MITSUBISHI

LANCER Evolution VIII MR

SERVICE MANUAL

Supplement

'04-2

GH-CT9A

No.1036K10

SERVICE MANUAL

LANCER
EVOLUTION VIII
MR

FOREWORD

This manual contains details of the main changes to the 2004 model Lancer Evolution VIII MR. Only differences to the current Lancer Evolution VIII are included, so please use this manual in conjunction with the related information specified on the next page.
Please ensure that proper servicing is carried out promptly, and that the information contained in the relevant manuals is carefully read and understood before doing any servicing work.
This information relates to the current vehicle (February 2004). Since specifications will change, some of the information contained here will inevitably be superseded.
Note that SI units are used in this manual. Old units are not shown alongside them.
(However, old units are used for some figures we have taken from existing documents).

Any opinions, requests, or questions concerning this manual, should be written on the 'Servicing Comments Form' at the end, and sent to us by fax.

February 2004

MITSUBISHI MOTOR CORPORATION

CONTENTS

This manual is printed on recycled paper.

Related information

Title	No.	Issue date	Title	No.	Issue date
New model manuals			Body Service Manuals		
• Mirage, Lancer	1036F30	10/1995	• Mirage, Lancer (supplement)	1036F52	8/1996
• Mirage, Lancer	1036F31	1/1996	• Lancer Sedia	1036K50	5/2000
• Mirage, Lancer	1036F32	8/1996	• Lancer Sedia (supplement)	1036K51	7/2000
• Mirage, Lancer	1036F33	7/1997	• Lancer Evolution VII (supplement)	1036K52	5/2001
• Lancer	1036F34	1/1998	• Lancer Sedia (supplement)	1036K53	10/2001
			• Lancer Evolution VIII MR (supplement)	1036K54	2/2004
• Mirage, Lancer	1036F35	10/1998			
• Lancer	1036F36	1/1999			
• Lancer	1036F37	12/1999			
• Lancer Sedia	1036K30	5/2000			
• Lancer Sedia	1036K31	7/2000			
• Lancer Evolution VII	1036K32	1/2001	Wiring layout diagram Service Manuals		
• Lancer Sedia	1036K33	5/2001	• Lancer Evolution VIII	1036K77	1/2003
• Lancer Sedia	1036K34	5/2001	• Lancer Evolution VIII MR (supplement)	1036K80	2/2004
• Lancer Evolution VII	1036K35	1/2001			
• Lancer Sedia	1036K36	5/2002			
• Lancer Evolution VIII	1036K37	1/2003			
• Lancer	1036K38	2/2003			
• Lancer	1036K39	12/2003			
• Lancer Evolution VIII MR	1036K40	2/2004			
Service Manuals			Engine Service Manuals		
• Lancer Sedia	1036K00	5/2002	• 4G6 Engine	1039G46	1/2001
• Lancer Sedia	1036K01	7/2000	• 4G6 Engine	1039G63	1/2003
• Lancer Evolution VII (supplement)	1036K02	1/2001			
• Lancer Sedia (supplement)	1036K03	5/2001			
• Lancer Sedia (supplement)	1036K04	10/2001	Transmission Service Manuals		
• Lancer Evolution VII (supplement)	1036K05	1/2002	• W5M51 Manual Transmission	1039M17	1/2001
• Lancer Sedia (supplement)	1036K06	5/2002	• W5M51Manual transmission (Supplement)	1039M22	1/2003
• Lancer Evolution VIII (supplement)	1036K07	1/2003	• W6MAA Manual transmission	1039M23	1/2003
• Lancer (supplement)	1036K08	2/2003			
• Lancer (supplement)	1036K09	12/2003			

Precautions to be taken when servicing vehicles with seatbelts fitted with SRS Airbag and Pretensioners:

1. **Incorrect inspection or servicing of SRS airbag and pretensioner fitted seatbelt parts, as well as any related components, could lead to major damage or non-operation as a result of sudden, unintentional operation of SRS airbag and pretensioner fitted seatbelts (incorrect deployment).**
2. **In cases where heating from painting processes occurs, the SRS-ECU, driver side airbag module, passenger side airbag module, pre-tensioner fitted seatbelts, and cross springs, should be removed.**
   - **93°C and above: SRS-ECU, driver side airbag module, passenger side airbag module, cross springs**
   - **90°C and above: pretensioner fitted seatbelts**
3. **Inspections and servicing of SRS airbag and pretensioner fitted seatbelt parts and any related components must, without fail, be done by a Mitsubishi Motors authorized dealer.**
4. **Inspections and servicing of SRS airbag and pretensioner fitted seatbelt parts and any related components must be done paying scrupulous attention to the relevant service manual (particularly in the case of Group 52B – SRS airbags).**

SECTION 00

GENERAL

CONTENTS

Model line-up

Model	Version	'04 Model	Grade	Engine Model	Transmission	Fuel System
GH-CT9A	SNDFZ	○	RS	4G63 (2 000 DOHC 16 valve intercooler turbo)	W5M51 (4WD, 5M/T)	MPI
	SJDFZ	○	RS		W6MAA (4WD, 6 M/T)	
	SJGFZ	○	GSR			

Note
○ = Continued model

Applied vehicles

GH-CT9A: CT9A-0300001 ~

SECTION 13A

MPI (Multi-point Fuel Injection)

CONTENTS

General

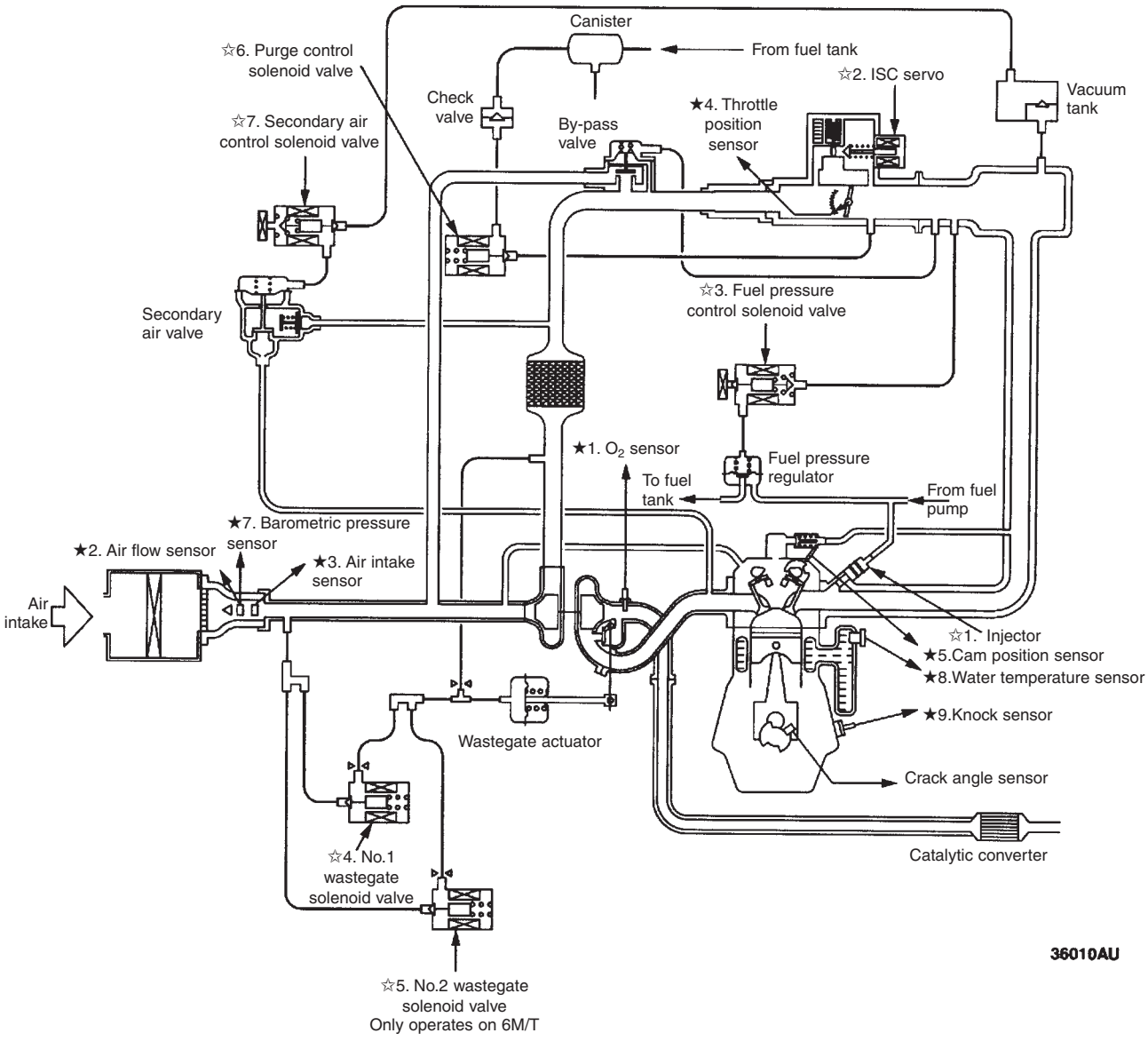
Service information issued contains the changes noted below. Other service details remain unchanged.

- Change from one to two wastegate solenoid valves. However, the No.2 wastegate solenoid valve on the 5 M/T is not functional.
- Diagnosis code No. P1500 changed to P0622. <6M/T>

MPI system diagram

★1. O2 sensor ★2. Air flow sensor ★3. Air intake sensor ★4. Throttle position sensor ★5. Cam position sensor ★6. Crack angle sensor ★7. Barometric pressure sensor ★8. Water temperature sensor ★9. Knock sensor	• Power supply • Ignition switch IG • Ignition switch ST • Vehicle speed sensor • A/C switch • A/C load signal • Power steering fluid pressure switch • Alternator FR signal • Intercooler water spray switch (auto) • Intercooler water spray switch (manual)	→ Engine ECU →

☆1. Injector ☆2. ISC servo (stepper motor) ☆3. Fuel pressure control solenoid valve ☆4. No.1 wastegate solenoid valve ☆5. No.2 wastegate solenoid valve ☆6. Purge control solenoid valve ☆7. Secondary air control solenoid valve	• Engine control relay • Fuel pump relay 2, 3 • A/C relay • Ignition coil • Fan controller • Condenser fan relay (HI) • Condenser fan relay (LOW) • Engine warning lamp • Diagnosis output • Alternator G terminal • Intercooler water spray relay • Intercooler water spray lamp

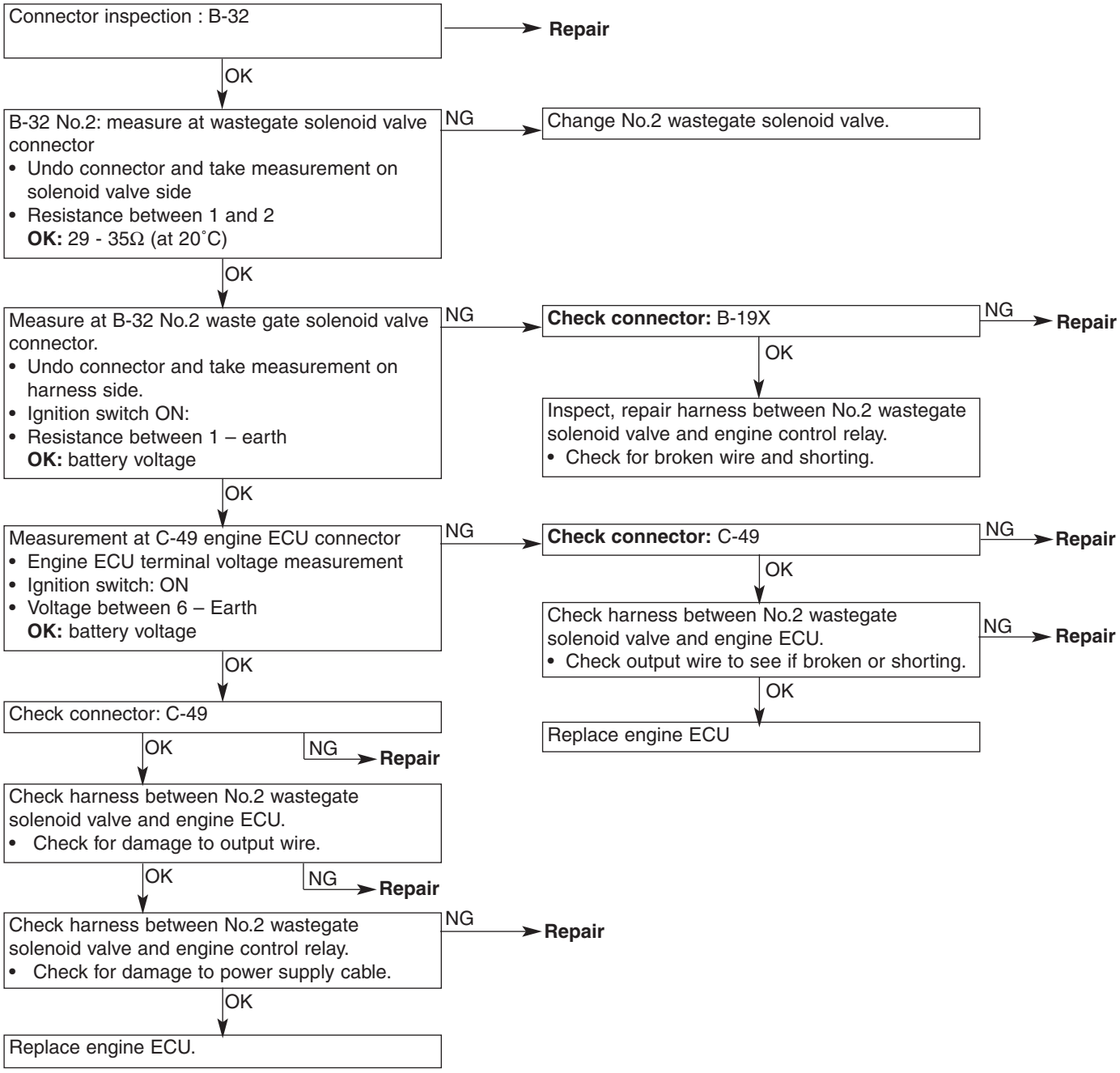


TROUBLESHOOTING

1. Inspection procedures for different types of malfunction

Inspection procedure 37

No.2 Wastegate solenoid valve system <6M/T>	Assumed cause of concern
The No.2 wastegate solenoid valve controls excess pressure introduced via the turbocharger wastegate actuator.	• No.2 wastegate solenoid valve malfunction • Engine ECU malfunction



2. ENGINE ECU CHECKS

2-1 List of terminal voltages

Terminal No.	Check item	Check item (engine condition)	Normal value
41	No.1 wastegate solenoid valve	Ignition switch ON	Battery voltage
		Engine: warm, idling (using premium petrol)	1V or less
6	No.2 wastegate solenoid valve <6M/T>	Ignition switch: ON	Battery voltage
		Accelerating in 2nd gear with throttle full open (at least 3500 rpm)	Voltage decrease

2-2 List of resistances and conductance between harness side connector – terminal

Terminal No.	Check item	Standard value, normal condition (check condition)
41-47	No.1 wastegate solenoid valve	29-35Ω (at 20˚C)
6-47	No.2 wastegate solenoid valve <6 M/T>	29-35Ω (at 20˚C)

SECTION 13B

FUEL SUPPLY

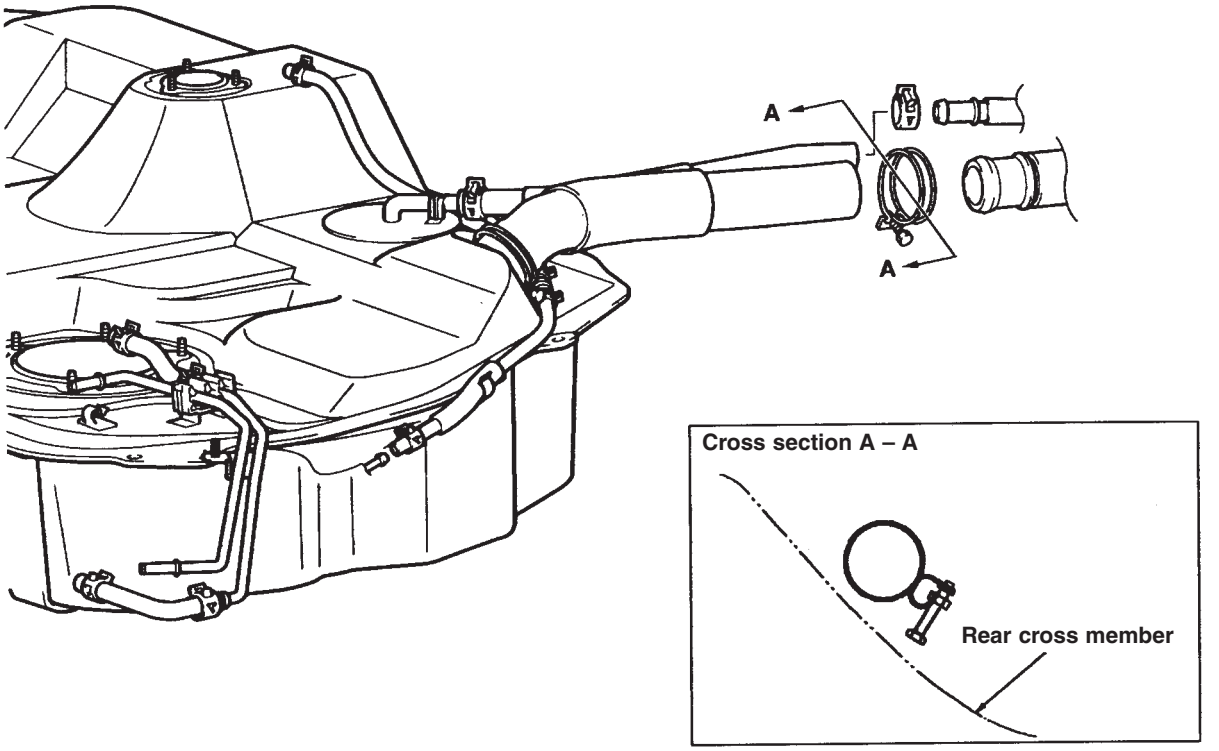
CONTENTS

General

As well as changing the filler neck hose clamp from an M6 x 39 to M6 x 49, the mounting position has been changed. There were no changes other than the following.

Fuel Tank

Removal and fitting



AC400023AB

NOTE
Fit the filler neck hose clamp so that it does not interfere with the rear cross member.

SECTION 15

INTAKE, EXHAUST

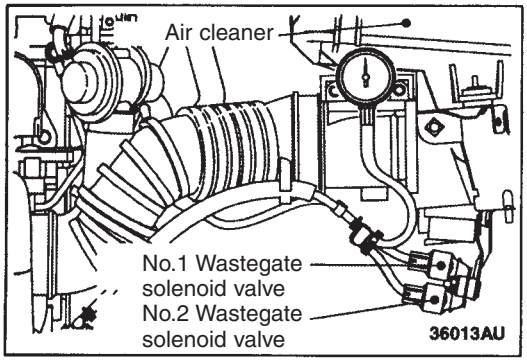
CONTENTS

General

The important service points were added as a result of the following changes. Other service points remain the same.
- Change to the turbocharger boost pressure (on 6M/T)
- Change from one to two wastegate solenoid valves. However, the No.2 wastegate on the 5M/T is not functional.

Servicing Standard Values

ITEM	STANDARD VALUE
Turbocharger boost pressure kPa <6M/T>	97-144



Vehicle servicing

1. Checking turbocharger boost pressure

<5M/T>
Since the No.2 wastegate solenoid valve does not function, the same check of the No.1 wastegate solenoid valve as before is carried out.
6M/T
Note
The driving test, which is done with the throttle fully open, must be done in a safe place with two people in the vehicle. The person sitting in the passenger seat should take the reading of the values on the pressure gauge.

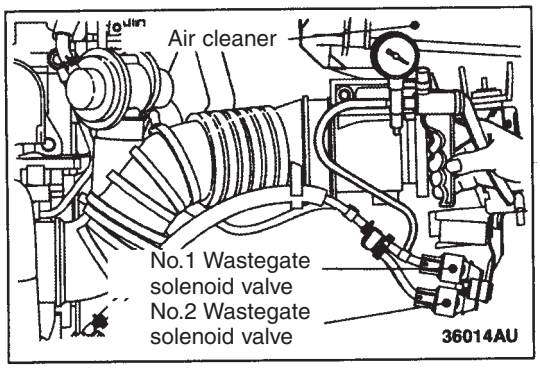
(1) Remove the hose (black) from the No.1 wastegate solenoid valve, and fit the pressure gauge to this hose. Fit a plug to solenoid valve nipple from which the hose (black) has been removed.
(2) Remove the No.2 wastegate solenoid valve connector.
(3) Accelerate at full throttle in 2nd gear, and then take the boost pressure measurement when engine speed gets to at least 3,000rpm.

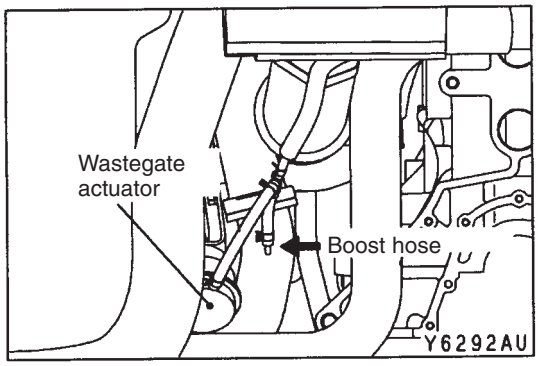
Standard value: 97 – 144kPa

(4) When the boost pressure is lower than the standard value, the cause could be one of the following:
1. Wastegate actuator misoperation
2. Boost pressure leak
3. Turbocharger NG

(5) When boost pressure is higher than standard value, the boost pressure control may be faulty, so please check the following points.

1) Wastegate actuator misoperation
2) Wastegate valve misoperation
3) Wastegate actuator rubber hose detachment, cracking.





2. Boost pressure control system inspection <6M/T>
Note
The driving test, which is done with the throttle fully open, must be done in a safe place with two people in the vehicle. The person sitting in the passenger seat should take the reading of the values on the pressure gauge.

(1) Remove hose (black) from No.1 wastegate solenoid valve, then connect a three-way coupling between the hose and the solenoid valve.
(2) Connect a hand vacuum pump to the three-way coupling.
(3) Remove boost hose from the wastegate actuator control boost nipple on the air outlet fitting, and fit a plug over the nipple.
(4) Apply a vacuum whilst covering and releasing the tip of the hose to check the vacuum condition.

Engine condition	Boost hose tip	Normal condition
Stop (ignition switch: "ON" position)	Released	Vacuum leaks
	Covered	Vacuum is maintained
Idle running after warming up.		Vacuum leaks

(5) Ignition switch to "LOCK" (OFF) position.
(6) Remove wastegate solenoid valve connector.
(7) Apply a vacuum whilst covering and releasing the tip of the hose, to check the vacuum condition (stop the hose tip with a plug when driving).

Engine condition	Boost hose tip	Normal condition
Stop (ignition switch: "ON" position)	Released	Vacuum leaks
	Covered	Vacuum is maintained
Accelerating with throttle full open in 2nd gear (at least 3500rpm)		Vacuum leaks

Note
When vacuum condition is not normal, it may be assumed that there is a problem with the wastegate actuator, wastegate solenoid valve, or hose.

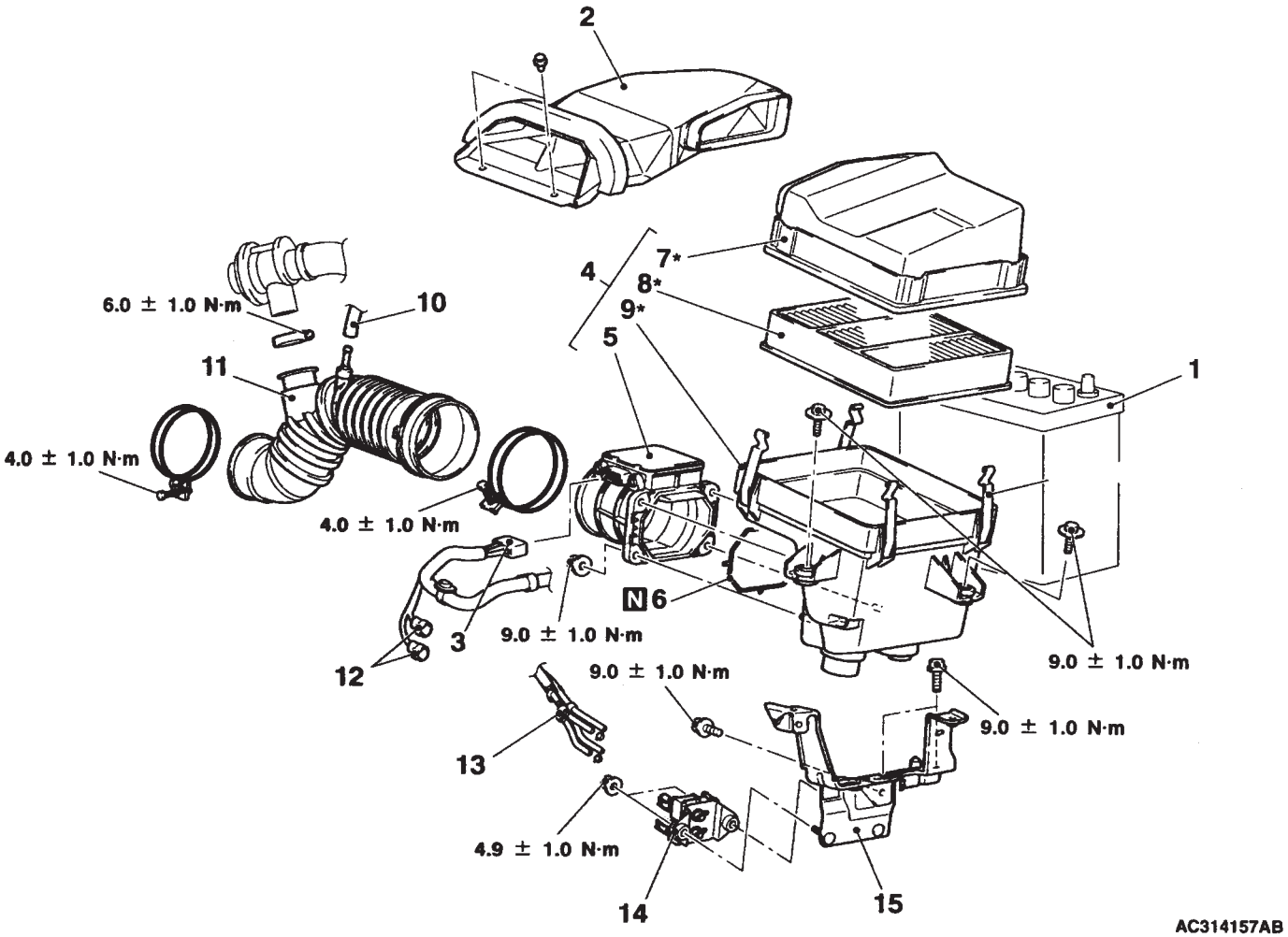
Air Cleaner

Removal and Fitting

Note

The parts marked with a ★ symbol are plastic components which contain recycled paper. Please note the following:
- **When fixing or removing, or after fitting parts, be careful not to knock or apply force to these components.**
- **When assembling, fix the air cleaner body ASSY securely to the air cleaner cover using the clamp on the body.**

Remarks
Parts marked with a ★ symbol use plastic that may contain recycled paper, so when scrapped are burnable.



Removal procedure
1. Battery
2. Air duct
3. Air flow sensor connector
4. Air cleaner assembly
5. Air flow sensor
6. Gasket
7. Air cleaner cover
8. Air cleaner element
9. Air cleaner body assembly
10. Vacuum hose
    - Air pipe E, air hose D, air by-pass valve assembly, air by-pass hose.
    - Oil level gauge assembly
11. Air intake hose
12. Wastegate solenoid valve connector
13. Vacuum hose connection
14. Wastegate solenoid valve assembly
15. Air cleaner bracket

<Memo>

SECTION 22

MANUAL TRANSMISSION

CONTENTS

General

The following troubleshooting items have been changed along with the changes to the wiring. Troubleshooting points other than those mentioned below remain unchanged, and are the same as on the existing Lancer Evolution VII/VIII.

Troubleshooting

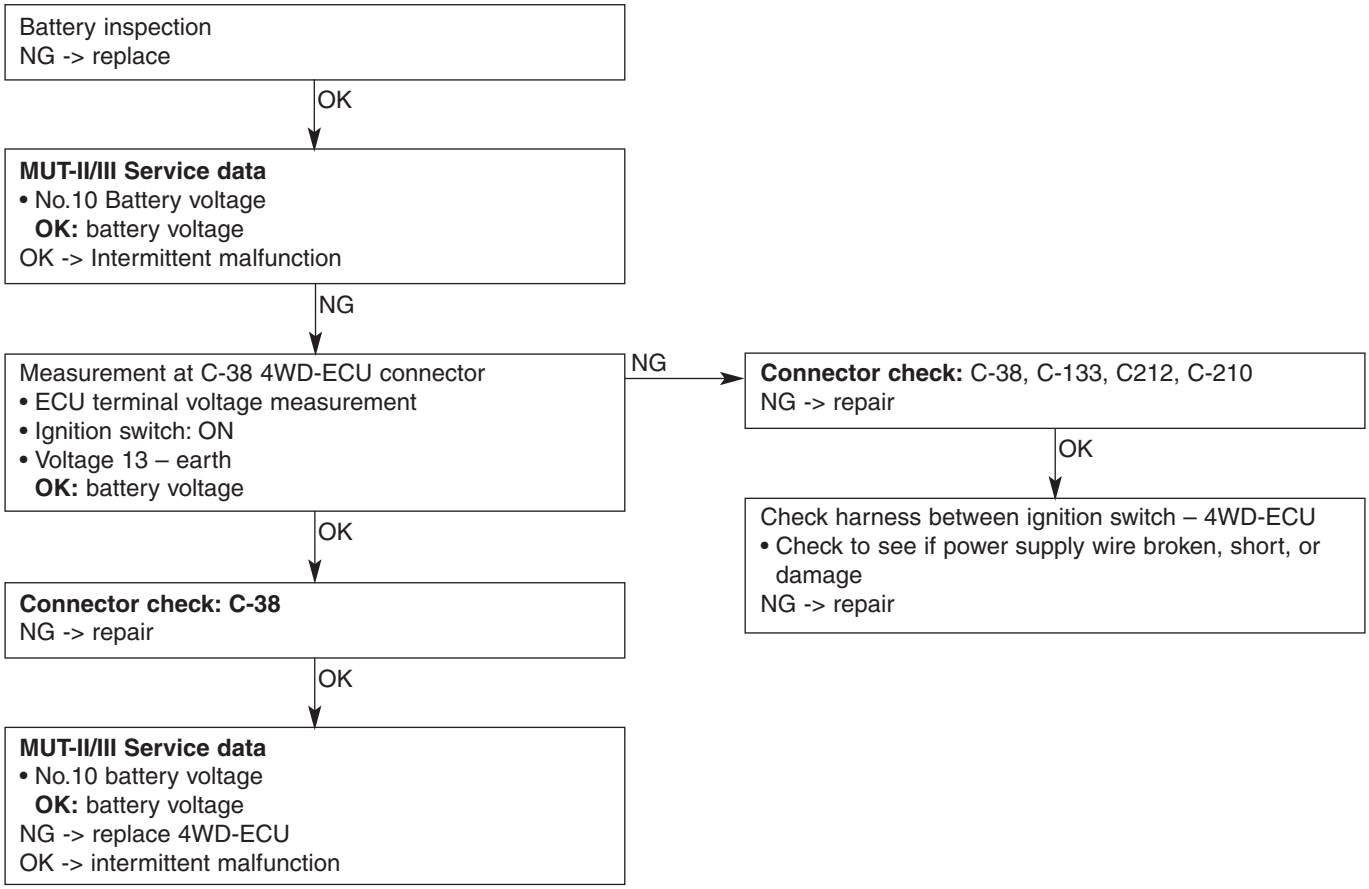
1. Diagnosis Code List

Diagnosis code no.	Diagnosis item		Page ref.
12	Power supply voltage (valve power supply) system	Broken wire or short	22-2
21	Vehicle wheel speed sensor <FR> system <ACD fitted vehicles>	Broken wire or short	22-3
22	Vehicle wheel speed sensor <FL> system <ACD fitted vehicles>	Broken wire or short	22-3
23	Vehicle wheel speed sensor <RR> system <ACD fitted vehicles>	Broken wire or short	22-3
24	Vehicle wheel speed sensor <RL> system <ACD fitted vehicles>	Broken wire or short	22-3
25	Abnormal diameter tyres <ACD fitted vehicle>		22-5
26	Vehicle wheel speed sensor system (output signal abnormal) <ACD fitted vehicles>		22-6
41	TPS system	Broken wire or earthing	22-7
42		Short	22-7
45	Pressure sensor system	Broken wire or earthing	22-8
46		Earth wire broken	22-8
47		Abnormal power supply	22-9
51	Longitudinal G sensor system	Broken wire or short	22-10
52		Sensor malfunction	22-11
56	Lateral G sensor system	Broken wire or short	22-12
57		Sensor malfunction	22-13
61	Stop lamp switch system	Broken wire	22-14
62	ACD mode switch system	Sticking	22-15
63	Parking brake switch system	Short or failing to return	22-16
65	ABS monitor system <ACD+AYC fitted vehicles>	Broken wire or ABS failure	22-17
74	Proportional control valve <ACD> system	Broken wire or short	22-18
81	Electrical pump relay system	Broken wire or short	22-18

2. Check procedures by diagnosis code

Code No.12 Power supply voltage (valve power supply) system	Assumed cause of concern
If the 4WD-ECU power supply voltage drops below 9V or rises above 18V, Code No.12 is output, indicating either a broken wire in the power supply circuit, a short, or a drop in the battery voltage.	• battery malfunction • harness, connector malfunction • 4WD-ECU malfunction

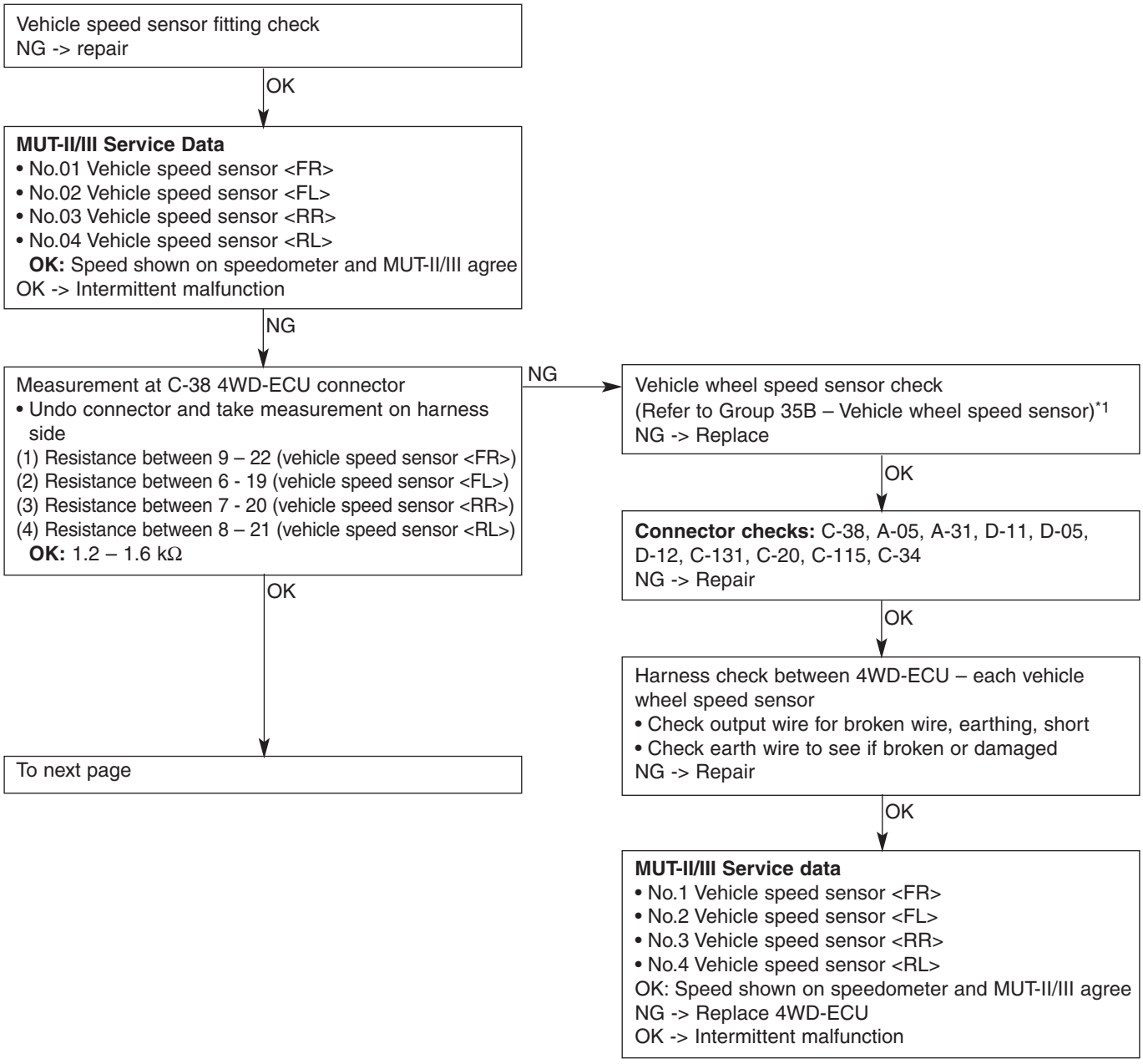
Remarks
In cases where other diagnosis codes are output, please refer to the relevant item.

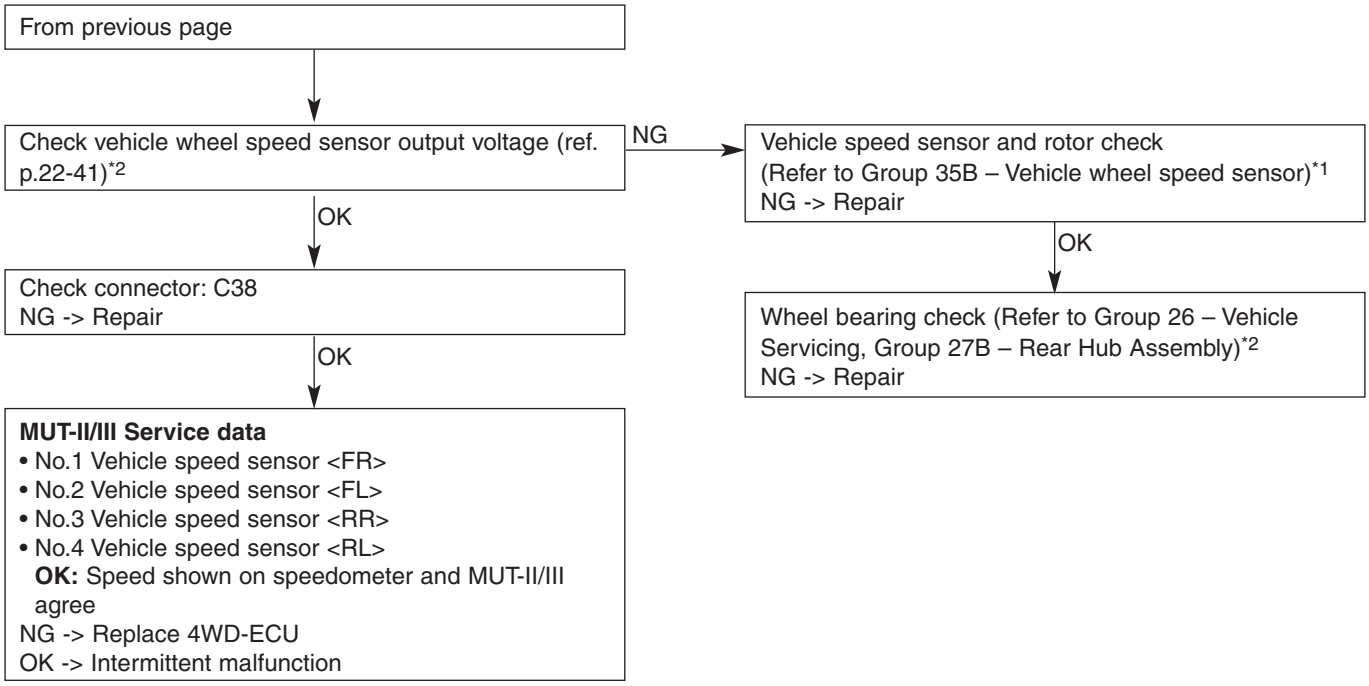


Code No.21 Vehicle wheel speed sensor <FR> systems **Code No.22 Vehicle wheel speed sensor <FL> systems** **Code No.23 Vehicle wheel speed sensor <RR> systems** **Code No.24 Vehicle wheel speed sensor <RL> systems**	**Assumed cause of concern**
When one of the vehicle wheel speed sensors detects a vehicle speed of 15kph or more, and when even one of the remaining 3 sensors cannot detect vehicle speed, the diagnosis code for wheel speed sensor broken wire or short is output.	• Wheel speed sensor malfunction • Rotor malfunction • Wheel bearing malfunction • Harness, connector malfunction • 4WD-ECU malfunction

<ACD fitted vehicle>

Remarks
*1: refer to '00-5 Lancer Sedia Service Manual (No.1036K00)
*2: refer to '01-1 Lancer Evolution VII Service Manual (No.1036K02)




From previous page
Check vehicle wheel speed sensor output voltage (ref. p.22-41)*2
NG
Vehicle speed sensor and rotor check
(Refer to Group 35B – Vehicle wheel speed sensor)*1
NG -> Repair
OK
Wheel bearing check (Refer to Group 26 – Vehicle Servicing, Group 27B – Rear Hub Assembly)*2
NG -> Repair
OK
Check connector: C38
NG -> Repair
OK
MUT-II/III Service data
• No.1 Vehicle speed sensor <FR>
• No.2 Vehicle speed sensor <FL>
• No.3 Vehicle speed sensor <RR>
• No.4 Vehicle speed sensor <RL>
OK: Speed shown on speedometer and MUT-II/III agree
NG -> Replace 4WD-ECU
OK -> Intermittent malfunction

Code No.25 Abnormal tyre diameter	Assumed cause of concern
Abnormal tyre Code No. 25 is output in cases where, when the steering wheel is in a central position, and vehicle speed is 20kph or more, there is a discrepancy between one of the vehicle wheel speed sensors and the average of the 4 wheel speed sensors, in that it is outside the specified range. However, the warning lamp does not come on.	• Tyre malfunction • Vehicle speed sensor malfunction • Rotor malfunction • Wheel bearing malfunction • Harness, connector malfunction • 4WD-ECU malfunction

<ACD fitted vehicles>

Remarks

*1: refer to '00-5 Lancer Sedia Service Manual (No.1036K00)

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

Vehicle speed sensor fitting check
NG -> repair

OK

MUT-II/III Service Data
- No.01 Vehicle speed sensor <FR>
- No.02 Vehicle speed sensor <FL>
- No.03 Vehicle speed sensor <RR>
- No.04 Vehicle speed sensor <RL>

OK: Speed shown on speedometer and MUT-II/III agree
OK -> Intermittent malfunction

NG

Measurement at C-38 4WD-ECU connector
- Undo connector and take measurement on harness side

(1) Resistance between 9 – 22 (vehicle speed sensor <FR>)
(2) Resistance between 6 - 19 (vehicle speed sensor <FL>)
(3) Resistance between 7 - 20 (vehicle speed sensor <RR>)
(4) Resistance between 8 – 21 (vehicle speed sensor <RL>)

OK: 1.2 – 1.6kΩ

NG → Vehicle wheel speed sensor
(Refer to Group 35B – Vehicle wheel speed sensor)*1
NG -> Repair

OK

Connector checks: C-38, A-05, A-31, D-11, D-05, D-12, C-131, C-20, C-115, C-34
NG: Repair

OK

Harness check between 4WD-ECU – each vehicle wheel speed sensor
- Check output wire for broken wire, earthing, short
- Check earth wire to see if broken or damaged

NG: repair

OK

MUT-II/III Service data
- No.1 Vehicle speed sensor <FR>
- No.2 Vehicle speed sensor <FL>
- No.3 Vehicle speed sensor <RR>
- No.4 Vehicle speed sensor <RL>

OK: Speed shown on speedometer and MUT-II/III agree
NG -> Replace 4WD-ECU
OK -> Intermittent malfunction

OK

Check vehicle wheel speed sensor output voltage (ref. p.22-41)*2

NG → Vehicle wheel speed sensor and rotor check
(Refer to Group 35B – Vehicle Wheel Speed Sensor)*1
NG -> Repair

OK

Check connector: C-38
NG -> repair

OK

MUT-II/III Service data
- No.1 Vehicle speed sensor <FR>
- No.2 Vehicle speed sensor <FL>
- No.3 Vehicle speed sensor <RR>
- No.4 Vehicle speed sensor <RL>

OK: Speed shown on speedometer and MUT-II/III agree
NG -> Replace 4WD-ECU
OK -> Intermittent malfunction

OK

Wheel bearing check (Refer to Group 26 – Vehicle Servicing, Group 27B – Rear Hub Assembly)*2
NG -> Repair

Code No.26 Vehicle wheel speed sensor system (output signal abnormal)	Assumed cause of concern
Abnormal vehicle wheel speed sensor Code No. 26 is output in cases where, when the vehicle speed is 20kph or more, one of the vehicle wheel speed sensors is outside the specified range. However, the warning lamp does come on.	• Tyre malfunction • Vehicle speed sensor malfunction • Rotor malfunction • Wheel bearing malfunction • Harness, connector malfunction • 4WD-ECU malfunction

<ACD fitted vehicles>

Remarks

*1: refer to '00-5 Lancer Sedia Service Manual (No.1036K00)

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

Vehicle speed sensor fitting check
NG -> repair

OK

MUT-II/III Service Data
• No.01 Vehicle speed sensor <FR>
• No.02 Vehicle speed sensor <FL>
• No.03 Vehicle speed sensor <RR>
• No.04 Vehicle speed sensor <RL>
OK: Speed shown on speedometer and MUT-II/III agree
OK -> Intermittent malfunction

NG

Measurement at C-38 4WD-ECU connector
• Undo connector and take measurement on harness side
(1) Resistance between 9 – 22 (vehicle speed sensor <FR>)
(2) Resistance between 6 - 19 (vehicle speed sensor <FL>)
(3) Resistance between 7 - 20 (vehicle speed sensor <RR>)
(4) Resistance between 8 – 21 (vehicle speed sensor <RL>)
OK: 1.2 – 1.6kΩ

NG → Vehicle wheel speed sensor
(Refer to Group 35B – Vehicle wheel speed sensor)*1
NG -> Repair

OK

Connector checks: C-38, A-05, A-31, D-11, D-05, D-12, C-131, C-20, C-115, C-34
NG -> Repair

OK

Harness check between 4WD-ECU – each vehicle wheel speed sensor
• Check output wire for broken wire, earthing, short
• Check earth wire to see if broken or damaged
NG -> repair

OK

MUT-II/III Service data
• No.1 Vehicle speed sensor <FR>
• No.2 Vehicle speed sensor <FL>
• No.3 Vehicle speed sensor <RR>
• No.4 Vehicle speed sensor <RL>
OK: Speed shown on speedometer and MUT-II/III agree
NG -> Replace 4WD-ECU
OK -> Intermittent malfunction

OK

Check vehicle wheel speed sensor output voltage (ref. p.22-41)*2

NG → Vehicle wheel speed sensor and rotor check
(Refer to Group 35B – Vehicle Wheel Speed Sensor)*1
NG -> Repair

OK

Wheel bearing check (Refer to Group 26 – Vehicle Servicing, Group 27B – Rear Hub Assembly)*2
NG -> Repair

OK

Check connector: C-38
NG -> repair

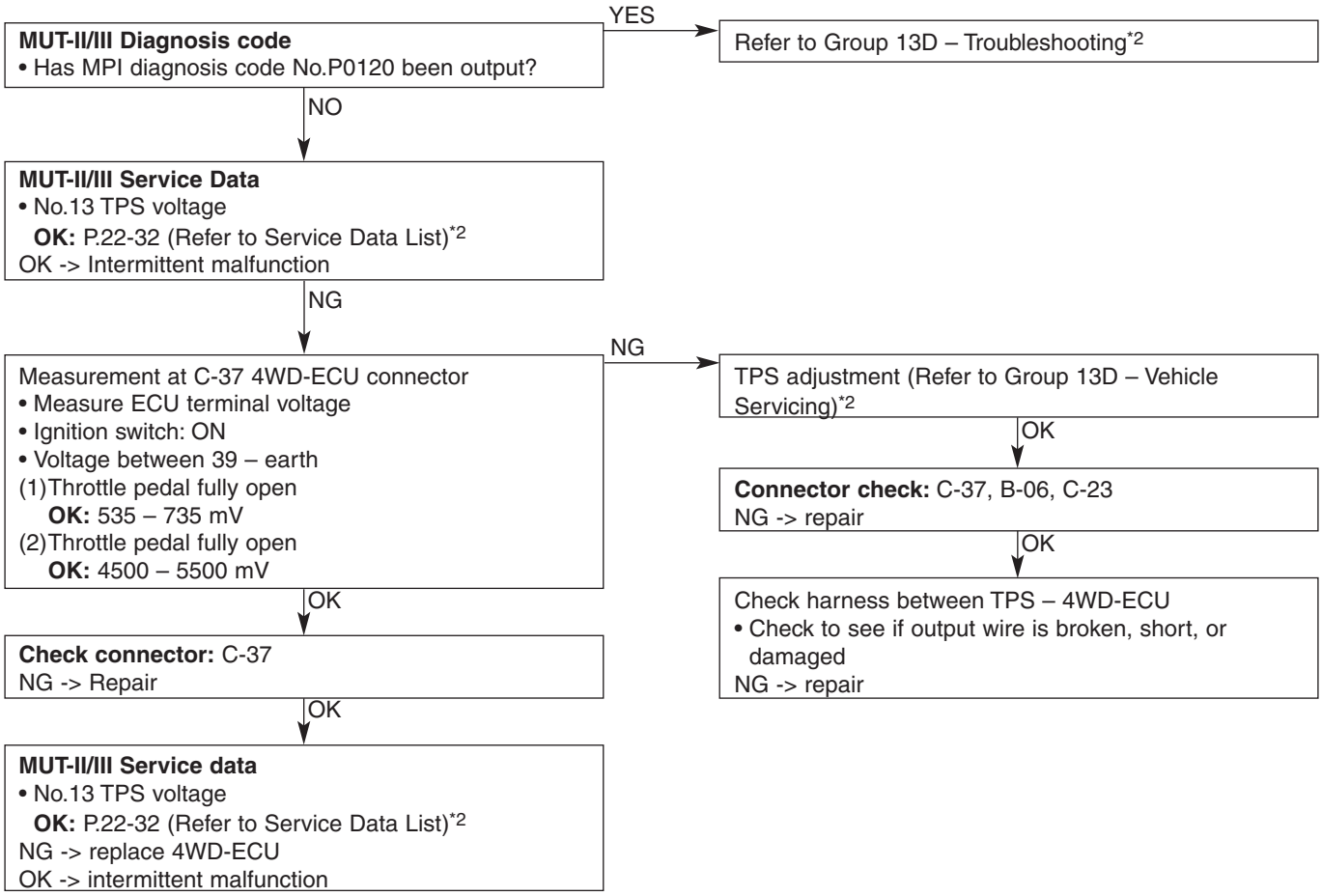
OK

MUT-II/III Service data
• No.1 Vehicle speed sensor <FR>
• No.2 Vehicle speed sensor <FL>
• No.3 Vehicle speed sensor <RR>
• No.4 Vehicle speed sensor <RL>
OK: Speed shown on speedometer and MUT-II/III agree
NG -> Replace 4WD-ECU
OK -> Intermittent malfunction

Code No.41, 42 TPS system	Assumed cause of concern
If, when idling, TPS output is 0.2V or less, code No.41 is output, indicating that output is too low. If, at 10kph or less, TPS output is 4.8V or more for a period of 2 minutes or more, code No.42 is output, indicating output is too high.	• TPS malfunction • Harness, connector malfunction • 4WD-ECU malfunction

Remarks

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



Code No.45 Pressure sensor system (broken wire or earth)	Assumed cause of concern
Code No.45 is output when output signal from pressure sensor is 0.2V or less.	• Harness, connector malfunction • Pressure sensor malfunction • 4WD-ECU malfunction

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

MUT-II/III Service data
• No.18 pressure sensor
OK: P.22-32 (Refer to Service Data List)*2
OK -> Intermittent malfunction
↓ NG

Measurement at C-37 4WD-ECU connector
• Measure ECU terminal voltage
• Ignition switch: ON
• Voltage between 32 – earth
OK: 0.5V – 1.5V
NG → **Check connector:** C-37, C-20, C-30, F-22, F-27
NG -> Repair
↓ OK

Check harness between pressure sensor – 4WD ECU
• Check to see if power supply line is broken, earth, or damaged.
• Check for broken output wire, earth, or damage
NG -> Repair
↓ OK

Replace pressure sensor

↓ OK

Check connector: C-37
NG -> Repair
↓ OK

MUT-II/III Service data
• No.18 Pressure sensor
OK: P.22-32 (Refer to Service Data List)*2
NG -> replace 4WD-ECU
OK -> intermittent malfunction

Code No.46 Pressure sensor system (earth wire broken)	Assumed cause of concern
Code No.46 is output when output signal from pressure sensor is 2.0V or more.	• Harness, connector malfunction • Pressure sensor malfunction • 4WD-ECU malfunction

Measurement at F-27 pressure sensor connector
• Undo connector, take measurement on harness side
• Resistance between 3 – earth
OK: 2Ω or less
NG → **Connector check:** C-37, C-20, F-22, F-27
NG -> repair
↓ OK

Check harness between pressure sensor – 4WD-ECU
• Check to see if earth wire is broken or damaged
NG -> repair
↓ OK

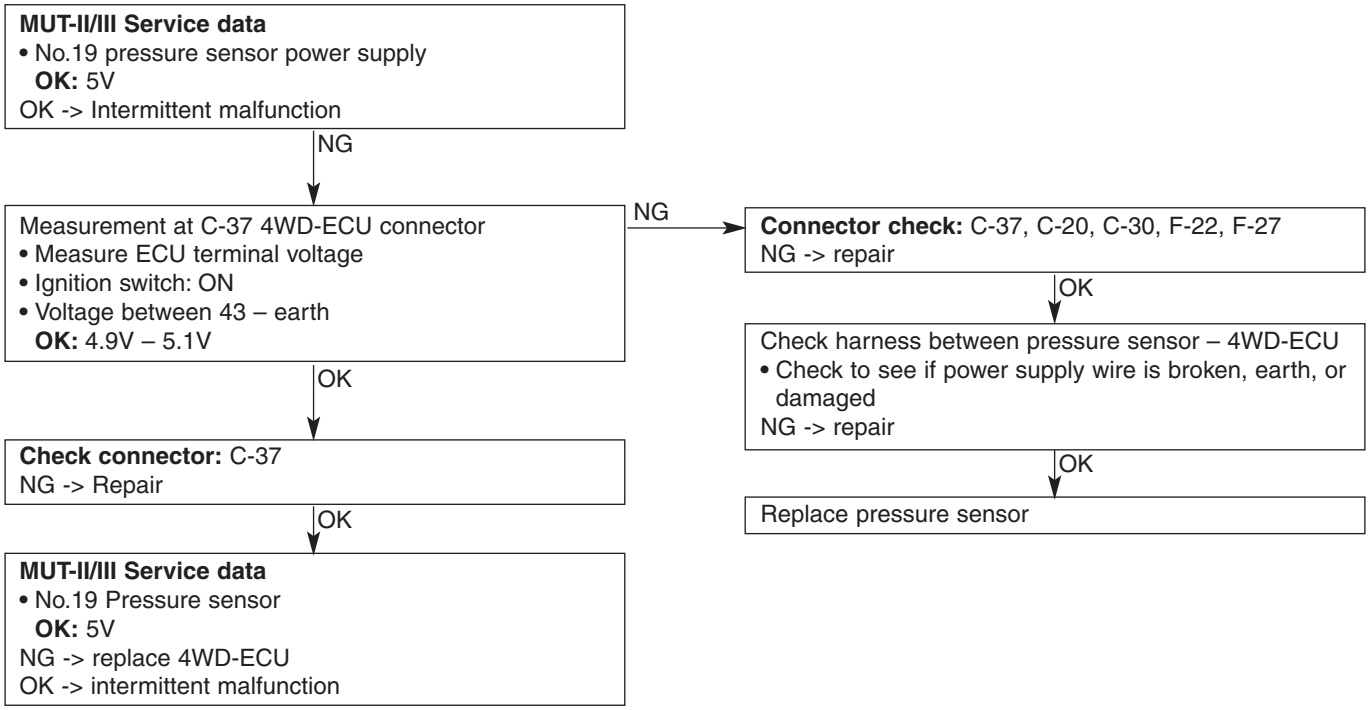
Replace 4WD-ECU

↓ OK

Check connector: F-27
NG: repair
↓ OK

Replace pressure sensor

Code No.47 Pressure sensor system (abnormal power supply)	Assumed cause of concern
Code No.47 is output when, with pressure sensor power supply OFF, the pressure sensor power supply voltage is 4.0V or more, and when pressure sensor power supply is ON, the pressure sensor power supply voltage is 4.0V or less.	• Harness, connector malfunction • Pressure sensor malfunction • 4WD-ECU malfunction



Code No.51 Longitudinal G sensor system	Assumed cause of concern
Code No.51 is output when the longitudinal G sensor signal falls below 0.5V or rises above 4.5V.	• Harness, connector malfunction • Longitudinal G sensor malfunction • ABS-ECU malfunction <AYC fitted vehicles> • 4WD-ECU malfunction

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

MUT-II/III Service data
• No.14 longitudinal G sensor power voltage
OK: P.22-32 Refer to (Service Data List)*2
OK -> Intermittent malfunction

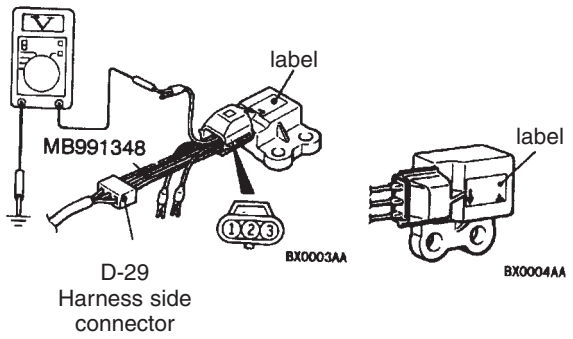
NG

Measurement at D-29 longitudinal G sensor connector
• Undo connector and measure on harness side
• Ignition switch: ON
(1) Voltage between 1 - earth
OK: battery voltage
(2) Resistance between 3 – earth
OK: 2Ω or less

(1) NG → **Connector check:** D-29, C-212, C-210
NG -> repair
OK → Check harness between longitudinal G sensor – ignition switch.
• Check for broken power supply wire, earth, damage
• NG -> repair

(2) NG → **Connector check:** D-29, C-20, B-109 <ACD + AYC fitted vehicles> D-29, C-20, C-38, <ACD-fitted vehicles>
NG -> repair
OK → Check harness between longitudinal G sensor – ABS-ECU <ACD+AYC fitted vehicles>
• Check to see if earth wire broken or damaged
NG -> repair
Check harness between longitudinal G sensor – 4WD-ECU <ACD fitted vehicles>
• Check to see if earth wire broken or damaged
NG -> repair
OK → **MUT-II/III Service data**
• No.14 longitudinal G sensor voltage
OK: Refer to P.22-32 (Service Data List)*2
NG -> Refer to Group 35C – Troubleshooting*2
<ACD+AYC fitted vehicles> or 4WD-ECU <ACD fitted vehicles> Replace
OK -> intermittent malfunction

OK



D-29
Harness side
connector

• Remove longitudinal G sensor
• Connect the special tool between D-29 longitudinal G sensor connector harness side connector and longitudinal G sensor.
• Ignition switch: ON
• Voltage between 2 – body earth (when longitudinal G sensor is set on a flat surface)
OK: 2.4 – 2.6V
• Voltage between 2 – body earth (when longitudinal G sensor is placed so that the label surface faces sideways)
OK: 3.3 – 3.7V

NG → Replace longitudinal G sensor

OK

Connector check: D-29, C-38, C-20, B-109 <ACD + AYC fitted vehicles> D-29, C-20, C-38 <ACD fitted vehicles>
NG -> repair

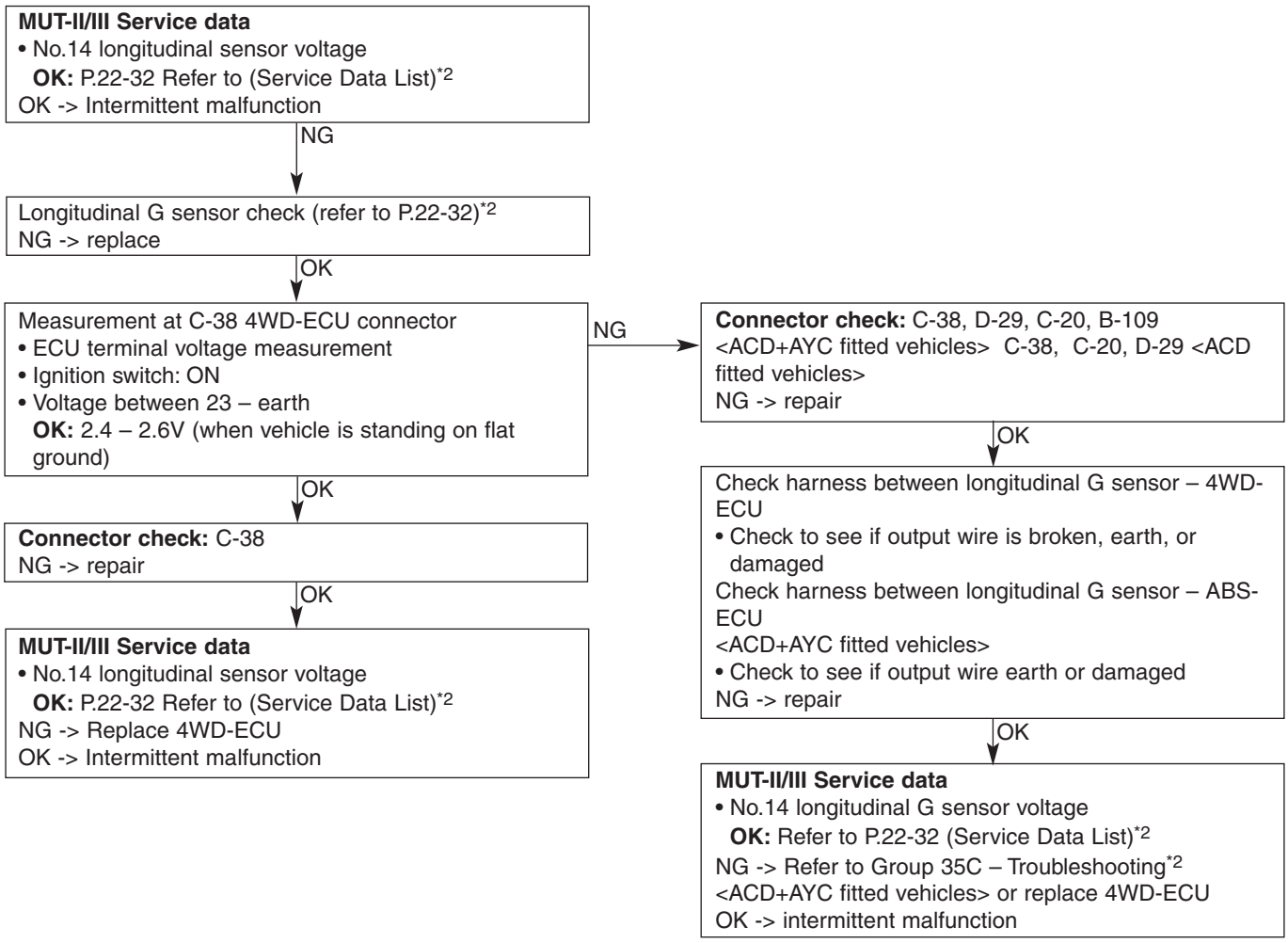
OK

Check harness between longitudinal G sensor – 4WD-ECU
• Check for broken output wire, earth, damage
Check harness between longitudinal G sensor – ABS-ECU <ACD+AYC fitted vehicles>
• Check output wire for earth, damage
NG -> repair

OK → **MUT-II/III Service data**
• No.14 longitudinal G sensor voltage
OK: Refer to P.22-32 (Service Data List)*2
NG -> Refer to Group 35C – Troubleshooting*2
<ACD+AYC fitted vehicles> or 4WD-ECU <ACD fitted vehicles> Replace
OK -> intermittent malfunction

Code No.52 Longitudinal G sensor system	Assumed cause of concern
At 10kph or over, with ABS and brakes not applied, code No. 52 is output in cases where G sensor indicates higher than specified value.	• Harness, connector malfunction • Longitudinal G sensor malfunction • ABS-ECU malfunction <ACD+AYC fitted vehicles> • 4WD-ECU malfunction

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



Code No.56 Longitudinal G sensor system	Assumed cause of concern
Code No.56 is output when the longitudinal G sensor signal falls below 0.5V or rises above 4.5V.	• Harness, connector malfunction • Longitudinal G sensor malfunction • ABS-ECU malfunction <ACD+AYC fitted vehicles> • 4WD-ECU malfunction

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

MUT-II/III Service data
• No.15 longitudinal G sensor power voltage
OK: P.22-32 Refer to (Service Data List)*2
OK -> Intermittent malfunction

NG

Measurement at D-31 lateral G sensor connector
• Undo connector and measure on harness side
• Ignition switch: ON
(1) Voltage between 1 - earth
OK: battery voltage
(2) Resistance between 3 – earth
OK: 2Ω or less

(1) NG → **Connector check:** D-31, C-212, C-210
NG -> repair

OK

Check harness between lateral G sensor – ignition switch.
• Check for broken power supply wire, earth, damage
NG -> repair

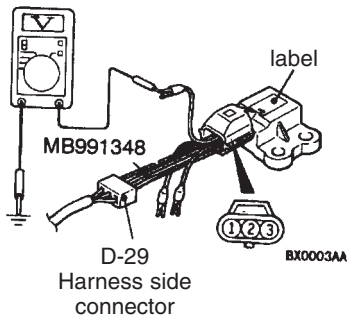
(2) NG → **Connector check:** D-31, C-20, B-109 <ACD + AYC fitted vehicles> D-31, C-20, C-38, <ACD-fitted vehicles>
NG -> repair

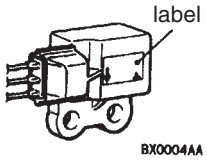
OK

Check harness between lateral G sensor – ABS-ECU <ACD+AYC fitted vehicles>
• Check to see if earth wire broken or damaged
Check harness between lateral G sensor – 4WD-ECU <ACD fitted vehicles>
• Check to see if earth wire broken or damaged
NG -> repair

OK

MUT-II/III Service data
• No.15 lateral G sensor voltage
OK: Refer to P.22-32 (Service Data List)*2
NG -> Refer to Group 35C – Troubleshooting*2
<ACD+AYC fitted vehicles> or 4WD-ECU <ACD fitted vehicles> Replace
OK -> intermittent malfunction





• Remove longitudinal G sensor
• Connect the special tool between D-31 longitudinal G sensor connector harness side connector and longitudinal G sensor.
• Ignition switch: ON
• Voltage between 2 – body earth (when longitudinal G sensor is set on a flat surface)
OK: 2.4 – 2.6V
• Voltage between 2 – body earth (when longitudinal G sensor is placed so that the label surface faces sideways)
OK: 3.3 – 3.7V

NG → Replace lateral G sensor

OK

Connector check: D-31, C-38, C-20, B-109 <ACD + AYC fitted vehicles> D-31, C-20, C-38 <ACD fitted vehicles>
NG -> repair

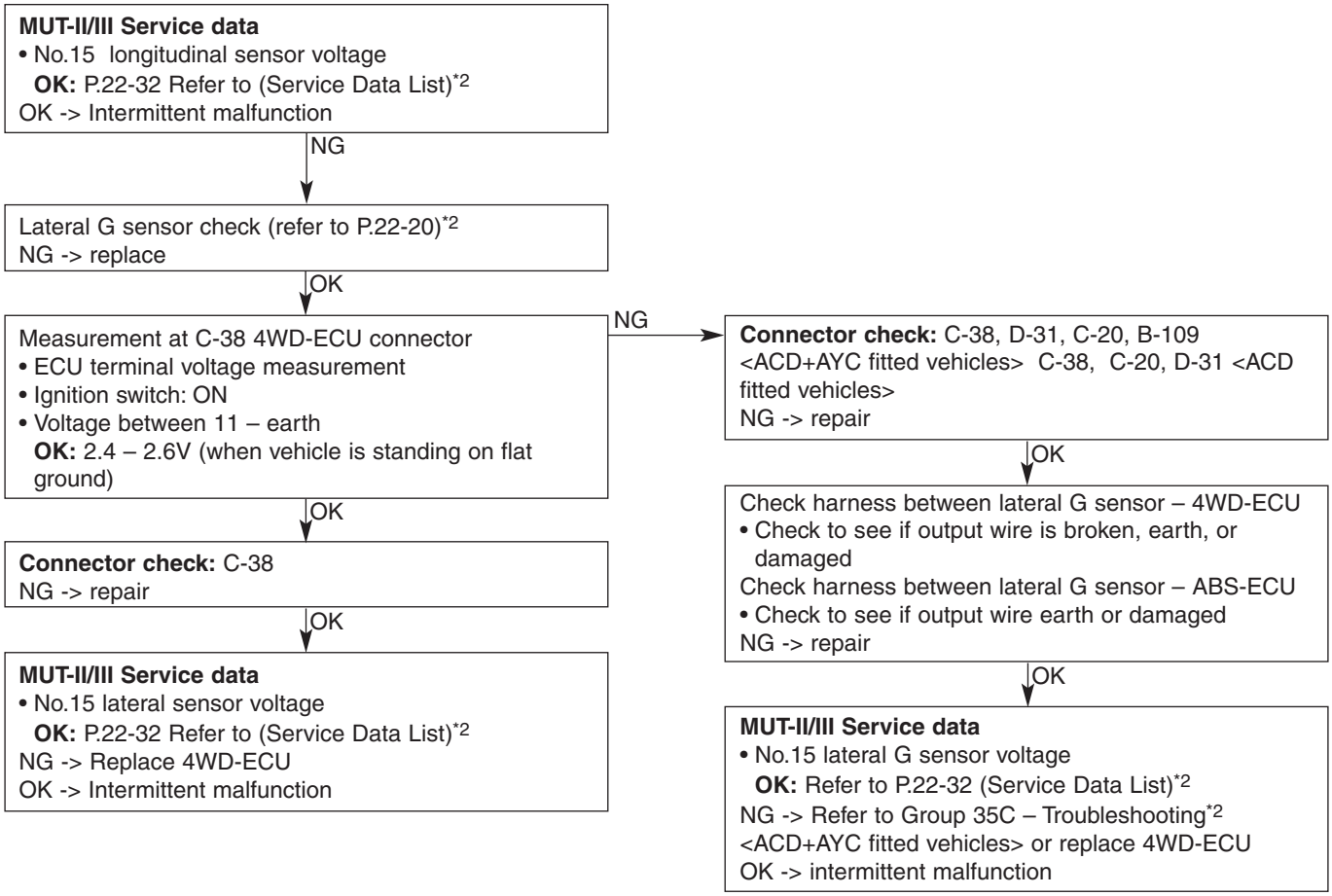
OK

Check harness between lateral G sensor – 4WD-ECU
• Check for broken output wire, earth, damage
Check harness between lateral G sensor – ABS-ECU <ACD+AYC fitted vehicles>
• Check output wire for earth, damage
NG -> repair

OK → **MUT-II/III Service data**
• No.15 longitudinal G sensor voltage
OK: Refer to P.22-32 (Service Data List)*2
NG -> Refer to Group 35C – Troubleshooting*2
<ACD+AYC fitted vehicles> or 4WD-ECU <ACD fitted vehicles> Replace
OK -> intermittent malfunction

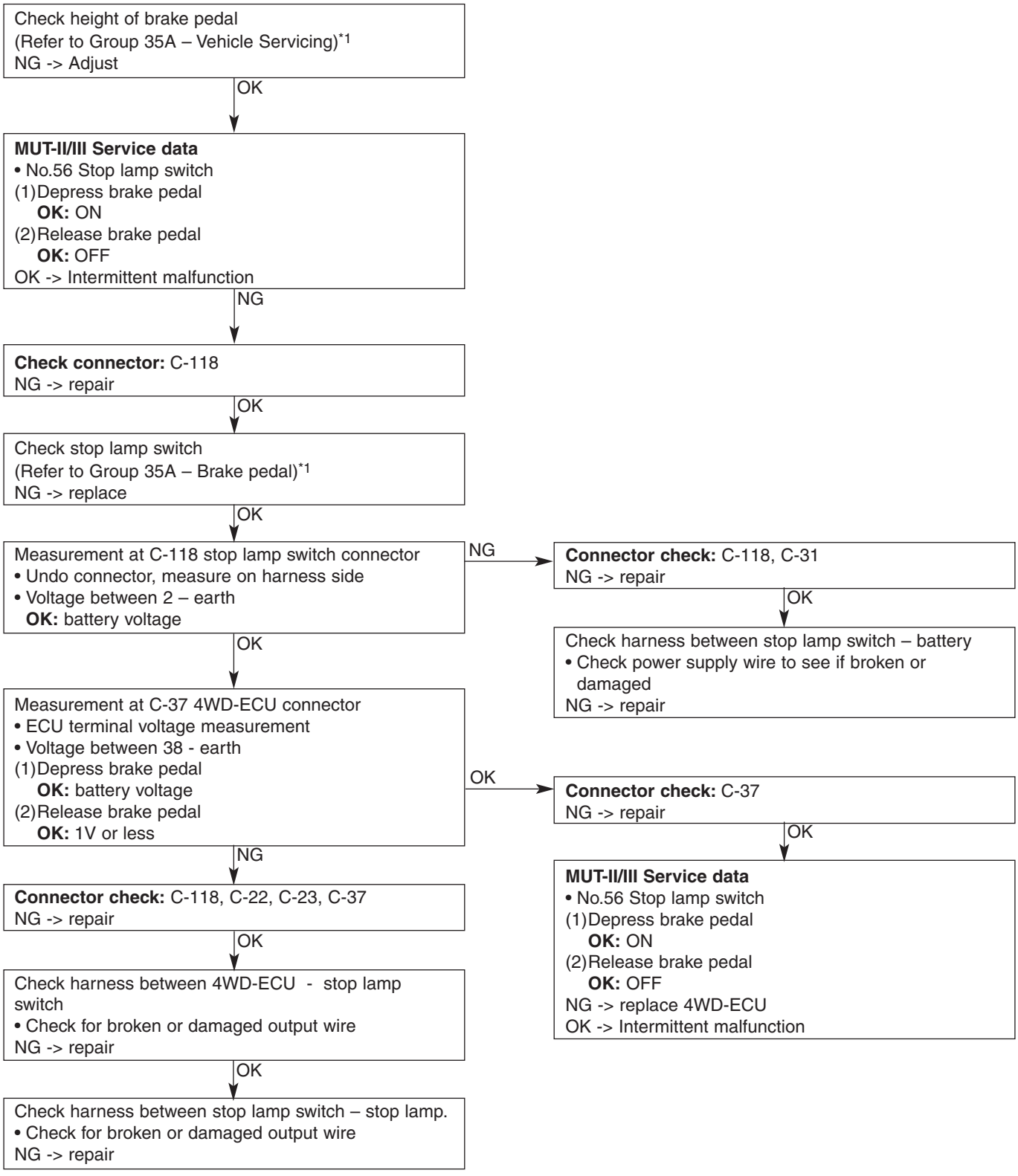
Code No.57 Lateral G sensor system	Assumed cause of concern
At 10kph or over, with ABS and brakes not applied, code No. 57 is output in cases where G sensor indicates higher than specified value.	• Harness, connector malfunction • Longitudinal G sensor malfunction • ABS-ECU malfunction <ACD+AYC fitted vehicles> • 4WD-ECU malfunction

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



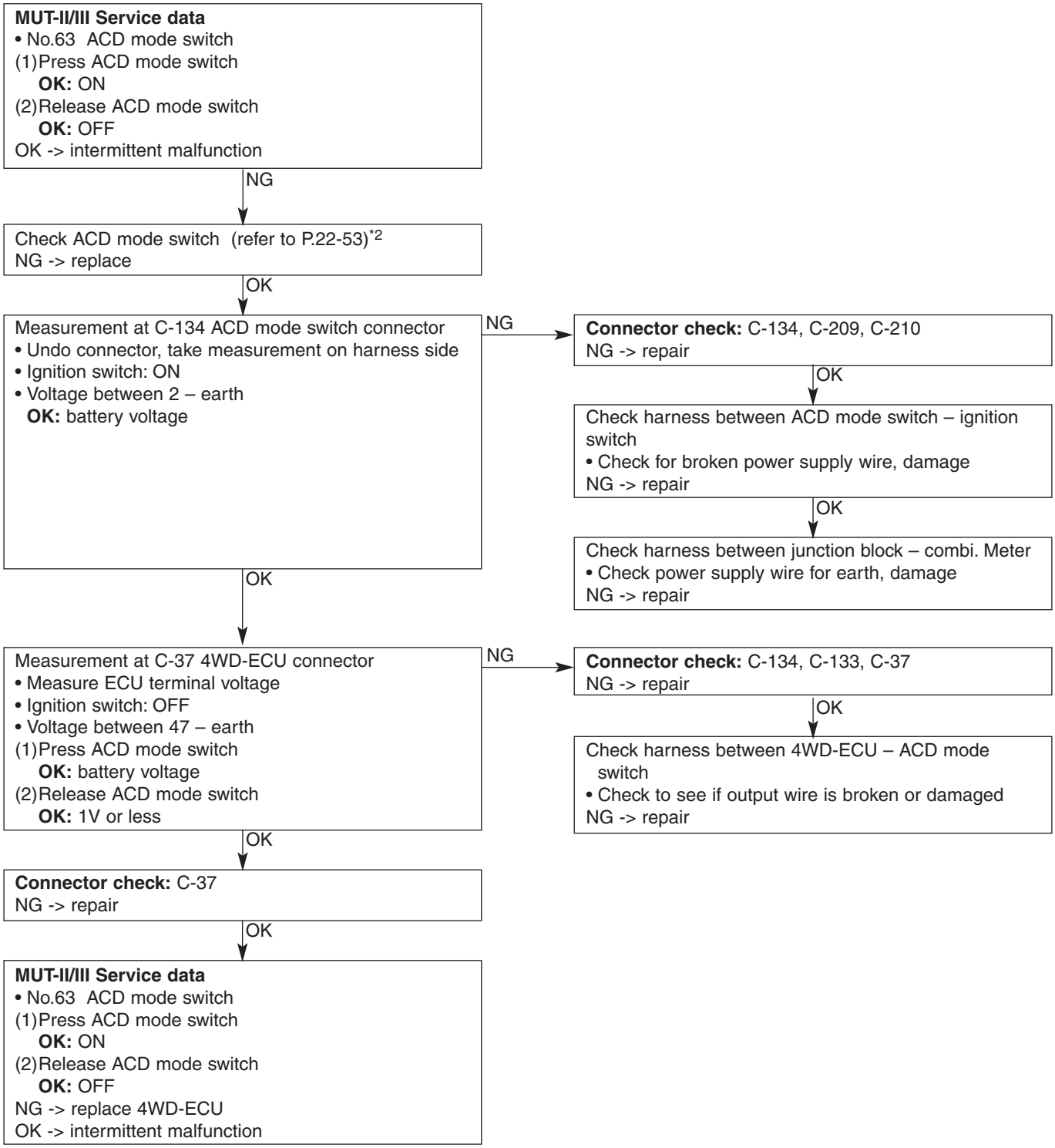
Code No.61 Stop lamp switch system	Assumed cause of concern
In cases where, at 15kph or over, the stop lamp switch stays ON for 15 minutes or longer, code No.61 is output.	• Brake pedal malfunction • Stop lamp switch malfunction • Harness, connector malfunction • 4WD-ECU malfunction

Remarks
*1: Refer to '00-5 Lancer Sedia Service Manual (No.1036K00)



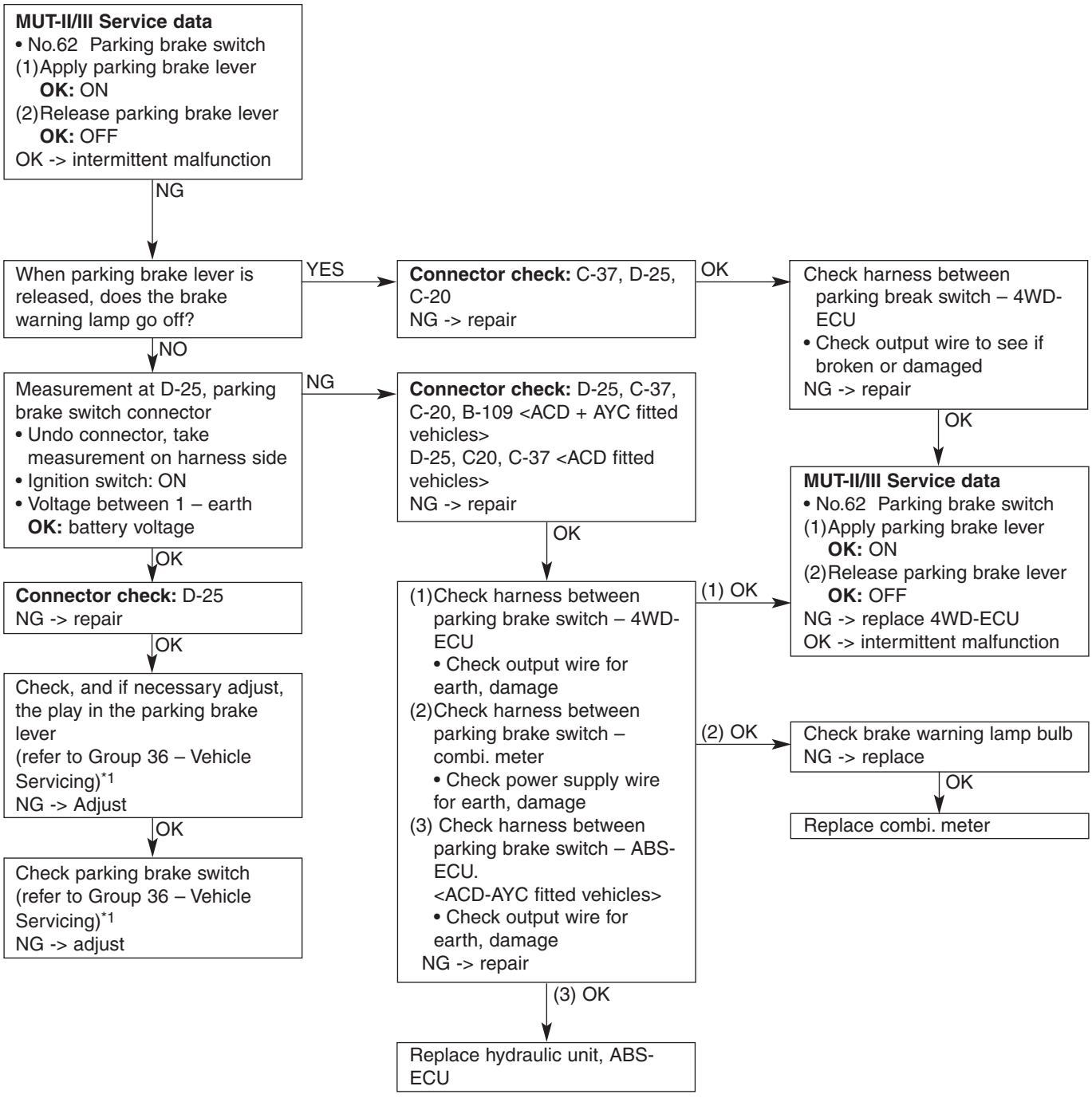
Code No.62 ACD mode switch system	Assumed cause of concern
In cases where the ACD mode switch remains ON for 60 seconds or more, code No.61 is output.	• ACD mode switch malfunction • Harness, connector malfunction • 4WD-ECU malfunction

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



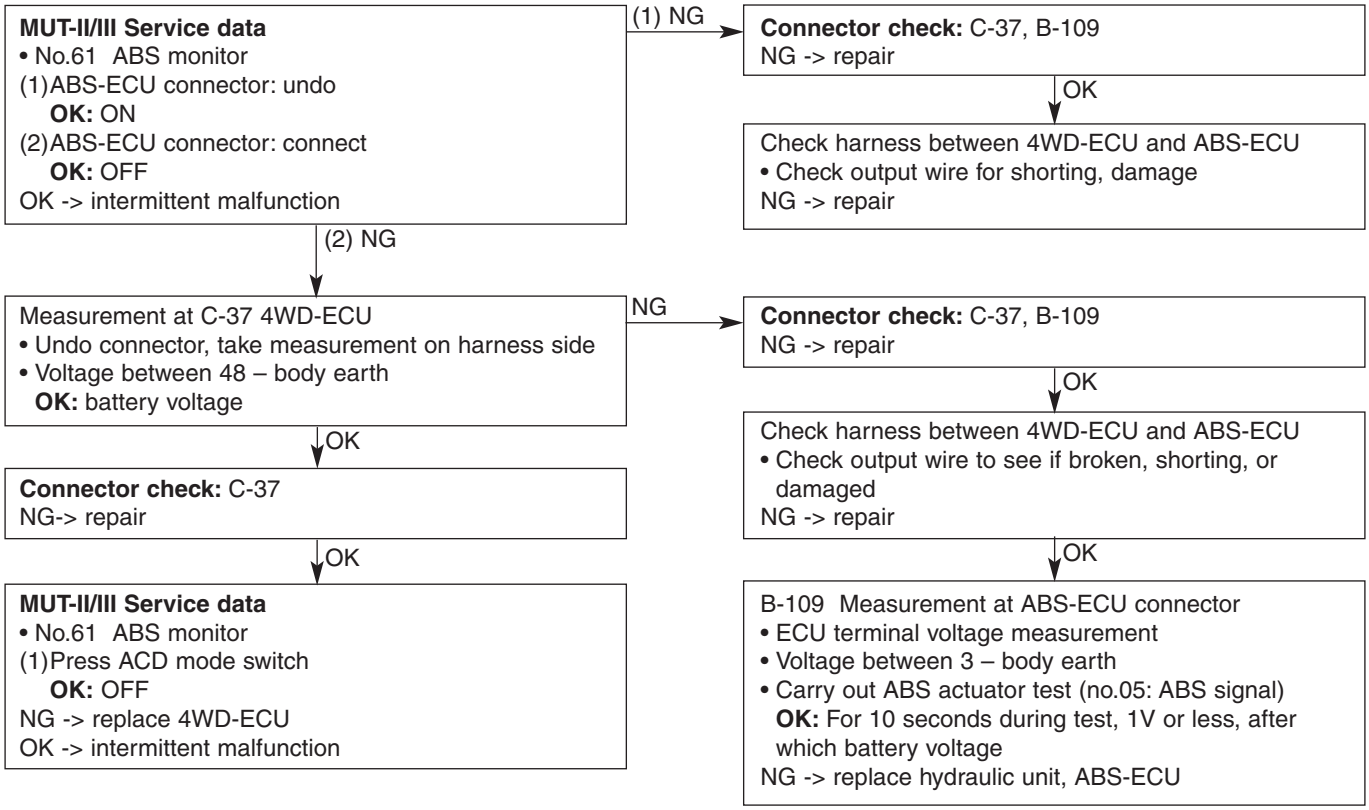
Code No.63 Parking brake switch	Assumed cause of concern
In cases where, at 15kph or over, the parking brake switch remains ON for 15 minutes or more, code No.63 is output.	• Parking brake switch malfunction • Harness, connector malfunction • ABS-ECU malfunction, <ACD+AYC fitted vehicles> • 4WD-ECU malfunction

Remarks
*1: Refer to '00-5 Lancer Sedia Service Manual (No.1036K00)



Code No.65 ABS monitor system	Assumed cause of concern
In cases where the ABS is detected to have been operating continuously for at least 1 minute, code No.65 is output.	• Harness, connector malfunction • ABS-ECU malfunction <ACD-AYC fitted vehicles> • 4WD-ECU malfunction

<ACD-AYC fitted vehicles>



Code No.74 Proportional valve <ACD> system	Assumed cause of concern
In cases where the proportional valve <ACD> control circuit is shorting, code No.74 is output.	• Proportional valve <ACD> malfunction • Harness, connector malfunction • 4WD-ECU malfunction

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

MUT-II/III Service data
• No.11 Proportional valve current <ACD>
OK: P.22-32 Refer to (Service Data List)*2
OK -> Intermittent malfunction

↓OK

Measurement at F-25 proportional valve <ACD> connector
• Undo connector, take measurement on proportional valve side
• Resistance between 2 -3
OK: 4.7Ω or less

NG → Replace hydraulic unit

↓OK

Measurement at F-25 proportional valve <ACD> connector
• Undo connector, take measurement on harness side
• Resistance between 2 – body earth
OK: 2Ω or less

OK → **Connector check:** F-25, F-22, C-30, C-133, C-38
NG -> repair

↓OK

Check harness between 4WD-ECU and Proportional valve <ACD>
• Check output wire to see if broken, shorting, or damaged
NG -> repair

↓OK

MUT-II/III Service data
• No.11 Proportional valve current <ACD>
OK: refer to P.22-32 (Service Data List) *2
NG: replace 4WD ECU
OK -> Intermittent malfunction

↓NG

Connector check: F-25, F-22
NG -> repair

↓OK

Check harness between proportional valve <ACD> - body earth
• Check earth wire to see if broken or damaged
NG -> repair

Code No.81 Electric pump relay system	Assumed cause of concern
Output when the circuit on the pump relay coil side is broken or shorting.	• Electric pump relay malfunction • Harness, connector malfunction • 4WD-ECU malfunction

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

MUT-II/III actuator test
• No.04 Electric pump operation
OK: the electric pump operating sound is audible
OK -> Intermittent malfunction

↓NG

Check electric pump relay (refer P.22-53)*2

NG → Replace electric pump relay

↓OK

Measurement at B-127 electric pump relay connector
• Undo connector, take measurement on harness side
• Resistance between 1 – body earth
OK: 2Ω or less

OK → **Connector check:** B-127, C-38
NG -> repair

↓OK

Check harness between 4WD-ECU and electric pump relay
• Check power supply wire to see if broken, shorting, or damaged
NG -> repair

↓OK

MUT-II/III Actuator test
• No.04 Electric pump operation
OK: the electric pump operating sound is audible
NG: replace 4WD ECU
OK ->

↓NG

Connector check: B-127
NG -> repair

↓OK

Check harness between electric pump relay - body earth
• Check earth wire to see if broken or damaged
NG -> repair

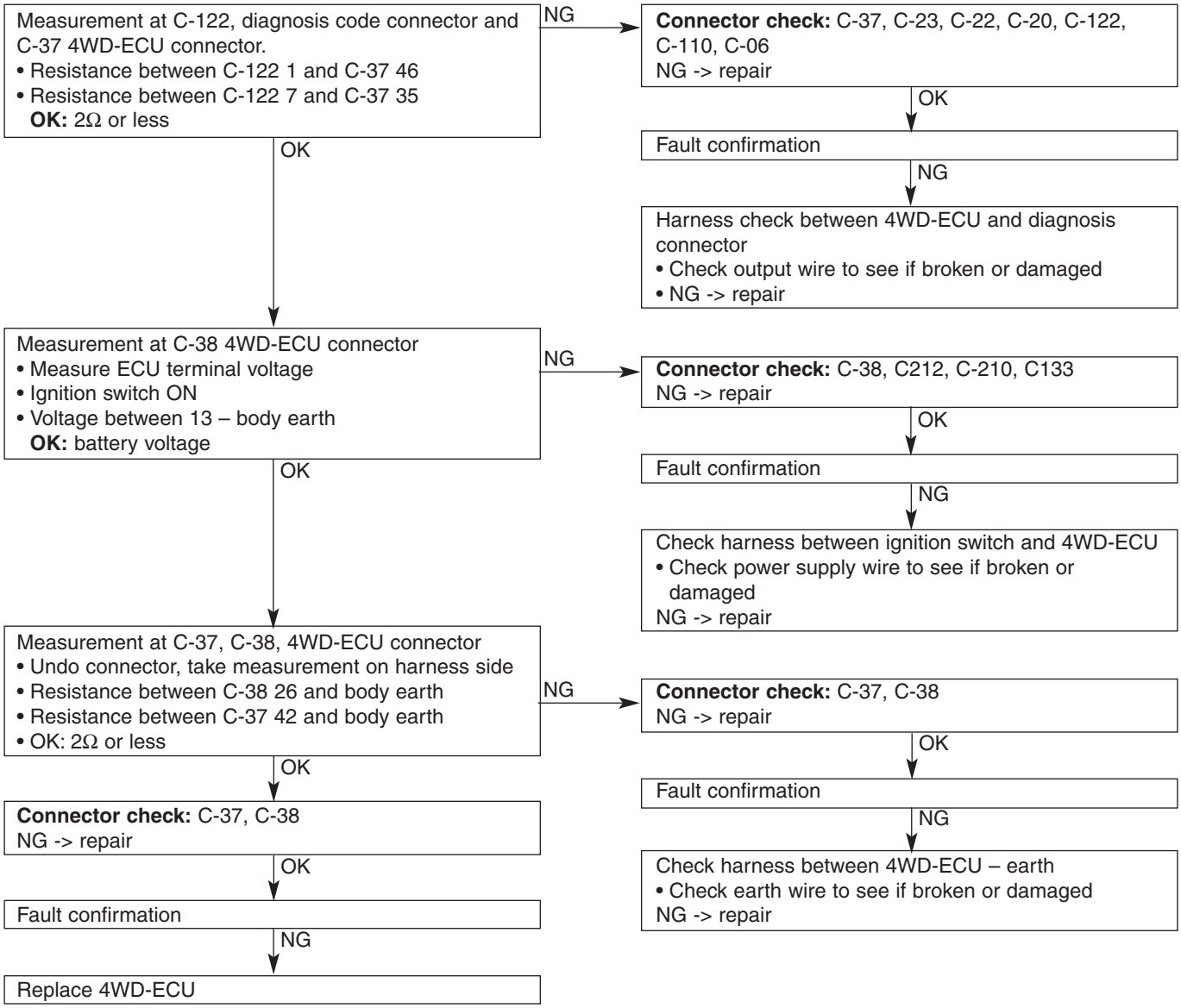
3. Fault classification

Fault	Check procedure No.	Page ref.
No communication between MUT-II/III and 4WD-ECU	2	22-19
When ignition switch is ON, (engine stopped), ACD mode indicator lamp does not come on.	3	22-20
Even after engine starts, at least 2 ACD mode indicator lamps remain lit	4	22-20

4. Fault classification procedure

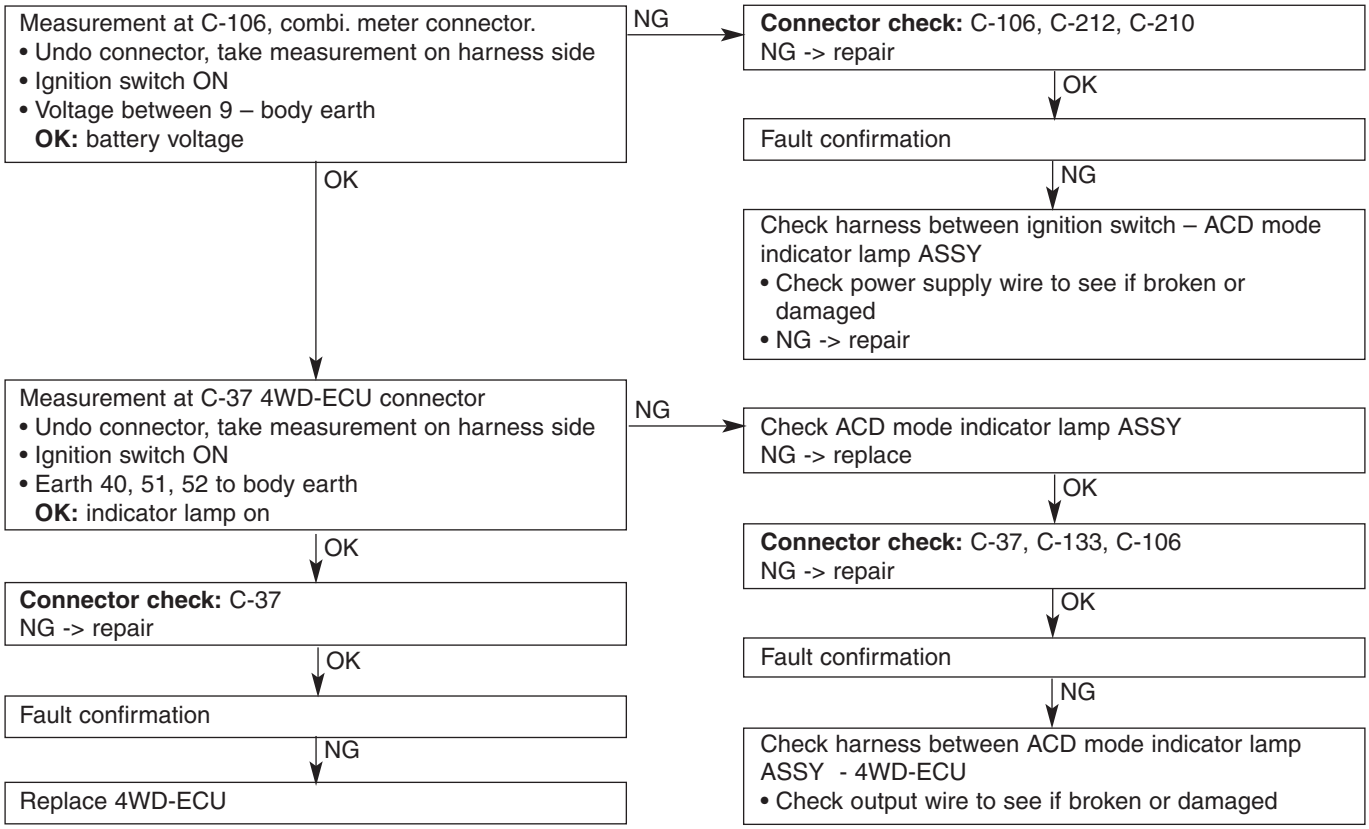
Checking procedure 2

No communication between MUT-II/III and 4WD-ECU	**Assumed cause of concern**
Diagnosis output circuit, 4WD-ECU power supply circuit, earth circuit or 4WD-ECU malfunctions are possible.	• Harness, connector malfunction • 4WD-ECU malfunction



Checking procedure 3

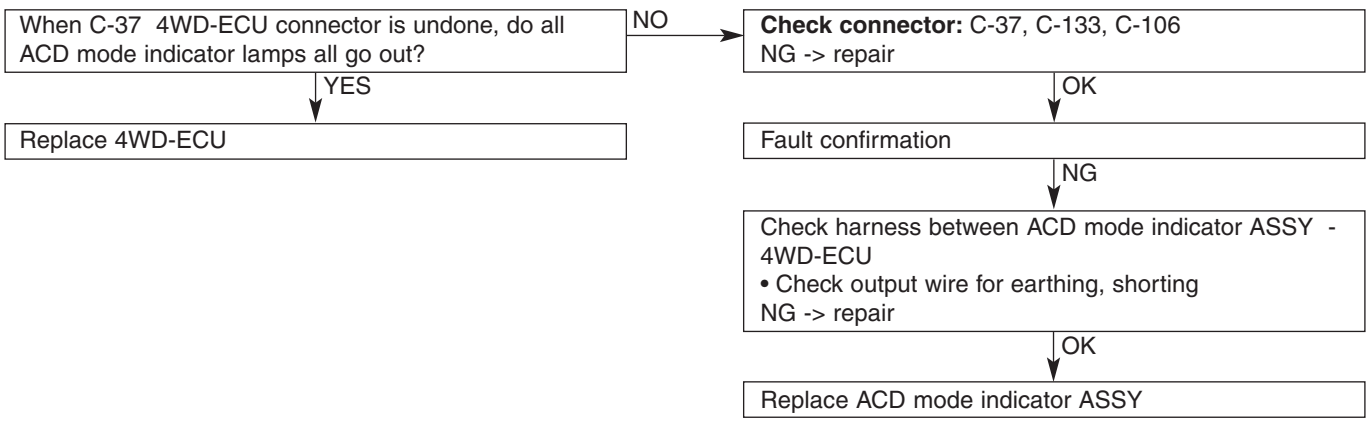
The ACD mode injector lamp does not come on when the ignition switch is ON (engine stopped)	Assumed cause of concern
ACD mode indicator lamp circuit or 4WD-ECU malfunctions are possible.	• Harness, connector malfunction • ACD mode indicator lamp ASSY malfunction • 4WD-ECU malfunction



Checking procedure 4

Even after engine starts, at least 2 ACD mode indicator lamps remain lit	Assumed cause of concern
ACD mode indicator lamp output circuit malfunction is possible.	• Harness, connector malfunction • 4WD-ECU malfunction • ACD mode indicator lamp ASSY malfunction

Remarks
This phenomenon is limited to when communication with MUT-II/III is possible (4WD-ECU power supply normal), and diagnosis code is normal/correct.



SECTION 33A

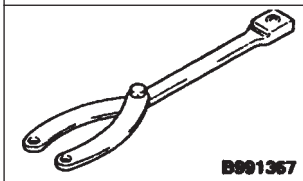
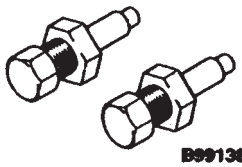
FRONT SUSPENSION

CONTENTS

General

Important servicing information has been added along with the adoption of Bilstein shock absorbers. However, apart from the information below, other servicing information remains unchanged.

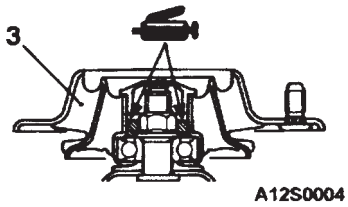
Special Tools

Tool	Number	Name	Details
 B991367	MB991367	Special spanner	Dismantling and assembly of strut ASSY. Vehicles fitted with Bilstein shock absorbers
 B991385	MB991385	Pin	

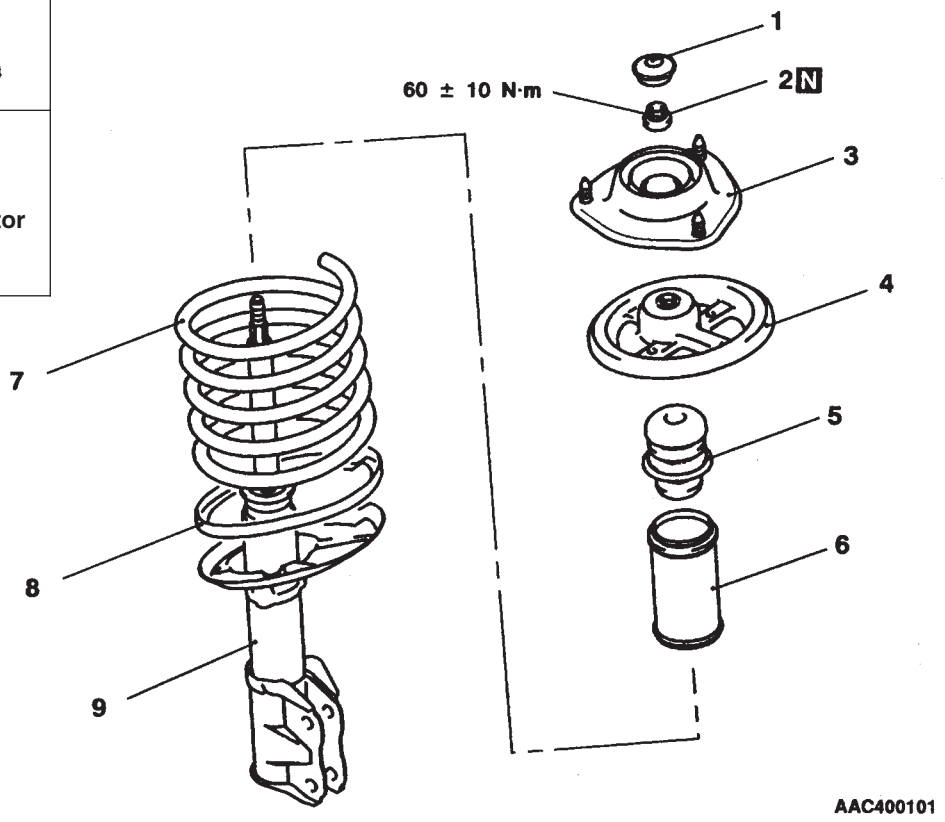
STRUT ASSY

Vehicles fitted with Bilstein shock absorbers

Dismantling and Assembly

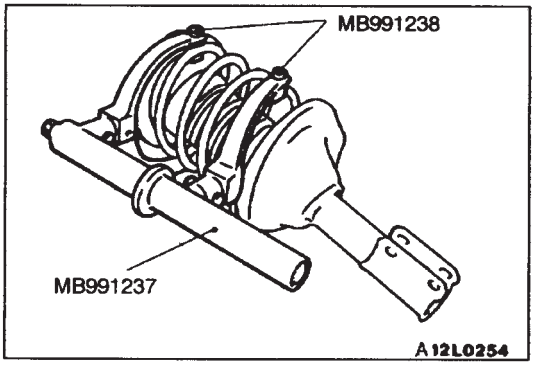


NOTE
When applying grease, ensure that none of it is left on the insulator rubber as this could lead to insulator rubber damage.



Dismantling procedure

1. Dust cover
◀A▶ ▶A◀ 2. Self-locking nut
3. Strut insulator ASSY
4. Upper spring seat
5. Bumper rubber
6. Dust cover
7. Coil spring
8. Lower spring pad
◀B▶ 9. Strut ASSY



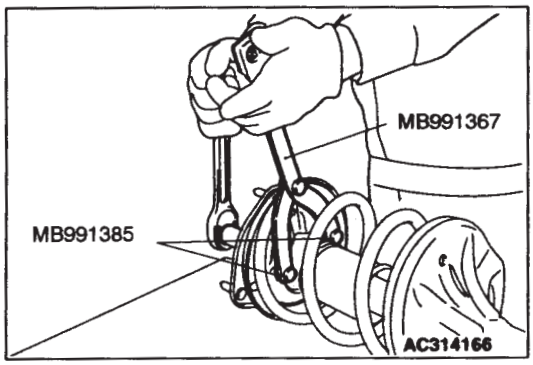
Important note on dismantling

Procedure remains unchanged, apart from the following point:

◀A▶ **Removal of self-locking nut**

1. Compress the coil spring using the following special tool
   - Spring compressor body (MB991237)
   - Arm set (MB991238)

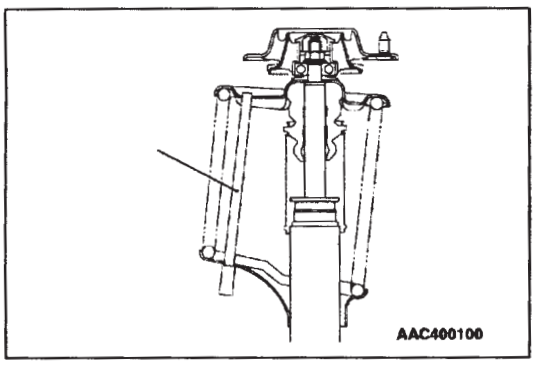
CAUTION
(1) To compress the coil spring securely, ensure that the special tool is extended as far as the spring will allow, then fitted evenly to the coil spring.
(2) There is a danger of special tool damage, so do not use an impact wrench.



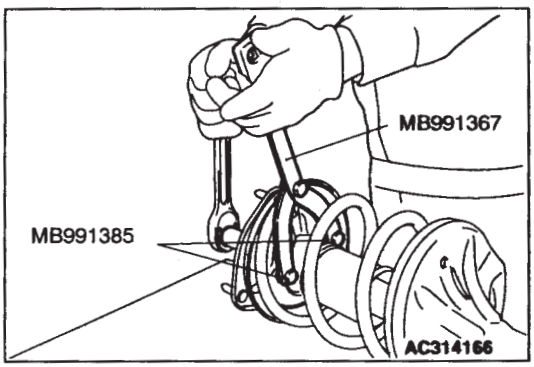
2. Using the following special tools, release the self-locking nut.
- Special spanner (MB991367)
- Pin (MB991385)

CAUTION
There is a danger of the lock nut inside the strut piston rod working loose, so when loosening the self-locking nut, do not use an impact wrench.

Important note on assembly
▶A◀ Fitting self-locking nut
1. With the coil spring compressed with the special tool, temporarily tighten the self-locking nut.



2. Match up strut assembly hole in lower spring seat, and hole in upper spring seat.
   Remarks
   Using a lever to align the holes can make this job easier.
3. Match both tips of coil spring precisely with the slots on the spring seats, and release the special tool.



4. Using the special tool, tighten the self-locking nut to the specified torque.
   Tightening torque: 60 ± 10N·m

CAUTION
There is a danger of the lock nut inside the strut piston rod working loose, so when loosening the self-locking nut, do not use an impact wrench.

SECTION 34

REAR SUSPENSION

CONTENTS

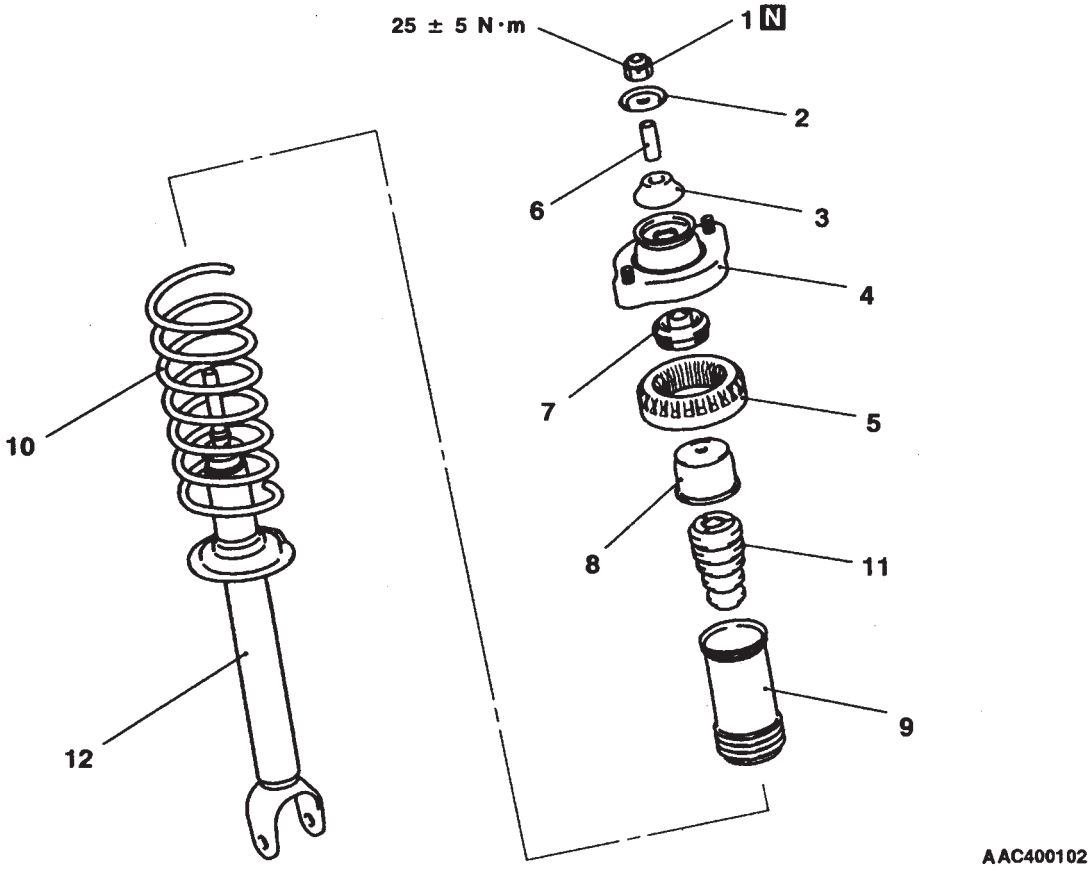
General

Important servicing information has been specified along with.the adoption of Bilstein shock absorbers.

Shock Absorber Assy

Vehicles fitted with Bilstein shock absorbers

Dismantling and Assembly



Dismantling procedure

◀A▶ ▶D◀ 1. Self-locking nut
2. Washer
3. Bush B
▶C◀ 4. Bracket ASSY
▶B◀ 5. Spring upper pad
6. Collar
7. Bush A
8. Cup ASSY
9. Dust cover
▶A◀ 10. Coil spring
11. Bumper rubber
12. Shock absorber

Remarks
Carry out dismantling and assembly following existing servicing instructions

SECTION 51

EXTERIOR

CONTENTS

General

Important servicing information has been specified, along with the following changes and additions. Other servicing information, however, remains the same as the information relating to the Lancer Evolution VIII.

- Changes and additions to front bumper components
- Changes to the position of the 3 diamonds badge, and addition to the EVOLUTION MR mark.

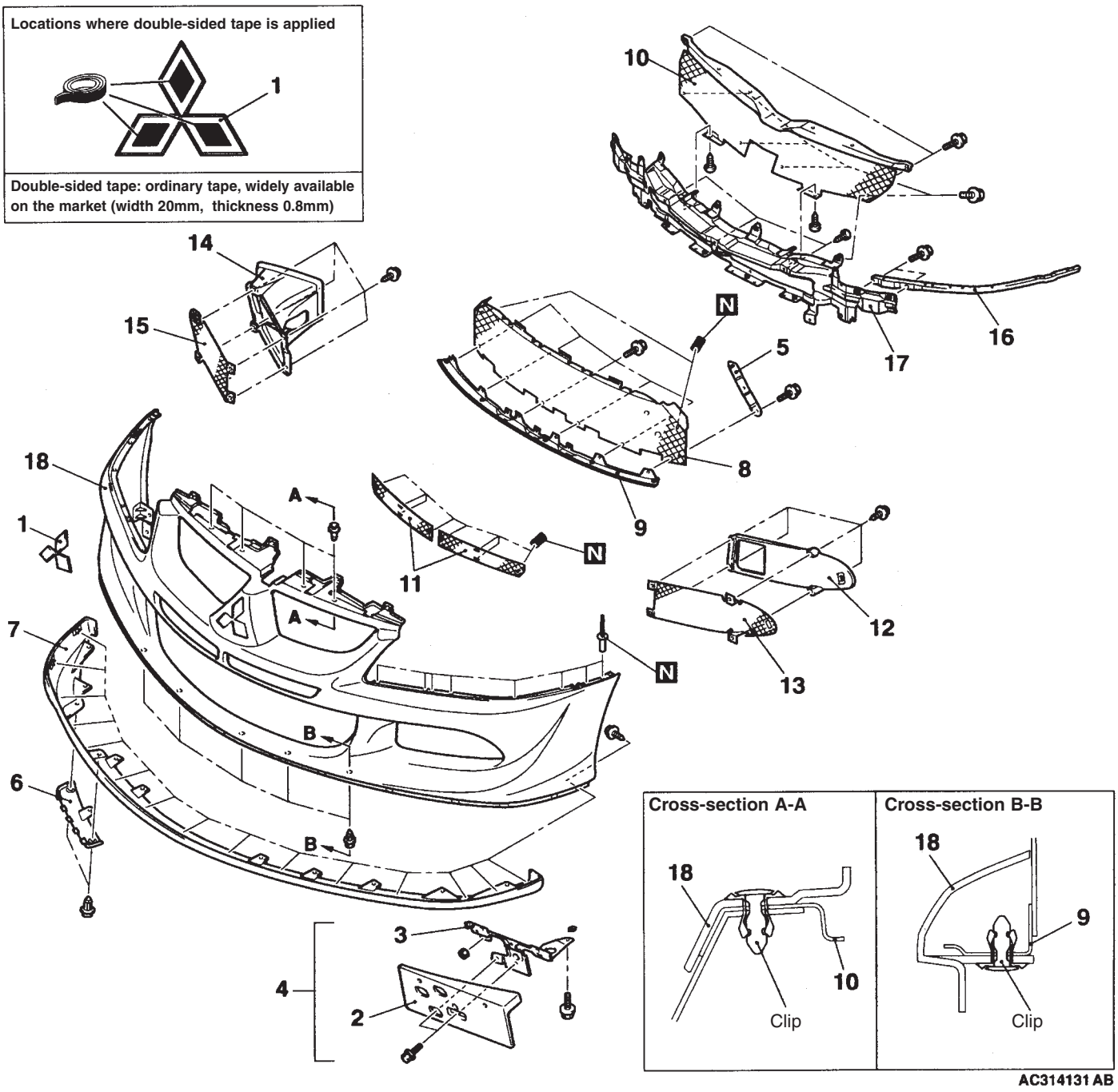
Front bumper

Adhesives

Locations used	Brand
Three diamonds badge	Double-sided tape: ordinary tape, widely available on the market (width 20mm, thickness 0.8mm)

Front Bumper

Dismantling · Assembling



Dismantling procedure

1. Three diamonds badge
2. Licence plate garnish
3. Licence plate bracket
4. Licence plate bracket ASSY
5. Front bumper plate
6. Cover
7. Front air dam panel
8. Front bumper lower plate ASSY
9. Front bumper lower reinforcement ASSY
10. Front bumper upper plate ASSY
11. Bumper net
12. Front bumper side cover
13. Bumper side net (LH)
14. Oil cooler duct
15. Bumper side net (RH)
    - Water spray hose and nozzle (ref. Section 15)

◀A▶ ▶A◀ 16. Front bumper side plate ASSY

17. Front bumper upper reinforcement ASSY
18. Front bumper facing

Important notes on dismantling

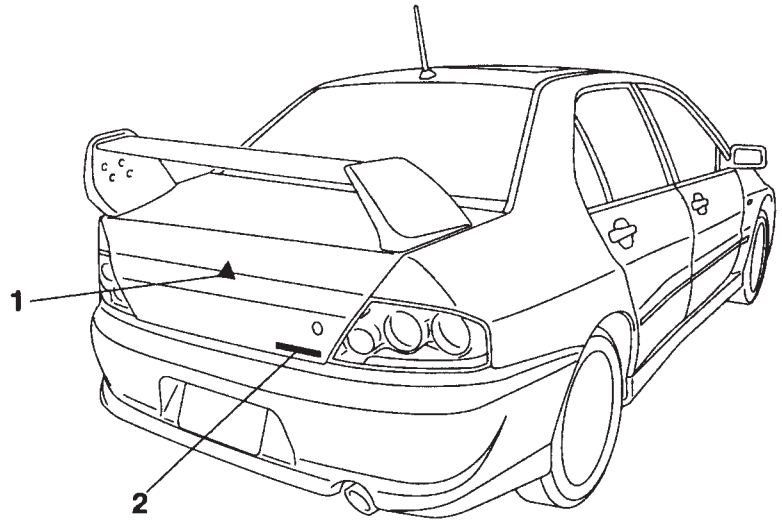
◀A▶ Front bumper side plate removal
Same as for existing front bumper rivet removal.

Important notes on assembly

▶A◀ Fitting front bumper side plate
Same as for existing front bumper rivet fitting.

Markings

Removal and fixing



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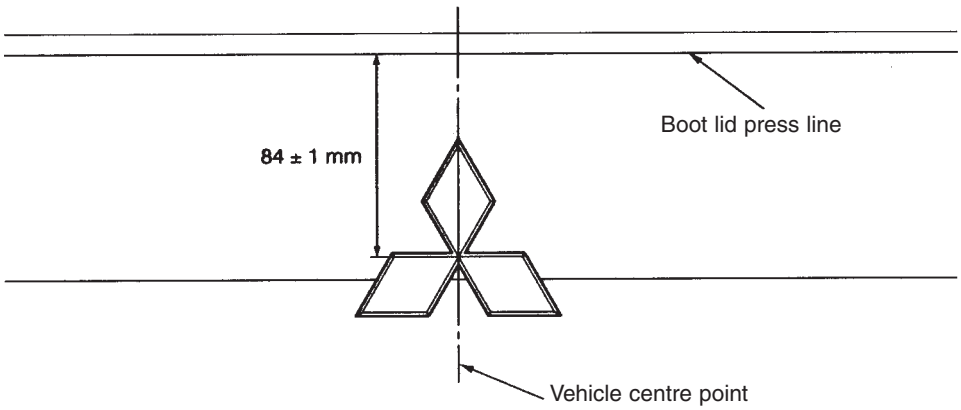
▶A◀ 1. Three diamonds badge

▶A◀ 2. EVOLUTION MR mark

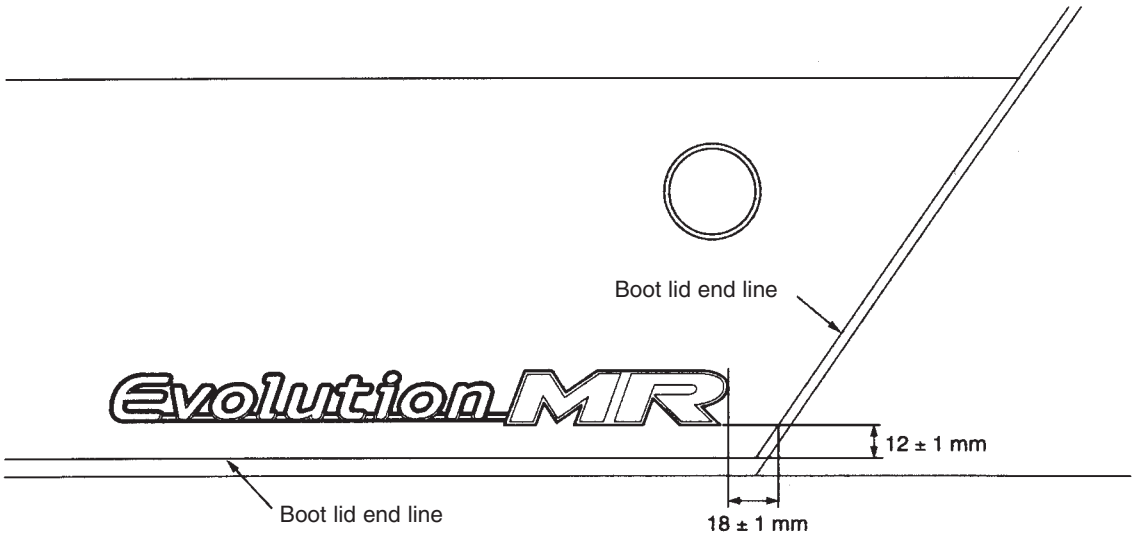
Important fitting notes

▶A◀ **Fixing the markings**

1. Positions
(1) Three diamonds badge



(2) EVOLUTION MR MARK



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2. Important fixing notes

(1) Clean and remove any grease from the body surface where markings will be affixed, using unleaded petrol.
(2) Remove the paper backing on the rear of the markings, and fix in position.
(3) Remove the 'application' tape.

Note
- **Do this job in an ambient temperature of 20 - 38˚C in a dust free location.**
- **If temperature is less than 20˚C, warm up the markings and the body where they will be fitted to between 20 – 30˚C.**
- **Stick the markings on and press firmly so that no air bubbles get trapped.**