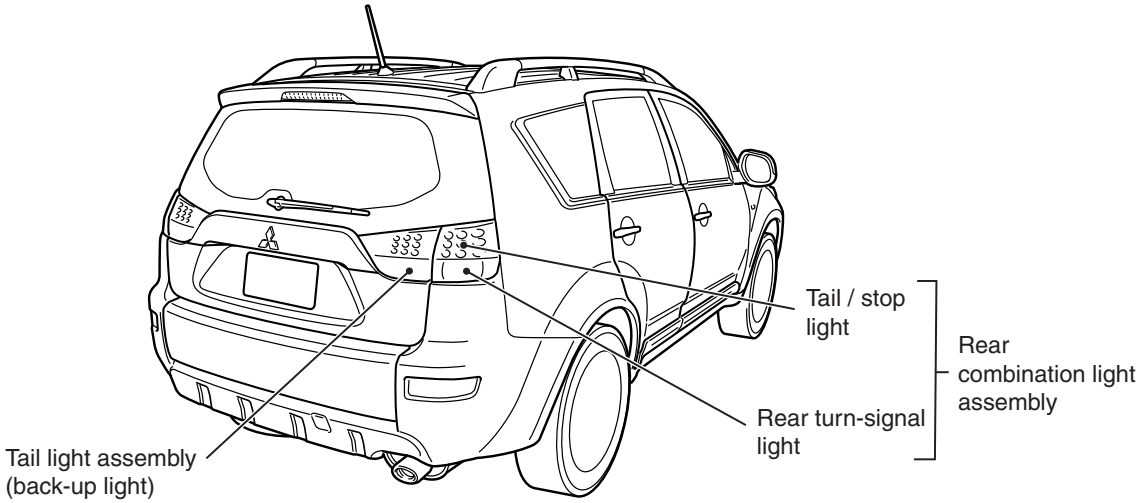
REAR COMBINATION LIGHT

GENERAL INFORMATION

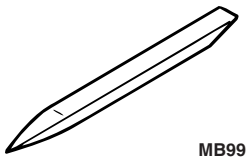
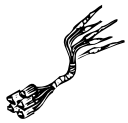
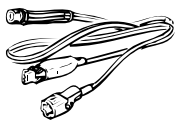
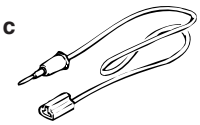
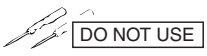
M1542000100372



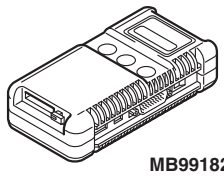
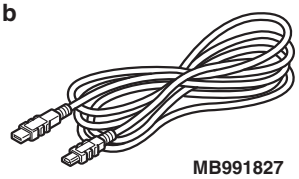
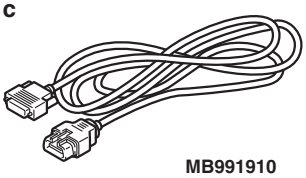
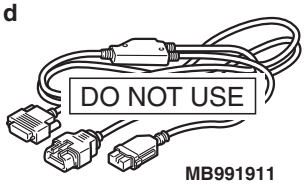
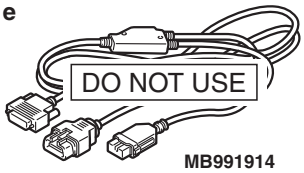
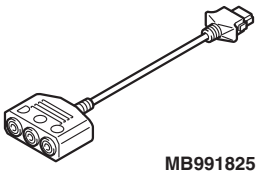
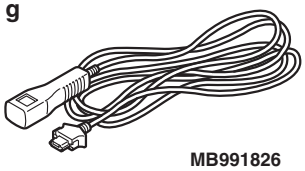
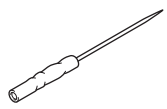
AC703004AB

SPECIAL TOOLS

M1541400100281

Tool	Tool number and name	Supersession	Application
 MB990784	MB990784 Ornament remover	General service tool	Removal of liftgate garnish, rear combination light assembly, tail light assembly
a  b  c  d  DO NOT USE MB991223	MB991223 a. MB991219 b. MB991220 c. MB991221 d. MB991222 Harness set a. Test harness b. LED harness c. LED harness adaptor d. Probe	General service tools	Continuity check and voltage measurement at harness wire or connector a. Connector pin contact pressure inspection b. Power circuit inspection c. Power circuit inspection d. Commercial tester connection

TSB Revision

Tool	Tool number and name	Supersession	Application
a  MB991824 b  MB991827 c  MB991910 d  MB991911 e  MB991914 f  MB991825 g  MB991826 MB991958	MB991958 a. MB991824 b. MB991827 c. MB991910 d. MB991911 e. MB991914 f. MB991825 g. MB991826 M.U.T.-III sub assembly a. Vehicle communication interface (V.C.I.) b. M.U.T.-III USB cable c. M.U.T.-III main harness A (Vehicles with CAN communication system) d. M.U.T.-III main harness B (Vehicles without CAN communication system) e. M.U.T.-III main harness C (for Chrysler models only) f. M.U.T.-III measurement adapter g. M.U.T.-III trigger harness	MB991824-KIT *NOTE: G: MB991826 M.U.T.-III Trigger Harness is not necessary when pushing V.C.I. ENTER key.*	**⚠ CAUTION** **M.U.T.-III main harness B (MB991911) should be used. M.U.T.-III main harness A and C should not be used for this vehicle.** Diagnostic code, service data and actuator test check.
 MB992006	MB992006 Extra fine probe	–	Continuity check and voltage measurement at harness wire or connector.

DIAGNOSIS

STANDARD FLOW OF DIAGNOSTIC TROUBLESHOOTING

M1541402500144

Refer to GROUP 00 – Contents of troubleshooting P.00-7.

TSB Revision

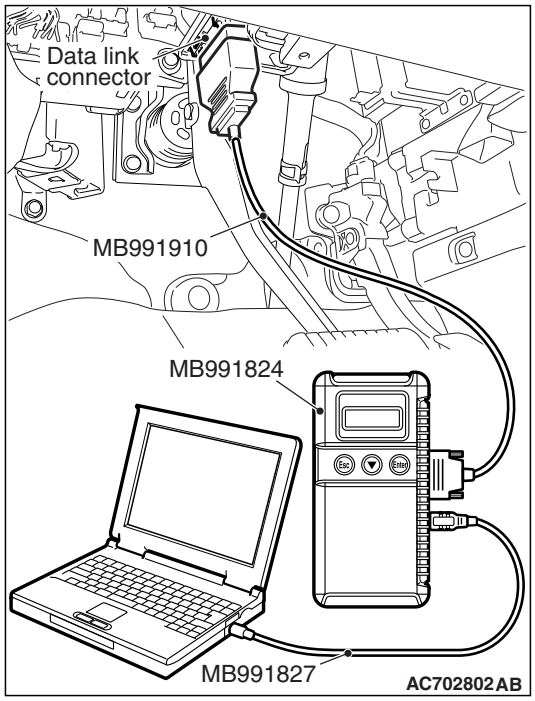
DIAGNOSTIC FUNCTION

M1541400900094

HOW TO CONNECT THE SCAN TOOL (M.U.T.-III)

Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)



⚠ CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

1. Ensure that the ignition switch is at the "LOCK" (OFF) position.
2. Start up the personal computer.
3. Connect special tool MB991827 to special tool MB991824 and the personal computer.
4. Connect special tool MB991910 to special tool MB991824.
5. Connect special tool MB991910 to the data link connector.
6. Turn the power switch of special tool MB991824 to the "ON" position.

   NOTE: When special tool MB991824 is energized, special tool MB991824 indicator light will be illuminated in a green color.
7. Start the M.U.T.-III system on the personal computer.

NOTE: Disconnecting scan tool MB991958 is the reverse of the connecting sequence, making sure that the ignition switch is at the "LOCK" (OFF) position.

HOW TO READ AND ERASE DIAGNOSTIC TROUBLE CODES

Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)

⚠ CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

NOTE: If the battery voltage is low, diagnostic trouble codes will not be set. Check the battery if scan tool MB991958 does not display.

1. Connect scan tool MB991958 to the data link connector.
2. Turn the ignition switch to the "ON" position.
3. Select "System select" from the start-up screen.
4. Select "From 2006 MY" of "Model Year." When the "Vehicle Information" is displayed, check the contents.

5. Select "ETACS" from "System List", and press the "OK" button.

   NOTE: When the "Loading Option Setup" list is displayed, check the applicable item.
6. Select "Diagnostic Trouble Code" to read the DTC.
7. If a DTC is set, it is shown.
8. Choose "Erase DTCs" to erase the DTC.

DIAGNOSTIC TROUBLE CODE CHART

M1541400200084

⚠ CAUTION

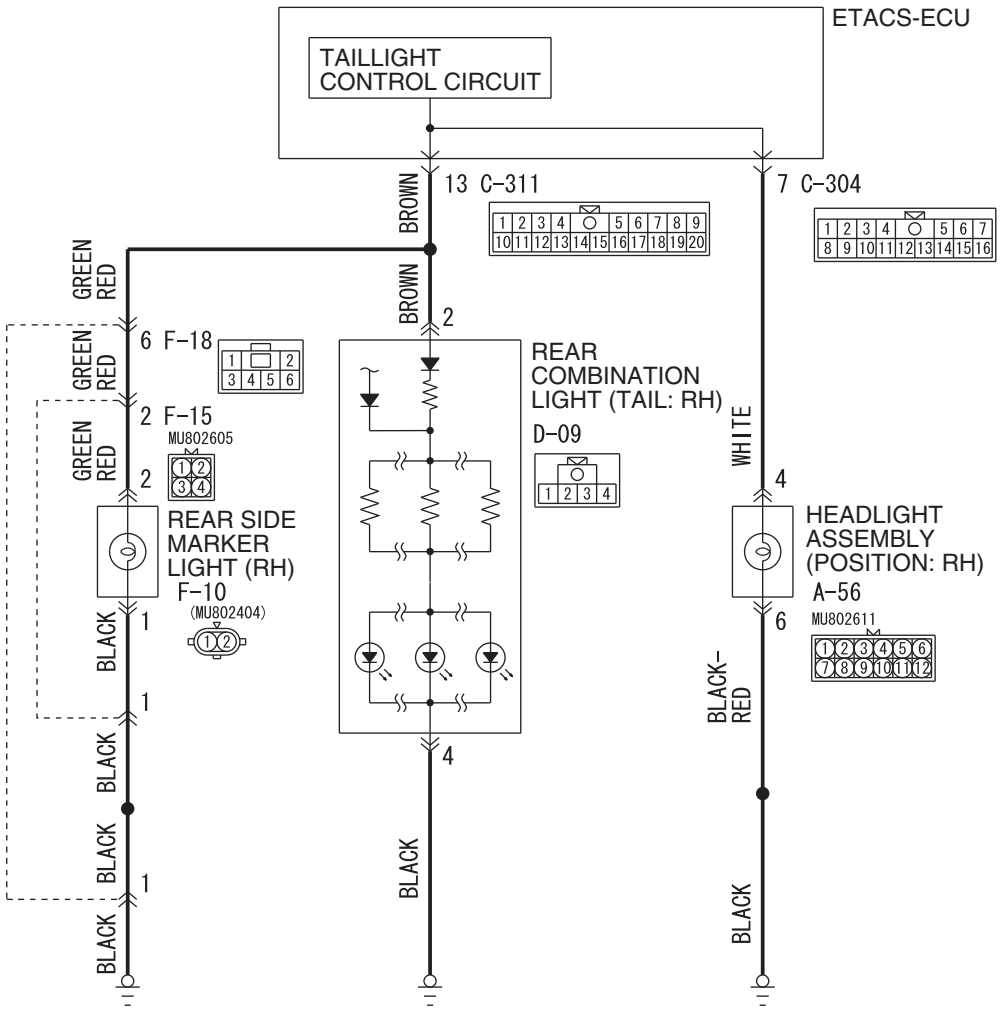
On troubleshooting, if the ignition switch is turned ON while disconnecting connector(s), diagnostic trouble code(s) associated with other system may be set. On completion, confirm all systems for diagnostic trouble code(s). If diagnostic trouble code(s) are set, erase them all.

Diagnostic trouble code No.	Diagnostic item	Reference page
B16A0	Taillight (RH) circuit open <Open circuit in the position light (RH) circuit, rear side marker light (RH) circuit and the taillight (RH) circuit>	P.54A-229
B16A7	Taillight (RH) circuit short <Short circuit in the position light (RH) circuit, rear side marker light (RH) circuit or the taillight (RH) circuit>	
B16A1	Taillight (LH) circuit open <Open circuit in the position light (LH) circuit, rear side marker light (LH) circuit, taillight (LH) circuit and the license plate light circuit>	P.54A-236
B16A8	Taillight (LH) circuit short <Short circuit in the position light (LH) circuit, rear side marker light (LH) circuit, taillight (LH) circuit or the license plate light circuit>	

DIAGNOSTIC TROUBLE CODE PROCEDURES

DTC B16A0: Taillight (RH) circuit open <Open circuit in the position light (RH) circuit, rear side marker light (RH) circuit and the taillight (RH) circuit>
DTC B16A7: Taillight (RH) circuit short <Short circuit in the position light (RH) circuit, rear side marker light (RH) circuit or the taillight (RH) circuit>

Taillight (RH) Circuit



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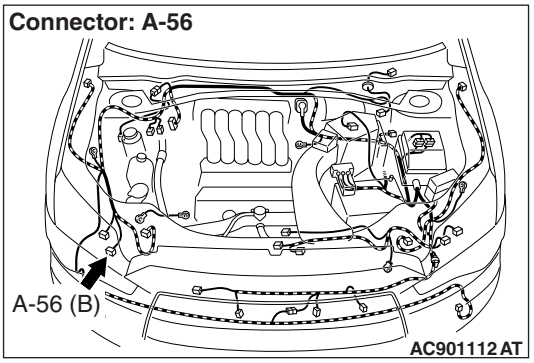
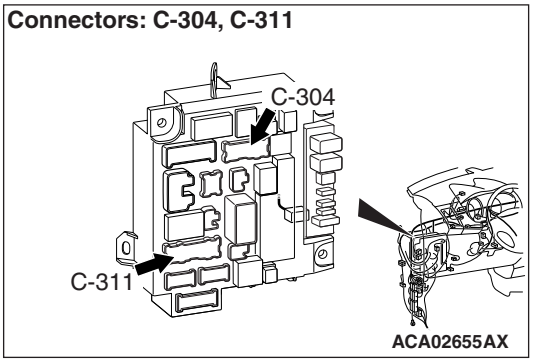
TSB Revision

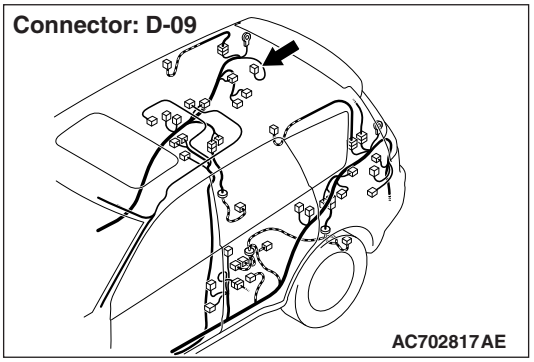
Connector: A-56



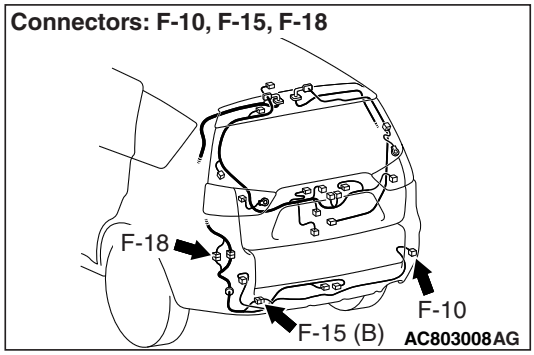
Connectors: C-304, C-311



Connector: D-09



Connectors: F-10, F-15, F-18



TROUBLE JUDGMENT

When an open circuit is detected in the taillight circuit, the ETACS-ECU sets DTC B16A0. If a short circuit is detected, DTC B16A7 is set.

TECHNICAL DESCRIPTION (COMMENT)

The problem detection of taillight is made based on the digital feed back signal (input signal to ETACS-ECU) which operates the taillight. When the ignition switch is "ON", the ETACS-ECU determines the taillight circuit state from the load placed on the line. After 100 ms has elapsed since the start of the check, the ETACS-ECU performs a sampling with each 10 ms. If an abnormality is detected, it increases the counter by 2, and when no abnormality is detected, it decreases the counter by 1. Once the counter reaches "10", the ETACS-ECU sets the DTC B16A0 if the load is detected on the line, and sets the DTC B16A7 if no load is detected.

TROUBLESHOOTING HINTS

- Malfunction of bulbs
- Malfunction of rear combination light unit (RH)
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector
- Malfunction of the ETACS-ECU

DIAGNOSIS

Required Special Tools:

- MB992006: Extra fine probe
- MB991223: Harness set
- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)

STEP 1. Bulb check.
Check the bulb of the light that does not illuminate.

Q: Is the check result normal?

YES : Go to Step 2.
NO : Replace the bulb of the light that does not illuminate.

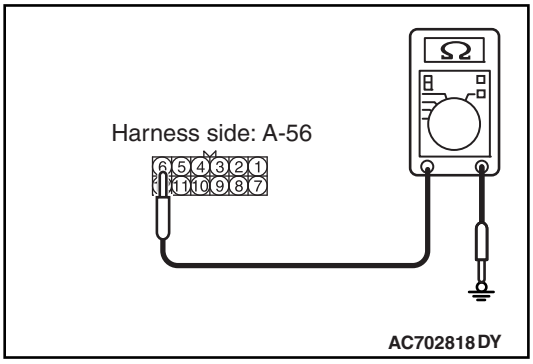
STEP 2. Check headlight assembly (RH) connector A-56 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is headlight assembly (RH) connector A-56 in good condition?

YES : Go to Step 3.
NO : Repair the damaged parts.

STEP 3. Resistance measurement at headlight assembly (RH) connector A-56.
(1) Disconnect the connector, and measure at the wiring harness side.
(2) Measure the resistance between headlight assembly (RH) connector A-56 (terminal No. 6) and the body ground.

The measured value should be continuity exists (2 Ω or less).



Q: Does the measured resistance value correspond with this range?

YES : Go to Step 5.
NO : Go to Step 4.

STEP 4. Check the wiring harness between headlight assembly (RH) connector A-56 (terminal No. 6) and ground.
Check the ground line for open circuit.

Q: Is the wiring harness between headlight assembly (RH) connector A-56 (terminal No. 6) and ground in good condition?

YES : Go to Step 17.
NO : Repair the wiring harness.

STEP 5. Check ETACS-ECU connectors C-304 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is ETACS-ECU connectors C-304 in good condition?

YES : Go to Step 6.
NO : Repair the damaged parts.

STEP 6. Check the wiring harness between headlight assembly (RH) A-56 connector (terminal No. 4) and ETACS-ECU connector C-304 (terminal No. 7).
Check the communication line for open or short circuit.

Q: Is the wiring harness between headlight assembly (RH) A-56 connector (terminal No. 4) and ETACS-ECU connector C-304 (terminal No. 7) in good condition?

YES : Go to Step 7.
NO : Repair the wiring harness.

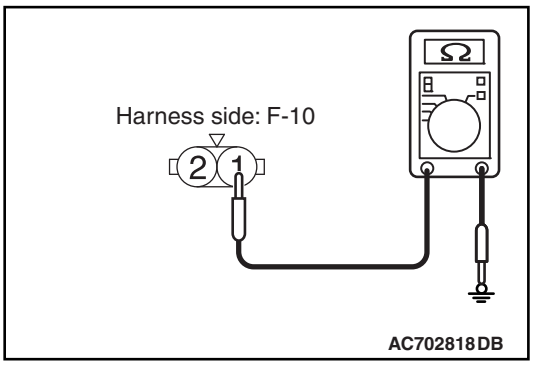
STEP 7. Check rear side marker light (RH) connector F-10 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is rear side marker light (RH) connector F-10 in good condition?

YES : Go to Step 8.
NO : Repair the damaged parts.

STEP 8. Resistance measurement at rear side marker light (RH) connector F-10.
(1) Disconnect the connector, and measure at the wiring harness side.
(2) Measure the resistance between rear side marker light (RH) connector F-10 (terminal No. 1) and the body ground.

The measured value should be continuity exists (2 Ω or less).



Q: Does the measured resistance value correspond with this range?

YES : Go to Step 10.
NO : Go to Step 9.

STEP 9. Check the wiring harness between rear side marker light (RH) connector F-10 (terminal No. 1) and ground.
Check the ground line for open circuit.

NOTE: Before the wiring harness check, check the F-15, F-18 and repair that if necessary.

Q: Is the wiring harness between rear side marker light (RH) connector F-10 (terminal No. 1) and ground in good condition?

YES : Go to Step 17.
NO : Repair the wiring harness.

STEP 10. Check ETACS-ECU connectors C-311 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is ETACS-ECU connectors C-311 in good condition?

YES : Go to Step 11.
NO : Repair the damaged parts.

STEP 11. Check the wiring harness between rear side marker light (RH) F-10 connector (terminal No. 2) and ETACS-ECU connector C-311 (terminal No. 13).

Check the communication line for open or short circuit.

NOTE: Before the wiring harness check, check the F-15, F-18 and repair that if necessary.

Q: Is the wiring harness between rear side marker light (RH) F-10 connector (terminal No. 2) and ETACS-ECU connector C-311 (terminal No. 13) in good condition?

YES : Go to Step 12.
NO : Repair the wiring harness.

STEP 12. Check rear combination light (RH) connector D-09 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is combination light (RH) connector D-09 in good condition?

YES : Go to Step 13.
NO : Repair the damaged parts.

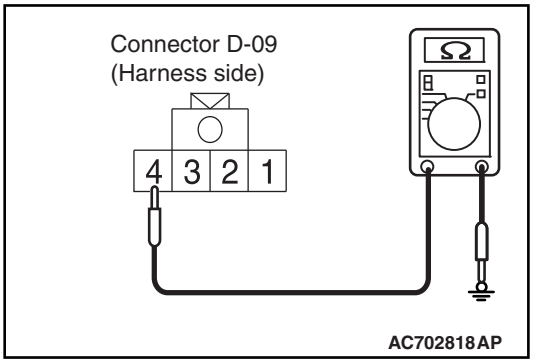
STEP 13. Resistance measurement at rear combination light (RH) connector D-09.

(1) Disconnect the connector, and measure at the wiring harness side.
(2) Measure the resistance between rear combination light (RH) connector D-09 (terminal No. 4) and the body ground.

The measured value should be continuity exists (2 Ω or less).

Q: Does the measured resistance value correspond with this range?

YES : Go to Step 15.
NO : Go to Step 14.



STEP 14. Check the wiring harness between rear combination light (RH) connector D-09 (terminal No. 4) and ground.
Check the ground line for open circuit.

Q: Is the wiring harness between rear combination light (RH) connector D-09 (terminal No. 4) and ground in good condition?

YES : Go to Step 17.
NO : Repair the wiring harness.

STEP 15. Check ETACS-ECU connectors C-311 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

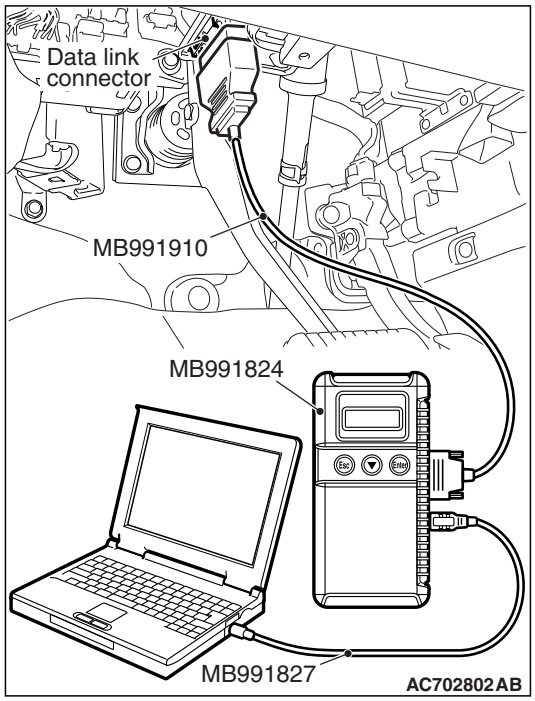
Q: Is ETACS-ECU connectors C-311 in good condition?

YES : Go to Step 16.
NO : Repair the damaged parts.

STEP 16. Check the wiring harness between rear combination light (RH) D-09 connector (terminal No. 2) and ETACS-ECU connector C-311 (terminal No. 13).
Check the communication line for open or short circuit.

Q: Is the wiring harness between rear combination light (RH) D-09 connector (terminal No. 2) and ETACS-ECU connector C-311 (terminal No. 13) in good condition?

YES : Go to Step 17.
NO : Repair the wiring harness.



STEP 17. Using scan tool MB991958, Check whether the diagnostic trouble code is reset.

⚠ CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

(1) Connect scan tool MB991958. Refer to "How to connect scan tool P.54A-227."
(2) Turn the ignition switch to the "ON" position.
(3) Erase the DTC.
(4) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
(5) Check if DTC is set.

Q: Is the DTC set?

YES : Go to Step 18.
NO : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-15).

STEP 18. Substitute a known good rear combination light unit (RH), and Using scan tool MB991958, Check whether the diagnostic trouble code is reset.

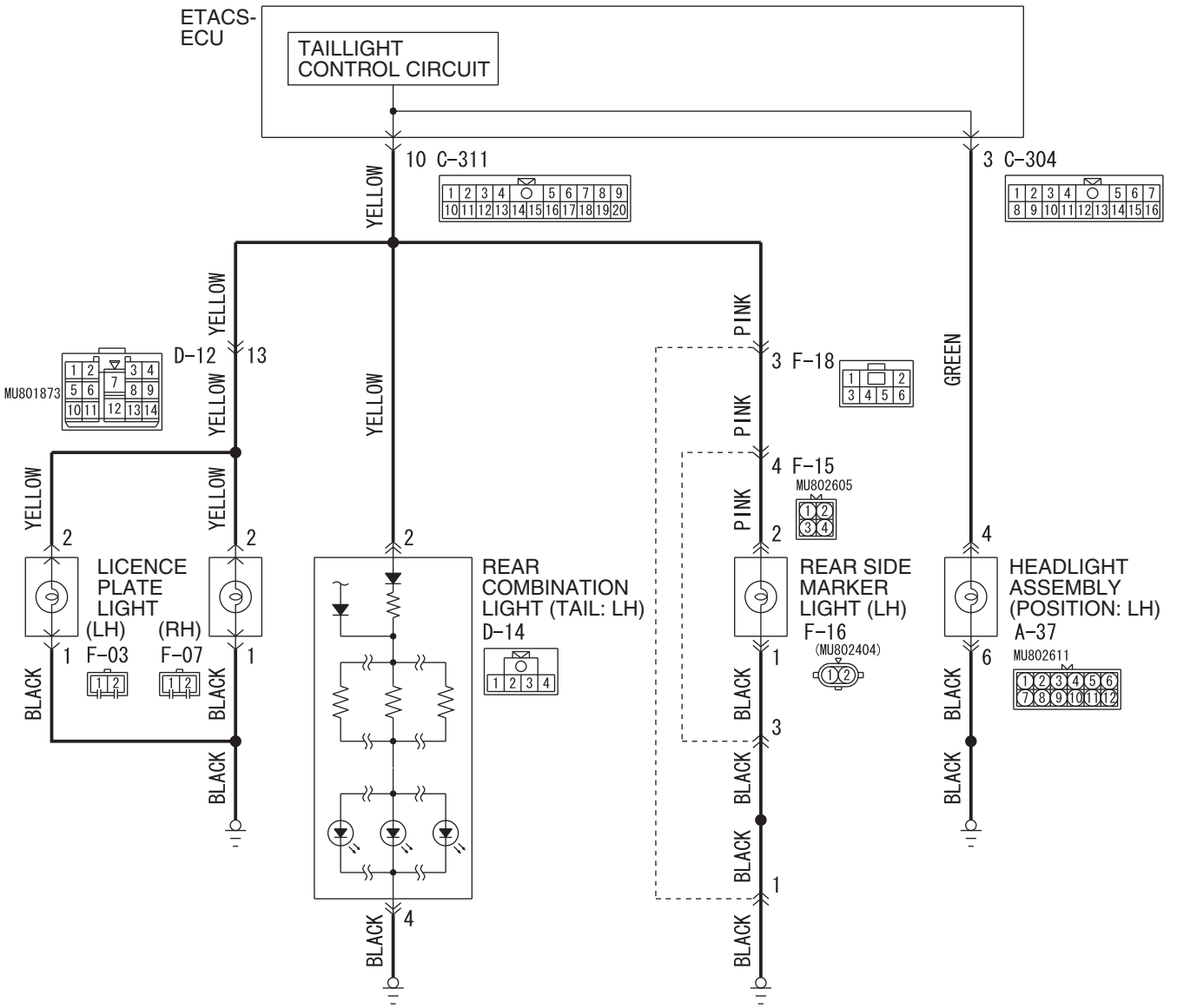
(1) Turn the ignition switch to the "ON" position.
(2) Erase the DTC.
(3) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
(4) Check if DTC is set.

Q: Is the DTC set?

YES : Replace the ETACS-ECU.
NO : Replace the rear combination light unit (RH).

DTC B16A1: Taillight (LH) circuit open <Open circuit in the position light (LH) circuit, rear side marker light (LH) circuit, taillight (LH) and the license plate light circuit>
DTC B16A8: Taillight (LH) circuit short <Short circuit in the position light (LH) circuit, rear side marker light (LH) circuit, taillight (LH) circuit or the license plate light circuit>

Taillight (LH) Circuit



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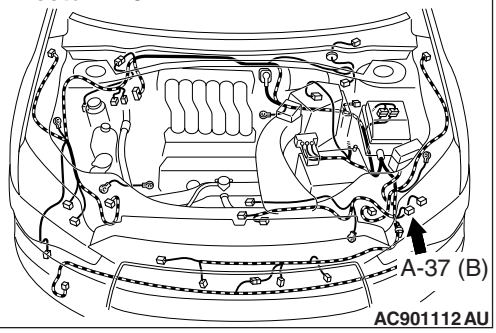
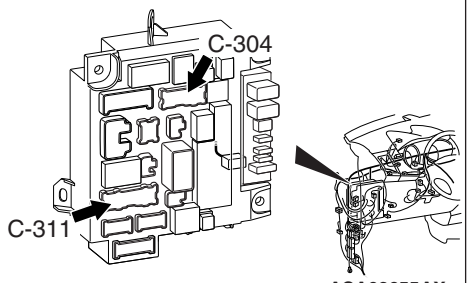
TSB Revision

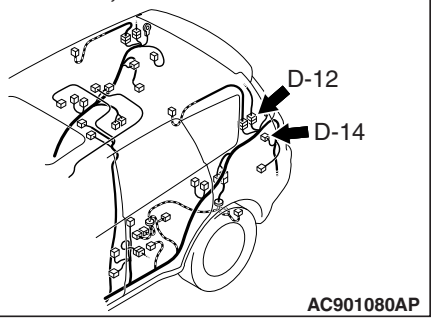
Connector: A-37



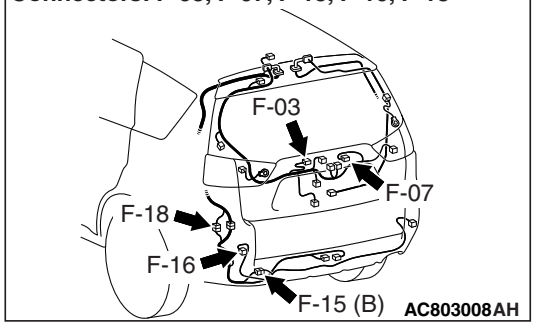
Connectors: C-304, C-311



Connectors: D-12, D-14



Connectors: F-03, F-07, F-15, F-16, F-18



TROUBLE JUDGMENT

When an open circuit is detected in the taillight circuit, the ETACS-ECU sets DTC B16A1. If a short circuit is detected, DTC B16A8 is set.

TECHNICAL DESCRIPTION (COMMENT)

The problem detection of taillight is made based on the digital feed back signal (input signal to ETACS-ECU) which operates the taillight. When the ignition switch is "ON", the ETACS-ECU determines the taillight circuit state from the load placed on the line. After 100 ms has elapsed since the start of the check, the ETACS-ECU performs a sampling with each 10 ms. If an abnormality is detected, it increases the counter by 2, and when no abnormality is detected, it decreases the counter by 1. Once the counter reaches "10", the ETACS-ECU sets the DTC B16A1 if the load is detected on the line, and sets the DTC B16A8 if no load is detected.

TROUBLESHOOTING HINTS

- Malfunction of bulbs
- Malfunction of rear combination light unit (LH)
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector
- Malfunction of the ETACS-ECU

DIAGNOSIS

Required Special Tools:

- MB992006: Extra fine probe
- MB991223: Harness set
- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)

STEP 1. Bulb check.
Check the bulb of the light that does not illuminate.

Q: Is the check result normal?

YES : Go to Step 2.
NO : Replace the bulb of the light that does not illuminate.

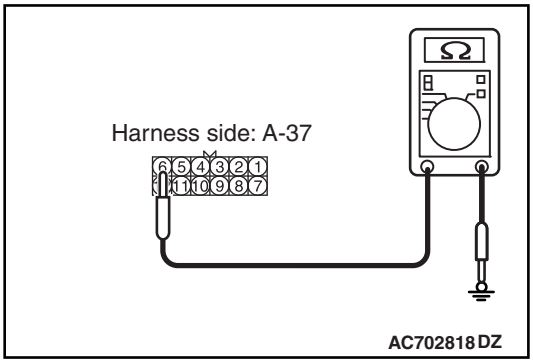
STEP 2. Check headlight assembly (LH) connector A-37 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is headlight assembly (LH) connector A-37 in good condition?

YES : Go to Step 3.
NO : Repair the damaged parts.

STEP 3. Resistance measurement at headlight assembly (LH) connector A-37.
(1) Disconnect the connector, and measure at the wiring harness side.
(2) Measure the resistance between headlight assembly (LH) connector A-37 (terminal No. 6) and the body ground.

The measured value should be continuity exists (2 Ω or less).



Q: Does the measured resistance value correspond with this range?

YES : Go to Step 5.
NO : Go to Step 4.

STEP 4. Check the wiring harness between headlight assembly (LH) connector A-37 (terminal No. 6) and ground.
Check the ground line for open circuit.

Q: Is the wiring harness between headlight assembly (LH) connector A-37 (terminal No. 6) and ground in good condition?

YES : Go to Step 22.
NO : Repair the wiring harness.

STEP 5. Check ETACS-ECU connectors C-304 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is ETACS-ECU connectors C-304 in good condition?

YES : Go to Step 6.
NO : Repair the damaged parts.

STEP 6. Check the wiring harness between headlight assembly (LH) A-37 connector (terminal No. 4) and ETACS-ECU connector C-304 (terminal No. 3).
Check the communication line for open or short circuit.

Q: Is the wiring harness between headlight assembly (LH) A-37 connector (terminal No. 4) and ETACS-ECU connector C-304 (terminal No. 3) in good condition?

YES : Go to Step 7.
NO : Repair the wiring harness.

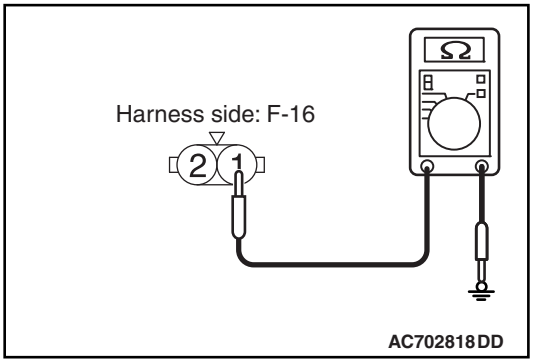
STEP 7. Check rear side marker light (LH) connector F-16 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is rear side marker light (LH) connector F-16 in good condition?

YES : Go to Step 8.
NO : Repair the damaged parts.

STEP 8. Resistance measurement at rear side marker light (LH) connector F-16.
(1) Disconnect the connector, and measure at the wiring harness side.
(2) Measure the resistance between rear side marker light (LH) connector F-16 (terminal No. 1) and the body ground.

The measured value should be continuity exists (2 Ω or less).



Q: Does the measured resistance value correspond with this range?

YES : Go to Step 10.
NO : Go to Step 9.

STEP 9. Check the wiring harness between rear side marker light (LH) connector F-16 (terminal No. 1) and ground.
Check the ground line for open circuit.

NOTE: Before the wiring harness check, check the F-15, F-18 and repair that if necessary.

Q: Is the wiring harness between rear side marker light (LH) connector F-16 (terminal No. 1) and ground in good condition?

YES : Go to Step 22.
NO : Repair the wiring harness.

STEP 10. Check ETACS-ECU connectors C-311 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is ETACS-ECU connectors C-311 in good condition?

YES : Go to Step 11.
NO : Repair the damaged parts.

STEP 11. Check the wiring harness between rear side marker light (LH) F-16 connector (terminal No. 2) and ETACS-ECU connector C-311 (terminal No. 10).

Check the communication line for open or short circuit.

NOTE: Before the wiring harness check, check the F-15, F-18 and repair that if necessary.

Q: Is the wiring harness between rear side marker light (LH) F-16 connector (terminal No. 2) and ETACS-ECU connector C-311 (terminal No. 10) in good condition?

YES : Go to Step 12.
NO : Repair the wiring harness.

STEP 12. Check license plate light (LH) connector F-03 and license plate light (RH) connector F-07 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

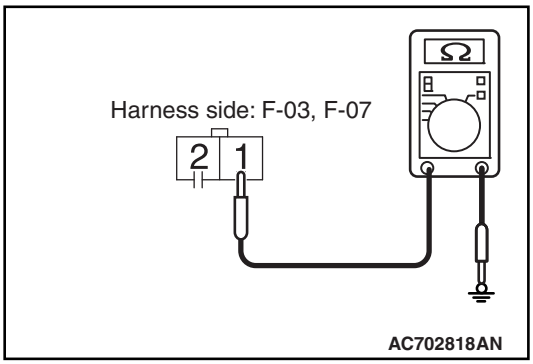
Q: Is license plate light (LH) connector F-03 and license plate light (RH) connector F-07 in good condition?

YES : Go to Step 13.
NO : Repair the damaged parts.

STEP 13. Resistance measurement at license plate light (LH) connector F-03 and license plate light (RH) connector F-07.

(1) Disconnect the connector, and measure at the wiring harness side.
(2) Measure the resistance between license plate light connector F-03 (LH), F-07 (RH) (terminal No. 1) and the body ground.

The measured value should be continuity exists (2 Ω or less).



Q: Does the measured resistance value correspond with this range?

YES : Go to Step 15.
NO : Go to Step 14.

STEP 14. Check the wiring harness between license plate light connector F-03 (LH) or F-07 (RH) (terminal No. 1) and ground.

Check the ground line for open circuit.

Q: Is the wiring harness between license plate light connector F-03 (LH) or F-07 (terminal No. 1) and ground in good condition?

YES : Go to Step 22.
NO : Repair the wiring harness.

STEP 15. Check ETACS-ECU connectors C-311 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is ETACS-ECU connectors C-311 in good condition?

YES : Go to Step 16.
NO : Repair the damaged parts.

STEP 16. Check the wiring harness between license plate light connector F-03 (LH), F-07 (RH) (terminal No. 2) and ETACS-ECU connector C-311 (terminal No. 10).

Check the communication line for open or short circuit.

NOTE: Before the wiring harness check, check the D-12 and repair that if necessary.

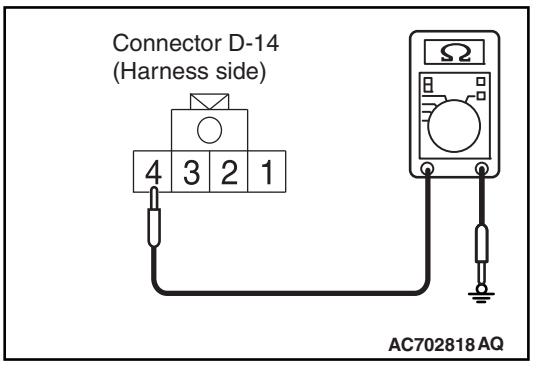
Q: Is the wiring harness between license plate light connector F-03 (LH), F-07 (RH) (terminal No. 2) and ETACS-ECU connector C-311 (terminal No. 10) in good condition?

YES : Go to Step 17.
NO : Repair the wiring harness.

STEP 17. Check rear combination light (LH) connector D-14 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is combination light (LH) connector D-14 in good condition?

YES : Go to Step 18.
NO : Repair the damaged parts.



STEP 18. Resistance measurement at rear combination light (LH) connector D-14.

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

(2) Measure the resistance between rear combination light (LH) connector D-14 (terminal No. 4) and the body ground.

The measured value should be continuity exists (2 Ω or less).

Q: Does the measured resistance value correspond with this range?

YES : Go to Step 20.

NO : Go to Step 19.

STEP 19. Check the wiring harness between rear combination light (LH) connector D-14 (terminal No. 4) and ground.

Check the ground line for open circuit.

Q: Is the wiring harness between rear combination light (LH) connector D-14 (terminal No. 4) and ground in good condition?

YES : Go to Step 22.

NO : Repair the wiring harness.

STEP 20. Check ETACS-ECU connectors C-311 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is ETACS-ECU connectors C-311 in good condition?

YES : Go to Step 21.

NO : Repair the damaged parts.

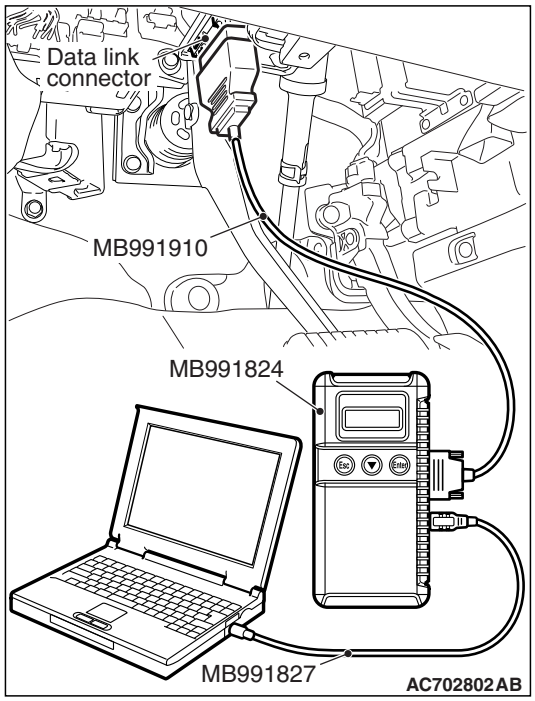
STEP 21. Check the wiring harness between rear combination light (LH) D-14 connector (terminal No. 2) and ETACS-ECU connector C-311 (terminal No. 10).

Check the communication line for open or short circuit.

Q: Is the wiring harness between rear combination light (LH) D-14 connector (terminal No. 2) and ETACS-ECU connector C-311 (terminal No. 10) in good condition?

YES : Go to Step 22.

NO : Repair the wiring harness.



STEP 22. Using scan tool MB991958, Check whether the diagnostic trouble code is reset.

⚠ CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

(1) Connect scan tool MB991958. Refer to "How to connect scan tool P.54A-227."
(2) Turn the ignition switch to the "ON" position.
(3) Erase the DTC.
(4) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
(5) Check if DTC is set.

Q: Is the DTC set?

YES : Go to Step 23.
NO : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-15).

STEP 23. Substitute a known good rear combination light unit (LH), and Using scan tool MB991958, Check whether the diagnostic trouble code is reset.

(1) Turn the ignition switch to the "ON" position.
(2) Erase the DTC.
(3) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
(4) Check if DTC is set.

Q: Is the DTC set?

YES : Replace the ETACS-ECU.
NO : Replace the rear combination light unit (LH).

TROUBLE SYMPTOM CHART

M1541401000362

Trouble symptom	Inspection Procedure No.	Reference page
None of taillights illuminates.	1	P.54A-244
One of the taillights does not illuminate.	2	P.54A-246
Stoplight does not illuminate or go out normally.	3	P.54A-249

TSB Revision

SYMPTOM PROCEDURES

Inspection Procedure 1: None of taillights illuminates.

⚠ CAUTION
Before replacing the ECU, ensure that the power supply circuit, the ground circuit and the communication circuit are normal.

TECHNICAL DESCRIPTION (COMMENT)

If none of taillights illuminates, the taillight switch input circuit or ETACS-ECU may have a problem.

TROUBLESHOOTING HINTS

- Malfunction of column switch
- Malfunction of the ETACS-ECU
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

DIAGNOSIS

Required Special Tools:

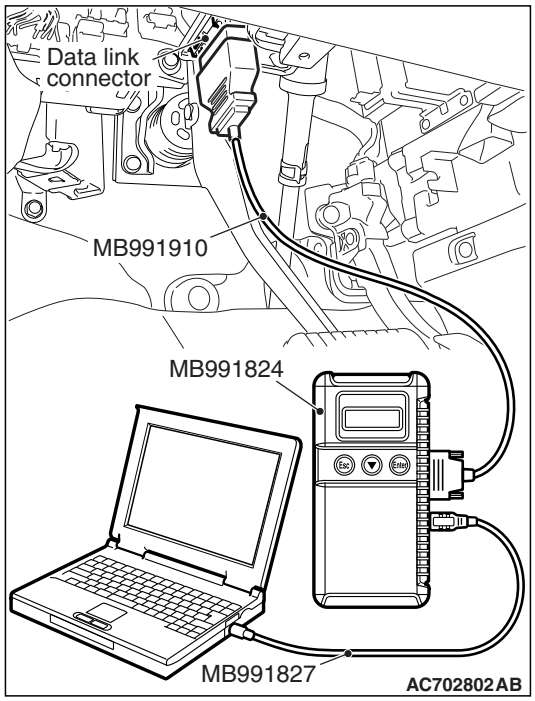
- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)

STEP 1. License plate light operation check

Check that the license plate light illuminates normally.

Q: Does license plate light work normally?

YES : Go to Step 2.
NO : Replace the ETACS-ECU.



STEP 2. Using scan tool MB991958, read the diagnostic trouble code.

⚠ CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

(1) Connect scan tool MB991958. Refer to "How to connect scan too (M.U.T.-III) P.54A-227."
(2) Turn the ignition switch to the "ON" position.
(3) Check whether the ETACS-ECU related DTC is set.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Diagnose the ETACS-ECU. Refer to P.54A-732.
NO : Go to Step 3.

STEP 3. Using scan tool MB991958, check data list.

Use the ETACS-ECU data list to check the signals related to the taillight illumination.

- Turn the ignition switch to the "ACC" position.
- Turn the taillight switch to the "ON" position.

Item No.	Item name	Normal conditions
Item 218	Taillight	ON

Q: Does scan tool MB991958 display the items "Taillight" as normal condition?

YES <Normal condition is displayed for item.> : Go to Step 4.
NO <Normal condition is not displayed for item No. 218.> : Troubleshoot the ETACS-ECU. Refer to Inspection Procedure 12 "ETACS-ECU does not receive any signal from the column switch signal" P.54A-818.

STEP 4. Retest the system

Check that the taillight illuminates normally.

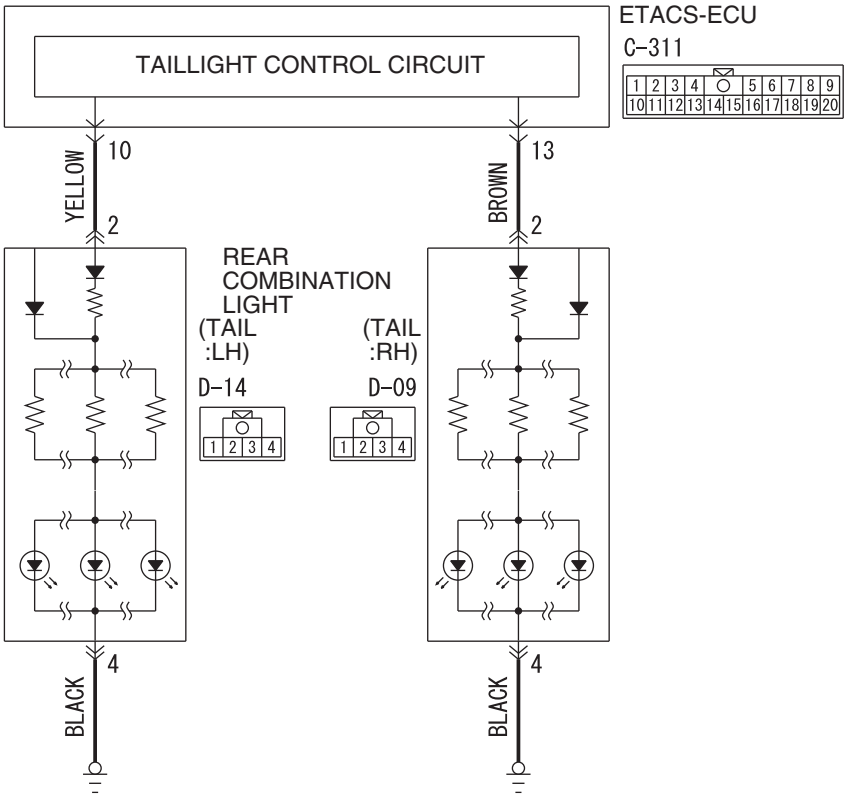
Q: Does the taillight work normally?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-15).

NO : Replace the ETACS-ECU.

Inspection Procedure 2: One of the taillights does not illuminate.

Taillight Circuit



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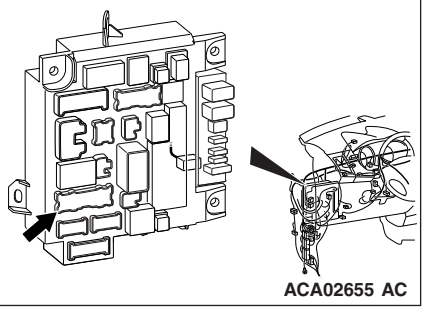
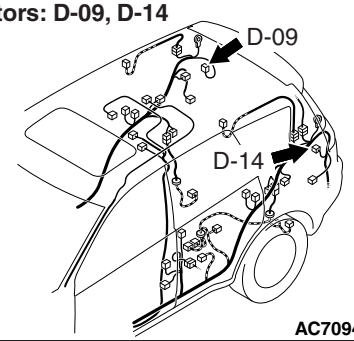
Connector: C-311



ACA02655 AC

Connectors: D-09, D-14



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TSB Revision

TECHNICAL DESCRIPTION (COMMENT)

When one of the taillights does not illuminate, the wiring harness, connector(s), or rear combination light unit may have a problem, or the fuse may be burned out.

TROUBLESHOOTING HINTS

- Malfunction of rear combination light unit
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

DIAGNOSIS

Required Special Tools:

- MB992006: Extra fine probe
- MB991223: Harness set
- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)

STEP 1. Check rear combination light connectors D-09 (RH) and D-14 (LH) for loose, corroded or damaged terminals, or terminals pushed back in the connector.

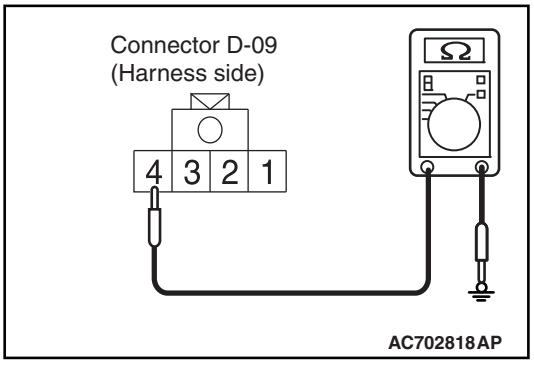
Q: Is rear combination light connectors D-09 (RH) and D-14 (LH) in good condition?

YES : Go to Step 2.
NO : Repair the damaged parts

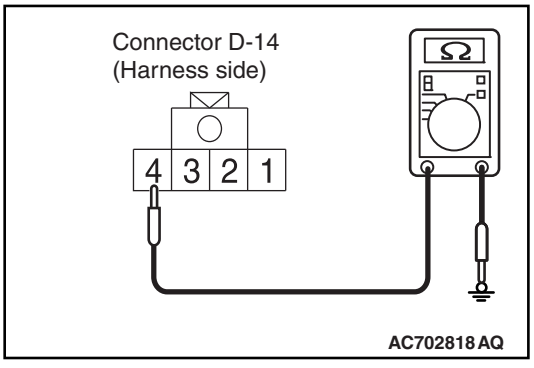
STEP 2. Resistance measurement at rear combination light connectors D-09 (RH) and D-14 (LH).

(1) Disconnect the connector, and measure at the wiring harness side.
(2) Measure the resistance between the connector of light which does not illuminate and body ground.

- Measure the resistance between rear combination light connector D-09 (RH) (terminal No. 4) and body ground.



- Measure the resistance between rear combination light connector D-14 (LH) (terminal No. 4) and body ground.



The measured value should be continuity exists (2 Ω or less).

Q: Does the measured resistance value correspond with this range?

YES : Go to Step 4.
NO : Go to Step 3.

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STEP 3. Check the wiring harness between rear combination light connectors D-09 (RH) and D-14 (LH) (terminal No. 4) and ground.
Check the ground line for open circuit.

Q: Is the check result normal?

YES : Go to Step 4.
NO : Repair the wiring harness.

STEP 4. Check ETACS-ECU connectors C-311 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is ETACS-ECU connectors C-311 in good condition?

YES : Go to Step 5.
NO : Repair the damaged parts.

STEP 5. Check the wiring harness between rear combination light connector D-09 (RH), D-14 (LH) and ETACS-ECU connector C-311 (terminal No. 13) (RH), (terminal No. 10) (LH).
Check the communication line for open or short circuit.

Q: Is the wiring harness between rear combination light connector D-09 (RH), D-14 (LH) and ETACS-ECU connector C-311 (terminal No. 13) (RH), (terminal No. 10) (LH) in good condition?

YES : Go to Step 6.
NO : Repair the wiring harness.

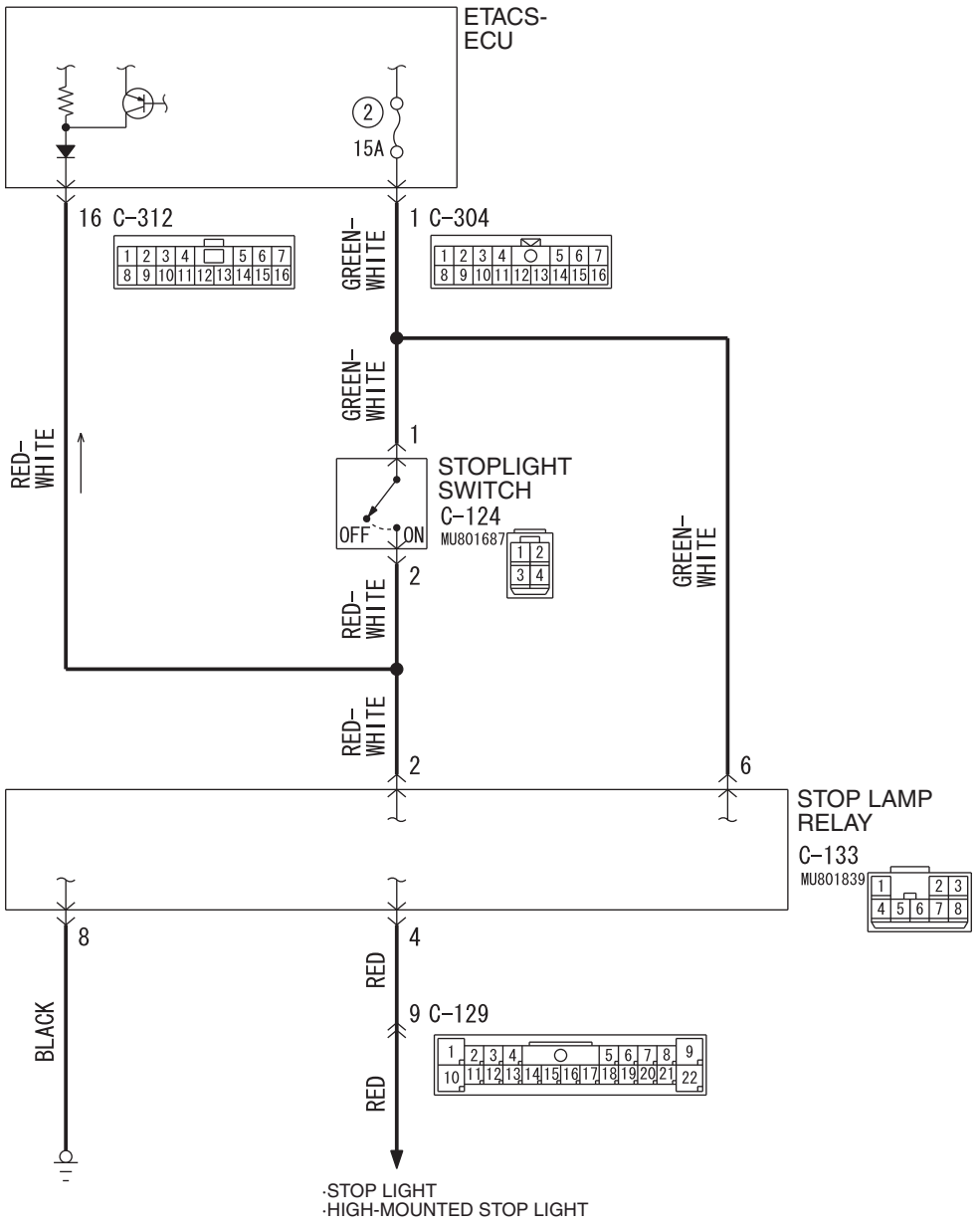
STEP 6. Retest the system.
Check that the taillight illuminates normally.

Q: Does the taillight work normally?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-15).
NO : Replace the rear combination light unit.

Inspection Procedure 3: Stoplight does not illuminate or go out normally.

Stoplight Circuit



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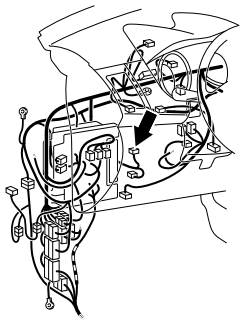
TSB Revision

Connector: C-133



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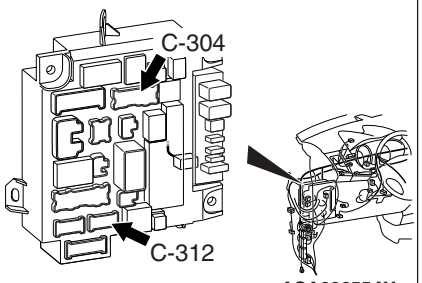
Connectors: C-304, C-312



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COMMENTS ON TROUBLE SYMPTOM

If the stoplights do not illuminate or go out normally, the stoplight relay power supply, ground circuit system, stoplight switch, or the stoplight relay * may be defective.

*NOTE: *: The stoplight relay cannot be inspected because it is a semiconductor relay.*

PROBABLE CAUSES

- Malfunction of stoplight switch
- Malfunction of stoplight relay
- Damaged harness wires and connectors

DIAGNOSIS

Required Special Tools:

- MB992006: Extra fine probe
- MB991223: Harness set

STEP 1. Check stoplight relay connector C-133 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is stoplight relay connector C-133 in good condition?

YES : Go to Step 2.
NO : Repair the damaged parts

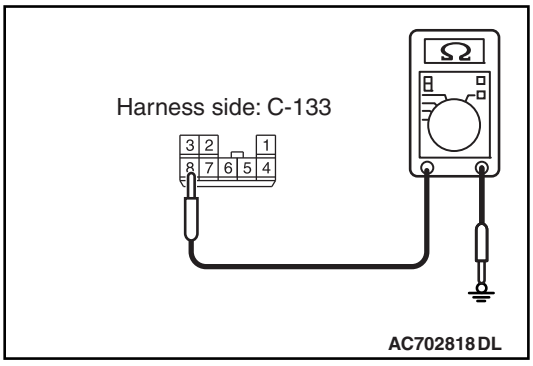
STEP 2. Resistance measurement at stoplight relay connector C-133.

(1) Disconnect the connector, and measure at the wiring harness side.
(2) Measure the resistance between stoplight relay connector C-133 (terminal No. 8) and the body ground.

The measured value should be continuity exists (2 Ω or less).

Q: Does the measured resistance value correspond with this range?

YES : Go to Step 4.
NO : Go to Step 3.



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STEP 3. Check the wiring harness between stoplight relay connector C-133 (terminal No. 8) and ground.
Check the ground line for open circuit.

Q: Is the wiring harness between stoplight relay connector C-133 (terminal No. 8) and ground in good condition?

YES : Go to Step 4.
NO : Repair the wiring harness.

STEP 4. Check the stoplight switch.
Remove the stoplight switch.

- Check for continuity between the terminals of the switch.

Check condition	Terminal connector of tester	Normal condition
At free position	1 – 2 (for stoplight switch)	Continuity exists (2 Ω or less)
	3 – 4 (for cruise control)	No continuity
Press the plunger from the edge of the outer case by the dimension shown in the figure.	1 – 2 (for stoplight switch)	No continuity
	3 – 4 (for cruise control)	Continuity exists (2 Ω or less)

Q: Is the stoplight switch in good condition?

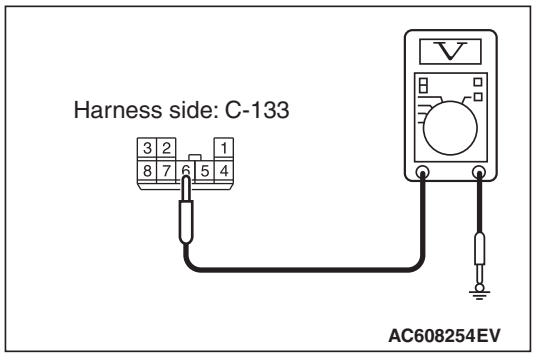
YES : Go to Step 5.
NO : Replace the stoplight switch.

STEP 5. Check the battery power supply circuit to the stoplight relay. Measure the voltage at stoplight relay connector C-133.

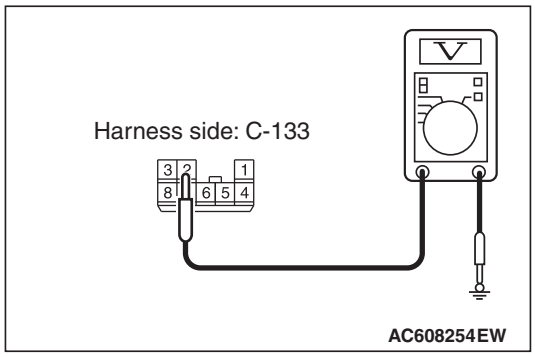
(1) Disconnect stoplight relay connector C-133 measure the voltage available at the wiring harness side of the connector.

(2) Measure the voltage between stoplight relay connector C-133 terminal 6 and ground.
- The voltage should measure approximately 12 volts (battery positive voltage).

(3) Stoplight switch: ON



(4) Measure the voltage between stoplight relay connector terminal No. 2 and the body ground.
- The voltage should measure approximately 12 volts (battery positive voltage).



Q: Is the measured voltage approximately 12 volts (battery positive voltage)?

YES : Go to Step 7.
NO : Go to Step 6.

STEP 6. Check ETACS-ECU connector C-304 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is ETACS-ECU connector C-304 in good condition?

YES : Go to Step 7.
NO : Repair the damaged parts

STEP 7. Check the wiring harness between stoplight relay connector C-133 (terminal No. 2/6) and ETACS-ECU connector C-304 (terminal No. 1).
- Check the power supply line (battery supply) for open circuit and short circuit.

Q: Is the wiring harness between stoplight relay connector C-133 (terminal No. 2/6) and ETACS-ECU connector C-304 (terminal No. 1) in good condition?

YES : Go to Step 8.
NO : Repair the wiring harness.

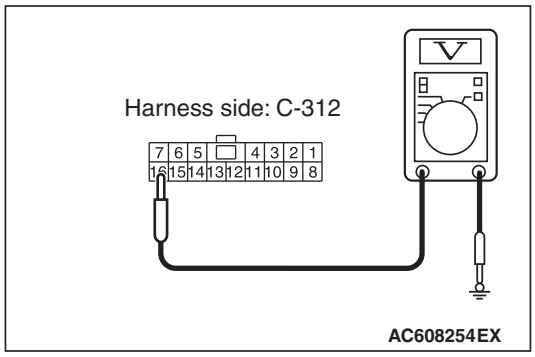
STEP 8. Check ETACS-ECU connectors C-312 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is ETACS-ECU connectors C-312 in good condition?

YES : Go to Step 9.
NO : Repair the damaged parts.

STEP 9. Check the battery power supply circuit to the ETACS-ECU. Measure the voltage at ETACS-ECU connector C-312.

(1) Disconnect connector measure the voltage available at the wiring harness side of the connector.
(2) Disconnecting the ETACS-ECU connector C-312.
(3) Stoplight switch: ON
(4) Measure the voltage between ETACS-ECU connector C-312 terminal No. 16 and the body ground.
- The voltage should measure approximately 12 volts (battery positive voltage).



Q: Is the measured voltage approximately 12 volts (battery positive voltage)?

YES : Go to Step 11.
NO : Go to Step 10.

STEP 10. Check the wiring harness between ETACS-ECU connector C-312 (terminal No. 16) and stoplight relay connector C-133 (terminal No. 2).

- Check the signal line for short circuit.

Q: Is the wiring harness between ETACS-ECU connector C-312 (terminal No. 16) and stoplight relay connector C-133 (terminal No. 2) in good condition?

YES : Go to Step 11.
NO : Repair the wiring harness.

STEP 11. Check the wiring harness between stoplight relay connector C-133 (terminal No. 4) and intermediate connector C-131 (terminal No. 9).

Check the communication line for open or short circuit.

Q: Is the wiring harness between stoplight relay connector C-133 (terminal No. 4) and intermediate connector C-131 (terminal No. 9) in good condition?

YES : Go to Step 12.
NO : Repair the wiring harness.

STEP 12. Retest the system

Check that the stoplight illuminates normally.

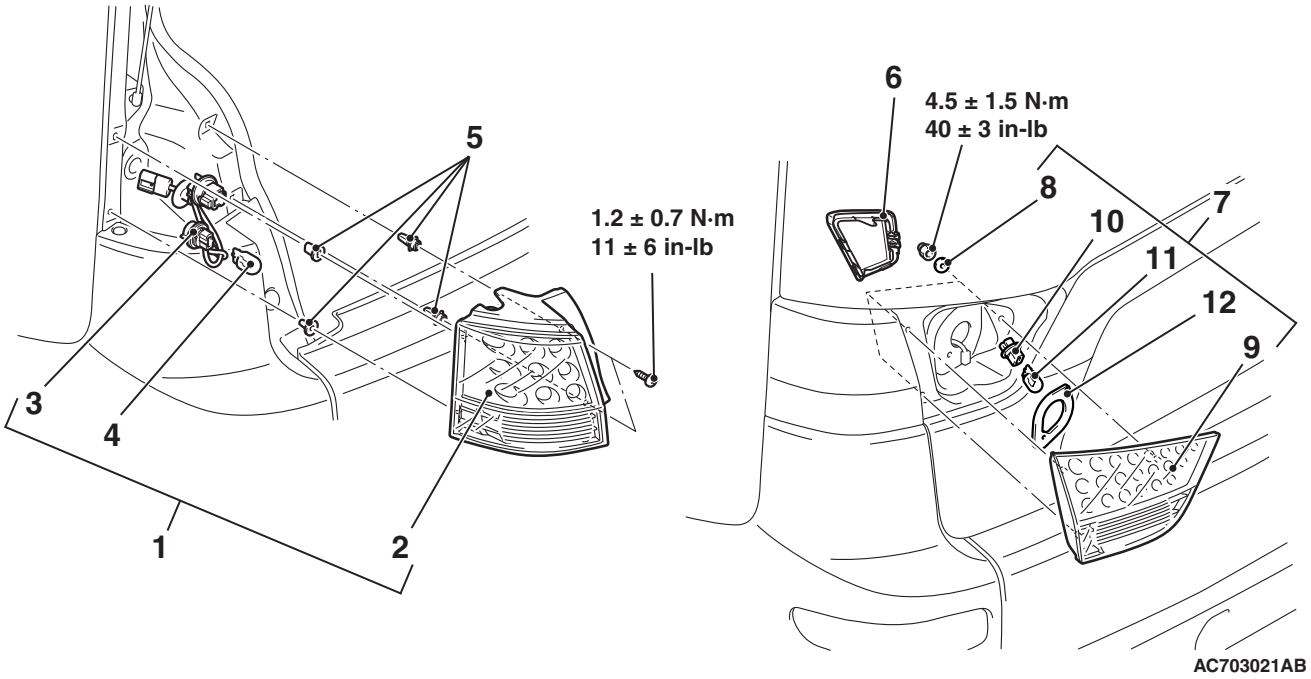
Q: Does the stoplight relay work normally?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-15).

NO : Replace the stoplight relay.

REAR COMBINATION LIGHT REMOVAL AND INSTALLATION

M1541402200239



Removal Steps

1. Rear combination light assembly
2. Rear combination light unit
3. Socket
4. Bulb
5. Grommet
6. Liftgate cover garnish (Refer to GROUP 52A – Liftgate Trim P.52A-14)

Removal Steps (Continued)

7. Taillight assembly
8. Gasket
9. Taillight unit
10. Socket
11. Bulb
12. Gasket

FOG LIGHT

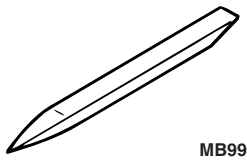
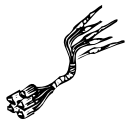
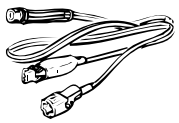
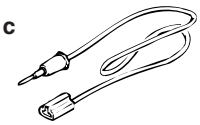
SERVICE SPECIFICATIONS

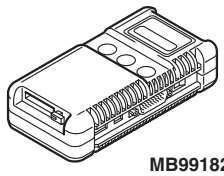
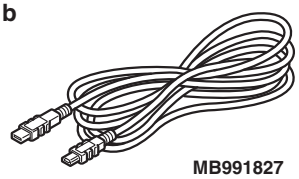
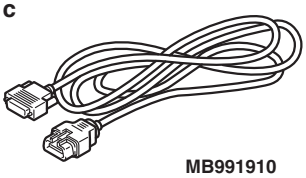
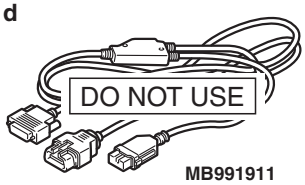
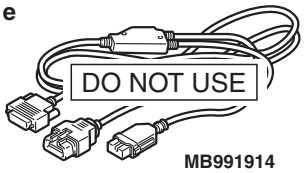
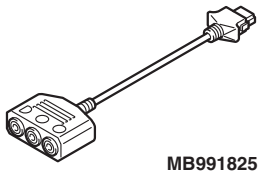
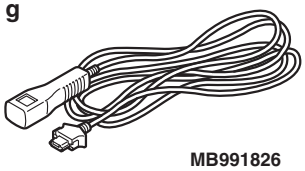
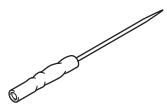
M1540400900187

Item	Standard value	Limit
Fog light aiming (cutoff line direction) [at 7.62 m (25.0 ft)]	The horizontal line 153.0 mm (6.02 inches) (1.15 degrees angle) below the horizontal line (H)	–
Fog light aiming (vertical direction) [at 7.62 m (25.0 ft)]	–	Area from 53.2 mm (2.09 inches) (0.4 degrees angle) above the cutoff line to 99.8 mm (3.93 inches) (0.75 degrees angle) below the cutoff line
Fog light aiming (horizontal direction) [at 7.62 m (25.0 ft)]	–	Vertical line (V) ± 599.7 mm (± 23.6 inches) (± 4.5 degrees angle).

SPECIAL TOOLS

M1540401800309

Tool	Tool number and name	Supersession	Application
 MB990784	MB990784 Ornament remover	General service tool	Removal of fog light bezel
a  b  c  d  DO NOT USE MB991223	MB991223 a. MB991219 b. MB991220 c. MB991221 d. MB991222 Harness set a. Test harness b. LED harness c. LED harness adaptor d. Probe	General service tools	Continuity check and voltage measurement at harness wire or connector a. Connector pin contact pressure inspection b. Power circuit inspection c. Power circuit inspection d. Commercial tester connection

Tool	Tool number and name	Supersession	Application
a  MB991824 b  MB991827 c  MB991910 d  MB991911 e  MB991914 f  MB991825 g  MB991826 MB991958	MB991958 a. MB991824 b. MB991827 c. MB991910 d. MB991911 e. MB991914 f. MB991825 g. MB991826 M.U.T.-III sub assembly a. Vehicle communication interface (V.C.I.) b. M.U.T.-III USB cable c. M.U.T.-III main harness A (Vehicles with CAN communication system) d. M.U.T.-III main harness B (Vehicles without CAN communication system) e. M.U.T.-III main harness C (for Chrysler models only) f. M.U.T.-III measurement adapter g. M.U.T.-III trigger harness	MB991824-KIT *NOTE: G: MB991826 M.U.T.-III Trigger Harness is not necessary when pushing V.C.I. ENTER key.*	**⚠ CAUTION** **M.U.T.-III main harness B (MB991911) should be used. M.U.T.-III main harness A and C should not be used for this vehicle.** Diagnostic code, service data and actuator test check.
 MB992006	MB992006 Extra fine probe	–	Continuity check and voltage measurement at harness wire or connector.

DIAGNOSIS

STANDARD FLOW OF DIAGNOSTIC TROUBLESHOOTING

M1540401700153

Refer to GROUP 00 – Contents of troubleshooting P.00-7.

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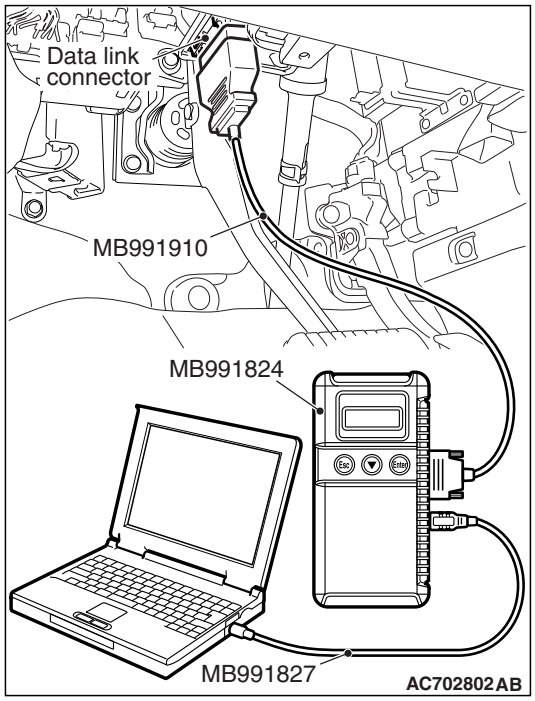
DIAGNOSTIC FUNCTION

M1540403000019

HOW TO CONNECT THE SCAN TOOL (M.U.T.-III)

Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)



⚠ CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

1. Ensure that the ignition switch is at the "LOCK" (OFF) position.
2. Start up the personal computer.
3. Connect special tool MB991827 to special tool MB991824 and the personal computer.
4. Connect special tool MB991910 to special tool MB991824.
5. Connect special tool MB991910 to the data link connector.
6. Turn the power switch of special tool MB991824 to the "ON" position.

   NOTE: When special tool MB991824 is energized, special tool MB991824 indicator light will be illuminated in a green color.
7. Start the M.U.T.-III system on the personal computer.

NOTE: Disconnecting scan tool MB991958 is the reverse of the connecting sequence, making sure that the ignition switch is at the "LOCK" (OFF) position.

HOW TO READ AND ERASE DIAGNOSTIC TROUBLE CODES

Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)

⚠ CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

NOTE: If the battery voltage is low, diagnostic trouble codes will not be set. Check the battery if scan tool MB991958 does not display.

1. Connect scan tool MB991958 to the data link connector.
2. Turn the ignition switch to the "ON" position.
3. Select "System select" from the start-up screen.
4. Select "From 2006 MY" of "Model Year." When the "Vehicle Information" is displayed, check the contents.

5. Select "ETACS" from "System List", and press the "OK" button.

   NOTE: When the "Loading Option Setup" list is displayed, check the applicable item.
6. Select "Diagnostic Trouble Code" to read the DTC.
7. If a DTC is set, it is shown.
8. Choose "Erase DTCs" to erase the DTC.

TROUBLE SYMPTOM CHART

M1540401000284

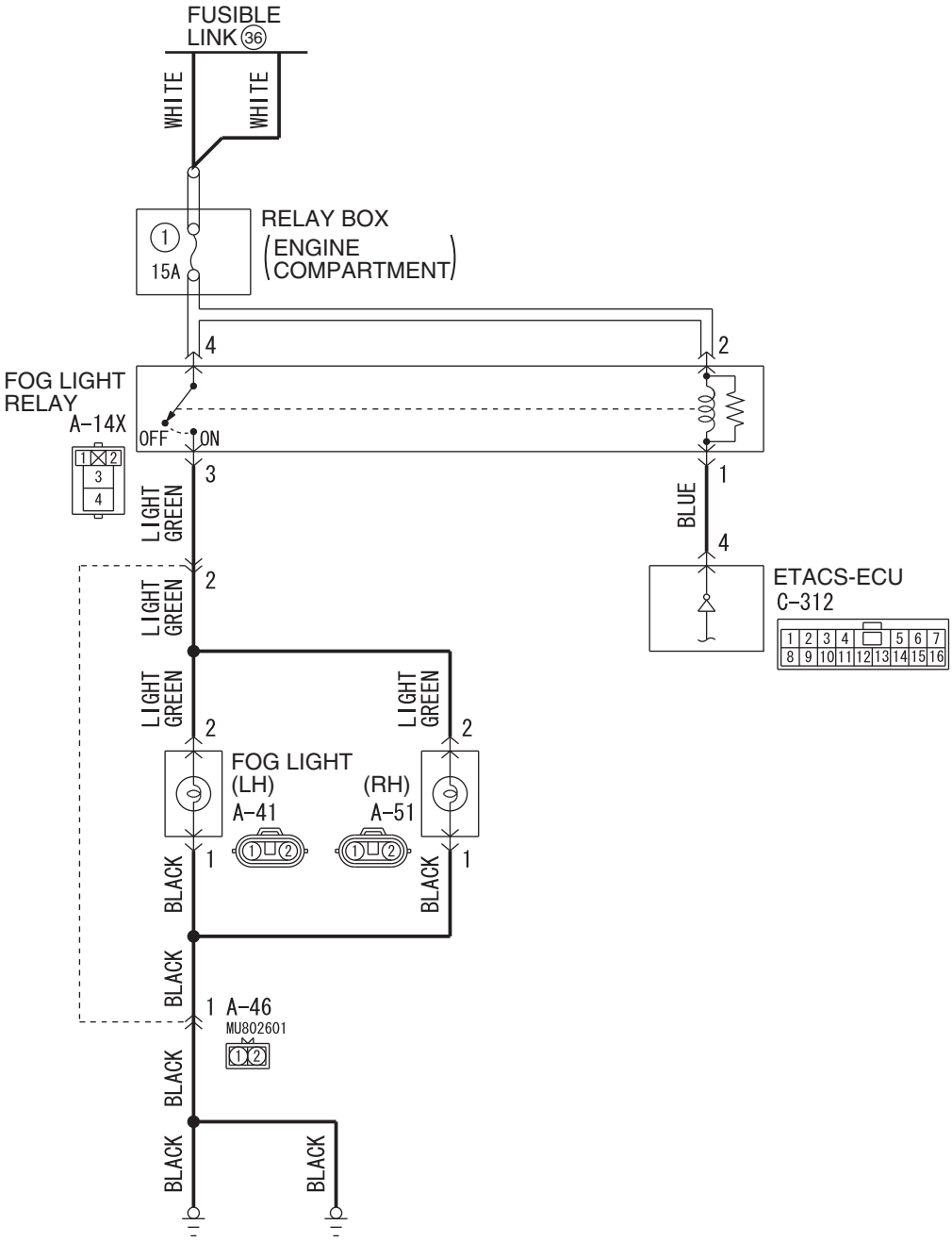
Trouble symptom	Inspection Procedure No.	Reference page
None of the front fog lights illuminates.	1	P.54A-259
One of the front fog lights does not illuminate.	2	P.54A-266
Fog light indicator does not illuminate/go out normally.	3	P.54A-269

SYMPTOM PROCEDURES

Inspection Procedure 1: None of the front fog lights illuminates.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

Fog Light and ETACS-ECU Communication Circuit



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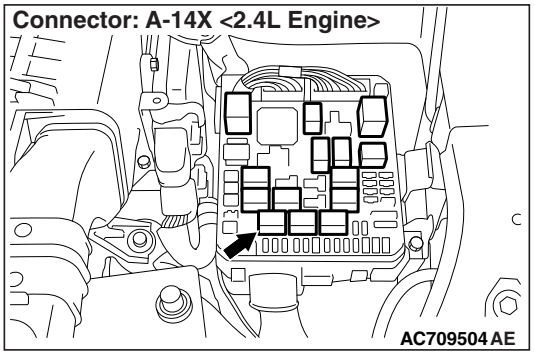
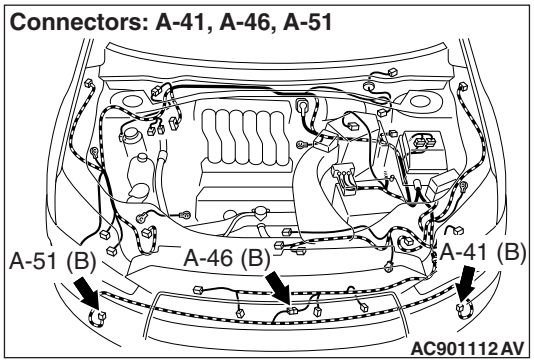
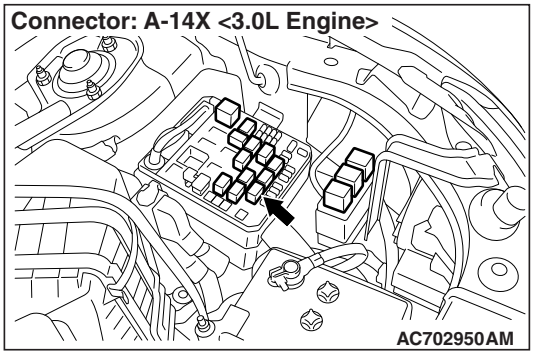
Connector: A-14X <2.4L Engine>



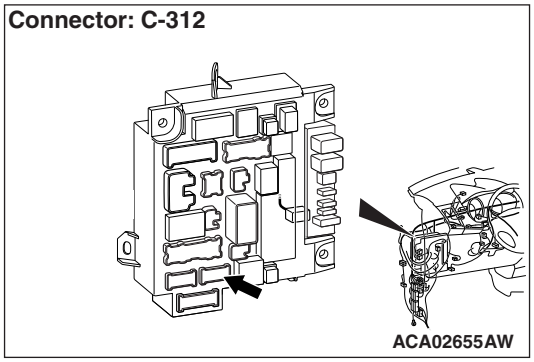
Connectors: A-41, A-46, A-51



Connector: A-14X <3.0L Engine>



Connector: C-312



CIRCUIT OPERATION

If none of front fog lights illuminates, the input signal circuit(s) below or the ETACS-ECU may be defective.

- Tail light switch
- Headlight switch
- Fog light switch
- Option coding information

TECHNICAL DESCRIPTION (COMMENT)

When the fog lights do not illuminate normally, the mentioned input signal circuit(s) or ETACS-ECU may be defective.

TROUBLESHOOTING HINTS

- Malfunction of the column switch
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS

Required Special Tools:

- MB991223: Harness Set
- MB992006: Extra Fine Probe
- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: V.C.I.
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A

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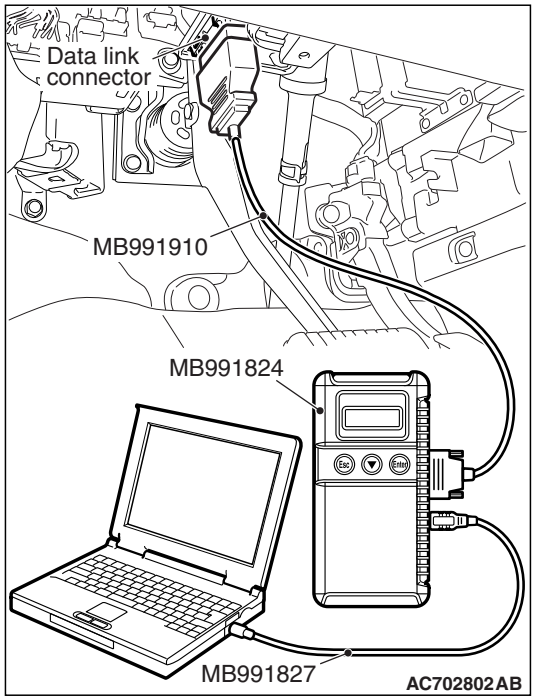


STEP 1. ETACS-ECU coding data check.

⚠ CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

(1) Connect scan tool MB991958. Refer to "How to connect the scan tool (M.U.T.-III) P.54A-257."
(2) Turn the ignition switch to the "ON" position.
(3) Read out the option coding information in ETACS-ECU. (Refer to GROUP 00, Coding Table.)
(4) Check that the "Front fog light" is set to "YES."
(5) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the ETACS-ECU coding data normal?

YES : Go to Step 2.
NO : Operate scan tool MB991958 to set the option coding "Front fog light" to "Yes," and check the trouble symptom.

STEP 2. Check that the tail/stop lights and headlights operate.

Check that the tail/stop lights and headlights illuminate normally.

Q: Do the tail/stop lights and headlights operate normally?

YES : Go to Step 3.
NO : Check the tail/stop lights and the headlights (Refer to trouble symptom chart P.54A-153).

STEP 3. Using scan tool MB991958, read the other system diagnostic trouble code.

Check if DTC is set to the ETACS-ECU.
(1) Turn the ignition switch to the "ON" position.
(2) Check whether the ETACS-ECU related DTC is set.
(3) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Troubleshoot the ETACS-ECU (Refer to P.54A-732).
NO : Go to Step 4.

STEP 4. Using scan tool MB991958, check data list.

Use the ETACS-ECU data list to check the signals related to the fog light function.

- Turn the ignition switch to the "ACC" position.
- Turn the fog light switch to ON.

Item No.	Item name	Normal condition
Item 212	Front fog light	ON

Q: Does scan tool MB991958 display the items "Front fog light" as normal condition?

YES : Go to Step 5.

NO : Troubleshoot the ETACS-ECU. Refer to Inspection Procedure 12 "ETACS-ECU does not receive any signal from the column switch signal." P.54A-818.

STEP 5. Check fog light relay connector A-14X for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is fog light relay connector A-14X in good condition?

YES : Go to Step 6.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2. Verify that the fog lights illuminate normally.

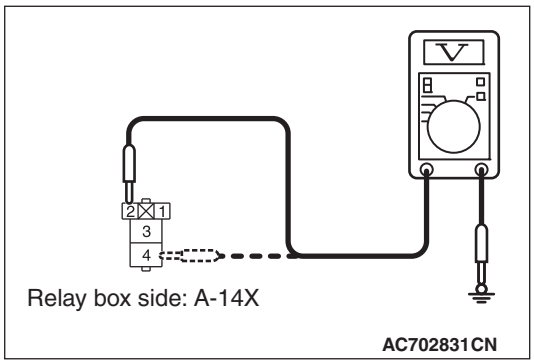
STEP 6. Check the fog light relay.

Refer to P.54A-274.

Q: Is the fog light relay in good condition?

YES : Go to Step 7.

NO : Replace the fog light relay. Verify that the fog lights illuminate normally.



STEP 7. Check the battery power supply circuit to the fog light relay. Measure the voltage at fog light relay connector A-14X.

⚠ CAUTION

The top and bottom of the fog light relay are difficult to identify. Prior to inspection, confirm the triangle mark on the relay box.

(1) Disconnect fog light relay connector A-14X and measure the voltage available at the relay box side of the connector.
(2) Measure the voltage between terminal 2 and ground, and between terminal 4 and ground.
- The voltage should measure approximately 12 volts (battery positive voltage).

Q: Is the measured voltage approximately 12 volts (battery positive voltage)?

YES : Go to Step 9.
NO : Go to Step 8.

STEP 8. Check the wiring harness between fog light relay connector A-14X (terminal 2 and 4) and fusible link (36).

- Check the power supply line for open circuit.

Q: Is the wiring harness between fog light relay connector A-14X (terminal 2 and 4) and fusible link (36) in good condition?

YES : Go to Step 13.
NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the front fog lights illuminate normally.

STEP 9. Check ETACS-ECU connector C-312 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is ETACS-ECU connector C-312 in good condition?

YES : Go to Step 10.
NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2. Verify that the fog lights illuminate normally.

STEP 10. Check the wiring harness between fog light relay connector A-14X (terminal 1) and ETACS-ECU connector C-312 (terminal 4).

Check the communication line for open circuit.

Q: Is the wiring harness between fog light relay connector A-14X (terminal 1) and ETACS-ECU connector C-312 (terminal 4) in good condition?

YES : Go to Step 11.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the front fog lights illuminate normally.

STEP 11. Check the wiring harness between fog light relay connector A-14X (terminal 3) and fog light (LH) connector A-41 or fog light (RH) connector A-51 (terminal 2).

NOTE: Also check intermediate connector A-46 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector A-46 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection P.00E-2.

- Check the power supply line for open circuit.

Q: Is the wiring harness between fog light relay connector A-14X (terminal 3) and fog light (LH) connector A-41 (terminal 2) or fog light (RH) connector A-51 (terminal 2) in good condition?

YES : Go to Step 12.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the front fog lights illuminate normally.

STEP 12. Check the wiring harness between fog light (LH) connector A-41 or fog light (RH) connector A-51 (terminal 1) and ground.

NOTE: Also check intermediate connector A-46 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector A-46 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection P.00E-2.

- Check the ground wires for open circuit.

Q: Is the wiring harness between fog light (LH) connector A-41 or fog light (RH) connector A-51 (terminal 1) and ground in good condition?

YES : Go to Step 13.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the front fog lights illuminate normally.

STEP 13. Retest the system.

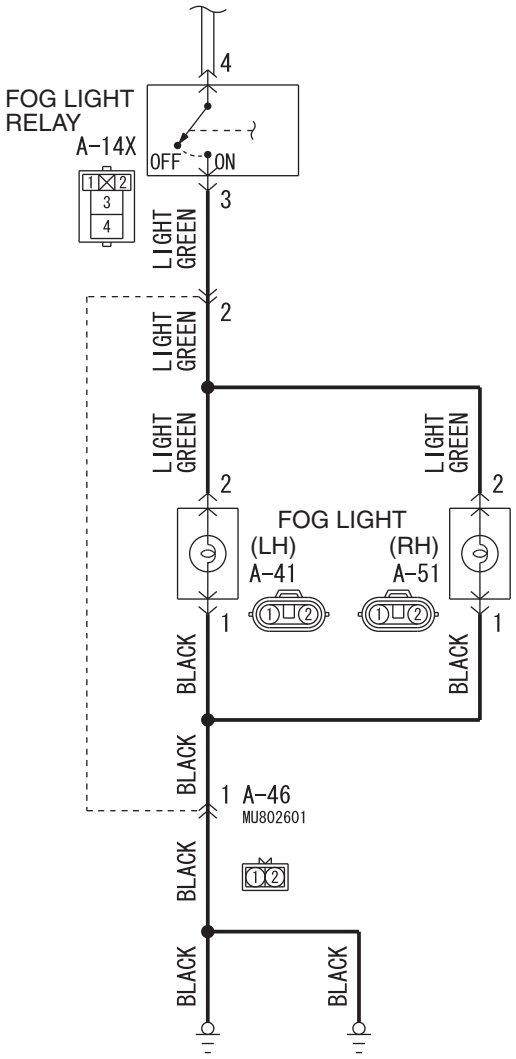
Q: Does the fog lights illuminate in good condition?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-15).

NO : Replace the ETACS-ECU.

Inspection Procedure 2: One of the front fog lights does not illuminate.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.



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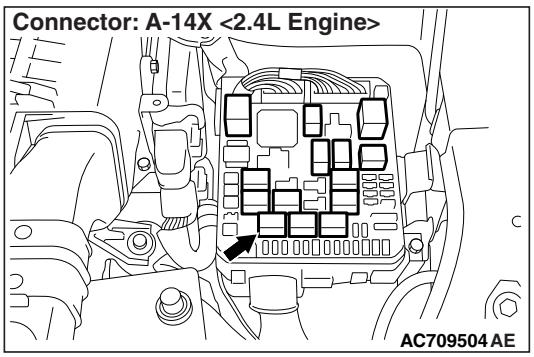

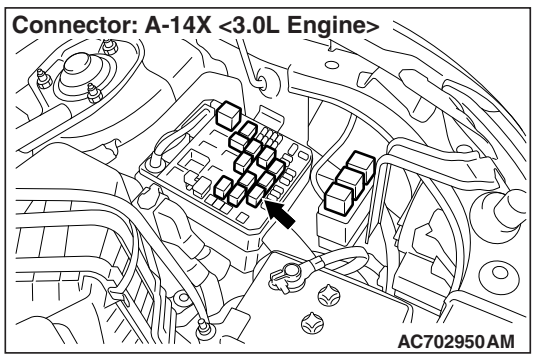

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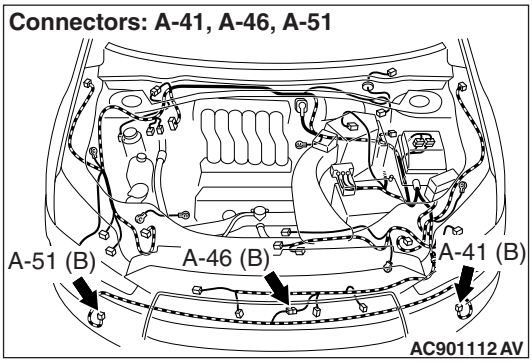


TECHNICAL DESCRIPTION (COMMENT)

When one of the fog lights does not illuminate, the wiring harness connector(s), the bulb may be defective.

TROUBLESHOOTING HINTS

- Burned-out fog light bulb
- Damaged harness wires and connectors

DIAGNOSIS

Required Special Tools:

- MB992006: Extra fine probe
- MB991223: Harness set

STEP 1. Check fog light (LH) connector A-41, fog light (RH) A-51 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is fog light (LH) connector A-41, fog light (RH) A-51 in good condition?

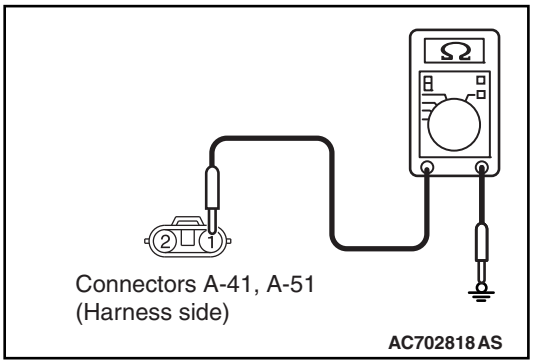
YES : Go to Step 2.
NO : Repair the damaged parts.

STEP 2. Check the fog light bulb.

(1) Remove the fog light bulb.
(2) Verify that the fog light bulb is not damaged or burned out.

Q: Is the fog light bulb in good condition?

YES : Go to Step 3.
NO : Replace the fog light bulb. Verify that the fog lights illuminate normally.



Connectors A-41, A-51
(Harness side)
AC702818AS

Step 3. Check the ground circuit to the fog light (LH) or fog light (RH). Measure the resistance at fog light (LH) connector A-41 or fog light (RH) connector A-51.

(1) Disconnect the connector, and measure at the wiring harness side.
(2) Check the resistance between the fog light connector and ground.
- Resistance between A-41 fog light (LH) connector terminal No.1 and ground
- Resistance between A-51 front fog light (RH) connector terminal No.1 and ground

OK: The resistance should be 2 Ω or less.

Q: Is the measured resistance 2 Ω or less?

YES : Go to Step 5.
NO : Go to Step 4.

Step 4. Check the wiring harness between fog light (LH) connector A-41 or fog light (RH) connector A-51 (terminal 1) and ground.

NOTE: Also check intermediate connector A-46 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector A-46 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection P.00E-2.

- Check the ground wires for open circuit.

Q: Is the wiring harness between fog light (LH) connector A-41 or fog light (RH) connector A-51 (terminal 1) and ground in good condition?

YES : Go to Step 7.
NO : Repair the wiring harness.

STEP 5. Check fog light relay connector A-14X for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is fog light relay connector A-14X in good condition?

YES : Go to Step 6.
NO : Repair the damaged parts.

STEP 6. Check the wiring harness between fog light (LH) connector A-41or fog light (RH) connector A-51 (terminal 2) and fog light relay connector A-14X (terminal 3).

NOTE: Also check intermediate connector A-46 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector A-46 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection P.00E-2.

- Check the power supply line for open circuit.

Q: Is the wiring harness between fog light (LH) connector A-41 or fog light (RH) connector A-51 (terminal 2) and fog light relay connector A-14X (terminal 3) in good condition?

YES : Go to Step 7.
NO : Repair the wiring harness.

STEP 7. Retest the system.

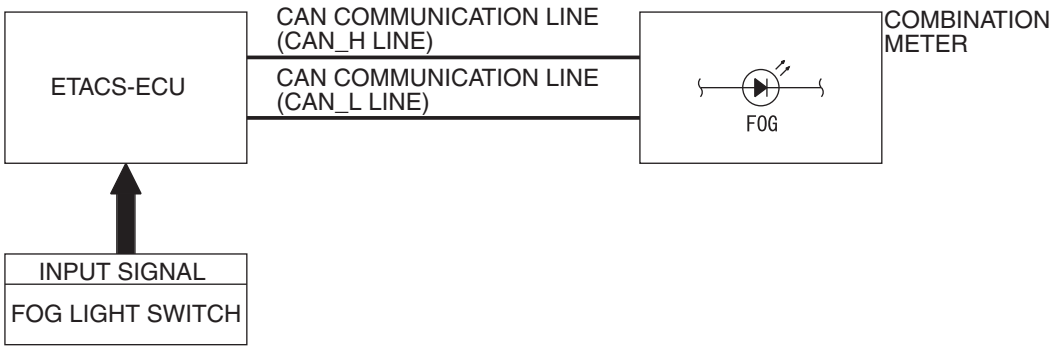
Q: Does the right or left fog light illuminate in good condition?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-15).
NO : Go to Step 1.

Inspection Procedure 3: Fog light indicator does not illuminate/go out normally.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the input and output signal circuits are normal.

Fog Light Indicator Circuit



AC703271AB
D7G54M074A00

TECHNICAL DESCRIPTION (COMMENT)

If the fog light indicator does not illuminate normally, connector(s), wiring harness in the CAN bus lines, the ETACS-ECU or the combination meter may be defective.

TSB Revision

TROUBLESHOOTING HINTS

- The ETACS-ECU may be defective
- The combination meter may be defective
- Damaged harness wires and connectors

DIAGNOSIS

Required Special Tools:

- MB991223: Harness Set
- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: V.C.I.
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A

STEP 1. Check the fog lights.

When the fog light switch is operated, check that the fog lights illuminate/go off normally.

Q: Is the fog lights normal?

YES : Go to Step 2.

NO : First, repair the fog lights. Refer to Inspection Procedure 2 "One of the front fog lights does not illuminate P.54A-266."

STEP 2. Using scan tool MB991958, diagnose the CAN bus line.

⚠ CAUTION

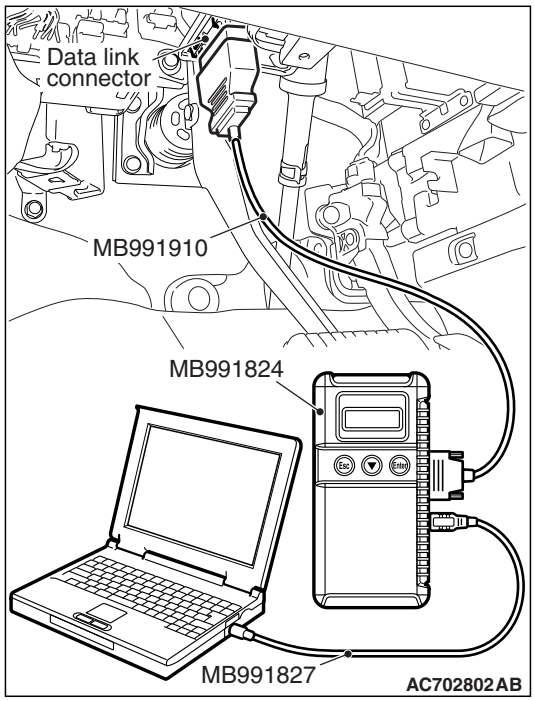
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

(1) Connect scan tool MB991958. Refer to "How to connect the scan tool (M.U.T.-III) P.54A-257."
(2) Turn the ignition switch to the "ON" position.
(3) Diagnose the CAN bus line.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 3.

NO : Repair the CAN bus line (Refer to GROUP 54C – Diagnosis P.54C-17).



STEP 3. Using scan tool MB991958, read the combination meter diagnostic trouble code.

(1) Check whether a combination meter-related DTC is set.
(2) Turn the ignition switch to the "ON" position.
Check whether the combination meter-related DTC is set.
(3) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Diagnose the combination meter (Refer to Diagnosis P.54A-34).
NO : Go to Step 4.

STEP 4. Using scan tool MB991958, check actuator test.

(1) Turn the ignition switch to the "ON" position.
(2) Perform the actuator test for the combination meter, and check that the fog light indicator illuminates (Refer to P.54A-91).
(3) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the check result normal?

YES : Replace the ETACS-ECU.
NO : Replace the combination meter.

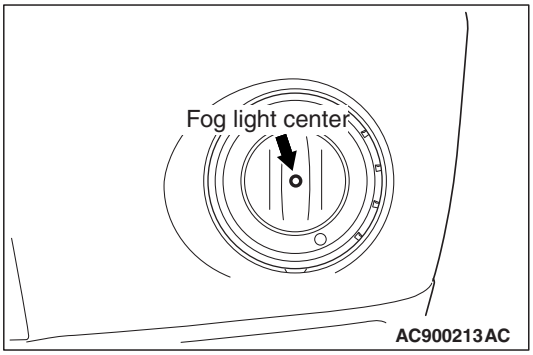
ON-VEHICLE SERVICE

FRONT FOG LIGHT AIMING

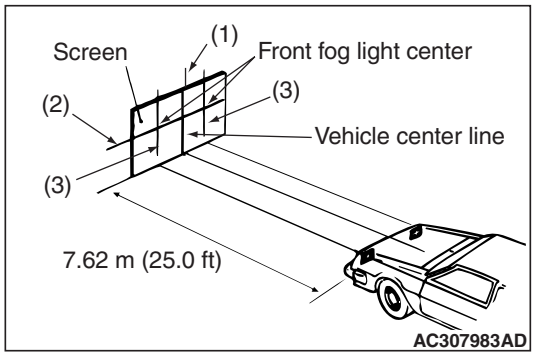
M1540400300635

PRE-AIMING INSTRUCTIONS

1. Inspect for rusted or faulty front fog light assemblies.
2. These conditions must be corrected before a satisfactory adjustment can be made.
3. Inspect tire inflation, and adjust if necessary.
4. If the fuel tank is not full, place a weight in the trunk of the vehicle to simulate weight of a full tank [3 kg (6.5 pounds) per gallon].
5. There should be no other load in the vehicle other than driver or substituted weight of approximately 68 kg (150 pounds) placed in driver's position.
6. Thoroughly clean the front fog light lenses.
7. Place the vehicle on a level floor, perpendicular to a flat screen 7.62 meters (25.0 ft) away from the bulb center-marks on the fog light lens.
8. Rock the vehicle sideways to allow the vehicle to assume its normal position.
9. Bounce the front suspension through three (3) oscillations by applying the body weight to the hood or bumper.

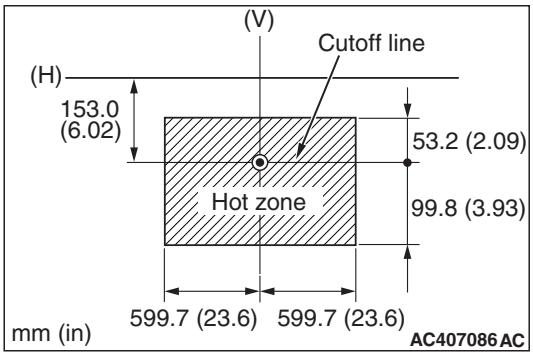


10.Measure the center of the front fog lights as shown in the illustration.

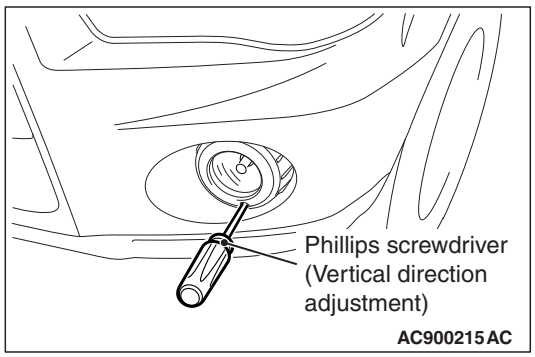


11.Four lines of adhesive tape (or equivalent markings) are required on screen or wall:
(1) Position a vertical tape or mark so that it is aligned with the vehicle center line.
(2) Measure the distance from the center of the front fog light lens to the floor. Transfer the measurement to the screen. Horizontal tape or mark on the screen is for reference of vertical adjustment.
(3) Measure the distance from the center line of the vehicle to the center of each front fog light. Transfer the measurement to the screen. Vertical tape or mark on the screen is for reference to the center line of each front fog light.

FOG LIGHT ADJUSTMENT



1. Check if the beam shining onto the screen is at the standard value.
   Standard value:
   (Cutoff line direction): The horizontal line (H) 153.0 mm (6.02 inches) (1.15 degrees angle) below the horizontal line (H)
   Limit:
   (Vertical direction): Area from 53.2 mm (2.09 inches) (0.4 degrees angle) above the cutoff line to 99.8 mm (3.93 inches) (0.75 degrees angle) below the cutoff line
   (Horizontal direction): Vertical line (V) ± 599.7 mm (± 23.6 inches) (± 4.5 degrees angle)



2. If it is not within the standard value range, adjust by turning the adjusting screw.

NOTE: The horizontal direction is non-adjustable. If deviation of the light beam axis exceeds the standard value, check that the mounting location or some other points are not faulty.

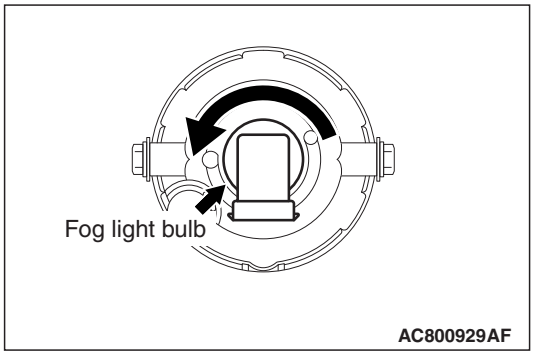
BULB REPLACEMENT

M1540400400643

⚠ CAUTION

Don't touch the bulb surface with bare hands or dirty gloves. If the bulb surface (glass part) gets dirty, clean it with alcohol or thinner immediately and dry well, and then install it.

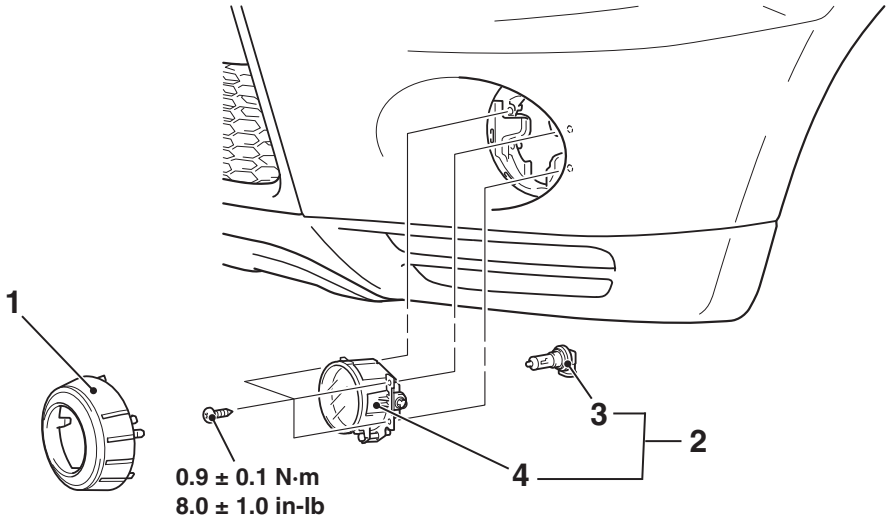
1. Remove the front fog light bezel and the front fog light assembly. (Refer to P.54A-273.)
2. Disconnect the connector and withdraw the bulb.
3. After replacing the bulb, securely connect the connector, and install the front fog light assembly and the front fog light bezel.



REMOVAL AND INSTALLATION

M1540400500338

Post-installation operation
Check the beam direction of the fog light (Refer to Front Fog Light Aiming P.54A-271).



Removal steps

<<A>> 1. Fog light bezel
2. Fog light assembly

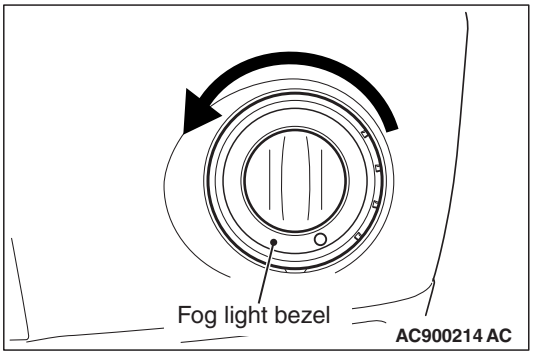
Removal steps (Continued)

3. Bulb
4. Fog light unit

TSB Revision

REMOVAL SERVICE POINT

<<A>> FOG LIGHT BEZEL REMOVAL

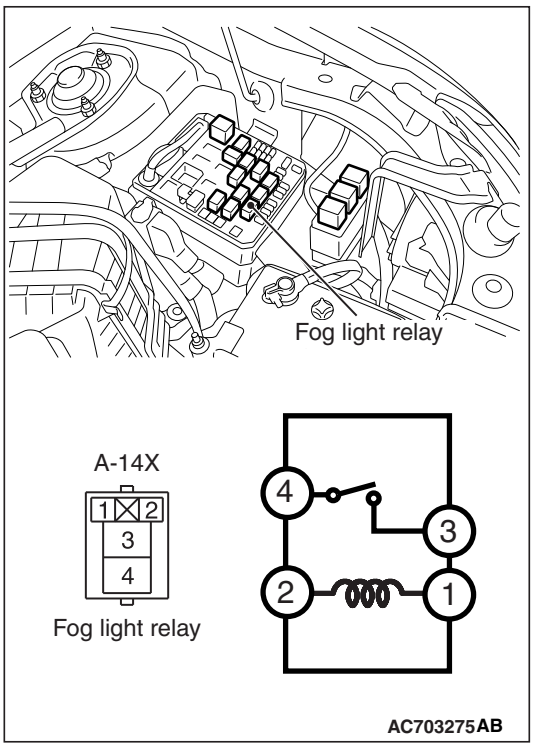


1. Turn the fog light bezel until it is locked.
2. Remove the fog light bezel from the front bumper.

INSPECTION

FOG LIGHT RELAY CHECK

M1540400700097



Battery voltage	Terminal number	Normal condition
Not energized	3 – 4	No continuity
With current supply [terminal 2 (+), terminal 1 (–)]		Continuity exists (2 ohms or less)

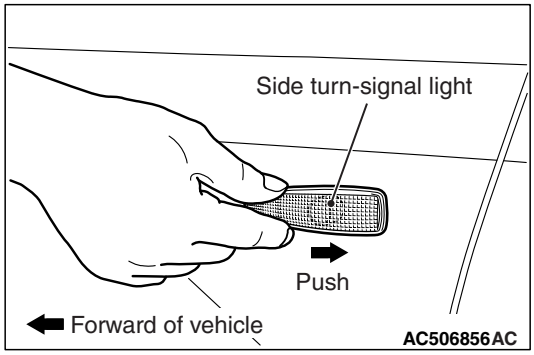
SIDE TURN-SIGNAL LIGHT

REMOVAL AND INSTALLATION

M1541800200394

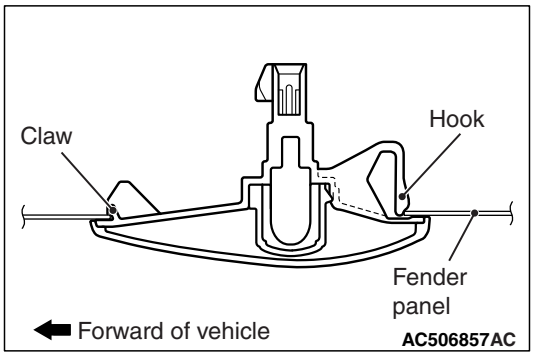
<SIDE TURN-SIGNAL LIGHT INTEGRATED IN DOOR MIRROR TYPE>

Refer to GROUP 51 – Outside Mirror P.51-120.



REMOVAL SERVICE POINT <FENDER PANEL ATTACHMENT TYPE SIDE TURN-SIGNAL LIGHT>

Push the side turn-signal light toward the vehicle rear to bend the hook, and then remove by disengaging the tab from the fender panel.



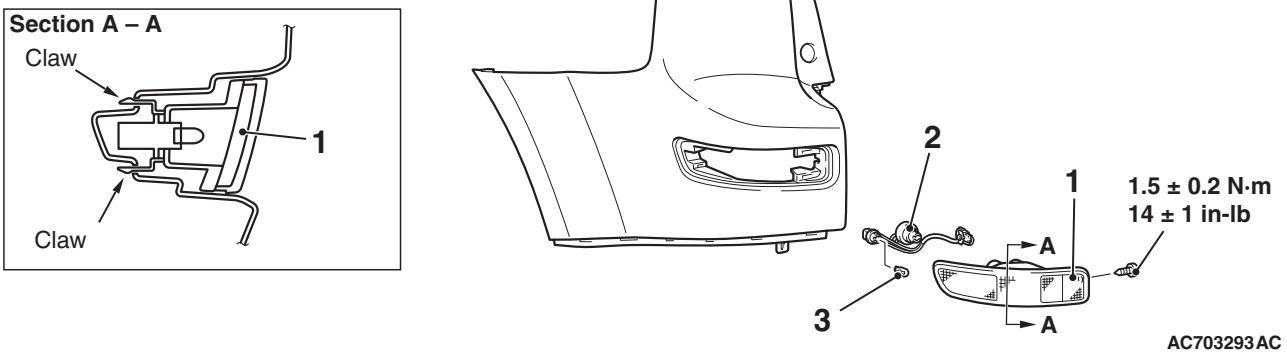
INSTALLATION SERVICE POINT <FENDER PANEL ATTACHMENT TYPE SIDE TURN-SIGNAL LIGHT>

Engage the claw to the fender panel to install the side turn signal light.

REAR SIDE-MARKAER LIGHT

REMOVAL AND INSTALLATION

M1544600100013



Removal Steps

- Rear corner bumper (Refer to GROUP 51, Rear Bumper Assembly P.51-7.)

1. Rear side-marker light unit

Removal Steps (Continued)

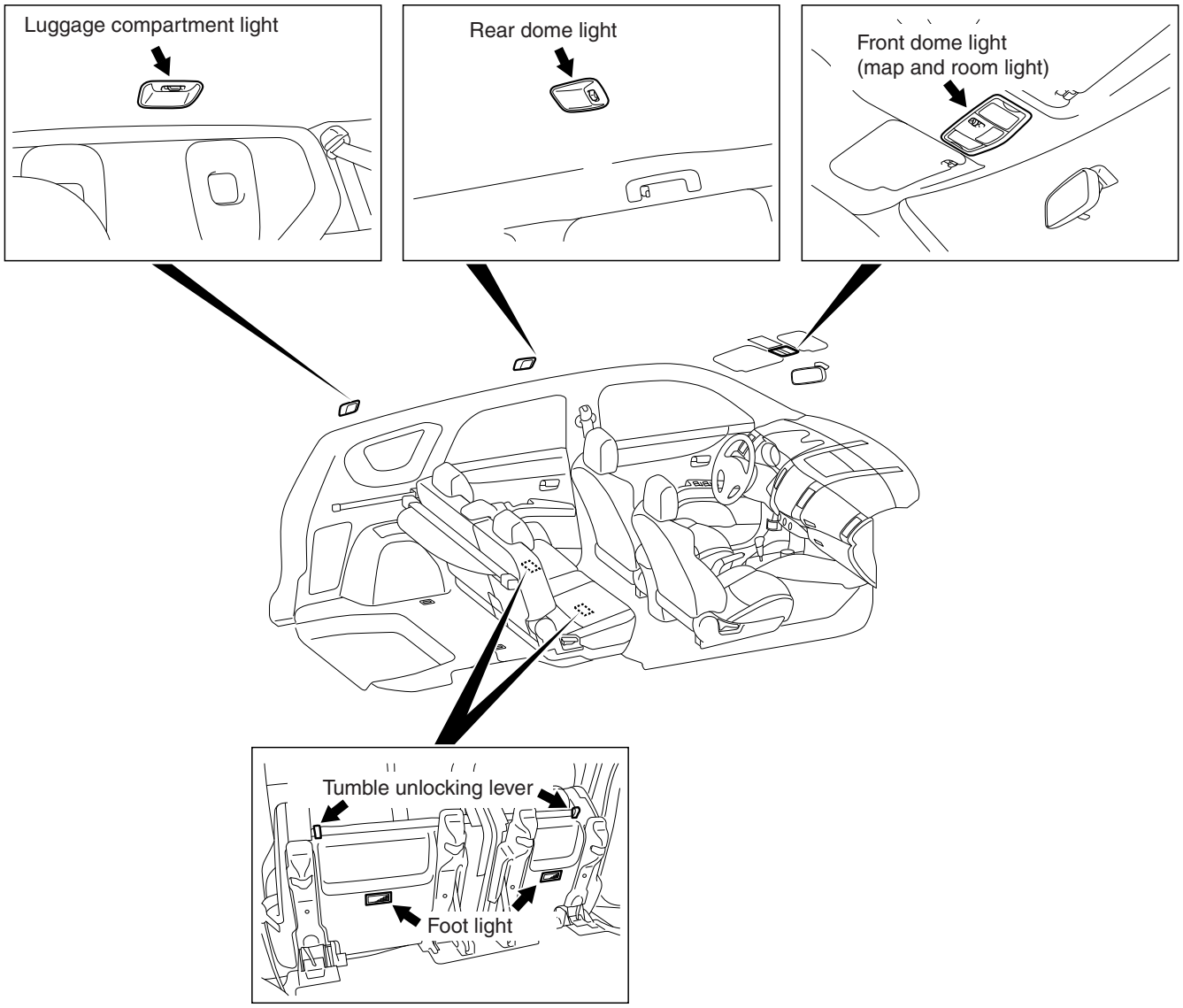
2. Socket assembly
3. Bulb

TSB Revision

DOME LIGHT

GENERAL INFORMATION

M1542000100394



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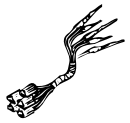
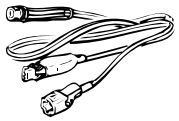
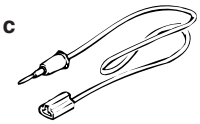
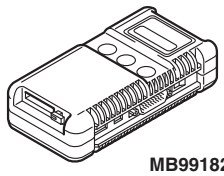
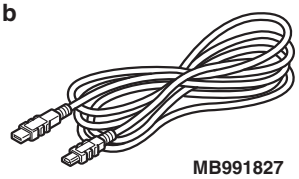
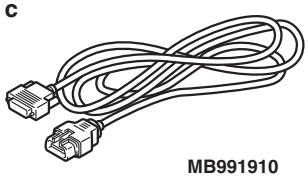
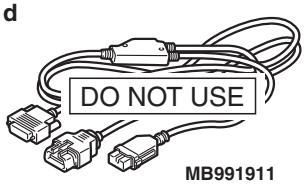
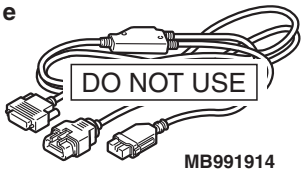
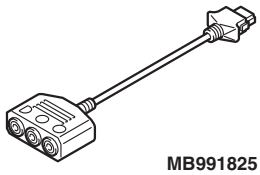
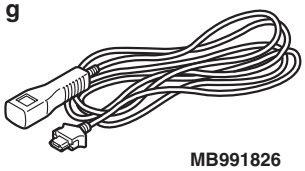
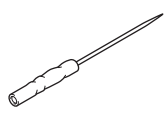
SPECIAL TOOLS

M1541301600282

TSB Revision

Tool	Tool number and name	Supersession	Application
a  b  c  d  MB991223	MB991223 a. MB991219 b. MB991220 c. MB991221 d. MB991222 Harness set a. Test harness b. LED harness c. LED harness adaptor d. Probe	General service tools	Continuity check and voltage measurement at harness wire or connector a. Connector pin contact pressure inspection b. Power circuit inspection c. Power circuit inspection d. Commercial tester connection

Tool	Tool number and name	Supersession	Application
a  MB991824 b  MB991827 c  MB991910 d  MB991911 e  MB991914 f  MB991825 g  MB991826 MB991958	MB991958 a. MB991824 b. MB991827 c. MB991910 d. MB991911 e. MB991914 f. MB991825 g. MB991826 M.U.T.-III sub assembly a. Vehicle communication interface (V.C.I.) b. M.U.T.-III USB cable c. M.U.T.-III main harness A (Vehicles with CAN communication system) d. M.U.T.-III main harness B (Vehicles without CAN communication system) e. M.U.T.-III main harness C (for Chrysler models only) f. M.U.T.-III measurement adapter g. M.U.T.-III trigger harness	MB991824-KIT *NOTE: G: MB991826 M.U.T.-III Trigger Harness is not necessary when pushing V.C.I. ENTER key.*	**⚠ CAUTION** **M.U.T.-III main harness B (MB991911) should be used. M.U.T.-III main harness A and C should not be used for this vehicle.** Diagnostic code, service data and actuator test check.
 MB992006	MB992006 Extra fine probe	–	Continuity check and voltage measurement at harness wire or connector.

DIAGNOSIS

STANDARD FLOW OF DIAGNOSTIC TROUBLESHOOTING

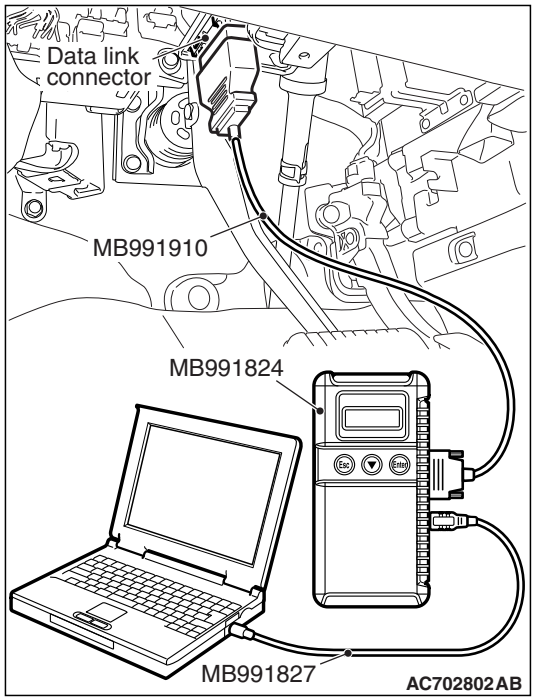
M1541301500177

Refer to GROUP 00 – Contents of troubleshooting
P.00-7.

DIAGNOSTIC FUNCTION

M1541302100042

HOW TO CONNECT THE SCAN TOOL (M.U.T.-III)



Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)

⚠ CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

1. Ensure that the ignition switch is at the "LOCK" (OFF) position.
2. Start up the personal computer.
3. Connect special tool MB991827 to special tool MB991824 and the personal computer.
4. Connect special tool MB991910 to special tool MB991824.
5. Connect special tool MB991910 to the data link connector.
6. Turn the power switch of special tool MB991824 to the "ON" position.

   NOTE: When special tool MB991824 is energized, special tool MB991824 indicator light will be illuminated in a green color.
7. Start the M.U.T.-III system on the personal computer.

NOTE: Disconnecting scan tool MB991958 is the reverse of the connecting sequence, making sure that the ignition switch is at the "LOCK" (OFF) position.

HOW TO READ AND ERASE DIAGNOSTIC TROUBLE CODES

Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)

⚠ CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

NOTE: If the battery voltage is low, diagnostic trouble codes will not be set. Check the battery if scan tool MB991958 does not display.

TSB Revision

1. Connect scan tool MB991958 to the data link connector.
2. Turn the ignition switch to the "ON" position.
3. Select "System select" from the start-up screen.
4. Select "From 2006 MY" of "Model Year." When the "Vehicle Information" is displayed, check the contents.
5. Select "ETACS" from "System List", and press the "OK" button.

   NOTE: When the "Loading Option Setup" list is displayed, check the applicable item.
6. Select "Diagnostic Trouble Code" to read the DTC.
7. If a DTC is set, it is shown.
8. Choose "Erase DTCs" to erase the DTC.

TROUBLE SYMPTOM CHART

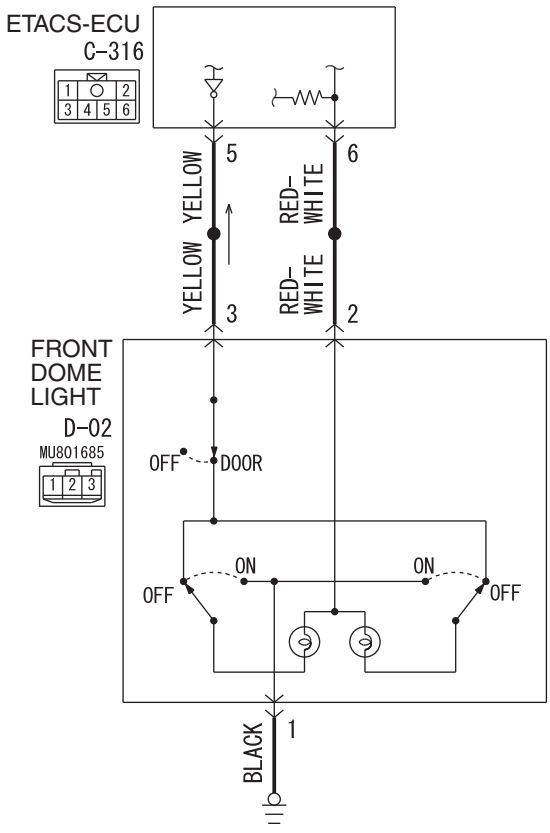
M1541300200184

Trouble symptom	Inspection Procedure No.	Reference page
The front dome light does not illuminate normally.	1	P.54A-282
The rear dome light does not illuminate normally.	2	P.54A-286
The luggage compartment light does not illuminate normally.	3	P.54A-291
The foot light does not illuminate normally.	4	P.54A-296
The interior light auto-cut function does not operate correctly.	5	P.54A-299

SYMPTOM PROCEDURES

Inspection Procedure 1: The front dome light does not illuminate normally.

Front Dome Light Circuit



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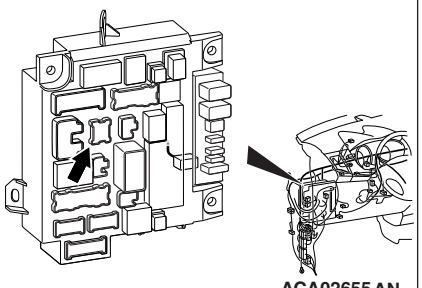
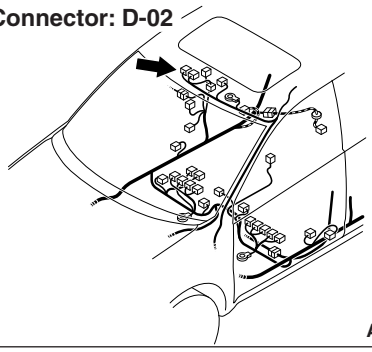
D7G54M039A00

Connector: C-316



ACA02655 AN

Connector: D-02



AC702816 AD

TROUBLE JUDGMENT

The ETACS-ECU illuminates and extinguishes the front room light in accordance with the input signals below.

- Ignition switch (IG1)
- Key reminder switch
- Door switches

TSB Revision

- Liftgate latch switch
- Front door lock actuator

TECHNICAL DESCRIPTION (COMMENT)

If this does not work normally, the above switch input circuit(s), front dome light, or ETACS-ECU may have a problem.

TROUBLESHOOTING HINTS

- Malfunction of the key reminder switch
- Malfunction of door switch
- Malfunction of liftgate latch switch
- Malfunction of the front door lock actuator
- Malfunction of front dome light
- Malfunction of the ETACS-ECU
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

DIAGNOSIS

Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)

STEP 1. Rear dome light operation check.

Check that the rear dome light illuminates and extinguishes normally.

Q: Does rear dome light work normally?

YES : Go to Step 2.
NO : Replace the ETACS-ECU.

STEP 2. Using scan tool MB991958, read the diagnostic trouble code.

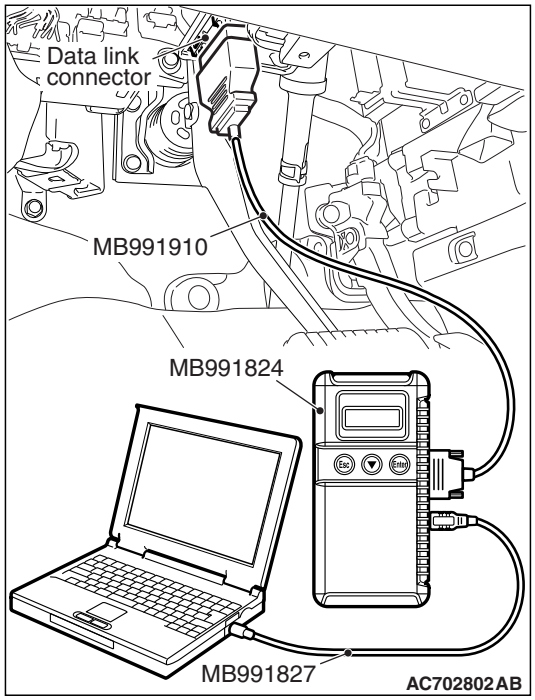
⚠ CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

(1) Connect scan tool MB991958. Refer to "How to connect scan too (M.U.T.-III) P.54A-280."
(2) Turn the ignition switch to the "ON" position.
(3) Check whether the ETACS-ECU related DTC is set.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Diagnose the ETACS-ECU. Refer to Diagnosis P.54A-732.
NO : Go to Step 3.



STEP 3. Using scan tool MB991958, check data list.

Use the ETACS-ECU data list to check the signals related to the front dome light.

- Turn the ignition switch to the "LOCK" (OFF) position.
- Remove the ignition key from the ignition key cylinder.
- Open each door.
- Open the liftgate.

Item No.	Item name	Normal conditions
Item 228	Dr door unlock	ON
Item 254	IG voltage	1 V or less
Item 256	Dr door ajar switch	Open
Item 257	As door ajar switch	Open
Item 258	RR door ajar switch	Open
Item 259	RL door ajar switch	Open
Item 260	Trunk/gate trunk ajar switch	Open
Item 264	Handle lock switch	Key in → Key out

Q: Does scan tool MB991958 display the items "Dr door unlock", "IG voltage", "Dr door ajar switch", "As door ajar switch", "RR door ajar switch", "RL door ajar switch", "Trunk/gate trunk ajar switch" and "Handle lock switch" as normal condition?

YES <Normal conditions are displayed for all items.> : Go to Step 4.

NO <Normal condition is not displayed for item No. 228.> : Troubleshoot the ETACS-ECU. Refer to Inspection Procedure 4 "ETACS-ECU does not receive any signal from the front door lock actuator" P.54A-794.

NO <Normal condition is not displayed for item No. 254.> : Troubleshoot the ETACS-ECU. Refer to Inspection Procedure 2 "ETACS-ECU does not receive any signal from the ignition switch (IG1)" P.54A-788.

NO <Normal condition is not displayed for item No. 256.> : Troubleshoot the ETACS-ECU. Refer to Inspection Procedure 5 "ETACS-ECU does not receive any signal from the front door switch (LH)" P.54A-801.

NO <Normal condition is not displayed for item No. 257.> : Troubleshoot the ETACS-ECU. Refer to Inspection Procedure 6 "ETACS-ECU does not receive any signal from the front door switch (RH)" P.54A-803.

NO <Normal condition is not displayed for item No. 258.> : Troubleshoot the ETACS-ECU. Refer to Inspection Procedure 7 "ETACS-ECU does not receive any signal from the rear door switch (LH)" P.54A-805.

NO <Normal condition is not displayed for item No. 259.> : Troubleshoot the ETACS-ECU. Refer to Inspection

Procedure 8 "ETACS-ECU does not receive any signal from the rear door switch (RH)" P.54A-808.

NO <Normal condition is not displayed for item No. 260.> : Troubleshoot the ETACS-ECU. Refer to Inspection Procedure 9 "ETACS-ECU does not receive any signal from the liftgate switch" P.54A-810.

NO <Normal condition is not displayed for item No. 264.> : Troubleshoot the ETACS-ECU. Refer to Inspection Procedure 3 "ETACS-ECU does not receive any signal from the key reminder switch" P.54A-791.

STEP 4. Check front dome light connector D-02 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is front dome light connector D-02 in good condition?

YES : Go to Step 5.
NO : Repair the damaged parts.

STEP 5. Front dome light bulb check

Check that the front dome light bulb is normal.

Q: Does front dome light work normally?

YES : Go to Step 6.
NO : Replace the front dome light bulb.

STEP 6. Check ETACS-ECU connector C-316 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is ETACS-ECU connectors C-316 in good condition?

YES : Go to Step 7.
NO : Repair the damaged parts.

STEP 7. Check the wiring harness between front dome light connector D-02 (terminal No. 2/3) and ETACS-ECU connector C-316 (terminal No. 6/5)

Check the communication line for open or short circuit.

Q: Are wiring harness between front dome light connector D-02 (terminal No. 2/3) and ETACS-ECU connector C-316 (terminal No. 6/5) in good condition?

YES : Go to Step 8.
NO : Repair the wiring harness.

STEP 8. Check front dome light connector D-02 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is front dome light connector D-02 in good condition?

YES : Go to Step 9.
NO : Repair the damaged parts.

STEP 9. Check the wiring harness between D-02 front dome light connector (terminal No. 1) and body ground.
Check the ground lines for open circuit.

Q: Is wiring harness between front dome light connector D-02 (terminal No. 1) and body ground in good condition?

YES : Replace the front dome light, and then go to Step 10.
NO : Repair the wiring harness.

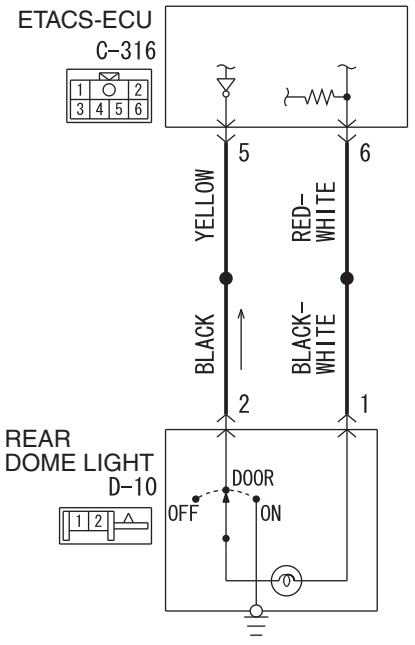
STEP 10. Retest the system
Check that the front dome light illuminates/extinguishes normally.

Q: Does the front dome light work normally?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-15).
NO : Replace the ETACS-ECU.

Inspection Procedure 2: The rear dome light does not illuminate normally.

Rear Dome Light Circuit



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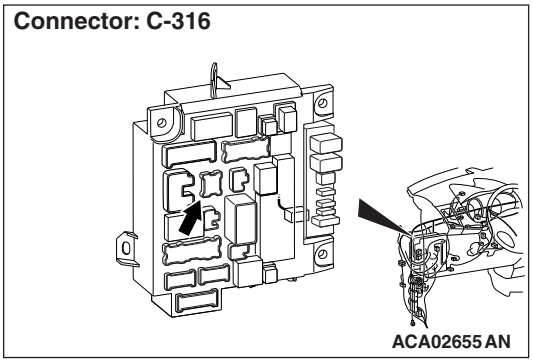
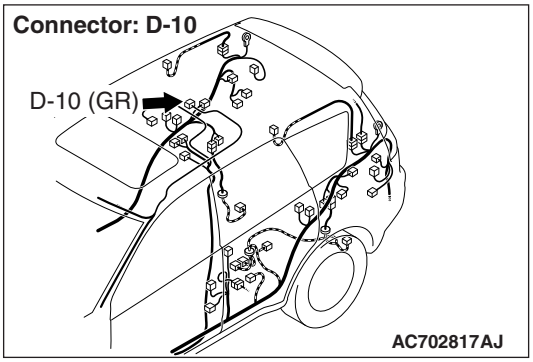




TROUBLE JUDGMENT

The ETACS-ECU illuminates and extinguishes the rear dome light in accordance with the input signals below.

- Ignition switch (IG1)
- Key reminder switch
- Door switches
- Liftgate latch switch
- Front door lock actuator

TECHNICAL DESCRIPTION (COMMENT)

If this does not work normally, the above switch input circuit(s), rear dome light, or ETACS-ECU may have a problem.

PROBABLE CAUSES

- Malfunction of the key reminder switch
- Malfunction of door switch
- Malfunction of liftgate latch switch
- Malfunction of the front door lock actuator (RH)
- Malfunction of rear dome light
- Malfunction of the ETACS-ECU
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

DIAGNOSIS

Required Special Tools:

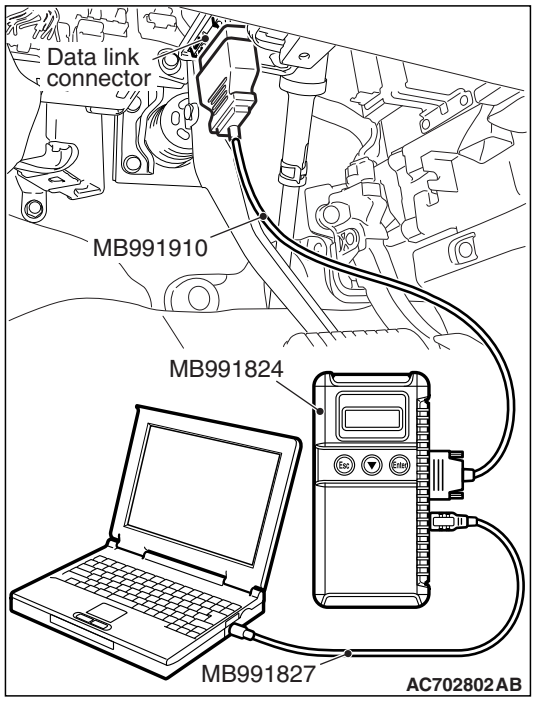
- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)

STEP 1. Front dome light operation check

Check that the front dome light illuminates and extinguishes normally.

Q: Does rear dome light work normally?

YES : Go to Step 2.
NO : Replace the ETACS-ECU.



STEP 2. Using scan tool MB991958, read the diagnostic trouble code.

⚠ CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

(1) Connect scan tool MB991958. Refer to "How to connect scan too (M.U.T.-III) P.54A-280."
(2) Turn the ignition switch to the "ON" position.
(3) Check whether the ETACS-ECU related DTC is set.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Diagnose the ETACS-ECU. Refer to P.54A-732.
NO : Go to Step 3.

STEP 3. Using scan tool MB991958, check data list.

Use the ETACS-ECU data list to check the signals related to the rear dome light.

- Turn the ignition switch to the "LOCK" (OFF) position.
- Remove the ignition key from the ignition key cylinder.
- Open each door.
- Open the liftgate.

Item No.	Item name	Normal conditions
Item 228	Dr door unlock	ON
Item 254	IG voltage	1 V or less
Item 256	Dr door ajar switch	Open
Item 257	As door ajar switch	Open
Item 258	RR door ajar switch	Open
Item 259	RL door ajar switch	Open
Item 260	Trunk/gate trunk ajar switch	Open
Item 264	Handle lock switch	Key in → Key out

Q: Does scan tool MB991958 display the items "Dr door unlock", "IG voltage", "Dr door ajar switch", "As door ajar switch", "RR door ajar switch", "RL door ajar switch", "Trunk/gate trunk ajar switch" and "Handle lock switch" as normal condition?

YES <Normal conditions are displayed for all items.> : Go to Step 4.

NO <Normal condition is not displayed for item No. 228.> : Troubleshoot the ETACS-ECU. Refer to Inspection Procedure 4 "ETACS-ECU does not receive any signal from the front door lock actuator" P.54A-794.

NO <Normal condition is not displayed for item No. 254.> : Troubleshoot the ETACS-ECU. Refer to Inspection Procedure 2 "ETACS-ECU does not receive any signal from the ignition switch (IG1)" P.54A-788.

NO <Normal condition is not displayed for item No. 256.> : Troubleshoot the ETACS-ECU. Refer to Inspection Procedure 5 "ETACS-ECU does not receive any signal from the front door switch (LH)" P.54A-801.

NO <Normal condition is not displayed for item No. 257.> : Troubleshoot the ETACS-ECU. Refer to Inspection Procedure 6 "ETACS-ECU does not receive any signal from the front door switch (RH)" P.54A-803.

NO <Normal condition is not displayed for item No. 258.> : Troubleshoot the ETACS-ECU. Refer to Inspection Procedure 7 "ETACS-ECU does not receive any signal from the rear door switch (LH)" P.54A-805.

NO <Normal condition is not displayed for item No. 259.> : Troubleshoot the ETACS-ECU. Refer to Inspection

Procedure 8 "ETACS-ECU does not receive any signal from the rear door switch (RH)" P.54A-808.

NO <Normal condition is not displayed for item No. 260.> : Troubleshoot the ETACS-ECU. Refer to Inspection Procedure 9 "ETACS-ECU does not receive any signal from the liftgate switch" P.54A-810.

NO <Normal condition is not displayed for item No. 264.> : Troubleshoot the ETACS-ECU. Refer to Inspection Procedure 3 "ETACS-ECU does not receive any signal from the key reminder switch" P.54A-791.

STEP 4. Check rear dome light connector D-10 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is rear dome light connector D-10 in good condition?

YES : Go to Step 5.
NO : Repair the damaged parts.

STEP 5. Rear dome light bulb check

Check that the rear dome light bulb is normal.

Q: Does rear dome light work normally?

YES : Go to Step 6.
NO : Replace the rear dome light bulb.

STEP 6. Check ETACS-ECU connector C-316 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is ETACS-ECU connectors C-316 in good condition?

YES : Go to Step 7.
NO : Repair the damaged parts.

STEP 7. Check the wiring harness between rear dome light D-10 connector terminal (No. 1/2) and ETACS-ECU connector C-316 (terminal No. 6/5)

Check the communication line for open or short circuit.

Q: Is wiring harness between rear dome light connector D-10 (terminal No. 1/2) and ETACS-ECU connector C-316 (terminal No. 6/5) in good condition?

YES : Go to Step 8.
NO : Repair the wiring harness.

STEP 8. Retest the system

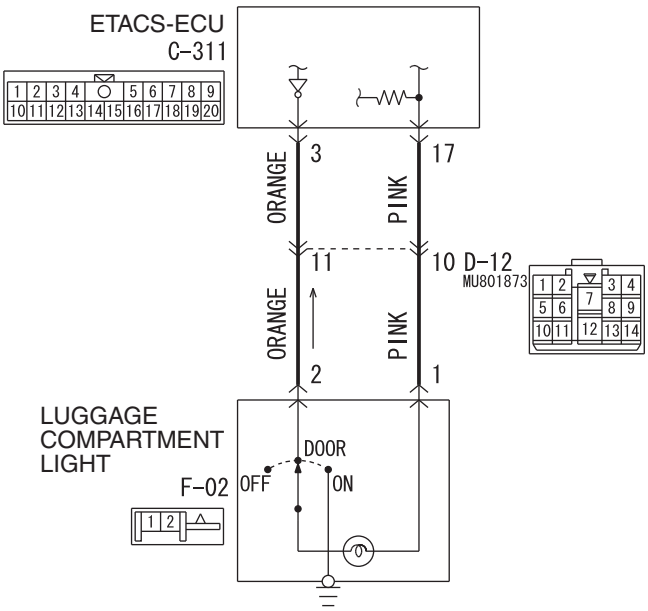
Check that the rear dome light illuminates/extinguishes normally.

Q: Does rear dome light work normally?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-15).
NO : Replace the ETACS-ECU.

Inspection Procedure 3: The luggage compartment light does not illuminate normally.

Luggage Compartment Light Circuit



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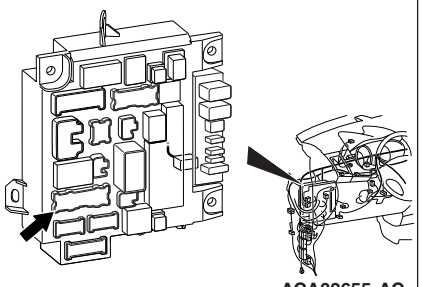
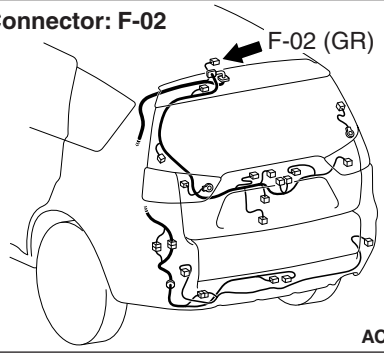
D7G54M023A00

Connector: C-311



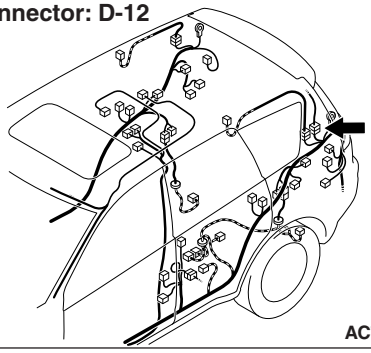
ACA02655 AC

Connector: F-02



AC702963 AC

Connector: D-12



AC702817AF

TROUBLE JUDGMENT

The ETACS-ECU illuminates and extinguishes the luggage compartment light in accordance with the input signals below.

- Ignition switch (IG1)
- Key reminder switch
- Door switches
- Liftgate latch switch
- Front door lock actuator

TECHNICAL DESCRIPTION (COMMENT)

If this does not work normally, the above switch input circuit(s), luggage compartment light, or ETACS-ECU may have a problem.

TSB Revision

TROUBLESHOOTING HINTS

- Malfunction of the key reminder switch
- Malfunction of door switch
- Malfunction of liftgate latch switch
- Malfunction of the front door lock actuator
- Malfunction of luggage compartment light
- Malfunction of the ETACS-ECU
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

DIAGNOSIS

Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)

STEP 1. Using scan tool MB991958, read the diagnostic trouble code.

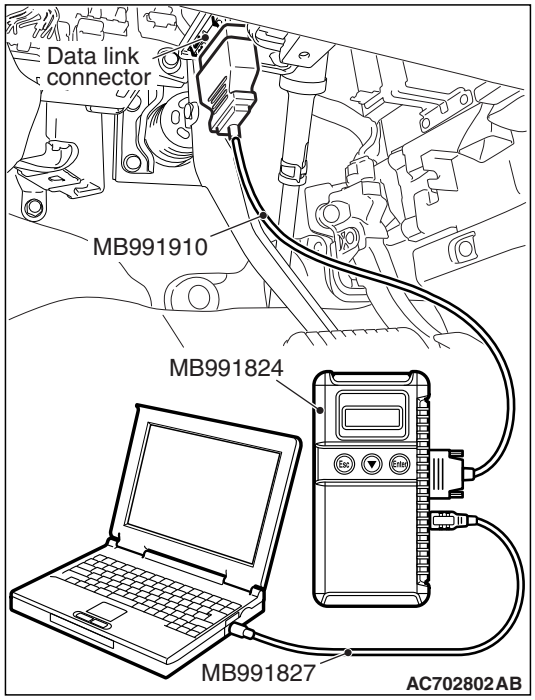
⚠ CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

(1) Connect scan tool MB991958. Refer to "How to connect scan too (M.U.T.-III) P.54A-280."
(2) Turn the ignition switch to the "ON" position.
(3) Check whether the ETACS-ECU related DTC is set.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Diagnose the ETACS-ECU. Refer to P.54A-732.
NO : Go to Step 2.



STEP 2. Using scan tool MB991958, check data list.

Use the ETACS-ECU service data to check the signals related to the operation of luggage compartment light.

- Turn the ignition switch to the "LOCK" (OFF) position.
- Remove the ignition key from the ignition key cylinder.
- Open each door.
- Open the liftgate.

Item No.	Item name	Normal conditions
Item 228	Dr door unlock	ON
Item 254	IG voltage	1 V or less
Item 256	Dr door ajar switch	Open
Item 257	As door ajar switch	Open
Item 258	RR door ajar switch	Open
Item 259	RL door ajar switch	Open
Item 260	Trunk/gate trunk ajar switch	Open
Item 264	Handle lock switch	Key in → Key out

Q: Does scan tool MB991958 display the items "Dr door unlock", "IG voltage", "Dr door ajar switch", "As door ajar switch", "RR door ajar switch", "RL door ajar switch", "Trunk/gate trunk ajar switch" and "Handle lock switch" as normal condition?

YES <Normal conditions are displayed for all items.> : Go to step 3.

NO <Normal condition is not displayed for item No. 228.> : Troubleshoot the ETACS-ECU. Refer to Inspection Procedure 4 "ETACS-ECU does not receive any signal from the front door lock actuator" P.54A-794.

NO <Normal condition is not displayed for item No. 254.> : Troubleshoot the ETACS-ECU. Refer to Inspection Procedure 2 "ETACS-ECU does not receive any signal from the ignition switch (IG1)" P.54A-788.

NO <Normal condition is not displayed for item No. 256.> : Troubleshoot the ETACS-ECU. Refer to Inspection Procedure 5 "ETACS-ECU does not receive any signal from the front door switch (LH)" P.54A-801.

NO <Normal condition is not displayed for item No. 257.> : Troubleshoot the ETACS-ECU. Refer to Inspection Procedure 6 "ETACS-ECU does not receive any signal from the front door switch (RH)" P.54A-803.

NO <Normal condition is not displayed for item No. 258.> : Troubleshoot the ETACS-ECU. Refer to Inspection Procedure 7 "ETACS-ECU does not receive any signal from the rear door switch (LH)" P.54A-805.

NO <Normal condition is not displayed for item No. 259.> : Troubleshoot the ETACS-ECU. Refer to Inspection

Procedure 8 "ETACS-ECU does not receive any signal from the rear door switch (RH)" P.54A-808.

NO <Normal condition is not displayed for item No. 260.> : Troubleshoot the ETACS-ECU. Refer to Inspection Procedure 9 "ETACS-ECU does not receive any signal from the liftgate switch" P.54A-810.

NO <Normal condition is not displayed for item No. 264.> : Troubleshoot the ETACS-ECU. Refer to Inspection Procedure 3 "ETACS-ECU does not receive any signal from the key reminder switch" P.54A-791.

STEP 3. Check luggage compartment light connector F-02 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is luggage compartment light connector F-02 in good condition?

YES : Go to Step 4.
NO : Repair the damaged parts.

STEP 4. Luggage compartment light bulb check
Check that the luggage compartment light bulb is normal.

Q: Does luggage compartment light work normally?

YES : Go to Step 5.
NO : Replace the luggage compartment light bulb.

STEP 5. Check ETACS-ECU connector C-311 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is ETACS-ECU connectors C-311 in good condition?

YES : Go to Step 6.
NO : Repair the damaged parts.

STEP 6. Check the wiring harness between luggage compartment light connector F-02 (terminal No. 2/1) and ETACS-ECU connector C-311 (terminal No. 3/17).
Check the communication line for open or short circuit.

NOTE: Prior to the wiring harness inspection, check intermediate connector D-12, and repair if necessary.

Q: Is wiring harness between luggage compartment light connector F-02 (terminal No. 2/1) and ETACS-ECU connector C-311 (terminal No. 3/17) in good condition?

YES : Go to Step 7.
NO : Repair the wiring harness.

STEP 7. Retest the system

Check that the luggage compartment light illuminates/extinguishes normally.

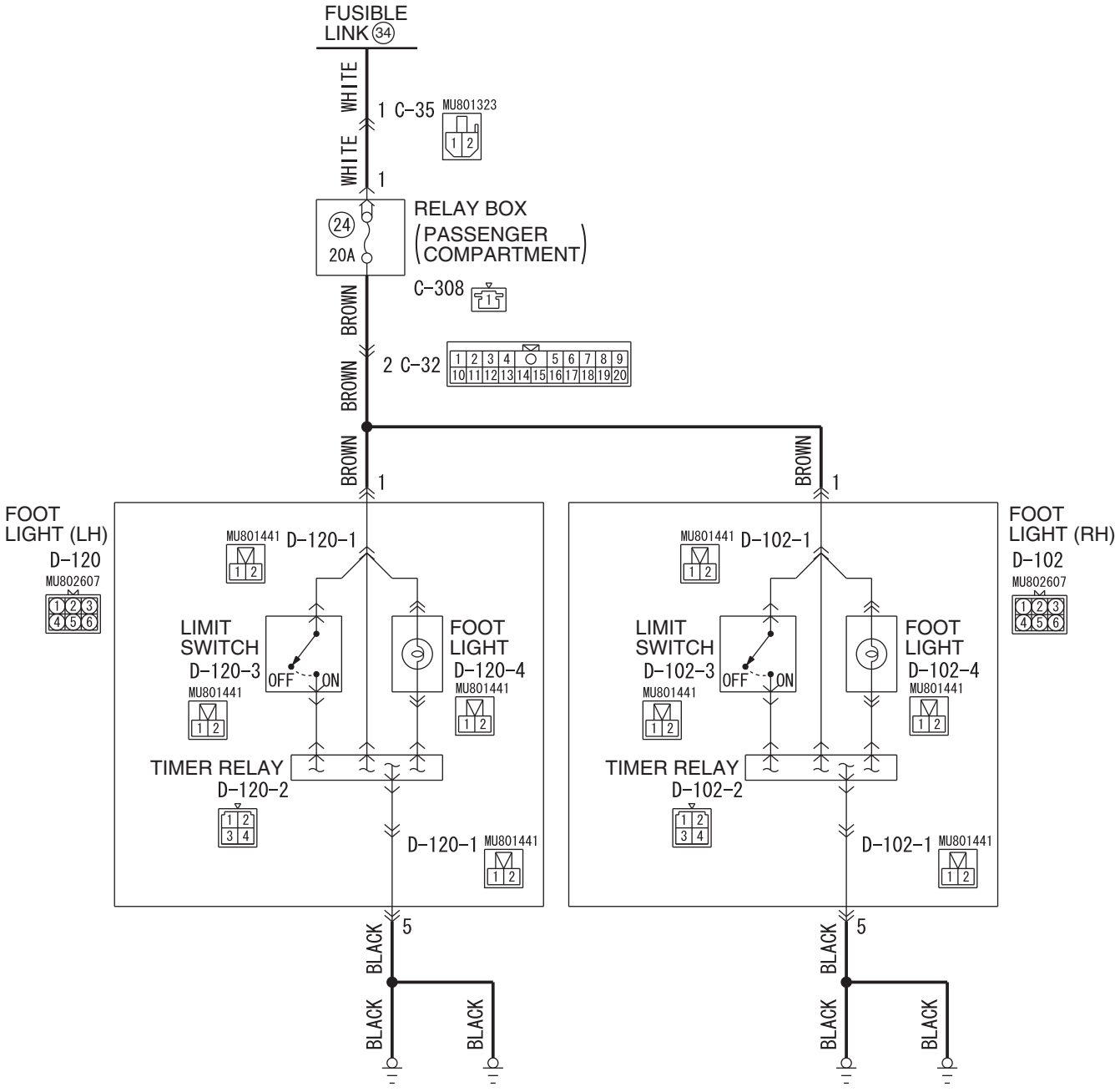
Q: Does the luggage compartment light work normally?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-15).

NO : Replace the ETACS-ECU.

Inspection Procedure 4: The foot light does not illuminate normally.

Foot Light Circuit



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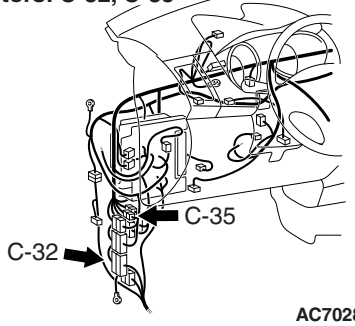
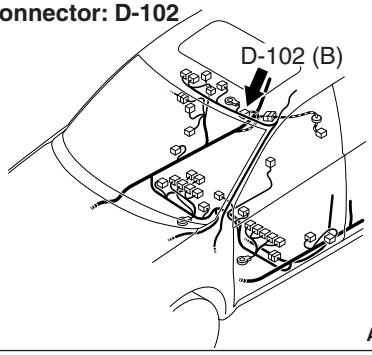
TSB Revision

Connectors: C-32, C-35



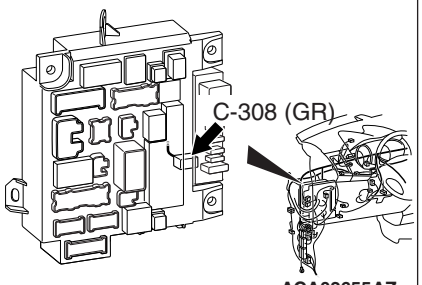
AC702815AK

Connector: D-102



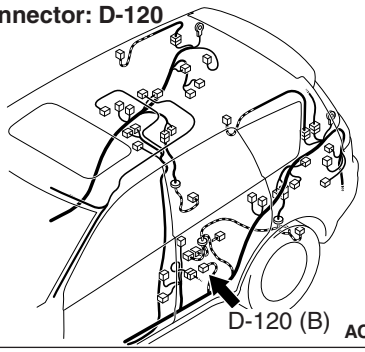
AC702816AE

Connector: C-308



ACA02655AZ

Connector: D-120



AC702817AK

TROUBLE JUDGMENT

If the foot light does not illuminate normally, the power supply circuit(s), ground circuit, or under cover rear may have a problem.

TROUBLESHOOTING HINTS

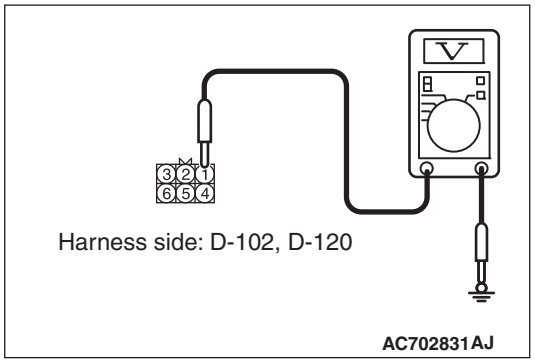
- Malfunction of under cover rear
- Damaged harness wires and connectors

DIAGNOSIS

STEP 1. Check electric foot light connector D-102 (RH), D-120 (LH) for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is the check result normal?

YES : Go to Step 2.
NO : Repair the defective connector.



STEP 2. Measure the voltage at foot light connector D-102 (RH), D-120 (LH).

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

(2) Measure the voltage between the D-102 (RH), D-120 (LH) electric folding second seat connector (terminal No. 1) and the ground.

The voltage should measure approximately 12 volts (battery positive voltage).

Q: Does the voltage measure battery voltage?

YES : Go to Step 4.

NO : Go to Step 3.

STEP 3. Check the wiring harness between foot light connector D-102 (RH), D-120 (LH) (terminal No. 1) and the fusible link (34).

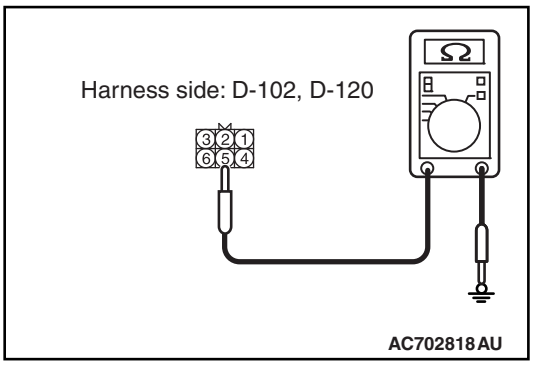
Check the power supply line for open or short circuit.

NOTE: Before the wiring harness check, check the relay box connector C-308, and the intermediate connector C-35, C-32 and then repair them if necessary.

Q: Is wiring harness between foot light connector D-102 (RH), D-120 (LH) (terminal No. 1) and the fusible link (34) in good condition?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-15).

NO : Repair the wiring harness.



STEP 4. Measure the resistance at foot light connector D-102 (RH), D-120 (LH).

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

(2) Measure the resistance between the resistance at foot light connector D-102 (RH), D-120 (LH) (terminal No. 5) and ground.

The measured value should be continuity exists (2 Ω or less).

Q: Does the measured resistance value correspond with this range?

YES : Go to Step 6.

NO : Go to Step 5.

STEP 5. Check the wiring harness between foot light connector D-102 (RH), D-120 (LH) (terminal No. 5) and ground.
Check the ground line for open circuit.

Q: Is wiring harness between foot light connector D-102 (RH), D-120 (LH) (terminal No. 5) and ground in good condition?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-15).
NO : Repair the wiring harness.

STEP 6. Retest the system.
Check that the foot light illuminates normally.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-15).
NO : Replace the under cover rear.

Inspection Procedure 5: The interior light auto-cut function does not operate correctly.

TECHNICAL DESCRIPTION (COMMENT)

The ETACS-ECU operates the interior light auto-cut function in accordance with the input signals below.
- Ignition switch (ACC)
- Ignition switch (IG1)
- Door switches

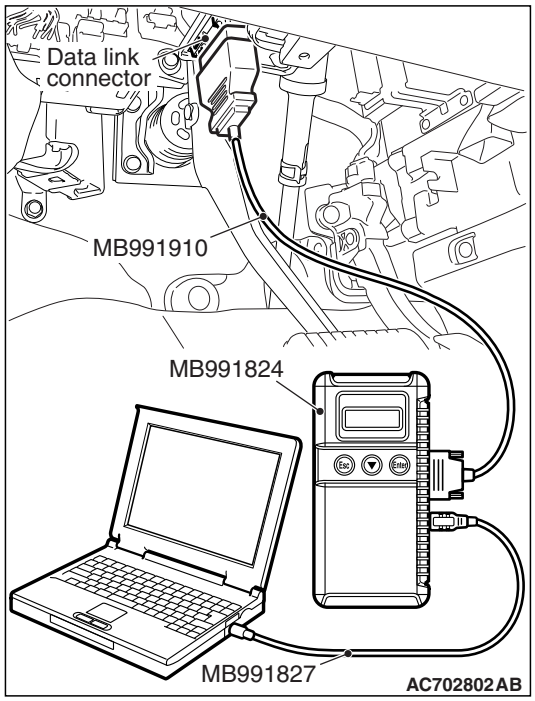
If this function does not work normally, these input signal circuit(s) or the ETACS-ECU may have a problem. Also, "Interior light auto cut timer" may be set to "0min" through customization.

TROUBLESHOOTING HINTS

- Malfunction of door switch
- Malfunction of the dome light
- Malfunction of the ETACS-ECU
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

DIAGNOSIS

Required Special Tools:
- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)



STEP 1. Using scan tool MB991958, Check the configuration function.

⚠ CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

(1) Connect scan tool MB991958. Refer to "How to connect scan tool (M.U.T.-III) P.54A-280."
(2) Turn the ignition switch to the "ON" position.
(3) Use the ETACS-ECU customize function to check to see which of the followings other than "0min" the "Interior light auto cut timer" is set.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the check result normal?

YES : Go to Step 2.
NO : Use the ETACS-ECU configuration function to set the "Interior light auto cut timer" to other than "0min" (Refer to P.54A-820).

STEP 2. Using scan tool MB991958, read the ETACS-ECU diagnostic trouble code.

Check if DTC is set to the ETACS-ECU.
(1) Turn the ignition switch to the "ON" position.
(2) Check whether the ETACS-ECU DTC is set.
(3) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Diagnose the ETACS-ECU. Refer to ETACS, Diagnosis P.54A-732.
NO : Go to Step 3.

STEP 3. Using scan tool MB991958, check data list.

Use the ETACS-ECU data list to check the signals related to the interior light auto-cut function.

- Turn the ignition switch to the "LOCK" (OFF) position.
- Open each door.

Item No.	Item name	Normal conditions
Item 254	IG voltage	1 V or less
Item 288	ACC switch	OFF
Item 256	Dr door ajar switch	Open
Item 257	As door ajar switch	Open
Item 258	RR door ajar switch	Open
Item 259	RL door ajar switch	Open

Q: Does scan tool MB991958 display the items "IG voltage", "ACC switch", "As door ajar switch", "RR door ajar switch", and "RL door ajar switch" as normal condition?

YES <Normal conditions are displayed for all items.> : Go to Step 4.

NO <Normal condition is not displayed for item No. 254.> : Troubleshoot the ETACS-ECU. Refer to Inspection Procedure 2 "ETACS-ECU does not receive any signal from the ignition switch (IG1)" P.54A-788.

NO <Normal condition is not displayed for item No. 288.> : Troubleshoot the ETACS-ECU. Refer to Inspection Procedure 1 "ETACS-ECU does not receive any signal from the ignition switch (ACC)" P.54A-786.

NO <Normal condition is not displayed for item No. 256.> : Troubleshoot the ETACS-ECU. Refer to Inspection Procedure 5 "ETACS-ECU does not receive any signal from the front door switch (LH)" P.54A-801.

NO <Normal condition is not displayed for item No. 257.> : Troubleshoot the ETACS-ECU. Refer to Inspection Procedure 6 "ETACS-ECU does not receive any signal from the front door switch (RH)" P.54A-803.

NO <Normal condition is not displayed for item No. 258.> : Troubleshoot the ETACS-ECU. Refer to Inspection Procedure 7 "ETACS-ECU does not receive any signal from the rear door switch (LH)" P.54A-805.

NO <Normal condition is not displayed for item No. 259.> : Troubleshoot the ETACS-ECU. Refer to Inspection Procedure 8 "ETACS-ECU does not receive any signal from the rear door switch (RH)" P.54A-808.

STEP 4. Retest the system.
Check that the interior light automatic shutdown function works normally.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-15).

NO : Replace the ETACS-ECU.

ON-VEHICLE SERVICE

CUSTOMIZATION FUNCTION

M1541301200206

With the scan tool MB991958 operation, the following functions can be programmed. The programmed information is held even when the battery is disconnected.

Adjustment item (scan tool display)	Adjustment item	Adjustment contents (scan tool display)	Adjusting contents
Dome light delay timer with door	Adjustment of interior light delay shutdown time	0sec	0 second (no delay shutdown time)
		7.5sec	7.5 seconds
		15sec	15 seconds
		30sec	30 seconds (initial condition)
		60sec	60 seconds
		120sec	120 seconds
		180sec	180 seconds
Interior light auto cut timer	Adjustment of interior light automatic shutdown function operation time	0min	Without function
		3min	3 minutes
		30min	30 minutes (initial condition)
		60min	60 minutes

REMOVAL AND INSTALLATION

M1541302700055

Refer to GROUP 52A – Headlining P.52A-15.

HIGH-MOUNTED STOPLIGHT

REMOVAL AND INSTALLATION

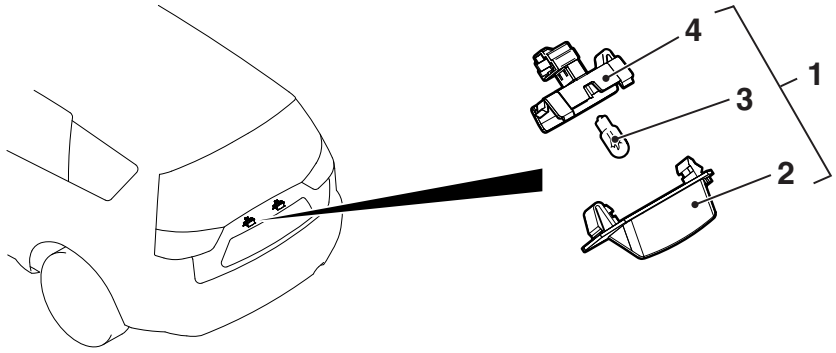
M1541700200201

Refer to GROUP 51 – Liftgate spoiler P.51-24.

LICENSE PLATE LIGHT

REMOVAL AND INSTALLATION

M1541900200238



AC506864AC

Removal Steps

<<A>> 1. License plate light assembly
2. Lens

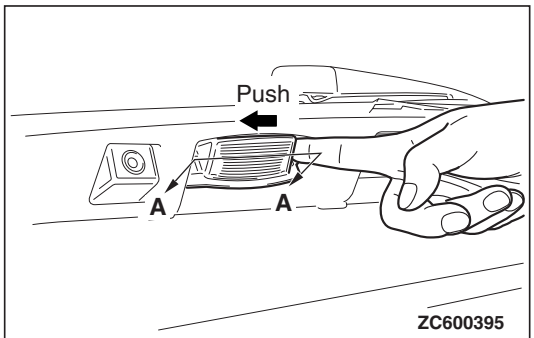
Removal Steps (Continued)

3. Bulb
4. Socket

REMOVAL SERVICE POINT

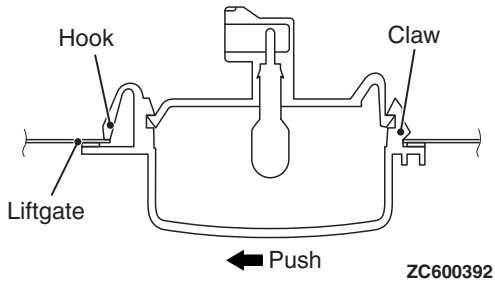
<<A>> LICENSE PLATE LIGHT REMOVAL

Push the license plate light to the left to bend the hook, and then remove by disengaging the tab from the liftgate.



ZC600395

Section A – A



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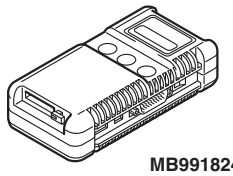
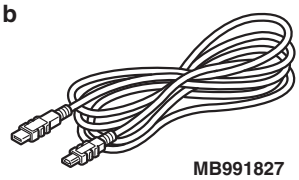
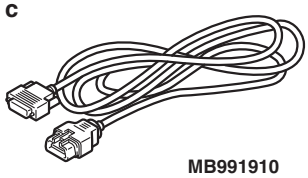
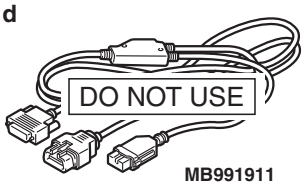
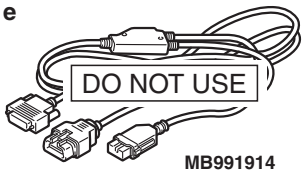
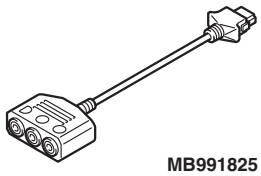
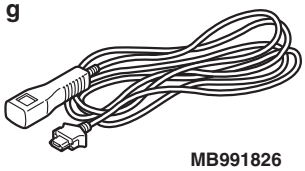
TSB Revision

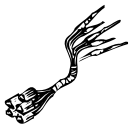
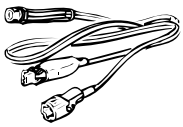
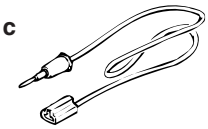
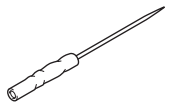
HAZARD WARNING LIGHT SWITCH

SPECIAL TOOLS

M1541500100288

Tool	Tool number and name	Supersession	Application
a  MB991824 b  MB991827 c  MB991910 d  MB991911 e  MB991914 f  MB991825 g  MB991826 MB991958	MB991958 a. MB991824 b. MB991827 c. MB991910 d. MB991911 e. MB991914 f. MB991825 g. MB991826 M.U.T.-III sub-assembly a. Vehicle communication interface (V.C.I.) b. M.U.T.-III USB cable c. M.U.T.-III main harness A (Vehicles with CAN communication system) d. M.U.T.-III main harness B (Vehicles without CAN communication system) e. M.U.T.-III main harness C (for Chrysler models only) f. M.U.T.-III measurement adapter g. M.U.T.-III trigger harness	MB991824-KIT *NOTE: G: MB991826 M.U.T.-III Trigger Harness is not necessary when pushing V.C.I. ENTER key.*	**⚠ CAUTION** **M.U.T.-III main harness B (MB991911) should be used. M.U.T.-III main harness A and C should not be used for this vehicle.** Diagnostic code, service data and actuator test check.

TSB Revision

Tool	Tool number and name	Supersession	Application
a  b  c  d  MB991223	MB991223 a. MB991219 b. MB991220 c. MB991221 d. MB991222 Harness set a. Check harness b. LED harness c. LED harness adapter d. Probe	General service tool (jumper)	Continuity check and voltage measurement at harness wire or connector a. Connector pin contact pressure inspection b. Power circuit inspection c. Power circuit inspection d. Commercial tester connection
 MB992006	MB992006 Extra fine probe	–	Continuity check and voltage measurement at harness wire or connector

DIAGNOSIS

STANDARD FLOW OF DIAGNOSTIC TROUBLESHOOTING

M1541501400152

Refer to GROUP 00 – Contents of troubleshooting P.00-7.

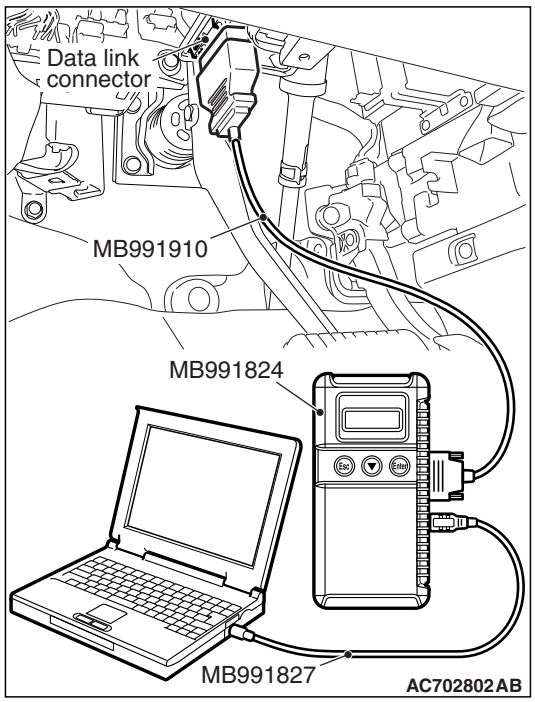
DIAGNOSTIC FUNCTION

M1541500600108

HOW TO CONNECT THE SCAN TOOL (M.U.T.-III)

Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)



⚠ CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

1. Ensure that the ignition switch is at the "LOCK" (OFF) position.
2. Start up the personal computer.
3. Connect special tool MB991827 to special tool MB991824 and the personal computer.
4. Connect special tool MB991910 to special tool MB991824.
5. Connect special tool MB991910 to the data link connector.
6. Turn the power switch of special tool MB991824 to the "ON" position.

   NOTE: When special tool MB991824 is energized, special tool MB991824 indicator light will be illuminated in a green color.
7. Start the M.U.T.-III system on the personal computer.

NOTE: Disconnecting scan tool MB991958 is the reverse of the connecting sequence, making sure that the ignition switch is at the "LOCK" (OFF) position.

HOW TO READ AND ERASE DIAGNOSTIC TROUBLE CODES

Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)

⚠ CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

NOTE: If the battery voltage is low, diagnostic trouble codes will not be set. Check the battery if scan tool MB991958 does not display.

1. Connect scan tool MB991958 to the data link connector.
2. Turn the ignition switch to the "ON" position.
3. Select "System select" from the start-up screen.
4. Select "From 2006 MY" of "Model Year." When the "Vehicle Information" is displayed, check the contents.
5. Select "ETACS" from "System List", and press the "OK" button.

   NOTE: When the "Loading Option Setup" list is displayed, check the applicable item.
6. Select "Diagnostic Trouble Code" to read the DTC.
7. If a DTC is set, it is shown.
8. Choose "Erase DTCs" to erase the DTC.

DIAGNOSTIC TROUBLE CODE CHART

M1541500200092

⚠ CAUTION
On troubleshooting, if the ignition switch is turned ON while disconnecting connector(s), diagnostic trouble code(s) associated with other system may be set. On completion, confirm all systems for diagnostic trouble code(s). If diagnostic trouble code(s) are set, erase them all.

Diagnostic trouble code No.	Diagnostic item	Reference page
B16A6	Turn-signal fuse blown	P.54A-307

DIAGNOSTIC TROUBLE CODE PROCEDURES

DTC B16A6: Turn-signal fuse blown

TROUBLE JUDGMENT
When the hazard warning light fuse is blown, the ETACS-ECU sets the DTC B16A6.

TECHNICAL DESCRIPTION (COMMENT)
With the ADC DTC not set, when the blown fuse of hazard warning light is detected three times consecutively, the ETACS-ECU sets the DTC B16A3.

TROUBLESHOOTING HINTS
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector
- Malfunction of the ETACS-ECU

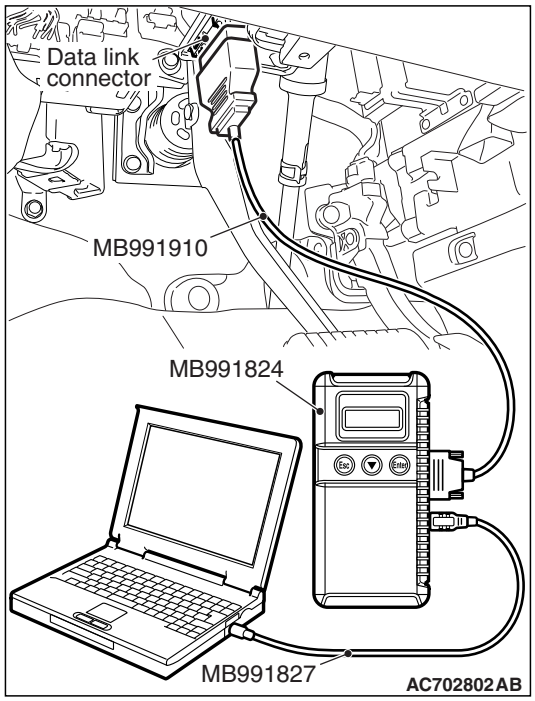
DIAGNOSIS

Required Special Tools:
- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)

STEP 1. Fuse check
Check if the turn-signal light fuse is normal.

Q: Is the check result normal?

YES : Go to Step 2.
NO : Replace the turn-signal light fuse.



STEP 2. Using scan tool MB991958, Check whether the diagnostic trouble code is reset.

⚠ CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

(1) Connect scan tool MB991958. Refer to "How to connect scan tool P.54A-305."
(2) Turn the ignition switch to the "ON" position.
(3) Erase the DTC.
(4) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
(5) Check if DTC is set.

Q: Is the DTC set?

YES : Replace the ETACS-ECU.
NO : The procedure is complete.

TROUBLE SYMPTOM CHART

M1541500700161

Trouble symptom	Inspection Procedure No.	Reference page
The hazard warning lights do not illuminate.	1	P.54A-309

SYMPTOM PROCEDURES

Inspection Procedure 1: The hazard warning lights do not illuminate.

⚠ CAUTION
Before replacing the ECU, ensure that the power supply circuit, the ground circuit and the communication circuit are normal.

TECHNICAL DESCRIPTION (COMMENT)

If the hazard warning light does not illuminate, the hazard warning light switch input circuit in center panel unit or the ETACS-ECU may have a problem.

TROUBLESHOOTING HINTS

- Malfunction of center panel unit
- Malfunction of the ETACS-ECU
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

DIAGNOSIS

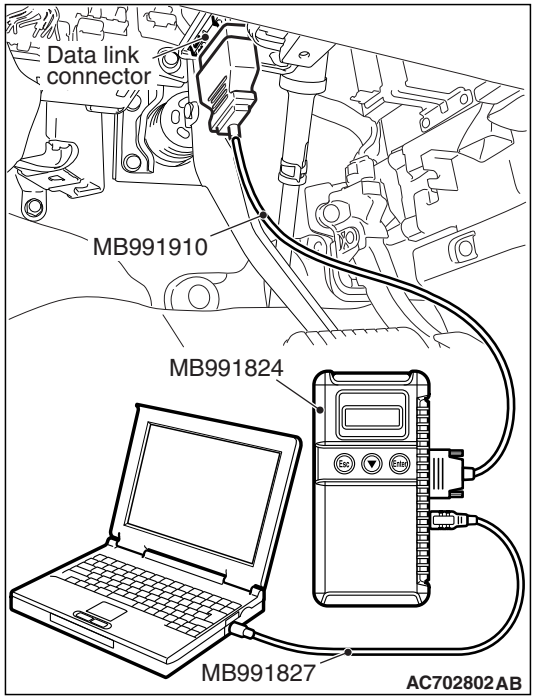
Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)

STEP 1. Check that the turn-signal light operate.
Check that the turn-signal lights illuminate normally.

Q: Does turn-signal light work normally?

YES : Go to Step 2.
NO : Diagnose the headlights. Refer to Inspection Procedure 12 "The turn-signal lights do not illuminate" P.54A-198.



STEP 2. Using scan tool MB991958, check data list.

Using the ETACS-ECU service data, check the hazard warning light signal.

⚠ CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

- Connect scan tool MB991958. Refer to "How to connect scan tool (M.U.T.-III) P.54A-305."
- Turn the ignition switch to the "ACC" position.
- Turn "ON" the hazard light switch.

Item No.	Item name	Normal conditions
Item 265	Hazard switch	ON

Q: Does scan tool MB991958 display the items "Hazard switch" as normal condition?

YES <Normal condition is displayed for item.> : Go to Step 3.

NO <Normal condition is not displayed for item No. 265.> : Troubleshoot the ETACS-ECU. Refer to Inspection Procedure 11 "ETACS-ECU does not receive any signal from the hazard warning light switch" P.54A-816.

STEP 3. Retest the system

Check that the hazard warning light illuminate normally.

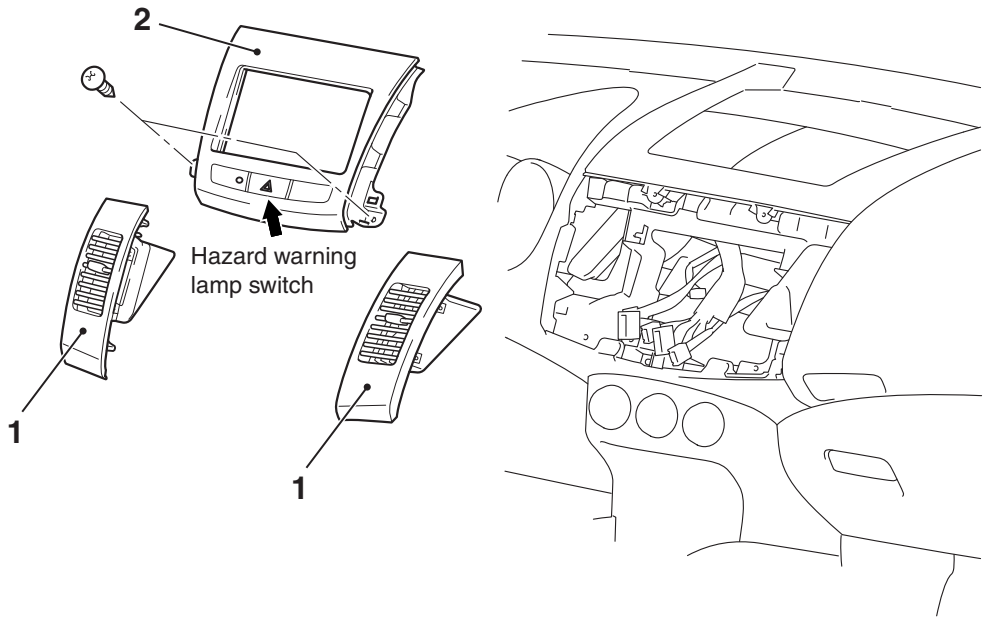
Q: Does the taillight work normally?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-15).

NO : Replace the ETACS-ECU.

REMOVAL AND INSTALLATION

M1541501000206



AC606574AC

Removal Steps

1. Center air outlet (Refer to GROUP 52A – Instrument Panel Assembly P.52A-2.)
2. Center panel assembly (Refer to GROUP 52A – Instrument Panel Assembly P.52A-2.)

INSPECTION

CONTINUITY CHECK FOR HAZARD WARNING LIGHT SWITCH

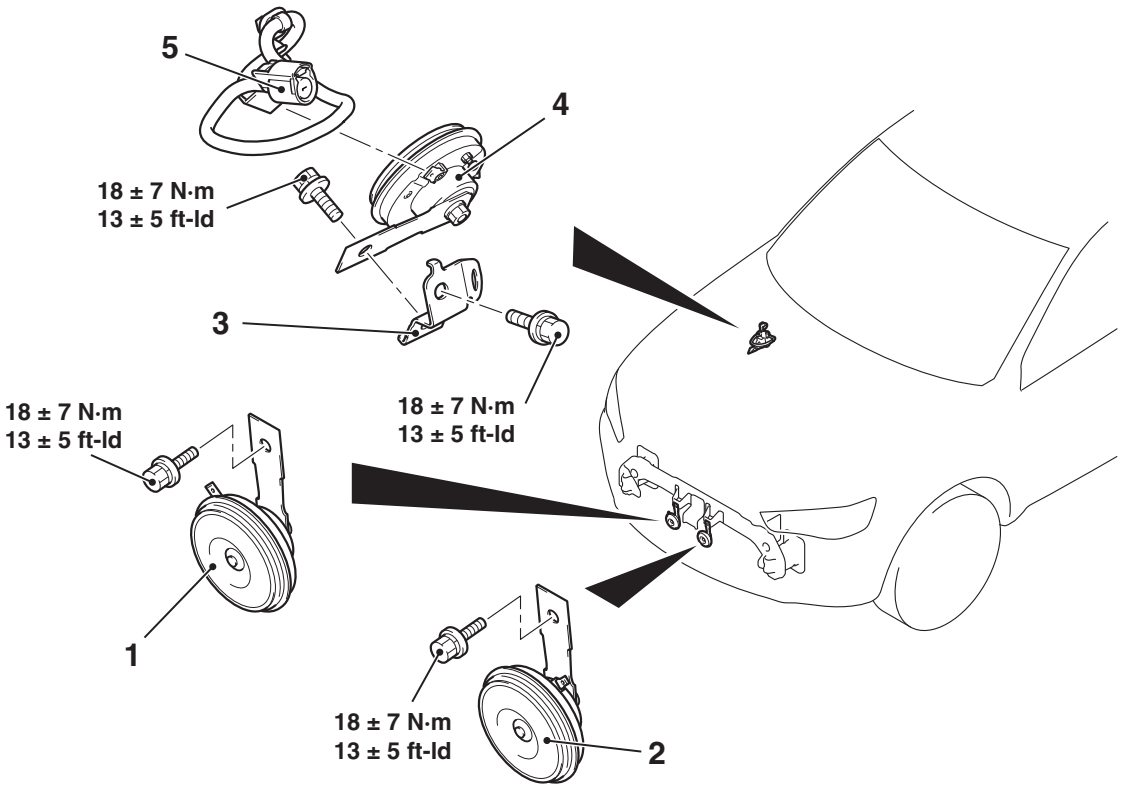
M1541501100173

Check the ETACS service data list using the scan tool MB991958. With the item No. 265 (Hazard switch), it is judged normal if the display shows ON when the hazard warning light switch is pressed, and OFF when not pressed.

HORN

REMOVAL AND INSTALLATION

M1542100200893



AC900246AC

Removal Steps

- Front bumper assembly (Refer to GROUP 51 – Front Bumper Assembly P.51-4.)

>>**A**<< 1. Horn (HI)

>>**A**<< 2. Horn (LO)

- ABS-ECU or ASC-ECU harness connector (Refer to GROUP 35B – Hydraulic Unit P.35B-188 or GROUP 35C- Hydraulic Unit P.35C-287)

Removal Steps (Continued)

>>**A**<< 3. Horn bracket <vehicles without theft-alarm siren>

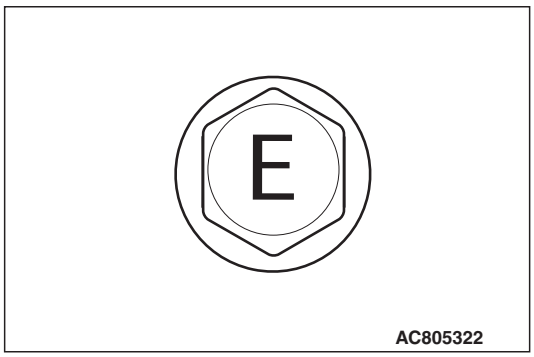
>>**A**<< 4. Horn (for theft-alarm) <vehicles without theft-alarm siren>

5. Horn harness <vehicles without theft-alarm siren>

TSB Revision

INSTALLATION SERVICE POINT

>>A<< HORN (FOR THEFT-ALARM)/HORN BRACKET/HORN (LO)/HORN (HI) INSTALLATION

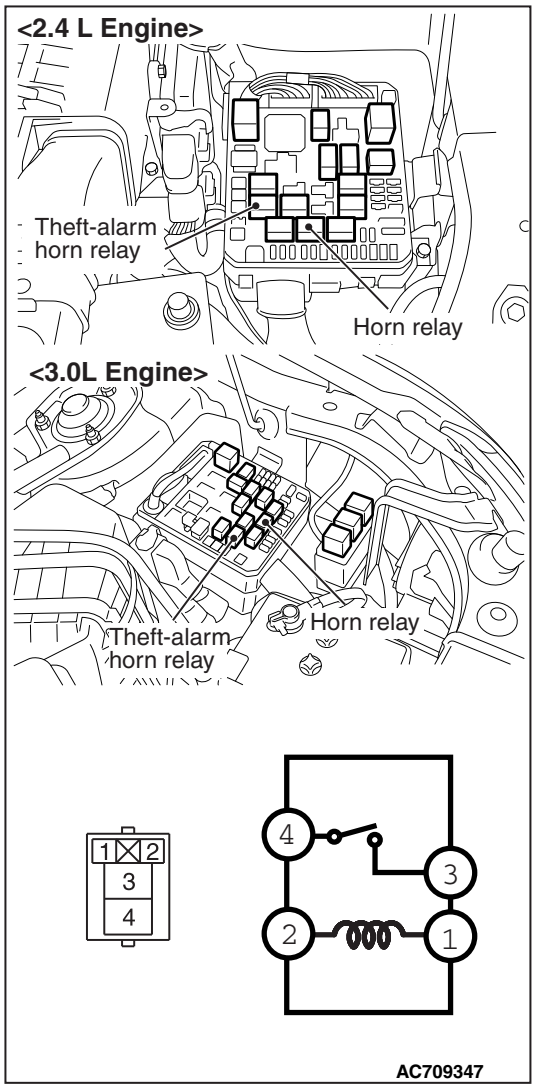


Use the earth bolts as the mounting bolts for horn (for theft-alarm), horn bracket, horn (LO) and horn (HI). The earth bolts have "E" mark on the bolt heads.

INSPECTION

HORN RELAY CHECK

M1542100400325



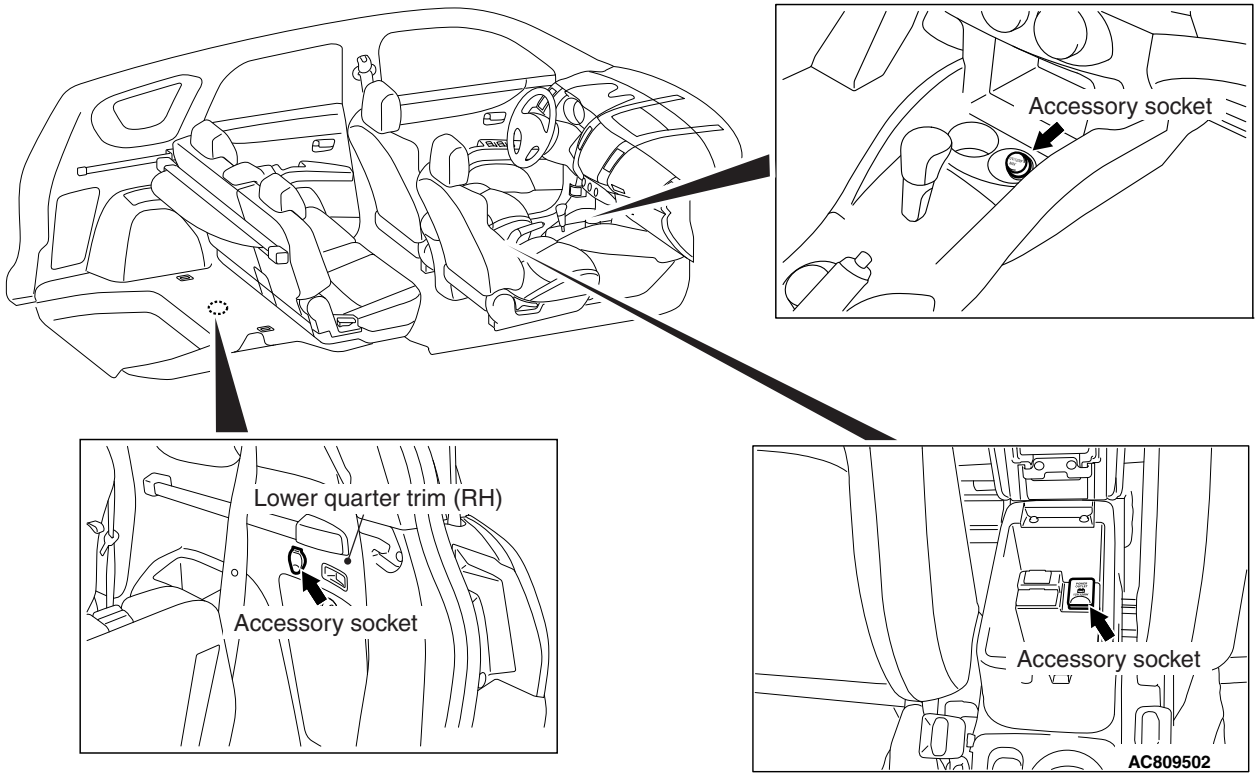
Battery voltage	Tester connection	Specified condition
Not energized	3 – 4	No continuity
With current supply [terminal 2 (+), terminal 1 (–)]		Continuity exists (2 ohms or less)

ACCESSORY SOCKET

GENERAL INFORMATION

M1542300500229

The plug-in type accessory socket has been installed for the convenient use of accessories.



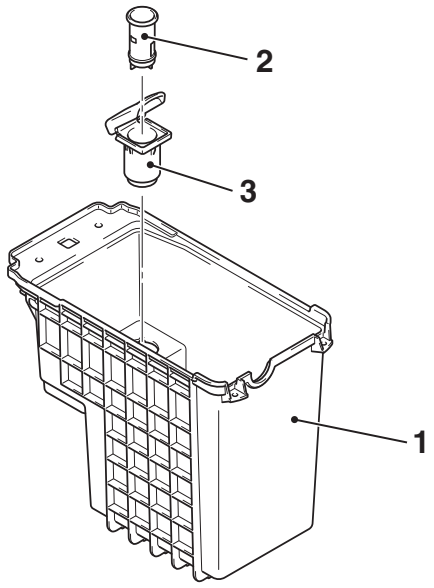
AC900187AF

- Accessory sockets have been added to the front floor console. if so equipped rear floor console <standard: 3.0L engine-High, Option: except 3.0L engine-High> and lower quarter trim (RH).
- The maximum load is 120 W when a single accessory socket is used. When three accessory sockets are used simultaneously, the combined maximum load for three sockets is 120 W.

REMOVAL AND INSTALLATION

M1542300200262

<REAR FLOOR CONSOLE>



AC506901AC

Removal Steps

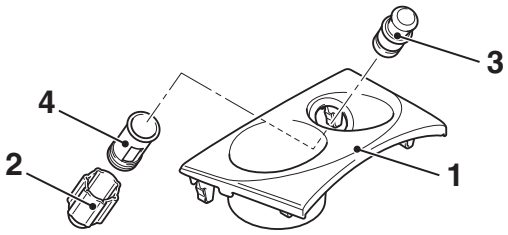
1. Rear floor console box (Refer to GROUP 52A, Rear Floor Console Assembly P.52A-8.)

<<A >>

Removal Steps (Continued)

2. Accessory socket
3. Accessory socket cover

<FRONT FLOOR CONSOLE>



AC605509AH

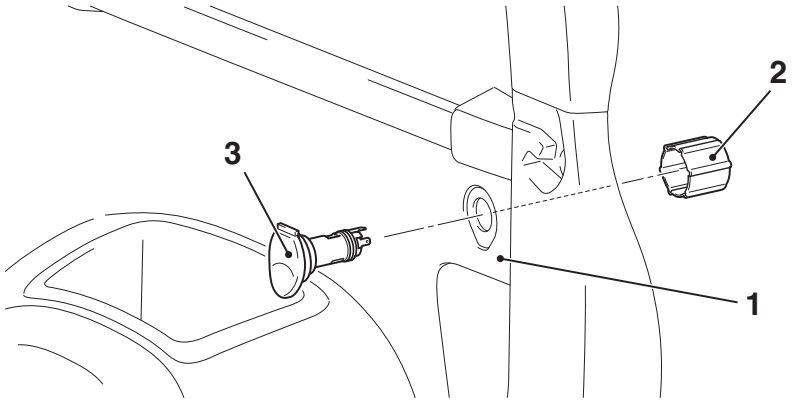
Removal Steps

1 Front floor console panel (Refer to GROUP 52A, Front Floor Console Assembly P.52A-7.)
2. Accessory socket case

Removal Steps (Continued)

3. Accessory socket cap
4. Accessory socket

<LOWER QUARTER TRIM (RH)>



AC506903AC

Removal Steps

1. Lower quarter trim (RH) (Refer to GROUP 52A, Interior Trim P.52A-10.)

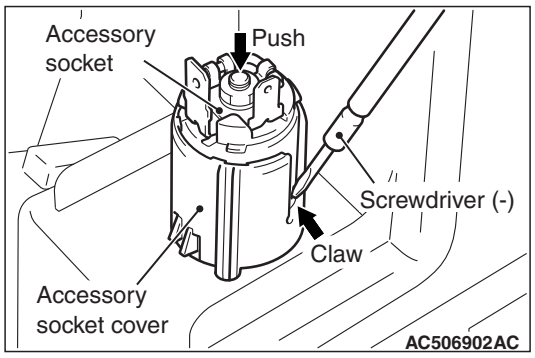
Removal Steps (Continued)

2. Accessory socket case
3. Accessory socket

REMOVAL SERVICE POINT

<<A>> ACCESSORY SOCKET REMOVAL

Lift the accessory socket cover tab, then remove by pressing down the accessory socket.



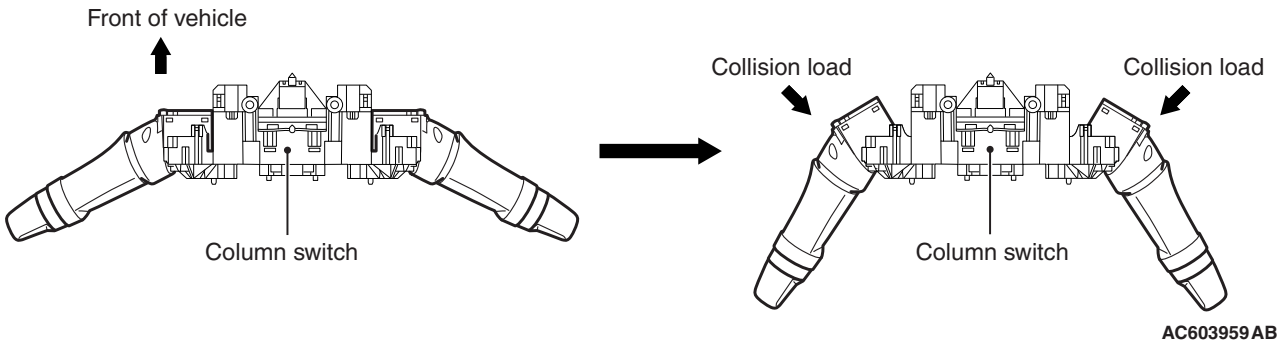
COLUMN SWITCH

GENERAL INFORMATION

M1543101800028

The column switch has a built in feature to ensure the driver's safety during frontal collision of vehicle.

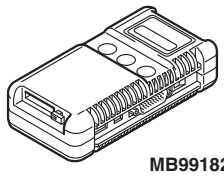
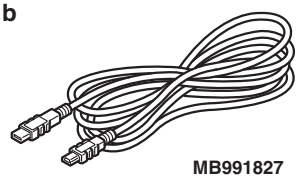
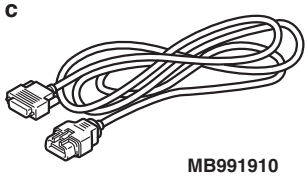
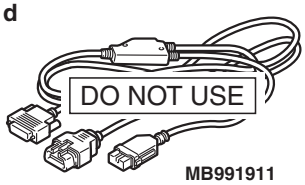
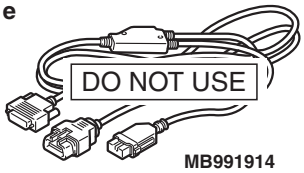
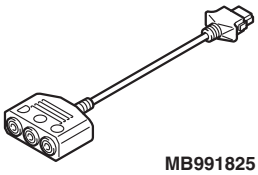
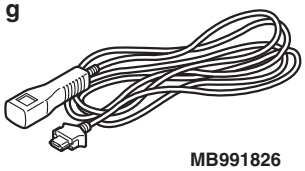
Function

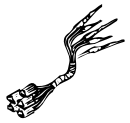
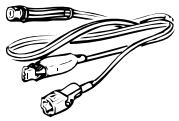
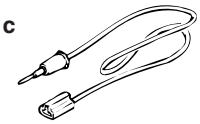
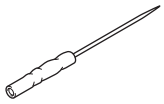


If the column switch is moved toward the front of the vehicle and hit on the instrument panel or meter bezel during a frontal collision, the steering wheel is moved to the front of the vehicle because the right and left levers fall down, ensuring the driver's safety. In addition, the column switch secures the rigidity that the levers do not fall down by the normal operation. The column switch cannot be reused after the deformation.

SPECIAL TOOLS

M1543100200205

Tool	Tool number and name	Supersession	Application
a  MB991824 b  MB991827 c  MB991910 d  MB991911 e  MB991914 f  MB991825 g  MB991826 MB991958	MB991958 a. MB991824 b. MB991827 c. MB991910 d. MB991911 e. MB991914 f. MB991825 g. MB991826 M.U.T.-III sub assembly a. Vehicle communication interface (V.C.I.) b. M.U.T.-III USB cable c. M.U.T.-III main harness A (Vehicles with CAN communication system) d. M.U.T.-III main harness B (Vehicles without CAN communication system) e. M.U.T.-III main harness C (for Chrysler models only) f. M.U.T.-III measurement adapter g. M.U.T.-III trigger harness	MB991824-KIT *NOTE: G: MB991826 M.U.T.-III Trigger Harness is not necessary when pushing V.C.I. ENTER key.*	**⚠ CAUTION** **M.U.T.-III main harness A (MB991910) should be used. M.U.T.-III main harness B and C should not be used for this vehicle.** Diagnostic code check.

Tool	Tool number and name	Supersession	Application
a  b  c  d  MB991223	MB991223 a. MB991219 b. MB991220 c. MB991221 d. MB991222 Harness set a. Test harness b. LED harness c. LED harness adaptor d. Probe	General service tools	Continuity check and voltage measurement at harness wire or connector a. Connector pin contact pressure inspection b. Power circuit inspection c. Power circuit inspection d. Commercial tester connection
 MB992006	MB992006 Extra fine probe	–	Continuity check and voltage measurement at harness wire or connector.

TROUBLESHOOTING

STANDARD FLOW OF DIAGNOSTIC TROUBLESHOOTING

M1543101200167

Refer to GROUP 00 – Contents of troubleshooting P.00-7.

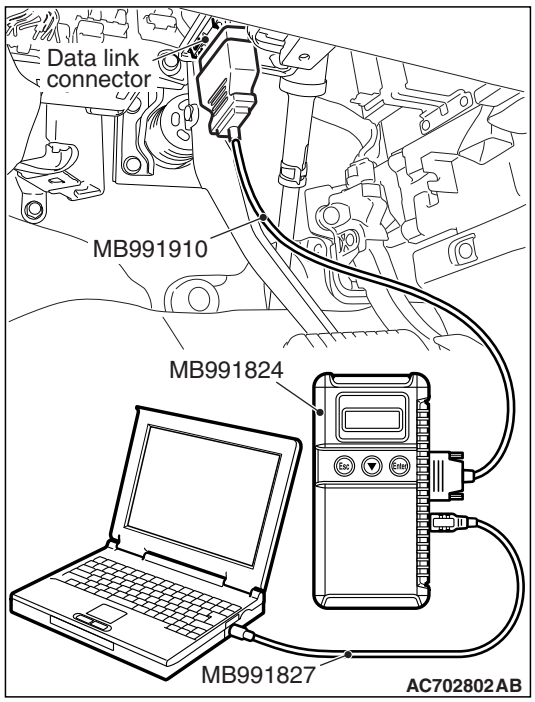
DIAGNOSTIC FUNCTION

M1543101300142

HOW TO CONNECT THE SCAN TOOL (M.U.T.-III)

Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)



⚠ CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

1. Ensure that the ignition switch is at the "LOCK" (OFF) position.
2. Start up the personal computer.
3. Connect special tool MB991827 to special tool MB991824 and the personal computer.
4. Connect special tool MB991910 to special tool MB991824.
5. Connect special tool MB991910 to the data link connector.
6. Turn the power switch of special tool MB991824 to the "ON" position.

   NOTE: When special tool MB991824 is energized, special tool MB991824 indicator light will be illuminated in a green color.
7. Start the M.U.T.-III system on the personal computer.

NOTE: Disconnecting scan tool MB991958 is the reverse of the connecting sequence, making sure that the ignition switch is at the "LOCK" (OFF) position.

HOW TO READ AND ERASE DIAGNOSTIC TROUBLE CODES

Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)

⚠ CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

NOTE: If the battery voltage is low, diagnostic trouble codes will not be set. Check the battery if scan tool MB991958 does not display.

1. Connect scan tool MB991958 to the data link connector.
2. Turn the ignition switch to the "ON" position.
3. Select "System select" from the start-up screen.
4. Select "From 2006 MY" of "Model Year." When the "Vehicle Information" is displayed, check the contents.
5. Select "ETACS" from "System List", and press the "OK" button.

   NOTE: When the "Loading Option Setup" list is displayed, check the applicable item.
6. Select "Diagnostic Trouble Code" to read the DTC.
7. If a DTC is set, it is shown.
8. Choose "Erase DTCs" to erase the DTC.

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DIAGNOSTIC TROUBLE CODE TABLE

M1543100300161

NOTE: The ETACS-ECU sets a diagnostic trouble code.

Diagnostic trouble code No.	Diagnostic item	Reference page
B2350	Malfunction of lighting switch	P.54A-321
B2351	Malfunction of the wiper/washer switch	

DIAGNOSTIC TROUBLE CODE PROCEDURES

DTC B2350: Malfunction of lighting switch,
DTC B2351: Malfunction of wiper/washer switch

TROUBLE JUDGMENT

The ETACS-ECU receives the signals related to lighting and wiper/washer from the column switch. If the fail information data is included in the signal from column switch, DTC B2350 (malfunction of lighting switch) or B2351 (malfunction of wiper/washer switch) is stored.

TECHNICAL DESCRIPTION (COMMENT)

The lighting switch, wiper/washer switch or the ETACS-ECU may have a problem.

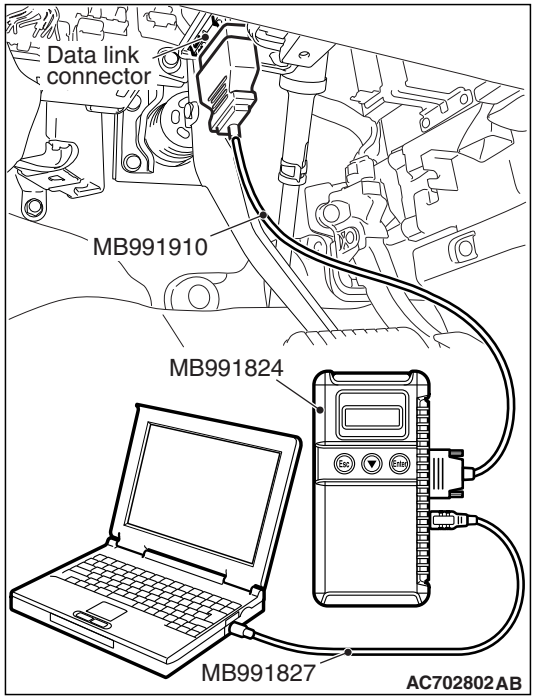
TROUBLESHOOTING HINTS

- Malfunction of lighting switch (with built-in column-ECU)
- Malfunction of wiper/washer switch
- The ETACS-ECU may be defective

DIAGNOSIS

Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)



STEP 1. Using scan tool MB991958, Check whether the diagnostic trouble code is reset.

Check again if the DTC is set to the ETACS-ECU.

⚠ CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

(1) Connect scan tool MB991958. Refer to "How to connect scan tool P.54A-319."
(2) Turn the ignition switch to the "ON" position.
(3) Erase the DTC.
(4) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
(5) Check if the DTC B2350 or B2351 is set.
(6) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

DTC B2351 is set. : Go to Step 2.
DTC B2350 is set. : Go to Step 3.
No DTC is set. : The trouble can be an intermittent malfunction (GROUP 00 – How to Cope with Intermittent Malfunction P.00-15).

STEP 2. Using scan tool MB991958, Check whether the diagnostic trouble code is reset.

Check again if the DTC is set to the ETACS-ECU.

(1) Replace the wiper/washer switch.
(2) Turn the ignition switch to the "ON" position.
(3) Erase the DTC.
(4) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
(5) Check if DTC is set.
(6) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Go to Step 3.
NO : The procedure is complete.

STEP 3. Using scan tool MB991958, Check whether the diagnostic trouble code is reset.

Check again if the DTC is set to the ETACS-ECU.
(1) Replace the lighting switch (with built-in column-ECU).
(2) Turn the ignition switch to the "ON" position.
(3) Erase the DTC.
(4) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
(5) Check if DTC is set.
(6) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

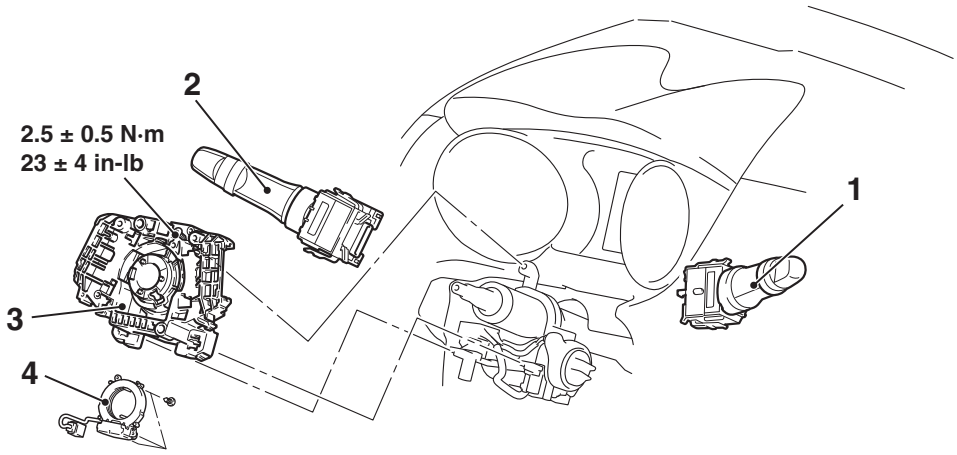
YES : Replace the ETACS-ECU.
NO : The procedure is complete.

REMOVAL AND INSTALLATION

M1543100700426

⚠ CAUTION

- **To remove the driver air bag module, refer to GROUP 52B – Service Precautions P.52B-25 and Air Bag Module(s) and Clock Spring P.52B-439.**
- **When the steering wheel sensor is replaced, always carry out calibration to make ASC-ECU learn the neutral point. (Refer to GROUP 35C – On-vehicle Service-Steering Wheel Sensor Calibration P.35C-283.) <Vehicles with ASC>**



AC609141AC

Removal Steps

- Steering column cover (Refer to GROUP 52A – Instrument Panel Assembly P.52A-2.)

1. Wiper/washer switch
2. Lighting switch (with built-in column-ECU)

- Steering wheel assembly (Refer to GROUP 52B – Air Bag Module(s) and Clock Spring P.52B-439.)

Removal Steps (Continued)

- Clock spring (Refer to GROUP 52B – Air Bag Module(s) and Clock Spring P.52B-439.)

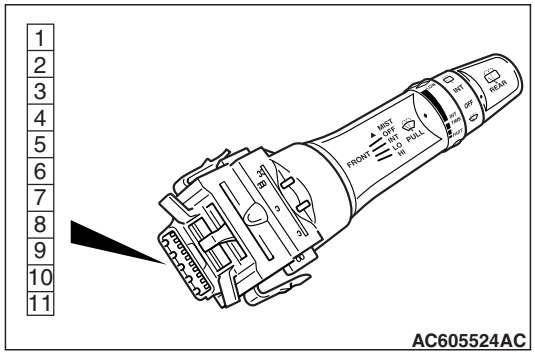
3. Column switch body
4. Steering wheel sensor (Refer to GROUP 35C – Steering wheel sensor P.35C-291.) <Vehicles with ASC>

INSPECTION

WIPER/WASHER SWITCH CONTINUITY CHECK

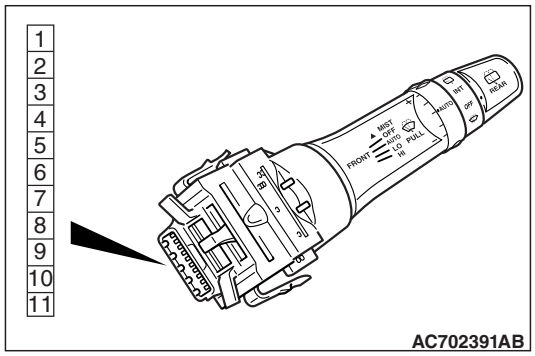
M1543101700098

<VEHICLES WITHOUT LIGHTING CONTROL SENSOR>



Switch position		Tester connection	Specified condition
OFF		–	Open circuit
Windshield intermittent wiper interval adjusting knob		6 – 3	Operating the adjusting knob changes the resistance.
Rear wiper switch		6 – 4	Continuity exists (2 Ω or less)
Rear washer switch		6 – 5	Continuity exists (2 Ω or less)
Windshield washer switch		6 – 7	Continuity exists (2 Ω or less)
Windshield wiper switch	Hi	6 – 8	Continuity exists (2 Ω or less)
	Lo	6 – 9	Continuity exists (2 Ω or less)
	Int	6 – 10	Continuity exists (2 Ω or less)
	Mist	6 – 11	Continuity exists (2 Ω or less)

<VEHICLES WITH LIGHTING CONTROL SENSOR>



Switch position	Tester connection	Specified condition
OFF	–	Open circuit
Windshield rain sensitive wiper function adjusting knob	6 – 3	Operating the adjusting knob changes the resistance.
Rear wiper switch	6 – 4	Continuity exists (2 Ω or less)
Rear washer switch	6 – 5	Continuity exists (2 Ω or less)
Windshield washer switch	6 – 7	Continuity exists (2 Ω or less)

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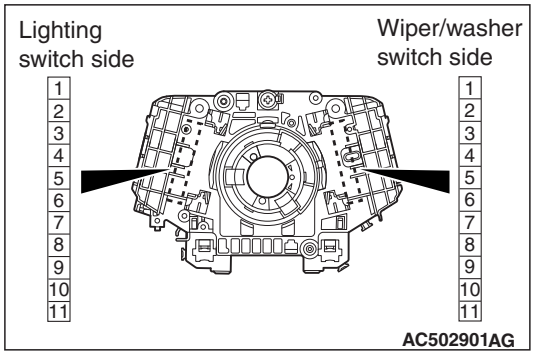
Switch position		Tester connection	Specified condition
Windshield wiper switch	Hi	6 – 8	Continuity exists (2 Ω or less)
	Lo	6 – 9	Continuity exists (2 Ω or less)
	Auto	6 – 10	Continuity exists (2 Ω or less)
	Mist	6 – 11	Continuity exists (2 Ω or less)

COLUMN SWITCH (SWITCH BODY PART) CONTINUITY CHECK

M1543100800069

1. Remove the lighting switch and the wiper/washer switch.
2. Check that the continuity is present for the same terminal numbers (No. 2-11) of the column switch body connectors that remain on the steering column.

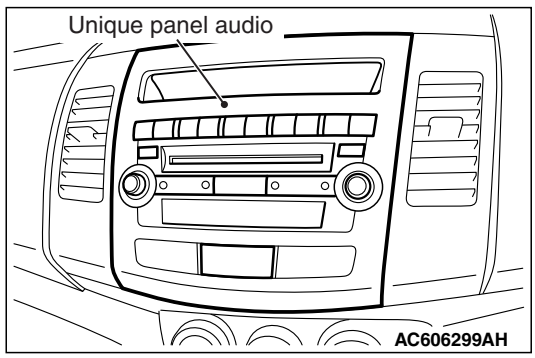


Column switch body	Tester connection	Specified condition
• Lighting switch side connector • Wiper/washer switch side connector	2 – 2 3 – 3 4 – 4 5 – 5 6 – 6 7 – 7 8 – 8 9 – 9 10 – 10 11 – 11	Continuity exists (2 Ω or less)

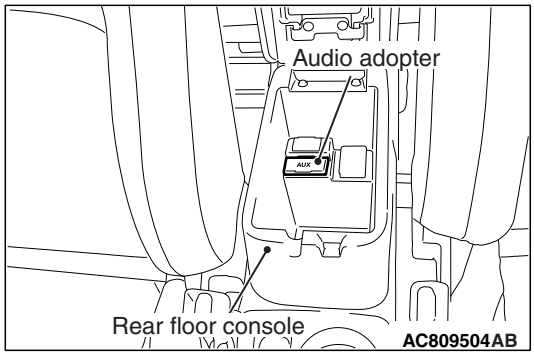
RADIO AND CD PLAYER

GENERAL INFORMATION

M1544000101382



The unique panel audio (radio and CD player, CD changer built-in type radio and CD player) gives a sense of unity with the instrument panel. Also, a new function automatically corrects the sound quality and volume during driving.



With the exception of some models, the vehicles with audio amplifier have the external connection jack (audio adapter).Therefore, portable music player and so on can be connected.

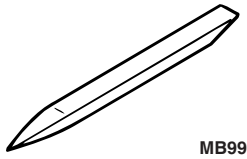
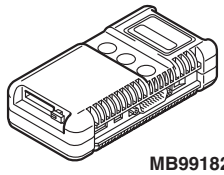
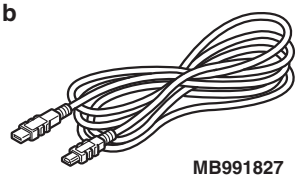
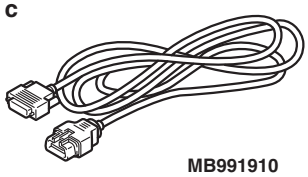
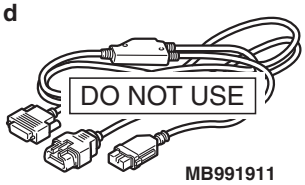
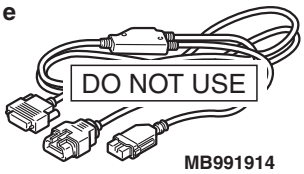
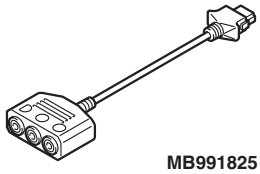
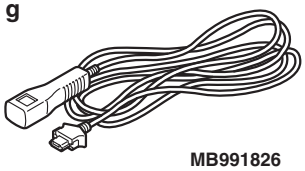
Item	radio and CD player	CD changer built-in type radio and CD player
Electronic tuning radio	Equipped	Equipped
SIRIUS satellite radio	–	Equipped (Only the vehicles with the satellite radio tuner)
USB	Equipped (Only the vehicles with the USB box or hands free module)	Equipped (Only the vehicles with the USB box or hands free module)
Hands free interface system	Equipped (Only the vehicles with the hands free module)	Equipped (Only the vehicles with the hands free module)
CD player*1 (compatible with MP3*2)	Equipped	Equipped
6-disk CD autochanger*1 (compatible with MP3*2)	–	Equipped
Audio integrated 4-ch power amplifier and digital signal processor (DSP)	General 140 W	General 140 W
Audio amplifier-integrated 8-ch power amplifier and digital signal processor (DSP) <Rockford Fosgate® premium sound system>	–	General 710 W (maximum)

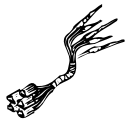
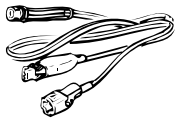
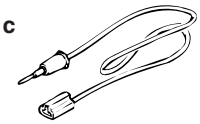
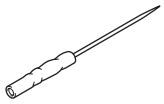
NOTE:

- **1: CD-R/CD-RW may not be played.*
- **2: Some may not be played.*

SPECIAL TOOLS

M1542000602555

Tool	Tool number and name	Supersession	Application
 MB990784	MB990784 Ornament remover	General service tool	Removal of center outlet, center panel or cover.
a  MB991824 b  MB991827 c  MB991910 d  MB991911 e  MB991914 f  MB991825 g  MB991826 MB991958	MB991958 a. MB991824 b. MB991827 c. MB991910 d. MB991911 e. MB991914 f. MB991825 g. MB991826 M.U.T.-III sub assembly a. Vehicle communication interface (V.C.I.) b. M.U.T.-III USB cable c. M.U.T.-III main harness A (Vehicles with CAN communication system) d. M.U.T.-III main harness B (Vehicles without CAN communication system) e. M.U.T.-III main harness C (for Chrysler models only) f. M.U.T.-III measurement adapter g. M.U.T.-III trigger harness	MB991824-KIT *NOTE: G: MB991826 M.U.T.-III Trigger Harness is not necessary when pushing V.C.I. ENTER key.*	**⚠ CAUTION** **M.U.T.-III main harness A (MB991910) should be used. M.U.T.-III main harness B and C should not be used for this vehicle.** Diagnostic trouble code or service data check.

Tool	Tool number and name	Supersession	Application
a  b  c  d  MB991223	MB991223 a. MB991219 b. MB991220 c. MB991221 d. MB991222 Harness set a. Test harness b. LED harness c. LED harness adaptor d. Probe	General service tools	Continuity check and voltage measurement at harness wire or connector for loose, corroded or damaged terminals, or terminals pushed back in the connector. a. Connector pin contact pressure inspection b. Power circuit inspection c. Power circuit inspection d. Commercial tester connection
 MB992006	MB992006 Extra fine probe	–	Continuity check and voltage measurement at harness wire or connector for loose, corroded or damaged terminals, or terminals pushed back in the connector.

DIAGNOSIS

INTRODUCTION TO AUDIO SYSTEM DIAGNOSIS

M1544004700725

RADIO AND CD PLAYER ERROR CODES

If the radio and CD player detects any malfunction in itself or the inserted CD, the error codes below will be shown on the display.

Error code	Cause	Cause of trouble and its solution
ERROR	Power supply error	This error code will be shown if there is any problem in the power supply system of the radio and CD player. Check the connectors and wiring harness of the power supply system, and check that the battery voltage is normal. Check that the same error does not appear.
ERROR 01	Focus error	These error codes will be shown if there is any problem with the CD or there is excessive vibration on the vehicle. If the error codes are not displayed when the vehicle is stopped and another CD is inserted, there is a problem with the CD. Check if there is any of the following problems with the CD. • Contamination, scratch, or deformation • Formation of moisture or grease Repair the CD and insert it again. Then, check that no error appears.
ERROR 02	Abnormal disc	
ERROR 03	Mechanical error	This error codes will be shown if there is any internal mechanical or electrical problem in the radio and CD player. Replace the radio and CD player check that no error codes are shown.

Error code	Cause	Cause of trouble and its solution
ERROR HOT	Protection against high temperature	If the internal temperature is extremely high, this error code will be shown. Turn off the radio and CD player and wait until they cool down. Wait for a while, and then turn on the unit again. Check that the same error does not appear.
ERROR DC	Detection abnormal output to the speaker	This error code will be shown if the radio and CD player or the audio amplifier has an internal error or is contaminated with the foreign material, and there is a problem with output to the speaker. If it is contaminated with the foreign material, turn OFF the power. Dry the foreign material if it is liquid, and remove it if it is solid. Then, check if the error code is displayed. If the error code is displayed, replace the radio and CD player or the audio amplifier.
i NO SONG	No playable music file is found.	No playable music file is stored in the iPod. Store music files to the iPod.
i VER ERROR	iPod cannot be recognized	iPod itself or software is not supported. Use the supported iPod.
i CONNECT i RETRY	iPod cannot be authenticated.	iPod is not authenticated. Reconnect. If the error code is not erased after that, the USB box communication may have a problem. Carry out the troubleshooting of "The USB adapter data cannot be replayed". (Refer to P.54A-640.)
U NO SONG	No playable music file is found.	No playable music file is stored in the USB memory. Store music files to the USB memory.
U FILE ERROR	Playback of unplayable file (copyright protected file, etc.) is attempted.	Displayed when the playback of unplayable file such as a copyright protected file is attempted. The error code is displayed approximately for 3 seconds, and then a next playable file is played automatically.
UNSUPPOR TED DEVICE	Unsupported device	The USB memory is not supported by the USB box. Use the supported USB memory.
UNSUPPOR TED FORMAT	Unsupported format	
USB BUS PWR	Overcurrent abnormality	There is a communication error with the USB box. Carry out the troubleshooting of "The USB adapter data cannot be replayed". (Refer to P.54A-640.)
U CONNECT U RETRY	USB memory cannot be authenticated.	The USB memory is not authenticated. Reconnect. If the error code is not erased after that, the USB box communication may have a problem. Carry out the troubleshooting of "The USB adapter data cannot be replayed". (Refer to P.54A-640.)
U LSI ERROR	USB box internal error	This error code will be shown when there is a problem in the USB box. Replace the USB box.

SATELLITE RADIO ERROR CODES <Vehicles with satellite radio tuner>

The display displays the error codes below if an abnormality related to the satellite radio is detected.

Error code	Cause	Cause of trouble and its solution
ANTENNA ERROR	Antenna error	This code is displayed when there is a failure, improper connection, or open circuit in the satellite antenna base and the satellite radio tuner cannot receive normal voltage value or current value. Check the satellite radio tuner, the satellite antenna base and the antenna feeder cable, and replace if necessary.
ACQUIRING SIGNAL	Cannot pick up signal	This code is displayed when the signal is too weak and it cannot be received. Move to a place where the signal can be received easily, or check if there is foreign material that interferes with signal reception on the satellite antenna base, and remove if necessary.
CALL 888-539-SIRIUS	Unauthorized channel	This code is displayed when the channel to be received is not included in the contract with SIRIUS™ satellite radio. Contact SIRIUS™ satellite radio and make a contract for the channel.
NO CHANNEL	There is no selectable channel	There is no channel that can be selected. Cancel the SKIP settings so that the channels can be selected.
INVALID CHANNEL	Channel is invalid	No program is broadcast on this channel now, or this channel cannot be received. Ask SIRIUS™ satellite radio.
SAT ERROR	Mechanical fault or bad connection	This code is displayed when the satellite radio tuner has a mechanical problem or when an error occurs in the communication with radio and CD player. Check the radio and CD player, the satellite radio tuner, and each harness and connector, and replace if necessary. (Refer to P.54A-675.)
OFF AIR	OFF AIR	This code is displayed when this channel is not broadcast at this moment, or broadcast of the satellite radio is interrupted. Check the airtime and the broadcast conditions of SIRIUS™ satellite radio.
NOT ACTIVATED	ID not registered	This code is displayed when the SIRIUS ID is not written to the satellite radio tuner. Replace the satellite radio tuner.
READING	Data reading in progress	This code is displayed when the data received is being read. Wait until reading of the data received is completed.
UPDATING	Channel data updating in progress	This code is displayed when SIRIUS™ satellite radio is updating the channel data. Wait until update is completed.
SUB UPDATING PRESS ANY KEY	Contract status updating complete	This code is displayed when the contract status is updated. This code disappears when any of the audio switch is pressed.

STANDARD FLOW OF DIAGNOSTIC TROUBLESHOOTING

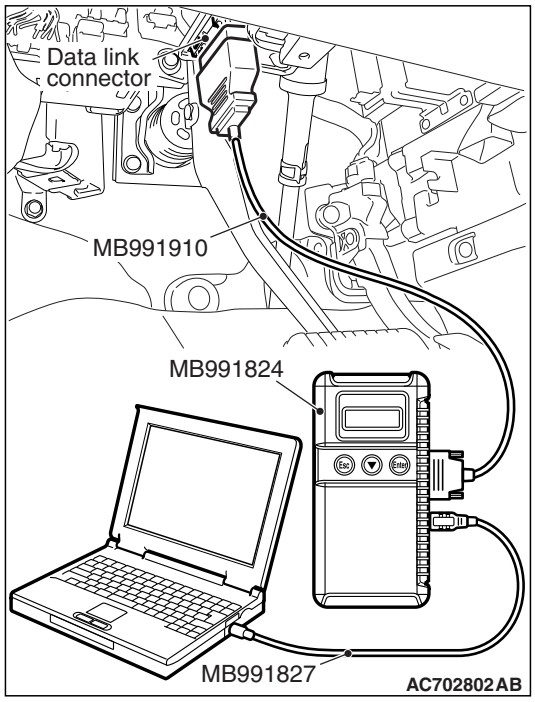
M1544004800636

Refer to GROUP 00 – Troubleshooting contents
P.00-7.

DIAGNOSIS FUNCTION

M1544013200320

HOW TO CONNECT THE SCAN TOOL (M.U.T.-III)



Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicles Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)

⚠ CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

1. Ensure that the ignition switch is at the "LOCK" (OFF) position.
2. Start up the personal computer.
3. Connect special tool MB991827 to special tool MB991824 and the personal computer.
4. Connect special tool MB991910 to special tool MB991824.
5. Connect special tool MB991910 to the data link connector.
6. Turn the power switch of special tool MB991824 to the "ON" position.

   NOTE: When special tool MB991824 is energized, special tool MB991824 indicator light will be illuminated in a green color.
7. Start the M.U.T.-III system on the personal computer.

NOTE: Disconnecting scan tool MB991958 is the reverse of the connecting sequence, making sure that the ignition switch is at the "LOCK" (OFF) position.

HOW TO READ AND ERASE DIAGNOSTIC TROUBLE CODES

Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicles Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)

NOTE: If the battery voltage is low, diagnostic trouble codes will not be set. Check the battery if scan tool MB991958 does not display.

1. Connect scan tool MB991958 to the data link connector.
2. Turn the ignition switch to the "ON" position.
3. Select "System select" from the start-up screen.
4. Select "From 2006 MY" of "Model Year." When the "Vehicle Information" is displayed, check the contents.

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5. Select "Meter" from "System List," and press the "OK" button.

   NOTE: When the "Loading Option Setup" list is displayed, check the applicable item.
6. Select "Diagnostic Trouble Code." to read the DTC.
7. If a DTC is set, it is shown.
8. Choose "Erase DTCs" to erase the DTC.

HOW TO DIAGNOSE THE CAN BUS LINES

Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicles Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)

1. Connect scan tool MB991958 to the data link connector.
2. Turn the ignition switch to the "ON" position.
3. Select "CAN bus diagnosis" from the start-up screen.
4. When the vehicle information is displayed, confirm that it matches the vehicle being diagnosed.
   - If they match, go to Step 8.
   - If not, go to Step 5.
5. Select the "view vehicle information" button.
6. Enter the vehicle information and select the "OK" button.
7. When the vehicle information is displayed, confirm again that it matches the vehicle being diagnosed.
   - If they match, go to Step 8.
   - If not, go to Step 5.
8. Select the "OK" button.
9. When the optional equipment screen is displayed, choose the one which the vehicle is fitted with, and then select the "OK" button.

CHECK OF FREEZE FRAME DATA

The freeze frame data can be checked by using scan tool.

When detecting fault and storing the diagnostic trouble code, the ECU connected to CAN bus line obtains the data before the determination of the diagnostic trouble code and the data when the diagnostic trouble code is determined, and then stores the ECU status of that time. By analyzing each data from scan tool, the troubleshooting can be performed more efficiently. The displayed items are as the table below.

Display item list

Item No.	Item name	Content	Unit
1	Odometer	Total driving distance after the diagnostic trouble code is generated	mile
2	Ignition cycle	Number of times the ignition switch is turned "ON" or "LOCK (OFF)" after the past failure transition	Number of counts is displayed.
4	Accumulated minute	Cumulative time for current malfunction of diagnostic trouble code	min

DIAGNOSTIC TROUBLE CODE CHART

M1544012900564

⚠ CAUTION

On troubleshooting, if the ignition switch is turned ON while disconnecting connector(s), diagnostic trouble code(s) associated with other system may be set. On completion, confirm all systems for diagnostic trouble code(s). If diagnostic trouble code(s) are set, erase them all.

DTC No.	Description	Reference page
U0019	Bus off (CAN-B)	P.54A-334
U0141	ETACS CAN timeout	P.54A-335
U0151	SRS-ABG CAN timeout	P.54A-337
U0154	OCM (occupant classification-ECU) CAN timeout	P.54A-339
U0155	Meter CAN timeout	P.54A-341
U0164	A/C CAN timeout	P.54A-343
U0168	WCM/KOS CAN timeout	P.54A-345
U0195	Satellite radio CAN timeout	P.54A-347
U1415	Coding not completed/Data fail	P.54A-349
B2420	Power integrated circuit	P.54A-351
B2421	Radio tuner	P.54A-352
B2423	6 CD player error	P.54A-353
B2424	CD player error	P.54A-355
B2450	Switch panel communication	P.54A-357
B2451	Audio panel type error	P.54A-362

DIAGNOSTIC TROUBLE CODE PROCEDURES

DTC U0019: Bus off (CAN-B)

⚠ CAUTION
If there is any problem in the CAN bus lines, an incorrect diagnostic trouble code may be set. Prior to this diagnosis, always diagnose the CAN bus lines.

⚠ CAUTION
Before replacing the radio and CD player, be sure to check that the power supply circuit, ground circuit, and communication circuit are normal.

TROUBLE JUDGMENT

When the radio and CD player is returned from the bus off state, or when the bus error is indicated to the radio and CD player state, the DTC U0019 (CAN-B) is set.

COMMENTS ON TROUBLE SYMPTOM

The radio and CD player, power supply for the radio and CD player, ground circuit, or CAN bus line may have a problem.

PROBABLE CAUSES

- Malfunctions of radio and CD player
- Malfunction of CAN bus line wiring harness and connector

DIAGNOSIS

Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A

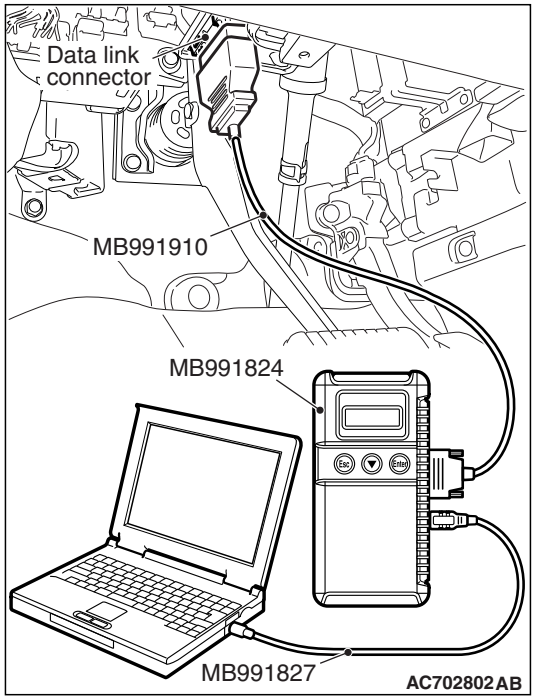
STEP 1. Using scan tool MB991958, diagnose the CAN bus line.

⚠ CAUTION
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

(1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) P.54A-331."
(2) Turn the ignition switch to the "ON" position.
(3) Diagnose the CAN bus line.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 2.
NO : Repair the CAN bus line (Refer to GROUP 54C, Diagnosis P.54C-17).



STEP 2. Check whether the scan tool MB991958 can communicate with the radio and CD player.

Q: Is the check result normal?

YES : Erase the diagnostic trouble code. This diagnosis is complete.

NO : Check the power supply circuit of the radio and CD player, and repair if necessary.

DTC U0141: ETACS CAN timeout

⚠ CAUTION

If DTC U0141 is set, be sure to diagnose the CAN bus line.

⚠ CAUTION

When replacing the radio and CD player, always check that the communication circuit is normal.

DIAGNOSTIC FUNCTION

If the signal from ETACS-ECU cannot be received, the radio and CD player sets the DTC U0141.

JUDGMENT CRITERIA

With the ignition switch in the ON position, system voltage between 10 – 16 volts (data from ETACS-ECU), power supply fuse(IOD fuse) is OK, or odometer value is 80.5 km (50 miles) or more, and the communication with ETACS-ECU cannot be established for 2,500 ms or more, the radio and CD player determines that a problem has occurred.

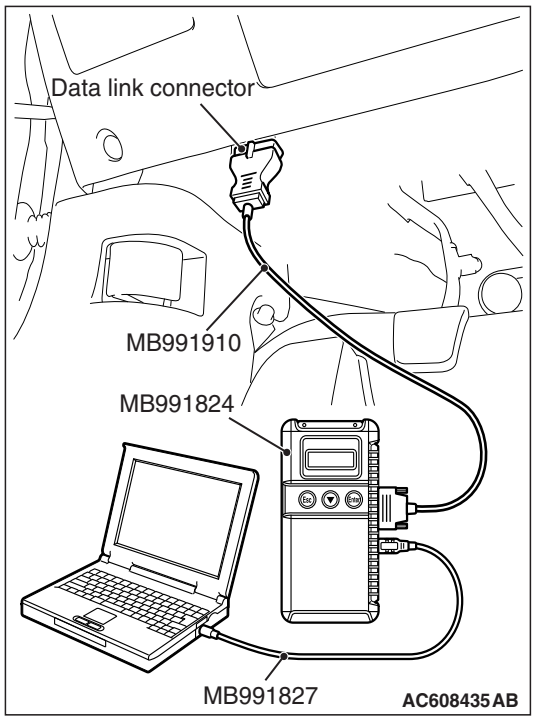
TROUBLESHOOTING HINTS

- The CAN bus line may be defective
- The radio and CD player may be defective
- The ETACS-ECU may be defective

DIAGNOSIS

Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicles Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)



STEP 1. Using scan tool MB991958, diagnose the CAN bus line.

⚠ CAUTION
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

(1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) P.54A-331."
(2) Turn the ignition switch to the "ON" position.
(3) Diagnose the CAN bus line.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 2.
NO : Repair the CAN bus line (Refer to GROUP 54C, Diagnosis P.54C-17).

STEP 2. Using scan tool MB991958, read the ETACS diagnostic trouble code.
Check if DTC is set to the ETACS-ECU.

Q: Is the DTC set?

YES : Diagnose the ETACS-ECU (Refer to P.54A-732).
NO : Go to Step 3.

STEP 3. Using scan tool MB991958, read the A/C diagnostic trouble code.
Check if DTC U0141 is set to the A/C-ECU.

Q: Is the DTC set?

YES : Go to Step 4.
NO : Go to Step 5.

STEP 4. Recheck for diagnostic trouble code.
Check again if the DTC is set to the radio and CD player.
(1) Erase the DTC.
(2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
(3) Check if DTC is set.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace the ETACS-ECU.
NO : The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the ETACS-ECU and the radio and CD player (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-15).

STEP 5. Recheck for diagnostic trouble code.
Check again if the DTC is set to the radio and CD player.
(1) Erase the DTC.
(2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
(3) Check if DTC is set.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace the radio and CD player.
NO : The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the ETACS-ECU and the radio and CD player (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-15).

DTC U0151: SRS-ABG CAN timeout

⚠ CAUTION
- **If DTC U0151 is set, be sure to diagnose the CAN bus line.**
- **When replacing the radio and CD player, always check that the communication circuit is normal.**

DIAGNOSTIC FUNCTION
If the signal from SRS-ECU cannot be received, the radio and CD player sets DTC U0151.

JUDGMENT CRITERIA
With the ignition switch in the ON position, system voltage between 10–16 volts (data from ETACS-ECU), power supply fuse(IOD fuse) is OK, or odometer value is 80.5 km (50 miles) or more, and the communication with SRS-ECU cannot be established for 2,500 ms or more, the radio and CD player determines that a problem has occurred.

TROUBLESHOOTING HINTS
- The CAN bus line may be defective
- The radio and CD player may be defective
- The SRS-ECU may be defective

DIAGNOSIS
Required Special Tools:
- MB991958: Scan Tool (M.U.T.-III Sub Assembly)

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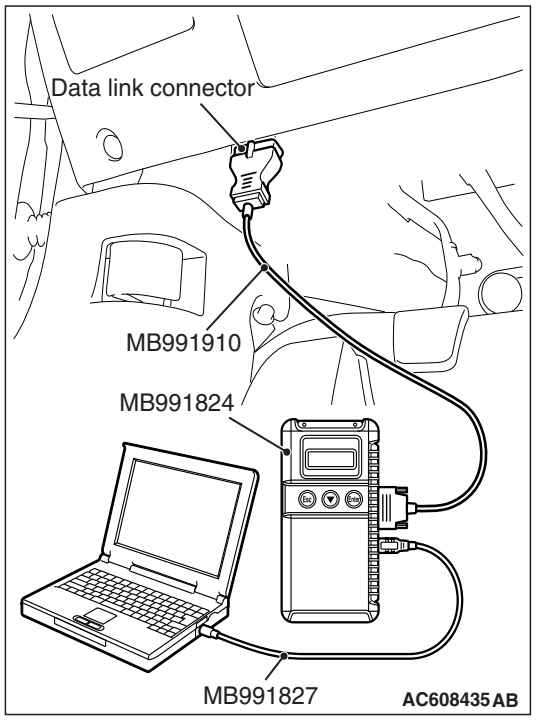
- MB991824: Vehicles Communication Interface (V.C.I.)
- MB991827: M.U.T.-III USB Cable
- MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)

STEP 1. Using scan tool MB991958, diagnose the CAN bus line

⚠ CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.



(1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) P.54A-331."
(2) Turn the ignition switch to the "ON" position.
(3) Diagnose the CAN bus line.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 2.
NO : Repair the CAN bus line (Refer to GROUP 54C, Diagnosis P.54C-17).

STEP 2. Using scan tool MB991958, read the SRS-ECU diagnostic trouble code

Check again if the DTC is set to the SRS-ECU.

Q: Is the DTC set?

YES : Troubleshoot the SRS (Refer to GROUP 52B, Troubleshooting P.52B-31).
NO : Go to Step 3.

STEP 3. Using scan tool MB991958, read the A/C-ECU diagnostic trouble code.

Check if the DTC U0151 is set to the A/C-ECU.

Q: Is the DTC set?

YES : Go to Step 4.
NO : Go to Step 5.

STEP 4. Recheck for diagnostic trouble code.
Check again if the DTC is set to the radio and CD player.
(1) Erase the DTC.
(2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
(3) Check if DTC is set.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace the SRS-ECU.
NO : The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the SRS-ECU and the radio and CD player (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-15).

STEP 5. Recheck for diagnostic trouble code.
Check again if the DTC is set to the radio and CD player.
(1) Erase the DTC.
(2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
(3) Check if DTC is set.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace the radio and CD player.
NO : The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the SRS-ECU and the radio and CD player (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-15).

DTC U0154: OCM (occupant classification-ECU) CAN timeout

⚠ CAUTION
If DTC U0154 is set, be sure to diagnose the CAN bus line.

⚠ CAUTION
When replacing the radio and CD player, always check that the communication circuit is normal.

DIAGNOSTIC FUNCTION
When the signals from occupant classification-ECU cannot be received, the radio and CD player sets DTC U0154.

JUDGMENT CRITERIA
With the ignition switch in the ON position, system voltage between 10 – 16 volts (data from ETACS-ECU), power supply fuse(IOD fuse) is OK, or odometer value is 80.5 km (50 miles) or more, and the communications with occupant classification-ECU cannot be established for 2,500 ms or more, the radio and CD player determines that a problem has occurred.

TROUBLESHOOTING HINTS
- The CAN bus line may be defective.
- The radio and CD player may be defective.
- The occupant classification-ECU may be defective.

DIAGNOSIS

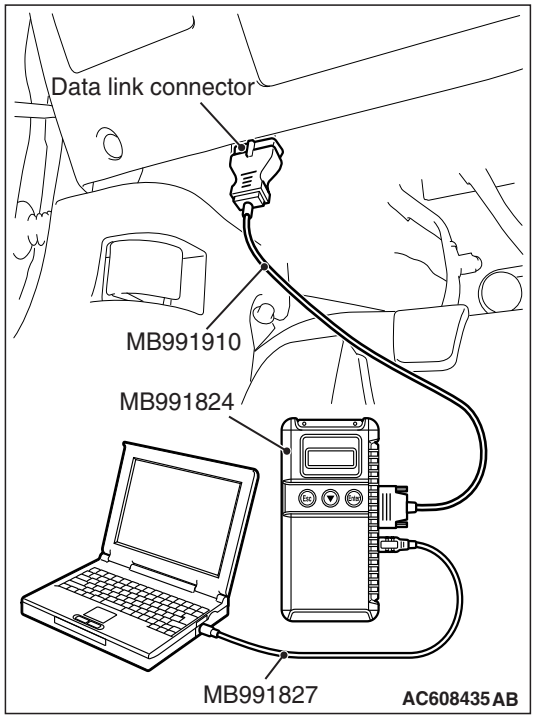
Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicles Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)

STEP 1. Using scan tool MB991958, diagnose the CAN bus line.

⚠ CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.



(1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) P.54A-331."
(2) Turn the ignition switch to the "ON" position.
(3) Diagnose the CAN bus line.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 2.
NO : Repair the CAN bus line (Refer to GROUP 54C, Diagnosis P.54C-17).

STEP 2. Using scan tool MB991958, read the occupant classification-ECU diagnostic trouble code.

Check if DTC is set to the occupant classification-ECU.

Q: Is the DTC set?

YES : Troubleshoot the SRS (Refer to GROUP 52B, Diagnosis P.52B-344).
NO : Go to Step 3.

STEP 3. Using scan tool MB991958, read the A/C-ECU diagnostic trouble code.

Check if the DTC U0154 is set to the A/C-ECU.

Q: Is the DTC set?

YES : Go to Step 4.
NO : Go to Step 5.

STEP 4. Recheck for diagnostic trouble code.
Check again if the DTC is set to the radio and CD player.
(1) Erase the DTC.
(2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
(3) Check if DTC is set.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace the occupant classification-ECU.
NO : The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the occupant classification-ECU and the radio and CD player (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-15).

STEP 5. Recheck for diagnostic trouble code.
Check again if the DTC is set to the radio and CD player.
(1) Erase the DTC.
(2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
(3) Check if DTC is set.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace the radio and CD player.
NO : The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the occupant classification-ECU and the radio and CD player (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-15).

DTC U0155: Meter CAN timeout

⚠ CAUTION
If DTC U0155 is set in the radio and CD player, diagnose the CAN main bus line.

⚠ CAUTION
Whenever the radio and CD player is replaced, ensure that the communication circuit is normal.

DIAGNOSTIC FUNCTION
When the signals from combination meter cannot be received, the radio and CD player sets DTC U0155.

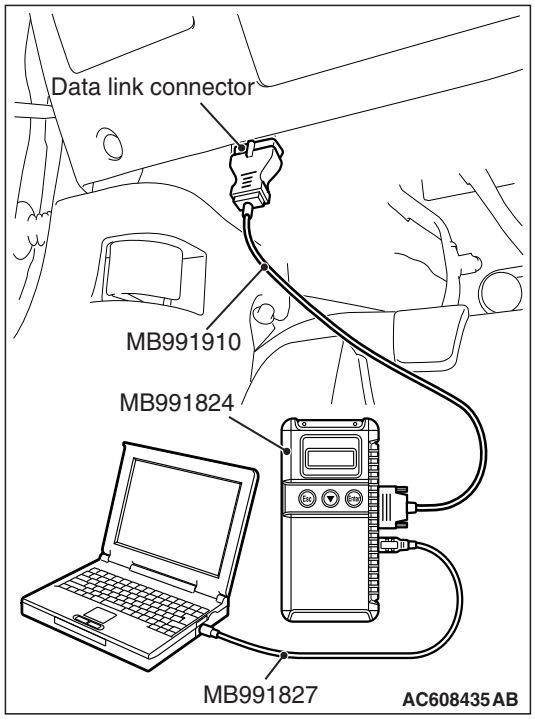
JUDGMENT CRITERIA
With the ignition switch in the ON position, system voltage between 10 – 16 volts (data from ETACS-ECU), power supply fuse(IOD fuse) is OK, or odometer value is 80.5 km (50 miles) or more, and the communications with combination meter cannot be established for 2,500 ms or more, the radio and CD player determines that a problem has occurred.

TROUBLESHOOTING HINTS
- The CAN bus line may be defective.
- The radio and CD player may be defective.
- The combination meter may be defective.

DIAGNOSIS
Required Special Tools:
- MB991958: Scan Tool (M.U.T.-III Sub Assembly)

TSB Revision

- MB991824: V.C.I.
- MB991827: M.U.T.-III USB Cable
- MB991910: M.U.T.-III Main Harness A



STEP 1. Using scan tool MB991958, diagnose the CAN bus line

⚠ CAUTION
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

(1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) P.54A-331."
(2) Turn the ignition switch to the "ON" position.
(3) Diagnose the CAN bus line.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 2.
NO : Repair the CAN bus line. (Refer to GROUP 54C, Diagnosis P.54C-17).

STEP 2. Using scan tool MB991958 read the combination meter diagnostic trouble code.

Check whether a combination meter DTCs are set or not.
(1) Turn the ignition switch to the "ON" position.
(2) Check for combination meter DTCs.
(3) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Diagnose the combination meter (Refer to combination meter, Diagnosis P.54A-34).
NO : Go to Step 3.

STEP 3. Using scan tool MB991958, read the A/C-ECU diagnostic trouble code.

Check if the DTC U0155 is set to the A/C-ECU.

Q: Is the DTC set?

YES : Go to Step 4.
NO : Go to Step 5.

STEP 4. Recheck for diagnostic trouble code.
Check again if the DTC is set to the radio and CD player.
(1) Erase the DTC.
(2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
(3) Check if DTC is set.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace the combination meter.
NO : The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the combination meter and the radio and CD player (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-15).

STEP 5. Recheck for diagnostic trouble code.
Check again if the DTC is set to the radio and CD player.
(1) Erase the DTC.
(2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
(3) Check if DTC is set.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace the radio and CD player.
NO : The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the combination meter and the radio and CD player (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-15).

DTC U0164: A/C CAN timeout

⚠ CAUTION
- **If DTC U0164 is set, be sure to diagnose the CAN bus line.**
- **When replacing the ECU, always check that the communication circuit is normal.**

DIAGNOSTIC FUNCTION
If the signal from A/C-ECU cannot be received, the radio and CD player sets DTC U0164.

JUDGMENT CRITERIA
With the ignition switch in the ON position, system voltage between 10–16 volts (data from ETACS-ECU), power supply fuse(IOD fuse) is OK, or odometer value is 80.5 km (50 miles) or more, and the communication with A/C-ECU cannot be established for 2,500 ms or more, the radio and CD player determines that a problem has occurred.

TROUBLESHOOTING HINTS
- The CAN bus line may be defective.
- The A/C-ECU may be defective.
- The radio and CD player may be defective.

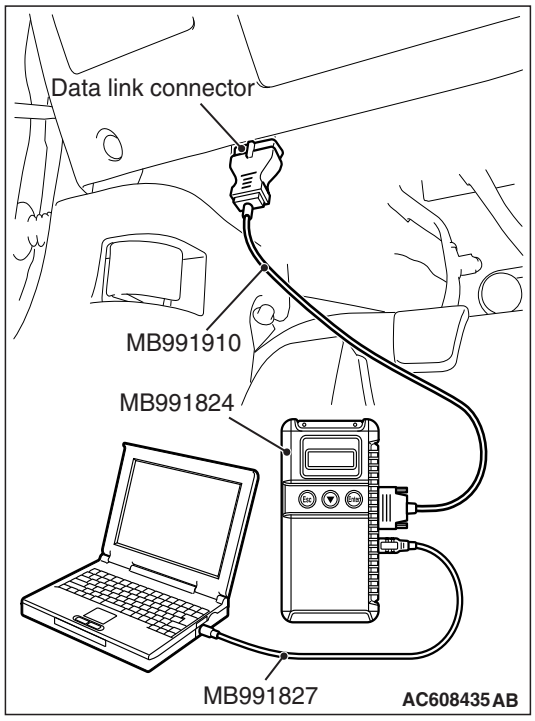
DIAGNOSIS
Required Special Tools:
- MB991958: Scan Tool (M.U.T.-III Sub Assembly)

TSB Revision

- MB991824: Vehicles Communication Interface (V.C.I.)
- MB991827: M.U.T.-III USB Cable
- MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)

STEP 1. Using scan tool MB991958, diagnose the CAN bus line.

⚠ CAUTION
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.



(1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) P.54A-331."
(2) Turn the ignition switch to the "ON" position.
(3) Diagnose the CAN bus line.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 2.
NO : Repair the CAN bus line (Refer to GROUP 54C, Diagnosis P.54C-17).

STEP 2. Using scan tool MB991958, read the A/C-ECU diagnostic trouble code.
Check if DTC is set to the A/C-ECU.

Q: Is the DTC set?

YES : Troubleshoot the A/C. (Refer to GROUP 55A, Manual A/C Diagnosis P.55A-11 GROUP 55B, Auto A/C Diagnosis P.55B-8.)
NO : Go to Step 3.

STEP 3. Using scan tool MB991958, read the ETACS diagnostic trouble code.
Check if the DTC U0164 is set to the ETACS-ECU.

Q: Is the DTC set?

YES : Go to Step 4.
NO : Go to Step 5.

STEP 4. Recheck for diagnostic trouble code.
Check again if the DTC is set to the radio and CD player.
(1) Erase the DTC.
(2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
(3) Check if DTC is set.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace the A/C-ECU.
NO : The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the A/C-ECU and the radio and CD player (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-15).

STEP 5. Recheck for diagnostic trouble code.
Check again if the DTC is set to the radio and CD player.
(1) Erase the DTC.
(2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
(3) Check if DTC is set.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace the radio and CD player.
NO : The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the A/C-ECU and the radio and CD player (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-15).

DTC U0168: WCM/KOS CAN timeout

⚠ CAUTION
- **If DTC U0168 is set, be sure to diagnose the CAN bus line.**
- **When replacing the radio and CD player, always check that the communication circuit is normal.**

DIAGNOSTIC FUNCTION
If the signal from KOS-ECU <vehicles with KOS> or WCM <vehicles with WCM> cannot be received, the radio and CD player sets DTC U0168.

JUDGMENT CRITERIA
With the ignition switch in the ON position, system voltage between 10 – 16 V (data from ETACS-ECU), power supply fuse(IOD fuse) is OK, or odometer value is 80.5 km (50 miles) or more, and the communication with KOS-ECU <vehicles with KOS> or WCM <vehicles with WCM> cannot be established for 2,500 ms or more, the radio and CD player determines that a problem has occurred.

TROUBLESHOOTING HINTS
- Malfunction of CAN bus line may be defective.
- Malfunction of the KOS-ECU may be defective. <vehicles with KOS>
- Malfunction of the WCM may be defective. <vehicles with WCM>
- Malfunction of radio and CD player may be defective.

DIAGNOSIS

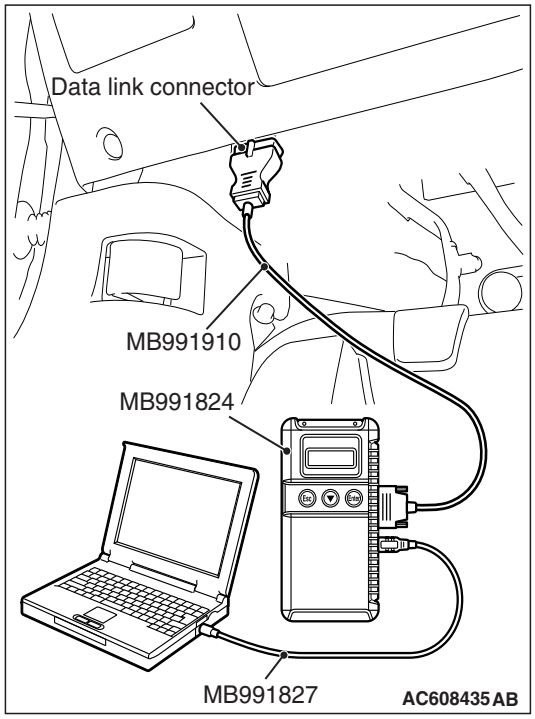
Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicles Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)

STEP 1. Using scan tool MB991958, diagnose the CAN bus line.

⚠ CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.



(1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) P.54A-331."
(2) Turn the ignition switch to the "ON" position.
(3) Diagnose the CAN bus line.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 2.
NO : Repair the CAN bus line (Refer to GROUP 54C, Diagnosis P.54C-17).

STEP 2. Using scan tool MB991958, read the KOS-ECU <vehicles with KOS> or WCM <vehicles with WCM> diagnostic trouble code.

Check again if the DTC is set to the KOS-ECU <vehicles with KOS> or WCM <vehicles with WCM>.

Q: Is the DTC set?

YES : Troubleshoot the KOS or WCM (Refer to GROUP 42B, Diagnosis P.42B-35 <KOS> or GROUP 42C, Diagnosis P.42C-18 <WCM>).
NO : Go to Step 3.

STEP 3. Using scan tool MB991958, read the diagnostic trouble code.

Check if the DTC U0168 is set to the ETACS-ECU.

Q: Is the DTC set?

YES : Go to Step 4.
NO : Go to Step 5.

TSB Revision

STEP 4. Recheck for diagnostic trouble code.
Check again if the DTC is set to the radio and CD player.
(1) Erase the DTC.
(2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
(3) Check if DTC is set.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace the WCM or KOS-ECU.
NO : The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the WCM or KOS-ECU and the radio and CD player (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-15).

STEP 5. Recheck for diagnostic trouble code.
Check again if the DTC is set to the radio and CD player.
(1) Erase the DTC.
(2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
(3) Check if DTC is set.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace the radio and CD player.
NO : The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the WCM or KOS-ECU and the radio and CD player (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-15).

DTC U0195: Satellite radio CAN timeout

⚠ CAUTION
If DTC U0195 is set in the radio and CD player, diagnose the CAN main bus line.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the communication circuit is normal.

DIAGNOSTIC FUNCTION
When the signals from satellite radio tuner cannot be received, the radio and CD player sets DTC U0195.

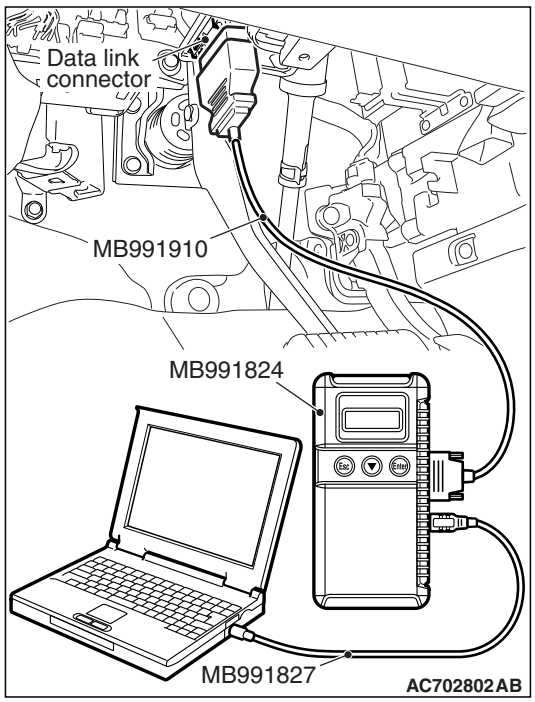
JUDGMENT CRITERIA
With the ignition switch in the ON position, system voltage between 10 – 16 volts (data from ETACS-ECU), power supply fuse(IOD fuse) is OK, or odometer value is 80.5 km (50 miles) or more, and the communications with satellite radio tuner cannot be established for 2,500 ms or more, the radio and CD player determines that a problem has occurred.

TROUBLESHOOTING HINTS
- The CAN bus line may be defective.
- The radio and CD player may be defective.
- The satellite radio tuner may be defective.

DIAGNOSIS
Required Special Tools:
- MB991958: Scan Tool (M.U.T.-III Sub Assembly)

TSB Revision

- MB991824: V.C.I.
- MB991827: M.U.T.-III USB Cable
- MB991910: M.U.T.-III Main Harness A



STEP 1. Using scan tool MB991958, diagnose the CAN bus line

⚠ CAUTION
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

(1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) P.54A-331."
(2) Turn the ignition switch to the "ON" position.
(3) Diagnose the CAN bus line.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 2.
NO : Repair the CAN bus line. (Refer to GROUP 54C, Diagnosis P.54C-17).

STEP 2. Using scan tool MB991958 read the satellite radio tuner diagnostic trouble code.

Check whether a satellite radio tuner DTCs are set or not.
(1) Turn the ignition switch to the "ON" position.
(2) Check for satellite radio tuner DTCs.
(3) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Diagnose the satellite radio tuner. (Refer to P.54A-658.)
NO : Go to Step 3.

STEP 3. Recheck for diagnostic trouble code.

Check again if the DTC is set to the radio and CD player.
(1) Erase the DTC.
(2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
(3) Check if DTC is set.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace the radio and CD player.
NO : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-15).

TSB Revision

DTC U1415: Coding not completed/Data fail

⚠ CAUTION
If there is any problem in the CAN bus lines, an incorrect diagnostic trouble code may be set. Prior to this diagnosis, always diagnose the CAN bus lines.

⚠ CAUTION
Before replacing the radio and CD player, be sure to check that the power supply circuit, ground circuit, and communication circuit are normal.

TROUBLE JUDGMENT

When the vehicle information data is not registered to the audio unit, the radio and CD player sets the DTC No.U1415.

COMMENTS ON TROUBLE SYMPTOM

The audio unit, ETACS-ECU, or CAN bus line may have a problem.

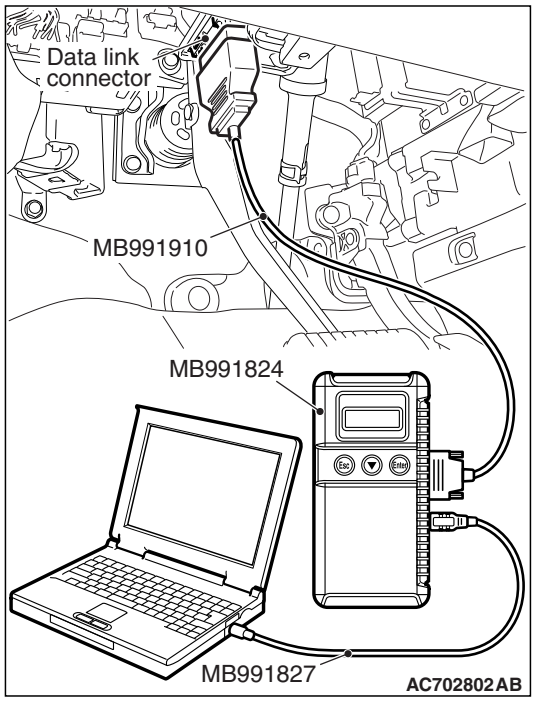
PROBABLE CAUSES

- Malfunctions of audio unit
- Malfunction of the ETACS-ECU
- Malfunction of CAN bus line wiring harness and connector

DIAGNOSIS

Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A



STEP 1. Using scan tool MB991958, diagnose the CAN bus line.

⚠ CAUTION
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

(1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) P.54A-331."
(2) Turn the ignition switch to the "ON" position.
(3) Diagnose the CAN bus line.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 2.
NO : Repair the CAN bus line. (Refer to GROUP 54C, Diagnosis P.54C-17).

STEP 2. Using scan tool MB991958, read the other system DTC.

Check if the diagnostic trouble code relating to the coding error is set to the ETACS-ECU.
(1) Turn the ignition switch to the "ON" position.
(2) Check for DTCs.
(3) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Diagnose the ETACS-ECU (Refer to GROUP 54A, ETACS-ECU, Diagnosis P.54A-732), and then go to Step 3.
NO : Go to Step 3.

STEP 3. Recheck for diagnostic trouble code.

Check again if the DTC is set to the radio and CD player.
(1) Erase the DTC.
(2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
(3) Check if the DTC is set.

Q: Is the DTC set?

YES : Replace the radio and CD player.
NO : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points, How to Cope with Intermittent Malfunction P.00-15).

TSB Revision

DTC B2420: Power integrated circuit

⚠ CAUTION
If there is any problem in the CAN bus lines, an incorrect diagnostic trouble code may be set. Prior to this diagnosis, always diagnose the CAN bus lines.

⚠ CAUTION
Before replacing the radio and CD player, be sure to check that the power supply circuit, ground circuit, and communication circuit are normal.

TROUBLE JUDGMENT

If the radio and CD player continuously apply the voltage of two volts or more to the speakers for one minute or more, it is determined that the offset voltage is exceeded, and then the diagnostic trouble code is set.

COMMENTS ON TROUBLE SYMPTOM

The radio and CD player or CAN bus line may have a problem.

PROBABLE CAUSES

- Malfunctions of radio and CD player
- Malfunction of CAN bus line wiring harness and connector

DIAGNOSIS

Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A

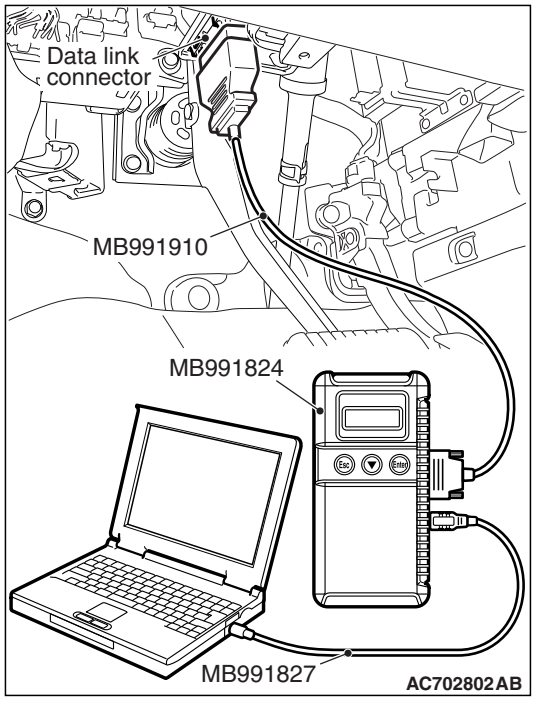
STEP 1. Using scan tool MB991958, diagnose the CAN bus line.

⚠ CAUTION
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

(1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) P.54A-331."
(2) Turn the ignition switch to the "ON" position.
(3) Diagnose the CAN bus line.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 2.
NO : Repair the CAN bus line. (Refer to GROUP 54C, Diagnosis P.54C-17).



STEP 2. Recheck for diagnostic trouble code.
Check again if the DTC is set to the radio and CD player.
(1) Erase the DTC.
(2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
(3) Check if the DTC is set.

Q: Is the diagnostic trouble code set?

YES : Replace the radio and CD player.
NO : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points, How to Cope with Intermittent Malfunction P.00-15).

DTC B2421: Radio tuner

⚠ CAUTION
If there is any problem in the CAN bus lines, an incorrect diagnostic trouble code may be set. Prior to this diagnosis, always diagnose the CAN bus lines.

⚠ CAUTION
Before replacing the radio and CD player, be sure to check that the power supply circuit, ground circuit, and communication circuit are normal.

TROUBLE JUDGMENT

If the communication cannot be established consecutively for 10 times between the incorporated tuner of radio and CD player and the microcomputer, the diagnostic trouble code is set.

COMMENTS ON TROUBLE SYMPTOM

The radio and CD player or CAN bus line may have a problem.

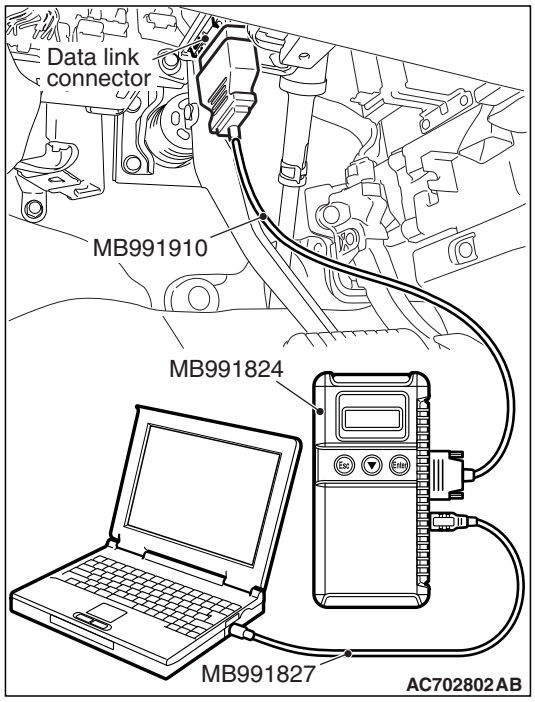
PROBABLE CAUSES

- Malfunctions of radio and CD player
- Malfunction of CAN bus line wiring harness and connector

DIAGNOSIS

Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A



STEP 1. Using scan tool MB991958, diagnose the CAN bus line.

⚠ CAUTION
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

(1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) P.54A-331."
(2) Turn the ignition switch to the "ON" position.
(3) Diagnose the CAN bus line.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 2.
NO : Repair the CAN bus line (Refer to GROUP 54C, Diagnosis P.54C-17).

STEP 2. Recheck for diagnostic trouble code.

Check again if the DTC is set to the radio and CD player.
(1) Erase the DTC.
(2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
(3) Check if the DTC is set.

Q: Is the DTC set?

YES : Replace the radio and CD player.
NO : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points, How to Cope with Intermittent Malfunction P.00-15).

DTC B2423: 6 CD player error

⚠ CAUTION
If there is any problem in the CAN bus lines, an incorrect diagnostic trouble code may be set. Prior to this diagnosis, always diagnose the CAN bus lines.

⚠ CAUTION
Before replacing the radio and CD player, be sure to check that the power supply circuit, ground circuit, and communication circuit are normal.

TROUBLE JUDGMENT

During the use of the CD changer of radio and CD player, if any of the ERROR, ERROR01, ERROR02, ERROR03, ERROR DC or ERROR HOT continues for 1 minute, the diagnostic trouble code is set.

COMMENTS ON TROUBLE SYMPTOM

The radio and CD player or CAN bus line may have a problem.

TSB Revision

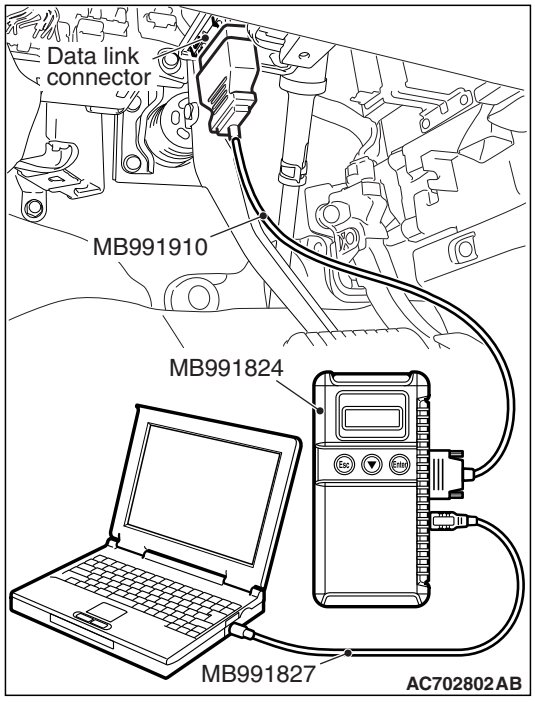
PROBABLE CAUSES

- Malfunctions of radio and CD player
- Malfunction of CAN bus line wiring harness and connector

DIAGNOSIS

Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A



STEP 1. Using scan tool MB991958, diagnose the CAN bus line

⚠ CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

(1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) P.54A-331."
(2) Turn the ignition switch to the "ON" position.
(3) Diagnose the CAN bus line.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 2.
NO : Repair the CAN bus line. (Refer to GROUP 54C, Diagnosis P.54C-17).

STEP 2. CD check

Playback a clean and unscratched CD for one minute, and recheck if the diagnostic trouble code is set to the radio and CD player.

(1) Erase the diagnostic trouble code.
(2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
(3) Playback the clean, unscratched CD for one minute.
(4) Check if diagnostic trouble code is set.

Q: Is the DTC set?

YES : Go to Step 3.
NO : Clean the CD, use a CD without scratches and burrs, or remove the CD burrs, and then reinsert the CD.

STEP 3. Recheck for diagnostic trouble code.
Check again if the DTC is set to the radio and CD player.
(1) Erase the DTC.
(2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
(3) Check if the DTC is set.

Q: Is the DTC set?

YES : Replace the radio and CD player.
NO : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-15).

DTC B2424: CD player error

⚠ CAUTION
If there is any problem in the CAN bus lines, an incorrect diagnostic trouble code may be set. Prior to this diagnosis, always diagnose the CAN bus lines.

⚠ CAUTION
Before replacing the radio and CD player, be sure to check that the power supply circuit, ground circuit, and communication circuit are normal.

TROUBLE JUDGMENT

During the use of the CD player of radio and CD player, if any of the ERROR, ERROR01, ERROR02, ERROR03, ERROR DC or ERROR HOT continues for 1 minute, the diagnostic trouble code is set.

COMMENTS ON TROUBLE SYMPTOM

The radio and CD player or CAN bus line may have a problem.

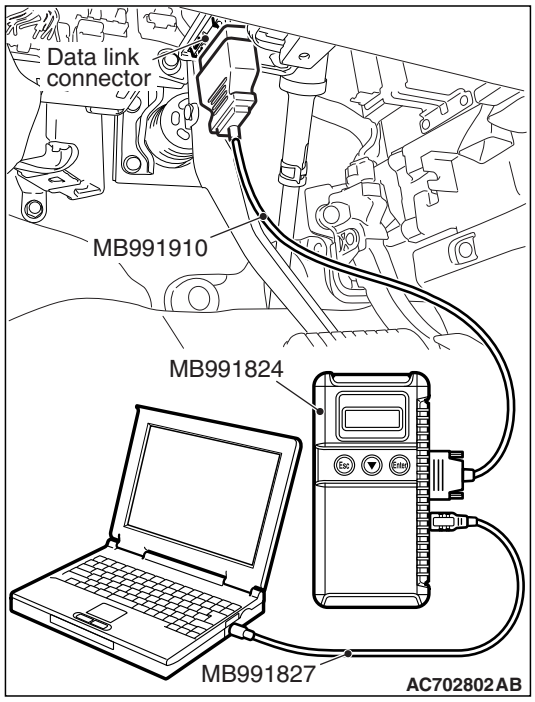
PROBABLE CAUSES

- Malfunctions of radio and CD player
- Malfunction of CAN bus line wiring harness and connector

DIAGNOSIS

Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A



STEP 1. Using scan tool MB991958, diagnose the CAN bus line.

⚠ CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

(1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) P.54A-331."
(2) Turn the ignition switch to the "ON" position.
(3) Diagnose the CAN bus line.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 2.
NO : Repair the CAN bus line. (Refer to GROUP 54C, Diagnosis P.54C-17).

STEP 2. CD check

Playback a clean and unscratched CD for one minute, and recheck if the diagnostic trouble code is set to the radio and CD player.

(1) Erase the diagnostic trouble code.
(2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
(3) Playback the clean, unscratched CD for one minute.
(4) Check if diagnostic trouble code is set.

Q: Is the diagnostic trouble code set?

YES : Go to Step 3.
NO : Clean the CD, use a CD without scratches and burrs, or remove the CD burrs, and then reinsert the CD.

STEP 3. Recheck for diagnostic trouble code.

Check again if the DTC is set to the radio and CD player.

(1) Erase the DTC.
(2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
(3) Check if the DTC is set.

Q: Is the DTC set?

YES : Replace the radio and CD player.
NO : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-15).

TSB Revision

Code No.B2450 Switch panel communication

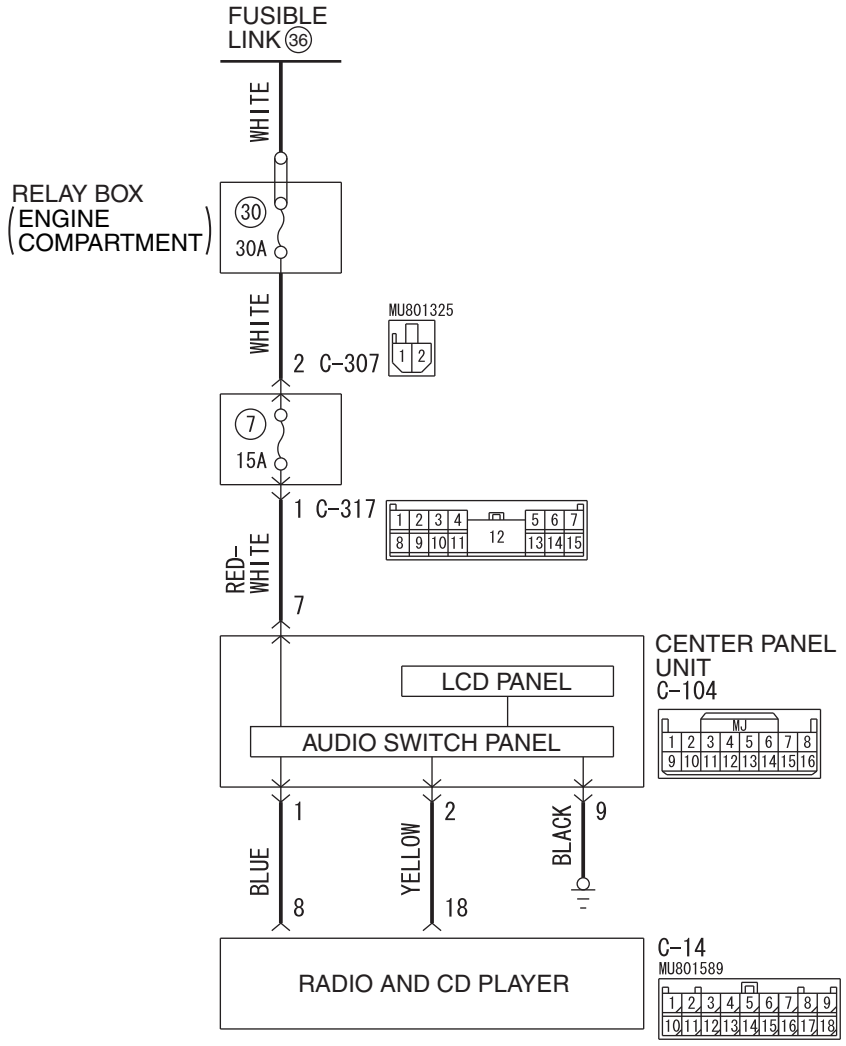
⚠ CAUTION

If there is any problem in the CAN bus lines, an incorrect diagnostic trouble code may be set. Prior to this diagnosis, always diagnose the CAN bus lines.

⚠ CAUTION

Before replacing the radio and CD player, be sure to check that the power supply circuit, ground circuit, and communication circuit are normal.

Center Panel Unit Power Supply Circuit



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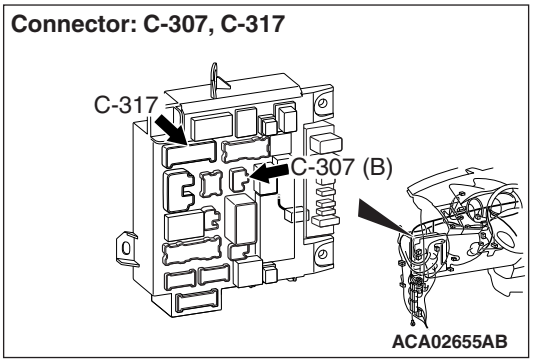
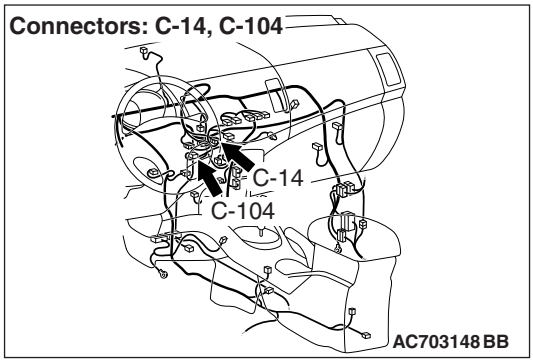




TROUBLE JUDGMENT

If the radio and CD player cannot establish the communication with center panel assembly for 1 minute or more, the diagnostic trouble code is set.

COMMENTS ON TROUBLE SYMPTOM

The radio and CD player, center panel assembly, or CAN bus line may have a problem.

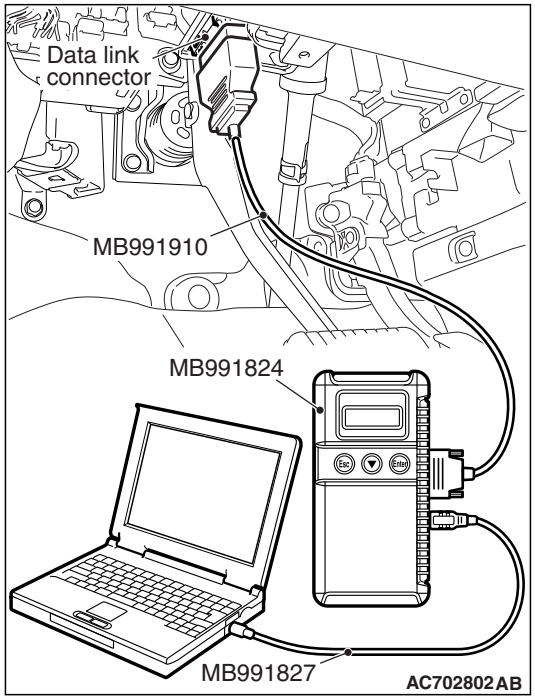
PROBABLE CAUSES

- Malfunctions of radio and CD player
- Malfunction of center panel assembly
- Malfunction of CAN bus line wiring harness and connector

DIAGNOSIS

Required Special Tools:

- MB991223: Harness Set
- MB992006: Extra Fine Probe
- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A



STEP 1. Using scan tool MB991958, diagnose the CAN bus line.

Use scan tool MB991958 to diagnose the CAN bus lines.

⚠ CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

(1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) P.54A-331."
(2) Turn the ignition switch to "ON" position.
(3) Diagnose the CAN bus line.

Q: Is the check result normal?

YES : Go to Step 2.
NO : Repair the CAN bus line. (Refer to GROUP 54C, Diagnosis P.54C-17.) On completion, go to Step 2.

STEP 2. Check center panel unit connector C-104 and radio and CD player connector C-14 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Are center panel unit connector C-104 and radio and CD player connector C-14 in good condition?

YES : Go to Step 3.
NO : Repair or replace the damaged component(s) (Refer to GROUP 00E, Harness Connector Inspection P.00E-2).

STEP 3. Check the wiring harness between center panel unit connector C-104 (terminal 1, 2) and radio and CD player connector C-14 (terminal 8, 18).

- Check the communication lines for open circuit and short circuit.

Q: Is the wiring harness between center panel unit connector C-104 (terminal 1, 2) and radio and CD player connector C-14 (terminal 8, 18) in good condition?

YES : Go to Step 4.
NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 4. Check the ground circuit to the center panel unit. Measure the resistance at center panel unit connector C-104.

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

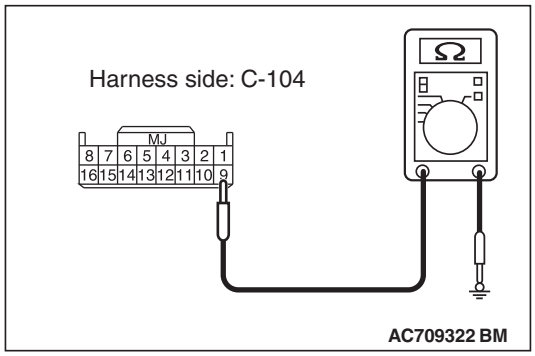
(2) Measure resistance between terminal 9 and ground.

OK: The resistance should be 2 ohm or less.

Q: Is the measured resistance 2 ohms or less?

YES : Go to Step 6.

NO : Go to Step 5.



STEP 5. Check the wiring harness between center panel unit connector C-104 (terminal 9) and ground.

- Check the ground wires for open circuit.

Q: Is the wiring harness between center panel unit connector C-104 (terminal 9) and ground in good condition?

YES : Go to Step 8.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 6. Check the power supply circuit to the center panel unit. Measure the voltage at center panel unit connector C-104.

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

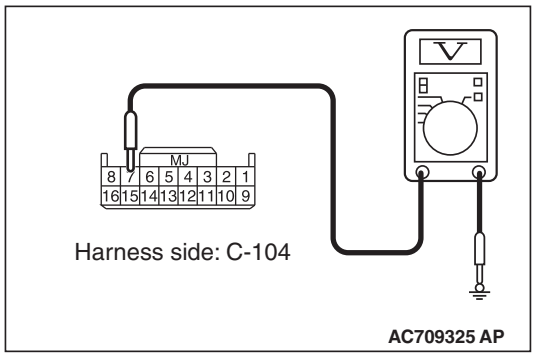
(2) Measure voltage between terminal 7 and ground.

OK: The voltage should measure approximately 12 volts (battery positive voltage).

Q: Is the measured voltage approximately 12 volts (battery positive voltage)?

YES : Go to Step 8.

NO : Go to Step 7.



STEP 7. Check the wiring harness between center panel unit connector C-104 (terminal 7) and fusible link (36).

- Check the power supply line for open circuit and short circuit.

NOTE: Also ETACS-ECU connector C-307, C-317 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If joint connector ETACS-ECU connector C-307, C-317 are damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection P.00E-2.

Q: Is the wiring harness between center panel unit connector C-124 (terminal 7) and fusible link (36) in good condition?

YES : Go to Step 8.
NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 8. Recheck for diagnostic trouble code.

Check again if the DTC is set to the radio and CD player.
(1) Erase the DTC.
(2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
(3) Check if the DTC is set.

Q: Is the DTC set?

YES : Go to Step 9.
NO : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points, How to Cope with Intermittent Malfunction P.00-15).

STEP 9. Recheck for diagnostic trouble code.

Temporarily replace the center panel unit, and recheck whether the DTC is set to the radio and CD player.
(1) Erase the DTC.
(2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
(3) Check if the DTC is set.

Q: Is the DTC set?

YES : Replace the radio and CD player.
NO : Replace the center panel unit.

DTC B2451: Audio panel type error

⚠ CAUTION
If there is any problem in the CAN bus lines, an incorrect diagnostic trouble code may be set. Prior to this diagnosis, always diagnose the CAN bus lines.

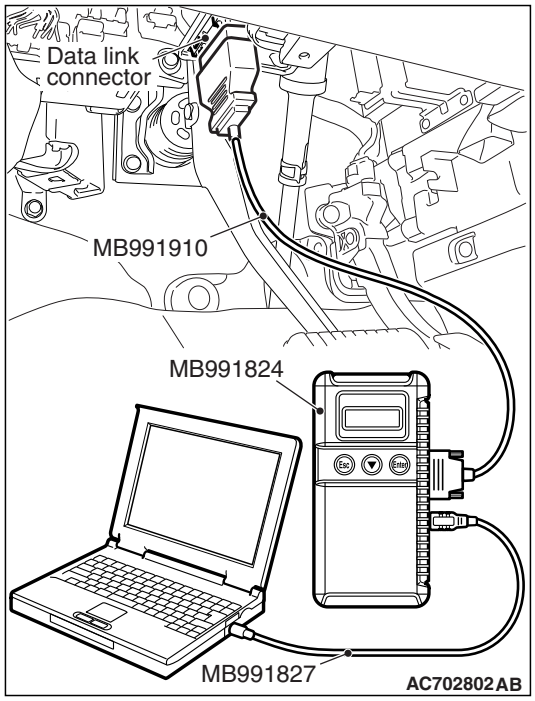
TROUBLE JUDGMENT
If the radio and CD player consecutively receive the display trouble signal from the center panel assembly for 1 minute, the diagnostic trouble code is set.

COMMENTS ON TROUBLE SYMPTOM
The center panel assembly or CAN bus line may have a problem.

PROBABLE CAUSES
- Malfunction of center panel assembly
- Malfunction of CAN bus line wiring harness and connector

DIAGNOSIS

STEP 1. Using scan tool MB991958, diagnose the CAN bus line.



⚠ CAUTION
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.
(1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) P.54A-331."
(2) Turn the ignition switch to the "ON" position.
(3) Diagnose the CAN bus line.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?
YES : Go to Step 2.
NO : Repair the CAN bus line. (Refer to GROUP 54C, Diagnosis P.54C-17).

STEP 2. Recheck for diagnostic trouble code.
Check again if the DTC is set to the radio and CD player.
(1) Erase the DTC.
(2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
(3) Check if the DTC is set.

Q: Is the DTC set?
YES : Replace the radio and CD player.
NO : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points, How to Cope with Intermittent Malfunction P.00-15).

TSB Revision

TROUBLE SYMPTOM CHART

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Trouble symptom	Inspection procedure No.	Reference page
Power is not turned ON when the power switch is turned ON.	1	P.54A-364
No sound is heard. <vehicles with audio amplifier>	2	P.54A-368
No sound is heard from one of the speakers. <vehicles without audio amplifier>	3	P.54A-375
No sound is heard from one of the speakers. <vehicles with audio amplifier>		P.54A-386
The audio does not operate normally by operating the radio and CD player of the center panel unit.	4	P.54A-399
Audio illuminations does not work normally.	5	P.54A-403
The sound of external input are not played. <Vehicles with audio adapter)>	6	P.54A-408
Noise appears at certain places when traveling (AM).	7	P.54A-410
Noise is present while moving (FM).	8	P.54A-411
Sound mixed with noise, only at night (AM).	9	P.54A-412
Broadcasts can be heard, but both AM and FM have a lot of noise.	10	P.54A-412
There is more noise on either AM or FM.	11	P.54A-413
Noise sometimes appears on FM during traveling.	12	P.54A-414
Noise is detected with engine running.	13	P.54A-415
Noise appears during vibration or shocks.	14	P.54A-416
Ever-present noise.	15	P.54A-417
Noise comes out, but neither AM nor FM sounds.	16	P.54A-417
Poor reception.	17	P.54A-417
Distortion on AM or on both AM and FM.	18	P.54A-419
Distortion on FM only.	19	P.54A-419
Using the auto select function, too few automatic stations are selected.	20	P.54A-419
Preset stations are erased.	21	P.54A-420
CD cannot be inserted.	22	P.54A-420
No sound (CD only).	23	P.54A-421
CD sound skips.	24	P.54A-421
Sound quality is poor.	25	P.54A-422
CD can not be ejected.	26	P.54A-422

NOTE:

- *For the troubleshooting of the USB box, refer to P.54A-639.<Vehicles with USB box>*
- *For the troubleshooting of the hands free module, refer to P.54A-592.<Vehicles with hands free module>*
- *For the troubleshooting of the steering wheel audio remote control switch, refer to P.54A-563.<Vehicles with steering wheel audio remote control switch>*

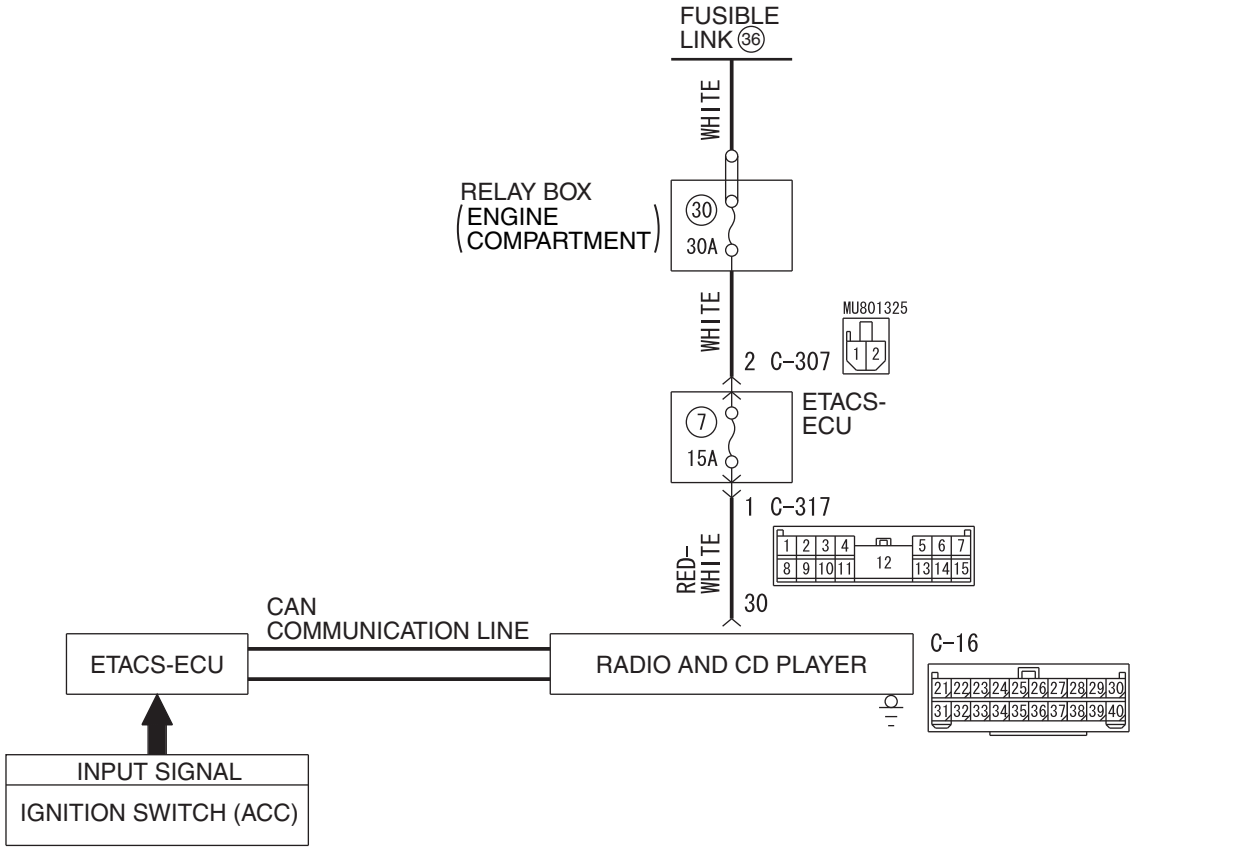
TSB Revision

SYMPTOM PROCEDURES

INSPECTION PROCEDURE 1: Power is not turned ON when the power switch is turned ON.

⚠ CAUTION
Before replacing the radio and CD player, ensure that the power supply circuit, the ground circuit and the communication circuit are normal.

Radio and CD Player Power Supply Circuit



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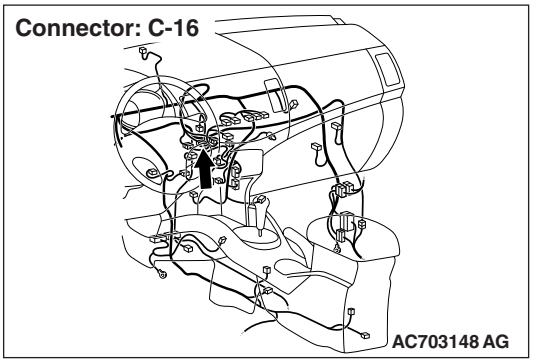
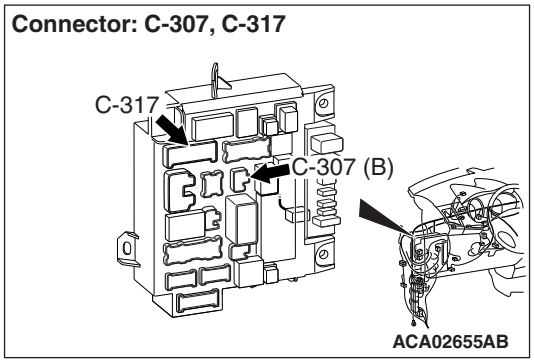




TSB Revision

OPERATION

When the ignition switch is in the ON or ACC position, the radio and CD player power can be turned ON. With the radio and CD player power ON, when the ignition switch is turned to the OFF position, the power for radio and CD player is also turned OFF.

COMMENTS ON TROUBLE SYMPTOM

Provided that the audio diagnostic trouble code is not set, if the power for radio and CD player cannot be turned ON, the radio and CD player, or power supply circuit for radio and CD player may have a problem, or the option coding information may be inconsistent.

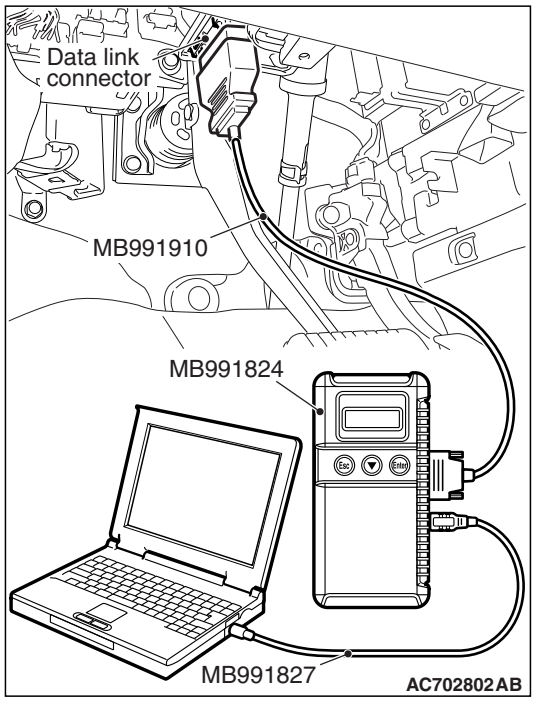
PROBABLE CAUSES

- Malfunctions of radio and CD player
- Malfunction of the ETACS-ECU
- Option coding information inconsistency
- Damaged harness wires and connectors

DIAGNOSIS

Required Special Tools:

- MB991223: Harness Set
- MB992006: Extra Fine Probe
- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A



STEP 1. ETACS-ECU coding data check.

(1) Operate scan tool MB991958 to read the ETACS-ECU option coding information. (Refer to GROUP 00, Coding List P.00-44.)

(2) Check that the "AUDIO" is set to "Present."

Q: Is the check result normal?

YES : Go to Step 2.

NO : Operate scan tool MB991958 to set the option coding "AUDIO" to "Present," and check the trouble symptom.

STEP 2. Using scan tool MB991958, read the ETACS-ECU diagnostic trouble code.

Check if the diagnostic trouble code is set to the ETACS-ECU.

Q: Is the DTC set?

YES : Troubleshoot the ETACS-ECU (Refer to GROUP 54A, ETACS, Diagnosis P.54A-732), and then go to Step 3.

NO : Go to Step 3.

TSB Revision

STEP 3. Using scan tool MB991958, check data list.

Check if ETACS-ECU related signal is set.

- Turn the ignition switch to the ON position.
- selector lever is "R" (Reverse) position

Item No.	Item name	Normal conditions
289	shift reveres SW	ON

OK: Normal condition is displayed.

Q: Is the check result normal?

YES : Go to step 8.
NO : Go to step 4.

STEP 4. Check radio and CD player connector C-16 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is radio and CD player connector C-16 in good condition?

YES : Go to Step 5.
NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2.

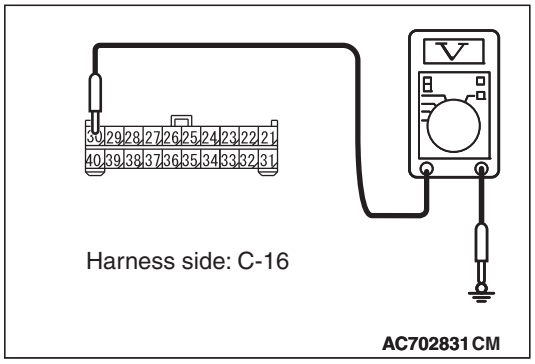
STEP 5. Check the power supply circuit to the radio and CD player. Measure the voltage at radio and CD player connector C-16.

(1) Disconnect the connector, and measure at the wiring harness-side connector.
(2) Measure the voltage between terminal 30 and ground.

OK: The voltage should measure approximately 12 volts (battery positive voltage).

Q: Is the measured voltage approximately 12 volts (battery positive voltage)?

YES : Go to Step 7.
NO : Go to Step 6.



STEP 6. Check the wiring harness between fusible link (36) and radio and CD player connector C-16 (terminal 30).

- Check the power supply lines (battery power supply) for open circuit and short circuit.

Q: Is the wiring harness between fusible link (36) and radio and CD player connector C-16 (terminal 30) in good condition?

YES : Go to Step 7.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 7. Check that the radio and CD player is correctly grounded

The radio and CD player should be connected to the ground with an assembling screw.

Q: Is the radio and CD player correctly grounded?

YES : Go to Step 8.

NO : Securely install and ground the radio and CD player.

STEP 8. Retest the system

Check if the radio and CD player power is turned ON.

Q: Is the check result normal?

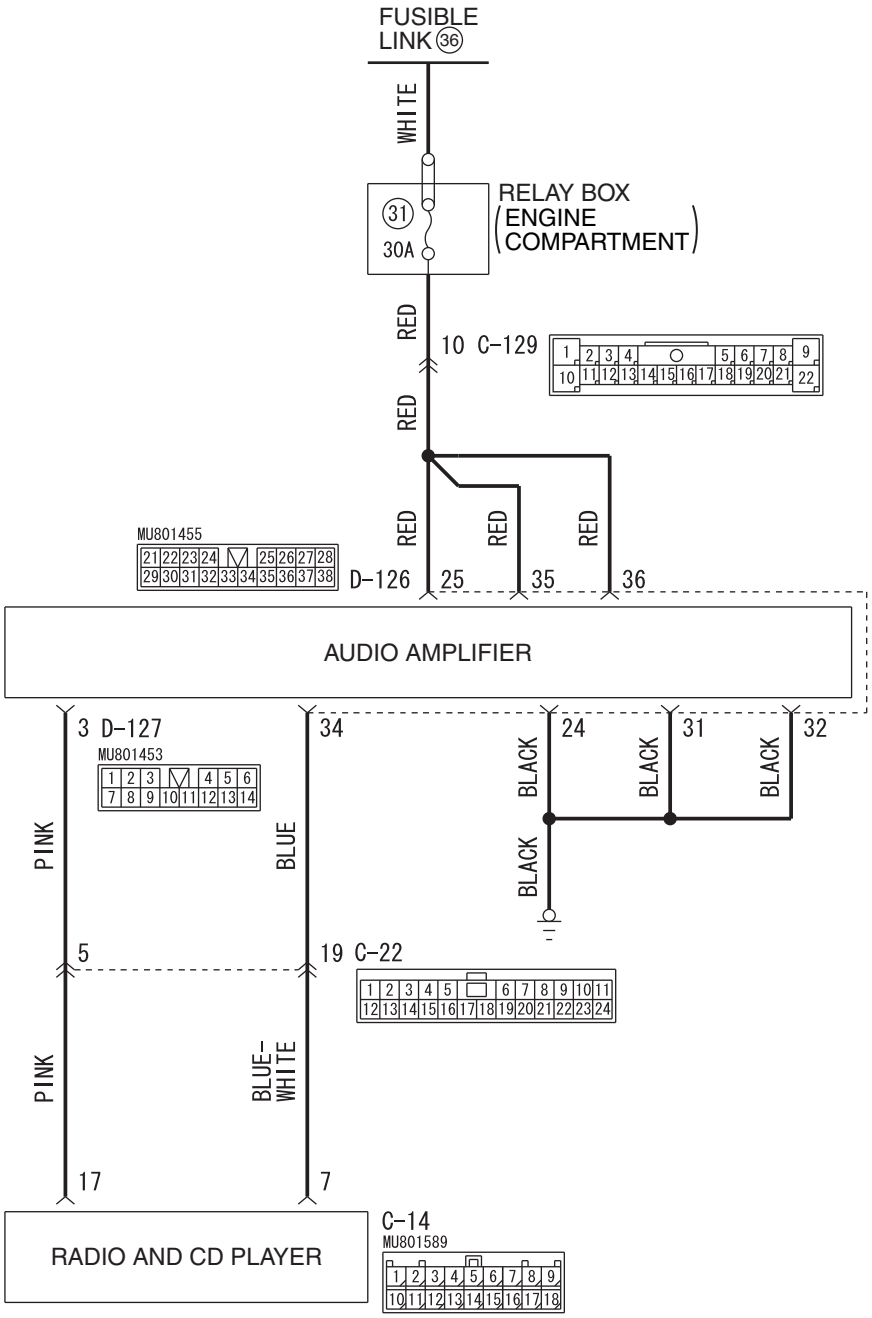
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-15).

NO : Replace the radio and CD player.

INSPECTION PROCEDURE 2: No sound is heard. <Vehicles with audio amplifier>

⚠ CAUTION
Before replacing the radio and CD player or audio amplifier, ensure that the power supply circuit, the ground circuit and the communication circuit are normal.

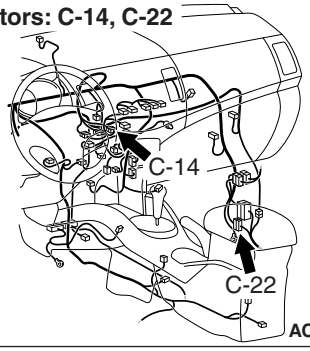
Audio System Circuit



WAG54M024A

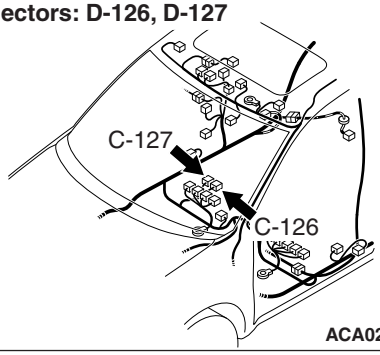
TSB Revision

Connectors: C-14, C-22



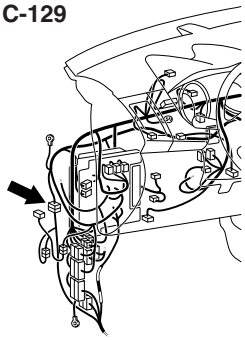
AC703148 AH

Connectors: D-126, D-127



ACA02660AB

Connector: C-129



ACA02653AB

COMMENTS ON TROUBLE SYMPTOM

If the audio sound is not output, the radio and CD player, audio amplifier, or power supply circuit of audio amplifier may have a problem, or the option coding information may be inconsistent.

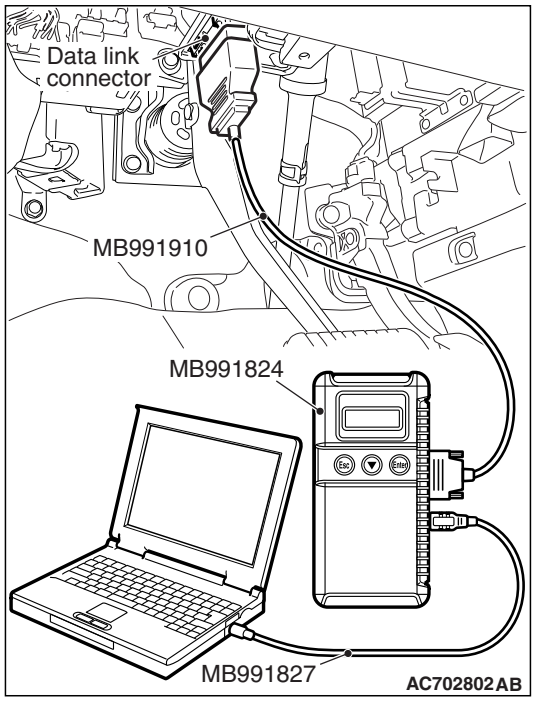
PROBABLE CAUSES

- Malfunctions of radio and CD player
- Malfunction of audio amplifier
- Option coding information inconsistency
- Damaged harness wires and connectors

DIAGNOSIS

Required Special Tools:

- MB991223: Harness Set
- MB992006: Extra Fine Probe
- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A



STEP 1. Check the ETACS-ECU coding data.

(1) Operate the scan tool MB991958 to read the ETACS-ECU option coding information. (Refer to GROUP 00, Coding List P.00-44.)

(2) Check that the "Number of speaker" is set to "Premium."

Q: Is the check result normal?

YES : Go to Step 2.

NO : Operate scan tool MB991958 to set the option coding "Speaker" to "Number of speaker," and check the trouble symptom.

STEP 2. Check audio amplifier connector D-126 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is audio amplifier connector D-126 in good condition?

YES : Go to Step 3.

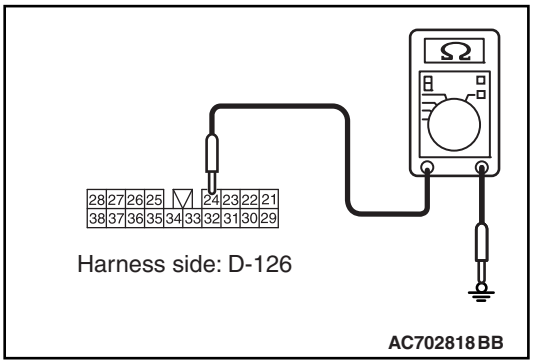
NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2.

STEP 3. Check the ground circuit to the rear monitor. Measure the resistance at audio amplifier connector D-126.

(1) Disconnect audio amplifier connector D-126, and measure the resistance available at the wiring harness side of the connector.

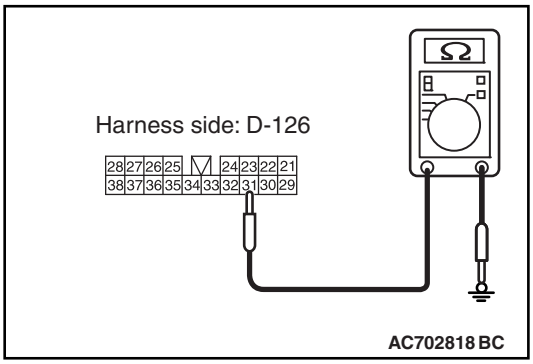
(2) Measure the resistance between terminal 24 and ground.

OK: The resistance should be 2 ohms or less.



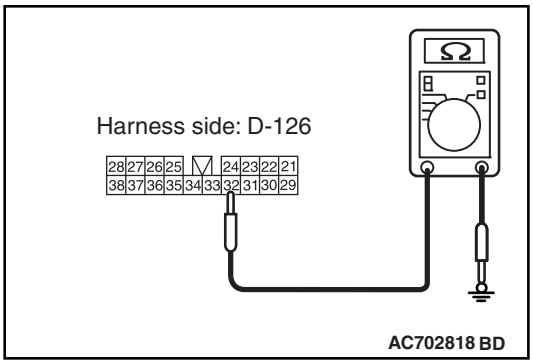
(3) Measure the resistance between terminal 31 and ground.

OK: The resistance should be 2 ohms or less.



(4) Measure the resistance between terminal 32 and ground.

OK: The resistance should be 2 ohms or less.



Q: Is the measured resistance 2 ohms or less?

YES : Go to Step 5.
NO : Go to Step 4.

STEP 4. Check the wiring harness between audio amplifier connector D-126 (terminal 24, 31, 32) and ground.

- Check the ground wires for open circuit.

Q: Is the wiring harness between audio amplifier connector D-126 (terminal 24, 31, 32) and ground in good condition?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points, How to Cope with Intermittent Malfunction P.00-15).
NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

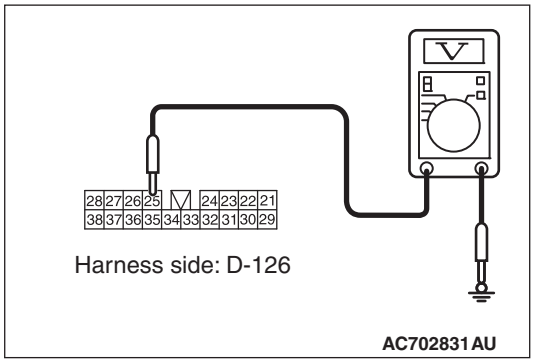
TSB Revision

STEP 5. Check the power supply circuit to the ETACS-ECU. Measure the voltage at audio amplifier connector D-126.

(1) Disconnect audio amplifier connector D-126, and measure the voltage available at the wiring harness-side connector.

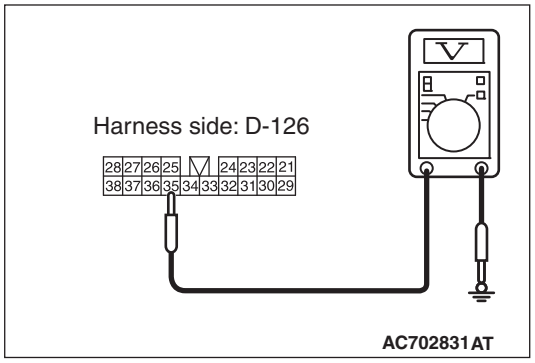
(2) Measure the voltage between terminal 25 and ground.

OK: The voltage should measure approximately 12 volts (battery positive voltage).



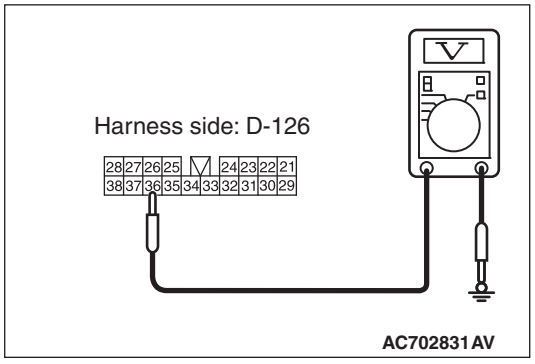
(3) Measure the voltage between terminal 35 and ground.

OK: The voltage should measure approximately 12 volts (battery positive voltage).



(4) Measure the voltage between terminal 36 and ground.

OK: The voltage should measure approximately 12 volts (battery positive voltage).



Q: Is the measured voltage approximately 12 volts (battery positive voltage)?

YES : Go to Step 7.
NO : Go to Step 6.

STEP 6. Check the wiring harness between audio amplifier connector D-126 (terminal 25, 35, 36) and fusible link (36).

- Check the power supply lines for open circuit and short circuit.

Q: Is the wiring harness between audio amplifier connector D-126 (terminal 25, 35, 36) and fusible link (36) in good condition?

YES : Go to Step 7.
NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 7. Check radio and CD player connector C-14 and audio amplifier connector C-127 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Are radio and CD player connector C-14 and audio amplifier C-127 in good condition?

YES : Go to Step 8.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2.

STEP 8. Check the wiring harness between radio and CD player connector C-14 (terminal 17) and audio amplifier connector D-127 (terminal 3)

- Check the communication line for open circuit and short circuit.

NOTE: Also check intermediate connector C-22 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-22 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection P.00E-2.

Q: Is the wiring harness between radio and CD player connector C-14 (terminal 17) and audio amplifier connector D-127 (terminal 3) in good condition?

YES : Go to Step 9.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 9. Check the wiring harness between radio and CD player connector C-14 (terminal 7) and audio amplifier connector D-126 (terminal 34)

- Check the communication line for open circuit and short circuit.

NOTE: Also check intermediate connector C-22 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-22 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection P.00E-2.

Q: Is the wiring harness between radio and CD player connector C-14 (terminal 7) and audio amplifier connector D-126 (terminal 34) in good condition?

YES : Go to Step 10.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 10. Retest the system

Replace the audio amplifier, then check that the audio sound is output.

Q: Is the check result normal?

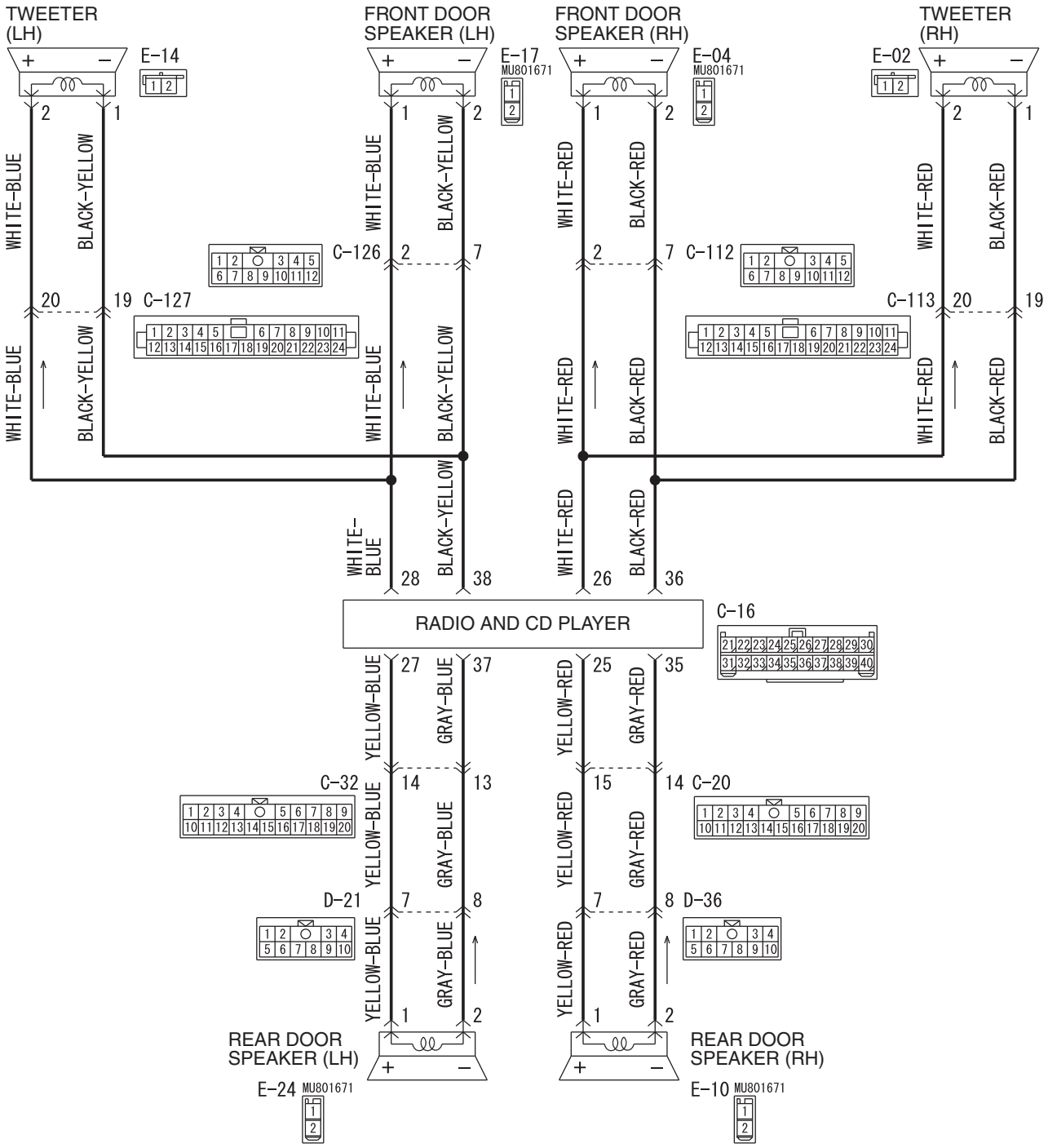
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points, How to Cope with Intermittent Malfunction P.00-15).

NO : Replace the radio and CD player.

INSPECTION PROCEDURE 3: No sound is heard from one of the speakers. <Vehicles without audio amplifier>

⚠ CAUTION
Before replacing the radio and CD player, ensure that the power supply circuit, the ground circuit and the communication circuit are normal.

Speaker System Circuit



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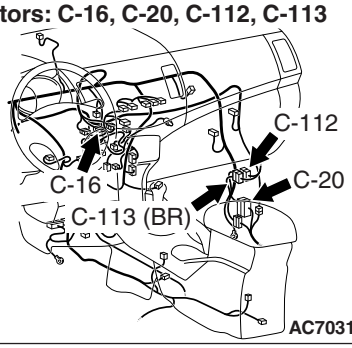
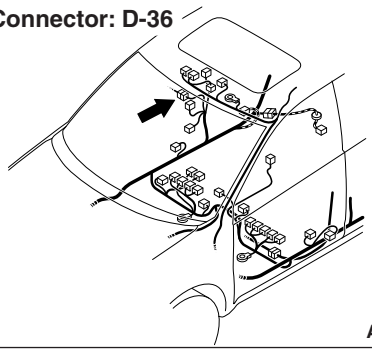
TSB Revision

Connectors: C-16, C-20, C-112, C-113



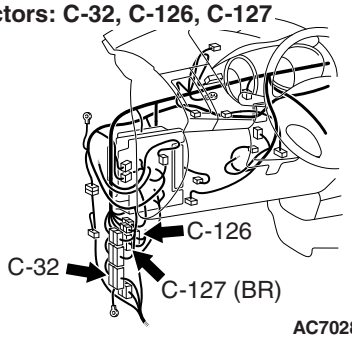
AC703148AI

Connector: D-36



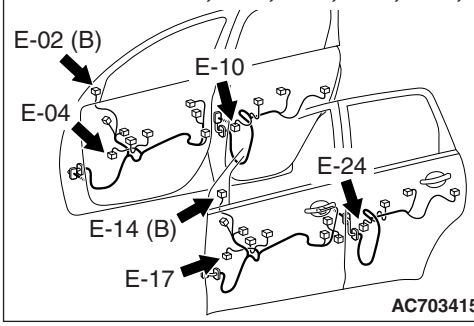
AC702816AJ

Connectors: C-32, C-126, C-127



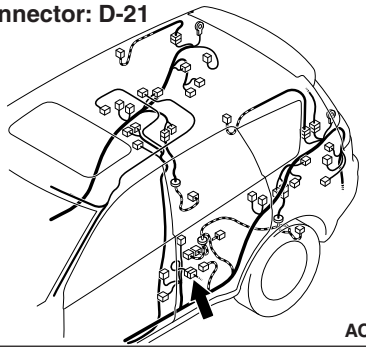
AC702815AN

Connectors: E-02, E-04, E-10, E-14, E-17, E-24



AC703415AC

Connector: D-21



AC702817AO

COMMENTS ON TROUBLE SYMPTOM

If the sound is not output from one of the speakers, the speaker, radio and CD player, communication line from the radio and CD player to the speakers may have a problem.

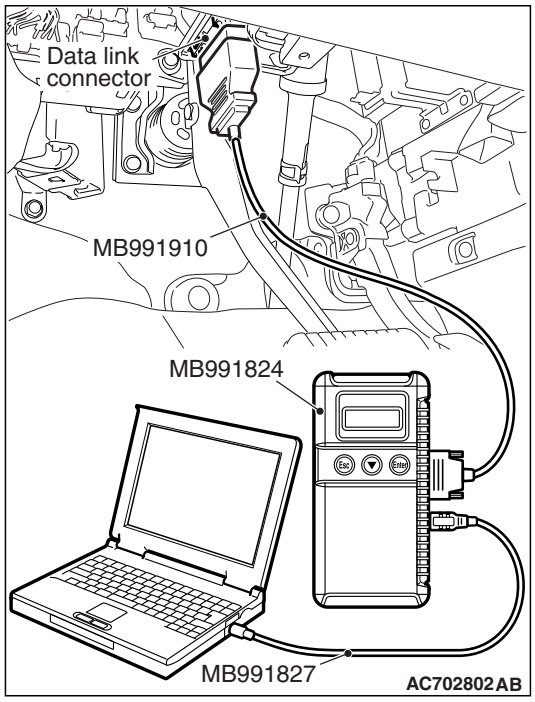
PROBABLE CAUSES

- Malfunction of speaker
- Malfunctions of radio and CD player
- Damaged harness wires and connectors

DIAGNOSIS

Required Special Tools:

- MB991223: Harness Set
- MB992006: Extra Fine Probe
- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A



STEP 1. ETACS-ECU coding data check.

(1) Operate the scan tool to read the ETACS-ECU option coding information. (Refer to GROUP 00, Coding List P.00-44.)

(2) Check that the "Number of speaker" is set to "6 speakers".

Q: Is the check result normal?

YES : Go to Step 2.

NO : Operate the scan tool to set the option coding "Number of speaker" to "6 speakers", and check the trouble symptom.

STEP 2. Checking with speaker test.

Perform the speaker test, and check which speaker does not output the sound. Refer to P.54A-690.

Q: Is the check result normal?

YES <normal for all> : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-15).

NO <abnormal for all> : Go to Step 27.

NO <only front door speaker (RH) is abnormal> : Go to Step 3.

NO <only front door speaker (LH) is abnormal> : Go to Step 7.

NO <only rear door speaker (RH) is abnormal> : Go to Step 11.

NO <only rear door speaker (LH) is abnormal> : Go to Step 15.

NO <only tweeter (RH) vehicles with 6 speakers is abnormal> : Go to Step 19.

NO <only tweeter (LH) vehicles with 6 speakers is abnormal> : Go to Step 23.

STEP 3. Check front door speaker (RH) connector E-04 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is front door speaker (RH) connector E-04 in good condition?

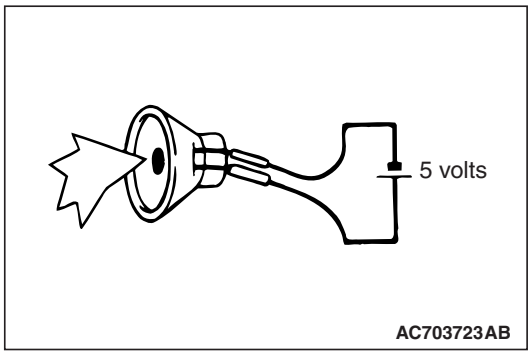
YES : Go to Step 4.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2.

STEP 4. Front door speaker (RH) check.

(1) Remove the front door speaker (RH). Refer to P.54A-692.

(2) Check that the front door speaker (RH) outputs the noise when the voltage of five volts is applied to the front door speaker (RH) connector terminal.



Q: Does the front door speaker (RH) output the noise?

YES : Go to Step 5.

NO : Replace the front door speaker (RH).

STEP 5. Check radio and CD player connector C-16 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is radio and CD player connector C-16 in good condition?

YES : Go to Step 6.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2.

STEP 6. Check the wiring harness between radio and CD player connector C-16 (terminal 26, 36) and front door speaker (RH) connector E-04 (terminal 1, 2).

NOTE: Also check intermediate connector C-112 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-112 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection P.00E-2.

- Check the communication lines for open circuit and short circuit.

Q: Is the wiring harness between radio and CD player connector C-16 (terminal 26, 36) and front door speaker (RH) connector E-04 (terminal 1, 2) in good condition?

YES : Check the trouble symptom. Go to Step 27.
NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

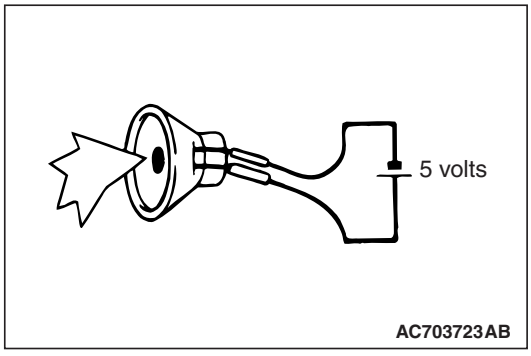
STEP 7. Check front door speaker (LH) connector E-17 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is front door speaker (LH) connector E-17 in good condition?

YES : Go to Step 8.
NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2.

STEP 8. Front door speaker (LH) check.

(1) Remove the front door speaker (LH). Refer to P.54A-692.
(2) Check that the front door speaker (LH) outputs the noise when the voltage of five volts is applied to the front door speaker (LH) connector terminal.



Q: Does the front door speaker (LH) output the noise?

YES : Go to Step 9.
NO : Replace the front door speaker (LH).

STEP 9. Check radio and CD player connector C-16 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is radio and CD player connector C-16 in good condition?

YES : Go to Step 10.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2.

STEP 10. Check the wiring harness between radio and CD player connector C-16 (terminal 28, 38) and front door speaker (LH) connector E-17 (terminal 1, 2).

NOTE: Also check intermediate connector C-126 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-126 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection P.00E-2.

- Check the communication lines for open circuit and short circuit.

Q: Is the wiring harness between radio and CD player connector C-16 (terminal 28, 38) and front door speaker (LH) connector E-17 (terminal 1, 2) in good condition?

YES : Check the trouble symptom. Go to Step 27.

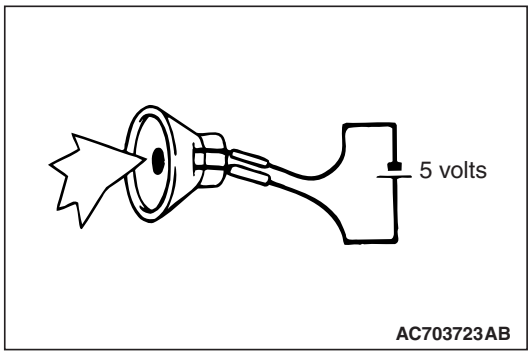
NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 11. Check rear door speaker (RH) connector E-10 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is rear door speaker (RH) connector E-10 in good condition?

YES : Go to Step 12.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2.



STEP 12. Rear door speaker (RH) check

(1) Remove the rear door speaker (RH). Refer to P.54A-692.
(2) Check that the rear door speaker (RH) outputs the noise when the voltage of five volts is applied to the rear door speaker (RH) connector terminal.

Q: Does the rear door speaker (RH) output the noise?

YES : Go to Step 13.
NO : Replace the rear door speaker (RH).

STEP 13. Check radio and CD player connector C-16 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is radio and CD player connector C-16 in good condition?

YES : Go to Step 14.
NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2.

STEP 14. Check the wiring harness between radio and CD player connector C-16 (terminal 25, 35) and rear door speaker (RH) connector E-10 (terminal 1, 2).

NOTE: Also check intermediate connectors C-20 and D-36 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-20 or D-36 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection P.00E-2.

- Check the communication lines for open circuit and short circuit.

Q: Is the wiring harness between radio and CD player connector C-16 (terminal 25, 35) and rear door speaker (RH) connector E-10 (terminal 1, 2) in good condition?

YES : Check the trouble symptom. Go to Step 27.
NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 15. Check rear door speaker (LH) connector E-24 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is rear door speaker (LH) connector E-24 in good condition?

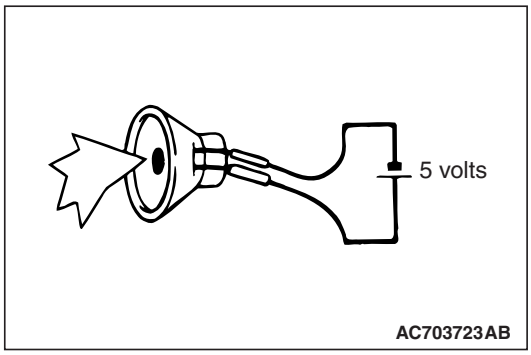
YES : Go to Step 16.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2.

STEP 16. Rear door speaker (LH) check.

(1) Remove the rear door speaker (LH). Refer to P.54A-692.

(2) Check that the rear door speaker (LH) outputs the noise when the voltage of five volts is applied to the rear door speaker (LH) connector terminal.



Q: Does the rear door speaker (LH) output the noise?

YES : Go to Step 17.

NO : Replace the rear door speaker (LH).

STEP 17. Check radio and CD player connector C-16 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is radio and CD player connector C-16 in good condition?

YES : Go to Step 18.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2.

STEP 18. Check the wiring harness between radio and CD player connector C-16 (terminal 27, 37) and rear door speaker (LH) connector E-24 (terminal 1, 2).

NOTE: Also check intermediate connectors C-32 and D-21 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-32 or D-21 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection P.00E-2.

- Check the communication lines for open circuit and short circuit.

Q: Is the wiring harness between radio and CD player connector C-16 (terminal 27, 37) and rear door speaker (LH) connector E-24 (terminal 1, 2) in good condition?

YES : Check the trouble symptom. Go to Step 27.
NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

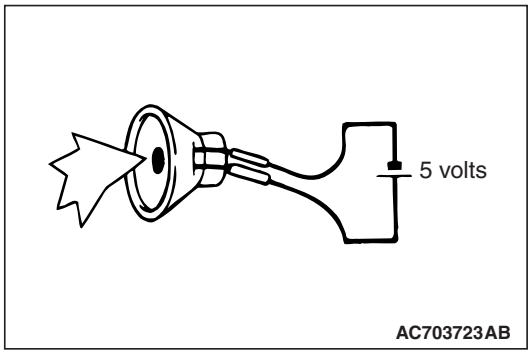
STEP 19. Check tweeter (RH) connector E-02 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is tweeter (RH) connector E-02 in good condition?

YES : Go to Step 20.
NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2.

STEP 20. Tweeter (RH) check.

(1) Remove the tweeter (RH). Refer to P.54A-692.
(2) Check that the tweeter (RH) outputs the noise when the voltage of five volts is applied to the tweeter (RH) connector terminal.



Q: Does the tweeter (RH) output the noise?

YES : Go to Step 21.
NO : Replace the tweeter (RH).

STEP 21. Check radio and CD player connector C-16 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is radio and CD player connector C-16 in good condition?

YES : Go to Step 22.
NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2.

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STEP 22. Check the wiring harness between radio and CD player connector C-16 (terminal 26, 36) and tweeter (RH) connector E-02 (terminal 2, 1).

NOTE: Also check intermediate connector C-113 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-113 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection P.00E-2.

- Check the communication lines for open circuit and short circuit.

Q: Is the wiring harness between radio and CD player connector C-16 (terminal 26, 36) and tweeter (RH) connector E-02 (terminal 2, 1) in good condition?

YES : Check the trouble symptom. Go to Step 27.
NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

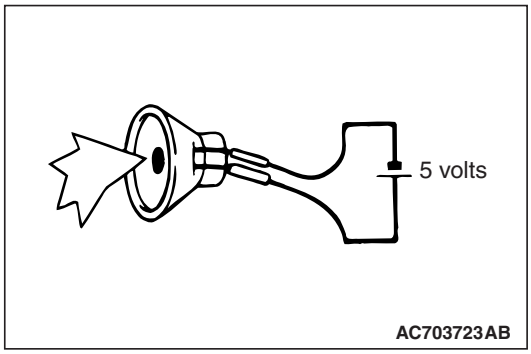
STEP 23. Check tweeter (LH) connector E-14 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is tweeter (LH) connector E-14 in good condition?

YES : Go to Step 24.
NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2.

STEP 24. Tweeter (LH) check.

(1) Remove the tweeter (LH). Refer to P.54A-692.
(2) Check that the tweeter (LH) outputs the noise when the voltage of five volts is applied to the tweeter (LH) connector terminal.



Q: Does the tweeter (LH) output the noise?

YES : Go to Step 25.
NO : Replace the tweeter (LH).

STEP 25. Check radio and CD player connector C-16 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is radio and CD player connector C-16 in good condition?

YES : Go to Step 26.
NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2.

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STEP 26. Check the wiring harness between radio and CD player connector C-16 (terminal 28, 38) and tweeter (LH) connector E-14 (terminal 2, 1).

NOTE: Also check intermediate connector C-127 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-127 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection P.00E-2.

- Check the communication lines for open circuit and short circuit.

Q: Is the wiring harness between radio and CD player or CD changer connector C-16 (terminal 28, 38) and tweeter (LH) connector E-14 (terminal 2, 1) in good condition?

YES : Check the trouble symptom. Go to Step 27.
NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 27. Retest the system

Check if the sound is output from the speakers.

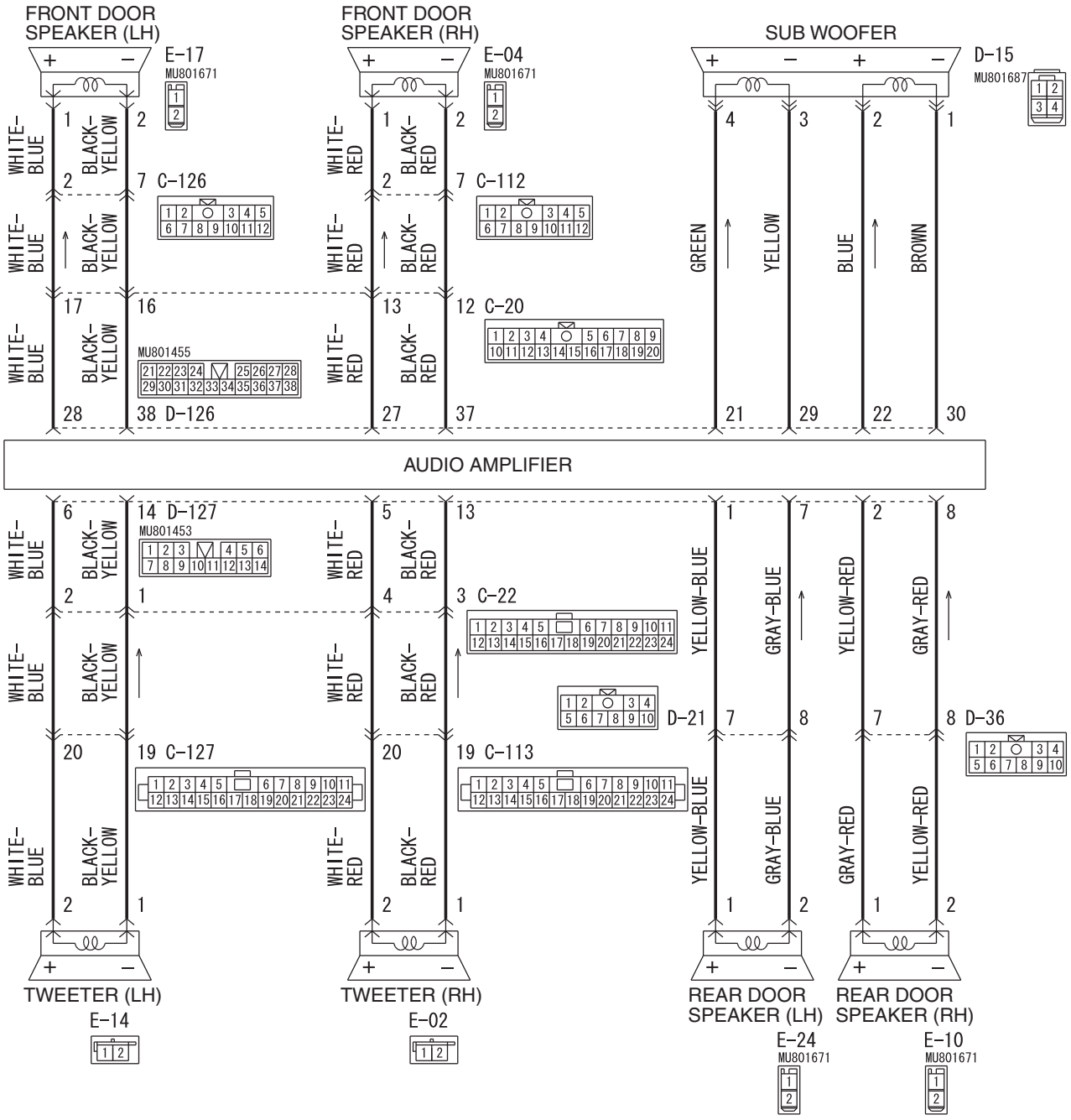
Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points, How to Cope with Intermittent Malfunction P.00-15).
NO : Replace the radio and CD player.

INSPECTION PROCEDURE 3: No sound is heard from one of the speakers. <Vehicles with audio amplifier>

⚠ CAUTION
Before replacing the radio and CD player, ensure that the power supply circuit, the ground circuit and the communication circuit are normal.

Speaker System Circuit



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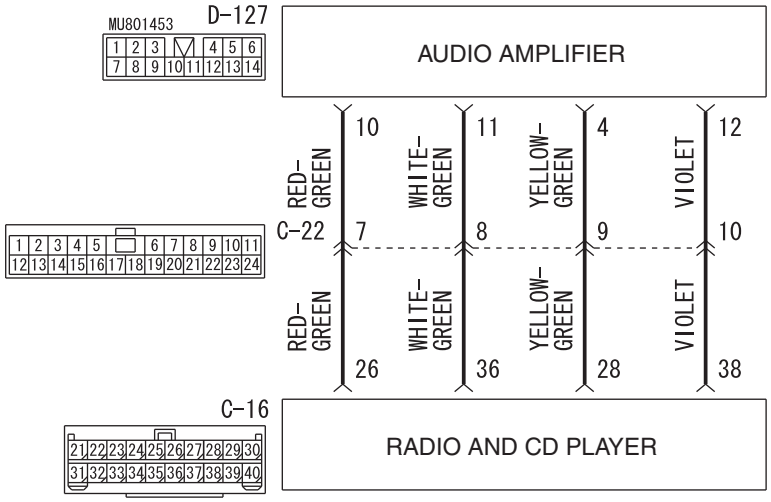

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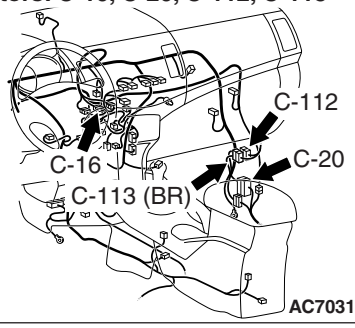
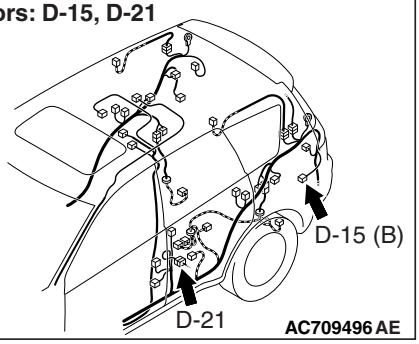
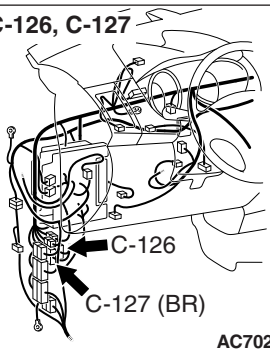
Connectors: C-16, C-20, C-112, C-113



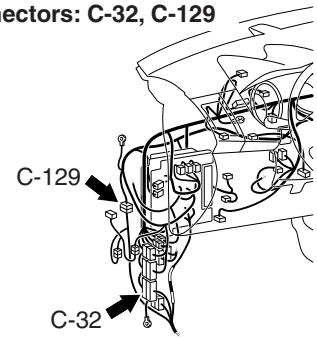
Connectors: D-15, D-21



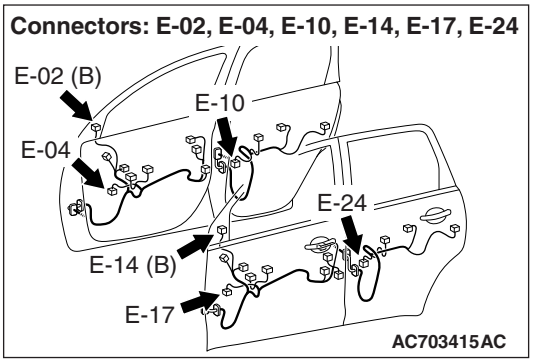
Connectors: C-126, C-127



Connectors: C-32, C-129



TSB Revision



COMMENTS ON TROUBLE SYMPTOM

If the sound is not heard from one of the speakers, the speaker, radio and CD player, audio amplifier, communication line from the radio and CD player to the audio amplifier, or communication line from the audio amplifier to the speaker may have a problem. Also, the option coding information may be inconsistent.

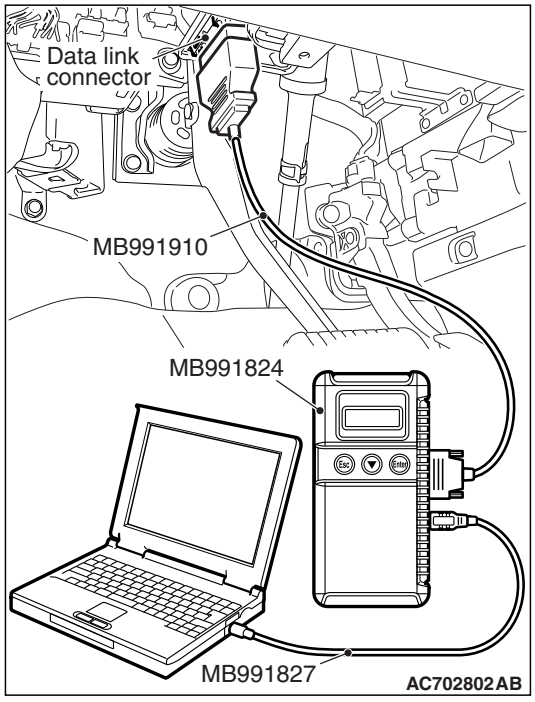
PROBABLE CAUSES

- Malfunction of speaker
- Malfunctions of radio and CD player
- Malfunction of audio amplifier
- Option coding information inconsistency
- Damaged harness wires and connectors

DIAGNOSIS

Required Special Tools:

- MB991223: Harness Set
- MB992006: Extra Fine Probe
- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A



STEP 1. ETACS-ECU coding data check.

(1) Operate scan tool MB991958 to read the ETACS-ECU option coding information. (Refer to GROUP 00, Coding List P.00-44.)

(2) Check that the "Number of speaker" is set to "Premium."

Q: Is the check result normal?

YES : Go to Step 2.

NO : Operate scan tool MB991958 to set the option coding "Number of speaker" to "Premium," and check the trouble symptom.

STEP 2. Checking with audio speaker check.
Perform the audio speaker check, and check which speaker does not output the sound. Refer to P.00E-2.

Q: Is the check result normal?

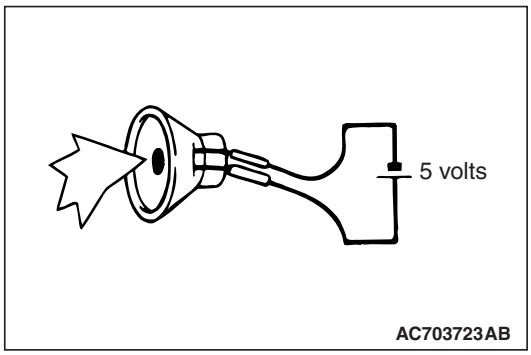
YES <normal for all> : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-15).
NO <abnormal for all> : Refer to Inspection Procedure 2 "No sound is heard" P.00E-2.
NO <only front door speaker (RH) is abnormal> : Go to Step 3.
NO <only front door speaker (LH) is abnormal> : Go to Step 9.
NO <only rear door speaker (RH) is abnormal> : Go to Step 15.
NO <only rear door speaker (LH) is abnormal> : Go to Step 19.
NO <only tweeter (RH) is abnormal> : Go to Step 23.
NO <only tweeter (LH) is abnormal> : Go to Step 27.
NO <only subwoofer is abnormal> : Go to Step 31.

STEP 3. Check front door speaker (RH) connector E-04 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is front door speaker (RH) connector E-04 in good condition?

YES : Go to Step 4.
NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2.

STEP 4. Check the front door speaker (RH).
(1) Remove the front door speaker (RH). Refer to P.00-15.
(2) Check that the front door speaker (RH) outputs the noise when the voltage of five volts is applied to the front door speaker (RH) connector terminal.



Q: Does the front door speaker (RH) output the noise?

YES : Go to Step 5.
NO : Replace the front door speaker (RH).

STEP 5. Check audio amplifier connector D-126 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is audio amplifier connector D-126 in good condition?

YES : Go to Step 6.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2.

STEP 6. Check the wiring harness between audio amplifier connector D-126 (terminal 27, 37) and front door speaker (RH) connector E-04 (terminal 1, 2).

NOTE: Also check intermediate connectors C-20 and C-112 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-20 or C-112 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection P.00E-2.

- Check the communication lines for open circuit and short circuit.

Q: Is the wiring harness between audio amplifier connector D-126 (terminal 27, 37) and front door speaker (RH) connector E-04 (terminal 1, 2) in good condition?

YES : Go to Step 7.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 7. Check radio and CD player connector C-104 and audio amplifier connector C-16 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Are radio and CD player connector C-104 and audio amplifier connector C-16 in good condition?

YES : Go to Step 8.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2.

STEP 8. Check the wiring harness between radio and CD player connector C-16 (terminal 26, 36) and audio amplifier connector D-127 (terminal 10, 11).

NOTE: Also check intermediate connector C-22 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-22 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection P.00E-2.

- Check the communication lines for open circuit and short circuit.

Q: Is the wiring harness between radio and CD player connector C-16 (terminal 26, 36) and audio amplifier connector D-127 (terminal 10, 11) in good condition?

YES : Check the trouble symptom, and go to Step 35.
NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

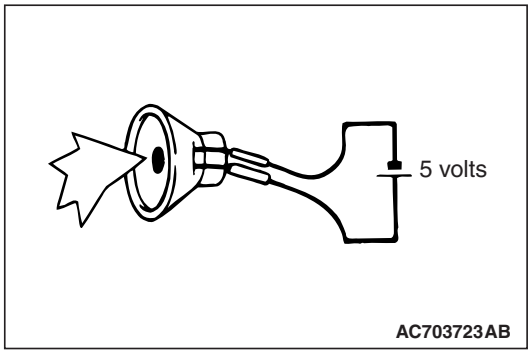
STEP 9. Check front door speaker (LH) connector E-17 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is front door speaker (LH) connector E-17 in good condition?

YES : Go to Step 10.
NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2.

STEP 10. Check the front door speaker (LH).

(1) Remove the front door speaker (LH). Refer to P.54A-692.
(2) Check that the front door speaker (LH) outputs the noise when the voltage of five volts is applied to the front door speaker (LH) connector terminal.



Q: Does the front door speaker (LH) output the noise?

YES : Go to Step 11.
NO : Replace the front door speaker (LH).

STEP 11. Check audio amplifier connector D-126 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is audio amplifier connector D-126 in good condition?

YES : Go to Step 12.
NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2.

TSB Revision

STEP 12. Check the wiring harness between audio amplifier connector D-126 (terminal 28, 38) and front door speaker (LH) connector E-17 (terminal 1, 2).

NOTE: Also check intermediate connectors C-20 and C-126 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connectors C-20 and C-126 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection P.00E-2.

- Check the communication lines for open circuit and short circuit.

Q: Is the wiring harness between audio amplifier connector D-126 (terminal 28, 38) and front door speaker (LH) connector E-17 (terminal 1, 2) in good condition?

YES : Go to Step 13.
NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 13. Check radio and CD player connector C-16 and audio amplifier connector C-127 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is radio and CD player connector C-16 and audio amplifier connector C-127 in good condition?

YES : Go to Step 14.
NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2.

STEP 14. Check the wiring harness between radio and CD player connector C-16 (terminal 28, 38) and audio amplifier connector D-127 (terminal 4, 12)

- Check the communication lines for open circuit and short circuit.

NOTE: Also check intermediate connector C-22 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-22 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection P.00E-2.

Q: Is the wiring harness between radio and CD player connector C-16 (terminal 28, 38) and audio amplifier connector D-127 (terminal 4, 12) in good condition?

YES : Check the trouble symptom, and go to Step 35.
NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

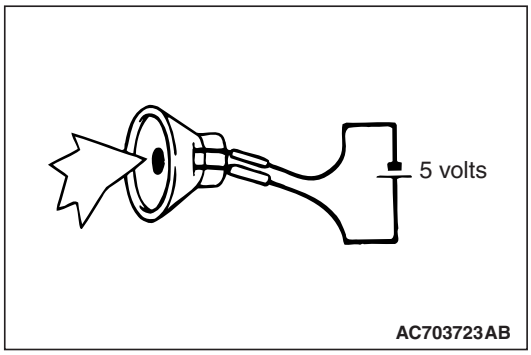
STEP 15. Check rear door speaker (RH) connector E-10 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is rear door speaker (RH) connector E-10 in good condition?

YES : Go to Step 16.
NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2.

STEP 16. Check the rear door speaker (RH).

(1) Remove the rear door speaker (RH). Refer to P.54A-692.
(2) Check that the rear door speaker (RH) outputs the noise when the voltage of five volts is applied to the rear door speaker (RH) connector terminal.



Q: Does the rear door speaker (RH) output the noise?

YES : Go to Step 17.
NO : Replace the rear door speaker (RH).

STEP 17. Check audio amplifier connector D-127 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is audio amplifier connector D-127 in good condition?

YES : Go to Step 18.
NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2.

STEP 18. Check the wiring harness between audio amplifier connector D-127 (terminal 2, 8) and rear door speaker (RH) connector E-10 (terminal 1, 2).

NOTE: Also check intermediate connector D-36 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector D-36 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection P.00E-2.

- Check the communication lines for open circuit and short circuit.

Q: Is the wiring harness between audio amplifier connector D-127 (terminal 2, 8) and rear door speaker (RH) connector E-10 (terminal 1, 2) in good condition?

YES : Check the trouble symptom, and go to Step 35.
NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

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STEP 19. Check rear door speaker (LH) connector E-24 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is rear door speaker (LH) connector E-24 in good condition?

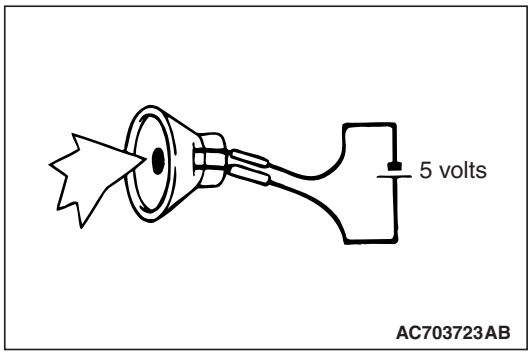
YES : Go to Step 20.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2.

STEP 20. Check the rear door speaker (LH).

(1) Remove the rear door speaker (LH). Refer to P.54A-692.

(2) Check that the rear door speaker (LH) outputs the noise when the voltage of five volts is applied to the rear door speaker (LH) connector terminal.



Q: Does the rear door speaker (LH) output the noise?

YES : Go to Step 21.

NO : Replace the rear door speaker (LH).

STEP 21. Check audio amplifier connector D-127 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is audio amplifier connector D-127 in good condition?

YES : Go to Step 22.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2.

STEP 22. Check the wiring harness between audio amplifier connector D-127 (terminal 1, 7) and rear door speaker (LH) connector E-24 (terminal 1, 2).

NOTE: Also check intermediate connector D-21 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector D-21 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection P.00E-2.

- Check the communication lines for open circuit and short circuit.

Q: Is the wiring harness between audio amplifier connector D-127 (terminal 1, 7) and rear door speaker (LH) connector E-24 (terminal 1, 2) in good condition?

YES : Check the trouble symptom, and go to Step 35.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 23. Check tweeter (RH) connector E-02 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is tweeter (RH) connector E-02 in good condition?

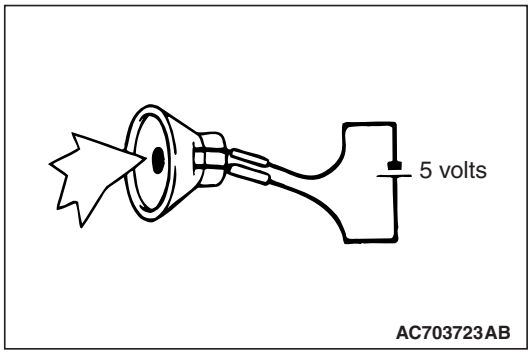
YES : Go to Step 24.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2.

STEP 24. Check the tweeter (RH).

(1) Remove the tweeter (RH). Refer to P.54A-692.

(2) Check that the tweeter (RH) outputs the noise when the voltage of five volts is applied to the tweeter (RH) connector terminal.



Q: Does the tweeter (RH) output the noise?

YES : Go to Step 25.

NO : Replace the tweeter (RH).

STEP 25. Check audio amplifier connector D-127 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is audio amplifier connector D-127 in good condition?

YES : Go to Step 26.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2.

STEP 26. Check the wiring harness between audio amplifier connector D-127 (terminal 5, 13) and tweeter (RH) connector E-02 (terminal 2, 1).

NOTE: Also check intermediate connectors C-22 and C-113 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-22 or C-113 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection P.00E-2.

- Check the communication lines for open circuit and short circuit.

Q: Is the wiring harness between audio amplifier connector D-127 (terminal 5, 13) and tweeter (RH) connector E-02 (terminal 2, 1) in good condition?

YES : Check the trouble symptom, and go to Step 35.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

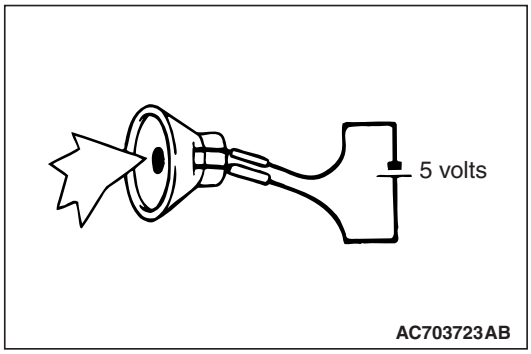
STEP 27. Check tweeter (LH) connector E-14 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is tweeter (LH) connector E-14 in good condition?

YES : Go to Step 28.
NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2.

STEP 28. Check the tweeter (LH).

(1) Remove the tweeter (LH). Refer to P.54A-692.
(2) Check that the tweeter (LH) outputs the noise when five volts are applied to the tweeter (LH) connector terminal.



Q: Does the tweeter (LH) output the noise?

YES : Go to Step 29.
NO : Replace the tweeter (LH).

STEP 29. Check audio amplifier connector D-127 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is audio amplifier connector D-127 in good condition?

YES : Go to Step 30.
NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2.

STEP 30. Check the wiring harness between audio amplifier connector D-127 (terminal 6, 14) and tweeter (LH) connector E-14 (terminal 2, 1).

NOTE: Also check intermediate connectors C-22 and C-127 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-22 or C-127 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection P.00E-2.

- Check the communication lines for open circuit and short circuit.

Q: Is the wiring harness between audio amplifier connector D-127 (terminal 6, 14) and tweeter (LH) connector E-14 (terminal 2, 1) in good condition?

YES : Check the trouble symptom, and go to Step 35.
NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 31. Check subwoofer connector D-15 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is subwoofer connector D-15 in good condition?

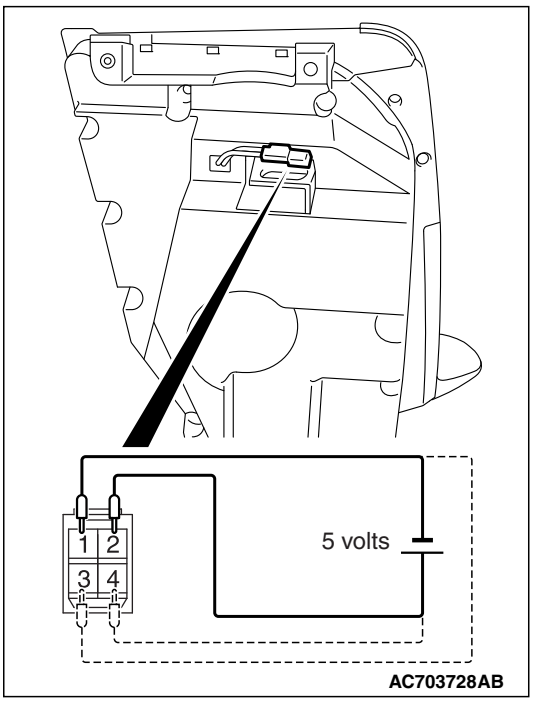
YES : Go to Step 32.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2.

STEP 32. Check the Subwoofer.

(1) Remove the subwoofer. Refer to P.54A-692.

(2) Check that the subwoofer outputs the noise when five volts are applied to the subwoofer connector terminal.



Q: Does the subwoofer output the noise?

YES : Go to Step 33.

NO : Replace the subwoofer.

STEP 33. Check audio amplifier connector D-126 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is audio amplifier connector D-126 in good condition?

YES : Go to Step 34.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2.

STEP 34. Check the wiring harness between audio amplifier connector D-126 (terminal 21, 22, 29, 30) and subwoofer connector D-15 (terminal 4, 2, 3, 1).

- Check the communication lines for open circuit and short circuit.

Q: Is the wiring harness between audio amplifier connector D-126 (terminal 21, 22, 29, 30) and subwoofer connector D-15 (terminal 4, 2, 3, 1) in good condition?

YES : Check the trouble symptom, and go to Step 35.
NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 35. Replace the audio amplifier temporarily, and check the trouble symptom.

Replace the audio amplifier temporarily, and check that the sound is output from the speaker.

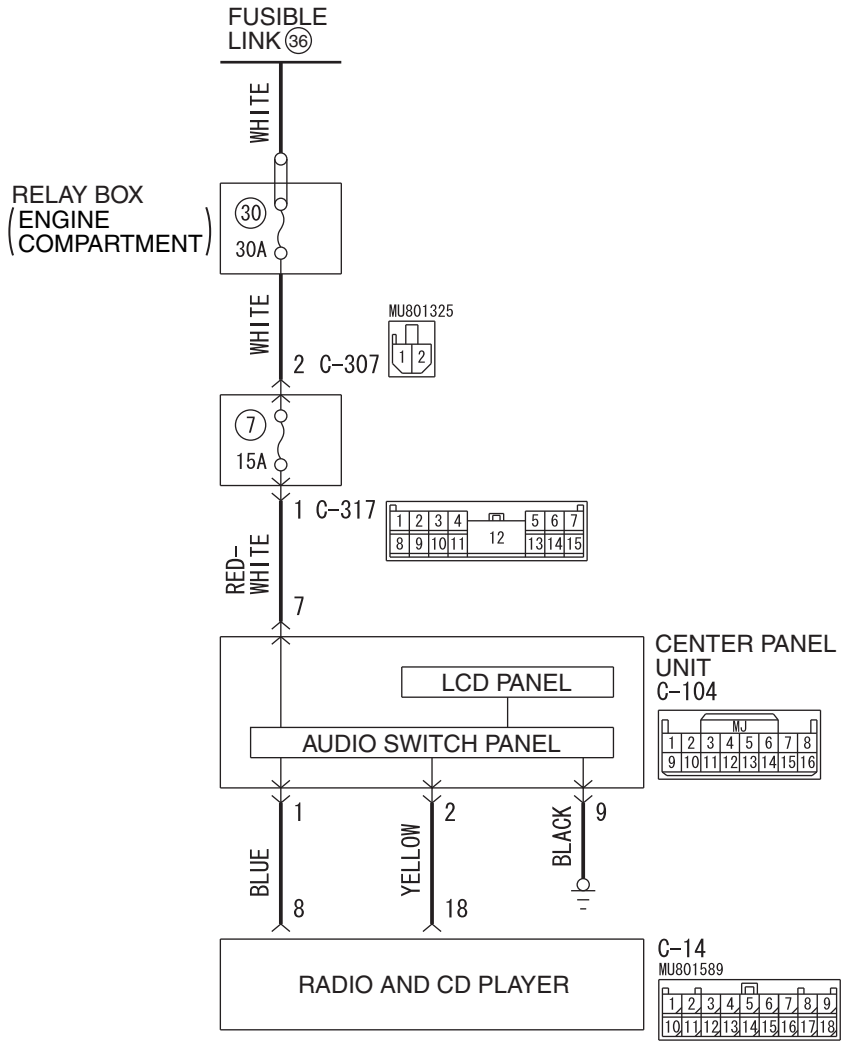
Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points, How to Cope with Intermittent Malfunction P.00-15).
NO : Replace the radio and CD player or CD player.

INSPECTION PROCEDURE 4: The audio does not operate normally by operating the radio and CD player of the center panel unit.

⚠ CAUTION
Before replacing the radio and CD player, ensure that the power supply circuit, the ground circuit and the communication circuit are normal.

Center Panel Unit Power Supply Circuit



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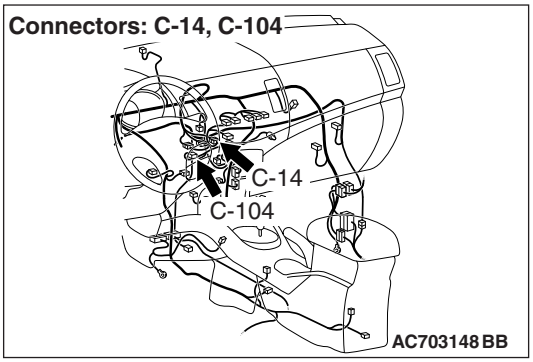

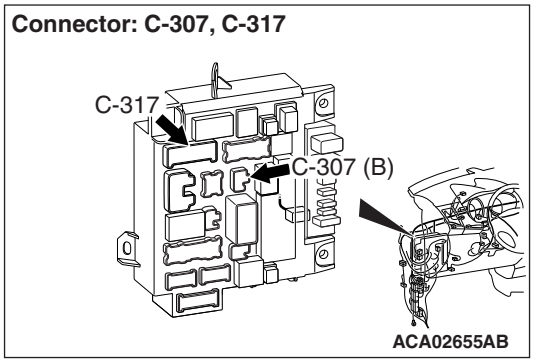

COMMENTS ON TROUBLE SYMPTOM

When the audio does not operate normally by operating the audio control unit of the center panel unit, the radio and CD player, center panel unit, or the power supply circuit system of center panel unit may be faulty.

PROBABLE CAUSES

- The radio and CD player may be defective.
- The center panel unit may be defective.
- Damaged harness wires and connectors

DIAGNOSIS

Required Special Tools:

- MB991223: Harness Set
- MB992006: Extra Fine Probe

STEP 1. Check center panel unit connector C-104 and radio and CD player connector C-14 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Are center panel unit connector C-104 and radio and CD player connector C-14 in good condition?

YES : Go to Step 2.

NO : Repair or replace the damaged component(s) (Refer to GROUP 00E, Harness Connector Inspection P.00E-2).

STEP 2. Check the wiring harness between center panel unit connector C-104 (terminal 1, 2) and radio and CD player connector C-14 (terminal 8, 18).

- Check the communication lines for open circuit and short circuit.

Q: Is the wiring harness between center panel unit connector C-104 (terminal 1, 2) and radio and CD player connector C-14 (terminal 8, 18) in good condition?

YES : Go to Step 3.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

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STEP 3. Check the ground circuit to the center panel unit. Measure the resistance at center panel unit connector C-104.

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

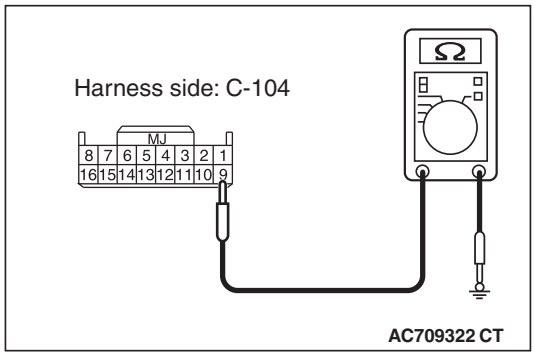
(2) Measure resistance between terminal 9 and ground.

OK: The resistance should be 2 ohm or less.

Q: Is the measured resistance 2 ohms or less?

YES : Go to Step 5.

NO : Go to Step 4.



STEP 4. Check the wiring harness between center panel unit connector C-104 (terminal 9) and ground.

- Check the ground wire for open circuit.

Q: Is the wiring harness between center panel unit connector C-104 (terminal 9) and ground in good condition?

YES : Check the trouble symptom.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 5. Check the power supply circuit to the center panel unit. Measure the voltage at center panel unit connector C-104.

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

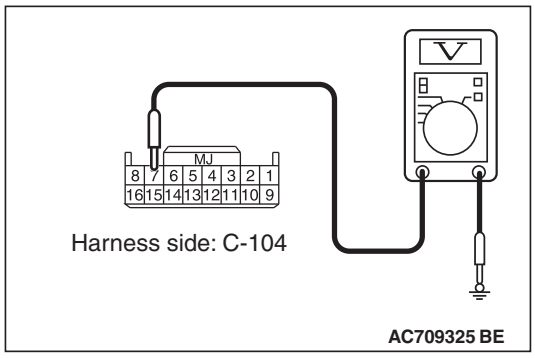
(2) Measure voltage between terminal 7 and ground.

OK: The voltage should measure approximately 12 volts (battery positive voltage).

Q: Is the measured voltage approximately 12 volts (battery positive voltage)?

YES : Go to Step 7.

NO : Go to Step 6.



STEP 6. Check the wiring harness between center panel unit connector C-104 (terminal 7) and fusible link (36).

- Check the power supply line for open circuit and short circuit.

NOTE: Also ETACS-ECU connector C-307, C-317 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If joint connector ETACS-ECU connector C-307, C-317 are damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection *P.00E-2**.*

Q: Is the wiring harness between center panel unit connector C-104 (terminal 7) and fusible link (36) in good condition?

YES : Check the trouble symptom.
NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 7. Replace the center panel unit temporarily, and check the trouble symptom.

Replace the center panel unit temporarily, and check that the audio works normally.

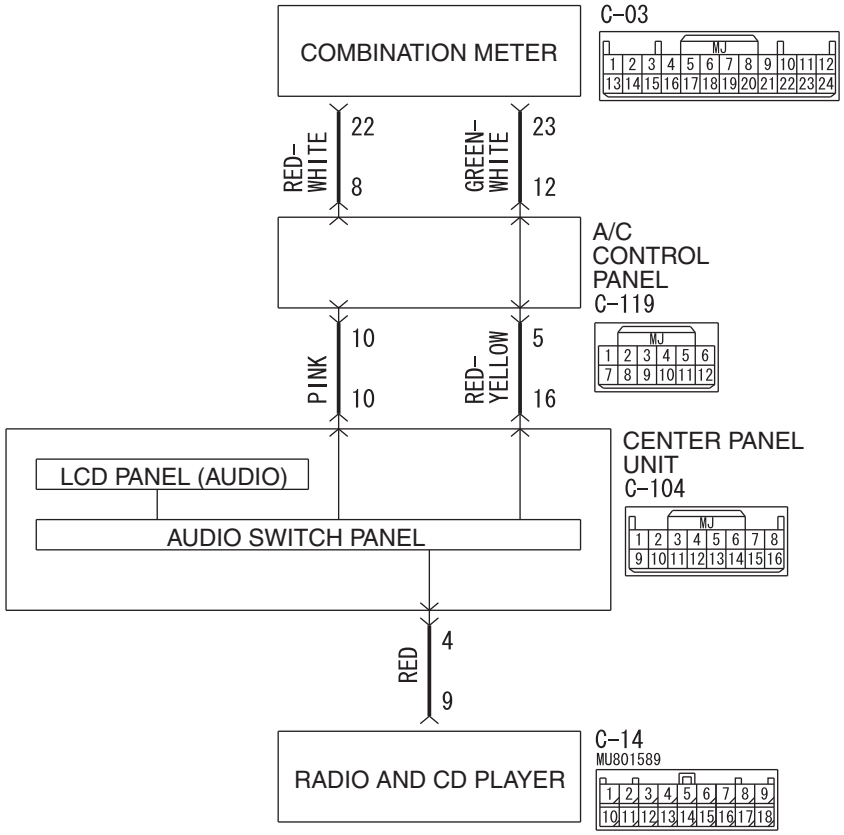
Q: Is the check result normal?

YES : Replace the center panel unit.
NO : Replace the radio and CD player.

INSPECTION PROCEDURE 5: Audio illuminations does not work normally.

⚠ CAUTION
Before replacing the radio and CD player, ensure that the power supply circuit, the ground circuit and the communication circuit are normal.

Center Panel Unit Communication Circuit



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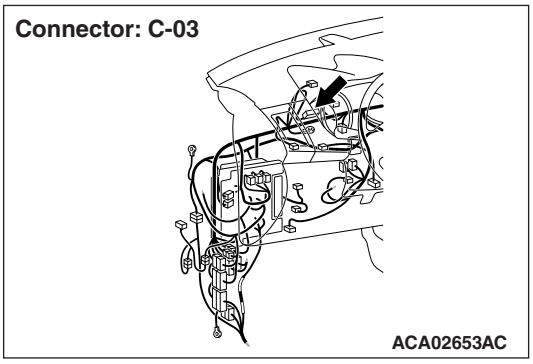
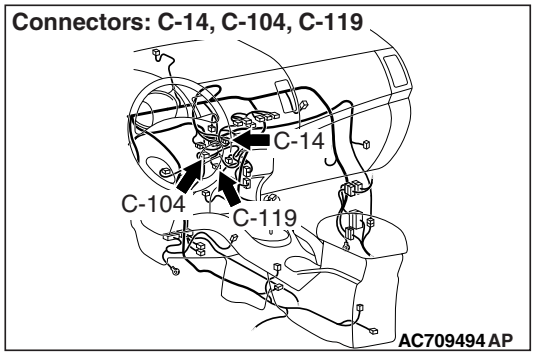
Connector: C-03



Connectors: C-14, C-104, C-119



OPERATION

- When the position light is illuminated, the audio illumination is switched to the nighttime illumination.
- When the brightness is adjusted using the combination meter rheostat switch, the audio illumination brightness is also adjusted.

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COMMENTS ON TROUBLE SYMPTOM

The center panel unit, radio and CD player, combination meter, or communication line from the radio and CD player to the combination meter may have a problem.

PROBABLE CAUSES

- The combination meter may be defective.
- The radio and CD player may be defective.
- The center panel unit may be defective.
- Damaged harness wires and connectors

DIAGNOSIS

Required Special Tools:

- MB991223: Harness Set
- MB992006: Extra Fine Probe

STEP 1. Operation check of the center panel unit

Operate the audio control switch of the center panel unit, and check if the audio operates normally.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Refer to Inspection Procedure 4 "The audio does not operate normally by operating the radio and CD player of the center panel unit." P.54A-399.

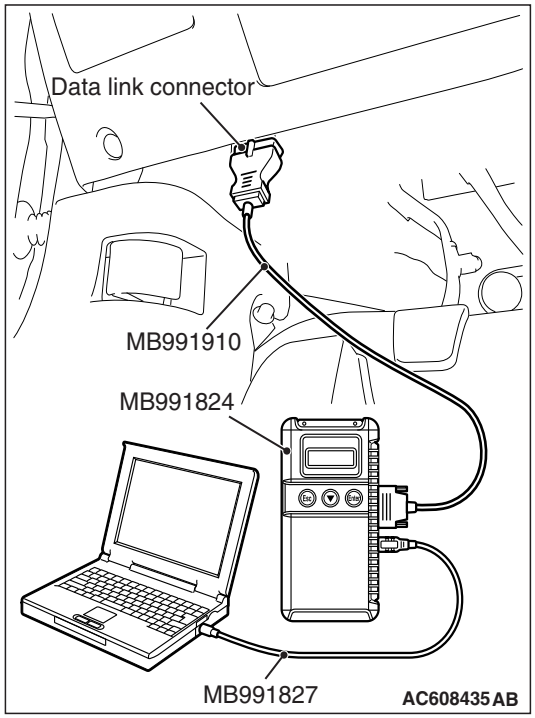
STEP 2. Check the combination meter.

Check whether the combination meter works normally.

Q: Is the check result normal?

YES : Go to Step 3.

NO : Diagnose the combination meter (Refer to P.54A-34).



STEP 3. Using scan tool MB991958, read the combination meter diagnostic trouble code.

Check again if the DTC is set to the combination meter.

⚠ CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

(1) Connect scan tool MB991958. Refer to "How to connect scan tool P.54A-331".
(2) Turn the ignition switch to the "ON" position.
(3) Check for combination meter DTCs.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Diagnose the combination meter (Refer to P.54A-34).
NO : Go to Step 4.

STEP 4. Check center panel unit connector C-104 and combination meter connector C-03 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Are center panel unit connector C-104 and combination meter connector C-03 in good condition?

YES : Go to Step 5.
NO : Repair the connector concerned.

STEP 5. Check the wiring harness between center panel unit connector C-104 (terminal 16) and combination meter connector C-03 (terminal 23).

- Check the communication line for open circuit and short circuit.

NOTE: Also check A/C control panel connector C-119 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If iA/C control panel connector C-119 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection P.00E-2.

Q: Is the wiring harness between center panel unit connector C-104 (terminal 16) and combination meter connector C-03 (terminal 23) in good condition?

YES : Go to Step 6.
NO : Repair the wiring harness.

STEP 6. Check A/C control panel C-119 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is A/C control panel C-119 in good condition?

YES : Go to Step 7.
NO : Repair the connector concerned.

STEP 7. Check the wiring harness between A/C control panel C-119 (terminal 8) and combination meter connector C-03 (terminal 22).

- Check the wiring harness for open circuit and short circuit.

Q: Is the wiring harness between A/C control panel C-119 (terminal 8) and combination meter connector C-03 (terminal 22) in good condition?

YES : Go to Step 8.
NO : Repair the wiring harness.

STEP 8. Check the wiring harness between A/C control panel C-119 (terminal 10) and center panel unit connector C-104 (terminal 10).

- Check the wiring harness for open circuit and short circuit.

Q: Is the wiring harness between A/C control panel C-119 (terminal 10) and center panel unit connector C-104 (terminal 10) in good condition?

YES : Go to Step 9.
NO : Repair the wiring harness.

STEP 9. Check radio and CD player connector C-14 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is radio and CD player connector C-14 in good condition?

YES : Go to Step 10.
NO : Repair the connector concerned.

STEP 10. Check the wiring harness between center panel unit connector C-104 (terminal 4) and radio and CD player connector C-14 (terminal 9).

- Check the communication line for open circuit and short circuit.

Q: Is the wiring harness between center panel unit connector C-104 (terminal 4) and radio and CD player connector C-14 (terminal 9) in good condition?

YES : Go to Step 11.
NO : Repair the wiring harness.

STEP 11. Replace the A/C control panel temporarily, and check the trouble symptom.

Replace the A/C control panel temporarily, and check that the audio illumination works normally.

Q: Is the check result normal?

YES : Replace the A/C control panel.
NO : Go to Step 12.

STEP 12. Replace the center panel unit temporarily, and check the trouble symptom.

Replace the center panel unit temporarily, and check that the audio illumination works normally.

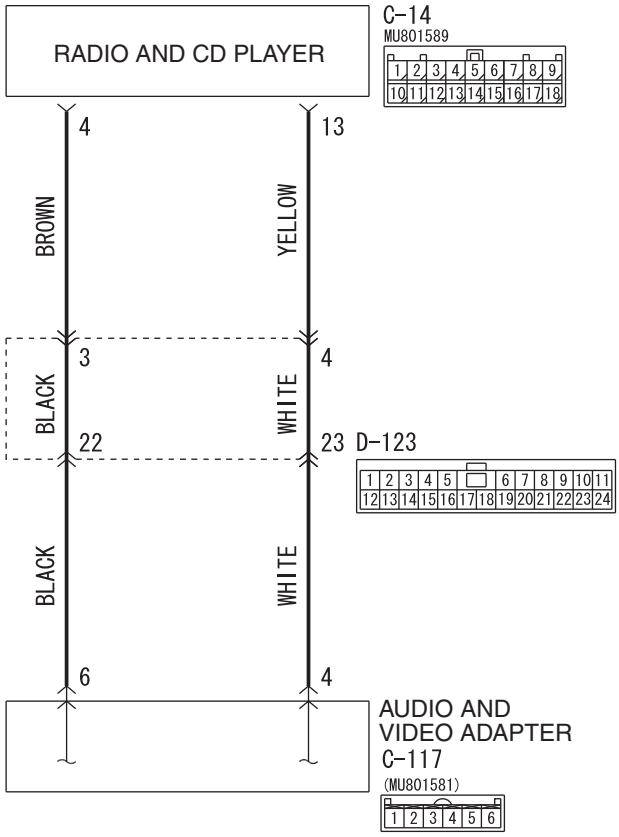
Q: Is the check result normal?

YES : Replace the center panel unit.
NO : Replace the radio and CD player.

INSPECTION PROCEDURE 6: The sound of external input are not played. <Vehicles with audio adapter)>

⚠ CAUTION
Before replacing the radio and CD player, ensure that the power supply circuit, the ground circuit and the communication circuit are normal.

Audio Adapter Communication Circuit



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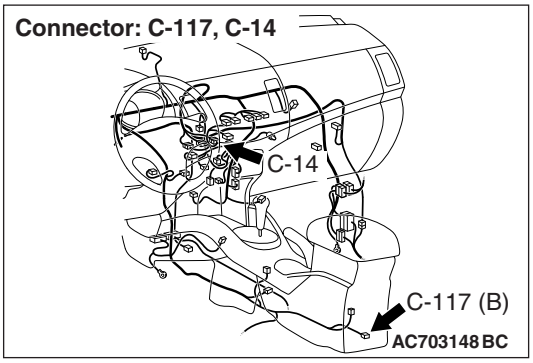

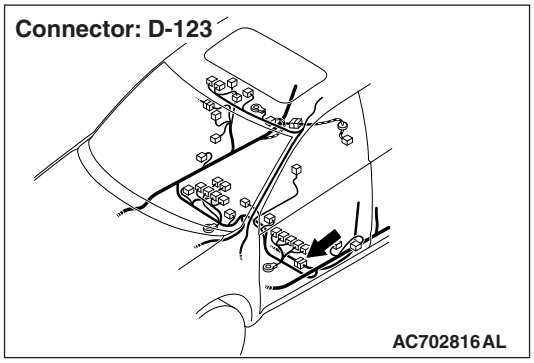

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COMMENTS ON TROUBLE SYMPTOM

If the external input sound is not output, the radio and CD player, audio communication line of radio and CD player, or audio adapter may have a problem.

PROBABLE CAUSES

- The audio adapter may be defective.
- The radio and CD player may be defective.
- Damaged harness wires and connectors

DIAGNOSIS

Required Special Tools:

- MB991223: Harness Set
- MB992006: Extra Fine Probe

STEP 1. Operation check of the radio and CD player

Check if the radio and CD player operates normally and outputs sound.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Troubleshoot the radio and CD player (Refer to P.54A-363).

STEP 2. Check the external sound input mode.

Check if the external sound input mode of the radio and CD player is set.

Q: Is the check result normal?

YES : Go to Step 3.

NO : Set the external sound input mode.

STEP 3. Check the audio adapter.

Check if the audio adapter is normal.(Refer to P.54A-425)

Q: Is the check result normal?

YES : Go to step 4.

NO : Replace the Audio adapter.

STEP 4. Check audio adapter connector C-117 and radio and CD player connector C-14 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Are audio adapter connector C-117 and radio and CD player connector C-14 in good condition?

YES : Go to step 5.

NO : Repair or replace the damaged component(s) (Refer to GROUP 00E, Harness Connector Inspection P.00E-2).

STEP 5. Check the wiring harness between audio adapter connector C-117 (terminal 4, 6) and radio and CD player connector C-14 (terminal 13, 4).

- Check the communication lines for open circuit and short circuit.

NOTE: Also check intermediate connectors D-123 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector D-123 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection P.00E-2.

Q: Is the wiring harness between audio adapter connector C-117 (terminal 4, 6) and radio and CD player connector C-14 (terminal 13, 4) in good condition?

YES : Replace the audio adapter, and go to Step 6.
NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 6. Retest the system.

Check that the external input is normal.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-15).
NO : Replace the radio and CD player.

INSPECTION PROCEDURE 7: Noise appears at certain places when traveling (AM).

DIAGNOSIS

STEP 1. Check the noise occur when entering or near a particular structure (building, tunnel, mountain, etc.)

Q: Does the noise occur when entering or near a particular structure (building, tunnel, mountain, etc.)?

YES : Go to Step 3.
NO : Go to Step 2.

STEP 2. After taking the following measures to prevent the noise, check that no noise appears.

(1) Change to a different station with a stronger wave to boost resistance to interference.
(2) Suppress high tones to reduce noise.

Q: Do the following measures eliminate the noise?

YES : The procedure is complete.
NO : Go to Step 4.

STEP 3. Ask the owner about the state of the noise.

Find out the following information from the owner.

- Place where the noise occurs.
- Locality conditions (valley, mountain, etc.)
- Name and frequency of stations affected by noise

Q: Which is the noise, vehicle noise or external noise?

Vehicle noise : It may not be possible to prevent noise if the signal is weak. The procedure is complete.
External noise : In almost all cases, prevention on the receiver side is impossible. Weak signals especially are susceptible to interference. Go to Step 4.

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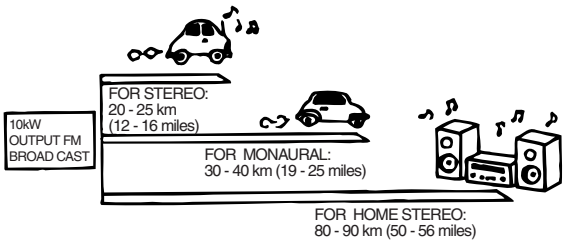
STEP 4. Check that there is no noise.

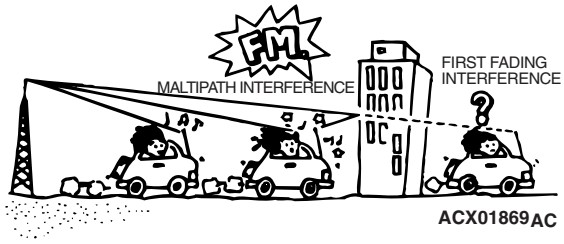
Q: Does noise still exist?

YES : If there is more noise than on radios in other vehicles, find out the noise condition and the name and frequency of the receiving stations from the owner, and consult with the radio manufacturer's service center.

NO : Normal.

INSPECTION PROCEDURE 8: Noise is present while moving (FM).





DIAGNOSIS

NOTE: FM waves have the same properties as light, and can be deflected and blocked. FM signal reception is severely degraded in the shadow of obstructions such as buildings or mountains. An FM receiver will then only receive a reflected signal.

1. The signal becomes weak as the distance from the station's transmission antenna increases. The signal strength received depends on the signal strength of the transmitting station and intervening obstructions such as buildings and hills. Generally speaking, the area of good reception is approximately 20 – 25 km for stereo reception, and 30 – 40 km for monaural reception.
2. The signal will becomes weak when an area of shadow from the transmitting antenna (places where there are obstructions such as mountains or buildings between the station transmitter and the vehicle), and noise will appear. <This is called first fading, and gives a steady buzzing noise.>
3. If a direct signal hits the antenna at the same time as a signal reflected by obstructions such as mountains or buildings, interference of the two signals will generate noise. When moving, noise will appear each time the vehicle's antenna passes through this kind of obstructed area. The strength and interval of the noise varies according to the signal strength and the conditions of deflection. <This is called multipath noise, and is a repetitive buzzing.>
4. Since FM stereo transmission and reception has a weaker field than monaural, it is often accompanied by a hissing noise.

After taking measures to prevent the noise, check that no noise occurs.

- Change to a different station with a stronger wave to boost resistance to interference.
- Suppress high tones to reduce noise.

If there is noise, the following causes can be considered.

- If due to vehicle noise: It may not be possible to prevent noise if the signal is weak.
- If due to external noise: In almost all cases, prevention on the receiver side is not possible. Weak signals especially are susceptible to interference.

If there is more noise than on radios in other vehicles, find out the noise condition and the name and frequency of the receiving stations from the owner, and consult with the radio manufacturer's service center.

INSPECTION PROCEDURE 9: Sound mixed with noise, only at night (AM).

The following factors can be considered as possible causes of noise appearing at night.

1. Factors due to signal conditions: Due to the fact that long-distance signals are more easily received at night, even stations that are received without problem during the day may experience interference in a general worsening of reception conditions. The weaker a station is the more susceptible it is to interference, and a change to different station or the appearance of a beating sound* may occur.

   NOTE: Beat sound: Two signals close in frequency interfere with each other, creating a repetitious high-pitched sound. This sound is generated not only by sound signals but electrical waves as well.*
2. Factors due to vehicles noise: Generator noise may be a cause.

DIAGNOSIS

STEP 1. Check that the noise still obvious even when the lights are off.

Q: Is the noise still obvious even when the lights are off?
YES : Go to Step 2.
NO : Go to Step 3.

STEP 2. Check that the noise fades away by the following action.
Tune to a station with a stronger wave.

Q: Does noise still exist?
YES : Consult the radio manufacturer's service center.
NO : The procedure is complete.

STEP 3. Check that the noise fades away when the vehicle harness is moved away from the radio (if the harness is not in the proper position).

Q: Does the noise fade away when the vehicle harness is moved any from the radio (If the harness is not in the proper position)?
YES : Repair the wiring harness.
NO : If there is more noise than other radios, consult the radio manufacturer's service center.

INSPECTION PROCEDURE 10: Broadcasts can be heard, but both AM and FM have a lot of noise.

DIAGNOSIS

STEP 1. Check the state of the antenna.
Check that there is no damage or crack in the roof antenna.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair or replace the roof antenna.

STEP 2. Check that the noise occur when the engine is stopped or the engine is running.

Q: Does noise occur when the engine is stopped or the engine is running?
When the engine is stopped : Go to Step 3.
When the engine is running : Check the vehicle's noise suppressor (Refer to Inspection Procedure 12 P.54A-415).

STEP 3. Check that the noise fades away by the following actions.
(1) Tune to a station with a stronger wave.
(2) Adjust the sound quality to suppress high tones.

Q: Is the noise eliminated?
YES : This diagnosis is complete.
NO : Go to Step 4.

STEP 4. Check that the radio and CD player is correctly grounded
The radio is connected to the ground with an assembling screw.

Q: Is the radio correctly grounded?
YES : Go to Step 5.
NO : Assemble the radio and CD player into the vehicle.

STEP 5. Check the antenna plug is connected to the radio and CD player.

Q: Is the antenna plug thoroughly connected to the radio and CD player?
YES : Go to Step 7.
NO : Go to Step 6.

STEP 6. Check that the noise is eliminated when the antenna plug is properly attached.

Q: Is the noise eliminated?
YES : This diagnosis is complete.
NO : Go to Step 7.

STEP 7. Check that the antenna is in good condition and is it properly mounted.

Q: Is the antenna in good condition and is it properly mounted?
YES : Consult the radio manufacturer's service center.
NO : Repair or replace the roof antenna.

INSPECTION PROCEDURE 11: There is more noise on either AM or FM.

DIAGNOSIS

- More noise comes out from AM only.
  - AM is easily interfered by the engine, power line, and thunder.
- More noise comes out from FM only.
  - Due to the property of FM waves, reflection and interference occur. Thus, noise are easily caused by interference of buildings and mountains.

STEP 1. Check which comes out more noise, AM or FM.

Q: Which comes out more noise, AM or FM?
AM : Go to Step 2.
FM : Refer to (Refer to Inspection Procedure 12 P.54A-414)

STEP 2. Check that there is noise under the following state(s).
- A motorcycle was passing.
- The levin was flashing.
- A vehicle passed close by, but it appeared to be a vehicle generating a particularly large amount of noise radiation.
- Passed beneath a power line.
- Passed beneath a telephone line.
- Passed close by a signal generator.
- Passed close by some other sources of electrical noise.
- Passed under a bridge.

Q: Is there noise in the above states?
YES : Go to Step 4.
NO : Go to Step 3.

STEP 3. Continue to check for static; when static is detected, check for the conditions listed above.

Q: Is there noise in the state described in Step 2?
YES : Noise prevention on the radio side is difficult. If the problem is particularly worse than other radios, consult a service center.
NO : Go to Step 4.

STEP 4. Compare it with the other radios.

Q: Is the noise level worse than other radios?
YES : Consult a service center.
NO : If the noise level is roughly the same as other radios, there is no action to be taken.

INSPECTION PROCEDURE 12: Noise sometimes appears on FM during traveling.

DIAGNOSIS

STEP 1. Check the state of the antenna.
Check that there is no damage or crack in the roof antenna.

Q: Is the mast antenna assembled?
YES : Go to Step 2.
NO : Repair or replace the roof antenna.

STEP 2. The check after adjusting the radio.

Q: Readjust the radio. Is the noise eliminated?
YES : The procedure is complete.
NO : Go to Step 3.

STEP 3. Check with several broadcasting stations.

NOTE: Multipath noise and fading noise: Because of the frequency of FM waves in extremely high, it is highly susceptible to effects from geological formations and buildings. These effects disrupt the broadcast signal and obstruct reception in several ways.

Multipath noise
- *This describes the echo that occurs when the broadcast signal is reflected by a large obstruction and enters the receiver with a slight time delay relative to the direct signal (repetitious buzzing).*

Fading noise
- *This is a buzzing noise that occurs when the broadcast beam is disrupted by obstructing objects and the signal strength fluctuates intricately within a narrow range.*

Q: Is the abnormality in reception generated only within a certain range?
YES : The effect of an electrical field condition (multipath noise, fading noise) could be the cause. The procedure is complete.
NO : Go to Step 4.

STEP 4. Check that noise appears when the radio switch is turned on while the vehicle is stopped.

NOTE: Static electricity noise: Body static electric from the shock absorber rubber bushings used to prevent vibration, tires, etc. occurs because of separation from the ground, causing a buzzing noise. There is no measures to discharge the static electricity of the vehicle body. Check that there is no noise.

Q: Does noise appear when the radio switch is turned on while the vehicle is stopped and the radio is tapped while tuned away from a station?
YES : Go to Step 5.
NO : It may be static electricity noise. The procedure is complete.

STEP 5. Check that the radio is correctly grounded.
The radio is connected to the ground with an assembling screw.

Q: Is the radio correctly grounded?
YES : Go to Step 6.
NO : Tighten the screw securely.

STEP 6. Check by replacing the radio and CD player.

Q: Are operations normal when using another radio and CD player?
YES : Either repair or replace the radio and CD player.
NO : Repair or replace the roof antenna.

Inspection Procedure 13: Noise is detected with engine running.

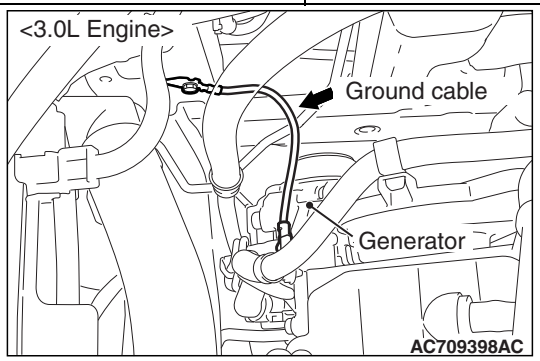
DIAGNOSIS

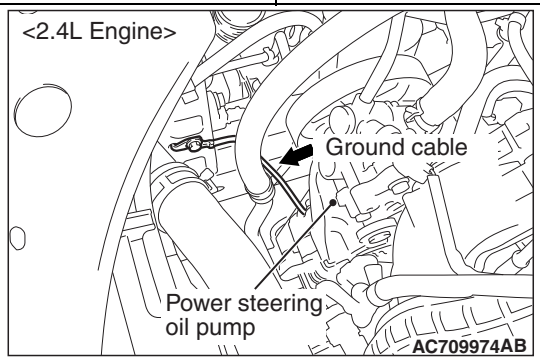
⚠ CAUTION
Never connect a noise filter to the high tension cable (spark plug wire). Spark plug wires incorporate resistors which have the effect of suppressing noise. If a spark plug wire is found to be causing noise, it must be replaced.

⚠ CAUTION
Confirm that the noise is not from an external source.

⚠ CAUTION
Noise prevention should be performed by suppressing strong sources of noise first.

Description of noise	Condition	Cause	Solution
AM, FM: ignition noise (popping, snapping, cracking, buzzing)	• Increasing the engine speed causes the generator whine to speed up and the volume to decrease. • Disappears when the ignition switch turned to "ACC", and engine is off.	• Electrical interference from the spark plugs. • Engine noise.	• Check or replace the ground cable. • Check or replace spark plug wires.
Other electrical components	-	Noise may intensify due to aging electrical components.	Repair or replace the electrical components.
Static electricity (cracking, crinkling)	Noise disappears when the vehicle is completely stopped.	Noise occurs when parts or wiring move and contact vehicle body.	Return parts or wiring to their proper position.
Static electricity (cracking, crinkling)	Various noises are produced depending on the body part of the vehicle.	This may be due to the recent removal of the front hood, bumpers, exhaust pipe and muffler, suspension, etc.	• Properly ground parts. • Properly ground all body parts.





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INSPECTION PROCEDURE 14: Noise appears during vibration or shocks.

DIAGNOSIS

STEP 1. Check the fit of the antenna.

Q: Is the antenna base fitted securely?

YES : Go to Step 2.
NO : Install the antenna, and tighten the mounting nut (Refer to P.54A-696). Check that there is no noise.

STEP 2. Check the fit of antenna feeder cable.

Q: Is the antenna feeder cable fitted securely?

YES : Go to Step 3.
NO : Ensure that the antenna base and the radio and CD player are fitted securely. Check that there is no noise.

STEP 3. Check that noise appears when the radio switch is turned on while the vehicle is stopped and the radio is tapped while tuned away from a station.

NOTE: Body static electricity from the shock absorber rubber bushings used to prevent vibration, tires, etc. occurs because of separation from the ground, causing a buzzing noise. Since no measures can be taken to discharge the static electricity of the vehicle body. Check that there is no noise.

Q: Does noise appear when the radio switch is turned on while the vehicle is stopped and the radio is tapped while tuned away from a station?

YES : Go to Step 4.
NO : It may be static electricity noise.

STEP 4. Verify that the radio is correctly grounded.

The radio is connected to the ground with an assembling screw.

Q: Is the radio correctly grounded?

YES : Go to Step 5.
NO : Tighten the screw securely. Check that there is no noise.

STEP 5. Check by replacing radio and CD player.

Q: Do the other radio and CD player work normally?

YES : Either repair or replace the original radio and CD player. Check that there is no noise.
NO : Either repair or replace the antenna assembly. Check that there is no noise.

INSPECTION PROCEDURE 15: Ever-present noise.

DIAGNOSIS

Use the Symptom Chart to diagnose the possible cause(s) of the noise. Noise is often created by the following factors:

- Traveling conditions of the vehicle
- Terrain of area travelled through
- Surrounding buildings
- Signal conditions
- Time period

If there are still problems with noise, even after performing inspection procedures 7 to 14, obtain information on the factors listed above. Determine whether the problem occurs on AM or FM, the station names, frequencies, etc. and contact the radio manufacturer's service center.

INSPECTION PROCEDURE 16: Noise comes out, but neither AM nor FM sounds.

DIAGNOSIS

STEP 1. Check the state of the antenna.
Check that there is no damage or crack in the roof antenna.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair or replace the roof antenna.

STEP 2. Check to see if inspections are taking place is an area exposed to special electric fields.

Q: Are inspections taking place under special electric field conditions (underground garage, inside a building, etc).?
YES : Go to Step 3.
NO : Go to Step 4.

STEP 3. Relocate and check.
Automatically receive in a good reception area that is not exposed to special electric fields.

Q: Is reception of the strongest radio frequency possible within the area?
YES : The procedure is complete.
NO : Go to Step 4.

STEP 4. Tune then check.

Q: Did the sensitivity improve after tuning?
YES : The procedure is complete.
NO : Go to Step 5.

STEP 5. Check the antenna plug is connected to the radio and CD player.

Q: Is the antenna plug thoroughly connected to the radio and CD player?
YES : Go to Step 6.
NO : Thoroughly the antenna plug connect to the radio and CD player.

STEP 6. Check by temporarily replacing the radio and CD player.

Q: Are operations normal when using another radio and CD player?
YES : Either repair or replace the new radio and CD player.
NO : Repair or replace the roof antenna.

INSPECTION PROCEDURE 17: Poor reception.

DIAGNOSIS

STEP 1. Check the state of the antenna.
Check that there is no damage or crack in the roof antenna.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair or replace the roof antenna.

STEP 2. Check to see if inspections are taking place is an area exposed to special electric fields.

Q: Are inspections taking place under special electric field conditions (underneath garage, inside a building, etc).?
YES : Go to Step 3.
NO : Go to Step 4.

STEP 3. Relocate and check.
Automatically receive in a good reception area that is not exposed to special electric fields.

Q: Is reception of the strongest radio frequency possible within the area?
YES : Move the vehicle to check the trouble symptom.
NO : Go to Step 4.

STEP 4. Tune then check.

Q: Did the sensitivity improve after tuning?
YES : The procedure is complete.
NO : Go to Step 5.

STEP 5. Check with several broadcasting stations.

NOTE: Multipath noise and fading noise: Because the frequency of FM waves is extremely high, it is highly susceptible to effects from geological formations and buildings. These effects disrupt the broadcast signal and obstruct reception in several ways.

Multipath noise

- *This describes the echo that occurs when the broadcast signal is reflected by a large obstruction and enters the receiver with a slight time delay relative to the direct signal (repetitious buzzing).*

Fading noise

- *This is a buzzing noise that occurs when the broadcast beam is disrupted by obstructing objects and the signal strength fluctuates intricately within a narrow range.*

Q: Is the abnormality in reception generated only within a certain range?
YES : Check that a poor reception is resolved.
NO : Go to Step 6.

STEP 6. Check the antenna plug connection to the radio and tape player or radio and CD player.

Q: Is the antenna plug thoroughly connected to the radio and tape player or radio and CD player?
YES : Go to Step 7.
NO : Thoroughly connect the antenna plug and the radio and tape player or radio and CD player.

STEP 7. Check by temporarily replacing the radio and CD player.

Q: Does the other radio and CD player work normally?
YES : Either repair or replace the radio and CD player.
NO : Repair or replace the roof antenna.

INSPECTION PROCEDURE 18: Distortion on AM or on both AM and FM.

DIAGNOSIS

STEP 1. Check the degree in which distortion is generated.

Q: How much distortion is generated?
Occasional distortion : Go to Step 2.
Constant distortion : Go to Step 3.

STEP 2. Check by the transmission antenna.

Q: Is there distortion by the transmission antenna?
YES : The input from the antenna is too big.
NO : Go to Step 3.

STEP 3. Check how the speakers are setup.

Q: Are any cords coming in contact with the paper cones of the speakers?
YES : Move the cords so that they do not come in contact with the paper cones of the speaker. Check that a distortion is resolved.
NO : Go to Step 4.

STEP 4. Check the speakers.

1. Remove the speakers.
2. Check to see if there is any ripping of the paper cones or any foreign obstacles in the paper cone.

Q: Are the speakers normal?
YES : Go to Step 5.
NO : Repair or replace the speakers.

STEP 5. Check how the speakers are setup.

Q: Check to see if the speakers are setup in a deformed manner.
YES : Correct the way the speakers are setup so they are securely setup.
NO : Repair or replace the radio and CD player.

INSPECTION PROCEDURE 19: Distortion on FM only.

DIAGNOSIS

STEP 1. Check with another broadcasting station.

Q: Is there distortion when turning to another broadcasting station?
YES : Go to Step 2.
NO : The signal from that station is too weak.

STEP 2. Relocate the reception area and check.

Q: When relocating the reception area does the distortion increase or decrease?
YES : The cause may be multipath noise.
NO : Repair or replace the radio and CD player.

INSPECTION PROCEDURE 20: Using the auto select function, too few automatic stations are selected.

DIAGNOSIS

STEP 1. Check the state of the antenna.
Check that there is no damage or crack in the roof antenna.

Q: Is the check result normal?
YES : Go to Step 2.
NO : Repair or replace the roof antenna.

STEP 2. Check the number of radio stations.

Q: Are there sufficient numbers of radio stations within the area?
YES : Go to Step 3.
NO : Go to Step 4.

STEP 3. Check the distance from the transmission antenna.

Q: Is there a transmission antenna within a range of 2 miles?
YES : Go to Step 5.
NO : Go to Step 4.

STEP 4. The check if there are not that many radio stations and when there is no transmission antenna in the vicinity.
Execute automatic selection and check to see that the strongest radio frequency is receivable within the area.

Q: Is reception of the strongest radio frequency possible within the area?
YES : There is no action to be taken.
NO : Go to Step 5.

STEP 5. Check that there is no vehicle under special electric field condition.

Q: Is the check result normal?
YES : Go to Step 7.
NO : Go to Step 6.

STEP 6. Relocate and check.
Automatically receive in a good reception area that is not exposed to special electric fields.

Q: Is reception of the strongest radio frequency possible within the area?
YES : There is no action to be taken.
NO : Go to Step 7.

STEP 7. Check the antenna plug is connected to the radio and CD player.

Q: Is the antenna plug thoroughly connected to the radio and CD player?
YES : Repair or replace the radio and CD player.
NO : Thoroughly connect the antenna plug and the radio and CD player.

INSPECTION PROCEDURE 21: Preset stations are erased.

CIRCUIT OPERATION
Power is continuously supplied to the radio and CD player.

TECHNICAL DESCRIPTION (COMMENT)
The cause is probably a faulty radio and CD player memory backup power supply system circuit.

TROUBLESHOOTING HINTS
- Damaged wiring harness or connector
- Malfunction of the radio and CD player

DIAGNOSIS
Refer to Inspection Procedure 1P.54A-364.

INSPECTION PROCEDURE 22: CD can not be inserted.

DIAGNOSIS

STEP 1. Check that a CD has been already loaded.

Q: Has a CD been already loaded?
NO : Go to Step 2.
YES : Take out the CD (If the CD cannot be ejected, refer to Inspection Procedure 26 P.54A-422). Check that a CD can be inserted.

STEP 2. Check how a CD is inserted.
- Ensure that the ignition switch is at "ACC" or "ON".

NOTE: If you try to load a CD when the ignition switch is at the positions other than "ACC" or "ON", the CD will not be inserted completely and then rejected.

Q: If you try to load the CD, does the CD stops halfway and then rejected?
YES : Refer to Inspection Procedure 26 P.54A-422.
NO : Go to Step 3.

STEP 3. Check after the CD is loaded.

NOTE: Even though the CD is loaded, "ERROR" (error) is sometimes displayed with the CD rejected because of vibration/shock or dew on the CD face or optical lens.

Q: Though the CD is inserted completely, is "ERROR" (error) displayed and the CD ejected?
YES : Go to Step 4.
NO : The procedure is complete.

STEP 4. Check the CD.

Check the CD for the conditions below:
- Is the CD loaded with its label facing down?
- Is the recorded face dirty or scratched?
- Is there dew on the recorded face?

Q: Is the CD in good condition?
YES : Go to Step 5.
NO : The original CD is defective.

STEP 5. Check again using a normal CD, which is not dirty or scratched.
- Load another normal CD.
- Check that the CD player recognizes and play the CD.

Q: When you substitute another normal CD, is the CD loaded correctly?
YES : The original CD is defective. Check that a CD can be inserted.
NO : Replace the radio and CD player. The procedure is complete.

INSPECTION PROCEDURE 23: No sound. (CD only)

DIAGNOSIS

STEP 1. Check again using another CD, which is not dirty or scratched.

Q: When you substitute another normal CD, is the CD played normally?
YES : The original CD is defective. The CD player should sound normally.
NO : Go to Step 2.

STEP 2. Check power supply to the CD player when the ignition switch is at "ACC" or "ON" position.

Q: Is the radio and CD player energized when the ignition switch is turned to the "ACC" or "ON" position?
YES : Replace the radio and CD player. The procedure is complete.
NO : Check the memory backup power supply circuit. Refer to Inspection Procedure 1 P.54A-364.

INSPECTION PROCEDURE 24: CD sound skips.

DIAGNOSIS

STEP 1. Check the state in which the sound on the CD jumps.

Q: Does the sound jump when the car is parked?
YES : Go to Step 2.
NO : Go to Step 4.

STEP 2. Check the surface of the CD.

Q: Are there any scratches or soiling on the CD?
YES : The CD is defective if there are any scratches. Clean the CD surface if it is dirty. Check that a CD sound skip is resolved.
NO : Go to Step 3.

STEP 3. Check when replacing with a CD that can be played normally without any scratches or soiling.

Q: Does the CD play normally when replaced with a CD that is not scratched or dirty and can play normally?
YES : Defective CD used. Check that a CD sound skip is resolved.
NO : Go to Step 4.

STEP 4. Check by tapping the radio and CD player.

NOTE: Check by using a known-good CD which is free from scratches, dirt or any other abnormality.

Q: Does the sound jump when tapping the radio and CD player?
YES : Securely mount the audio. Check that a CD sound skip is resolved.
NO : Either replace the audio system or take the following measures if a servicing shop is nearby.
1. Investigate in detail the conditions when the sound jumps while driving the car.
2. Describe these conditions to the service shop for consultation.
3. Either replace the audio according to the instructions of the service shop.

Check that a CD sound skip is resolved.

INSPECTION PROCEDURE 25: Sound quality is poor.

DIAGNOSIS

Check to see that the CD can be played normally and that it is free of any scratches or soiling.
Replace with better sound quality CD.

Q: Is the sound quality better replacing the CD with a clean CD without any scratches that can be played?
YES : The CD is defective. The sound quality should return to normal.
NO : Either repair or replace the radio and CD player.

INSPECTION PROCEDURE 26: CD can not be ejected.

DIAGNOSIS

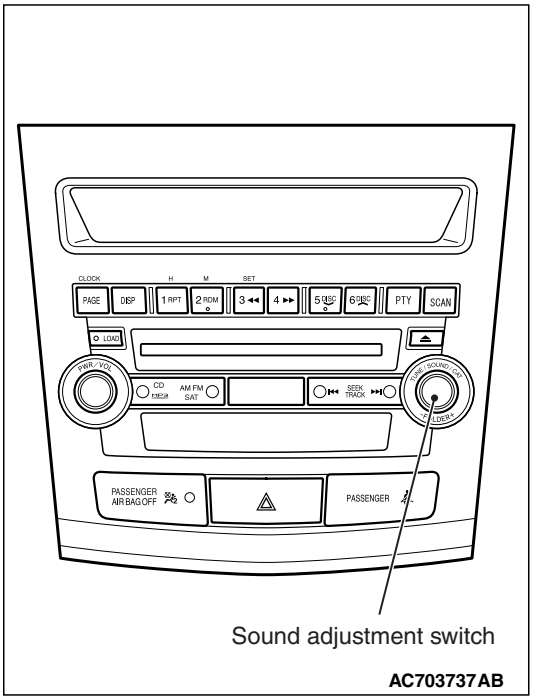
Check the power of ignition switch "ACC" or "ON" position.

Q: Does the radio and CD player power turn ON when the ignition switch is in the "ACC" or "ON" position?
YES : Either replace the radio and CD player.
NO : Check the memory backup power supply circuit. Refer to Inspection Procedure 1 P.54A-364.

ON-VEHICLE SERVICE

ADJUSTMENT OF VOLUME AND SOUND QUALITY AUTOMATIC CORRECTION FUNCTION

M1544014200107



When the following operations are performed with the audio power ON, the sound volume during driving and the ON/OFF of sound quality automatic correction function are switched.

1. Press and hold (approximately 2 seconds) the sound adjustment switch.
2. Press the sound adjustment switch (approximately 1.5 seconds or less) to switch to the SCV setting screen.
3. SCV ON (when the automatic correction function is ON) or SCV OFF (when the automatic correction function is OFF) is displayed.
4. Turn the sound adjustment switch knob to switch between SCV ON and OFF.
5. Press the sound adjustment switch or leave as it is for 10 seconds or more.
6. Go back to the audio normal screen.

SERVICE DATA

M1544014100218

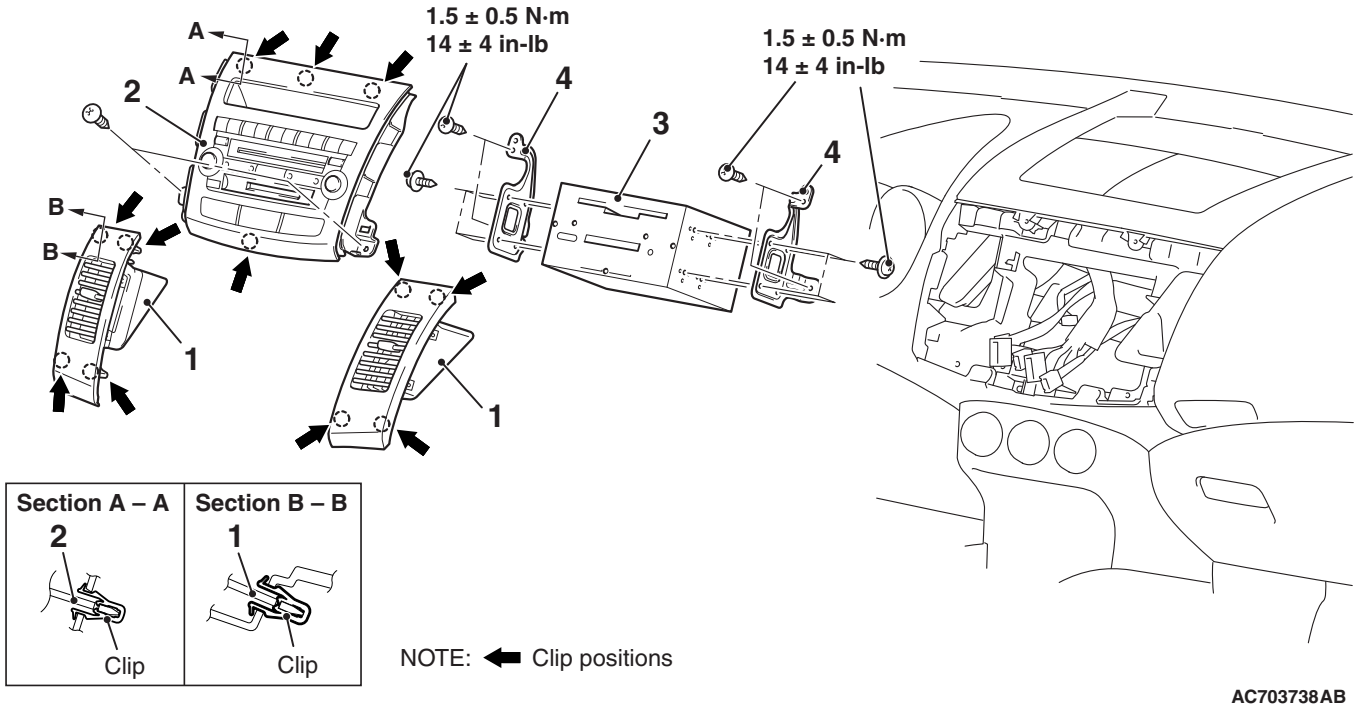
Item No.	Scan tool display	Check condition	Normal condition
1	RADIO remoto SW (SEEK-)	When the "CH down" switch is pushed	ON
2	RADIO remoto SW (SEEK+)	When the "CH up" switch is pushed	ON
3	RADIO remoto SW (MODE)	When the "Mode" switch is pushed	ON
4	RADIO remoto SW (VOL-)	When the "VOL down" switch is pushed	ON
5	RADIO remoto SW (VOL+)	When the "VOL up" switch is pushed	ON
10	On hook switch	When the "Hang-up" switch is pushed	ON
11	Off hook switch	When the "Pick-up" switch is pushed	ON
13	VR switch	When the "Speech" switch is pushed	ON

REMOVAL AND INSTALLATION

M1544010900676

RADIO AND CD PLAYER

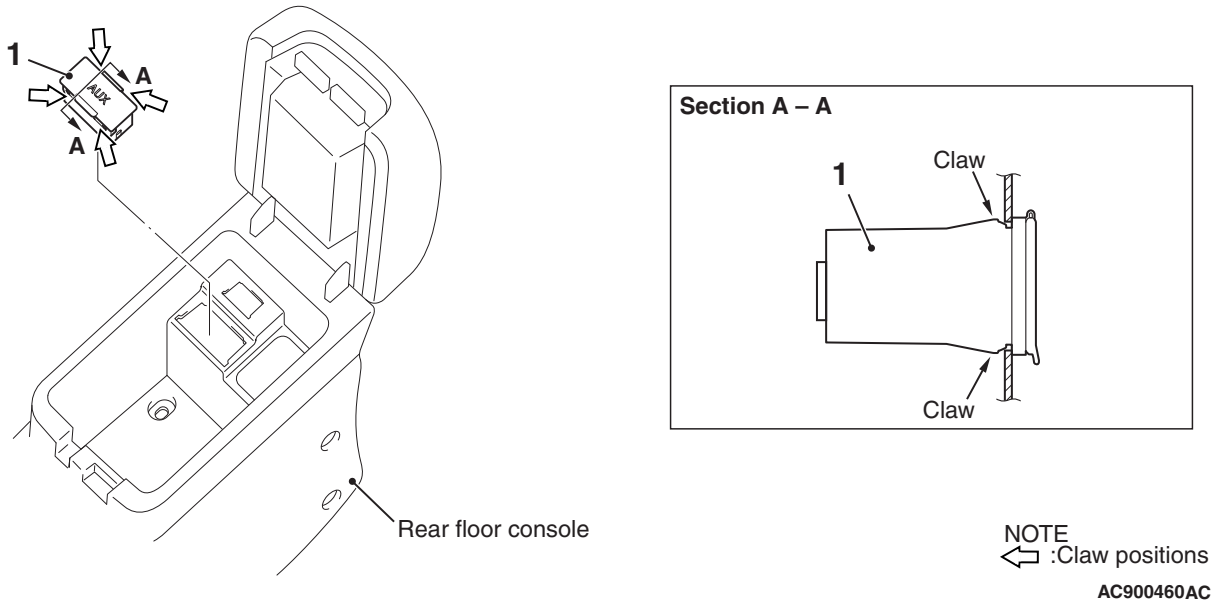
NOTE: When the radio and CD player are replaced, always turn the ignition switch to the ON position once and then carry out the operation check.



Removal Steps
1. Center outlet
2. Center panel assembly

Removal Steps (Continued)
3. Radio and CD player
4. Radio and CD player bracket

AUDIO ADAPTER



Removal Steps
- Rear floor console assembly (Refer to GROUP 52A – Rear Floor Console assembly P.52A-8.)

1. Audio adapter

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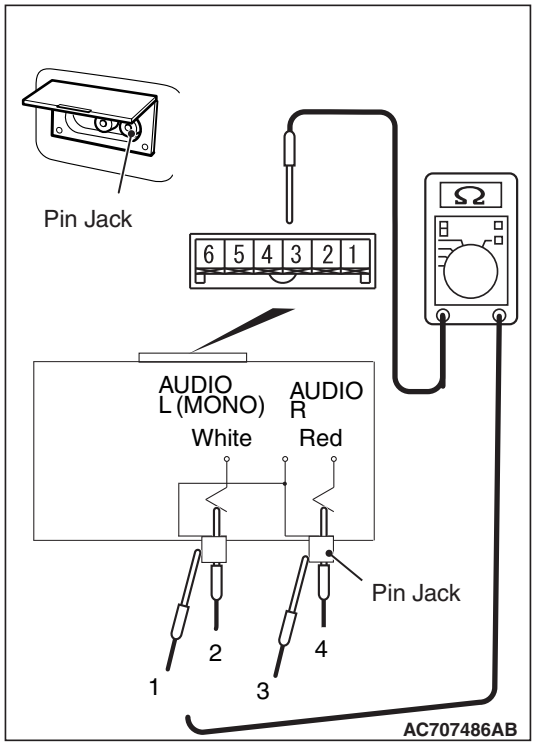
INSPECTION

AUDIO ADAPTER INSPECTION

M1544019000012

1. Remove the audio adapter.(Refer to P.54A-423)
2. Check the continuity between terminals of audio adapter and pin jack.



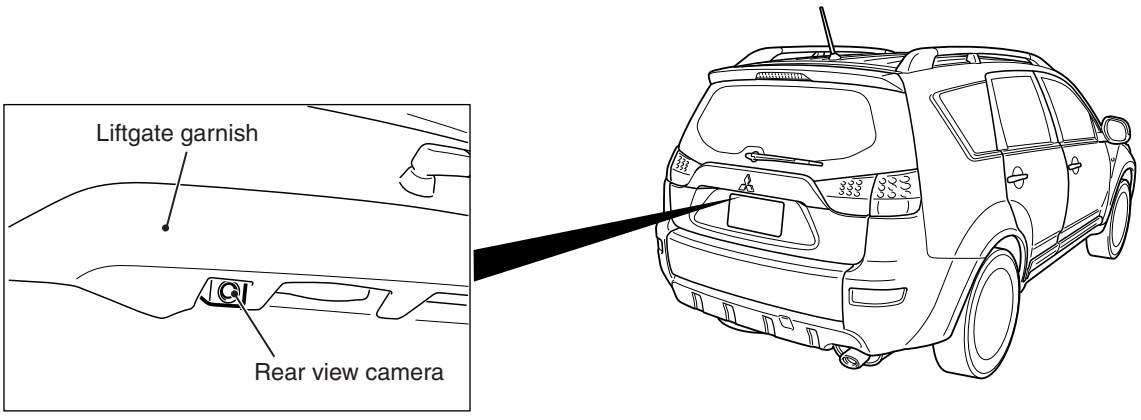
The connecting position of pin jack side circuit tester	Terminal number	Measurement value
1	5	Continuity exists. (2 Ω or less)
2	4	
3	5	
4	6	

REAR VIEW CAMERA

GENERAL INFORMATION

M1540905600164

A rear view camera has been established to the liftgate garnish. The rear view camera displays the rear view image of the vehicle on the multivision display for easy confirmation of safety when driving backward.



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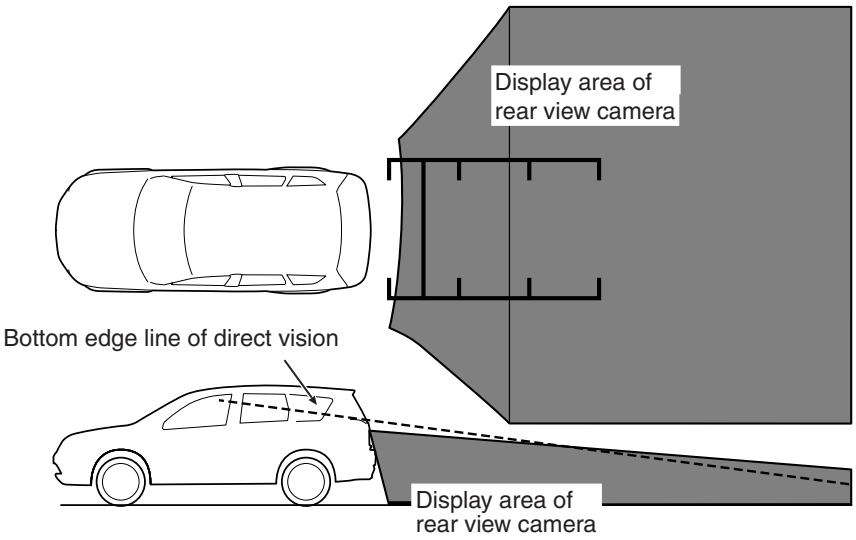


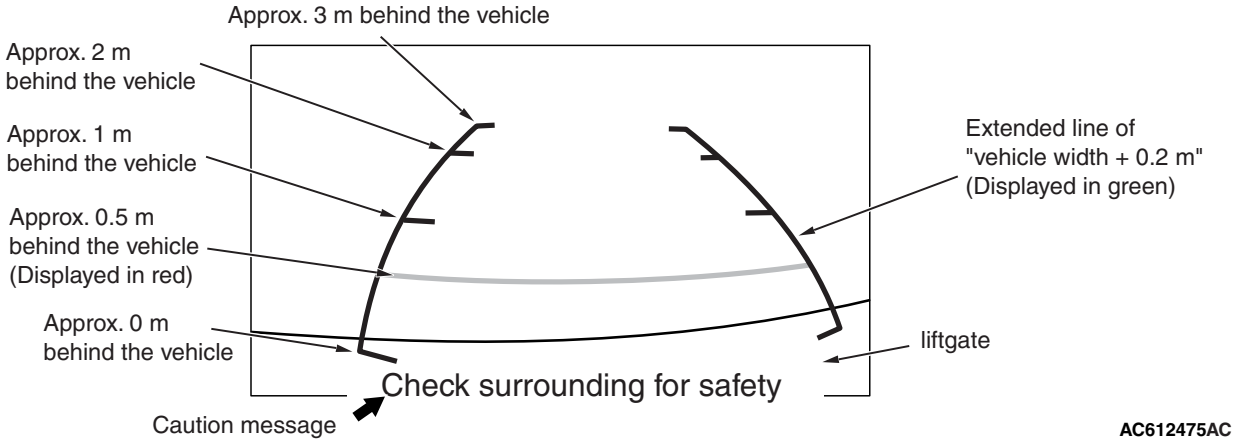
AC612214AC

OPERATION

When the selector lever is moved to the R (reverse) position with the ignition switch ON, the image of the rear view camera is displayed on the multivision display screen.

Screen display

Displays rear view camera.



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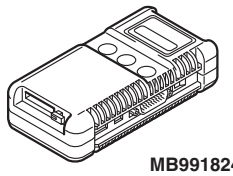
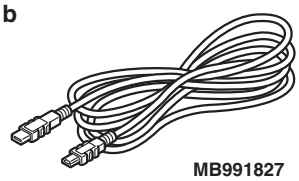
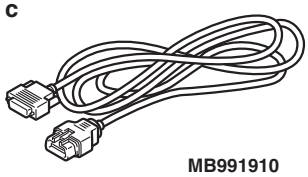
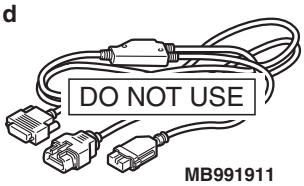
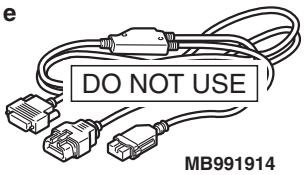
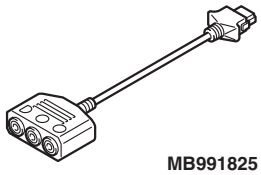
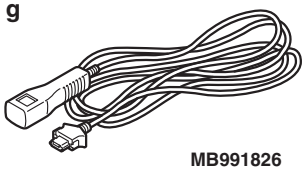
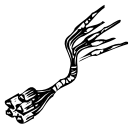
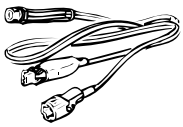
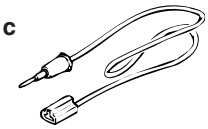
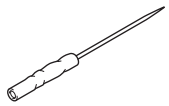
SPECIAL TOOLS

M1540902100041

Tool	Tool number and name	Supersession	Application
a  MB991824 b  MB991827 c  MB991910 d  MB991911 e  MB991914 f  MB991825 g  MB991826 MB991958	MB991958 a. MB991824 b. MB991827 c. MB991910 d. MB991911 e. MB991914 f. MB991825 g. MB991826 M.U.T.-III sub assembly a. Vehicle communication interface (V.C.I.) b. M.U.T.-III USB cable c. M.U.T.-III main harness A (Vehicles with CAN communication system) d. M.U.T.-III main harness B (Vehicles without CAN communication system) e. M.U.T.-III main harness C (for Chrysler models only) f. M.U.T.-III measurement adapter g. M.U.T.-III trigger harness	MB991824-KIT *NOTE: G: MB991826 M.U.T.-III Trigger Harness is not necessary when pushing V.C.I. ENTER key.*	**⚠ CAUTION** **M.U.T.-III main harness A (MB991910) should be used. M.U.T.-III main harness B and C should not be used for this vehicle.** Diagnostic trouble code or service data check.

Tool	Tool number and name	Supersession	Application
a  b  c  d  MB991223	MB991223 a. MB991219 b. MB991220 c. MB991221 d. MB991222 Harness set a. Test harness b. LED harness c. LED harness adaptor d. Probe	General service tools	Continuity check and voltage measurement at harness wire or connector for loose, corroded or damaged terminals, or terminals pushed back in the connector. a. Connector pin contact pressure inspection b. Power circuit inspection c. Power circuit inspection d. Commercial tester connection
 MB992006	MB992006 Extra fine probe	–	Continuity check and voltage measurement at harness wire or connector for loose, corroded or damaged terminals, or terminals pushed back in the connector.

TROUBLESHOOTING

STANDARD FLOW OF DIAGNOSTIC TROUBLESHOOTING

M1540902300067

Refer to GROUP 00 – Contents of troubleshooting P.00-7.

TROUBLE SYMPTOM CHART

M1540900300072

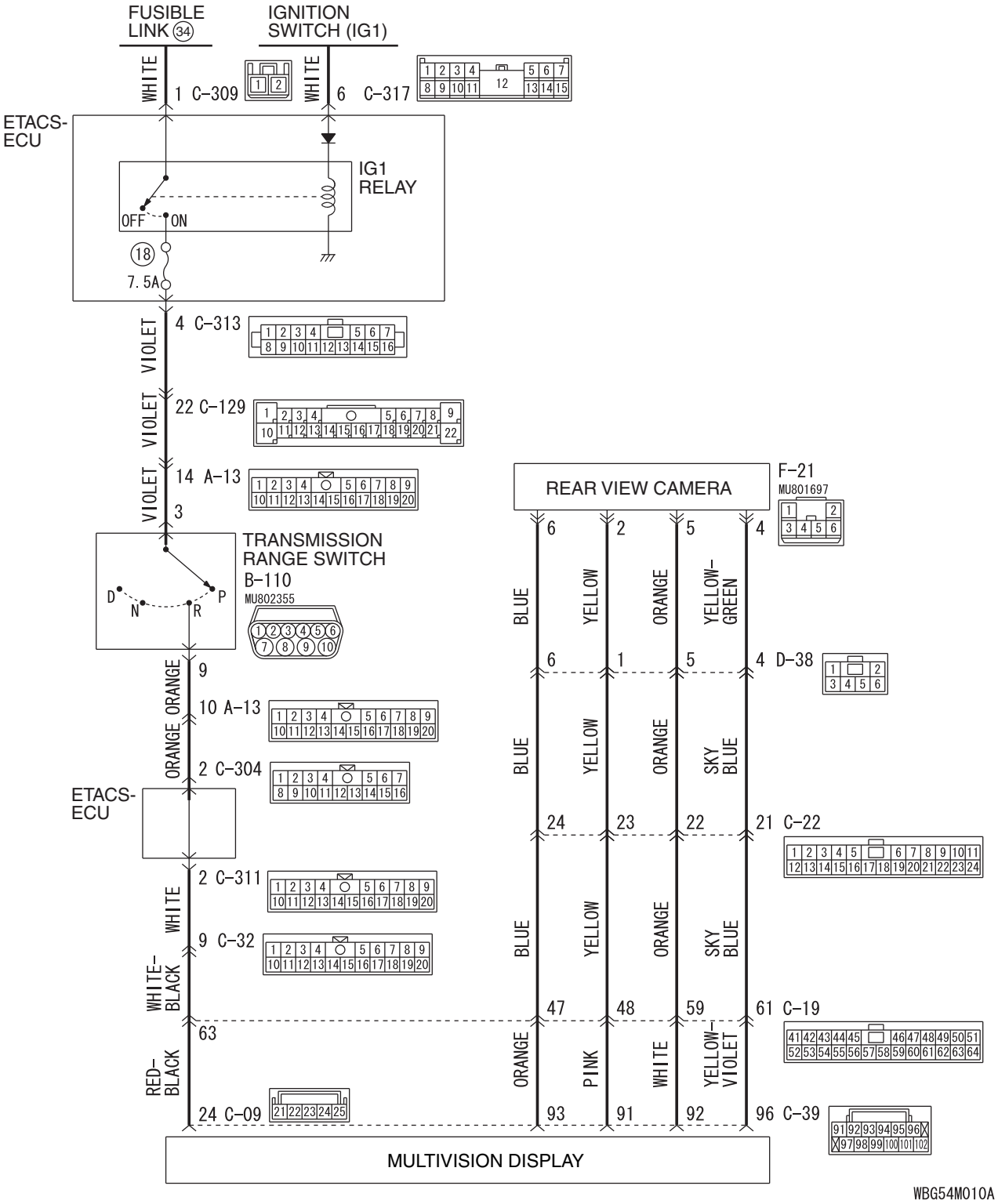
Trouble symptom	Reference page
Rear view camera image is not correctly displayed	P.54A-429

SYMPTOM PROCEDURES

Rear view camera image is not correctly displayed.

⚠ CAUTION
Before replacing the multivision display, ensure that the power supply circuit, the ground circuit, and the communication circuit are normal. (Check that the voltage is 10 V or more.)

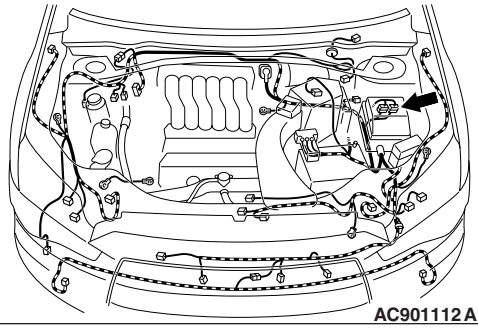
Rear View Camera Circuit



WBG54M010A

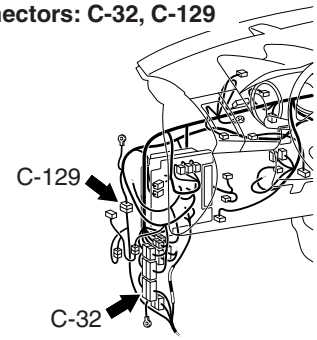
TSB Revision

Connector: A-13



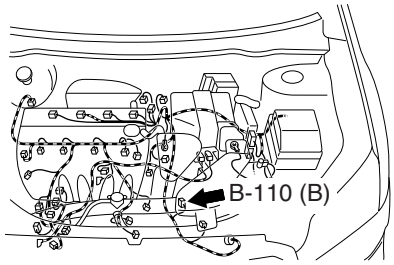
AC901112 AH

Connectors: C-32, C-129



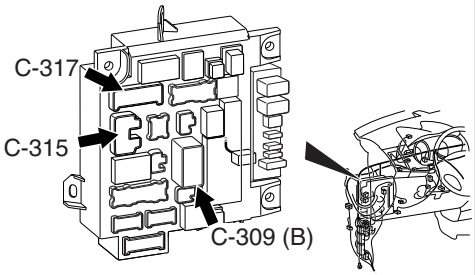
ACA02653AD

Connector: B-110 <2.4L ENGINE>



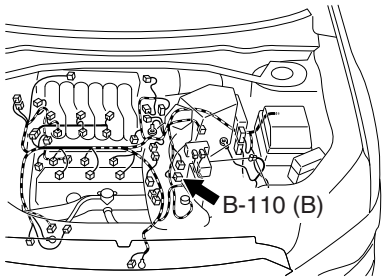
AC901625AB

Connectors: C-309, C-315, C-317



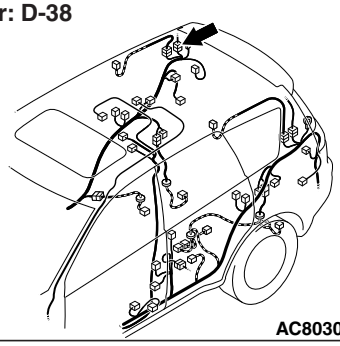
ACA02655AD

Connector: B-110 <3.0L ENGINE>



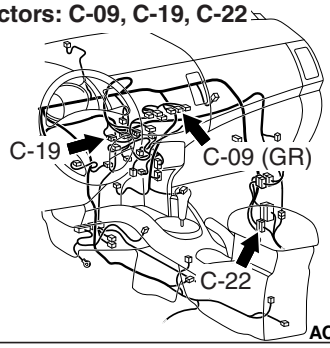
AC901598 AC

Connector: D-38



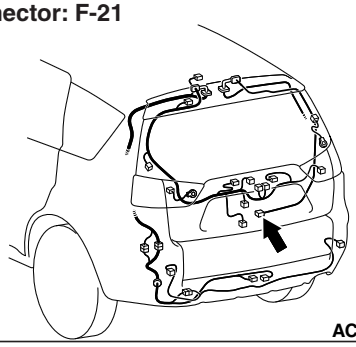
AC803007AB

Connectors: C-09, C-19, C-22



AC709494 AQ

Connector: F-21



AC803008 AB

COMMENTS ON TROUBLE SYMPTOM

When the screen of rear view camera is not shown even if the selector lever is "R" (Reverse) position, the rear view camera, the wiring harness, connectors, transmission range switch or multivision display may be defective.

PROBABLE CAUSES

- Damaged harness wires and connectors
- Malfunction of the transmission range switch

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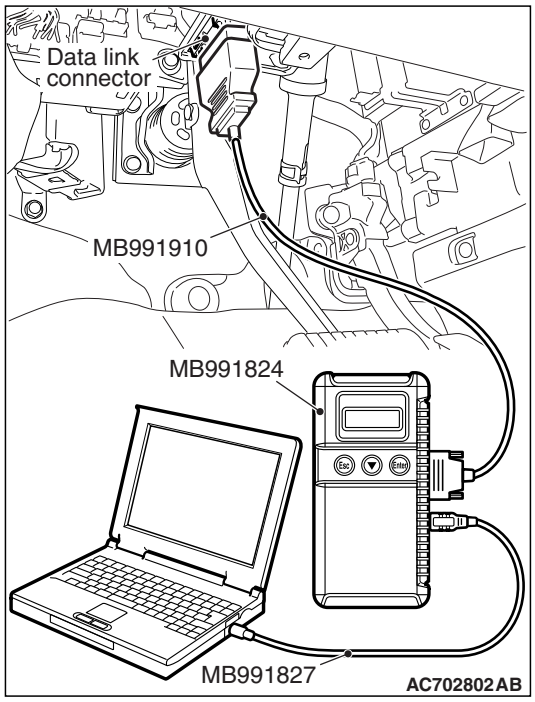
- Malfunction of the rear view camera
- Malfunction of the multivision display

DIAGNOSIS

Required Special Tools:

- MB991223: Harness Set
- MB992006: Extra Fine Probe
- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A

STEP 1. Using scan tool MB991958, read the ETACS-ECU diagnostic trouble code.



(1) Operate scan tool MB991958 to read the ETACS-ECU option coding information. (Refer to GROUP 00, Coding List P.00-44.)
(2) Check if the diagnostic trouble code is set to the ETACS-ECU.

Q: Is the DTC set?

YES : Troubleshoot the ETACS-ECU (Refer to GROUP 54A, ETACS, Diagnosis P.54A-732), and then go to Step 2.
NO : Go to Step 2.

STEP 2. Using scan tool MB991958, check data list.

Check if ETACS-ECU related signal is set.

- Turn the ignition switch to the ON position.

Item No.	Item name	Normal conditions
254	IG voltage	System positive voltage

OK: Normal condition is displayed.

Q: Is the check result normal?

YES : Go to Step 3.
NO : Refer to Troubleshooting – Inspection Procedure 1 "The ignition switch (IG1) signal is not received" P.54A-788.

STEP 3. Using scan tool MB991958, check data list

Check if ETACS-ECU related signal is set.

- Turn the ignition switch to the ON position.
- selector lever is "R" (Reverse) position

Item No.	Item name	Normal condition
289	shift reveres SW	ON

OK: Normal condition is displayed.

Q: Is the check result normal?

YES : Go to step 10.
NO : Go to step 4.

STEP 4. Check ETACS-ECU connector C-313 and transmission range switch connector B-110 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Are ETACS-ECU connector C-313 and transmission range switch connector B-110 in good condition?

YES : Go to Step 5.
NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2.

STEP 5. Check the wiring harness between ETACS-ECU connector C-313 (terminal 4) and transmission range switch connector B-110 (terminal 3).

- Check the communication lines for open circuit and short circuit.

NOTE: Also check intermediate connector C-129, A-13 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-129, A-13 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection P.00E-2.

Q: Is the wiring harness between ETACS-ECU connector C-313 (terminal 4) and transmission range switch connector B-110 (terminal 3) in good condition?

YES : Go to Step 6.
NO : Repair the wiring harness.

STEP 6. Check ETACS-ECU connector C-304 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is ETACS-ECU connector C-304 in good condition?

YES : Go to Step 7.
NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2.

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STEP 7. Check the wiring harness between ETACS-ECU connector C-304 (terminal 2) and transmission range switch connector B-110 (terminal 9).

- Check the communication lines for open circuit and short circuit.

NOTE: Also check intermediate connector A-13 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector A-13 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection P.00E-2.

Q: Is the wiring harness between ETACS-ECU connector C-304 (terminal 2) and transmission range switch connector B-110 (terminal 9) in good condition?

YES : Go to Step 8.
NO : Repair the wiring harness.

STEP 8. Check the transmission range switch and the control cable.

Check that the transmission range switch and the control cable are adjusted correctly.(GROUP 23A– On-vehicle Service, transmission range switch and control cable adjustment P.23A-144 <CVT> or GROUP 23C – On-vehicle Service, transmission range switch and control cable adjustmentP.23C-269 <A/T>)

Q: Is the check result normal?

YES : Go to Step 9.
NO : Adjust the transmission range switch and the control cable.

STEP 9. Check the transmission range switch.

- Check for continuity of the transmission range switch. (Refer to GROUP 23A – On-vehicle service, Transmission range check P.23A-143 <CVT> or GROUP 23C – On-vehicle service, Transmission range check P.23C-269 <A/T>)

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-15).
NO : Replace the transmission range switch.

STEP 10. Check ETACS-ECU connector C-311 and multivision display connector C-09 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Are ETACS-ECU connector C-311 and multivision display connector C-09 in good condition?

YES : Go to Step 11.
NO : Repair the defective connector.

STEP 11. Check the wiring harness between ETACS-ECU C-311 connector (terminal 2) and C-09 multivision display connector (terminal 24).

- Check the communication lines for open circuit or short circuit.

NOTE: Before the wiring harness inspection, inspect the C-19 and C-32 intermediate connector, and repair if necessary.

Q: Is the wiring harness between ETACS-ECU C-311 connector (terminal 2) and C-09 multivision display connector (terminal 24) in good condition?

YES : Go to step 12.
NO : Repair the wiring harness.

STEP 12. Confirmation in MMCS service mode

Perform "Network/Connect Line Check" in the MMCS service mode to check that the communication and wire connection with the rear view camera are OK (Refer to P.54A-443).

NOTE: The rear view camera is shown as "rear camera" on the "Network/Connect Line Check" in the service mode of MMCS.

Q: Is the check result normal?

YES : Go to Step 14.
NO : Go to Step 13.

STEP 13. Check rear view camera connector F-21 and multivision display connector C-39 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Are rear view camera connector F-21 and multivision display connector C-39 in good condition?

YES : Go to Step 14.
NO : Repair the defective connector.

STEP 14. Check the wiring harness between rear view camera connector F-21 connector (terminal 6, 2, 5, 4) and multivision display C-39 connector (terminal 93, 91, 92, 96)

- Check the communication lines for open circuit and short circuit.

NOTE: Also check intermediate connector C-19, C-22, D-38 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-19, C-22, D-38 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection P.00E-2.

Q: Is the check result normal?

YES : Go to Step 15.
NO : Repair the wiring harness.

STEP 15. Confirmation in MMCS service mode.
(1) Display the VEHICLE SIGNAL CHECK screen. (Refer to P.54A-443.)
(2) Move the selector lever to the R position and check whether "ON" is displayed.

Q: Is the check result normal?
YES : Go to Step 16.
NO : Replace the multivision display.

STEP 16. Trouble symptom recheck
Check that the display of rear view camera is shown normally.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction P.00-15).
NO : Replace the rear view camera temporarily and go to Step 17.

STEP 17. Trouble symptom recheck
Check that the display of rear view camera is shown normally.

Q: Is the check result normal?
YES : Replace the rear view camera.
NO : Replace the multivision display.

ON-VEHICLE SERVICE

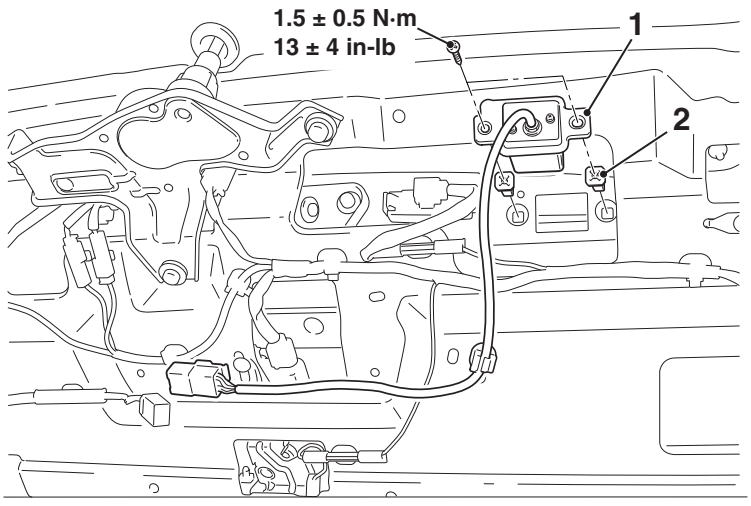
CAMERA SETTING

M1540905700019

Refer to MMCS – service mode P.54A-443.

REMOVAL AND INSTALLATION

M1540905500059



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Removal Steps
- Liftgate trim (Refer to GROUP 52A – Liftgate Trim P.52A-14)

Removal Steps (Continued)
1. Rear view camera
2. Screw grommet