
DTC C123B: Prolonged operation of ASC

⚠ CAUTION

- If there is any problem in the CAN bus lines, an incorrect diagnostic trouble code may be set. Prior to this diagnosis, diagnose the CAN bus lines (Refer to GROUP 54C – CAN Bus Line Diagnostic Flow [P.54C-10](#)).
- Whenever ECU is replaced, ensure that the CAN bus lines are normal.
- When the steering wheel sensor is replaced, always carry out calibration to make ASC-ECU learn the neutral point (Refer to [P.35C-283](#)).
- Do not drop or shock the G and yaw rate sensor.
- When the G and yaw rate sensor is replaced, always carry out calibration to make ASC-ECU learn the neutral point (Refer to [P.35C-282](#)).
- When the hydraulic unit (integrated with ASC-ECU) is replaced, always carry out the calibration of the steering wheel sensor, the G and yaw rate sensor and brake fluid pressure sensor (Refer to [P.35C-282](#), [P.35C-283](#) and [P.35C-284](#)).

OPERATION

ASC-ECU controls ASC by calculating the data sent from the wheel speed sensor, the steering wheel sensor, and the G and yaw rate sensor.

DTC SET CONDITIONS

This diagnostic trouble code is set when ASC operates for a prolonged period.

NOTE: When the vehicle runs on a slippery or rough road, or when the vehicle makes the steady turn, this diagnostic trouble code may be set.

PROBABLE CAUSES

- Steering wheel sensor malfunction
- G and yaw rate sensor malfunction
- Improper installation of wheel speed sensor, steering wheel sensor, or G and yaw rate sensor
- ASC-ECU malfunction
- Different steering wheel
- Wheel alignment not performed

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 lines.

Use scan tool to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to Step 3.

NO : Repair the CAN bus lines (Refer to GROUP 54C – CAN Bus Diagnostics Table [P.54C-17](#)). On completion, go to Step 2.

STEP 2. DTC recheck after resetting CAN bus lines

Q: Is DTC C123B set?

YES : Go to Step 3.

NO : The procedure is complete.

STEP 3. Check the wheel speed sensor, and G and yaw rate sensor-related DTC.

Check that DTCs C100A, C1015, C1020, C102B, C1011, C101C, C1027, C1032, C1014, C101F, C102A, C1035, C1041, C1042, C1043, C1044, C1219, C2205, C123C, and C2204 are also set.

Q: Are DTCs C100A, C1015, C1020, C102B, C1011, C101C, C1027, C1032, C1014, C101F, C102A, C1035, C1041, C1042, C1043, C1044, C1219, C2205, C123C, and C2204 also set?

YES : Carry out the diagnosis for the relevant diagnostic trouble codes, and then go to Step 10.

NO : Go to Step 4.

STEP 4. Check of G and yaw rate sensor installation status

Check that the G and yaw rate sensor is installed correctly.

Q: Is the check result normal?

YES : After checking the G and yaw rate sensor, perform the calibration of the G and yaw rate sensor to make ASC-ECU relearn the neutral point (Refer to [P.35C-282](#)). Then go to Step 5.

NO : Reinstall the G and yaw rate sensor correctly (Refer to [P.35C-290](#)). Then go to Step 10.

STEP 5. Using scan tool MB991958, check the data list

Check the following data list (Refer to [P.35C-270](#).)

- Item 08: Lateral G sensor
- Item 09: G sensor
- Item 12: Yaw rate sensor

Q: Is the check result normal?

YES : Go to Step 6.

NO : Replace the G and yaw rate sensor (Refer to [P.35C-290](#)). Then go to Step 10.

STEP 6. Check of steering wheel sensor installation status

Check that the steering wheel sensor is installed correctly.

Q: Is the check result normal?

YES : Go to Step 7.

NO : Install the steering wheel sensor correctly (Refer to [P.35C-291](#)). Then go to Step 7.

STEP 7. Wheel alignment check

Refer to GROUP 33 – On-vehicles service/Front Wheel Alignment Check and Adjustment [P.33C-8](#).

Q: Is the check result normal?

YES : After checking the wheel alignment, perform the calibration of steering wheel sensor to make ASC-ECU relearn the neutral point (Refer to [P.35C-283](#)). Then go to Step 8.

NO : After adjusting the wheel alignment, perform the calibration of steering wheel sensor to make ASC-ECU relearn the neutral point (Refer to [P.35C-283](#)). Then go to Step 8.

STEP 8. Using scan tool MB991958, check the data list

Check the following data list (Refer to [P.35C-270](#)).

- Item 11: Steering angle

Q: Is the check result normal?

YES : Go to Step 9.

NO : Replace the steering wheel sensor (Refer to [P.35C-291](#)). Then go to Step 10.

STEP 9. Check whether the DTC is reset.

(1) Erase the DTC.

(2) Drive the vehicle at 12mph (20 km/h) or higher.

Q: Does ASC unnecessary activation occur or is the DTC C123B set?

YES : Replace the hydraulic unit (integrated with ASC-ECU) (Refer to [P.35C-287](#)). Then go to Step 10.

NO : Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/How to Cope with Intermittent Malfunctions [P.00-15](#)).

STEP 10. Check whether the DTC is reset.

(1) Erase the DTC.

(2) Drive the vehicle at 12mph (20 km/h) or higher.

Q: Does ASC unnecessary activation occur or is the DTC C123B set?

YES : Return to Step 1.

NO : The procedure is complete.

DTC C2200: Abnormality in ASC-ECU**⚠ CAUTION**

- If there is any problem in the CAN bus lines, an incorrect diagnostic trouble code may be set. Prior to this diagnosis, diagnose the CAN bus lines (Refer to GROUP 54C – CAN Bus Line Diagnostic Flow [P.54C-10](#)).
- Whenever ECU is replaced, ensure that the CAN bus lines are normal.
- When the hydraulic unit (integrated with ASC-ECU) is replaced, always carry out the calibration of the steering wheel sensor, the G and yaw rate sensor and brake fluid pressure sensor (Refer to [P.35C-282](#), [P.35C-283](#) and [P.35C-284](#)).

OPERATION

ASC-ECU controls ASC by calculating the data sent from the wheel speed sensor, the steering wheel sensor, and the G and yaw rate sensor.

DTC SET CONDITIONS

This diagnostic trouble code is set when ASC-ECU has malfunction.

PROBABLE CAUSES

ASC-ECU malfunction

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. M.U.T.-III CAN bus diagnostics

Use scan tool to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Repair the CAN bus lines. (Refer to GROUP 54C – CAN Bus Diagnostics Table [P.54C-17](#).) On completion, go to Step 3.

**STEP 2. Diagnostic trouble code recheck after resetting
CAN bus lines**
Erase the DTC.**Q: Is DTC C2200 set?****YES** : Replace the hydraulic unit (integrated with ASC-ECU) (Refer to [P.35C-287](#)). Then go to Step 3.**NO** : Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/How to Cope with Intermittent Malfunctions [P.00-15](#)).

**STEP 3. Diagnostic trouble code recheck after resetting
CAN bus lines**

Erase the DTC.

Q: Is DTC C2200 set?**YES** : Return to Step 1.**NO** : This diagnosis is complete.

DTC C2101: Abnormality in battery voltage (high voltage)**⚠ CAUTION**

- If there is any problem in the CAN bus lines, an incorrect DTC may be set. Prior to this diagnosis, diagnose the CAN bus lines (Refer to GROUP 54C – CAN Bus Line Diagnostic Flow [P.54C-10](#)).
- Whenever ECU is replaced, ensure that the CAN bus lines are normal.
- When the hydraulic unit (integrated with ASC-ECU) is replaced, always carry out the calibration of the steering wheel sensor, the G and yaw rate sensor and brake fluid pressure sensor (Refer to [P.42C-10](#), [P.35C-283](#) and [P.35C-284](#)).

OPERATION

The ASC-ECU is energized by the valve power supply circuit (terminal No.32). When the power is supplied from the ignition switch (IG1) to the IG1 relay in ETACS-ECU, IG1 relay is turned on. At this time, the valve power supply circuit (terminal No.4) energizes the ASC-ECU.

DTC SET CONDITIONS

This DTC is set when the ASC-ECU power supply voltage is more than 18.0 ± 1.0 V.

PROBABLE CAUSES

- Battery failure
- ASC-ECU malfunction
- Charging system failed

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 lines.

Use scan tool to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to Step 3.

NO : Repair the CAN bus lines (Refer to GROUP 54C – CAN Bus Diagnostics Table [P.54C-17](#)). On completion, go to Step 2.

STEP 2. DTC recheck after resetting CAN bus lines

Q: Is DTC C2101 set?

YES : Go to Step 3.

NO : The procedure is complete.

STEP 3. Battery check

Refer to GROUP 54A – Battery Test [P.54A-9](#).

Q: Is the battery in good condition?

YES : Go to Step 5.

NO : Charge or replace the battery. Then go to Step 4.

STEP 4. Charging system check

Refer to GROUP 16 – On-vehicle Service/Output Current Test [P.16-9](#).

Q: Is the check result normal?

YES : Go to Step 5.

NO : Repair or replace the charging system component(s).

STEP 5. Check whether the DTC is reset.

Erase the DTC.

Q: Is DTC C2101 set?

YES : Replace the hydraulic unit (integrated with ASC-ECU) (Refer to [P.35C-287](#)). Then go to Step 6.

NO : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/How to Cope with Intermittent Malfunctions [P.00-15](#)).

STEP 6. Check whether the DTC is reset.

Erase the DTC.

Q: Is DTC C2101 set?

YES : Return to Step 1.

NO : The procedure is complete.

DTC C1395: Brake fluid filling not completed

⚠ CAUTION

- If there is any problem in the CAN bus lines, an incorrect diagnostic trouble code may be set. Prior to this diagnosis, diagnose the CAN bus lines (Refer to GROUP 54C – CAN Bus Line Diagnostic Flow [P.54C-10](#)).
- Whenever ECU is replaced, ensure that the CAN bus lines are normal.
- When the hydraulic unit (integrated with ASC-ECU) is replaced, always carry out the calibration of the steering wheel sensor, the G and yaw rate sensor and brake fluid pressure sensor (Refer to [P.35C-282](#), [P.35C-283](#) and [P.35C-284](#)).

DTC SET CONDITIONS

This diagnostic trouble code is set when the brake fluid is not filled in the hydraulic unit.

PROBABLE CAUSES

- Different hydraulic unit (For delivery to factory)
- ASC-ECU malfunction

DIAGNOSIS**Required Special Tools:**

- 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. Using scan tool MB991958, diagnose the CAN bus lines.

Use scan tool to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Repair the CAN bus lines. (Refer to GROUP 54C – CAN Bus Diagnostics Table [P.54C-17](#).) On completion, go to Step 2.

STEP 2. Check whether the DTC is reset.

Erase the DTC.

Q: Is DTC C1395 set?

YES : Replace the hydraulic unit (integrated with ASC-ECU) (Refer to [P.35C-287](#)).

NO : The procedure is complete.

DTC C121C: Torque request signal rejection**⚠ CAUTION**

- If there is any problem in the CAN bus lines, an incorrect diagnostic trouble code may be set. Prior to this diagnosis, diagnose the CAN bus lines (Refer to GROUP 54C – CAN Bus Line Diagnostic Flow [P.54C-10](#)).
- Whenever ECU is replaced, ensure that the CAN bus lines are normal.
- Do not drop or shock the G and yaw rate sensor.
- When the G and yaw rate sensor is replaced, always carry out calibration to make ASC-ECU learn the neutral point (Refer to [P.35C-282](#)).
- When the hydraulic unit (integrated with ASC-ECU) is replaced, always carry out the calibration of the steering wheel sensor, the G and yaw rate sensor and brake fluid pressure sensor (Refer to [P.35C-282](#), [P.35C-283](#) and [P.35C-284](#)).

CIRCUIT OPERATION

ASC-ECU sends the signal to the engine control module as necessary to decrease the engine output for the ASC system operation.

DTC SET CONDITIONS

This diagnostic trouble code is set when the request for the decrease of output is rejected by the engine control module.

PROBABLE CAUSES

- Wrong coding
- Engine control module malfunction
- ASC-ECU malfunction
- External noise interference

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 lines.

Use scan tool to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to Step 3.

NO : Repair the CAN bus lines (Refer to GROUP 54C – CAN Bus Diagnostics Table [P.54C-17](#)). On completion, go to Step 2.

STEP 2. DTC recheck after resetting CAN bus lines**Q: Is DTC C121C set?****YES** : Go to Step 3.**NO** : The procedure is complete.

STEP 3. M.U.T.-III other system diagnostic trouble code

Use scan tool to check that the diagnostic trouble code is set in the engine control module.

Q: Is any DTC set?**YES** : Troubleshoot the engine control module diagnostic trouble code <Refer to GROUP 13A – Diagnostic Trouble Code Chart [P.13A-49](#) (2.4L engine) or GROUP 13B – Diagnostic Trouble Code Chart [P.13B-50](#) (3.0L engine)>.**NO** : Go to Step 4.

STEP 4. M.U.T.-III diagnostic trouble code

Check that the diagnostic trouble code U1417 is set in ASC-ECU.

Q: Is DTC U1417 set?**YES** : Troubleshoot for the diagnostic trouble code U1417 (Refer to [P.35C-212](#)). Then go to Step 5.**NO** : Replace the hydraulic unit (integrated with ASC-ECU) (Refer to [P.35C-287](#)). Then go to Step 7.

STEP 5. M.U.T.-III data list

Check the following data list (Refer to [P.35C-270](#)).

- Item 68: Allow ESP torque request

Q: Is the check result normal?**YES** : Go to Step 6.**NO** : Troubleshoot the engine control module diagnostic trouble code <Refer to GROUP 13A – Diagnostic Trouble Code Chart [P.13A-49](#) (2.4L engine) or GROUP 13B – Diagnostic Trouble Code Chart [P.13B-50](#) (3.0L engine)>, and then go to Step 7.

STEP 6. Check whether the diagnostic trouble code is reset.

Erase the DTC.

Q: Is DTC C121C set?**YES** : Replace the hydraulic unit (integrated with ASC-ECU) (Refer to [P.35C-287](#)). Then go to Step 7.**NO** : If the trouble symptom is resolved, an intermittent malfunction such as poorly engaged connector(s) or wiring harness is suspected (Refer to GROUP 00 – How to Use Troubleshooting/How to Cope with Intermittent Malfunctions [P.00-15](#)).

STEP 7. Check whether the diagnostic trouble code is reset.

Erase the DTC.

Q: Is DTC C121C set?

YES : Return to Step 1.

NO : The procedure is complete.

DTC C1290: CAN time-out error

 **CAUTION**

- If there is any problem in the CAN bus lines, an incorrect diagnostic trouble code may be set. Prior to this diagnosis, diagnose the CAN bus lines (Refer to GROUP 54C – CAN Bus Line Diagnostic Flow [P.54C-10](#)).
- If the diagnostic trouble code No.C1290 is set in ASC-ECU, always diagnose the CAN bus line. If there is any fault in the CAN bus lines, an incorrect diagnostic trouble code may be set. In this case, the set diagnostic trouble code is not highly reliable.
- Whenever ECU is replaced, ensure that the CAN bus lines are normal.
- When the hydraulic unit (integrated with ASC-ECU) is replaced, always carry out the calibration of the steering wheel sensor, the G and yaw rate sensor and brake fluid pressure sensor (Refer to [P.35C-282](#), [P.35C-283](#) and [P.35C-284](#)).
- When the diagnostic trouble code No.C1290 is set in ASC-ECU, the diagnostic trouble code for another system may also be set. When the diagnostic trouble code for another system is set, carry out diagnosis for that system first.

CIRCUIT OPERATION

ASC-ECU receives signals necessary for the operations of ABS or ASC from the engine control module, TCM, AWD-ECU, ETACS-ECU, and the steering wheel sensor via the CAN bus lines.

DTC SET CONDITIONS

ASC-ECU receives signals necessary for the operations of ABS or ASC from the engine control module, TCM, AWD-ECU or AWC-ECU, ETACS-ECU, and steering wheel sensor via CAN bus lines. This diagnostic trouble code is stored when ASC-ECU cannot receive the signals necessary for the operations of ABS or ASC from the engine control module, TCM, AWD-ECU or AWC-ECU, ETACS-ECU, and steering wheel sensor.

PROBABLE CAUSES

- Engine control module malfunction
- TCM malfunction
- AWD-ECU or AWC-ECU malfunction
- Steering wheel sensor malfunction
- CAN bus malfunction
- ASC-ECU malfunction
- ETACS-ECU malfunction
- ETACS-ECUs have been interchanged between two vehicles.
- Connector disconnected or improperly connected
- Stretched or broken wires

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 lines.

Use scan tool to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Repair the CAN bus lines (Refer to GROUP 54C – CAN Bus Diagnostics Table [P.54C-17](#)). On completion, go to Step 4.

STEP 2. Using scan tool MB991958, diagnostic trouble code

Check that the diagnostic trouble codes U0100, U0101, U0114, U0126, and U0141 are set in ASC-ECU.

Q: Is any DTC set?

YES : Troubleshoot for the relevant diagnostic trouble code (Refer to [P.35C-18](#)).

NO : Go to Step 3.

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

Using scan tool, check if the diagnostic trouble codes are set from the engine control module, TCM, AWD-ECU or AWC-ECU and ETACS-ECU or not.

Q: Is any DTC set?

YES : Troubleshoot the relevant diagnostic trouble code, and then go to Step 4.

NO : Go to Step 4.

STEP 4. Connector check: ASC-ECU connector

Q: Is the check result normal?

YES : Go to Step 5.

NO : Repair the defective connector. Then go to Step 5.

STEP 5. ETACS-ECU coding data check

Refer to GROUP 00 – Precautions before Service/Coding List
[P.00-44](#).

Vehicle line

OK: OUTLANDER

Transmission

OK (A/T): 6AT

OK (CVT): CVT

Engine type

OK (2.4L engine): 2.4L D4 MPI VVT

OK (3.0L engine): 3.0L S4 MIVEC

Engine power

OK: Normal

Chassis type for A.S.C.

OK : Type 2

Final drive

OK (FWD): Front Drive

OK (AWD): 4WD FF Base

Front differential

OK (except S-AWC): Open

OK (S-AWC): ELSD

Transfer

OK (FWD): FWD

OK (AWD): ECC

SAS

OK: Present

4WD/AWD

OK (FWD): Not present

OK (AWD): Present

TCM

OK: Present

ACDAYC

OK: Not present

Q: Is the check result normal?

YES : Go to Step 6.

NO : Replace the ETACS-ECU (Refer to GROUP 54A –
[ETACS-ECU P.54A-825](#)), and then go to Step 7.

STEP 6. Check whether the diagnostic trouble code is reset.

Erase the DTC.

Q: Is DTC C1290 set?

YES : Replace the hydraulic unit (integrated with ASC-ECU). Then go to Step 7.

NO : If the trouble symptom is resolved, an intermittent malfunction such as poorly engaged connector(s) or wiring harness is suspected (Refer to GROUP 00 – How to Use Troubleshooting/How to Cope with Intermittent Malfunctions [P.00-15](#)).

STEP 7. Check whether the diagnostic trouble code is reset.

Erase the DTC.

Q: Is DTC C1290 set?

YES : Return to Step 1.

NO : The procedure is complete.

DTC C2203: VIN not recorded

⚠ CAUTION

- If there is any problem in the CAN bus lines, an incorrect diagnostic trouble code may be set. Prior to this diagnosis, diagnose the CAN bus lines (Refer to GROUP 54C – CAN Bus Line Diagnostic Flow [P.54C-10](#)).
- When other diagnostic trouble code for ASC-ECU is set, troubleshoot that diagnostic trouble code first.
- Whenever ECU is replaced, ensure that the CAN bus lines are normal.
- When the hydraulic unit (integrated with ASC-ECU) is replaced, always carry out the calibration of the steering wheel sensor, the G and yaw rate sensor and brake fluid pressure sensor (Refer to [P.35C-282](#), [P.35C-283](#) and [P.35C-284](#)).

OPERATION

ASC-ECU receives vehicle information from the engine control module and stores it.

DTC SET CONDITIONS

This diagnostic trouble code is set when ASC-ECU cannot receive the vehicle information from the engine control module.

PROBABLE CAUSES

- Malfunction of the CAN bus
- Engine control module malfunction
- ASC-ECU malfunction

- When the ignition switch is turned to the "ON" position for the first time after the ASC-ECU is replaced.

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 lines.

Use scan tool to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to Step 3.

NO : Repair the CAN bus lines (Refer to GROUP 54C – CAN Bus Diagnostics Table [P.54C-17](#)). On completion, go to Step 2.

STEP 2. Diagnostic trouble code recheck after resetting CAN bus lines

- (1) Ignition switch "LOCK" (OFF)
- (2) Ignition switch "ON"

Q: Is DTC C2203 set?

YES : Go to Step 3.

NO : The procedure is complete.

STEP 3. M.U.T.-III diagnostic trouble code

Check that the engine control module sets a diagnostic trouble code.

Q: Is any DTC set?

YES : Troubleshoot the engine control module diagnostic trouble code <Refer to GROUP 13A – Diagnostic Trouble Code Chart [P.13A-49](#) (2.4L engine) or GROUP 13B – Diagnostic trouble code chart [P.13B-50](#) (3.0L engine)>, and then go to Step 5.

NO : Go to Step 4.

STEP 4. Check whether the diagnostic trouble code is reset.

- (1) Erase the DTC.
- (2) Ignition switch: "LOCK" (OFF) position
- (3) Ignition switch: "ON" position

Q: Is DTC C2203 set?

YES : Replace the hydraulic unit (integrated with ASC-ECU) (Refer to [P.35C-287](#)), and then go to Step 5.

NO : If a trouble is solved, it is determined that there is an intermittent malfunction such as poor engaged connector(s) or open circuit (Refer to GROUP 00 – How to Use Troubleshooting/How to Cope with Intermittent Malfunctions [P.00-15](#)).

STEP 5. Check whether the diagnostic trouble code is reset.

- (1) Erase the DTC.
- (2) Ignition switch: "LOCK" (OFF) position
- (3) Ignition switch: "ON" position

Q: Is DTC C2203 set?

YES : Return to Step 1.

NO : The procedure is complete.

DTC C2206: Re-execution of variant coding** CAUTION**

- If there is any problem in the CAN bus lines, an incorrect diagnostic trouble code may be set. Prior to this diagnosis, diagnose the CAN bus lines (Refer to GROUP 54C – CAN Bus Line Diagnostic Flow [P.54C-10](#)).
- If the diagnostic trouble code C2206 is set in ASC-ECU, always diagnose the CAN bus line. If there is any fault in the CAN bus lines, an incorrect diagnostic trouble code may be set. In this case, the set diagnostic trouble code is not highly reliable.
- Before replacing the ECU, ensure that the communication circuit is normal.
- When the diagnostic trouble code C2206 is set in ASC-ECU, the diagnostic trouble code may also be set in ETACS-ECU. When the diagnostic trouble code is set in ETACS-ECU, carry out the diagnosis of the diagnostic trouble code for ETACS-ECU first.
- When the hydraulic unit (integrated with ASC-ECU) is replaced, always carry out the calibration of the steering wheel sensor, the G and yaw rate sensor and brake fluid pressure sensor (Refer to [P.35C-282](#), [P.35C-283](#) and [P.35C-284](#)).

OPERATION

ASC-ECU receives the vehicle information stored in the ETACS-ECU via CAN bus lines.

DTC SET CONDITIONS

ASC-ECU communicates with ETACS-ECU via CAN bus lines. This diagnostic trouble code is set if the vehicle information stored in ETACS-ECU varies from the one stored when the ignition switch was last turned on.

PROBABLE CAUSES

- ETACS-ECU or ASC-ECU which was equipped with other vehicle is used.
- Malfunction of ETACS-ECU

- ASC-ECU malfunction
- External noise interference

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 lines.

Use scan tool to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Repair the CAN bus lines. (Refer to GROUP 54C – CAN Bus Diagnostics Table [P.54C-17](#).) On completion, go to Step 7.

STEP 2. Using scan tool MB991958, diagnostic trouble code

Check that the diagnostic trouble code U1415 or U1417 is set in ASC-ECU.

Q: Is DTC U1415 or U1417 set?

YES : Troubleshoot for the relevant diagnostic trouble code (Refer to [P.35C-18](#)).

NO : Go to Step 3.

STEP 3. Using scan tool MB991958, diagnostic trouble code of other systems

Use scan tool to check that the vehicles information-related DTC is set by the ETACS-ECU.

Q: Is any DTC set?

YES : Troubleshoot the relevant diagnostic trouble code, and then go to Step 7.

NO : Go to Step 4.

STEP 4. ETACS-ECU coding data check

Refer to GROUP 00 – Precautions before Service/Coding List [P.00-44](#).

Q: Is the check result normal?

YES : Go to Step 6.

NO : Go to Step 5.

STEP 5. ETACS-ECU variant coding

Perform the variant coding to the ETACS-ECU.

Q: Does variant coding succeed?

YES : Go to Step 7.

NO : Replace the ETACS-ECU (Refer to GROUP 54A – ETACS-ECU [P.54A-825](#)), and then go to Step 7.

STEP 6. Check whether the diagnostic trouble code is reset.

- (1) Erase the DTC.
- (2) Ignition switch: "LOCK" (OFF) position
- (3) Ignition switch: "ON" position

Q: Is DTC C2206 set?

YES : Replace the hydraulic unit (integrated with ASC-ECU) (Refer to [P.35C-287](#)), and then go to Step 7.

NO : The procedure is complete.

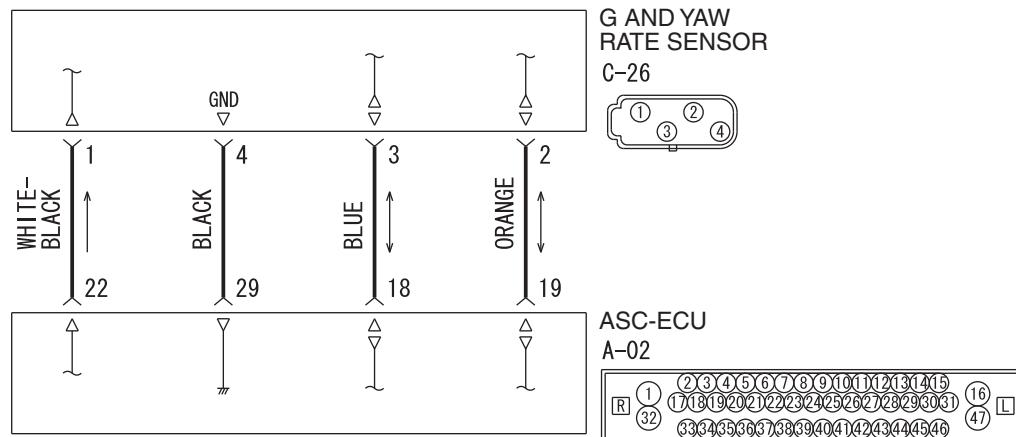
STEP 7. Check whether the diagnostic trouble code is reset.

- (1) Erase the DTC.
- (2) Ignition switch: "LOCK" (OFF) position
- (3) Ignition switch: "ON" position

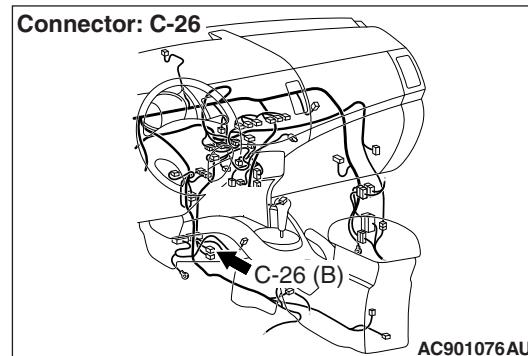
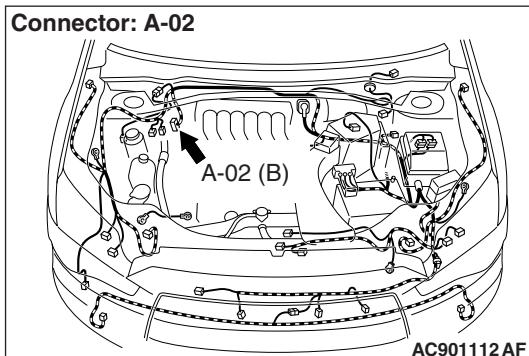
Q: Is DTC C2206 set?

YES : Return to Step 1.

NO : The procedure is complete.

DTC C1210: Abnormality in G and yaw rate sensor**G and Yaw Rate Sensor Circuit**

ACA02068

**⚠ CAUTION**

- If there is any problem in the CAN bus lines, an incorrect diagnostic trouble code may be set. Prior to this diagnosis, diagnose the CAN bus lines (Refer to GROUP 54C – CAN Bus Line Diagnostic Flow [P.54C-10](#)).
- Whenever ECU is replaced, ensure that the CAN bus lines are normal.
- Do not drop or shock the G and yaw rate sensor.
- When the G and yaw rate sensor is replaced, always carry out calibration to make ASC-ECU learn the neutral point (Refer to [P.35C-282](#)).
- When the hydraulic unit (integrated with ASC-ECU) is replaced, always carry out the calibration of the steering wheel sensor, the G and yaw rate sensor and brake fluid pressure sensor (Refer to [P.35C-282](#), [P.35C-283](#) and [P.35C-284](#)).

OPERATION

- The G and yaw rate sensor outputs the signal to ASC-ECU via the CAN bus lines.

DTC SET CONDITIONS

This diagnostic trouble code is set if any malfunction below is found:

- When the output value of the longitudinal G-sensor is abnormal
- When abnormality in longitudinal G-sensor is detected by the self-diagnosis of the G and yaw rate sensor

PROBABLE CAUSES

- G and yaw rate sensor malfunction
- ASC-ECU malfunction
- External noise interference
- The G and yaw rate sensor for FWD is installed.

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 lines.

Use scan tool to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to Step 3.

NO : Repair the CAN bus lines (Refer to GROUP 54C – CAN Bus Diagnostics Table [P.54C-17](#)). On completion, go to Step 2.

STEP 2. DTC recheck after resetting CAN bus lines

Q: Is DTC C1210 set?

YES : Go to Step 3.

NO : The procedure is complete.

STEP 3. M.U.T.-III data list

Check the following data list (Refer to [P.35C-270](#)).

- Item 09: G sensor

Q: Is the check result normal?

YES : Go to Step 6.

NO : Go to Step 4.

STEP 4. Connector check: A-02 ASC-ECU connector, C-26 G and yaw rate sensor connector

Q: Is the check result normal?

YES : Go to Step 5.

NO : Repair the connector, and then go to Step 8.

STEP 5. Wiring harness check between A-02 ASC-ECU connector terminal No. 18 and C-26 G and yaw rate sensor connector terminal No. 3 as well as between A-02 ASC-ECU connector terminal No. 19 and C-137 G and yaw rate sensor connector terminal No. 2

- Check the communication circuit for open and short circuit.

Q: Is the check result normal?

YES : Replace the G and yaw rate sensor (Refer to [P.35C-290](#)), and then go to Step 7.

NO : Repair the wiring harness, and then go to Step 8.

STEP 6. Check whether the DTC is reset.

(1) Erase the DTC.

(2) Drive the vehicle at 12mph (20 km/h) or higher.

Q: Is DTC C1210 set?

YES : Replace the hydraulic unit (ASC-ECU) (Refer to [P.35C-287](#)), and then go to Step 8.

NO : Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/How to Cope with Intermittent Malfunctions [P.00-15](#)).

STEP 7. Check whether the DTC is reset.

- (1) Erase the DTC.
- (2) Drive the vehicle at 12mph (20 km/h) or higher.

Q: Is DTC C1210 set?

YES : Replace the hydraulic unit (integrated with ASC-ECU)
(Refer to [P.35C-287](#)), and then go to Step 8.

NO : The procedure is complete.

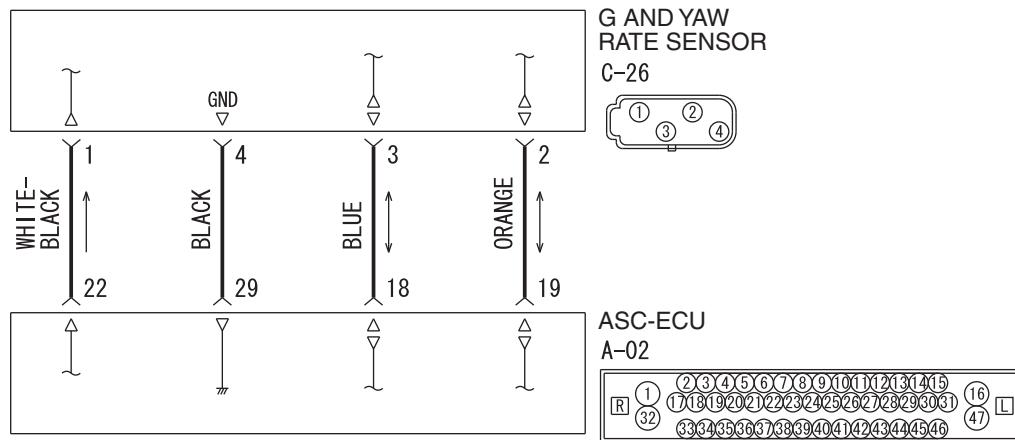
STEP 8. Check whether the DTC is reset.

- (1) Erase the DTC.
- (2) Drive the vehicle at 12mph (20 km/h) or higher.

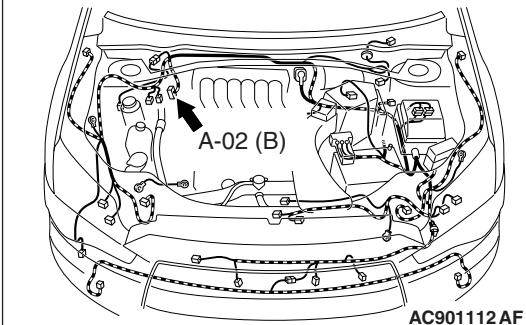
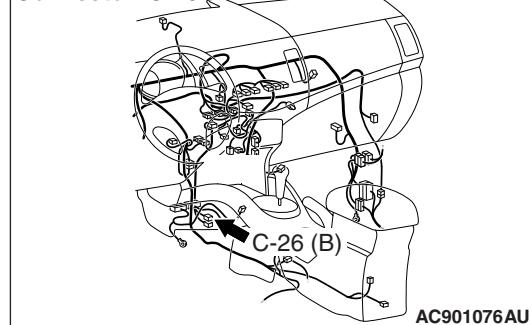
Q: Is DTC C1210 set?

YES : Return to Step 1.

NO : The procedure is complete.

DTC C1242: Abnormality in G and yaw rate sensor (Abnormality in longitudinal G sensor output signal)**G and Yaw Rate Sensor Circuit**

ACA02068

Connector: A-02**Connector: C-26**

⚠ CAUTION

- If there is any problem in the CAN bus lines, an incorrect diagnostic trouble code may be set. Prior to this diagnosis, diagnose the CAN bus lines (Refer to GROUP 54C – CAN Bus Line Diagnostic Flow [P.54C-10](#)).
- Whenever ECU is replaced, ensure that the CAN bus lines are normal.
- Do not drop or shock the G and yaw rate sensor.
- When the G and yaw rate sensor is replaced, always carry out calibration to make ASC-ECU learn the neutral point (Refer to [P.35C-282](#)).
- When the hydraulic unit (integrated with ASC-ECU) is replaced, always carry out the calibration of the steering wheel sensor, the G and yaw rate sensor and brake fluid pressure sensor (Refer to [P.35C-282](#), [P.35C-283](#) and [P.35C-284](#)).

OPERATION

- ASC-ECU supplies power to the G and yaw rate sensor at the terminal No.1.
- The G and yaw rate sensor outputs the signal to ASC-ECU via the special CAN bus lines.

DTC SET CONDITIONS

This diagnostic trouble code is set when the abnormality is detected by comparing the longitudinal G-sensor value output from the G and yaw rate sensor with the value output from the wheel speed sensor.

PROBABLE CAUSES

- Improper installation of the G and yaw rate sensor
- G and yaw rate sensor malfunction
- Wheel speed sensor malfunction
- ASC-ECU malfunction
- External noise interference

NOTE: This DTC may be set also when the vehicle is driven on the four-wheel drum tester.

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 lines.

Use scan tool to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Repair the CAN bus lines (Refer to GROUP 54C – CAN Bus Diagnostics Table [P.54C-17](#)). On completion, go to Step 2.

STEP 2. Using scan tool MB991958, DTC

Check that the DTC U0125 is set in ASC-ECU.

Q: Is DTC U0125 set?

YES : Troubleshoot for the DTC (Refer to [P.35C-201](#)). Then go to Step 3.

NO : Go to Step 3.

STEP 3. DTC recheck after resetting CAN bus lines

Q: Is DTC C1242 set?

YES : Go to Step 4.

NO : The procedure is complete.

STEP 4. Check the wheel speed sensor-related DTC.

Use the scan tool to check whether the wheel speed sensor-related DTC is set or not.

Q: Is the DTC set?

YES : Troubleshoot for the relevant DTC (Refer to [P.35C-18](#)).

NO : Go to Step 5.

STEP 5. Using scan tool MB991958, check the data list

Check the following data list under curb weight condition or one occupant (driver) only in the vehicle, on a flat road (Refer to [P.35C-270](#)).

- Item 09: G sensor
- Item 96: G sensor offset

Q: Is the check result normal?

YES : Turn the ignition switch to the ON from OFF position. Then go to Step 9.

NO : Go to Step 6.

STEP 6. G and yaw rate sensor check

Check that the G and yaw rate sensor is installed correctly.

Q: Is the check result normal?

YES : Go to Step 7.

NO : Reinstall the G and yaw rate sensor correctly (Refer to [P.35C-290](#)), and then go to Step 10.

STEP 7. Connector check: A-02 ASC-ECU connector, C-26 G and yaw rate sensor connector**Q: Is the check result normal?****YES** : Go to Step 8.**NO** : Repair the connector, and then go to Step 10.**STEP 8. Wiring harness check between A-02 ASC-ECU connector terminal No. 18 and C-26 G and yaw rate sensor connector terminal No. 3 as well as between A-02 ASC-ECU connector terminal No. 19 and C-26 G and yaw rate sensor connector terminal No. 2**

- Check the communication circuit for open and short circuit.

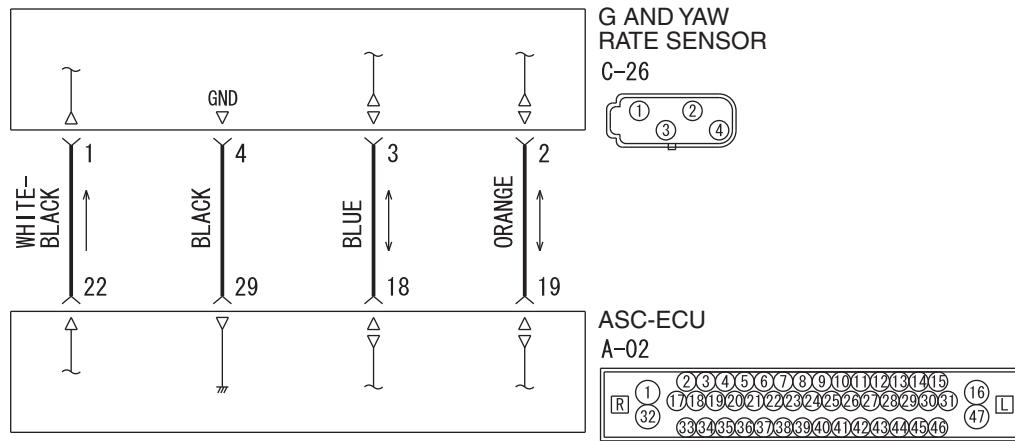
Q: Is the check result normal?**YES** : Replace the G and yaw rate sensor (Refer to [P.35C-290](#)). Then go to Step 9.**NO** : Repair the wiring harness, and then go to Step 10.

STEP 9. Check whether the DTC is reset.**(1) Erase the DTC.****(2) Drive the vehicle at 12mph (20 km/h) or higher.****Q: Is DTC C1242 set?****YES** : Replace the hydraulic unit (integrated with ASC-ECU) (Refer to [P.35C-287](#)), and then go to Step 10.**NO** : Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/How to Cope with Intermittent Malfunctions [P.00-15](#)).

STEP 10. Check whether the DTC is reset.**(1) Erase the DTC.****(2) Drive the vehicle at 12mph (20 km/h) or higher.****Q: Is DTC C1242 set?****YES** : Return to Step 1.**NO** : The procedure is complete.

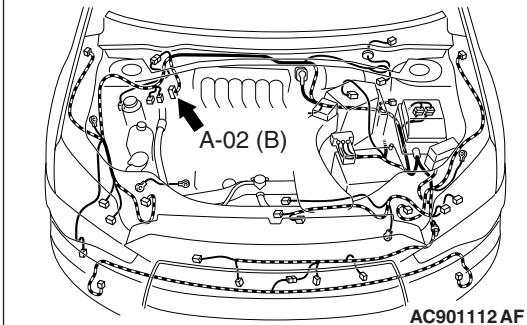
DTC C123C: Abnormality in G and yaw rate sensor [Abnormality in lateral G and yaw rate output value (incorrect installation)]

G and Yaw Rate Sensor Circuit

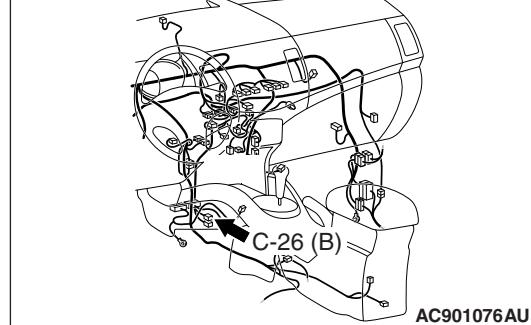


ACA02068

Connector: A-02



Connector: C-26



⚠ CAUTION

- If there is any problem in the CAN bus lines, an incorrect diagnostic trouble code may be set. Prior to this diagnosis, diagnose the CAN bus lines (Refer to GROUP 54C – CAN Bus Line Diagnostic Flow [P.54C-10](#)).
- Whenever ECU is replaced, ensure that the CAN bus lines are normal.
- When the steering wheel sensor is replaced, always carry out calibration to make ASC-ECU learn the neutral point (Refer to [P.35C-283](#)).
- Do not drop or shock the G and yaw rate sensor.
- When the G and yaw rate sensor is replaced, always carry out calibration to make ASC-ECU learn the neutral point (Refer to [P.35C-282](#)).
- When the hydraulic unit (integrated with ASC-ECU) is replaced, always carry out the calibration of the steering wheel sensor, the G and yaw rate sensor and brake fluid pressure sensor (Refer to [P.35C-282](#), [P.35C-283](#) and [P.35C-284](#)).

OPERATION

- ASC-ECU supplies power to the G and yaw rate sensor at the terminal No.1.
- The G and yaw rate sensor outputs the signal to ASC-ECU via the CAN bus lines.

DTC SET CONDITIONS

This diagnostic trouble code is set if any malfunction below is found:

- The output value of lateral G and yaw rate sensor is abnormal.
- When abnormality is detected by comparing the value output from the lateral G and yaw rate sensor with the one from the steering wheel sensor and wheel speed sensor

PROBABLE CAUSES

- Improper installation of the G and yaw rate sensor
- G and yaw rate sensor malfunction
- Steering wheel sensor malfunction
- Improper installation of steering wheel sensor
- Malfunction of wheel speed sensor
- ASC-ECU malfunction
- External noise interference

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 lines.

Use scan tool to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Repair the CAN bus lines (Refer to GROUP 54C – CAN Bus Diagnostics Table [P.54C-17](#)). On completion, go to Step 2.

STEP 2. Using scan tool MB991958, DTC

Check that the DTC U0125 is set in ASC-ECU.

Q: Is DTC U0125 set?

YES : Troubleshoot for the DTC (Refer to [P.35C-201](#)). Then go to Step 3.

NO : Go to Step 3.

STEP 3. DTC recheck after resetting CAN bus lines

Q: Is DTC C123C set?

YES : Go to Step 4.

NO : The procedure is complete.

STEP 4. Check the wheel speed sensor-related or steering wheel sensor-related DTC.

Use scan tool to check whether the wheel speed sensor-related or steering wheel sensor-related DTC is set or not.

Q: Is the DTC set?

YES : Troubleshoot for the relevant DTC (Refer to [P.35C-18](#)).

NO : Go to Step 5.

STEP 5. G and yaw rate sensor installation check

Check that the G and yaw rate sensor is installed correctly.

Q: Is the check result normal?

YES : After checking the G and yaw rate sensor, carry out calibration of the G and yaw rate sensor to make ASC-ECU relearn the neutral point (Refer to [P.35C-282](#)). Then go to Step 6.

NO : Reinstall the G and yaw rate sensor correctly (Refer to [P.35C-290](#)), and then go to Step 12.

STEP 6. M.U.T.-III data list

Check the following data list (Refer to [P.35C-270](#)).

- Item 08: Lateral G-sensor
- Item 12: Yaw rate sensor

Q: Is the check result normal?

YES : Go to Step 9.

NO : Go to Step 7.

STEP 7. Connector check: A-02 ASC-ECU connector, C-26 G and yaw rate sensor connector**Q: Is the check result normal?****YES** : Go to Step 8.**NO** : Repair the connector, and then go to Step 13.**STEP 8. Wiring harness check between A-02 ASC-ECU connector terminal No. 18 and C-26 G and yaw rate sensor connector terminal No. 3 as well as between A-02 ASC-ECU connector terminal No. 19 and C-26 G and yaw rate sensor connector terminal No. 2**

- Check the communication circuit for open and short circuit.

Q: Is the check result normal?**YES** : Replace the G and yaw rate sensor (Refer to [P.35C-290](#)), and then go to Step 12.**NO** : Repair the wiring harness, and then go to Step 13.

STEP 9. Steering wheel sensor installation check

Check that the steering wheel sensor is installed correctly.

Q: Is the check result normal?**YES** : Go to Step 10.**NO** : Reinstall the steering wheel sensor correctly (Refer to [P.35C-291](#)), and then go to Step 10.

STEP 10. Wheel alignment checkRefer to GROUP 33 – On-vehicles service/Front Wheel Alignment Check [P.33-8](#).**Q: Is the check result normal?****YES** : After checking the wheel alignment, carry out calibration of steering wheel sensor to make ASC-ECU relearn the neutral point (Refer to [P.35C-283](#)). Then go to Step 11.**NO** : After adjusting the wheel alignment, carry out calibration of steering wheel sensor to make ASC-ECU relearn the neutral point (Refer to [P.35C-283](#)). Then go to Step 11.

STEP 11. M.U.T.-III data listCheck the following data list (Refer to [P.35C-270](#)).

- Item 11: Steering angle

Q: Is the check result normal?**YES** : Go to Step 12.**NO** : Replace the steering wheel sensor (Refer to [P.35C-291](#)), and then go to Step 12.

STEP 12. Check whether the DTC is reset.

- (1) Erase the DTC.
- (2) Drive the vehicle at 12mph (20 km/h) or higher.

Q: Is DTC C123C set?

YES : Replace the hydraulic unit (ASC-ECU) (Refer to [P.35C-287](#)), and then go to Step 13.

NO : Intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction [P.00-15](#)).

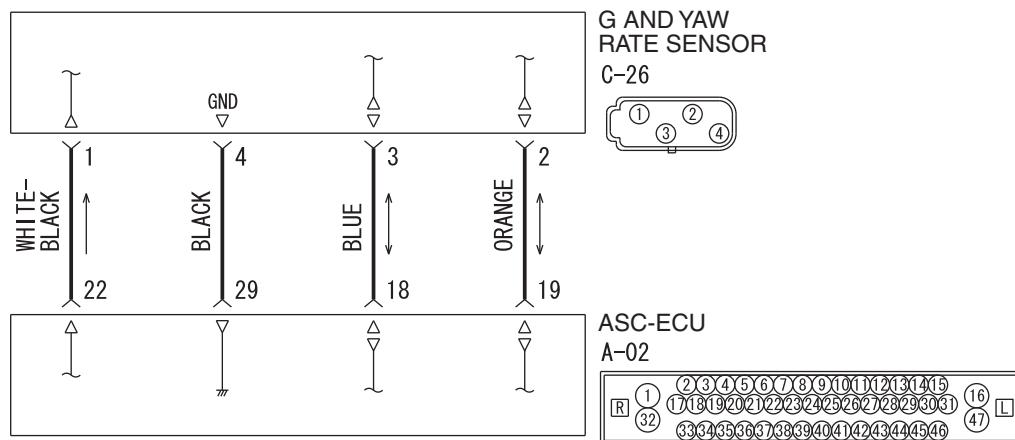
STEP 13. Check whether the DTC is reset.

- (1) Erase the DTC.
- (2) Drive the vehicle at 12mph (20 km/h) or higher.

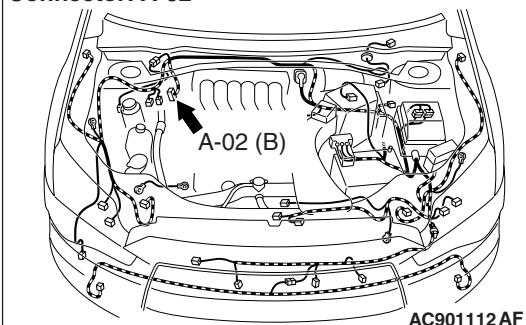
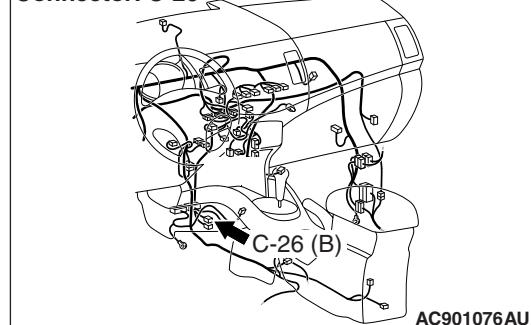
Q: Is DTC C123C set?

YES : Return to Step 1.

NO : The procedure is complete.

DTC C2204: Internal abnormality in G and yaw rate sensor**G and Yaw Rate Sensor Circuit**

ACA02068

Connector: A-02**Connector: C-26**

⚠ CAUTION

- If there is any problem in the CAN bus lines, an incorrect diagnostic trouble code may be set. Prior to this diagnosis, diagnose the CAN bus lines (Refer to GROUP 54C – CAN Bus Line Diagnostic Flow [P.54C-10](#)).
- Whenever ECU is replaced, ensure that the CAN bus lines are normal.
- Do not drop or shock the G and yaw rate sensor.
- When the G and yaw rate sensor is replaced, always carry out calibration to make ASC-ECU learn the neutral point (Refer to [P.35C-282](#)).
- When the hydraulic unit (integrated with ASC-ECU) is replaced, always carry out the calibration of the steering wheel sensor, the G and yaw rate sensor and brake fluid pressure sensor (Refer to [P.35C-282](#), [P.35C-283](#) and [P.35C-284](#)).

CIRCUIT OPERATION

- ASC-ECU supplies power to the G and yaw rate sensor at the terminal No.1.
- The G and yaw rate sensor outputs the signal to ASC-ECU via the CAN bus lines.

DTC SET CONDITIONS

This diagnostic trouble code is set if any malfunction below is found:

- When abnormality in lateral G sensor and yaw rate sensor is detected by the self-diagnosis of the G and yaw rate sensor
- When the output value of the G and yaw rate sensor is not within the standard value range

NOTE: This diagnostic trouble code may be set when G and yaw rate sensor is put on the turntable turning at high speed.

PROBABLE CAUSES

- Improper installation of the G and yaw rate sensor
- Damaged wiring harness and connectors
- G and yaw rate sensor malfunction
- ASC-ECU malfunction

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 lines.

Use scan tool to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Repair the CAN bus lines (Refer to GROUP 54C – CAN Bus Diagnostics Table [P.54C-17](#)). On completion, go to Step 2.

STEP 2. Using scan tool MB991958, check the DTC

Check that the DTC U0125 is set in ASC-ECU.

Q: Is DTC U0125 set?

YES : Troubleshoot for the DTC (Refer to [P.35C-201](#)). Then go to Step 3.

NO : Go to Step 3.

STEP 3. DTC recheck after resetting CAN bus lines

Q: Is DTC C2204 set?

YES : Go to Step 4.

NO : The procedure is complete.

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

Check the following data list under curb weight condition or one occupant (driver) only in the vehicle, on a flat road (Refer to [P.35C-270](#)).

- Item 08: Lateral G-sensor
- Item 09: G-sensor
- Item 12: Yaw rate sensor
- Item 73: Lateral G sensor offset
- Item 97: Yaw rate sensor offset

Q: Is the check result normal?

YES : Turn the ignition switch to the ON from OFF position. Then go to Step 8.

NO : Go to Step 5.

STEP 5. G and yaw rate sensor installation check

Check that the G and yaw rate sensor is installed correctly.

Q: Is the check result normal?

YES : Go to Step 6.

NO : Reinstall the G and yaw rate sensor correctly (Refer to [P.35C-290](#)), and then go to Step 8.

STEP 6. Connector check: A-02 ASC-ECU connector, C-26 G and yaw rate sensor connector

Q: Is the check result normal?

YES : Go to Step 7.

NO : Repair the connector, and then go to Step 8.

STEP 7. Wiring harness check between A-02 ASC-ECU connector terminal No. 18 and C-26 G and yaw rate sensor connector terminal No. 3 as well as between A-02 ASC-ECU connector terminal No. 19 and C-26 G and yaw rate sensor connector terminal No. 2

- Check the communication circuit for open and short circuit.

Q: Is the check result normal?

YES : Go to Step 8.

NO : Repair the wiring harness, and then go to Step 8.

STEP 8. Check whether the DTC is reset.

(1) Erase the DTC.

(2) Drive the vehicle at 12mph (20 km/h) or higher.

Q: Is DTC C2204 set?

YES : Replace the G and yaw rate sensor (Refer to [P.35C-290](#)), and then go to Step 9.

NO : Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/How to Cope with Intermittent Malfunctions [P.00-15](#)).

STEP 9. Check whether the DTC is reset.

(1) Erase the DTC.

(2) Drive the vehicle at 12mph (20 km/h) or higher.

Q: Is DTC C2204 set?

YES : Replace the hydraulic unit (integrated with ASC-ECU) (Refer to [P.35C-287](#)), and then go to Step 10.

NO : Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/How to Cope with Intermittent Malfunctions [P.00-15](#)).

STEP 10. Check whether the DTC is reset.

(1) Erase the DTC.

(2) Drive the vehicle at 12mph (20 km/h) or higher.

Q: Is DTC C2204 set?

YES : Return to Step 1.

NO : The procedure is complete.

DTC C2111: Brake Fluid Pressure Sensor Power Supply Circuit (High input)
DTC C2112: Brake Fluid Pressure Sensor Power Supply Circuit (Low input)

⚠ CAUTION

- If there is any problem in the CAN bus lines, an incorrect diagnostic trouble code may be set. Prior to this diagnosis, diagnose the CAN bus lines (Refer to GROUP 54C – CAN Bus Line Diagnostic Flow [P.54C-10](#)).
- Whenever ECU is replaced, ensure that the CAN bus lines are normal.
- When the hydraulic unit (integrated with ASC-ECU) is replaced, always carry out the calibration of the steering wheel sensor, the G and yaw rate sensor and brake fluid pressure sensor (Refer to [P.35C-282](#), [P.35C-283](#) and [P.35C-284](#)).

OPERATION

When the brake pedal is depressed, the brake fluid pressure sensor integrated in the hydraulic unit detects the brake fluid pressure applied from the master cylinder, converts the pressure value into voltage signal, and outputs it.

DTC SET CONDITIONS

This diagnostic trouble code is set when the voltage applied to the pressure sensor is not within the standard value range.

PROBABLE CAUSES

ASC-ECU malfunction

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 lines.

Use scan tool to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to Step 3.

NO : Repair the CAN bus lines (Refer to GROUP 54C – CAN Bus Diagnostics Table [P.54C-17](#)). On completion, go to Step 2.

STEP 2. DTC recheck after resetting CAN bus lines**Q: Are DTCs C2111 or C2112 set?**

YES : Go to Step 3.

NO : The procedure is complete.

STEP 3. Battery check

Refer to GROUP 54A – Battery Test [P.54A-9](#).

Q: Is the battery in good condition?

YES : Go to Step 4.

NO : Charge or replace the battery, and then go to Step 6.

STEP 4. Charging system check

Refer to GROUP 16 – On-vehicle Service/Output Current Test [P.16-9](#).

Q: Is the charging system in good condition?

YES : Go to Step 5.

NO : Repair or replace the charging system component(s), and then go to Step 6.

STEP 5. Check whether the diagnostic trouble code is reset.

Erase the diagnostic trouble code.

Q: Are DTCs C2111 or C2112 set?

YES : Replace the hydraulic unit (integrated with ASC-ECU) (Refer to [P.35C-287](#)), and then go to Step 6.

NO : Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/How to Cope with Intermittent Malfunctions [P.00-15](#)).

STEP 6. Check whether the diagnostic trouble code is reset.

Erase the diagnostic trouble code.

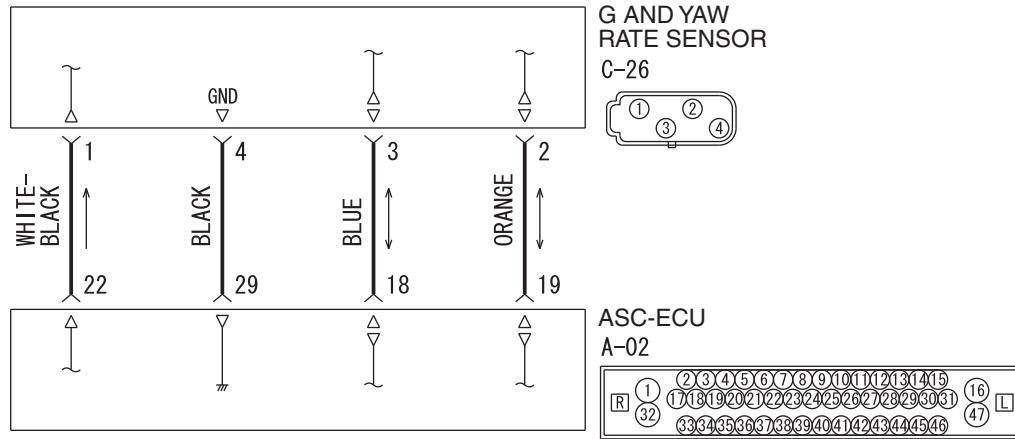
Q: Are DTCs C2111 or C2112 set?

YES : Return to Step 1.

NO : The procedure is complete.

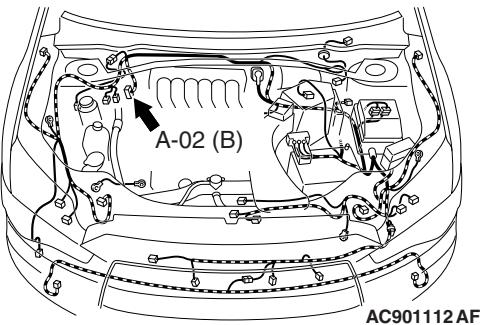
DTC C2114: Abnormality in G and yaw rate sensor operation voltage (Low voltage)
DTC C2115: Abnormality in G and yaw rate sensor operation voltage (High voltage)

G and Yaw Rate Sensor Circuit

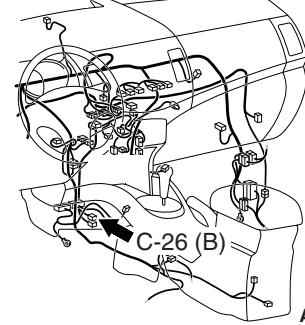


ACA02068

Connector: A-02



Connector: C-26



⚠ CAUTION

- If there is any problem in the CAN bus lines, an incorrect diagnostic trouble code may be set. Prior to this diagnosis, diagnose the CAN bus lines (Refer to GROUP 54C – CAN Bus Line Diagnostic Flow [P.54C-10](#)).
- Whenever ECU is replaced, ensure that the CAN bus lines are normal.
- Do not drop or shock the G and yaw rate sensor.
- When the G and yaw rate sensor is replaced, always carry out calibration to make ASC-ECU learn the neutral point (Refer to [P.35C-282](#)).
- When the hydraulic unit (integrated with ASC-ECU) is replaced, always carry out the calibration of the steering wheel sensor, the G and yaw rate sensor and brake fluid pressure sensor (Refer to [P.35C-282](#), [P.35C-283](#) and [P.35C-284](#)).

CIRCUIT OPERATION

- ASC-ECU supplies power to the G and yaw rate sensor at the terminal No.1.
- The G and yaw rate sensor outputs the signal to ASC-ECU via the special CAN bus lines.

DTC SET CONDITIONS

This diagnostic trouble code is set if any malfunction below is found:

DTC C2114

- When the power supply voltage applied from ASC-ECU to the G and yaw rate sensor is not within the standard value range <low voltage (6.5 ± 0.5 V or less)>

DTC C2115

- When the power supply voltage applied from ASC-ECU to the G and yaw rate sensor is not within the standard value range <high voltage (18.0 ± 1.0 V or more)>

PROBABLE CAUSES

- Damaged wiring harness and connectors
- G and yaw rate sensor malfunction
- ASC-ECU malfunction

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 lines.

Use scan tool to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Repair the CAN bus lines (Refer to GROUP 54C – CAN Bus Diagnostics Table [P.54C-17](#)). On completion, go to Step 2.

STEP 2. Using scan tool MB991958, check the DTC.

Check that the DTC U0125 is set in ASC-ECU.

Q: Is DTC U0125 set?

YES : Troubleshoot for the DTC (Refer to [P.35C-201](#)). Then go to Step 3.

NO : Go to Step 3.

STEP 3. DTC recheck

Q: Is DTC C2114 or C2115 set?

YES : Go to Step 4.

NO : The procedure is complete.

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

Check the following data list (Refer to [P.35C-270](#)).

- Item 08: Lateral G sensor
- Item 09: G sensor
- Item 12: Yaw rate sensor

Q: Is the check result normal?

YES : Go to Step 12.

NO : Go to Step 5.

STEP 5. Connector check: A-02 ASC-ECU connector, C-26 G and yaw rate sensor connector

Q: Is the check result normal?

YES : Go to Step 6.

NO : Repair the connector, and then go to Step 13.

STEP 6. Wiring harness check between A-02 ASC-ECU connector terminal No. 18 and C-26 G and yaw rate sensor connector terminal No. 3 as well as between A-02 ASC-ECU connector terminal No. 19 and C-26 G and yaw rate sensor connector terminal No. 2

- Check the communication circuit for open and short circuit.

Q: Is the check result normal?

YES : Go to Step 7.

NO : Repair the wiring harness, and then go to Step 13.

STEP 7. G and yaw rate sensor installation check

Check that the G and yaw rate sensor is installed correctly.

Q: Is the check result normal?

YES : Go to Step 8.

NO : Reinstall the G and yaw rate sensor correctly (Refer to [P.35C-290](#)), and then go to Step 13.

STEP 8. Voltage measurement at C-26 G and yaw rate sensor connector

(1) Disconnect the C-26 G and yaw rate sensor connector.

(2) Turn the ignition switch to the "ON" position.

(3) Measure the voltage at the harness side between the terminal No.1 and the body ground.

OK: 6.5 - 16 volt

Q: Is the check result normal?

YES : Go to Step 11.

NO : Go to Step 9.

STEP 9. Voltage measurement at A-02 ASC-ECU connector

(1) Disconnect the ASC-ECU connector, connect the ASC check harness (Special tool: MB991997) to the ASC-ECU-side connector and harness-side connector, and then measure at the special tool connector side.

(2) Disconnect the C-26 G and yaw rate sensor connector.

(3) Turn the ignition switch to the "ON" position.

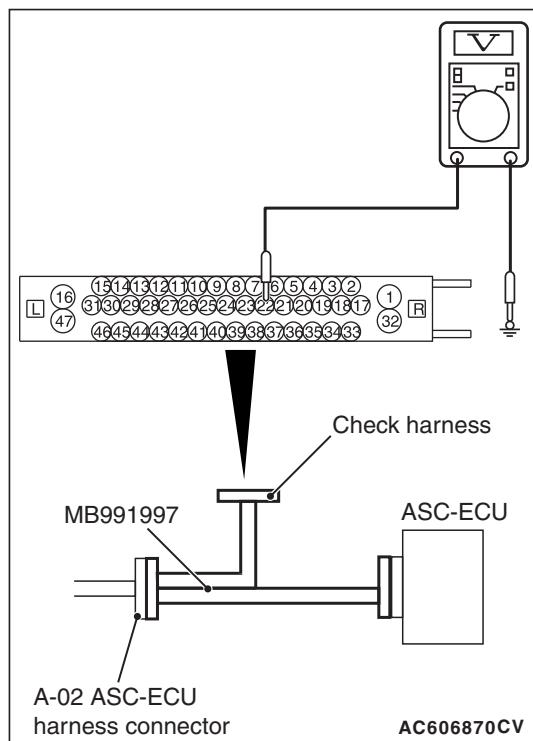
(4) Measure the voltage between the terminal No.22 and the body ground.

OK: 6.5 - 16 volt

Q: Is the check result normal?

YES : Go to Step 10.

NO : Go to Step 12.

**STEP 10. Wiring harness check between A-02 ASC-ECU connector terminal No.22 and C-26 G and yaw rate sensor connector terminal No.1.**

- Check the power supply circuit for short and open circuit.

Q: Is the check result normal?

YES : Go to Step 12.

NO : Repair the wiring harness between A-02 ASC-ECU connector terminal No. 22 and C-26 G and yaw rate sensor connector terminal No. 1.

STEP 11. Wiring harness check between A-02 ASC-ECU connector terminal No.29 and C-26 G and yaw rate sensor connector terminal No.4.

- Check the ground circuit for open circuit.

Q: Is the check result normal?

YES : Replace the G and yaw rate sensor (Refer to [P.35C-290](#)) and then go to Step 12.

NO : Repair the wiring harness between A-02 ASC-ECU connector terminal No.29 and C-26 G and yaw rate sensor connector terminal No.4.

STEP 12. Check whether the DTC is reset.

- (1) Erase the DTC.
- (2) Drive the vehicle at 12mph (20 km/h) or higher.

Q: Is DTC C2114 or C2115 set?

YES : Replace the hydraulic unit (integrated with ASC-ECU) (Refer to [P.35C-287](#)), and then go to Step 13.

NO : Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/How to Cope with Intermittent Malfunctions [P.00-15](#)).

STEP 13. Check whether the DTC is reset.

- (1) Erase the DTC.
- (2) Drive the vehicle at 12mph (20 km/h) or higher.

Q: Is DTC C2114 or C2115 set?

YES : Return to Step 1.

NO : The procedure is complete.

DTC C123A: Abnormality in sensor calibration

⚠ CAUTION

- If there is any problem in the CAN bus lines, an incorrect diagnostic trouble code may be set. Prior to this diagnosis, diagnose the CAN bus lines (Refer to GROUP 54C – CAN Bus Line Diagnostic Flow [P.54C-10](#)).
- Whenever ECU is replaced, ensure that the CAN bus lines are normal.
- When the steering wheel sensor is replaced, always carry out calibration to make ASC-ECU learn the neutral point (Refer to [P.35C-283](#)).
- Do not drop or shock the G and yaw rate sensor.
- When the G and yaw rate sensor is replaced, always carry out calibration to make ASC-ECU learn the neutral point (Refer to [P.35C-282](#)).
- When the hydraulic unit (integrated with ASC-ECU) is replaced, always carry out the calibration of the steering wheel sensor, the G and yaw rate sensor and brake fluid pressure sensor (Refer to [P.35C-282](#), [P.35C-283](#) and [P.35C-284](#)).

CIRCUIT OPERATION

ASC-ECU stores the calibrated value of the G and yaw rate sensor, steering wheel sensor, and brake fluid pressure sensor.

DTC SET CONDITIONS

This diagnostic trouble code is set when the calibrated value for each sensor stored in ASC-ECU is not within the predetermined range.

- Abnormality in neutral position of the G and yaw rate sensor
- Abnormality in neutral position of the steering wheel sensor

PROBABLE CAUSES

- ASC-ECU malfunction
- External noise interference
- Improper installation of G and yaw rate sensor or steering wheel sensor

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 lines.

Use scan tool to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to Step 3.

NO : Repair the CAN bus lines. (Refer to GROUP 54C – CAN Bus Diagnostics Table [P.54C-17](#)). On completion, go to Step 2.

STEP 2. DTC recheck after resetting CAN bus lines

Q: Is DTC C123A set?

YES : Go to Step 3.

NO : The procedure is complete.

STEP 3. Check other DTC is set.

Check whether the DTC related to G and yaw rate sensor and the steering wheel sensor is set.

Q: Is any diagnostic trouble code set?

YES : Diagnose for the DTC (Refer to [P.35C-18](#)).

NO : Go to Step 4.

STEP 4. G and yaw rate sensor calibration

Perform the calibration of G and yaw rate sensor (Refer to [P.35C-282](#)).

Q: Has the calibration succeeded?

YES : Go to Step 5.

NO : Replace the hydraulic unit (integrated with ASC-ECU) (Refer to [P.35C-287](#)), and then go to Step 8.

STEP 5. Steering wheel sensor calibration

Perform the calibration of steering wheel sensor (Refer to [P.35C-283](#)).

Q: Has the calibration succeeded?

YES : Go to Step 6.

NO : Replace the hydraulic unit (integrated with ASC-ECU) (Refer to [P.35C-287](#)), and then go to Step 8.

STEP 6. Brake fluid pressure sensor calibration

Perform the calibration of brake fluid pressure sensor (Refer to [P.35C-284](#)).

Q: Has the calibration succeeded?

YES : Go to Step 7.

NO : Replace the hydraulic unit (integrated with ASC-ECU) (Refer to [P.35C-287](#)), and then go to Step 8.

STEP 7. Check whether the diagnostic trouble code is reset.

Erase the DTC.

Q: Is DTC C123A set?

NO : Replace the hydraulic unit (integrated with ASC-ECU) (Refer to [P.35C-287](#)), and then go to Step 8.

NO : Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/How to Cope with Intermittent Malfunctions [P.00-15](#)).

STEP 8. Check whether the diagnostic trouble code is reset.

Erase the DTC.

Q: Is DTC C123A set?

YES : Return to Step 1.

NO : The procedure is complete.

DTC C1219: Abnormality in steering wheel sensor signal

⚠ CAUTION

- If there is any problem in the CAN bus lines, an incorrect diagnostic trouble code may be set. Prior to this diagnosis, diagnose the CAN bus lines (Refer to GROUP 54C – CAN Bus Line Diagnostic Flow [P.54C-10](#)).
- Whenever ECU is replaced, ensure that the CAN bus lines are normal.
- When the steering wheel sensor is replaced, always carry out calibration to make ASC-ECU learn the neutral point (Refer to [P.35C-283](#)).
- Do not drop or shock the G and yaw rate sensor.
- When the G and yaw rate sensor is replaced, always carry out calibration to make ASC-ECU learn the neutral point (Refer to [P.35C-282](#)).
- When the hydraulic unit (integrated with ASC-ECU) is replaced, always carry out the calibration of the steering wheel sensor, the G and yaw rate sensor and brake fluid pressure sensor (Refer to [P.35C-282](#), [P.35C-283](#) and [P.35C-284](#)).

CIRCUIT OPERATION

Steering wheel sensor outputs the signal to ASC-ECU via the CAN bus lines.

DTC SET CONDITIONS

This diagnostic trouble code is set if any malfunction below is found:

- The tolerance of the neutral position of steering wheel sensor exceeds the specified range.

- Abnormality in steering wheel sensor output value
- When abnormality is detected by comparing the value output from the steering wheel sensor with the one from the wheel speed sensor and the G and yaw rate sensor.

PROBABLE CAUSES

- Improper installation of steering wheel sensor
- Wheel alignment not performed
- Steering wheel sensor malfunction
- Different steering wheel
- G and yaw rate sensor malfunction
- Malfunction of wheel speed sensor
- ASC-ECU malfunction
- External noise interference

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 lines.

Use scan tool to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to Step 3.

NO : Repair the CAN bus lines (Refer to GROUP 54C – CAN Bus Diagnostics Table [P.54C-17](#)). On completion, go to Step 2.

STEP 2. DTC recheck after resetting CAN bus lines

Q: Is DTC C1219 set?

YES : Go to Step 3.

NO : The procedure is complete.

STEP 3. M.U.T.-III DTC

Check that the wheel speed sensor-related, G and yaw rate sensor-related, or steering wheel sensor-related DTC is set.

Q: Is the DTC set?

YES : Troubleshoot the relevant DTC, and then go to Step 9.

NO : Go to Step 4.

STEP 4. Check how steering wheel sensor is installed.

Check that the steering wheel sensor is installed correctly (Refer to [P.35C-291](#)).

Q: Is the check result normal?

YES : Go to Step 5.

NO : Install the steering wheel sensor correctly (Refer to [P.35C-291](#)), and then go to Step 5.

STEP 5. G and yaw rate sensor installation check

Check that the G and yaw rate sensor is installed correctly.

Q: Is the check result normal?

YES : Go to Step 6.

NO : Reinstall the G and yaw rate sensor correctly (Refer to [P.35C-290](#)), and then go to Step 6.

STEP 6. Wheel alignment check

Refer to GROUP 33 – On-vehicles service/Front Wheel Alignment Check [P.33-8](#).

Q: Is the check result normal?

YES : After the wheel alignment check, perform the steering wheel sensor calibration to make ASC-ECU learn the neutral point again (Refer to [P.35C-283](#)). Then go to Step 7.

NO : After the adjustment of the wheel alignment, perform the steering wheel sensor calibration to make ASC-ECU learn the neutral position again (Refer to [P.35C-283](#)). Then go to Step 7.

STEP 7. Scan tool data list

Check the following data list (Refer to [P.35C-270](#)).

- Item 11: Steering angle sensor

Q: Is the check result normal?

YES : Go to Step 8.

NO : After the steering wheel sensor is replaced (Refer to [P.35C-291](#)), perform the steering wheel sensor calibration to make ASC-ECU learn the neutral point again (Refer to [P.35C-283](#)). Then go to Step 9.

STEP 8. Check whether the DTC is reset.

(1) Erase the DTC.

(2) Drive the vehicle at 12mph (20 km/h) or higher.

Q: Is DTC C1219 set?

YES : Replace the hydraulic unit (integrated with ASC-ECU) (Refer to [P.35C-287](#)), and then go to Step 9.

NO : The procedure is complete.

STEP 9. Check whether the DTC is reset.

(1) Erase the DTC.

(2) Drive the vehicle at 12mph (20 km/h) or higher.

Q: Is DTC C1219 set?

YES : Return to Step 1.

NO : The procedure is complete.

DTC C121A: Abnormality in steering wheel sensor initialization**⚠ CAUTION**

- If there is any problem in the CAN bus lines, an incorrect diagnostic trouble code may be set. Prior to this diagnosis, diagnose the CAN bus lines (Refer to GROUP 54C – CAN Bus Line Diagnostic Flow [P.54C-10](#)).
- Whenever ECU is replaced, ensure that the CAN bus lines are normal.
- When the steering wheel sensor is replaced, always carry out calibration to make ASC-ECU learn the neutral point (Refer to [P.35C-283](#)).
- When the hydraulic unit (integrated with ASC-ECU) is replaced, always carry out the calibration of the steering wheel sensor, the G and yaw rate sensor and brake fluid pressure sensor (Refer to [P.35C-282](#), [P.35C-283](#) and [P.35C-284](#)).

OPERATION

Steering wheel sensor stores the neutral position learned by the scan tool. When the neutral position has not been stored in the steering wheel sensor yet, the steering wheel sensor outputs the signal indicating that it does not have neutral position.

DTC SET CONDITIONS

This diagnostic trouble code is set when ASC-ECU detects that the steering wheel sensor has not learned the neutral position yet.

PROBABLE CAUSES

- Steering wheel sensor malfunction
- ASC-ECU malfunction
- Neutral position of steering wheel sensor not learned

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 lines.

Use scan tool to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to Step 3.

NO : Repair the CAN bus lines (Refer to GROUP 54C – CAN Bus Diagnostics Table [P.54C-17](#)). On completion, go to Step 2.

STEP 2. DTC recheck after resetting CAN bus lines**Q: Is DTC C121A set?****YES** : Go to Step 3.**NO** : The procedure is complete.

STEP 3. Steering wheel sensor calibration

Perform calibration of steering wheel sensor (Refer to [P.35C-283](#)).

Q: Has the calibration succeeded?**YES** : Go to Step 4.**NO** : After the steering wheel sensor is replaced, perform the steering wheel sensor calibration to make ASC-ECU learn the neutral point again (Refer to [P.35C-283](#)). Then go to Step 4.

STEP 4. Check whether the DTC is reset.

Erase the DTC.

Q: Is DTC C121A set?**YES** : Replace the hydraulic unit (integrated with ASC-ECU) (Refer to [P.35C-287](#)), and then go to Step 5.**NO** : The procedure is complete.

STEP 5. Check whether the DTC is reset.

Erase the DTC.

Q: Is DTC C121A set?**YES** : Return to Step 1.**NO** : The procedure is complete.

DTC C2205: Internal malfunction of steering wheel sensor

⚠ CAUTION

- If there is any problem in the CAN bus lines, an incorrect diagnostic trouble code may be set. Prior to this diagnosis, diagnose the CAN bus lines (Refer to GROUP 54C – CAN Bus Line Diagnostic Flow [P.54C-10](#)).
- Whenever ECU is replaced, ensure that the CAN bus lines are normal.
- When the steering wheel sensor is replaced, always carry out calibration to make ASC-ECU learn the neutral point (Refer to [P.35C-283](#)).
- When the hydraulic unit (integrated with ASC-ECU) is replaced, always carry out the calibration of the steering wheel sensor, the G and yaw rate sensor and brake fluid pressure sensor (Refer to [P.35C-282](#), [P.35C-283](#) and [P.35C-284](#)).

CIRCUIT OPERATION

- Steering wheel sensor sends its status signal to ASC-ECU.

DTC SET CONDITIONS

This diagnostic trouble code is set when ASC-ECU detects that the steering wheel sensor has malfunction.

PROBABLE CAUSES

- Steering wheel sensor malfunction
- ASC-ECU malfunction
- External noise interference

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 lines.

Use scan tool to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Repair the CAN bus lines (Refer to GROUP 54C – CAN Bus Diagnostics Table [P.54C-17](#)). On completion, go to Step 4.

STEP 2. Check whether the DTC is reset.

Erase the DTC.

Q: Is DTC C2205 set?

YES : Replace the steering wheel sensor (Refer to [P.35C-291](#)), and then go to Step 3.

NO : The procedure is complete.

STEP 3. Check whether the DTC is reset.

Erase the DTC.

Q: Is DTC C2205 set?

YES : Replace the hydraulic unit (integrated with ASC-ECU) (Refer to [P.35C-287](#)), and then go to Step 4.

NO : The procedure is complete.

STEP 4. Check whether the DTC is reset.

Erase the DTC.

Q: Is DTC C2205 set?

YES : Return to Step 1.

NO : The procedure is complete.

DTC C2002: Valve calibration not completed

⚠ CAUTION

- If there is any problem in the CAN bus lines, an incorrect DTC may be set. Prior to this diagnosis, diagnose the CAN bus lines (Refer to GROUP 54C – CAN Bus Line Diagnostic Flow [P.54C-10](#)).
- Whenever ECU is replaced, ensure that the CAN bus lines are normal.
- When the hydraulic unit (integrated with ASC-ECU) is replaced, always carry out the calibration of the steering wheel sensor, the G and yaw rate sensor and brake fluid pressure sensor (Refer to [P.35C-282](#), [P.35C-283](#) and [P.35C-284](#)).

OPERATION

Perform the master cylinder pressure sensor calibration to store the calibrated value in the ASC-ECU. At the same time, the calibrated value of cut valve and inlet valve are stored.

DTC SET CONDITIONS

This DTC is set when the calibrated values for cut valve and inlet valve stored in ASC-ECU are not within the predetermined range.

PROBABLE CAUSES

- ASC-ECU malfunction
- Noise interference

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 lines.

Use scan tool to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to Step 3.

NO : Repair the CAN bus lines (Refer to GROUP 54C – CAN Bus Diagnostics Table [P.54C-17](#)). On completion, go to Step 2.

STEP 2. DTC recheck after resetting CAN bus lines**Q: Is DTC C2002 set?**

YES : Replace the hydraulic unit (integrated with ASC-ECU) (Refer to [P.35C-287](#)). Then go to Step 3.

NO : The procedure is complete.

STEP 3. Check whether the DTC is reset.

Erase the DTC.

Q: Is DTC C2002 set?

YES : Return to Step 1.

NO : The procedure is complete.

DTC C2003: Control parameter not implement

⚠ CAUTION

- If there is any problem in the CAN bus lines, an incorrect diagnostic trouble code may be set. Prior to this diagnosis, diagnose the CAN bus lines (Refer to GROUP 54C – CAN Bus Line Diagnostic Flow [P.54C-10](#)).
- If diagnostic trouble code No.C2003 is set in ASC-ECU, always diagnose the CAN bus line. If there is any fault in the CAN bus lines, an incorrect diagnostic trouble code may be set. In this case, the set diagnostic trouble code is not highly reliable.
- Before replacing the ECU, ensure that the communication circuit is normal.
- When diagnostic trouble code C2003 is set in ASC-ECU, the diagnostic trouble code may also be set in ETACS-ECU. When the diagnostic trouble code is set in ETACS-ECU, carry out the diagnosis of the diagnostic trouble code for ETACS-ECU first.
- When the hydraulic unit (integrated with ASC-ECU) is replaced, always carry out the calibration of the steering wheel sensor, the G and yaw rate sensor and brake fluid pressure sensor (Refer to [P.35C-282](#), [P.35C-283](#) and [P.35C-284](#)).

DTC SET CONDITIONS

ASC-ECU communicates with ETACS-ECU via CAN bus lines. When received unset vehicle information from the ETACS-ECU, this diagnostic trouble code is set.

PROBABLE CAUSES

- ETACS-ECU or ASC-ECU which was equipped with other vehicle is used.
- Faulty installation of ETACS-ECU or ASC-ECU
- Faulty ETACS-ECU coding
- Malfunction of ETACS-ECU
- ASC-ECU malfunction

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.

Use scan tool to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to Step 3.

NO : Repair the CAN bus lines (Refer to GROUP 54C – CAN Bus Diagnostics Table [P.54C-17](#)). On completion, go to Step 2.

STEP 2. Diagnostic trouble code recheck after resetting CAN bus lines**Q: Is DTC C2003 set?**

YES : Go to Step 3.

NO : The procedure is complete.

STEP 3. Scan tool other system DTC

Use scan tool to check whether any coding-related diagnostic trouble code is set by ETACS-ECU.

Q: Is the DTC set?

YES : Troubleshoot for the relevant diagnostic trouble code (Refer to GROUP 54A – ETACS-ECU/Diagnostic Trouble Code Chart [P.54A-732](#)). Then go to Step 8.

NO : Go to Step 4.

STEP 4. Check part number of ASC-ECU

Check the part number of ASC-ECU.

Q: Is the check result normal?

YES : Go to Step 5.

NO : Replace the hydraulic unit (integrated with ASC-ECU) (Refer to [P.35C-287](#)). Then go to Step 8.

STEP 5. ETACS-ECU coding data check

Refer to GROUP 00 – Precautions before Service/Coding List
[P.00-44](#).

Vehicle line

OK: OUTLANDER

Transmission

OK (A/T): 6AT

OK (CVT): CVT

Engine type

OK (2.4L engine): 2.4L D4 MPI VVT

OK (3.0L engine): 3.0L S4 MIVEC

Engine power

OK: Normal

Chassis type for A.S.C.

OK : Type 2

Final drive

OK (FWD): Front Drive

OK (AWD): 4WD FF Base

Front differential

OK (except S-AWC): Open

OK (S-AWC): ELSD

Transfer

OK (FWD): FWD

OK (AWD): ECC

SAS

OK: Present

4WD/AWD

OK (FWD): Not present

OK (AWD): Present

TCM

OK: Present

ACDAYC

OK: Not present

Q: Is the check result normal?

YES : Go to Step 6.

NO : Replace the ETACS-ECU (Refer to GROUP 54A – ETACS-ECU [P.54A-825](#)), and then go to Step 8.

STEP 6. Check part number of ETACS-ECU

Check the part number of ETACS-ECU.

Q: Is the check result normal?

YES : Go to Step 7.

NO : Replace the ETACS-ECU (Refer to GROUP 54A – ETACS-ECU [P.54A-825](#)), and then go to Step 8.

STEP 7. Check whether the diagnostic trouble code is reset.

Erase the DTC.

Q: Is DTC C2003 set?

YES : Replace the hydraulic unit (integrated with ASC-ECU) (Refer to [P.35C-287](#)). Then go to Step 8.

NO : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/How to Cope with Intermittent Malfunctions [P.00-15](#)).

STEP 8. Check whether the diagnostic trouble code is reset.

Erase the DTC.

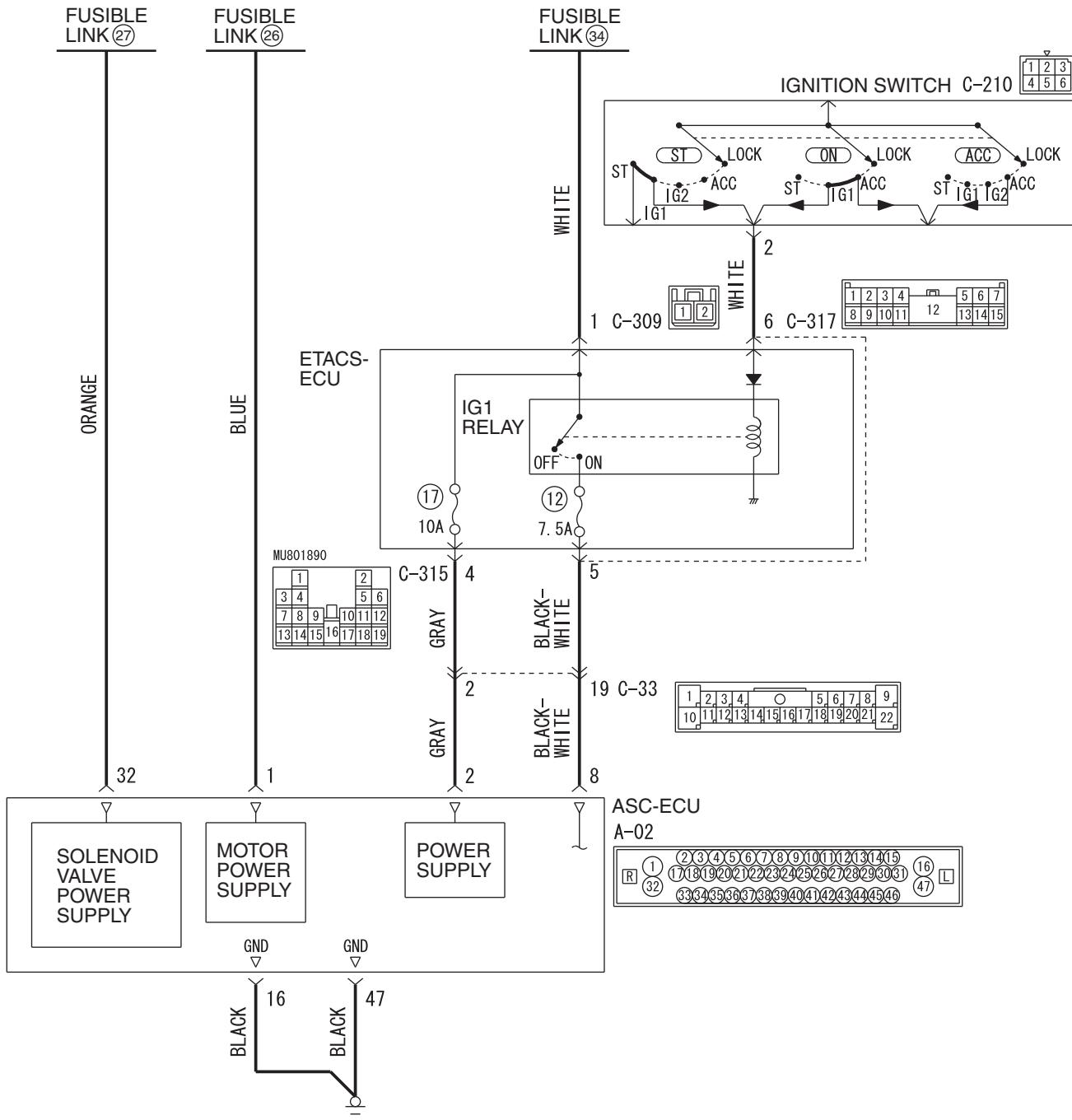
Q: Is DTC C2003 set?

YES : Return to Step 1.

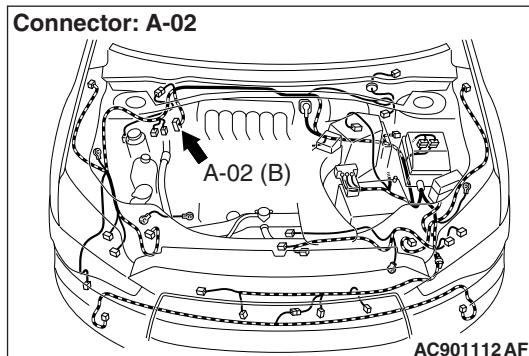
NO : The procedure is complete.

DTC C1608: Implausible diagnosis data

Solenoid Valve, Motor and ASC-ECU Power Supply Circuit



WAG35M004A



⚠ CAUTION

- If there is any problem in the CAN bus lines, an incorrect diagnostic trouble code may be set. Prior to this diagnosis, diagnose the CAN bus lines (Refer to GROUP 54C – CAN Bus Line Diagnostic Flow [P.54C-10](#)).
- Whenever ECU is replaced, ensure that the CAN bus lines are normal.
- When the hydraulic unit (integrated with ASC-ECU) is replaced, always carry out the calibration of the steering wheel sensor, the G and yaw rate sensor and brake fluid pressure sensor (Refer to [P.35C-282](#), [P.35C-283](#) and [P.35C-284](#)).

OPERATION

The ASC-ECU stores diagnostic trouble codes and failure information in the EEPROM*.

ASC-ECU (EEPROM*) contains the power supply circuit (terminal No.2).

*NOTE: *:EEPROM (Electrical Erasable and Programmable ROM)*

DTC SET CONDITIONS

- This diagnostic trouble code is set when the failure information stored in the EEPROM is not reliable. The failure information stored in the past is not output, and only this diagnostic trouble code is set.
- This diagnostic trouble code may occur when ASC-ECU power supply shutdown or drop between ASC-ECU is writing a data to the EEPROM.

PROBABLE CAUSES

- Disconnection of the ASC-ECU connector or the battery terminal when the ignition switch is ON
- Loose battery terminal
- Abnormality in battery
- Damaged wiring harness and connectors
- ASC-ECU malfunction

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
- MB991997: ASC check harness

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

Use scan tool to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to Step 3.

NO : Repair the CAN bus lines (Refer to GROUP 54C – CAN Bus Diagnostics Table [P.54C-10](#)). On completion, and then go to Step 2.

STEP 2. Diagnostic trouble code recheck after resetting CAN bus lines

Q: Is DTC C1608 set?

YES : Go to Step 3.

NO : The procedure is complete.

STEP 3. Battery check

Refer to GROUP 54A – Battery Test [P.54A-9](#).

Q: Is the battery in good condition?

YES : Go to Step 5.

NO : Go to Step 4.

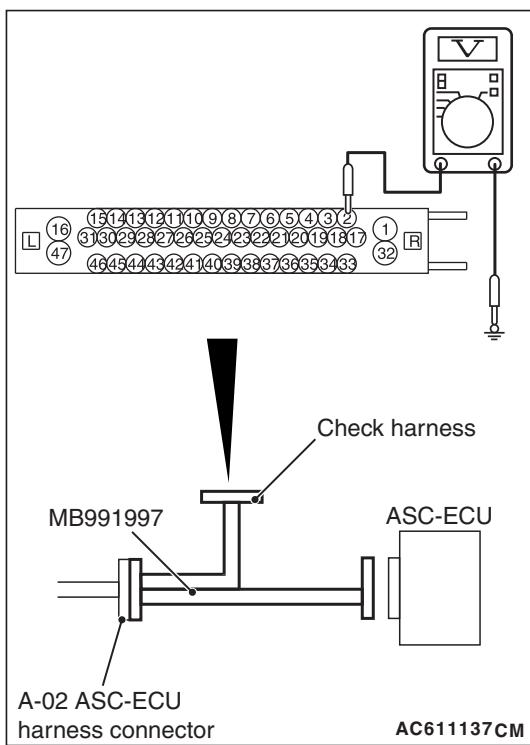
STEP 4. Charging system check

Refer to GROUP 16 – On-vehicle Service/Output Current Test [P.16-9](#).

Q: Is the charging system in good condition?

YES : Replace the battery. Then go to Step 11.

NO : Repair or replace the charging system component(s).



STEP 5. Voltage measurement at the A-02 ASC-ECU connector

(1) Disconnect the connector, connect special tool MB991997 to the harness-side connector, and measure the voltage at the special tool connector side.

NOTE: Do not connect the special tool MB991997 to ASC-ECU.

(2) Measure the voltage between the terminal No.2 and the body ground.

OK: Approximately system voltage

Q: Is the check result normal?

YES : Go to Step 7.

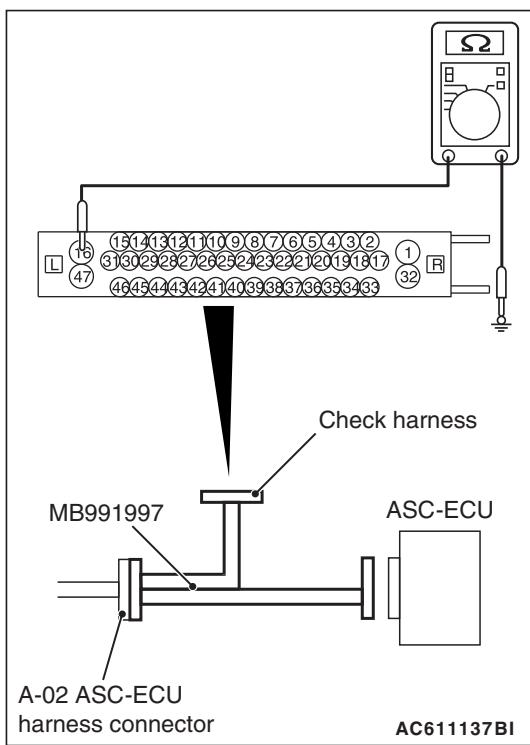
NO : Go to Step 6.

STEP 6. Connector check: A-02 ASC-ECU connector

Q: Is the check result normal?

YES : The open or short circuit may be present in the power supply circuit. Repair the wiring harness between the A-02 ASC-ECU connector terminal No.02 and fuse No.17.

NO : Repair the defective connector.

STEP 7. Resistance measurement at A-02 ASC-ECU connector

(1) Disconnect the ASC-ECU connector, connect special tool ASC check harness (MB991997) to the harness-side connector, and then measure the resistance at the special tool connector side.

NOTE: Do not connect the special tool ASC check harness (MB991997) to ASC-ECU.

(2) Resistance between the terminal No.16 and the body ground, and between the terminal No.47 and the body ground

OK: Continuity exists (2 ohms or less)

Q: Is the check result normal?

YES : Go to Step 9.

NO : Go to Step 8.

STEP 8. Connector check: A-02 ASC-ECU connector

Q: Is the check result normal?

YES : An open circuit may be present in the ground circuit.

Repair the wiring harness between the A-02 ASC-ECU terminal No.16 and body ground, and between the A-02 ASC-ECU terminal No.47 and body ground.

NO : Repair the defective connector.

STEP 9. Check whether the DTC is reset.

(1) Erase the DTC.

(2) Turn the ignition switch to the "LOCK" (OFF) position.

(3) Turn the ignition switch to the "ON" position.

(4) Drive the vehicle at 12mph (20 km/h) or higher.

NOTE: The ABS warning light does not turn OFF in some cases unless the vehicle runs at 12mph (20 km/h) or higher.

Q: Is DTC C1608 set?

YES : Replace the hydraulic unit (integrated with ASC-ECU) (Refer to P.35C-287). Then go to Step 10.

NO : Go to Step 11.

STEP 10. Check whether the DTC is reset.

- (1) Erase the DTC.
- (2) Turn the ignition switch to the "LOCK" (OFF) position.
- (3) Turn the ignition switch to the "ON" position.
- (4) Drive the vehicle at 12mph (20 km/h) or higher.

NOTE: The ABS warning light does not turn OFF in some cases unless the vehicle runs at 12mph (20 km/h) or higher.

Q: Is DTC C1608 set?

YES : Return to Step 1.
NO : Go to Step 11.

STEP 11. Check the other DTCs.

- (1) Erase the DTC.
- (2) Turn the ignition switch to the "LOCK" (OFF) position.
- (3) Turn the ignition switch to the "ON" position.
- (4) Drive the vehicle at 12mph (20 km/h) or higher.

NOTE: The ABS warning light does not turn OFF in some cases unless the vehicle runs at 12mph (20 km/h) or higher.

Q: Is any DTC set?

YES : Carry out the applicable troubleshooting for the DTC
(Refer to [P.35B-15](#)).
NO : The procedure is complete.

DTC U0001: Bus-off

⚠ CAUTION

- If there is any problem in the CAN bus lines, an incorrect diagnostic trouble code may be set. Prior to this diagnosis, diagnose the CAN bus lines (Refer to GROUP 54C – CAN Bus Line Diagnostic Flow [P.54C-10](#)).
- If diagnostic trouble code U0001 is set in ASC-ECU, always diagnose the CAN bus line. If there is any fault in the CAN bus lines, an incorrect diagnostic trouble code may be set. In this case, the set diagnostic trouble code is not highly reliable.
- Before replacing the ECU, ensure that the communication circuit is normal.
- When the hydraulic unit (integrated with ASC-ECU) is replaced, always carry out the calibration of the steering wheel sensor, the G and yaw rate sensor and brake fluid pressure sensor (Refer to [P.35C-282](#), [P.35C-283](#) and [P.35C-284](#)).

DTC SET CONDITIONS

This diagnostic trouble code is set when ASC-ECU has ceased the CAN communication (bus off).

COMMENTS ON TROUBLE SYMPTOM

Malfunction of wiring harness, connector (s), or ASC-ECU may be present.

PROBABLE CAUSES

- Wiring harness or connector failure of CAN bus line
- ASC-ECU malfunction
- Other ECU malfunction

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. M.U.T.-III CAN bus diagnostics

Use scan tool to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Repair the CAN bus lines (Refer to GROUP 54C – CAN Bus Diagnostics Table [P.54C-17](#)). On completion, go to Step 3.

STEP 2. Check whether the DTC is reset.

Erase the DTC.

Q: Is DTC U0001 set?

YES : Replace the hydraulic unit (integrated with ASC-ECU) (Refer to [P.35C-287](#)), and then go to Step 3.

NO : If the trouble symptom is resolved, an intermittent malfunction such as poorly engaged connector(s) or wiring harness is suspected (Refer to GROUP 00 – How to Use Troubleshooting/How to Cope with Intermittent Malfunctions [P.00-15](#)).

STEP 3. Check whether the DTC is reset.

Erase the DTC.

Q: Is DTC U0001 set?

YES : Return to Step 1.

NO : The procedure is complete.

DTC U0100: Engine time-out error

DTC U0101: A/T or CVT time-out error

DTC U0114: AWD time-out error

DTC U0126: Steering wheel sensor time-out error

DTC U0141: ETACS time-out error

CAUTION

- If there is any problem in the CAN bus lines, an incorrect diagnostic trouble code may be set. Prior to this diagnosis, diagnose the CAN bus lines (Refer to GROUP 54C – CAN Bus Line Diagnostic Flow [P.54C-10](#)).
- If diagnostic trouble codes U0100, U0101, U0114, U0126, and U0141 are set in ASC-ECU, always diagnose the CAN bus line. If there is any fault in the CAN bus lines, an incorrect diagnostic trouble code may be set. In this case, the set diagnostic trouble code is not highly reliable.
- Before replacing the ECU, ensure that the communication circuit is normal.
- When the steering wheel sensor is replaced, always carry out calibration to make ASC-ECU learn the neutral point (Refer to [P.35C-283](#)).
- When the hydraulic unit (integrated with ASC-ECU) is replaced, always carry out the calibration of the steering wheel sensor, the G and yaw rate sensor and brake fluid pressure sensor (Refer to [P.35C-282](#), [P.35C-283](#) and [P.35C-284](#)).

CIRCUIT OPERATION

ASC-ECU communicates with the engine control module, TCM, AWD-ECU or AWC-ECU the steering wheel sensor, and ETACS-ECU via the CAN bus lines.

DTC SET CONDITIONS

This diagnostic trouble code is set if ASC-ECU cannot receive the signal sent from other ECU for a certain period.

PROBABLE CAUSES

DTC U0100

- Wiring harness or connector failure of CAN bus line
- Engine control module malfunction
- ASC-ECU malfunction
- Connector disconnected or improperly connected
- Stretched or broken wires

DTC U0101

- Wiring harness or connector failure of CAN bus line
- Malfunction of TCM
- ASC-ECU malfunction
- Connector disconnected or improperly connected
- Stretched or broken wires

DTC U0114

- Wiring harness or connector failure of CAN bus line
- AWD-ECU or AWC-ECU malfunction
- ASC-ECU malfunction
- Connector disconnected or improperly connected
- Stretched or broken wires

DTC U0126

- Wiring harness or connector failure of CAN bus line
- Steering wheel sensor malfunction
- ASC-ECU malfunction
- Connector disconnected or improperly connected
- Stretched or broken wires

DTC U0141

- Wiring harness or connector failure of CAN bus line
- Malfunction of ETACS-ECU
- ASC-ECU malfunction
- Connector disconnected or improperly connected
- Stretched or broken wires

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. M.U.T.-III CAN bus diagnostics

Use scan tool to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Repair the CAN bus lines (Refer to GROUP 54C – CAN Bus Diagnostics Table [P.54C-17](#)). On completion, go to Step 3.

STEP 2. Check whether the DTC is reset.

Q: Is DTC U0100, U0101, U0114, U0126 or U0141 set?

YES : Go to Step 3.

NO : The procedure is complete.

STEP 3. Connector check: ASC-ECU connector

Q: Is the check result normal?

YES : Go to Step 4.

NO : Repair the defective connector. Then go to Step 4.

STEP 4. M.U.T.-III other system DTC

Use scan tool to check that other diagnostic trouble code is set in the ECU corresponding to the relevant diagnosis.

Q: Is other DTC set?

YES : Troubleshoot for the relevant diagnostic trouble code.

NO : Go to Step 5.

STEP 5. ETACS-ECU coding data check

Refer to GROUP 00 – Precautions before Service/Coding List
[P.00-44](#).

Vehicle line

OK: OUTLANDER

Transmission

OK (A/T): 6AT

OK (CVT): CVT

Engine type

OK (2.4L engine): 2.4L D4 MPI VVT

OK (3.0L engine): 3.0L S4 MIVEC

Engine power

OK: Normal

Chassis type for A.S.C.

OK : Type 2

Final drive

OK (FWD): Front Drive

OK (AWD): 4WD FF Base

Front differential

OK (except S-AWC): Open

OK (S-AWC): ELSD

Transfer

OK (FWD): FWD

OK (AWD): ECC

SAS

OK: Present

4WD/AWD

OK (FWD): Not present

OK (AWD): Present

TCM

OK: Present

ACDAYC

OK: Not present

Q: Is the check result normal?

YES : Go to Step 6.

NO : Replace the ETACS-ECU (Refer to GROUP 54A – ETACS-ECU [P.54A-825](#)), and then go to Step 6.

STEP 6. Check whether the DTC is reset.

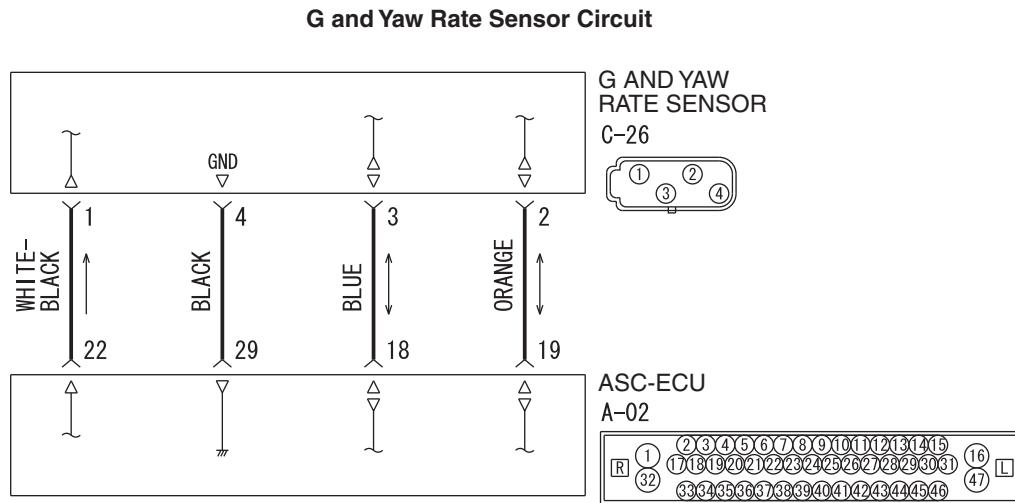
Erase the DTCs.

Q: Is DTC U0100, U0101, U0114, U0126 or U0141 set?

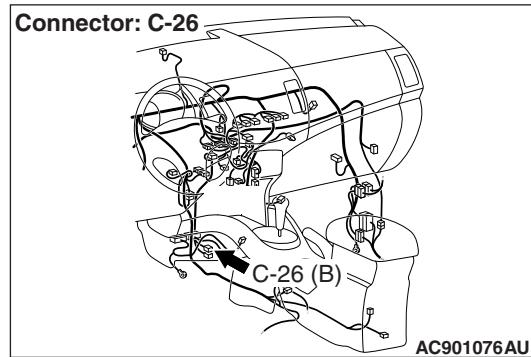
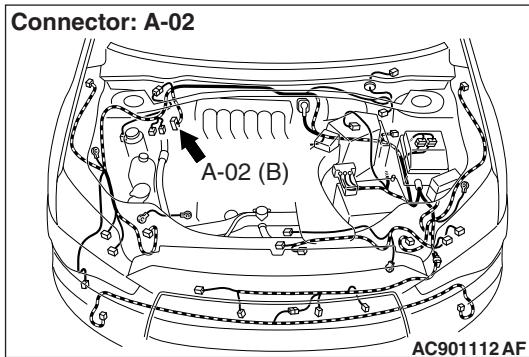
YES : Replace the hydraulic unit (integrated with ASC-ECU) (Refer to [P.35C-287](#)).

NO : The procedure is complete.

DTC U0125: G and yaw rate sensor message time-out error/message error



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CAUTION

- If there is any problem in the CAN bus lines, an incorrect diagnostic trouble code may be set. Prior to this diagnosis, diagnose the CAN bus lines (Refer to GROUP 54C – CAN Bus Line Diagnostic Flow [P.54C-10](#)).
- Whenever ECU is replaced, ensure that the CAN bus lines are normal.
- Do not drop or shock the G and yaw rate sensor.
- When the G and yaw rate sensor is replaced, always carry out calibration to make ASC-ECU learn the neutral point (Refer to [P.35C-282](#)).
- When the hydraulic unit (integrated with ASC-ECU) is replaced, always carry out the calibration of the steering wheel sensor, the G and yaw rate sensor and brake fluid pressure sensor (Refer to [P.35C-282](#), [P.35C-283](#) and [P.35C-284](#)).

CIRCUIT OPERATION

The G and yaw rate sensor outputs the signal to ASC-ECU via the special CAN bus lines.

DTC SET CONDITIONS

This DTC is set when the ASC-ECU cannot receive the signal from the G and yaw rate sensor although there is no abnormality in ASC-ECU supply voltage.

PROBABLE CAUSES

- Wiring harness or connector failure in special CAN bus lines between ASC-ECU and G and yaw rate sensor
- G and yaw rate sensor malfunction
- ASC-ECU malfunction
- External noise interference
- Connector disconnected or improperly connected
- Stretched or broken wires

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 lines.

Use scan tool to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to Step 3.

NO : Repair the CAN bus lines. (Refer to GROUP 54C – CAN Bus Diagnostics Table [P.54C-17](#)). On completion, go to Step 2.

STEP 2. DTC recheck after resetting CAN bus lines

Q: Is DTC U0125 set?

YES : Go to Step 3.

NO : The procedure is complete.

STEP 3. Connector check: A-02 ASC-ECU connector, C-26 G and yaw rate sensor connector

Q: Is the check result normal?

YES : Go to Step 4.

NO : Repair the connector, and then go to Step 7.

STEP 4. Wiring harness check between A-02 ASC-ECU connector terminals No.18 and C-26 G and yaw rate sensor connector terminals No.3, and between A-02 ASC-ECU connector terminals No.19 and C-26 G and yaw rate sensor connector terminals No.2.

Check for open and short circuit in communication circuit

Q: Is the check result normal?

YES : Go to Step 5.

NO : Repair the wiring harness, and then go to Step 7.

STEP 5. Check whether the DTC is reset.

Erase the DTC.

Q: Is DTC U0125 set?

YES : Replace the G and yaw rate sensor (Refer to [P.35C-290](#)) and then go to Step 6.

NO : The procedure is complete.

STEP 6. Check whether the DTC is reset.

Erase the DTC.

Q: Is DTC U0125 set?

YES : Replace the hydraulic unit (integrated with ASC-ECU) (Refer to [P.35C-287](#)), and then go to Step 7.

NO : The procedure is complete.

STEP 7. Check whether the DTC is reset.

Erase the DTC.

Q: Is DTC U0125 set?

YES : Return to Step 1.

NO : The procedure is complete.

DTC U0401: Engine malfunction detected

⚠ CAUTION

- If there is any problem in the CAN bus lines, an incorrect diagnostic trouble code may be set. Prior to this diagnosis, diagnose the CAN bus lines (Refer to GROUP 54C – CAN Bus Line Diagnostic Flow [P.54C-10](#)).
- If diagnostic trouble code U0401 is set in ASC-ECU, always diagnose the CAN bus line. If there is any fault in the CAN bus lines, an incorrect diagnostic trouble code may be set. In this case, the set diagnostic trouble code is not highly reliable.
- Before replacing the ECU, ensure that the communication circuit is normal.

CIRCUIT OPERATION

Engine-related signals are sent or received to and from between ASC-ECU and engine control module via CAN bus lines.

DTC SET CONDITIONS

This diagnostic trouble code is set when the engine control module malfunction has been detected.

PROBABLE CAUSES

- Malfunction of engine system
- Engine control module malfunction
- ASC-ECU malfunction
- External noise interference

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 lines.

Use scan tool to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Repair the CAN bus lines. (Refer to GROUP 54C – CAN Bus Diagnostics Table [P.54C-17](#)). On completion, go to Step 5.

STEP 2. Using scan tool MB991958, DTC

Use scan tool to check that any diagnostic trouble code other than the code U0401 is set in ASC-ECU.

Q: Is any DTC set?

YES : Troubleshoot the relevant diagnostic trouble code, and then go to Step 5.

NO : Go to Step 3.

STEP 3. Using scan tool MB991958, other system DTC

Use scan tool to check that the diagnostic trouble code is set by the engine control module.

Q: Is any DTC set?

YES : Troubleshoot the relevant diagnostic trouble code, and then go to Step 5.

NO : Go to Step 4.

STEP 4. Check whether the DTC is reset.

Erase the DTC.

Q: Is DTC U0401 set?

YES : Replace the hydraulic unit (integrated with ASC-ECU) (Refer to [P.35C-287](#)), and then go to Step 5.

NO : Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/How to Cope with Intermittent Malfunctions [P.00-15](#)).

STEP 5. Check whether the DTC is reset.

Erase the DTC.

Q: Is DTC U0401 set?

YES : Return to Step 1.

NO : The procedure is complete.

DTC U0428: Communication error in steering wheel sensor** CAUTION**

- If there is any problem in the CAN bus lines, an incorrect diagnostic trouble code may be set. Prior to this diagnosis, diagnose the CAN bus lines (Refer to GROUP 54C – CAN Bus Line Diagnostic Flow [P.54C-10](#)).
- If diagnostic trouble code U0428 is set in ASC-ECU, always diagnose the CAN bus line. If there is any fault in the CAN bus lines, an incorrect diagnostic trouble code may be set. In this case, the set diagnostic trouble code is not highly reliable.
- Before replacing the ECU, ensure that the communication circuit is normal.
- When the hydraulic unit (integrated with ASC-ECU) is replaced, always carry out the calibration of the steering wheel sensor, the G and yaw rate sensor and brake fluid pressure sensor (Refer to [P.35C-282](#), [P.35C-283](#) and [P.35C-284](#)).

CIRCUIT OPERATION

The steering wheel sensor outputs the steering wheel status to ASC-ECU via the CAN bus lines.

DTC SET CONDITIONS

This diagnostic trouble code is set when ASC-ECU has detected the communication error in the steering wheel sensor.

PROBABLE CAUSES

- Steering wheel sensor malfunction
- ASC-ECU malfunction
- External noise interference

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 lines.

Use scan tool to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Replace the steering wheel sensor (Refer to [P.35C-291](#)). Then go to Step 2.

NO : Repair the CAN bus lines (Refer to GROUP 54C – CAN Bus Diagnostics Table [P.54C-17](#)). On completion, go to Step 3.

STEP 2. Check whether the DTC is reset.

Erase the DTC.

Q: Is DTC U0428 set?

YES : Replace the hydraulic unit (integrated with ASC-ECU) (Refer to [P.35C-287](#)).

NO : The procedure is complete.

STEP 3. Check whether the DTC is reset.

Erase the DTC.

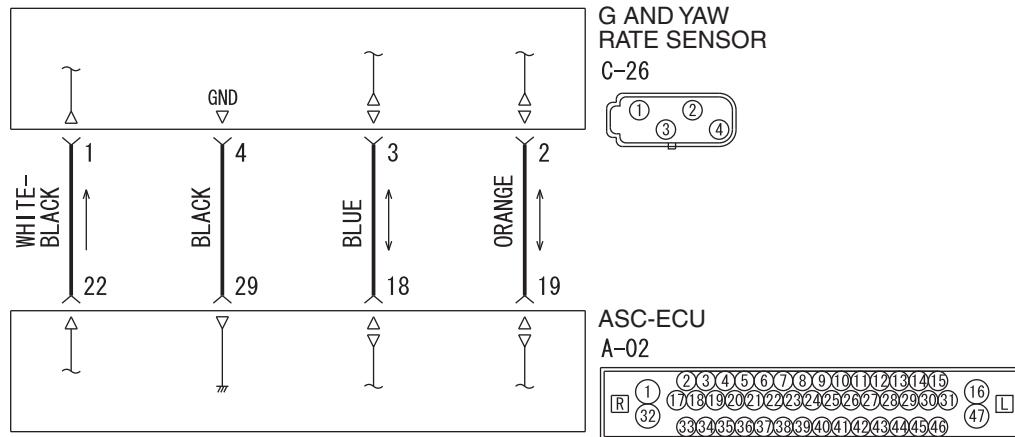
Q: Is DTC U0428 set?

YES : Return to Step 1.

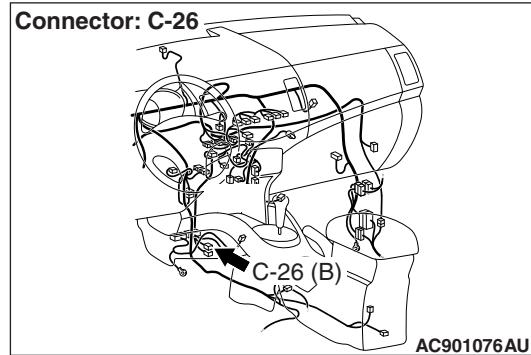
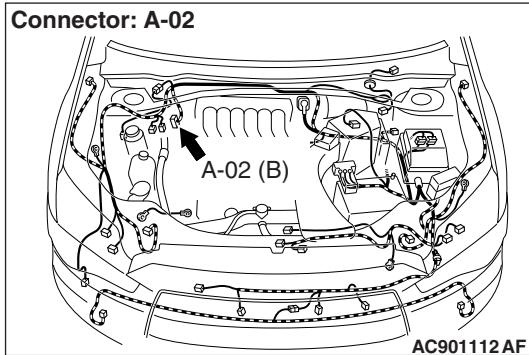
NO : The procedure is complete.

DTC U1003: G and yaw rate sensor bus-off

G and Yaw Rate Sensor Circuit



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⚠ CAUTION

- If there is any problem in the CAN bus lines, an incorrect diagnostic trouble code may be set. Prior to this diagnosis, diagnose the CAN bus lines (Refer to GROUP 54C, CAN Bus Diagnosis Table P.54C-17).
- Whenever ECU is replaced, ensure that the CAN bus lines are normal.
- Do not drop or shock the G and yaw rate sensor.
- When the G and yaw rate sensor is replaced, always carry out calibration to make ASC-ECU learn the neutral point (Refer to P.35C-282).
- When the hydraulic unit (integrated with ASC-ECU) is replaced, always carry out the calibration of the steering wheel sensor, the G and yaw rate sensor and brake fluid pressure sensor (Refer to P.35C-282, P.35C-283 and P.35C-284).

CIRCUIT OPERATION

The G and yaw rate sensor outputs the signal to ASC-ECU via the special CAN bus lines.

DTC SET CONDITIONS

This DTC is set when the ASC-ECU cannot receive the signal from the G and yaw rate sensor although there is no abnormality in ASC-ECU supply voltage.

PROBABLE CAUSES

- Wiring harness or connector failure for the special CAN bus lines between ASC-ECU and the G and yaw rate sensor
- G and yaw rate sensor malfunction
- ASC-ECU malfunction
- Connector disconnected or improperly connected
- Stretched or broken wires

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. M.U.T.-III CAN bus diagnostics

Use scan tool to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to Step 3.

NO : Repair the CAN bus lines (Refer to GROUP 54C – CAN Bus Diagnostics Table [P.54C-17](#)). On completion, go to Step 2.

STEP 2. Diagnostic trouble code recheck after resetting CAN bus lines

Q: Is DTC U1003 set?

YES : Go to Step 3.

NO : The procedure is complete.

STEP 3. Connector check: A-02 ASC-ECU connector, C-26 G and yaw rate sensor connector

Q: Is the check result normal?

YES : Go to Step 4.

NO : Repair the connector, and then go to Step 7.

STEP 4. Wiring harness check between A-02 ASC-ECU connector terminals No.18 and C-26 G and yaw rate sensor connector terminals No.3, and between A-02 ASC-ECU connector terminals No.19 and C-26 G and yaw rate sensor connector terminals No.2.

Check for open and short circuit in communication circuit

Q: Is the check result normal?

YES : Go to Step 5.

NO : Repair the wiring harness, and then go to Step 7.

STEP 5. Check whether the DTC is reset.

Erase the DTC.

Q: Is DTC U1003 set?

YES : Replace the G and yaw rate sensor (Refer to [P.35C-290](#)), and then go to Step 6.

NO : The procedure is complete.

STEP 6. Check whether the DTC is reset.

Erase the DTC.

Q: Is DTC U1003 set?

YES : Replace the hydraulic unit (integrated with ASC-ECU) (Refer to [P.35C-287](#)), and then go to Step 7.

NO : The procedure is complete.

STEP 7. Check whether the DTC is reset.

Erase the DTC.

Q: Is DTC U1003 set?

YES : Return to Step 1.

NO : The procedure is complete.

DTC U1415: Variant coding not completed

⚠ CAUTION

- If there is any problem in the CAN bus lines, an incorrect diagnostic trouble code may be set. Prior to this diagnosis, diagnose the CAN bus lines (Refer to GROUP 54C – CAN Bus Line Diagnostic Flow [P.54C-10](#)).
- Whenever ECU is replaced, ensure that the CAN bus lines are normal.
- When the diagnostic trouble code No.U1415 is set in ASC-ECU, the diagnostic trouble code may also be set in ETACS-ECU. When the diagnostic trouble code is set in ETACS-ECU, carry out the diagnosis of the diagnostic trouble code for ETACS-ECU first.
- When the hydraulic unit (integrated with ASC-ECU) is replaced, always carry out the calibration of the steering wheel sensor, the G and yaw rate sensor and brake fluid pressure sensor (Refer to [P.35C-282](#), [P.35C-283](#) and [P.35C-284](#)).

CIRCUIT OPERATION

ASC-ECU receives the vehicle information stored in the ETACS-ECU via CAN bus lines.

DTC SET CONDITIONS

This diagnostic Trouble code is set when the variant coding for ETACS-ECU has not been completed.

PROBABLE CAUSES

- Variant coding for ETACS-ECU has not been implemented.
- ASC-ECU malfunction

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.

Use scan tool to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Repair the CAN bus lines (Refer to GROUP 54C – CAN Bus Diagnostics Table [P.54C-17](#)). On completion, go to Step 4.

STEP 2. Using scan tool MB991958, read the ETACS-ECU DTC.

Use scan tool to check that the diagnostic trouble code B222C is set in the ETACS-ECU.

Q: Is any DTC set?

YES : Troubleshoot the relevant diagnostic Trouble code, and then go to Step 4.

NO : Go to Step 3.

STEP 3. Check whether the DTC is reset.

(1) Erase the DTC.

(2) Ignition switch "LOCK" (OFF)

(3) Ignition switch "ON"

(4) Check that the ABS warning light is extinguished.

Q: Is DTC U1415 set?

YES : Replace the hydraulic unit (ASC-ECU) (Refer to [P.35C-287](#)), and then go to Step 4.

NO : Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/How to Cope with Intermittent Malfunctions [P.00-15](#)).

STEP 4. Check whether the DTC is reset.

(1) Erase the DTC.

(2) Ignition switch "LOCK" (OFF)

(3) Ignition switch "ON"

(4) Check that the ABS warning light is extinguished.

Q: Is DTC U1415 set?

YES : Return to Step 1.

NO : The procedure is complete.

DTC U1417: Variant coding value invalid (includes faulty installation)

⚠ CAUTION

- If there is any problem in the CAN bus lines, an incorrect diagnostic trouble code may be set. Prior to this diagnosis, diagnose the CAN bus lines (Refer to GROUP 54C – CAN Bus Line Diagnostic Flow [P.54C-10](#)).
- If diagnostic trouble code No.U1417 is set in ASC-ECU, always diagnose the CAN bus lines. If there is any fault in the CAN bus lines, an incorrect diagnostic trouble code may be set. In this case, the set diagnostic trouble code is not highly reliable.
- Before replacing the ECU, ensure that the communication circuit is normal.
- When diagnostic trouble code No.U1417 is set in ASC-ECU, the diagnostic trouble code may also be set in ETACS-ECU. When the diagnostic trouble code is set in ETACS-ECU, carry out the diagnosis of the diagnosis code for ETACS-ECU first.
- When the hydraulic unit (integrated with ASC-ECU) is replaced, always carry out the calibration of the steering wheel sensor, the G and yaw rate sensor and brake fluid pressure sensor (Refer to [P.35C-282](#), [P.35C-283](#) and [P.35C-284](#)).

CIRCUIT OPERATION

ASC-ECU receives the vehicle information stored in the ETACS-ECU via CAN bus lines.

DTC SET CONDITIONS

ASC-ECU communicates with ETACS-ECU via CAN bus lines. This diagnostic trouble code is set when the vehicle information received from the ETACS-ECU is invalid.

PROBABLE CAUSES

- ETACS-ECU malfunction
- Engine control module malfunction
- ETACS-ECUs have been interchanged between two vehicles.
- ASC-ECU malfunction
- External noise interference
- ASC-ECUs have been interchanged between two vehicles.

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.

Use scan tool to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to Step 3.

NO : Repair the CAN bus lines (Refer to GROUP 54C – CAN Bus Diagnostics Table [P.54C-17](#)). On completion, go to Step 2.

STEP 2. DTC recheck after resetting CAN bus lines

Q: Is DTC U1417 set?

YES : Go to Step 3.

NO : The procedure is complete.

STEP 3. Using scan tool MB991958, other system DTC

Use scan tool to check whether any diagnostic trouble code related to vehicles information is set or not by the ETACS-ECU or engine control module.

Q: Is any DTC set?

YES : Troubleshoot for the relevant diagnostic trouble code.

NO : Go to Step 4.

STEP 4. ETACS-ECU coding data check

Refer to GROUP 00 – Precautions before Service/Coding List
[P.00-44](#).

Vehicle line

OK: OUTLANDER

Transmission

OK (A/T): 6AT

OK (CVT): CVT

Engine type

OK (2.4L engine): 2.4L D4 MPI VVT

OK (3.0L engine): 3.0L S4 MIVEC

Engine power

OK: Normal

Chassis type for A.S.C.

OK : Type 2

Final drive

OK (FWD): Front Drive

OK (AWD): 4WD FF Base

Front differential

OK (except S-AWC): Open

OK (S-AWC): ELSD

Transfer

OK (FWD): FWD

OK (AWD): ECC

SAS

OK: Present

4WD/AWD

OK (FWD): Not present

OK (AWD): Present

TCM

OK: Present

ACDAYC

OK: Not present

Q: Is the check result normal?

YES : Go to Step 5.

NO : Replace the ETACS-ECU (Refer to GROUP 54A – ETACS-ECU [P.54A-825](#)), and then go to Step 7.

STEP 5. Engine control module coding data check

Refer to GROUP 00 – Precautions before Service/Coding List
[P.00-44](#).

Q: Is the check result normal?

YES : Go to Step 6.

NO : Replace the engine control module <Refer to GROUP 13A – ECM [P.13A-887](#) (2.4L engine) or Refer to GROUP 13B – ECM [P.13B-903](#) (3.0L engine)>, and then go to Step 7.

STEP 6. Check part number of ETACS-ECU

Check the part number of ETACS-ECU.

Q: Is the check result normal?

YES : Go to Step 7.

NO : Replace the ETACS-ECU (Refer to GROUP 54A – ETACS-ECU [P.54A-825](#)), and then go to Step 7.

STEP 7. Check part number of ASC-ECU

Check the part number of ASC-ECU.

Q: Is the check result normal?

YES : Go to Step 8.

NO : Replace the hydraulic unit (integrated with ASC-ECU) (Refer to [P.35C-287](#)), and then go to Step 9.

STEP 8. Check whether the diagnostic trouble code is reset.

Erase the DTC.

Q: Is DTC U1417 set?

YES : Replace the hydraulic unit (integrated with ASC-ECU) (Refer to [P.35C-287](#)), and then go to Step 9.

NO : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/How to Cope with Intermittent Malfunctions [P.00-15](#)).

STEP 9. Check whether the diagnostic trouble code is reset.

Erase the DTC.

Q: Is DTC U1417 set?

YES : Return to Step 1.

NO : The procedure is complete.

SYMPTOM CHART

M1355006900781

⚠ CAUTION

- ASC may operate in the following conditions without hard braking: Low mu road surface, high-speed turn, and bumpy road surface. When asking the customers, confirm that they have/have not encountered ABS operation in corresponding conditions.
- During ASC operation, the brake pedal is pulled forward gradually, and the noise occurs at the same time. This is because the brake line pressure varies intermittently to prevent the wheel lock, and not a system malfunction.

⚠ CAUTION

During diagnosis, a diagnostic trouble code associated with other system may be set when the ignition switch is turned on with connector(s) disconnected. On completion, confirm all systems for diagnostic trouble code(s). If diagnostic trouble code(s) are set, erase them all.

Trouble symptom		Inspection procedure number	Reference page
Scan tool communication with ABS/TCL/Skid control system is impossible.	Scan tool communication with all systems are impossible.	–	Refer to GROUP 54C – Troubleshooting P.54C-17 .
	Scan tool communication only with ABS/TCL/Skid control system is impossible.	1	P.35C-217
ASC OFF indicator light flashes at a rate of 2Hz.		2	P.35C-218
Brake warning light stays ON with the parking brake lever released.		3	P.35C-219
ABS warning light does not illuminate when ignition switch is turned to the ON position (Engine stopped).		4	P.35C-225
Brake warning light does not illuminate when the ignition switch is turned to ON position (Engine stopped).		5	P.35C-227
ABS warning light stays ON after the engine is started.		6	P.35C-229
ASC warning display stays ON after the engine is started.		7	P.35C-232
ASC OFF display or ASC OFF light stays ON after the engine is started.		8	P.35C-234
ASC Operation Display Stays ON after the Engine is Started.		9	P.35C-238
After ASC OFF switch is turned OFF, TCL/Skid control system cannot be disabled.		10	P.35C-240
Abnormality in brake operation		11	P.35C-243
ASC system does not operate or faulty ASC operate.		12	P.35C-244
ASC-ECU power supply circuit system		13	P.35C-247
Steering wheel sensor power supply circuit system		14	P.35C-258
HSA (Hill Start Assist) does not work.		15	P.35C-262
HSA (Hill Start Assist) works on a flat road.		16	P.35C-267
The initial check sound of hydraulic unit is loud.		17	P.35C-268

SYMPTOM PROCEDURES

Inspection Procedure 1: Scan tool communication only with ABS/TCL/Skid control system is impossible.

⚠ CAUTION

- If there is any problem in the CAN bus lines, an incorrect diagnostic trouble code may be set. Prior to this diagnosis, diagnose the CAN bus lines (Refer to GROUP 54C – CAN Bus Line Diagnostic Flow [P.54C-10](#)).
- Whenever ECU is replaced, ensure that the CAN bus lines are normal.
- When the hydraulic unit (integrated with ASC-ECU) is replaced, always carry out the calibration of the steering wheel sensor, the G and yaw rate sensor and brake fluid pressure sensor (Refer to [P.35C-282](#), [P.35C-283](#) and [P.35C-284](#)).

COMMENTS ON TROUBLE SYMPTOM

When scan tool cannot communicate with the ABS/TCL/ASC system, the CAN bus line, ASC-ECU power supply circuit system, or ASC-ECU may be faulty.

PROBABLE CAUSES

- Damaged wiring harness and connectors
- ASC-ECU malfunction
- Wrong routing of scan tool harness
- Abnormality in battery or generator
- Abnormality in power supply voltage to ASC-ECU
- ECU malfunction of other system

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. M.U.T.-III CAN bus diagnostics

Use scan tool to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Check the power supply circuit, and repair if necessary (Refer to [P.35C-247](#)).

NO : Repair the CAN bus lines (Refer to GROUP 54C – CAN Bus Diagnostics Table [P.54C-17](#)).

Inspection Procedure 2: ASC OFF display flashes at a rate of 2Hz.

SYSTEM OPERATION

When ASC OFF display flashes at a rate of 2 Hz, TCL control by brake force is prohibited.

TECHNICAL DESCRIPTION (COMMENT)

This operation is performed for the following reasons and is not a malfunction.

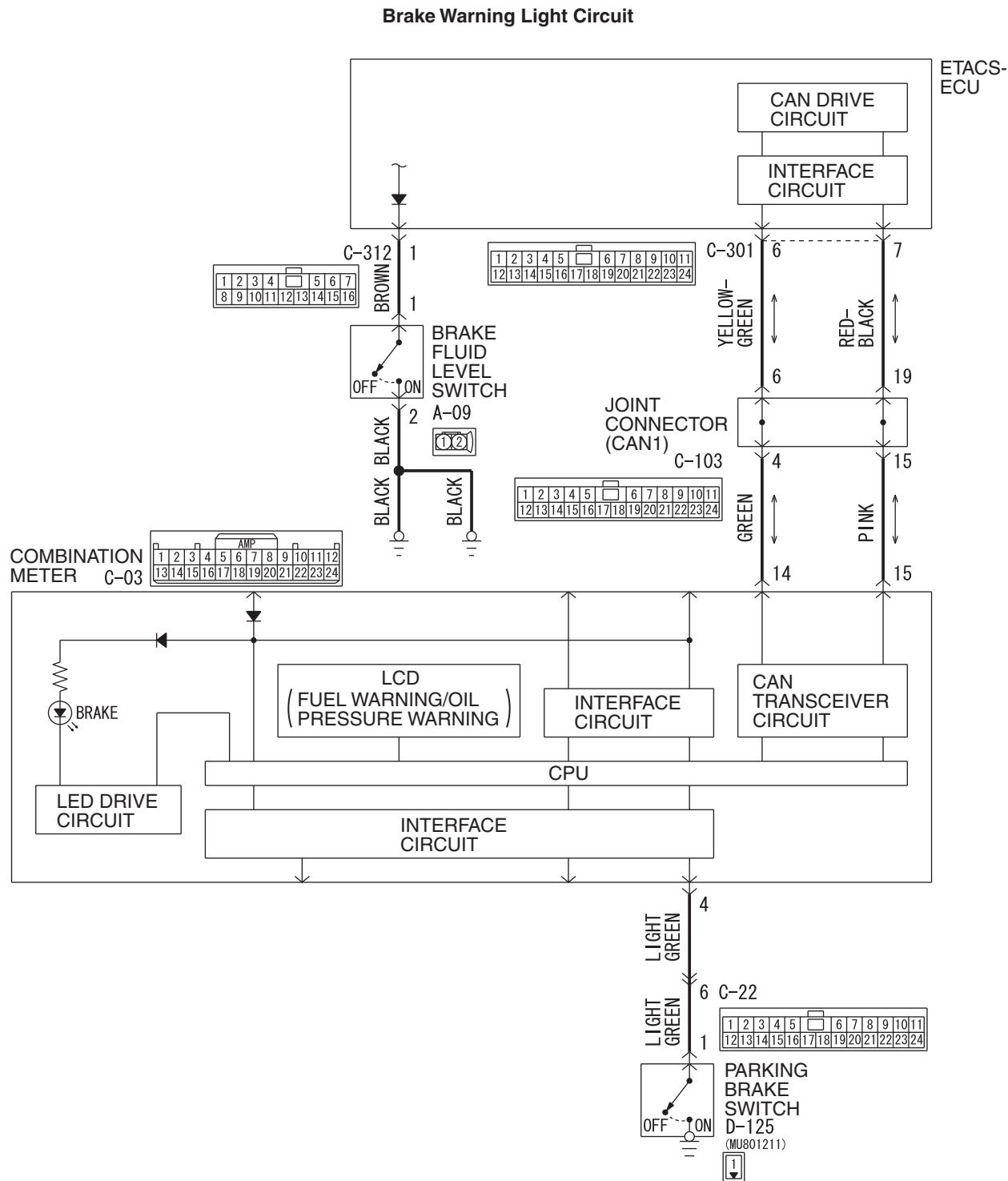
- ASC-ECU calculates the estimated temperature of the brake pad. In general, as the brake pad temperature increases, the coefficient of friction for the brake pad becomes smaller, resulting in the reduced braking force. When the estimated temperature of the brake pad reaches the specified value or more, ASC-ECU flashes the ASC OFF display at a rate of 2 Hz to warn the driver that the brake controllability by TCL is decreased by the reduced braking force. Consequently, ASC-ECU prohibits the TCL control (brake control only) until it determines that the estimated temperature of the brake pad is normal.

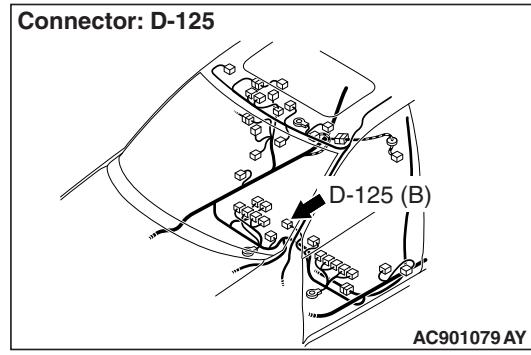
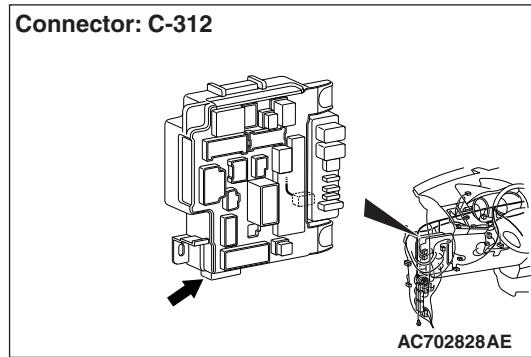
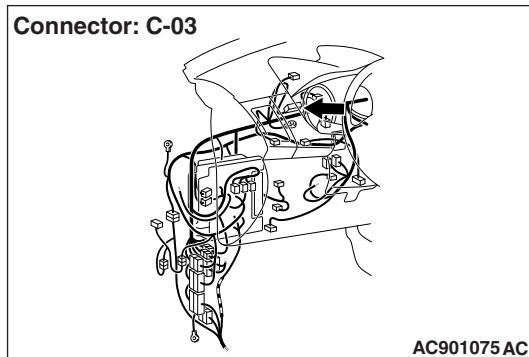
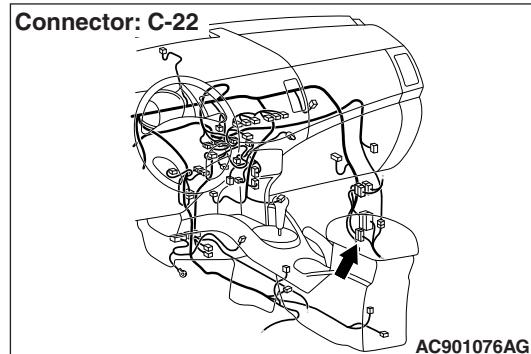
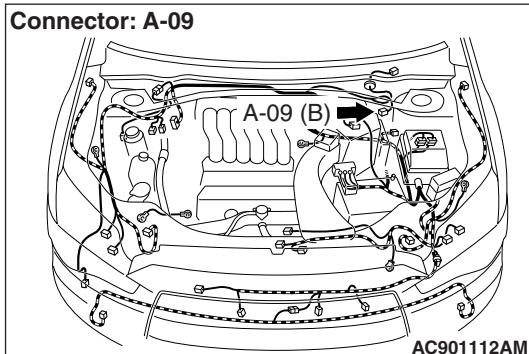
NOTE: Besides severe driving, brake pad condition and brake drag are also suspected as a cause of overheat. After the ASC OFF display illumination turns off, check the brake pad condition and brake drag.

PROBABLE CAUSES

- Overheat of brake pad

Inspection Procedure 3: Brake warning light Stays ON with the parking brake lever released.





CAUTION

- If there is any problem in the CAN bus lines, an incorrect diagnostic trouble code may be set. Prior to this diagnosis, diagnose the CAN bus lines (Refer to GROUP 54C – CAN Bus Line Diagnostic Flow [P.54C-10](#)).
- Whenever ECU is replaced, ensure that the CAN bus lines are normal.

OPERATION

- When the parking brake switch is turned "ON", the combination meter terminal No.4 is grounded, and the brake warning light illuminates.
- When reduction of the brake fluid amount is detected, the brake fluid level switch is turned from "ON" to OFF. ETACS-ECU monitors the brake fluid level switch, and instructs the combination meter via the CAN bus line to illuminate the brake warning light.

TECHNICAL DESCRIPTION (COMMENT)

This may be caused by ground fault in the parking brake switch circuit.

PROBABLE CAUSES

- The brake pad thickness is at the limit value or less.
- The brake fluid amount is at the "LOWER" level or lower.
- Poor adjustment of the parking brake lever
- Damaged wiring harness and connectors
- Parking brake switch malfunction
- Brake fluid level switch malfunction
- Combination meter malfunction
- ETACS-ECU malfunction

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 lines.

Use scan tool to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Repair the CAN bus lines (Refer to GROUP 54C – CAN Bus Diagnostics Table [P.54C-10](#)). On completion, go to Step 2.

STEP 2. DTC check after resetting CAN bus lines

Use scan tool to check that the DTC is set in the combination meter and ETACS-ECU.

Q: Is any DTC set?

YES : Carry out the diagnosis for the DTC.

NO : Go to Step 3.

STEP 3. Brake fluid level check

Check that the brake fluid is filled up to the "MIN" level or higher.

Q: Is the check result normal?

YES : Go to Step 5.

NO : Go to Step 4.

STEP 4. Brake pad check

Refer to GROUP 35A – On-vehicle Service/Brake Pad Check [P.35A-21](#).

Q: Is the check result normal?

YES : Fill the brake fluid up to the "MAX" level. Then go to Step 17.

NO : Replace the brake pad (Refer to GROUP 35A – On-vehicle Service/Brake Pad Replacement [P.35A-21](#)). Then go to Step 17.

STEP 5. Brake fluid level switch check

Refer to GROUP 35A – On-vehicle Service/Brake Fluid Level Switch Check [P.35A-20](#).

Q: Is the check result normal?

YES : Go to Step 6.

NO : Replace the reservoir tank assembly (Refer to GROUP 35A – Master Cylinder Assembly and Brake Booster Assembly [P.35A-30](#)). Then go to Step 17.

STEP 6. Connector check: A-09 brake fluid level switch connector, C-312 ETACS-ECU connector

Q: Is the check result normal?

YES : Go to Step 7.

NO : Repair the damaged connector.

STEP 7. Measure the voltage at A-09 brake fluid level switch connector.

- (1) Disconnect the connector, and measure at the wiring harness side.
- (2) Turn the ignition switch to the "ON" position.
- (3) Measure the voltage between the terminal No. 1 and the body ground.

OK: Approximately system voltage

Q: Is the check result normal?

YES : Go to Step 9.

NO : Go to Step 8.

STEP 8. Measure the voltage at the C-312 ETACS-ECU connector.

⚠ CAUTION

With the C-312 ETACS-ECU connector kept connected, disconnect the A-09 brake fluid level switch connector.

- (1) Turn the ignition switch to the "ON" position.
- (2) Measure the voltage between terminal No.1 and the body ground by backprobing.

OK: Approximately system voltage

Q: Is the check result normal?

YES : Repair the wiring harness between the C-312 ETACS-ECU connector terminal No. 1 and the A-09 brake fluid level switch connector terminal No. 1.

NO : Replace the ETACS-ECU (Refer to GROUP 54A – ETACS-ECU [P.54A-825](#)). Then go to Step 17.

STEP 9. Wiring harness check: between A-09 brake fluid level switch connector and body ground

Check for open circuit in the harness wire between A-09 brake fluid level switch connector terminal No.2 and body ground.

Q: Is the check result normal?

YES : Go to Step 10.

NO : Repair the wiring harness.

STEP 10. Parking brake lever stroke check

Refer to GROUP 36 – On-vehicle Service/Parking Brake Lever Stroke Check and Adjustment [P.36-9](#).

Q: Is the check result normal?

YES : Go to Step 11.

NO : Adjust the parking brake lever stroke (Refer to GROUP 36 – On-vehicle Service/Parking Brake Lever Stroke Check and Adjustment [P.36-9](#)). Then go to Step 17.

STEP 11. Parking brake switch check

Refer to GROUP 36 – On-vehicle Service/Parking Brake Switch Check [P.36-10](#).

Q: Is the check result normal?

YES : Go to Step 12.

NO : Replace the parking brake switch (Refer to GROUP 36 – Parking Brake Lever [P.36-11](#)). Then go to Step 17.

STEP 12. Connector check: D-125 parking brake switch connector

Q: Is the check result normal?

YES : Go to Step 13.

NO : Repair the damaged connector.

STEP 13. Measure the voltage at D-125 parking brake switch connector.

- (1) Disconnect the connector, and measure at the wiring harness side.
- (2) Turn the ignition switch to the "ON" position.
- (3) Measure the voltage between the terminal No.1 and the body ground.

OK: Approximately system voltage

Q: Is the check result normal?

YES : Go to Step 16.

NO : Go to Step 14.

STEP 14. Connector check: C-03 Combination meter connector, C-22 intermediate connector**Q: Is the check result normal?**

YES : Go to Step 15.

NO : Repair the defective connector.

STEP 15. Wiring harness check: between the C-03 combination meter connector and the D-125 parking brake switch connector

Check for short circuit in the harness wire between the C-03 combination meter connector terminal No.4 and the D-125 parking brake switch connector terminal No.1.

Q: Is the check result normal?

YES : Go to Step 16.

NO : Repair the wiring harness.

STEP 16. Retest the system.**Q: Does the brake warning light turn ON and OFF normally according to the parking brake lever operation?**

YES : Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/How to Cope with Intermittent Malfunctions [P.00-15](#)).

NO : Replace the combination meter assembly (Refer to GROUP 54A – Combination Meter [P.54A-118](#)). Then go to Step 17.

STEP 17. Retest the system.**Q: Does the brake warning light turn ON and OFF normally according to the parking brake lever operation?**

YES : The procedure is complete.

NO : Return to Step 1.

Inspection Procedure 4: ABS warning light does not illuminate when ignition switch is turned to the ON position (engine stopped).

⚠ CAUTION

- If there is any problem in the CAN bus lines, an incorrect diagnostic trouble code may be set. Prior to this diagnosis, diagnose the CAN bus lines (Refer to GROUP 54C – CAN Bus Line Diagnostic Flow [P.54C-10](#)).
- Before replacing the ECU, ensure that the communication circuit is normal.
- When the hydraulic unit (integrated with ASC-ECU) is replaced, always carry out the calibration of the steering wheel sensor, the G and yaw rate sensor and brake fluid pressure sensor (Refer to [P.35C-282](#), [P.35C-283](#) and [P.35C-284](#)).

OPERATION

- ASC-ECU sends the illumination request signal of the ABS warning light to the combination meter through ETACS-ECU via CAN communication.
- ASC-ECU illuminates the ABS warning light via ETACS-ECU for approximately 3 seconds for valve check with the ignition switch turned to the ON position.

COMMENTS ON TROUBLE SYMPTOM

This may be caused by faults in the CAN bus line, ETACS-ECU, combination meter or ASC-ECU.

PROBABLE CAUSES

- Damaged wiring harness and connectors
- Malfunction of ETACS-ECU
- Combination meter malfunction
- ASC-ECU malfunction
- The ETACS-ECU coding data is abnormal.

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 lines.

Use scan tool to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Repair the CAN bus lines (Refer to GROUP 54C – CAN Bus Diagnostics Table [P.54C-17](#)).

STEP 2. Using scan tool MB991958, diagnostic trouble code

Use scan tool to check the diagnostic trouble code for the ASC system.

Q: Is the DTC set?

YES : Carry out the diagnosis for the diagnostic trouble code (Refer to [P.35C-18](#)).

NO : Go to Step 3.

STEP 3. Using scan tool MB991958, actuator test

Perform the actuator test No.07 of the combination meter system, and check if the ABS warning light illuminates (Refer to GROUP 54A – Combination Meter/Actuator Test Table [P.54A-91](#), [P.54A-91](#)).

Q: Is the check result normal?

YES : Go to Step 4.

NO : Diagnose the combination meter (Refer to GROUP 54A – Combination Meter/Trouble Symptom Chart [P.54A-69](#)). Then go to Step 8.

STEP 4. ETACS-ECU coding data check

Use scan tool to check if coding data stored in ETACS-ECU is normal (Refer to GROUP 00 – Precautions before Service/Coding List [P.00-44](#)).

Q: Is the check result normal?

YES : Go to Step 5.

NO : Replace the ETACS-ECU, and then go to Step 8.

STEP 5. Using scan tool MB991958, other system diagnostic trouble code

Using scan tool, check that the DTC U0141 is not set by the combination meter system.

Q: Is the DTC U0141 set?

YES : Troubleshoot the combination meter (Refer to GROUP 54A – combination meter – Troubleshooting/DTC [P.54A-34](#)), and then go to Step 8.

NO : Go to Step 6.

STEP 6. Using scan tool MB991958, other system diagnostic trouble code

Using scan tool, check that the DTC U0121 is not set by the ETACS system.

Q: Is the DTC U0121 set?

YES : Troubleshoot the ETACS-ECU (Refer to GROUP 54A – ETACS – Troubleshooting/DTC [P.54A-732](#)), and then go to Step 8.

NO : Go to Step 7.

STEP 7. Retest the system.

Q: Does the ABS warning light turn ON and OFF normally?

YES : Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/How to Cope with Intermittent Malfunctions [P.00-15](#)).

NO : Replace the hydraulic unit (integrated with ASC-ECU) (Refer to [P.35C-287](#)), and then go to Step 8.

STEP 8. Retest the system.

Q: Does the ABS warning light turn ON and OFF normally?

YES : The procedure is complete.

NO : Return to Step 1.

Inspection Procedure 5: Brake warning light does not illuminate when the ignition switch is turned to ON position (engine stopped).**⚠ CAUTION**

- If there is any problem in the CAN bus lines, an incorrect DTC may be set. Prior to this diagnosis, diagnose the CAN bus lines (Refer to GROUP 54C – CAN Bus Line Diagnostic Flow [P.54C-10](#)).
- Whenever ECU is replaced, ensure that the CAN bus lines are normal.
- When the hydraulic unit (integrated with ASC-ECU) is replaced, always carry out the calibration of the steering wheel sensor, the G and yaw rate sensor and brake fluid pressure sensor (Refer to [P.35C-282](#), [P.35C-283](#) and [P.35C-284](#)).

OPERATION

- ASC-ECU sends the illumination request signal of the break warning light to the combination meter through ETACS-ECU via the CAN communication.
- ASC-ECU illuminates brake warning light via ETACS-ECU for approximately 3 seconds for bulb check with the ignition switch turned to the ON position.

COMMENTS ON TROUBLE SYMPTOM

This may be caused by faults in the CAN bus line, ETACS-ECU, combination meter or ASC-ECU.

PROBABLE CAUSES

- Damaged wiring harness and connectors
- Malfunction of ETACS-ECU
- Malfunction of the combination meter
- ASC-ECU malfunction

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 lines.

Use scan tool to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Repair the CAN bus lines (Refer to GROUP 54C – CAN Bus Diagnostics Table [P.54C-17](#)). Then go to Step 7.

STEP 2. Using scan tool MB991958, check the DTC

Use scan tool to check the DTC for the ASC system.

Q: Is the DTC set?

YES : Carry out the diagnosis for the DTC (Refer to [P.35C-18](#)).

NO : Go to Step 3.

STEP 3. Actuator test of combination meter

Perform the following actuator test by the combination meter system, and check if the brake warning light illuminates (Refer to GROUP 54A – Combination Meter/Actuator Test Table [P.54A-91](#), [P.54A-91](#)).

- Item No.07: Indicator 1

Q: Is the check result normal?

YES : Go to Step 4.

NO : Diagnose the combination meter (Refer to GROUP 54A – Combination Meter/Trouble Symptom Chart [P.54A-69](#)). Then go to Step 7.

STEP 4. Using scan tool MB991958, check the other system DTC

Using scan tool, check that DTC U0141 is not set by the combination meter system.

Q: Is the DTC set?

YES : Diagnose the combination meter (Refer to GROUP 54A – Combination Meter/DTC [P.54A-53](#)). Then go to Step 7.

NO : Go to Step 5.

STEP 5. Using scan tool MB991958, check the other system DTC

Using scan tool, check that DTC U0121 is not set by the ETACS system.

Q: Is the DTC set?

YES : Perform troubleshooting on ETACS-ECU (Refer to GROUP 54A – ETACS/DTC [P.54A-741](#)). Then go to Step 7.

NO : Go to Step 6.

STEP 6. Retest the system.**Q: Does the brake warning light turn ON and OFF**

YES : Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/How to Cope with Intermittent Malfunctions [P.00-15](#)).

NO : Replace the hydraulic unit (integrated with ASC-ECU) (Refer to [P.35C-287](#)), and then go to Step 7.

STEP 7. Retest the system.**Q: Does the brake warning light turn ON and OFF normally?**

YES : The procedure is complete.

NO : Return to Step 1.

Inspection Procedure 6: ABS warning light stays ON after the engine is started.** CAUTION**

- If there is any problem in the CAN bus lines, an incorrect diagnostic trouble code may be set. Prior to this diagnosis, diagnose the CAN bus lines (Refer to GROUP 54C – CAN Bus Line Diagnostic Flow [P.54C-10](#)).
- Whenever ECU is replaced, ensure that the CAN bus lines are normal.
- When the hydraulic unit (integrated with ASC-ECU) is replaced, always carry out the calibration of the steering wheel sensor, the G and yaw rate sensor and brake fluid pressure sensor (Refer to [P.35C-282](#), [P.35C-283](#) and [P.35C-284](#)).

SYSTEM OPERATION

- ASC-ECU sends the illumination request signal of the ABS warning light to the combination meter through ETACS-ECU via CAN communication.
- ASC-ECU illuminates the ABS warning light via ETACS-ECU for approximately 3 seconds for valve check with the ignition switch turned to the ON position.

TECHNICAL DESCRIPTION (COMMENT)

This may be caused by faults in the CAN bus line, ETACS-ECU, combination meter or ASC-ECU.

PROBABLE CAUSES

- Damaged wiring harness and connectors
- ETACS-ECU malfunction
- Combination meter malfunction
- ASC-ECU malfunction
- Control stop due to the low voltage

NOTE: Due to the abnormality in the supply voltage, the diagnostic trouble code may not be set even when the ABS warning light is illuminated.

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 lines.

Use scan tool to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Repair the CAN bus lines (Refer to GROUP 54C – CAN Bus Diagnostics Table [P.54C-17](#)). Then go to Step 8.

STEP 2. Using scan tool MB991958, check the DTC

Use scan tool to check the DTC for the ASC system.

Q: Is the DTC set?

YES : Carry out the diagnosis for the DTC (Refer to [P.35C-18](#)).

NO : Go to Step 3.

STEP 3. Actuator test of combination meter

Perform the following actuator test by the combination meter system, and check if the ABS warning light illuminates normally (Refer to GROUP 54A – Combination Meter/Actuator Test Table [P.54A-91](#), [P.54A-91](#)).

- Item No.07: Indicator 1

Q: Is the check result normal?

YES : Go to Step 4.

NO : Replace the combination meter (Refer to GROUP 54A – Combination Meter [P.54A-118](#)). Then go to Step 8.

STEP 4. Check the ASC-ECU power supply circuit system.
Refer to [P.35C-247](#).

Q: Is the check result normal?

YES : Go to Step 5.

NO : Diagnose the power supply circuit of the ASC-ECU
(Refer to [P.35C-247](#)).

STEP 5. Using scan tool MB991958, check the other system DTC

Using scan tool, check that DTC U0141 is not set by the combination meter system.

Q: Is the DTC set?

YES : Diagnose the combination meter (Refer to GROUP 54A – Combination Meter/DTC [P.54A-53](#)). Then go to Step 8.

NO : Go to Step 6.

STEP 6. Using scan tool MB991958, check the other system DTC

Using scan tool, check that DTC U0121 is not set by the ETACS system.

Q: Is the DTC set?

YES : Perform troubleshooting on ETACS-ECU (Refer to GROUP 54A – ETACS/DTC [P.54A-741](#)). Then go to Step 8.

NO : Go to Step 7.

STEP 7. Retest the system.

(1) Erase the DTC.

(2) Drive the vehicle at 6 mph (10 km/h) or higher.

Q: Does the ABS warning light turn ON and OFF normally?

YES : Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/How to Cope with Intermittent Malfunctions [P.00-15](#)).

NO : Replace the hydraulic unit (integrated with ASC-ECU) (Refer to [P.35C-287](#)), and then go to Step 8.

STEP 8. Retest the system.

(1) Erase the DTC.

(2) Drive the vehicle at 6 mph (10 km/h) or higher.

Q: Does the ABS warning light turn ON and OFF normally?

YES : The procedure is complete.

NO : Return to Step 1.

Inspection Procedure 7: ASC warning display stays ON after the engine is started.

⚠ CAUTION

- Whenever ECU is replaced, ensure that the CAN bus lines (Refer to GROUP 54C – CAN Bus Line Diagnostic Flow [P.54C-10](#)) are normal.
- When the hydraulic unit (integrated with ASC-ECU) is replaced, always carry out the calibration of the steering wheel sensor, the G and yaw rate sensor and brake fluid pressure sensor (Refer to [P.35C-282](#), [P.35C-283](#) and [P.35C-284](#)).

OPERATION

ASC-ECU sends the illumination request signal of the ASC warning display to the combination meter through ETACS-ECU via the CAN communication.

TECHNICAL DESCRIPTION (COMMENT)

This may be caused by faults in the CAN bus line, ETACS-ECU, combination meter or ASC-ECU.

PROBABLE CAUSES

- Damaged wiring harness and connectors
- Malfunction of ETACS-ECU
- Combination meter malfunction
- ASC-ECU malfunction
- Control is disabled due to the low voltage

NOTE: Due to the abnormality in the supply voltage, the diagnostic trouble code may not be set even when the ASC warning display illuminates.

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 lines.

Use scan tool to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Repair the CAN bus lines (Refer to GROUP 54C – CAN Bus Diagnostics Table [P.54C-17](#)). Then go to Step 8.

STEP 2. Using scan tool MB991958, check the DTC

Use scan tool to check the DTC for the ASC system.

Q: Is the DTC set?

YES : Carry out the diagnosis for the DTC (Refer to [P.35C-18](#)).

NO : Go to Step 3.

STEP 3. Actuator test of combination meter

Perform the following actuator test by the combination meter system, and check if the ASC warning display illuminates normally (Refer to GROUP 54A – Combination Meter/Actuator Test Table [P.54A-91](#), [P.54A-91](#)).

- Item No.13: Indicator 4

Q: Is the check result normal?

YES : Go to Step 4.

NO : Replace the combination meter (Refer to GROUP 54A – Combination Meter [P.54A-118](#)). Then go to Step 8.

STEP 4. Check the ASC-ECU power supply circuit system.

Refer to [P.35C-247](#).

Q: Is the check result normal?

YES : Go to Step 5.

NO : Diagnose the power supply circuit of the ASC-ECU (Refer to [P.35C-247](#)).

STEP 5. Using scan tool MB991958, check the other system DTC

Using scan tool, check that DTC U0141 is not set by the combination meter system.

Q: Is the DTC set?

YES : Diagnose the combination meter (Refer to GROUP 54A – Combination Meter/DTC [P.54A-53](#)). Then go to Step 8.

NO : Go to Step 6.

STEP 6. Using scan tool MB991958, check the other system DTC

Using scan tool, check that DTC U0121 is not set by the ETACS system.

Q: Is the DTC set?

YES : Perform troubleshooting on ETACS-ECU (Refer to GROUP 54A – ETACS/DTC [P.54A-741](#)). Then go to Step 8.

NO : Go to Step 7.

STEP 7. Retest the system.

Q: Does the ASC warning display turn ON and OFF normally?

YES : Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/How to Cope with Intermittent Malfunction [P.00-15](#)).

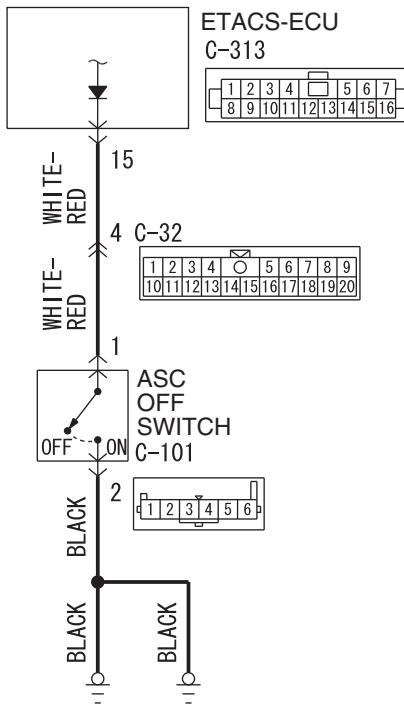
NO : Replace the hydraulic unit (integrated with ASC-ECU) (Refer to [P.35C-287](#)), and then go to Step 8.

STEP 8. Retest the system.

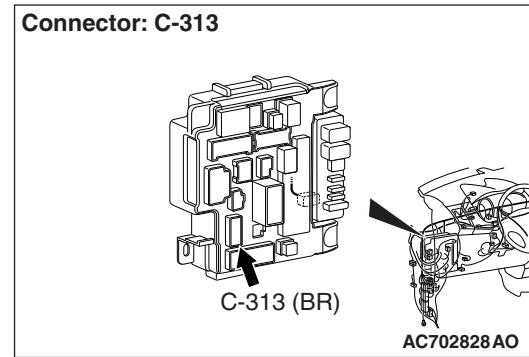
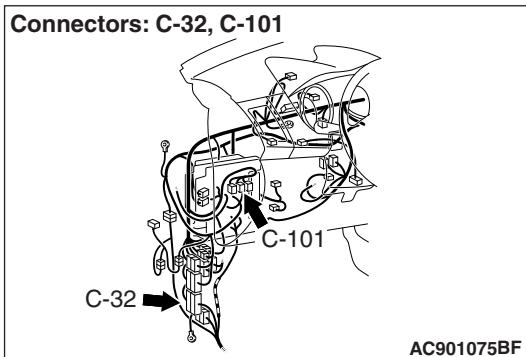
Q: Does the ASC warning display turn ON and OFF normally?

YES : The procedure is complete.

NO : Return to Step 1.

Inspection Procedure 8: ASC OFF display or ASC OFF light stays ON after the engine is started.

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**⚠ CAUTION**

- If there is any problem in the CAN bus lines, an incorrect diagnostic trouble code may be set. Prior to this diagnosis, diagnose the CAN bus lines (Refer to GROUP 54C – CAN Bus Line Diagnostic Flow [P.54C-10](#)).
- Whenever ECU is replaced, ensure that the CAN bus lines are normal.
- When the hydraulic unit (integrated with ASC-ECU) is replaced, always carry out the calibration of the steering wheel sensor, the G and yaw rate sensor and brake fluid pressure sensor (Refer to [P.35C-282](#), [P.35C-283](#) and [P.35C-284](#)).

OPERATION

- ASC-ECU sends the illumination request signal of ASC OFF display to the combination meter through ETACS-ECU via CAN communication.
- By the operation of ASC OFF switch, the ASC OFF display illuminates when the ASC function is stopped.
- When the ASC OFF switch is pressed for 3 seconds or more, the ASC system turns OFF.
- When the ASC OFF switch is pressed for 15 seconds or more, the ASC is kept in ON state.

TECHNICAL DESCRIPTION (COMMENT)

This may be caused by faults in the CAN bus line, ETACS-ECU, combination meter or ASC-ECU.

PROBABLE CAUSES

- Damaged wiring harness and connectors
- ETACS-ECU malfunction
- Combination meter malfunction
- ASC-ECU malfunction
- ASC OFF switch malfunction

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 lines.

Use scan tool to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Repair the CAN bus lines (Refer to GROUP 54C – CAN Bus Diagnostics Table [P.54C-17](#)). Then go to Step 10.

STEP 2. Using scan tool MB991958, check the DTC

Use scan tool to check the DTC for the ASC system.

Q: Is the DTC set?

YES : Carry out the diagnosis for the DTC (Refer to [P.35C-18](#)).

NO : Go to Step 3.

STEP 3. Actuator test of combination meter

Perform the following actuator test by the combination meter system, and check if the ASC OFF display or light illuminates normally (Refer to GROUP 54A – Combination Meter/Actuator Test Table [P.54A-91](#), [P.54A-91](#)).

- Item No.7: Indicator 1

Q: Is the check result normal?

YES : Go to Step 4.

NO : Replace the combination meter (Refer to GROUP 54A – Combination Meter [P.54A-118](#)). Then go to Step 9.

STEP 4. ASC OFF switch check

Refer to [P.35C-286](#).

Q: Is the check result normal?

YES : Go to Step 5.

NO : Replace ASC OFF switch (Refer to [P.35C-285](#)). Then go to Step 10.

STEP 5. Connector check: C-313 ETACS-ECU connector, C-32 intermediate connector, C-101 ASC OFF switch connector

Q: Is the check result normal?

YES : Go to Step 6.

NO : Repair the damaged connector.

STEP 6. Wiring harness check between C-313 ETACS-ECU connector terminal No.15 and C-101 ASC OFF switch connector terminal No.1

- Check the power supply circuit for short circuit.

Q: Is the check result normal?

YES : Go to Step 7.

NO : Repair the wiring harness between C-313 ETACS-ECU connector terminal No.15 and C-101 ASC OFF switch connector terminal No.1.

STEP 7. Using scan tool MB991958, check the DTC for other systems

Using scan tool, check that DTC U0141 is not set by the combination meter system.

Q: Is the DTC set?

YES : Diagnose the combination meter (Refer to GROUP 54A – Combination Meter/DTC [P.54A-53](#)). Then go to Step 10.

NO : Go to Step 8.

STEP 8. Using scan tool MB991958, check the DTC for other systems

Using scan tool, check that DTC U0121 is not set by the ETACS system.

Q: Is the DTC set?

YES : Perform troubleshooting on ETACS-ECU (Refer to GROUP 54A – ETACS/DTC [P.54A-741](#)). Then go to Step 9.

NO : Go to Step 9.

STEP 9. Retest the system.

Q: Does ASC OFF display or ASC OFF light turn ON and OFF normally?

YES : Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/How to Cope with Intermittent Malfunctions [P.00-15](#)).

NO : Replace the hydraulic unit (integrated with ASC-ECU) (Refer to [P.35C-287](#)). Then go to Step 10.

STEP 10. Retest the system.

Q: Does ASC OFF display or ASC OFF light turn ON and OFF normally?

YES : The procedure is complete.

NO : Return to Step 1.

Inspection Procedure 9: ASC Operation Display Stays ON after the Engine is Started.

⚠ CAUTION

- If there is any problem in the CAN bus lines, an incorrect diagnostic trouble code may be set. Prior to this diagnosis, diagnose the CAN bus lines (Refer to GROUP 54C – CAN Bus Line Diagnostic Flow [P.54C-10](#)).
- Whenever ECU is replaced, ensure that the CAN bus lines are normal.
- When the hydraulic unit (integrated with ASC-ECU) is replaced, always carry out the calibration of the steering wheel sensor, the G and yaw rate sensor and brake fluid pressure sensor (Refer to [P.35C-282](#), [P.35C-283](#) and [P.35C-284](#)).

OPERATION

ASC-ECU sends the illumination request signal of the ASC indicator light to the combination meter through ETACS-ECU via the CAN communication.

COMMENTS ON TROUBLE SYMPTOM

This may be caused by faults in the CAN bus line, ETACS-ECU, combination meter or ASC-ECU.

PROBABLE CAUSES

- Damaged wiring harness and connectors
- ETACS-ECU malfunction
- Combination meter malfunction
- ASC-ECU malfunction

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 lines.

Use scan tool to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Repair the CAN bus lines (Refer to GROUP 54C – CAN Bus Diagnostics Table [P.54C-17](#)). Then go to Step 8.

STEP 2. Using scan tool MB991958, check the DTC

Use scan tool to check the DTC for the ASC system.

Q: Is the DTC set?

YES : Carry out the diagnosis for the DTC (Refer to [P.35C-18](#)).

NO : Go to Step 3.

STEP 3. Actuator test of combination meter

Perform the following actuator test by the combination meter system, and check if the ASC warning display illuminates normally (Refer to GROUP 54A – Combination Meter/Actuator Test Table [P.54A-91](#), [P.54A-91](#)).

- Item No.13: Indicator 4

Q: Is the check result normal?

YES : Go to Step 4.

NO : Replace the combination meter (Refer to GROUP 54A – Combination Meter [P.54A-118](#)). Then go to Step 8.

STEP 4. Check the ASC-ECU power supply circuit system.

Refer to [P.35C-247](#).

Q: Is the check result normal?

YES : Go to Step 5.

NO : Diagnose the power supply circuit of the ASC-ECU (Refer to [P.35C-247](#)).

STEP 5. Using scan tool MB991958, check the other system DTC

Using scan tool, check that DTC U0141 is not set by the combination meter system.

Q: Is the DTC set?

YES : Diagnose the combination meter (Refer to GROUP 54A – Combination Meter/DTC [P.54A-53](#)). Then go to Step 8.

NO : Go to Step 6.

STEP 6. Using scan tool MB991958, check the other system DTC

Using scan tool, check that DTC U0121 is not set by the ETACS system.

Q: Is the DTC set?

YES : Perform troubleshooting on ETACS-ECU (Refer to GROUP 54A – ETACS/DTC [P.54A-741](#)). Then go to Step 8.

NO : Go to Step 7.

STEP 7. Retest the system.

Q: Does the ASC warning display turn OFF normally?

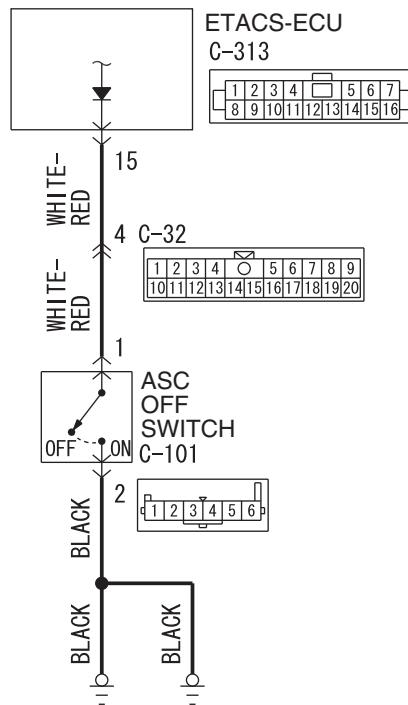
YES : Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/How to Cope with Intermittent Malfunctions [P.00-15](#)).NO : Replace the hydraulic unit (integrated with ASC-ECU) (Refer to [P.35C-287](#)), and then go to Step 8.

STEP 8. Retest the system.

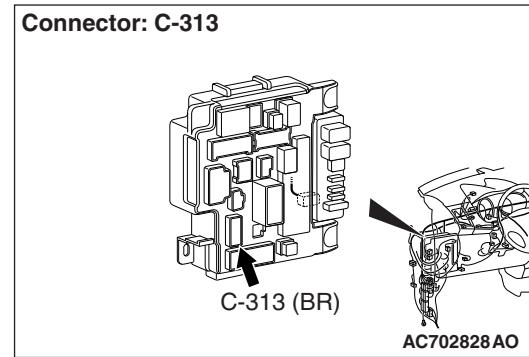
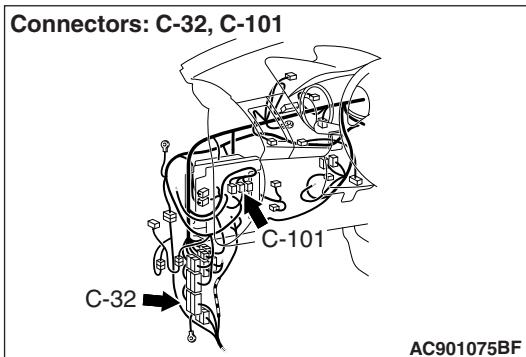
Q: Does the ASC warning display OFF normally?

YES : The procedure is complete.

NO : Return to Step 1.

Inspection Procedure 10: After ASC OFF switch is turned OFF, TCL/Skid control system cannot be disabled.

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**⚠ CAUTION**

- If there is any problem in the CAN bus lines, an incorrect diagnostic trouble code may be set. Prior to this diagnosis, diagnose the CAN bus lines (Refer to GROUP 54C – CAN Bus Line Diagnostic Flow [P.54C-10](#)).
- Whenever ECU is replaced, ensure that the CAN bus lines are normal.

OPERATION

The ETACS-ECU terminal No.15 is grounded by pressing the ASC OFF switch and illuminate the ASC OFF indicator. The ON/OFF state of the ASC OFF switch is transferred from ETACS-ECU to ASC-ECU via the CAN bus line.

COMMENTS ON TROUBLE SYMPTOM

This may be caused by the open circuit in the ASC OFF switch circuit.

PROBABLE CAUSES

- Damaged wiring harness and connectors
- ASC OFF switch malfunction
- ETACS-ECU malfunction
- The ASC OFF switch is pressed for more than 15 seconds (The system returns to normal by pressing the ignition switch to the "OFF" position and to the "ON" position).

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. ASC OFF switch check

Refer to [P.35C-286](#).

Q: Is the check result normal?

YES : Go to Step 2.

NO : Replace ASC OFF switch (Refer to [P.35C-285](#)). Then go to Step 6.

STEP 2. Connector check: C-313 ETACS-ECU connector, C-32 intermediate connector, C-101 ASC OFF switch connector

Q: Is the check result normal?

YES : Go to Step 3.

NO : Repair the damaged connector.

STEP 3. Wiring harness check between C-313 ETACS-ECU connector terminal No.15 and C-101 ASC OFF switch connector terminal No.1

- Check the power supply circuit for open circuit.

Q: Is the check result normal?

YES : Go to Step 4.

NO : Repair the wiring harness between C-313 ETACS-ECU connector terminal No.15 and C-101 ASC OFF switch connector terminal No.1.

STEP 4. Wiring harness check between C-101 ASC OFF switch connector terminal No.2 and the body ground

- Check the ground wires for open circuit.

Q: Is the check result normal?

YES : Go to Step 5.

NO : Repair the wiring harness between C-45 ASC OFF switch connector terminal No.2 and the body ground.

STEP 5. Retest the system.

Q: Does ASC turn ON and OFF normally using ASC OFF switch?

YES : Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/How to Cope with Intermittent Malfunctions [P.00-15](#)).

NO : Replace the ETACS-ECU (Refer to GROUP 54A – ETACS-ECU [P.54A-825](#)). Then go to Step 6.

STEP 6. Retest the system.

Q: Does ASC turn ON and OFF normally using ASC OFF switch?

YES : The procedure is complete.

NO : Return to Step 1.

Inspection Procedure 11: Abnormality in brake operation

⚠ CAUTION

- If there is any problem in the CAN bus lines, an incorrect diagnostic trouble code may be set. Prior to this diagnosis, diagnose the CAN bus lines (Refer to GROUP 54C – CAN Bus Line Diagnostic Flow [P.54C-10](#)).
- Whenever ECU is replaced, ensure that the CAN bus lines are normal.
- When the hydraulic unit (integrated with ASC-ECU) is replaced, always carry out the calibration of the steering wheel sensor, the G and yaw rate sensor and brake fluid pressure sensor (Refer to [P.35C-282](#), [P.35C-283](#) and [P.35C-284](#)).

TECHNICAL DESCRIPTION (COMMENT)

Although the cause of the trouble cannot be clearly resolved since it depends on the running status and road surface condition, the malfunction of the hydraulic circuit may occur if any diagnostic trouble code is not detected.

PROBABLE CAUSES

- Hydraulic unit (Integrated with ASC-ECU) malfunction
- Malfunction of hydraulic circuit
- Malfunction of brake assembly
- Malfunction of brake booster
- Malfunction of master cylinder assembly

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, check the diagnostic trouble code**Q: Is the check result normal?**

YES : Go to Step 2.

NO : Troubleshoot for the relevant diagnostic trouble code (Refer to [P.35C-18](#)).

STEP 2. Hydraulic unit (Integrated with ASC-ECU) check

Check that the brake tube is installed to the hydraulic unit (integrated with ASC-ECU) correctly (Refer to [P.35C-277](#)).

Q: Is the check result normal?

YES : Go to Step 3.

NO : Connect the brake tubes correctly, repair the external brake lines, or replace the hydraulic unit (integrated with ASC-ECU) (Refer to [P.35C-287](#)).

STEP 3. Brake operation check

Perform the following checks.

- Brake pedal check (Refer to GROUP 35A – On-vehicle Service/Brake Pedal Check and Adjustment [P.35A-15](#)).
- Brake booster check (Refer to GROUP 35A – On-vehicle Service/Brake Booster Operation Check [P.35A-17](#)).
- Check valve check (Refer to GROUP 35A – On-vehicle Service/Check Valve Operation Check [P.35A-19](#)).

Q: Can any fault be found with the brake operation?

YES : Check the brake-related parts, and repair if necessary. Then, go to Step 4.

NO : Go to Step 4.

STEP 4. Hydraulic unit check

Perform the following actuator tests (Refer to [P.35C-273](#)).

- Item No.01: FL wheel ABS drive
- Item No.02: FR wheel ABS drive
- Item No.03: RL wheel ABS drive
- Item No.04: RR wheel ABS drive
- Item No.05: FL wheel TCL drive
- Item No.06: FR wheel TCL drive
- Item No.07: RL wheel TCL drive
- Item No.08: RR wheel TCL drive

Q: Is the check result normal?

YES : The procedure is complete.

NO : Replace the hydraulic unit (integrated with ASC-ECU) (Refer to [P.35C-287](#)).

Inspection Procedure 12: ASC system does not operate or faulty ASC operate.

⚠ CAUTION

- If there is any problem in the CAN bus lines, an incorrect diagnostic trouble code may be set. Prior to this diagnosis, diagnose the CAN bus lines (Refer to GROUP 54C – CAN Bus Line Diagnostic Flow [P.54C-10](#)).
- Whenever ECU is replaced, ensure that the CAN bus lines are normal.
- When the hydraulic unit (integrated with ASC-ECU) is replaced, always carry out the calibration of the steering wheel sensor, the G and yaw rate sensor and brake fluid pressure sensor (Refer to [P.42C-10](#), [P.35C-283](#) and [P.35C-284](#)).

COMMENTS ON TROUBLE SYMPTOM

In case of this trouble symptom, ASC system operation may be disabled. Diagnostic trouble code may be set by the TCL/ASC system using scan tool.

PROBABLE CAUSES

- Low battery output
- Wiring harness or connector failure of CAN bus line
- ASC-ECU malfunction
- Different ETACS-ECU, abnormal variant coding information

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. DTC check

Use scan tool to check the DTC for the ASC system (Refer to [P.35C-18](#)).

Q: Is the check result normal?

YES : Go to Step 2.

NO : Carry out the diagnosis for the DTC (Refer to [P.35C-18](#)).

STEP 2. Engine control module coding data check

Using scan tool, check if any abnormality is present to the coding data below which are stored in the engine control module (Refer to GROUP 00 – Precautions before Service/Coding List [P.00-44](#)).

A.S.C.

OK: Available

Q: Is the check result normal?

YES : Go to Step 4.

NO : Go to Step 3.

STEP 3. Engine control module coding data check

Perform the variant coding to the Engine control module.

Q: Is the check result normal?

YES : Go to Step 5.

NO : Replace the engine control module (Refer to GROUP 13A – ECM [P.13A-887](#) <2.4L engine> – or GROUP 13B – ECM [P.13B-903](#) <3.0L engine>). Then go to Step 5.

STEP 4. Hydraulic unit (integrated with ASC-ECU) check

Check that the brake tube is correctly mounted to the hydraulic unit (integrated with ASC-ECU) (Refer to [P.35C-277](#)).

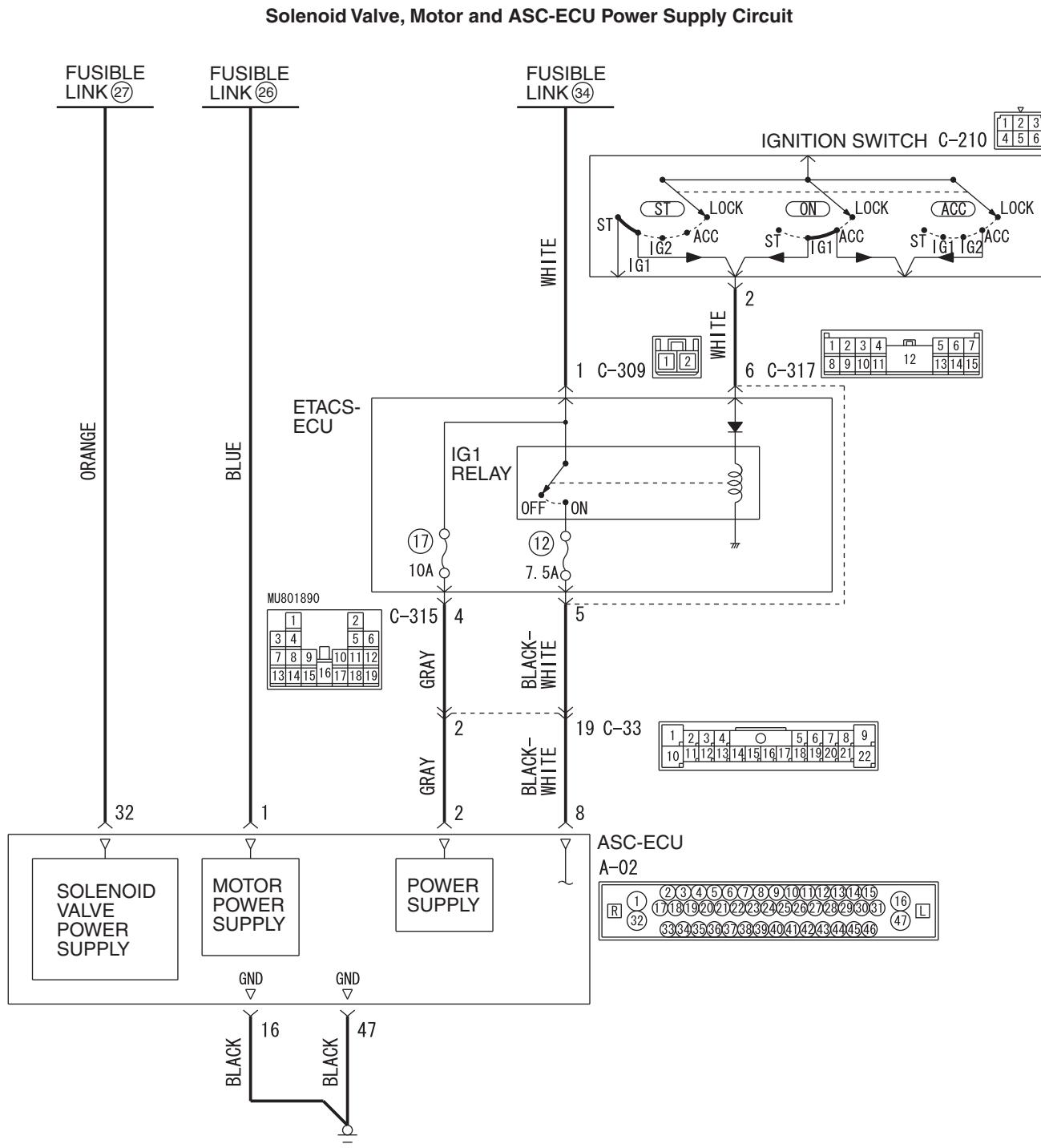
Q: Is the check result normal?

YES : Replace the hydraulic unit (integrated with ASC-ECU) (Refer to [P.35C-277](#)). Then go to Step 5.

NO : Connect the brake tubes correctly, and repair or replace the external brake lines of the hydraulic unit (integrated with ASC-ECU).

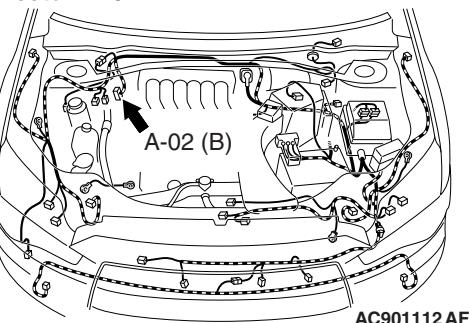
STEP 5. Operation check**Q: Does skid control/TCL operate normally?****YES** : The procedure is complete.**NO** : Check the brake system related components other than the skid control/TCL system.

Inspection Procedure 13: ASC-ECU power supply circuit system

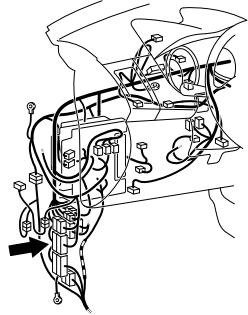


WAG35M004A

Connector: A-02

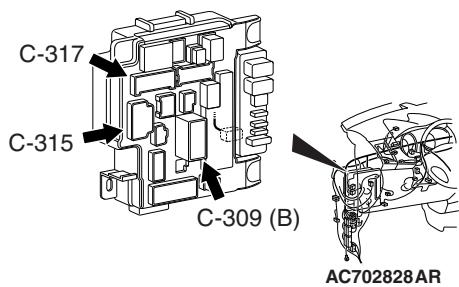


Connector: C-33



AC901075AB

Connectors: C-309, C-315, C-317



AC702828AR

⚠ CAUTION

- When the ASC-ECU power supply voltage becomes 9.7 ± 0.3 V or less, the ABS warning light, ASC warning display, and ASC OFF display illuminate, and the ABS, stability control, and TCL controls are prohibited.
- If the battery terminal is not tightened properly, a dump surge may occur and the power supply voltage may become abnormally high for a short time.
- If there is any problem in the CAN bus lines, an incorrect diagnostic trouble code may be set. Prior to this diagnosis, diagnose the CAN bus lines (Refer to GROUP 54C – CAN Bus Line Diagnostic Flow [P.54C-10](#)).
- Whenever ECU is replaced, ensure that the CAN bus lines are normal.
- When the hydraulic unit (integrated with ASC-ECU) is replaced, always carry out the calibration of the steering wheel sensor, the G and yaw rate sensor and brake fluid pressure sensor (Refer to [P.35C-282](#), [P.35C-283](#) and [P.35C-284](#)).

OPERATION

- ASC-ECU contains the power supply circuit (terminal No. 32) for the solenoid valve. The solenoid valve is energized by the valve relay, which is incorporated in ASC-ECU.
- ASC-ECU contains the power supply circuit (terminal No.2) for ASC-ECU. The power is supplied from the fusible link No.34 through the multi-purpose fuse No.17.

- ASC-ECU contains the power supply circuit (terminal No.8) for ASC-ECU. When the ignition switch (IG1) is turned ON, the voltage is applied to the relay incorporated in ETACS-ECU to turn ON the relay, and the power is supplied from the fusible link No.34 through multi-purpose fuse No.12.
- ASC-ECU contains the power supply circuit (terminal No.1) for the pump motor. The pump motor is energized by the motor switch, which is incorporated in ASC-ECU.
- When malfunction occurs in ASC-ECU power supply, the communication with scan tool becomes unavailable.

PROBABLE CAUSES

- Damaged wiring harness and connectors
- Malfunction of fuse or fusible link
- Improper tightening of battery terminal
- Improper tightening of grounding bolt
- Battery failure
- Charging system failed
- ASC-ECU malfunction

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
- MB991997: ASC check harness

STEP 1. Battery check

Refer to GROUP 54A – Battery Test [P.54A-9](#).

Q: Is the battery in good condition?

YES : Go to Step 3.

NO : Charge or replace the battery. Then go to Step 2.

STEP 2. Charging system check

Refer to GROUP 16 – On-vehicle Service/Output Current Test [P.16-9](#).

Q: Is the charging system in good condition?

YES : Go to Step 3.

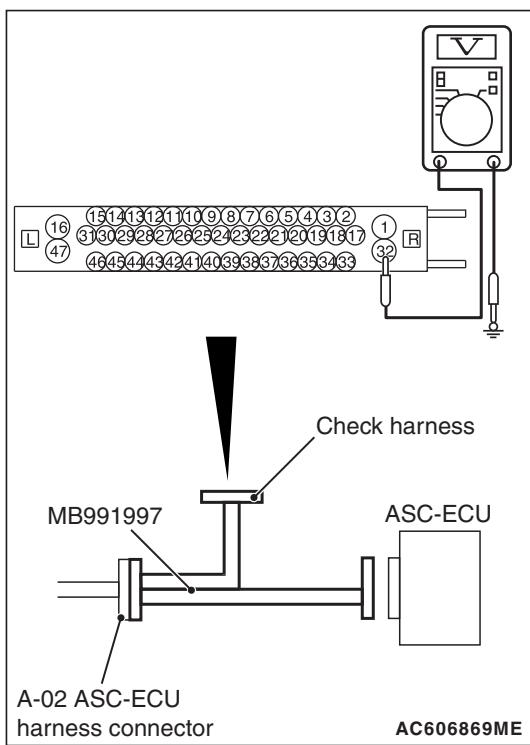
NO : Repair or replace the charging system component(s).

STEP 3. Connector check: A-02 ASC-ECU connector, C-33 intermediate connector, C-317 ETACS-ECU connector, C-315 ETACS-ECU connector

Q: Is the check result normal?

YES : Go to Step 4.

NO : Repair the damaged connector.



STEP 4. Voltage measurement at the A-02 ASC-ECU connector

(1) Disconnect the ASC-ECU connector, connect special tool ASC check harness (MB991997) to the harness-side connector, and then measure the voltage at the special tool connector side.

NOTE: Do not connect the special tool ASC check harness (MB991997) to ASC-ECU.

(2) Measure the voltage between terminal No.32 and body ground.

OK: Approximately system voltage

Q: Is the check result normal?

YES : Go to Step 7.

NO : Go to Step 5.

STEP 5. Fusible link check: Check the fusible link No.27.

Q: Is the check result normal?

YES : The open circuit may be present in the power supply circuit. Repair the wiring harness between the A-02 ASC-ECU connector terminal No.32 and the fusible link No.27. Then go to Step 20.

NO : Go to Step 6.

STEP 6. Resistance measurement at A-02 ASC-ECU connector

- (1) Removal the fusible link No.27.
- (2) Disconnect the ASC-ECU connector, connect special tool ASC check harness (MB991997) to the harness-side connector, and then measure the resistance at the special tool connector side.

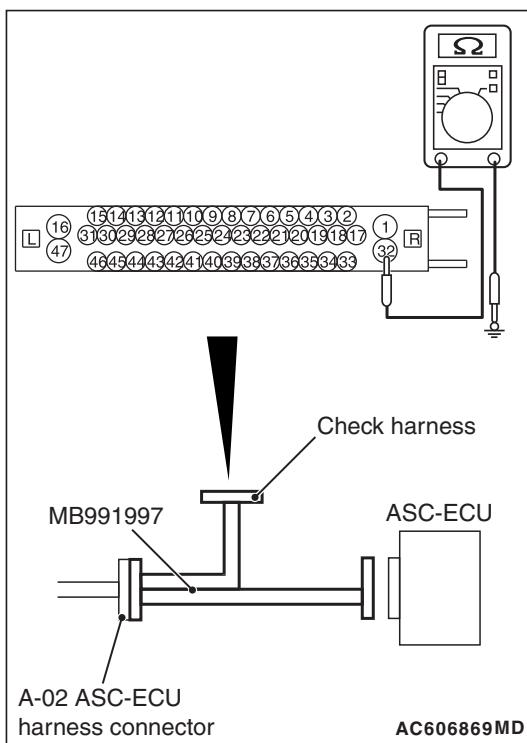
NOTE: Do not connect the special tool ASC check harness (MB991997) to ASC-ECU.

- (3) Measure the resistance between the terminal No.32 and the body ground.

OK: No continuity

Q: Is the check result normal?

YES : Replace the fusible link No.27. Then go to Step 20.
NO : The short circuit may be present in the power supply circuit. Repair the wiring harness between the A-02 ASC-ECU connector terminal No.32 and the fusible link No.27, and then replace the fusible link No.27. Then go to Step 20.



STEP 7. Voltage measurement at the A-02 ASC-ECU connector

- (1) Disconnect the ASC-ECU connector, connect special tool ASC check harness (MB991997) to the harness-side connector, and then measure the voltage at the special tool connector side.

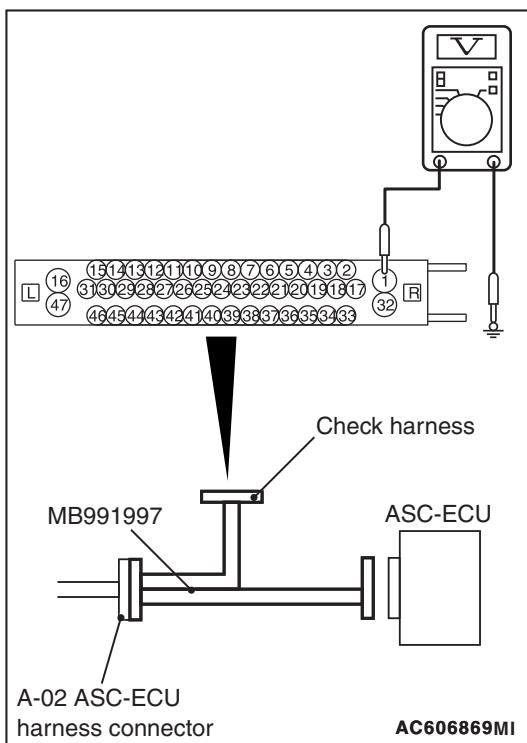
NOTE: Do not connect the special tool ASC check harness (MB991997) to ASC-ECU.

- (2) Measure the voltage between terminal No.1 and body ground.

OK: Approximately system voltage

Q: Is the check result normal?

YES : Go to Step 10.
NO : Go to Step 8.



STEP 8. Check the fusible link No.26.

Q: Is the check result normal?

YES : The open circuit may be present in the power supply circuit. Repair the wiring harness between the A-02 ASC-ECU connector terminal No.1 and the fusible link No.26. Then go to Step 20.

NO : Go to Step 9.

STEP 9. Resistance measurement at A-02 ASC-ECU connector

(1) Removal the fusible link No.26.

(2) Disconnect the ASC-ECU connector, connect special tool ASC check harness (MB991997) to the harness-side connector, and then measure the resistance at the special tool connector side.

NOTE: Do not connect the special tool ASC check harness (MB991997) to ASC-ECU.

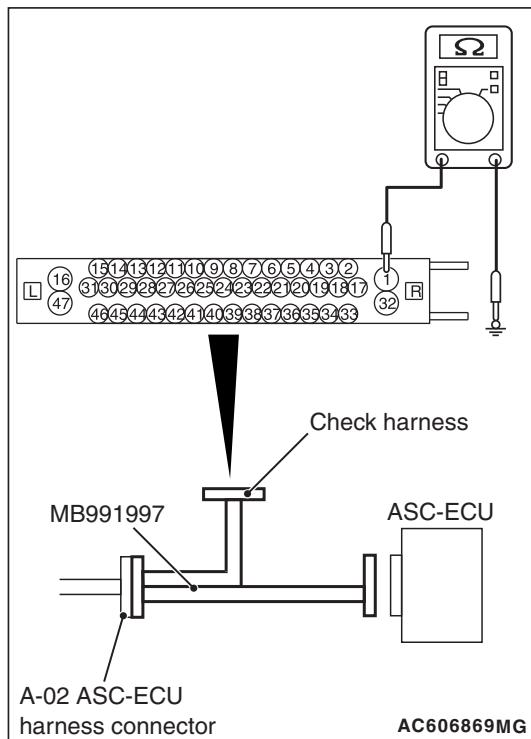
(3) Measure the resistance between the terminal No.1 and the body ground.

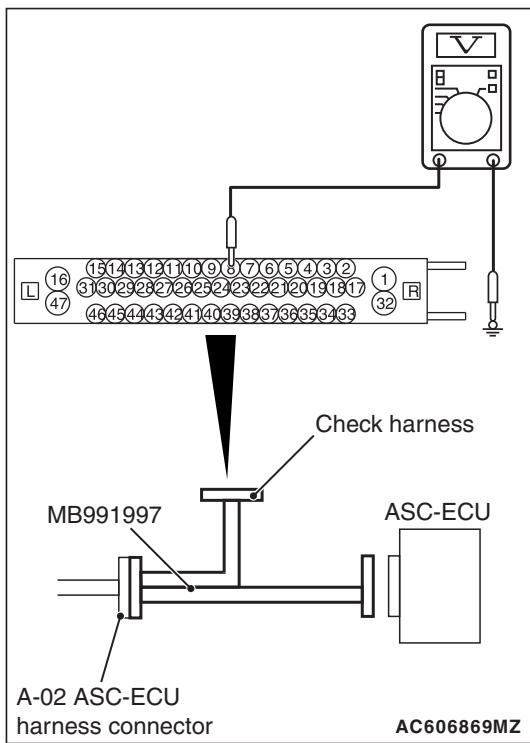
OK: No continuity

Q: Is the check result normal?

YES : Replace the fusible link No.26. Then go to Step 20.

NO : The short circuit may be present in the power supply circuit. Repair the wiring harness between the A-02 ASC-ECU connector terminal No.1 and the fusible link No.26, and then replace the fusible link No.26. Then go to Step 20.



STEP 10. Voltage measurement at the A-02 ASC-ECU connector

- (1) Disconnect the ASC-ECU connector, connect special tool ASC check harness (MB991997) to the harness-side connector, and then measure the voltage at the special tool connector side.

NOTE: Do not connect the special tool ASC check harness (MB991997) to ASC-ECU.

- (2) Ignition switch: "ON" position.
- (3) Measure the voltage between terminal No.8 and body ground.

OK: Approximately system voltage

Q: Is the check result normal?

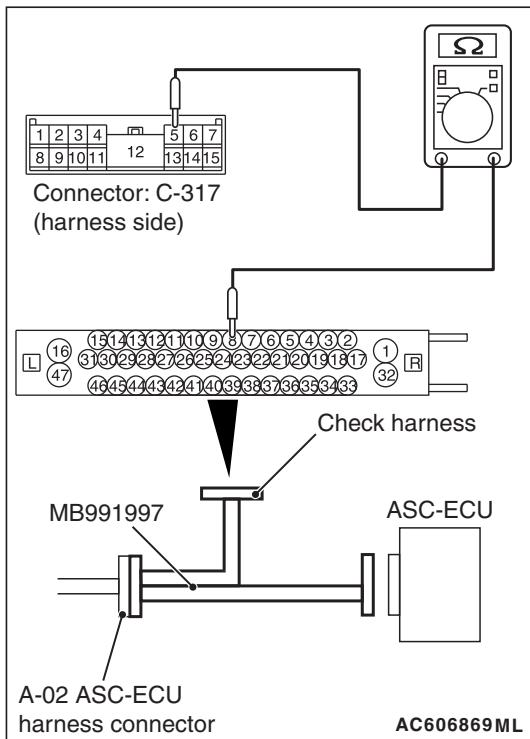
YES : Go to Step 14.
NO : Go to Step 11.

STEP 11. Check the fuse No.12.

Visually check for open circuit in fuse No.12.

Q: Is the check result normal?

YES : Go to Step 12.
NO : Go to Step 13.



STEP 12. Resistance measurement at A-02 ASC-ECU connector

- 1) Disconnect the C-317 ETACS-ECU connector.
- 2) Disconnect the A-02 ASC-ECU connector, connect special tool ASC check harness (MB991997) to the harness-side connector, and then measure the resistance at the special tool connector side.

NOTE: Do not connect the special tool ASC check harness (MB991997) to ASC-ECU.

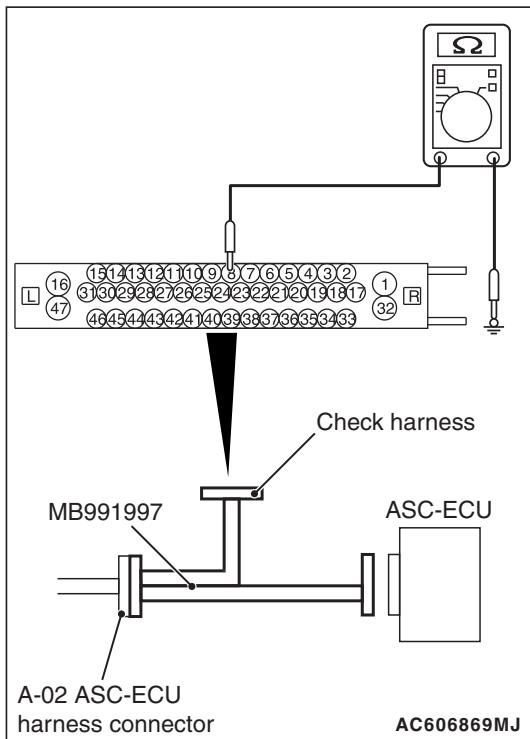
- 3) Measure the resistance between the A-02 ASC-ECU connector terminal No.8 and the C-317 ETACS-ECU connector terminal No.5.

OK: Continuity exists (2 Ω or less)

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/How to Cope with Intermittent Malfunctions [P.00-15](#)).

NO : The open circuit may be present in the power supply circuit. Repair the wiring harness between the A-02 ASC-ECU connector terminal No.8 and the C-317 ETACS-ECU connector terminal No.5. Then go to Step 20.



STEP 13. Resistance measurement at A-02 ASC-ECU connector

- 1) Disconnect the C-317 ETACS-ECU connector.
- 2) Disconnect the ASC-ECU connector, connect special tool ASC check harness (MB991997) to the harness-side connector, and then measure the resistance at the special tool connector side.

NOTE: Do not connect the special tool ASC check harness (MB991997) to ASC-ECU.

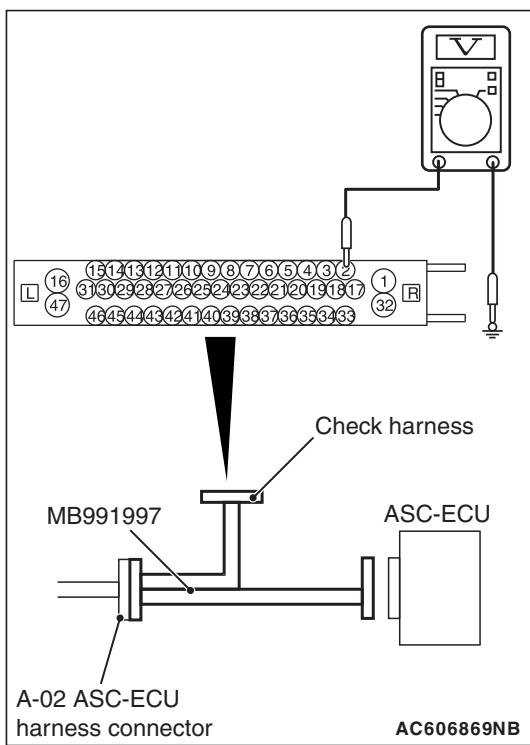
- 3) Measure the resistance between the terminal No.8 and the body ground.

OK: No continuity

Q: Is the check result normal?

YES : Replace the fuse No.12. Then go to Step 20.

NO : The short circuit may be present in the power supply circuit. Repair the wiring harness between the A-02 ASC-ECU connector terminal No.8 and the C-317 ETACS-ECU connector terminal No.5, and then replace the fuse No.12. Then go to Step 20.

STEP 14. Voltage measurement at the A-02 ASC-ECU connector

(1) Disconnect the ASC-ECU connector, connect special tool ASC check harness (MB991997) to the harness-side connector, and then measure the voltage at the special tool connector side.

NOTE: Do not connect the special tool ASC check harness (MB991997) to ASC-ECU.

(2) Measure the voltage between terminal No.2 and body ground.

OK: Approximately system voltage

Q: Is the check result normal?

YES : Go to Step 18.

NO : Go to Step 15.

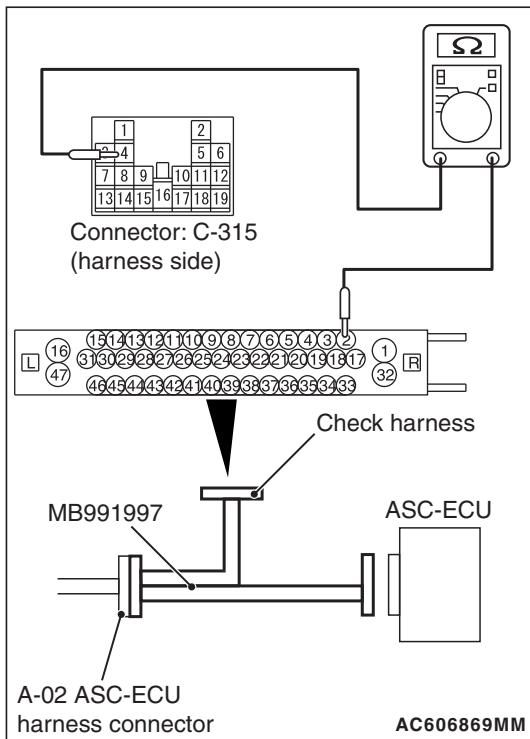
STEP 15. Check the fuse No.17.

Visually check for open circuit in fuse No.17.

Q: Is the check result normal?

YES : Go to Step 16.

NO : Go to Step 17.



STEP 16. Resistance measurement at A-02 ASC-ECU connector

- 1) Disconnect the C-315 ETACS-ECU connector.
- 2) Disconnect the A-02 ASC-ECU connector, connect special tool ASC check harness (MB991997) to the harness-side connector, and then measure the resistance at the special tool connector side.

NOTE: Do not connect the special tool ASC check harness (MB991997) to ASC-ECU.

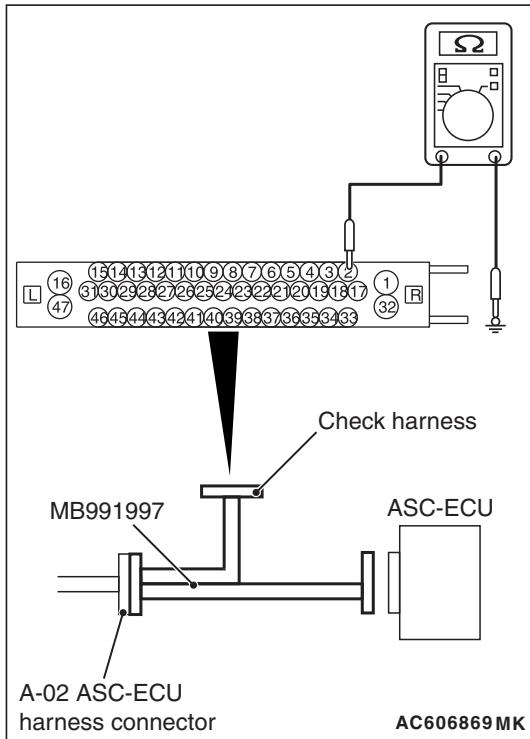
- 3) Measure the resistance between the A-02 ASC-ECU connector terminal No.2 and the C-315 ETACS-ECU connector terminal No.4.

OK: Continuity exists (2 Ω or less)

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/How to Cope with Intermittent Malfunctions [P.00-15](#)).

NO : The open circuit may be present in the power supply circuit. Repair the wiring harness between the A-02 ASC-ECU connector terminal No.2 and the C-315 ETACS-ECU connector terminal No.4. Then go to Step 20.



STEP 17. Resistance measurement at A-02 ASC-ECU connector

- 1) Disconnect the C-315 ETACS-ECU connector.
- 2) Disconnect the ASC-ECU connector, connect special tool ASC check harness (MB991997) to the harness-side connector, and then measure the resistance at the special tool connector side.

NOTE: Do not connect the special tool ASC check harness (MB991997) to ASC-ECU.

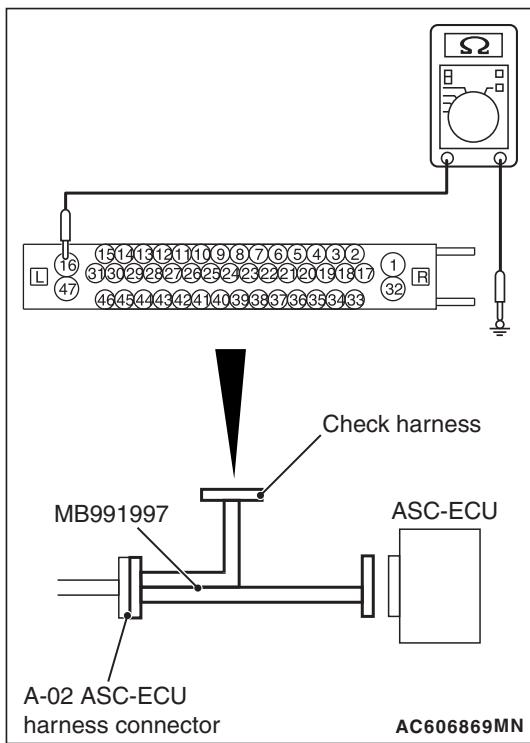
- 3) Measure the resistance between the terminal No.2 and the body ground.

OK: No continuity

Q: Is the check result normal?

YES : Replace the fuse No.17. Then go to Step 20.

NO : The short circuit may be present in the power supply circuit. Repair the wiring harness between the A-02 ASC-ECU connector terminal No.2 and the C-315 ETACS-ECU connector terminal No.4, and then replace the fuse No.17. Then go to Step 20.

STEP 18. Resistance measurement at the A-02 ASC-ECU connector

(1) Disconnect the ASC-ECU connector, connect special tool ASC check harness (MB991997) to the harness-side connector, and then measure the resistance at the special tool connector side.

NOTE: Do not connect the special tool ASC check harness (MB991997) to ASC-ECU.

(2) Measure the resistance between terminal No.16 and body ground, and between terminal No.47 and body ground.

OK: Continuity exists (2 Ω or less)

Q: Is the check result normal?

YES : Go to Step 19.

NO : An open circuit may be present in the ground circuit. Repair the wiring harness between the A-02 ASC-ECU connector terminal No.16 and the body ground, and between the A-02 ASC-ECU connector terminal No.47 and the body ground.

STEP 19. Retest the system.

Make sure that the scan tool cable is properly connected and the V.C.I. switch is "ON".

Q: Is the communication with scan tool possible?

YES : Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/How to Cope with Intermittent Malfunctions [P.00-15](#)).

NO : Replace the hydraulic unit (integrated with ASC-ECU) (Refer to [P.35C-287](#)). Then go to Step 20.

STEP 20. Retest the system.

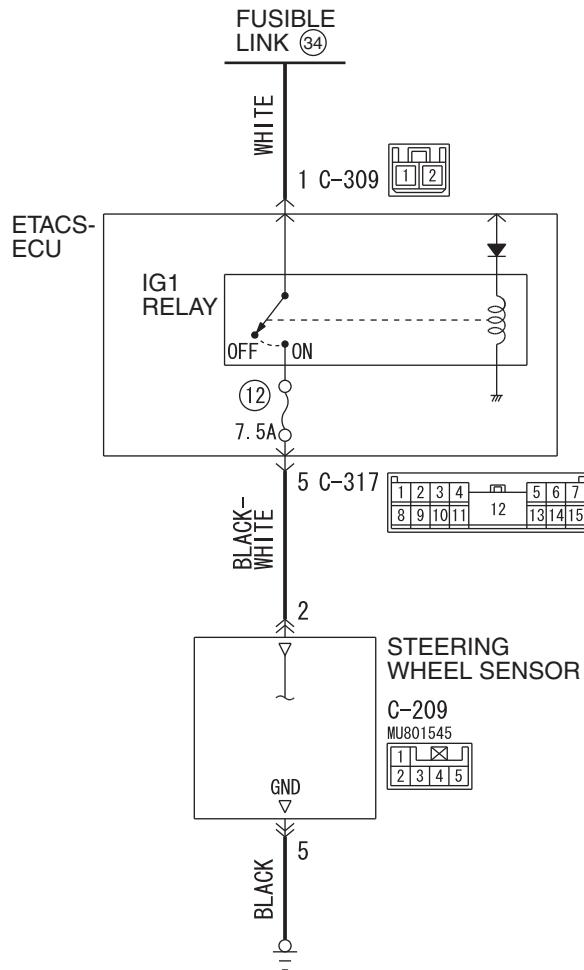
Q: Is the communication with scan tool possible?

YES : Return to Step 1.

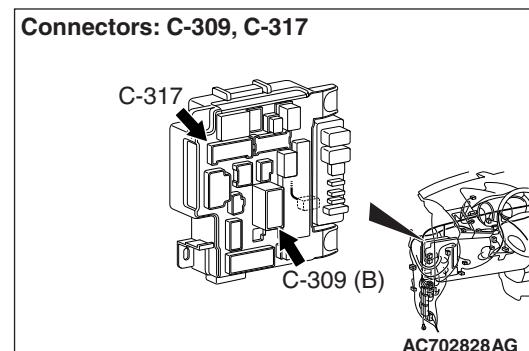
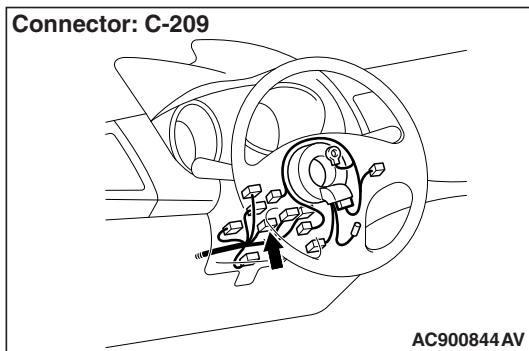
NO : The procedure is complete.

Inspection Procedure 14: Steering wheel sensor power supply circuit system

Steering Wheel Sensor Power Supply Circuit



WAG35M007A



⚠ CAUTION

- If there is any problem in the CAN bus lines, an incorrect diagnostic trouble code may be set. Prior to this diagnosis, diagnose the CAN bus lines (Refer to GROUP 54C – CAN Bus Line Diagnostic Flow [P.54C-10](#)).
- Whenever ECU is replaced, ensure that the CAN bus lines are normal.
- When the steering wheel sensor is replaced, always carry out calibration to make ASC-ECU learn the neutral point (Refer to [P.35C-283](#)).

OPERATION

- Steering wheel sensor contains the power supply circuit (terminal No.2) for Steering wheel sensor. The power is supplied from the ETACS-ECU (terminal No.5). The power is supplied from the fusible link No.34 through the multi-purpose fuse No.12.
- When malfunction occurs in Steering wheel sensor power supply, the communication with scan tool becomes unavailable.

PROBABLE CAUSES

- Damaged wiring harness and connectors
- Fuse and fusible link malfunction
- Improper tightening of battery terminal
- Battery failure
- Charging system failed
- Steering wheel sensor malfunction

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
- MB991997: ASC check harness

STEP 1. Connector check: C-209 steering wheel sensor connector**Q: Is the check result normal?****YES** : Go to Step 2.**NO** : Repair the damaged connector.

STEP 2. Resistance measurement at C-209 steering wheel sensor connector.

- (1) Disconnect C-209 steering wheel sensor connector and measure the resistance available at the wiring harness side of the connector.
- (2) Check for continuity between C-209 steering wheel sensor connector terminal No.5 and body ground.

OK: Continuity exists (2 Ω or less)

Q: Is the check result normal?

YES : Go to Step 4.

NO : Go to Step 3.

STEP 3. Check the wiring harness between C-209 steering wheel sensor connector terminal No.5 and the body ground.

- Check the ground wires for open circuit.

Q: Is the check result normal?

YES : If a trouble is solved, it is determined that there is an intermittent malfunction such as poor engaged connector(s) or open circuit (Refer to GROUP 00 – How to use Troubleshooting/How to Cope with Intermittent Malfunctions [P.00-15](#)).

NO : Repair the wiring harness.

STEP 4. Connector check: C-309 ETACS-ECU connector, C-317 ETACS-ECU connector

Q: Is the check result normal?

YES : Go to Step 5.

NO : Repair the damaged connector.

STEP 5. Voltage measurement at C-309 ETACS-ECU connector

- (1) Disconnect C-306 ETACS-ECU connector and measure the voltage available at the wiring harness side of the connector.
- (2) Measure the voltage between C-309 ETACS-ECU connector terminal No.1 and body ground.

OK: Approximately system voltage

Q: Is the check result normal?

YES : Go to Step 7.

NO : Go to Step 6.

STEP 6. Check the wiring harness between fusible link No. 34 and C-309 ETACS-ECU connector terminal No.1.

- Check the power supply lines (battery power supply) for open circuit and short circuit.

Q: Is the check result normal?

YES : If a trouble is solved, it is determined that there is an intermittent malfunction such as poor engaged connector(s) or open circuit (Refer to GROUP 00 – How to use Troubleshooting/How to Cope with Intermittent Malfunctions [P.00-15](#)).

NO : Repair the wiring harness.

STEP 7. Measure the voltage at the C-209 steering wheel sensor connector.

- (1) Disconnect C-209 steering wheel sensor connector and measure the voltage at the wiring harness side of the connector.
- (2) Turn the ignition switch to the ON position.
- (3) Measure the voltage between the terminal No.2 and the body ground.

OK: Approximately system voltage

Q: Is the check result normal?

YES : Go to Step 10.

NO : Go to Step 8.

STEP 8. Check the fuse No.12.

Visually check for open circuit in fuse No.12.

Q: Is the check result normal?

YES : Go to Step 9.

NO : The short circuit may be present in the power supply circuit. Check the wiring harness between the C-209 steering wheel sensor connector terminal No.2 and the C-317 ETACS-ECU connector terminal No.5, and repair if necessary. And then replace the fuse No.12.

STEP 9. Check the wiring harness between C-209 steering wheel sensor connector terminal No.2 and C-317 ETACS-ECU connector terminal No.5.

- Check the power supply lines (battery power supply) for open circuit.

Q: Is the check result normal?

YES : Go to Step 10.

NO : Repair the wiring harness between the C-209 steering wheel sensor connector terminal No.2 and the C-317 ETACS-ECU connector terminal No.5.

STEP 10. Using scan tool MB991958, check the ETACS system data list

Check the input signal of IG1 relay.

- Turn the ignition switch to the ON position.

Item No.	Item name	Normal condition
Item 254	IG voltage	System voltage

OK: Normal condition is displayed.

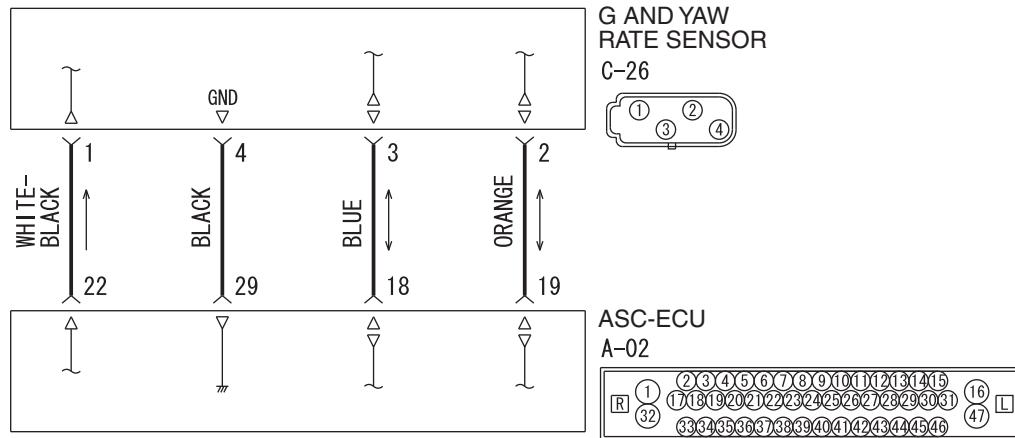
Q: Is the check result normal?

YES : Replace the steering wheel sensor.

NO : Refer to GROUP 54A - ETACS – Input Signal Procedures/Input Signal Procedure 2 "The ignition switch (IG1) signal is not received" [P.54A-786](#).

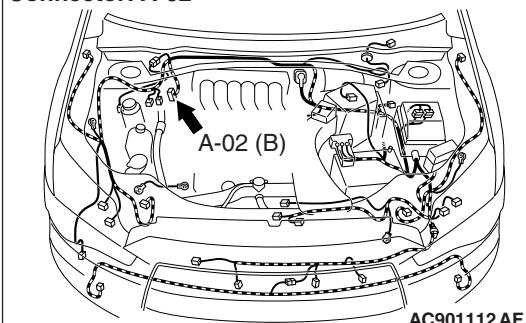
Inspection Procedure 15: HSA (Hill Start Assist) does not work.

G and Yaw Rate Sensor Circuit

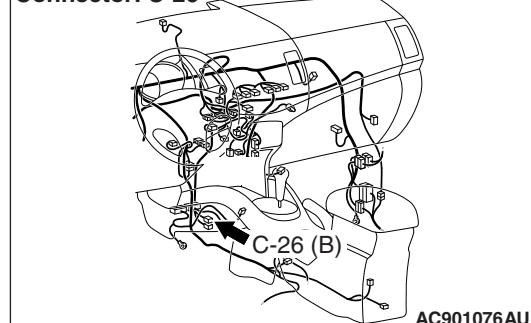


ACA02068

Connector: A-02



Connector: C-26



⚠ CAUTION

- If there is any problem in the CAN bus lines, an incorrect diagnostic trouble code may be set. Prior to this diagnosis, diagnose the CAN bus lines (Refer to GROUP 54C – CAN Bus Line Diagnostic Flow [P.54C-10](#)).
- Whenever ECU is replaced, ensure that the CAN bus lines are normal.
- When the hydraulic unit (integrated with ASC-ECU) is replaced, always carry out the calibration of the steering wheel sensor, the G and yaw rate sensor and brake fluid pressure sensor (Refer to [P.35C-282](#), [P.35C-283](#) and [P.35C-284](#)).

OPERATION

- The slope gradient may be low.
- The vehicle is not completely stationary.
- A failure may have occurred in the calibration of the G and yaw rate sensor or brake fluid pressure sensor.
- The parking brake switch may be seized, which causes the HSA to fail to start the operation.
- A problem (noise interference) may have occurred in the CAN bus line, resulting in an improper communication with ASC-ECU or each ECU.

NOTE:

- *The HSA does not work even when the wheel speed sensor output pulse (vehicle moved) while the vehicle is parked.*
- *The HSA is affected by the loading conditions and vehicle posture at the occurrence of phenomenon. When checking the HSA operation in actual driving, carry out the check on the vehicle with one occupant (driver) only.*

PROBABLE CAUSES

- Improper installation of the G and yaw rate sensor
- G and yaw rate sensor malfunction
- Calibration failure of the G and yaw rate sensor
- Calibration failure of the brake fluid pressure sensor
- Seizure of the parking brake switch
- Malfunction of wheel speed sensor
- Malfunction of transmission range switch
- Malfunction of ETACS-ECU
- Malfunction of hydraulic unit (integrated with ASC-ECU)
- Wiring harness or connector failure of CAN bus line
- Damaged wiring harness and connectors

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
- MB991997: ASC check harness

STEP 1. HSA operation check

Check if the HSA works with one occupant (driver) only in the vehicle.

Q: Is the check result normal?

YES : The procedure is complete.

NO : Go to Step 2.

STEP 2. Parking brake check

With the parking brake not pulled, check if the brake warning light is off.

Q: Is the check result normal?

YES : Go to Step 3.

NO : Carry out Inspection Procedure 3 "Brake warning light stays ON with the parking brake lever released (ABS warning light is OFF)" (Refer to [P.35C-219](#)).

STEP 3. Using scan tool MB991958, diagnose the CAN bus line.

Use scan tool to diagnose the CAN bus lines.

Q: Is the check result normal?

YES : Go to Step 4.

NO : Repair the CAN bus lines (Refer to GROUP 54C – CAN Bus Diagnostics Table [P.54C-17](#)). Then go to Step 13.

STEP 4. Using scan tool MB991958, check DTC

Use scan tool MB991958 to check the DTC for the ASC system.

Q: Is the DTC set?

YES : Carry out the diagnosis for the diagnostic trouble code (Refer to [P.35C-18](#)).

NO : Go to Step 5.

STEP 5. Using scan tool MB991958, check the data listCheck the following data list (Refer to [P.35C-270](#)).

- Pulled up parking brake lever.

Item No.	Item name	Normal condition
120	Parking brake switch (Input)	ON

- Move the selector lever to the "R", "D", "N" and "P" position.

Item No.	Item name	Normal condition
70	Target gear	<ul style="list-style-type: none"> • "R" • Selector lever:"R" position
71	Actual gear	<ul style="list-style-type: none"> • "D" • Selector lever:"D" position • "P" • Selector lever:"P" position • "N" • Selector lever:"N" position

Q: Is the check result normal?

YES : Go to Step 6.

NO <Item No. 120> : Carry out the Inspection procedure 3
"Brake Warning Light Stays ON with the Parking
Brake Lever Released (ABS warning light is OFF)"
(Refer to [P.35C-219](#)), and then go to Step 13.

NO <Item No. 70, 71> : Go to Step 11.

STEP 6. Using scan tool MB991958, check the data listCheck the following data list under curb weight condition or one occupant (driver) only in the vehicle, on a flat road.(Refer to [P.35C-270](#))

- Item 09: G sensor
- Item 12: Yaw rate sensor

Q: Is the check result normal?

YES : Go to Step 9

NO : Go to Step 7

**STEP 7. Connector check: A-02 ASC-ECU connector, C-26
G and yaw rate sensor****Q: Is the check result normal?**

YES : Go to Step 8.

NO : Repair the connector, and then go to Step 13.

STEP 8. Check the harness wire between C-26 G and yaw rate sensor connector terminal No. 3, 2 and A-02 ASC-ECU connector No. 18, 19.

- Check the communication lines for open circuit and short circuit.

Q: Is the check result normal?**YES** : Go to Step 9.**NO** : Repair the wiring harness, and then go to Step 13.

STEP 9. G and yaw rate sensor installation check

Check that the G and yaw rate sensor is installed correctly.

Q: Is the check result normal?**YES** : Carry out the calibration of the G and yaw rate sensor (Refer to [P.35C-282](#)). Then go to Step 10**NO** : Reinstall the G and yaw rate sensor correctly (Refer to [P.35C-290](#)), and then go to Step 13.

STEP 10. Using scan tool MB991958, check the data listCheck the following data list (Refer to [P.35C-270](#)).

- Item 10: Master cylinder pressure

Q: Is the check result normal?**YES** : Go to Step 11**NO** : Carry out the calibration of the brake fluid pressure sensor (Refer to [P.35C-282](#)). Then go to Step 13

STEP 11. Using scan tool MB991958, check the DTC

Use scan tool MB991958 to check that the DTC is set in the TCM.

Q: Is the DTC set?**YES** : Carry out the diagnosis for the DTC (Refer to GROUP 23A – Diagnostic Trouble Code Chart [P.23A-29](#) <CVT> or GROUP 23C – Diagnostic Trouble Code Chart [P.23C-27](#) <A/T>).**NO** : Go to Step 12.

STEP 12. Retest the system.

Check if the HSA works with one occupant (driver) only in the vehicle.

Q: Is the check result normal?**YES** : If a trouble is solved, it is determined that there is an intermittent malfunction such as poor engaged connector(s) or open circuit (Refer to GROUP 00 – How to Use Troubleshooting/How to Cope with Intermittent Malfunctions [P.00-15](#)).**NO** : Replace the hydraulic unit (integrated with ASC-ECU) (Refer to [P.35C-287](#)).

STEP 13. Retest the system.

Check if the HSA works with one occupant (driver) only in the vehicle.

Q: Is the check result normal?

YES : The procedure is complete.

NO : Return to Step 1.

Inspection Procedure 16: HSA (Hill Start Assist) works on a flat road.

⚠ CAUTION

- If there is any problem in the CAN bus lines, an incorrect diagnostic trouble code may be set. Prior to this diagnosis, diagnose the CAN bus lines (Refer to GROUP 54C – CAN Bus Line Diagnostic Flow [P.54C-10](#)).
- Whenever ECU is replaced, ensure that the CAN bus lines are normal.
- When the hydraulic unit (integrated with ASC-ECU) is replaced, always carry out the calibration of the steering wheel sensor, the G and yaw rate sensor and brake fluid pressure sensor (Refer to [P.35C-282](#), [P.35C-283](#) and [P.35C-284](#)).

COMMENTS ON TROUBLE SYMPTOM

- A failure may have occurred in the calibration of the G & yaw rate sensor.
- Some drivers mistake a brake dragging for HSA operation.
- If the suspension is modified, the vehicle posture changes, and the ASC-ECU judges that the vehicle is on a steep slope and may activate HSA.

PROBABLE CAUSES

- Improper installation of the G and yaw rate sensor
- G and yaw rate sensor malfunction
- Brake drag
- Damaged wiring harness and connectors

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. HSA operation check

Check if the HSA works on a flat road with one occupant (driver) only in the vehicle.

Q: Does the HSA work on a flat road?

YES : Go to Step 2

NO : The procedure is complete.

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

Check the following data list (Refer to [P.35C-270](#)).

- Item 09: G sensor

Q: Is the check result normal?

YES : Go to Step 5.

NO : Go to Step 3

STEP 3. G and yaw rate sensor installation check

Check that the G and yaw rate sensor is installed correctly.

Q: Is the check result normal?

YES : Carry out the calibration of the G and yaw rate sensor (Refer to [P.35C-282](#)). Then go to Step 4

NO : Reinstall the G and yaw rate sensor correctly (Refer to [P.35C-290](#)), and then go to Step 5.

STEP 4. Brake drag check

Check the brake system for drag.

Q: Is the check result normal?

YES : Go to Step 5

NO : Repair the brake drag, and then go to Step 5.

STEP 5. Retest the system.

Check if the HSA works on a flat road with one occupant (driver) only in the vehicle.

Q: Does the HSA work on a flat road?

YES : Return to Step 2.

NO : The procedure is complete.

Inspection Procedure 17: The initial check sound of hydraulic unit is loud.

⚠ CAUTION

When installing brake tube, match the axial center of flare nut and brake tube with the center of hole at the hydraulic unit side, and check that the fluid does not leak.

COMMENT ON TROUBLE SYMPTOM

The operation sound may be decreased by reducing the load at the rubber mount portion of the brake tube and hydraulic unit.

PROBABLE CAUSES

- Improper installation of the hydraulic unit

- Improper installation of the brake tube

DIAGNOSIS

DRIVING CHECK

- (1) Turn the ignition switch from the "LOCK" (OFF) position to the "ON" position.
- (2) When vehicle speed reaches 6 mph (10 km/h), check the operating sound volume and compare it with that of the same model.

OK: The operating sound is the same volume or less by comparing with that of the same model.

Q: Is the check result normal?

YES : This diagnosis is complete.

NO : Carry out adjustment for hydraulic unit installation.
(Refer to [P.35C-277](#)).

DATA LIST REFERENCE TABLE

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The following items of ECU input data can be read using scan tool.

Item No.	Check item	Check condition	Normal condition
01	FL wheel speed sensor	Perform a test run of the vehicle.	The speedometer display and the scan tool display almost agree with each other. <During stop: approximately 0.4 mph (0.7km/h)>
02	FR wheel speed sensor		
03	RL wheel speed sensor		
04	RR wheel speed sensor		
05	Power supply voltage		Battery positive voltage (10 to 18 V ASC operable range)
07	Brake switch (input)	The brake pedal is depressed.	ON
		The brake pedal is released.	OFF
08	Lateral G sensor (+: left turn, -: right turn)	Vehicle stopped (level)	-0.11 to 0.11 G
		Running	-1 to 1 G
09	G sensor (+: deceleration, -: acceleration)	Vehicle stopped (level)	<ul style="list-style-type: none"> • 0 G^{*1} (fixed value) <Vehicles with FWD> • -0.15 to 0.15 G <Vehicles with AWD, FWD with idle neutral control>
		Running	0 G ^{*1} (fixed value)
			-1 to 1 G
10	Master cylinder pressure (+: pressure increase, -: pressure decrease)	The brake pedal is depressed.	Increases by the amount of the brake pedal depression.
		The brake pedal is released.	-3 to 3 bar
11	Steering angle (+: left turn, -: right turn)	Vehicle stopped (the steering wheel is in the neutral position)	-6 to 6 deg
		Running	Nearly the same as the steering wheel operation angle <-720 to 720 deg (ASC-ECU normal detection value)>
			Nearly the same as the steering wheel operation angle <-850 to 850 deg (Sensor normal value as a single unit)>
12	Yaw rate sensor (+: left turn, -: right turn)	Vehicle stopped (level)	-3.6 to 3.6 deg/s
		Running	-100 to 100 deg/s
14	Brake switch	The brake pedal is depressed.	ON
		The brake pedal is released.	OFF
15	Emission test mode	Emission test mode: ON	ON
		Emission test mode: OFF	OFF

Item No.	Check item	Check condition	Normal condition
26	Brake fluid pressure switch	Brake fluid level is lower than the "LOWER" marking.	Low
		Brake fluid level is higher than the "LOWER" marking.	Normal
28	ASC/TCL off switch	When the ASC OFF switch is not operated (when the ASC control is available)	ON
		When the ASC OFF switch is operated (pressed and held for 3 seconds or more)(when the ASC control is prohibited)	OFF
		When the ASC OFF switch is operated (pressed and held for 15 seconds or more)(when the ASC OFF control is prohibited by fail-safe function)*2	ON
45	SAS OK flag	When the steering wheel sensor neutral point is learned	Comp
		When the steering wheel sensor neutral point is not learned	Not Comp
		When the steering wheel sensor is defective	SAS fail
			SAS fail&No Comp
65	Engine Speed	When the accelerator pedal is depressed (engine started)	The tachometer display and the scan tool display almost agree with each other.
66	Engine torque		Displays the engine torque.
67	APS		Displays the accelerator pedal opening angle.
68	Allow ESP torque request		Permitted
70	Target gear	When the selector lever is operated	Displays the selector lever position.
71	Actual gear		
72	Master cylinder pressure Offset	The difference between the neutral position that was input to the ASC-ECU before the master cylinder pressure sensor calibration and the neutral position after the calibration.	-8 to 8 bar
73	Lateral G sensor offset	The difference between the neutral position that was input to the ASC-ECU before the G and yaw rate sensor calibration and the neutral position after the calibration.	-0.15 to 0.15 G
86	Ignition switch	Ignition switch: ON	ON
87	Ignition switch (input)	Ignition switch: ON	ON
88	Vehicle speed	Perform a test run of the vehicle.	The speedometer display and the scan tool display almost agree with each other.

Item No.	Check item	Check condition	Normal condition
91	Brake pressure sensor	The brake pedal is depressed.	ON
		The brake pedal is released.	OFF
96	G sensor offset	The difference between the neutral positions before the calibration and after the calibration received in the ASC-ECU at G & yaw rate sensor calibration.	<ul style="list-style-type: none"> • 0 G^{*1} (fixed value) <Vehicles with FWD> • -0.15 to 0.15 G <Vehicles with AWD, FWD with idle neutral control>
97	Yaw rate sensor offset	The difference between the neutral position that was input to the ASC-ECU before the G and yaw rate sensor calibration and the neutral position after the calibration.	-6.0 to 6.0 deg/s
105	Power supply voltage (input)		Battery positive voltage (10 to 18 V ASC operable range)
120	Parking brake switch (Input)	When the parking brake lever is pulled up:	ON
		When the parking brake lever is released:	OFF
128	A.S.C./TCL off switch (input)	The ASC OFF switch is pressed.	ON
		The ASC OFF switch is not operated.	OFF

NOTE:

- ^{*1}: The G and yaw rate sensor does not detect longitudinal acceleration of a vehicle, thus "0 G" is always set.
- ^{*2}: When the ASC OFF switch is pressed and held for 15 seconds, the ASC system returns to the ON status.

ACTUATOR TEST REFERENCE TABLE

Using scan tool, the following actuators can be forcibly operated:

NOTE:

- ABS and ASC are operated by ASC-ECU.
- When ASC-ECU is disabled due to the fail-safe function, the actuator test cannot be performed.
- The actuator test can be performed only when the vehicle is stationary.

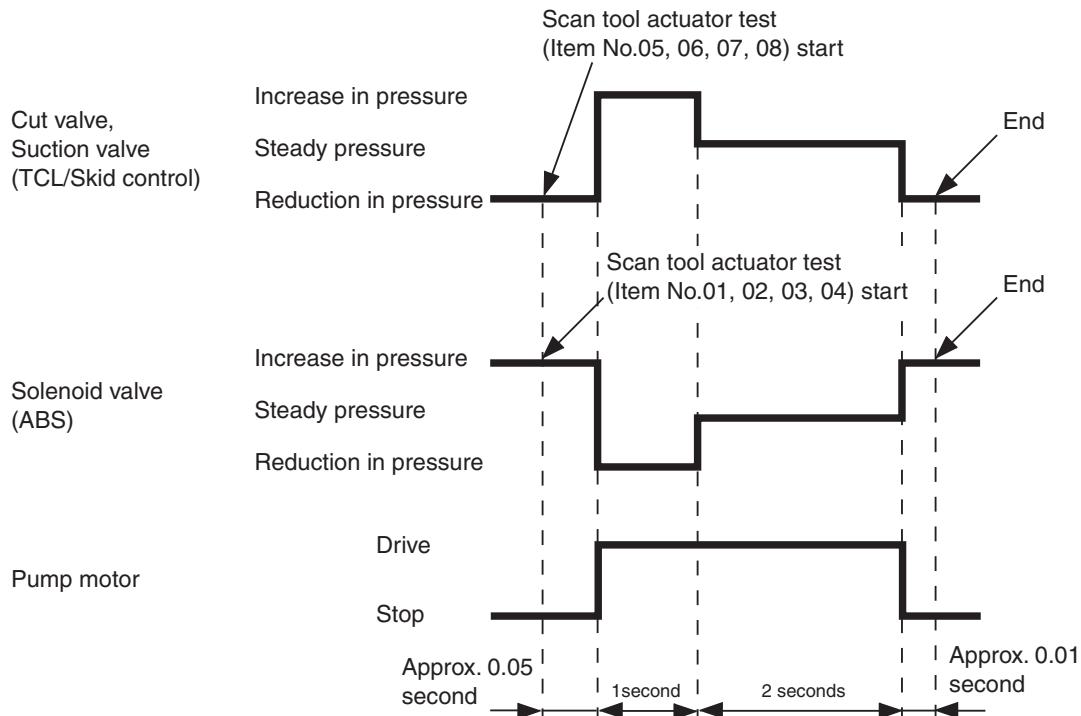
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- While the actuator test is performed, the ABS warning light flashes at a rate of 2 Hz.
- After the actuator test has been performed, the brake warning light, ABS warning light, ASC operation display, and ASC OFF display illuminate until the ignition switch is turned to ON again or the communication between scan tool and ASC-ECU is terminated.

Actuator test specifications

Item No.	Check item	Driven component
01	FL wheel ABS drive	Solenoid valve for the corresponding channel of the hydraulic unit and pump motor (simplified inspection mode)
02	FR wheel ABS drive	
03	RL wheel ABS drive	
04	RR wheel ABS drive	
05	FL wheel TCL drive	
06	FR wheel TCL drive	
07	RL wheel TCL drive	
08	RR wheel TCL drive	
09	Engine TCL drive	Outputs the engine torque control signal (engine torque = 0 N·m) to the engine ECU for three seconds.

Operation pattern of items 01 to 08



AC400776AK

CHECK AT ECU TERMINALS

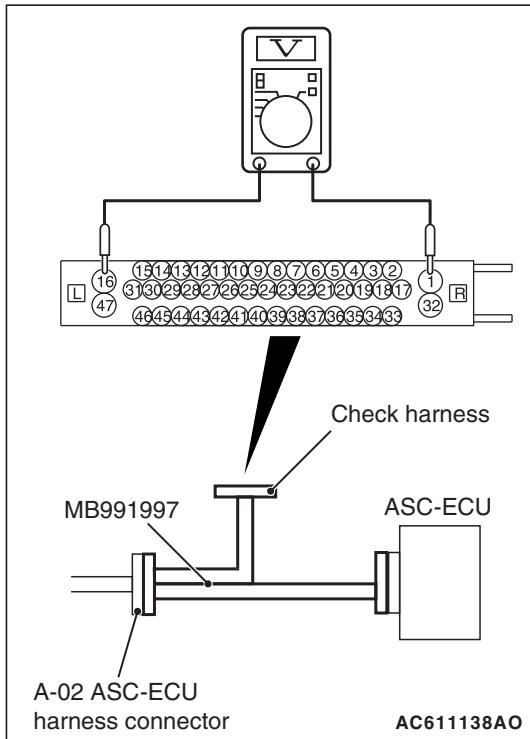
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TERMINAL VOLTAGE CHECK

Required Special Tool:

MB991997: ASC Check Harness

Connect the special tool ASC check harness (MB991997) to measure the voltage between each check connector terminal and the ground terminal (No.16 or 47).



Terminal No.	Check item	Check condition	Normal condition
1	Motor power supply	Ignition switch: ON (OFF)	Approximately system voltage
2	ASC-ECU power supply	Ignition switch: ON	Approximately system voltage
		Ignition switch: OFF	Approximately system voltage
8	Ignition switch signal for ASC-ECU activation	Ignition switch: ON	Approximately system voltage
		Ignition switch: OFF	1 Volt or less
22	G and yaw rate sensor power supply	Ignition switch: ON	Approximately system voltage
32	Solenoid valve power supply	Ignition switch: ON (OFF)	Approximately system voltage
34	Wheel speed sensor (FR) power supply	Ignition switch: ON	Approximately system voltage

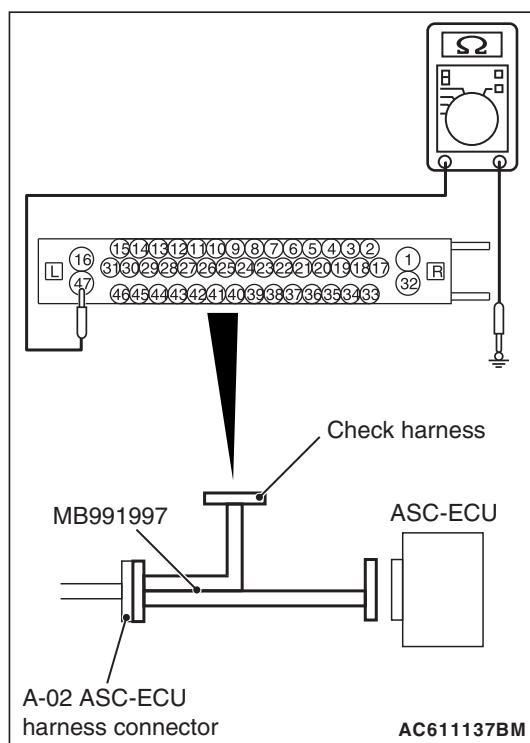
Terminal No.	Check item	Check condition	Normal condition
36	Wheel speed sensor (RL) power supply	Ignition switch: ON	Approximately system voltage
43	Wheel speed sensor (RR) power supply	Ignition switch: ON	Approximately system voltage
45	Wheel speed sensor (FL) power supply	Ignition switch: ON	Approximately system voltage

CONTINUITY CHECK AT WIRING HARNESS-SIDE CONNECTOR

Required Special Tool:

MB991997: ASC Check Harness

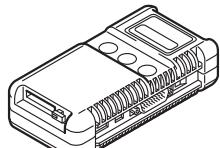
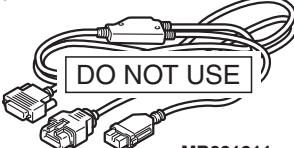
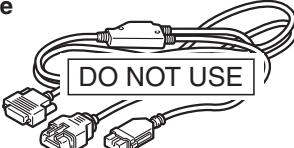
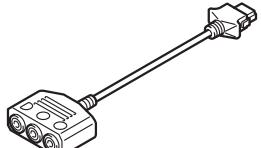
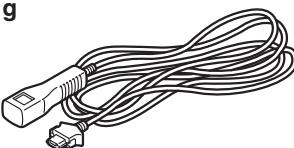
1. When performing the continuity check, turn the ignition switch to LOCK (OFF) position, connect the special tool ASC check harness (MB991997) as shown in the figure, and disconnect the ASC-ECU connector.
2. Check for continuity between terminals shown in the chart below.
3. Terminal layout is shown in the figure.

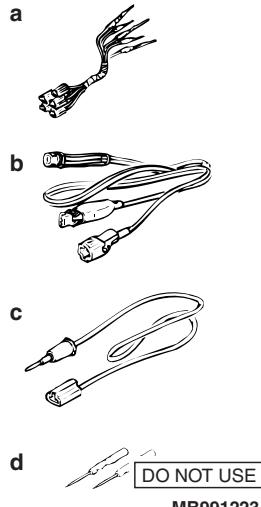


Terminal No.	Signal	Normal conditions
16 – body ground	Earth	Continuity exists (2Ω or less)
47 – body ground	Earth	Continuity exists (2Ω or less)

SPECIAL TOOLS

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Tool	Tool number and name	Supersession	Application
a  MB991824	MB991958 a. MB991824 b. MB991827 c. MB991910 d. MB991911 e. MB991914 f. MB991825 g. MB991826	MB991824-KIT <i>NOTE: G: MB991826 M.U.T.-III Trigger Harness is not necessary when pushing V.C.I. ENTER key.</i>	⚠ 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. ASC check (Diagnostic trouble code display, data list display and calibration by scan tool)
b  MB991827	M.U.T.-III sub assembly		
c  MB991910	a. Vehicle communication interface (V.C.I.) b. M.U.T.-III USB cable		
d  MB991911	c. M.U.T.-III main harness A (Vehicles with CAN communication system)		
e  MB991914	d. M.U.T.-III main harness B (Vehicles without CAN communication system)		
f  MB991825	e. M.U.T.-III main harness C (for Chrysler models only)		
g  MB991826 MB991958	f. M.U.T.-III measurement adapter g. M.U.T.-III trigger harness		
 MB991997	MB991997	ASC check harness	Voltage inspection at ASC-ECU terminals

Tool	Tool number and name	Supersession	Application
	MB991223 a. MB991219 b. MB991220 c. MB991221 d. MB991222 Harness set a. Test harness b. LED harness c. LED harness adaptor d. Probe d.  DO NOT USE MB991223	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 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.
	MB991709 Wiring harness set	—	Output current measure at the wheel speed sensor

ON-VEHICLE SERVICE

WHEEL SPEED SENSOR OUTPUT CURRENT MEASUREMENT

Refer to GROUP 35B – Wheel Speed Sensor Output

Current Measurement [P.35B-184](#).

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HYDRAULIC UNIT CHECK

M1355006100280

Required Special Tools:

- MB991958: scan tool Sub Assembly
 - MB991824: Vehicle Communication Interface (V.C.I.)
 - MB991827: scan tool USB Cable
 - MB991910: scan tool Main Harness A (Vehicles with CAN communication system)

1. Raise the vehicle using a jack and support the specified points with a rigid rack.

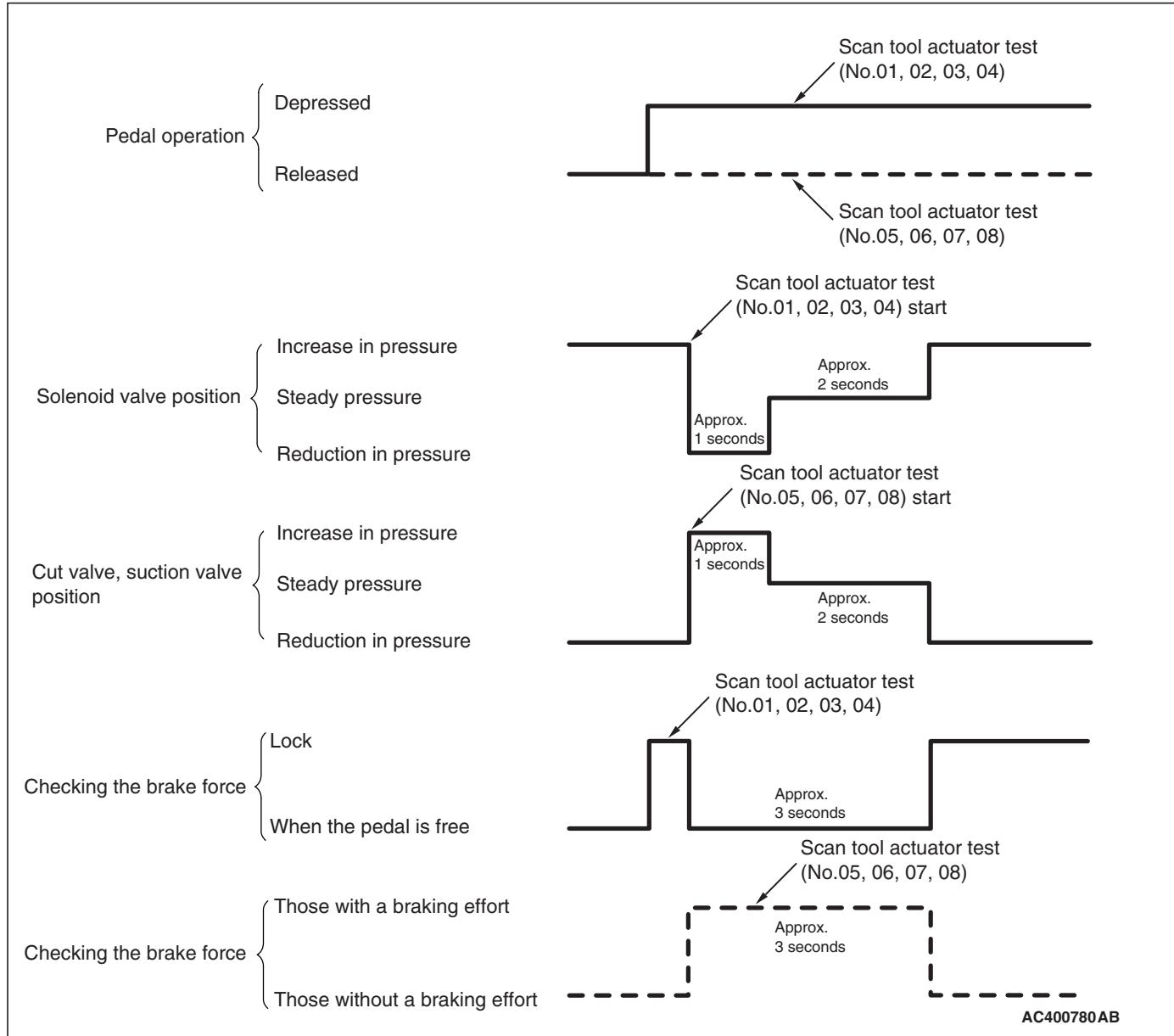
⚠ CAUTION

Before connecting or disconnecting scan tool, always turn the ignition switch to the LOCK (OFF) position.

2. Before setting scan tool, turn the ignition key to the LOCK (OFF) position.
3. Confirm that the selector lever is in the "N" position, and then start the engine.
4. When carrying out the actuator tests No.01 to 04, perform the actuator tests using scan tool while depressing the brake pedal. When carrying out the actuator tests No.05 to 08, perform the actuator tests using scan tool without depressing the brake pedal. When carrying out the actuator tests, rotate the wheel by hands to confirm that the braking force changes.

NOTE:

- *While performing the actuator test, the ABS warning light flashes at a rate of 2 Hz.*
- *When ASC-ECU is disabled due to the fail-safe function, the scan tool actuator test cannot be performed.*
- *After the actuator test has been performed, the ABS warning light, brake warning light, ASC ON indicator light, and ASC OFF indicator light illuminate until the ignition switch is turned to ON again or the communication between scan tool and ASC-ECU is terminated.*



5. This is indicated as shown in the above.
6. When any malfunction has been found, take a necessary action according to the "Judgment Table."

Judgment Table

Display on scan tool	Operation	Test result	Judgment	Cause	Measure
01 FL wheel ABS 02 FR wheel ABS 03 RL wheel ABS 04 RR wheel ABS	<ul style="list-style-type: none"> Depress the brake pedal to lock the wheel. Select the vehicle to be inspected using scan tool, perform the actuator test. Rotate the selected wheel by hands to confirm the braking force. 	Braking force decreases for 3 seconds from the lock status.	Normal	—	—
		The wheel does not lock even if the brake pedal is depressed.		Error	Clogged brake line other than hydraulic unit Clogged hydraulic circuit in the hydraulic unit
		Braking force does not decrease.			Faulty routing of hydraulic unit brake tube
					Malfunction of hydraulic unit solenoid valve operation
05 FL wheel TCL 06 FR wheel TCL 07 RL wheel TCL 08 RR wheel TCL	<ul style="list-style-type: none"> Select the vehicle to be inspected using scan tool, perform the actuator test. Rotate the selected wheel by hands to confirm the braking force. 	Lock condition occurs for 3 seconds from the status without braking force.	Normal	—	—
		The wheel does not lock.		Error	<ul style="list-style-type: none"> Faulty routing of hydraulic unit brake tube Clogged brake line other than hydraulic unit
					Clogged hydraulic circuit in the hydraulic unit

- After the inspection, turn the ignition switch to the LOCK (OFF) position, and then disconnect scan tool.

HYDRAULIC UNIT INSTALLATION ADJUSTMENT

Refer to [P.35C-287](#).

- Operate the pre-removal steps for the hydraulic unit.
- Remove all brake tubes.
- Remove the protector.
- Loosen the mounting bolt and nut of the hydraulic unit bracket.
- Install all brake tubes temporarily.
- Shake hydraulic unit to all directions with both hands to make the hydraulic unit bracket insulator fit with the unit.

7. Install the hydraulic unit bracket with mounting bolt and nut not to load the brake tube.
8. Install the protector.
9. Install all brake tubes securely.
NOTE: Install the flare nut taking care not to let the brake tube turn together.
10. Operate the post-installation steps of the hydraulic unit.

IN THE EVENT OF A DISCHARGED BATTERY

M1355006200168

⚠ WARNING

If the ASC is not operating, the vehicle will be unstable during braking. Do not drive the vehicle with the ASC-ECU connector disconnected or with the ASC not operating.

If the engine is started using a booster cable when the battery is completely flat, and the vehicle is then driven without waiting for the battery to be recharged, the engine may misfire and it may not be possible to drive the vehicle. This is because the ASC consumes a large amount of current when carrying out its initial checks. If this happens, recharge the battery fully.

ALL SENSOR CALIBRATION (G AND YAW RATE SENSOR, STEERING WHEEL SENSOR, BRAKE FLUID PRESSURE SENSOR)

M1357003900012

⚠ CAUTION

Before carrying out the calibration, check that the diagnostic trouble code related to the steering wheel sensor, G and yaw rate sensor, or brake fluid pressure sensor is not set.

⚠ CAUTION

When the next operation has been completed, carry out the calibration to make ASC-ECU learn the neutral point of the steering wheel sensor, G and yaw rate sensor, and brake fluid pressure sensor.

- ASC-ECU replacement

⚠ CAUTION

Carry out the calibration under the following conditions.

- The vehicle has one occupant (driver) only.
- Turn the steering wheel to set the wheels in the straight-ahead positions.
- The brake pedal is not depressed. (The stop light switch is OFF.)

1. Park the vehicle on a level surface.

⚠ CAUTION

Before connecting or disconnecting scan tool, always turn the ignition switch to the LOCK (OFF) position.

2. Before setting scan tool, turn the ignition key to the LOCK (OFF) position.
3. Turn the ignition switch to the ON position.

4. Select "ABS/ASC/ASTC."
5. Select "Special function."
6. Select "Sensor calibration."
7. Select "all sensor calibration."
8. Before removing scan tool from the vehicle, turn the ignition key to the LOCK (OFF) position.

G AND YAW RATE SENSOR CALIBRATION

M1355009300175

⚠ CAUTION

Before performing calibration, check that the G and yaw rate sensor-related diagnosis code is not set.

⚠ CAUTION

After the next operation has been completed, carry out the calibration to make ASC-ECU learn the neutral position of the G and yaw rate sensor.

- G and yaw rate sensor replacement
- ASC-ECU replacement

1. Park the vehicle on a level surface.

⚠ CAUTION

Before connecting or disconnecting the scan tool, turn the ignition switch to the "LOCK" (OFF) position.

2. Set the scan tool with the ignition "LOCK" (OFF).
3. Turn the ignition switch to the ON position.
4. Select the relevant system from the menu.
5. Select "ABS/ASC/ASTC" from the system lists in "System select", and press "OK" button.
6. Select "Special function" in "ABS/ASC/ASTC".
7. Select "Sensor calibration" in "Special function".
8. Select "G sensor calibration" from the selected item, and press "OK" button.
9. The screen displays "G sensor calibration: The selected command will be executed. Are you sure? Caution: Please check the execution conditions." Then press "OK" button.
- 10."Execute: The command was executed." will be shown.
Then press "OK" button.
- 11.Select "Lateral/G sensor calibration" from the selected item, and press "OK" button.
- 12.The screen displays "Lateral/G sensor calibration: The selected command will be executed. Are you sure? Caution: Please check execution conditions." Then press "OK" button.
- 13."Executed: The command was executed." will be shown.
Then press "OK" button.
- 14.Learning neutral point complete
- 15.Turn the ignition switch to "LOCK" (OFF) position and then disconnect the scan tool.

STEERING WHEEL SENSOR CALIBRATION

M1355009200275

⚠ CAUTION

After the next operation has been completed, carry out the following two operations:

- Alignment adjustment <Front>
- Steering wheel sensor (column switch assembly) replacement, removal, installation
- ASC-ECU replacement
- When the steering wheel sensor is replaced or installed, perform "Steering angle correction amount initialization" of the AWC-ECU. (Refer to .)<Vehicles with S-AWC>
 1. Update the neutral position stored in the steering wheel sensor.
 2. Reset the calibrated value of the steering angle stored in ASC-ECU.

⚠ CAUTION

- Before performing the calibration, check if the steering wheel sensor-related diagnosis code is set in ASC-ECU.
- When the diagnosis code other than C121A is set, carry out inspection according to each troubleshooting procedure.

1. Place the vehicle on a level surface with its road wheels in the straight ahead position.

⚠ CAUTION

Before connecting or disconnecting the scan tool, turn the ignition switch to the "LOCK" (OFF) position.

2. Set the scan tool with the ignition at "LOCK" (OFF).
3. Ignition switch: ON
4. Select the relevant system from the menu.
5. Select "Steering angle sensor" from the system list in "System select", and press "OK" button.
6. Select "Special function" under "Steering angle sensor".
7. Select "SAS Calibration" under "Special function".

NOTE: If the steering angle sensor neutral point has been learned, the display will show "If SAS needs re-calibration, execute SAS calibration after executing SAS initialization". If yes, press "OK" button.

8. As "SAS initialization" is selected under "SAS Calibration", press "OK" button.

NOTE: At this time, if the steering angle sensor neutral point has been learned, the display will show "Do you want to start? Note This operation will clear DTCs". Then, press "OK" button.

9. The display should show "Completed." Press "OK" button.
10. Press the OK button.
11. The display should show "SAS Calibration: Do you want to start?". Then press the OK button.

NOTE: Please execute after making a tire and a steering wheel straight.

12. The display should show "Completed." Press "OK" button.
13. Turn the ignition switch to "LOCK" (off) position, and then turn the ignition switch ON again.
14. Select the relevant system from the menu.
15. Select "ABS/ASC/ASTC" from the system list under "System select", and press "OK" button.
16. Select "Special function" under "ABS/ASC/ASTC".
17. Select "Sensor calibration" under "Special function".
18. Select "SAS calibration" under "Sensor calibration", and press "OK" button.
19. The screen displays "SAS calibration: The selected command will be executed. Are you sure? Caution: Confirm the execution conditions." Then press "OK" button.
20. "Executed: The command was executed." will be shown. Then press "OK" button.
21. Select "Diagnostic trouble code" under "ABS/ASC/ASTC". If the diagnostic trouble code "C2205 SAS internal failure (past trouble)" is set, clear it.
22. Learning neutral point complete
23. Turn the ignition switch to "LOCK" (OFF) position and then disconnect the scan tool.

BRAKE FLUID PRESSURE SENSOR CALIBRATION

M1355024100112

CAUTION

Prior to calibration, check that no brake fluid pressure sensor-related diagnostic trouble codes are set.

CAUTION

After the following procedure is complete, carry out calibration to let the ASC-ECU learn the neutral position of the brake fluid pressure sensor.

- During diagnosis according to diagnostic trouble code No. C123A
- ASC-ECU replacement

CAUTION

During the calibration, the brake pedal should be released (the stoplight switch should be off).

1. Park the vehicle on a level surface.

CAUTION

Before connecting or disconnecting the scan tool, turn the ignition switch to the "LOCK" (OFF) position.

2. Set the scan tool with the ignition at "LOCK" (OFF).
3. Turn the ignition switch to the ON position.
4. Select the relevant system from the menu.
5. Select "ABS/ASC/ASTC/WSS" from the system list under "System select", and press "OK" button.

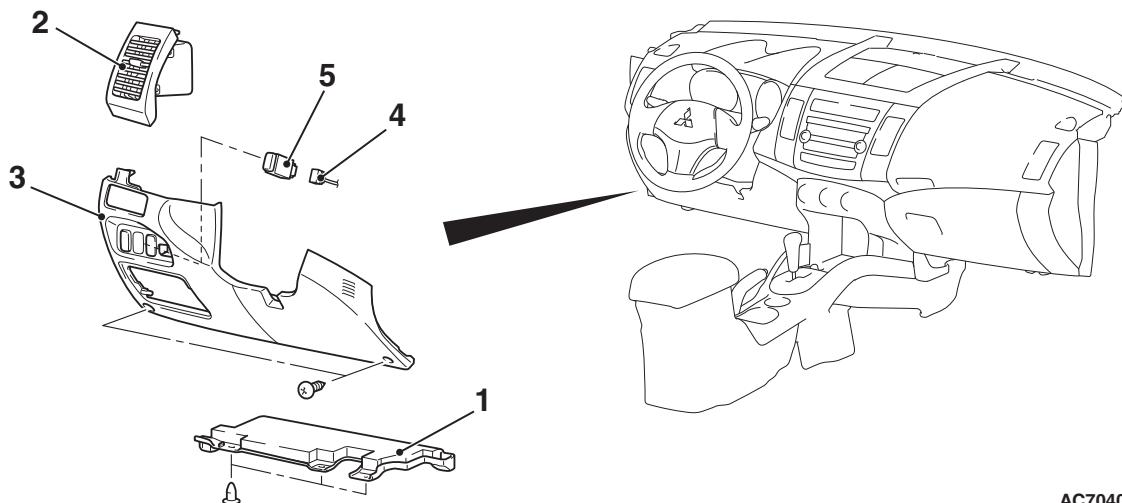
6. Select "Special function" under "ABS/ASC/ASTC/WSS".
7. Select "Sensor calibration" under "Special function".
8. Select "M/C pressure sensor calibration" from the selected item, and press "OK" button.
9. The screen displays "M/C pressure sensor calibration: The selected command will be executed. Are you sure? Caution: Please check execution conditions." Then press "OK" button.
- 10."Executed: The command was executed." will be shown. Then press "OK" button.
- 11.Learning neutral point complete
- 12.Turn the ignition switch to "LOCK" (OFF) position and then disconnect the scan tool.

ASC OFF SWITCH

REMOVAL AND INSTALLATION

NOTE: Refer to GROUP 52A – Instrument Panel Assembly for the clip location [P.52A-2](#).

M1355020100143



AC704090AB

Removal steps

1. Bottom cover assembly (driver side)
2. Side air outlet

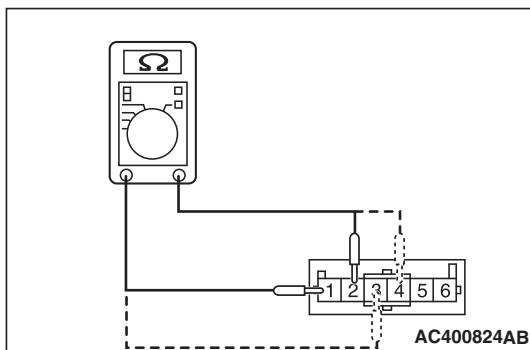
Removal steps (Continued)

3. Lower panel assembly
4. ASC OFF switch connector
5. ASC OFF switch

INSPECTION

M1355020200195

ASC OFF SWITCH CONTINUITY CHECK



1. As shown in the figure, connect the circuit tester to the ASC OFF switch as a single unit.
2. Check the continuity when the ASC OFF switch is pressed and released.

Item	When the ASC OFF switch is released (No operation status)	When the ASC OFF switch is pressed
Continuity between terminal No. 1 and No. 2	No continuity	Continuity exists. (2 Ω or less)
Continuity between terminal No. 3 and No. 4	Continuity exists.	Continuity exists.

HYDRAULIC UNIT

REMOVAL AND INSTALLATION

M1355005600572

CAUTION

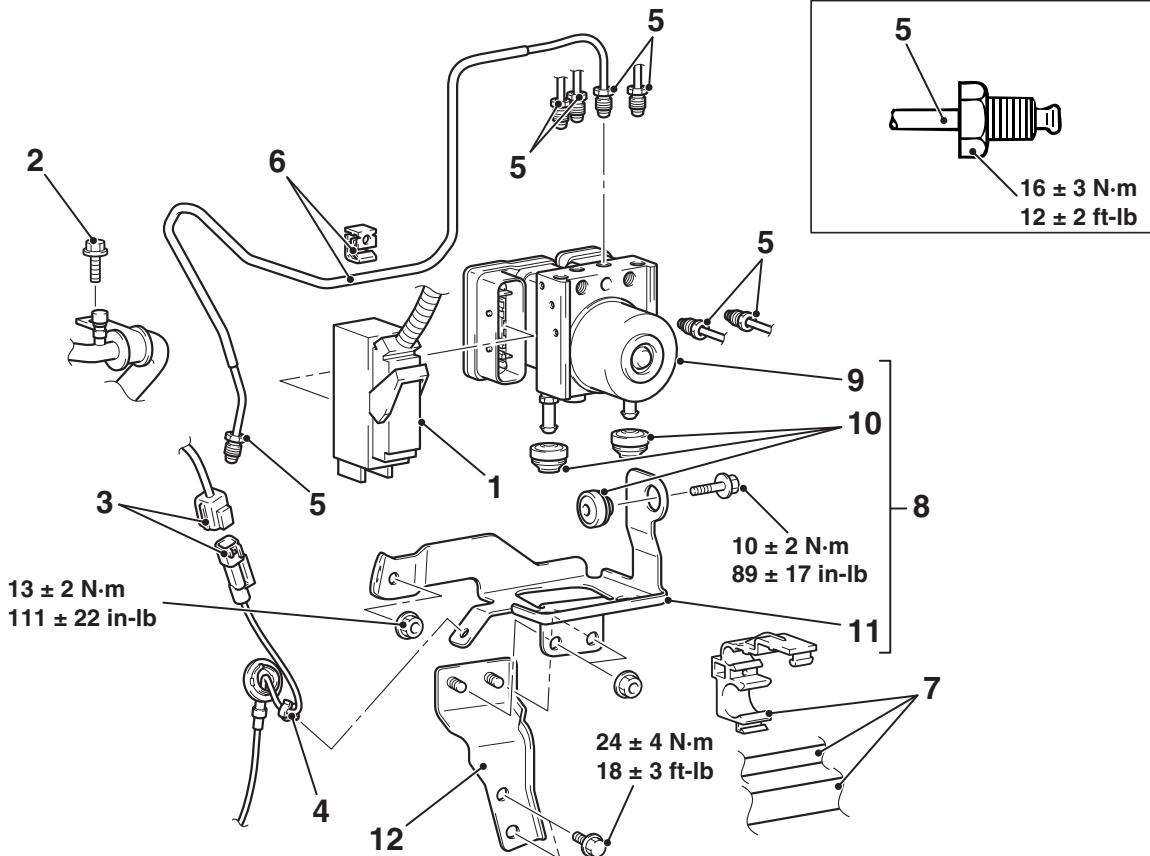
When the hydraulic unit (integrated with ASC-ECU) is replaced, after turning the ignition switch ON or OFF (vehicle information from ETACS-ECU is registered), always carry out the calibration of all sensors (steering wheel sensor, G and yaw rate sensor, and brake fluid pressure sensor) at one time.(Refer to P.35C-281.)

Pre-removal operation

- Strut tower bar removal (Refer to GROUP 42A – Strut Tower Bar P.42A-13.)
- Brake fluid draining
- Intake manifold plenum removal (Refer to GROUP 15 – Intake Manifold Plenum P.15-6.)

Post-installation operation

- Intake manifold plenum installation (Refer to GROUP 15 – Intake Manifold Plenum P.15-6.)
- Brake fluid refilling and air bleeding (Refer to GROUP 35A – On-vehicle Service, Brake Fluid Level Inspection and Bleeding P.35A-20.)
- Strut tower bar installation (Refer to GROUP 42A – Strut Tower Bar P.42A-13.)
- Hydraulic unit check (Refer to P.35B-184.)



AC703833 AB

Removal steps

1. ASC-ECU harness connector
2. Suction pipe installation bolt
3. Wheel speed sensor harness connector connection
4. Wheel speed sensor harness clip connection
- >>A<< 5. Brake tube connection
6. Brake tube and clip connection

<<A>>

Removal steps (Continued)

7. Suction pipe, liquid pipe and clip connection
8. Hydraulic unit (ASC-ECU) and hydraulic unit bracket
9. Hydraulic unit (ASC-ECU)
10. Hydraulic unit bracket insulator
11. Hydraulic unit bracket B
12. Hydraulic unit bracket A

REMOVAL SERVICE POINT

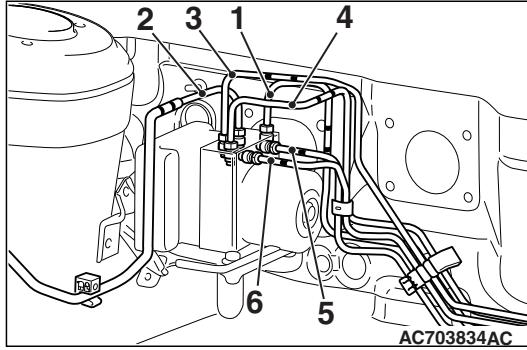
<<A>> HYDRAULIC UNIT (ASC-ECU) REMOVAL

⚠ CAUTION

- Be careful when removing the hydraulic unit because it is heavy.
- Never loosen the nuts and the bolts because the hydraulic unit cannot be disassembled.
- Do not drop or shock the hydraulic unit.
- Do not turn the hydraulic unit upside down or lay down the unit because the inner air becomes difficult to be bled.

INSTALLATION SERVICE POINT

>>A<< BRAKE TUBE CONNECTION



Install the brake pipe to the hydraulic unit as shown in the figure.

1. From master cylinder (primary) <Marking color: Blue>
2. To front brake (RH) <Marking color: Orange>
3. To front brake (LH) <Marking color: Red>
4. From master cylinder (secondary) <Marking color: Yellow>
5. To rear brake (LH) <Marking color: Pink>
6. To rear brake (RH) <Marking color: White>

WHEEL SPEED SENSOR

REMOVAL AND INSTALLATION

M1355005300612

<FRONT WHEEL SPEED SENSOR>

Refer to GROUP 35B, Wheel Speed Sensor

P.35B-189.

<REAR WHEEL SPEED SENSOR: FWD>

Refer to GROUP 35B, Wheel Speed Sensor

P.35B-189.

<REAR WHEEL SPEED SENSOR: AWD>

⚠ CAUTION

The vehicle speed detection encoder collects any metallic particle easily, because it is magnetized. Make sure that the encoder should not collect any metallic particle. Check that there is not any trouble prior to reassembling it.

<Vehicles with 7 seating capacity>

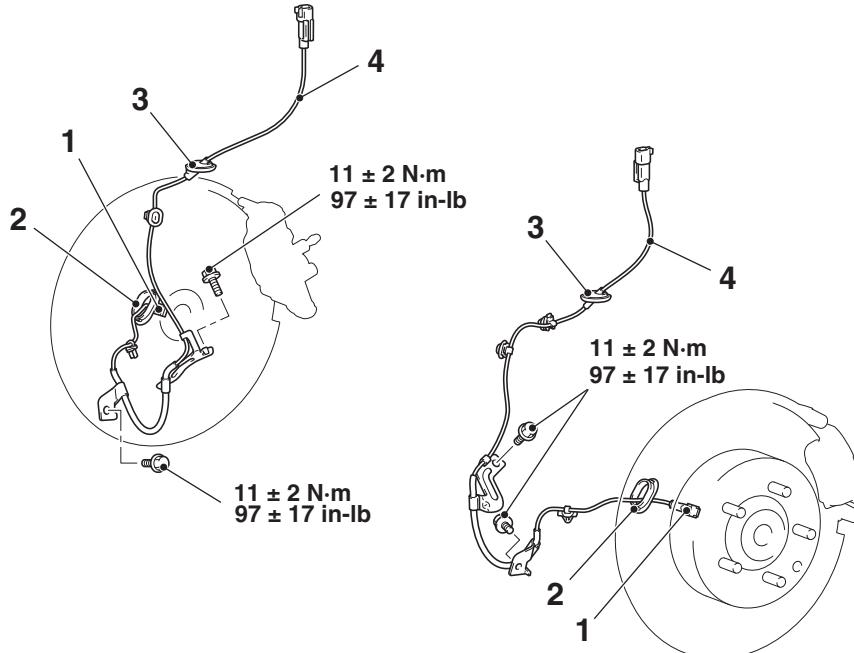
Refer to GROUP 35B, Wheel Speed Sensor

P.35B-189.

<VEHICLES WITH 5 SEATING CAPACITY>

Pre-removal and post-installation operation

Quarter trim removal and installation (Refer to GROUP 52A
– Trim P.52A-10).



AC900804AC

Removal steps

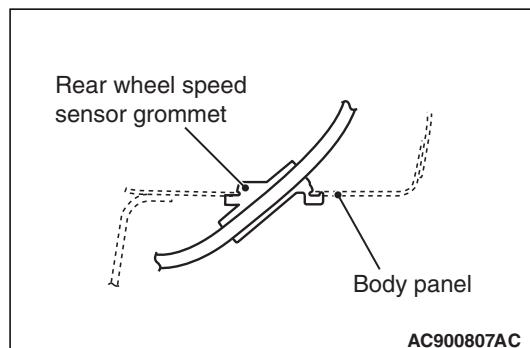
1. Rear wheel speed sensor and trailing arm assembly connection
2. Protector
- >>A<< 3. Rear wheel speed sensor grommet
 - Rear wheel speed sensor connector
4. Rear wheel speed sensor

NOTE: The vehicle speed detection encoder is integrated with the rear hub assembly, which cannot be disassembled.

INSTALLATION SERVICE POINTS

>>A<< FRONT WHEEL SPEED SENSOR GROMMET/REAR WHEEL SPEED SENSOR GROMMET INSTALLATION

Install the front wheel speed sensor grommet and the rear wheel speed sensor grommet to the body panel snugly as shown in the figure.



M1352008400910

Refer to GROUP 35B, Wheel and Tire Inspection P.35B-193.

WHEEL AND TIRE INSPECTION

G AND YAW RATE SENSOR

REMOVAL AND INSTALLATION

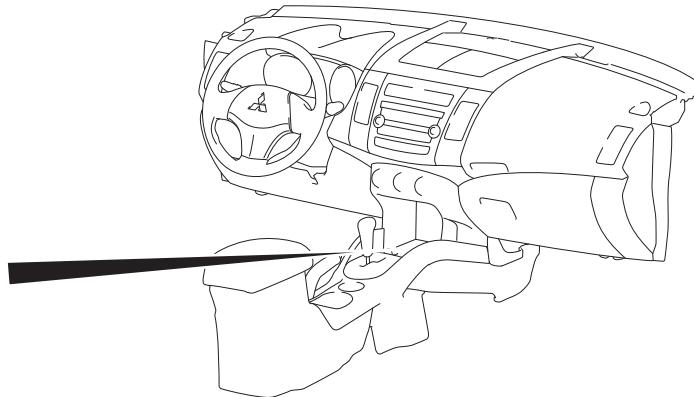
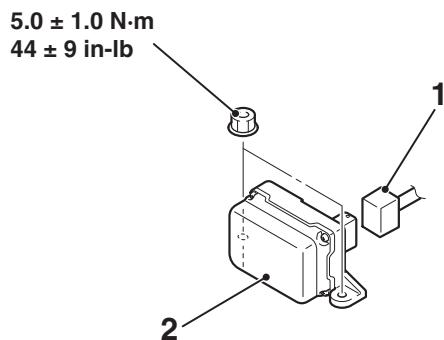
M1355004500259

CAUTION

- Do not use impact wrench.
- Do not drop or shock the G and yaw rate sensor.
- When the G and yaw rate sensor is replaced or reinstalled, always carry out calibration to make ASC-ECU learn the neutral point. (Refer to [P.35C-282](#).)

Pre-removal and post-installation steps

SRS control unit (SRS-ECU) removal and installation Refer to GROUP 52B – SRS Control Unit (SRS-ECU) [P.52B-436](#).



AC704093 AB

Removal steps

1. Harness connector
2. G and yaw rate sensor

STEERING WHEEL SENSOR

REMOVAL AND INSTALLATION

M1355005100674

⚠ CAUTION

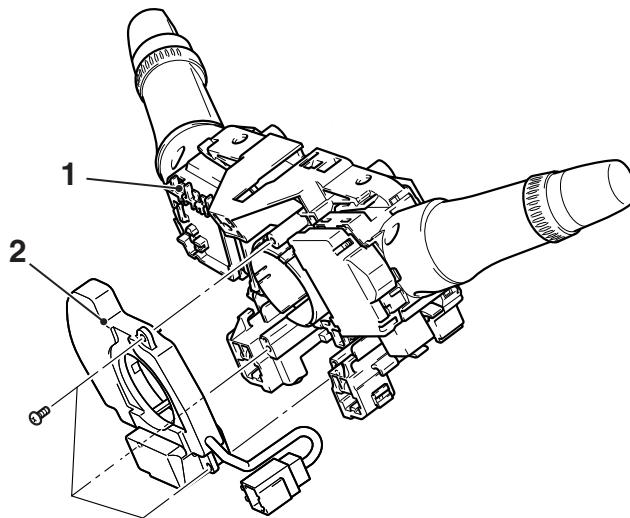
- Always align the center of the clock spring before installing the steering wheel sensor. Otherwise, the sensor can be damaged.
- If the center of the clock spring is not correctly aligned, the steering wheel may not be turned fully or the cable inside the clock spring may be broken, causing the SRS air bag to be inoperative or operated incorrectly.
- Before removing the steering wheel/air bag module assembly, refer to GROUP 52B – Service Pre-cautions [P.52B-25](#) and Air Bag Module Clock Spring [P.52B-439](#).
- When the steering wheel sensor is replaced or reinstalled, always carry out calibration to make ASC-ECU learn the neutral point. (Refer to [P.35C-283](#).)

Pre-removal operation

- Air bag module assembly and steering wheel assembly removal (Refer to GROUP 37 – Steering Wheel [P.37-31](#)).

Post-installation operation

- Airbag module assembly and steering wheel assembly installation (Refer to GROUP 37 – Steering Wheel [P.37-31](#)).
- Perform steering wheel calibration. (Refer to [P.35C-283](#)).



ACA02951 AC

Removal steps

- Clock spring/column switch assembly (Refer to GROUP 54A – Column Switch [P.54A-323](#)).
- Steering wheel sensor

<<A>>

REMOVAL SERVICE POINT

<<A>> STEERING WHEEL SENSOR REMOVAL

⚠ CAUTION

After removing the steering wheel sensor, do not rotate the sensor rotating part by 360° or more.

NOTES