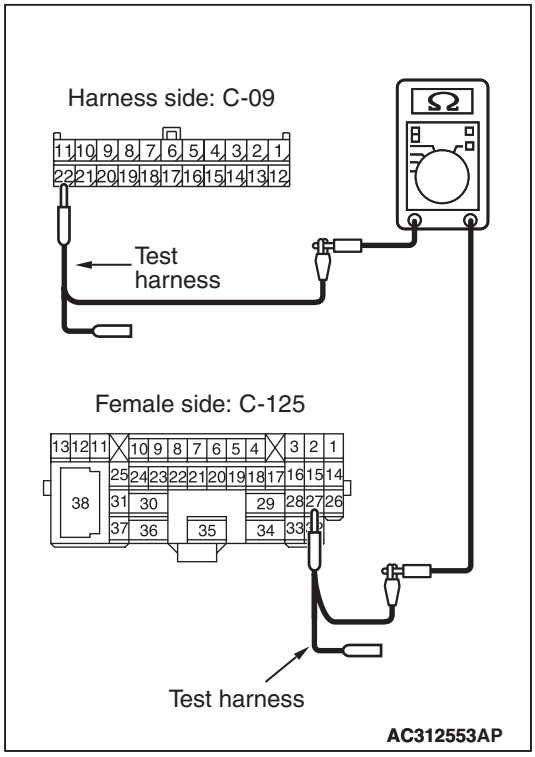
(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-125 intermediate connector terminal No.26 and C-09 joint

connector (CAN2) terminal No.11

OK: 2 Ω or less



(5) Continuity between C-125 intermediate connector terminal No.27 and C-09 joint connector (CAN2) terminal No.22

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Are the check results normal?

YES : <All the voltages measure 2 Ω or less> Go to Step 37 .

NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between joint connector (CAN2) and the intermediate connector.

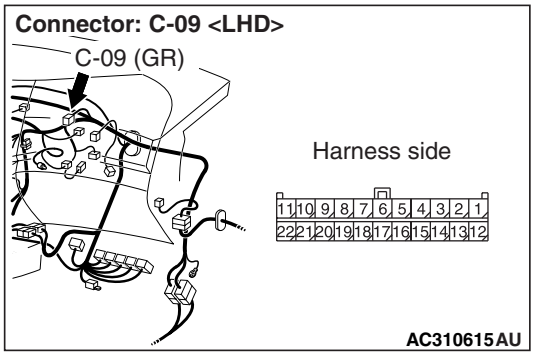
STEP 37. Resistance measurement at C-09 joint connector (CAN2) and C-126 diagnosis connector.

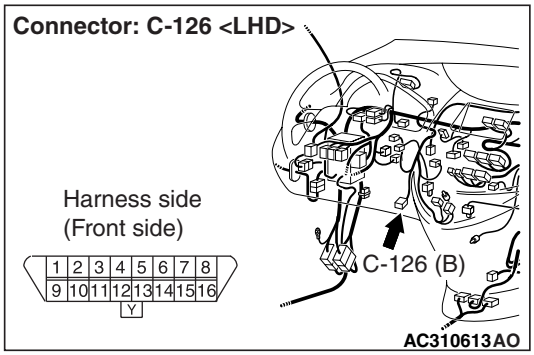
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the connector, and measure at the wiring harness side.

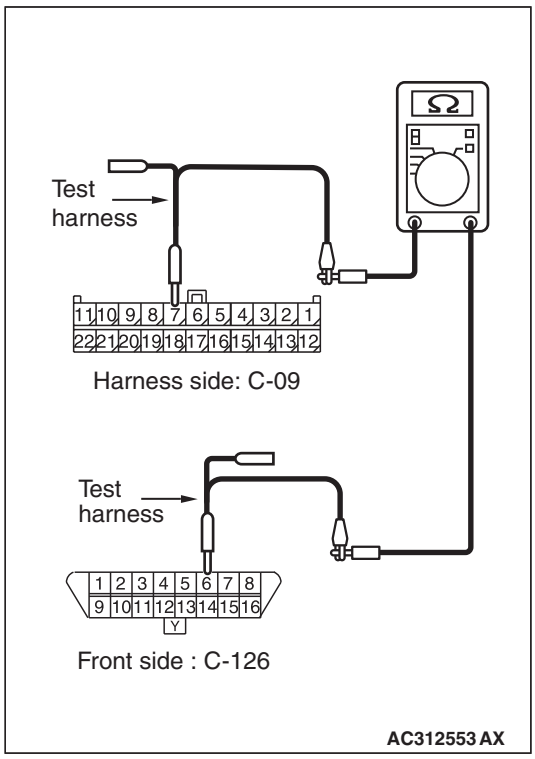
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

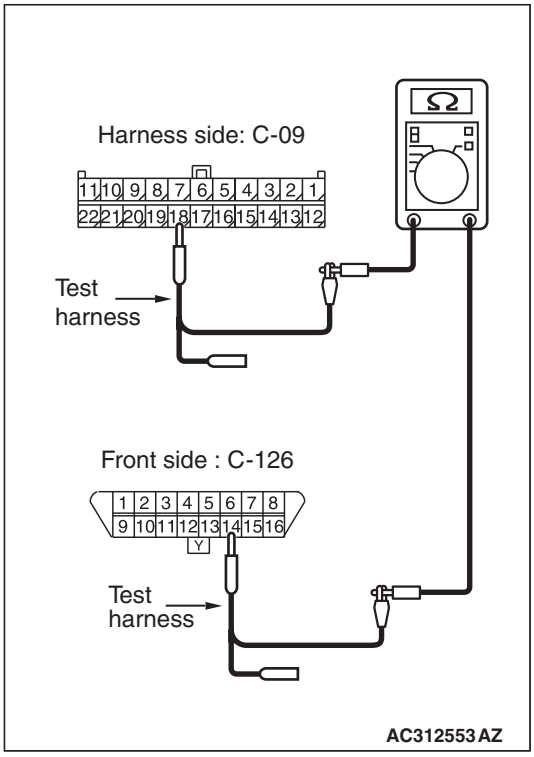
(3) Ensure that the negative battery terminal is

disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal No.7 and C-126 diagnosis connector terminal No.6

OK: 2 Ω or less



(5) Continuity between C-09 joint connector (CAN2) terminal No.18 and C-126 diagnosis connector terminal No.14

OK: 2 Ω or less

⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Are the check results normal?

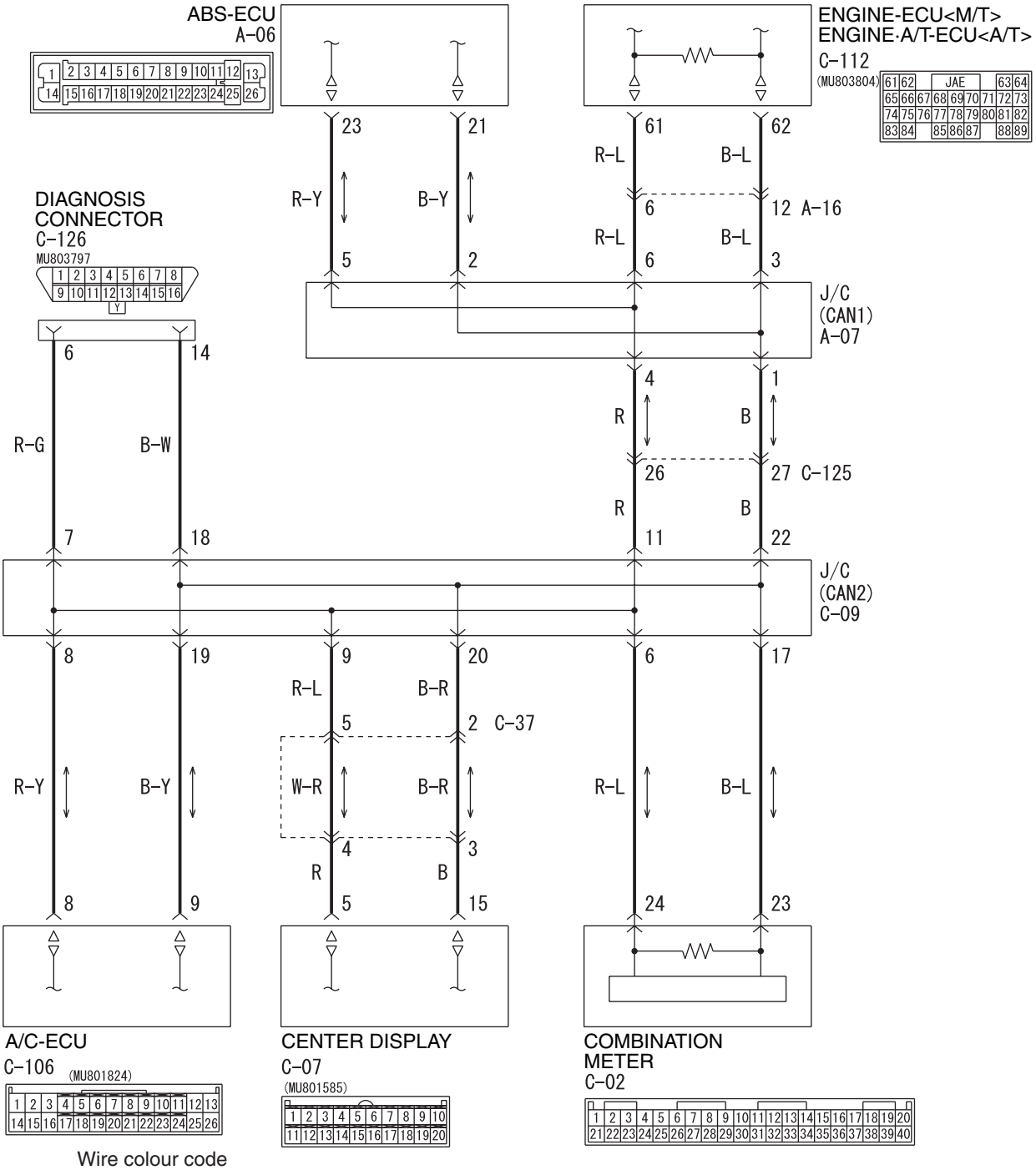
YES : <All the resistances measure 2 Ω or less> Diagnostics item 10: Diagnose shorts between CAN_L and H lines. Refer to P.54D-328.

NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between joint connector (CAN1) and the diagnosis connector.

Diagnostic Item 19: Diagnose CAN bus lines thoroughly <RH drive vehicles without ASC>

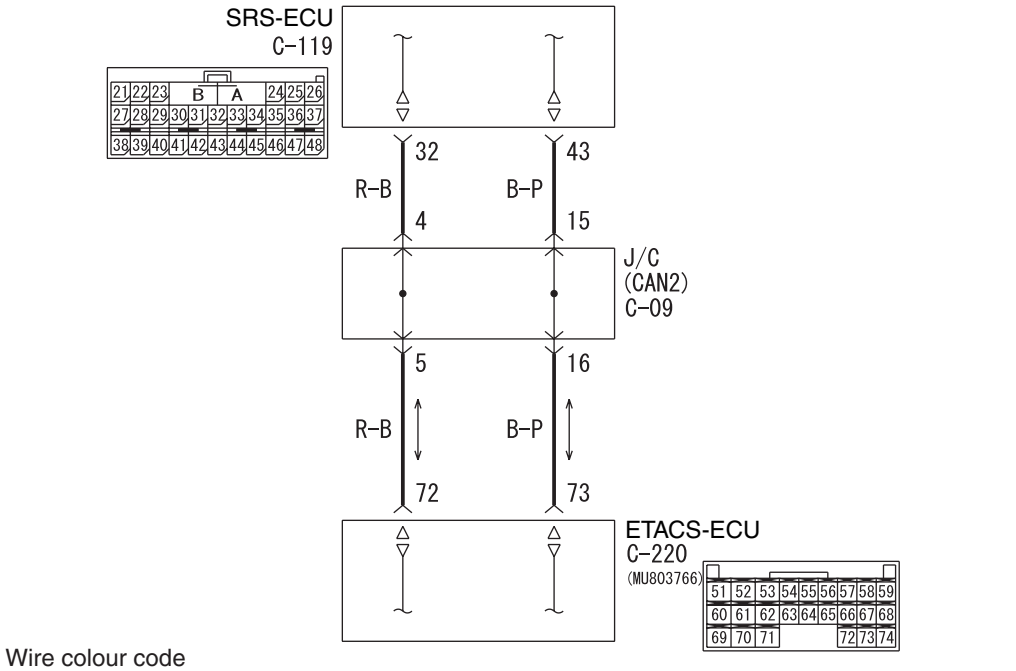
⚠ CAUTION

When servicing a CAN bus line, earth yourself by touching a metal object such as an unpainted water pipe. If you fail to do, a component connected to the CAN bus line may be broken.



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E22AA



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E23AA

TROUBLE JUDGMENT

If the MUT-III can not received signals from ECUs, CAN bus line connector(s) are broken or an open circuit has occurred.

COMMENTS ON TROUBLE SYMPTOM

The CAN bus line wire or connectors may have loose, corroded, or damage terminals, or terminals pushed back in the connector.

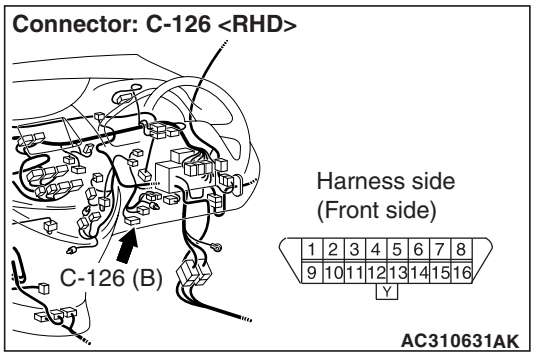
POSSIBLE CAUSES

- Damaged harness wires and connectors
- Malfunction of the ETACS-ECU
- Malfunction of the combination meter
- Malfunction of the A/C-ECU
- Malfunction of the SRS-ECU
- Malfunction of the multi-centre display
- Malfunction of the ABS-ECU
- Malfunction of the engine-ECU <M/T> or engine-A/T-ECU <A/T>

DIAGNOSTIC PROCEDURE

STEP 1. Connector check: C-126 diagnosis connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?
YES : Go to Step 2 .
NO : Repair the defective connector.

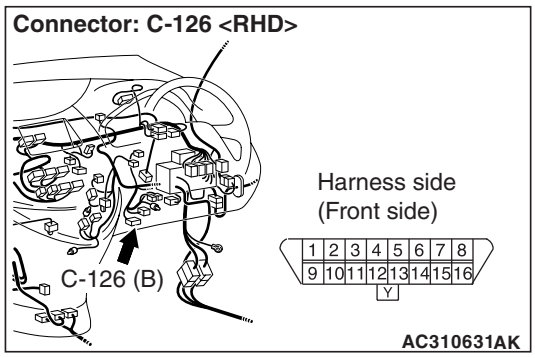
STEP 2. Resistance measurement at the C-126 diagnosis connector.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.

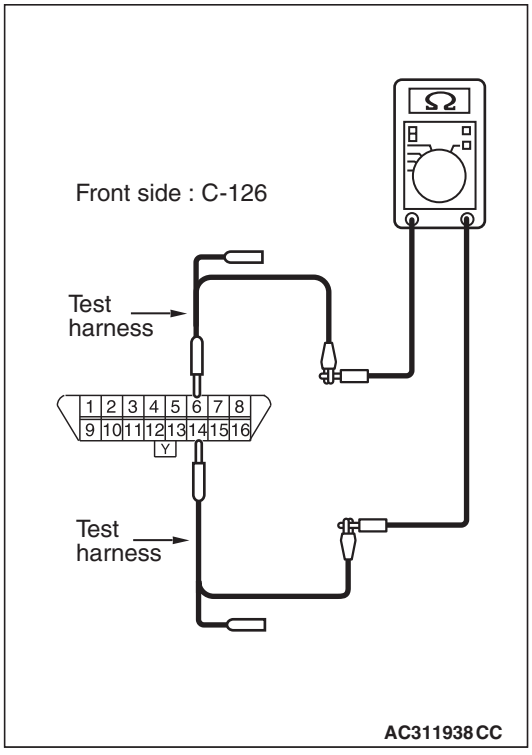


(1) Measure at the diagnosis connector wiring harness side.
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-126 diagnosis connector terminal Nos. 6 and 14

Q: How much resistance is measured?

2 Ω or less : Diagnose the lines between the CAN_L and H for short circuit. Refer to P.54D-354.

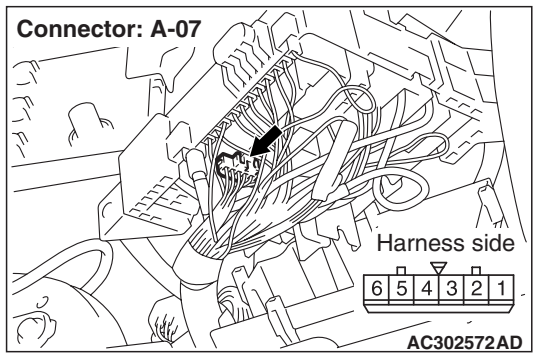
No continuity : Diagnose the terminator resistors at both ends. Refer to P.54D-419.

More than 2 Ω (i.e. continuity exists) : Go to Step 3 .

STEP 3. Connector check: A-07 joint connector (CAN1)

NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

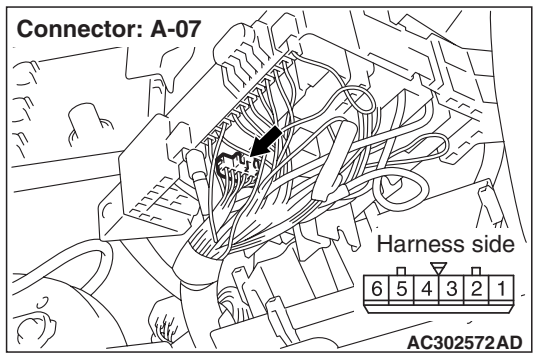
When checking the joint connector, ensure that its wiring harness side is not damaged.

Q: Is the check result normal?

YES : Go to Step 4 .

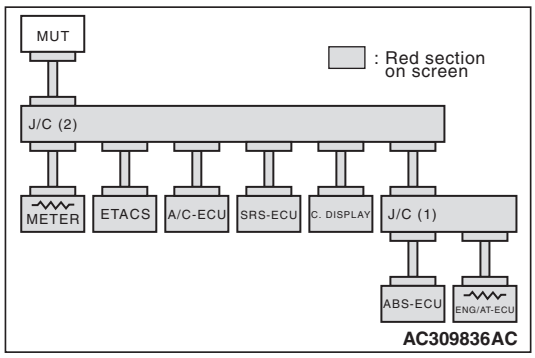
NO : Repair a defective connector or replace the joint connector (front wiring harness assembly).

STEP 4. MUT-III CAN bus diagnostics [A-07 joint connector (CAN1) disconnected]



(1) Disconnect the joint connector (CAN1), and

check by using the MUT-III.



(2) Check that the MUT-III indications correspond to the illustration.

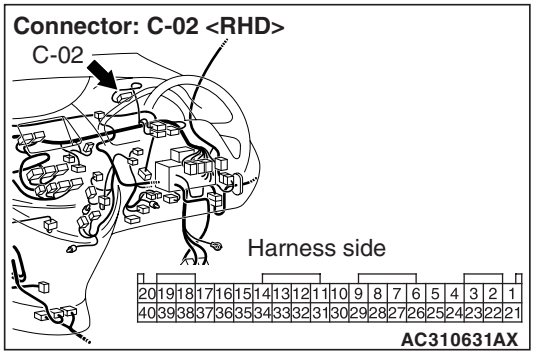
Q: Is the check result normal?

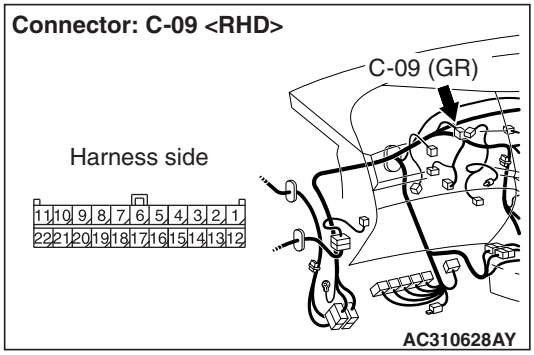
YES : <MUT-III indications correspond to the illustration> Go to Step 22 .

NO : <MUT-III indications do not correspond to the illustration> Go to Step 5 .

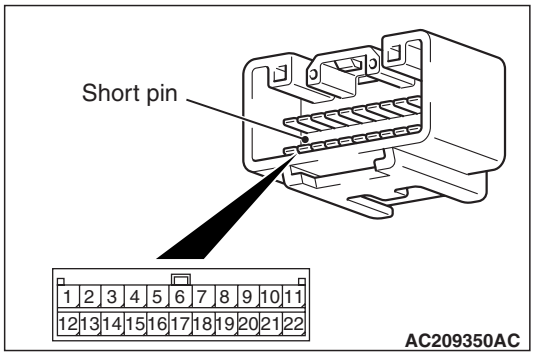
STEP 5. Connector check: C-09 joint connector (CAN2) and C-02 combination meter connector

⚠ CAUTION





The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.



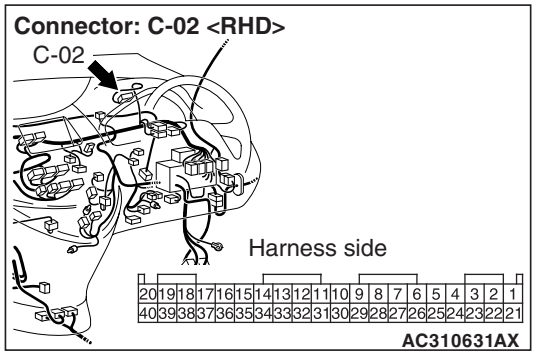
When checking the joint connector, ensure that its wiring harness side is not damaged.

Q: Is the check result normal?

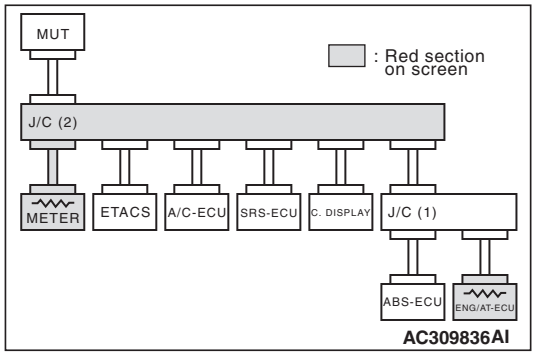
YES : Go to Step 6 .

NO : Repair a defective connector or replace the joint connector.

STEP 6. MUT-III CAN bus diagnostics (C-02 combination meter connector disconnected)



(1) Disconnect the combination meter connector, and diagnose by using the MUT-III.



(2) Check that the MUT-III indications correspond to the illustration.

Q: Is the check result normal?

YES : <MUT-III indications correspond to the illustration> Go to Step 7 .

NO : <MUT-III indications do not correspond to the illustration> Go to Step 8 .

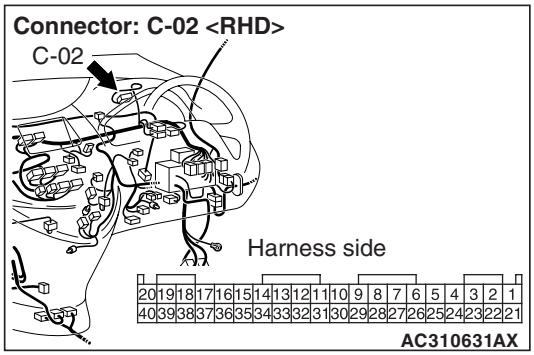
STEP 7. Resistance measurement at C-09 joint connector (CAN2) and C-02 combination meter connector.

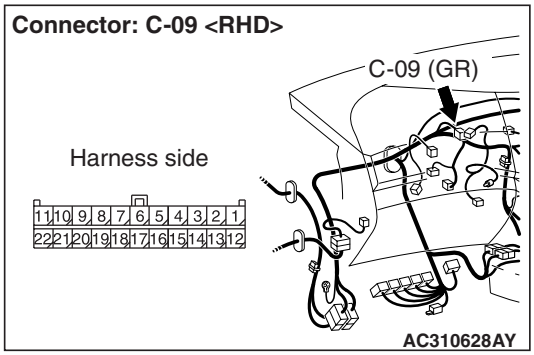
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN2) and the combination meter connector, and measure at the wiring harness side.

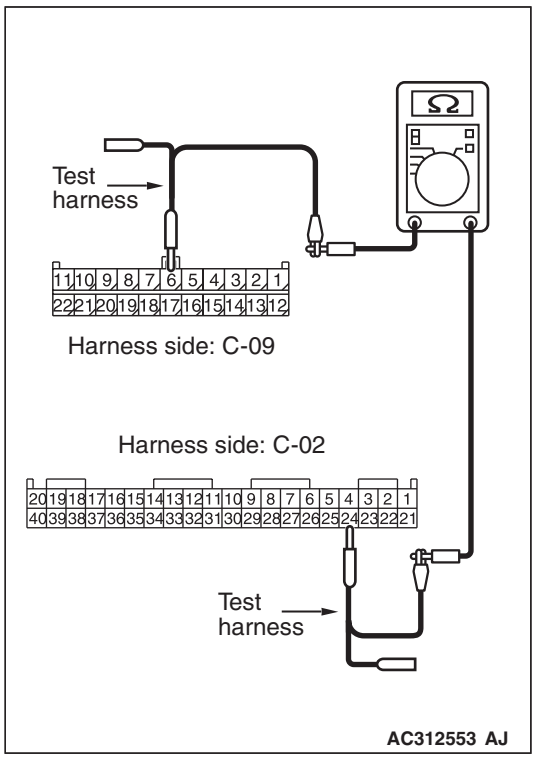
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

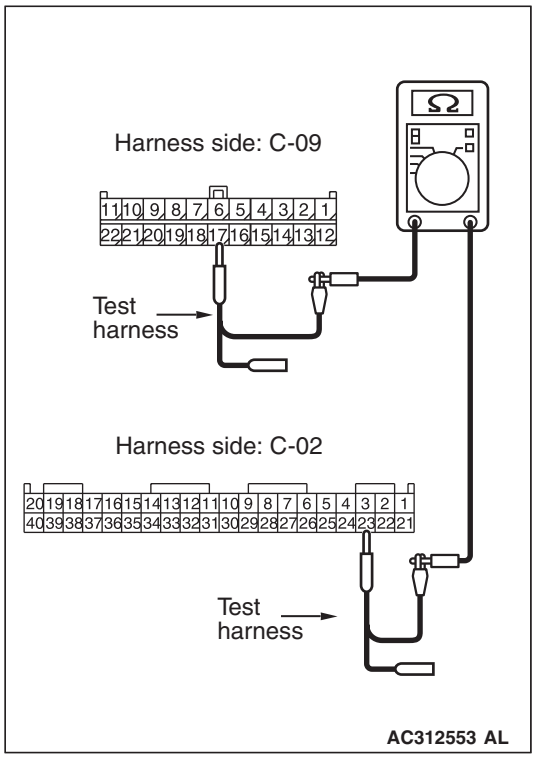
(3) Ensure that the negative battery terminal is

disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal No.6 and C-02 combination meter connector terminal No.24

OK: 2 Ω or less



(5) Continuity between C-09 joint connector (CAN2) terminal No.17 and C-02 combination meter connector terminal No.23

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

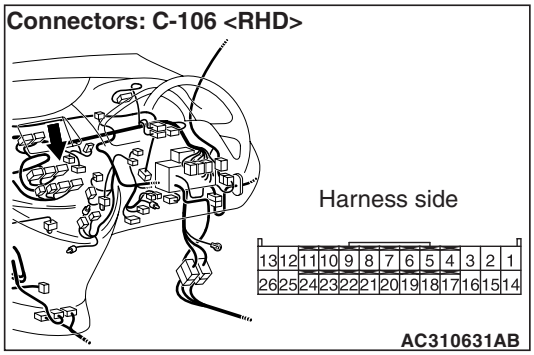
Q: Are the check results normal?

YES : <All the resistances measure 2 Ω or less> Power supply to the combination meter may be suspected. Diagnose the combination meter. Refer to P.54A-55.

NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between joint connector (CAN2) and the combination meter connector.

STEP 8. Connector check: C-106 A/C-ECU connector

⚠ CAUTION



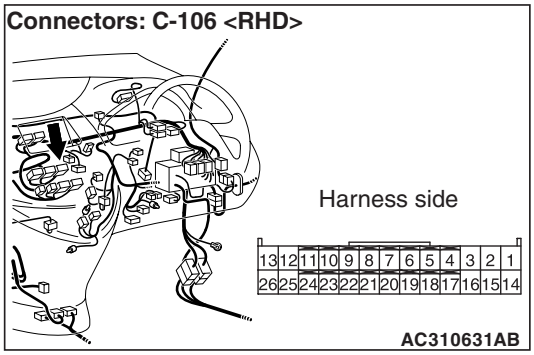
The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 9 .

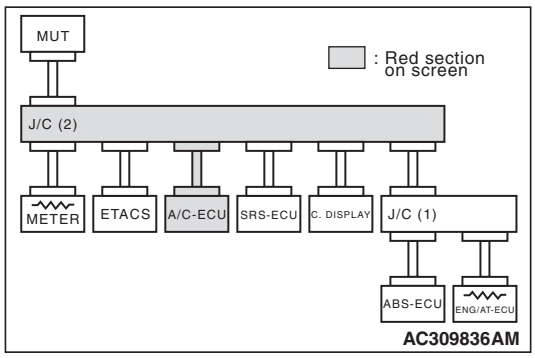
NO : Repair the defective connector.

STEP 9. MUT-III CAN bus diagnostics (C-106 A/C-ECU connector disconnected)



(1) Disconnect the A/C-ECU connector, and

diagnose by using the MUT-III.



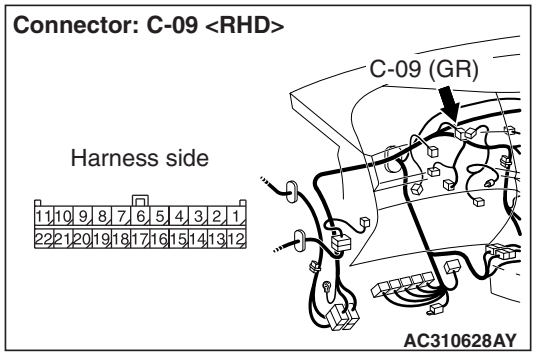
(2) Check that the MUT-III indications correspond to the illustration.

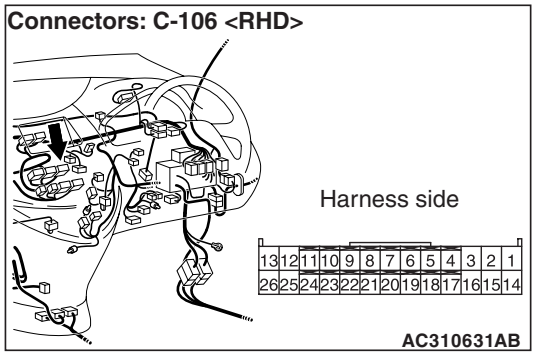
Q: Is the check result normal?
YES : <MUT-III indications correspond to the illustration> Go to Step 10 .
NO : <MUT-III indications do not correspond to the illustration> Go to Step 11 .

STEP 10. Resistance measurement at C-09 joint connector (CAN2) and C-106 A/C-ECU connector.

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.

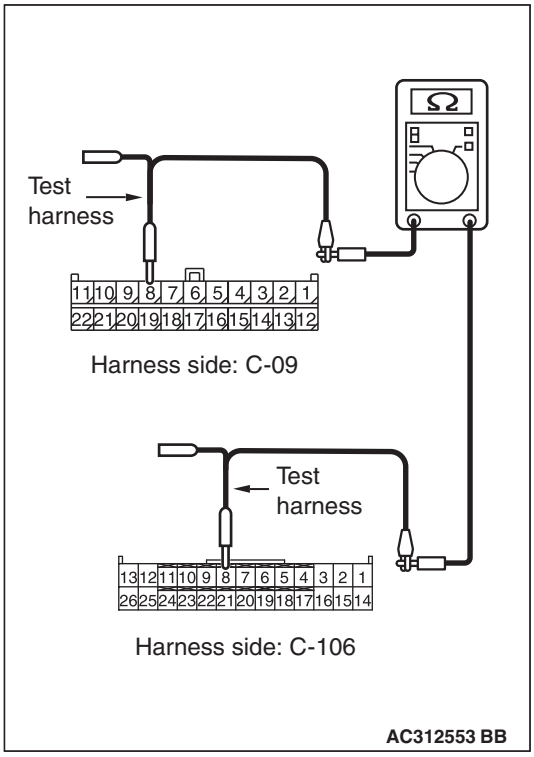




(1) Disconnect the joint connector (CAN2) and the A/C-ECU connector, and measure at the wiring harness side.
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

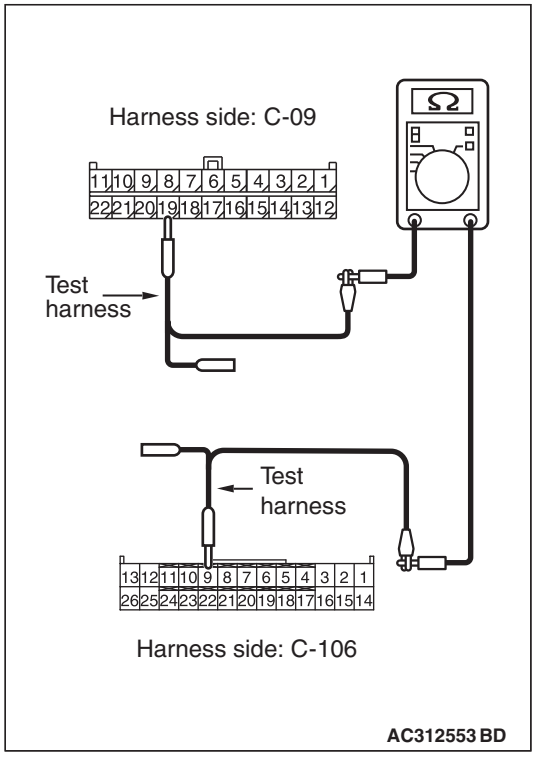
(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal No.8 and C-106 A/C-ECU connector

terminal No.8

OK: 2 Ω or less



(5) Continuity between C-09 joint connector (CAN2) terminal No.19 and C-106 A/C-ECU connector terminal No.9

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

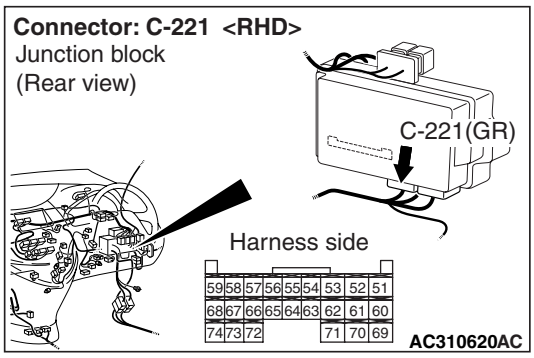
Q: Are the check results normal?

YES : <All the resistances measure 2 Ω or less> Power supply to the A/C-ECU may be suspected. Diagnose the air conditioner system. Refer to P.55-174.

NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between the joint connector (CAN2) and the A/C-ECU connector.

STEP 11. Connector check: C-221 ETACS-ECU connector

⚠ CAUTION



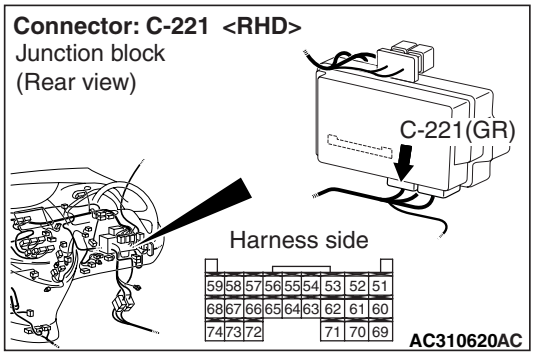
The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

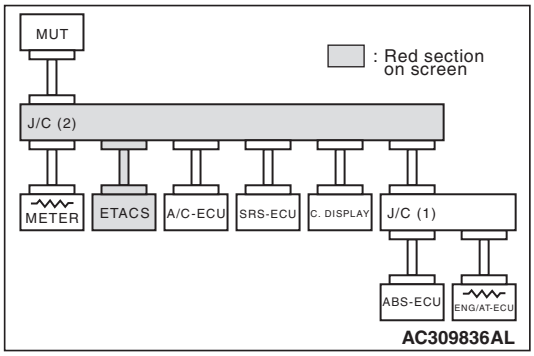
YES : Go to Step 12 .

NO : Repair the defective connector.

STEP 12. MUT-III CAN bus diagnostics (C-221 ETACS-ECU connector disconnected)



(1) Disconnect the ETACS-ECU connector, and diagnose by using the MUT-III.



(2) Check that the MUT-III indications correspond to the illustration.

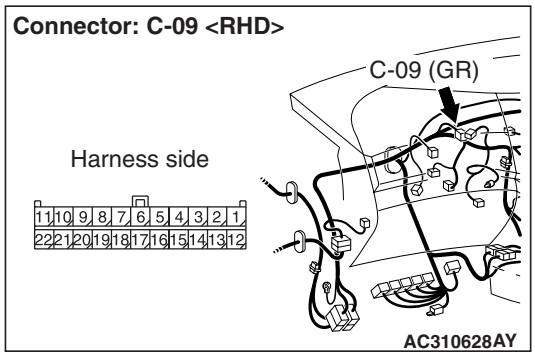
Q: Is the check result normal?

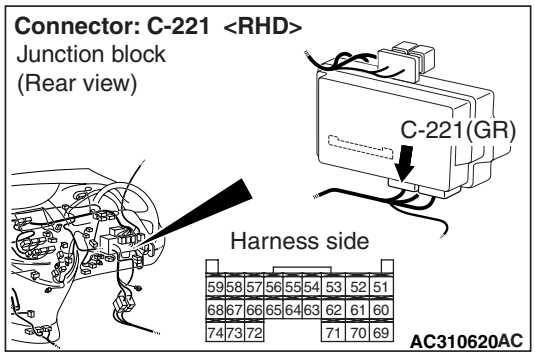
YES : <MUT-III indications correspond to the illustration> Go to Step 13 .
NO : <MUT-III indications do not correspond to the illustration> Go to Step 14 .

STEP 13. Resistance measurement at C-09 joint connector (CAN2) and C-221 ETACS-ECU connector.

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.

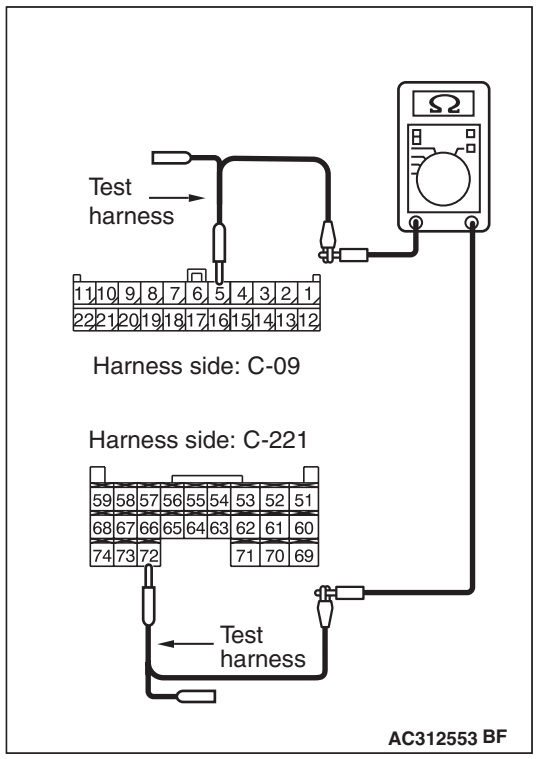




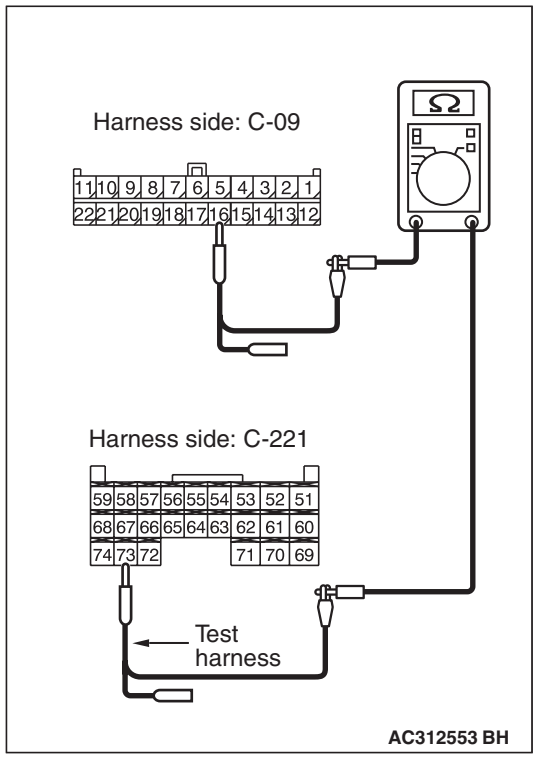
(1) Disconnect the joint connector (CAN2) and the ETACS-ECU connector, and measure at the wiring harness side.
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal No.5 and C-221 ETACS-ECU connector terminal No.72
OK: 2 Ω or less



(5) Continuity between C-09 joint connector (CAN2) terminal No.16 and C-221 ETACS-ECU

connector terminal No.73

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

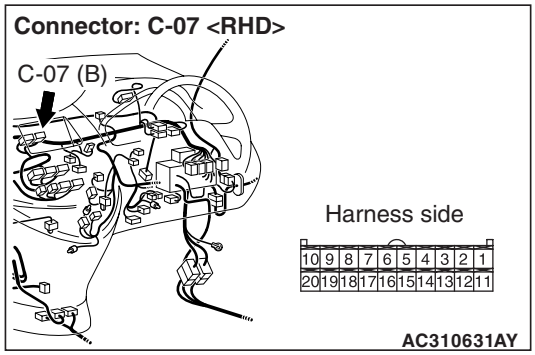
Q: Are the check results normal?

YES : <All the resistances measure 2 Ω or less> Power supply to the ETACS-ECU may be suspected. Diagnose the SWS. Refer to P.54B-87.

NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between the joint connector (CAN2) and the ETACS-ECU connector.

STEP 14. Connector check: C-07 centre display connector

⚠ CAUTION



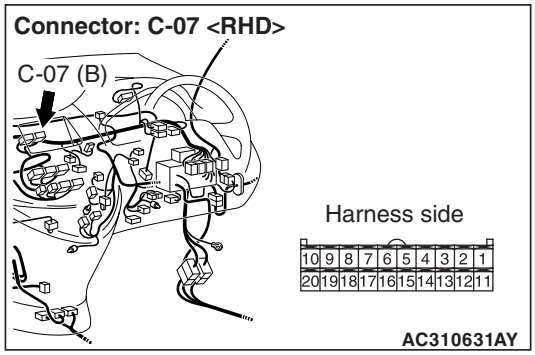
The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

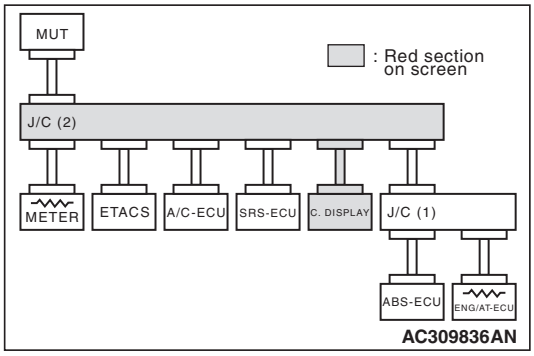
YES : Go to Step 15 .

NO : Repair the defective connector.

STEP 15. MUT-III CAN bus diagnostics (C-07 centre display connector disconnected)



(1) Disconnect the centre display connector, and diagnose by using the MUT-III.



(2) Check that the MUT-III indications correspond to the illustration.

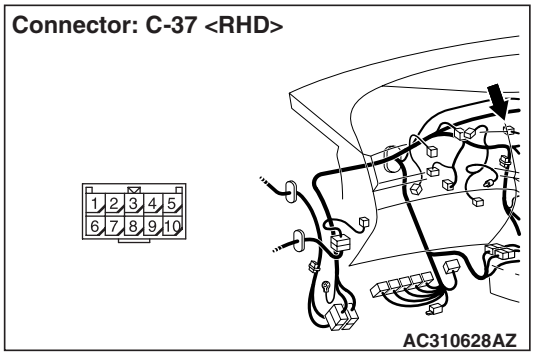
Q: Is the check result normal?

YES : <MUT-III indications correspond to the illustration> Go to Step 16 .

NO : <MUT-III indications do not correspond to the illustration> Go to Step 27 .

STEP 16. Connector check: C-37 jumper connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Check that the wiring harness of the jumper connector is not damaged.

Q: Is the check result normal?

YES : Go to Step 17 .

NO : Repair the defective connector.

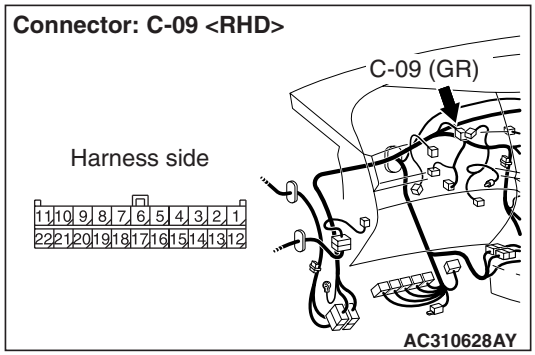
STEP 17. Resistance measurement at C-37 jumper connector and C-09 joint connector (CAN2).

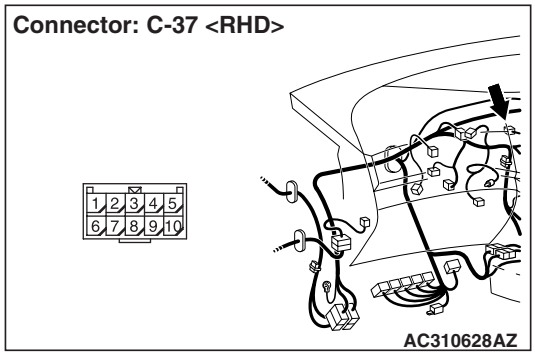
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





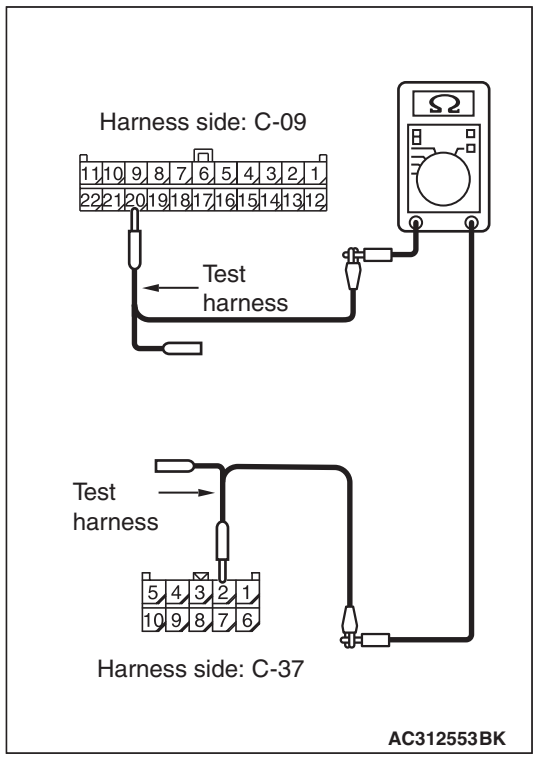
(1) Disconnect the joint connector (CAN2) and the jumper connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

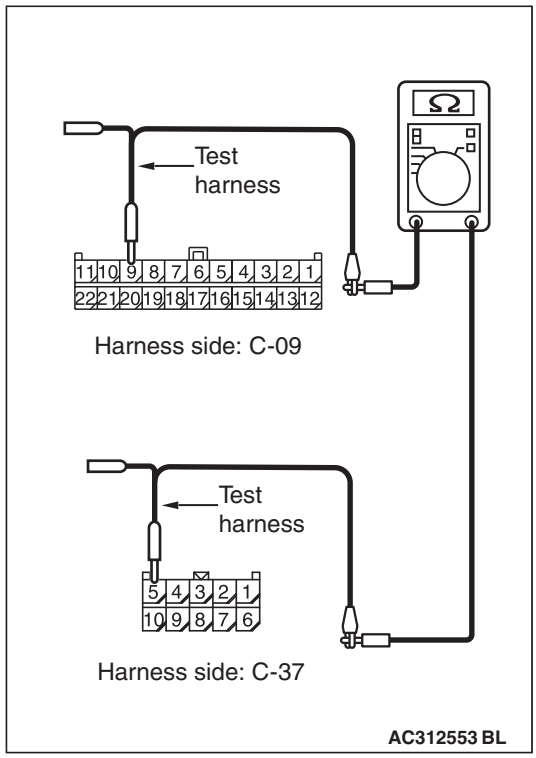
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-37 jumper connector terminal No.2 and C-09 joint connector (CAN2) terminal No.20

OK: 2 Ω or less



(5) Continuity between C-37 jumper connector terminal No.5 and C-09 joint connector (CAN2)

terminal No.9

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Are the check results normal?

YES : <All the voltages measure 2 Ω or less> Go to Step 18 .

NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between joint connector (CAN2) and the jumper connector.

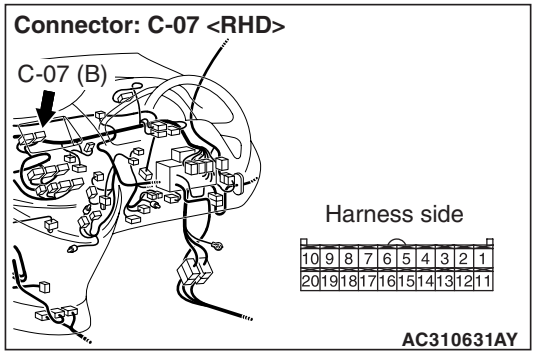
STEP 18. Resistance measurement at C-37 jumper connector and C-07 centre display connector.

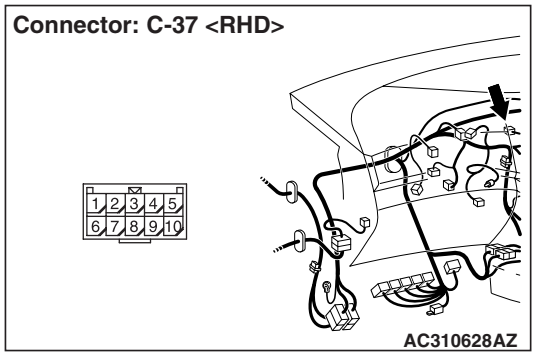
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





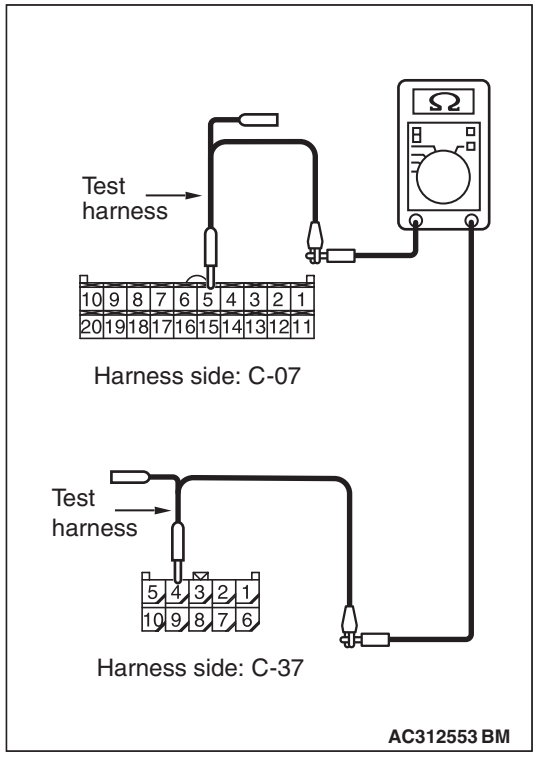
(1) Disconnect the centre display connector and the jumper connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

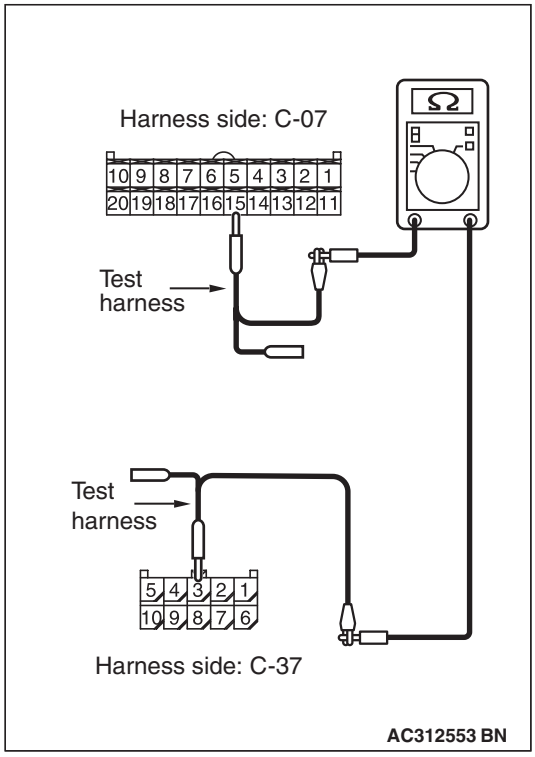
(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-37 jumper connector terminal No.4 and C-07 centre display connector

terminal No.5.

OK: 2 Ω or less



(5) Continuity between C-37 jumper connector terminal No.3 and C-07 centre display connector terminal No.15.

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

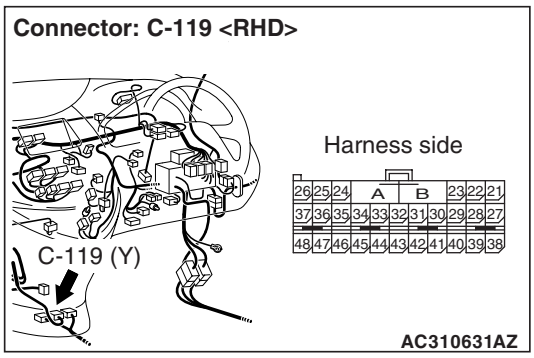
Q: Are the check results normal?

YES : <All the resistances measure 2 TAG or less> Power supply to the centre display may be suspected. Diagnose the centre display system. Refer to P.54A-161.

NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between the centre display connector and the jumper connector.

STEP 19. Connector check: C-119 SRS-ECU connector

⚠ CAUTION



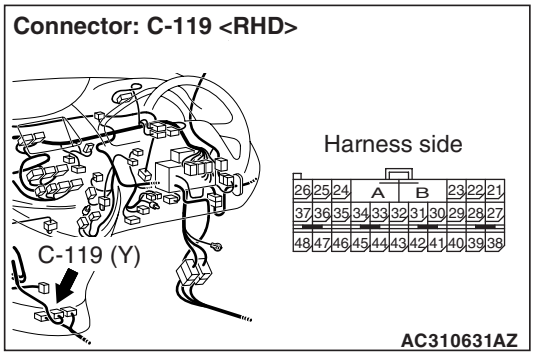
The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

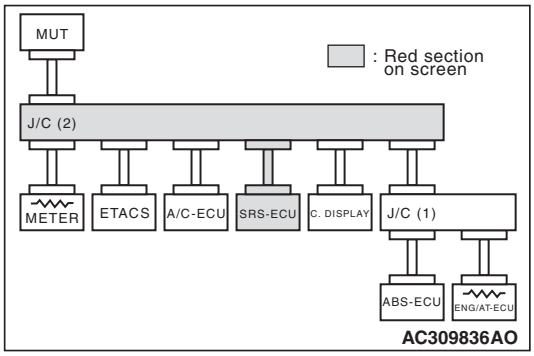
YES : Go to Step 20 .

NO : Repair the defective connector.

STEP 20. MUT-III CAN bus diagnostics (C-119 SRS-ECU connector disconnected)



(1) Disconnect the SRS-ECU connector, and diagnose by using the MUT-III.



(2) Check that the MUT-III indications correspond to the illustration.

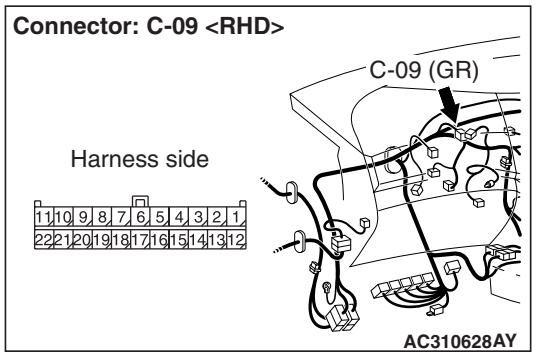
Q: Is the check result normal?

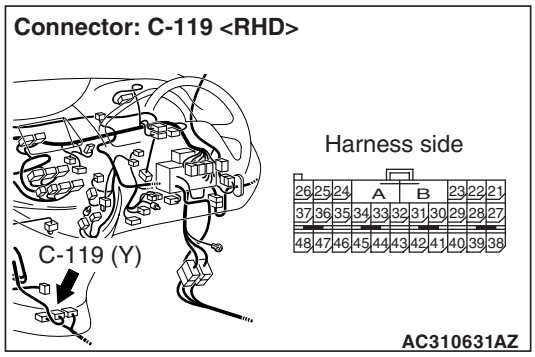
YES : <MUT-III indications correspond to the illustration> Go to Step 21 .
NO : <MUT-III indications do not correspond to the illustration> Go to Step 31 .

STEP 21. Resistance measurement at C-09 joint connector (CAN2) and C-119 SRS-ECU connector.

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.

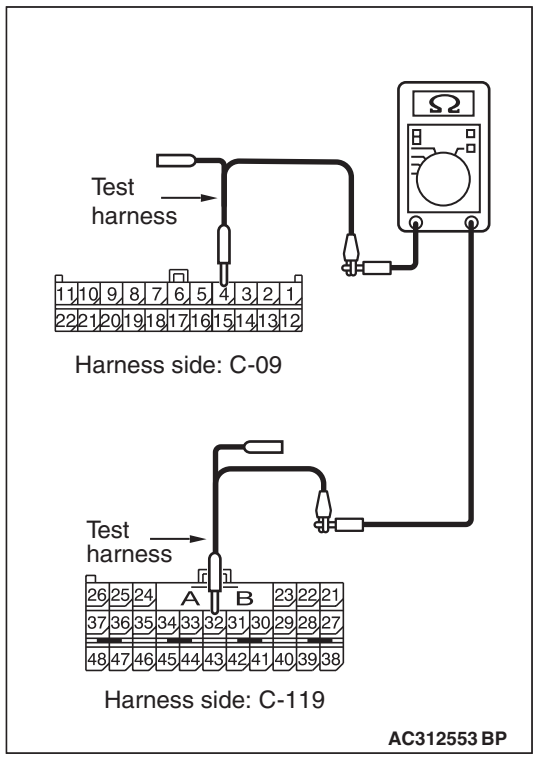




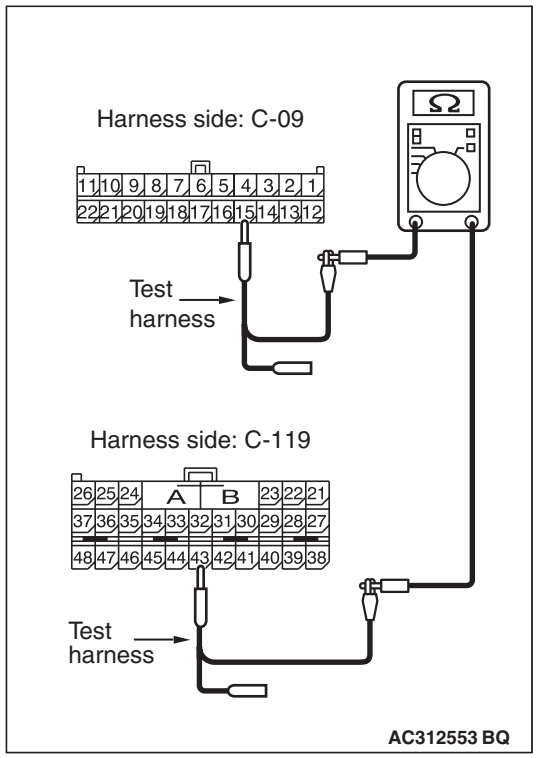
(1) Disconnect the joint connector (CAN2) and the SRS-ECU connector, and measure at the wiring harness side.
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal No.4 and C-119 SRS-ECU connector terminal No.32
OK: 2 Ω or less



(5) Continuity between C-09 joint connector (CAN2) terminal No.15 and C-119 SRS-ECU connector

terminal No.43

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

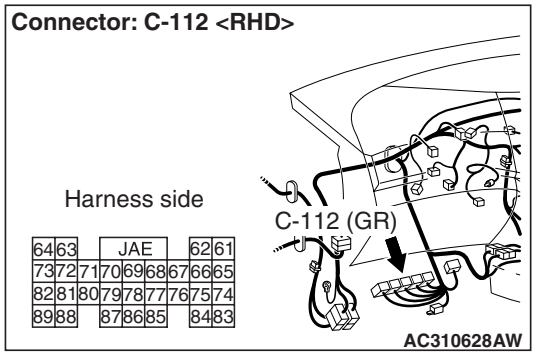
Q: Are the check results normal?

YES : <All the resistances measure 2 Ω or less> Power supply to the SRS-ECU may be suspected. Diagnose the SRS system. Refer to P.52B-201.

NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between the joint connector (CAN2) and the SRS-ECU connector.

STEP 22. Connector check: C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector

⚠ CAUTION



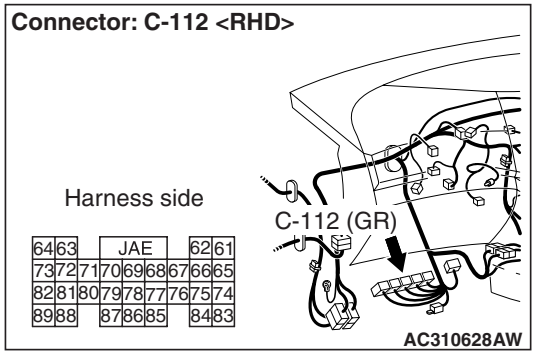
The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

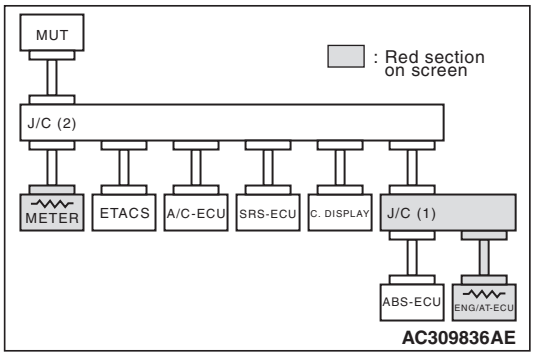
YES : Go to Step 23 .

NO : Repair the defective connector.

STEP 23. MUT-III CAN bus diagnostics (C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector disconnected)



(1) Disconnect the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector, and diagnose by using the MUT-III.



(2) Check that the MUT-III indications correspond to the illustration.

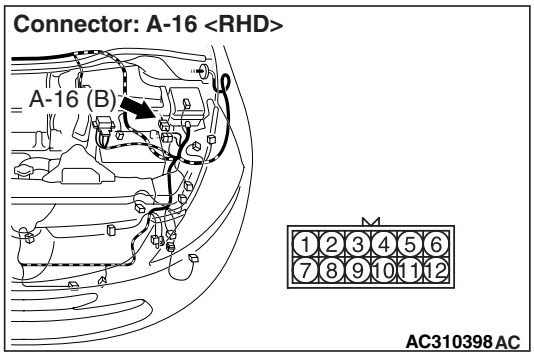
Q: Is the check result normal?

YES : <MUT-III indications correspond to the illustration> Go to Step 24 .

NO : <MUT-III indications do not correspond to the illustration> Go to Step 27 .

STEP 24. Connector check: A-16 intermediate connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 25 .

NO : Repair the defective connector.

STEP 25. Resistance measurement at A-16 intermediate connector and A-07 joint connector (CAN1).

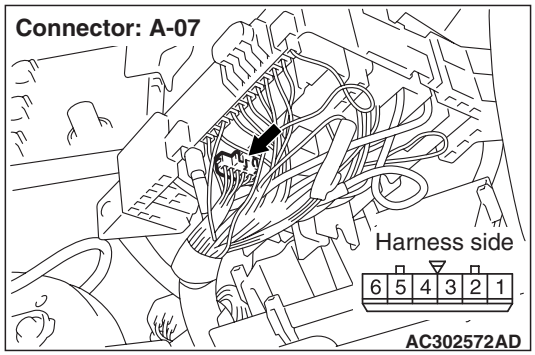
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

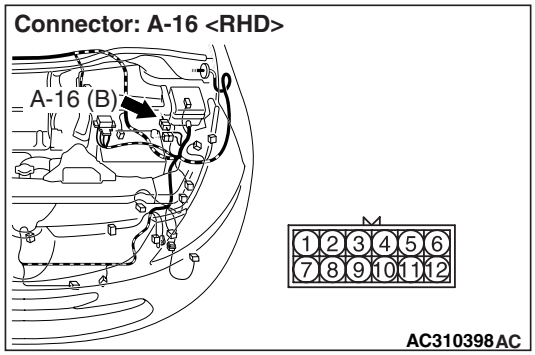
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





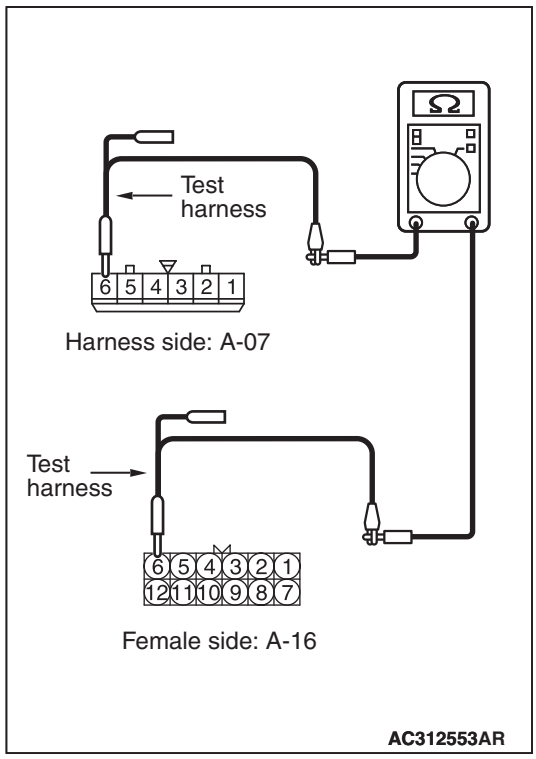
(1) Disconnect the joint connector (CAN1) and the intermediate connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

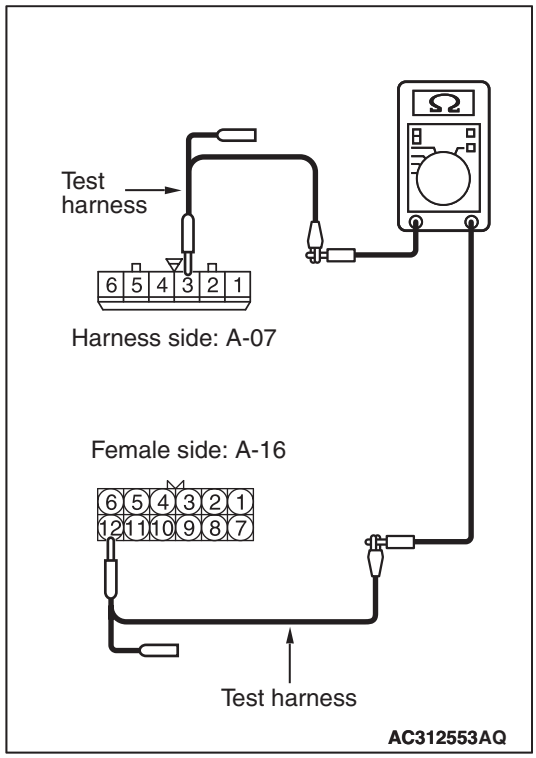
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between A-16 intermediate connector terminal No.6 and A-07 joint connector (CAN1) terminal No.6

OK: 2 Ω or less



(5) Continuity between A-16 intermediate connector terminal No.12 and A-07 joint connector (CAN1)

terminal No.3

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Are the check results normal?

YES : <All the voltages measure 2 Ω or less> Go to Step 26 .

NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between joint connector (CAN1) and the intermediate connector.

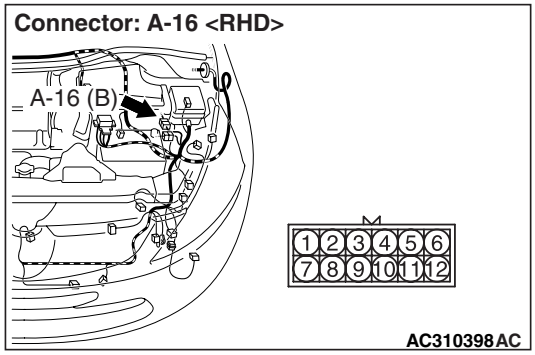
STEP 26. Resistance measurement at A-16 intermediate connector and C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector.

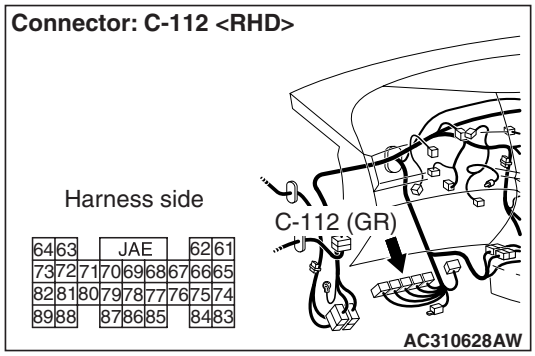
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





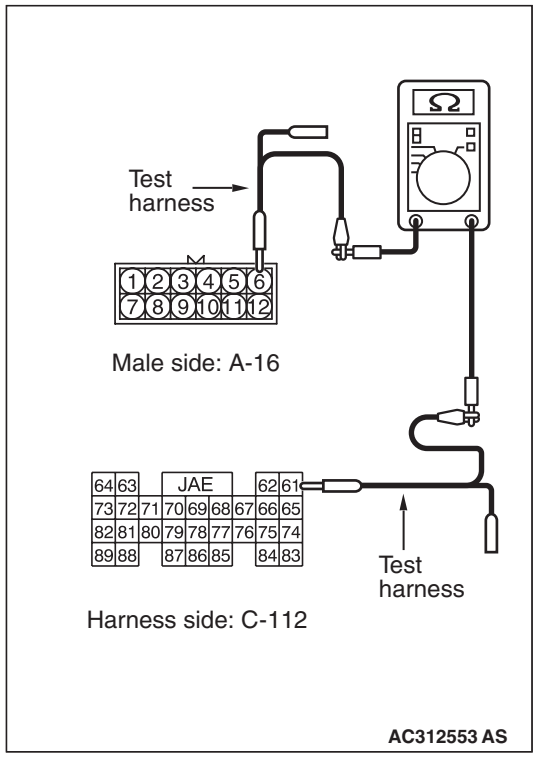
(1) Disconnect the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector and the intermediate connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

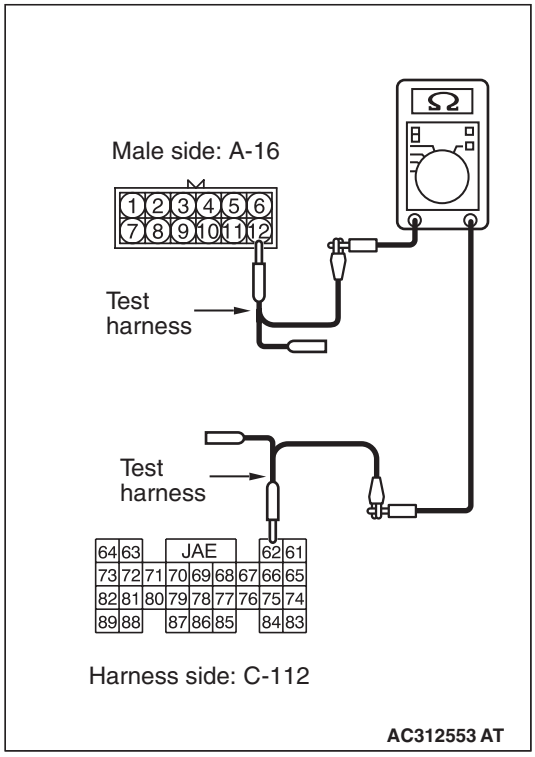
(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between A-16 intermediate connector terminal No.6 and C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector terminal

No.61.

OK: 2 Ω or less



(5) Continuity between A-16 intermediate connector terminal No.12 and C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector terminal No.62.

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

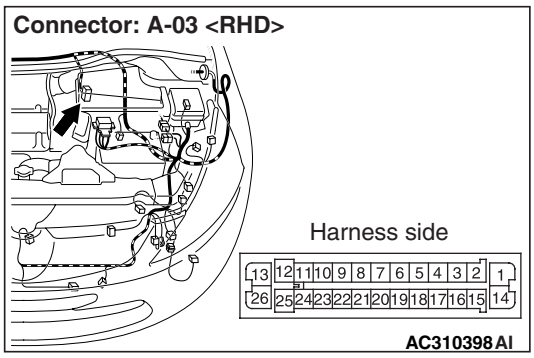
Q: Are the check results normal?

YES : <All the resistances measure 2 Ω or less> Power supply to the engine-ECU <M/T> or engine-A/T-ECU <A/T> may be suspected. Diagnose the engine control system. Refer to P.13A-321.

NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector and the joint connector (CAN1).

STEP 27. Connector check: A-03 ABS-ECU connector

⚠ CAUTION



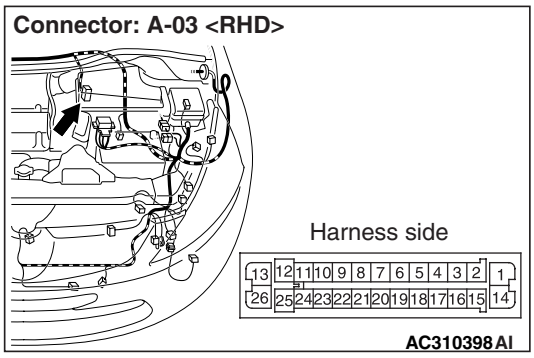
The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

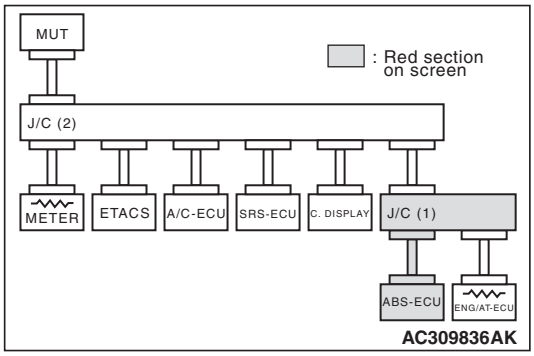
YES : Go to Step 28 .

NO : Repair the defective connector.

STEP 28. MUT-III CAN bus diagnostics (A-03 ABS-ECU connector disconnected)



(1) Disconnect the ABS-ECU connector, and diagnose by using the MUT-III.



(2) Check that the MUT-III indications correspond to the illustration.

Q: Is the check result normal?

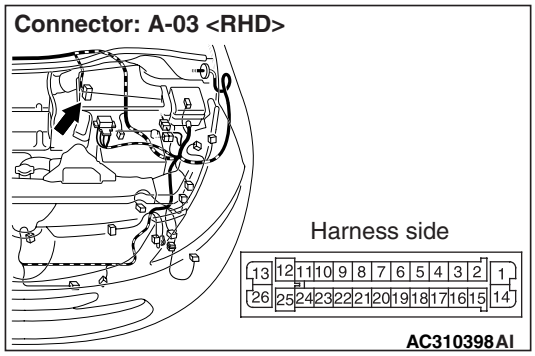
YES : <MUT-III indications correspond to the illustration> Go to Step 29 .
NO : <MUT-III indications do not correspond to the illustration> Go to Step 30 .

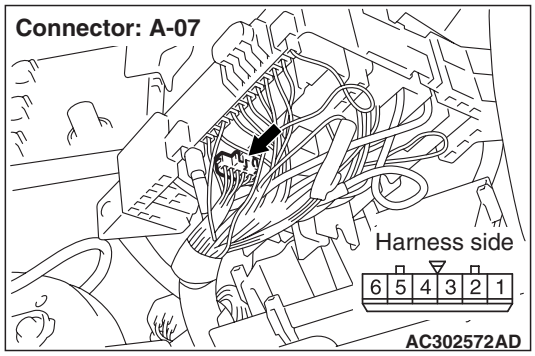
STEP 29. Resistance measurement at A-07 joint connector (CAN1) and A-03 ABS-ECU connector.

NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.

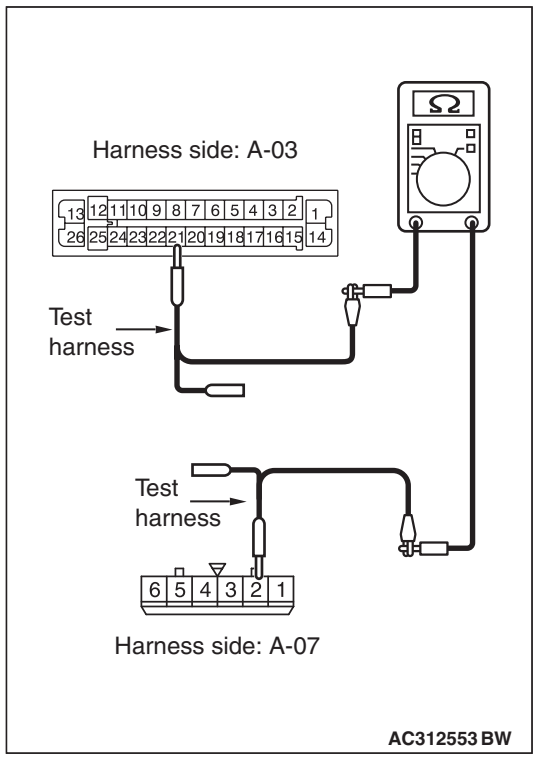




(1) Disconnect the joint connector (CAN1) and the ABS-ECU connector, and measure at the wiring harness side.
(2) Ignition switch: OFF (LOCK)

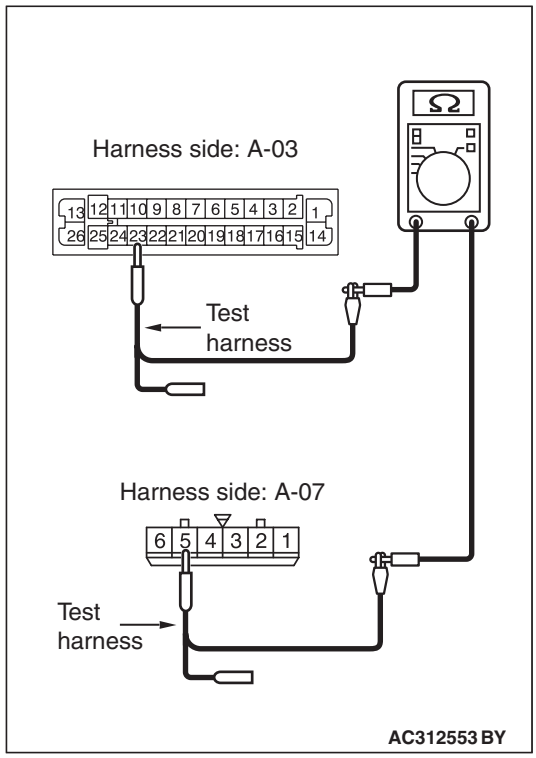
⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between A-07 joint connector (CAN1) terminal No.2 and A-03 ABS-ECU connector terminal No.21

OK: 2 Ω or less



(5) Continuity between A-07 joint connector (CAN1) terminal No.5 and A-03 ABS-ECU connector

terminal No.23

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

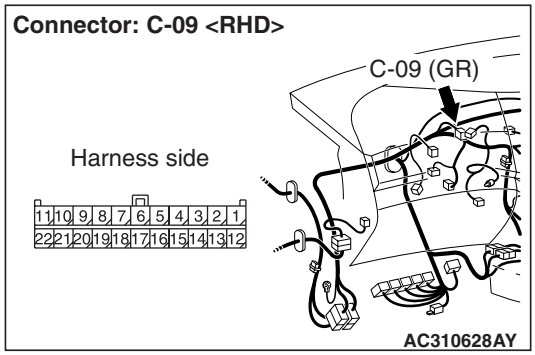
Q: Are the check results normal?

YES : <All the resistances measure 2 Ω or less> Power supply to the ABS-ECU may be suspected. Diagnose the ABS system. Refer to P.35B-65.

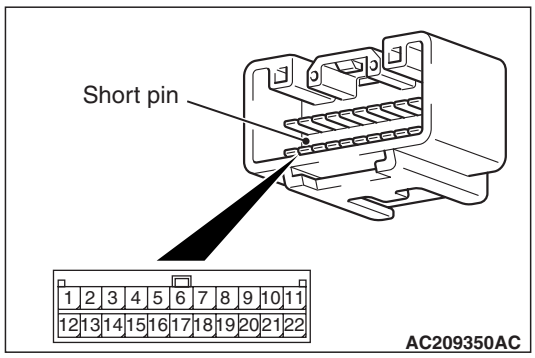
NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between the joint connector (CAN1) and the ABS-ECU connector.

STEP 30. Connector check: C-09 joint connector (CAN2)

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.



When checking the joint connector, ensure that its wiring harness side is not damaged.

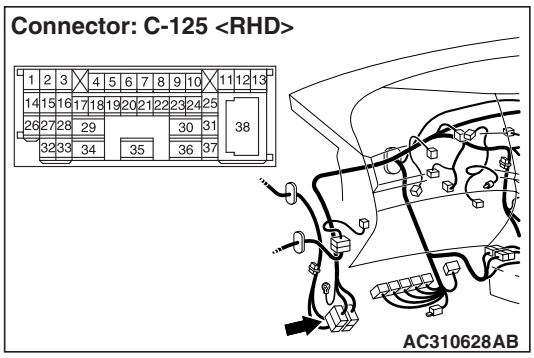
Q: Is the check result normal?

YES : Go to Step 31 .

NO : Repair a defective connector or replace the joint connector.

STEP 31. Connector check: C-125 intermediate connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 32 .

NO : Repair the defective connector.

STEP 32. Resistance measurement at C-125 intermediate connector and A-07 joint connector (CAN1).

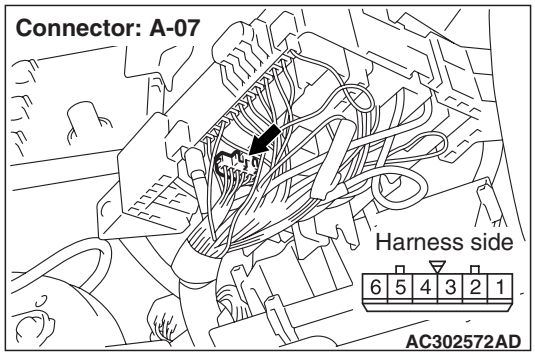
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

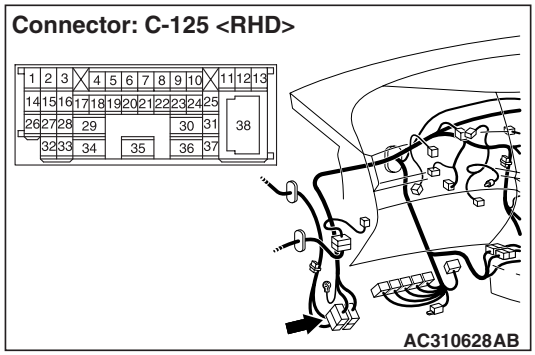
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





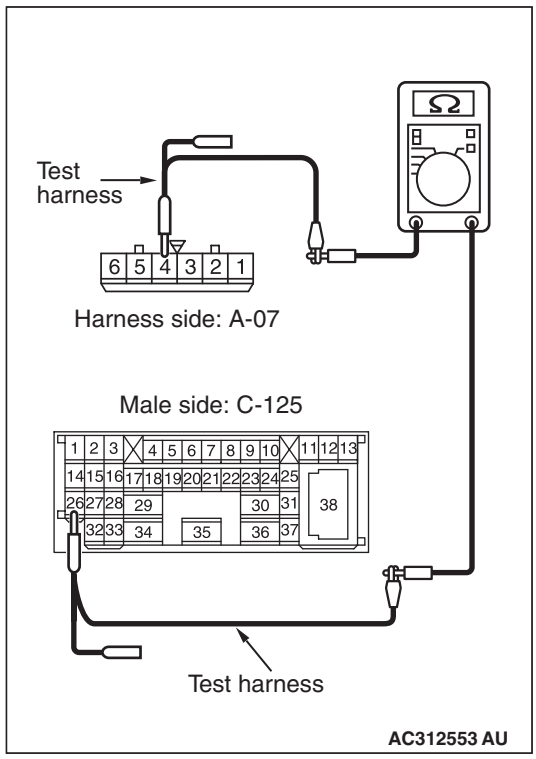
(1) Disconnect the joint connector (CAN1) and the intermediate connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

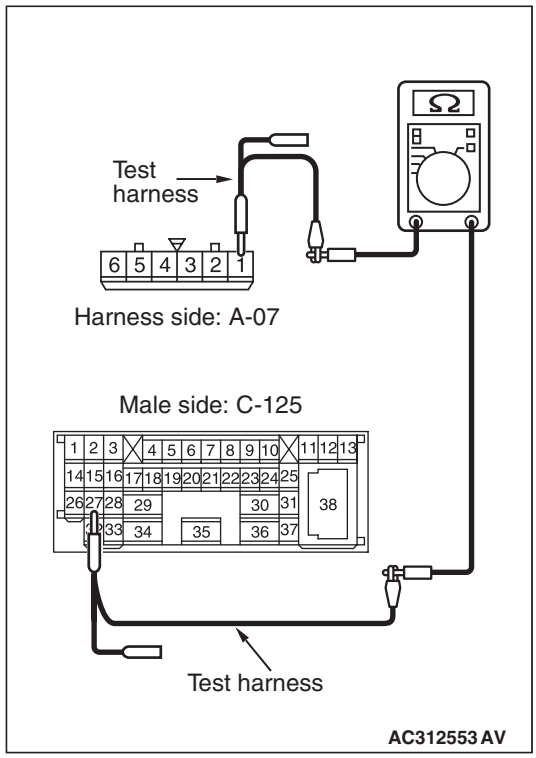
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-125 intermediate connector terminal No.26 and A-07 joint connector (CAN1) terminal No.4

OK: 2 Ω or less



(5) Continuity between C-125 intermediate connector terminal No.27 and A-07 joint

connector (CAN1) terminal No.1

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Are the check results normal?

YES : <All the voltages measure 2 Ω or less> Go to Step 33 .

NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between joint connector (CAN1) and the intermediate connector.

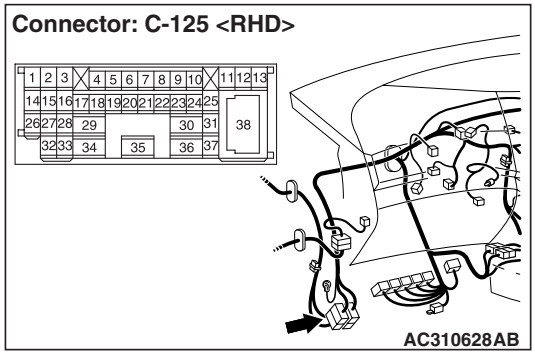
STEP 33. Resistance measurement at C-125 intermediate connector and C-09 joint connector (CAN2).

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.



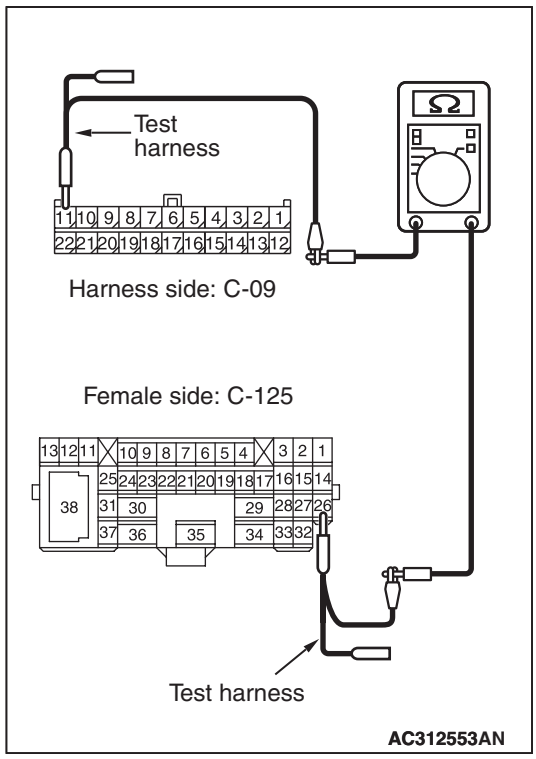
(1) Disconnect the joint connector (CAN2) and the intermediate connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

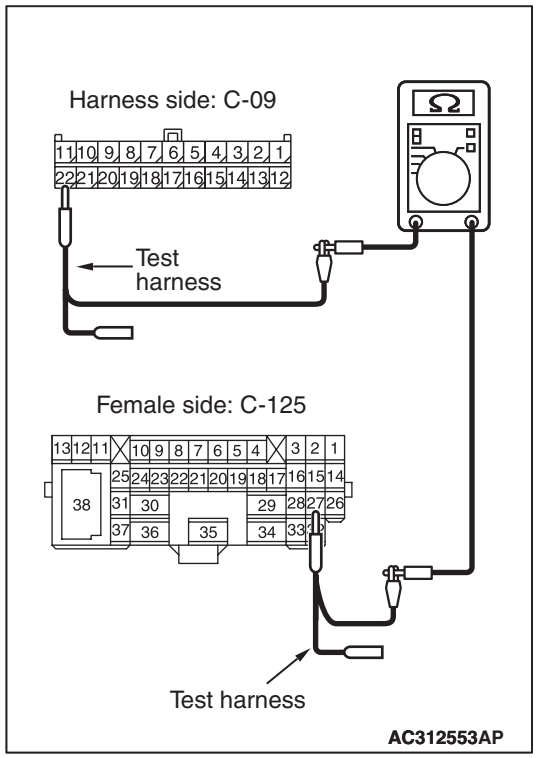
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-125 intermediate connector terminal No.26 and C-09 joint connector (CAN2) terminal No.11

OK: 2 Ω or less



(5) Continuity between C-125 intermediate connector terminal No.27 and C-09 joint

connector (CAN2) terminal No.22

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Are the check results normal?

YES : <All the voltages measure 2 Ω or less> Go to Step 34 .

NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between joint connector (CAN2) and the intermediate connector.

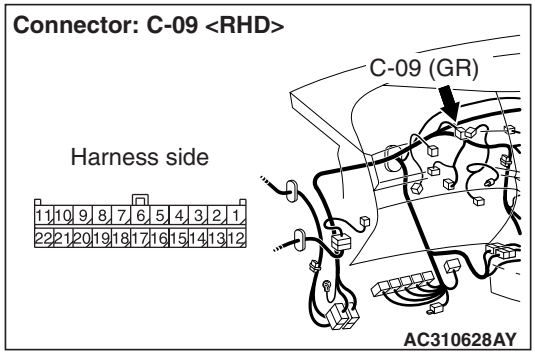
STEP 34. Resistance measurement at C-09 joint connector (CAN2) and C-126 diagnosis connector.

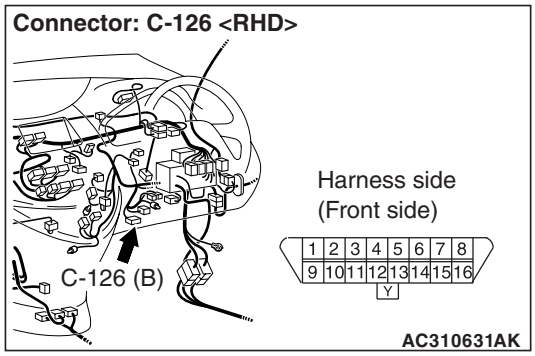
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





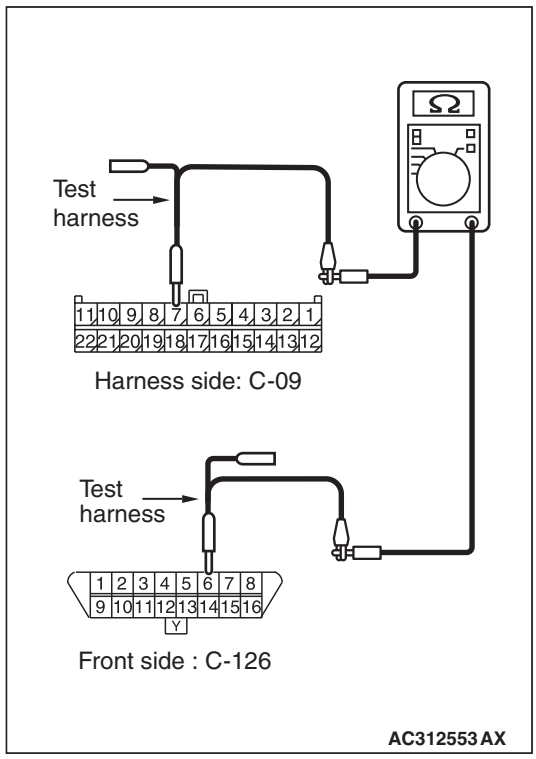
(1) Disconnect the connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

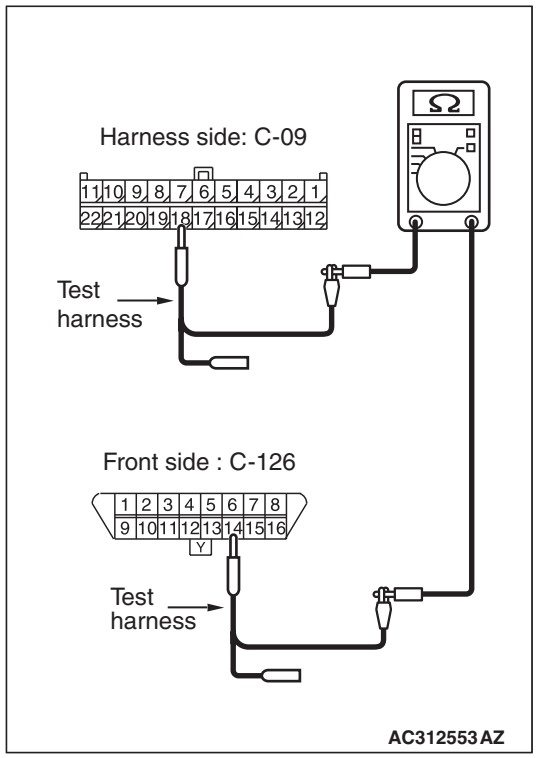
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal No.7 and C-126 diagnosis connector terminal No.6

OK: 2 Ω or less



(5) Continuity between C-09 joint connector (CAN2) terminal No.18 and C-126 diagnosis connector

terminal No.14

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Are the check results normal?

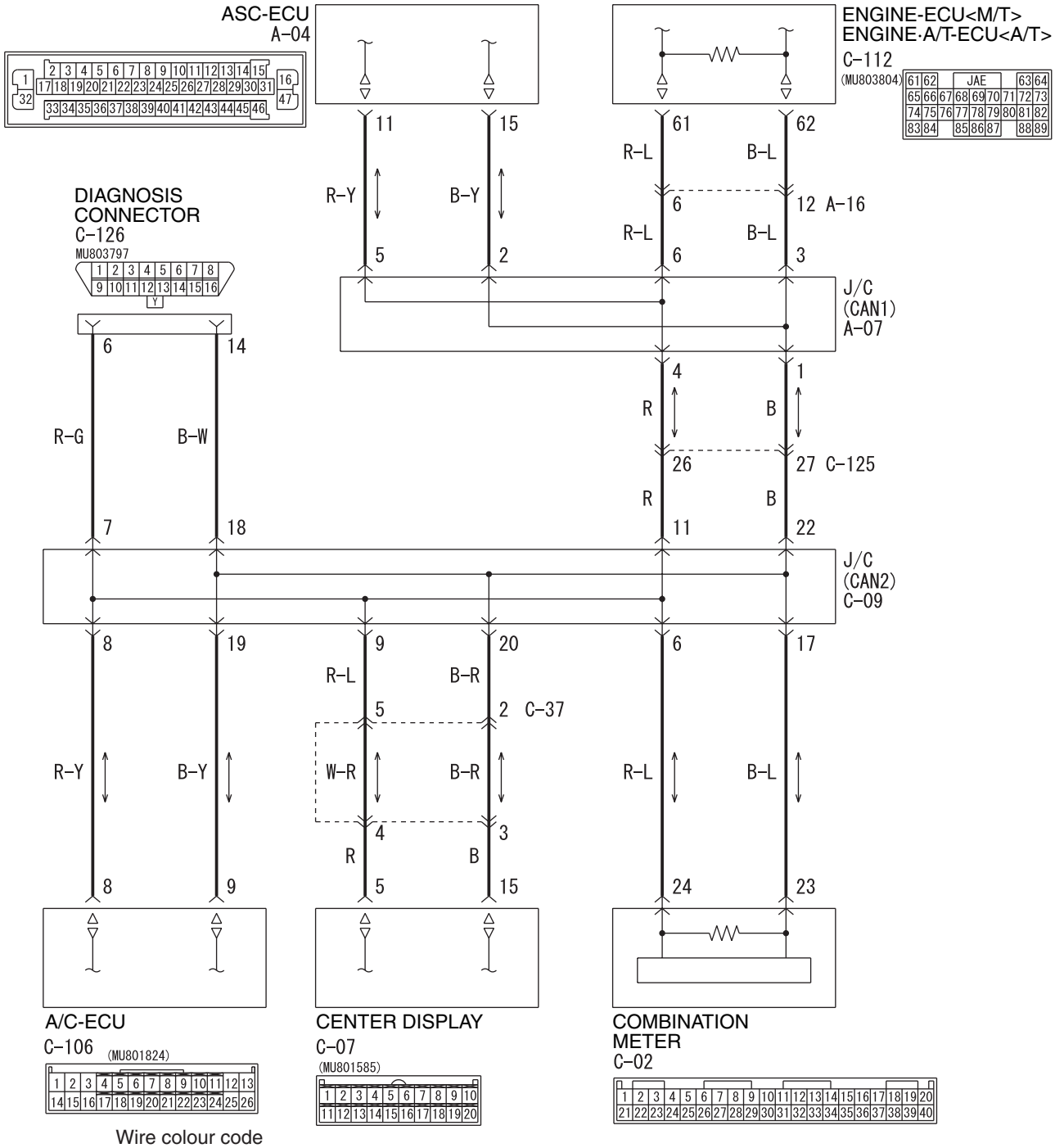
YES : <All the resistances measure 2 Ω or less> Diagnostics item 11: Diagnose shorts between CAN_L and H lines. Refer to P.54D-354.

NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between joint connector (CAN1) and the diagnosis connector.

Diagnostic Item 20: Diagnose CAN bus lines thoroughly <RH drive vehicles with ASC>

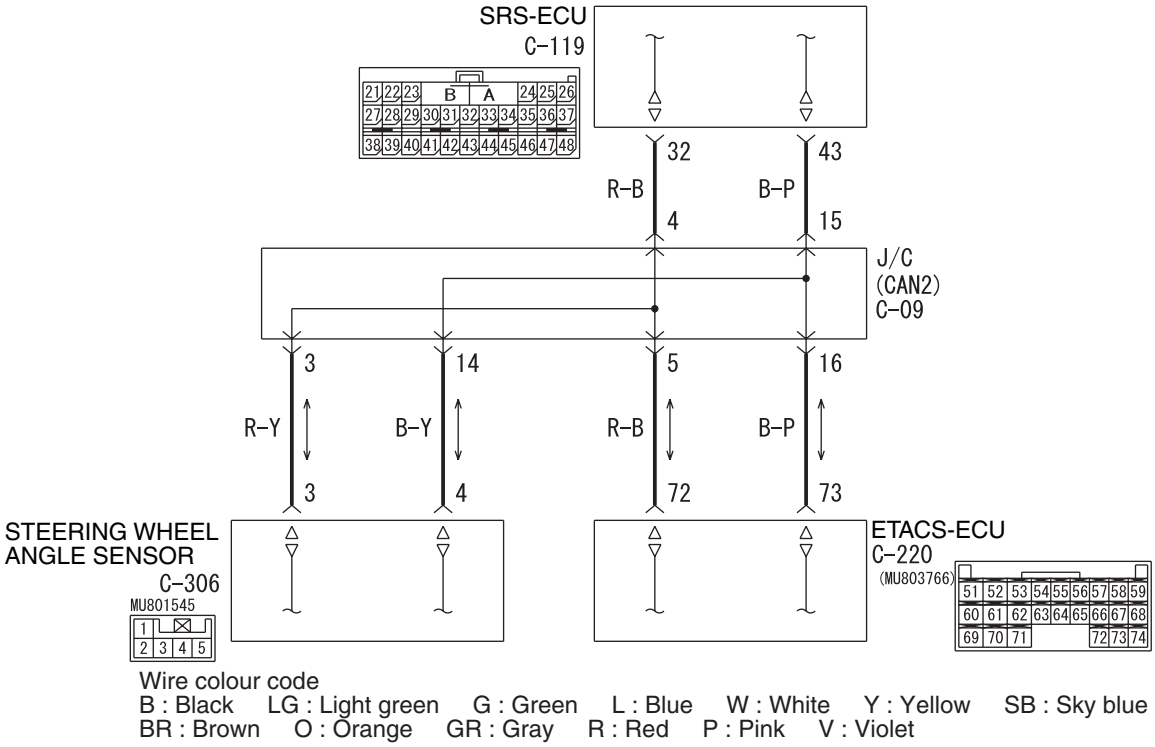
⚠ CAUTION

When servicing a CAN bus line, earth yourself by touching a metal object such as an unpainted water pipe. If you fail to do, a component connected to the CAN bus line may be broken.



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E24AA



W4X54E25AA

TROUBLE JUDGMENT

If the MUT-III can not received signals from ECUs, CAN bus line connector(s) are broken or an open circuit has occurred.

COMMENTS ON TROUBLE SYMPTOM

The CAN bus line wire or connectors may have loose, corroded, or damage terminals, or terminals pushed back in the connector.

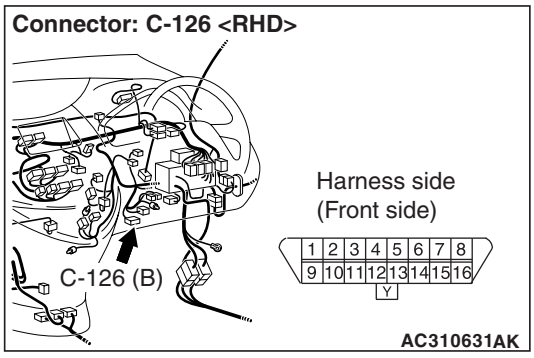
POSSIBLE CAUSES

- Damaged harness wires and connectors
- Malfunction of the ETACS-ECU
- Malfunction of the combination meter
- Malfunction of the A/C-ECU
- Malfunction of the SRS-ECU
- Malfunction of the multi-centre display
- Malfunction of the steering wheel angle sensor
- Malfunction of the ASC-ECU
- Malfunction of the engine-ECU <M/T> or engine-A/T-ECU <A/T>

DIAGNOSTIC PROCEDURE

STEP 1. Connector check: C-126 diagnosis connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?
YES : Go to Step 2 .
NO : Repair the defective connector.

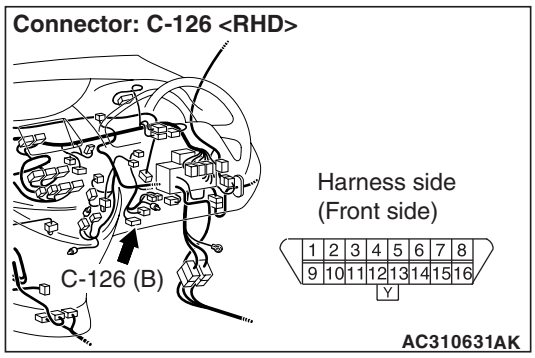
STEP 2. Resistance measurement at the C-126 diagnosis connector.

⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.

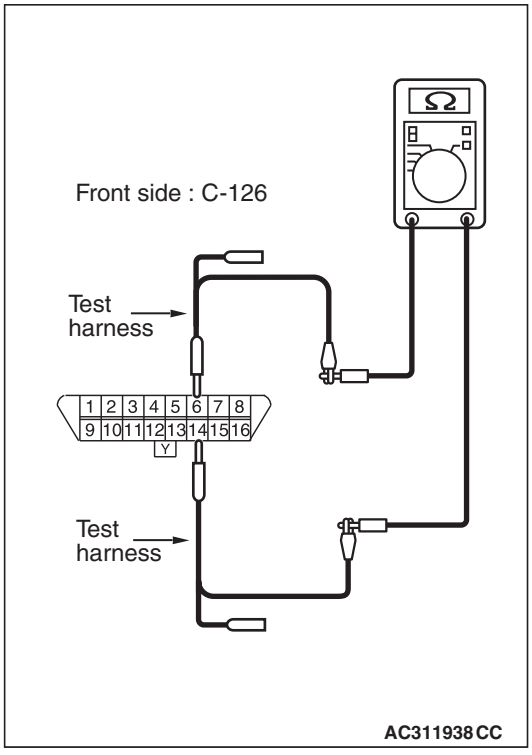


(1) Measure at the diagnosis connector wiring harness side.
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-126 diagnosis connector terminal Nos. 6 and 14

Q: How much resistance is measured?

2 Ω or less : Diagnose the lines between the CAN_L and H for short circuit. Refer to P.54D-378.

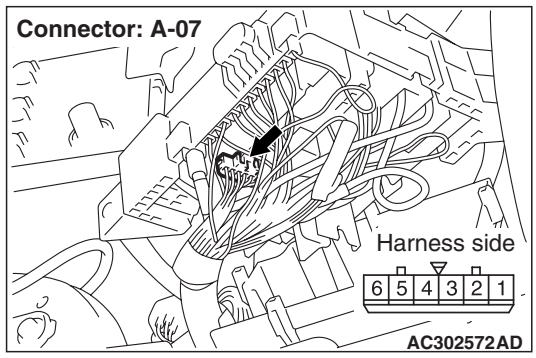
No continuity : Diagnose the terminator resistors at both ends. Refer to P.54D-419.

More than 2 Ω (i.e. continuity exists) : Go to Step 3 .

STEP 3. Connector check: A-07 joint connector (CAN1)

NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

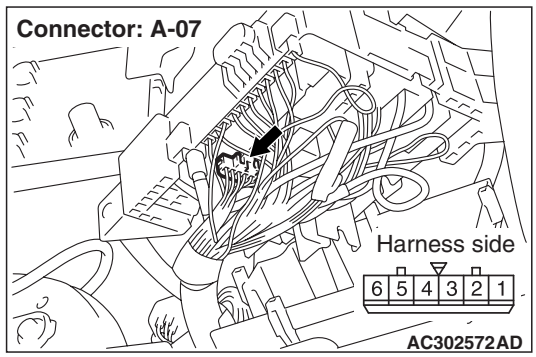
When checking the joint connector, ensure that its wiring harness side is not damaged.

Q: Is the check result normal?

YES : Go to Step 4 .

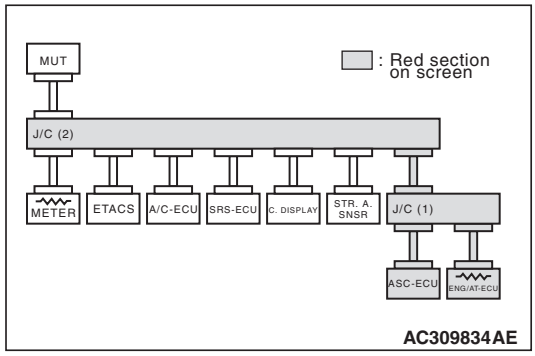
NO : Repair a defective connector or replace the joint connector (front wiring harness assembly).

STEP 4. MUT-III CAN bus diagnostics (A-07 joint connector (CAN1)



(1) Disconnect the joint connector (CAN1), and

check by using the MUT-III.



(2) Check that the MUT-III indications correspond to the illustration.

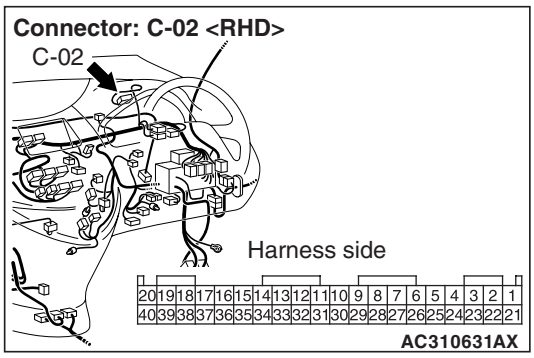
Q: Is the check result normal?

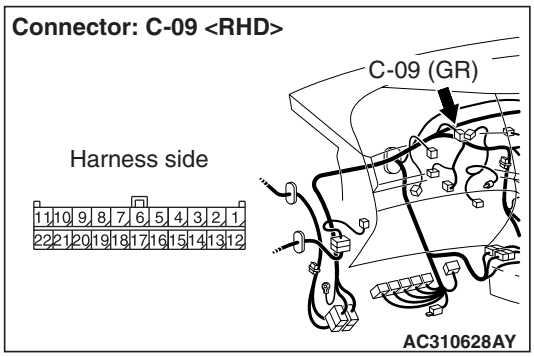
YES : <MUT-III indications correspond to the illustration> Go to Step 25 .

NO : <MUT-III indications do not correspond to the illustration> Go to Step 5 .

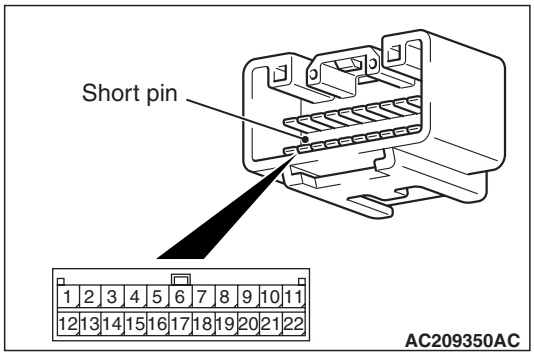
STEP 5. Connector check: C-09 joint connector (CAN2) and C-02 combination meter connector

⚠ CAUTION





The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.



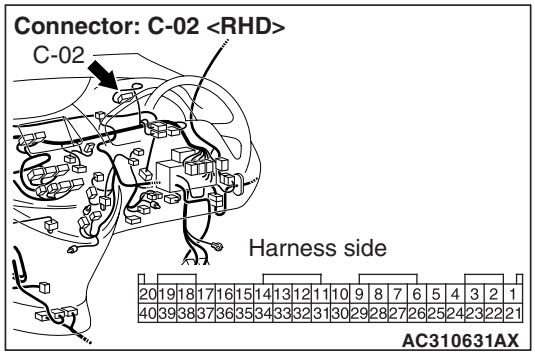
When checking the joint connector, ensure that its wiring harness side is not damaged.

Q: Is the check result normal?

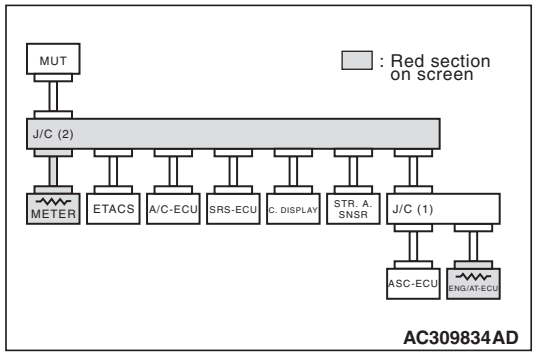
YES : Go to Step 6 .

NO : Repair a defective connector or replace the joint connector.

STEP 6. MUT-III CAN bus diagnostics (C-02 combination meter connector disconnected)



(1) Disconnect the combination meter connector, and diagnose by using the MUT-III.



(2) Check that the MUT-III indications correspond to the illustration.

Q: Is the check result normal?

YES : <MUT-III indications correspond to the illustration> Go to Step 7 .

NO : <MUT-III indications do not correspond to the illustration> Go to Step 8 .

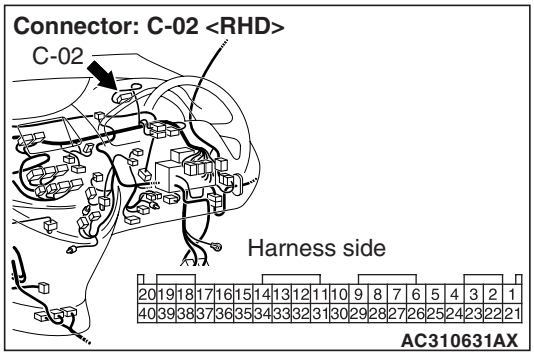
STEP 7. Resistance measurement at C-09 joint connector (CAN2) and C-02 combination meter connector.

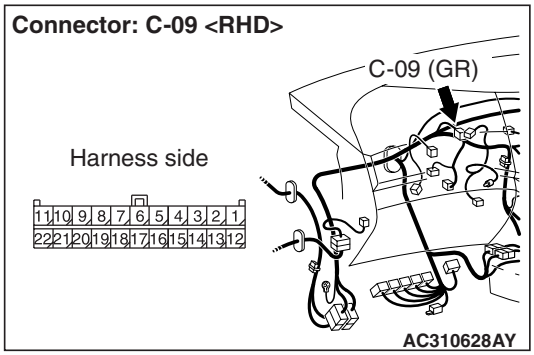
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the joint connector (CAN2) and the combination meter connector, and measure at the wiring harness side.

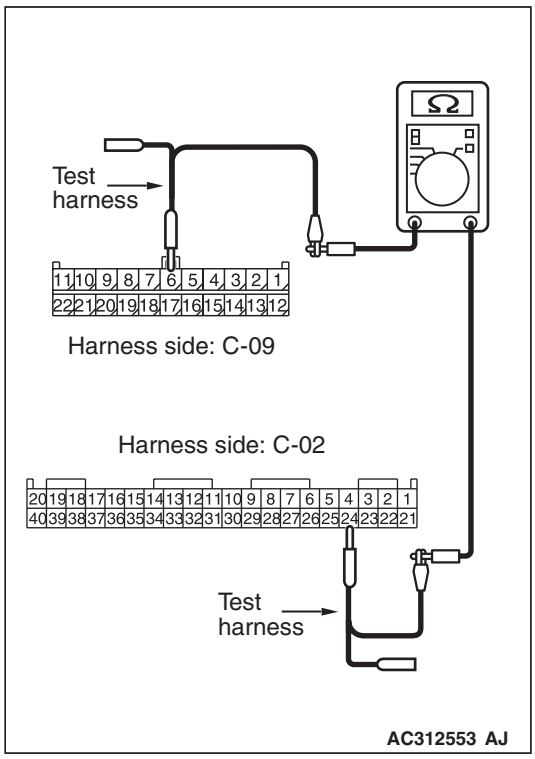
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

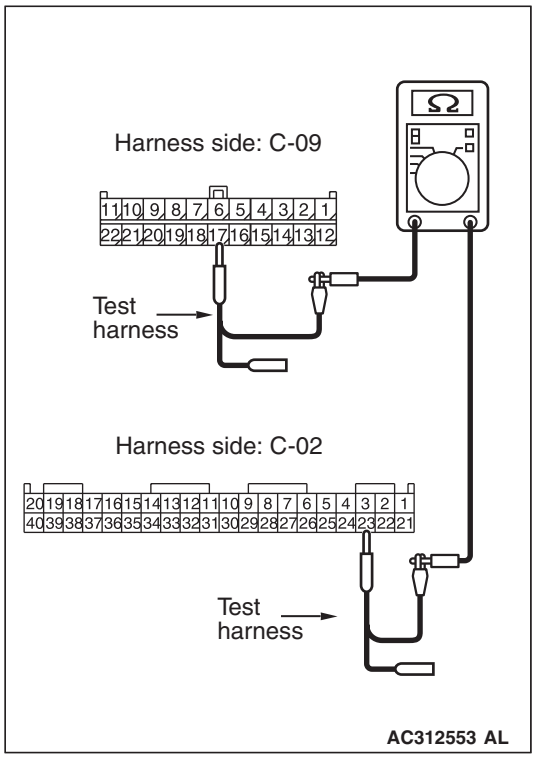
(3) Ensure that the negative battery terminal is

disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal No.6 and C-02 combination meter connector terminal No.24

OK: 2 Ω or less



(5) Continuity between C-09 joint connector (CAN2) terminal No.17 and C-02 combination meter connector terminal No.23

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

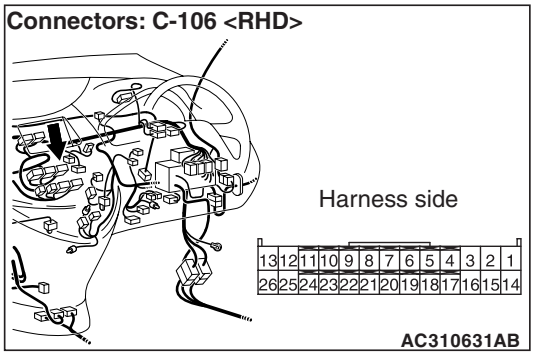
Q: Are the check results normal?

YES : <All the resistances measure 2 Ω or less> Power supply to the combination meter may be suspected. Diagnose the combination meter. Refer to P.54A-55.

NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between joint connector (CAN2) and the combination meter connector.

STEP 8. Connector check: C-106 A/C-ECU connector

⚠ CAUTION



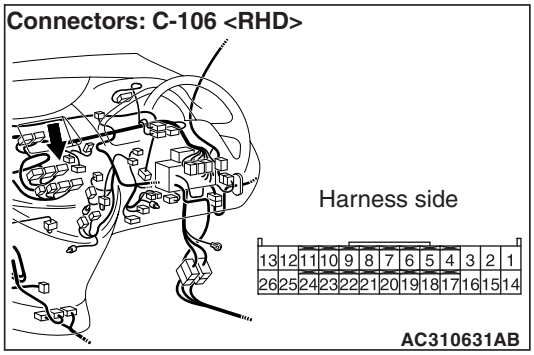
The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 9 .

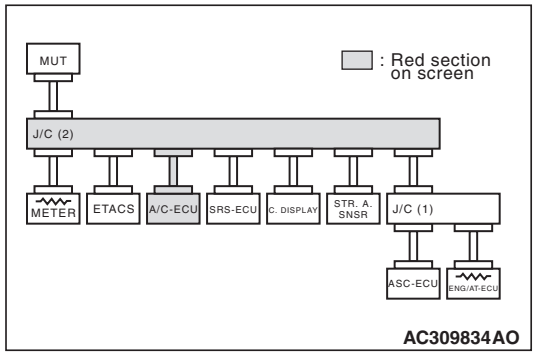
NO : Repair the defective connector.

STEP 9. MUT-III CAN bus diagnostics (C-106 A/C-ECU connector disconnected)



(1) Disconnect the A/C-ECU connector, and

diagnose by using the MUT-III.



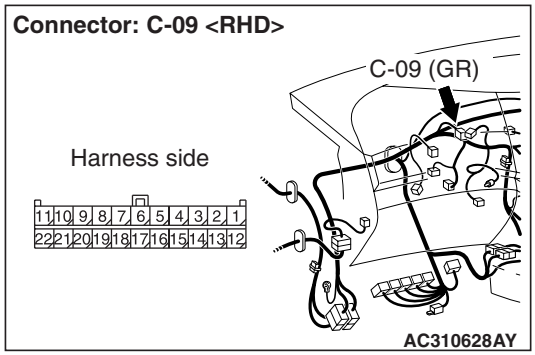
(2) Check that the MUT-III indications correspond to the illustration.

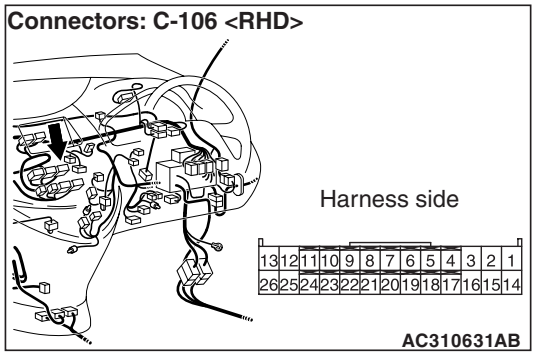
Q: Is the check result normal?
YES : <MUT-III indications correspond to the illustration> Go to Step 10 .
NO : <MUT-III indications do not correspond to the illustration> Go to Step 11 .

STEP 10. Resistance measurement at C-09 joint connector (CAN2) and C-106 A/C-ECU connector.

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.

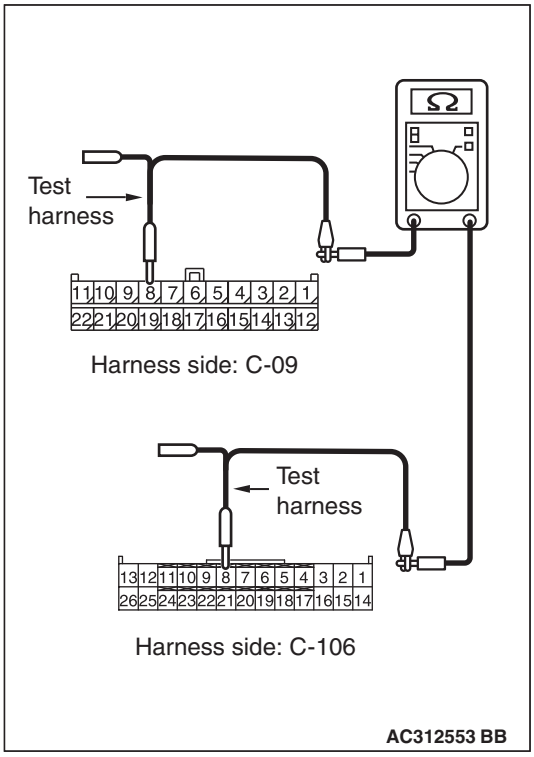




(1) Disconnect the joint connector (CAN2) and the A/C-ECU connector, and measure at the wiring harness side.
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

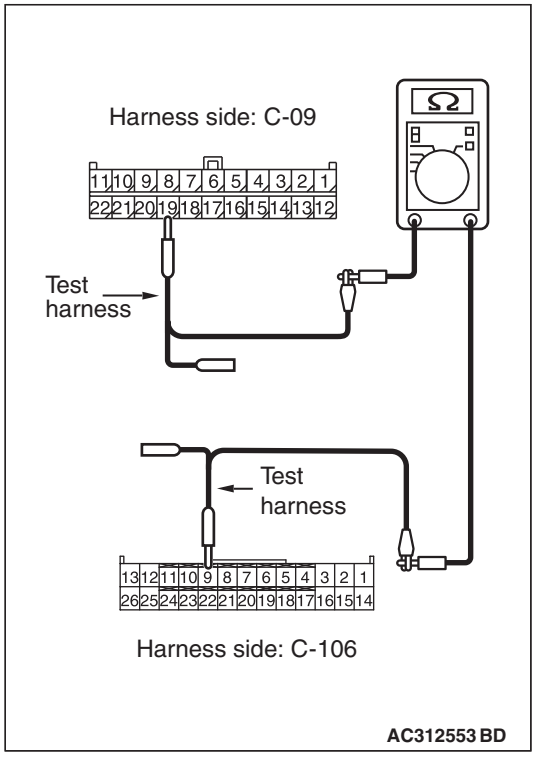
(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal No.8 and C-106 A/C-ECU connector

terminal No.8

OK: 2 Ω or less



(5) Continuity between C-09 joint connector (CAN2) terminal No.19 and C-106 A/C-ECU connector terminal No.9

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

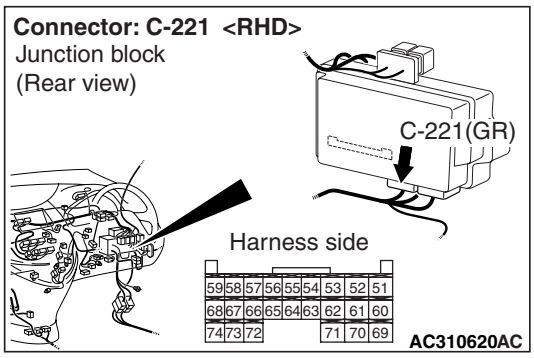
Q: Are the check results normal?

YES : <All the resistances measure 2 Ω or less> Power supply to the A/C-ECU may be suspected. Diagnose the air conditioner system. Refer to P.55-178.

NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between the joint connector (CAN2) and the A/C-ECU connector.

STEP 11. Connector check: C-221 ETACS-ECU connector

⚠ CAUTION



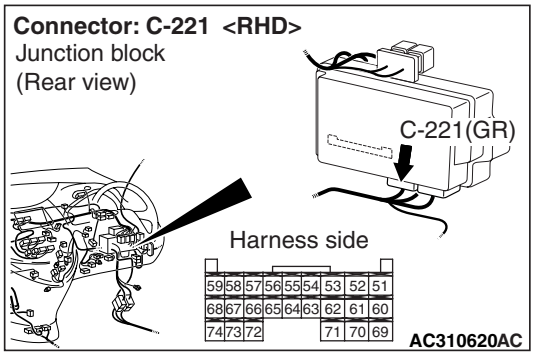
The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

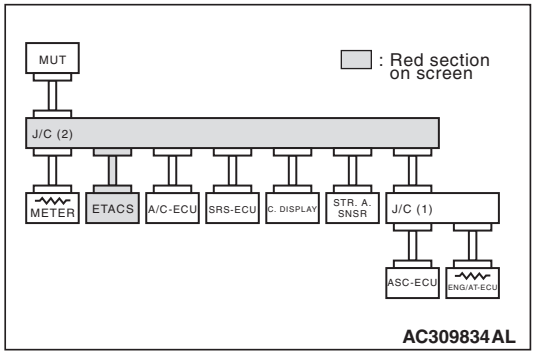
YES : Go to Step 12 .

NO : Repair the defective connector.

STEP 12. MUT-III CAN bus diagnostics (C-221 ETACS-ECU connector disconnected)



(1) Disconnect the ETACS-ECU connector, and diagnose by using the MUT-III.



(2) Check that the MUT-III indications correspond to the illustration.

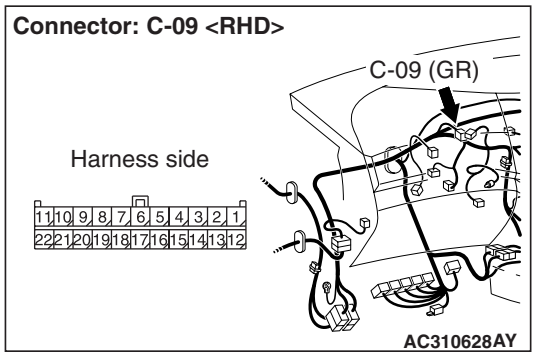
Q: Is the check result normal?

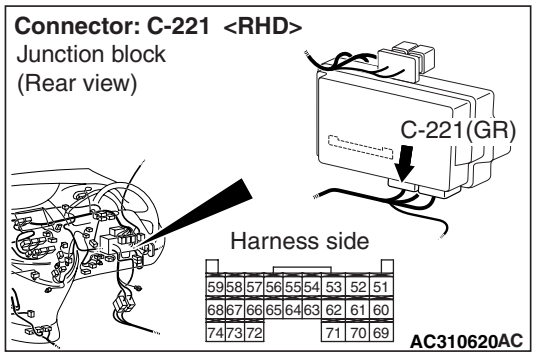
YES : <MUT-III indications correspond to the illustration> Go to Step 13 .
NO : <MUT-III indications do not correspond to the illustration> Go to Step 14 .

STEP 13. Resistance measurement at C-09 joint connector (CAN2) and C-221 ETACS-ECU connector.

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.

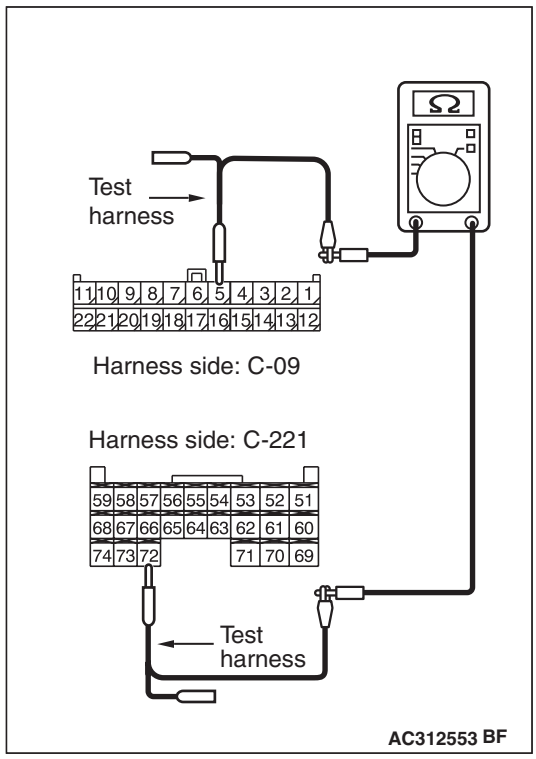




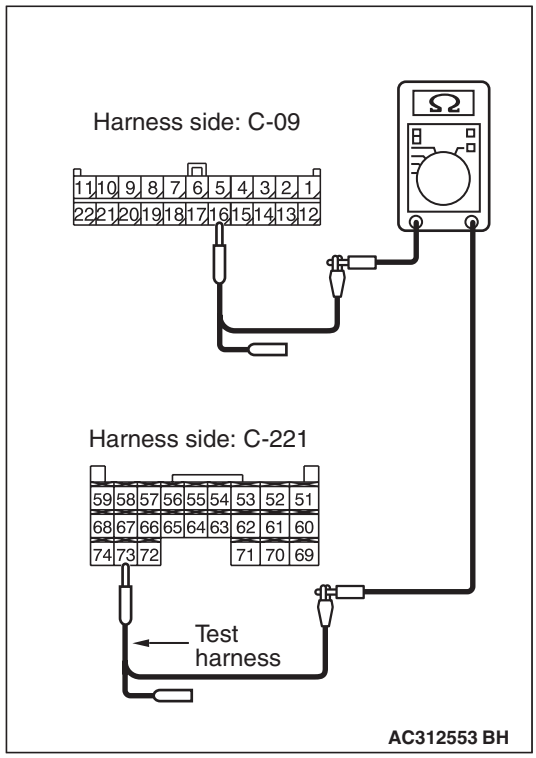
(1) Disconnect the joint connector (CAN2) and the ETACS-ECU connector, and measure at the wiring harness side.
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal No.5 and C-221 ETACS-ECU connector terminal No.72
OK: 2 Ω or less



(5) Continuity between C-09 joint connector (CAN2) terminal No.16 and C-221 ETACS-ECU

connector terminal No.73

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

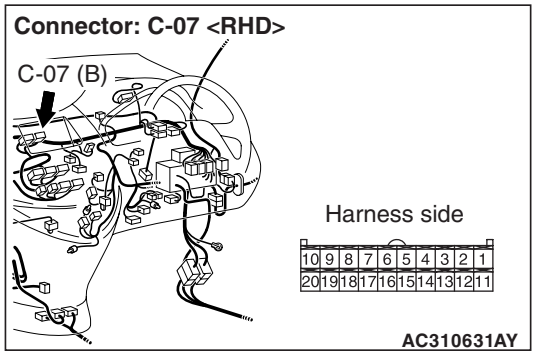
Q: Are the check results normal?

YES : <All the resistances measure 2 Ω or less> Power supply to the ETACS-ECU may be suspected. Diagnose the SWS. Refer to P.54B-87.

NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between the joint connector (CAN2) and the ETACS-ECU connector.

STEP 14. Connector check: C-07 centre display connector

⚠ CAUTION



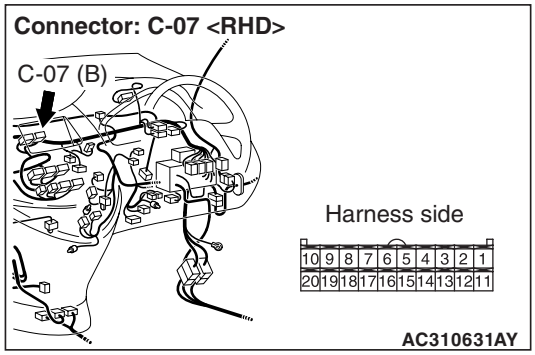
The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

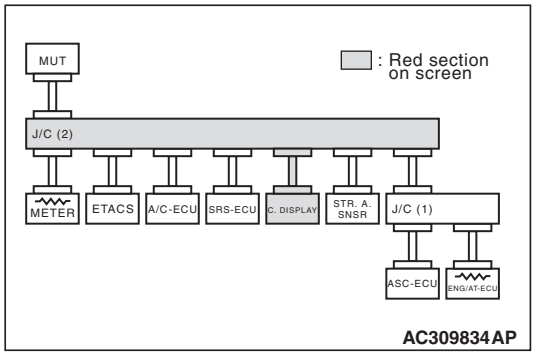
YES : Go to Step 15 .

NO : Repair the defective connector.

STEP 15. MUT-III CAN bus diagnostics (C-07 centre display connector disconnected)



(1) Disconnect the centre display connector, and diagnose by using the MUT-III.



(2) Check that the MUT-III indications correspond to the illustration.

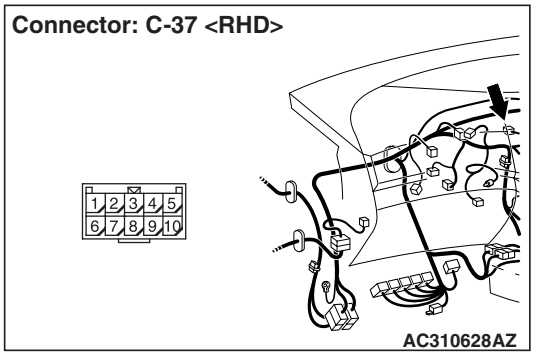
Q: Is the check result normal?

YES : <MUT-III indications correspond to the illustration> Go to Step 16 .

NO : <MUT-III indications do not correspond to the illustration> Go to Step 27 .

STEP 16. Connector check: C-37 jumper connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Check that the wiring harness of the jumper connector is not damaged.

Q: Is the check result normal?

YES : Go to Step 17 .

NO : Repair the defective connector.

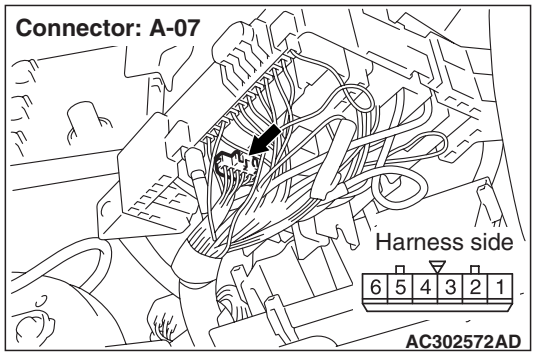
STEP 17. Resistance measurement at C-37 jumper connector and C-09 joint connector (CAN2).

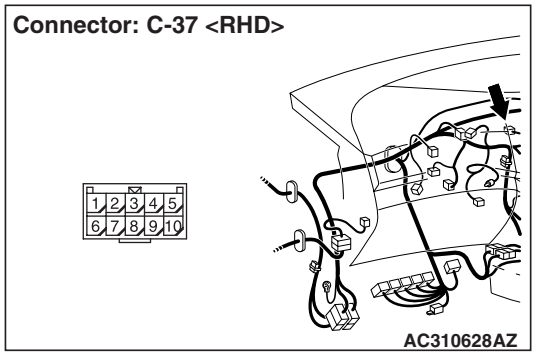
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





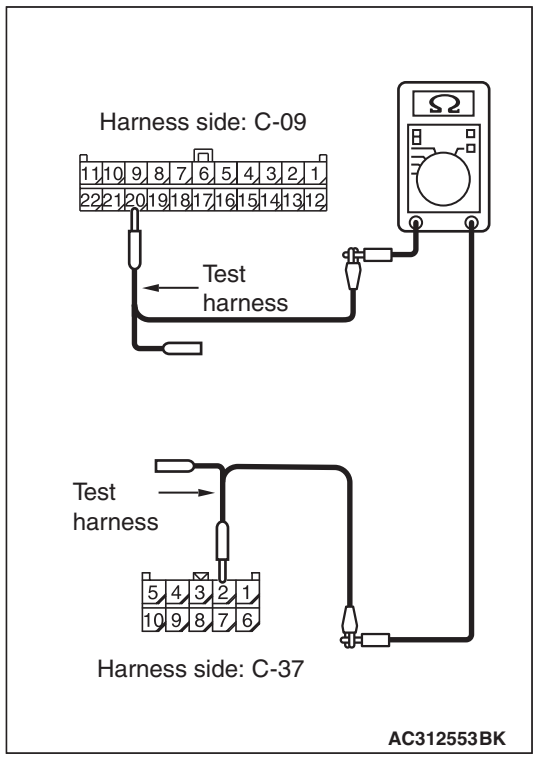
(1) Disconnect the joint connector (CAN2) and the jumper connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

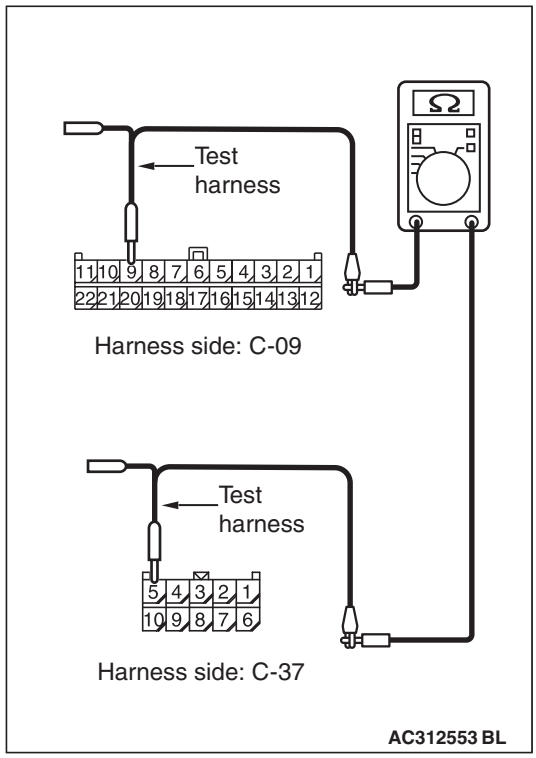
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-37 jumper connector terminal No.2 and C-09 joint connector (CAN2) terminal No.20

OK: 2 Ω or less



(5) Continuity between C-37 jumper connector terminal No.5 and C-09 joint connector (CAN2)

terminal No.9

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Are the check results normal?

YES : <All the voltages measure 2 Ω or less> Go to Step 18 .

NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between joint connector (CAN2) and the jumper connector.

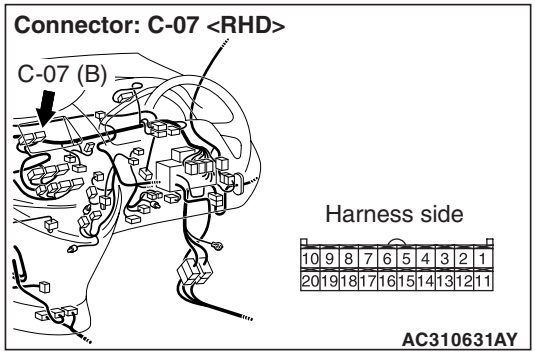
STEP 18. Resistance measurement at C-37 jumper connector and C-07 centre display connector.

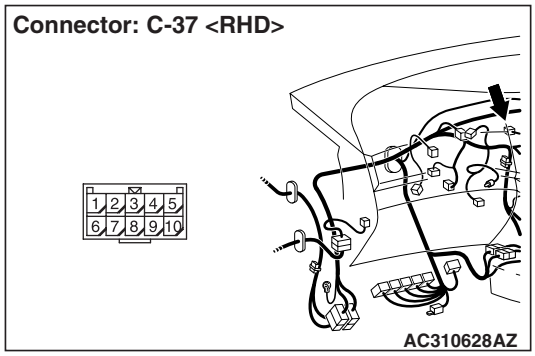
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





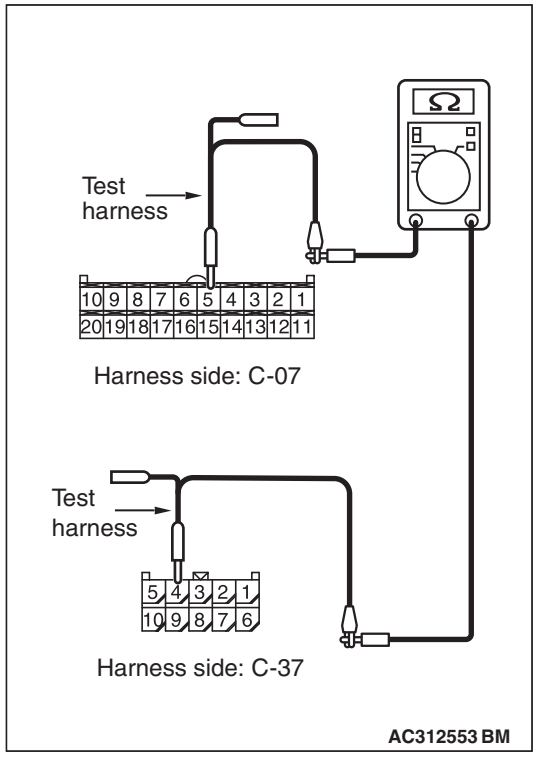
(1) Disconnect the centre display connector and the jumper connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

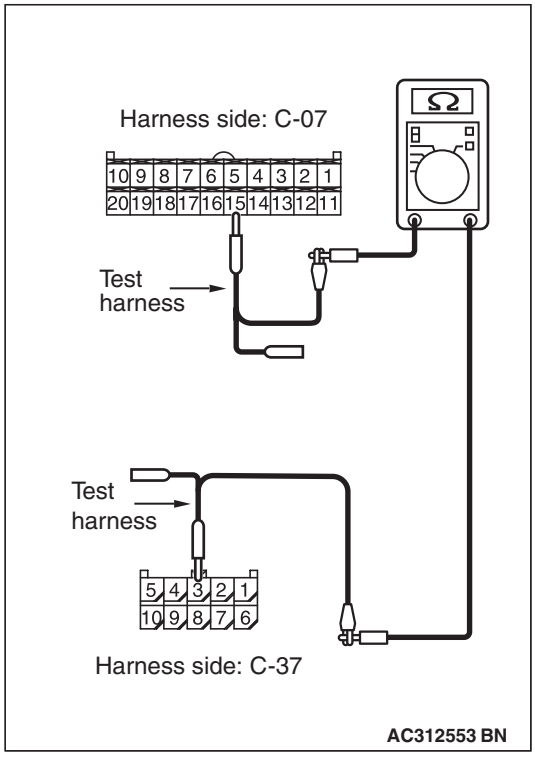
(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-37 jumper connector terminal No.4 and C-07 centre display connector

terminal No.5.

OK: 2 Ω or less



(5) Continuity between C-37 jumper connector terminal No.3 and C-07 centre display connector terminal No.15.

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

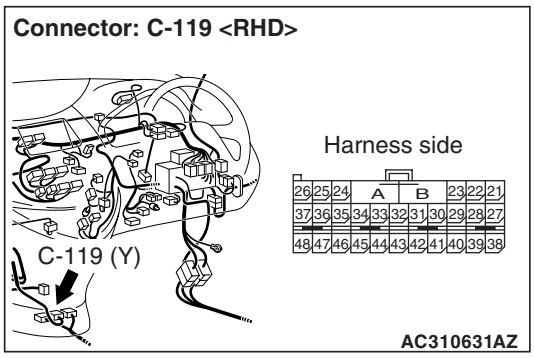
Q: Are the check results normal?

YES : <All the resistances measure 2 TAG or less> Power supply to the centre display may be suspected. Diagnose the centre display system. Refer to P.54A-161.

NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between the centre display connector and the jumper connector.

STEP 19. Connector check: C-119 SRS-ECU connector

⚠ CAUTION



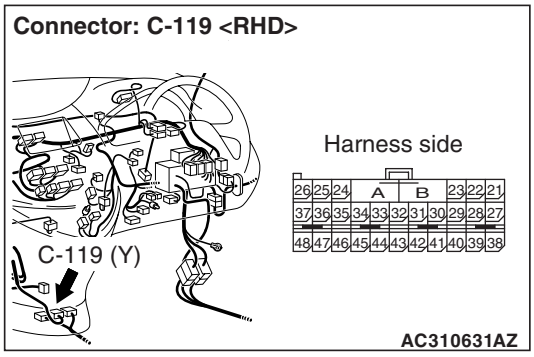
The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

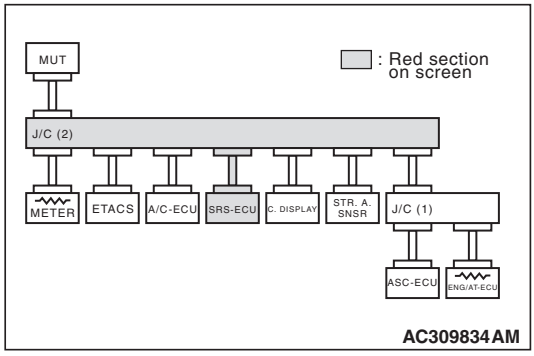
YES : Go to Step 20 .

NO : Repair the defective connector.

STEP 20. MUT-III CAN bus diagnostics (C-119 SRS-ECU connector disconnected)



(1) Disconnect the SRS-ECU connector, and diagnose by using the MUT-III.



(2) Check that the MUT-III indications correspond to the illustration.

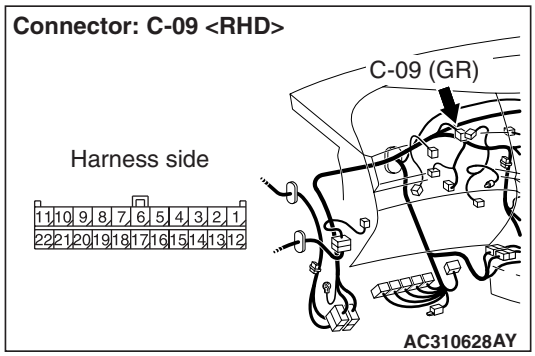
Q: Is the check result normal?

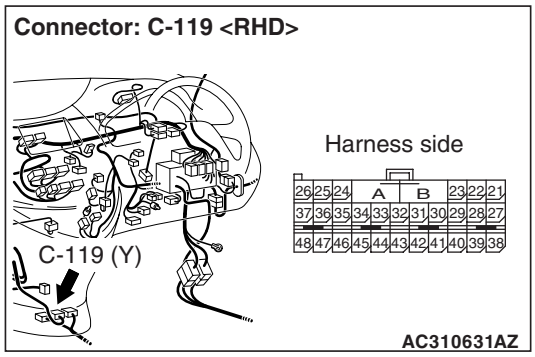
YES : <MUT-III indications correspond to the illustration> Go to Step 21 .
NO : <MUT-III indications do not correspond to the illustration> Go to Step 22 .

STEP 21. Resistance measurement at C-09 joint connector (CAN2) and C-119 SRS-ECU connector.

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.

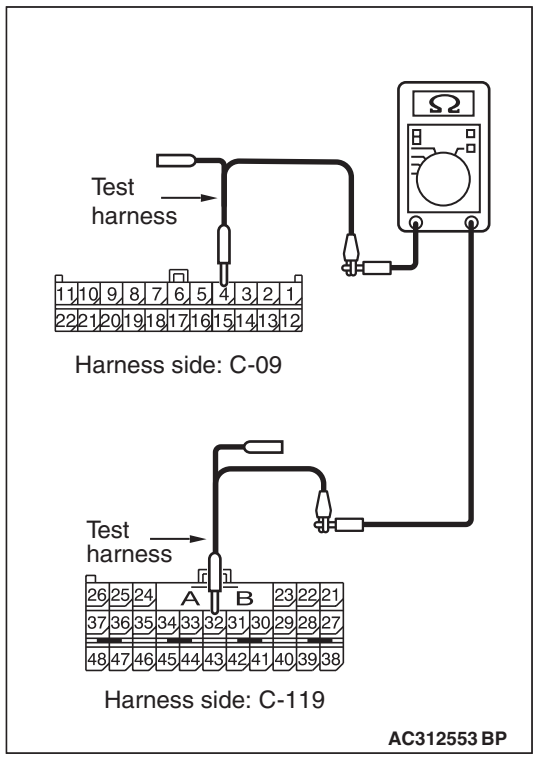




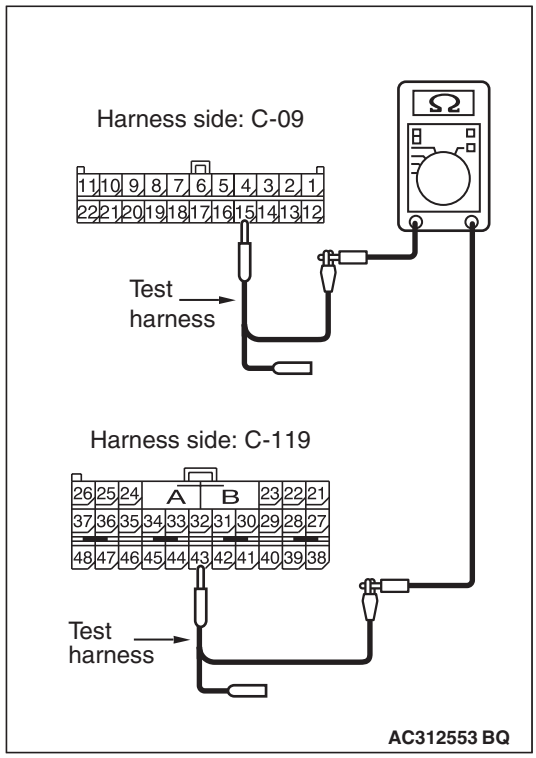
(1) Disconnect the joint connector (CAN2) and the SRS-ECU connector, and measure at the wiring harness side.
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal No.4 and C-119 SRS-ECU connector terminal No.32
OK: 2 Ω or less



(5) Continuity between C-09 joint connector (CAN2) terminal No.15 and C-119 SRS-ECU connector

terminal No.43

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

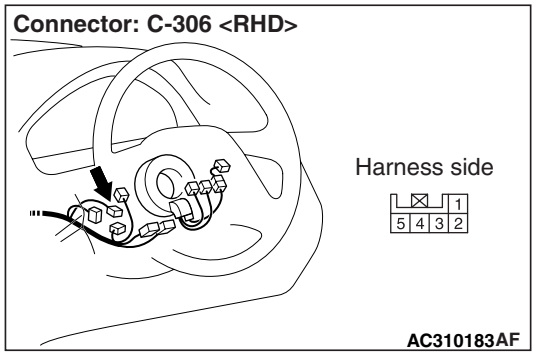
Q: Are the check results normal?

YES : <All the resistances measure 2 Ω or less> Power supply to the SRS-ECU may be suspected. Diagnose the SRS system. Refer to P.52B-201.

NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between the joint connector (CAN2) and the SRS-ECU connector.

STEP 22. Connector check: C-306 steering wheel angle sensor connector

⚠ CAUTION



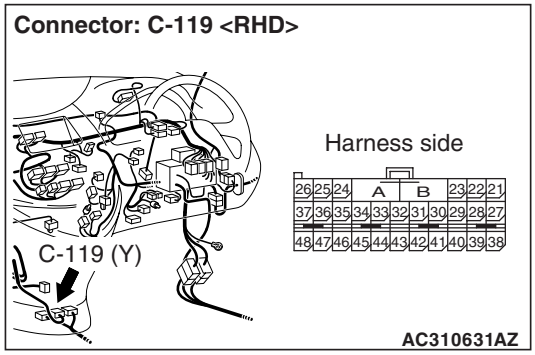
The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

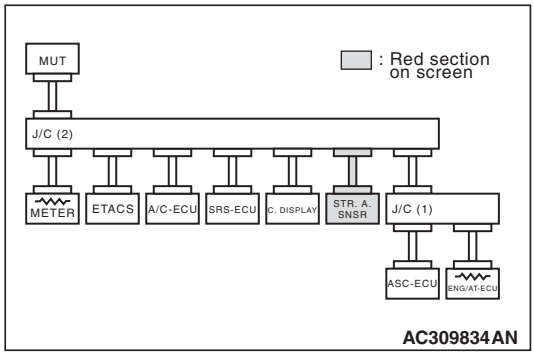
YES : Go to Step 23 .

NO : Repair the defective connector.

STEP 23. MUT-III CAN bus diagnostics (C-119 steering wheel angle sensor connector disconnected)



(1) Disconnect the steering wheel angle sensor connector, and diagnose by using the MUT-III.



(2) Check that the MUT-III indications correspond to the illustration.

Q: Is the check result normal?

YES : <MUT-III indications correspond to the illustration> Go to Step 24 .

NO : <MUT-III indications do not correspond to the illustration> Go to Step 34 .

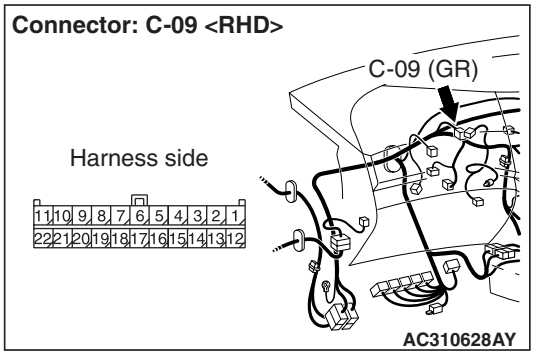
STEP 24. Resistance measurement at C-09 joint connector (CAN2) and C-306 steering wheel angle sensor connector.

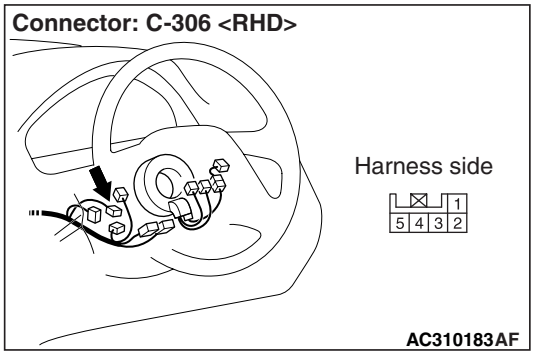
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





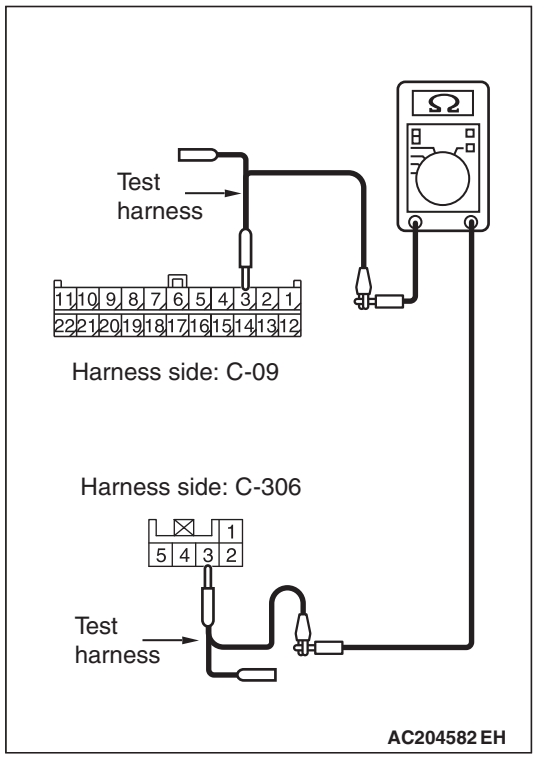
(1) Disconnect the joint connector (CAN2) and the steering wheel angle sensor connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

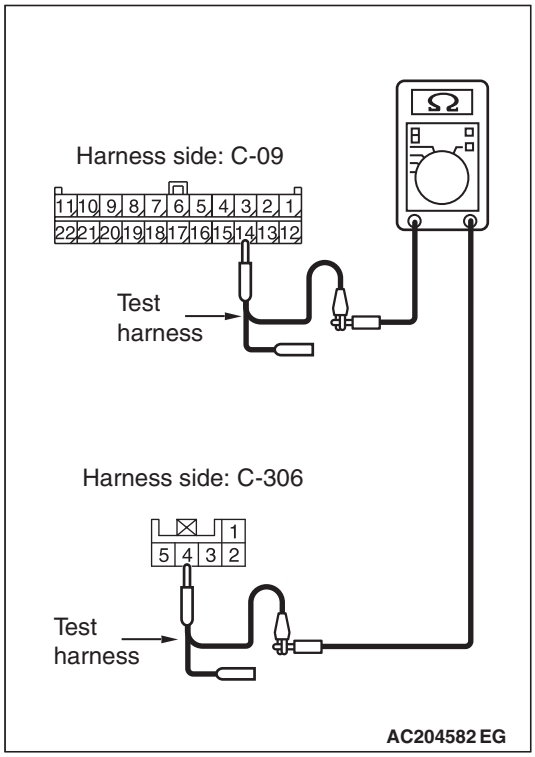
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal No.3 and C-306 steering wheel angle sensor connector terminal No.3

OK: 2 Ω or less



(5) Continuity between C-09 joint connector (CAN2) terminal No.14 and C-306 steering wheel angle sensor connector terminal No.4

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

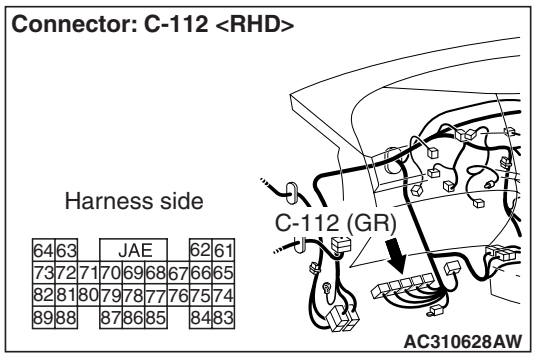
Q: Are the check results normal?

YES : <All the resistances measure 2 Ω or less> Power supply to the steering wheel angle sensor may be suspected. Diagnose the ASC system. Refer to P.35C-135.

NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between the joint connector (CAN2) and the steering wheel angle sensor connector.

STEP 25. Connector check: C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector

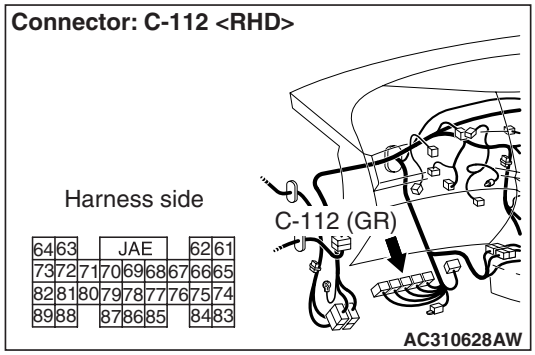
⚠ CAUTION



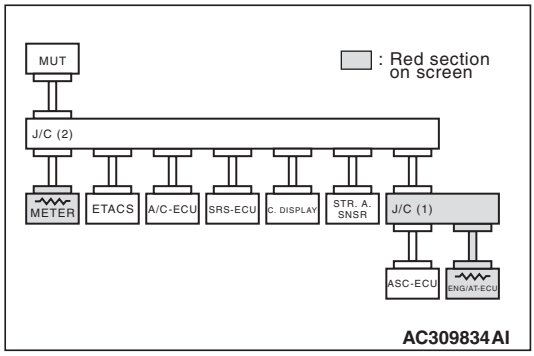
The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?
YES : Go to Step 26 .
NO : Repair the defective connector.

STEP 26. MUT-III CAN bus diagnostics (C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector disconnected)



(1) Disconnect the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector, and diagnose by using the MUT-III.

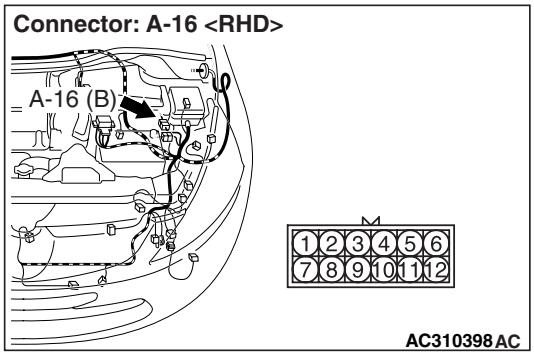


(2) Check that the MUT-III indications correspond to the illustration.

Q: Is the check result normal?
YES : <MUT-III indications correspond to the illustration> Go to Step 27 .
NO : <MUT-III indications do not correspond to the illustration> Go to Step 30 .

STEP 27. Connector check: A-16 intermediate connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?
YES : Go to Step 28 .
NO : Repair the defective connector.

STEP 28. Resistance measurement at A-16 intermediate connector and A-07 joint connector (CAN1).

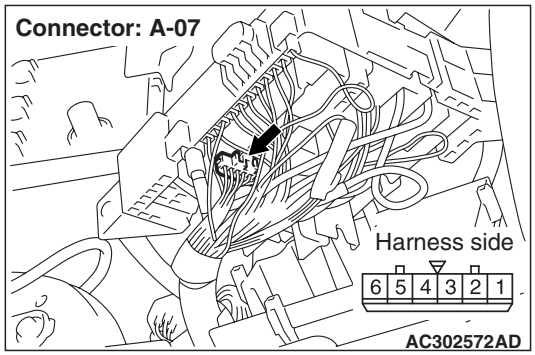
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

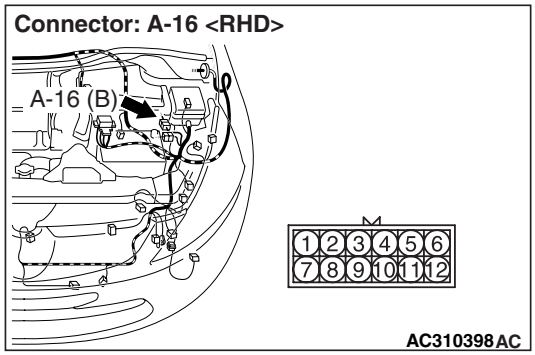
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





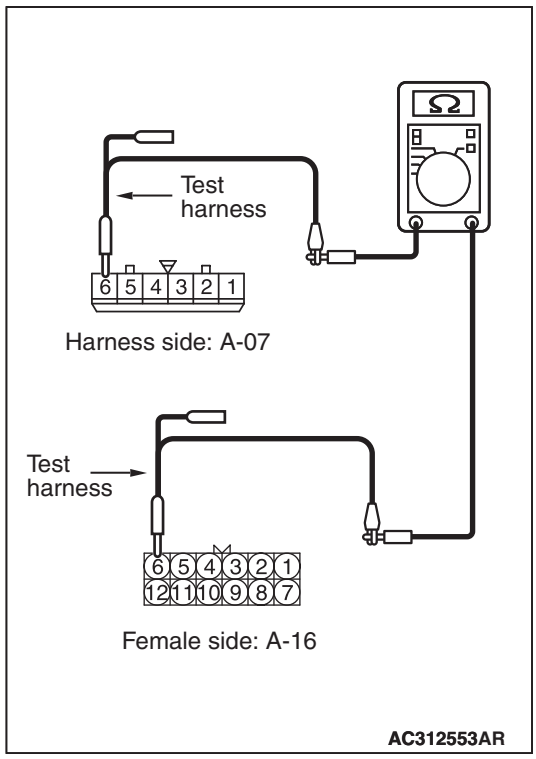
(1) Disconnect the joint connector (CAN1) and the intermediate connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

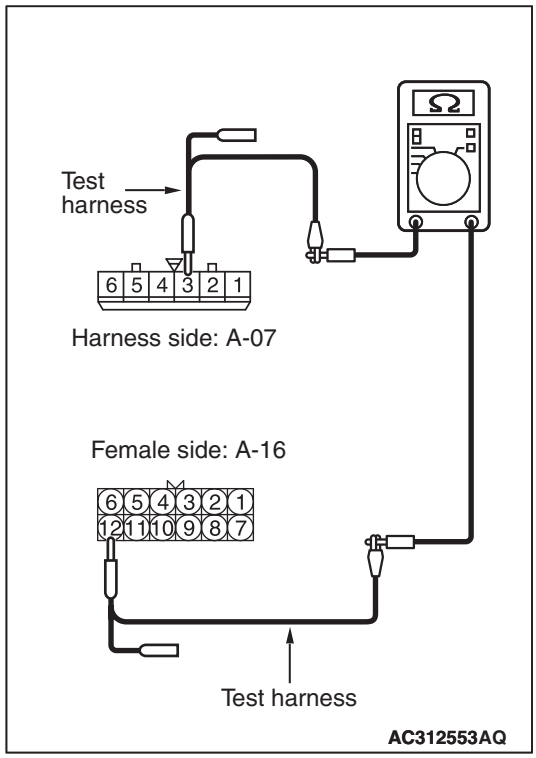
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between A-16 intermediate connector terminal No.6 and A-07 joint connector (CAN1) terminal No.6

OK: 2 Ω or less



(5) Continuity between A-16 intermediate connector terminal No.12 and A-07 joint connector (CAN1)

terminal No.3

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Are the check results normal?

YES : <All the voltages measure 2 Ω or less> Go to Step 29 .

NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between joint connector (CAN1) and the intermediate connector.

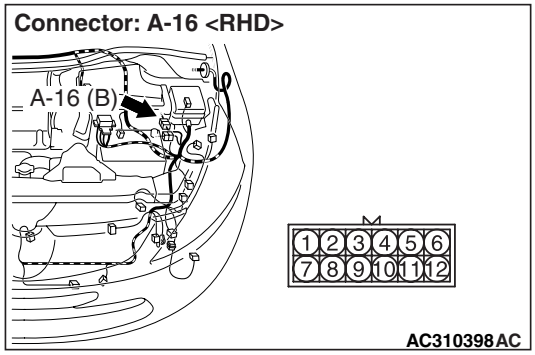
STEP 29. Resistance measurement at A-16 intermediate connector and C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector.

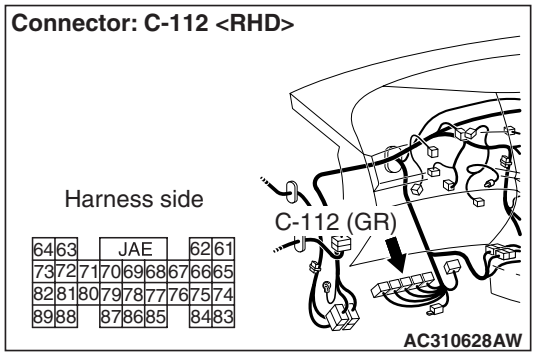
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





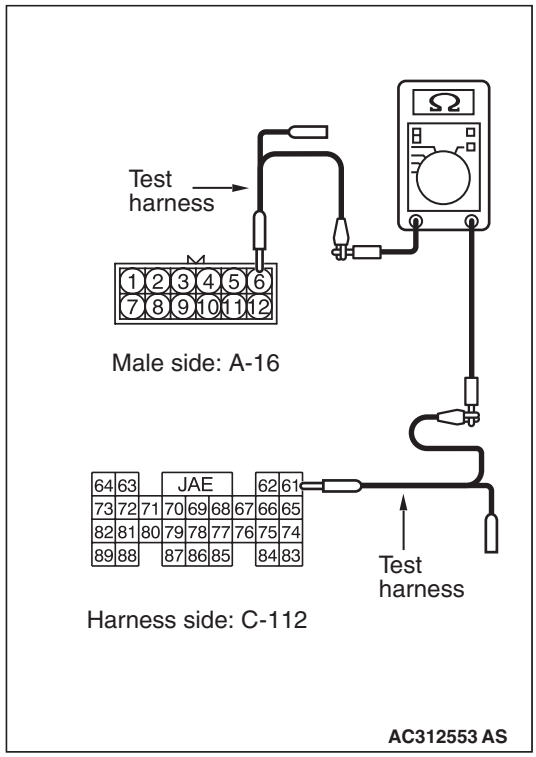
(1) Disconnect the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector and the intermediate connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

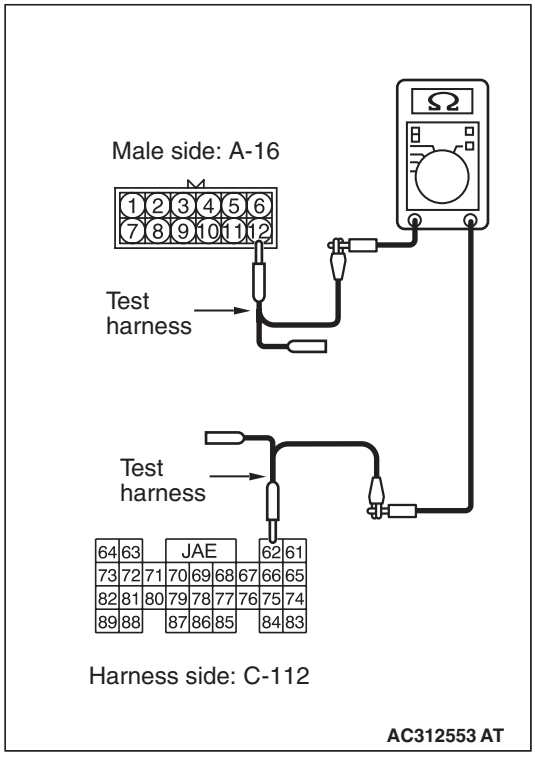
(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between A-16 intermediate connector terminal No.6 and C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector terminal

No.61.

OK: 2 Ω or less



(5) Continuity between A-16 intermediate connector terminal No.12 and C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector terminal No.62.

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

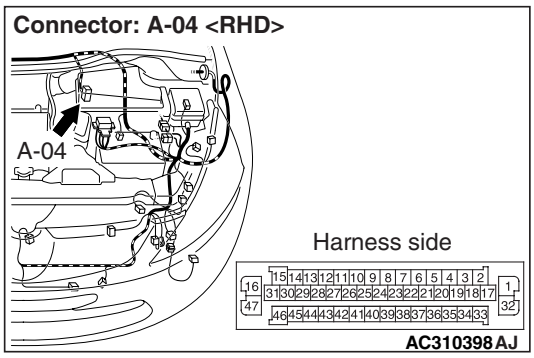
Q: Are the check results normal?

YES : <All the resistances measure 2 Ω or less> Power supply to the engine-ECU <M/T> or engine-A/T-ECU <A/T> may be suspected. Diagnose the engine control system. Refer to P.13A-321.

NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector and the joint connector (CAN1).

STEP 30. Connector check: A-04 ASC-ECU connector

⚠ CAUTION



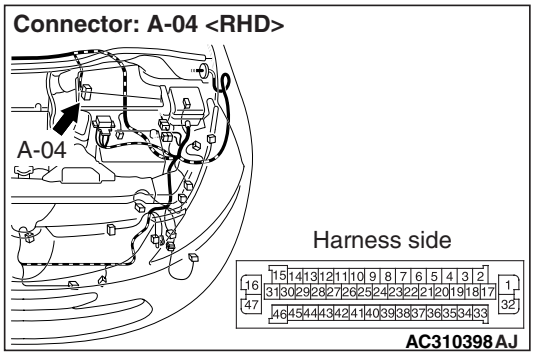
The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

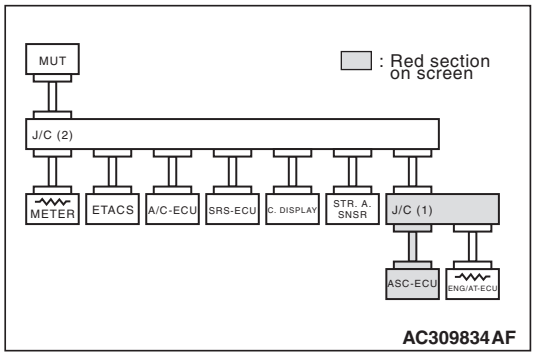
YES : Go to Step 31 .

NO : Repair the defective connector.

STEP 31. MUT-III CAN bus diagnostics (A-04 ASC-ECU connector disconnected)



(1) Disconnect the ASC-ECU connector, and diagnose by using the MUT-III.



(2) Check that the MUT-III indications correspond to the illustration.

Q: Is the check result normal?

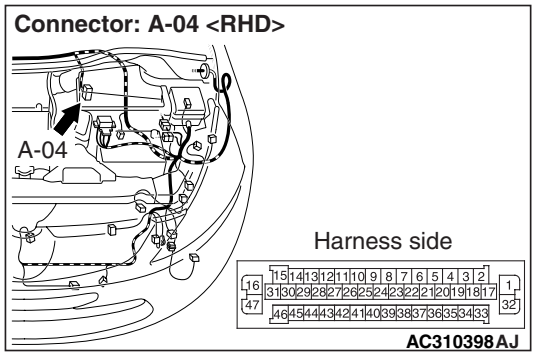
YES : <MUT-III indications correspond to the illustration> Go to Step 32 .
NO : <MUT-III indications do not correspond to the illustration> Go to Step 33 .

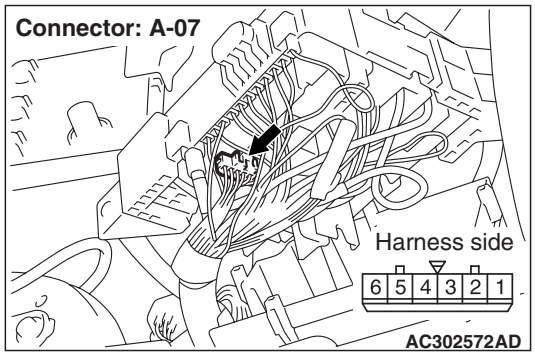
STEP 32. Resistance measurement at A-07 joint connector (CAN1) and A-04 ASC-ECU connector.

NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.

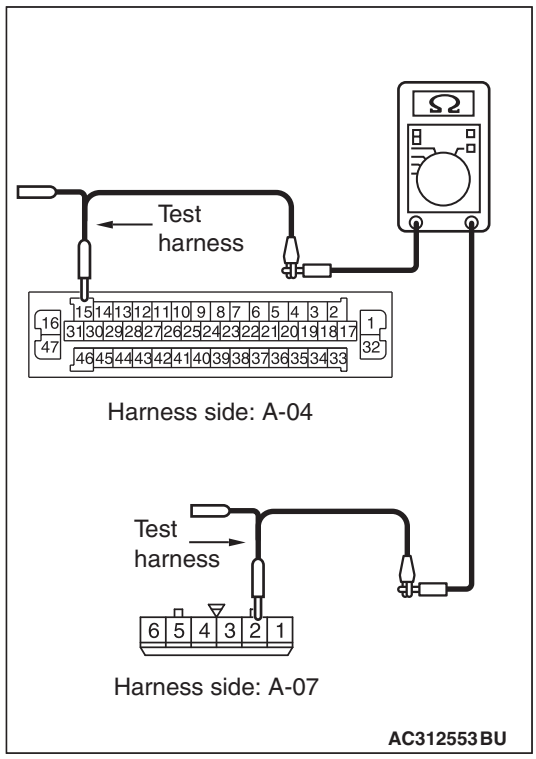




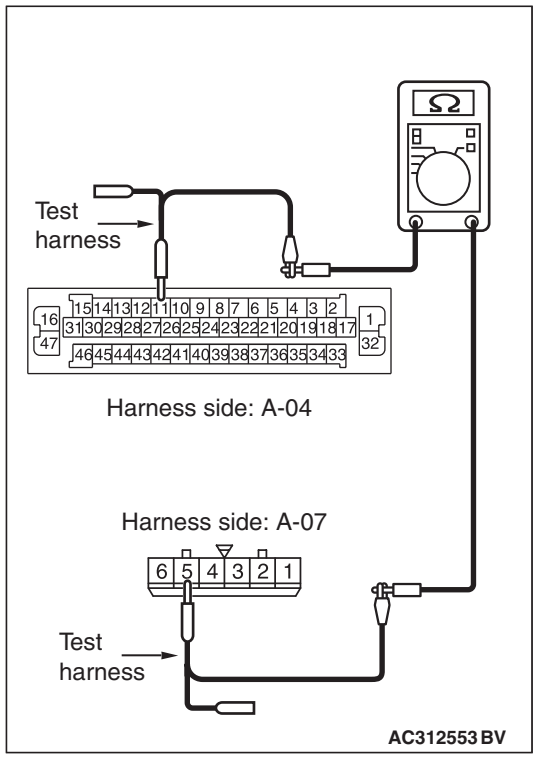
(1) Disconnect the joint connector (CAN1) and the ASC-ECU connector, and measure at the wiring harness side.
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between A-07 joint connector (CAN1) terminal No.2 and A-04 ASC-ECU connector terminal No.15
OK: 2 Ω or less



(5) Continuity between A-07 joint connector (CAN1) terminal No.5 and A-04 ASC-ECU connector

terminal No.11

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

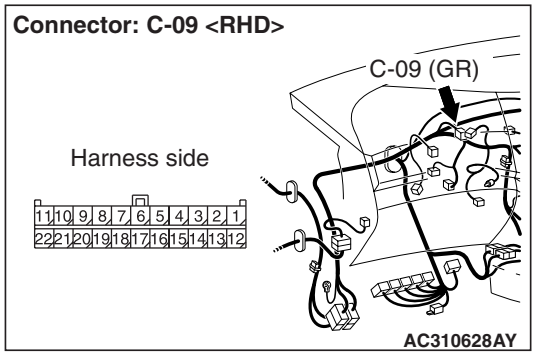
Q: Are the check results normal?

YES : <All the resistances measure 2 Ω or less> Power supply to the ASC-ECU may be suspected. Diagnose the ASC system. Refer to P.35C-129.

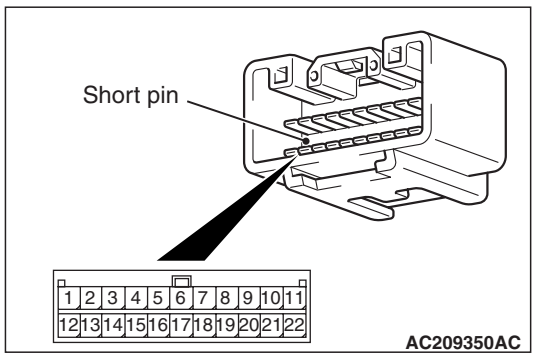
NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between the joint connector (CAN1) and the ASC-ECU connector.

STEP 33. Connector check: C-09 joint connector (CAN2)

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.



When checking the joint connector, ensure that its wiring harness side is not damaged.

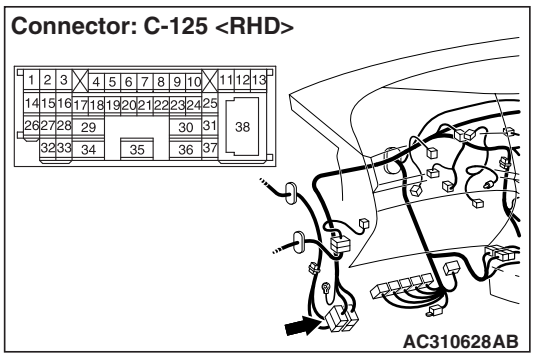
Q: Is the check result normal?

YES : Go to Step 34 .

NO : Repair a defective connector or replace the joint connector.

STEP 34. Connector check: C-125 intermediate connector

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 35 .

NO : Repair the defective connector.

STEP 35. Resistance measurement at C-125 intermediate connector and A-07 joint connector (CAN1).

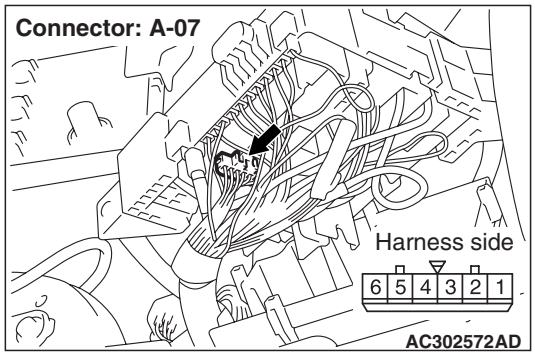
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

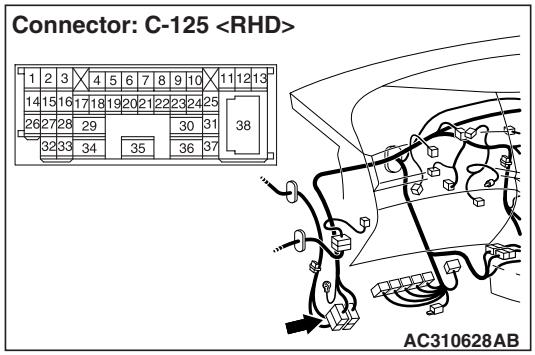
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





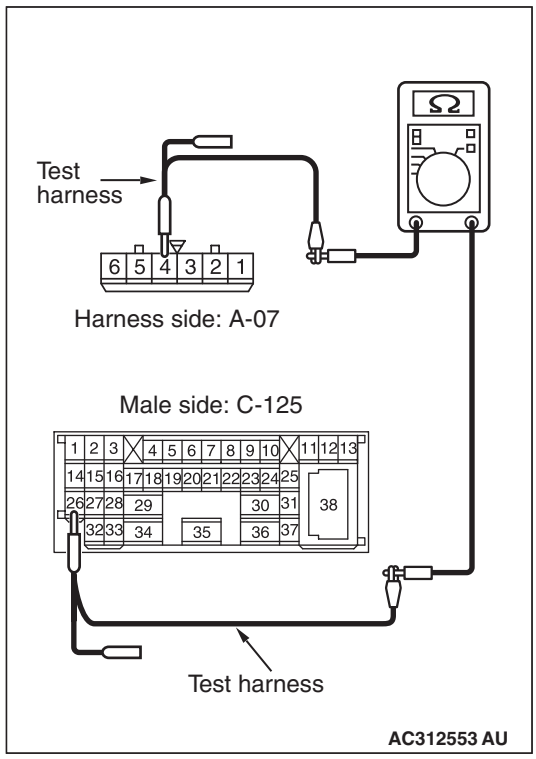
(1) Disconnect the joint connector (CAN1) and the intermediate connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

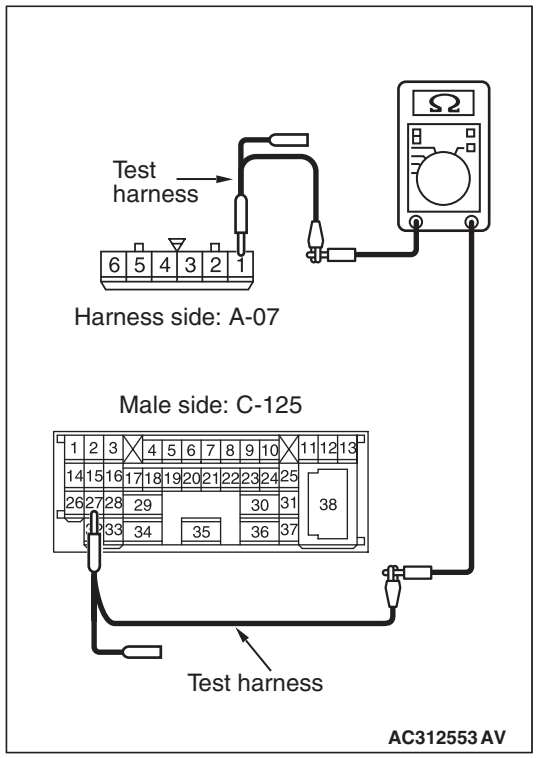
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-125 intermediate connector terminal No.26 and A-07 joint connector (CAN1) terminal No.4

OK: 2 Ω or less



(5) Continuity between C-125 intermediate connector terminal No.27 and A-07 joint

connector (CAN1) terminal No.1

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Are the check results normal?

YES : <All the voltages measure 2 Ω or less> Go to Step 36 .

NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between joint connector (CAN1) and the intermediate connector.

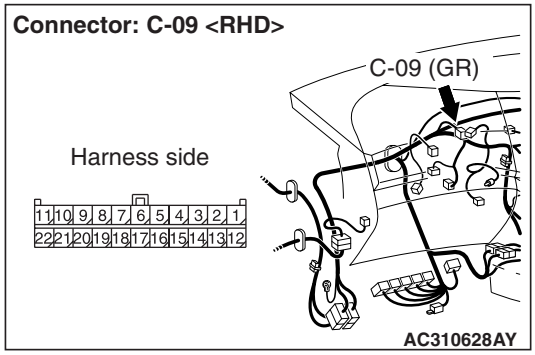
STEP 36. Resistance measurement at C-125 intermediate connector and C-09 joint connector (CAN2).

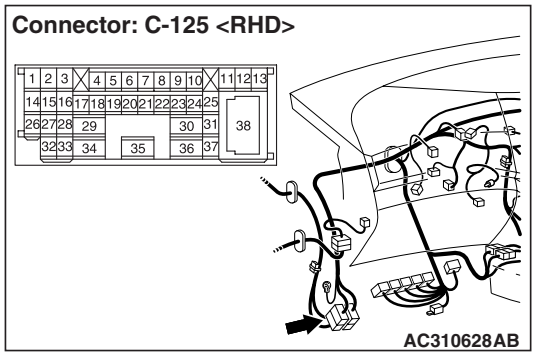
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





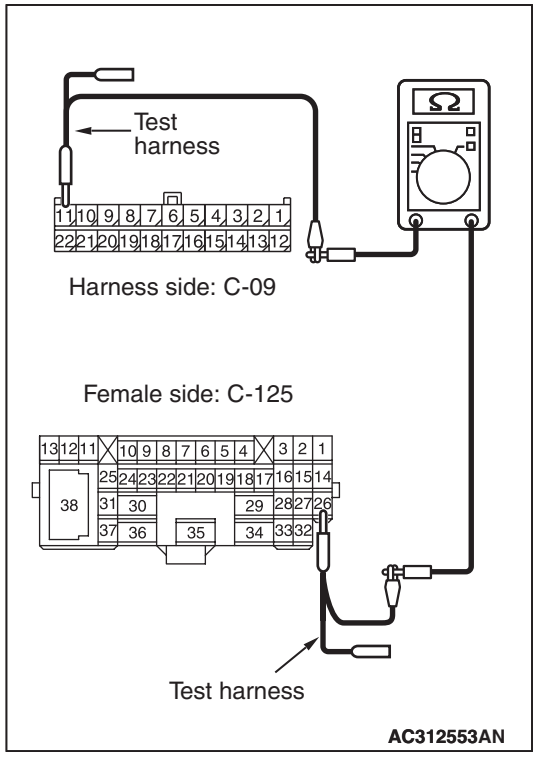
(1) Disconnect the joint connector (CAN2) and the intermediate connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

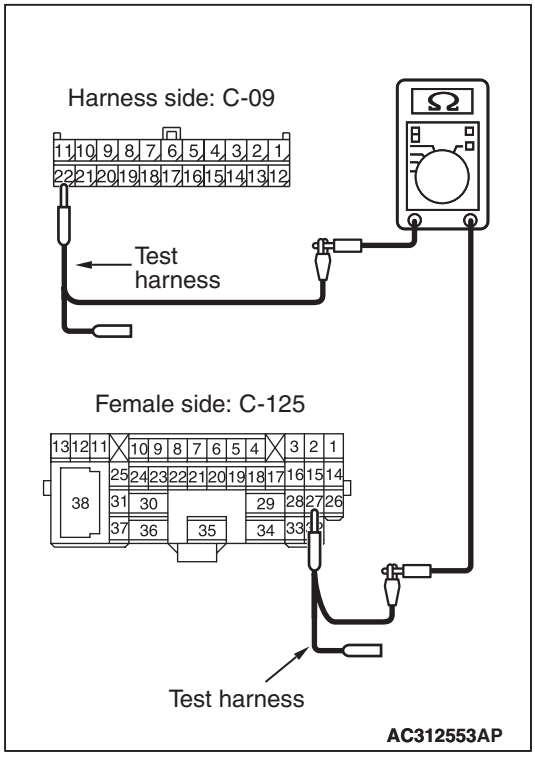
(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-125 intermediate connector terminal No.26 and C-09 joint

connector (CAN2) terminal No.11

OK: 2 Ω or less



(5) Continuity between C-125 intermediate connector terminal No.27 and C-09 joint connector (CAN2) terminal No.22

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Are the check results normal?

YES : <All the voltages measure 2 Ω or less> Go to Step 37 .

NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between joint connector (CAN2) and the intermediate connector.

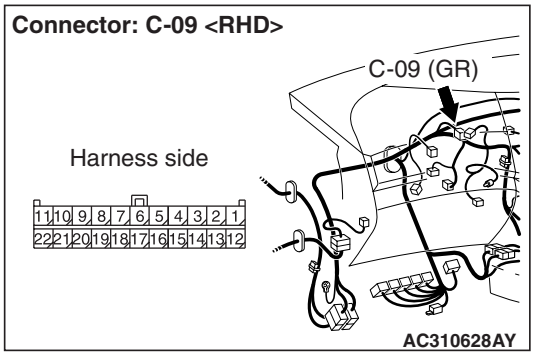
STEP 37. Resistance measurement at C-09 joint connector (CAN2) and C-126 diagnosis connector.

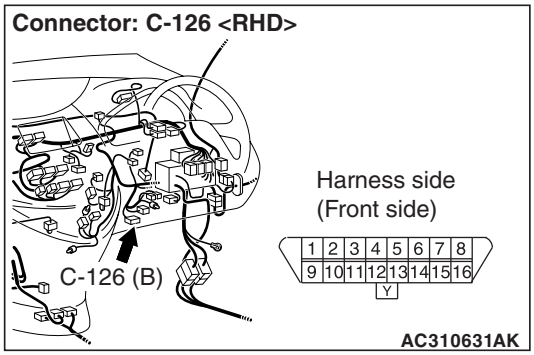
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the connector, and measure at the wiring harness side.

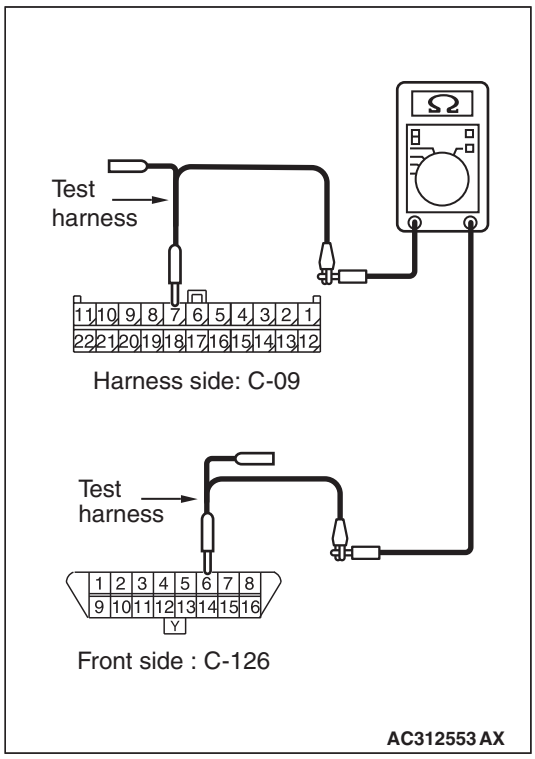
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

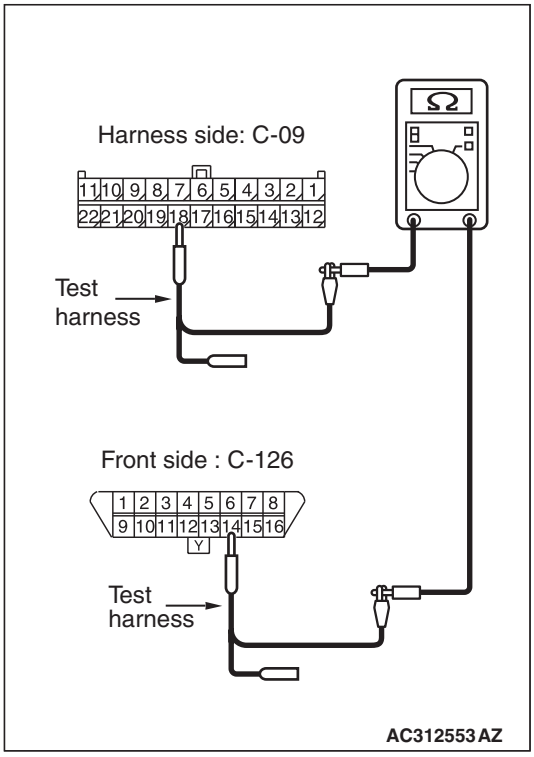
(3) Ensure that the negative battery terminal is

disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal No.7 and C-126 diagnosis connector terminal No.6

OK: 2 Ω or less



(5) Continuity between C-09 joint connector (CAN2) terminal No.18 and C-126 diagnosis connector terminal No.14

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

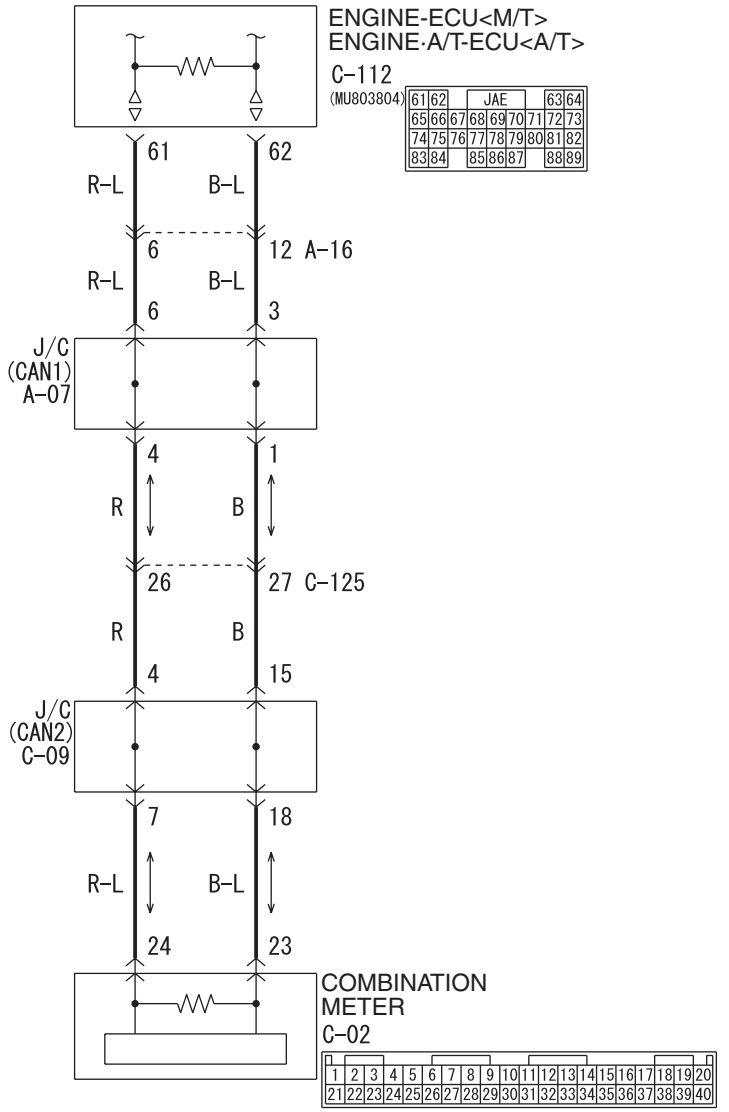
Q: Are the check results normal?

YES : <All the resistances measure 2 Ω or less> Diagnostics item 12: Diagnose shorts between CAN_L and H lines. Refer to P.54D-378.

NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between joint connector (CAN1) and the diagnosis connector.

Diagnostic Item 21: Diagnose the lines between the joint connectors (CAN1 and CAN2) <LH drive vehicles>

⚠ CAUTION
When servicing a CAN bus line, earth yourself by touching a metal object such as an unpainted water pipe. If you fail to do, a component connected to the CAN bus line may be broken.



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E16AA

TROUBLE JUDGMENT

If the MUT-III cannot receive any signal from the ABS-ECU and the engine-ECU <M/T> or engine-A/T-ECU <A/T>, CAN bus line connector(s) are broken or an open circuit has occurred.

COMMENTS ON TROUBLE SYMPTOM

The CAN bus line wire or connectors may have loose, corroded, or damage terminals, or terminals pushed back in the connector.

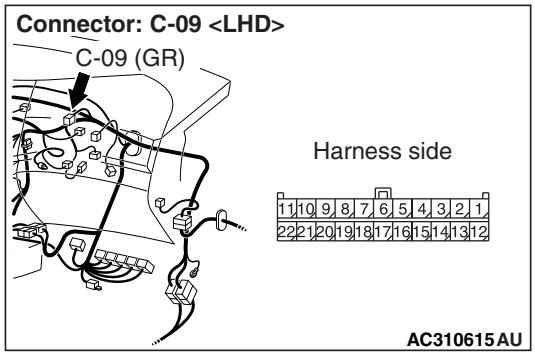
POSSIBLE CAUSES

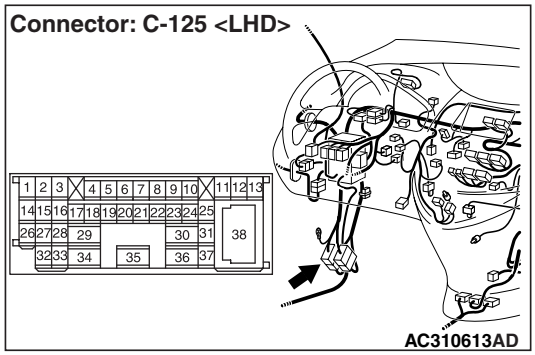
- Damaged harness wires and connectors

DIAGNOSTIC PROCEDURE

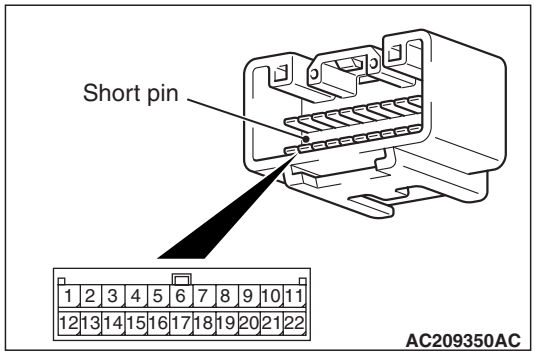
STEP 1. Connector check: C-09 joint connector (CAN2) and C-125 intermediate connector

⚠ CAUTION





The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.



When checking the joint connector, ensure that its wiring harness side is not damaged.

Q: Are the check results normal?

YES : Go to Step 2 .
NO : Repair a defective connector or replace the joint connector.

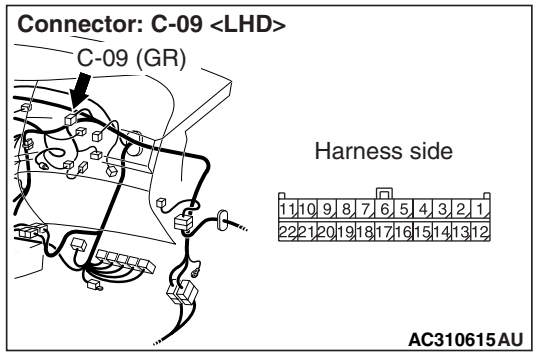
STEP 2. Resistance measurement at C-09 joint connector (CAN2) and C-125 intermediate connector.

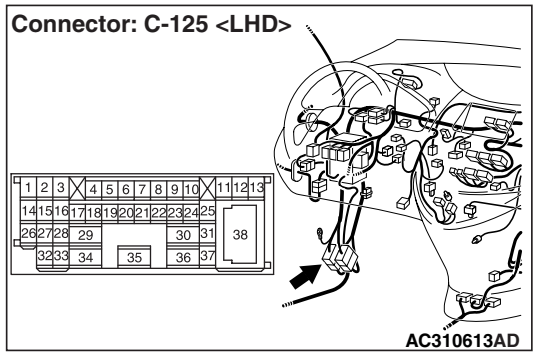
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





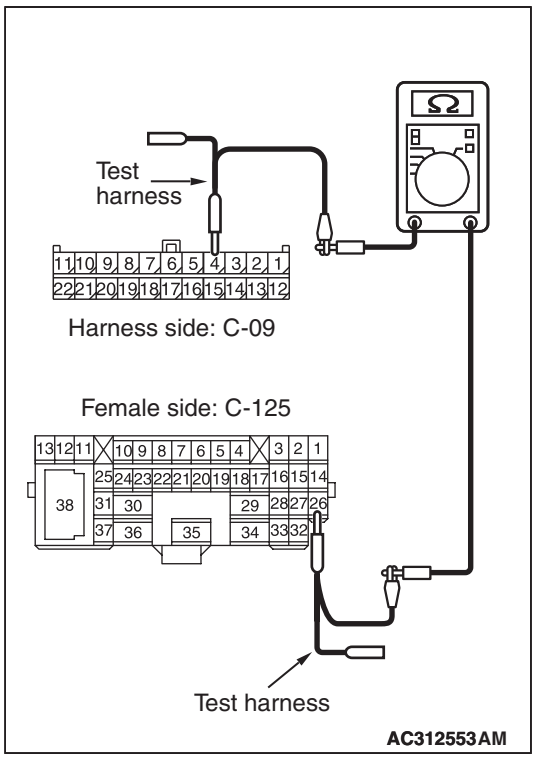
(1) Disconnect the joint connector (CAN2) and the intermediate connector, and measure at the wiring harness side.
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

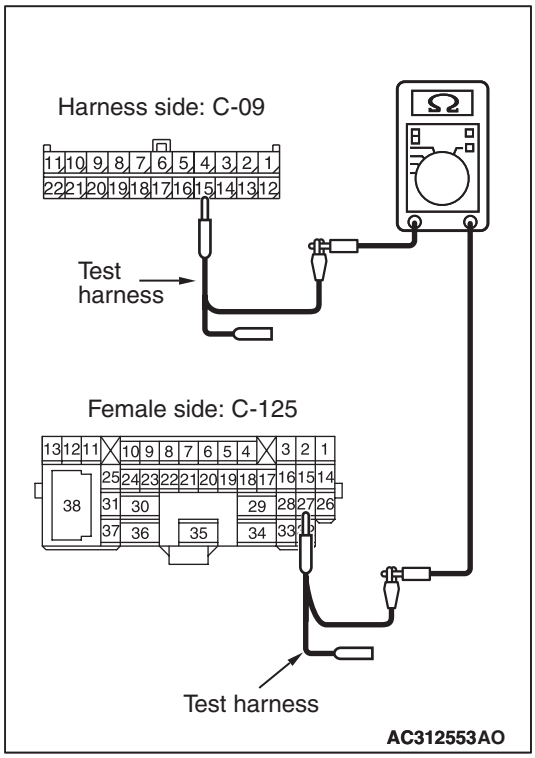
(3) Ensure that the negative battery terminal is

disconnected.



(4) Continuity between C-125 intermediate connector terminal No.26 and C-09 joint connector (CAN2) terminal No.4

OK: 2 Ω or less



(5) Continuity between C-125 intermediate connector terminal No.27 and C-09 joint connector (CAN2) terminal No.15

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Are the check results normal?

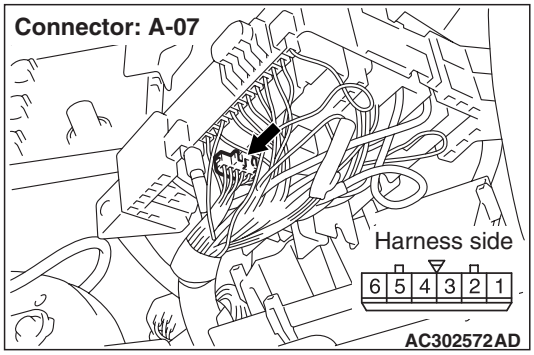
YES : <All the voltages measure 2 Ω or less> Go to Step 3 .

NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between joint connector (CAN2) and the intermediate connector.

STEP 3. Connector check: A-07 joint connector (CAN1)

NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

When checking the joint connector, ensure that its wiring harness side is not damaged.

Q: Is the check result normal?

YES : Go to Step 4 .

NO : Repair a defective connector or replace the joint connector (front wiring harness assembly).

STEP 4. Resistance measurement at C-125 intermediate connector and A-07 joint connector (CAN1).

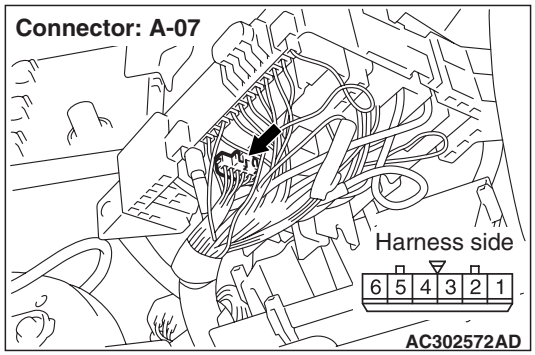
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

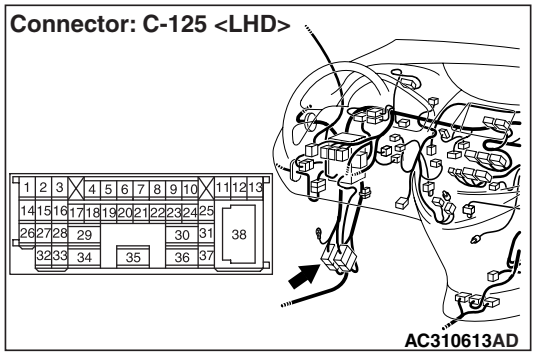
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





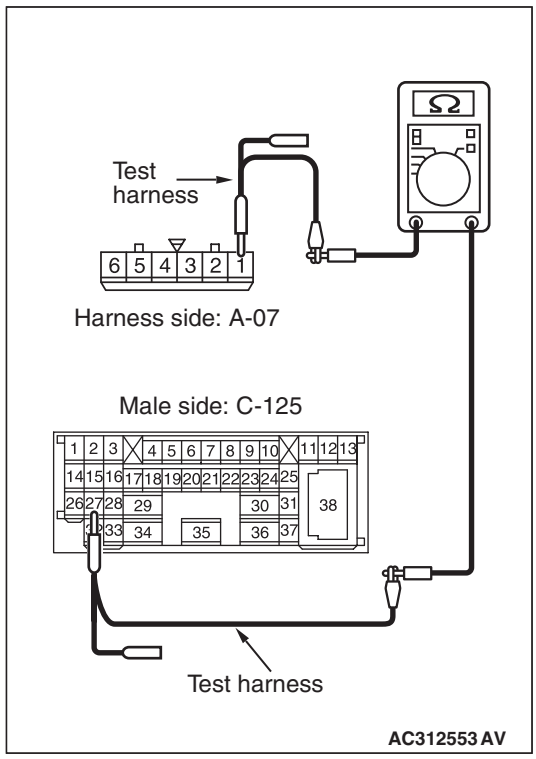
(1) Disconnect the joint connector (CAN1) and the intermediate connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

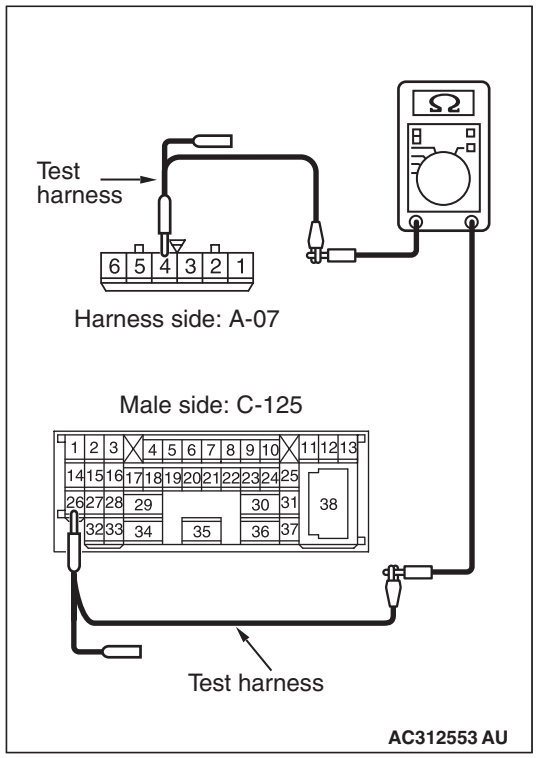
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between A-07 joint connector (CAN1) terminal No.1 and C-125 intermediate connector terminal No.27

OK: 2 Ω or less



(5) Continuity between A-07 joint connector (CAN1) terminal No.4 and C-125 intermediate connector

terminal No.26

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

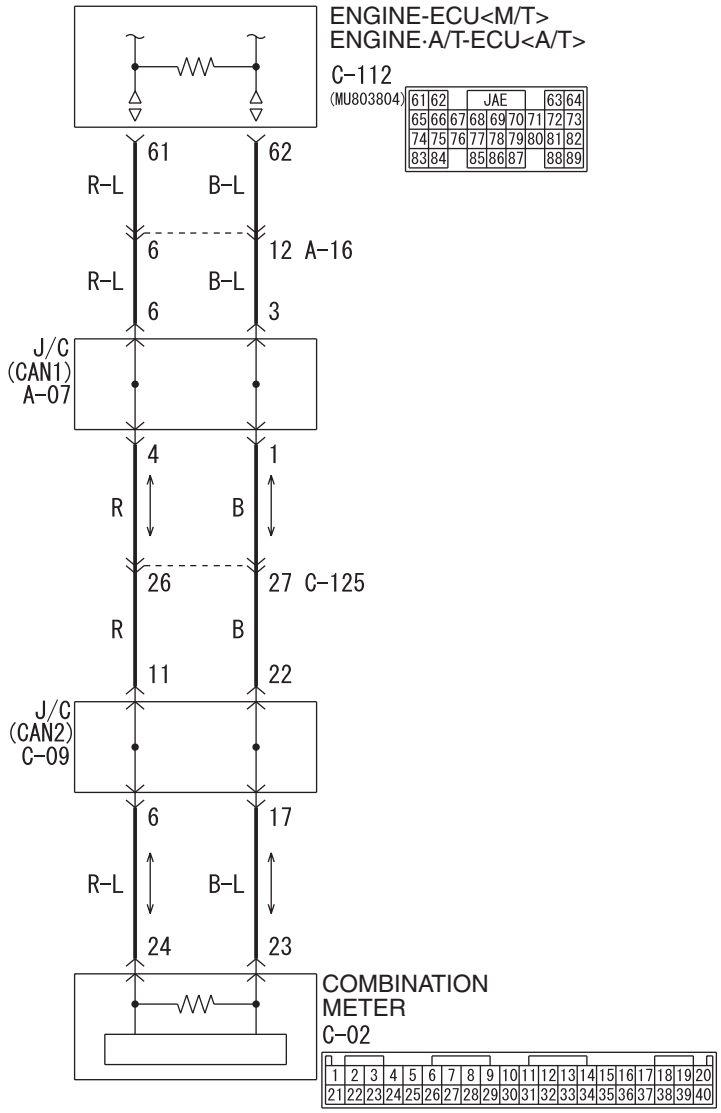
Q: Are the check results normal?

YES : <All the resistances measure 2 Ω or less> Follow diagnostic item 23 "Diagnose the lines from the main bus line to the engine-ECU <M/T> or engine-A/T-ECU <A/T>" (Refer to P.54D-562), diagnostic item 24 "Diagnose the lines between CAN main bus line and the ABS-ECU (Refer to P.54D-567), or diagnostic item 25 "Diagnose the lines between CAN main bus line and the ASC-ECU" (Refer to P.54D-571).

NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between joint connector (CAN1) and the intermediate connector.

Diagnostic Item 22: Diagnose the lines between the joint connectors (CAN1 and CAN2) <RH drive vehicles>

⚠ CAUTION
When servicing a CAN bus line, earth yourself by touching a metal object such as an unpainted water pipe. If you fail to do, a component connected to the CAN bus line may be broken.



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E17AA

TROUBLE JUDGMENT

If the MUT-III cannot receive any signal from the ABS-ECU and the engine-ECU <M/T> or engine-A/T-ECU <A/T>, CAN bus line connector(s) are broken or an open circuit has occurred.

COMMENTS ON TROUBLE SYMPTOM

The CAN bus line wire or connectors may have loose, corroded, or damage terminals, or terminals pushed back in the connector.

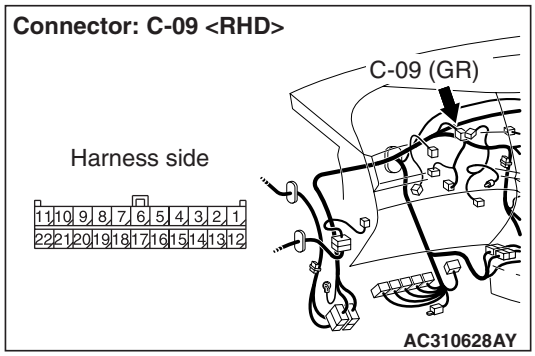
POSSIBLE CAUSES

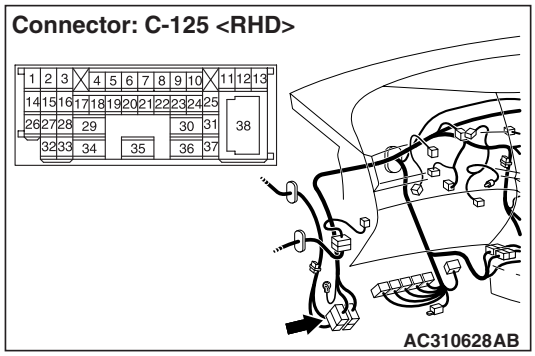
- Damaged harness wires and connectors

DIAGNOSTIC PROCEDURE

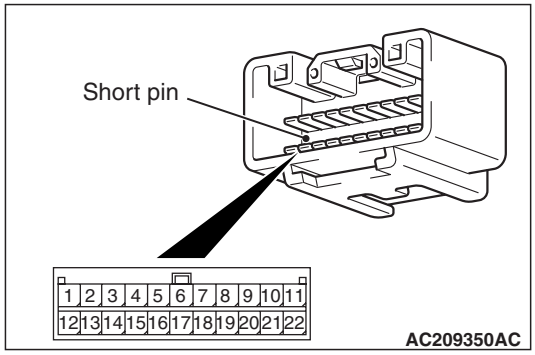
STEP 1. Connector check: C-09 joint connector (CAN2) and C-125 intermediate connector

⚠ CAUTION





The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.



When checking the joint connector, ensure that its wiring harness side is not damaged.

Q: Are the check results normal?

YES : Go to Step 2 .
NO : Repair a defective connector or replace the joint connector.

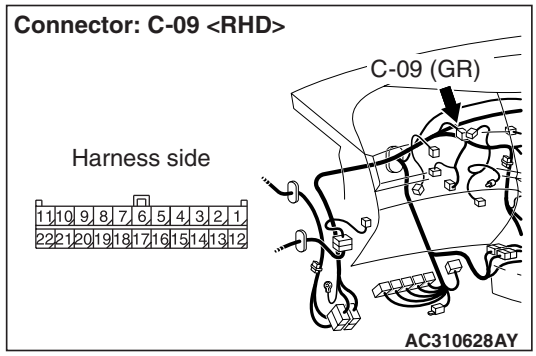
STEP 2. Resistance measurement at C-09 joint connector (CAN2) and C-125 intermediate connector.

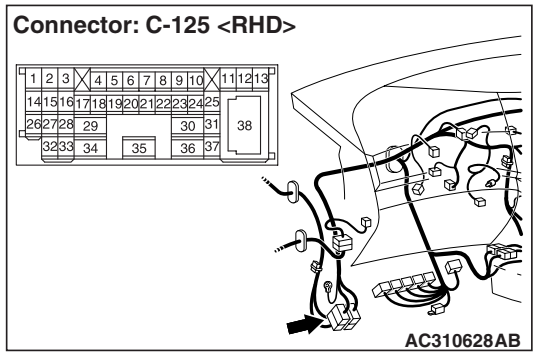
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





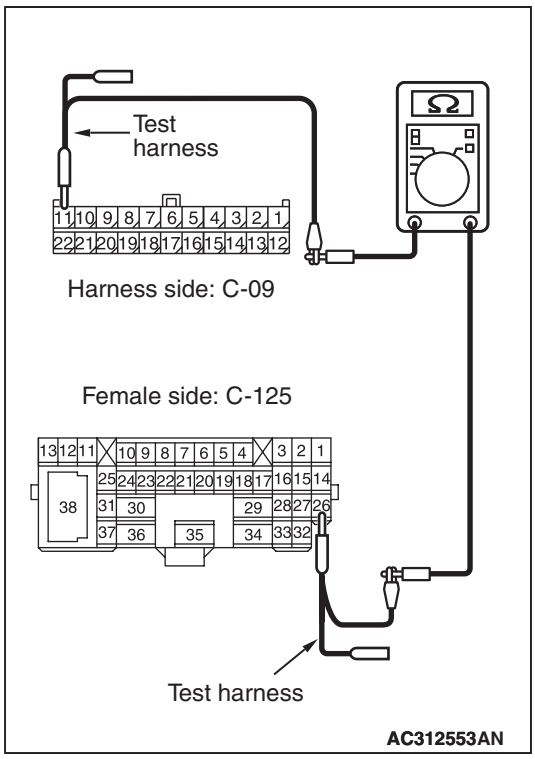
(1) Disconnect the joint connector (CAN2) and the intermediate connector, and measure at the wiring harness side.
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

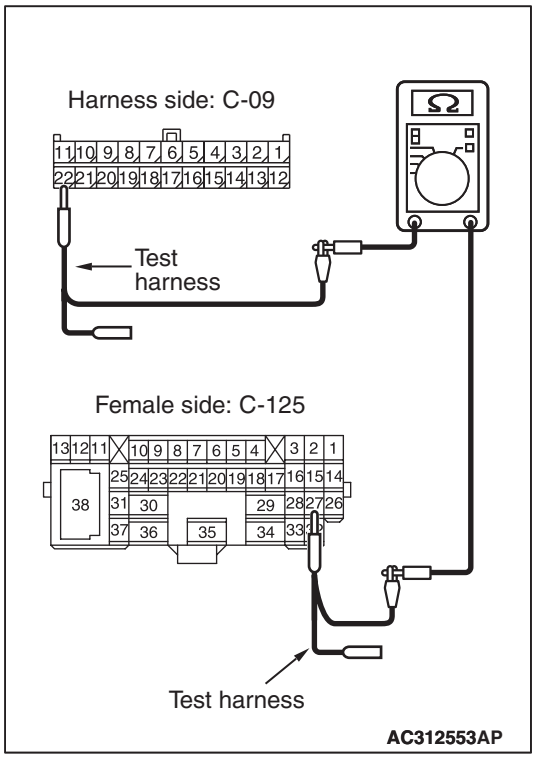
(3) Ensure that the negative battery terminal is

disconnected.



(4) Continuity between C-125 intermediate connector terminal No.26 and C-09 joint connector (CAN2) terminal No.11

OK: 2 Ω or less



(5) Continuity between C-125 intermediate connector terminal No.27 and C-09 joint connector (CAN2) terminal No.22

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Are the check results normal?

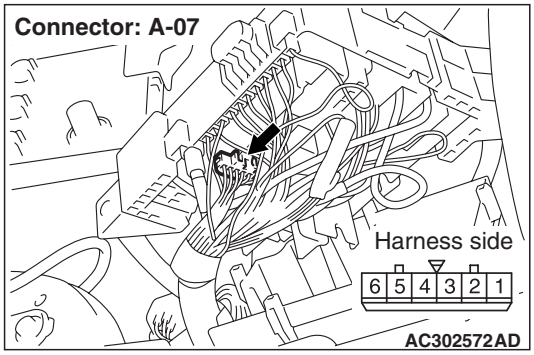
YES : <All the voltages measure 2 Ω or less> Go to Step 3 .

NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between joint connector (CAN2) and the intermediate connector.

STEP 3. Connector check: A-07 joint connector (CAN1)

NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION



The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

When checking the joint connector, ensure that its wiring harness side is not damaged.

Q: Is the check result normal?

YES : Go to Step 4 .

NO : Repair a defective connector or replace the joint connector (front wiring harness assembly).

STEP 4. Resistance measurement at C-125 intermediate connector and A-07 joint connector (CAN1).

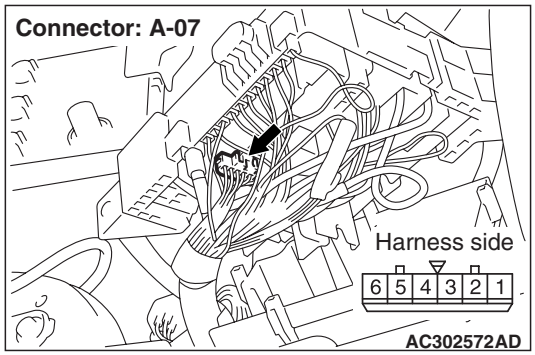
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

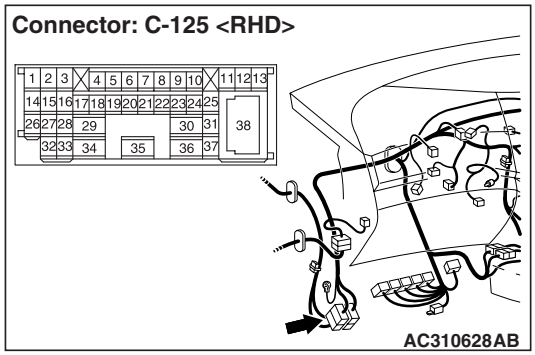
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





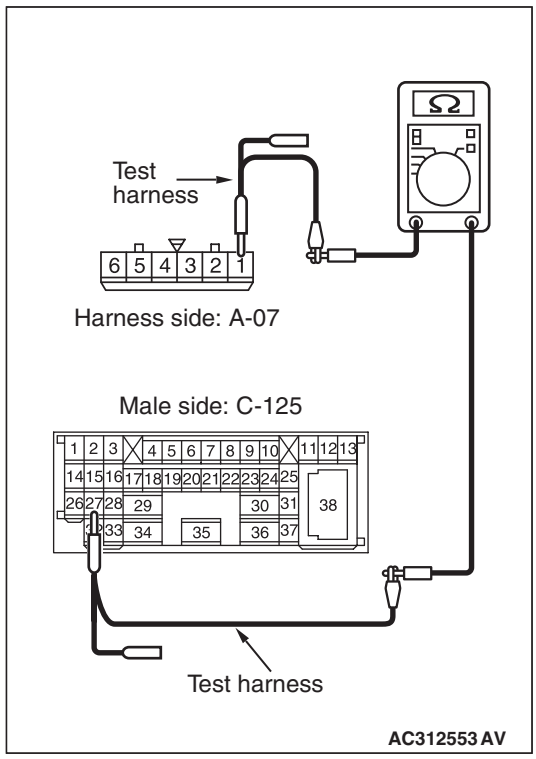
(1) Disconnect the joint connector (CAN1) and the intermediate connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

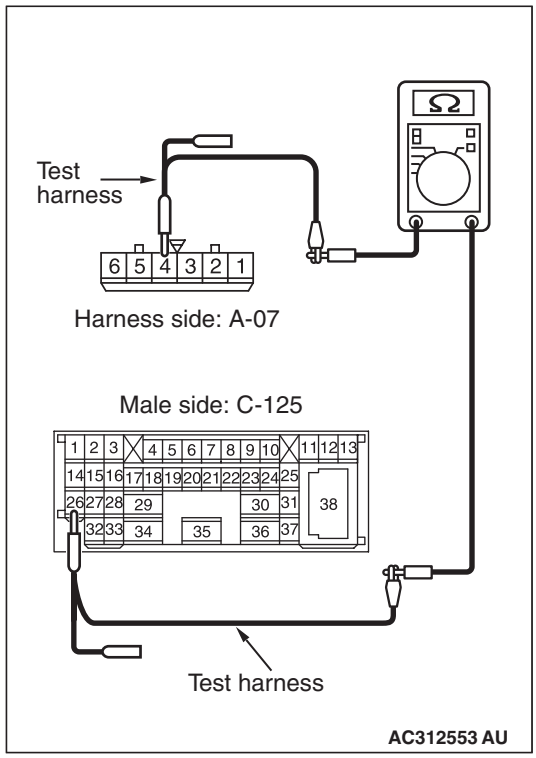
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between A-07 joint connector (CAN1) terminal No.1 and C-125 intermediate connector terminal No.27

OK: 2 Ω or less



(5) Continuity between A-07 joint connector (CAN1) terminal No.4 and C-125 intermediate connector

terminal No.26

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

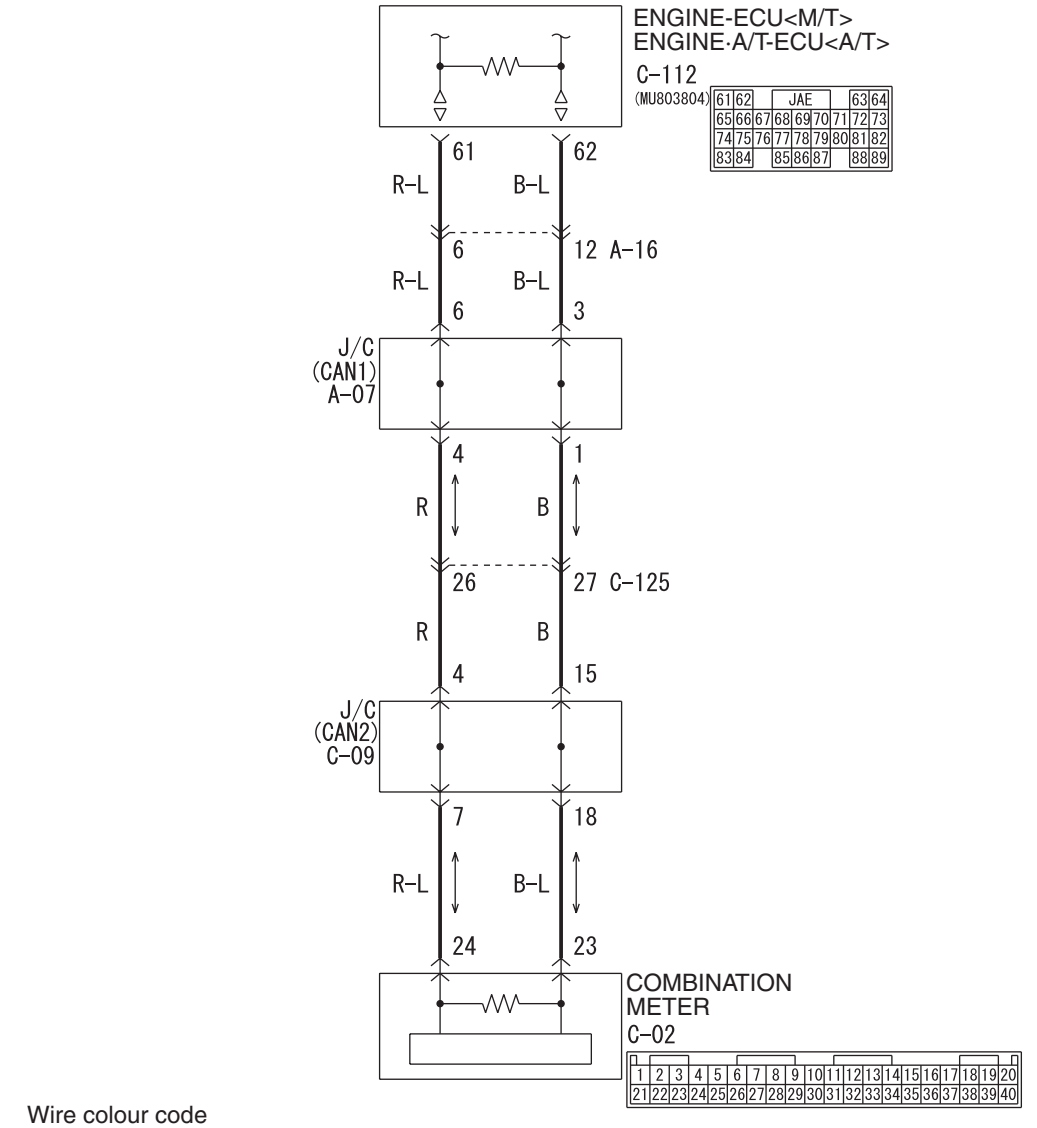
Q: Are the check results normal?

YES : <All the resistances measure 2 Ω or less> Follow diagnostic item 23 "Diagnose the lines from the main bus line to the engine-ECU <M/T> or engine-A/T-ECU <A/T>" (Refer to P.54D-562), diagnostic item 24 "Diagnose the lines between CAN main bus line and the ABS-ECU (Refer to P.54D-567), or diagnostic item 25 "Diagnose the lines between CAN main bus line and the ASC-ECU" (Refer to P.54D-571).

NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between joint connector (CAN1) and the intermediate connector.

Diagnostic Item 23: Diagnose the lines from the main bus line to the engine-ECU <M/T> or engine-A/T-ECU <A/T>.

⚠ CAUTION
When servicing a CAN bus line, earth yourself by touching a metal object such as an unpainted water pipe. If you fail to do, a component connected to the CAN bus line may be broken.



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E16AA

TROUBLE JUDGMENT

If the MUT-III cannot receive any signal from the engine-ECU <M/T> or engine-A/T-ECU <A/T>, CAN bus line connector(s) are broken or an open circuit has occurred.

COMMENTS ON TROUBLE SYMPTOM

Connector(s), wiring harness in the CAN bus lines, the engine-ECU <M/T> or engine-A/T-ECU <A/T> may be defective.

POSSIBLE CAUSES

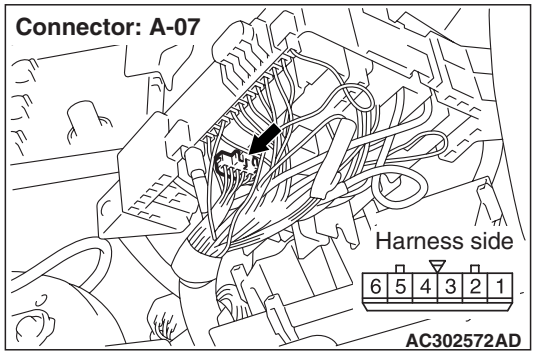
- Damaged harness wires and connectors
- Malfunction of the engine-ECU <M/T> or engine-A/T-ECU <A/T>

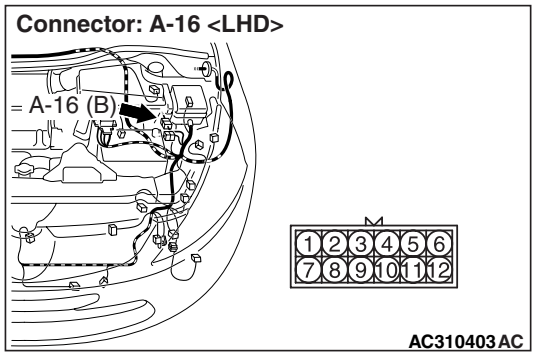
DIAGNOSTIC PROCEDURE

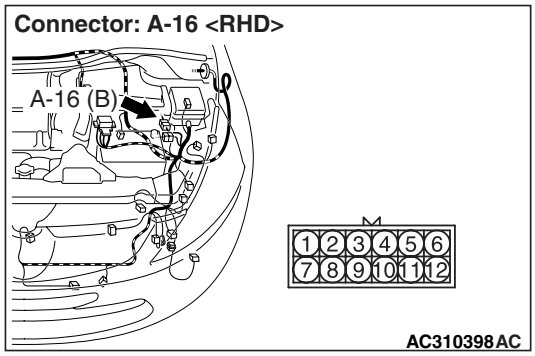
STEP 1. Connector check: A-07 joint connector (CAN1) and A-16 intermediate connector

NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

⚠ CAUTION







The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

When checking the joint connector, ensure that its wiring harness side is not damaged.

Q: Is the check result normal?

YES : Go to Step 2 .

NO : Repair a defective connector or replace the joint connector (front wiring harness assembly).

STEP 2. Resistance measurement at A-07 joint connector (CAN1) and A-16 intermediate connector.

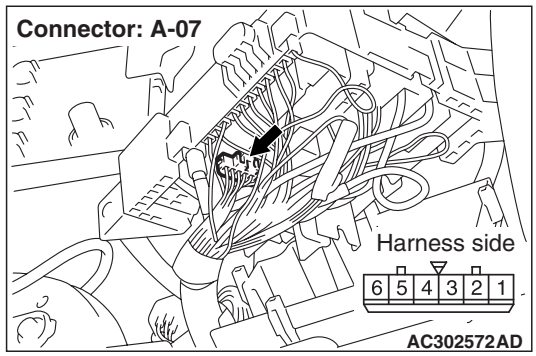
NOTE: When checking A-07 joint connector (CAN1), disassemble and check the engine compartment relay box by referring to P.54D-616.

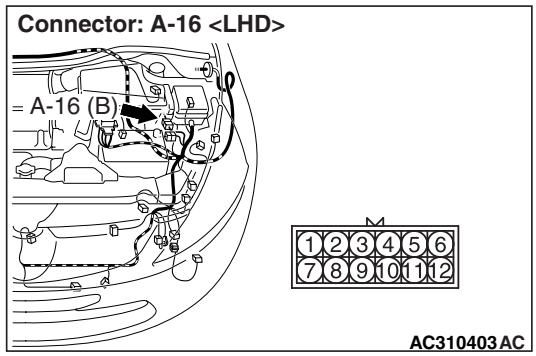
⚠ CAUTION

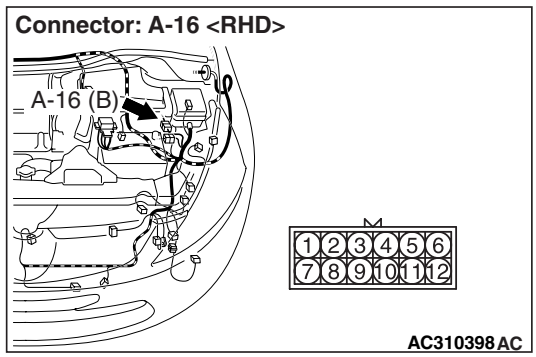
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.







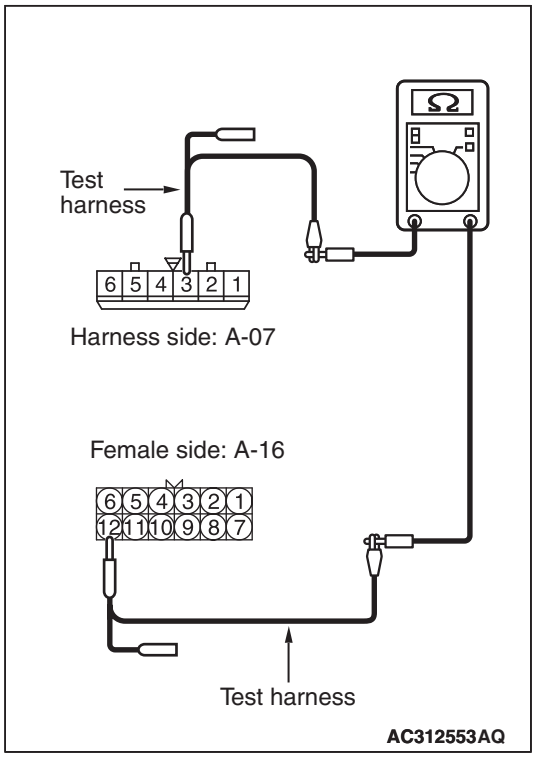
(1) Disconnect the joint connector (CAN1) and the intermediate connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

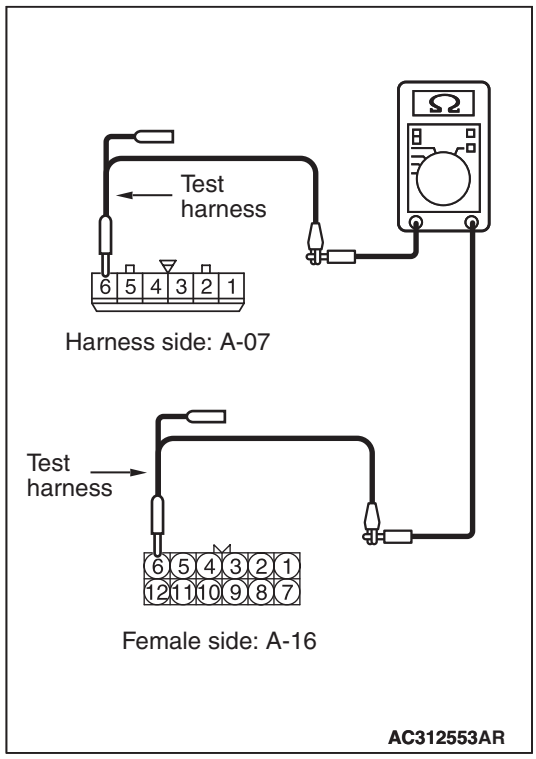
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between A-07 joint connector (CAN1) terminal No.3 and A-16 intermediate connector terminal No.12

OK: 2 Ω or less



(5) Continuity between A-07 joint connector (CAN1) terminal No.6 and A-16 intermediate connector terminal No.6

OK: 2 Ω or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

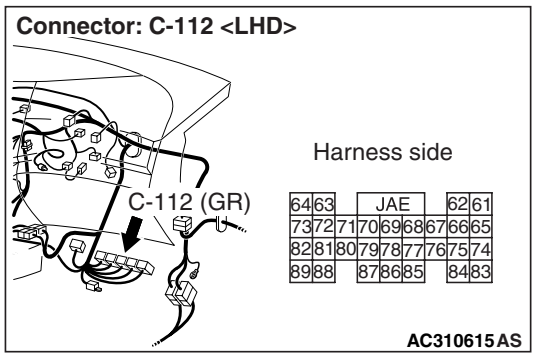
Q: Is the check result normal?

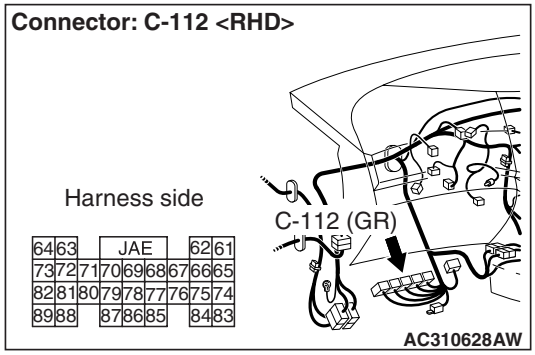
YES : <All the voltages measure 2 Ω or less> Go to Step 3 .

NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between joint connector (CAN1) and the intermediate connector.

STEP 3. Connector check: C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector

⚠ CAUTION





The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 4 .

NO : Repair a defective connector or replace the joint connector.

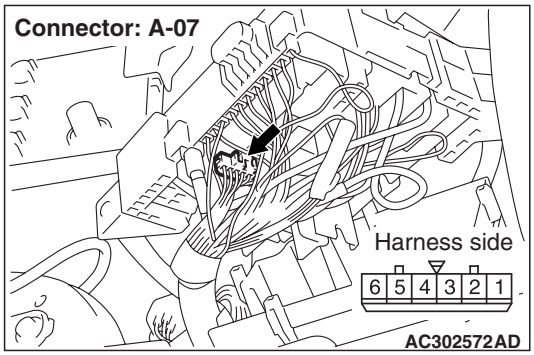
STEP 4. Resistance measurement at A-07 intermediate connector and C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector.

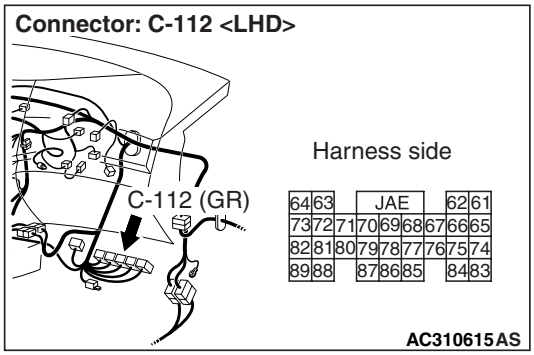
⚠ CAUTION

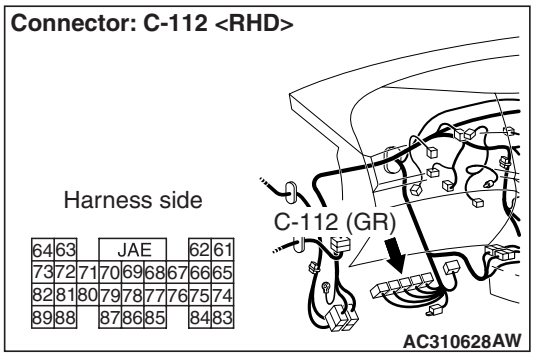
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.







(1) Disconnect the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector and the intermediate connector, and measure at the wiring harness side.

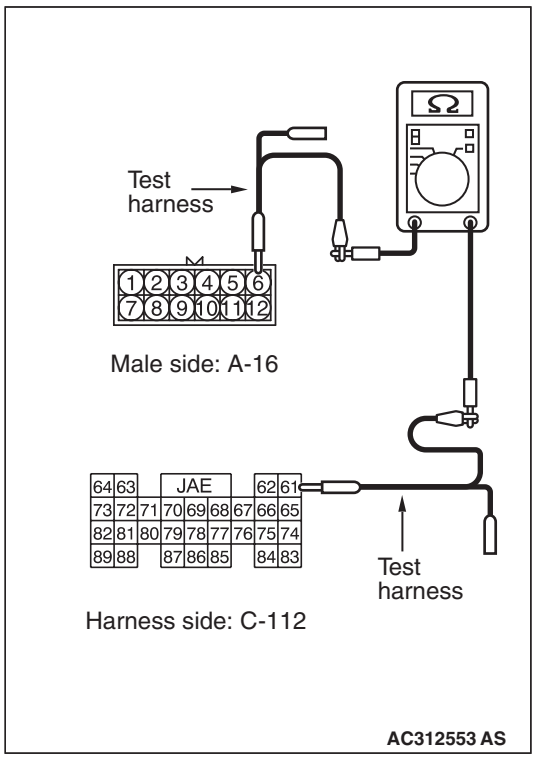
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

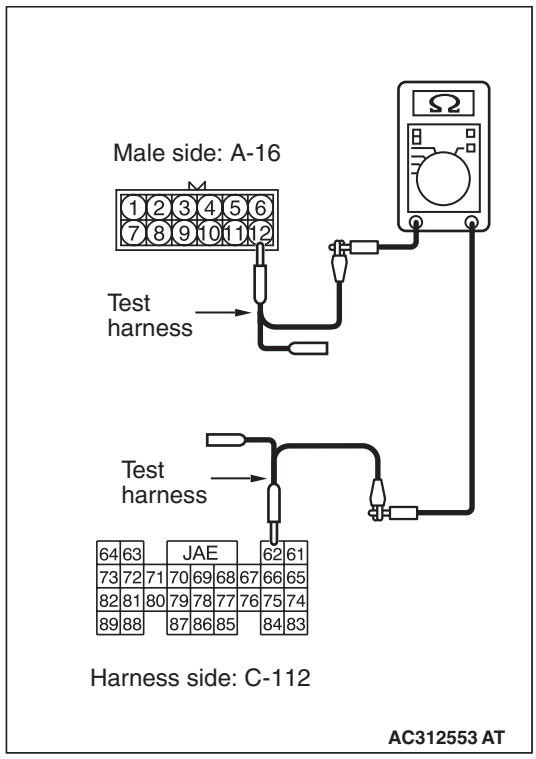
(3) Ensure that the negative battery terminal is

disconnected.



(4) Continuity between A-16 intermediate connector terminal No.6 and C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector terminal No.61.

OK: 2 Ω or less



(5) Continuity between A-16 intermediate connector terminal No.12 and C-112 engine-ECU <M/T> or engine-A/T-ECU <A/T> connector terminal No.62.

OK: 2 Ω or less

⚠ CAUTION
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

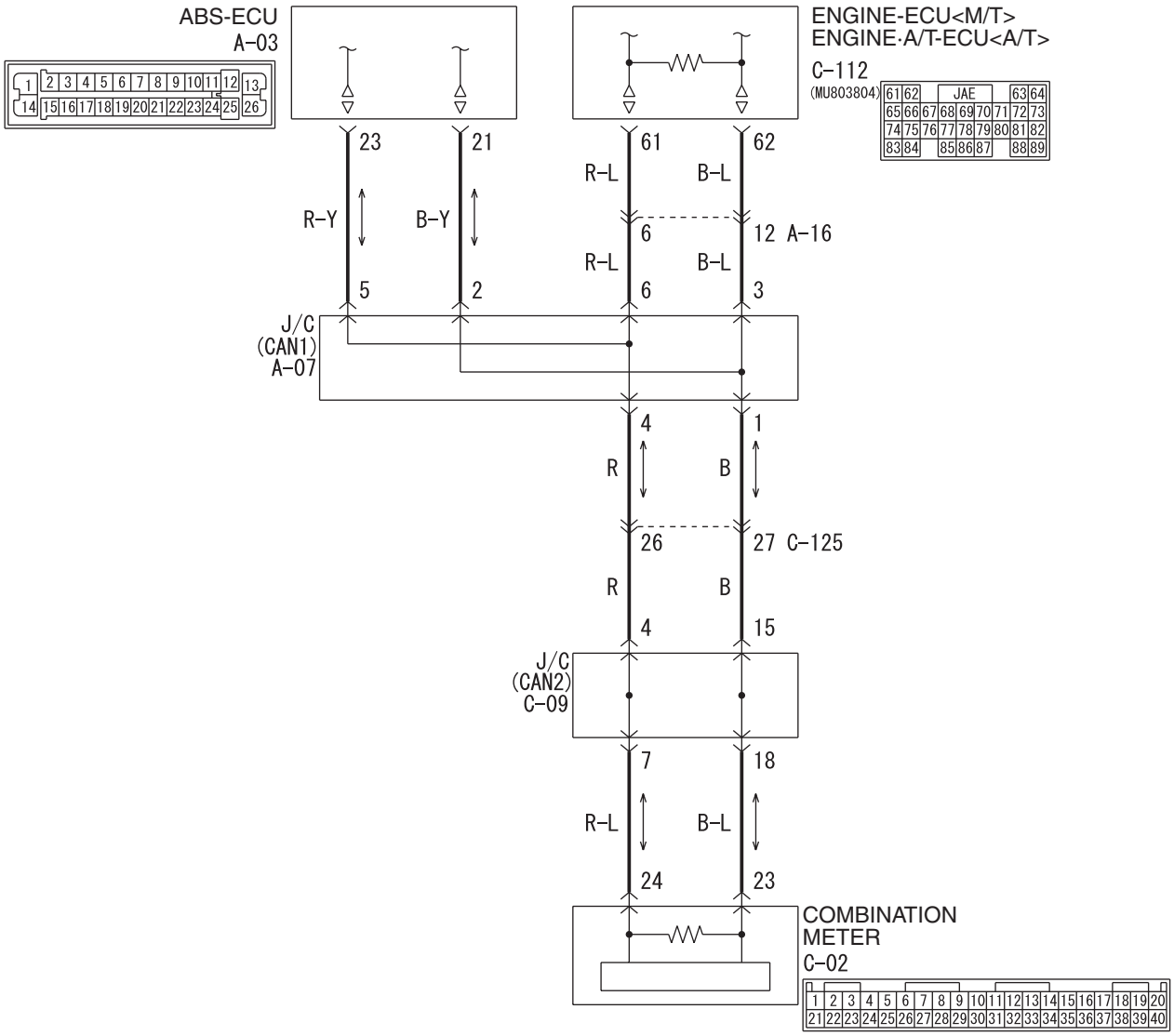
Q: Is the check result normal?

YES : <All the resistances measure 2 Ω or less> Power supply to the engine-ECU <M/T> or engine-A/T-ECU <A/T> may be suspected. Diagnose the engine control system. Refer to P.13A-321.

NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between the engine-ECU <M/T> or engine-A/T-ECU <A/T> connector and the intermediate connector.

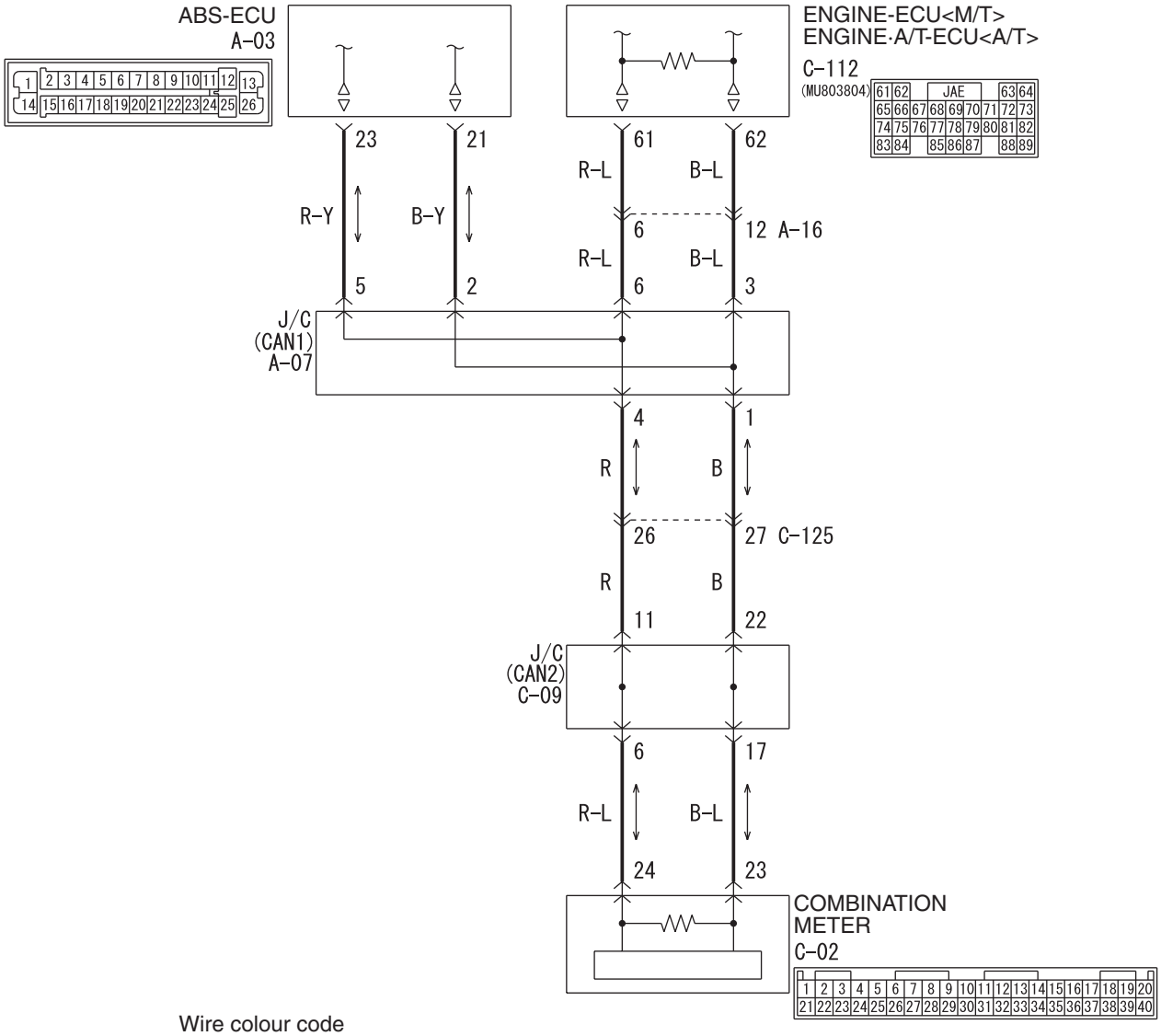
Diagnostic Item 24: Diagnose the lines between CAN main bus line and the ABS-ECU <Vehicles without ASC>

⚠ CAUTION
When servicing a CAN bus line, earth yourself by touching a metal object such as an unpainted water pipe. If you fail to do, a component connected to the CAN bus line may be broken.



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E14AA



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E15AA

TROUBLE JUDGMENT

If the MUT-III can not received signal from the ABS-ECU, CAN bus line connector(s) are broken or an open circuit has occurred.

COMMENTS ON TROUBLE SYMPTOM

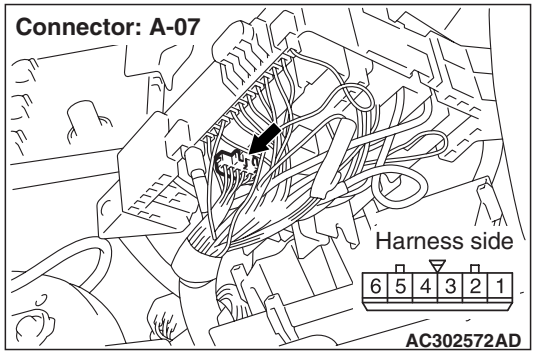
The wiring harness wire or connectors may have loose, corroded, or damage terminals, or terminals pushed back in the connector, or the ABS-ECU may be defective.

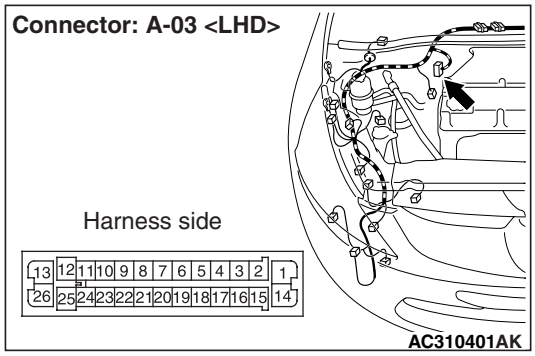
POSSIBLE CAUSES

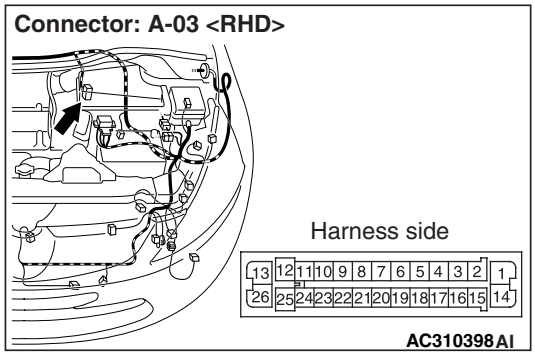
- Damaged harness wires and connectors
- Malfunction of the ABS-ECU

DIAGNOSTIC PROCEDURE

STEP 1. Connector check: A-07 joint connector (CAN1) connector and A-03 ABS-ECU connector

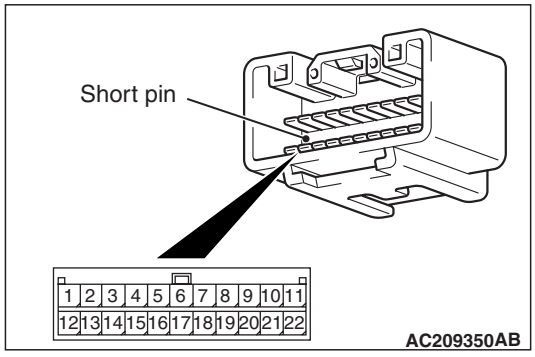






⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.



When checking the joint connector, ensure that its wiring harness side and its short pins are not damaged.

Q: Is the check result normal?

YES : Go to Step 2 .

NO : Repair a defective connector or replace the joint connector (front wiring harness assembly).

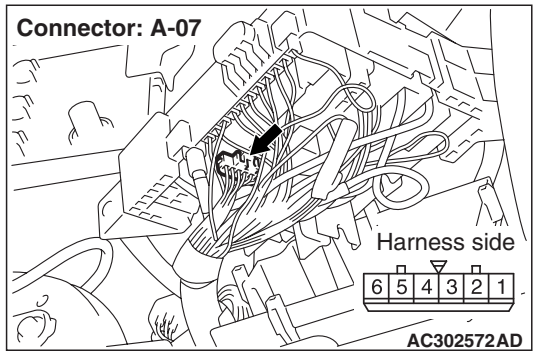
STEP 2. Resistance measurement at A-07 joint connector (CAN1) and A-03 ABS-ECU connector.

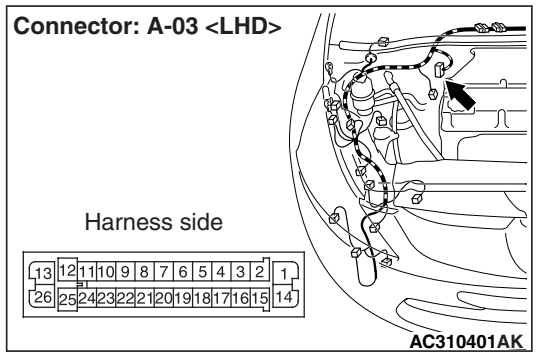
⚠ CAUTION

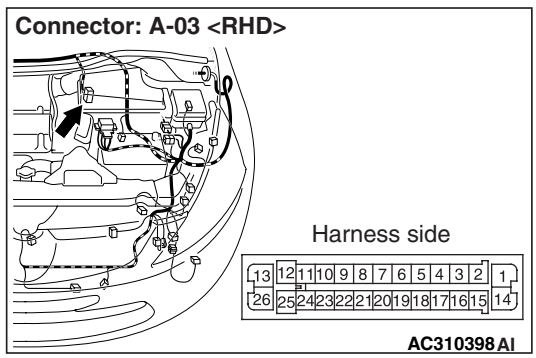
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.







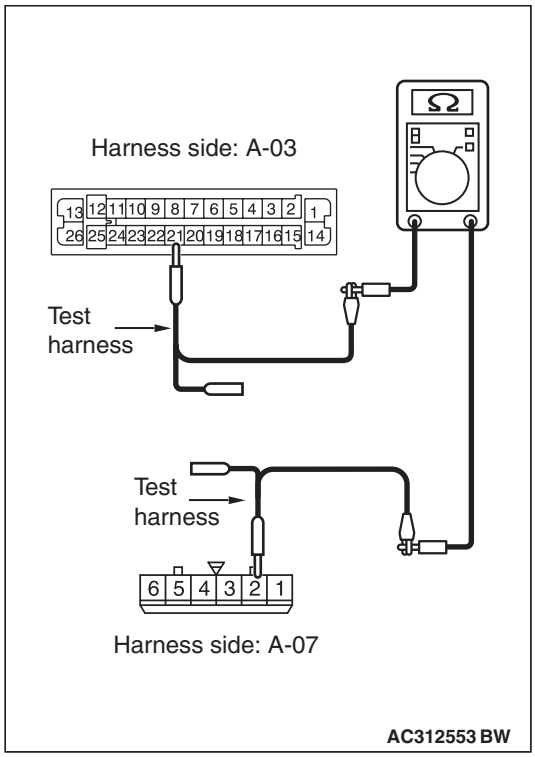
(1) Disconnect the joint connector (CAN1) and the ABS-ECU connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

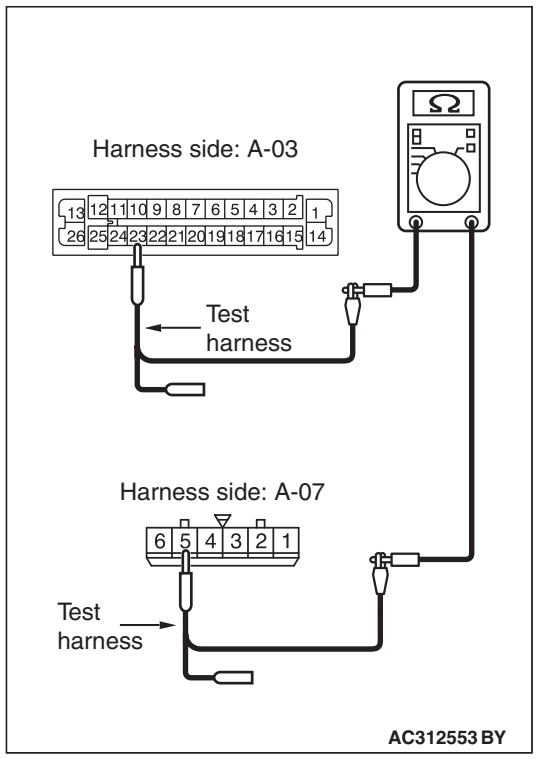
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between A-07 joint connector (CAN1) terminal No.2 and A-03 ABS-ECU connector terminal No.21

OK: 2 ohms or less



(5) Continuity between A-07 joint connector (CAN1) terminal No.5 and A-03 ABS-ECU connector terminal No.23

OK: 2 ohms or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

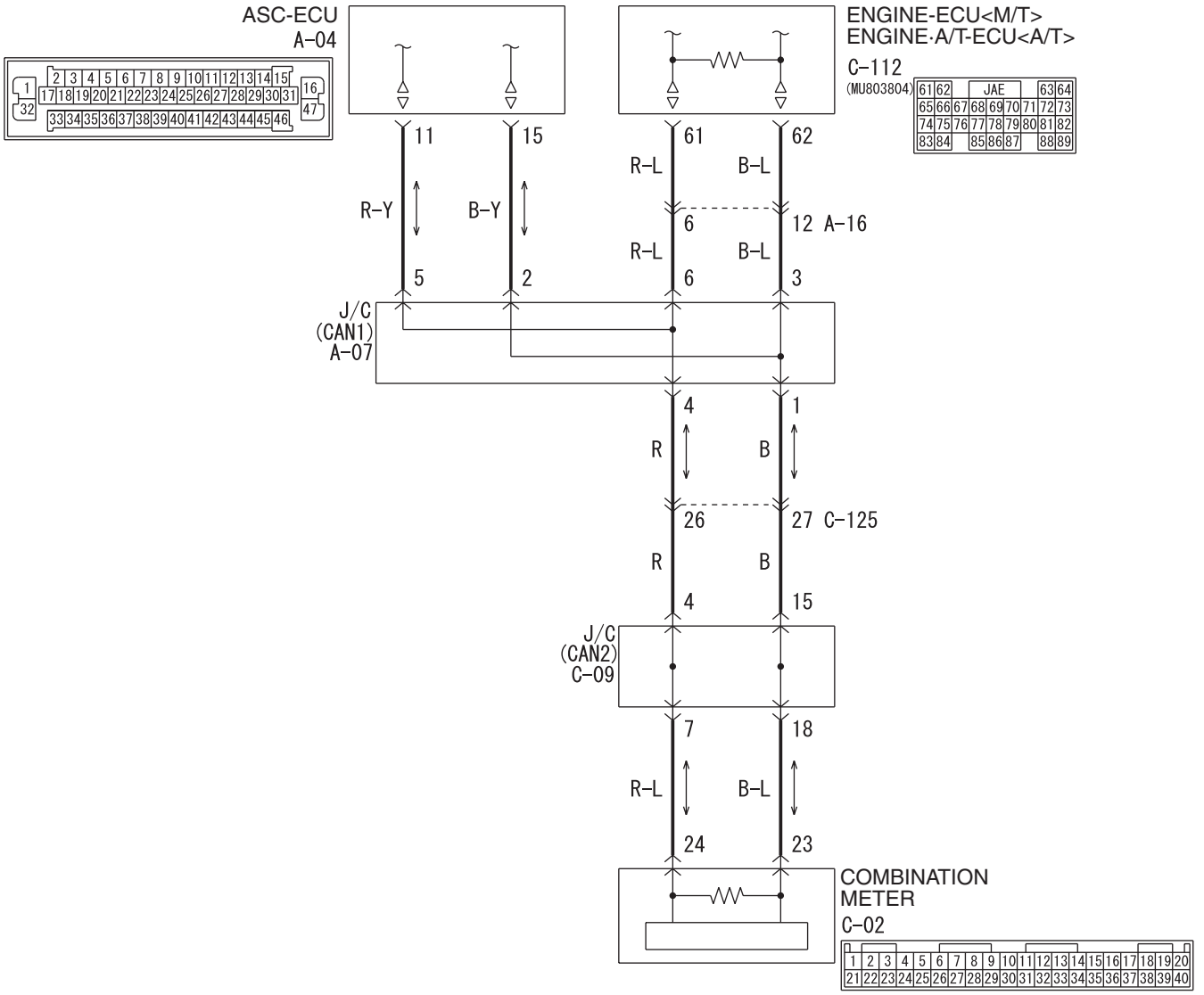
Q: Are the check results normal?

YES : <All the resistances measure 2 Ω or less> Power supply to the ABS-ECU may be suspected. Diagnose the ABS system. Refer to P.35B-65.

NO : <Either or all of the resistances measure more than 2 Ω> Repair the wiring harness between the joint connector (CAN1) and the ABS-ECU connector.

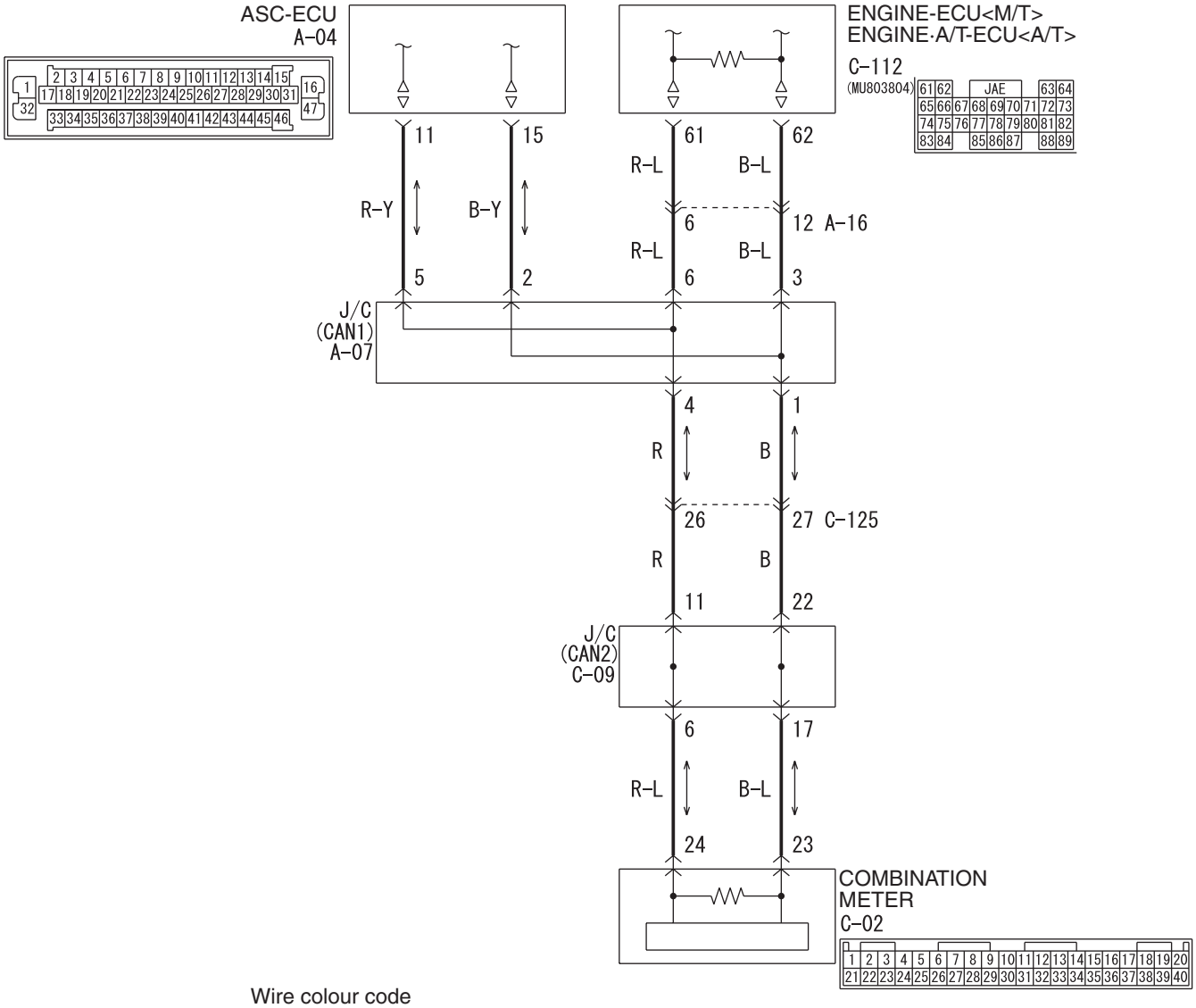
Diagnostic Item 25: Diagnose the lines between CAN main bus line and the ASC-ECU <Vehicles with ASC>

⚠ CAUTION
When servicing a CAN bus line, earth yourself by touching a metal object such as an unpainted water pipe. If you fail to do, a component connected to the CAN bus line may be broken.



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E12AA



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E13AA

TROUBLE JUDGMENT

If the MUT-III can not received signal from the ASC-ECU, CAN bus line connector(s) are broken or an open circuit has occurred.

COMMENTS ON TROUBLE SYMPTOM

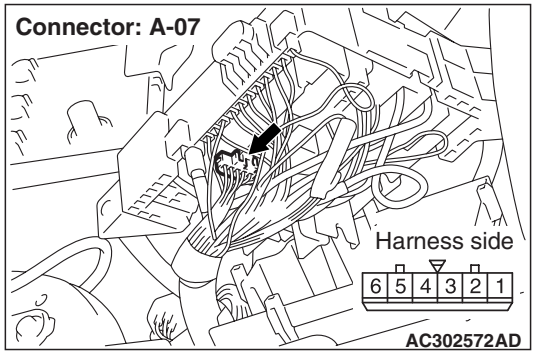
The wiring harness wire or connectors may have loose, corroded, or damage terminals, or terminals pushed back in the connector, or the ASC-ECU may be defective.

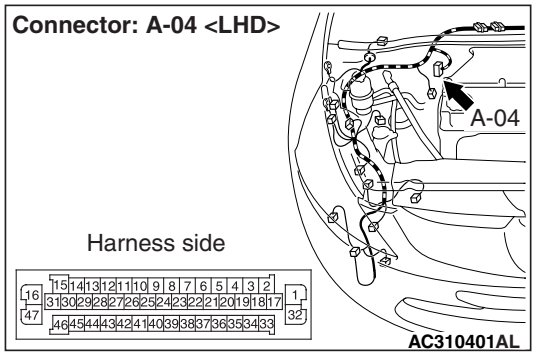
POSSIBLE CAUSES

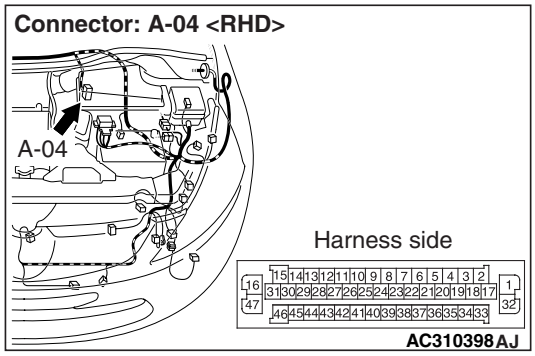
- Damaged harness wires and connectors
- Malfunction of the ASC-ECU

DIAGNOSTIC PROCEDURE

STEP 1. Connector check: A-07 joint connector (CAN1) connector and A-04 ASC-ECU connector

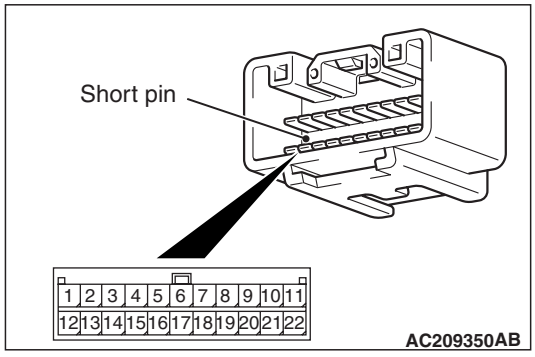






⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.



When checking the joint connector, ensure that its wiring harness side and its short pins are not damaged.

Q: Is the check result normal?

YES : Go to Step 2 .

NO : Repair a defective connector or replace the joint connector (front wiring harness assembly).

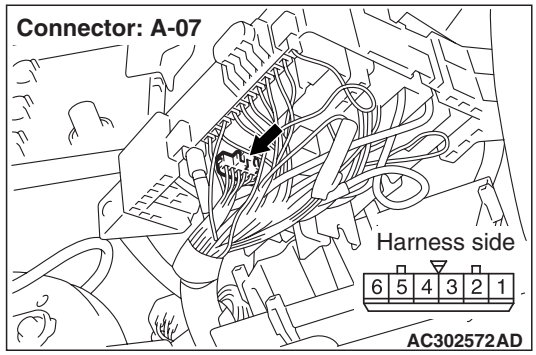
STEP 2. Resistance measurement at A-07 joint connector (CAN1) and A-04 ASC-ECU connector.

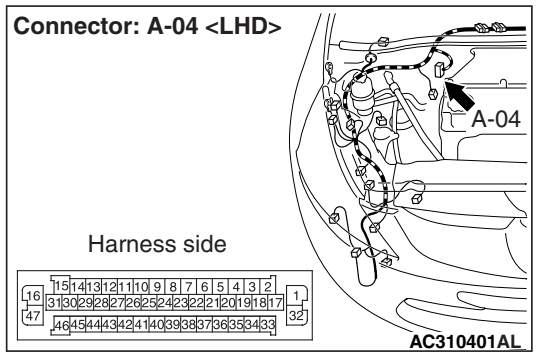
⚠ CAUTION

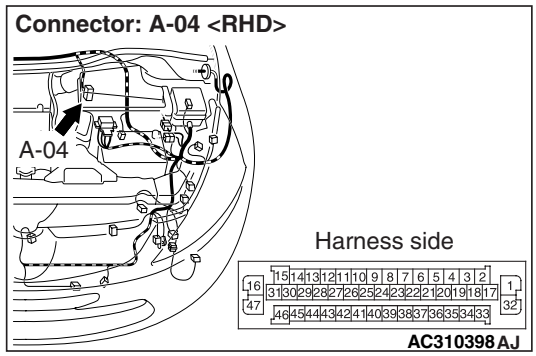
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.







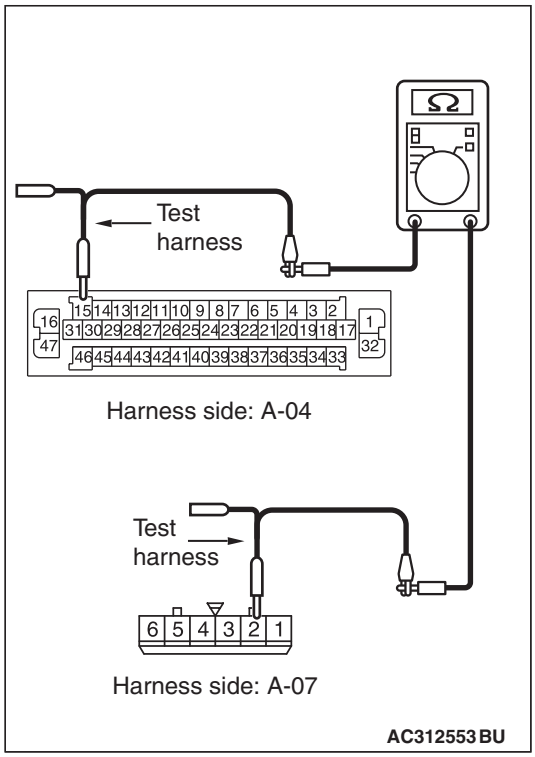
(1) Disconnect the joint connector (CAN1) and the ASC-ECU connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

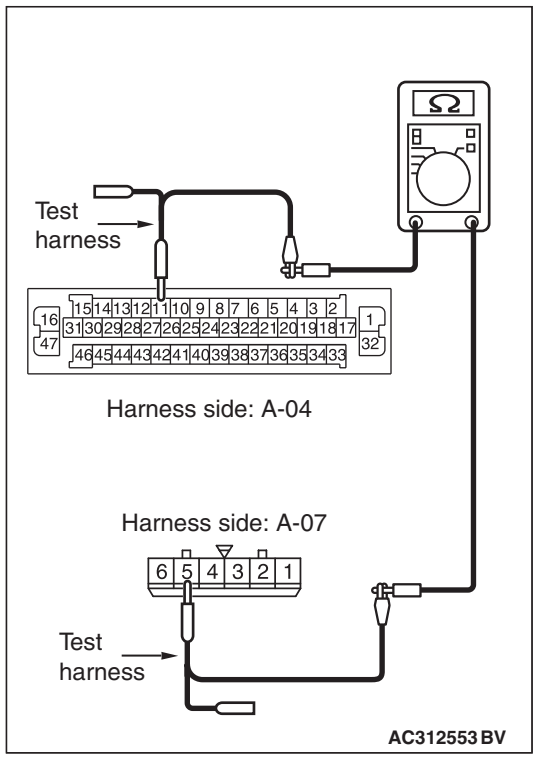
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between A-07 joint connector (CAN1) terminal No.2 and A-04 ASC-ECU connector terminal No.15

OK: 2 ohms or less



(5) Continuity between A-07 joint connector (CAN1) terminal No.5 and A-04 ASC-ECU connector terminal No.11

OK: 2 ohms or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

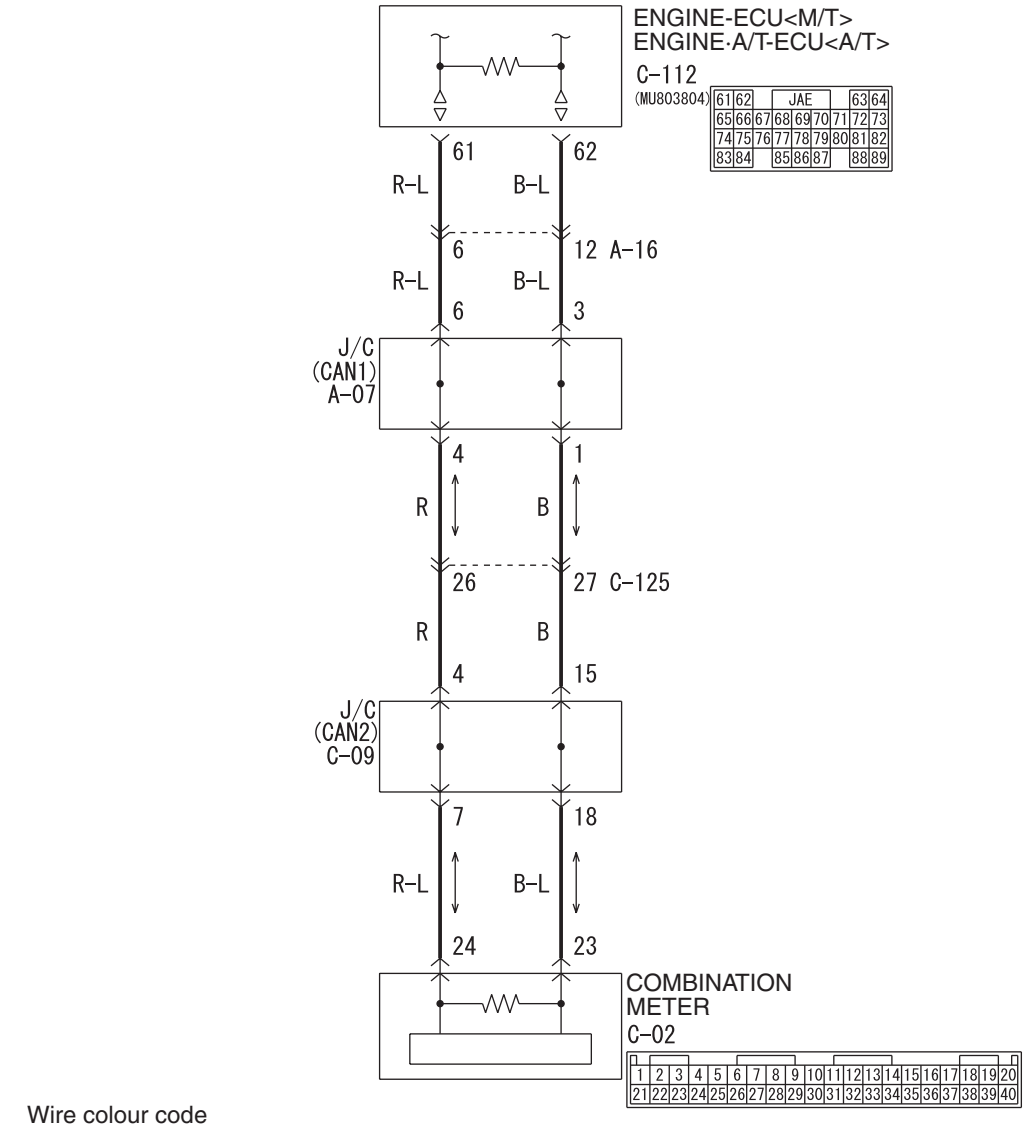
Q: Are the check result normal?

YES : <All the resistances measure 2 Ω or less> Power supply to the ASC-ECU may be suspected. Diagnose the ASC system. Refer to P.35C-129.

NO : <Either or all of the voltages measure more than 2 Ω> Repair the wiring harness between the joint connector (CAN1) and the ASC-ECU connector.

Diagnostic Item 26: Diagnose the lines from the main bus line to the combination meter <LH drive vehicles>

⚠ CAUTION
When servicing a CAN bus line, earth yourself by touching a metal object such as an unpainted water pipe. If you fail to do, a component connected to the CAN bus line may be broken.



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E16AA

TROUBLE JUDGMENT

If the MUT-III can not received signals from the combination meter, CAN bus line connector(s) are broken or an open circuit has occurred.

COMMENTS ON TROUBLE SYMPTOM

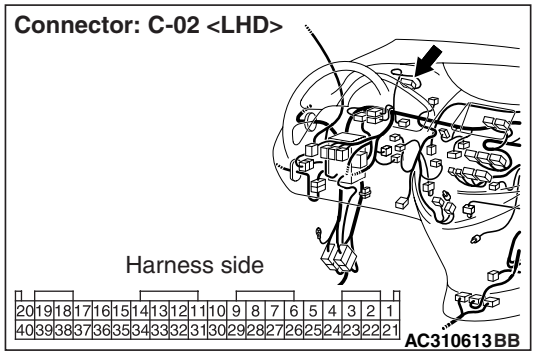
The wiring harness wire or connectors may have loose, corroded, or damage terminals, or terminals pushed back in the connector, or the combination meter may be defective.

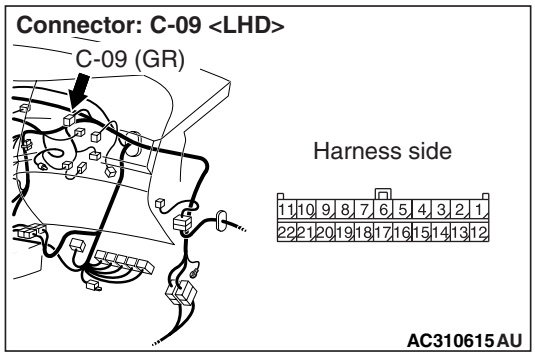
POSSIBLE CAUSES

- Damaged harness wires and connectors
- Malfunction of the combination meter

DIAGNOSTIC PROCEDURE

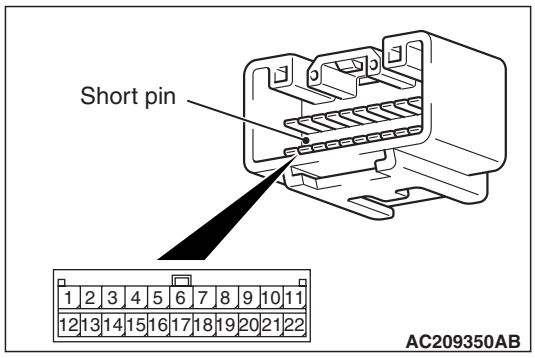
STEP 1. Connector check: C-09 joint connector (CAN2) connector and C-02 combination meter connector





⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.



When checking the joint connector, ensure that its wiring harness side and its short pins are not damaged.

Q: Is the check result normal?

YES : Go to Step 2 .
NO : Repair a defective connector or replace the joint connector.

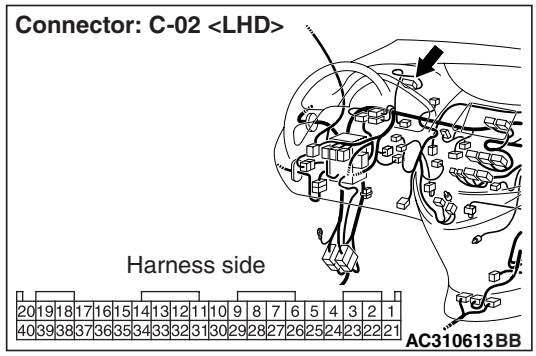
STEP 2. Resistance measurement at C-09 joint connector (CAN2) and C-02 combination meter connector.

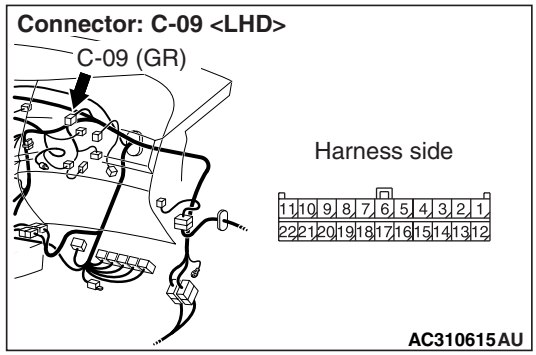
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





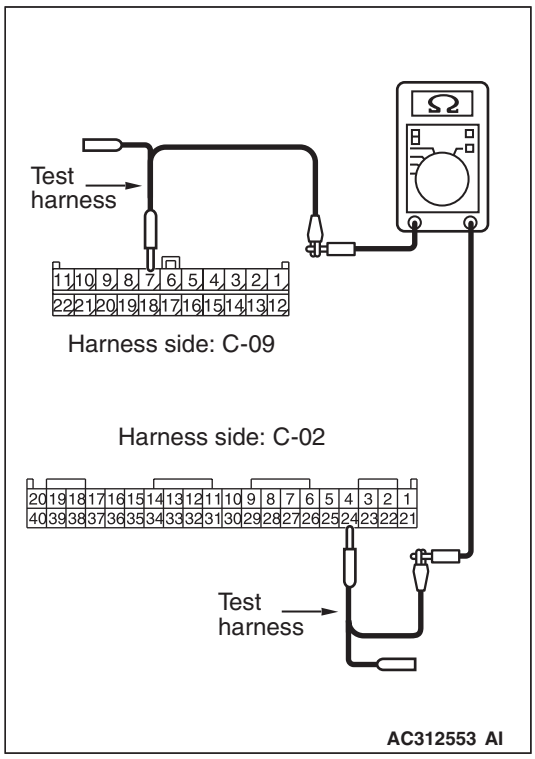
(1) Disconnect the joint connector (CAN2) and the combination meter connector, and measure at the wiring harness side.
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

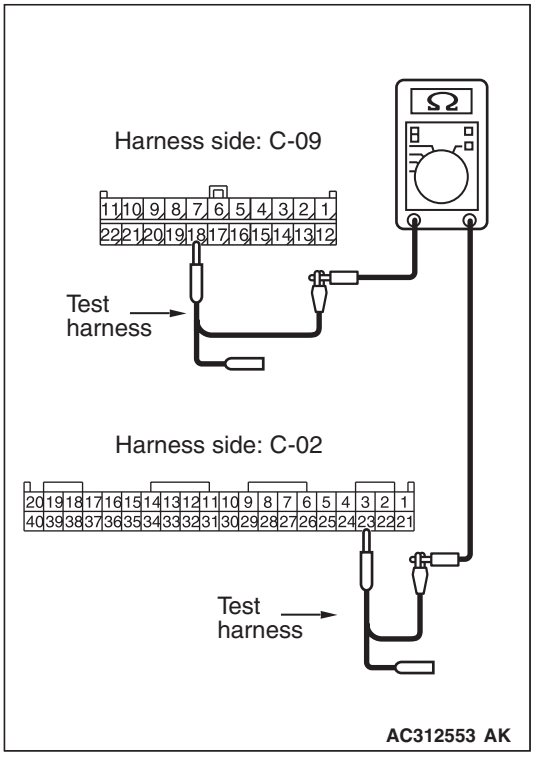
(3) Ensure that the negative battery terminal is

disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal No.7 and C-02 combination meter connector terminal No.24

OK: 2 ohms or less



(5) Continuity between C-09 joint connector (CAN2) terminal No.18 and C-02 combination meter connector terminal No.23

OK: 2 ohms or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

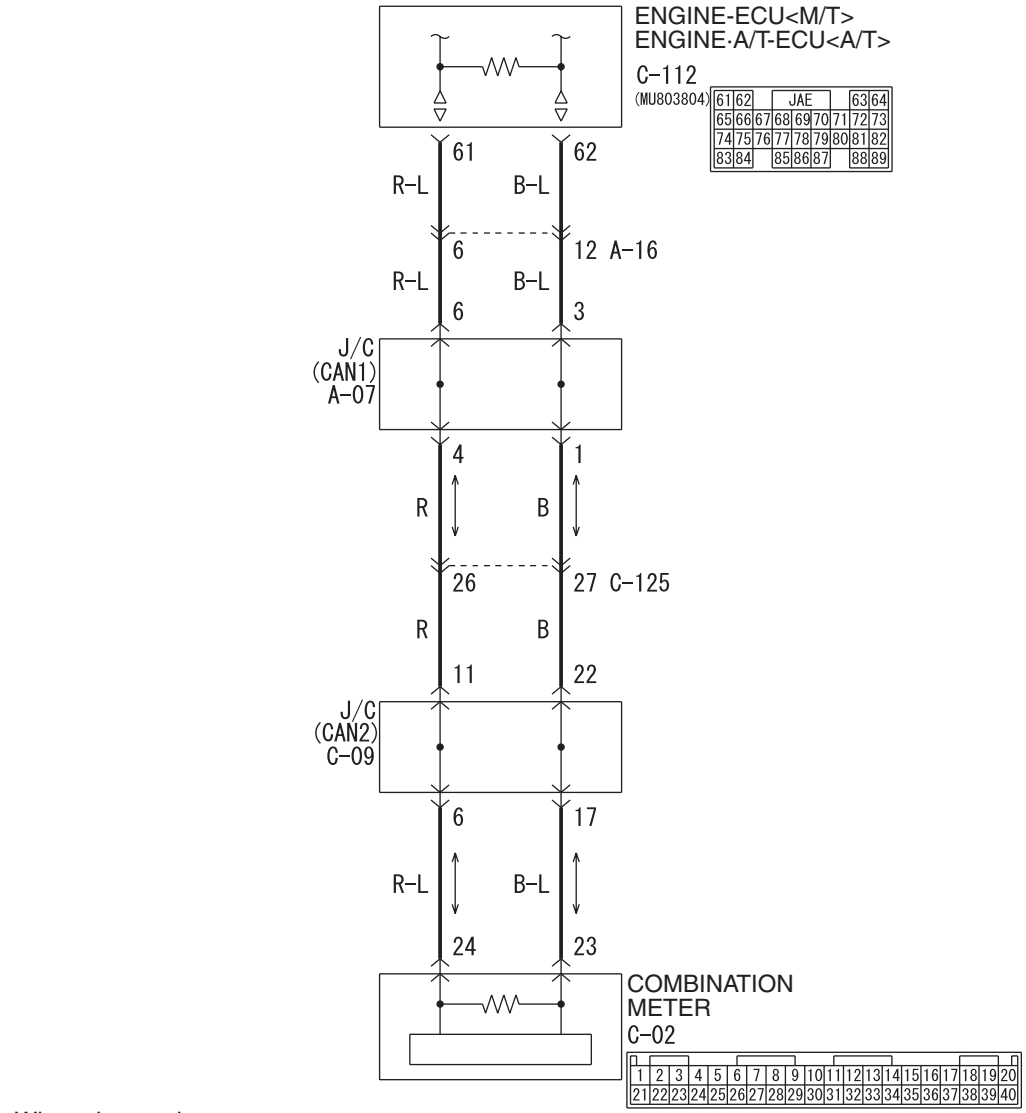
Q: Are the check result normal?

YES : <All the resistances measure 2 Ω or less> Power supply to the combination meter connector may be suspected. Diagnose the combination meter. Refer to P.54A-55.

NO : <Either or all of the voltages measure more than 2 Ω> Repair the wiring harness between joint connector (CAN2) and the combination meter connector.

Diagnostic Item 27: Diagnose the lines from the main bus line to the combination meter <RH drive vehicles>

⚠ CAUTION
When servicing a CAN bus line, earth yourself by touching a metal object such as an unpainted water pipe. If you fail to do, a component connected to the CAN bus line may be broken.



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E17AA

TROUBLE JUDGMENT

If the MUT-III can not received signals from the combination meter, CAN bus line connector(s) are broken or an open circuit has occurred.

COMMENTS ON TROUBLE SYMPTOM

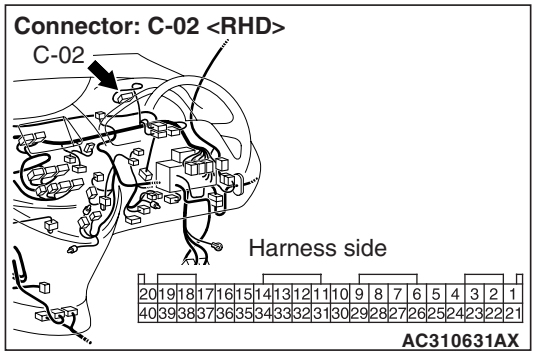
The wiring harness wire or connectors may have loose, corroded, or damage terminals, or terminals pushed back in the connector, or the combination meter may be defective.

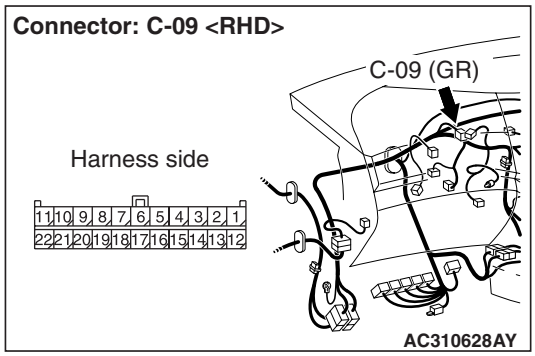
POSSIBLE CAUSES

- Damaged harness wires and connectors
- Malfunction of the combination meter

DIAGNOSTIC PROCEDURE

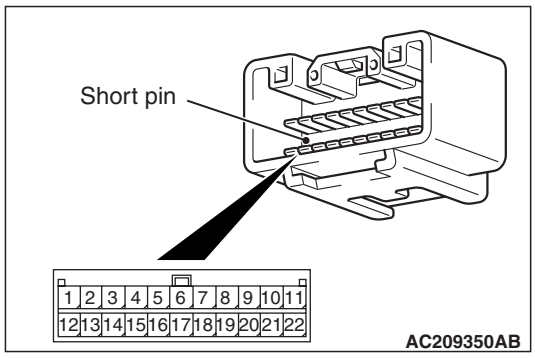
STEP 1. Connector check: C-09 joint connector (CAN2) connector and C-02 combination meter connector





⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.



When checking the joint connector, ensure that its wiring harness side and its short pins are not damaged.

Q: Are the check result normal?

YES : Go to Step 2 .
NO : Repair a defective connector or replace the joint connector.

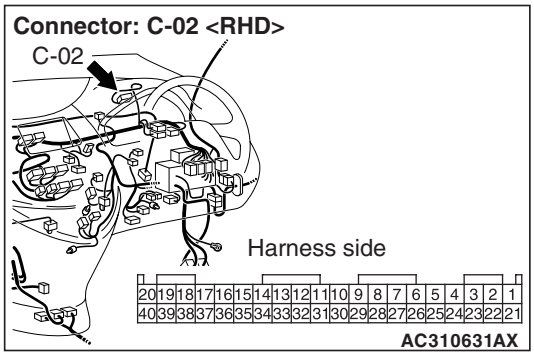
STEP 2. Resistance measurement at C-09 joint connector (CAN2) and C-02 combination meter connector.

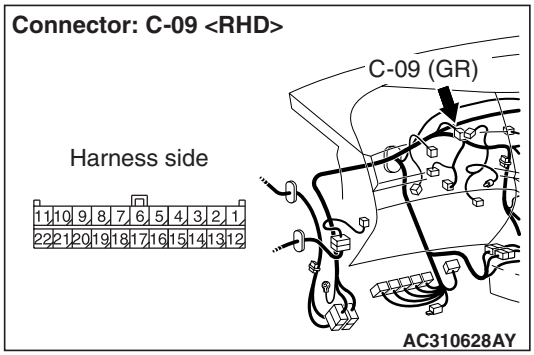
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





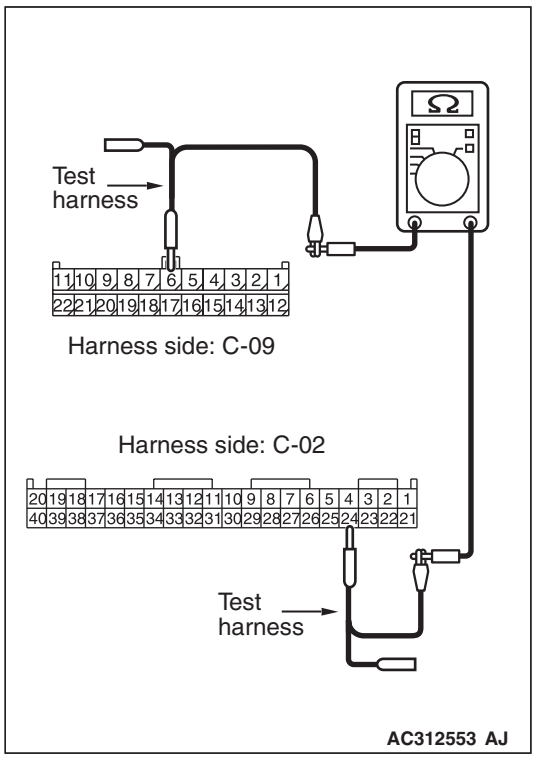
(1) Disconnect the joint connector (CAN2) and the combination meter connector, and measure at the wiring harness side.
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

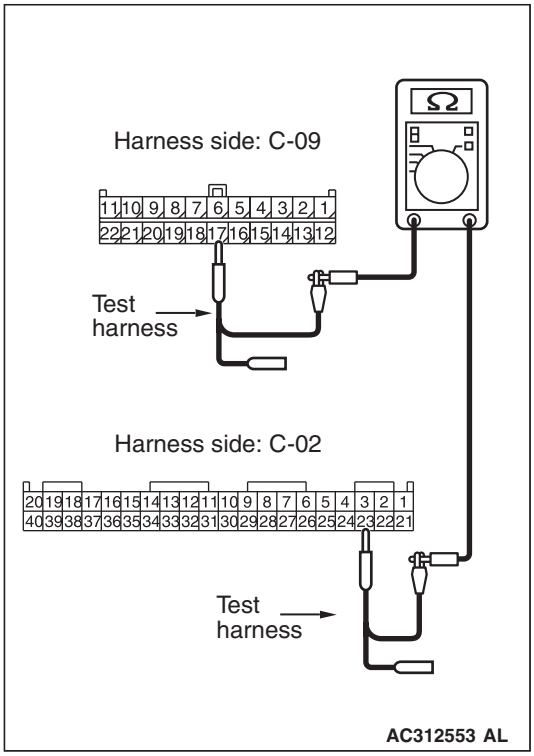
(3) Ensure that the negative battery terminal is

disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal No.6 and C-02 combination meter connector terminal No.24

OK: 2 ohms or less



(5) Continuity between C-09 joint connector (CAN2) terminal No.17 and C-02 combination meter connector terminal No.23

OK: 2 ohms or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

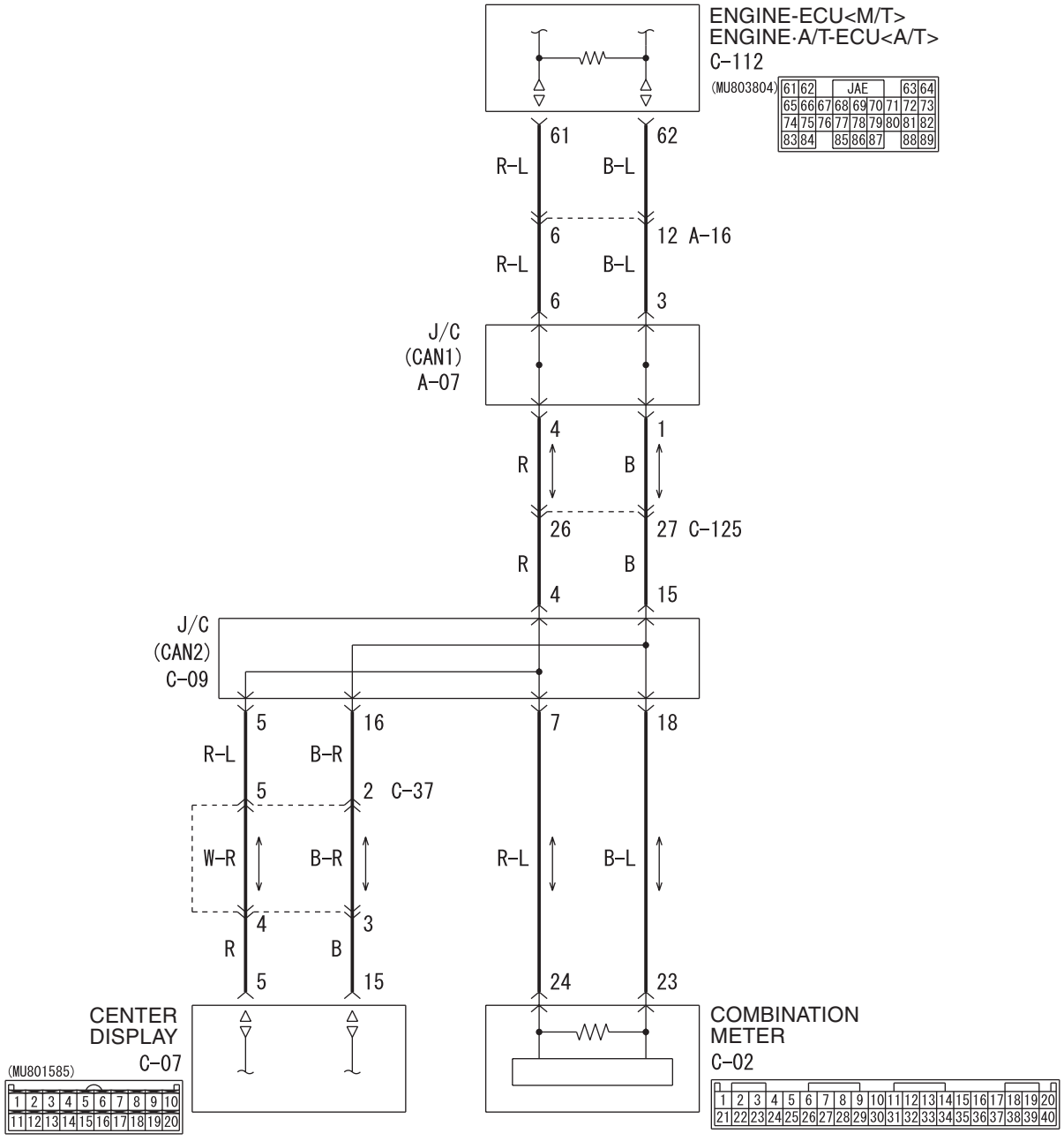
Q: Are the check result normal?

YES : <All the resistances measure 2 Ω or less> Power supply to the combination meter connector may be suspected. Diagnose the combination meter. Refer to P.54A-55.

NO : <Either or all of the voltages measure more than 2 Ω> Repair the wiring harness between joint connector (CAN2) and the combination meter connector.

Diagnostic Item 28: Diagnose the lines from the main bus line to the centre display <LH drive vehicles>

⚠ CAUTION
When servicing a CAN bus line, earth yourself by touching a metal object such as an unpainted water pipe. If you fail to do, a component connected to the CAN bus line may be broken.



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E02AA

TROUBLE JUDGMENT

If the MUT-III can not received signals from the centre display, CAN bus line connector(s) are broken or an open circuit has occurred.

COMMENTS ON TROUBLE SYMPTOM

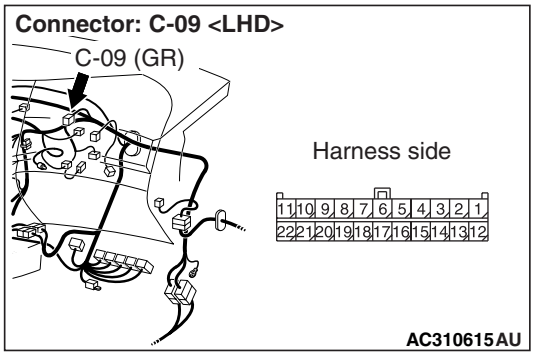
The wiring harness wire or connectors may have loose, corroded, or damage terminals, or terminals pushed back in the connector, or the centre display may be defective.

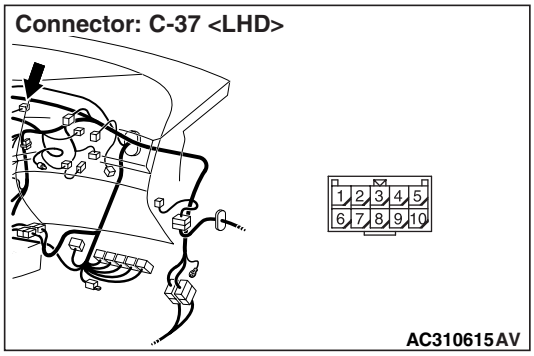
POSSIBLE CAUSES

- Damaged harness wires and connectors
- Malfunction of the centre display

DIAGNOSTIC PROCEDURE

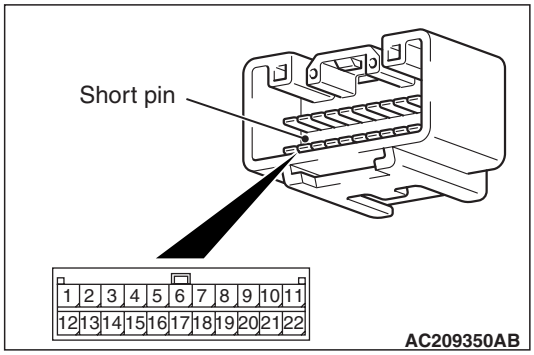
STEP 1. Connector check: C-09 joint connector (CAN2) connector and C-37 jumper connector





⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.



When checking the joint connector, ensure that its wiring harness side and its short pins are not damaged, and check that the wiring harness of the jumper connector is not damaged.

Q: Is the check result normal?

YES : Go to Step 2 .

NO : Repair a defective connector or replace the joint connector.

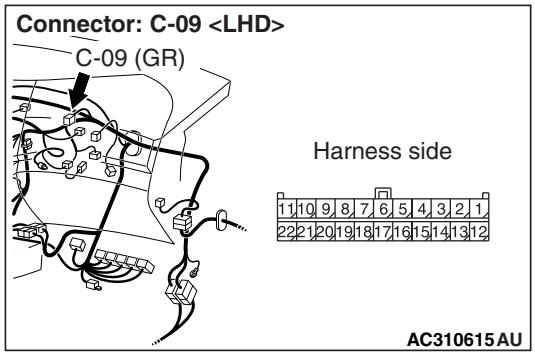
STEP 2. Resistance measurement at the C-09 joint connector (CAN2) connector and C-37 jumper connector.

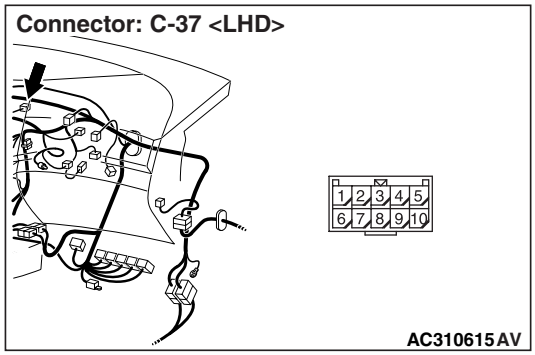
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





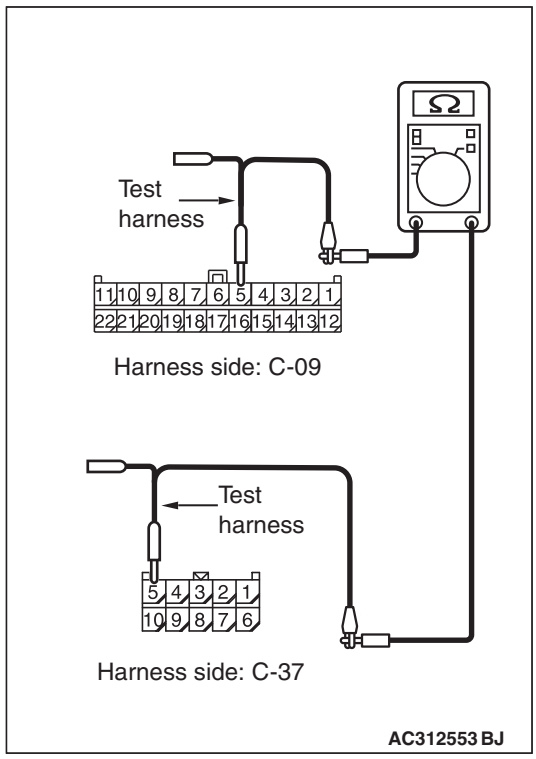
(1) Disconnect the joint connector (CAN2) and the jumper connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

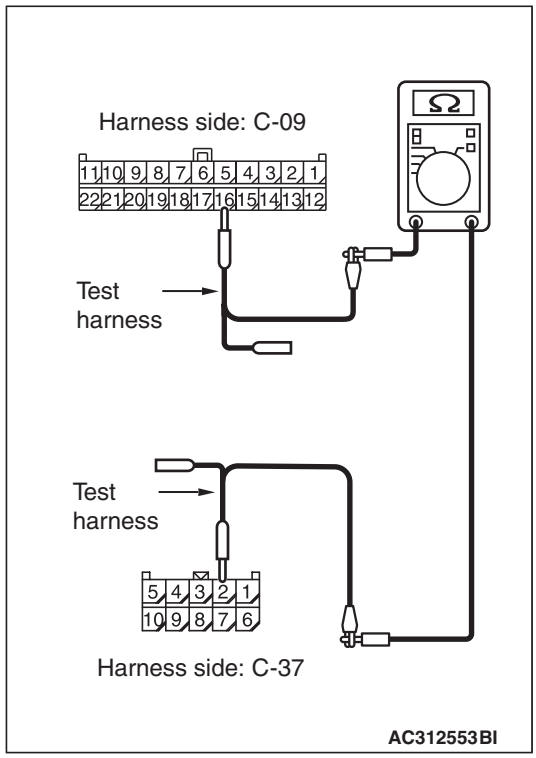
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal No.5 and C-37 jumper connector terminal No.5

OK: 2 ohms or less



(5) Continuity between C-09 joint connector (CAN2) terminal No.16 and C-37 jumper connector

terminal No.2

OK: 2 ohms or less

⚠ CAUTION

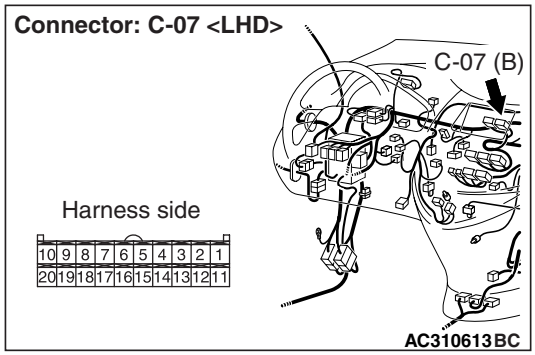
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Are the check result normal?

YES : <All the resistances measure 2 Ω or less> Go to Step 3 .

NO : <Either or all of the voltages measure more than 2 Ω> Repair the wiring harness between the joint connector (CAN2) and the jumper connector.

STEP 3. Connector check: C-07 centre display connector



⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 4 .

NO : Repair a defective connector or replace the joint connector.

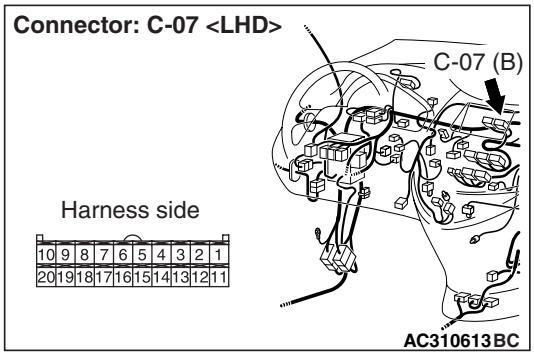
STEP 4. Resistance measurement at the C-37 jumper connector and C-07 centre display connector.

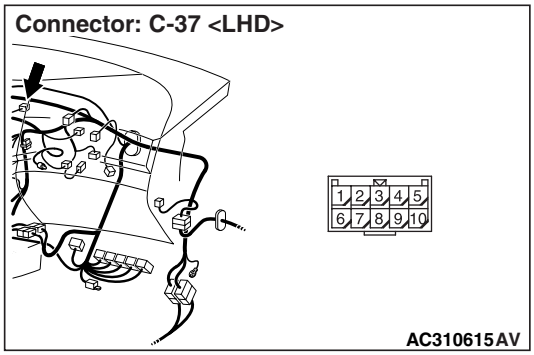
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the jumper connector and the centre display connector, and measure at the wiring harness side.

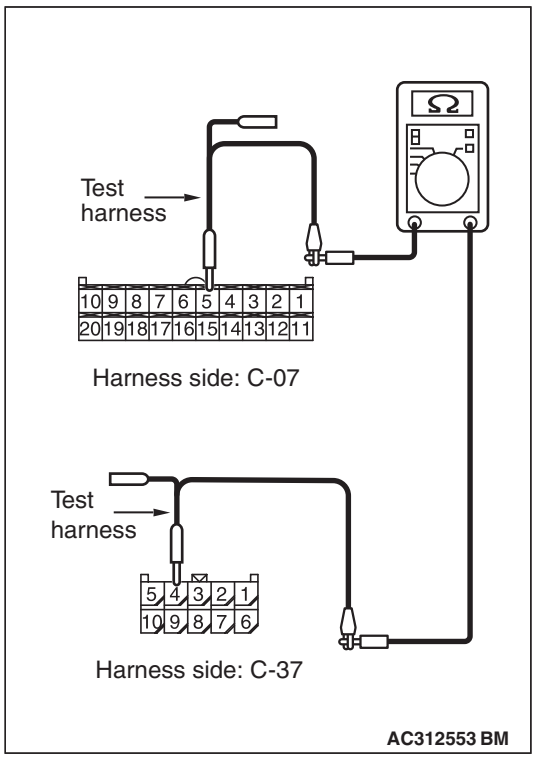
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

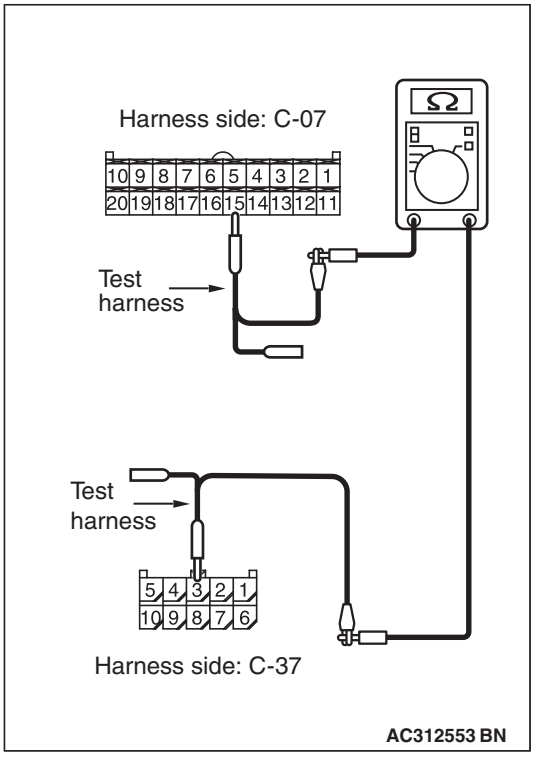
(3) Ensure that the negative battery terminal is

disconnected.



(4) Continuity between C-37 jumper connector terminal No.4 and C-07 centre display connector terminal No.5

OK: 2 ohms or less



(5) Continuity between C-37 jumper connector terminal No.3 and C-07 centre display connector terminal No.15

OK: 2 ohms or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

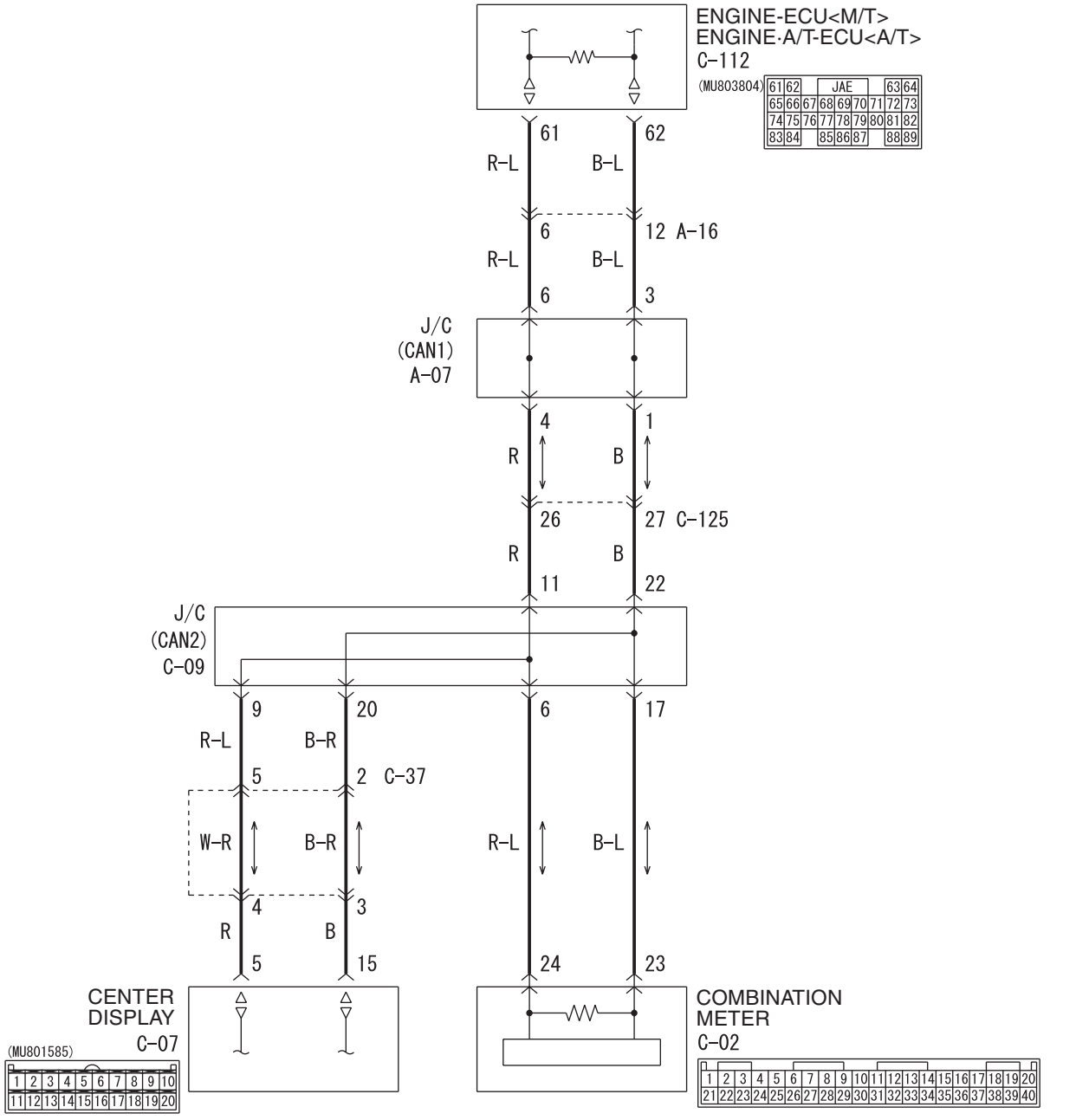
Q: Are the check result normal?

YES : <All the resistances measure 2 Ω or less> Power supply to the centre display connector may be suspected. Diagnose the centre display. Refer to P.54A-161.

NO : <Either or all of the voltages measure more than 2 Ω> Repair the wiring harness between the jumper connector and the centre display connector.

Diagnostic Item 29: Diagnose the lines from the main bus line to the centre display <RH drive vehicles>

⚠ CAUTION
When servicing a CAN bus line, earth yourself by touching a metal object such as an unpainted water pipe. If you fail to do, a component connected to the CAN bus line may be broken.



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E03AA

TROUBLE JUDGMENT

If the MUT-III can not received signals from the centre display, CAN bus line connector(s) are broken or an open circuit has occurred.

COMMENTS ON TROUBLE SYMPTOM

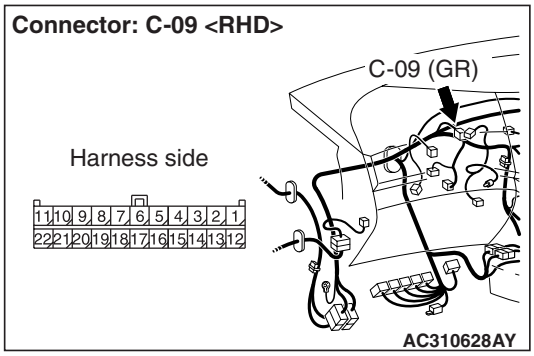
The wiring harness wire or connectors may have loose, corroded, or damage terminals, or terminals pushed back in the connector, or the centre display may be defective.

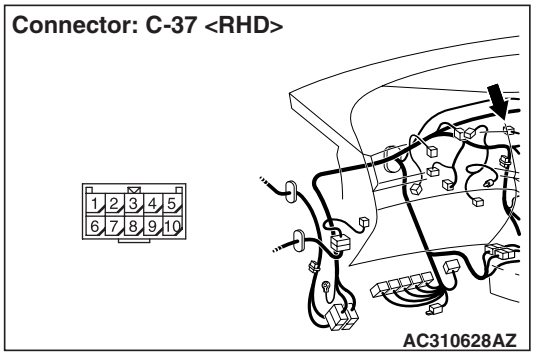
POSSIBLE CAUSES

- Damaged harness wires and connectors
- Malfunction of the centre display

DIAGNOSTIC PROCEDURE

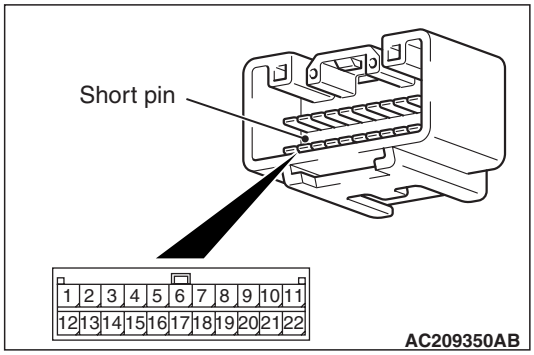
STEP 1. Connector check: C-09 joint connector (CAN2) connector and C-37 jumper connector





⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.



When checking the joint connector, ensure that its wiring harness side and its short pins are not damaged, and check that the wiring harness of the jumper connector is not damaged.

Q: Is the check result normal?

YES : Go to Step 2 .

NO : Repair a defective connector or replace the joint connector.

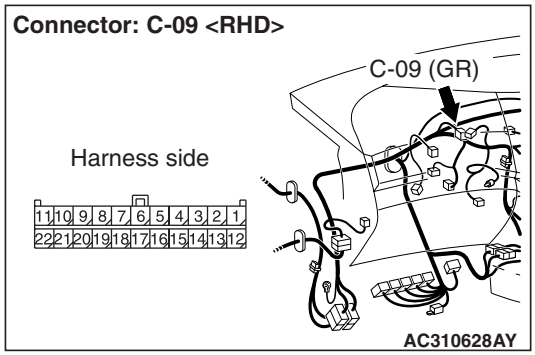
STEP 2. Resistance measurement at the C-09 joint connector (CAN2) connector and C-37 jumper connector.

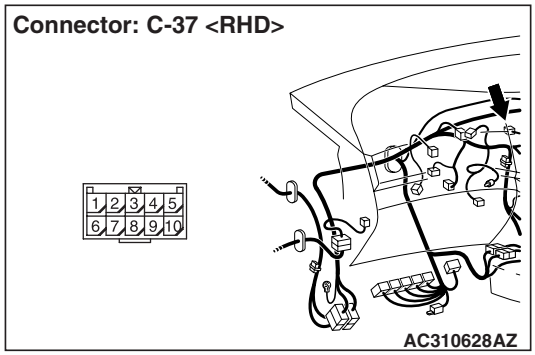
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





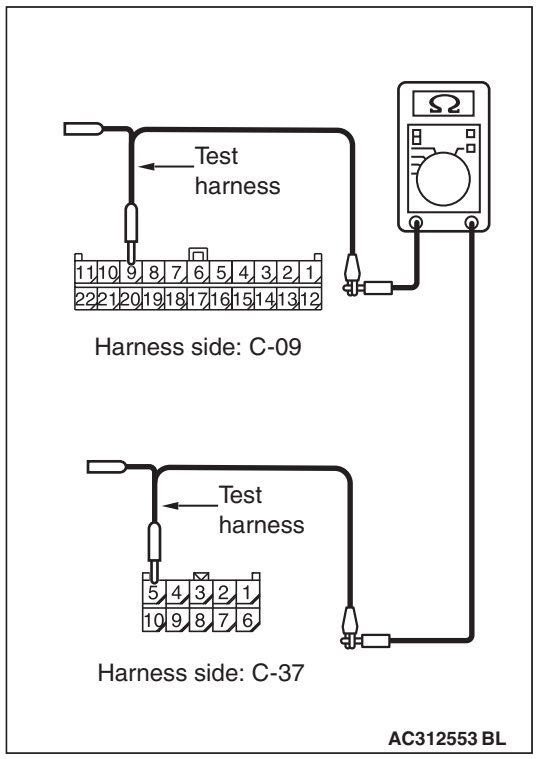
(1) Disconnect the joint connector (CAN2) and the jumper connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

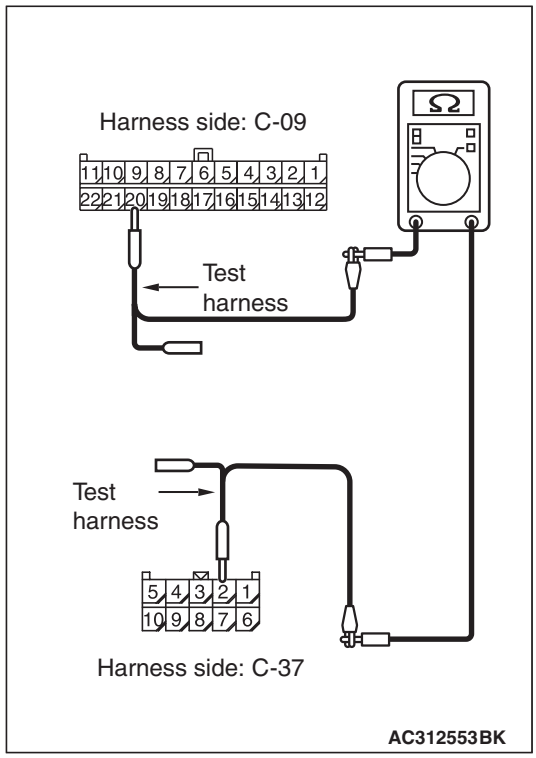
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal No.9 and C-37 jumper connector terminal No.5

OK: 2 ohms or less



(5) Continuity between C-09 joint connector (CAN2) terminal No.20 and C-37 jumper connector

terminal No.2

OK: 2 ohms or less

⚠ CAUTION

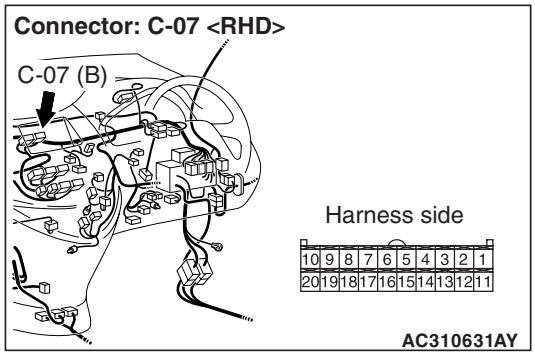
Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

Q: Are the check result normal?

YES : <All the resistances measure 2 Ω or less> Go to Step 3 .

NO : <Either or all of the voltages measure more than 2 Ω> Repair the wiring harness between the joint connector (CAN2) and the jumper connector.

STEP 3. Connector check: C-07 centre display connector



⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.

Q: Is the check result normal?

YES : Go to Step 4 .

NO : Repair a defective connector or replace the joint connector.

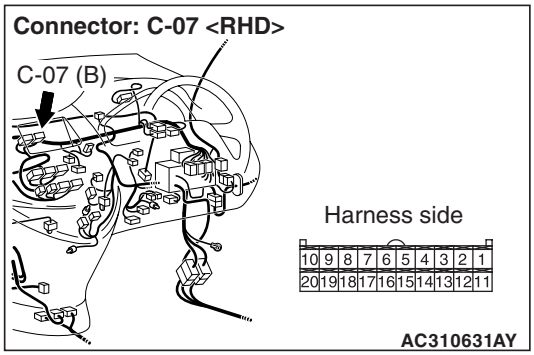
STEP 4. Resistance measurement at the C-37 jumper connector and C-07 centre display connector.

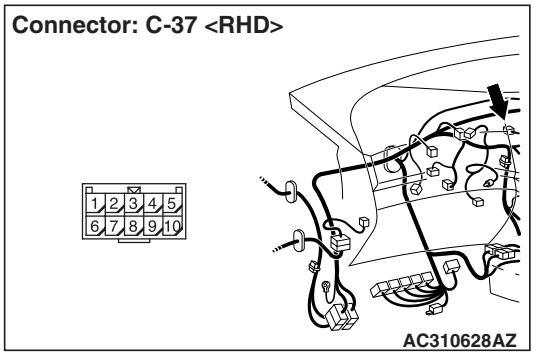
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





(1) Disconnect the jumper connector and the centre display connector, and measure at the wiring harness side.

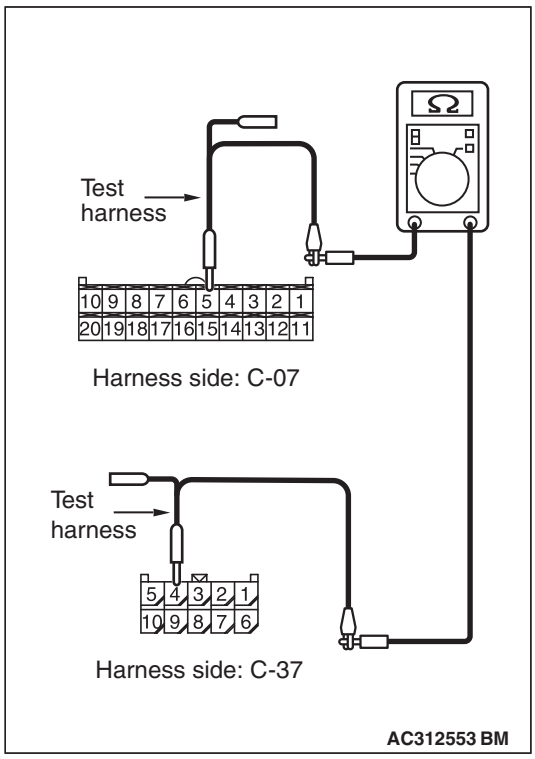
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

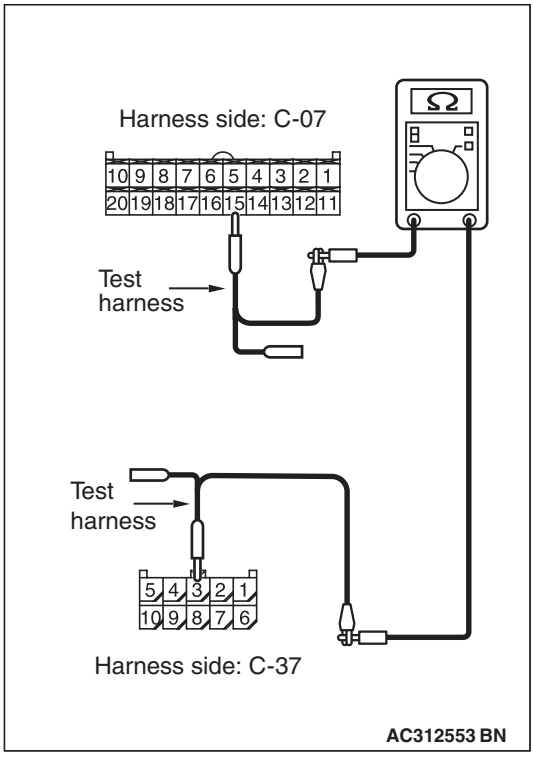
(3) Ensure that the negative battery terminal is

disconnected.



(4) Continuity between C-37 jumper connector terminal No.4 and C-07 centre display connector terminal No.5

OK: 2 ohms or less



(5) Continuity between C-37 jumper connector terminal No.3 and C-07 centre display connector terminal No.15

OK: 2 ohms or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

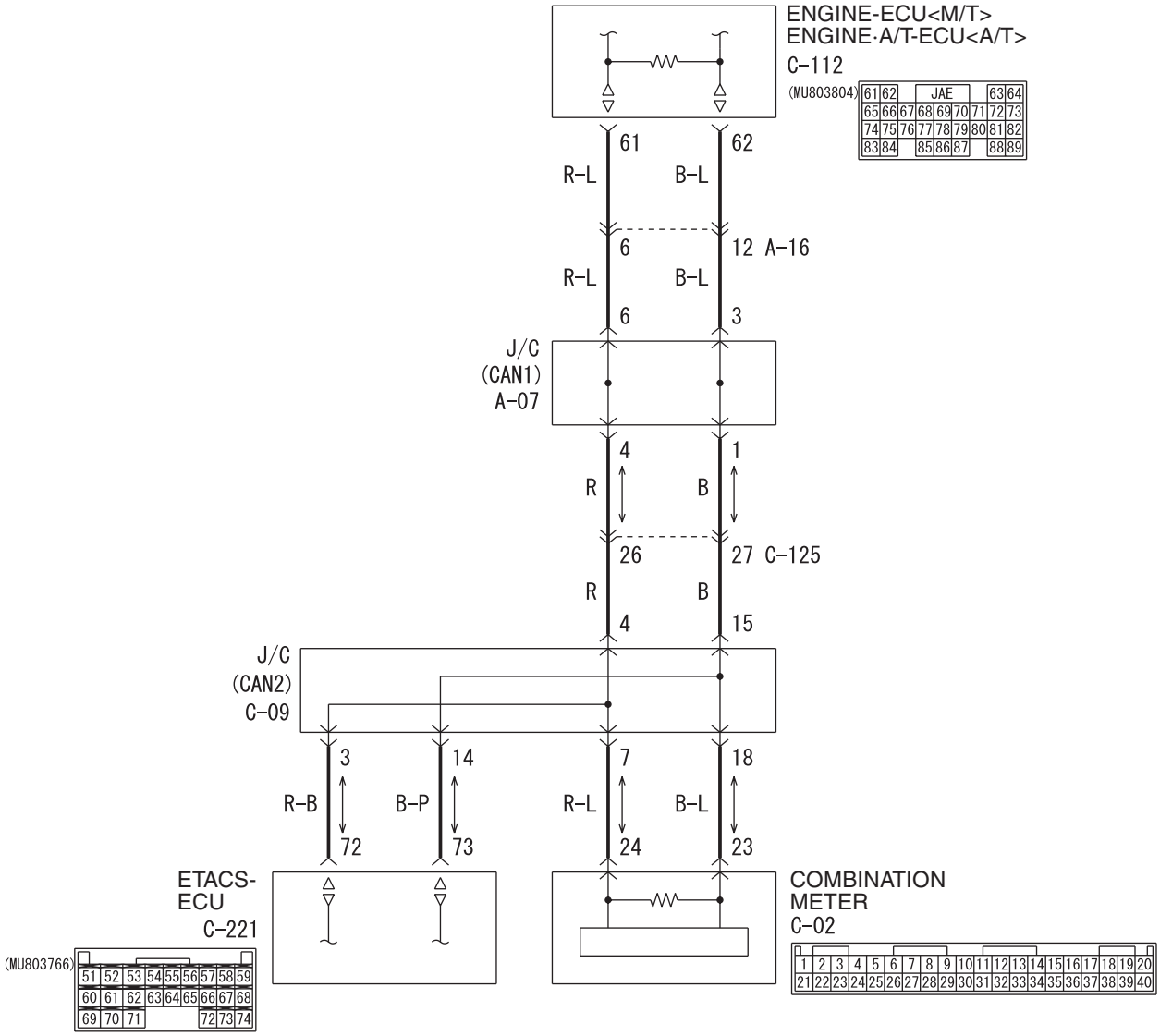
Q: Are the check result normal?

YES : <All the resistances measure 2 Ω or less> Power supply to the centre display connector may be suspected. Diagnose the centre display. Refer to P.54A-161.

NO : <Either or all of the voltages measure more than 2 Ω> Repair the wiring harness between the jumper connector and the centre display connector.

Diagnostic Item 30: Diagnose the lines from the main bus line to the ETACS-ECU <LH drive vehicles>

⚠ CAUTION
When servicing a CAN bus line, earth yourself by touching a metal object such as an unpainted water pipe. If you fail to do, a component connected to the CAN bus line may be broken.



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E04AA

TROUBLE JUDGMENT

If the MUT-III can not received signal from the ETACS-ECU, CAN bus line connector(s) are broken or an open circuit has occurred.

COMMENTS ON TROUBLE SYMPTOM

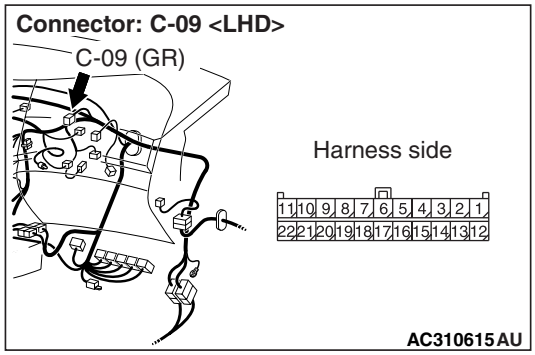
The wiring harness wire or connectors may have loose, corroded, or damage terminals, or terminals pushed back in the connector, or the ETACS-ECU may be defective.

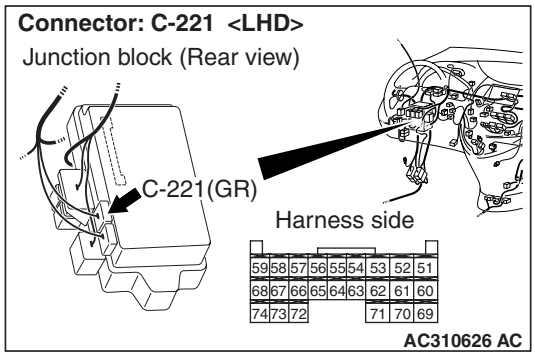
POSSIBLE CAUSES

- Damaged harness wires and connectors
- Malfunction of the ETACS-ECU

DIAGNOSTIC PROCEDURE

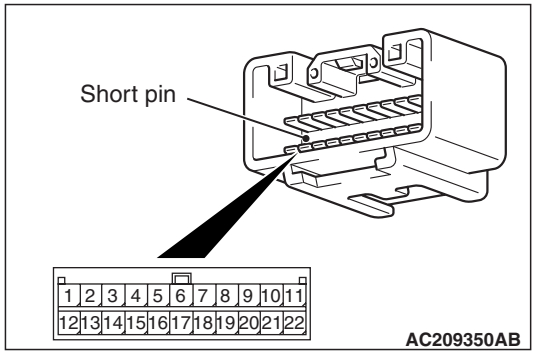
STEP 1. Connector check: C-09 joint connector (CAN2) connector and C-221 ETACS-ECU connector





⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.



When checking the joint connector, ensure that its wiring harness side and its short pins are not damaged.

Q: Is the check result normal?

YES : Go to Step 2 .
NO : Repair a defective connector or replace the joint connector.

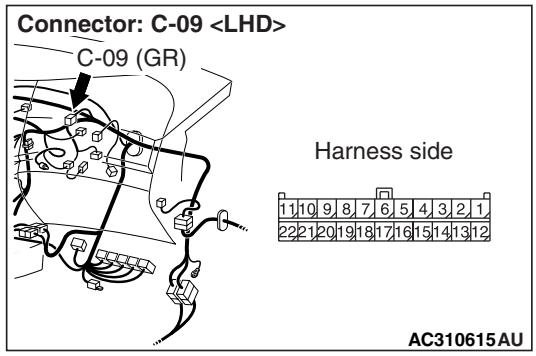
STEP 2. Resistance measurement at C-09 joint connector (CAN2) and C-221 ETACS-ECU connector.

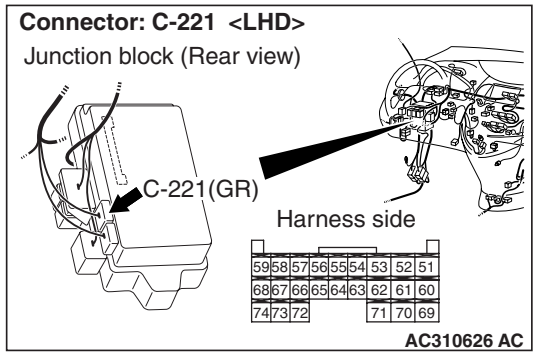
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





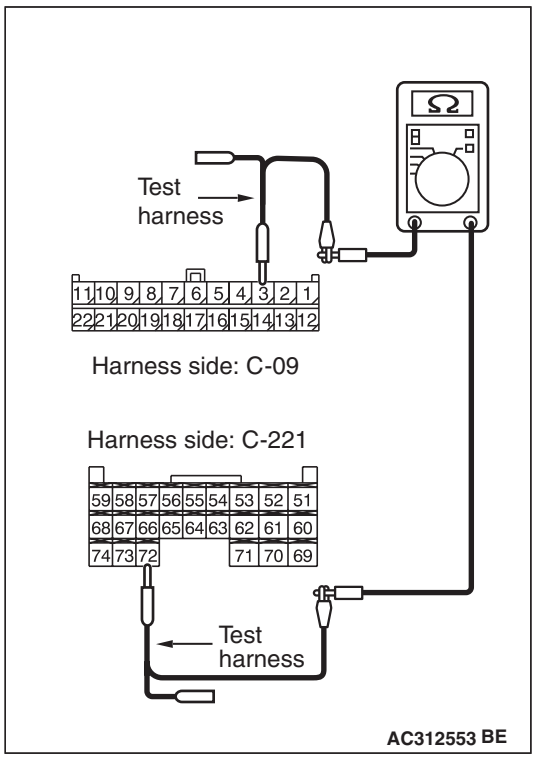
(1) Disconnect the joint connector (CAN2) and the ETACS-ECU connector, and measure at the wiring harness side.
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

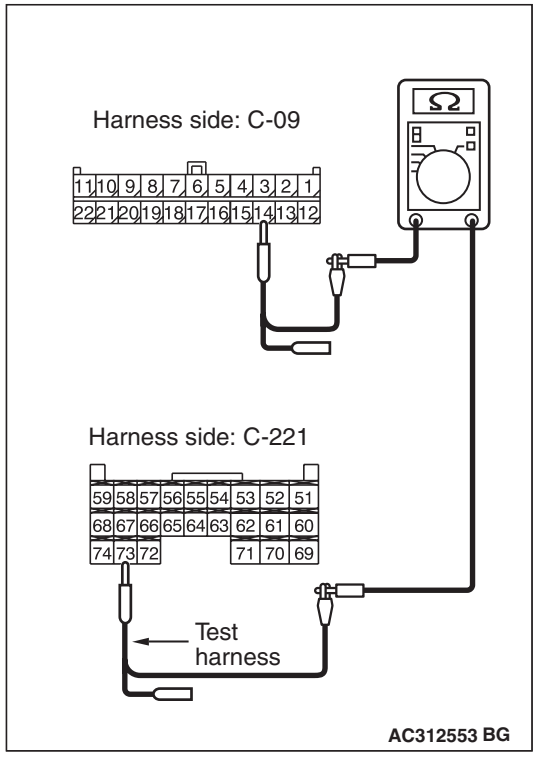
(3) Ensure that the negative battery terminal is

disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal No.3 and C-221 ETACS-ECU connector terminal No.72

OK: 2 ohms or less



(5) Continuity between C-09 joint connector (CAN2) terminal No.14 and C-221 ETACS-ECU connector terminal No.73

OK: 2 ohms or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

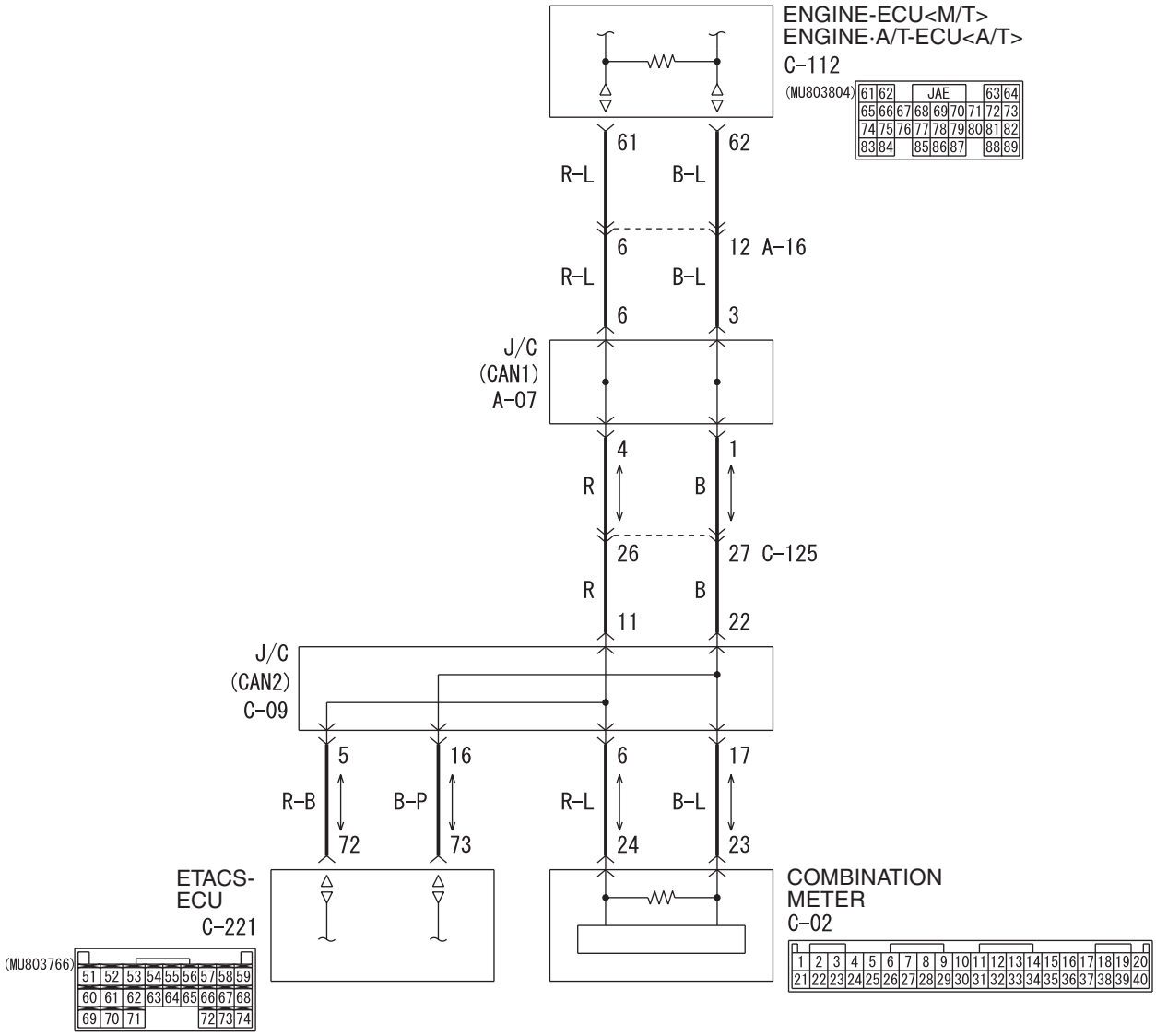
Q: Are the check result normal?

YES : <All the resistances measure 2 Ω or less> Power supply to the ETACS-ECU may be suspected. Diagnose the SWS. Refer to P.54B-87.

NO : <Either or all of the voltages measure more than 2 Ω> Repair the wiring harness between the joint connector (CAN2) and the ETACS-ECU connector.

Diagnostic Item 31: Diagnose the lines from the main bus line to the ETACS-ECU <RH drive vehicles>

⚠ CAUTION
When servicing a CAN bus line, earth yourself by touching a metal object such as an unpainted water pipe. If you fail to do, a component connected to the CAN bus line may be broken.



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E05AA

TROUBLE JUDGMENT

If the MUT-III can not received signal from the ETACS-ECU, CAN bus line connector(s) are broken or an open circuit has occurred.

COMMENTS ON TROUBLE SYMPTOM

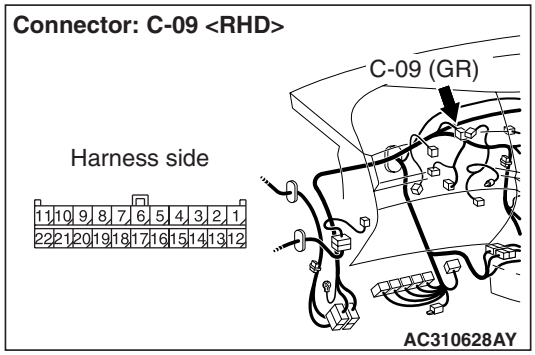
The wiring harness wire or connectors may have loose, corroded, or damage terminals, or terminals pushed back in the connector, or the ETACS-ECU may be defective.

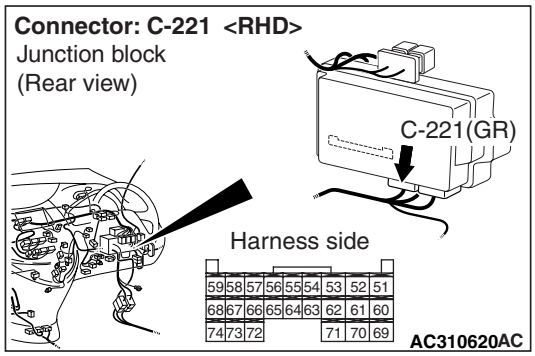
POSSIBLE CAUSES

- Damaged harness wires and connectors
- Malfunction of the ETACS-ECU

DIAGNOSTIC PROCEDURE

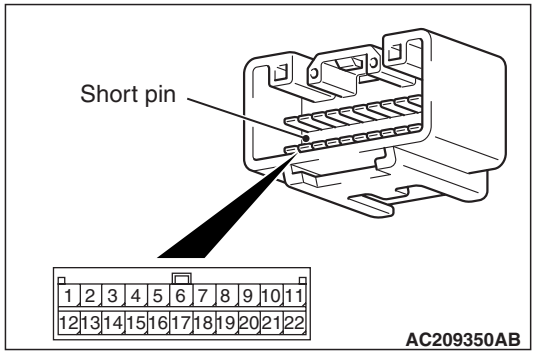
STEP 1. Connector check: C-09 joint connector (CAN2) connector and C-221 ETACS-ECU connector





⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.



When checking the joint connector, ensure that its wiring harness side and its short pins are not damaged.

Q: Are the check result normal?

YES : Go to Step 2 .
NO : Repair a defective connector or replace the joint connector.

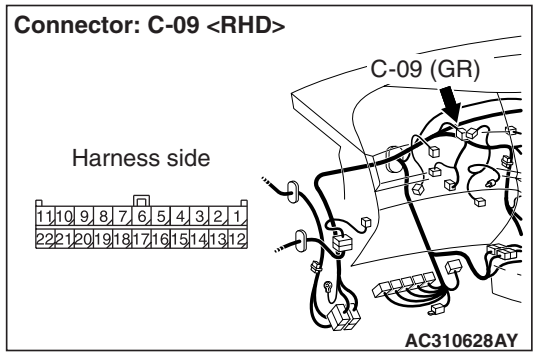
STEP 2. Resistance measurement at C-09 joint connector (CAN2) and C-221 ETACS-ECU connector.

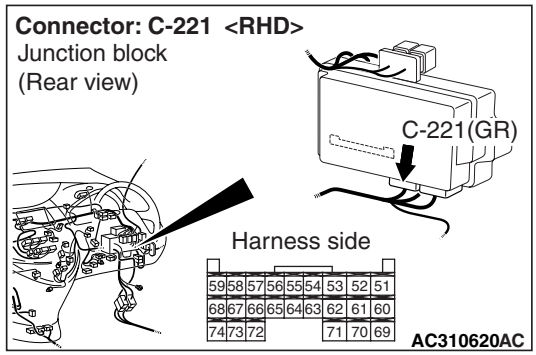
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





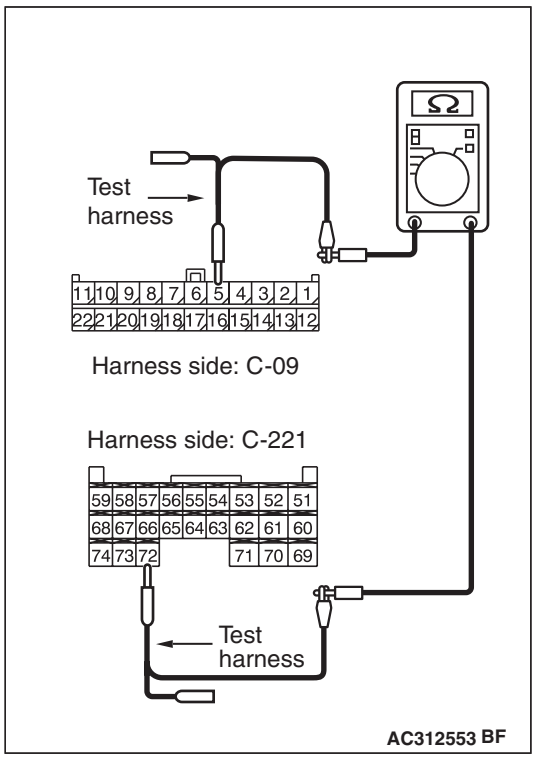
(1) Disconnect the joint connector (CAN2) and the ETACS-ECU connector, and measure at the wiring harness side.
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

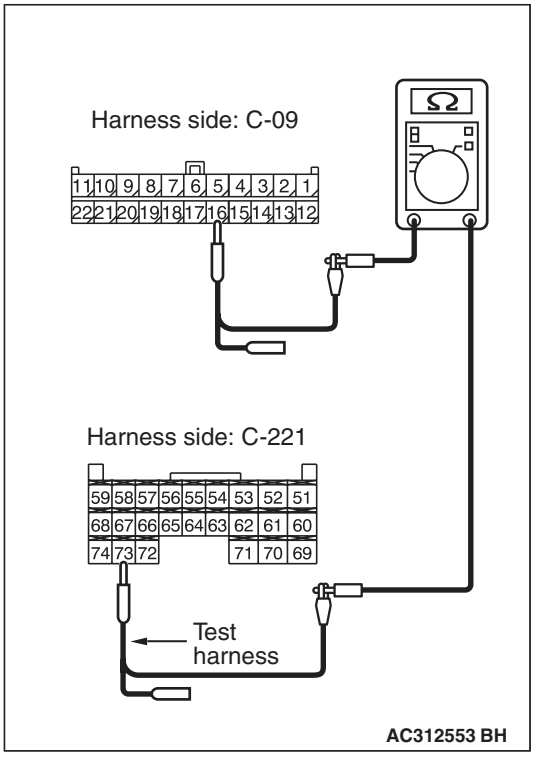
(3) Ensure that the negative battery terminal is

disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal No.5 and C-221 ETACS-ECU connector terminal No.72

OK: 2 ohms or less



(5) Continuity between C-09 joint connector (CAN2) terminal No.16 and C-221 ETACS-ECU connector terminal No.73

OK: 2 ohms or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

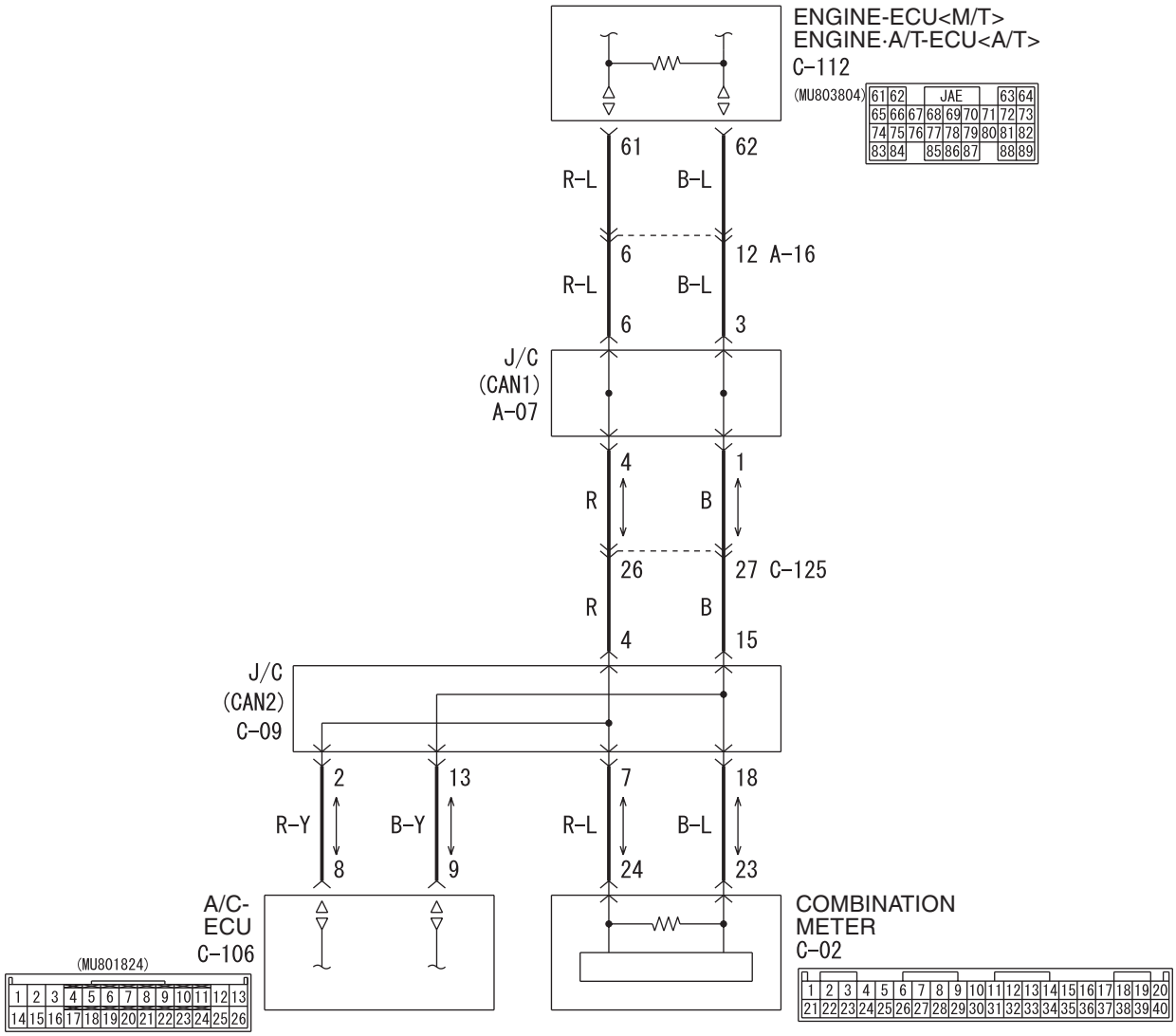
Q: Are the check result normal?

YES : <All the resistances measure 2 Ω or less> Power supply to the ETACS-ECU may be suspected. Diagnose the SWS. Refer to P.54B-87.

NO : <Either or all of the voltages measure more than 2 Ω> Repair the wiring harness between the joint connector (CAN2) and the ETACS-ECU connector.

Diagnostic Item 32: Diagnose the lines from the main bus line to the A/C-ECU <LH drive vehicles>

⚠ CAUTION
When servicing a CAN bus line, earth yourself by touching a metal object such as an unpainted water pipe. If you fail to do, a component connected to the CAN bus line may be broken.



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E01AA

TROUBLE JUDGMENT

If the MUT-III can not received signals from the A/C-ECU, CAN bus line connector(s) are broken or an open circuit has occurred.

COMMENTS ON TROUBLE SYMPTOM

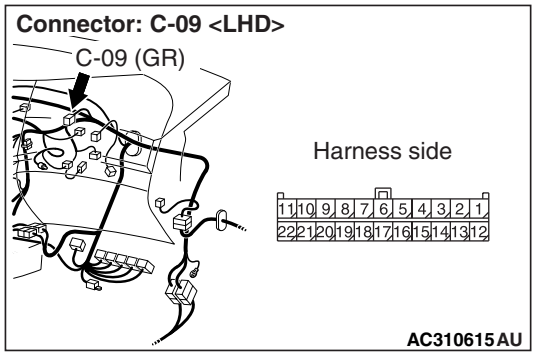
The wiring harness wire or connectors may have loose, corroded, or damage terminals, or terminals pushed back in the connector, or the A/C-ECU may be defective.

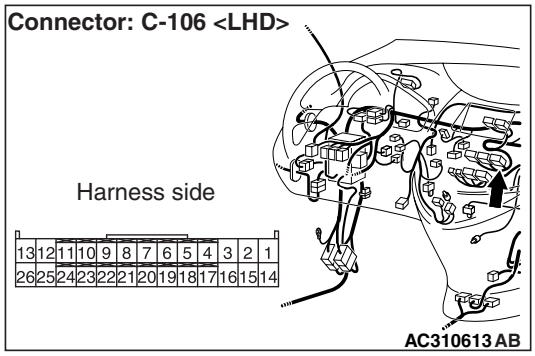
POSSIBLE CAUSES

- Damaged harness wires and connectors
- Malfunction of the A/C-ECU

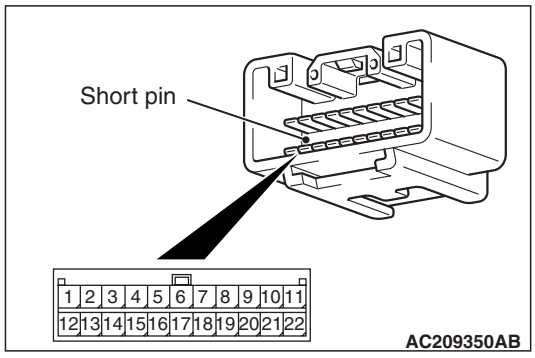
DIAGNOSTIC PROCEDURE

STEP 1. Connector check: C-09 joint connector (CAN2) connector and C-106 A/C-ECU connector





⚠ CAUTION
The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.



When checking the joint connector, ensure that its wiring harness side and its short pins are not damaged.

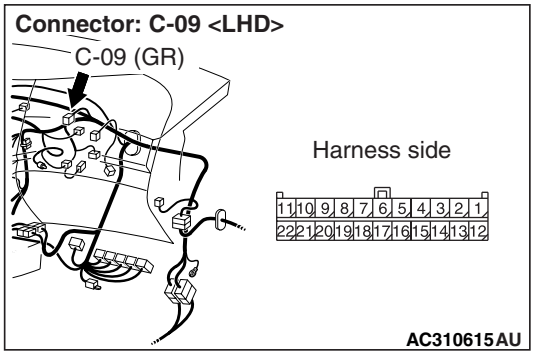
Q: Are the check result normal?

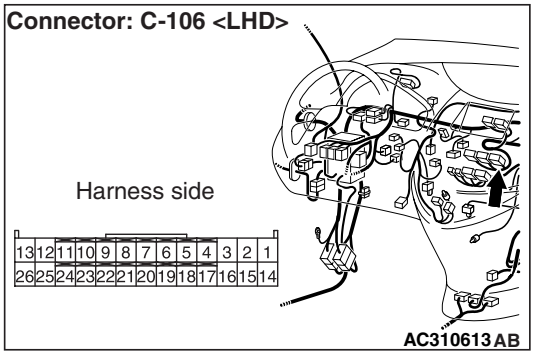
YES : Go to Step 2 .
NO : Repair a defective connector or replace the joint connector.

STEP 2. Resistance measurement at C-09 joint connector (CAN2) and C-106 A/C-ECU connector.

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.



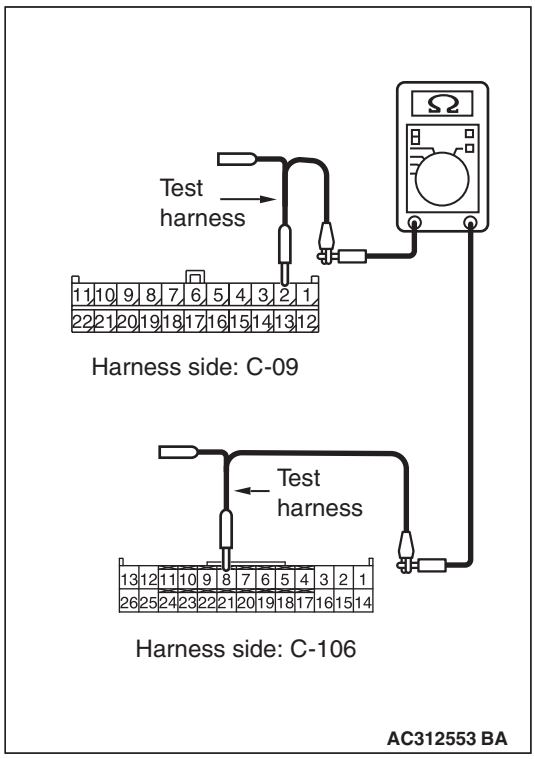


(1) Disconnect the joint connector (CAN2) and the A/C-ECU connector, and measure at the wiring harness side.
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

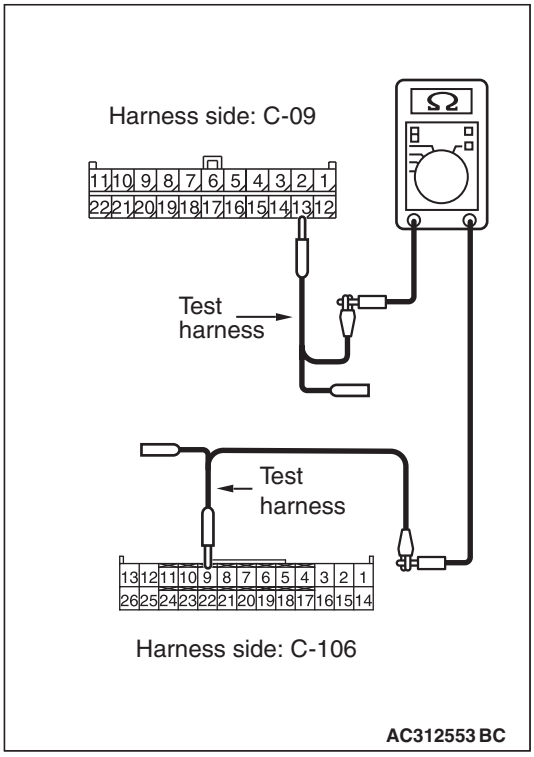
(3) Ensure that the negative battery terminal is

disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal No.2 and C-106 A/C-ECU connector terminal No.8

OK: 2 ohms or less



(5) Continuity between C-09 joint connector (CAN2) terminal No.13 and C-106 A/C-ECU connector terminal No.9

OK: 2 ohms or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

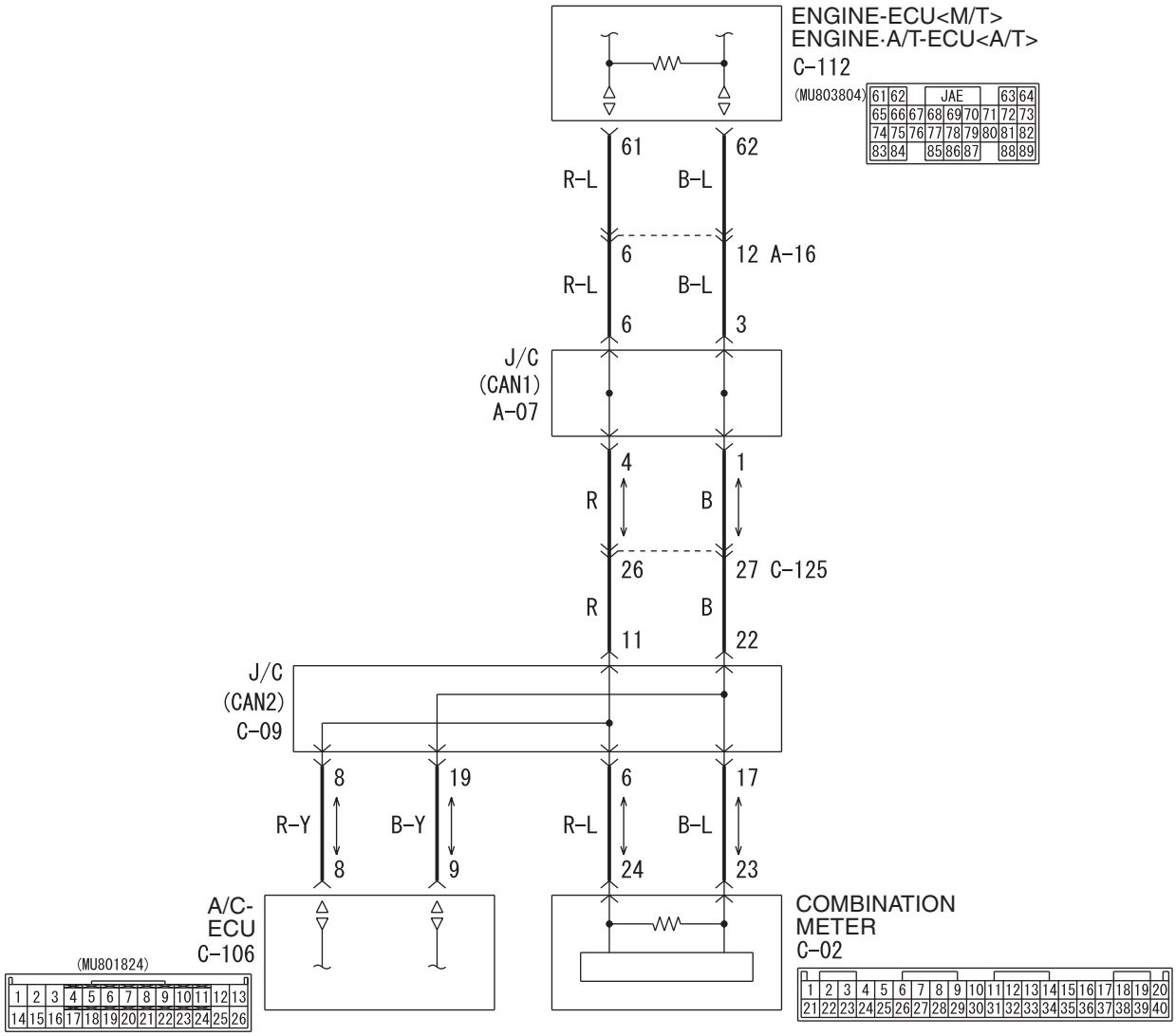
Q: Are the check result normal?

YES : <All the resistances measure 2 Ω or less> Power supply to the A/C-ECU may be suspected. Diagnose the air conditioner system. Refer to P.55-174.

NO : <Either or all of the voltages measure more than 2 Ω> Repair the wiring harness between the joint connector (CAN2) and the A/C-ECU connector.

Diagnostic Item 33: Diagnose the lines from the main bus line to the A/C-ECU <RH drive vehicles>

⚠ CAUTION
When servicing a CAN bus line, earth yourself by touching a metal object such as an unpainted water pipe. If you fail to do, a component connected to the CAN bus line may be broken.



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E00AA

TROUBLE JUDGMENT

If the MUT-III can not received signals from the A/C-ECU, CAN bus line connector(s) are broken or an open circuit has occurred.

COMMENTS ON TROUBLE SYMPTOM

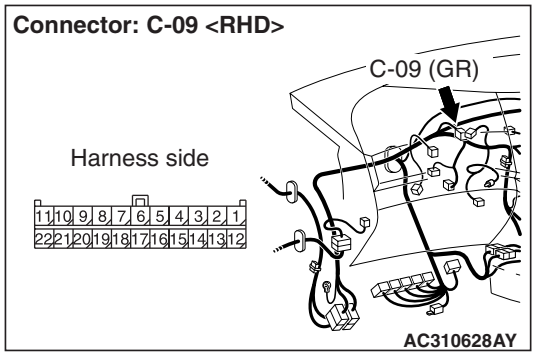
The wiring harness wire or connectors may have loose, corroded, or damage terminals, or terminals pushed back in the connector, or the A/C-ECU may be defective.

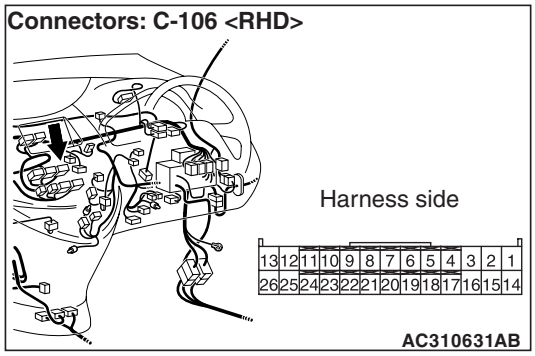
POSSIBLE CAUSES

- Damaged harness wires and connectors
- Malfunction of the A/C-ECU

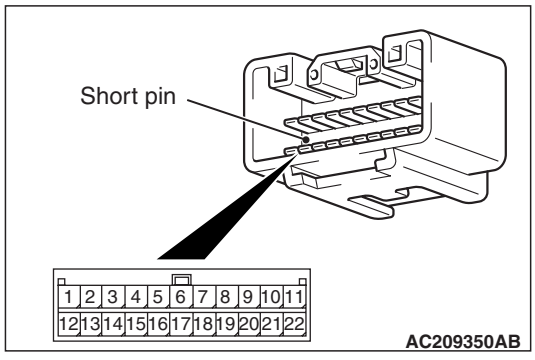
DIAGNOSTIC PROCEDURE

STEP 1. Connector check: C-09 joint connector (CAN2) connector and C-106 A/C-ECU connector





⚠ CAUTION
The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.



When checking the joint connector, ensure that its wiring harness side and its short pins are not damaged.

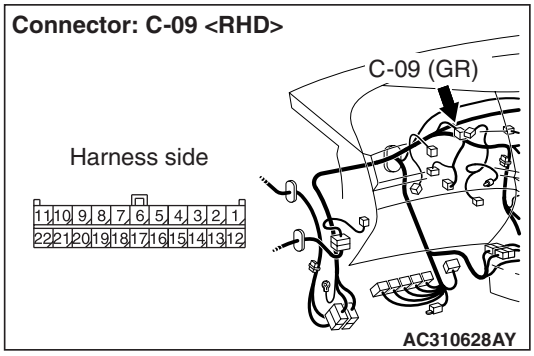
Q: Are the check result normal?

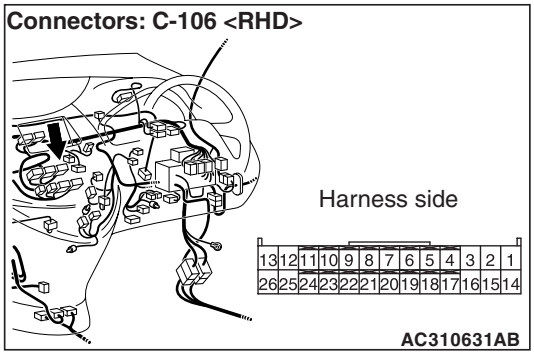
YES : Go to Step 2 .
NO : Repair a defective connector or replace the joint connector.

STEP 2. Resistance measurement at C-09 joint connector (CAN2) and C-106 A/C-ECU connector.

⚠ CAUTION
A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION
The test wiring harness should be used. For details refer to P.54D-8.



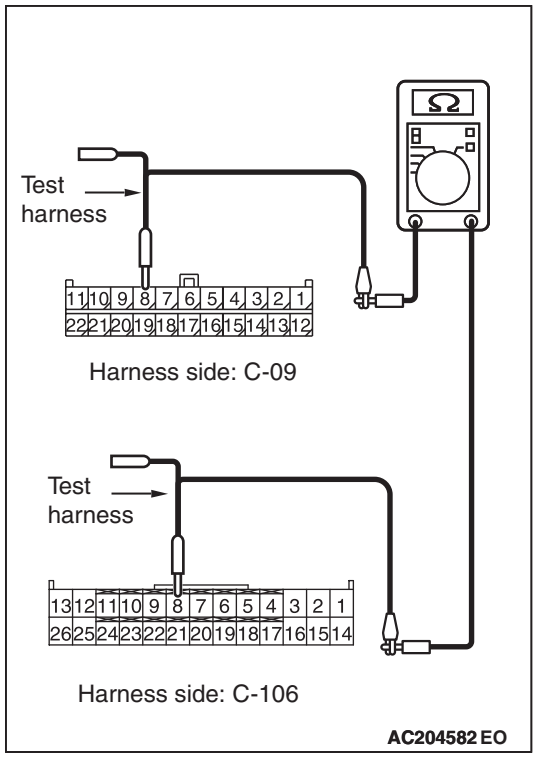


(1) Disconnect the joint connector (CAN2) and the A/C-ECU connector, and measure at the wiring harness side.
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

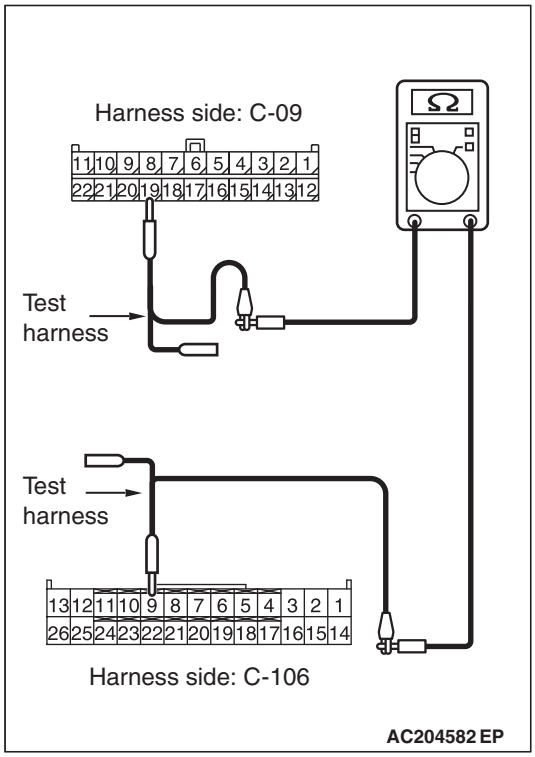
(3) Ensure that the negative battery terminal is

disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal No.8 and C-106 A/C-ECU connector terminal No.8

OK: 2 ohms or less



(5) Continuity between C-09 joint connector (CAN2) terminal No.19 and C-106 A/C-ECU connector terminal No.9

OK: 2 ohms or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

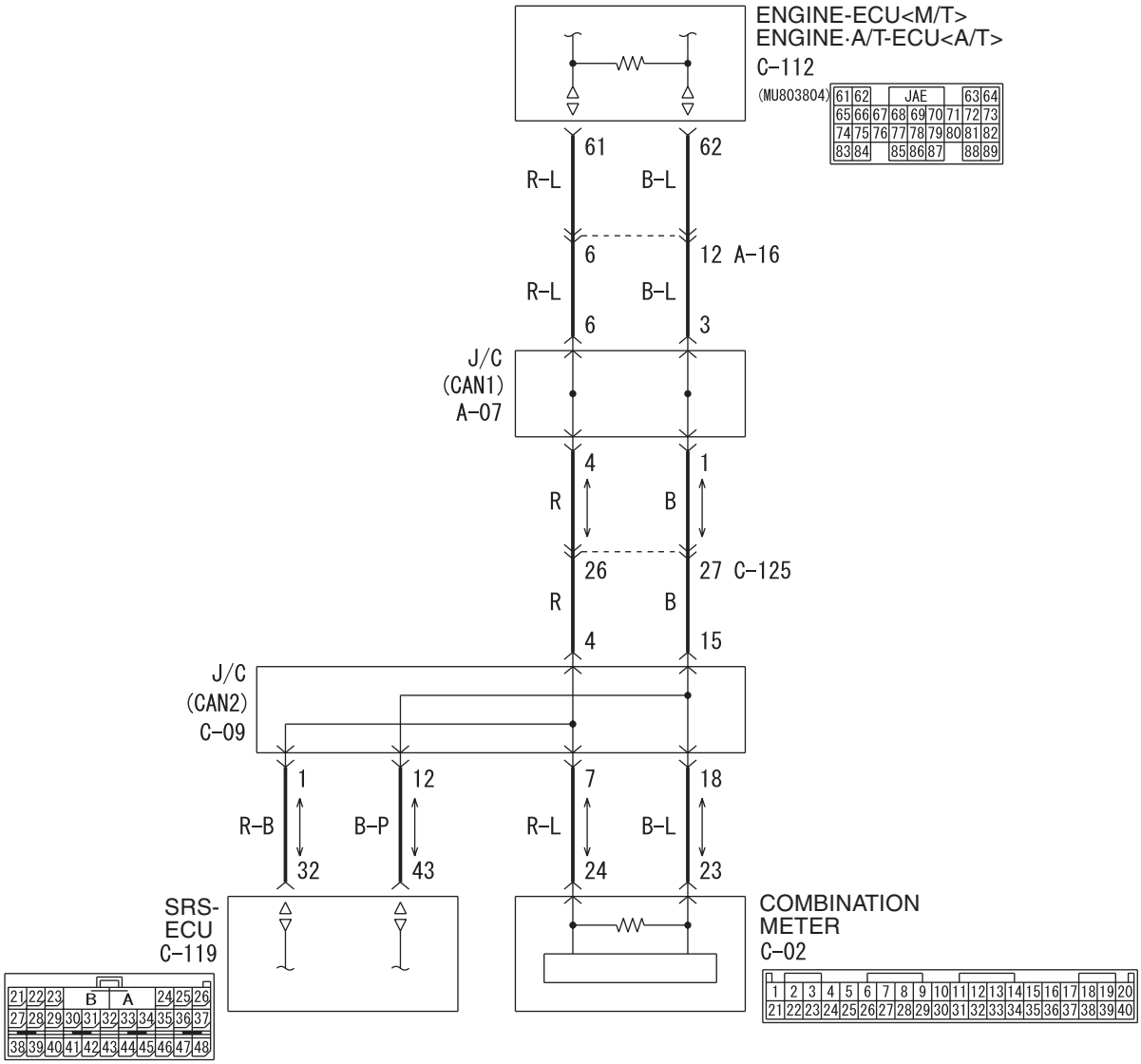
Q: Are the check result normal?

YES : <All the resistances measure 2 Ω or less> Power supply to the A/C-ECU may be suspected. Diagnose the air conditioner system. Refer to P.55-178.

NO : <Either or all of the voltages measure more than 2 Ω> Repair the wiring harness between the joint connector (CAN2) and the A/C-ECU connector.

Diagnostic Item 34: Diagnose the lines from the main bus line to the SRS-ECU <LH drive vehicles>

⚠ CAUTION
When servicing a CAN bus line, earth yourself by touching a metal object such as an unpainted water pipe. If you fail to do, a component connected to the CAN bus line may be broken.



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E08AA

TROUBLE JUDGMENT

If the MUT-III can not received signal from the SRS-ECU, CAN bus line connector(s) are broken or an open circuit has occurred.

COMMENTS ON TROUBLE SYMPTOM

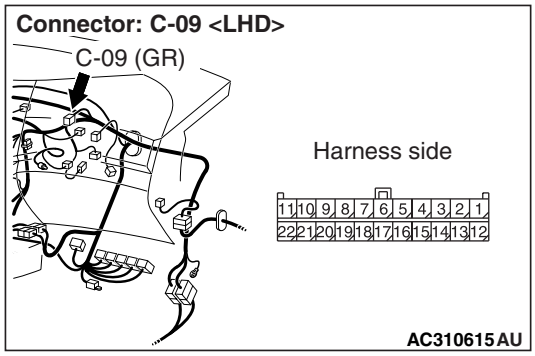
The wiring harness wire or connectors may have loose, corroded, or damage terminals, or terminals pushed back in the connector, or the SRS-ECU may be defective.

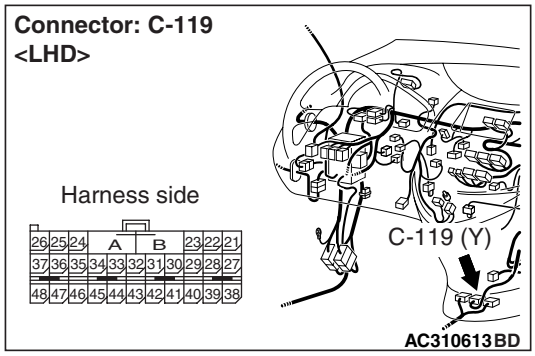
POSSIBLE CAUSES

- Damaged harness wires and connectors
- Malfunction of the SRS-ECU

DIAGNOSTIC PROCEDURE

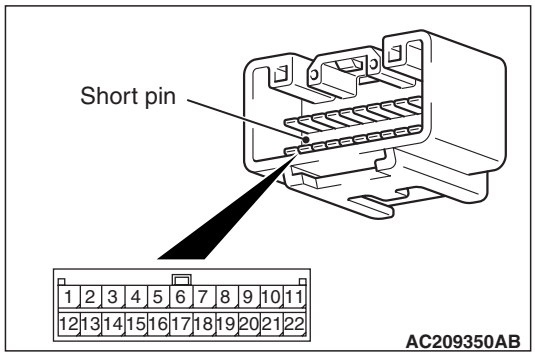
STEP 1. Connector check: C-09 joint connector (CAN2) connector and C-119 SRS-ECU connector





⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.



When checking the joint connector, ensure that its wiring harness side and its short pins are not damaged.

Q: Are the check result normal?

YES : Go to Step 2 .
NO : Repair a defective connector or replace the joint connector.

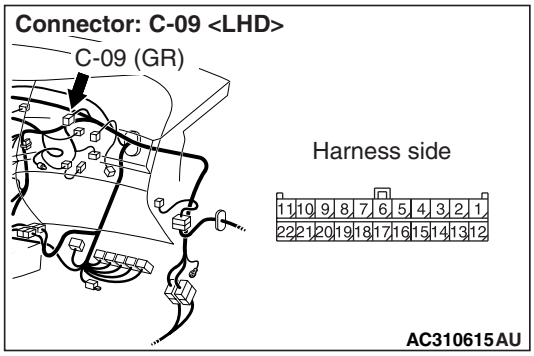
STEP 2. Resistance measurement at C-09 joint connector (CAN2) and C-119 SRS-ECU connector.

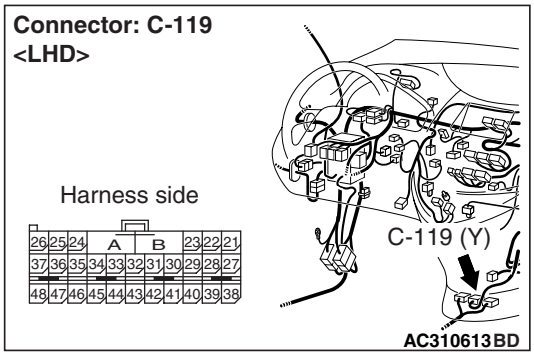
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





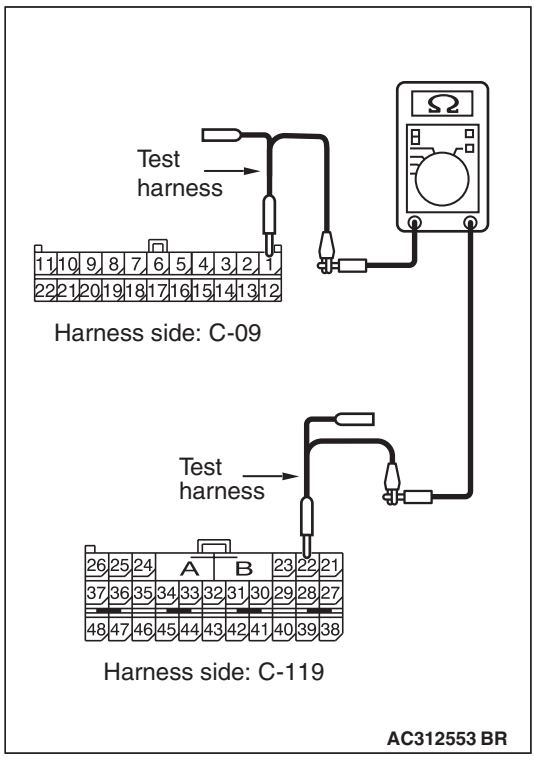
(1) Disconnect the joint connector (CAN2) and the SRS-ECU connector, and measure at the wiring harness side.
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

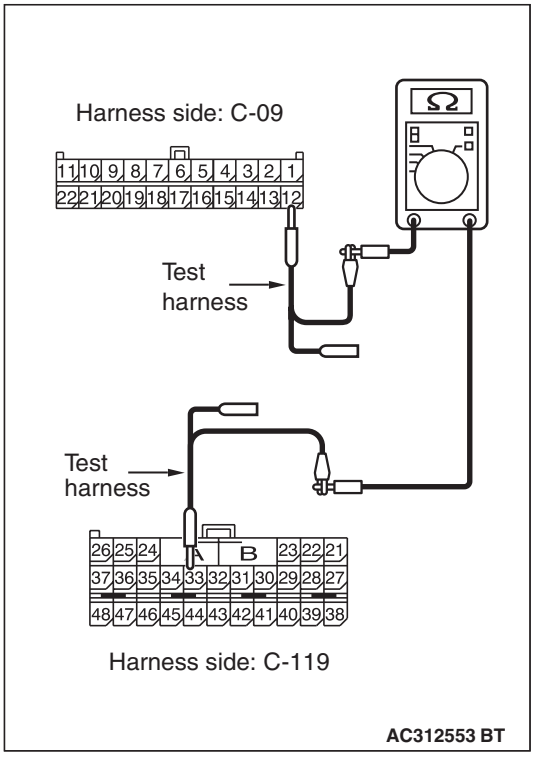
(3) Ensure that the negative battery terminal is

disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal No.1 and C-119 SRS-ECU connector terminal No.22

OK: 2 ohms or less



(5) Continuity between C-09 joint connector (CAN2) terminal No.12 and C-119 SRS-ECU connector terminal No.33

OK: 2 ohms or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

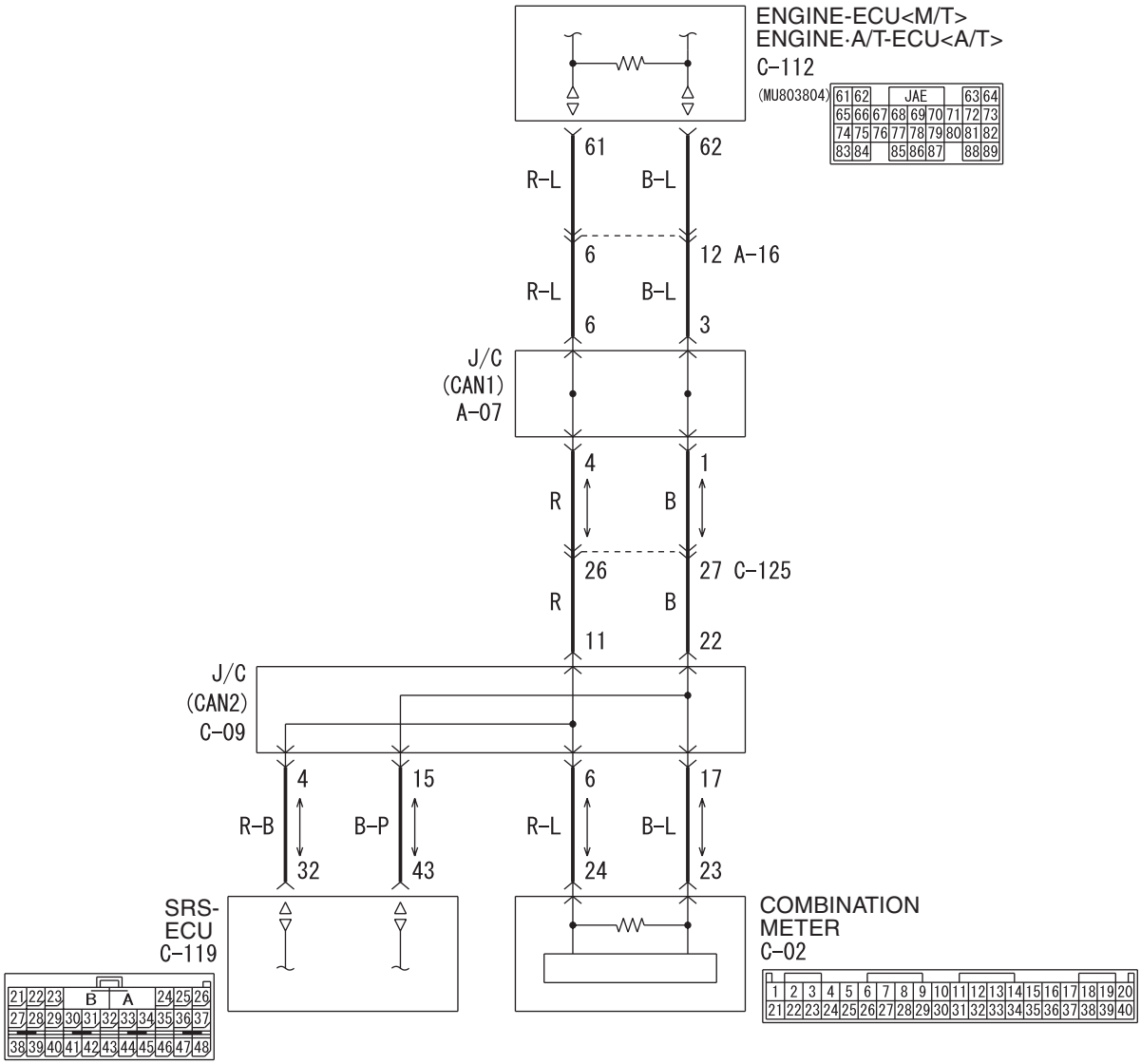
Q: Are the check result normal?

YES : <All the resistances measure 2 Ω or less> Power supply to the SRS-ECU may be suspected. Diagnose the SRS system. Refer to P.35C-135.

NO : <Either or all of the voltages measure more than 2 Ω> Repair the wiring harness between the joint connector (CAN2) and the SRS-ECU connector.

Diagnostic Item 35: Diagnose the lines from the main bus line to the SRS-ECU <RH drive vehicles>

⚠ CAUTION
When servicing a CAN bus line, earth yourself by touching a metal object such as an unpainted water pipe. If you fail to do, a component connected to the CAN bus line may be broken.



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E09AA

TROUBLE JUDGMENT

If the MUT-III can not received signal from the SRS-ECU, CAN bus line connector(s) are broken or an open circuit has occurred.

COMMENTS ON TROUBLE SYMPTOM

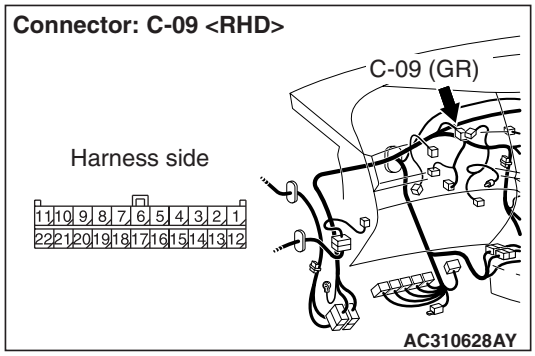
The wiring harness wire or connectors may have loose, corroded, or damage terminals, or terminals pushed back in the connector, or the SRS-ECU may be defective.

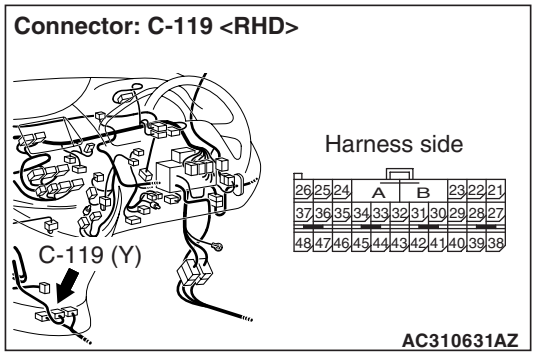
POSSIBLE CAUSES

- Damaged harness wires and connectors
- Malfunction of the SRS-ECU

DIAGNOSTIC PROCEDURE

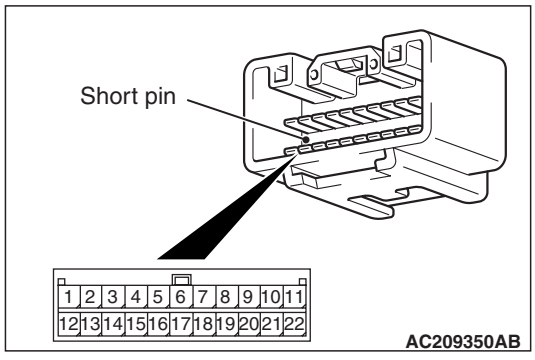
STEP 1. Connector check: C-09 joint connector (CAN2) connector and C-119 SRS-ECU connector





⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.



When checking the joint connector, ensure that its wiring harness side and its short pins are not damaged.

Q: Are the check result normal?

YES : Go to Step 2 .
NO : Repair a defective connector or replace the joint connector.

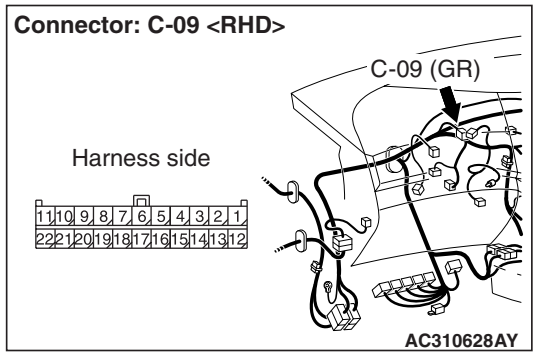
STEP 2. Resistance measurement at C-09 joint connector (CAN2) and C-119 SRS-ECU connector.

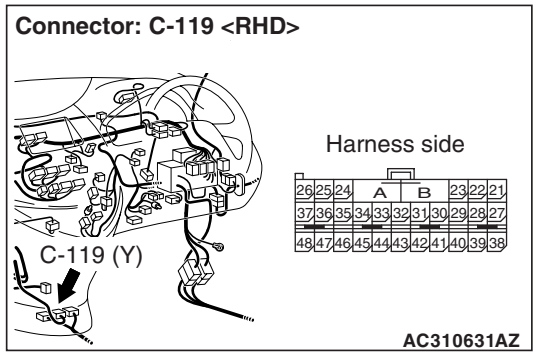
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





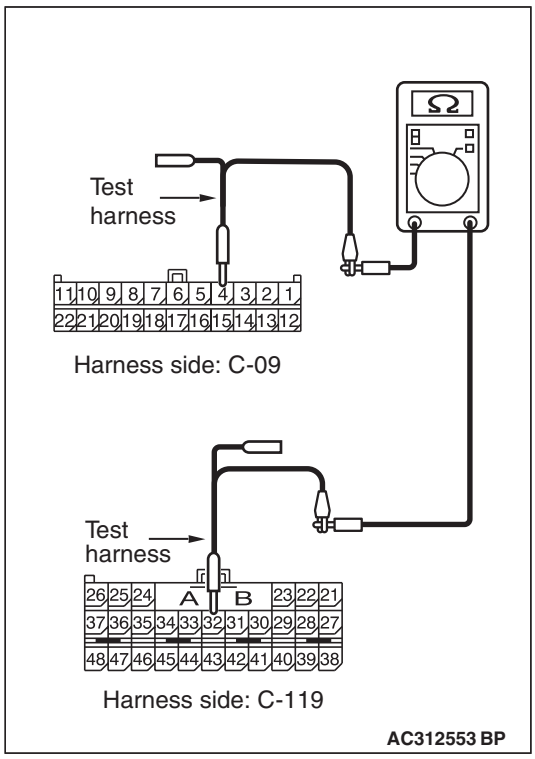
(1) Disconnect the joint connector (CAN2) and the SRS-ECU connector, and measure at the wiring harness side.
(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

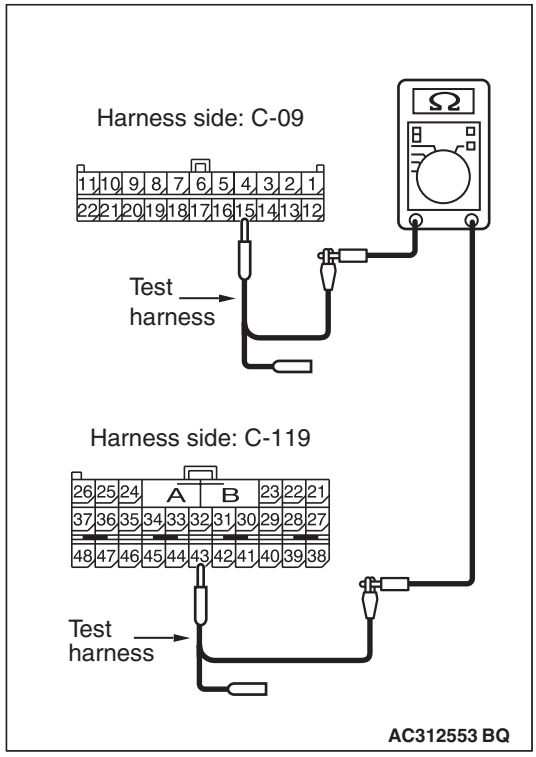
(3) Ensure that the negative battery terminal is

disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal No.4 and C-119 SRS-ECU connector terminal No.32

OK: 2 ohms or less



(5) Continuity between C-09 joint connector (CAN2) terminal No.15 and C-119 SRS-ECU connector terminal No.43

OK: 2 ohms or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

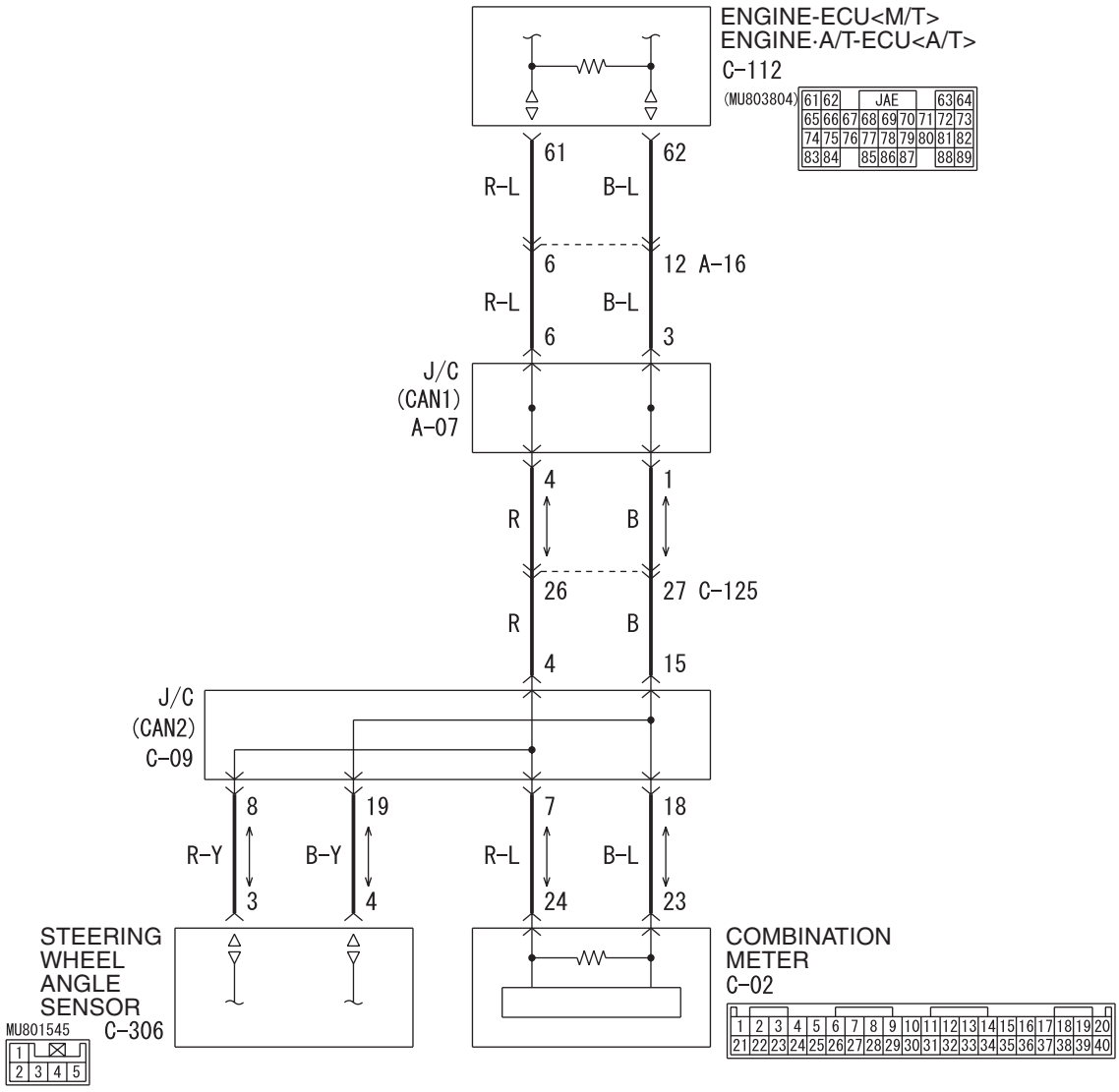
Q: Are the check result normal?

YES : <All the resistances measure 2 Ω or less> Power supply to the SRS-ECU may be suspected. Diagnose the SRS system. Refer to P.52B-201.

NO : <Either or all of the voltages measure more than 2 Ω> Repair the wiring harness between the joint connector (CAN2) and the SRS-ECU connector.

Diagnostic Item 36: Diagnose the lines from the main bus line to the steering wheel angle sensor <LH drive vehicles>

⚠ CAUTION
When servicing a CAN bus line, earth yourself by touching a metal object such as an unpainted water pipe. If you fail to do, a component connected to the CAN bus line may be broken.



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E06AA

TROUBLE JUDGMENT

If the MUT-III can not received signal from the steering wheel angle sensor, CAN bus line connector(s) are broken or an open circuit has occurred.

COMMENTS ON TROUBLE SYMPTOM

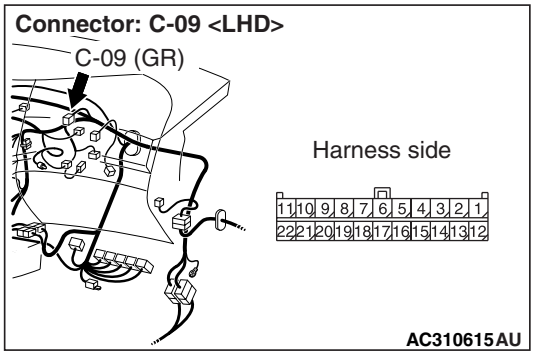
The CAN bus line wiring harness wire or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector, or the steering wheel angle sensor may be defective.

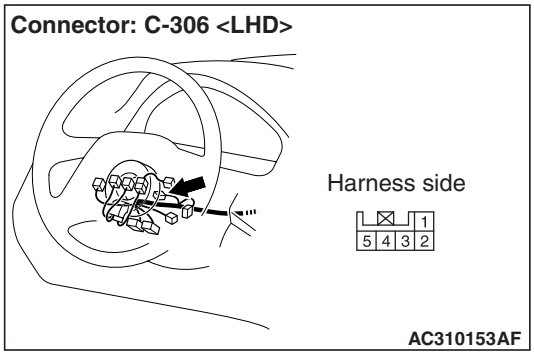
POSSIBLE CAUSES

- Damaged harness wires and connectors
- Malfunction of the steering wheel angle sensor

DIAGNOSTIC PROCEDURE

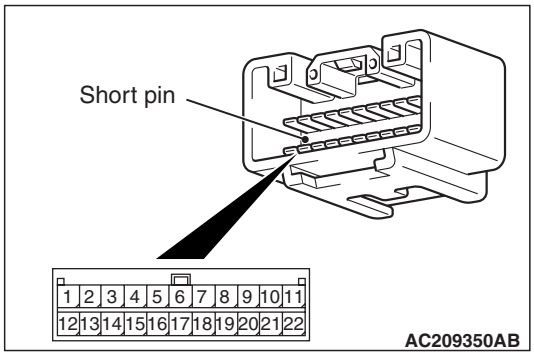
STEP 1. Connector check: C-09 joint connector (CAN2) connector and C-306 steering wheel angle sensor connector





⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.



When checking the joint connector, ensure that its wiring harness side and its short pins are not damaged.

Q: Are the check result normal?

YES : Go to Step 2 .

NO : Repair a defective connector or replace the joint connector.

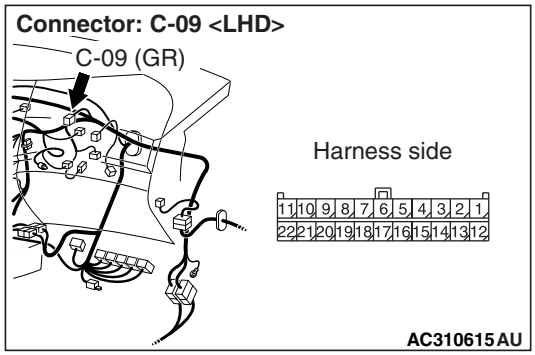
STEP 2. Resistance measurement at C-09 joint connector (CAN2) and C-306 steering wheel angle sensor connector.

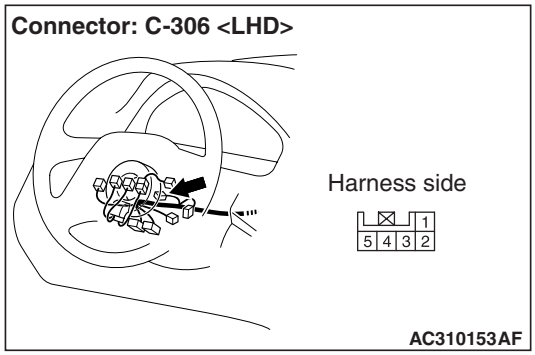
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





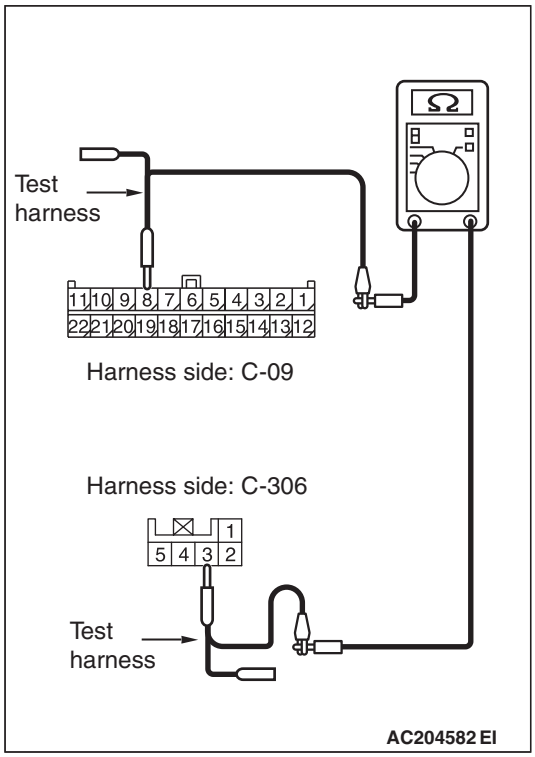
(1) Disconnect the joint connector (CAN2) and the steering wheel angle sensor connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

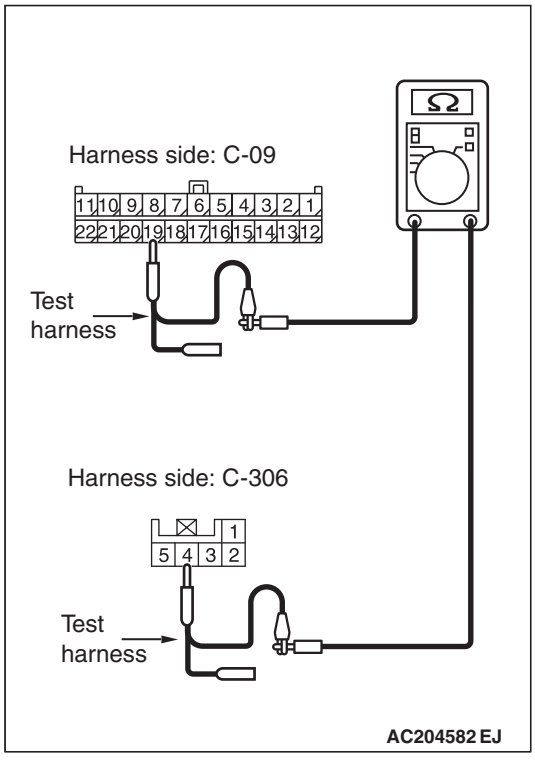
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal No.8 and C-306 steering wheel angle sensor connector terminal No.3

OK: 2 ohms or less



(5) Continuity between C-09 joint connector (CAN2) terminal No.19 and C-306 steering wheel angle

sensor connector terminal No.4

OK: 2 ohms or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

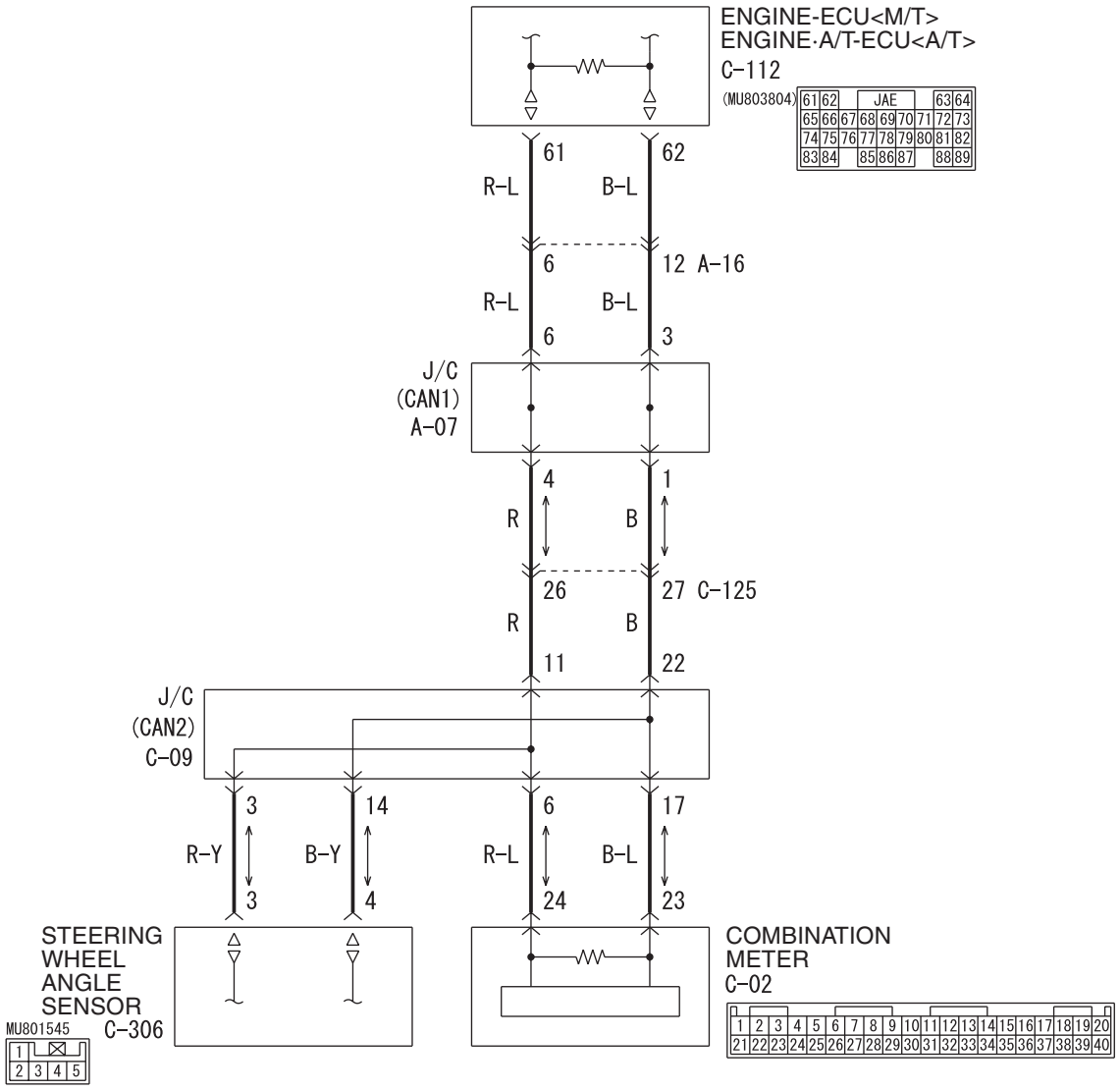
Q: Are the check result normal?

YES : <All the resistances measure 2 Ω or less> Power supply to the steering wheel angle sensor may be suspected. Diagnose the ASC system. Refer to P.35C-135.

NO : <Either or all of the voltages measure more than 2 Ω> Repair the wiring harness between the joint connector (CAN2) and the steering wheel angle sensor connector.

Diagnostic Item 37: Diagnose the lines from the main bus line to the steering wheel angle sensor <RH drive vehicles>

⚠ CAUTION
When servicing a CAN bus line, earth yourself by touching a metal object such as an unpainted water pipe. If you fail to do, a component connected to the CAN bus line may be broken.



Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

W4X54E07AA

TROUBLE JUDGMENT

If the MUT-III can not received signal from the steering wheel angle sensor, CAN bus line connector(s) are broken or an open circuit has occurred.

COMMENTS ON TROUBLE SYMPTOM

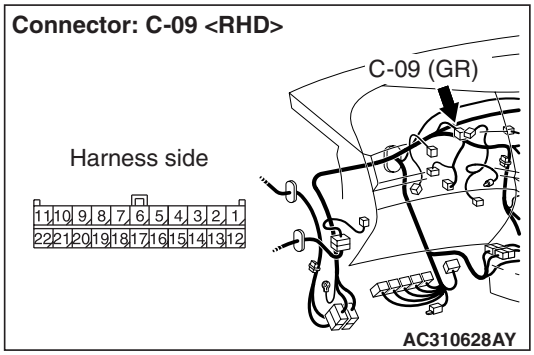
The CAN bus line wiring harness wire or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector, or the steering wheel angle sensor may be defective.

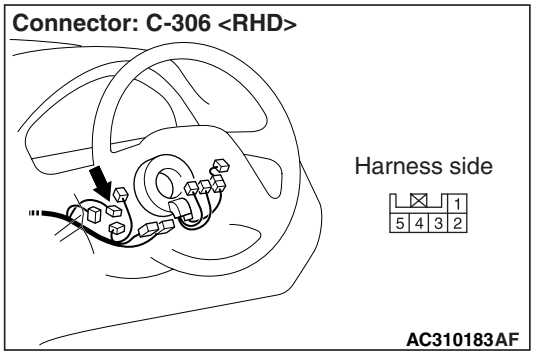
POSSIBLE CAUSES

- Damaged harness wires and connectors
- Malfunction of the steering wheel angle sensor

DIAGNOSTIC PROCEDURE

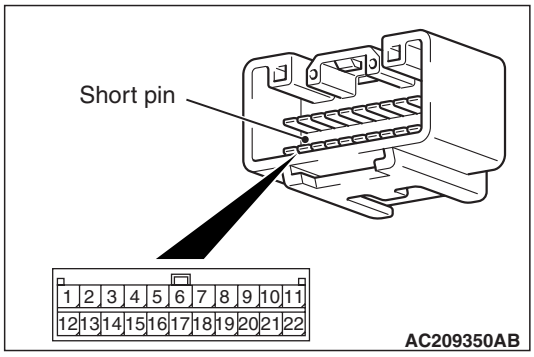
STEP 1. Connector check: C-09 joint connector (CAN2) connector and C-306 steering wheel angle sensor connector





⚠ CAUTION

The strand end of the twist wire should be within 10 cm from the connector. For details refer to P.54D-8.



When checking the joint connector, ensure that its wiring harness side and its short pins are not damaged.

Q: Are the check result normal?

YES : Go to Step 2 .

NO : Repair a defective connector or replace the joint connector.

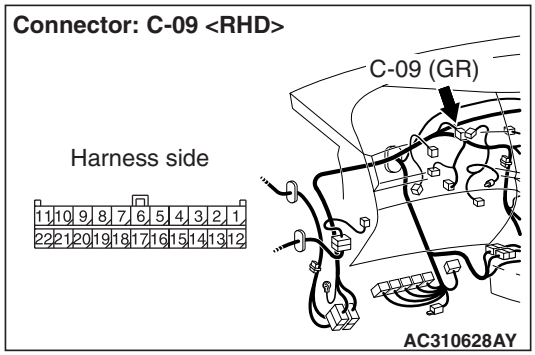
STEP 2. Resistance measurement at C-09 joint connector (CAN2) and C-306 steering wheel angle sensor connector.

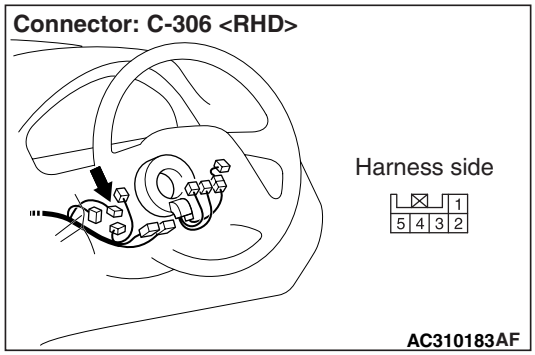
⚠ CAUTION

A digital multimeter should be used. For details refer to P.54D-8.

⚠ CAUTION

The test wiring harness should be used. For details refer to P.54D-8.





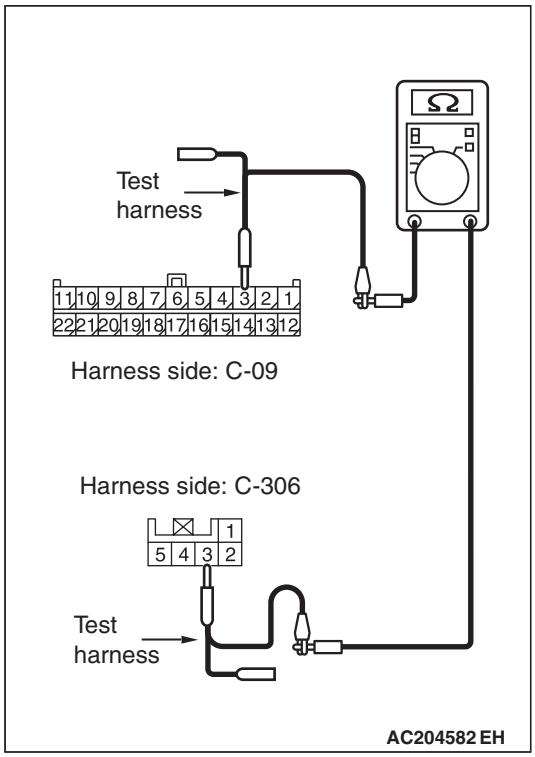
(1) Disconnect the joint connector (CAN2) and the steering wheel angle sensor connector, and measure at the wiring harness side.

(2) Ignition switch: OFF (LOCK)

⚠ CAUTION

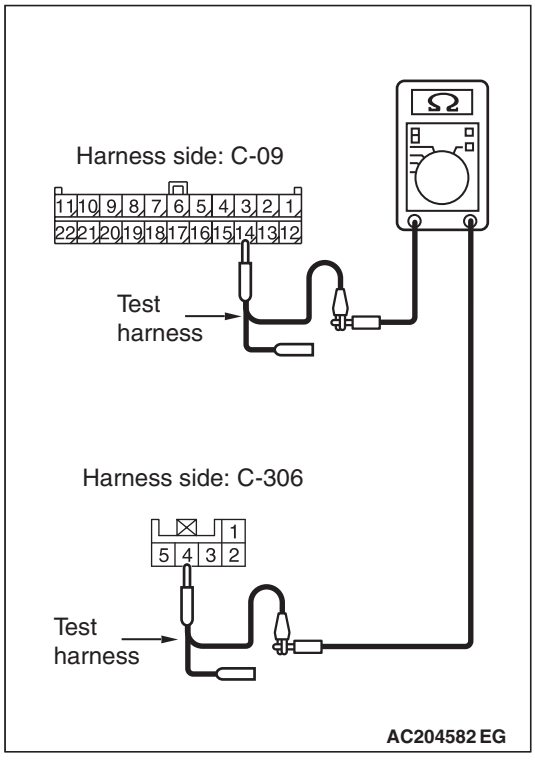
When measuring the resistance, disconnect the negative battery terminal. For details refer to P.54D-8.

(3) Ensure that the negative battery terminal is disconnected.



(4) Continuity between C-09 joint connector (CAN2) terminal No.3 and C-306 steering wheel angle sensor connector terminal No.3

OK: 2 ohms or less



(5) Continuity between C-09 joint connector (CAN2) terminal No.14 and C-306 steering wheel angle

sensor connector terminal No.4

OK: 2 ohms or less

⚠ CAUTION

Strictly observe the specified wiring harness repair procedure. For details refer to P.54D-8.

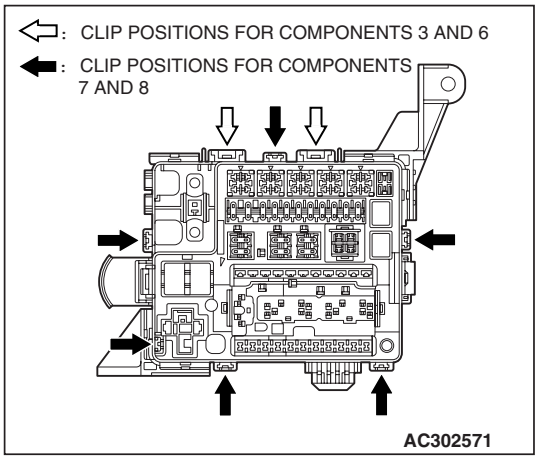
Q: Are the check result normal?

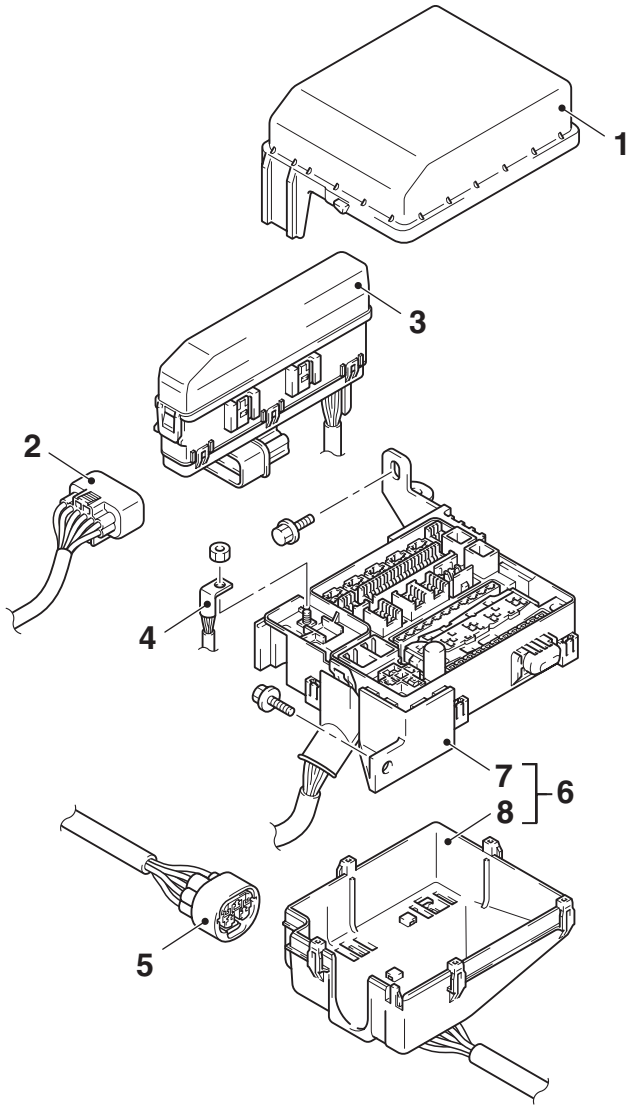
YES : <All the resistances measure 2 Ω or less> Power supply to the steering wheel angle sensor may be suspected. Diagnose the ASC system. Refer to P.35C-135.

NO : <Either or all of the voltages measure more than 2 Ω> Repair the wiring harness between the joint connector (CAN2) and the steering wheel angle sensor connector.

ENGINE COMPARTMENT RELAY BOX DISASSEMBLY AND REASSEMBLY

M1548304400028





Disassembly steps

1. Relay box cover
2. Connector
3. Relay box
4. Terminal

Disassembly steps (Continued)

5. Connector
6. Relay box assembly
7. Relay box body
8. Relay box under cover

CAN COMMUNICATION SIGNAL TABLE

M1548300400071

SIGNAL	TRANSMITTER ECU	RECEIVER ECU						
		POWER TRAIN CONTROL MODULE	ABS or ABS/TCL-ECU	ASC-ECU	MULTI-CENTRE DISPLAY UNIT (MIDDLE-GRADE TYPE)	COMBINATION METER	A/C-ECU	ETACS-ECU
Engine speed signal	Power train control module	–	–	×	–	×	×	–
A/C information signal		–	–	–	–	–	×	–
Vehicle speed signal		–	–	–	–	×	×	–
Vehicle stop signal		–	–	–	–	×	×	×
Malfunction indicator lamp request signal		–	–	–	–	×	–	–
Auto-cruise control indicator lamp signal		–	–	–	–	×	–	–
Engine coolant temperature signal		–	–	–	–	×	×	–
Selector position signal		–	–	–	–	×	–	×
Ignition switch (IG1) signal		–	–	×	–	–	–	–
Shift change permission signal		–	–	×	–	–	–	–
Shift change inhibition signal		–	–	×	–	–	–	–
ABS warning light request signal	ABS-ECU	–	–	–	–	×	–	–
Indicator lamp request signal	ABS or ABS/TCL-ECU	–	–	–	–	×	–	–
Indicator lamp request signal	ASC-ECU	–	–	–	–	×	–	–
Communication continuation request signal	Multi centre display unit (middle-grade type)	–	–	–	–	–	–	×
Ignition switch (ACC) signal		–	–	–	–	–	–	×

SIGNAL	TRANSMITTER ECU	RECEIVER ECU						
		POWER TRAIN CONTROL MODULE	ABS or ABS/TCL-ECU	ASC-ECU	MULTI-CENTRE DISPLAY UNIT (MIDDLE-GRADE TYPE)	COMBINATION METER	A/C-ECU	ETACS-ECU
Adjustment request signal		–	–	–	–	–	–	×
Customize signal		–	–	–	–	–	–	×
Buzzer sound signal		–	–	–	–	–	–	×
Communication continuation request signal	Combination meter	–	–	–	–	–	–	×
Vehicle speed signal		–	–	–	–	–	–	×
Ignition switch (IG1) signal		–	–	–	–	–	–	×
Seat belt signal		–	–	–	–	–	–	×
Fuel information signal		×	–	–	–	–	–	–
Communication continuation request signal	A/C-ECU	–	–	–	–	–	–	×
Compressor signal		×	–	–	–	–	–	–
Idle-up request signal		×	–	–	–	–	–	–
Cooling fan request signal		×	–	–	–	–	–	–
Blower fan signal		×	–	–	–	–	–	–
Set temperature signal		–	–	–	×	–	–	–
Ambient temperature signal		–	–	–	×	–	–	–
Fan air volume signal		–	–	–	×	–	–	–
Air outlet mode signal		–	–	–	×	–	–	–
Communication standby signal	ETACS-ECU	–	–	–	–	×	–	–
Ignition switch (ACC) signal		–	–	–	–	×	–	–
Ignition switch (IG1) signal		–	–	–	–	×	–	–
High-beam indicator request signal		–	–	–	–	×	–	–

SIGNAL	TRANSMITTER ECU	RECEIVER ECU						
		POWER TRAIN CONTROL MODULE	ABS or ABS/TCL-ECU	ASC-ECU	MULTI-CENTRE DISPLAY UNIT (MIDDLE-GRADE TYPE)	COMBINATION METER	A/C-ECU	ETACS-ECU
Turn-signal indicator request signal		–	–	–	–	×	–	–
Fog light indicator request signal		–	–	–	–	×	–	–
Illumination signal		–	–	–	–	×	–	–
Door "open" signals		–	–	–	–	×	–	–
Interior light shut-off signal		–	–	–	–	×	–	–
Customize signal		–	–	–	×	–	–	–
Steering angle signal	Steering wheel sensor	–	–	×	–	–	–	–
Steering angular velocity signal		–	–	×	–	–	–	–
Yaw rate signal	G and yaw rate sensor	–	–	×	–	–	–	–
Longitudinal gravity signal		–	–	×	–	–	–	–
Lateral gravity signal		–	–	×	–	–	–	–

CAN COMMUNICATION-RELATED DIAGNOSIS CODE (U CODE) TABLE

M1548300300074

OUTPUT ECU	CODE NO.	DIAGNOSTIC ITEM	ACTION
Engine-ECU <M/T> or Engine-A/T-ECU <A/T>	U1073	Bus Off	CAN main bus line diagnostics
	U1102	ABS-ECU time-out	
	U1108	Combination meter time-out	
	U1110	A/C-ECU time-out	
ABS-ECU	U1073	Bus Off	CAN main bus line diagnostics

OUTPUT ECU	CODE NO.	DIAGNOSTIC ITEM	ACTION
ASC-ECU	U1073	Bus Off	CAN main bus line diagnostics
	U1100	Engine-ECU <M/T> or engine-A/T-ECU <A/T> time-out (related to engine)	
	U1101	Engine-ECU <M/T> or engine-A/T-ECU <A/T> time-out (related to transmission)	
	U1104	Steering wheel angle sensor time-out	
Centre display unit	U1073	Bus Off	CAN main bus line diagnostics
	U1100	Engine-ECU <M/T> or engine-A/T-ECU <A/T> time-out (related to engine)	
	U1108	Combination meter time-out	
	U1109	ETACS-ECU time-out	
	U1110	A/C-ECU time-out	
	U1120	Failure information on Engine-ECU <M/T> or engine-A/T-ECU <A/T> (related to engine)	Diagnose CAN main bus lines and confirm input signals.
	U1128	Failure information on combination meter	
	U1130	Failure information on A/C-ECU	
Combination meter	U1073	Bus Off	CAN main bus line diagnostics
	U1100	Engine-ECU <M/T> or engine-A/T-ECU <A/T> time-out (related to engine)	
	U1101	Engine-ECU <M/T> or engine-A/T-ECU <A/T> time-out (related to transmission)	
	U1102	TCL/ASC-ECU time-out	
	U1109	ETACS-ECU time-out	
	U1112	SRS-ECU time-out	
	U1120	Failure information on Engine-ECU <M/T> or engine-A/T-ECU <A/T> (related to engine)	Diagnose CAN main bus lines and confirm input signals.
	U1206	Flag invalid	
SRS-ECU	U1073	Bus Off	CAN main bus line diagnostics
A/C-ECU	U1073	Bus Off	CAN main bus line diagnostics
	U1100	Engine-ECU <M/T> or engine-A/T-ECU <A/T> time-out (related to engine)	
	U1109	ETACS-ECU time-out	
	U1120	Failure information on Engine-ECU <M/T> or engine-A/T-ECU <A/T> (related to engine)	Diagnose CAN main bus lines and confirm input signals.

OUTPUT ECU	CODE NO.	DIAGNOSTIC ITEM	ACTION
ETACS-ECU	U1073	Bus Off	CAN main bus line diagnostics
	U1100	Engine-ECU <M/T> or engine-A/T-ECU <A/T> time-out (related to engine)	
	U1101	Engine-ECU <M/T> or engine-A/T-ECU <A/T> time-out (related to transmission)	
	U1108	Combination meter time-out	
	U1110	A/C-ECU time-out	
	U1111	Multi-centre display unit (middle-grade type) time-out	
	U1128	Failure information on combination meter	Diagnose CAN main bus lines and confirm input signals.