LANCER EVOLUTION IX

WORKSHOP MANUAL

FOREWORD

This Workshop manual contains procedures for service mechanics, including removal, disassembly, inspection, adjustment, reassembly and installation. Use the following manuals in combination with this manual as required.

TECHNICAL INFORMATION MANUAL
IEVE04E1CD
IEVE04E1CD
IEVE04E1CD

WORKSHOP MANUAL
CHASSIS GROUP
BODY REPAIR MANUAL
CEVX04E1CD
CEVX05E1CD

PARTS CATALOGUE B606K006A

All information, illustrations and product descriptions contained in this manual are current as at the time of publication. We, however, reserve the right to make changes at any time without prior notice or obligation.

MITSUBISHI MOTORS
Europe B.V.

 Oct. 2005

GROUP INDEX

SRS SERVICE PRECAUTIONS

M1001006000229

⚠ ***DANGER***

In order to avoid injury to yourself or others from accidental deployment of the air bag during servicing, read and carefully follow all the precautions and procedures described in this manual.

⚠ **CAUTION**

Do not use any electrical test equipment on or near SRS components, except those specified on P.52B-8.

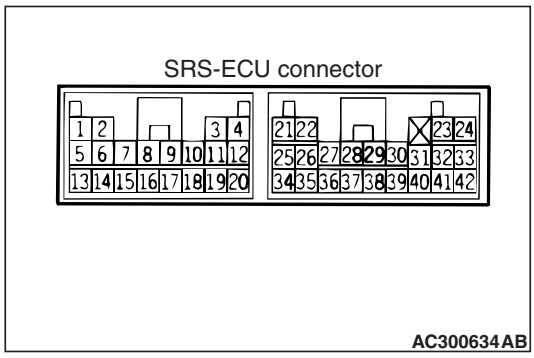
⚠ **CAUTION**

Never Attempt to Repair the Following Components:

1. **SRS air bag control unit (SRS-ECU)**
2. **Clock spring**
3. **Driver's and passenger's (front) air bag modules**
4. **Front impact sensor**
5. **Seat belt with pre-tensioner**

NOTE: If any of these components are diagnosed as faulty, they should only be replaced, in accordance with the INDIVIDUAL COMPONENTS SERVICE procedures in this manual, starting at page P.52B-105.

⚠ **CAUTION**



Do not attempt to repair the wiring harness connectors of the SRS. If a defective wiring harness is found, repair or replace it by referring to the table below.

SRS-ECU terminal No.	Destination of harness	Remedy
1, 2	Instrument panel wiring harness → Front wiring harness (RH) → Front impact sensor (RH)	Correct or replace each wiring harness.
3, 4	Instrument panel wiring harness → Front wiring harness (LH) → Front impact sensor (LH)	Correct or replace each wiring harness.
7	Instrument panel wiring harness→ Earth	Correct or replace the instrument panel wiring harness.
8	Instrument panel wiring harness → SRS warning lamp	Correct or replace the instrument panel wiring harness.
9, 10	Instrument panel wiring harness → Passenger's (front) air bag module	Correct or replace the instrument panel wiring harness.
11, 12	Instrument panel wiring harness → Clock spring → Driver's air bag module	Correct or replace instrument panel wiring harness. Replace the clock spring.
13	Instrument panel wiring harness → Junction block (fuse No.3)	Correct or replace the instrument panel wiring harness.
16	Instrument panel wiring harness → Junction block (fuse No.2)	Correct or replace the instrument panel wiring harness.

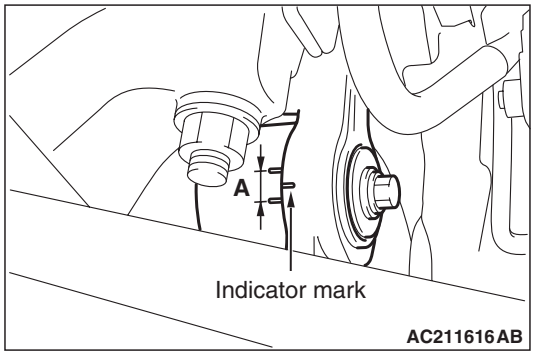
ON-VEHICLE SERVICE

DRIVE BELT TENSION CHECK

M1111003100612

⚠ CAUTION

Check the drive belt tension after turning the crankshaft clockwise one turn or more.



1. Make sure that the indicator mark is within the area marked with A in the illustration.
2. If the mark is out of the area, replace the drive belt. (Refer to P.11A-15).

   NOTE: The drive belt tension check is not necessary as auto-tensioner is adopted.

AUTO-TENSIONER CHECK

M1111003000284

OPERATION CHECK

1. Turn OFF the engine from the idle state then check to see that the drive belt is not protruding from the pulley width of the auto-tensioner.
2. Remove the drive belt.(Refer to P.11A-15).

3. Securely insert the spindle handle or ratchet handle with a 12.7 mm insertion angle into the jig hole of the auto tensioner. Turn the auto-tensioner to the left and right to check and see that there is no threading.
4. If there are any problems in the procedure 1 or 3, replace the auto-tensioner.(Refer to P.11A-36).
5. Install the drive belt.(Refer to P.11A-15).

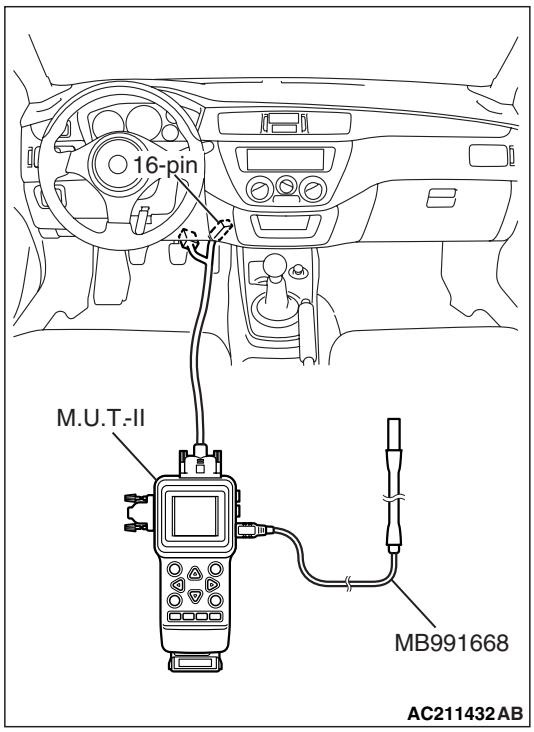
FUNCTION CHECK

You can verify if the auto-tensioner is defective or not by checking the drive belt tension.

When using the M.U.T.-II

1. Check the drive belt tension. (Refer to P.11A-7).
2. Measure the drive belt tension vibration frequency by the following procedures:

⚠ CAUTION

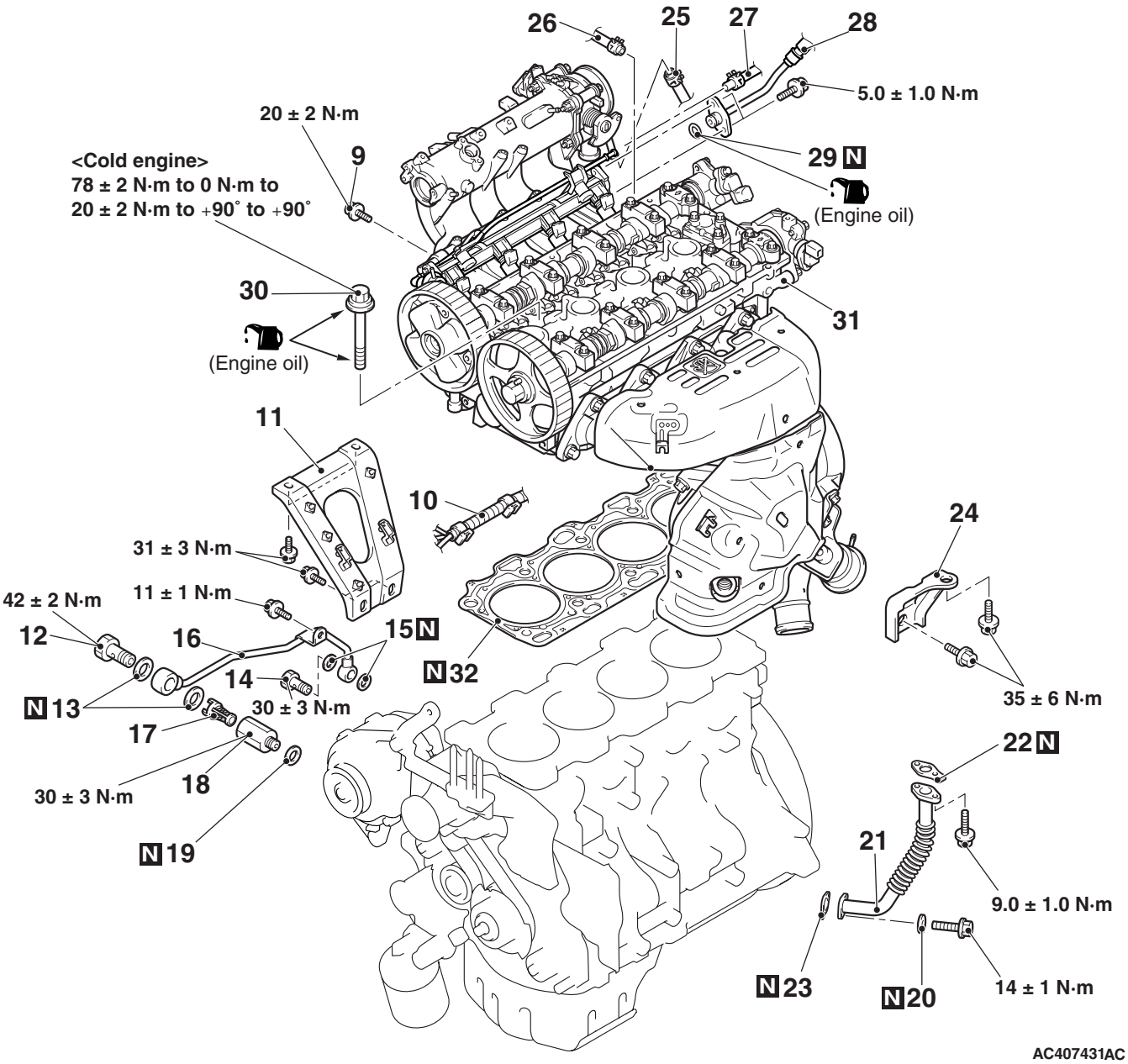


To prevent damage to the M.U.T.-II, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting the M.U.T.-II.

(1) Connect special tool belt tension meter set (MB991668) to the M.U.T.-II.

(2) Connect the M.U.T.-II to the diagnosis connector.

(3) Turn the ignition switch to "ON" position, and select "BELT TENSION" on the menu screen.



AC407431AC

Removal steps

9. Alternator brace bolt
10. Battery wiring harness connection
11. Inlet manifold stay
>>E<< 12. Eye bolt
13. Gasket
14. Eye bolt
15. Gasket
16. Oil feeder control valve pipe
17. Filter
18. Oil pipe joint
19. Gasket
20. Gasket
21. Oil return tube
22. Oil return tube gasket
>>D<< 23. Oil return tube gasket

Removal steps (Continued)

24. Turbocharger bracket
- Water outlet fitting and thermostat case assembly (Refer to GROUP 14, Water Hose and Water Pipe P.14-22).
- Rocker cover (Refer to P.11A-17).

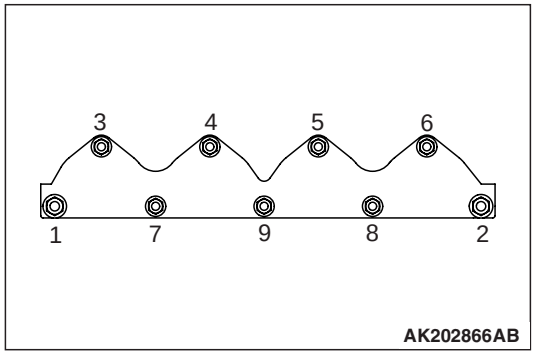
25. Water return hose connection
26. Heater hose connection
27. Fuel return line hose connection
>>C<< 28. Fuel high-pressure hose connection
>>C<< 29. O-ring
<<A>> >>B<< 30. Cylinder head bolts
31. Cylinder head assembly
>>A<< 32. Cylinder head gasket

Item	N·m
WATER PUMP AND WATER HOSE	
Engine coolant temperature sensor	29 ± 10
Engine coolant temperature gauge unit	11 ± 1
Water outlet fitting bolts	10 ± 1
Thermostat housing bolts	23 ± 4
Water inlet pipe bolt (M6)	10 ± 1
Water inlet pipe bolt (M8)	13 ± 2
Water pump bolts	14 ± 1
Detonation sensor	23 ± 2
ROCKER ARMS AND CAMSHAFT	
Camshaft position sensor bolt	11 ± 1
Cover bolts	10 ± 2
Camshaft position sensing cylinder bolt	22 ± 4
Camshaft position sensor support bolts	14 ± 1
Bearing cap bolts	20 ± 1
Oil delivery body bolts	11 ± 1
Oil feeder control valve bolt	11 ± 1
Check valve	30 ± 3
Eye bolt	42 ± 2
Oil pipe bolt	11 ± 1
Oil pipe joint	30 ± 3
CYLINDER HEAD AND VALVES	
Cylinder head bolts	78 ± 2 → 0 → 20 ± 2 → +90° → +90°
OIL PAN AND OIL PUMP	
Drain plug	39 ± 5
Oil level sensor bolts	9.0 ± 1.0
Oil filter	14 ± 2
Oil pan bolts	9.0 ± 3.0
Oil screen bolts	19 ± 3
Baffle plate bolts	22 ± 4
Oil pressure switch	19 ± 3
Oil cooler by-pass valve	54 ± 5
Relief plug	44 ± 5
Oil filter bracket bolts	19 ± 3
Plug cap	23 ± 3
Flange bolt	36 ± 3
Oil pump case bolts	23 ± 3
Oil pump cover bolts	17 ± 1
Oil pump cover screw	10 ± 2

INSTALLATION SERVICE POINT

>>A<< EXHAUST MANIFOLD INSTALLATION

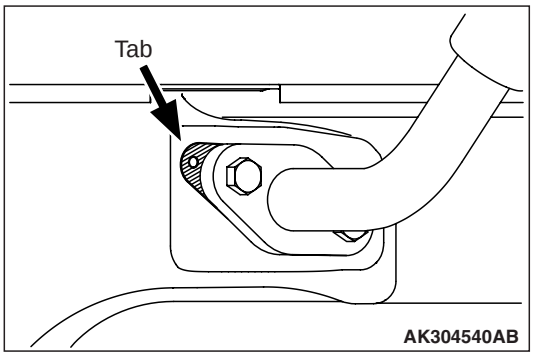
1. Hand tighten all the exhaust manifold mounting nuts.
2. Tighten the M8 nuts to 29 ± 3 N·m in the indicated sequence.
3. Tighten the M10 nuts to 49 ± 5 N·m in the indicated sequence.
4. Tighten the M8 nuts again to 29 ± 3 N·m in the indicated sequence.



5. Finally tighten the M10 nuts and the M8 nuts to the specified torque, both in the indicated sequence.

Tightening torque:
33 ± 6 N·m <M8>
55 ± 10 N·m <M10>

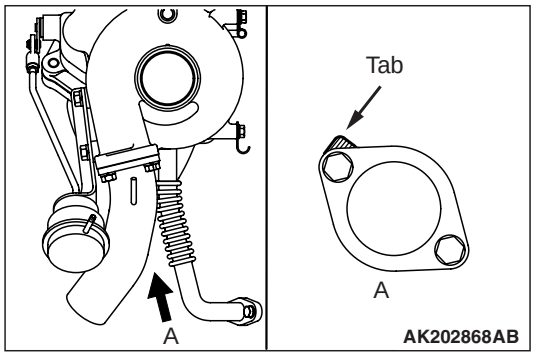
>>B<< OIL RETURN PIPE GASKET INSTALLATION



Install the oil return pipe gasket with its tab located as shown in the drawing.

NOTE: The gasket on the turbocharger end of the pipe does not require special alignment for installation.

>>C<< OUTLET FITTING GASKET INSTALLATION

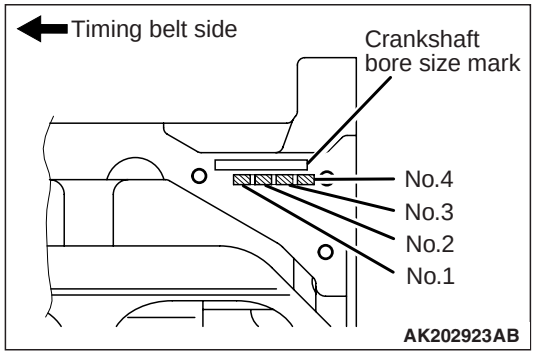


Install the air outlet fitting gasket with its tab located as shown in the drawing.

NOTE: Keep the disassembled pistons, piston pins and connecting rods cylinder by cylinder.

INSTALLATION SERVICE POINTS

>>A<< PISTON PIN INSTALLATION

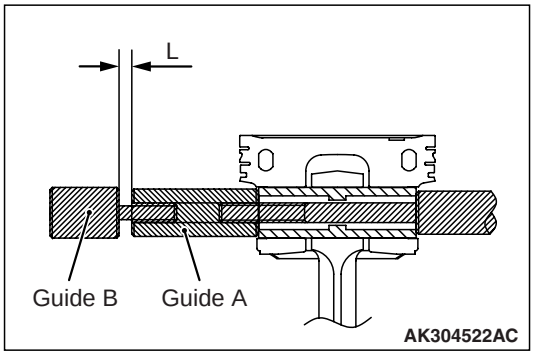


1. When replacing a piston, check the cylinder bore size mark stamped at the indicated location on the cylinder block and select an appropriate replacement piston using the following table.

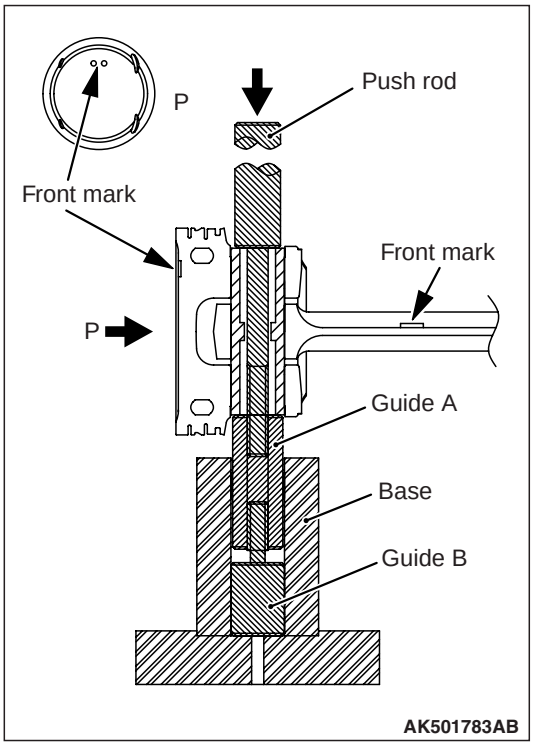
Cylinder bore size mark	Piston size mark
I	A
II	No mark
III	C

NOTE: The piston size mark is located on the piston top surface.

2. Insert the special tool Push Rod into the piston pin, and install Guide A.
3. Assemble the piston and the connecting rod together, ensuring that their front marks are aligned with each other.
4. Apply engine oil onto the periphery of the piston pin.
5. Insert the piston pin assembled in Step 1 above into the piston pin boss. Guide A end of the piston pin should be inserted first into the front mark end of the boss.



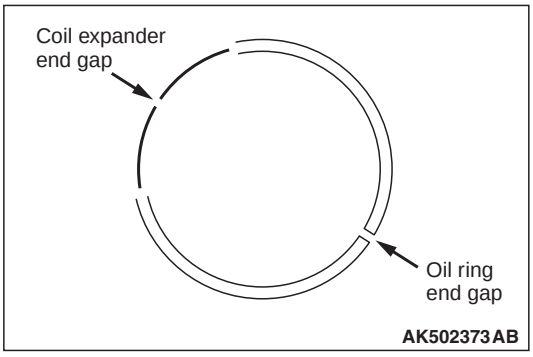
6. Insert Guide B into Guide A with having 1.25 mm of the clearance "L" between Guide A and B.



7. Install the piston and connecting rod assembly with the tools onto the special tool Piston Setting Base, ensuring that the piston front mark faces upwards.
8. Using a press, press fit the piston pin. If the force required to press fit the piston pin is less than the standard value, replace the piston pin (piston assembly) or the connecting rod, or both.

Standard value: 7,350 – 17,100 N

>>B<< OIL RING INSTALLATION



1. Fit the oil ring coil expander and oil ring into the piston ring groove.

NOTE: Locate the oil ring and coil expander end gaps as shown in the drawing.

NOTE: New coil expander and oil ring are an identified by colour marks as follows:

TROUBLESHOOTING

DIAGNOSIS TROUBLESHOOTING FLOW

Refer to P.00-5, GROUP 00 – How to Use Troubleshooting/Inspection Service Points.

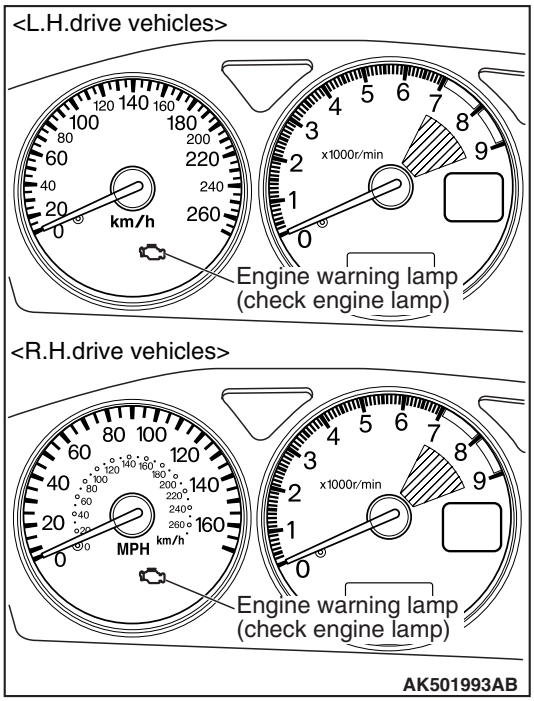
NOTE: If the engine-ECU is replaced, the steering lock cylinder and ignition key should be replaced together with it.

M1131150001572

DIAGNOSIS FUNCTION

M1131155501527

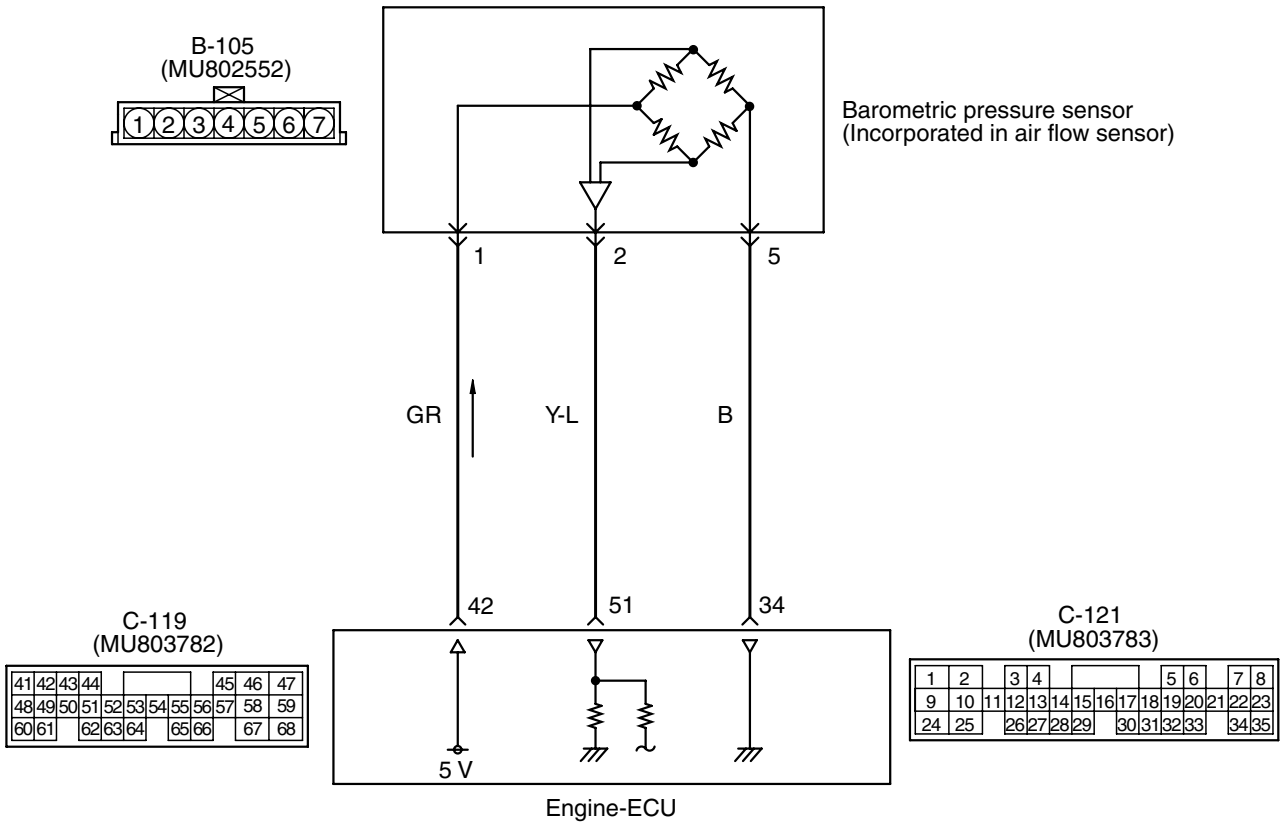
ENGINE WARNING LAMP (CHECK ENGINE LAMP)



If an abnormality occurs in any of the following items related to the Multipoint Fuel Injection (MPI) system, the engine warning lamp will illuminate.
If the lamp remains illuminated or if the lamp illuminates while the engine is running, check the diagnosis code output.

Code No. P105: Barometric Pressure Sensor System

Barometric pressure sensor circuit



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

AK501801AB

OPERATION

- A power voltage of 5 V is applied to the barometric pressure sensor power terminal (terminal No. 1) of the air flow sensor connector from the engine-ECU (terminal No. 42) and earthed to the engine-ECU (terminal No. 34) from the air flow sensor (terminal No. 5).
- The sensor signal is inputted to the engine-ECU (terminal No. 51) from the barometric pressure sensor output terminal (terminal No. 2) of the air flow sensor connector.

FUNCTION

- The barometric pressure sensor converts the barometric pressure into a voltage signal and inputs the signal to the engine-ECU.
- In response to the signal, the engine-ECU corrects the fuel injection amount, etc.

TROUBLE JUDGMENT

Check Condition

- 2 seconds after the ignition switch has been placed in the "ON" position or the engine has started up.

Judgment Criterion

- The sensor output voltage of 4.5 V or more (Barometric pressure above 114 kPa or equivalent) for 2 seconds.

or

- The sensor output voltage 0.2 V or less (Barometric pressure below 53 kPa or equivalent) for 2 seconds.

PROBABLE CAUSES

- Failed barometric pressure sensor
- Open/short circuit in barometric pressure sensor circuit or loose connector contact
- Failed engine-ECU

PROBABLE CAUSES

- Failed throttle position sensor
- Open/short circuit in throttle position sensor circuit or loose connector contact
- Failed engine-ECU

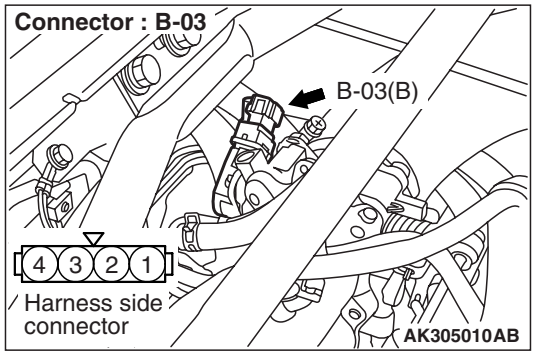
DIAGNOSIS PROCEDURE

STEP 1. M.U.T.-II/III data list

- Refer to Data List Reference Table P.13A-372.
  a. Item No. 14: Throttle position sensor

Q: Is the check result normal?
YES : Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points P.00-5).
NO : Go to Step 2 .

STEP 2. Connector check: B-03 throttle position sensor connector



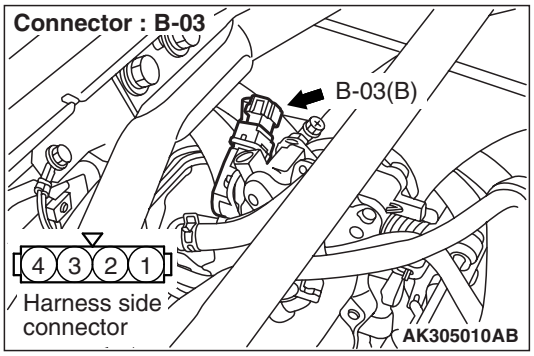
Q: Is the check result normal?
YES : Go to Step 3 .
NO : Repair or replace the connector.

STEP 3. Check throttle position sensor itself.

- Check throttle position sensor itself (Refer to P.13A-404).

Q: Is the check result normal?
YES : Go to Step 4 .
NO : Replace the throttle position sensor.

STEP 4. Perform voltage measurement at B-03 throttle position sensor connector.

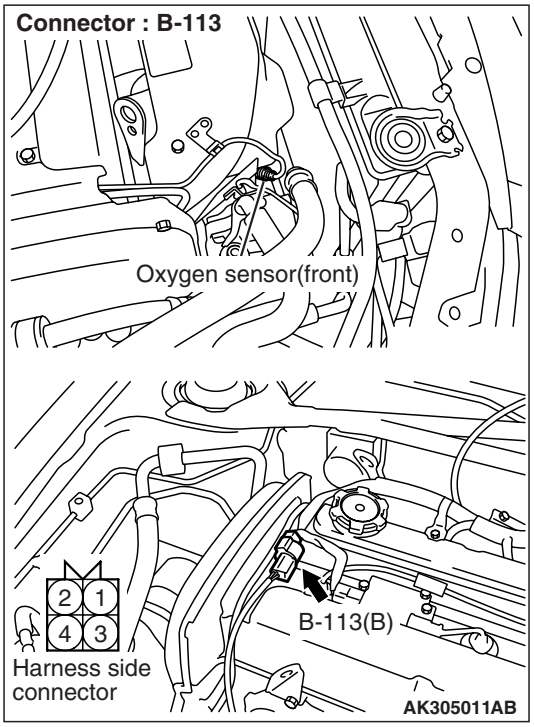


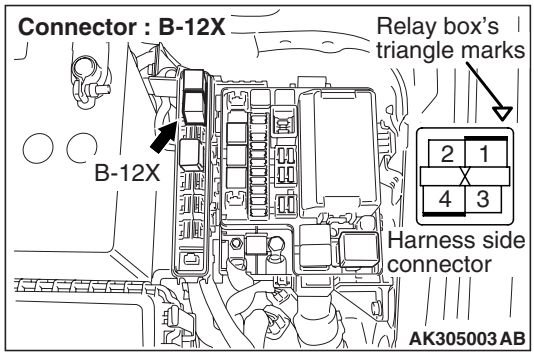
- Disconnect connector, and measure at harness side.
- Ignition switch: "ON"
- Voltage between terminal No. 1 and earth.

OK: 4.9 – 5.1 V

Q: Is the check result normal?
YES : Go to Step 10 .
NO : Go to Step 5 .

STEP 9. Check harness between B-113 (terminal No. 1) oxygen sensor (front) connector and B-12X (terminal No. 4) engine control relay connector.

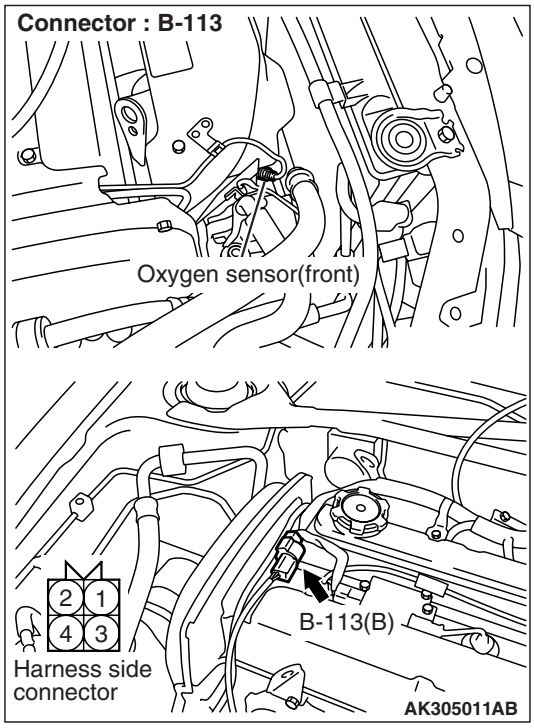


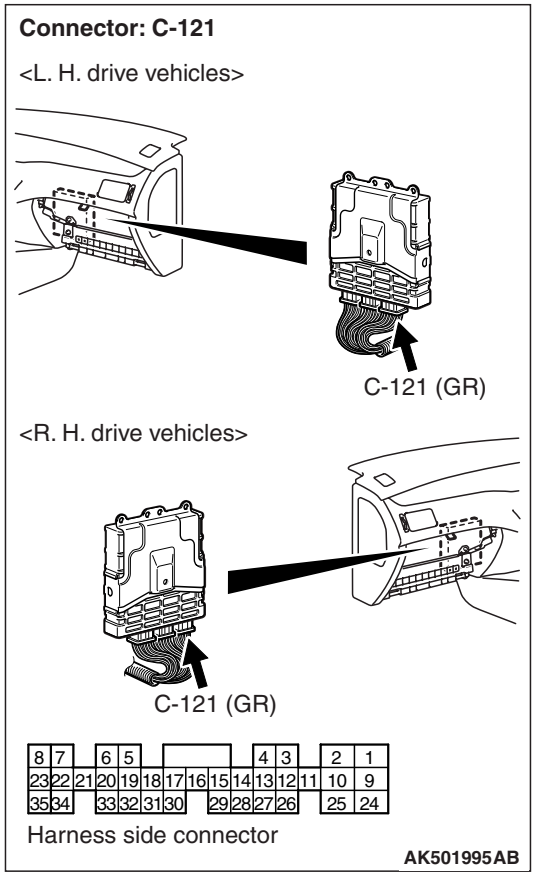


- Check power supply line for damage.

Q: Is the check result normal?
YES : Go to Step 10 .
NO : Repair the damaged harness wire.

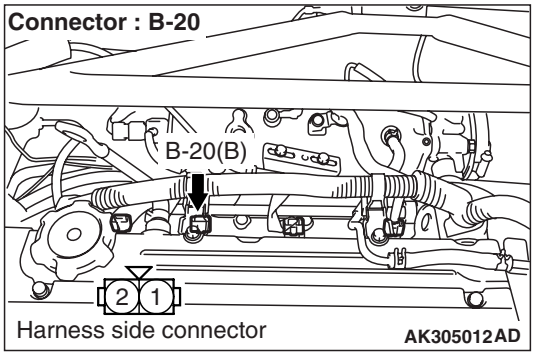
STEP 10. Check harness between B-113 (terminal No. 3) oxygen sensor (front) connector and C-121 (terminal No. 3) engine-ECU connector.





- Check earthing line for damage.

STEP 4. Perform voltage measurement at B-20 No. 2 injector connector.

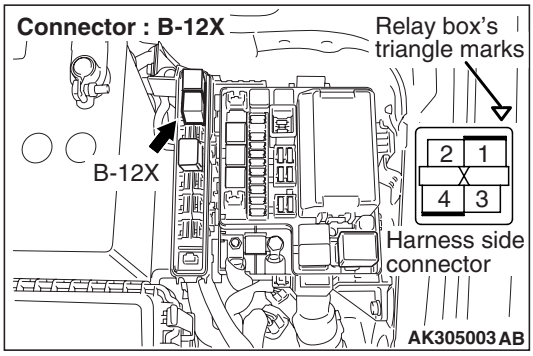


- Disconnect connector, and measure at harness side.
- Ignition switch: "ON"
- Voltage between terminal No. 1 and earth.

OK: System voltage

Q: Is the check result normal?
YES : Go to Step 8 .
NO : Go to Step 5 .

STEP 5. Connector check: B-12X engine control relay connector



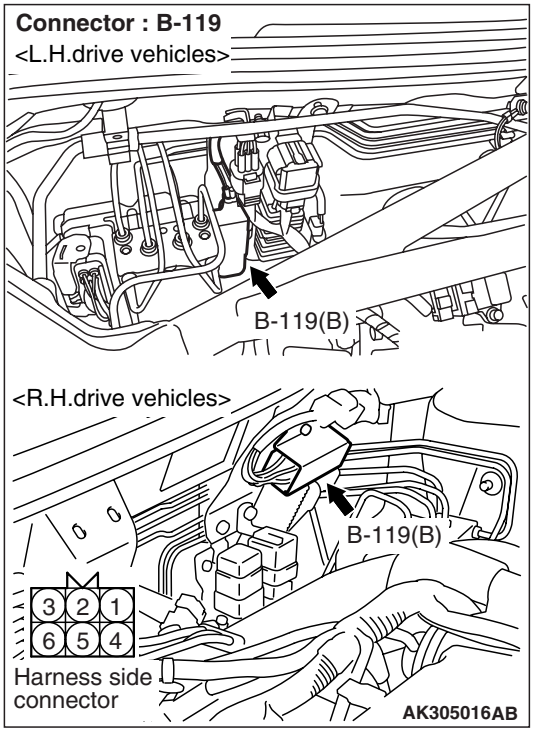
Q: Is the check result normal?
YES : Go to Step 6 .
NO : Repair or replace the connector.

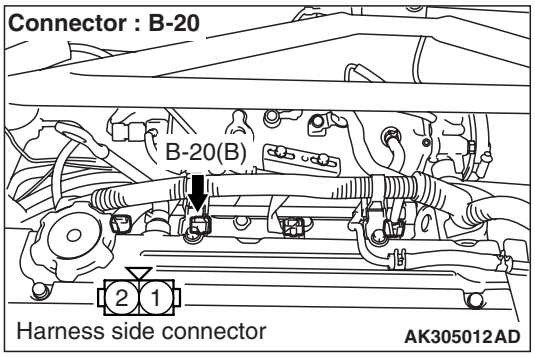
STEP 6. Check injector resistor itself.

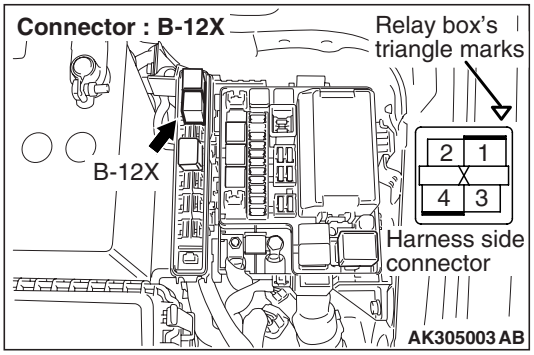
- Check injector resistor itself (Refer to P.13A-407)

Q: Is the check result normal?
YES : Go to Step 7 .
NO : Replace the injector resistor.

STEP 7. Check harness between B-119 (terminal No. 4) injector resistor connector and B-20 (terminal No. 1) No. 2 injector connector.







- Check power supply line for open/short circuit.

STEP 11. Fuel pressure measurement.

- Fuel pressure measurement (Refer to fuel pressure test P.13A-396).

Q: Is the check result normal?
YES : Go to Step 12 .
NO : Repair.

STEP 12. Check for intake of air from intake hose and inlet manifold.

Q: Is the check result normal?
YES : Go to Step 13 .
NO : Repair.

STEP 13. Check for skipped timing belt teeth.

Q: Is the check result normal?
YES : Go to Step 14 .
NO : Repair.

STEP 14. Exhaust gas recirculation system check.

- Exhaust gas recirculation system check (Refer to GROUP 17 – Exhaust gas recirculation (EGR) system P.17-14).

Q: Is the check result normal?
YES : Replace the engine-ECU
NO : Repair.

Code No. P0301: No. 1 Cylinder Misfire Detection System

OPERATION

- Refer to P0201 injector circuit P.13A-105.

FUNCTION

- If a misfire occurs while the engine is running, the engine speed changes for an instant.
- The engine-ECU checks for such changes in engine speed.

TROUBLE JUDGMENT

Check Conditions

- The engine speed is 500 – 6,500 r/min.
- The engine coolant temperature is –10°C or higher.
- The barometric pressure is 76 kPa or more.
- The volumetric efficiency is 30 – 55%.
- The adaptive learning has been completed with the vane that generates the crankshaft position signals.
- During the engine operation except the shift change or low speed driving and rapid acceleration and deceleration, also intermittent operation of air compressor (A/C: within the 3 seconds after changing to ON from OFF or to OFF from ON).
- The throttle deviation is within the range of –0.06 V/10ms to 0.06 V/10ms.

Judgment Criteria

- Misfire has occurred more frequently than allowed during the last 200 revolutions (When the catalyst temperature is higher than 950°C).

or

- Misfire has occurred in 15 or more of the last 1,000 revolutions (corresponding to 1.5 times the limit of emission standard).

PROBABLE CAUSES

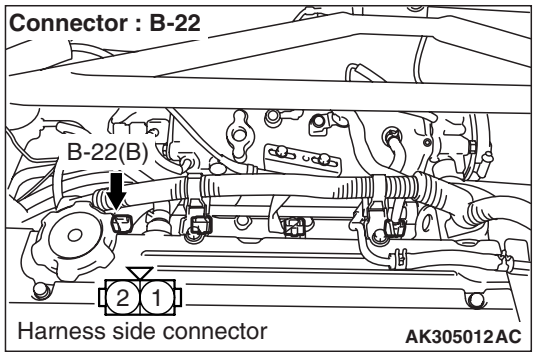
- Ignition system related part(s) failed
- Low compression pressure
- Failed engine-ECU

DIAGNOSIS PROCEDURE

STEP 1. Check ignition coil spark.

Q: Is the check result normal?
YES : Go to Step 2 .
NO : Check ignition Circuit System (Refer to Inspection procedure 30 <L.H. drive vehicles>P.13A-356 or Inspection procedure 31 <R.H. drive vehicles>P.13A-363).

STEP 2. Connector check: B-22 No. 1 injector connector



Q: Is the check result normal?
YES : Go to Step 3 .
NO : Repair or replace the connector.

STEP 20. Check the crankshaft sensing blade

Q: Is the check result normal?

YES : Go to Step 21 .

NO : Replace the crankshaft sensing blade.

STEP 21: M.U.T.-II/III data list

- Refer to Data List Reference Table P.13A-372.
  a. Item No. 22: Crank angle sensor

Q: Is the check result normal?

YES : Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points P.00-5).

NO : Replace the crank angle sensor.

OPERATION

- The power is supplied to the idle speed control servo (terminal No. 2 and No. 5) from the engine control relay (terminal No. 4).
- The engine-ECU (terminal No. 14, No. 15, No. 28 and No. 29) makes power transistor in the unit be in "ON" position in order, and that makes currents go on the idle speed control servo (terminal No. 1, No. 3, No. 4 and No. 6).

FUNCTION

- The idle speed control servo opens and closes the servo valve in response to a signal from the engine-ECU to control the intake air flow rate during idling.

TROUBLE JUDGMENT

Check Conditions

- Vehicle speed has reached 1.5 km/h at least once.
- Under the closed loop idle speed control.

Judgment Criterion

- Actual idle speed has continued to be higher than the target idle speed by 300 r/min. or more for 10 seconds.

Check Conditions

- Vehicle speed has reached 1.5 km/h at least once.
- During idle speed closed loop control.
- The highest temperature at the last drive is 45°C or less.
- Engine coolant temperature is approximately 80°C or less.
- Battery voltage is 10 V or more.
- The barometric pressure is 76 kPa or higher.
- Intake air temperature is −10°C or more.

Judgment Criterion

- Actual idle speed has continued to be higher than the target idle speed by 200 r/min. or more for 10 seconds.

Check Conditions

- During idle speed closed loop control.
- Engine coolant temperature is approximately 80°C or less.
- Battery voltage is 10 V or more.
- Power steering fluid pressure switch is off.
- Volumetric efficiency is 40% or lower.
- The barometric pressure is 76 kPa or higher.
- Intake air temperature is −10°C or more.

Judgment Criterion

- Actual idle speed has continued to be higher than the target idle speed by 100 r/min. or more for 10 seconds.

PROBABLE CAUSES

- Failed idle speed control servo
- Open/short circuit in idle speed control servo circuit or loose connector contact
- Failed engine-ECU

DIAGNOSIS PROCEDURE

STEP 1. M.U.T.-II/III data list

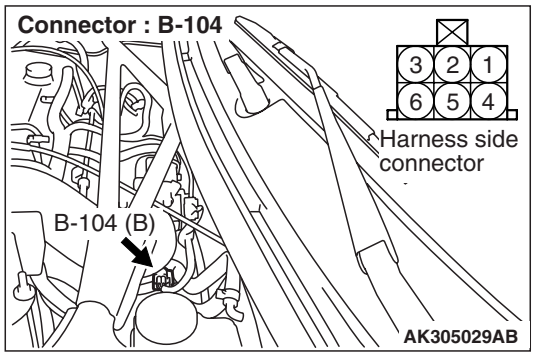
- Refer to Data List Reference Table P.13A-372.
  a. Item No. 45: Idle speed control servo

Q: Is the check result normal?

YES : Intermittent malfunction (Refer to GROUP 00 − How to Use Troubleshooting/Inspection Service Points P.00-5).

NO : Go to Step 2 .

STEP 2. Connector check: B-104 idle speed control servo connector



Q: Is the check result normal?

YES : Go to Step 3 .

NO : Repair or replace the connector.

STEP 3. Check idle speed control servo itself.

- Check idle speed control servo itself (Refer to P.13A-408).

Q: Is the check result normal?

YES : Go to Step 4 .

NO : Replace the idle speed control servo.

FUNCTION

- The intake camshaft position sensor detects the top dead center on the compression stroke of the No. 1 cylinder and inputs a pulse signal to the engine-ECU.

TROUBLE JUDGMENT

Check Condition

- Engine: During the engine cranking and the driving.

Judgment Criterion

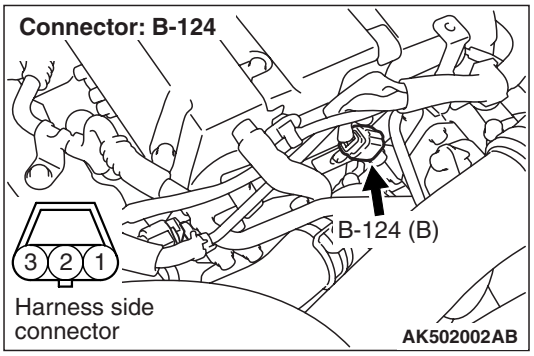
- The sensor output voltage remains unchanged (no pulse signal is inputted) for 4 seconds.

PROBABLE CAUSE

- Failed intake camshaft position sensor
- Open/short circuit in intake camshaft position sensor circuit or loose connector contact
- Failed engine-ECU

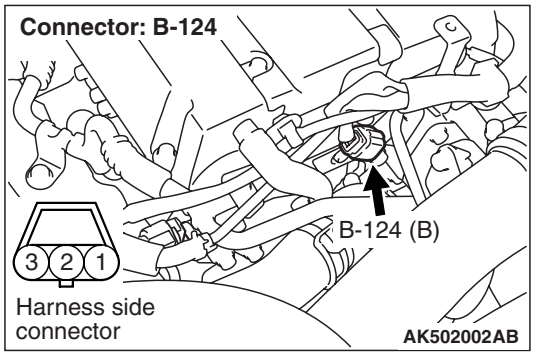
DIAGNOSIS PROCEDURE

STEP 1. Connector check: B-124 intake camshaft position sensor connector



Q: Is the check result normal?
YES : Go to Step 2 .
NO : Repair or replace the connector.

STEP 2. Perform voltage measurement at B-124 intake camshaft position sensor connector.



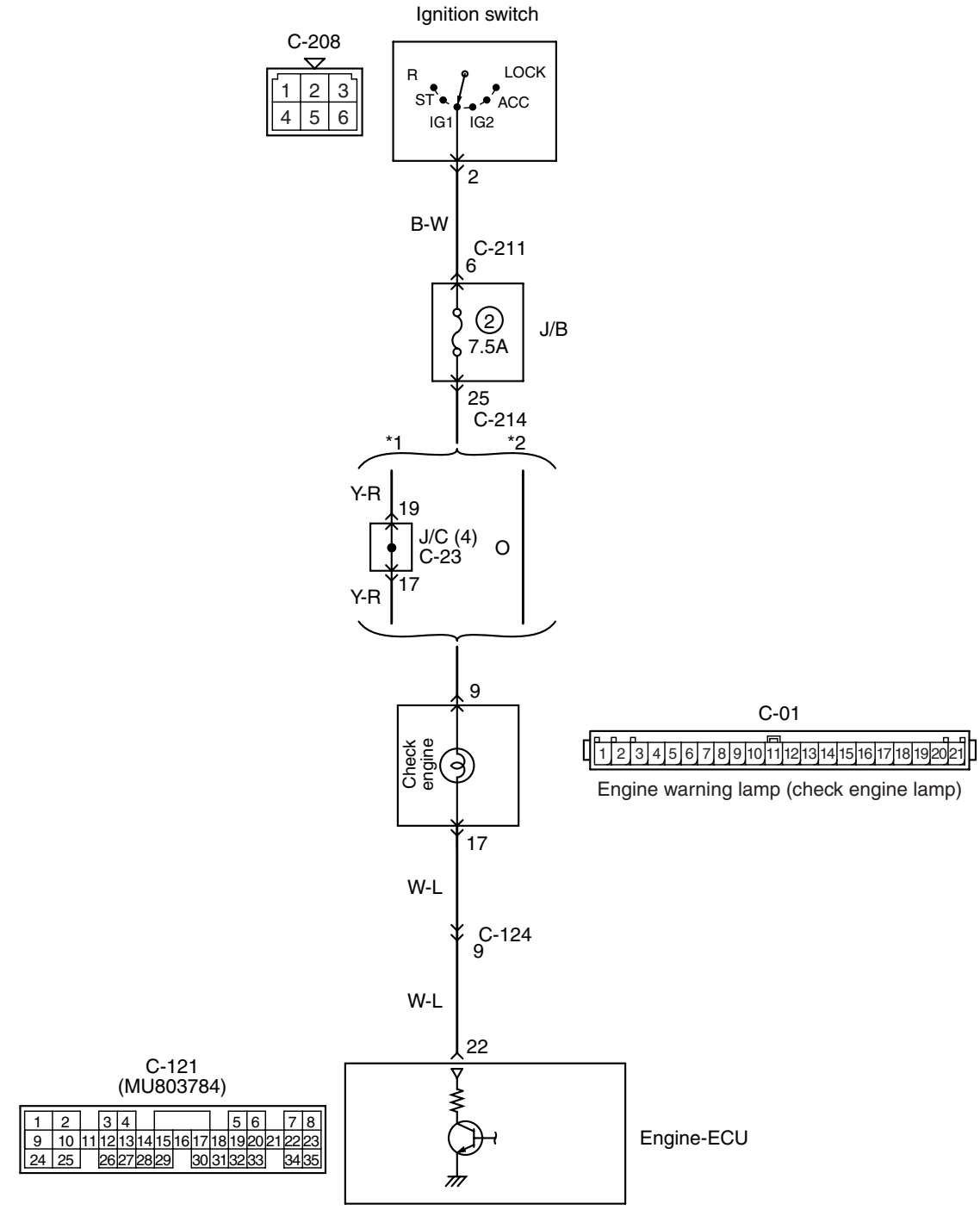
- Disconnect connector, and measure at harness side.
- Ignition switch: "ON"
- Voltage between terminal No. 3 and earth.

OK: System voltage

Q: Is the check result normal?
YES : Go to Step 4 .
NO : Go to Step 3 .

Inspection Procedure 3: The Engine Warning Lamp does not Illuminate Right after the Ignition Switch is Turned to the "ON" Position

Engine warning lamp (check engine lamp) circuit



NOTE
*1: L.H. drive vehicles
*2: R.H. drive vehicles

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

AK501825AB

STEP 9. Check timing marks of timing belt.

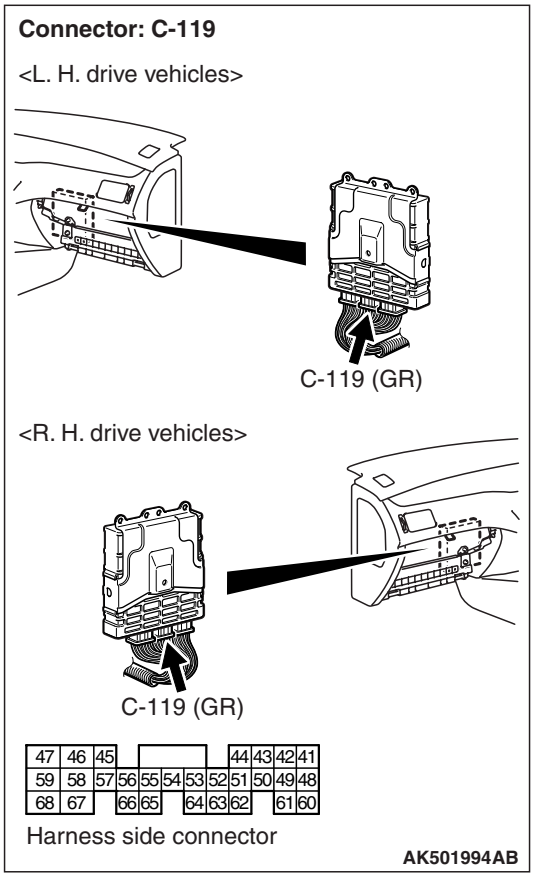
Q: Is the check result normal?
YES : Go to Step 10 .
NO : Align timing marks.

STEP 10. M.U.T.-II/III data list

- Refer to Data List Reference Table P.13A-372.
  a. Item No. 11: Oxygen sensor (front)

Q: Is the check result normal?
YES : Go to Step 11 .
NO : Check the oxygen sensor (front) system (Refer to Code No. P0130 P.13A-75).

STEP 11. Perform voltage measurement at C-119 engine-ECU.

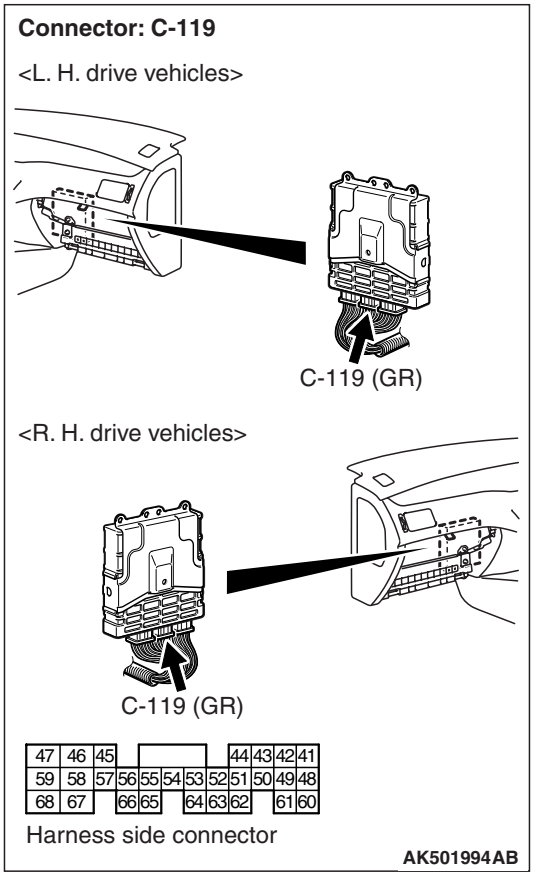


- Measure engine-ECU terminal voltage.
- Ignition switch: "ON"
- Voltage between terminal No. 46 and earth, also between terminal No. 58 and earth.

OK: 0.5 V or less

Q: Is the check result normal?
YES : Go to Step 13 .
NO : Go to Step 12 .

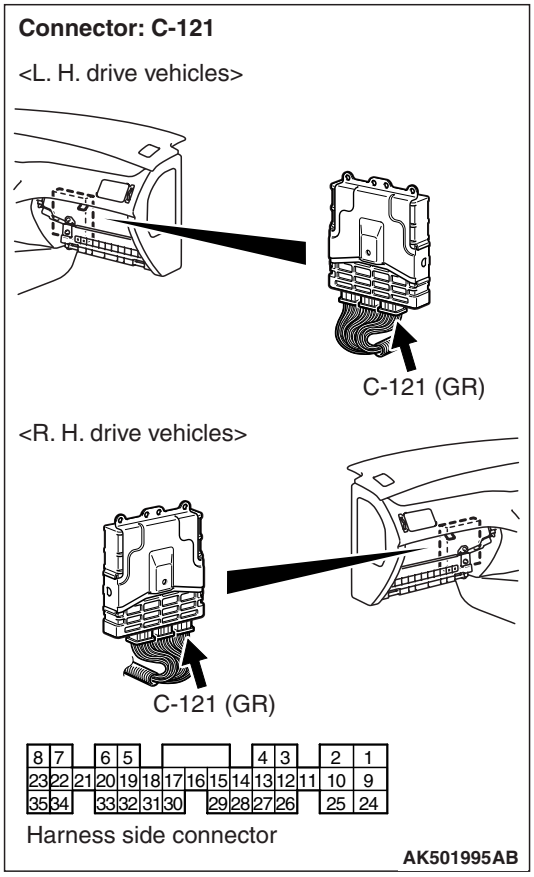
STEP 12. Connector check: C-119 engine-ECU connector

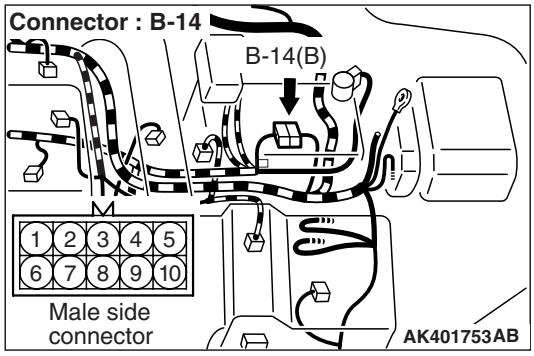


Q: Is the check result normal?
YES : Check and repair harness between C-119 (terminal No. 46 and No. 58) engine-ECU connector and body earth.
- Check earthing line for open circuit and damage.

NO : Repair or replace the connector.

STEP 11. Perform voltage measurement at C-121 engine-ECU connector.



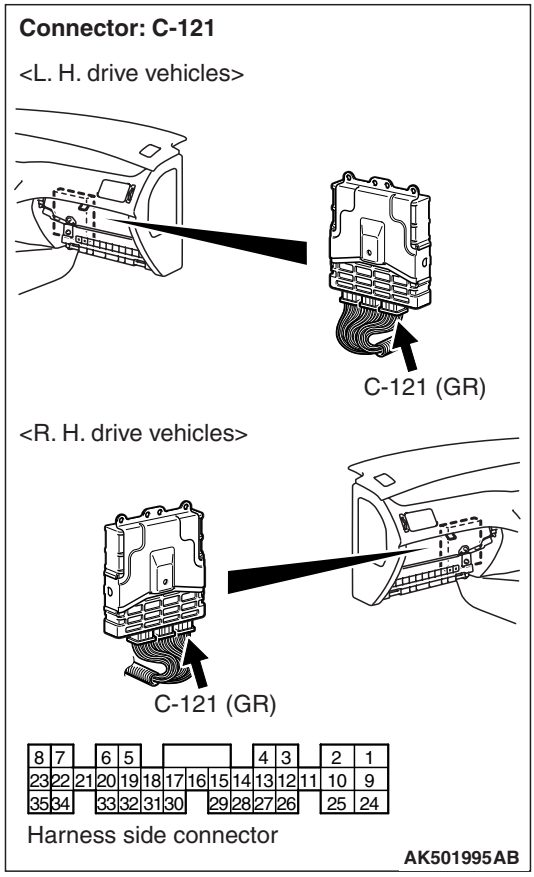


- Disconnect connector, and measure at harness side.
- Ignition switch: "ON"
- Voltage between terminal No. 8 and earth.

OK: System voltage

Q: Is the check result normal?
YES : Go to Step 12 .
NO : Check and repair harness between B-14 (terminal No. 10) intermediate connector and C-121 (terminal No. 8) engine-ECU connector.
- Check output line for short circuit.

STEP 12. Perform voltage measurement at C-121 engine-ECU connector.



- Measure engine-ECU terminal voltage.
- Engine: Idling after warm-up
- Transmission: Neutral
- Radiator fan: Inactive
- Voltage between terminal No. 8 and earth.

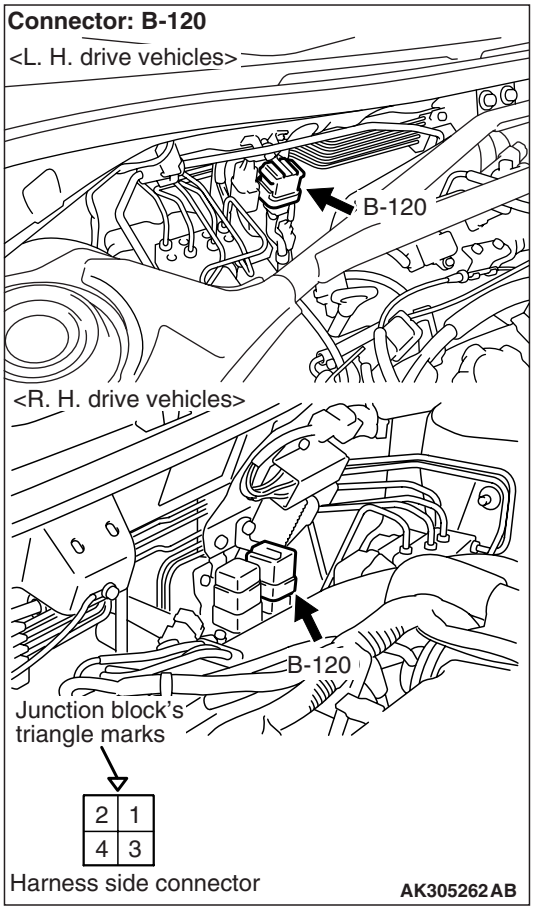
OK: Switching the head lamps to ON from OFF causes the voltage to increase by 0.2 – 3.5 V.

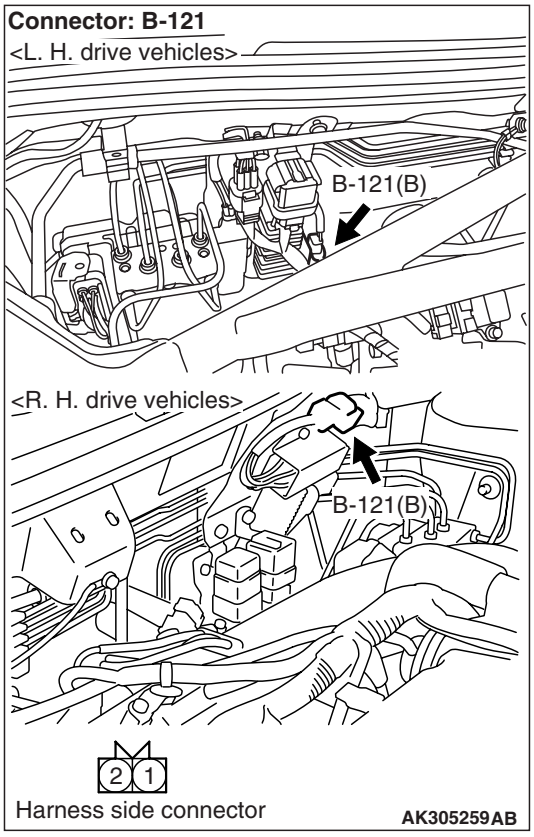
Q: Is the check result normal?
YES : Go to Step 13 .
NO : Replace the alternator.

STEP 13. Check the trouble symptoms.

Q: Does trouble symptom persist?
YES : Replace the engine-ECU.
NO : Intermittent malfunction (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points P.00-5).

STEP 20. Perform voltage measurement at B-120 fuel pump relay (3) connector.





- Remove relay, and measure at junction block side.
- Ignition switch: "ON"
- Voltage between terminal No. 2 and earth, and No. 4 and earth.

OK: System voltage

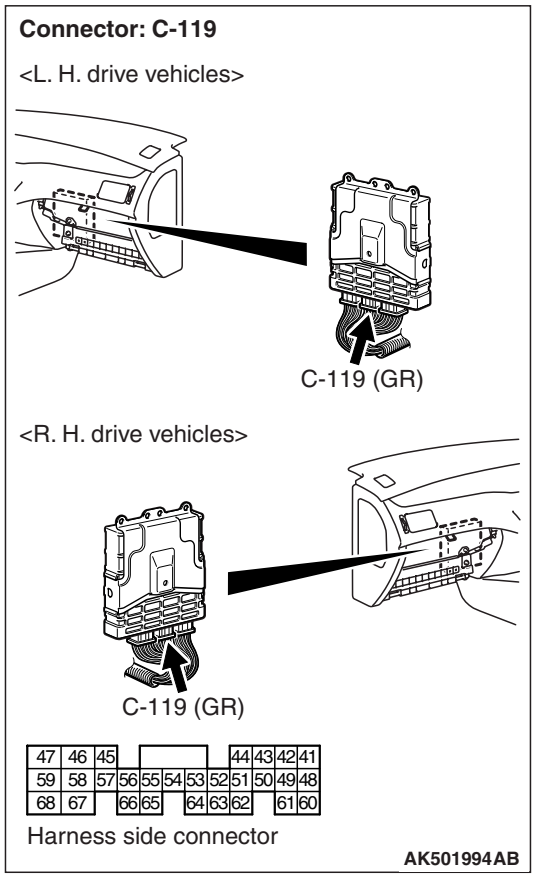
Q: Is the check result normal?

YES : Go to Step 21 .

NO : Check intermediate connector C-123, and repair if necessary. If intermediate connector is normal, check and repair harness between B-120 (terminal No. 2 and No. 4) fuel pump relay (3) connector and B-121 (terminal No. 1) fuel pump resistor connector.

- Check power supply line for damage.

STEP 21. Connector check: C-119 engine-ECU connector.

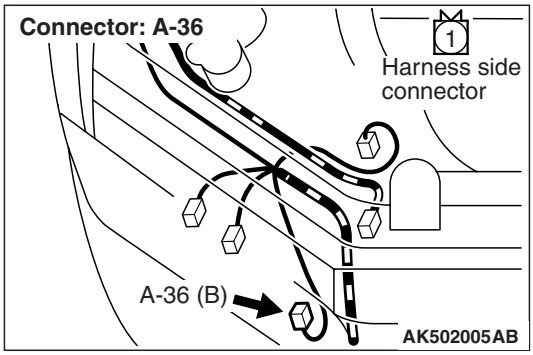


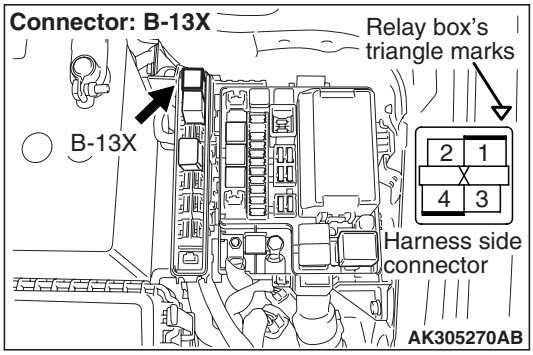
Q: Is the check result normal?

YES : Go to Stop 22 .

NO : Repair or replace the connector.

STEP 7. Perform voltage measurement at A-36 A/C compressor assembly connector.





- Disconnect connector, and measure at harness side.
- Remove B-13X (terminal No. 1 and No. 4) A/C compressor relay and short-circuit of harness side connector.
- Ignition switch: "ON"
- Voltage between terminal No. 1 and earth.

OK: System voltage

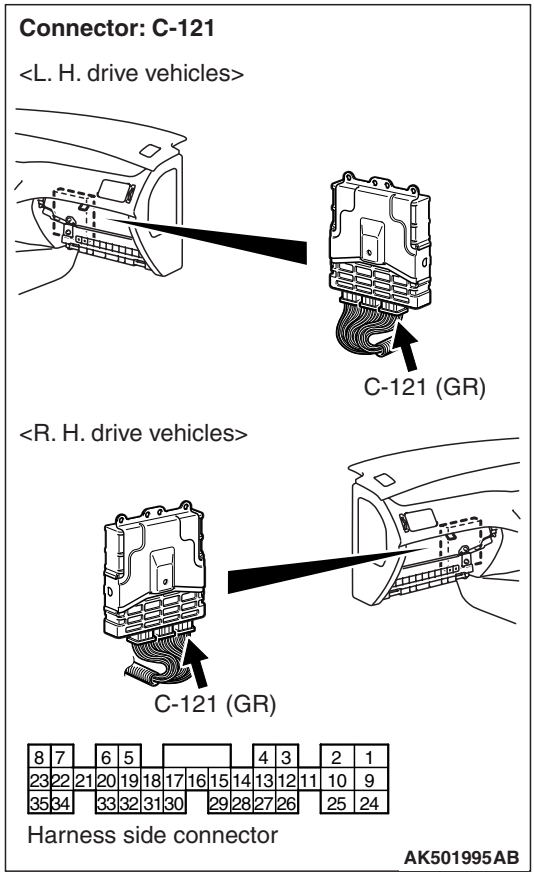
Q: Is the check result normal?

YES : Go to Step 8 .

NO : Check intermediate connector A-13[*1] or C-31[*2], and repair if necessary. If intermediate connector is normal, check and repair harness between A-36 (terminal No. 1) A/C compressor assembly connector and B-13X (terminal No. 4) A/C compressor relay connector.

- Check output line for open/short circuit.

STEP 8. Perform voltage measurement at C-121 engine-ECU connector.



- Disconnect connector, and measure at harness side.
- Ignition switch: "ON"
- Voltage between terminal No. 20 and earth.

OK: System voltage

Q: Is the check result normal?

YES : Go to Step 12 .

NO : Go to Step 9 .

Item No.	Inspection item	Inspection condition		Normal condition	Inspection procedure No.	Reference page
21	Engine coolant temperature sensor	Ignition switch: "ON" or engine running	Coolant temperature: −20°C	−20°C	Code No. P0115	P.13A-52
			Coolant temperature: 0°C	0°C		
			Coolant temperature: 20°C	20°C		
			Coolant temperature: 40°C	40°C		
			Coolant temperature: 80°C	80°C		
22	Crank angle sensor	• Engine: Cranking • Tachometer: Connected	Compare engine speed on tachometer with the value displayed on M.U.T.-II/III	Matched	–	–
		Engine: Idle operation	Coolant temperature: −20°C	1,200 – 1,400 r/min		
			Coolant temperature: 0°C	1,200 – 1,400 r/min		
			Coolant temperature: 20°C	1,200 – 1,400 r/min		
			Coolant temperature: 40°C	1,050 – 1,250 r/min		
			Coolant temperature: 80°C	750 – 950 r/min		
25	Barometric pressure sensor	Ignition switch: "ON"	Altitude: 0 m	101 kPa	Code No.P0105	P.13A-35
			Altitude: 600 m	95 kPa		
			Altitude: 1,200 m	88 kPa		
			Altitude: 1,800 m	81 kPa		
27	Power steering fluid pressure switch	Engine: Idle operation	Steering wheel: Not operated	OFF	Code No.P0551	P.13A-197
			Steering wheel: Operated	ON		
28	A/C switch	Engine: Idle	AC switch: OFF	OFF	Procedure No. 27	P.13A-341
			AC switch: ON / A/C compressor is not driven	OFF		
			AC switch: ON / A/C compressor is driven	ON		
34	Air flow sensor reset signal	Engine: After engine warm-up	Idle operation	ON	Code No. P0100	P.13A-24
			3,000 r/min	OFF		

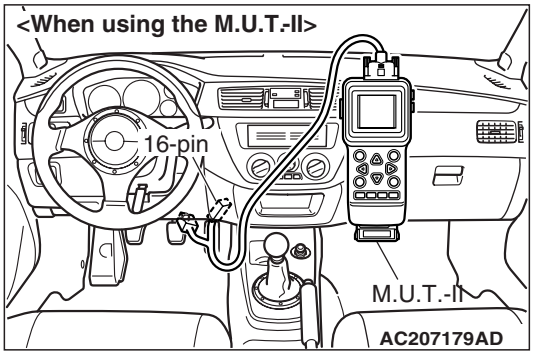
3. Disconnect the fuel pump module connector.

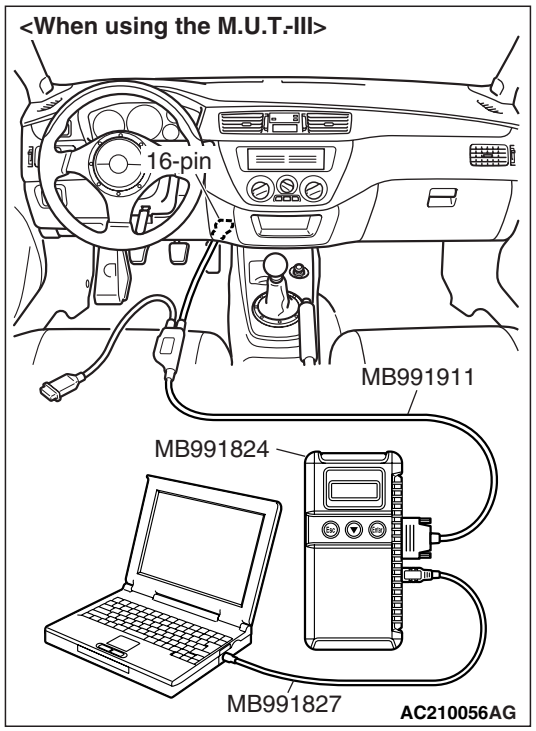
4. After starting the engine and letting it run until it stops naturally, turn the ignition switch to the "LOCK" (OFF) position.
5. Connect the fuel pump module connector.
6. Install the protector and rear seat assembly (Refer to GROUP 52A – Rear Seat Assembly P.52A-20).

FUEL PUMP OPERATION CHECK

M1131002000818

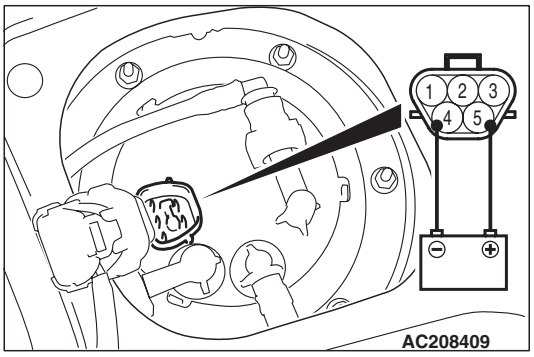
⚠ CAUTION





To prevent damage to the M.U.T.-II/III, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting the M.U.T.-II/III.

1. Check the operating of the fuel pump by using the M.U.T.-II/III to force-drive the fuel pump.



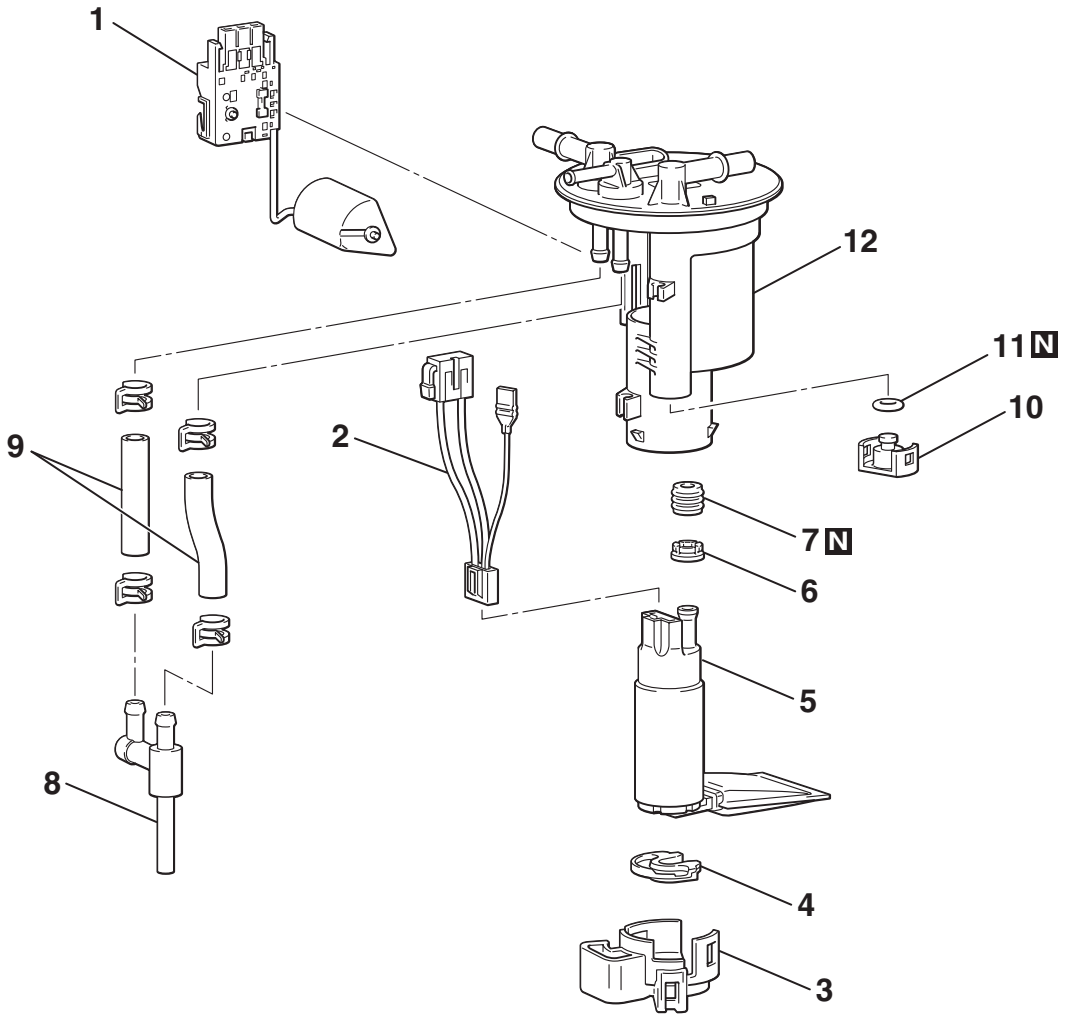
2. If the fuel pump will not operate, check by using the following procedure. If normal, check the fuel pump drive circuit.
   (1) Turn the ignition switch to the "LOCK" (OFF) position.
   (2) Remove the rear seat assembly (Refer to GROUP 52A – Rear Seat Assembly P.52A-20).
   (3) Remove the protector.
   (4) Disconnect the fuel pump module connector.
   (5) When the fuel pump drive connector is attached directly to the battery, check if the sound of the fuel pump operation can be heard.

   NOTE: As the fuel pump is an in-tank type, the fuel pump sound is hard to hear. Remove the fuel tank filler tube cap and check from the tank inlet.
   (6) Check for fuel pressure by pinching the fuel hose with fingertips.
   (7) Connect the fuel pump module connector.
   (8) Install the protector and rear seat assembly (Refer to GROUP 52A – Rear Seat Assembly P.52A-20).

FUEL PUMP MODULE DISASSEMBLY AND REASSEMBLY

M1135004600410

<FUEL PUMP MODULE>



AC210872 AB

Disassembly steps

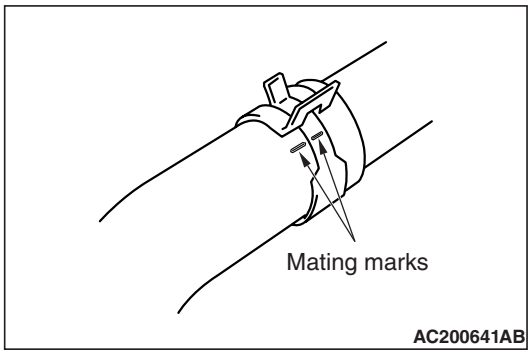
1. Fuel gauge unit (Main)
2. Fuel pump harness
3. Fuel pump bracket
4. Fuel pump cushion
5. Fuel pump
6. Spacer

Disassembly steps (Continued)

>>A<< 7. Grommet
8. Fuel feed assist pump
9. Fuel hose
10. Cap
>>A<< 11. O-ring
12. Fuel filter assembly

REMOVAL SERVICE POINT

<<A>> RADIATOR LOWER HOSE DISCONNECTION



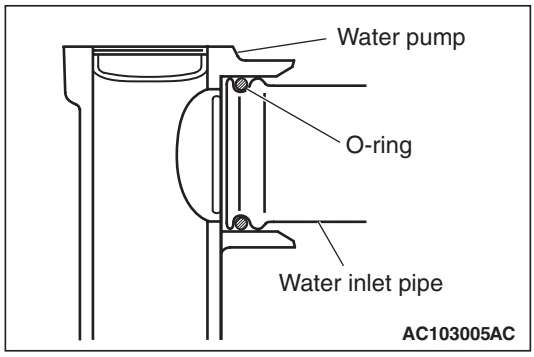
Make mating marks on the radiator hose and the hose clamp. Disconnect the radiator hose.

INSTALLATION SERVICE POINTS

>>A<< O-RING INSTALLATION

⚠ CAUTION

Do not let the O-ring get contaminated with grease or engine oil.



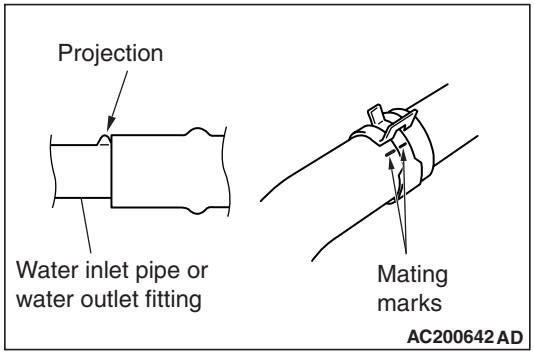
Fit an O-ring into the O-ring groove located at the end of the water inlet pipe and apply water to the O-ring or the inside of the mounting surface of the water pump for insertion.

>>B<< WATER INLET PIPE INSTALLATION

Temporarily install the water inlet pipe. After installing the water outlet fitting and thermostat case assembly, tighten the mounting bolt of the water inlet pipe to the specified torque.

Tightening torque
M6 bolt: 5.0 ± 1.0 N·m
M8 bolt: 13 ± 2 N·m

>>C<< RADIATOR LOWER HOSE/RADIATOR UPPER HOSE CONNECTION



1. Insert each hose as far as the projection of the water inlet pipe or water outlet fitting.
2. Align the mating marks on the radiator hose and hose clamp, and then connect the radiator hose.

INSPECTION

M1141003400360

WATER PIPE AND HOSE CHECK

Check the water pipe and hose for cracks, damage and clogs. Replace them if necessary.

13.If the voltage reading conforms to the value in the voltage regulation, then the voltage regulator is operating normally.

If the voltage is not within the standard value, there is a malfunction of the voltage regulator or of the alternator.

14.After the test, lower the engine speed to the idle speed.

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

16.Remove the M.U.T.-II/III.

17.Disconnect the negative battery cable.

18.Disconnect the ammeter and voltmeter.

19.Connect the alternator output wire to the alternator "B" terminal.

20.Remove the special tool, and return the connector to the original condition.

21.Connect the negative battery cable.

Voltage Regulation Table

Standard value:

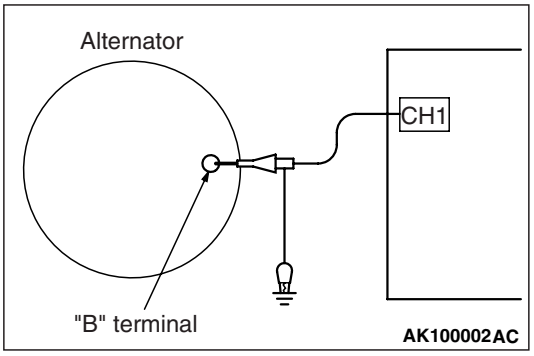
Inspection terminal	Voltage regulator ambient temperature °C	Voltage V
Terminal "S"	−20	14.2 – 15.4
	20	13.9 – 14.9
	60	13.4 – 14.6
	80	13.1 – 14.5

WAVEFORM CHECK USING AN OSCILLOSCOPE

M1161001200209

MEASUREMENT METHOD

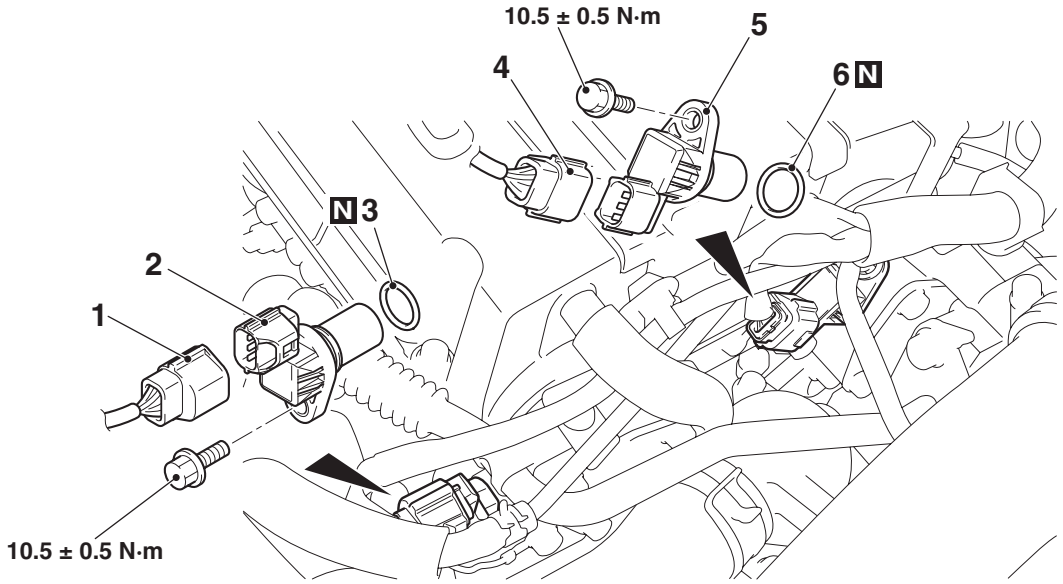
Connect the oscilloscope special patterns pick-up to the alternator "B" terminal.



CAMSHAFT POSITION SENSOR

REMOVAL AND INSTALLATION

M1163003400829



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AC505000AB

Removal steps <exhaust side>

1. Camshaft position sensor connector
2. Camshaft position sensor
3. O-ring

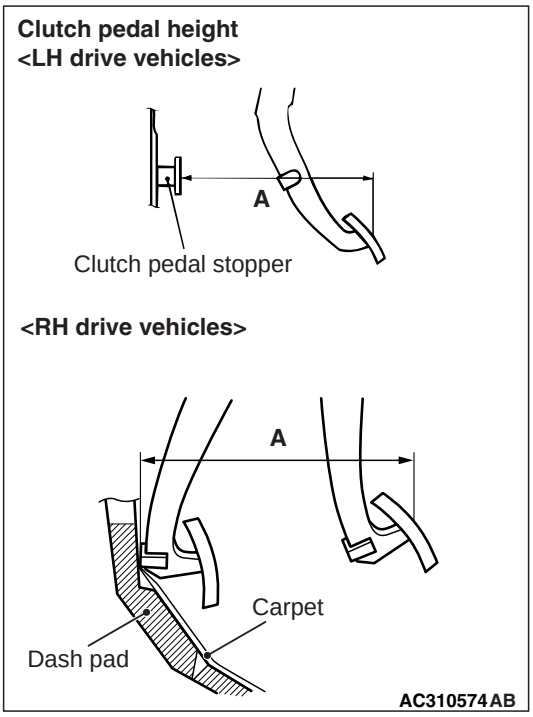
Removal steps <inlet side>

4. Camshaft position sensor connector
5. Camshaft position sensor
6. O-ring

ON-VEHICLE SERVICE

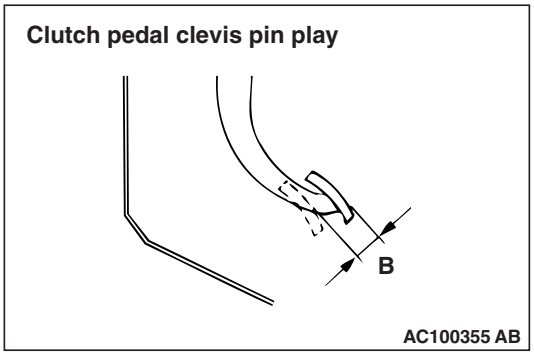
CLUTCH PEDAL CHECK AND ADJUSTMENT

M1211000900401



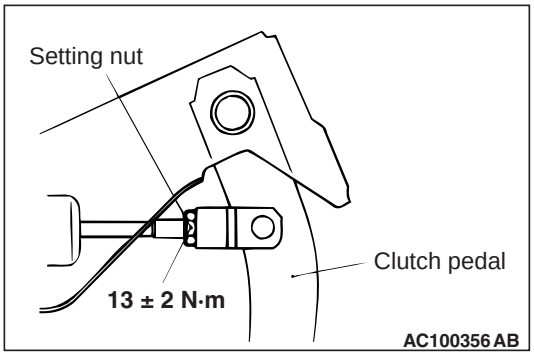
1. Measure the clutch pedal height.

   Standard value (A): 203.8 ± 2 mm <LH drive vehicles>, 198.7 ± 2 mm <RH drive vehicles>



2. Measure the clutch pedal clevis pin play.

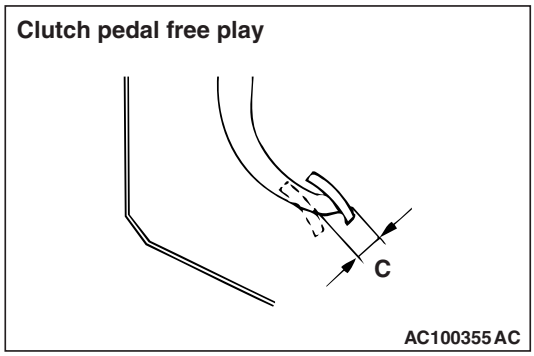
   Standard value (B): 1 – 3 mm

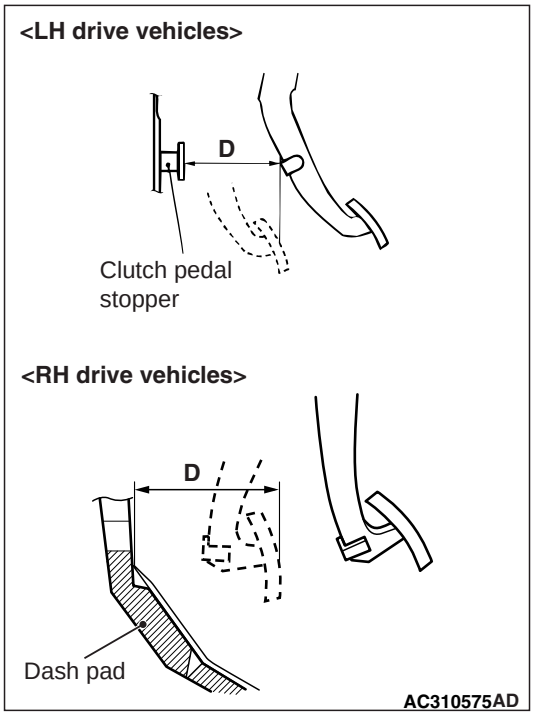


⚠ CAUTION

Do not push in the master cylinder pushrod at this time, otherwise the clutch will not operate properly.

3. If the clutch pedal height and clutch pedal clevis pin play are not within the standard value, loosen the setting nut to adjust the clutch pedal height and clevis pin play to the standard value.





4. After completing the adjustments, confirm that the clutch pedal free play (measured at the face of the pedal pad) and the distance between the clutch pedal (the face of the pedal pad) and the clutch pedal stopper or dash pad when the clutch is disengaged are within the standard value ranges.

   Standard value (C): 4 – 13 mm
   Standard value (D): 114.3 mm or more <LH drive vehicles>, 95 mm or more <RH drive vehicles>

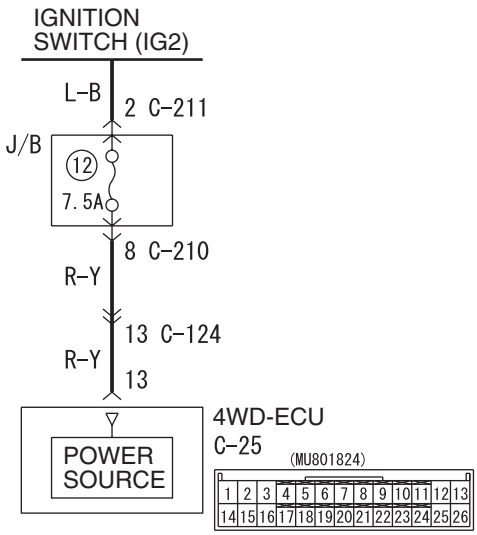
Diagnosis code No.	Diagnosis items		Reference page
73	Directional control valve system <Left>	open circuit or short circuit	Refer to GROUP 27 – Diagnostic Trouble Code Chart P.27-9
74	Proportional valve system <ACD>	open circuit or short circuit	P.22A-105
81	Electric pump relay system	open circuit or short circuit	P.22A-109
82		electric pump malfunction or pressure sensor defect	P.22A-113
84	AYC control error		Refer to GROUP 27 – Diagnostic Trouble Code Chart P.27-9
85	ACD control error		–

NOTE: Code No.85 is not a code number set due to malfunction, but a code number output when control for the 4WD-ECU to protect the ACD is stopped in excessive driving. ACD control can be recovered by turning the ignition switch ON to OFF to ON.

DIAGNOSIS TROUBLE CODE PROCEDURES

Code No.12 Power supply voltage (valve power supply) system

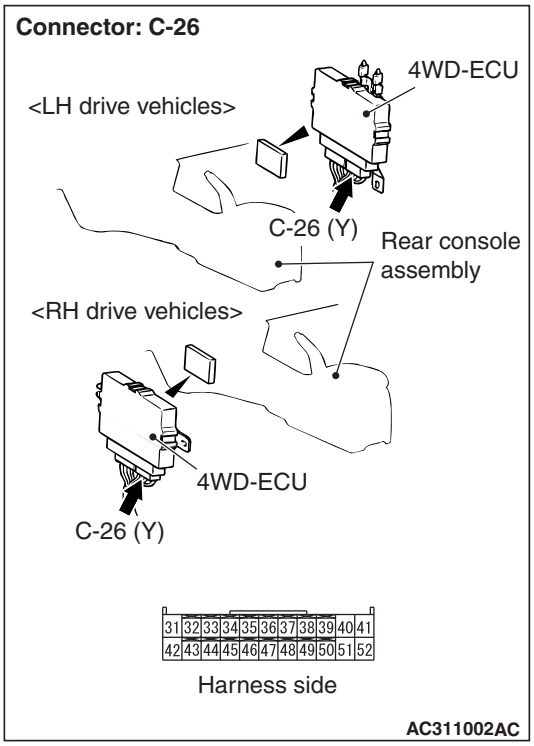
Power supply circuit <LH drive vehicles>

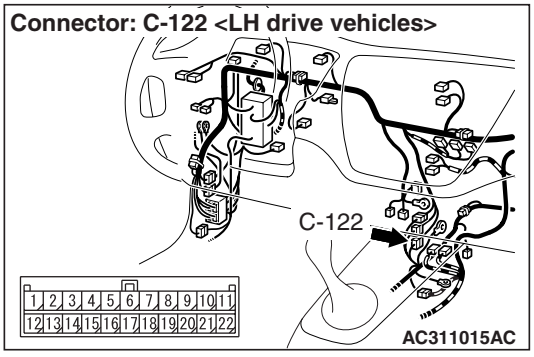


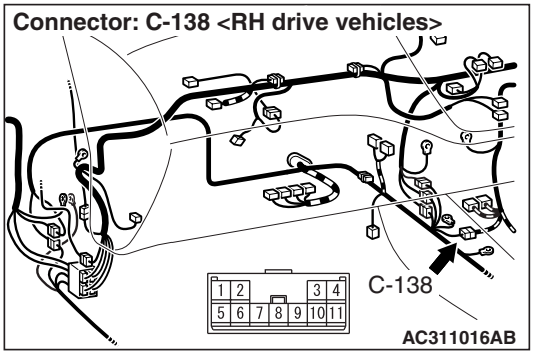
Wire colour code
B : Black LG : Light green G : Green L : Blue W : White Y : Yellow SB : Sky blue
BR : Brown O : Orange GR : Gray R : Red P : Pink V : Violet

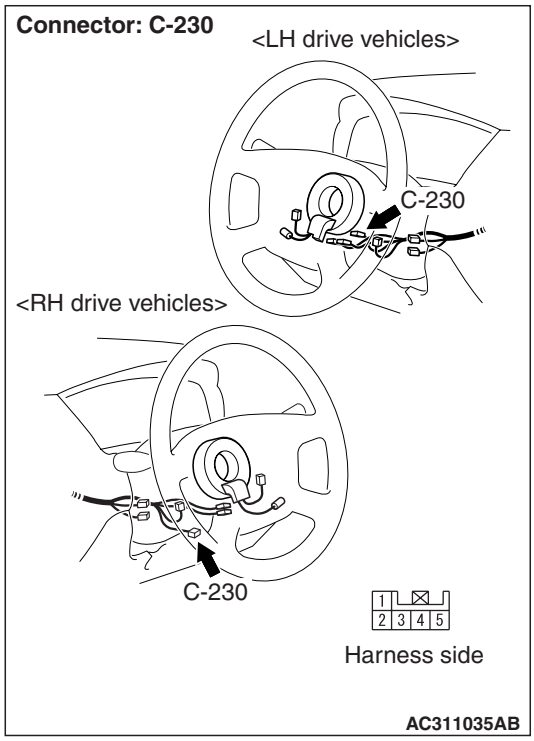
W4J22E01AA

STEP 5. Connectors check: C-26 4WD-ECU connector, C-122 intermediate connector, C-230 steering wheel sensor connector <LH drive vehicles> or C-26 4WD-ECU connector, C-138 intermediate connector, C-230 steering wheel sensor connector <RH drive vehicles>.





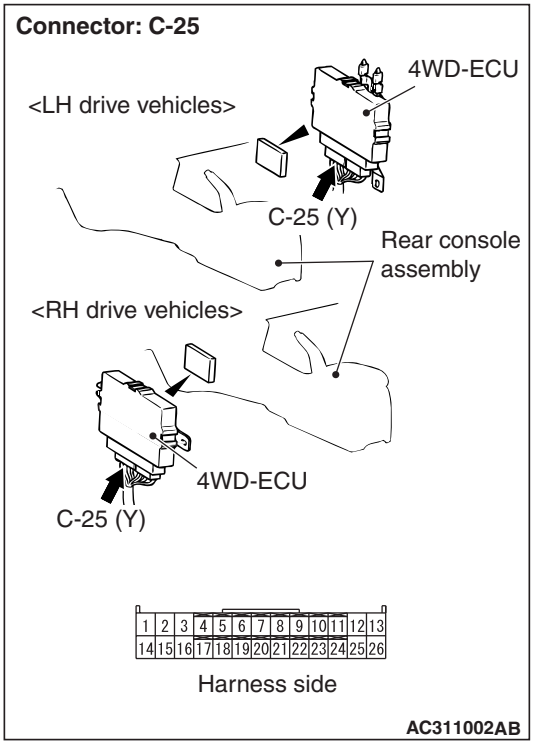


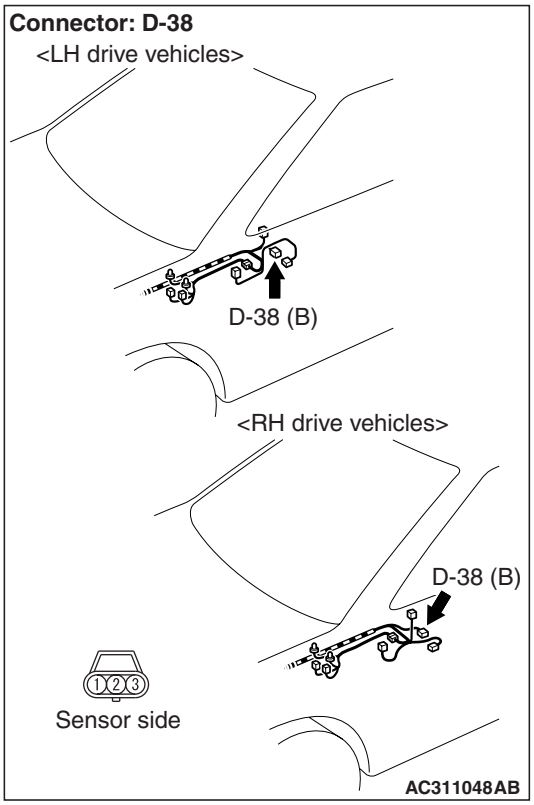


Check for the contact with terminals.

Q: Is the check result normal?
YES : Go to Step 6.
NO : Repair the defective connector.

STEP 14. Check the harness between 4WD-ECU connector C-25 terminal No.23 and longitudinal G-sensor connector D-38 terminal No.2.

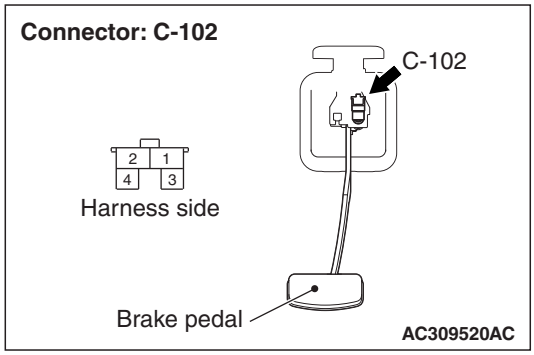


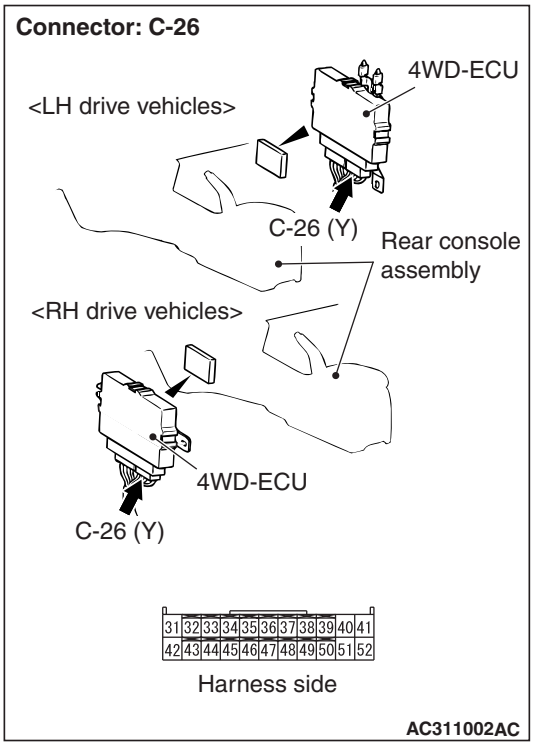


Check the output line for short or open circuit.

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

STEP 11. Check the harness between stop lamp switch connector C-102 terminal No.1 and 4WD-ECU connector C-26 terminal No.38.

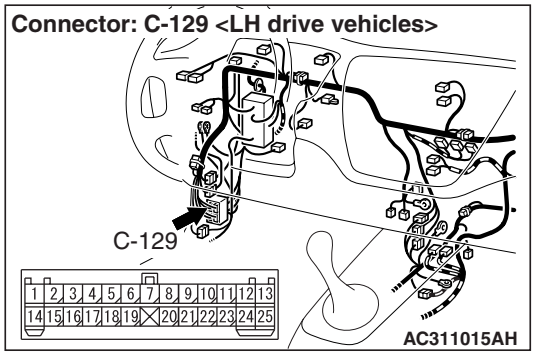


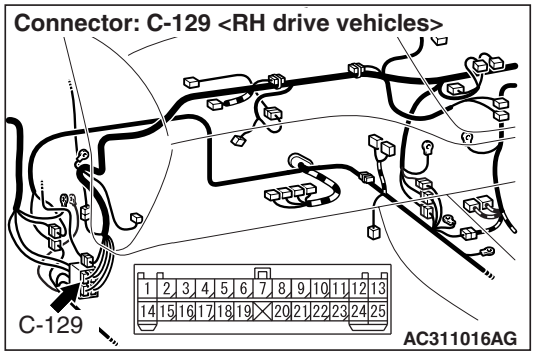


Check the output line for short or open circuit.

Q: Is the check result normal?
YES : Go to Step 9.
NO : Repair the wiring harness.

STEP 12. Connector check: C-129 intermediate connector

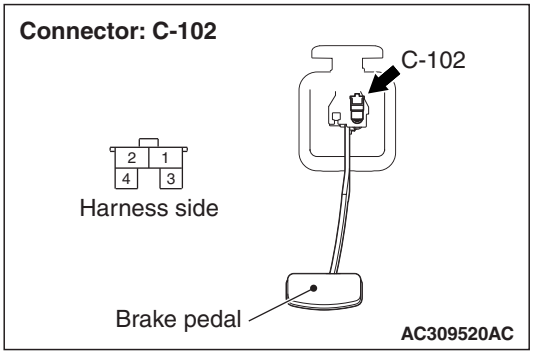




Check for the contact with terminals.

Q: Is the check result normal?
YES : Go to Step 13.
NO : Repair the defective connector.

STEP 13. Check the harness between stop lamp switch connector C-102 terminal No.2 and battery.

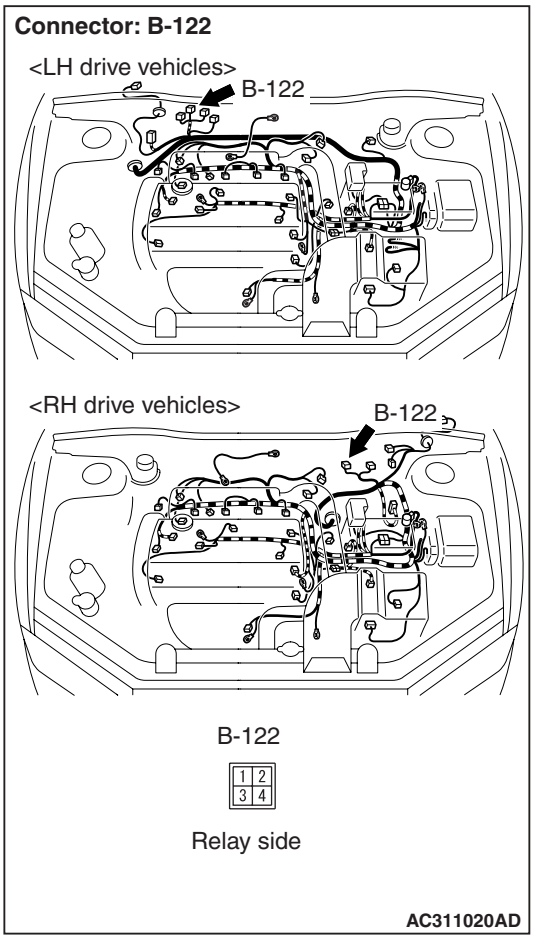


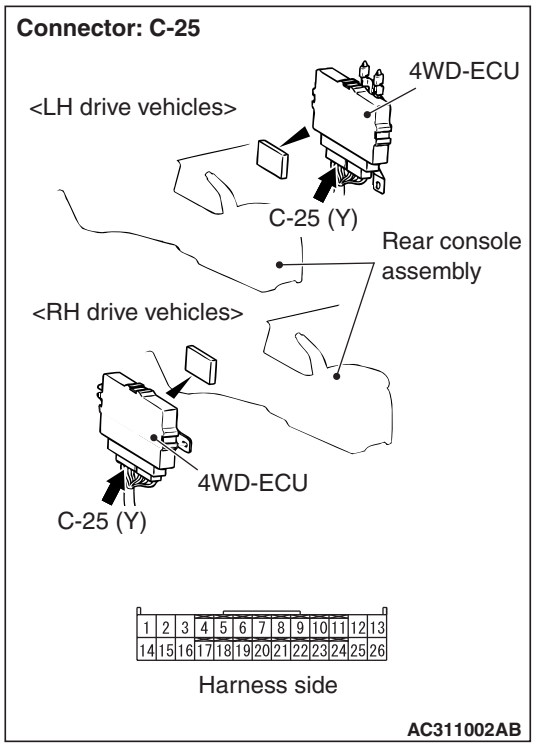
Check the power supply line for short or open circuit.

Q: Is the check result normal?
YES : Go to Step 9.
NO : Repair the wiring harness.

Q: Is the check result normal?
YES : Go to Step 8.
NO : Repair the defective connector.

STEP 8. Check the harness between electric pump relay connector B-122 terminal No.2 and 4WD-ECU connector C-25 terminal No.16.





Check the power supply line for short or open circuit.

Q: Is the check result normal?
YES : Go to Step 6.
NO : Repair the wiring harness.

Code No.82 Electric pump relay system (electric pump malfunction or pressure sensor defect)

ELECTRIC PUMP RELAY SYSTEM CIRCUIT

Refer to P.22A-109.

OPERATION

Refer to P.22A-109.

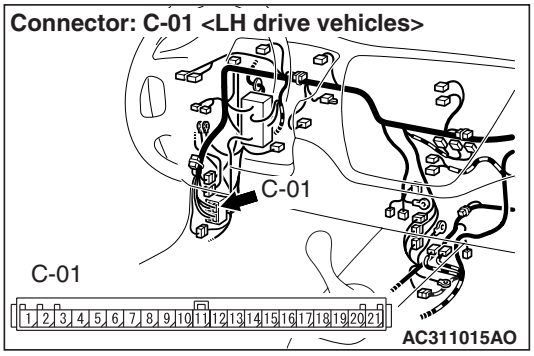
DIAGNOSIS CODE SET CONDITIONS

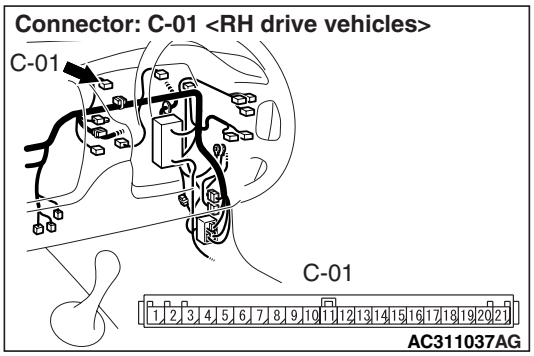
Code No.82 is set when the pressure sensor does not reach the specified value even if the 4WD-ECU has output the electric pump motor drive command.

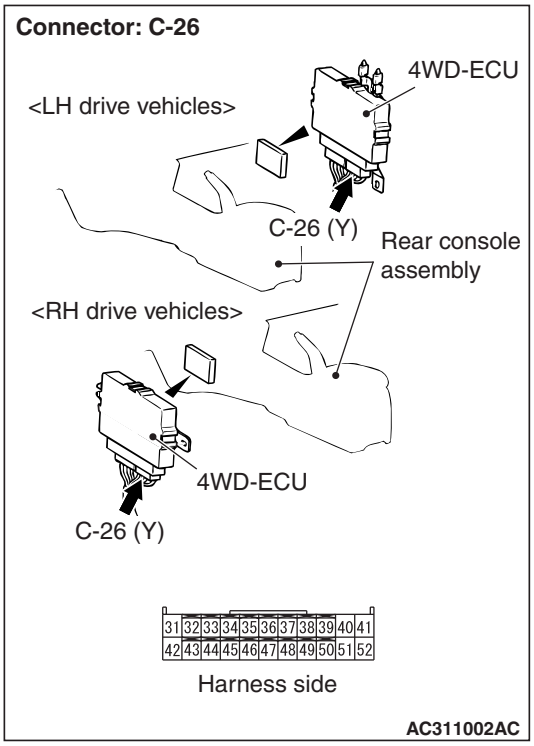
PROBABLE CAUSES

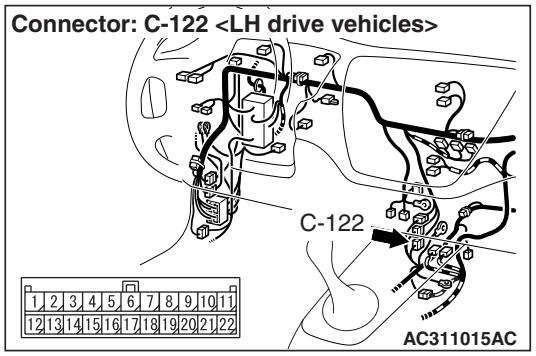
- Insufficient fluid
- Malfunction of the pressure sensor
- Malfunction of the electric pump relay
- Malfunction of the hydraulic unit
- Damaged harness wires and connectors
- Malfunction of the 4WD-ECU

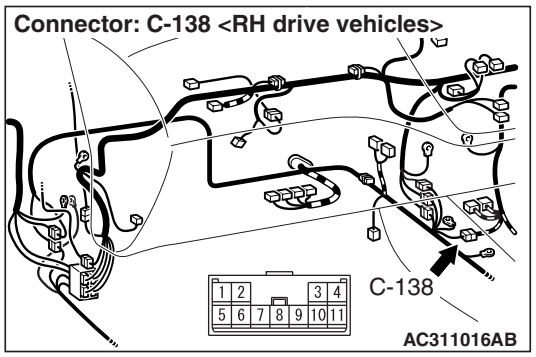
STEP 2. Connectors check: C-01 combination meter connector, C-26 4WD-ECU connector, C-122 intermediate connector <LH drive vehicles> or C-01 combination meter connector, C-26 4WD-ECU connector, C-138 intermediate connector <RH drive vehicles>.







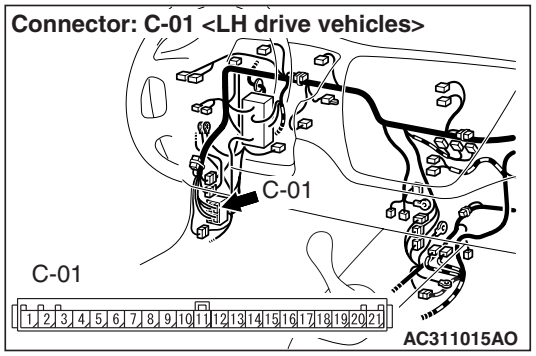


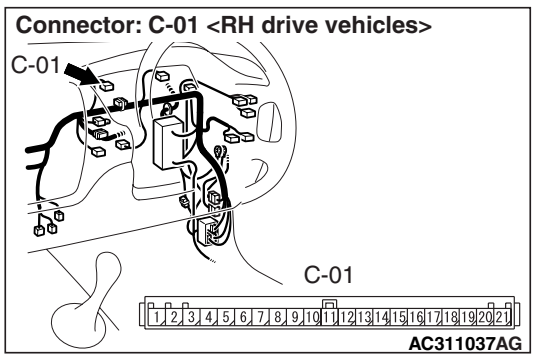


Check for the contact with terminals.

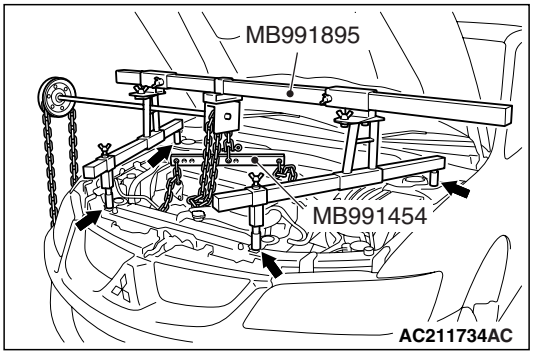
Q: Is the check result normal?
YES : Go to Step 3.
NO : Repair the defective connector.

STEP 3. Check the harness between combination meter connector C-01 (terminal No.10, 14, 15) and 4WD-ECU connector C-26 (terminal No.40, 52, 51).

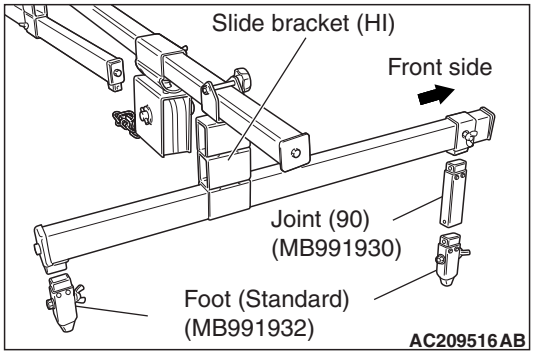




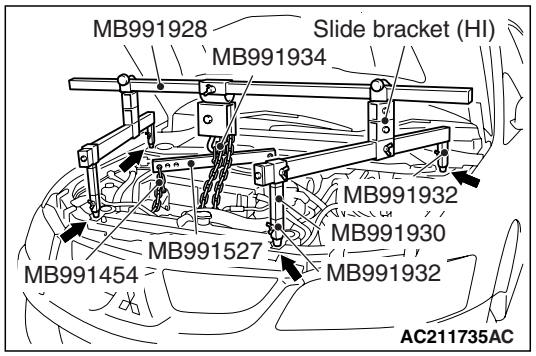
<<C>> ENGINE ASSEMBLY SUPPORTING



1. <Engine hanger (special tool MB991895) is used>
   (1) Set special tool MB991895 to the strut mounting nuts and the radiator support upper insulator mounting bolts, which are located in the engine compartment, as shown.
   (2) Set special tool MB991454 to hold the engine and transmission assembly.



2. <Engine hanger (special tool MB991928) is used>
   (1) Assemble the engine hanger (special tool MB991928). Set the following parts to the base hanger.
   - Slide bracket (HI)
   - Foot (standard) (MB991932)
   - Joint (90) (MB991930)



   (2) Set the engine hanger (special tool MB991928) to the strut mounting nuts and the radiator support upper insulator mounting bolts, which are located in the engine compartment, as shown.

NOTE: Adjust the engine hanger balance by sliding the slide bracket (HI).

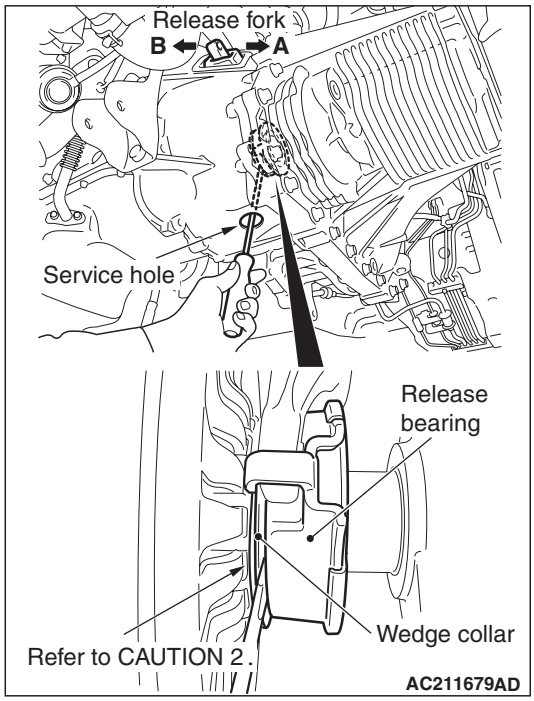
   (3) Set special tool MB991454 to hold the engine and transmission assembly.

<<D>> CLUTCH RELEASE BEARING SEPARATION

1. Remove the service hole cover of the clutch housing.

⚠ CAUTION

- **Do not insert the flat-tipped driver before pressing the release fork towards direction A.**
- **Do not insert the flat-tipped driver between the wedge collar and the wave spring.**



2. Insert the flat-tipped driver between the release bearing and wedge collar while slightly pressing the release fork towards direction A by hand.

⚠ CAUTION

If the driver cannot be turned slightly (the release bearing cannot be disconnected), remove the flat-tipped driver and press the release fork several times towards direction A, then retry again. If the release bearing is pried off forcibly, it may be damaged.

3. Disconnect the release bearing with the wedge collar while prying off slightly by the flat-tipped driver (turn the driver's handle 90°).

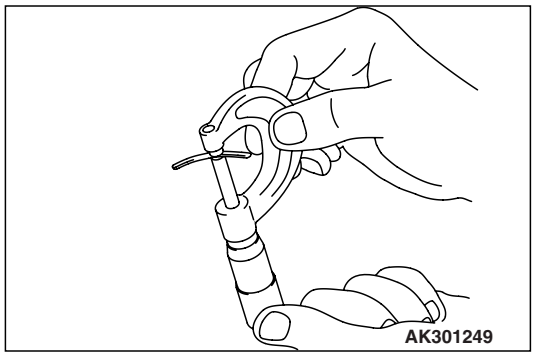
NOTE: When the release bearing is disconnected, the release fork is moved to the direction B fully by the return spring.

⚠ CAUTION

In the following steps, make sure to use the same O-rings that were removed during disassembly.

7. Install the control assembly and tighten its bolts to the specified torque.
8. With the gear shifted into 2nd gear, raise the main shaft and install the snap ring tightly on the main shaft rear bearing.

   NOTE: Refer to CONTROL ASSEMBLY INSTALLATION for the method for shifting the gear into 2nd.
9. Return the control assembly to the neutral position and remove its mounting bolts. Remove the control assembly.
10. Remove the transmission case.
11. Remove the snap ring from the main shaft rear bearing, then remove the transmission case.
12. Remove the crushed pieces of solder.
13. If the solder has not been crushed at all:
    (1) In the case of the input shaft rear bearing and the main shaft rear bearing, use the thicker solder (1.6 mm diameter, about 10 mm long) and repeat steps 4 to 12.
    (2) In the case of the reverse idler gear, use the thicker shim and repeat steps 4 to 12.



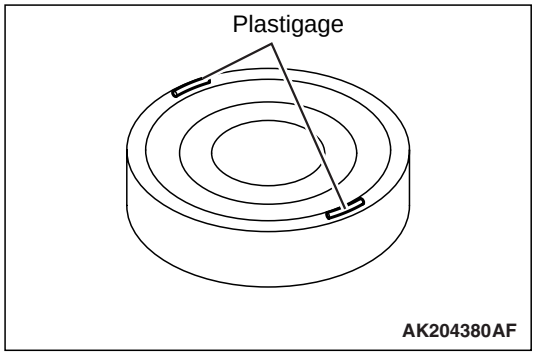
14. Use a micrometer to measure the thickness of the each crushed solder beads and record the each measured value.
15. Select each shim with the thickness calculated by the following formula that will adjust each end play to a value within the standard value range.
    (1) In the case of the input shaft rear bearing and the main shaft rear bearing:

    Shim thickness: (T1 − 0 mm) to (T1 − 0.06 mm)
    T1: The crushed solder thickness mm
    Standard input shaft end play: 0 mm − 0.06 mm
    Standard main shaft end play: 0 mm − 0.06 mm

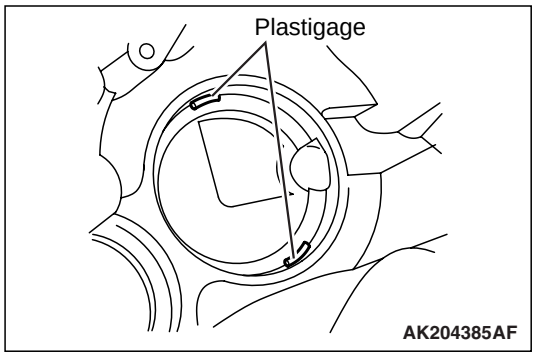
    (2) In the case of the reverse idler gear:

    Shim thickness: (T1 + T2 − 0.04 mm) to (T1 + T2 − 0.10 mm)
    T1: The crushed solder thickness mm
    T2: The shim thickness used for measurement mm
    Standard reverse idler gear end play: 0.04 mm − 0.10 mm

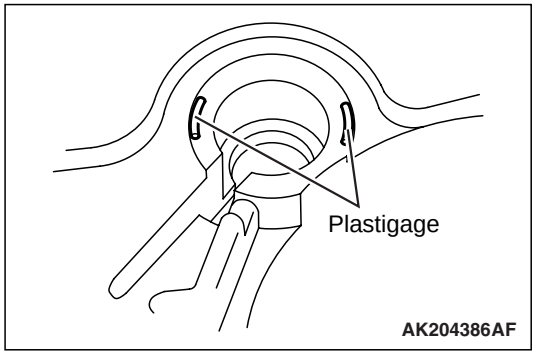
<Measurement using Plastigage>



1. Put the plastigage (about 10 mm long) on the input shaft rear bearing as indicated in the illustration. Install the adjusting shim having minimum thickness.

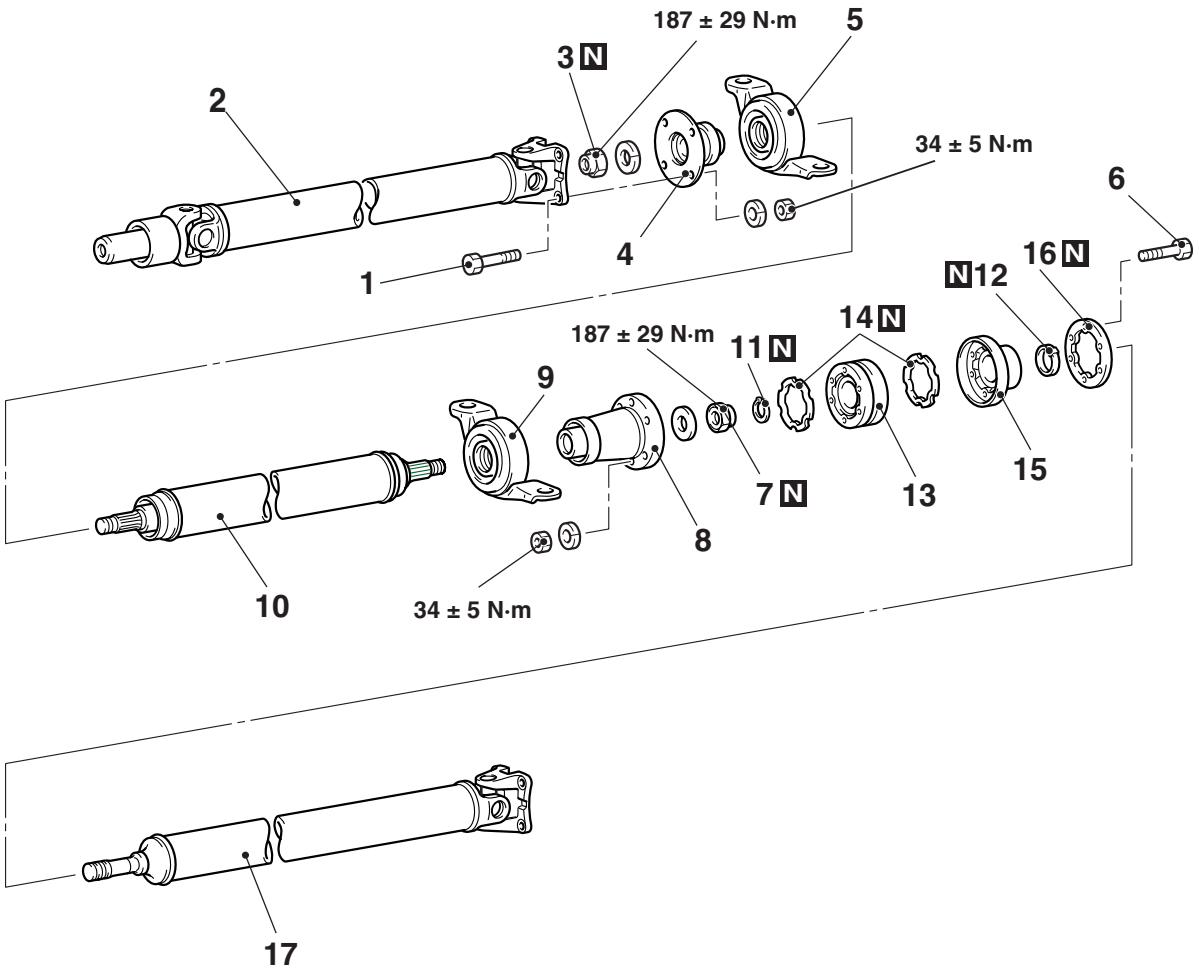


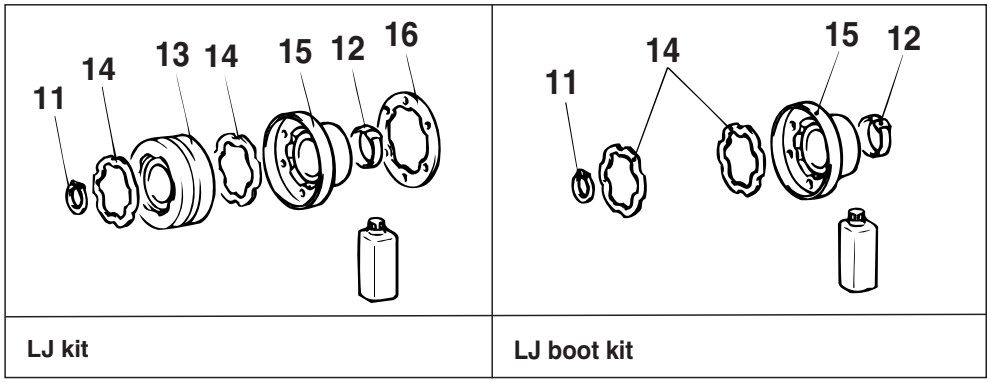
2. Put the plastigage (about 10 mm long) on the main shaft rear bearing fitting surface in the transmission case as indicated in the illustration. Install the adjusting shim having minimum thickness.



DISASSEMBLY AND REASSEMBLY

M1251001200249





LJ kit	LJ boot kit

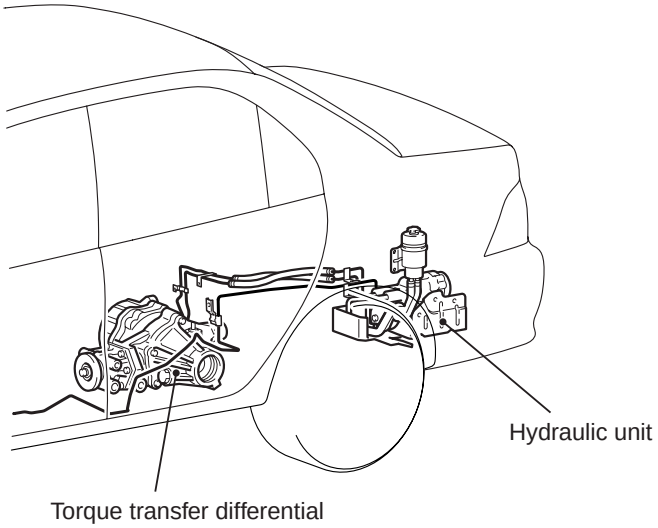
AC211583AC

Disassembly steps

		1.	Bolt
		2.	Front propeller shaft assembly
	>>**E**<<	3.	Self locking nut
<<**A**>>	>>**E**<<	4.	Companion flange
<<**B**>>	>>**E**<<	5.	Centre bearing assembly
<<**C**>>		6.	Bolt
	>>**D**<<	7.	Self locking nut
<<**A**>>	>>**D**<<	8.	Companion flange
	>>**D**<<	9.	Centre bearing assembly

Disassembly steps (Continued)

		10.	Centre propeller shaft
		11.	Snap ring
	>>**C**<<	12.	Boot band
<<**D**>>	>>**B**<<	13.	LJ assembly
		14.	Rubber packing
<<**E**>>	>>**A**<<	15.	LJ boot
		16.	Washer
		17.	Rear propeller shaft



AC311159 AB

SERVICE SPECIFICATIONS

M1271000300557

Item	Standard value	Limit
Rear axle total backlash mm	–	6
Wheel bearing rotation starting torque N·m	–	1.0
Wheel bearing axial play mm	–	0.05
TJ boot assembly dimension mm	90 ± 3	–
Pressure generated by AYC hydraulic unit (pressure sensor value) MPa	0.9 – 1.1	–

LUBRICANTS

M1271000400383

Item		Specified lubricant	Quantity
AYC	Differential	DIA QUEEN LSD gear oil	0.55 ± 0.02 L
	Torque transfer mechanism	DIA QUEEN ATF-SP III	0.55 – 0.6 L
AYC hydraulic piping		DIA QUEEN ATF-SP III	1.0 L
Torque transfer mechanism oil seal lip		Vaseline	As required
Drive shaft EBJ joint		Repair kit grease	80 ± 10 g
Drive shaft TJ joint		Repair kit grease	135 ± 10 g

SEALANT

M1271000500313

Item	Specified sealant	Remark
Vent plug	3M ATD Part No.8661 or equivalent	Semi-drying sealant
Differential carrier cover mounting part		

⚠ CAUTION
While the system is being bled of air, add fluid as necessary to ensure that it is left in the oil reservoir during the entire procedure.

8. After air has been completely discharged, tighten bleeder screw and turn the steering wheel in the straight-ahead position.
9. Repeat steps 6 and 7 two to three times until no air bubbles are recognized in the fluid that comes out. Then, tighten the bleeder screw to the specified torque.

   Tightening torque: 9 ± 1 N·m

10. Perform steps 5 through 8 for the right bleeder screw. Note, however, that the steering wheel should be turned counterclockwise.
11. When removing the hydraulic unit, bleed the fluid line in ACD side (Refer to GROUP 22A - On-vehicle Service P.22A-153).

⚠ CAUTION
If the system is not completely bled of air, the hydraulic unit could generate noise, degrading pump durability.

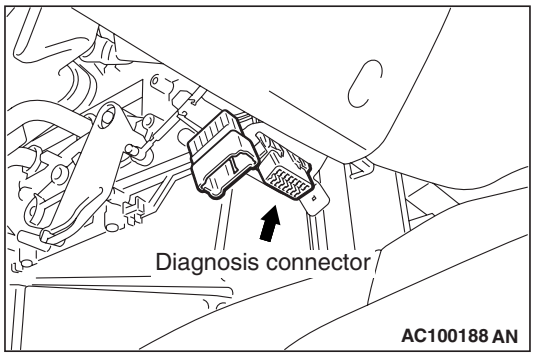
12. After the system has been completely bled of air, check for the fluid level (Refer to P.27-27).

AYC OPERATION CHECK

M1272004900026

1. Lift up the vehicles.

⚠ CAUTION
Turn the ignition switch to the "LOCK (OFF)" position before connecting or disconnecting the M.U.T.-II/III.



2. Set the M.U.T.-II/III to the 16-pin diagnosis connector.
3. Start the engine.
4. Set the gear to the 2nd gear or above, operate M.U.T.-II/III, and check from the data list (Item No.09) that the wheel speed is within 10 km/h to 20 km/h.

NOTE:
- *Set the steering wheel to the neutral position.*
- *When turning the steering wheel, AYC operates continually (operation sound from the torque transfer differential), but it is not system fault. In this case, set the steering wheel to the neutral position, and perform the following operations in order to stop the ACD.*
  - *Release the clutch.*
  - *Set the gear to "Neutral".*
  - *Stop the engine.*

5. Operate the M.U.T.-II/III, drive the torque transfer differential by the actuator test (item No.06 and 07) forcibly.

   NOTE:
   - *Drive the clutch operating mode forcibly for 1 minute, release the operation automatically. Drive can also be cleared forcibly using the Clear key of M.U.T.-II/III.*
   - *If the hydraulic unit function has been stopped by fail-safe, the torque transfer differential cannot be forcibly driven.*

6. Operating the M.U.T.-II/III by data list (item No.07 and 08), check the condition of the wheel speed below.

<Driving actuator test item No.06 forcibly>
The left rear wheel is faster 2 km/h than right rear wheel.
<Driving actuator test item No.07 forcibly>
The right rear wheel is faster 2 km/h than left rear wheel.

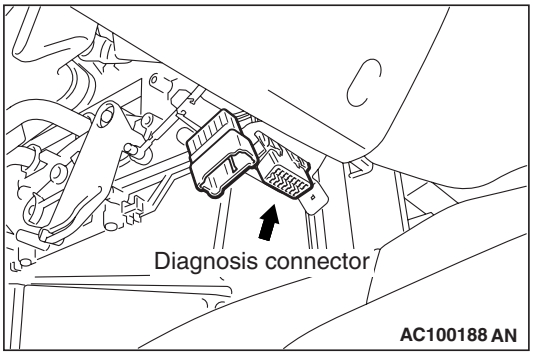
NOTE: If the above are not satisfied, check the oil pressure as the system may be faulty.

OIL PRESSURE CHECK

M1272005000037

1. Lift up the vehicles.

⚠ CAUTION
Turn the ignition switch to the "LOCK (OFF)" position before connecting or disconnecting the M.U.T.-II/III.



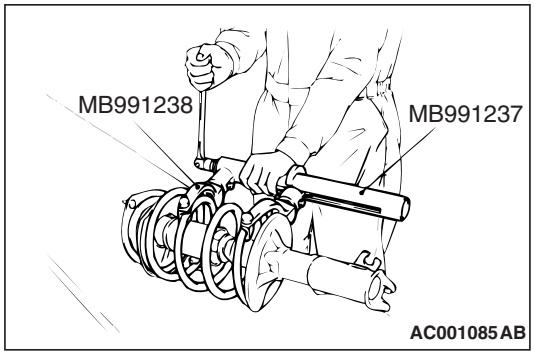
<WHEEL BALANCER CALIBRATION CHECKS>

1. Mount an undamaged original-equipment alloy rim and tyre assembly (wheel) onto your off-the-car wheel balancer. Balance the wheel.
2. <<Zero Calibration Check>> Loosen the balancer wing nut, rotate the wheel a half-turn (180°), and retighten the nut. Recheck the balance.
   - If the imbalance is 5 g or less, the zero calibration is OK. Rebalance the wheel, then go to Step 4 to check static balance.
   - If the imbalance is more than 5 g, go to Step 3.
3. Loosen the balancer wing nut, rotate the wheel 1/4 turn (90°), and retighten the nut. Recheck the wheel balance.
   - If the imbalance is 5 g or less, the wheel may not be centred on the balancer, or the balancing cones, the cup, and/or wing nut are damaged, dirty, or inappropriate for the wheel. You may need to refer to the balancer manufacturer's instructions to verify the correct attachments. After making the necessary corrections, recheck the wheel balance. If OK, then go to Step 4.
   - If the imbalance is more than 5 g, the balancer requires calibration. Contact the balancer manufacturer for calibration by their repair representative.
4. <<Static Balance Check>> Attach a 5 g weight to the outer rim. Recheck the balancer. The balancer should detect 5 ± 2 g of imbalance 170 to 190° away from the 5 g weight.
   - If the imbalance is within specification, the static balance calibration is correct. Go to Step 5 to check the dynamic balance.
   - If the imbalance is out of specification, the balancer requires calibration. Contact the balancer manufacturer for calibration by their repair representative.
5. <<Dynamic Balance Check>> Attach a 5 g weight to the inner rim at 180° opposite the 5 g weight that was added in Step 4. Recheck the balance. The balancer should detect 5 ± 2 g of imbalance 170 to 190° away from both the inner and outer 5 g weights.
   - If the imbalance is within specification, the dynamic balance calibration is correct. The balancer calibration checks are complete.
   - If the imbalance is out of specification, the balancer requires calibration. Contact the balancer manufacturer for calibration by their repair representative.

ASSEMBLY SERVICE POINTS

>>A<< STRUT NUT INSTALLATION

1. Ensure that the bearing is seated correctly.

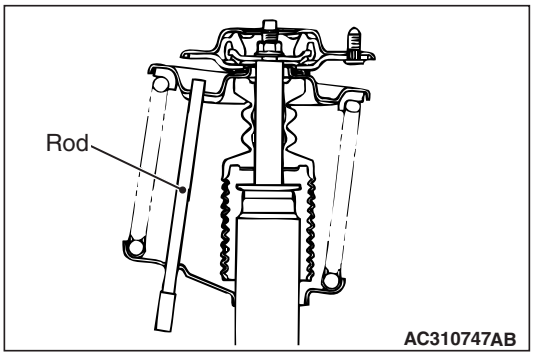


2. Install following special tools to the strut assembly same as its removal.
   - Spring compressor body (MB991237)
   - Arm set (MB991238)

⚠ CAUTION

Do not use an impact wrench to tighten the bolt of special tool spring compressor body (MB991237), otherwise the special tool will break.

3. While the coil spring is being compressed by the special tools, temporarily tighten the strut nut.



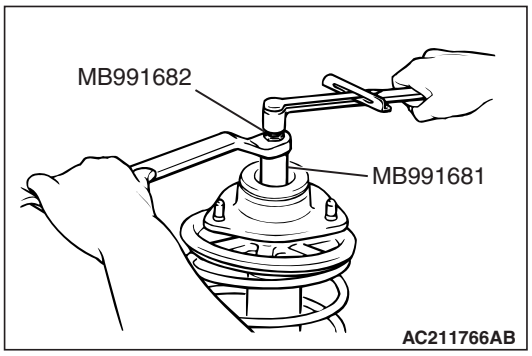
4. Align the hole in the strut spring lower seat with the hole in the upper spring seat.

   NOTE: Using a rod as shown facilitates the alignment.

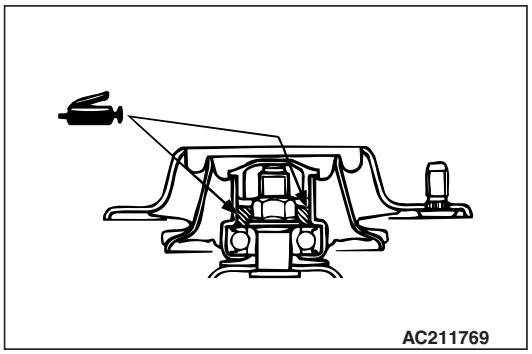
5. Correctly align both ends of the coil spring with the grooves in the spring seat, and then loosen the special tools.

⚠ CAUTION

Do not use an impact wrench to tighten the strut nut, otherwise the strut nut will be damaged. Vibration of the impact wrench will cause the valve inside the strut to dropout.



6. Using following special tools, tighten the strut nut to 60 ± 10 N·m.
   - Wrench (MB991681)
   - Socket (MB991682)



7. After tightening the strut nut, fill the multi purpose grease to the bearing part of strut insulator.

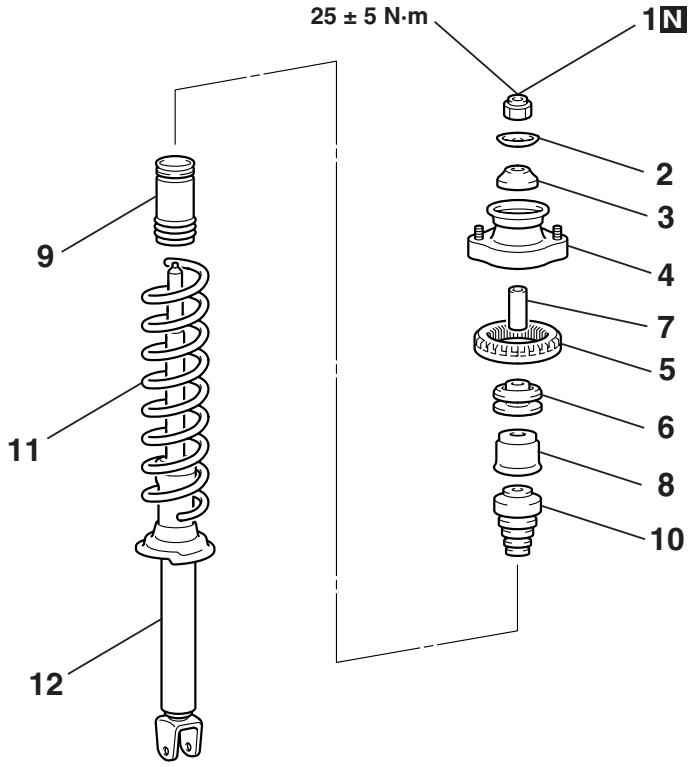
INSPECTION

M1332001400229

- Check the strut bearing for wear or rust.
- Check the rubber parts for damage or deterioration.
- Check the coil spring for deformation, deterioration or damage.
- Check the front suspension strut for deformation.

DISASSEMBLY AND ASSEMBLY

M1341005300363



AC310801AB

Disassembly steps

<<**A**>> >>**D**<< 1. Coil spring nut
2. Coil spring washer
3. Coil spring bushing
>>**C**<< 4. Shock absorber insulator
>>**B**<< 5. Spring upper pad
6. Coil spring bushing

Disassembly steps (Continued)

7. Coil spring collar
8. Shock absorber cup
9. Shock absorber cover
10. Shock absorber damper
>>**A**<< 11 Coil spring
12 Shock absorber assembly

FRONT DISC BRAKE ASSEMBLY

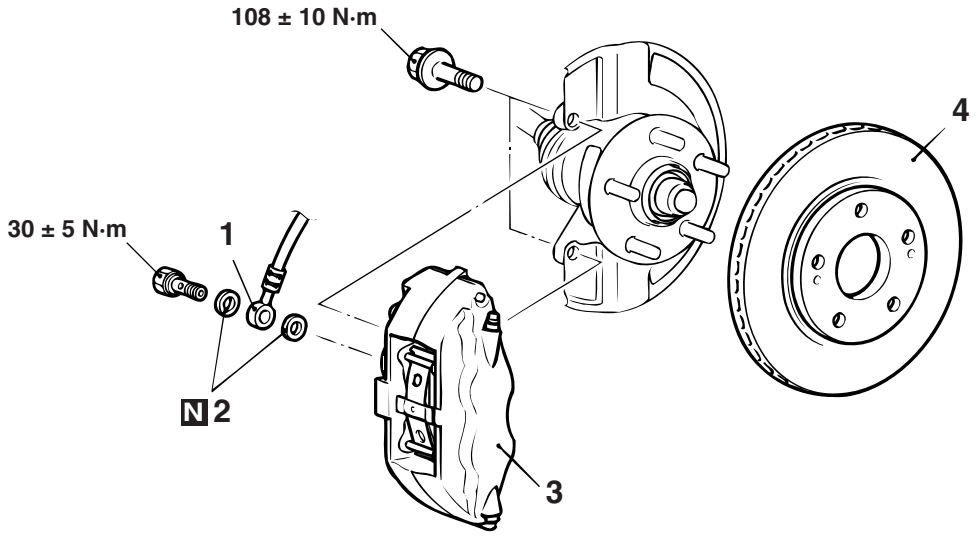
REMOVAL AND INSTALLATION

M1351006000526

⚠ CAUTION

Take care not to contact the parts or tools to the caliper because the paint of caliper will be scratched. And if there is brake fluid on the caliper, wipe it off quickly.

Pre-removal Operation	Post-installation Operation
• Brake Fluid Draining	• Brake Fluid Supplying and Air Bleeding (Refer to P.35A-7).



AC211991 AB

Removal steps

1. Brake hose connection
2. Gasket

>>A<< 3. Brake caliper assembly

4. Brake disc

INSTALLATION SERVICE POINT

>>A<< BRAKE CALIPER ASSEMBLY INSTALLATION

1. Find the drag force of the disc brake (Refer to P.35A-8).

   Standard value: 69 N or less

2. If that drag force exceeds the standard value, disassemble the caliper assembly. Then check the piston for contamination or rust, and confirm if the piston or the piston seal is deteriorated.

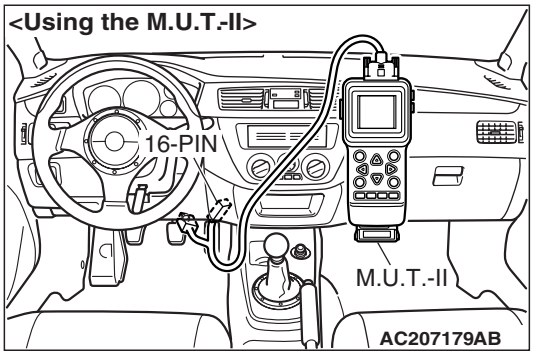
INSPECTION

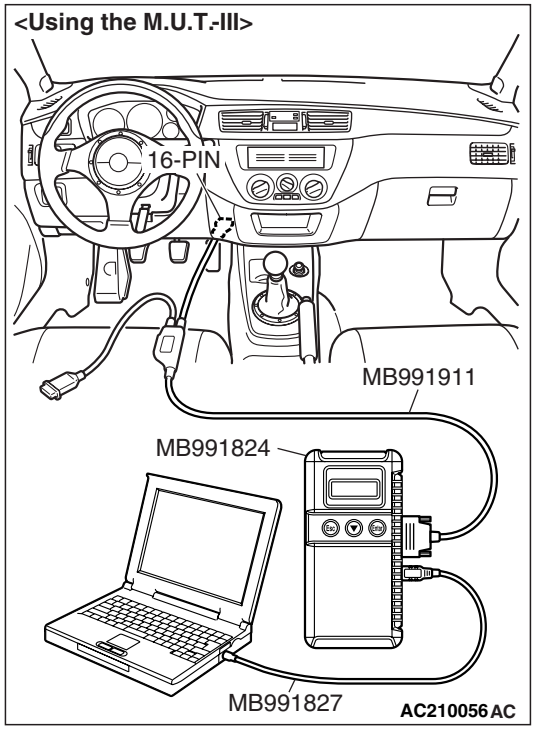
M1351006100341

BRAKE DISC CHECK

Disc wear (Refer to P.35A-11).
Disc run-out (Refer to P.35A-12).

STEP 5. Check whether the diagnosis code is reset.





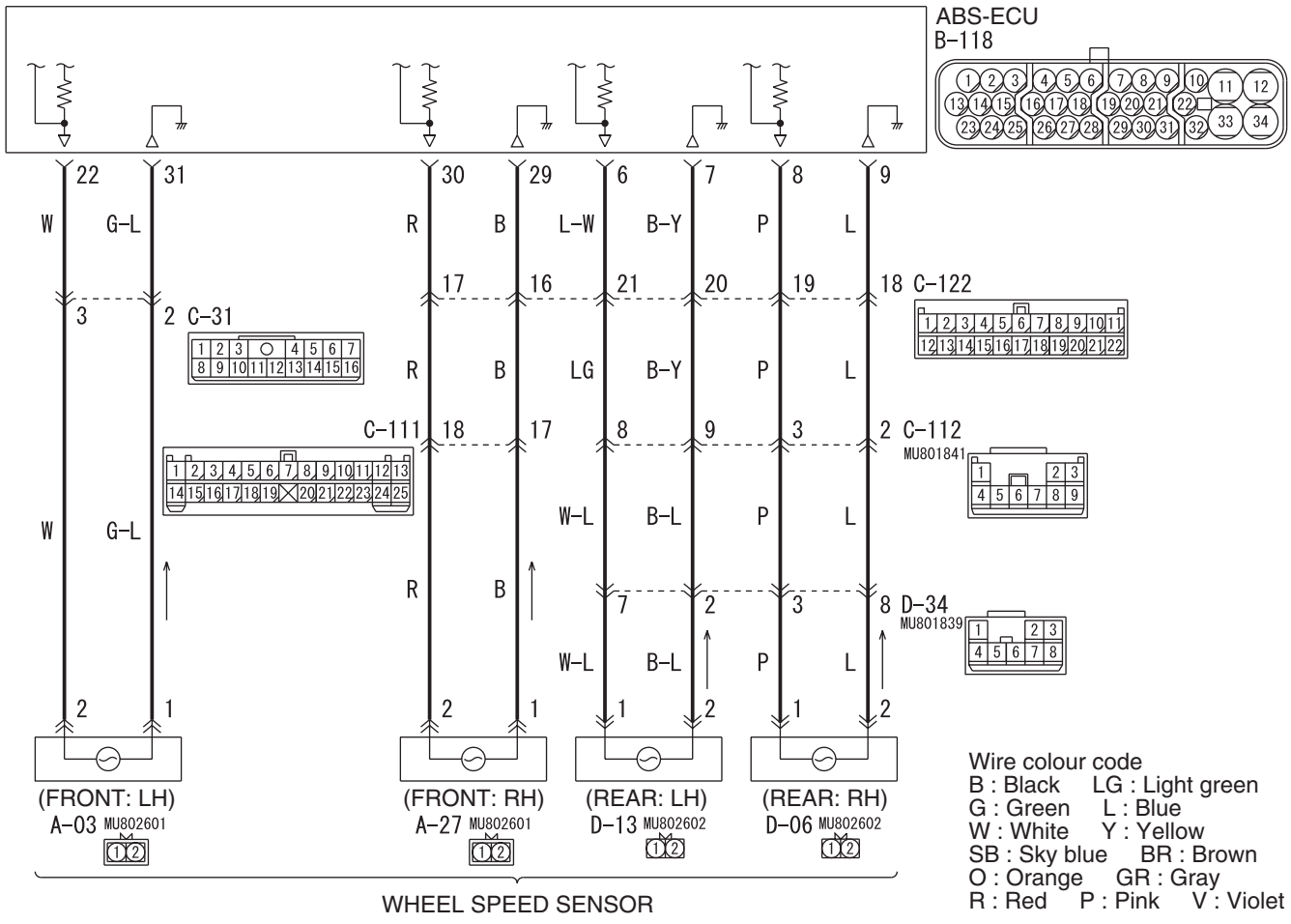
Check again if the diagnosis code is set.
(1) Turn the ignition switch to the "ON" position.
(2) Erase the diagnosis code.
(3) Turn the ignition switch to the "LOCK" (OFF) position.
(4) Turn the ignition switch to the "ON" position.
(5) Check if the diagnosis code is set.
(6) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Does diagnosis code No.16 reset?
YES : Start over at Step 1.
NO : The procedure is complete.

DIAGNOSTIC TROUBLE CODE PROCEDURES <R.H. drive vehicle>

Code No.11: Front Right Wheel Speed Sensor (Open Circuit or Short Circuit)
Code No.12: Front Left Wheel Speed Sensor (Open Circuit or Short Circuit)
Code No.13: Rear Right Wheel Speed Sensor (Open Circuit or Short Circuit)
Code No.14: Rear Left Wheel Speed Sensor (Open Circuit or Short Circuit)
Code No.21: Front Right Wheel Speed Sensor System
Code No.22: Front Left Wheel Speed Sensor System
Code No.23: Rear Right Wheel Speed Sensor System
Code No.24: Rear Left Wheel Speed Sensor System

Wheel Speed Sensor Circuit

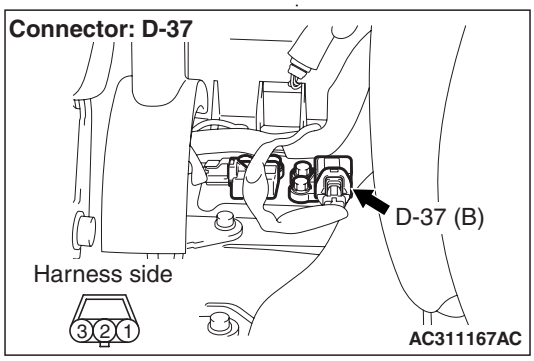


W4J35E012A

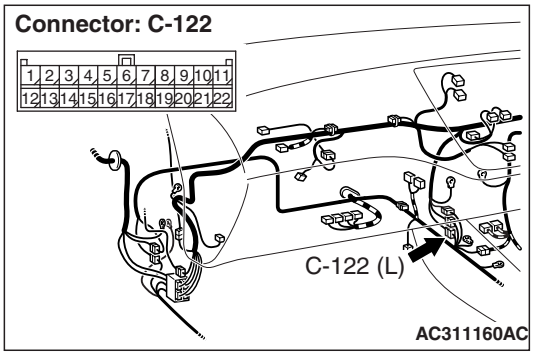
OPERATION

- A toothed wheel speed rotor generates a voltage pulse as it moves across the pickup field of each wheel speed sensor.
- The amount of voltage generated at each wheel is determined by the clearance between the wheel speed rotor teeth and the wheel speed sensor, and by the speed of rotation.
- The wheel speed sensors transmit the frequency of the voltage pulses and the amount of voltage generated by each pulse to the ABS-ECU.

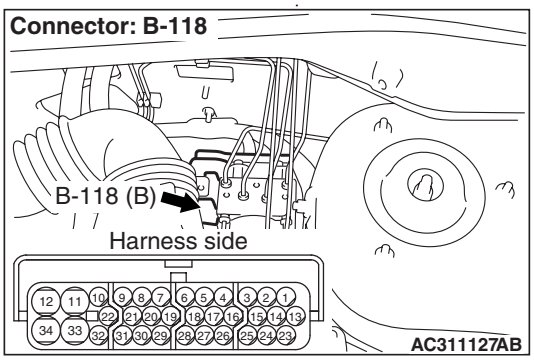
STEP 9. Check the following connectors.



Lateral G-sensor connector D-37



Intermediate connector C-122



ABS-ECU connector B-118

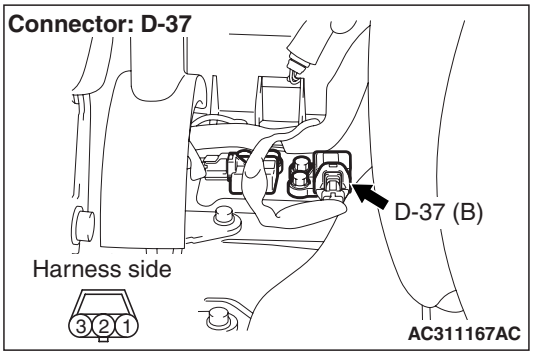
Check the connectors for loose, corroded or damaged terminals, or terminals pushed back in the connector.

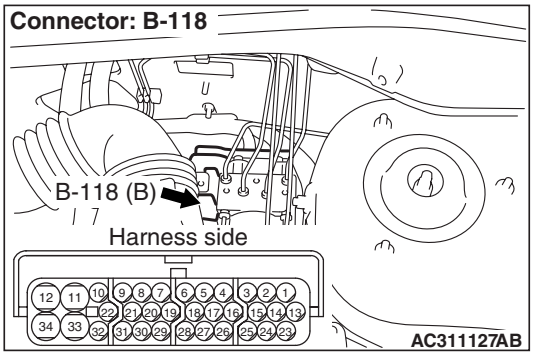
Q: Are the connectors and terminals in good condition?

YES : Go to Step 10.

NO : Repair it and then go to Step 11.

STEP 10. Check the following harness wire.





The wire between lateral G-sensor connector D-37 (terminal 2) and ABS-ECU connector B-118 (terminal 14)

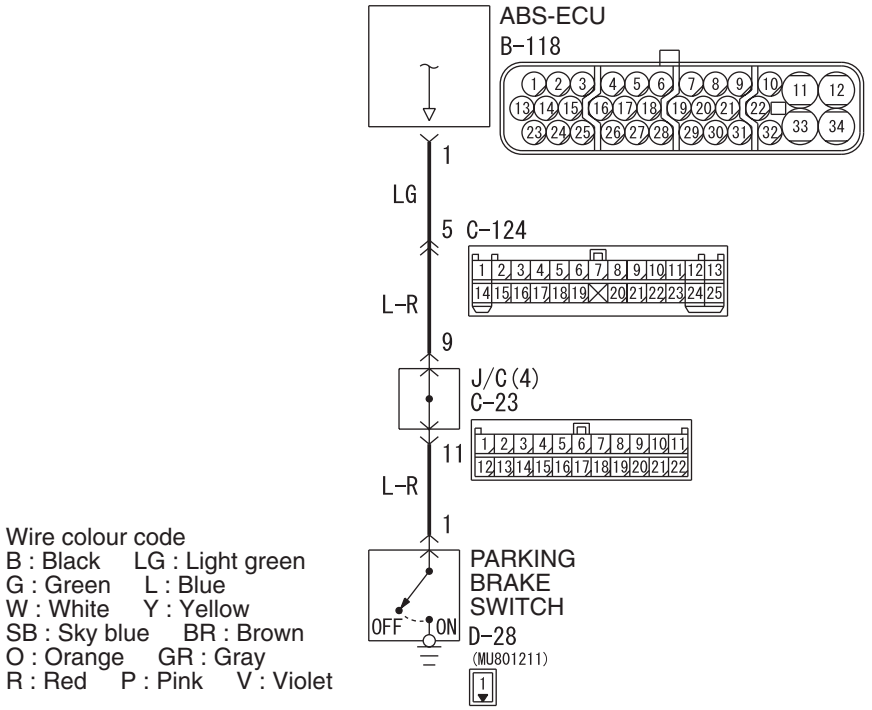
Q: Is the harness wire damaged?

YES : Repair or replace it and then go to Step 11.

NO : Replace the brake modulator hydraulic unit (integrated with ABS-ECU) (Refer to P.35B-143). Then go to Step 11.

INSPECTION PROCEDURE 5: In the Inspection with the M.U.T.-II/III Data List, the Parking Brake Switch is not Turned ON or Turned OFF.

Parking Brake Switch Circuit



W4J35E025A

OPERATION

The ABS-ECU monitors the parking brake switch to optimise the ABS control.

COMMENT ON TROUBLE SYMPTOM

The cause may be an open or a short circuit between the parking brake switch and the ABS-ECU.

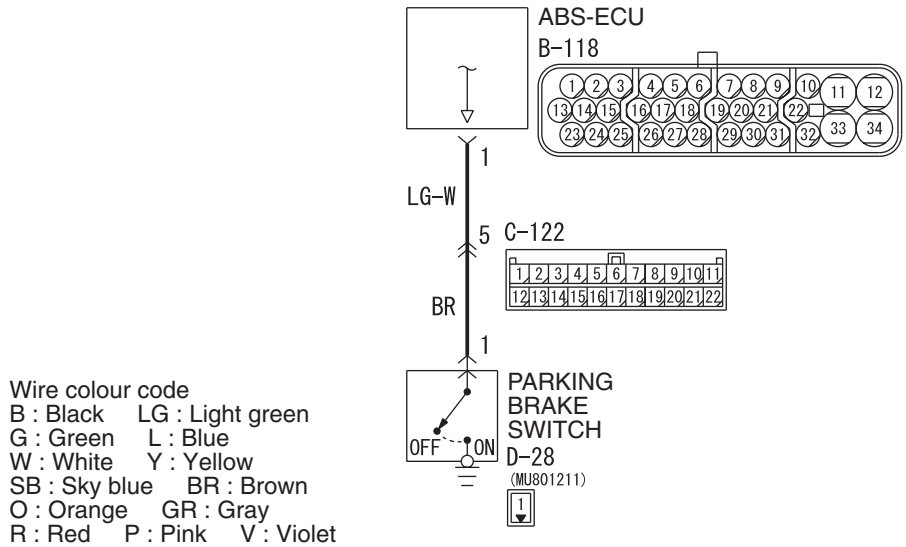
PROBABLE CAUSES

The most likely causes for this case are:

- Damaged wiring harness or connector
- Malfunction of the parking brake switch
- Malfunction of the brake modulator hydraulic unit (integrated with ABS-ECU)

INSPECTION PROCEDURE 5: In the Inspection with the M.U.T.-II/III Data List, the Parking Brake Switch is not Turned ON or Turned OFF.

Parking Brake Switch Circuit



OPERATION

The ABS-ECU monitors the parking brake switch to optimise the ABS control.

COMMENT ON TROUBLE SYMPTOM

The cause may be an open or a short circuit between the parking brake switch and the ABS-ECU.

PROBABLE CAUSES

The most likely causes for this case are:

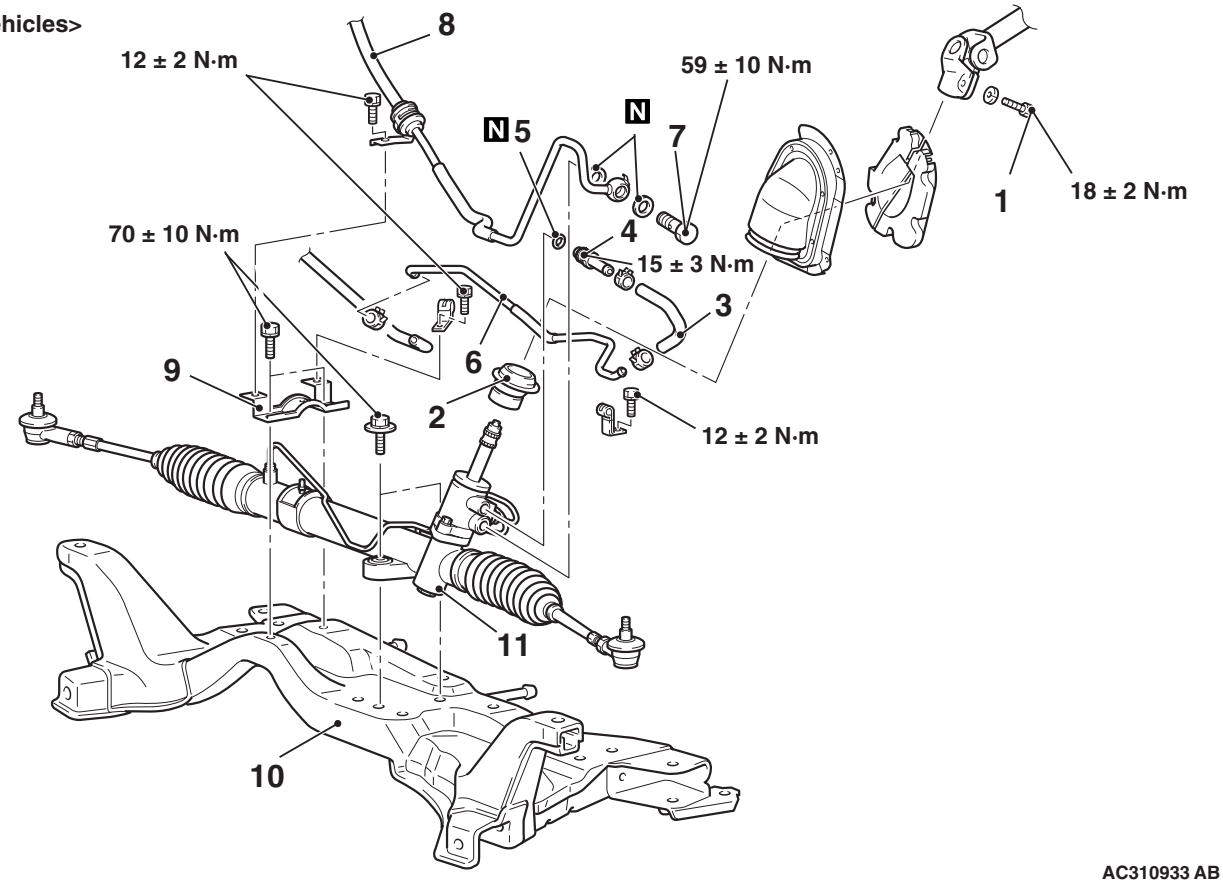
- Damaged wiring harness or connector
- Malfunction of the parking brake switch
- Malfunction of the brake modulator hydraulic unit (integrated with ABS-ECU)

GROUP 36

PARKING BRAKES

CONTENTS

<LH drive vehicles>



AC310933 AB

Removal steps

1. Steering shaft assembly and gear box connecting bolt.
>>**A**<< 2. Joint cover grommet
3. Return hose
4. Return tube
5. O-ring

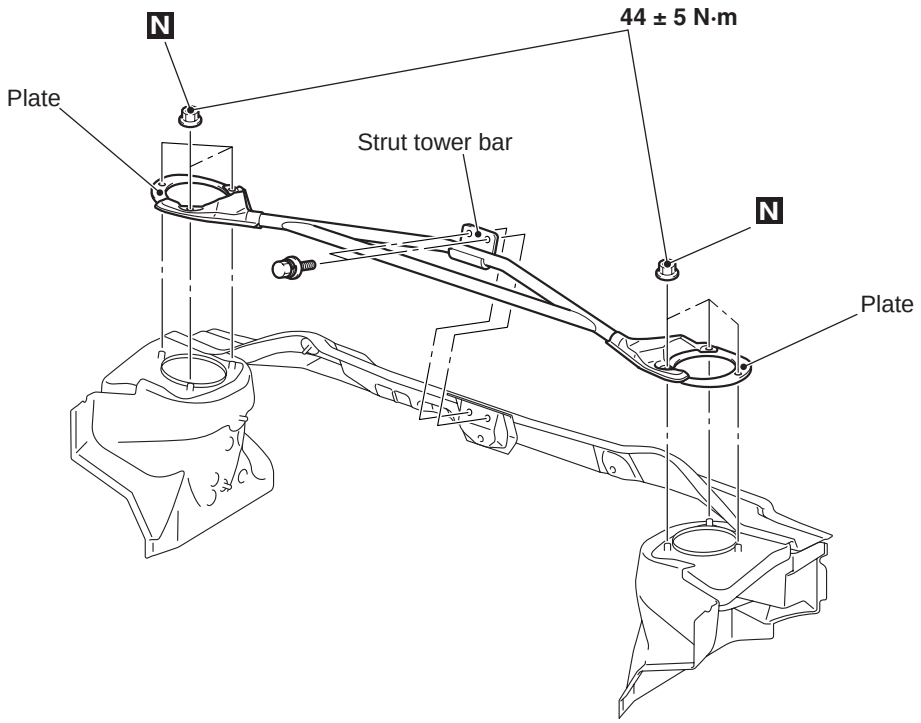
Removal steps (Continued)

6. Return tube
7. Eye bolt
8. Pressure hose assembly
9. Clamp
10. Front axle No.1 crossmember
11. Steering gear and linkage

STRUT TOWER BAR

REMOVAL AND INSTALLATION

M1421005600132



AC211421AB

WINDOW GLASS

ADHESIVE

M1422000500111

Item	Specified adhesive
Windshield	3M ATD Part No.8609 Super Fast Urethane Auto Glass Sealant or equivalent 3M ATD Part No.8608 Super Fast Urethane Primer or equivalent
Rear window glass	

Waterproof film removal steps
- Rear door trim (Refer to GROUP 52A, Door trim P.52A-12).

1. Waterproof film

Door inner opening weatherstrip removal steps
- Scuff plate, centre pillar lower trim and cowl side trim (Refer to GROUP 52A, Trims P.52A-10).

2. Door inner opening weatherstrip (Body side)

Door outer opening weatherstrip removal steps
- Rear door check mounting bolt (Door side) (Refer to P.42-26).

3. Retainer weatherstrip

<<A>> >>A<<

Door outer opening weatherstrip removal steps (Continued)

4. Door outer opening weatherstrip

Door window glass runchannel removal

5. Door window glass runchannel

Door beltline inner weatherstrip removal steps
- Rear door trim (Refer to GROUP 52A, Door trim P.52A-12).
- Centre sash upper (Refer to P.42-27).

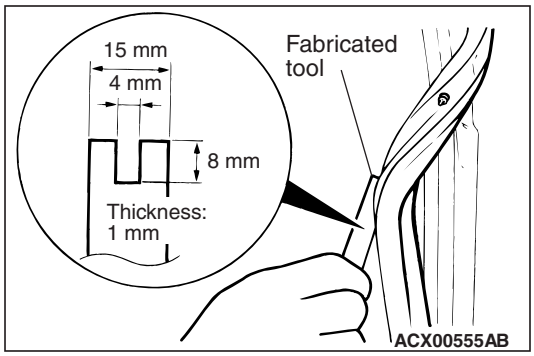
6. Door beltline inner weatherstrip

Door beltline moulding removal steps
- Door window glass (Refer to P.42-27).
- Stationary glass (Refer to P.42-27).

7. Door beltline moulding

REMOVAL SERVICE POINT

<<A>> DOOR OUTER OPENING WEATHERSTRIP REMOVAL



Make a fabricated tool as shown in the illustration to remove the door weatherstrip.

INSTALLATION SERVICE POINT

>>A<< DOOR OUTER OPENING WEATHERSTRIP INSTALLATION

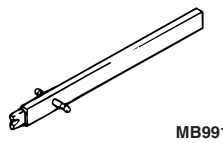
The clip colour identifies the left and right weatherstrips so be sure to use the colours so as to install correctly.

Applicable side	Identification colour
Right door	Pink
Left door	Natural (White)

TRUNK LID

SPECIAL TOOL

M1421000600245

Tool	Number	Name	Use
 MB991244	MB991244	Torsion bar remover and installer	Removal and installation of trunk lid torsion bar

ON-VEHICLE SERVICE

TRUNK LID ADJUSTMENT

M1421001000042

1. If the clearance around the trunk lid panel assembly is not uniform and locking and unlocking of the trunk lid is difficult, make adjustments to the trunk lid bumpers (refer to P.42-36) and trunk lid hinges (refer to P.42-36).
2. If the clearance around the trunk lid panel assembly is uniform, but locking and unlocking of the trunk lid is difficult, make adjustments to the trunk lid bumpers (refer to P.42-36) and trunk lid striker (refer to P.42-36).

REMOVAL SERVICE POINT

<<A>> DOOR SASH TAPES REMOVAL

⚠ CAUTION

Pay attention to keep from getting burned by hot door panel or tapes.

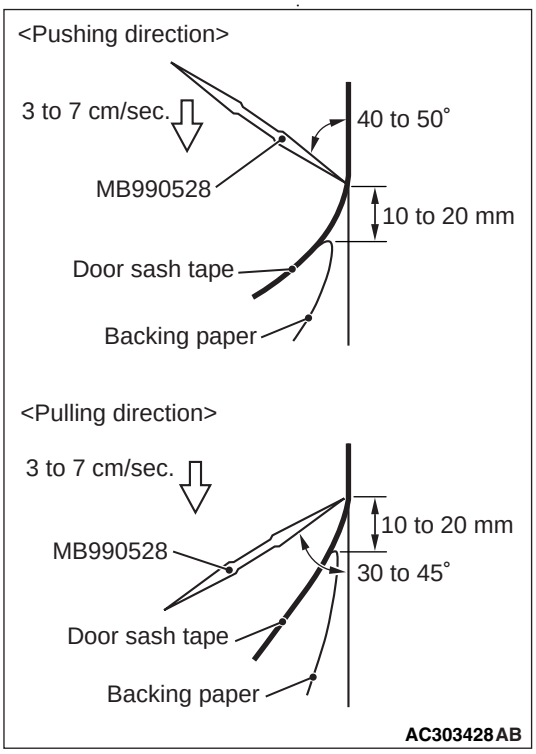
1. Use a hair drier to warm the tape.
2. Peel the tip of the tape with your finger, and then peel off the tape parallel to the application surface.

INSTALLATION SERVICE POINT

>>A<< DOOR SASH TAPES INSTALLATION

⚠ CAUTION

- **The ambient temperature should be 20 to 30°C. Ensure that the working area is clean. Ideally, the tape application should be done at ambient temperature of 25°C.**
- **If ambient temperature is less than 15°C, heat the tape and application surface to a temperature of 20 to 30°C. If ambient temperature is 35°C or higher, cool down them. The adhesive property of the tape is deteriorated at low temperature, so the tape may come adrift easily. Meanwhile, it gets softened at hot temperature.**
- **When beginning to apply the tape, pay particular attention. If the end of the tape cannot be applied to the specified position with an accuracy of less than 1 mm, it may cause the poor appearance or adhesion.**



Use the special tool stripe tape spatula (MB990528) to apply the tape with a steady pace and pressure. If you do not apply the tape with a steady pace or pressure, or abort the application, a shallow groove (lateral groove called as "Shock line") may be present on the tape surface. Meanwhile, if you apply it too quickly, air bubbles may be formed under the tape.

1. Wrap a soft cloth (synthetic fibre) around the tip of the special tool.
2. Use isopropyl alcohol to degrease the tape application surface.
3. Wipe away dirt from the tape.

GROUP 52

INTERIOR AND SUPPLEMENTAL RESTRAINT SYSTEM(SRS)

CONTENTS

GROUP 52B

SUPPLEMENTAL RESTRAINT SYSTEM (SRS)

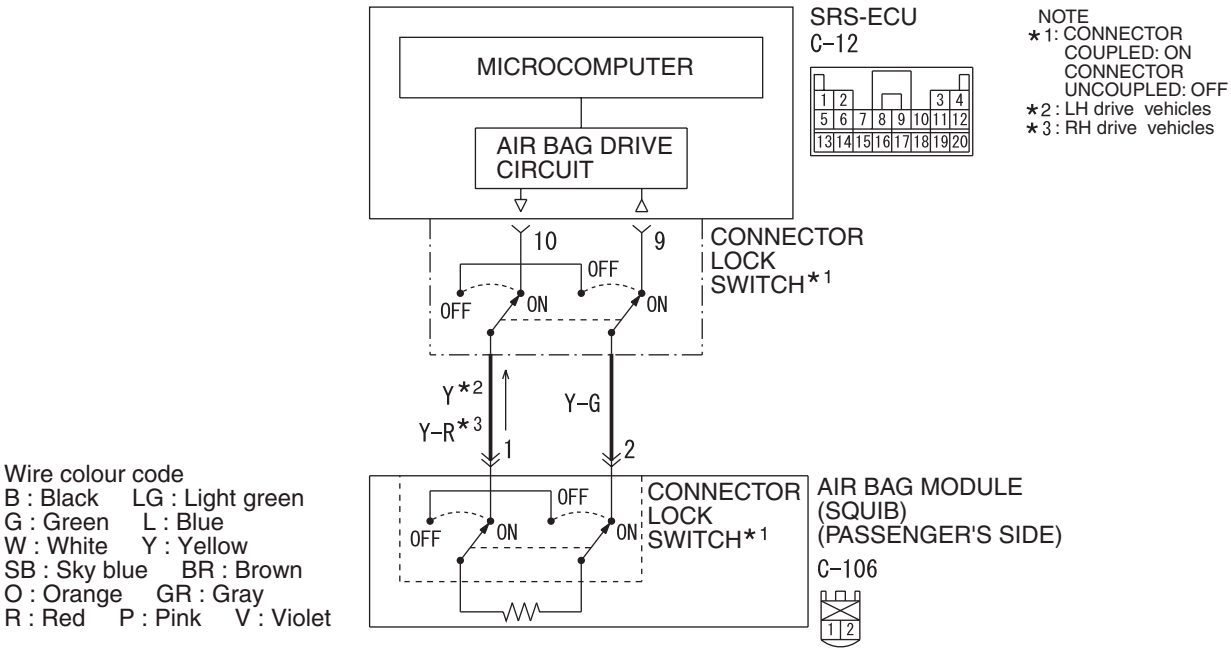
CONTENTS

⚠ *WARNING*

- ***Carefully read and observe the information in the SERVICE PRECAUTIONS prior to any service.***
- ***For information concerning troubleshooting or maintenance, always observe the procedures in the Troubleshooting section.***
- ***If any SRS components are removed or replaced in connection with any service procedures, be sure to follow the procedures in the INDIVIDUAL COMPONENT SERVICE section for the compartments involved.***
- ***If you have any questions about the SRS, please contact your local distributor.***

Code No.25: Passenger's (front) air bag module (squib) system (open-circuited in the squib circuit)

Passenger's (Front) Air Bag Module (Squib) Circuit



W6J52E001A

OPERATION

- The SRS-ECU judges how severe a collision is by detecting signals from the front impact sensors and the front air bag analogue G-sensor. If the impact is over a predetermined level, the SRS-ECU outputs an ignition signal. At this time, if the front air bag safing G-sensor is on, the SRS air bag will inflate.
- The ignition signal is input to the air bag module to inflate the air bag.

DIAGNOSIS CODE SET CONDITIONS

This diagnosis code is set if passenger's (front) air bag squib wire(s) are open-circuited. However, if no diagnosis code resets, the SRS warning lamp will be switched off (diagnosis code will be retained).

PROBABLE CAUSES

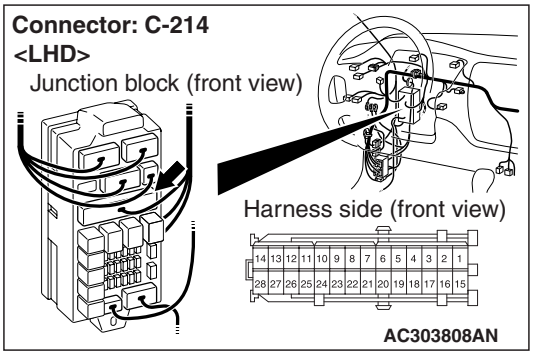
- Open circuit in the passenger's (front) air bag module (squib) circuit
- Improper connector contact
- Malfunction of the SRS-ECU

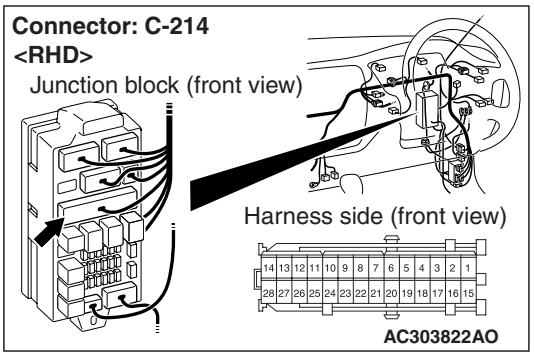
STEP 4. Check a burned-out fuse.

(1) Replace the fuse.
(2) Turn the ignition switch to the "ON" position, wait for at least one minute and then turn the ignition switch to the "LOCK" (OFF) position.
(3) Check the fuse.

Q: Is the fuse in good condition?
YES : This diagnosis is complete.
NO : Go to Step 5.

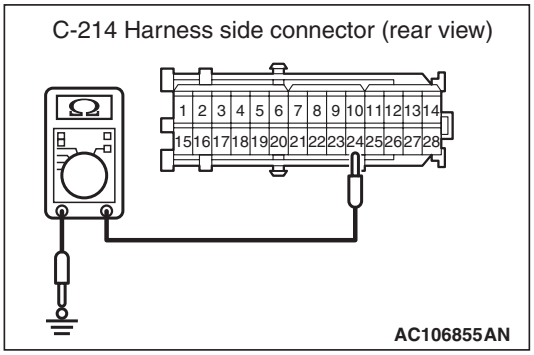
STEP 5. Resistance measurement at the junction block connector C-214





(1) Disconnect junction block connector C-214, and measure at the wiring harness side.

⚠ CAUTION



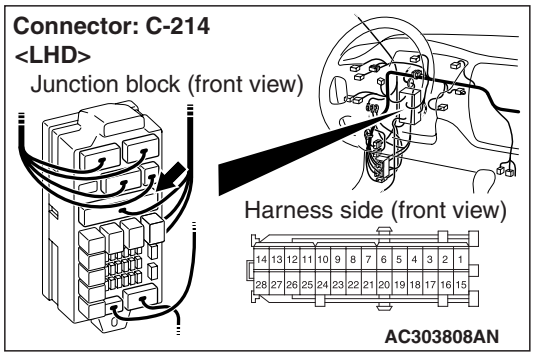
Do not insert a test probe into the terminal from its front side directly as the connector contact pressure may be weakened.

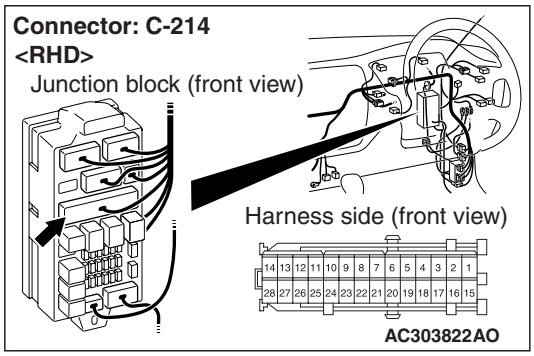
(2) Resistance measurement between terminal 24 and body earth.

OK: Open circuit

Q: Is the check result normal?
YES : Go to Step 6.
NO : Go to Step 7.

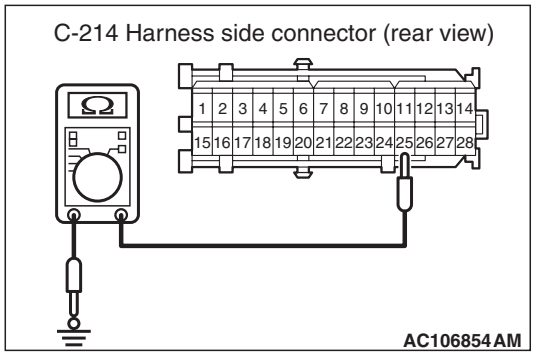
STEP 6. Resistance measurement at junction block connector C-214





(1) Disconnect junction block connector C-214, and measure at the wiring harness side.

⚠ CAUTION



Do not insert a test probe into the terminal from its front side directly as the connector contact pressure may be weakened.

(2) Resistance measurement between terminal 25 and body earth.

OK: Open circuit

(3) Resistance measurement between C-12 harness side connector terminals 9, 10 and body earth.

OK: Open circuit

Q: Is the check result normal?

YES : Go to Step 3.

NO : Repair the harness wires between SRS-ECU connector C-12 (terminal No.9 and 10) and passenger's (front) air bag module connector C-106 (terminal No.1 and 2).

STEP 3. Check whether the diagnosis code is reset.

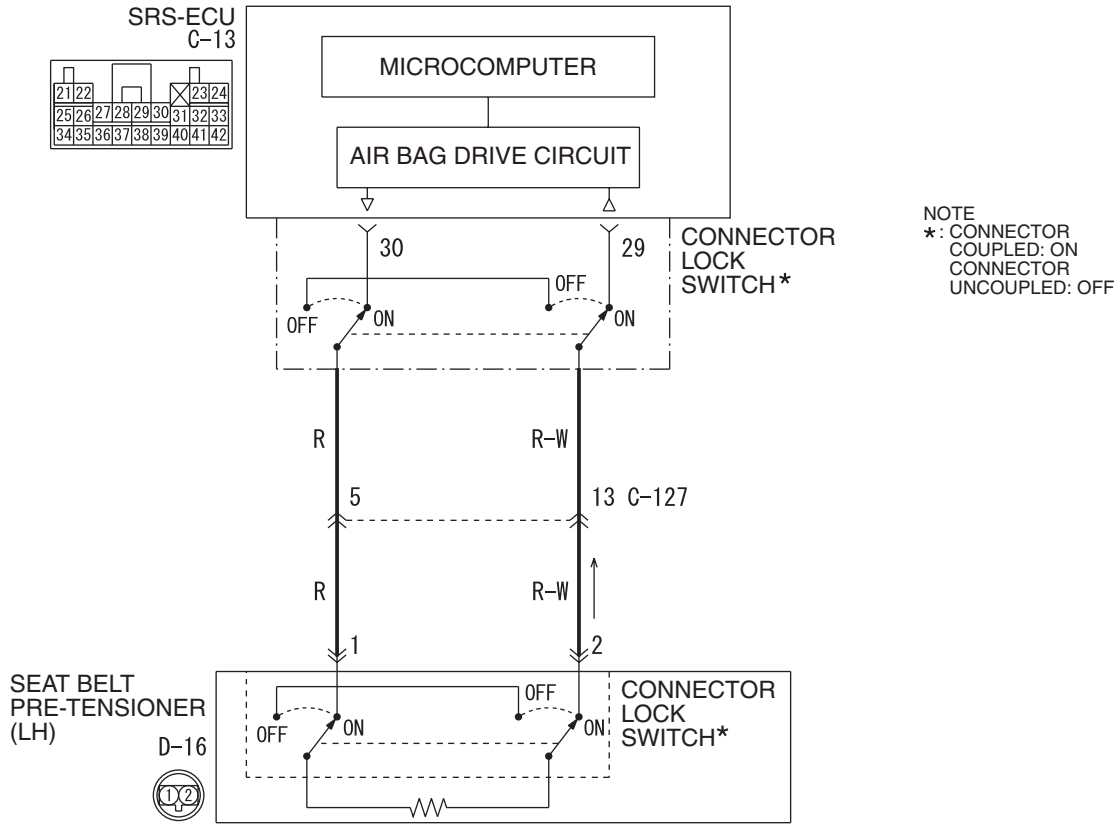
Q: Is diagnosis code 65 set?

YES : Replace the SRS-ECU (Refer to P.52B-109).

NO : An intermittent malfunction is suspected (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points P.00-5).

Code No.66: Driver's seat belt pre-tensioner (squib) system (short-circuited to the power supply)

Driver's Seat Belt Pre-Tensioner (Squib) (LHD)



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

W4J52E021A

INDIVIDUAL COMPONENT SERVICE

M1524002900431

⚠ ***WARNING***

- ***If heat damage may occur during paint work, remove the SRS-ECU, the driver's and passenger's (front) air bag modules, the clock spring, front impact sensors and the seat belt with pre-tensioner.***
  - ***SRS-ECU, driver's and passenger's (front) air bag modules, clock spring and front impact sensors: 93°C or more***
  - ***Seat belt with pre-tensioner: 90°C or more***
- ***If the SRS components are removed for the purpose of check, sheet metal repair, painting, etc., they should be stored in a clean, dry place until they are reinstalled.***

If the SRS components are to be removed or replaced as a result of maintenance, troubleshooting etc., follow the service procedures that follow. (Front impact sensor; refer to P.52B-107, SRS-ECU; refer to P.52B-109, Driver's and passenger's (front) air bag modules and clock spring; refer to P.52B-110, Seat belt with pre-tensioner; refer to P.52B-117).

GROUP 54A

CHASSIS ELECTRICAL

CONTENTS

Continued on next page

⚠ ***WARNING***
Battery posts, terminals and related accessories contain lead and lead compounds. WASH HANDS AFTER HANDLING.

WARNINGS REGARDING SERVICING OF SUPPLEMENTAL RESTRAINT SYSTEM (SRS) EQUIPPED VEHICLES

⚠ ***WARNING***
- ***Improper service or maintenance of any component of the SRS, or any SRS-related component, can lead to personal injury or death to service personnel (from inadvertent firing of the air bag) or to the driver and passenger (from rendering the SRS inoperative).***
- ***Service or maintenance of any SRS component or SRS-related component must be performed only at an authorized MITSUBISHI dealer.***
- ***MITSUBISHI dealer personnel must thoroughly review this manual, and especially its GROUP 52B - Supplemental Restraint System (SRS) before beginning any service or maintenance of any component of the SRS or any SRS-related component.***

NOTE
The SRS includes the following components: SRS air bag control unit, SRS warning light, front impact sensors, air bag module, clock spring, and interconnecting wiring. Other SRS-related components (that may have to be removed/installed in connection with SRS service or maintenance) are indicated in the table of contents by an asterisk (*).

8. If the key ID was registered successfully, "Progress" indication will turn active (gray). Then the registration process completes. If the key ID failed to be registered, "In-Complete" indication will turn active (gray).
9. The number of keys currently registered will be displayed. To register an additional key, replace the ignition key with the next key to be registered within five seconds. Key ID registration screen will be displayed, then register another key.

   NOTE: A maximum of eight different keys can be registered.
10. This completes the registration operation. Turn the ignition switch "LOCK" (OFF) and leave it off for approximately ten seconds.
11. Check that the engine can be started with each of the ignition keys.
12. Check that the immobilizer system diagnosis code and MPI system diagnosis code did not set.
13. If not diagnosis code is shown, terminate the M.U.T.-III.
14. Turn the ignition switch to "LOCK" (OFF) position.
15. Disconnect M.U.T.-III.

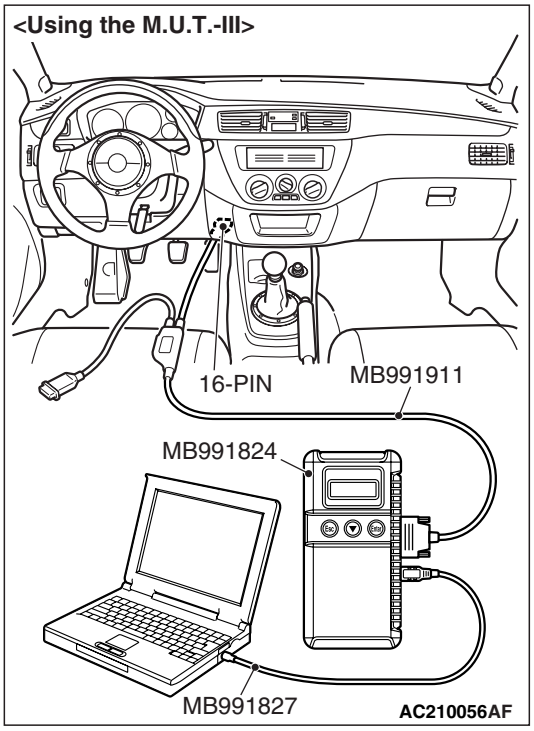
Registration of additional keys with the M.U.T.-III

Additional key(s) can be registered with the M.U.T.-III while keeping all existing key data.

⚠ CAUTION

To prevent damage to M.U.T.-III, always turn the ignition switch to "LOCK" (OFF) position before connecting or disconnecting M.U.T.-III.

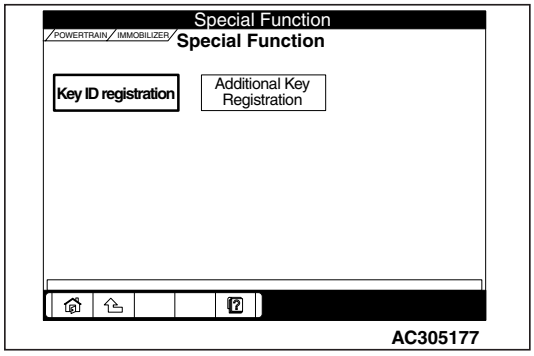
NOTE: To register additional keys with the M.U.T.-III, no registered keys must be lost.



1. Connect M.U.T.-III to the 16-pin diagnosis connector.
2. Turn the ignition switch to "ON" position.

NOTE: Before registration, check that no diagnosis code is set. If a diagnosis code is set, resolve the problem beforehand.

3. Carry out steps 3 to 6 of the sub-section "Registration with M.U.T.-III."



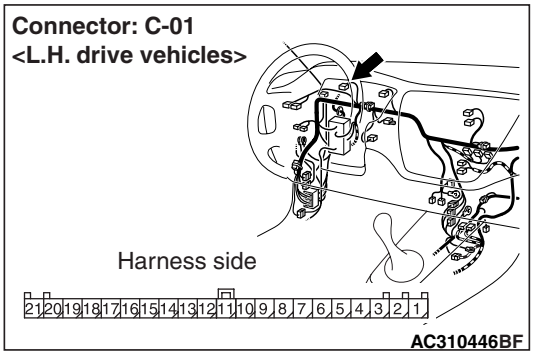
4. Choose "Transponder ID addition" from "Special Function" screen.

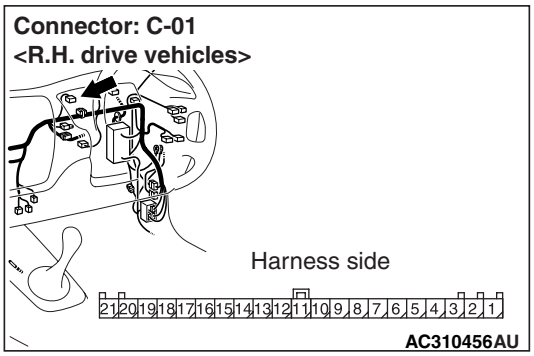
(3) Measure the resistance between terminal 2 and earth.

OK: 2 ohms or less

Q: Is the check result normal?
YES : Repair or replace the combination meter. Check to see that all meters operate.
NO : Go to Step 7.

STEP 7. Check the wiring harness between combination meter connector C-01 (terminals 1 and 2) and earth.





Q: Are the wiring harness between combination meter connector C-01 (terminals 1 and 2) and earth in good condition?
YES : There is no action to be taken.
NO : Repair the wiring harness. Check to see that all meters operate.

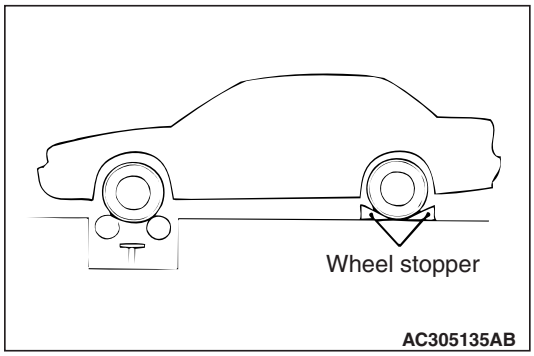
ON-VEHICLE SERVICE

SPEEDOMETER CHECK

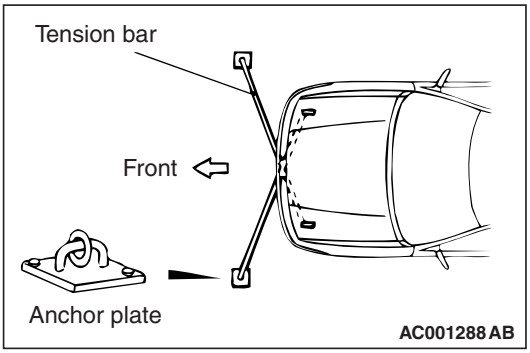
M1543000900531

1. Adjust the pressure of tyres to the specified level. (Refer to GROUP 31, On-vehicle Service P.31-7).

⚠ CAUTION
Do not operate the clutch suddenly. Do not increase/decrease speed rapidly while testing.



2. Set the vehicle onto a speedometer tester and use wheel chocks to hold the rear wheels.
3. To prevent the front wheel from moving from side to side, attach tension bars to the tie-down hook, and secure both ends to anchor plates.



4. To prevent the vehicle from moving, attach a chain or wire to the rear retraction hook, and make sure the end of the chain or wire is secured.
5. Check if the speedometer indicator range is within the standard values.

Standard value:

Standard indicator km/h	Allowance range km/h
20	20 – 24
40	40 – 44
80	80 – 85
120	121 – 127
160	162 – 169
200	203 – 211

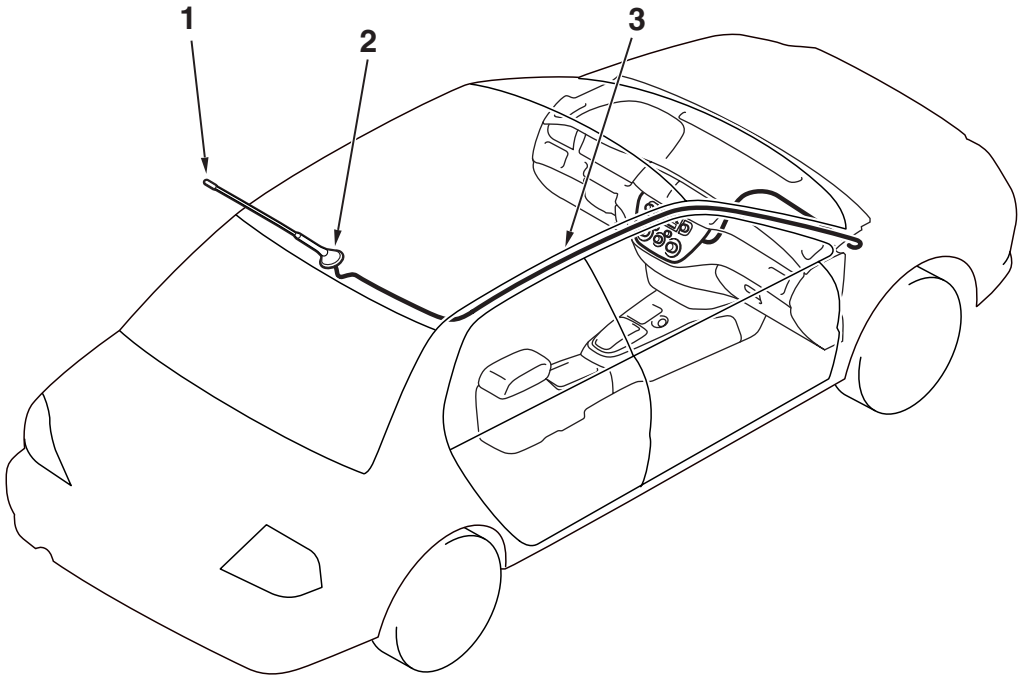
6. If not to the standard value, inspect for proper tyre size. If not correct, replace the tyres with original size tyres and retest. If correct, replace the speedometer. If still not to standard value, replace the vehicle speed sensor.

ANTENNA

REMOVAL AND INSTALLATION

M1544002900648

Pre-removal and Post-installation Operation
- Front pillar trim, Rear pillar trim, Centre pillar trim lower, Centre pillar trim upper (Refer to GROUP 52A, Trims P.52A-10).
- Headlining Removal and Installation (Refer to GROUP 52A, Headlining P.52A-17).



AC005156AD

1. Roof antenna pole

Antenna feeder cable removal steps
2. Roof antenna base
- Instrument panel assembly (Refer to GROUP 52A, Instrument panel assembly P.52A-2).
3. Antenna feeder cable

REAR WINDOW DEFOGGER

GENERAL INFORMATION

M1543000100319

Rear Defogger operation

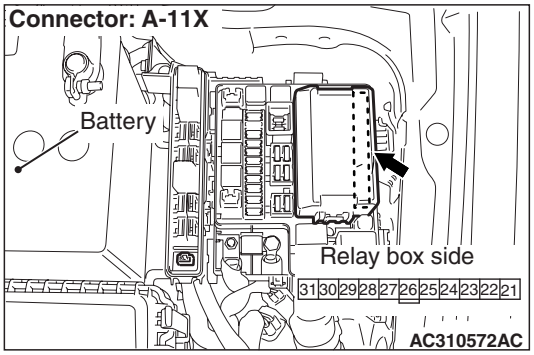
The defogger relay turns ON if the defogger switch built-in the A/C-ECU is turned ON when the ignition switch is in the "ON" position. When the defogger relay turns ON, power is supplied to the defogger and the defogger is activated. The defogger comes with a timer function that causes the defogger switch to automatically turn OFF in about 11 minutes after the defogger switch is turned ON.

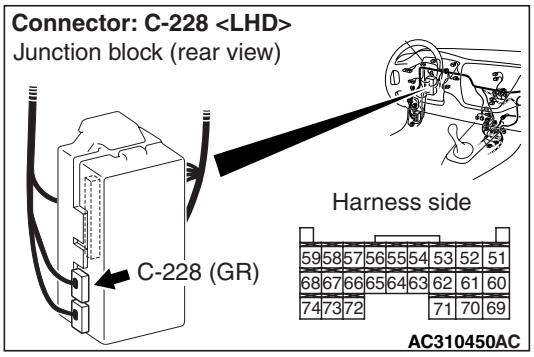
TROUBLESHOOTING

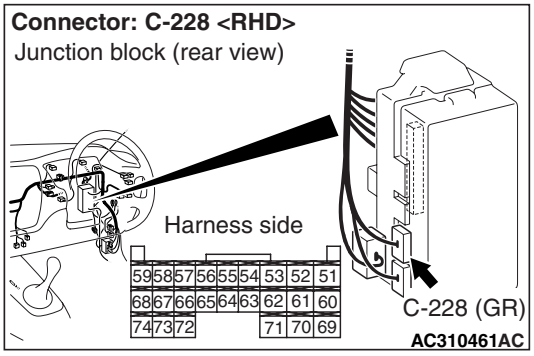
M1543000701552

The rear window defogger is controlled by the A/C-ECU. For troubleshooting, refer to GROUP 55-Troubleshooting P.55-29.

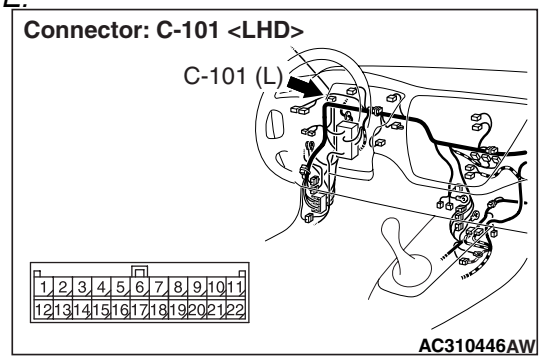
Step 9. Check the wiring harness between C-228 ETACS-ECU connector terminal No.59 and A-11X front-ECU connector terminal No.22.

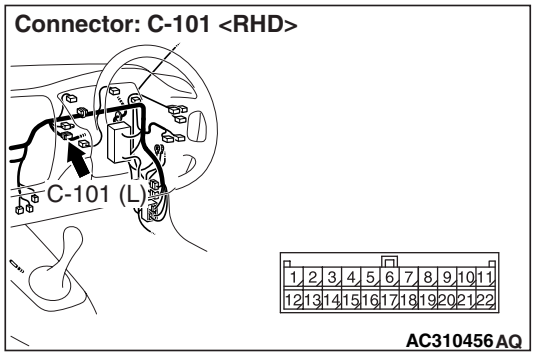


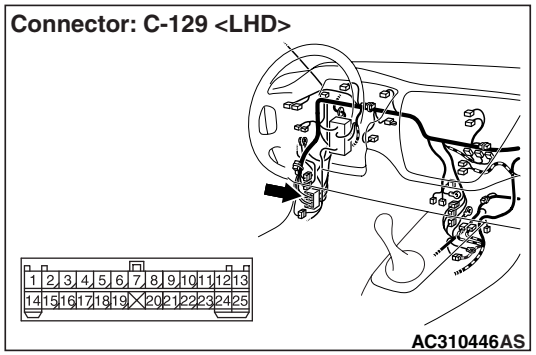


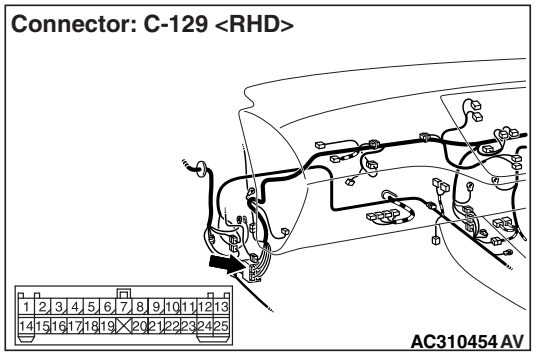


NOTE:









Prior to the wiring harness inspection, check joint connector C-101 and intermediate connector C-129, and repair if necessary.

- Check the communication lines for open circuit.

Q: Is the check result normal?

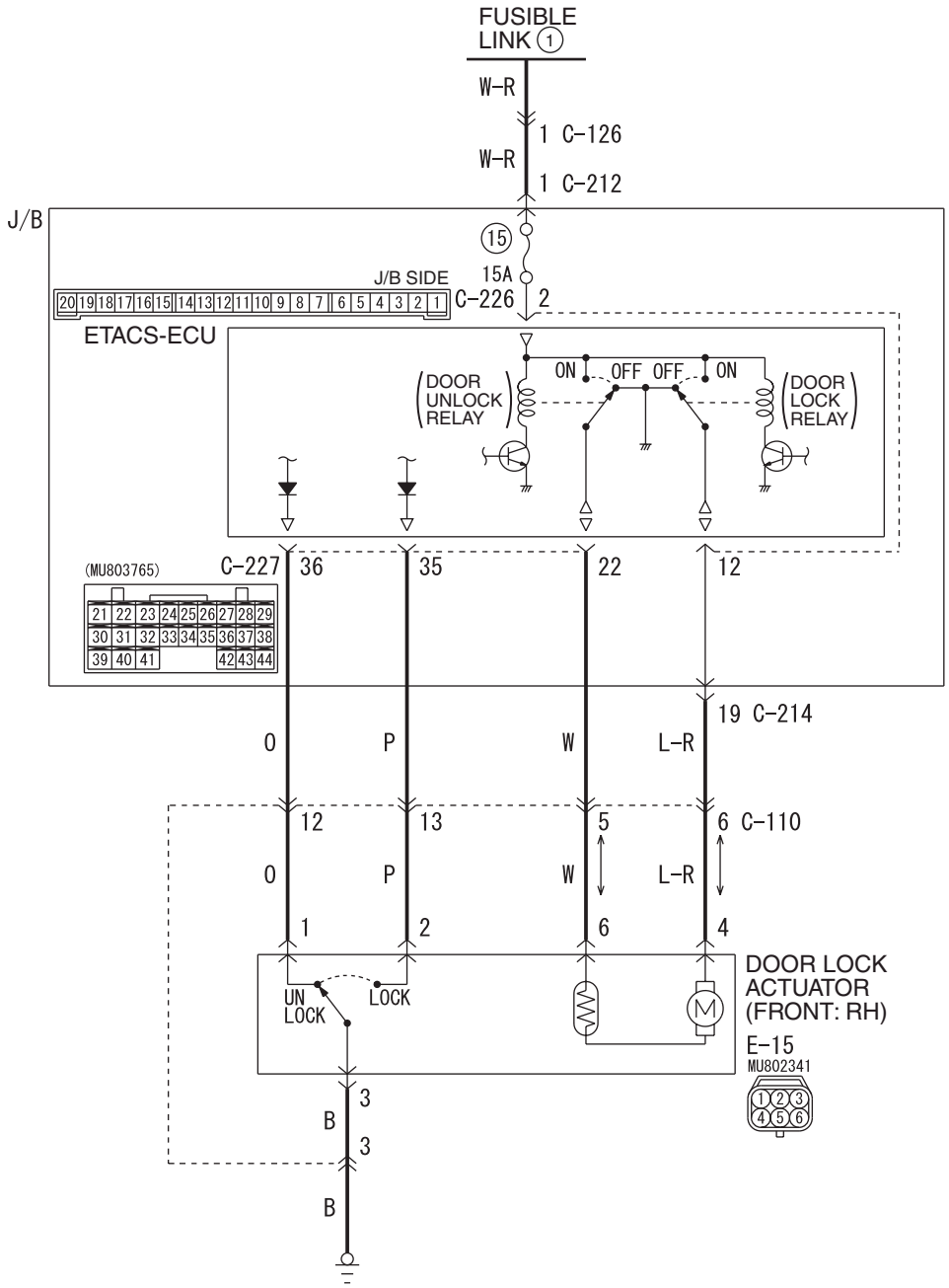
YES : Go to Step 10.

NO : Repair the wiring harness.

INSPECTION PROCEDURE C-1: Central door locking system does not work. <RH drive vehicles>

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

Central Door Lock Power Supply Circuit <RHD>



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

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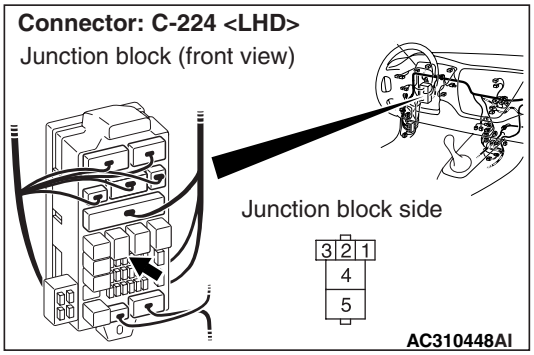
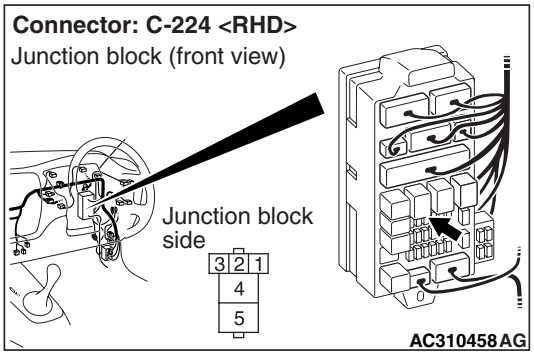
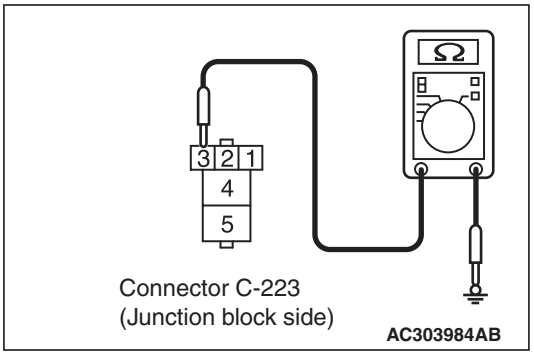
Step 8. Resistance measurement at C-224 power window relay connector





(1) Disconnect the connector, and measure at the junction block side.

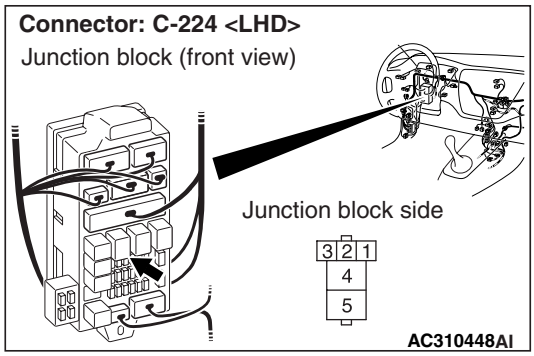


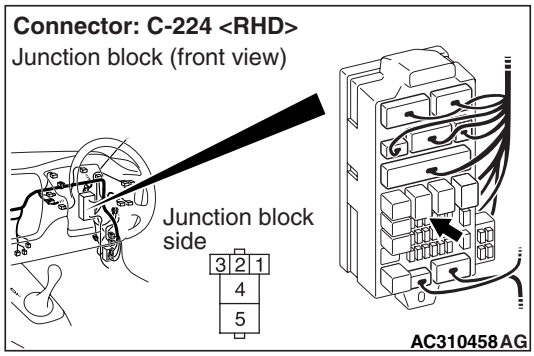
(2) Resistance between terminal 3 and body earth

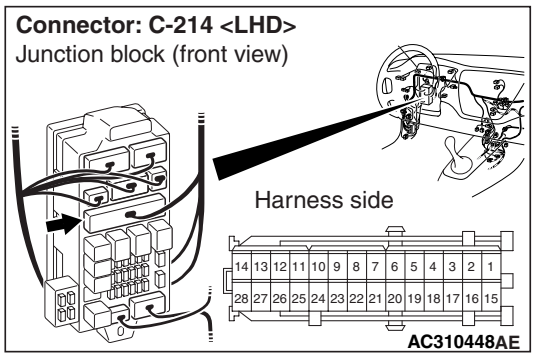
OK: 2Ω or less

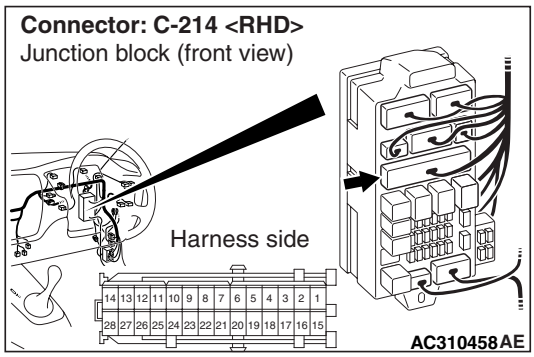
Q: Is the check result normal?
YES : Go to Step 10.
NO : Go to Step 9.

Step 9. Check the wiring harness between C-224 power window relay connector terminal No.3 and body earth.







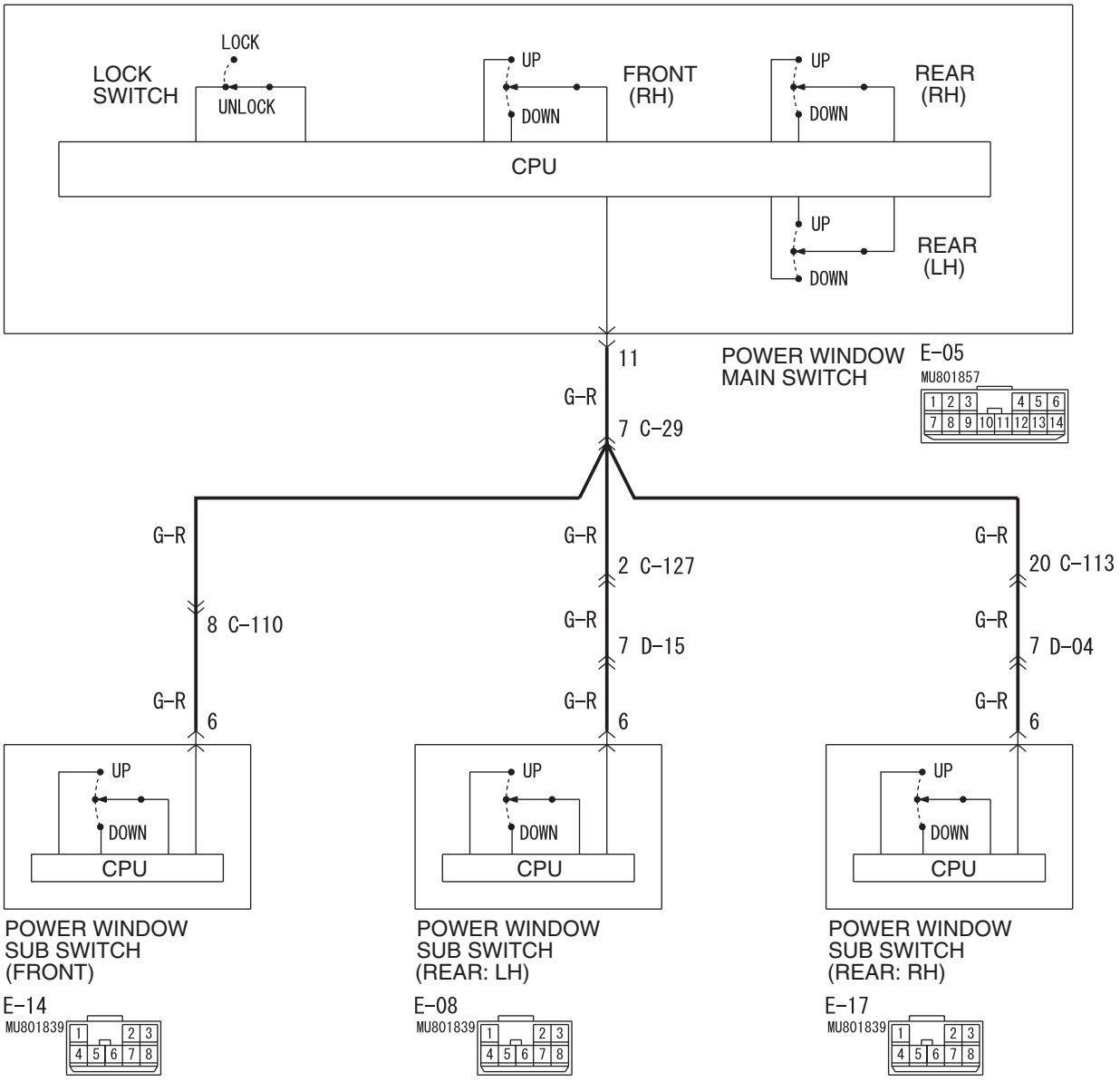


NOTE: Prior to the wiring harness inspection, check junction block connector C-214, and repair if necessary.

- Check the earth wires for open circuit.

INSPECTION PROCEDURE D-4: Front and/or rear passenger's power window(s) do not work by means of the power window main switch.

Power Window Circuit <LHD>



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

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Q: Is the check result normal?
All the signals are received normally. : Go to Step 3.
The key reminder switch signal is not received. : Refer to inspection procedure L-8 "The key reminder switch signal is not received P.54B-257."
The hazard warning lamp switch signal is not received. : Refer to inspection procedure L-9 "The hazard warning lamp switch signal is not received P.54B-261."
The keyless entry transmitter switch signal is not received. : Refer to inspection procedure L-13 "Each switch signal of the keyless entry transmitter is not received P.54B-282."

Step 3. Retest the system.
Check that the encrypted code can be registered.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the ETACS-ECU.

INSPECTION PROCEDURE E-4: The timer lock function does not work after the doors have been unlocked by the keyless entry system.

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

COMMENT ON TROUBLE SYMPTOM
If the keyless entry timer lock does not work normally, the input signal circuit(s) to the keyless entry transmitter or the ETACS-ECU may be defective.

POSSIBLE CAUSES
- Malfunction of the keyless entry transmitter
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSIS PROCEDURE

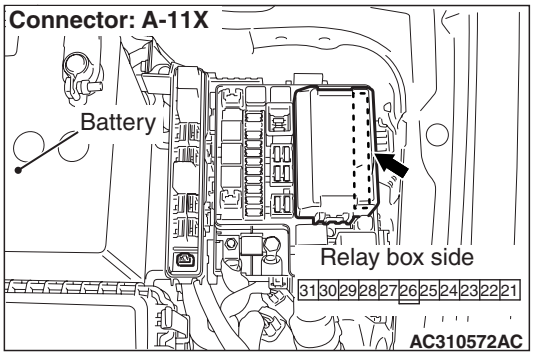
Step 1. Check the operation of the keyless entry system.
Check that the keyless entry system works normally.

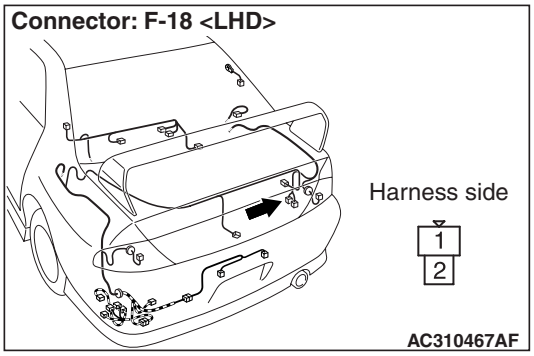
Q: Is the check result normal?
YES : Go to Step 2.
NO : Refer to inspection procedure E-1 "Keyless entry system does not work P.54B-125."

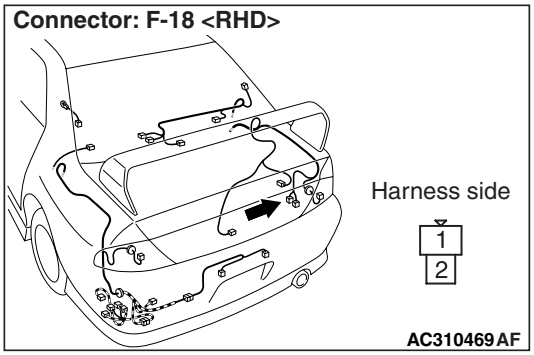
Step 2. Retest the system.
Check that the timer lock works normally.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the ETACS-ECU.

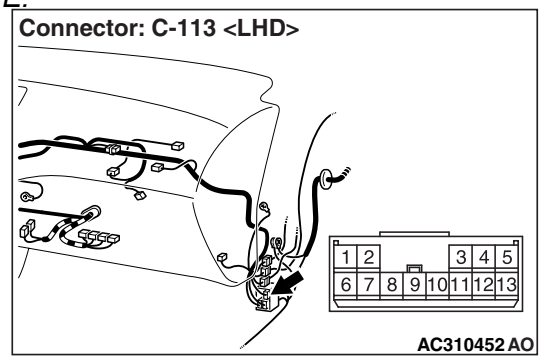
Step 8. Check the wiring harness between F-18 windshield washer motor connector terminal No.2 and A-11X front-ECU connector terminal No.21.

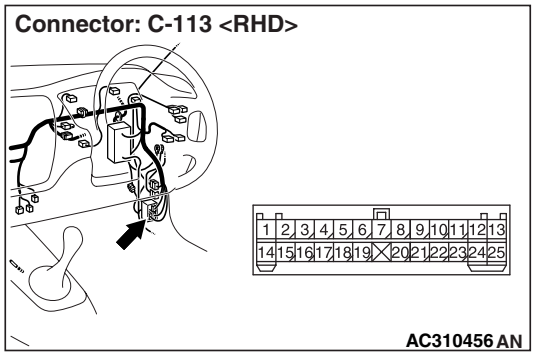


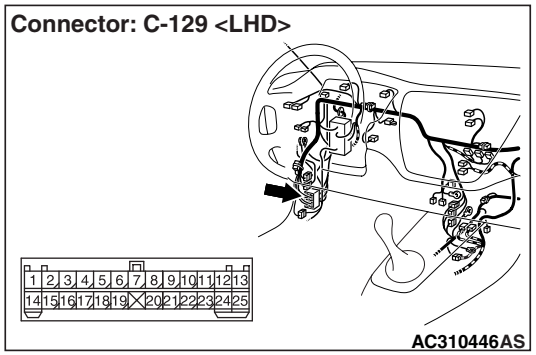


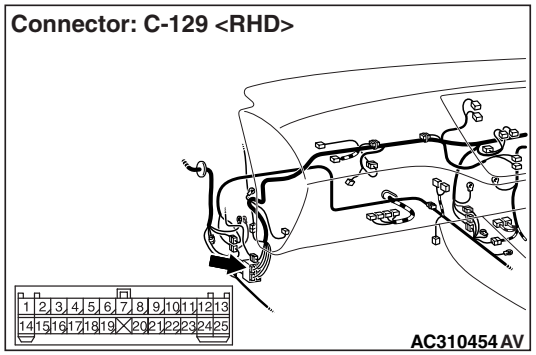


NOTE:







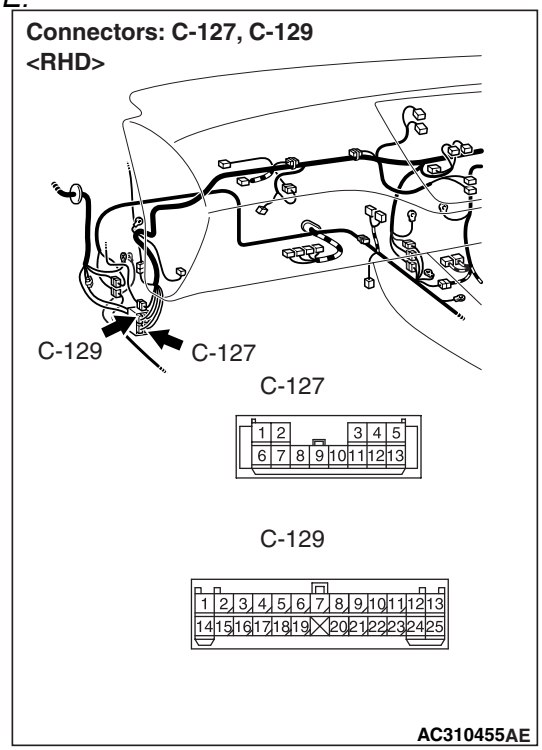


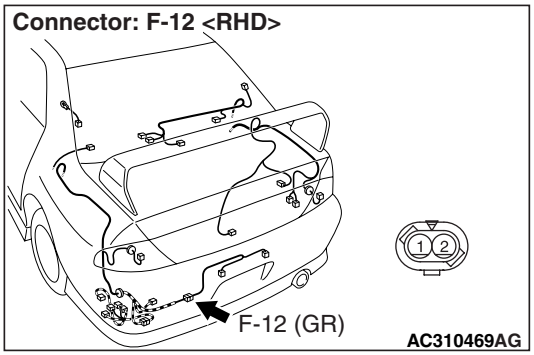
Prior to the wiring harness inspection, check the intermediate connector C-129, C-113 and repair if necessary.

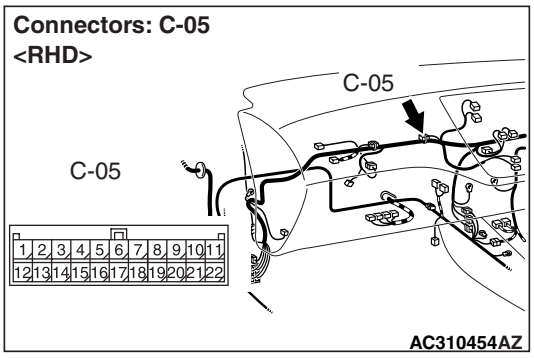
- Check the power supply line to the ignition switch (ACC) for open circuit.

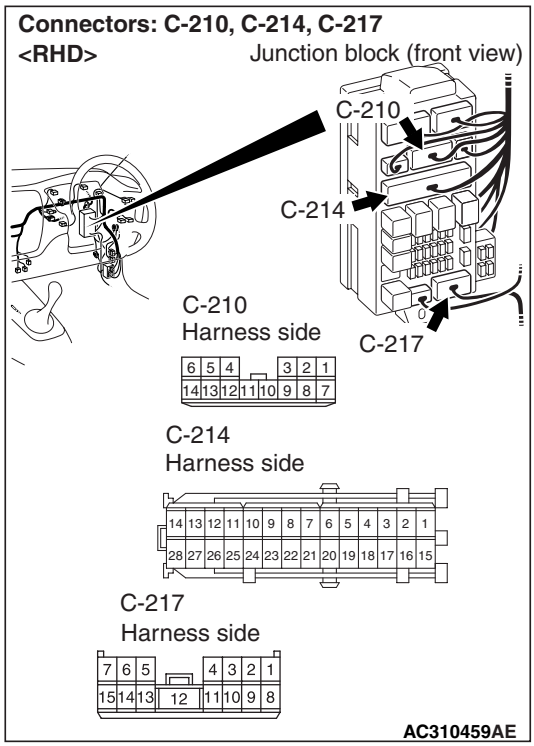
Q: Is the check result normal?
YES : Go to Step 9.
NO : Repair the wiring harness.

NOTE:









Prior to the wiring harness inspection, check intermediate connector C-129 <tail lamp, licence plate lamp or tail lamp indicator>, C-127 <tail lamp LH or licence plate lamp> or F-12 <licence plate lamp>, joint connector C-05 <tail lamp RH, or tail lamp indicator>, junction block connector C-210 <tail lamp RH, or tail lamp indicator>, C-214 <tail lamp indicator> or C-217 <tail lamp RH> and repair if necessary.

- Check the output lines for open circuit.

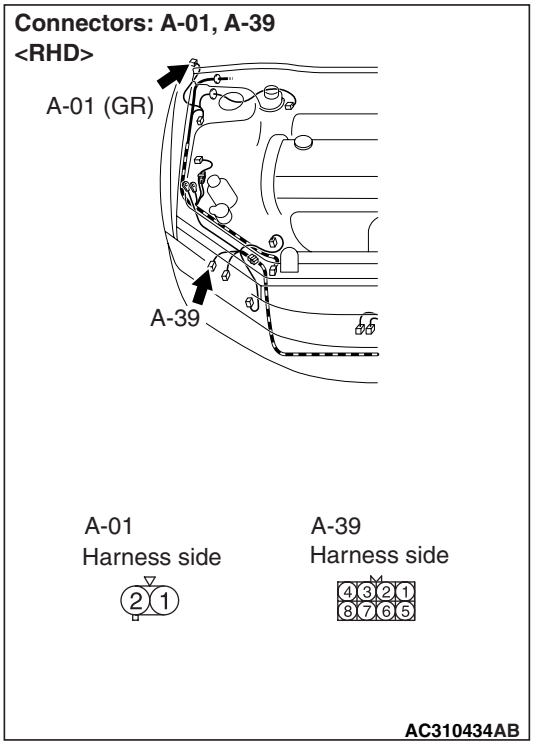
Q: Is the check result normal?
YES : Go to Step 7.
NO : Repair the wiring harness.

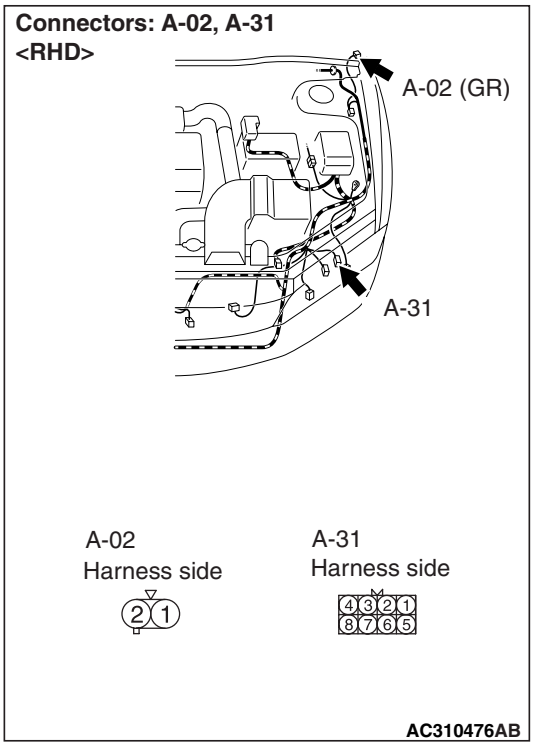
Step 7. Retest the system.

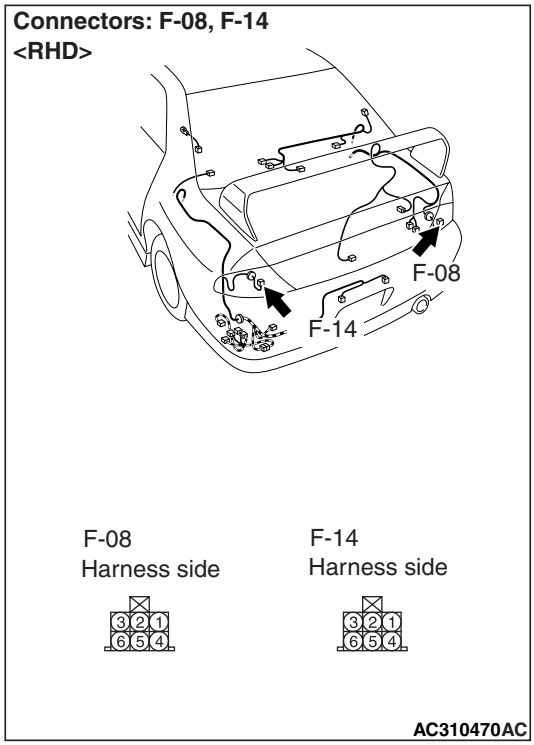
Check that the tail lamps, the position lamps and the licence plate lamps illuminate normally.

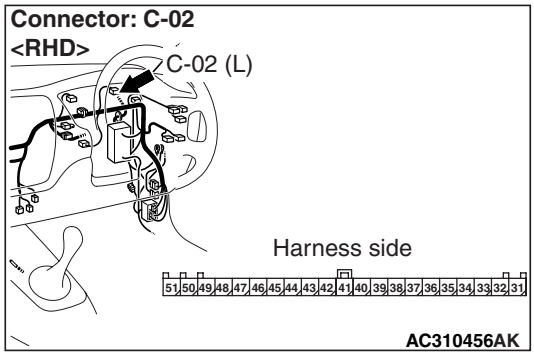
Q: Is the check result normal?
The all lamps illuminate normally : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
When the tail lamps do not illuminate : Replace the rear combination lamp socket assembly.
When the position lamps do not illuminate : Replace the position lamp socket.
When the licence plate lamps do not illuminate : Replace the licence plate lamp socket.
When the tail lamp indicator do not illuminate : Replace the combination meter assembly.

Step 3. Resistance measurement at the A-39 <front RH> or A-31 <front LH> headlamp assembly connector, the A-01 <side RH> or A-02 <side LH> side turn-signal lamp connector, the F-08 <rear RH> or F-14 <rear LH> rear combination lamp connector, the C-02 <turn-signal indicator lamp> combination meter connector







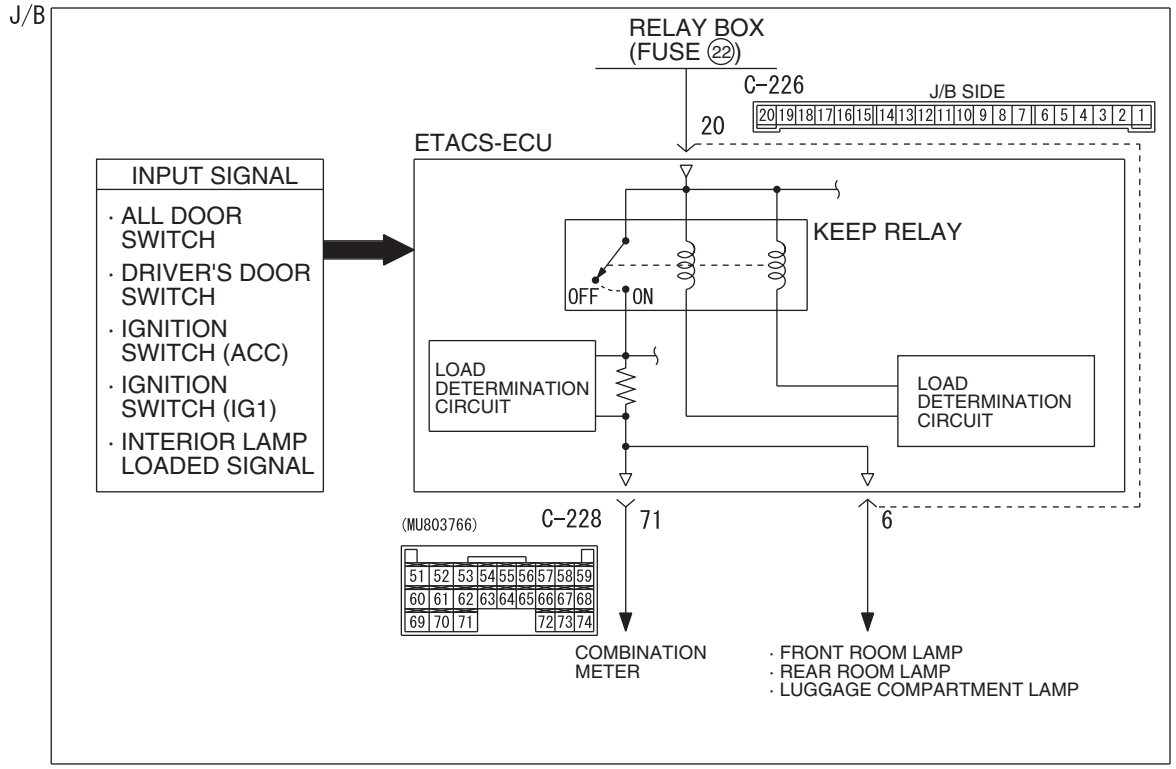


(1) Disconnect the connector, and measure at the wiring harness side.

INSPECTION PROCEDURE K-2: Interior lamp automatic shutdown function does not work normally.

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

Interior Lamp Automatic Shutdown Function Circuit



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COMMENTS ON TROUBLE SYMPTOM

The ETACS-ECU operates the interior lamp automatic shutdown function in accordance with the input signals below.

- Ignition switch (ACC)
- Ignition switch (IG1)
- Driver's door switch
- All of the door switches
- Interior lamp loaded signal

If this function does not work normally, these input signal circuit(s) or the ETACS-ECU may be defective. Note that this function can be disabled/enabled by the adjustment function (default setting; enabled).

POSSIBLE CAUSES

- Malfunction of the door switches
- Malfunction of the room lamp
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

DIAGNOSTIC PROCEDURE

Step 1. Check the adjustment function.

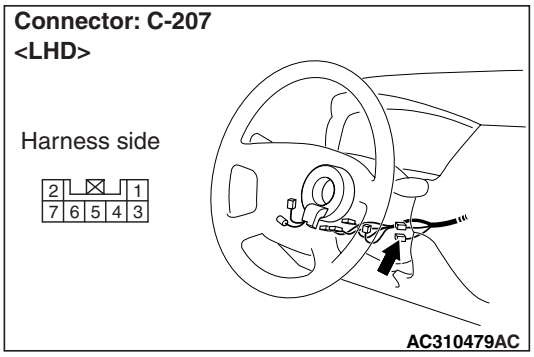
Check that the interior lamp automatic shutdown function has been enabled by using the adjustment function.

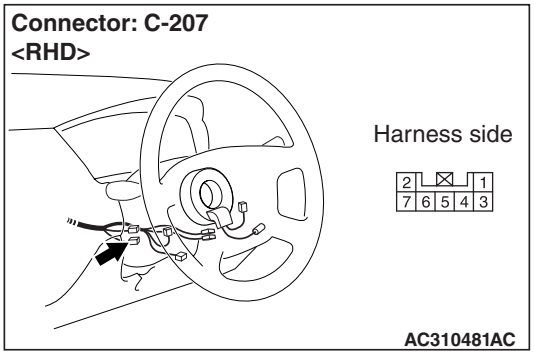
Q: Is the check result normal?

YES : Go to Step 2.

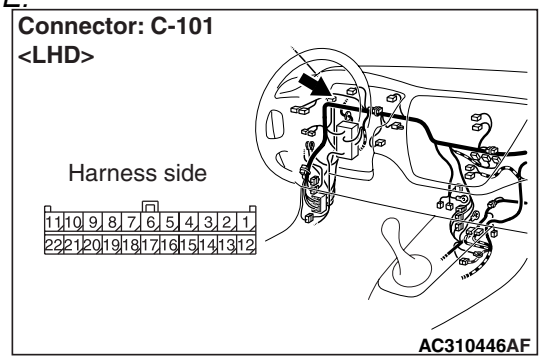
NO : Enable the interior lamp automatic shutdown function by using the adjustment function. Refer to P.54B-302.

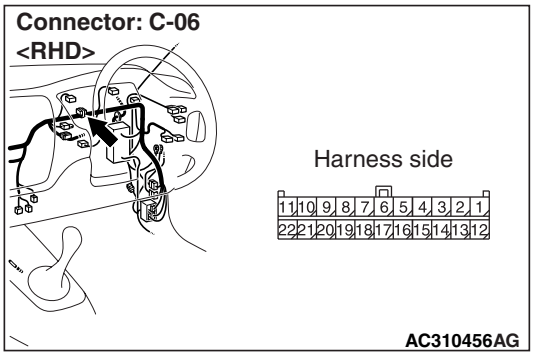
Step 4. Check the wiring harness between C-207 key reminder switch connector terminal No.4 and the body earth.





NOTE:



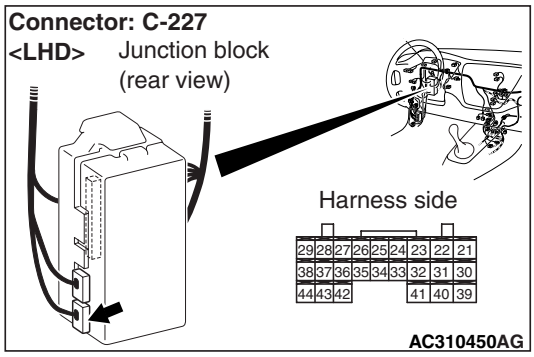


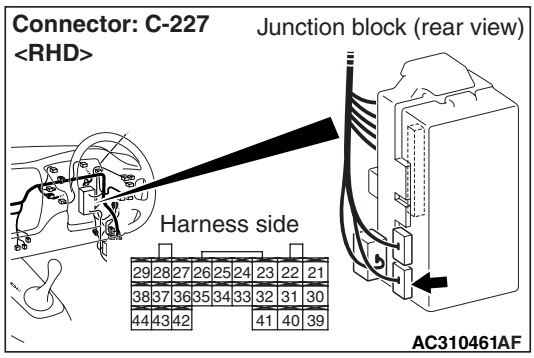
Prior to the wiring harness inspection, check joint connector C-101 <LH drive vehicles> or C-06 <RH drive vehicles>, and repair if necessary.

- Check the earth wires for open circuit.

Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Repair the wiring harness.

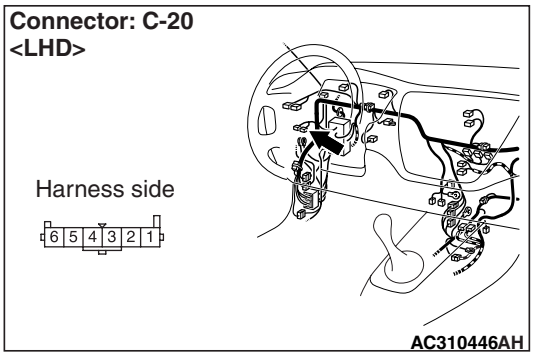
Step 5. Connector check: C-227 ETACS-ECU connector

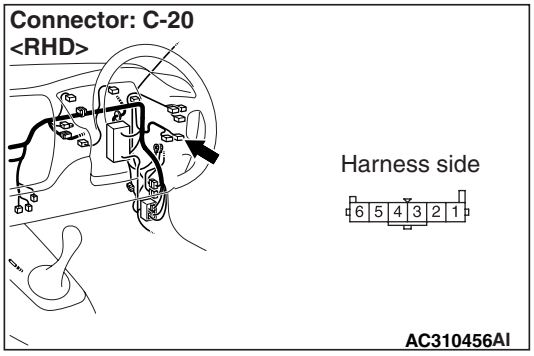




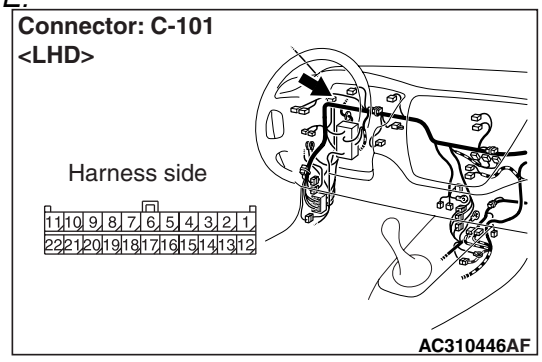
Q: Is the check result normal?
YES : Go to Step 6.
NO : Repair the defective connector.

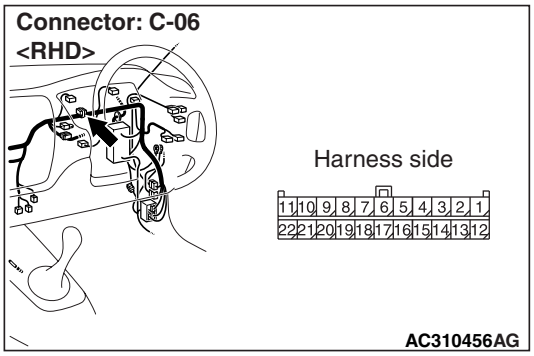
Step 4. Check the wiring harness between C-20 fog lamp switch connector terminal No.6 and body earth.





NOTE:





Prior to the wiring harness inspection, check joint connector C-101 <LH driver vehicles> or C-06 <RH drive vehicles>, and repair if necessary.

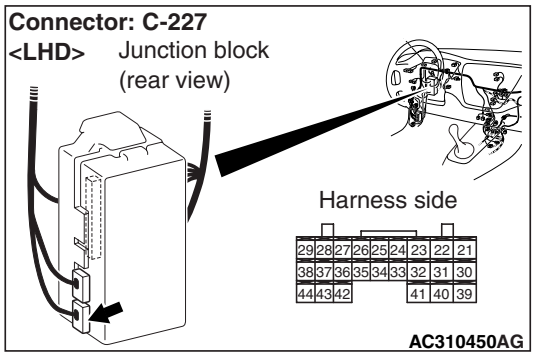
- Check the earth wires for open circuit.

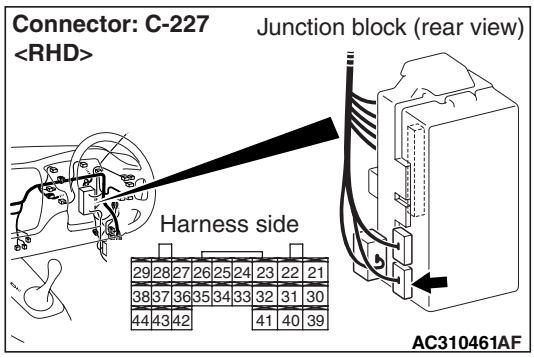
Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

NO : Repair the wiring harness.

Step 5. Connector check: C-227 ETACS-ECU connector



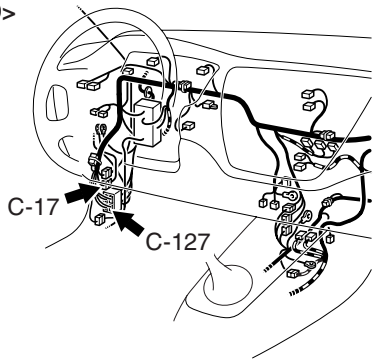


Q: Is the check result normal?

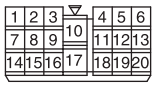
YES : Go to Step 6.

NO : Repair the defective connector.

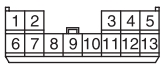
Connectors: C-17, C-127
<LHD>



C-17

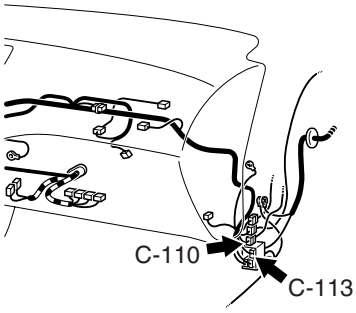


C-127

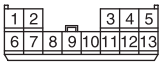


AC310447AH

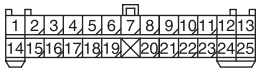
Connectors: C-110, C-113
<LHD>



C-110

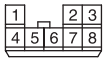


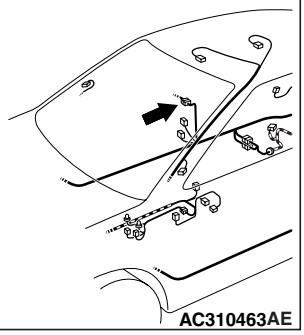
C-113



AC310453AC

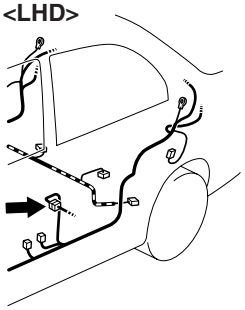
Connector: D-04
<LHD>

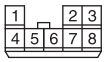




AC310463AE

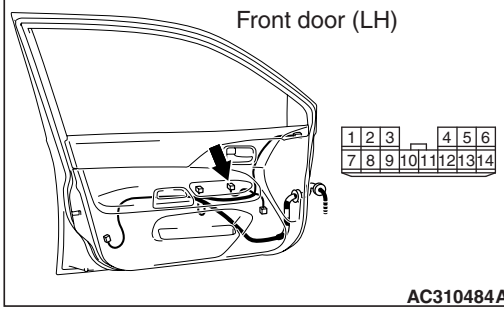
Connector: D-15
<LHD>





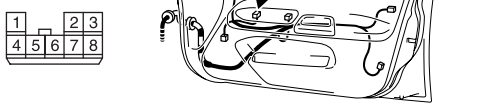
AC310465AE

Connector: E-05 <LHD>



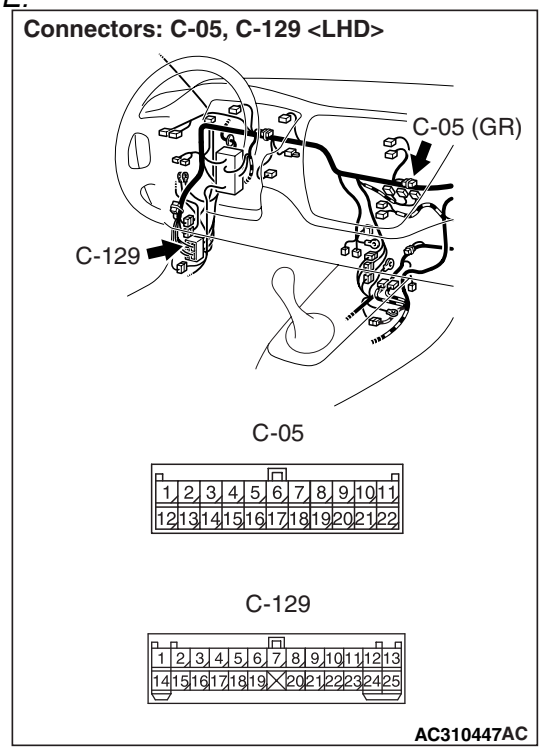
AC310484AF

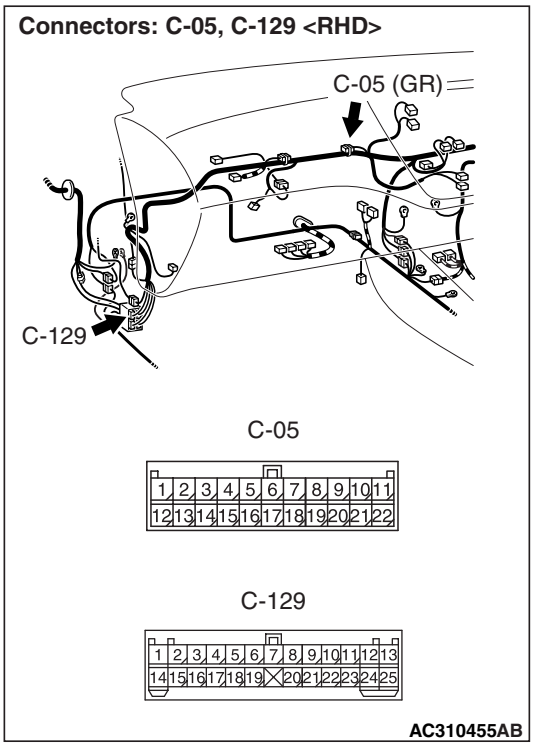
Connector: E-14
<LHD>



AC310488AF

NOTE:





Prior to the wiring harness inspection, check intermediate connector C-129, joint connector C-05, and repair if necessary.

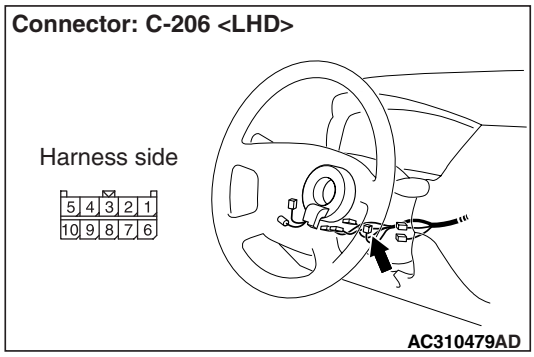
- Check the power supply line for open circuit.

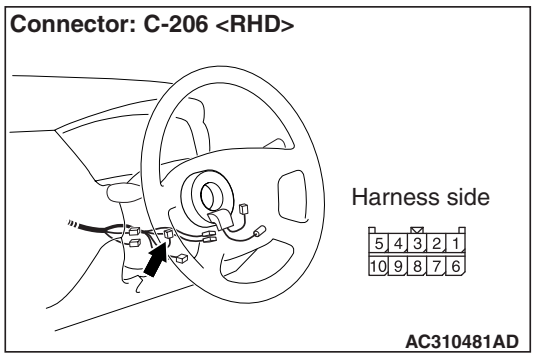
Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

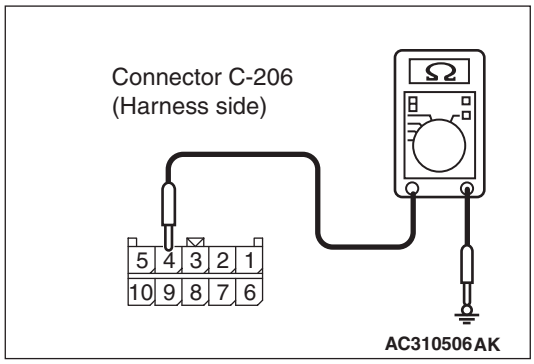
NO : Repair the wiring harness.

Step 5. Resistance measurement at C-206 column switch connector





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



(2) Continuity between C-206 column switch connector terminal No.4 and body earth

OK: 2 Ω or less

Q: Is the check result normal?

YES : Go to Step 7.

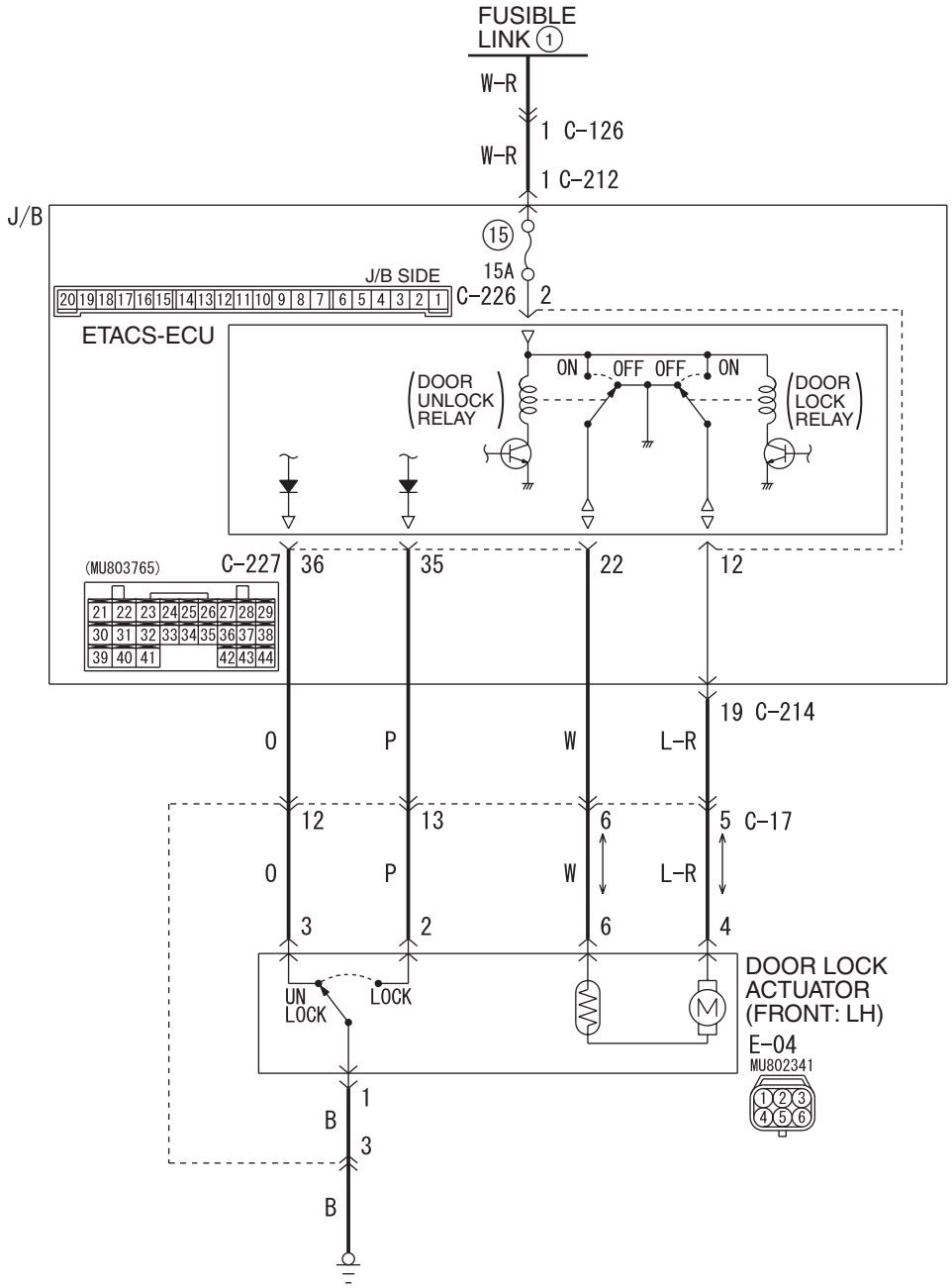
NO : Go to Step 6.

CENTRAL DOOR LOCKING SYSTEM

INSPECTION PROCEDURE C-1: Central door locking system does not work. <LH drive vehicles>

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

Central Door Lock Power Supply Circuit <LHD>



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

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Step 5. Retest the system.

Replace the SRS-ECU, and check that the impact detection door unlock function works normally.

(1) Replace the SRS-ECU.
(2) Check that the impact detection door unlock function works normally.

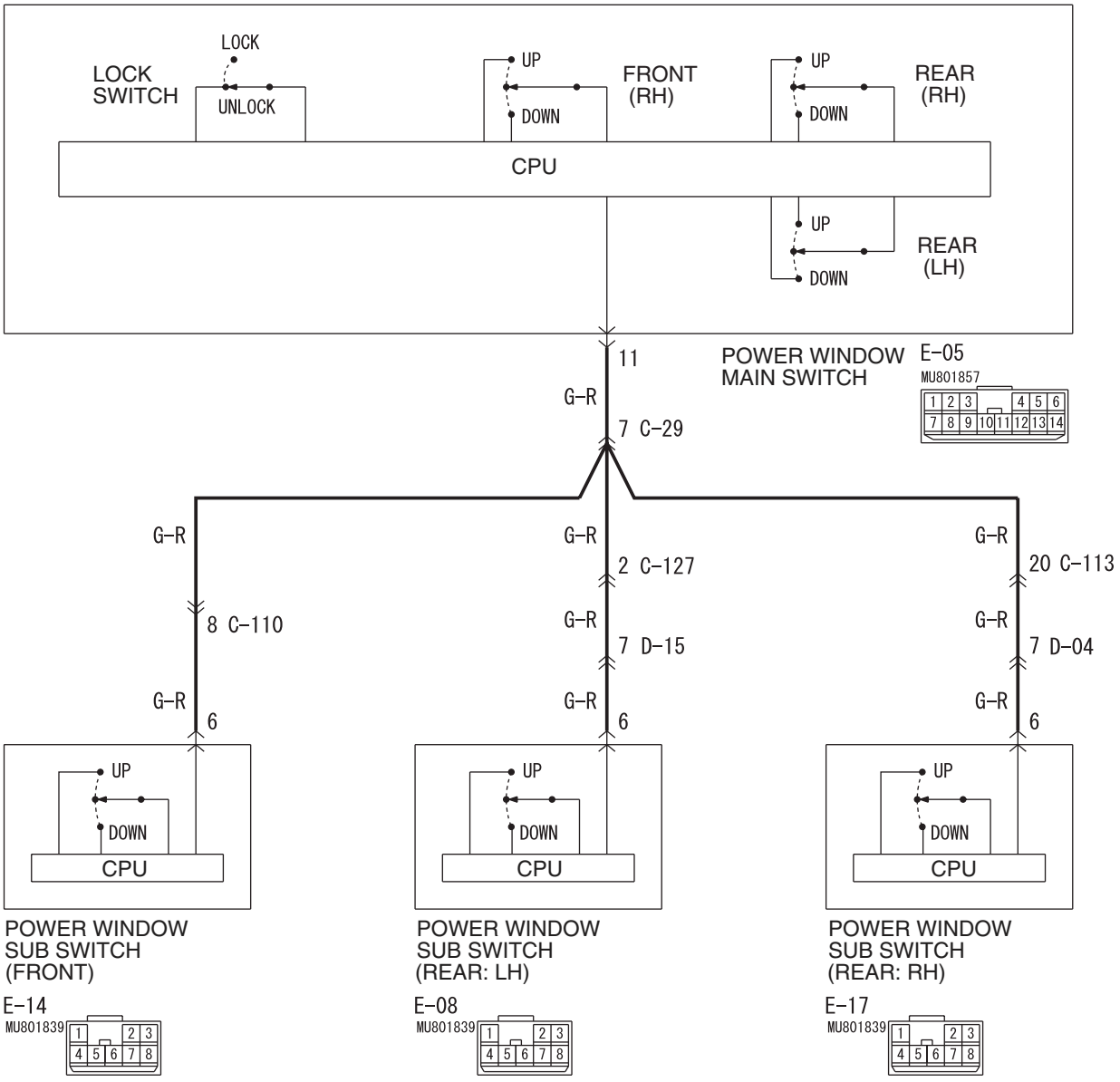
Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

NO : Replace the ETACS-ECU.

INSPECTION PROCEDURE D-4: Front and/or rear passenger's power window(s) do not work by means of the power window main switch.

Power Window Circuit <LHD>



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

W4J54E104A

Q: Is the check result normal?
YES : Go to Step 33.
NO : Repair the wiring harness.

Step 33. Retest the system.
After the rear power window sub switch (LH) is replaced, check that the rear left door anti-trap function can be operated by the power window sub switch.
(1) Replace the rear power window sub switch (LH).
(2) Check that the rear left power window anti-trap function works.

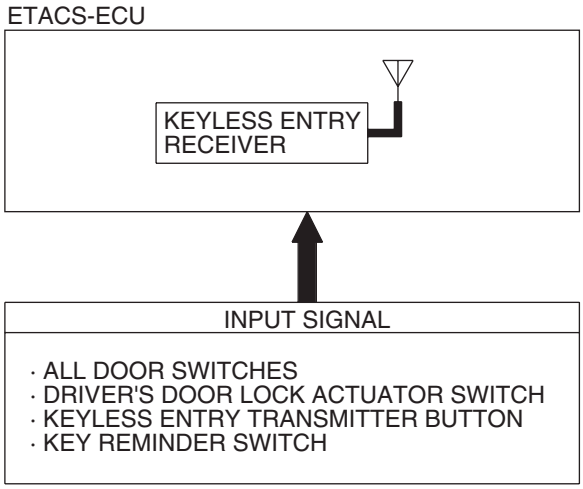
Q: Is the check result normal?
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).
NO : Replace the rear power window regulator motor assembly (LH).

KEYLESS ENTRY SYSTEM

INSPECTION PROCEDURE E-1: Keyless entry system does not work.

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

Keyless Entry System Function Circuit



W4J54E109A

COMMENTS ON TROUBLE SYMPTOM

If the keyless entry system does not work normally, the input signal circuits to the components below or the ETACS-ECU may be defective.
- Key reminder switch
- All of the door switches
- Keyless entry transmitter
- Driver's door lock actuator

POSSIBLE CAUSES

- Malfunction of the key reminder switch
- Malfunction of the door switches
- Malfunction of the keyless entry transmitter
- Malfunction of the driver's door lock actuator
- Malfunction of the ETACS-ECU
- Damaged harness wires and connectors

Step 3. SWS monitor data list

- Enter a simulated vehicle speed when the windshield intermittent wiper interval adjusting knob position is slow side.

NOTE: Also check that the wiper interval changes smoothly when the vehicle is accelerated from 0 km/h to 25 km/h.

Item No.	Item name	Normal condition
ITEM 37	INT WIPER TIME	18.0 – 12.0 s

OK: Normal condition is displayed.

Q: Is the check result normal?

YES : Go to Step 4.

NO : Refer to Inspection Procedure L-13 "The vehicle speed sensor signal is not received P.54C-302."

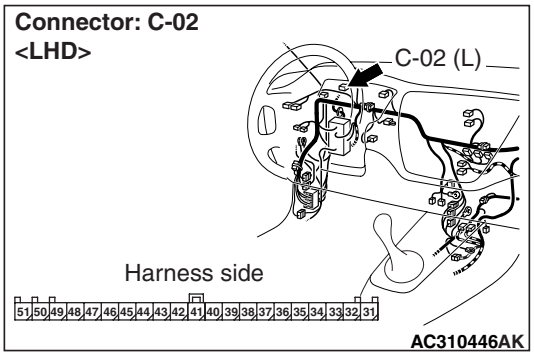
Step 4. Retest the system.

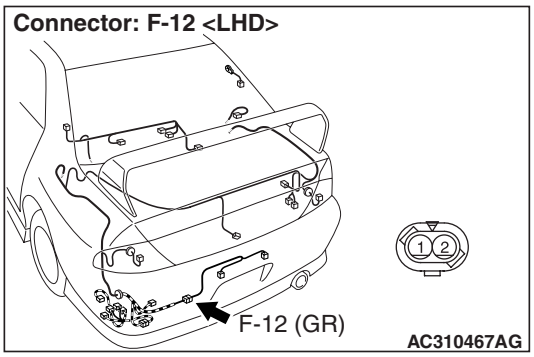
Check that the intermittent wiper interval depends on the vehicle speed.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

NO : Replace the ETACS-ECU.





NOTE: Prior to the wiring harness inspection, check intermediate connector F-12 <licence plate lamp> and repair if necessary.

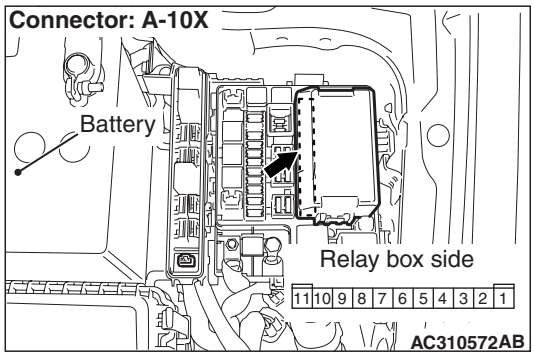
- Check the earth wires for open circuit.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

NO : Repair the wiring harness.

Step 5. Connector check: A-10X front-ECU connector



Q: Is the check result normal?

YES : Go to Step 6.

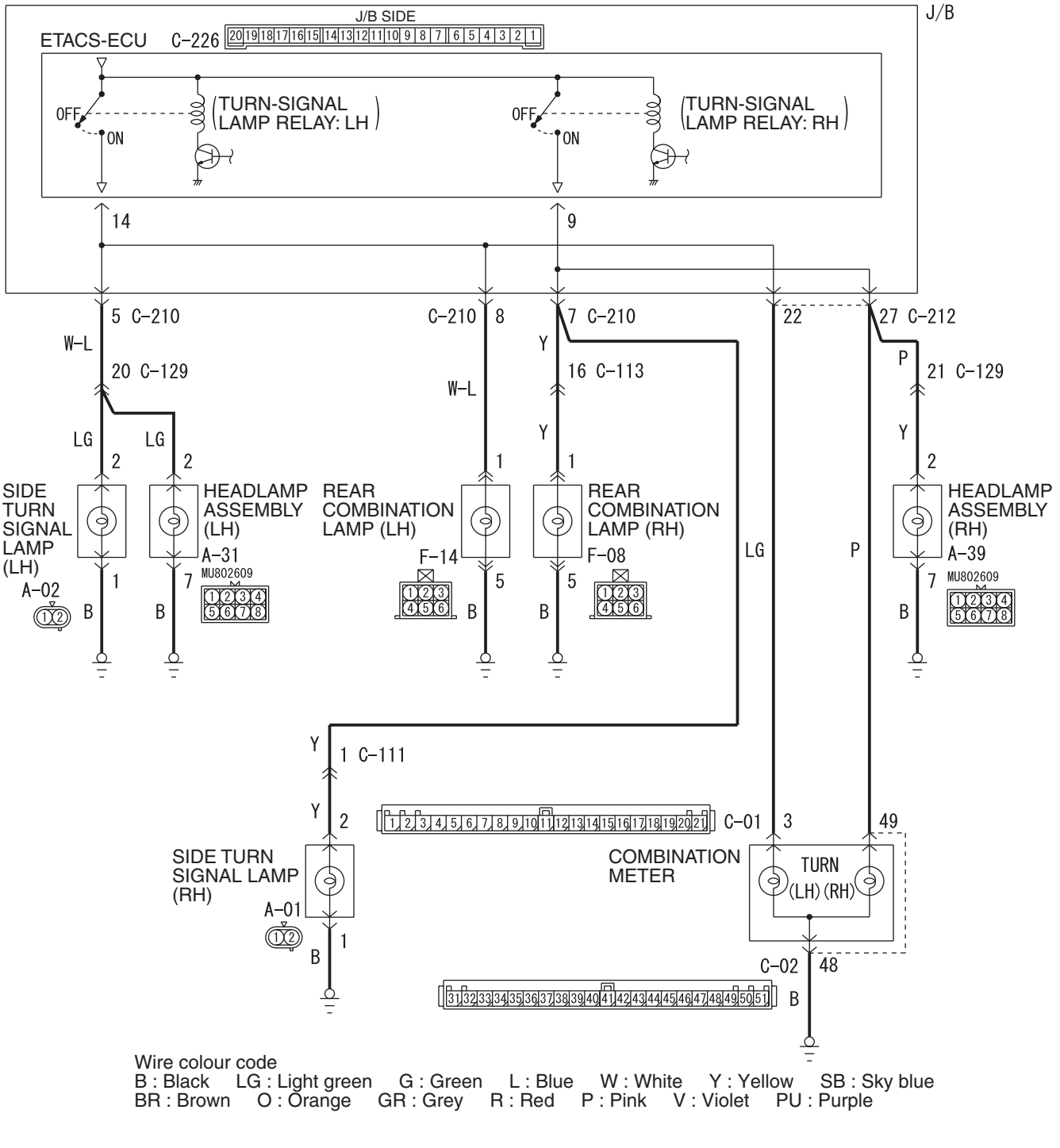
NO : Repair the defective connector.

INSPECTION PROCEDURE I-3: Any of the turn-signal lamps does not illuminate. <LH drive vehicles>

⚠ CAUTION

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

Turn-Signal Lamps Circuit <LHD>



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

W6J54E026A

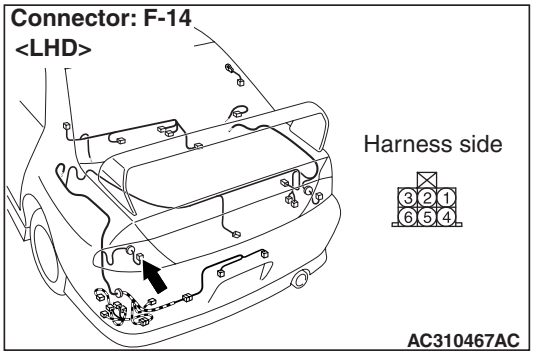
COMMENTS ON TROUBLE SYMPTOM

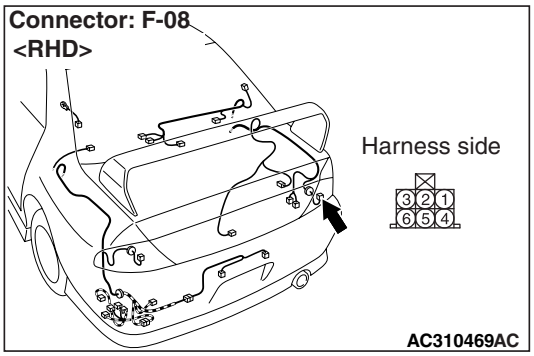
If any of the turn-signal lamps does not illuminate normally, wiring harness connector(s) or the bulb may be defective.

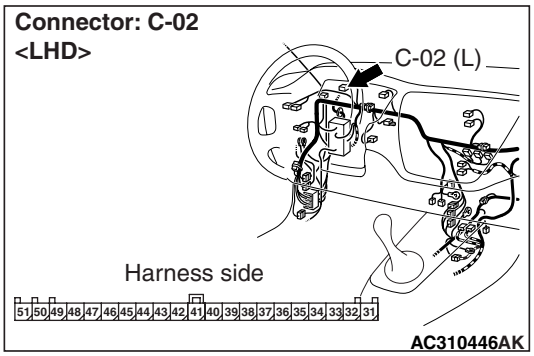
POSSIBLE CAUSES

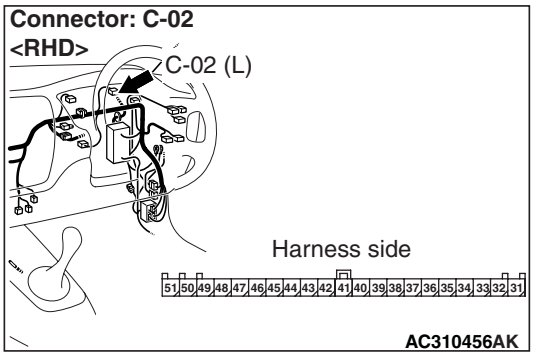
- Defective turn-signal lamp bulb
- Damaged harness wires and connectors

Step 4. Check the wiring harness from F-14 <LH drive vehicles>, F-08 <RH drive vehicles> rear fog lamp connector terminal No.5, C-02 <rear fog lamp indicator lamp> combination meter connector terminal No.48 to body earth.









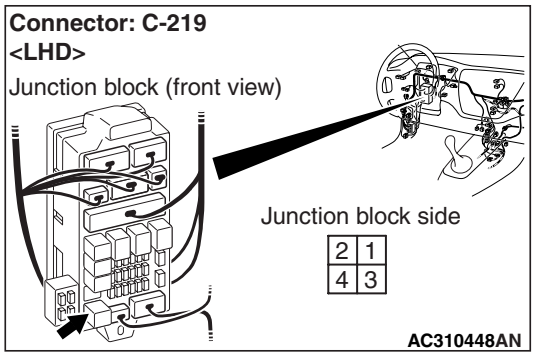
- Check the earth wires for open circuit.

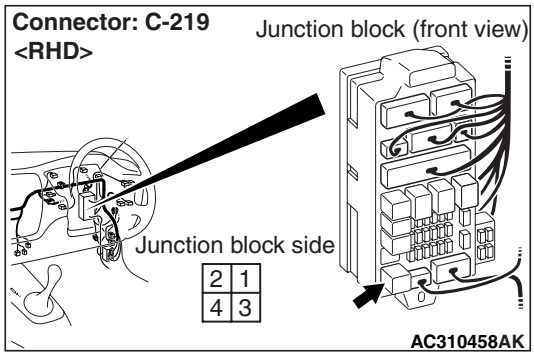
Q: Is the check result normal?

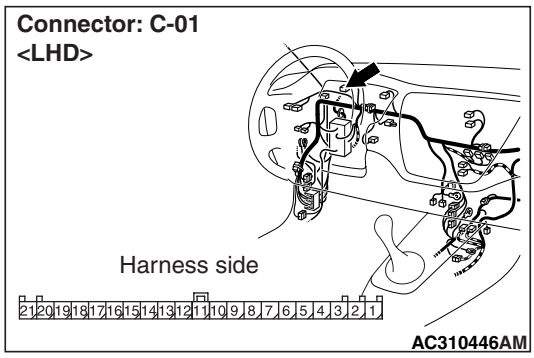
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

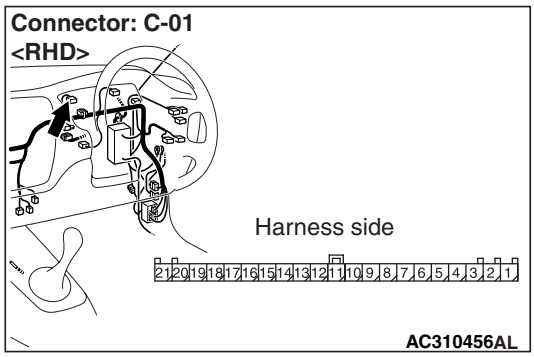
NO : Repair the wiring harness.

Step 5. Connector check: C-219 rear fog lamp relay connector, C-01 <rear fog lamp indicator lamp> combination meter connector









Q: Is the check result normal?

YES : Go to Step 6.

NO : Repair the defective connector.

Step 6. SWS monitor data list.

<Selected item> ETACS ECU

- Driver's door: open

Item No.	Item name	Normal condition
Item 32	DR DOOR SW	ON

OK: Normal condition is displayed.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction P.00-5).

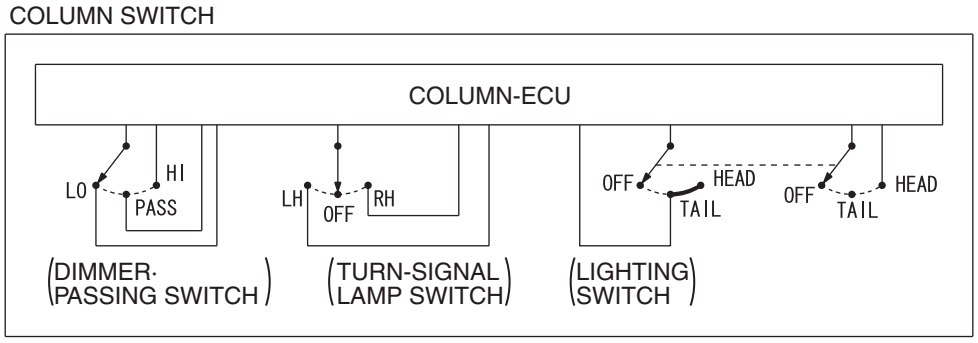
NO : Replace the ETACS-ECU.

INSPECTION PROCEDURE L-4: The column switch (lighting, turn-signal lamp and headlamp washer switch) signal is not received.

⚠ CAUTION

Whenever the ECU is replaced, ensure that the input signal circuit is normal.

Lighting Switch Input Circuit



W4J54E159A

COMMENTS ON TROUBLE SYMPTOM

Input signal from the column switch (lighting, turn-signal lamp and headlamp washer switch) is used to operate the functions below. If the signal is abnormal, these functions will not work normally.

- Lamp reminder function
- Headlamp and tail lamp
- Headlamp automatic shutdown function
- Fog lamp
- Turn signal lamp
- Headlamp washer

POSSIBLE CAUSES

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

DIAGNOSIS PROCEDURE

Step 1. Check the column switch connector.

Check that the wiper and washer switch connector, the lighting switch connector and the switch body connector are in good condition.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Repair the defective connector.

DIAGNOSTIC PROCEDURE

Step 1. SWS monitor data list.

<Selected item> ETACS ECU

- Driver's door is open

Item No.	Item name	Normal condition
Item 32	DR DOOR SW	ON

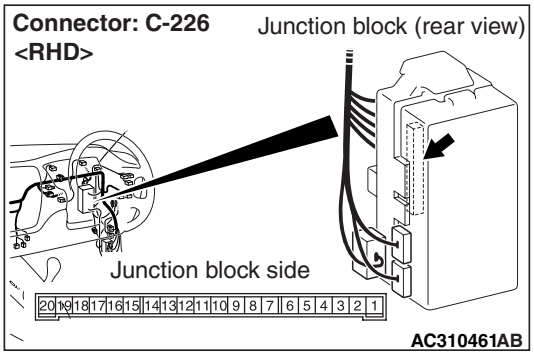
OK: Normal condition is displayed.

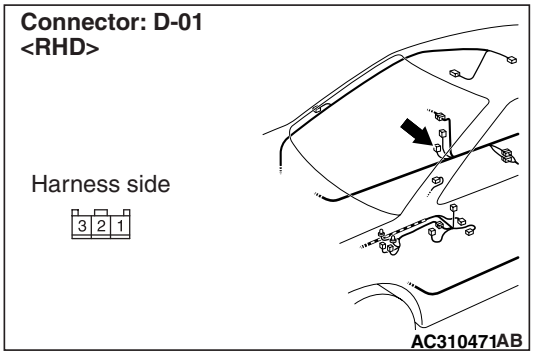
Q: Is the check result normal?

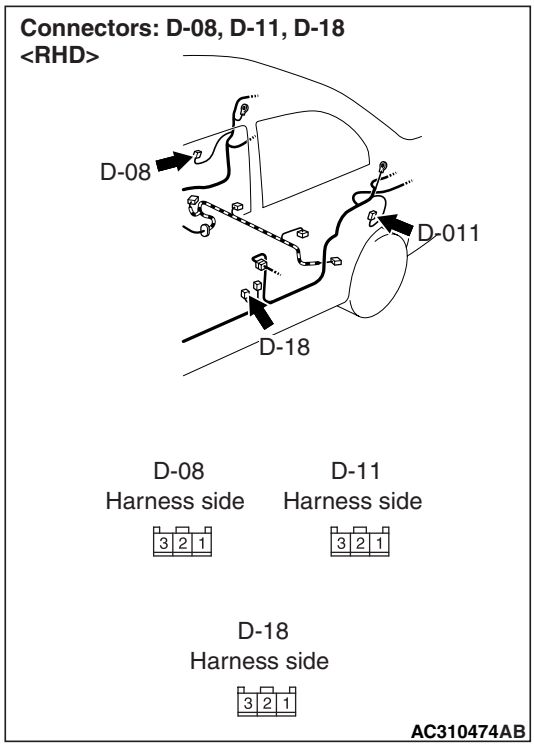
YES : Go to Step 2.

NO : Refer to Inspection Procedure L-3 "The door switch (front: RH) signal is not received <RH drive vehicles>P.54C-265 ."

Step 2. Connector check: D-18 <front: LH>, D-01 <front: RH>, D-08 <rear: RH> or D-11 <rear: LH> door switch connectors, and C-226 ETACS-ECU connector







Q: Is the check result normal?

YES : Go to Step 3.

NO : Repair the defective connector.

Step 3. Check the installation condition.

Check that the door switch is installed on the body correctly.

Q: Is the check result normal?

YES : Go to Step 4.

NO : Correct the installation condition.

Step 4. Check the door switch.

Refer to GROUP 42 – Door P.42-27.

Q: Is the check result normal?

YES : Go to Step 5.

NO : Replace the door switch.

FRONT-ECU

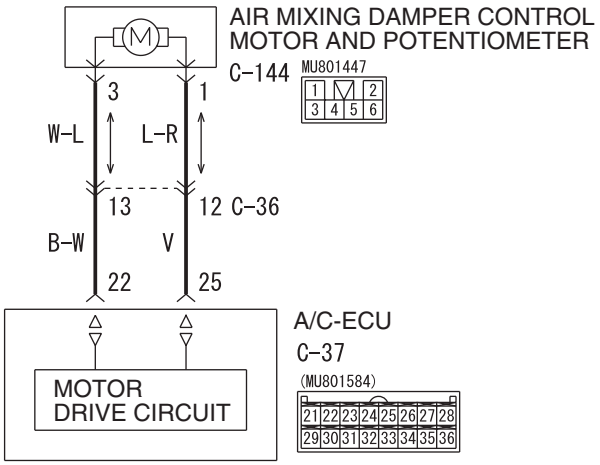
AC305097AB

NOTE: Measurement is not possible as the front-ECU is mounted on the relay box directly. The values are for reference only.

Terminal No.	Check item	Check condition	Normal condition
1	–	–	–
2	Output to headlamp (high-beam)	When headlamps (high-beam) are on	System voltage
3, 4	Battery power supply (for headlamp)	Always	System voltage
5	Battery power supply (for tail lamp)	Always	System voltage
6	Output to headlamp (low-beam)	When headlamps (low-beam) are on	System voltage
7	Battery power supply (for ECU)	Always	System voltage
8	Output to tail lamps	When tail lamps are on	System voltage
9 to 11	–	–	–
21	Output to windshield washer	When windshield washer is on	System voltage
22	SWS communication line	Always	0 – 12 V (pulse signal)
23	Input of automatic stop signal to windshield wiper	When windshield wiper is on	System voltage
24	Power supply to ignition switch (ACC)	Ignition switch: "ACC"	System voltage
25	Input of backup signal from headlamp switch	Headlamp switch: ON	0 V
26	Input of backup signal to windshield wiper	Windshield low-speed wiper switch or windshield high-speed wiper switch: ON	0 V
27	Output to windshield wiper (low-speed)	When windshield wiper is on (at low speed)	System voltage
28	Output to windshield wiper (high-speed)	When windshield wiper is on (at high speed)	System voltage
29	–	–	–
30	Power supply to ignition switch (IG2)	Ignition switch: "ON"	System voltage
31	Earth	Always	0 V

Code No.41: Air Mixing Damper Control Motor System

Air Mixing Damper Control Motor Circuit



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

W6J55E018A

COMMENTS ON TROUBLE SYMPTOM

This code is set when the air mixing damper cannot be rotated to the preset opening angle.

PROBABLE CAUSES

- Malfunction of the air mixing damper control motor and potentiometer
- Malfunction of the automatic A/C control panel (A/C-ECU)
- Damaged the wiring harness or connectors

DIAGNOSIS PROCEDURE

STEP 1. Check the air mixing damper control motor and potentiometer.

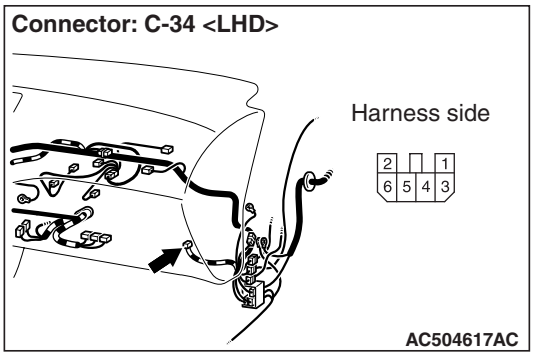
Refer to P.55-114.

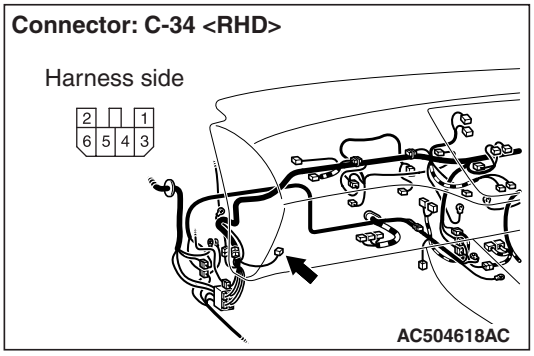
Q: Is the check result normal?

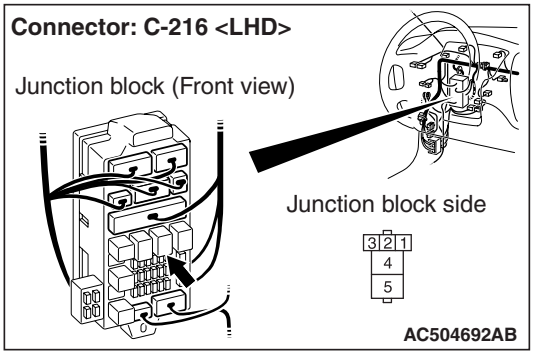
YES : Go to Step 2.

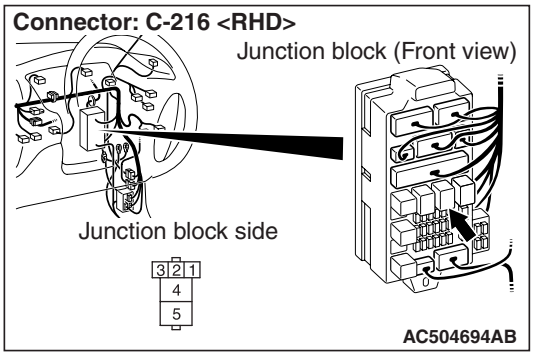
NO : Replace the air mixing damper control motor and potentiometer.

STEP 13. Connector check: C-216 blower relay connector and C-34 blower linear controller connector



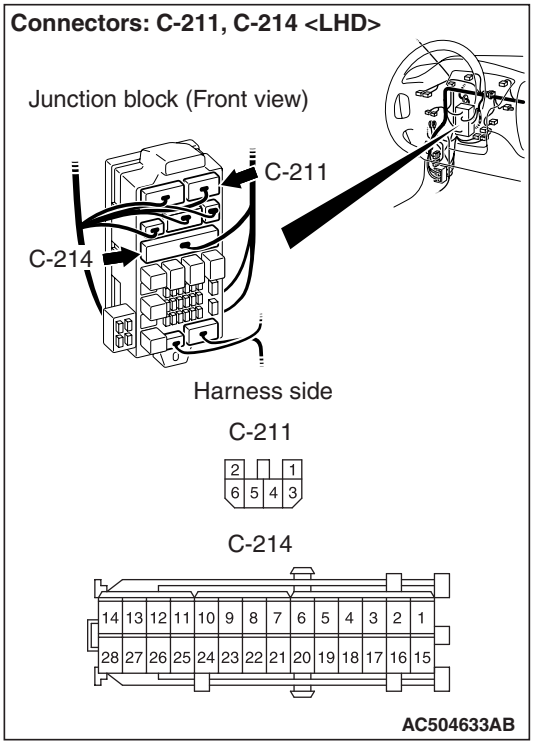


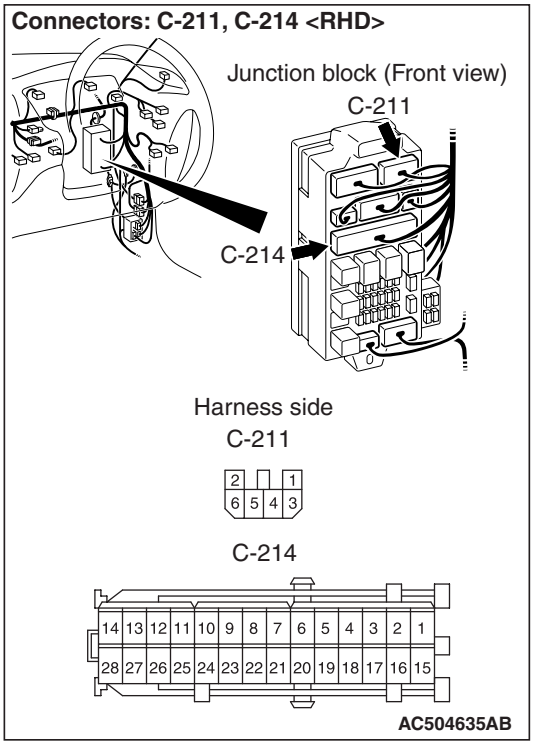




Q: Is the check result normal?
YES : Go to Step 14.
NO : Repair the connector.

NOTE:





Prior to the wiring harness inspection, check junction block connectors C-214 and C-211, and repair if necessary.

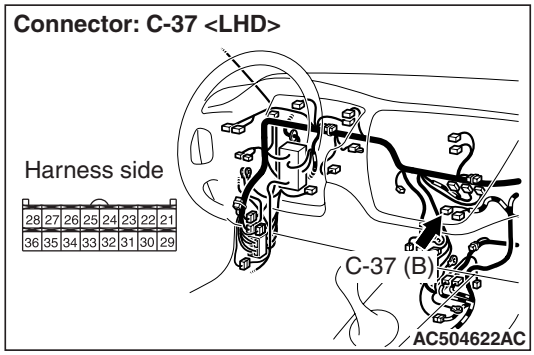
- Check the A/C-ECU power supply line for open or short circuit.

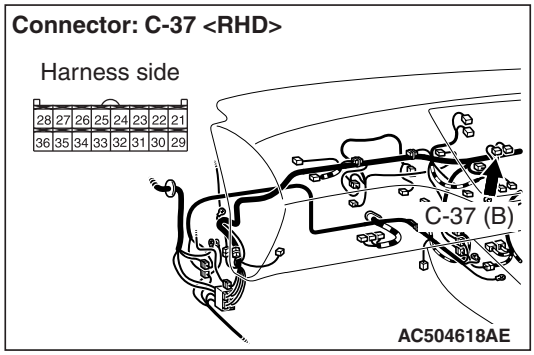
Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-5).

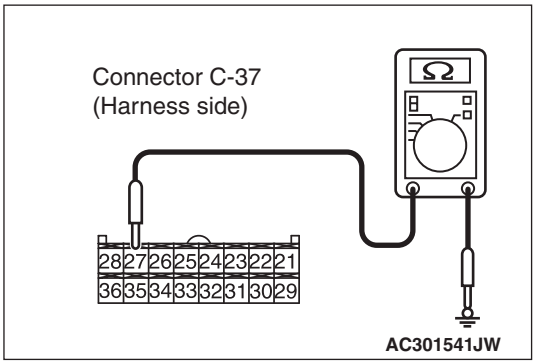
NO : Repair the wiring harness.

STEP 4. Resistance measurement at C-37 A/C-ECU connector.





(1) Remove the relay, and measure at the junction block side.



(2) Continuity between terminal 27 and body earth.

OK: 2 ohm or less

Q: Is the check result normal?

YES : Go to Step 7.

NO : Go to Step 5.

ACTUATOR TEST TABLE

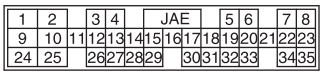
M1554005200315

Item No.	Check items	Drive content
01	Blower motor	Stop
02		Low speed
03		Middle speed
04		High speed
05	Air mixing damper control motor	Open angle: Approximately 0% (MAX COOL)
06		Opening angle: approximately 50%
07		Open angle: Approximately 100% (MAX HOT)
08	Mode selection damper control motor	FACE
09		FOOT
10		DEF
11	Compressor output	OFF
12		ON
13	Outside/inside air selection damper control motor	Outside air
14		Inside air
38	Idle-up	OFF (A/C high pressure)
39		ON (A/C low pressure)

CHECK AT ENGINE-A/T ECU TERMINALS

M1554005400289

<C-121>



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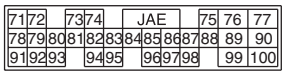
<C-117>

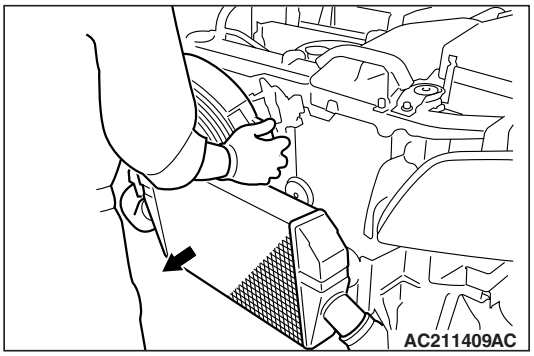


AC504605AB

Terminal No.	Check items	Check conditions	Normal conditions
20	Output to A/C compressor	A/C compressor relay: OFF	System voltage
		A/C compressor relay: ON	0 V
30	Condenser fan motor relay (HI)	Fan inactive state (Engine coolant temperature: 90°C or less	System voltage
		Fan high-speed rotation state (Engine coolant temperature: 105°C or less	1 V or less
31	Condenser fan motor relay (LOW)	Fan inactive state (Engine coolant temperature: 90°C or less)	System voltage
		Fan low-speed rotation state (Engine coolant temperature: 95 – 100°C or less)	1 V or less
83	Input from A/C-ECU (A/C1)	When the A/C is in operation (When the air thermo sensor detects 3°C or more).	System voltage
65	Input from A/C-ECU (A/C2)	When the A/C is under low load	System voltage

REMOVAL SERVICE POINT

<<A>> FAN SHROUD ASSEMBLY REMOVAL



1. Remove the intercooler mounting bolts/nuts and pull the intercooler forward.
2. Move the fan motor/shroud assembly upward for removal.

<<B>> FLEXIBLE DISCHARGE HOSE/LIQUID PIPE A DISCONNECTION

⚠ CAUTION

As the compressor oil and receiver are highly moisture absorbent, use a non-porous material to plug the hose and nipples.

To prevent the entry of dust or other foreign material, plug the dismantled hose and condenser assembly nipples.

INSTALLATION SERVICE POINT

>>A<< CONDENSER INSTALLATION

When replacing the condenser, refill it with a specified amount of compressor oil and install it to the vehicle.

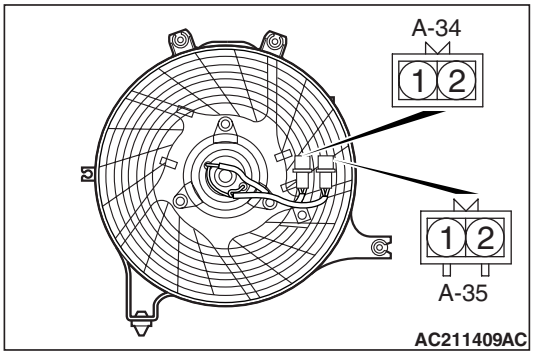
Compressor oil: SUN PAG 56

Quantity: 15 cm^3 (0.5 floz)

INSPECTION

M1552014301351

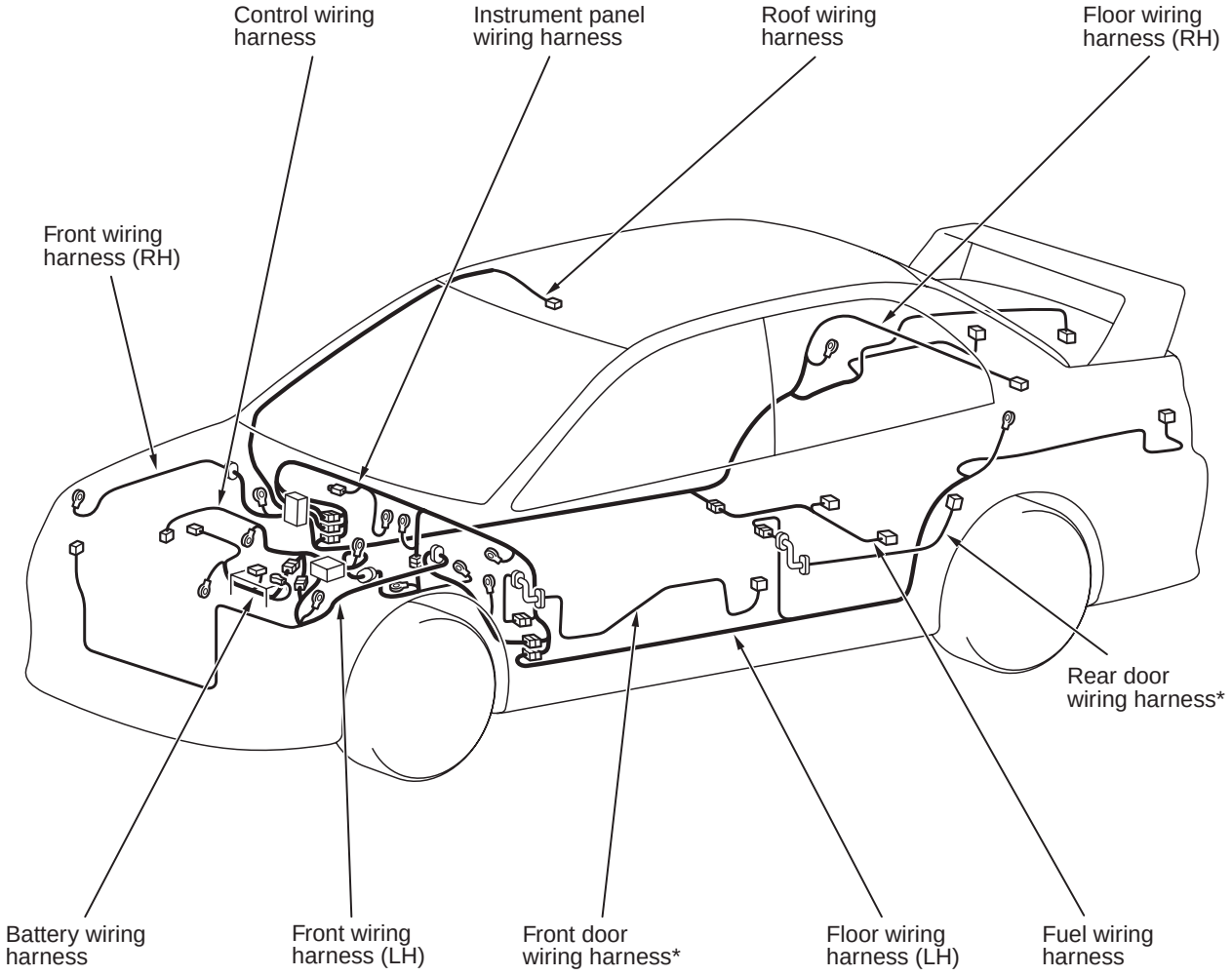
CONDENSER FAN MOTOR CHECK



BATTERY CONNECTION	CONDENSER FAN MOTOR OPERATION
• Connect connector A-34 terminal 2 to the positive battery terminal • Connect connector A-35 terminal 2 to the negative battery terminal	Condenser fan motor LO operation
• Connect connector A-34 terminal 1 to the positive battery terminal • Connect connector A-35 terminal 2 to the negative battery terminal	Condenser fan motor HI operation

OVERALL WIRING DIAGRAM <RH drive vehicles>

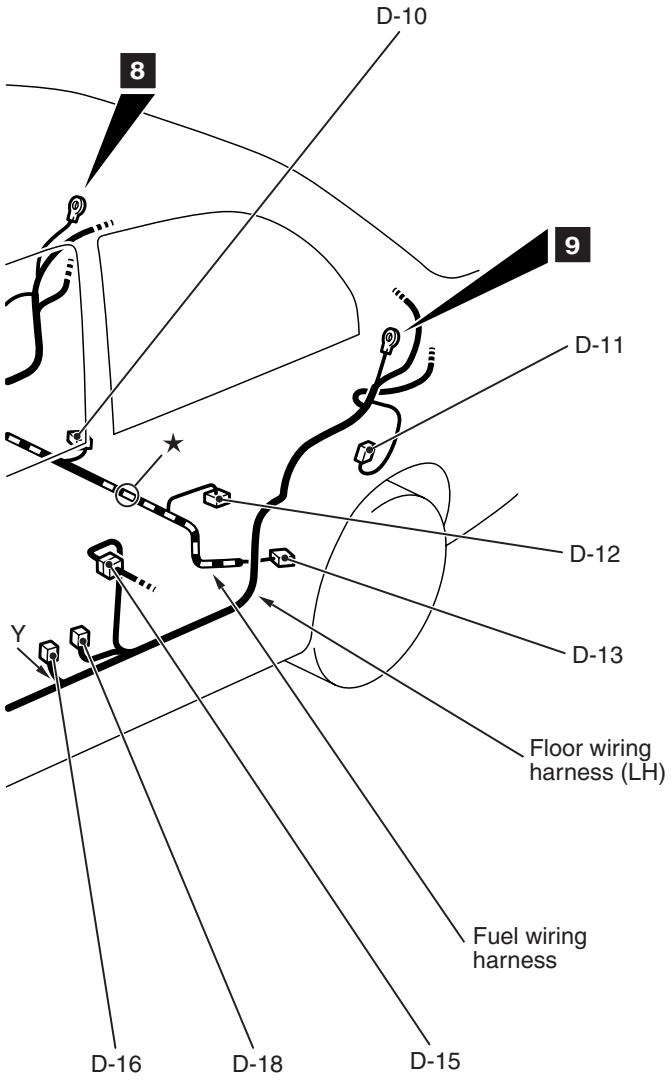
M1801000101186



AC310155AB

NOTE:

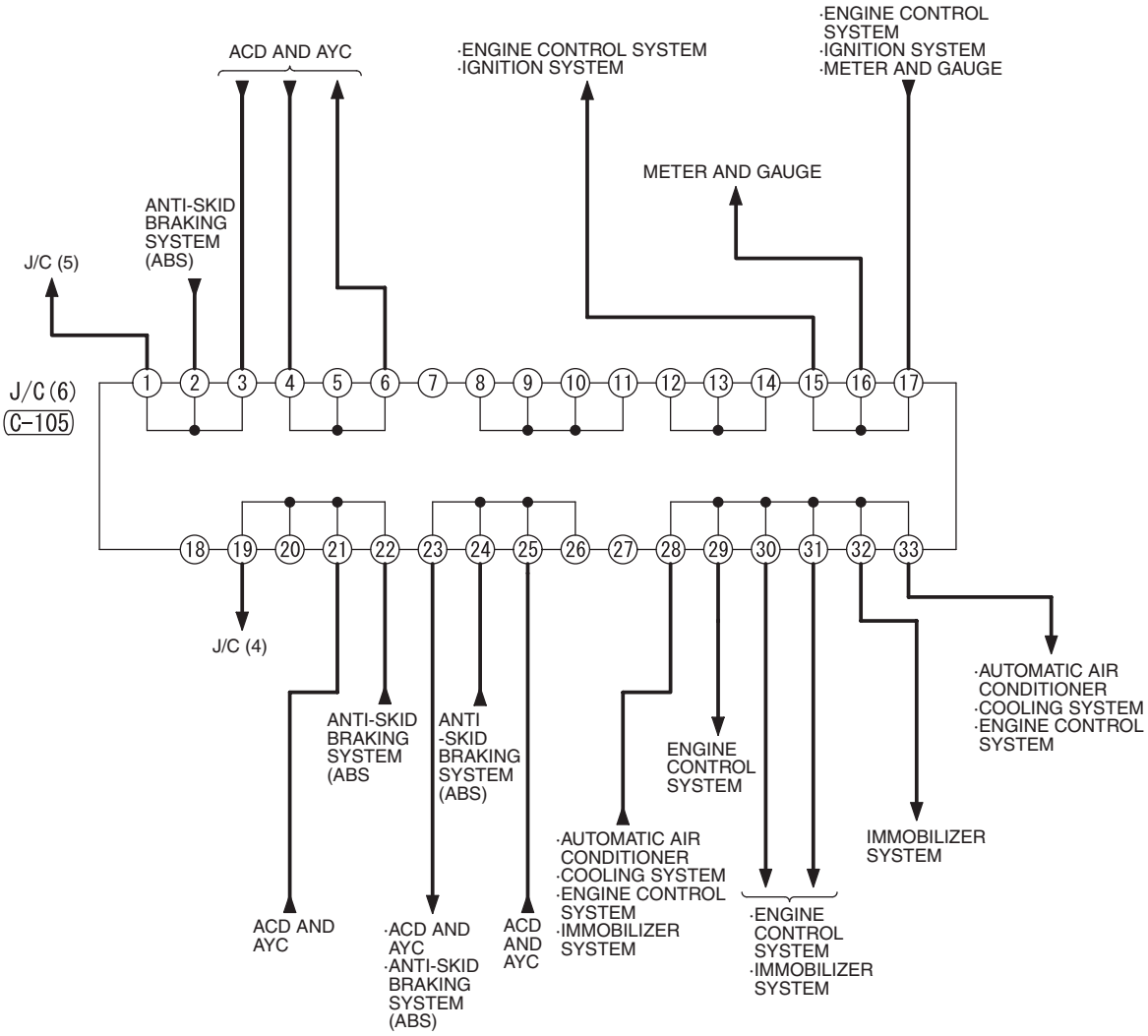
1. *This illustration shows only major wiring harnesses.*
2. **: also equipped at the right side.*



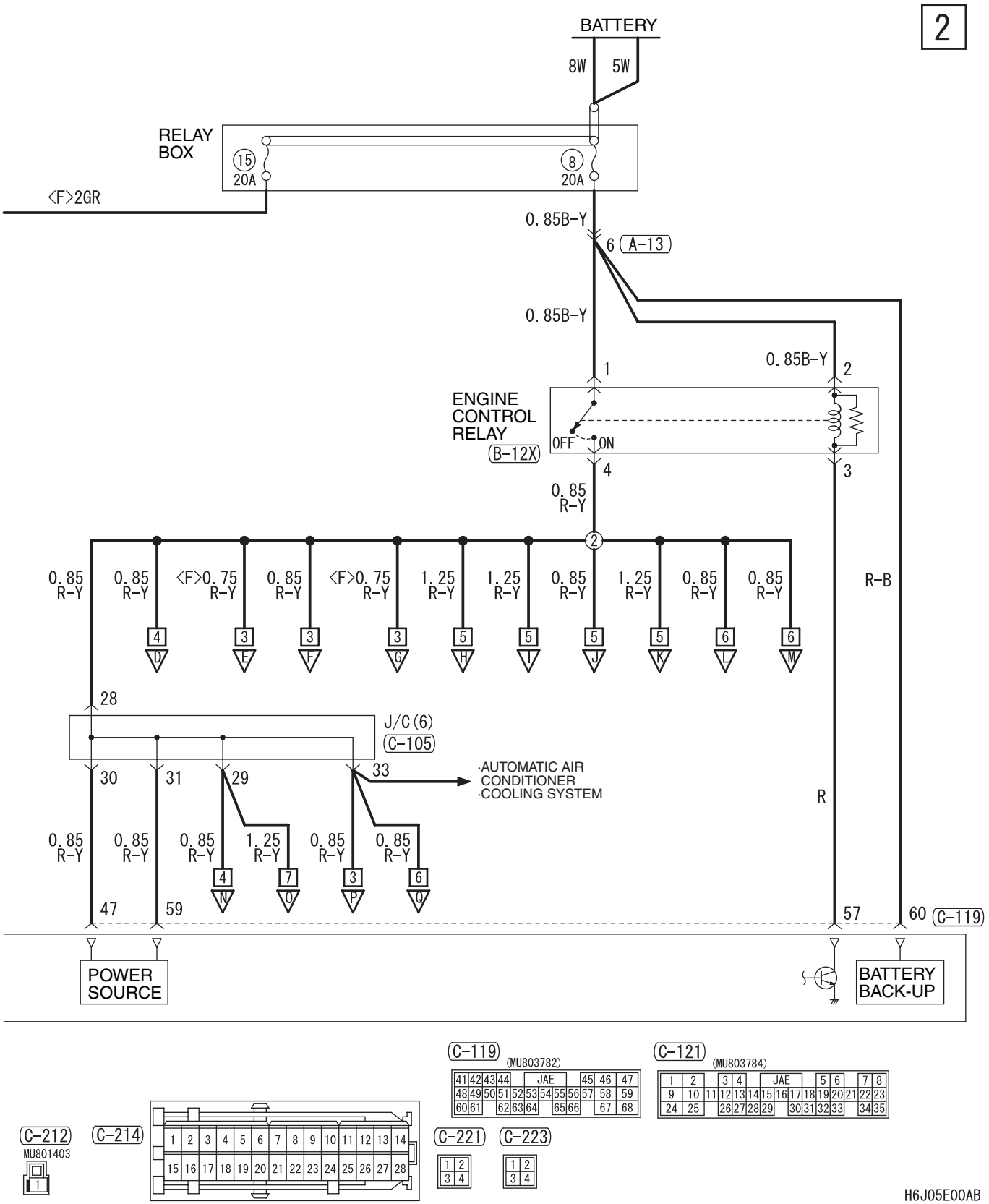
Connector colour code
B : Black
BR : Brown
G : Green
GR : Grey
L : Blue
None : Milk white
O : Orange
R : Red
V : Violet
Y : Yellow

AC310170AE

D-23	(1)	Cigarette lighter
D-24	(1-B)	Cigarette lighter
D-25	(2-B)	Ashtray illumination lamp
D-26	(2-B)	Cigarette lighter illumination lamp
D-28	(1-B)	Parking brake switch
D-29	(2)	Tweeter (LH)
D-30	(2)	Tweeter (RH)
D-33	(1)	Floor wiring harness (RH) and fuel wiring harness combination
D-34	(8)	Floor wiring harness (RH) and fuel wiring harness combination
D-37	(3-B)	G-sensor (lateral)
D-38	(3-B)	G-sensor (longitudinal)
D-39	(6)	No connection

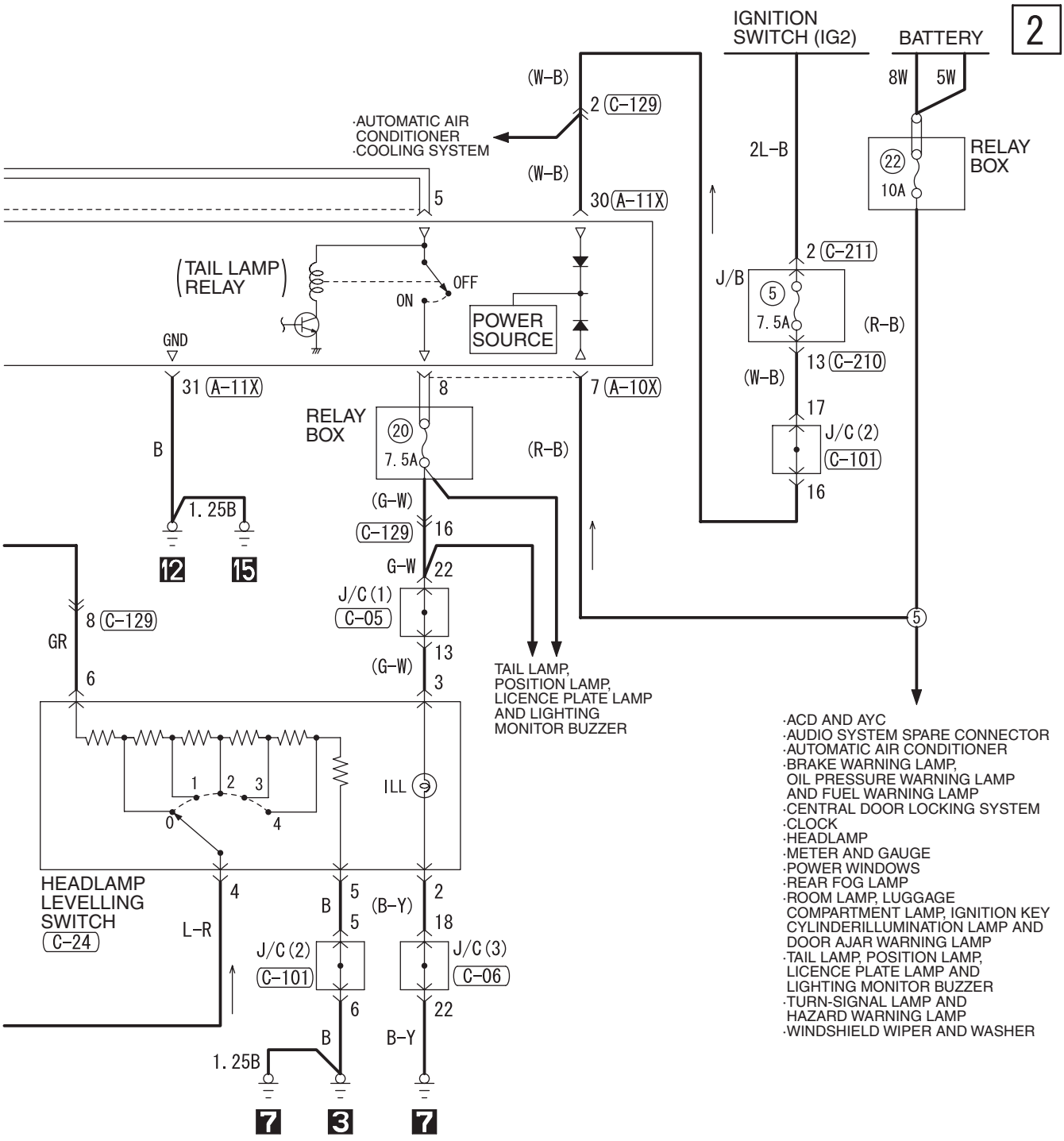

·ENGINE CONTROL SYSTEM
·IGNITION SYSTEM
·METER AND GAUGE
ACD AND AYC
·ENGINE CONTROL SYSTEM
·IGNITION SYSTEM
METER AND GAUGE
ANTI-SKID BRAKING SYSTEM (ABS)
J/C (5)
J/C (6)
C-105
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33
J/C (4)
·AUTOMATIC AIR CONDITIONER
·COOLING SYSTEM
·ENGINE CONTROL SYSTEM
ANTI-SKID BRAKING SYSTEM (ABS
ANTI -SKID BRAKING SYSTEM (ABS)
ENGINE CONTROL SYSTEM
IMMOBILIZER SYSTEM
·AUTOMATIC AIR CONDITIONER
·COOLING SYSTEM
·ENGINE CONTROL SYSTEM
·IMMOBILIZER SYSTEM
ACD AND AYC
·ACD AND AYC
·ANTI-SKID BRAKING SYSTEM (ABS)
ACD AND AYC
·ENGINE CONTROL SYSTEM
·IMMOBILIZER SYSTEM

H6J00E02CB


2
BATTERY
8W
5W
RELAY BOX
15
20A
8
20A
<F>2GR
0.85B-Y
6
A-13
0.85B-Y
1
0.85B-Y
2
ENGINE CONTROL RELAY
B-12X
OFF
ON
4
3
0.85 R-Y
2
0.85 R-Y
0.85 R-Y
<F>0.75 R-Y
0.85 R-Y
<F>0.75 R-Y
1.25 R-Y
1.25 R-Y
0.85 R-Y
1.25 R-Y
0.85 R-Y
0.85 R-Y
R-B
4 D
3 E
3 F
3 G
5 H
5 I
5 J
5 K
6 L
6 M
28
J/C (6)
C-105
30
31
29
33
·AUTOMATIC AIR CONDITIONER
·COOLING SYSTEM
R
0.85 R-Y
0.85 R-Y
0.85 R-Y
1.25 R-Y
0.85 R-Y
0.85 R-Y
4 N
7 O
3 P
6 Q
47
59
57
60
C-119
POWER SOURCE
BATTERY BACK-UP
C-119
(MU803782)
41 42 43 44 JAE 45 46 47
48 49 50 51 52 53 54 55 56 57 58 59
60 61 62 63 64 65 66 67 68
C-121
(MU803784)
1 2 3 4 JAE 5 6 7 8
9 10 11 12 13 14 15 16 17 18 19 20 21 22 23
24 25 26 27 28 29 30 31 32 33 34 35
C-212
MU801403
1
C-214
1 2 3 4 5 6 7 8 9 10 11 12 13 14
15 16 17 18 19 20 21 22 23 24 25 26 27 28
C-221
1 2
3 4
C-223
1 2
3 4

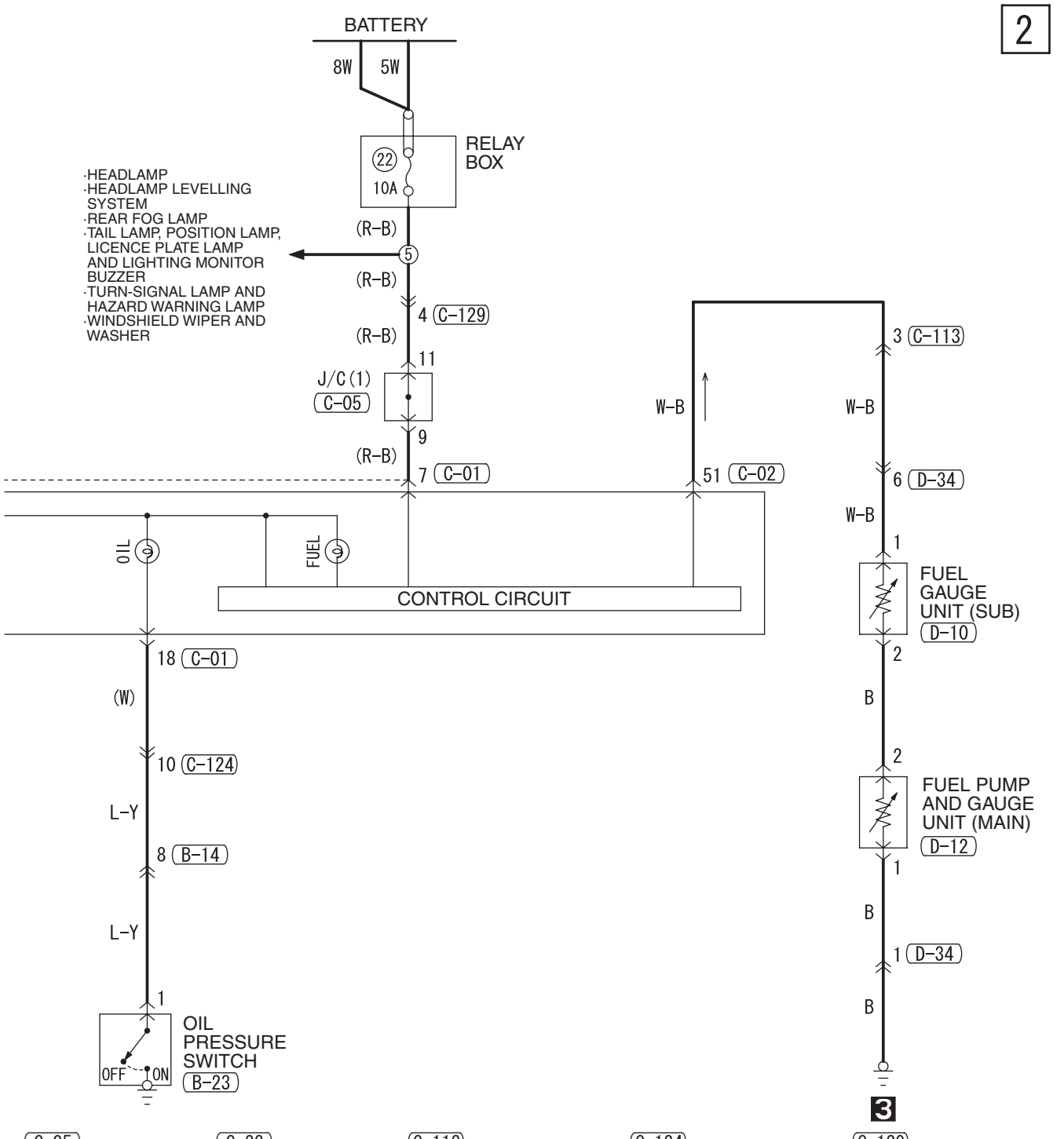
H6J05E00AB

NOTES



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

H6J08E04AB



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

H6J10E01AB

2

NOTE
*: ·HEADLAMP
·REAR FOG LAMP
·TAIL LAMP, POSITION LAMP, LICENCE PLATE LAMP AND LIGHTING MONITOR BUZZER
·TURN-SIGNAL LAMP AND HAZARD WARNING LAMP
·WINDSHIELD WIPER AND WASHER