

SECTION 22

MANUAL TRANSMISSION

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Precautions Regarding Servicing of Vehicles Fitted with SRS Airbags

1. Before removing or fitting any SRS Airbag related components, it is essential that you refer to the '00-5 Lancer Sedia Service Manual (No. 1036K00), Chapter 52B - "Servicing Precautions".
2. Make certain that, when removing or fitting any component in a system marked with an * in the above list of section titles, you do not knock any SRS Airbag related components.

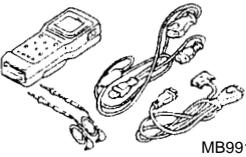
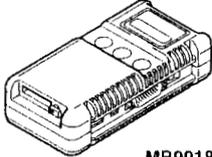
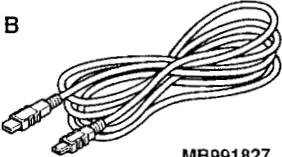
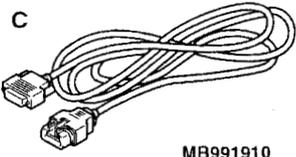
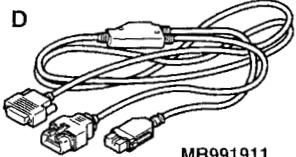
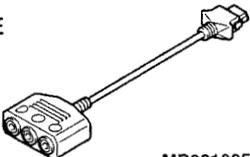
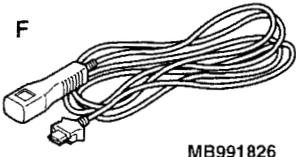
General

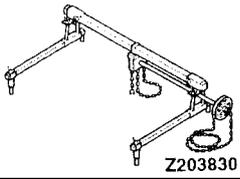
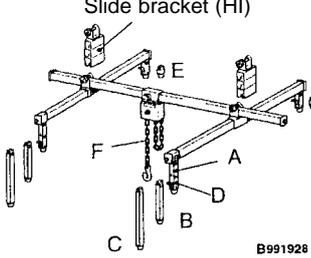
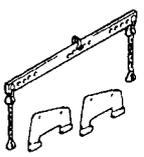
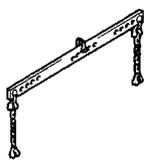
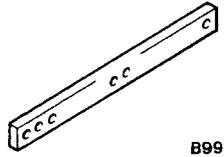
The following servicing information has been changed with the introduction of the new Lancer Evolution VIII. Servicing details otherwise remain unchanged, and are the same as for the Lancer Evolution VII.

Lubrication

Item	Name	Capacity dm ³
Transmission oil <6M/T>	Mitsubishi Genuine DIA QUEEN Super Multi-gear oil (75W/85W)	2.2

Special Tools

Tools	Number	Name	Use
 <p>MB991502</p>	MB991502	MUT-II Sub-ASSY	Diagnosis code checking
<p>A</p>  <p>MB991824</p> <p>B</p>  <p>MB991827</p> <p>C</p>  <p>MB991910</p> <p>D</p>  <p>MB991911</p> <p>E</p>  <p>MB991825</p> <p>F</p>  <p>MB991826</p> <p>MB991955</p>	<p>MB991955</p> <p>A: MB991824 B: MB991827 C: MB991910 D: MB991911 E: MB991825 F: MB991826</p>	<p>MUT-III Sub-ASSY</p> <p>A: V.C.I. (Vehicle Communication Interface) B: USB cable C: MUT-III main harness A (vehicles with CAN communication) D: MUT-III main harness B (vehicles without CAN communications) E: Adapter for measurements F: Trigger harness</p>	

Tools	Number	Name	Use
	Recommended tools Anzen Jidosha (Co. Ltd) MZ203831 Or Banzai (Co. Ltd) MZ203830	Engine lifter	To hold the engine ASSY when removing or fitting the transmission. Note 1. The engine lifter balancer (MB991454) is one part of the engine lifter ASSY (MB991453). 2. Only use a chain with the engine lifter balancer (MB991454)
Slide bracket (HI) 	MB991928 A: MB991929 B: MB991930 C: MB991931 D: MB991932 E: MB991933 F: MB991934	Engine lifter A: Joint (50) x 2 B: Joint (90) x 2 C: Joint (140) x 2 D: Feet (stand) x 4 E: Feet (short) x 2 F: Chain & hook ASSY	
	MB991453	Engine lifter attachment set	
	MB991454	Engine lifter balancer	
	MB991527	Engine lifter	

Troubleshooting

1. Diagnosis Code List

Diagnosis code No.	Diagnosis item	Reference page
31	Steering sensor <ST-1, ST-2, ST-N> system	Broken wire or short 22-4
63	Parking brake switch system	Short or forgotten to return 22-5
65	ABS monitor system (vehicles fitted with ACD + AYC)	Broken wire or ABS fault 22-6
82	Electromotive pump relay system	Electromotive pump fault or pressure sensor abnormality 22-7

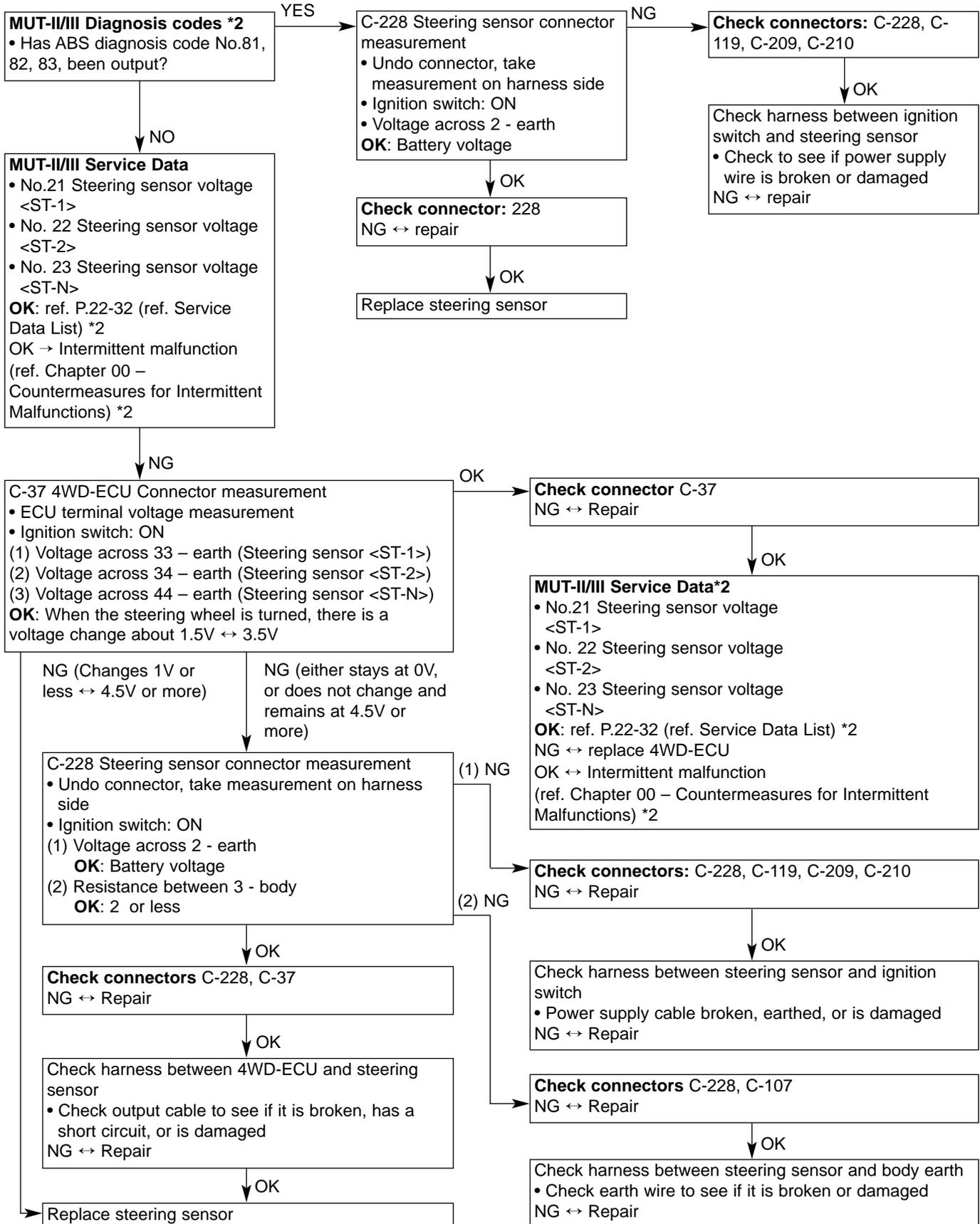
2. Checking Procedure for each Diagnosis Code

Note

*1: Refer to '00 – 5 Lancer Sedia Service Manual (No.103K00)

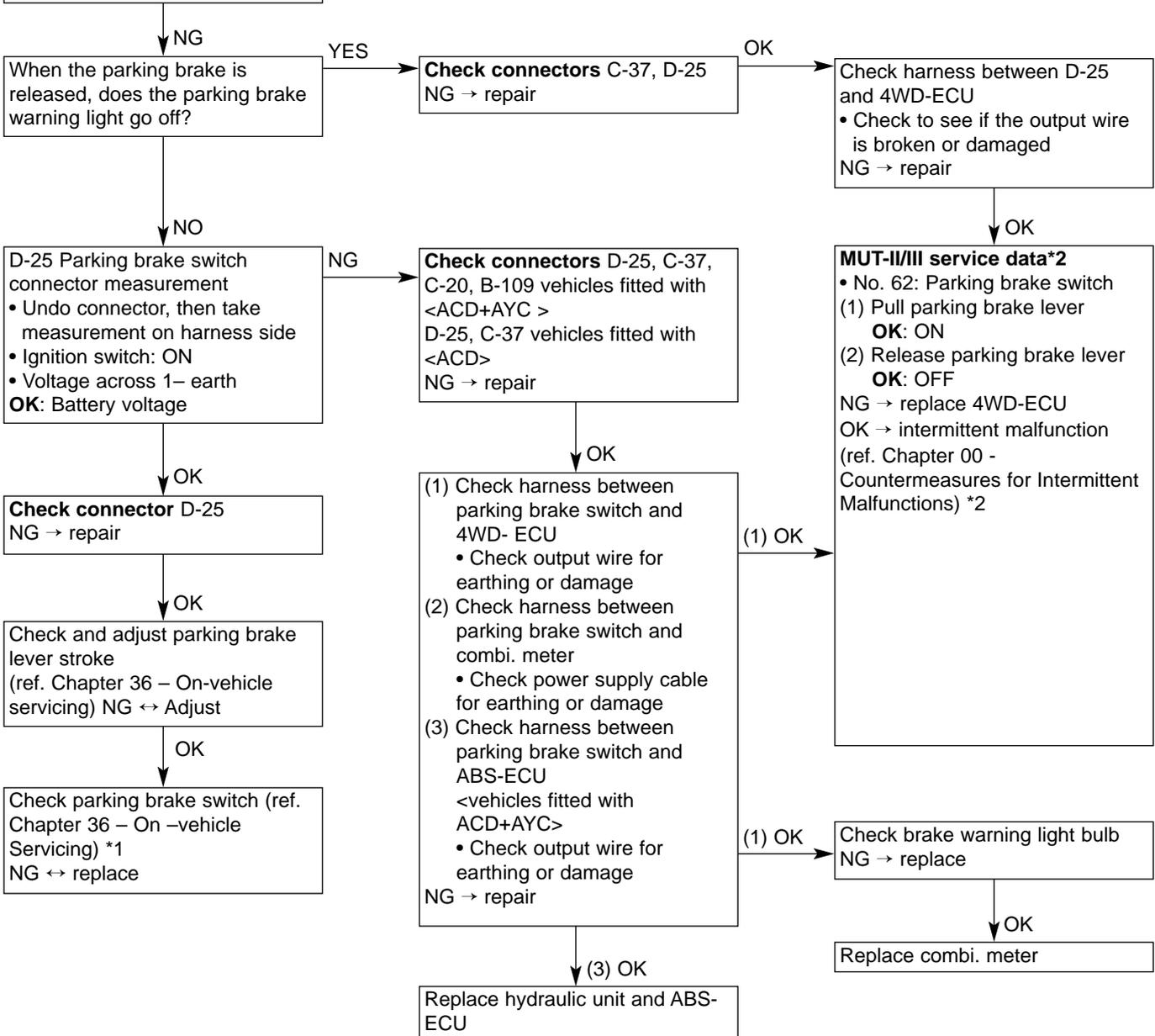
*2: Refer to '01-1 Lancer Evolution VII Service Manual (No.1036K02)

Code No.31 Steering sensor <ST-1, ST-2, ST-3>	Possible causes
When a steering sensor output wire (ST-1, ST-2, or ST-N) is broken or has a short circuit, No.31 will be output.	Steering sensor malfunction Harness, connector malfunction 4WD-ECU malfunction



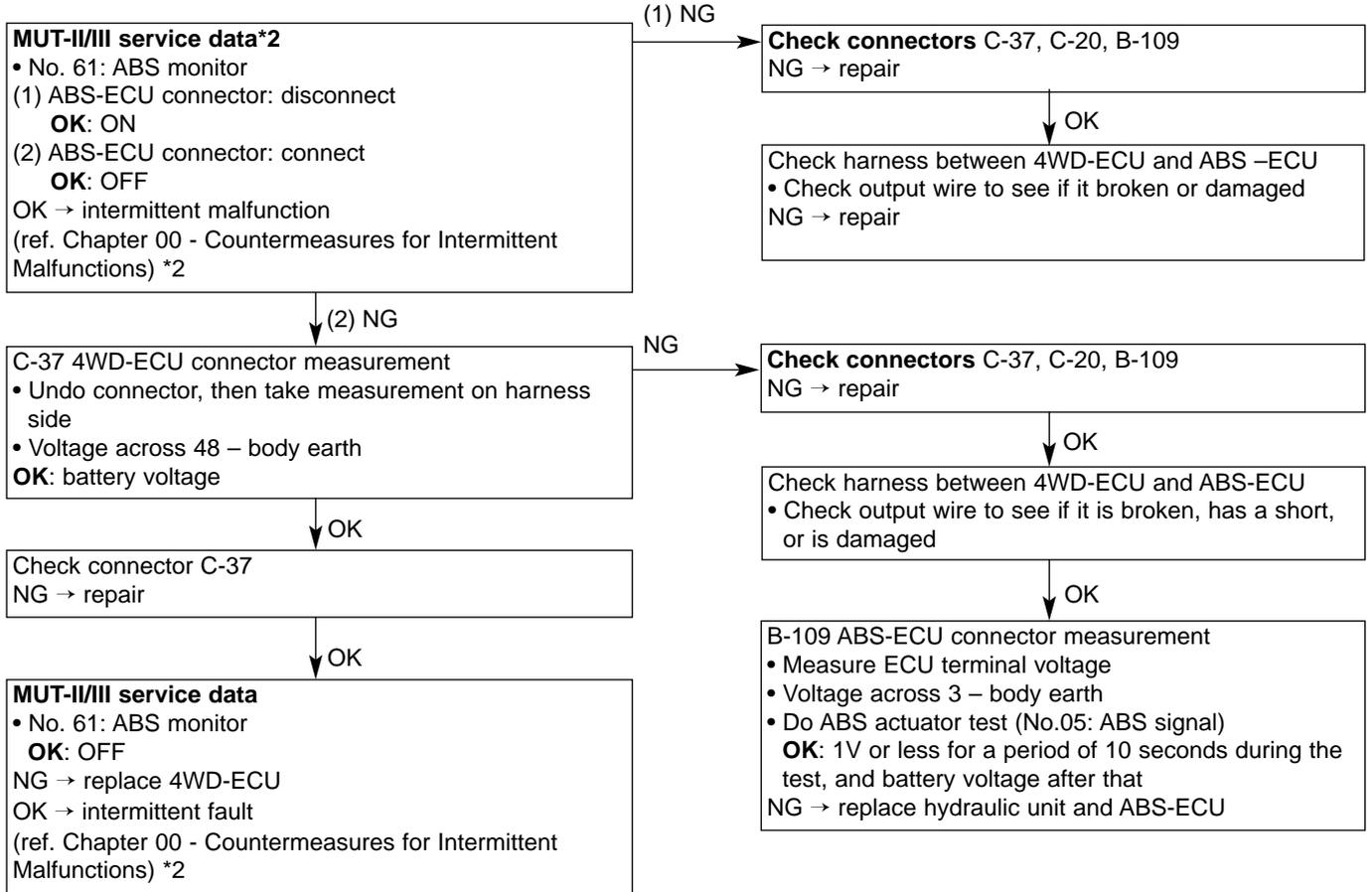
Code No.63 Parking brake switch system	Probable causes
At vehicle speeds of 15km/h and over, code No. 63 is output if the parking brake stays ON for 15 minutes or more.	<ul style="list-style-type: none"> • Parking brake switch malfunction • Harness, connector malfunction • ABS-ECU malfunction (vehicles fitted with ACD + AYC) • 4WD-ECU malfunction

MUT-II/III service data*2
 • No. 62: Parking brake switch
 (1) Pull parking brake lever
OK: ON
 (2) Release parking brake lever
OK: OFF
 OK → intermittent malfunction
 (ref. Chapter 00 - Countermeasures for Intermittent Malfunctions) *2

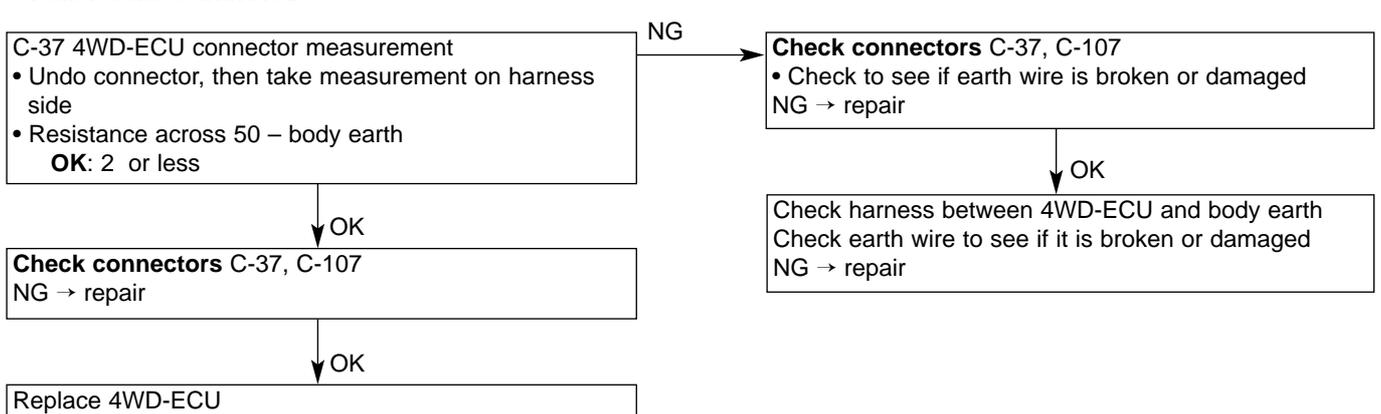


Code No.65 ABS Monitoring System	Probable causes
When ABS operating for 1 minute or more continuously is detected, code No. 65 is output.	<ul style="list-style-type: none"> • Harness, connector malfunction • ABS-ECU malfunction <vehicles fitted with ACD+AYC> • 4WD-ECU malfunction

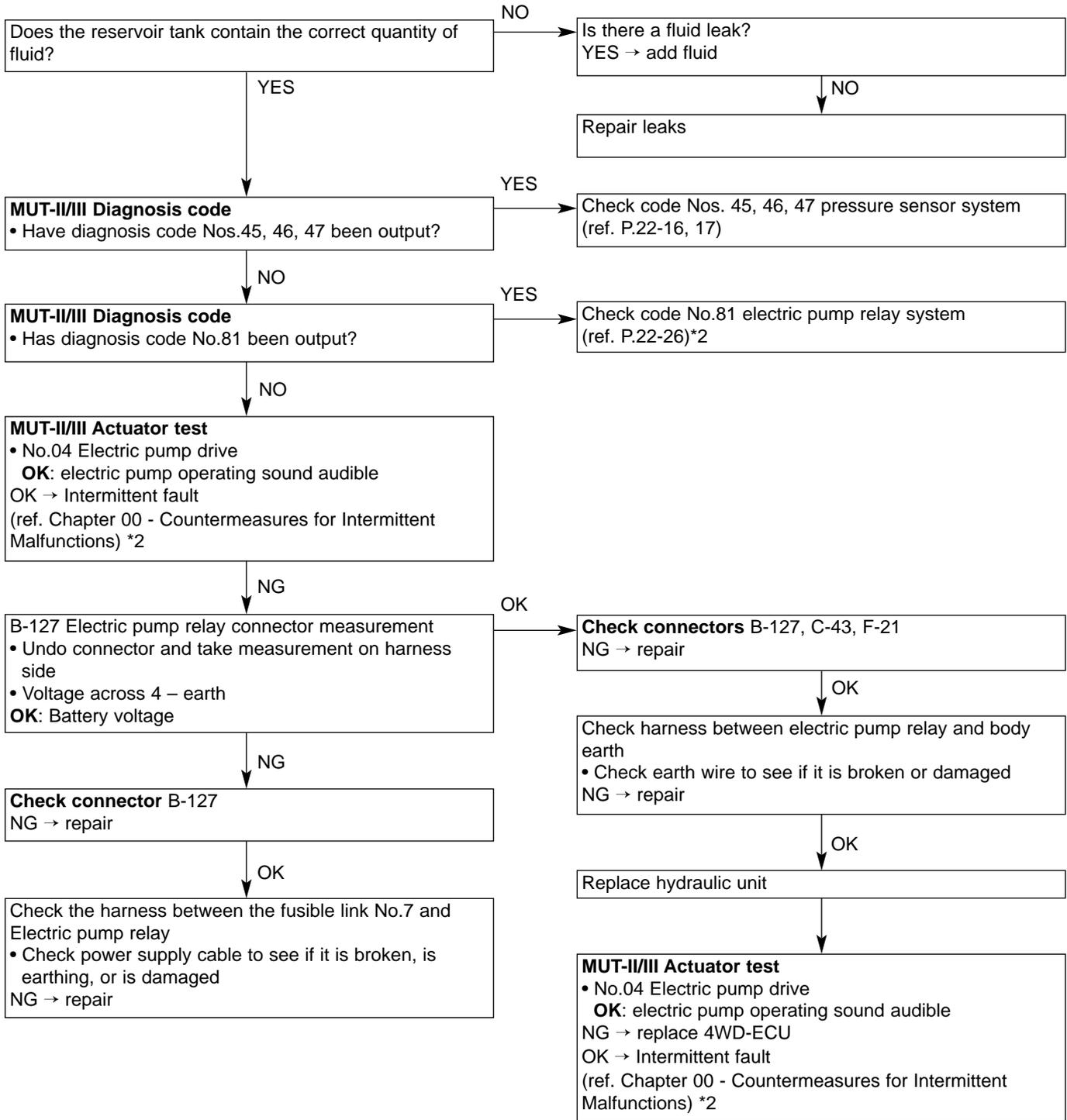
<Vehicles fitted with ACD+AYC>



<Vehicles fitted with ACD>



Code No.82 Electric Pump Relay System	Probable causes
Code No.82 is output when the pressure sensor does not reach the specified value, even if the 4WD-ECU has output the electric pump motor drive command.	<ul style="list-style-type: none"> • Insufficient fluid • Pressure sensor malfunction • Hydraulic pressure unit malfunction • Harness, connector malfunction • 4WD-ECU malfunction • Electric pump relay malfunction



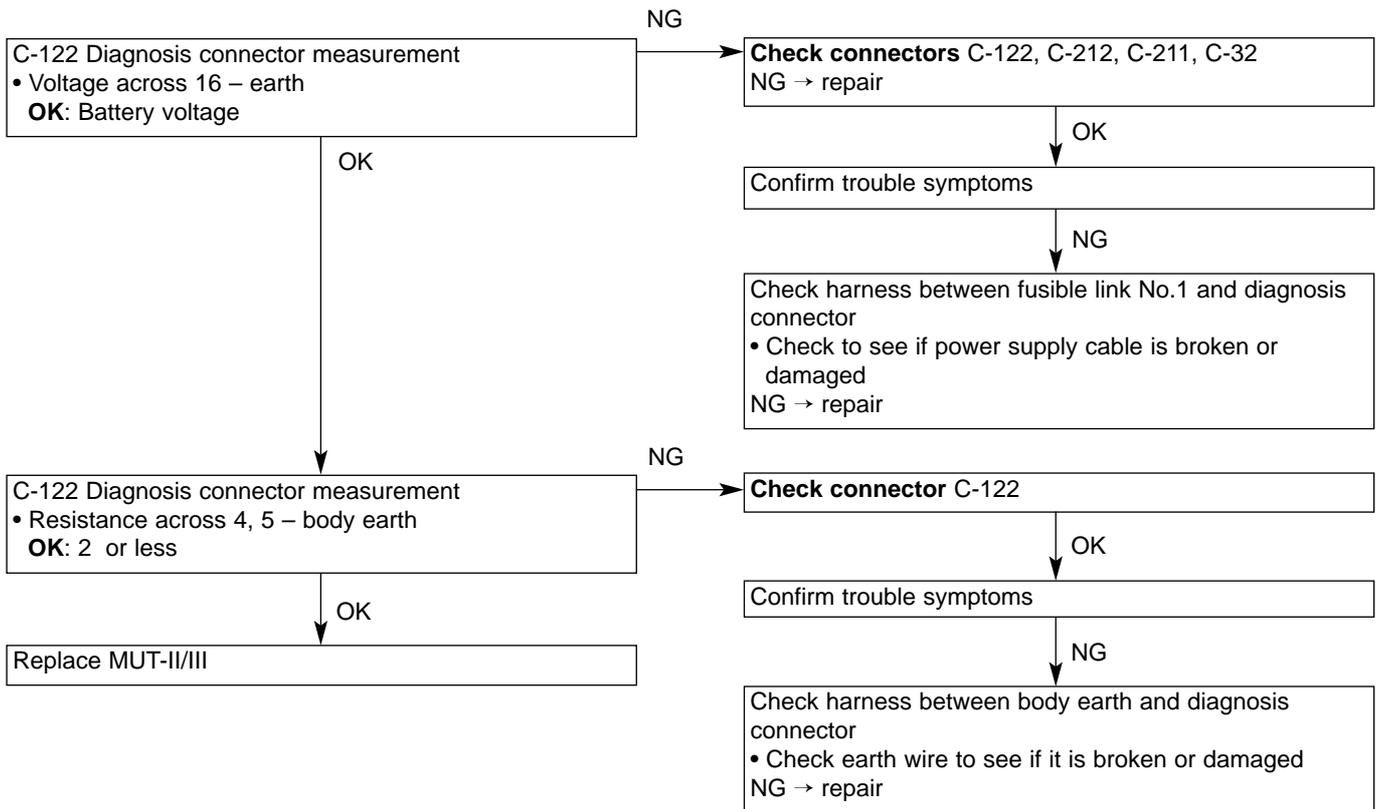
5. Inspection Chart for Trouble Symptoms

Fault symptom	Checking Procedure No.	Page
No communication possible between MUT-II/III and any other system	1	22-8

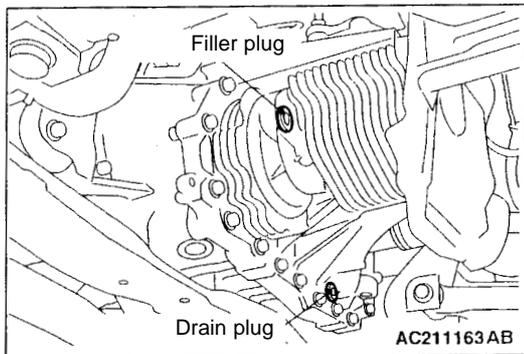
6. Trouble Symptom Checking Procedures

Checking Procedure 1

No communication possible between MUT-II/III and any other system	Possible causes
It is possible that there is a malfunction in the diagnosis connector power supply circuit, the earth circuit, or the MUT-II/III.	<ul style="list-style-type: none"> • Diagnosis connector malfunction • Harness, connector malfunction • MUT-II/III malfunction



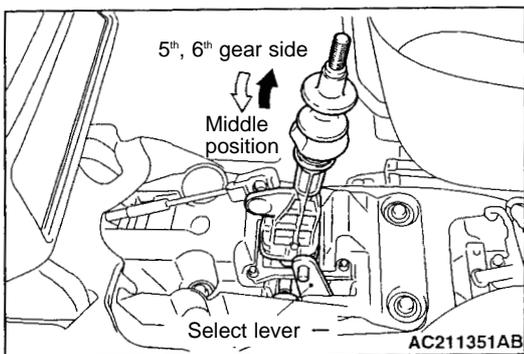
On-vehicle Servicing



1. Changing transmission oil <6 M/T>

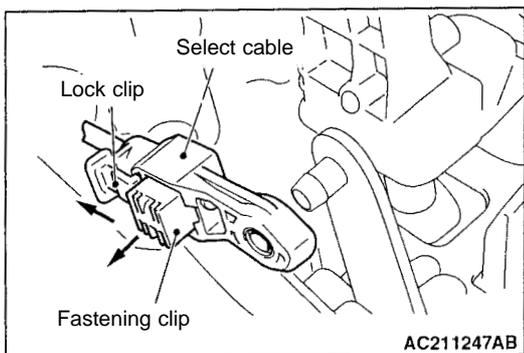
Servicing information other than that noted below remains the same.

Transmission oil
Specified transmission oil:
Mitsubishi DIA QUEEN SUPER MULTIGRADE OIL <75W/85W>
Quantity: 2.2 dm³

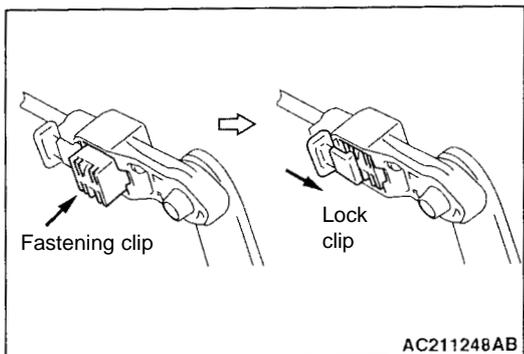


2. Select cable (inside cabin) adjustment <6M/T>

1. Put gear stick in the neutral position
2. Remove front floor console. (ref. '01-1 Lancer Evolution VII Service Manual (No.1036K02) – Chapter 52A)
3. Disconnect the select cable from the select lever
4. Move the gear stick towards the 5th and 6th gears so that it touches the stopper, then check the cable connection is secure and the assembly is running smoothly (run-in).
5. Remove hand from gear stick, and allow it to return naturally to the neutral position



6. Move the select cable lock clip in the direction of the arrow in the diagram, pulling the fastening clip
7. Without moving the gear stick from the neutral position, connect the select cable to the select lever.
8. Adjust the select cable



9. Press the select cable fastening clip in, and move the lock clip back.
10. Check by shifting the gear stick into each gear.

NOTE

Repeat steps 3 and 10 if the gear stick does not go into a gear, or if it catches and does not move smoothly.

11. Fit the front floor console (ref. '01-1 Lancer Evolution VII Service Manual (No. 1036K02) – Chapter 52A)

22-10 MANUAL TRANSMISSION - TRANSMISSION CONTROL<6M/T>

Transmission Control <6M/T>

Removal and Fitting

CAUTION

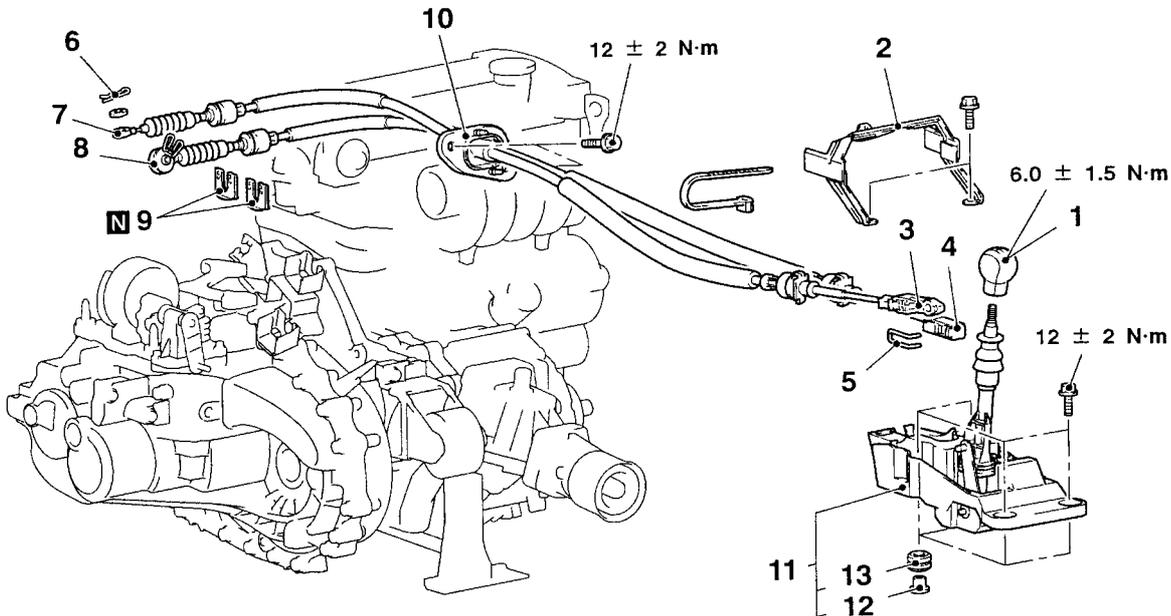
1. On the gear stick ASSY, do not disassemble anything other than the distance piece and bush. (Non-supplied parts)
2. Never use mineral oil on the moving parts of the gear stick ASSY. This is because if mineral oil is used, it could cause plastic parts to break.

Pre-removal and post-fitting operations

- Removal and fitting of air cleaner ASSY
- Removal and fitting of air by-pass hose, air hose E, air pipe C, air hose D (ref. Chapter 15 – Intercooler)
- Removal and fitting of battery, battery tray

Caution: SRS

Do not subject the SRS-ECU to any shocks when removing or fitting shift and select cable ASSY, or gear stick ASSY.



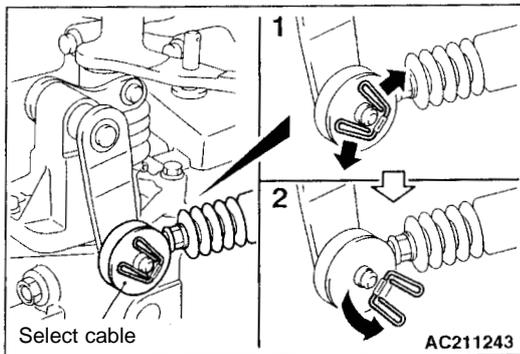
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Shift cable & select cable ASSY removal procedure

1. Gear stick knob
 - Front floor console
2. Front floor console bracket
- ▶ B ◀ 3. Select cable connection (inside cabin)
4. Shift cable connection (inside cabin)
5. Clip (inside cabin)
6. Snap pin
- ▶ A ◀ 7. Shift cable connection (transmission side)
- ◀ A ▶ ▶ A ◀ 8. Select cable connection (transmission side)
- ◀ B ▶ ▶ A ◀ 9. Clip (transmission side)
10. Shift cable & select cable ASSY

Gear stick ASSY fitting procedure

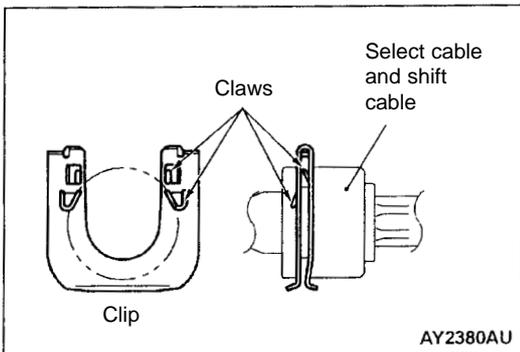
1. Gear stick knob
 - Front floor console
2. Front floor console bracket
- ▶ B ◀ 3. Select cable connection (inside cabin)
4. Shift cable connection (inside cabin)
5. Clip (inside cabin)
11. Gear stick ASSY
12. Distance piece
13. Bush



Removal

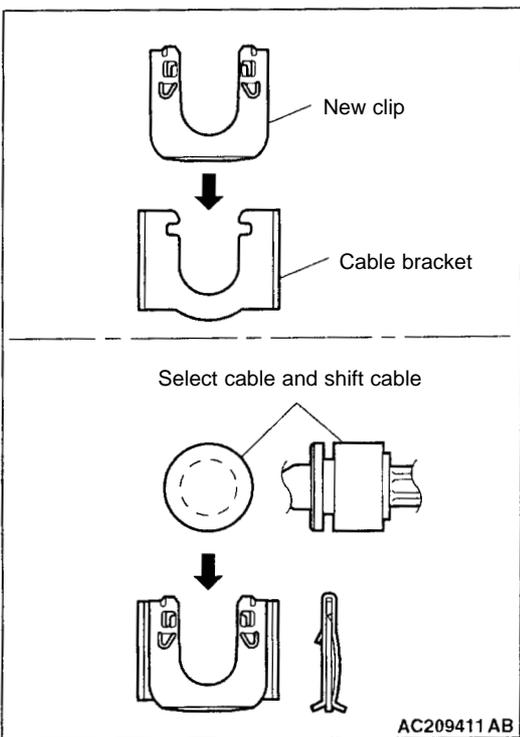
◀ A ▶ Removal of select cable connection (transmission side)

Set the select cable clip in the position indicated in the diagram, then undo the select cable connection.



◀ B ▶ Clip removal (transmission side)

Use a screwdriver or similar device to undo the claws of the clip, then remove the clip and each of the cables from the bracket.



Fitting

▶ A ◀ Fitting of select cable connection (transmission side), shift cable connection (transmission side), clip (transmission side)

1. Set the gear stick on the transmission side to neutral position
2. Fit the shift cable end (transmission side) and the select cable (transmission side) facing the snap pin.
3. After fitting the new clip to the transmission cable bracket, fit the shift cable and select cable to the cable bracket.

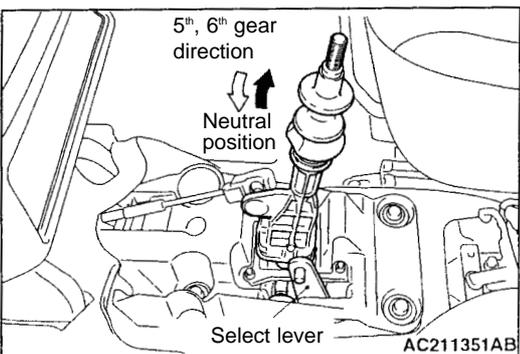
NOTE

The clip can be fitted either way round.

CAUTION

When fitting the clip, select cable and shift cable, make sure you hear them snap tight so that they are securely connected.

4. Check that the gear stick (inside cabin) moves smoothly into all of the gears.



▶ B ◀ Fitting of select cable connection (inside cabin)

1. Move the gear stick towards 5th and 6th gears until it touches the stopper, then check the cable connection is secure and the assembly is running smoothly (run-in).
2. Remove hand from the gear stick, then fit the select cable (inside cabin) to the select lever in the neutral position (to which it returns naturally).
3. Check that the shift cable (inside cabin) and select cable (inside cabin) are securely connected, then move the gear stick into each of the gear positions.
4. If the gear stick does not go into all of the gear positions, adjust the select cable (ref. P.22-9)

Transfer ASSY <6M/T>

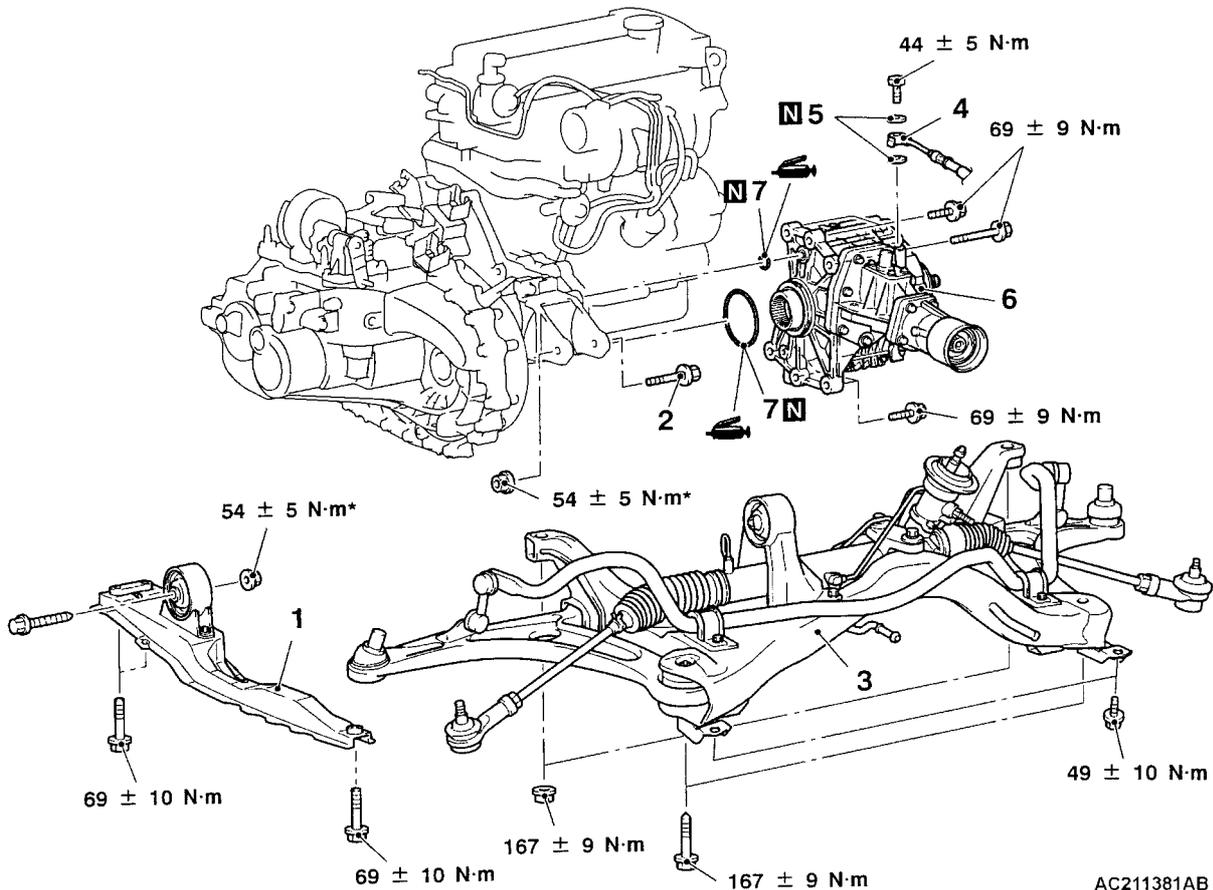
CAUTION

1. Before removing steering wheel and airbag module ASSY, without fail read Chapter 52-B Precautions for Servicing and Airbag Module and Clock Spring.
2. When Brembo brake calipers are used, there is concern over paint peeling off, so when doing servicing work, make sure they are not scratched by other components and tools.
3. *Indicates parts which should be initially tightened, and then fully tightened when the engine weight is supported by the vehicle body.

Removal and fitting

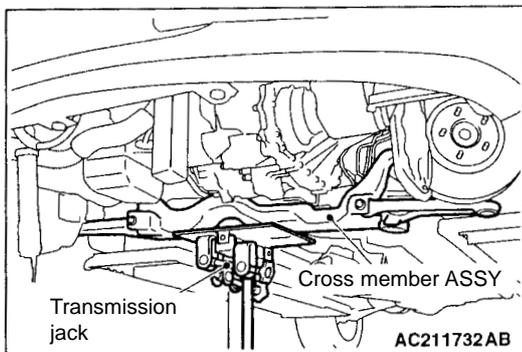
Pre-removal and Post-fitting operations

- Removal and fitting of steering wheel
- Removal and fitting of cover (ref. Chapter 51 – Front Bumper)
- Removal and fitting of side cover (ref. Chapter 51 – Front Bumper)
- Removal and fitting of steering shaft cover
- Removal and fitting of steering gear and joint connection
- Removal and fitting of cross member bar
- Removal and fitting of front exhaust pipe
- Removal and fitting of front propeller shaft
- Removal and fitting of drive shaft, output shaft
- Draining and filling of transmission oil
- Draining and filling of transfer oil
- Bleeding and hydraulic pressure check <ACD> <only after fitting>
- Bleeding <AYC> <only after fitting>
- Power steering fluid filling and bleeding <only after fitting>
- Wheel alignment check, adjustment <only after fitting>



Removal procedure

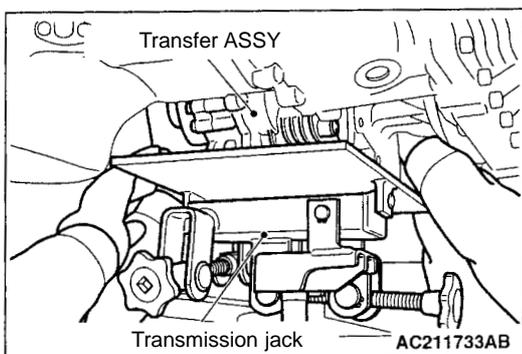
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| <p>1. Centre member</p> <ul style="list-style-type: none"> • Power steering return hose and steering gear connection • Power steering pressure hose and steering gear connection <p>2. Rear roll stopper connecting bolt</p> | <p>◀ A ▶</p> <p>◀ B ▶</p> | <p>3. Cross member ASSY</p> <p>4. Transfer pressure hose ASSY</p> <p>5. Gasket</p> <p>6. Transfer ASSY</p> <p>7. O-ring</p> |
|--|---------------------------|---|



Removal

◀ A ▶ Removal of cross member ASSY

Support the cross member ASSY with the transmission jack, then remove the cross member fixing bolt and cross member ASSY



◀ B ▶ Removal of transfer ASSY

Support the transfer ASSY with the transmission jack, then remove the transfer fixing bolt and transfer ASSY.

Transmission ASSY <6M/T>

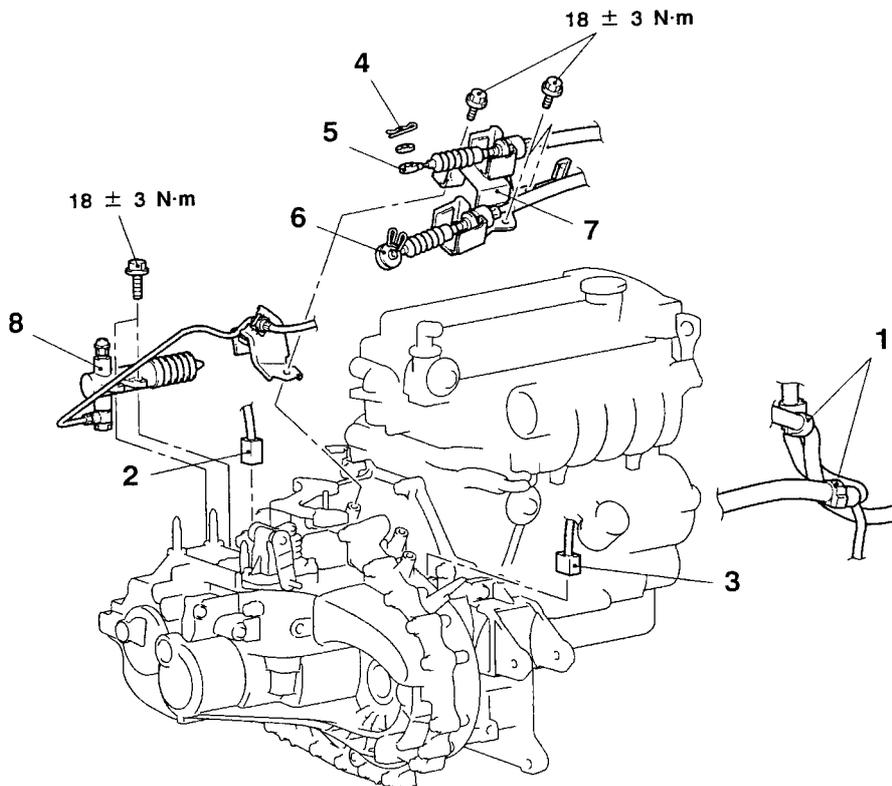
CAUTION

1. Before removing steering wheel and airbag module ASSY, be sure to read Chapter 52-B Precautions for Servicing, Airbag Module and Clock Spring.
2. When Brembo brake calipers are used, there is concern over paint peeling off, so when doing servicing work, make sure they are not scratched by other components and tools.
3. * Indicates parts which should be initially tightened, and then fully tightened when the engine weight is supported by the vehicle body.

Removal and fitting

Pre-removal and Post-fitting operations

- Removal and fitting of transfer ASSY (ref. P.22-18)
- Removal and fitting of battery and battery tray
- Removal and fitting of strut and tower bar
- Temporary fitting of strut ASSY fixing bolt <only before removal>
- Removal and fitting of air duct
- Removal and fitting of air pipe hose, air hose E, air pipe C, air hose D (ref. Chapter 15 – Intercooler)
- Removal and fitting of air cleaner ASSY
- Removal and fitting of air intake hose
- Removal and fitting of canister
- Removal and fitting of starter ASSY (ref. Chapter 16 – Starter)



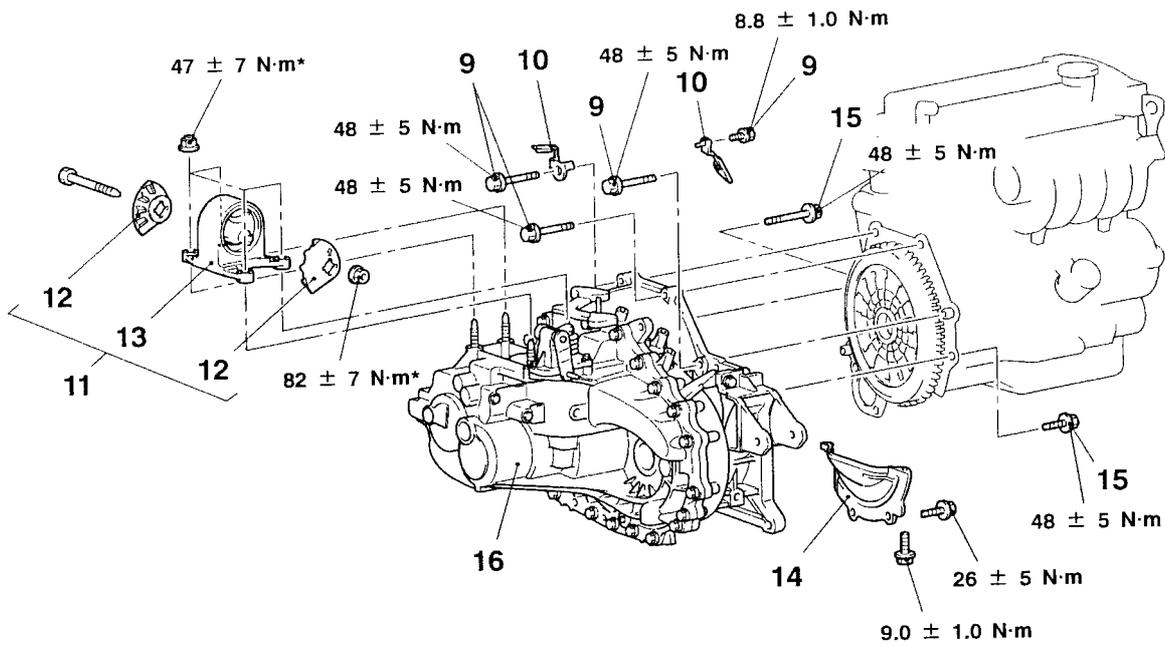
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Removal procedure

1. Main harness clamp connection
2. Reversing light switch connector connection
3. Vehicle speed sensor connector connection
4. Snap pin
5. Shift cable connection

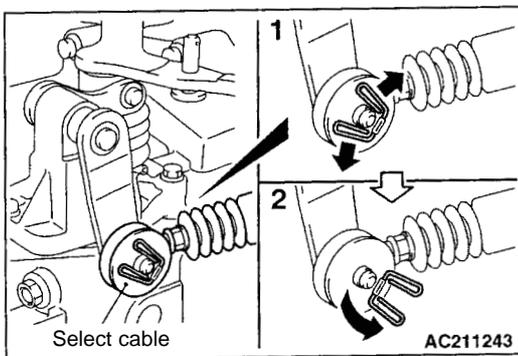
◀ A ▶

6. Select cable connection
7. Control cable ASSY & bracket (transmission side)
8. Clutch release cylinder & clutch oil pipe



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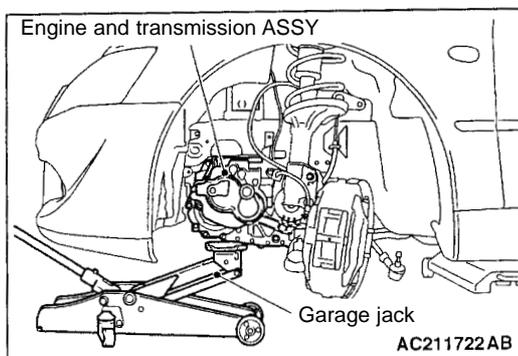
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|-------|--|-------|---------------------------------------|
| | 9. Transmission ASSY upper part coupling bolts | ◀ C ▶ | • Engine ASSY support |
| | 10. Harness clamp | | • For lifting the engine |
| ◀ B ▶ | 11. Transmission mount ASSY | | 14. Bell housing cover |
| | ▶ A ◀ | ◀ D ▶ | • Clutch release bearing connection |
| | 12. Transmission mount stopper | | 15. Transmission lower coupling bolts |
| | 13. Transmission mount bracket | | 16. Transmission ASSY |



Removal

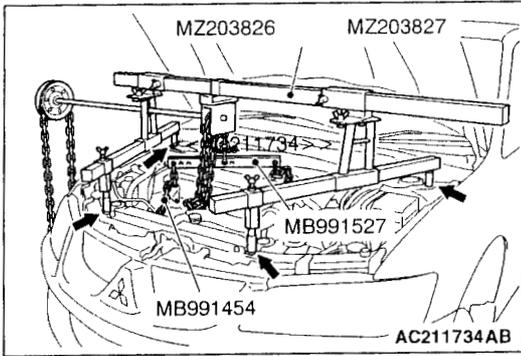
◀ A ▶ Removal of select cable connection (transmission side) removal

Set the select cable clip in the positions indicated (1,2) in the diagram, then undo the select cable connection.



◀ B ▶ Transmission mount ASSY removal

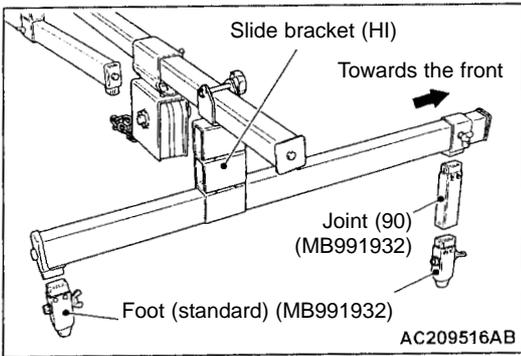
Support the engine and transmission ASSY with a garage jack, then remove the transmission mount ASSY.



◀ C ▶ Engine ASSY Support

<When using the special engine lifter tool (MZ203831 or MZ203830)>

1. Fit the special engine lifter to the strut mounting nuts and radiator support upper insulator mounting bolts, shown in the diagram, in the engine bay.
2. Fit the special engine lifter (MB991527) and engine lifter balancer (MB991454) chains, supporting the engine and transmission ASSY.



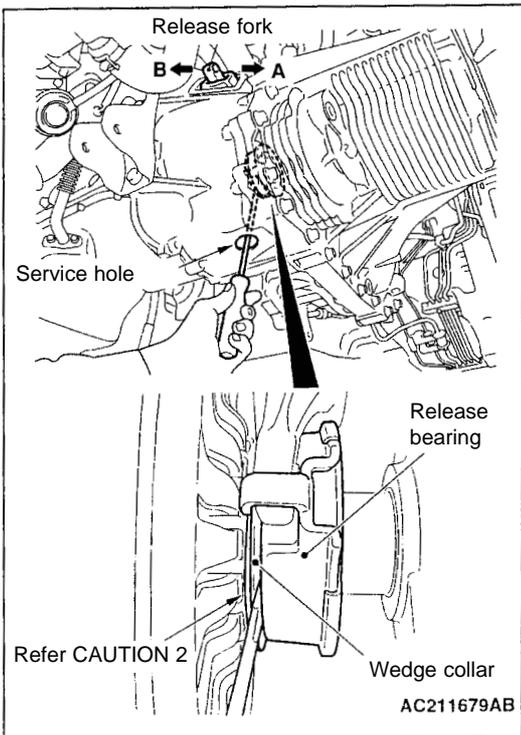
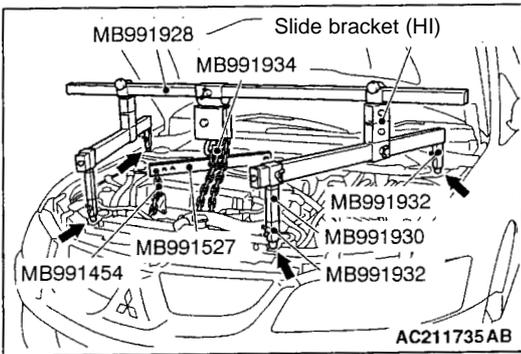
<When using the special engine lifter (MB991928)>

1. Assemble the special engine lifter tool (MB991928) (Fit the following parts to the lower lifter)
 - slide bracket (HI)
 - foot (standard) (MB991932)
 - joint (90) (MB991930)
2. Fit the special engine lifter (MB991928) to the strut mounting nuts and radiator support upper insulator mounting bolts, shown in the diagram, in the engine bay.
3. Fit the special engine lifter (MB991527) and engine lifter balancer (MB991454) chains.

NOTE

Adjust the balance by sliding the special engine lifter (MB991928) slide bracket (HI).

4. Support the engine and transmission ASSY.



◀ D ▶ Separate clutch release bearing

1. Remove the clutch housing service hole cover
2. Whilst lightly pushing the release fork, by hand, in direction A, insert a flat-tip screwdriver between the release bearing and wedge collar.

CAUTION

(1) Do not insert the flat tip screwdriver before pressing the release fork in direction A.

(2) Do not insert the flat tip screwdriver between the wedge collar and wave spring by mistake.

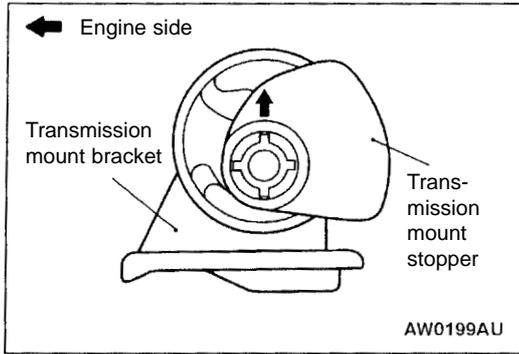
3. Twist the screwdriver gently (turning the handle about 90°) and separate the release bearing and wedge collar

NOTE

The release fork will be forced to move fully in direction B by the return spring, as soon as it is separated from the collar.

CAUTION

If it is hard to turn the screwdriver (the release bearing cannot be separated), remove the screwdriver, then repeat the above procedure after pushing the release fork in direction A 2 or three times. Forcibly trying to separate the release bearing could damage or break it.



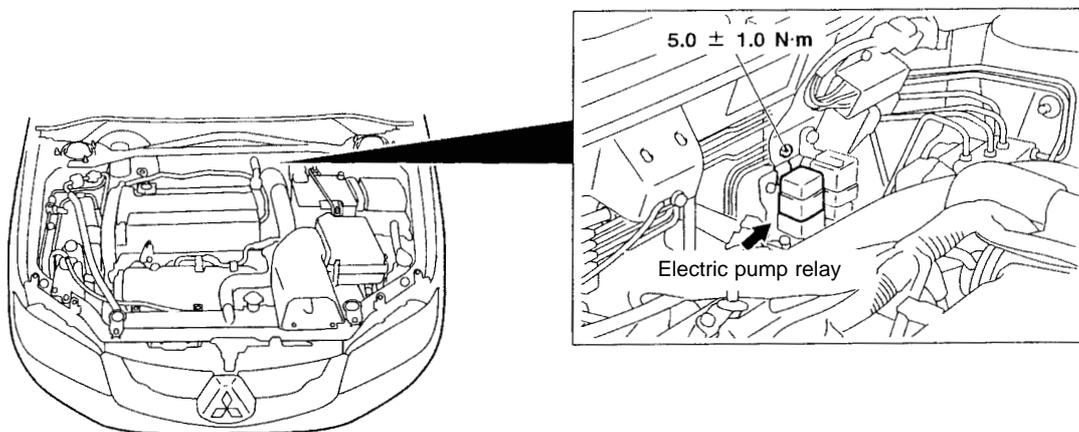
Fitting

▶ A ◀ Fitting transmission mount stopper

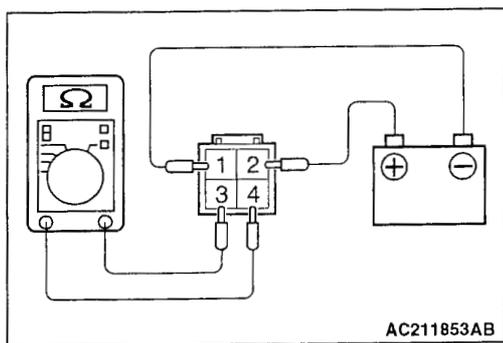
Fit so that the arrow on the transmission mount stopper is vertical relative to the vehicle body.

Sensor, Switch, Relay <ACD,ACD+AYC>

Removal and fitting



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Check

Electric pump relay continuity check

1. Remove electric pump relay connector

Check item		Normal condition
Tester connection terminal No.	Battery connection terminal No.	
3,4	-	No continuity
	Connect battery (+) terminal to 2, and battery (-) terminal to 1.	2 or less

2. If there is a malfunction, replace electric pump relay.