

REAR AXLE

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SERVICE SPECIFICATIONS

<Vehicles with AYC>

Items	Standard value	Limit
Rear axle total backlash mm	–	5
Pressure generated by hydraulic unit MPa {kgf/cm ² }	0 – 1.6 {10.0 – 16.0}	–
Wheel bearing axial play mm	–	0.05
Wheel bearing rotation starting torque Nm {kgf·cm}	–	1.0 {10.5} or less

<Vehicles without AYC>

Items	Standard value	Limit
Right-to-left difference in combined thickness of friction plate and friction disc mm	0 – 0.05	–
Clearance between spring plate and differential case mm	0.06 – 0.25	–
LSD differential torque Nm {kgf·m}	When new clutch plate is installed	5 – 19 {0.5 – 1.9}
	When existing clutch plate is installed	2 – 19 {0.2 – 1.9}
Distortion of friction plate and friction disc mm	–	0.08
Difference in thickness between friction plate, friction disc, and spring plate mm	–	0.1

LUBRICANT

<Vehicles with AYC>

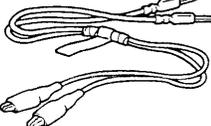
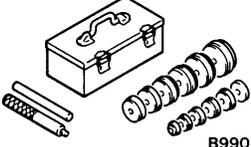
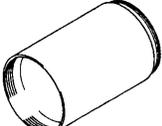
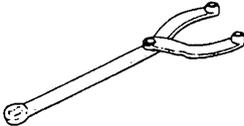
Items			Specified lubricant	Capacity
Gear oil	Torque transfer differential	Differential	mitsubishi genuine dia queen super hypoid gear oil (GL-5)	0.41 ± 0.02 dm ³ {0.41 ± 0.02 ℓ}
		Torque transfer mechanism	mitsubishi genuine dia queen ayc fluid	0.70 ⁺⁰ / _{-0.05} dm ³ {0.70 ⁺⁰ / _{-0.05} ℓ}
Hydraulic piping fluid			mitsubishi genuine dia queen atf-spii	1 dm ³ {1 ℓ}
Torque transfer mechanism oil seal lips			Vaseline	As required

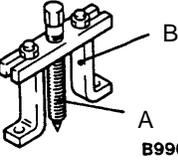
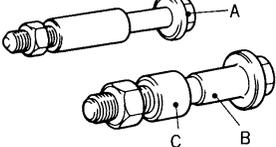
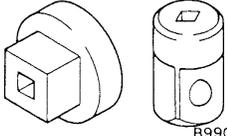
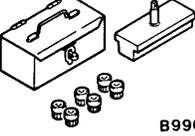
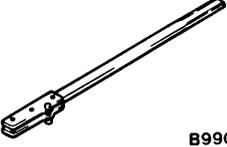
SEALANT

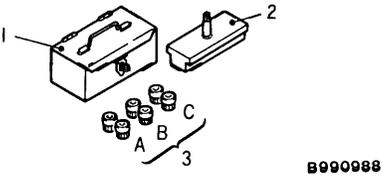
<Vehicles with AYC>

Items	Specified sealant
Torque transfer differential vent plug	Semi-drying sealant: THREEBOND 1281B (460 g)
Torque transfer mechanism cover	

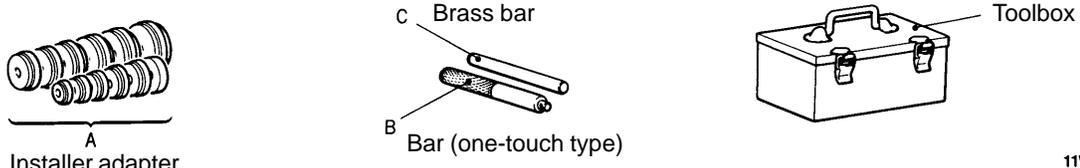
SPECIAL TOOLS

Tool	Number	Name	Use
 <p>B991529</p>	MB991529	Diagnosis code check harness	Inspection of AYC (diagnosis display by AYC warning lamp)
	MD998330 (MD998331)	Oil pressure gauge (2,942 kPa {30 kgf/cm ² })	Hydraulic pressure measurement <vehicles with AYC>
 <p>B991705</p>	MB991705	Hose adapter	
 <p>B990925</p>	MB990925	Bearing & oil seal installer set	Pressfitting of oil seal <differential>
 <p>B991115</p>	MB991115	Oil seal installer	Pressfitting of oil seal <differential> (used in combination with MB990938)
	MD998812	Installer cap	Pressfitting of oil seal <torque transfer mechanism of vehicles with AYC>
	MD998813	Installer 100	
	MD998829	Installer adapter (60)	
 <p>B990767</p>	MB990767	End yoke holder	Fixing of hub

Tool	Number	Name	Use
 <p>B990241</p>	MB990241 A: MB990242 B: MB990244	Rear axle shaft puller A: Puller shaft B: Puller bar	<ul style="list-style-type: none"> ● Removal of drive shaft ● Removal of rear hub assembly
 <p>B991354</p>	MB991354	Puller body	
	A: MB991017 B: MB990998 C: MB991000	A, B: Front hub remover & installer C: Spacer	<ul style="list-style-type: none"> ● Temporary fixing of unit bearing ● Measurement of wheel bearing rotation starting torque ● Measurement of wheel bearing axial play Use MB991000 (component of MB990998) for the spacer.
 <p>B990326</p>	MB990326	Preload socket	<ul style="list-style-type: none"> ● Measurement of wheel bearing rotation starting torque ● Measurement of drive pinion preload
 <p>B991113</p>	MB991406, MB990635, or MB991113	Steering linkage puller	<ul style="list-style-type: none"> ● Disconnection of ball joint ● Removal of hub bolt
 <p>B991460</p>	MB991460	Plug	Prevention of differential oil from being discharged and entry of foreign matter <differential>
 <p>B990988</p>	MB990988	Side gear holding tool set	Measurement of clutch plate preload <vehicles without AYC>
 <p>B990850</p>	MB990850	End yoke holder	Removal and installation of companion flange

MB990988 	Number		Name	O.D. mm
	1	MB990551	Box	–
	2	MB990989	Base	–
	3	(MB990990)	Tool A	25
		(MB990991)	Tool B	28
		(MB990992)	Tool C	31

MB990925



Installer adapter (A), Brass bar (C), Bar (one-touch type) (B), Toolbox

11W0113

	Tool number (MB990925)	O.D. mm		Tool number (MB990925)	O.D. mm
A	MB990926	39.0	A	MB990933	63.5
	MB990927	45.0		MB990934	67.5
	MB990928	49.5		MB990935	71.5
	MB990929	51.0		MB990936	75.5
	MB990930	54.0		MB990937	79.0
	MB990931	57.0	B	MB990938	–
	MB990932	61.0	C	MB990939	–

TROUBLESHOOTING <AYC>

1. BASIC TROUBLESHOOTING CONDITIONS

Before starting the troubleshooting procedure, make sure that the following items have been checked okay.

- The correct steering wheel has been properly installed in the neutral position of the steering column shaft.
- Tire and wheel sizes are correct with correct specifications. Inflation pressure, balance, and wear conditions are okay.
- Wheel alignment is correct.
- The engine, suspension, and other parts have not been remodeled so as to affect the AYC system.

2. DIAGNOSIS FUNCTION

READING THE DIAGNOSIS CODE

Read the diagnosis code using AYC warning lamp.

3. INSPECTION CHART FOR DIAGNOSIS CODE

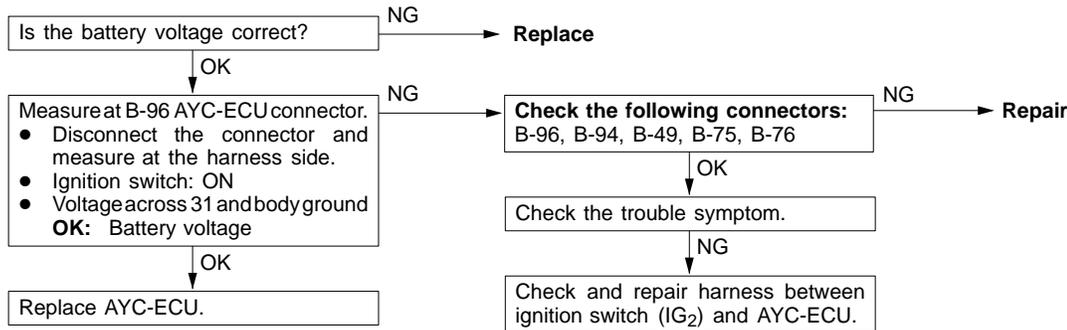
Diagnosis code No.	Diagnosis items	Ref. page
12	Power supply voltage (valve power supply) system (open- or short-circuit)	27-7
21	FR wheel speed sensor system (open- or short-circuit)	27-7
22	FL wheel speed sensor system (open- or short-circuit)	27-7
23	RR wheel speed sensor system (open- or short-circuit)	27-7
24	RL wheel speed sensor system (open- or short-circuit)	27-7
25	Wrong-diameter tire	27-9
26	Faulty wheel speed sensor	27-10
31	Steer sensor (ST-1, ST-2, ST-N) system (open-circuit)	27-11
32	Steer sensor (ST-N) system (short-circuit)	27-11
33	Steer sensor (ST-N) system	27-12
34	Steer sensor (ST-1, ST-2) system (short-circuit)	27-12
41	TPS system (open- or short-circuit)	27-13
51	Longitudinal acceleration sensor system (open- or short-circuit)	27-13
52	Longitudinal acceleration sensor	27-14
56	Lateral acceleration sensor system (open- or short-circuit)	27-13
61	Stop lamp switch system (open-circuit)	27-14
65	ABS monitor system (open-circuit or defective ABS)	27-15
71	Proportioning valve system (open- or short-circuit)	27-15
72	Directional control valve (right) system (open- or short-circuit)	27-16
73	Directional control valve (left) system (open- or short-circuit)	27-17
81	AYC relay system (open- or short-circuit)	27-18
82	Electric pump system	27-19
83	Electric pump system	27-20

4. INSPECTION PROCEDURES FOR DIAGNOSIS CODES

Code No. 12: Power supply voltage (valve power supply) system	Probable cause
This code is output when the AYC-ECU power supply voltage drops below, goes beyond, a specified level.	<ul style="list-style-type: none"> ● Defective harness or connector ● Defective battery ● Defective AYC-ECU

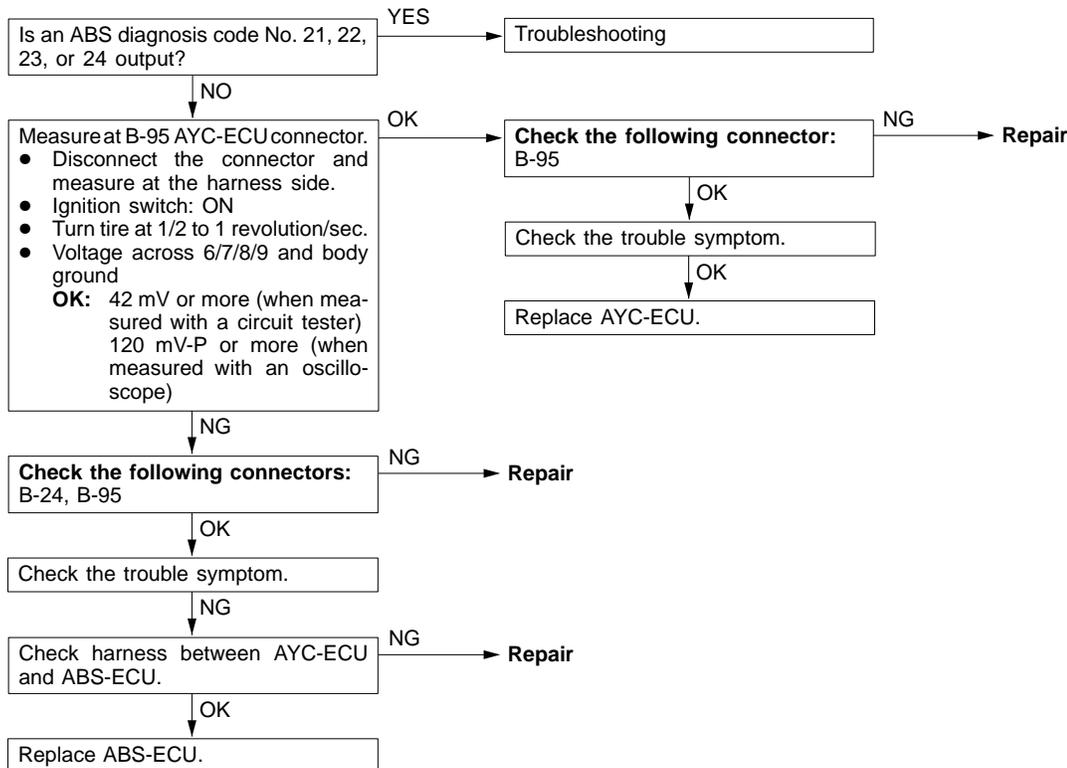
NOTE

Refer to the corresponding item if any other diagnosis code is being output.

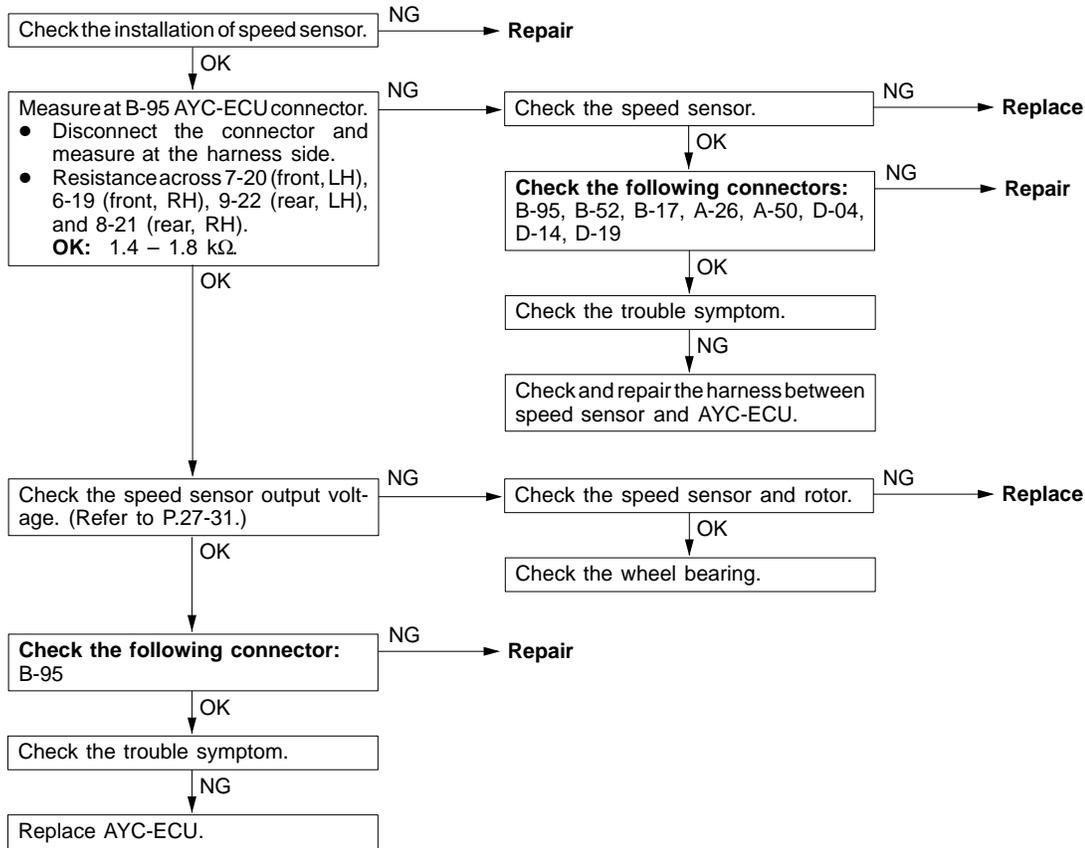


Code No. 21, 22, 23, 24: Wheel speed sensor system	Probable cause
This code is output if any one of three wheel speed sensors fails to provide an input even after the other wheel exceeded 8 km/h.	<ul style="list-style-type: none"> ● Defective harness or connector ● Defective ABS-ECU ● Defective AYC-ECU

<Vehicles with ABS>

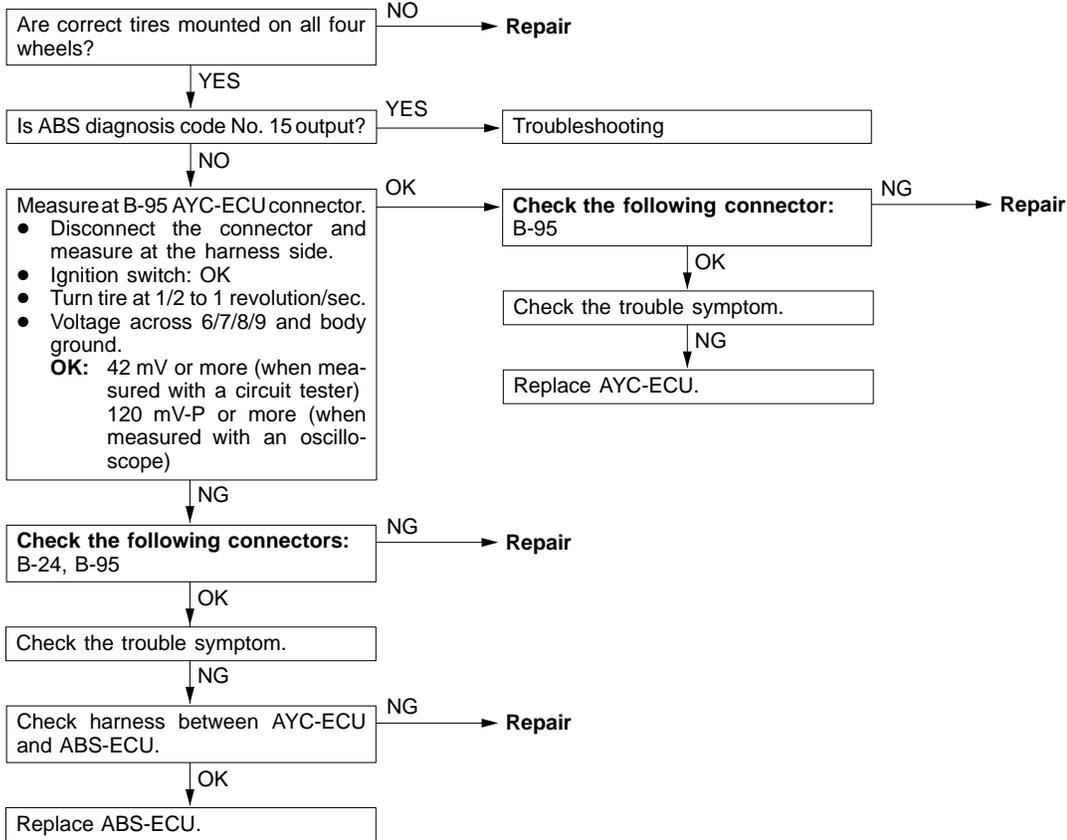


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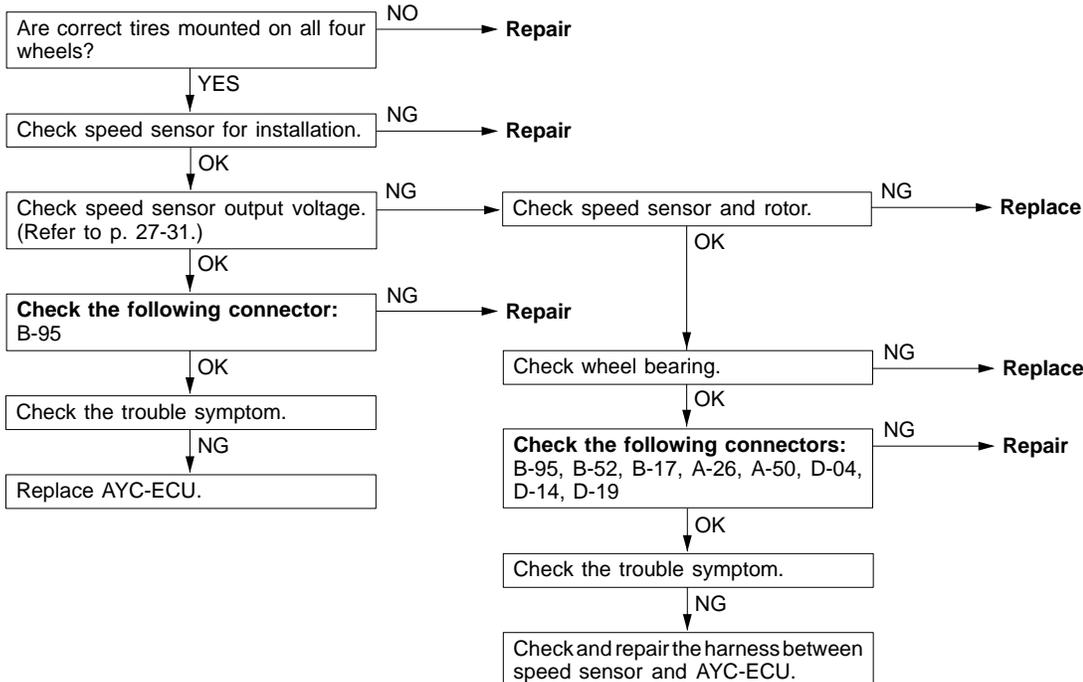


Code No. 25: Wrong-diameter tire	Probable cause
This code is output if the speed of any one of the four wheels exceeds a specified level with respect to the average of the four wheel speed sensor outputs when the steering wheel is in the straight-ahead position and the vehicle speed exceeds 20 km/h. At this time, the warning lamp does not light up.	<ul style="list-style-type: none"> ● Defective harness or connector ● Defective AYC-ECU ● Defective ABS-ECU

<Vehicles with ABS>

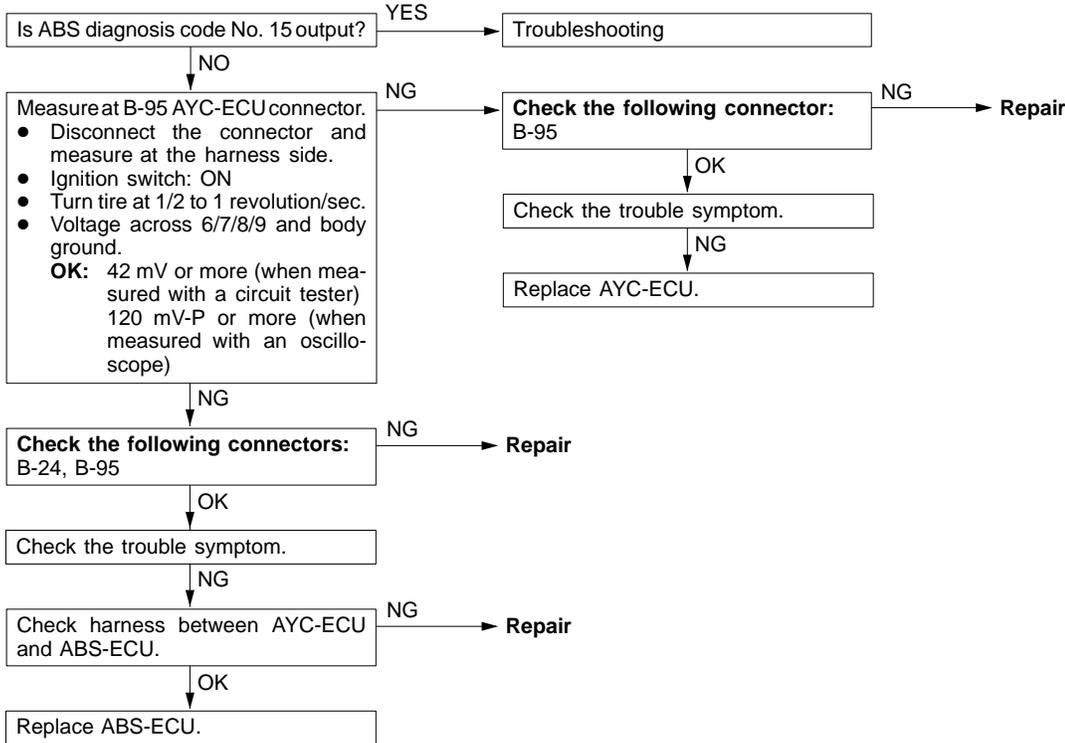


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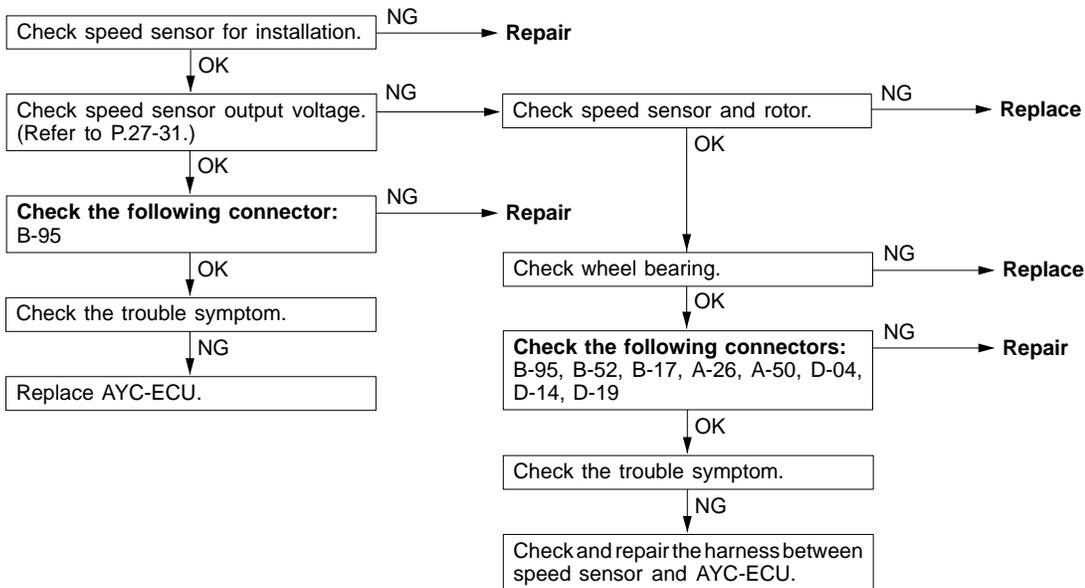


Code No. 26: Wheel speed sensor system (faulty output signal)	Probable cause
This code is output if the speed of one of the four wheels exceeds a specified level when the vehicle speed is 20 km/h or more. At this time, the warning lamp is turned on.	<ul style="list-style-type: none"> ● Defective harness or connector ● Defective AYC-ECU ● Defective ABS-ECU

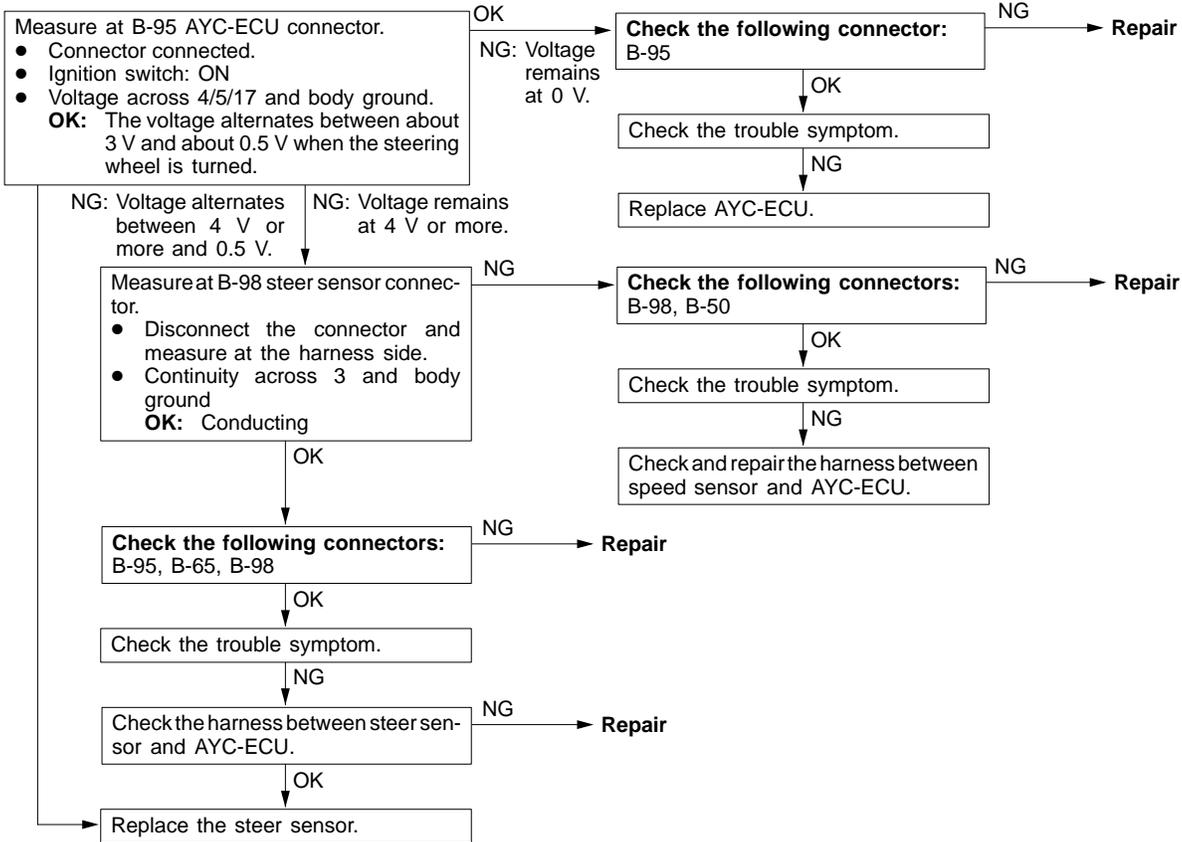
<Vehicles with ABS>



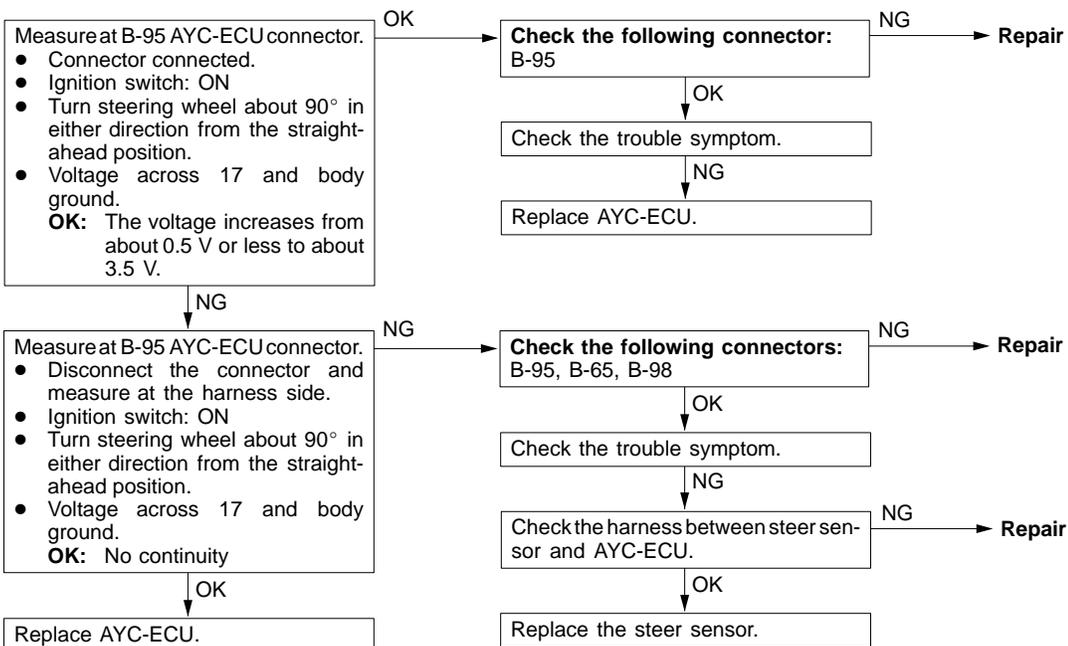
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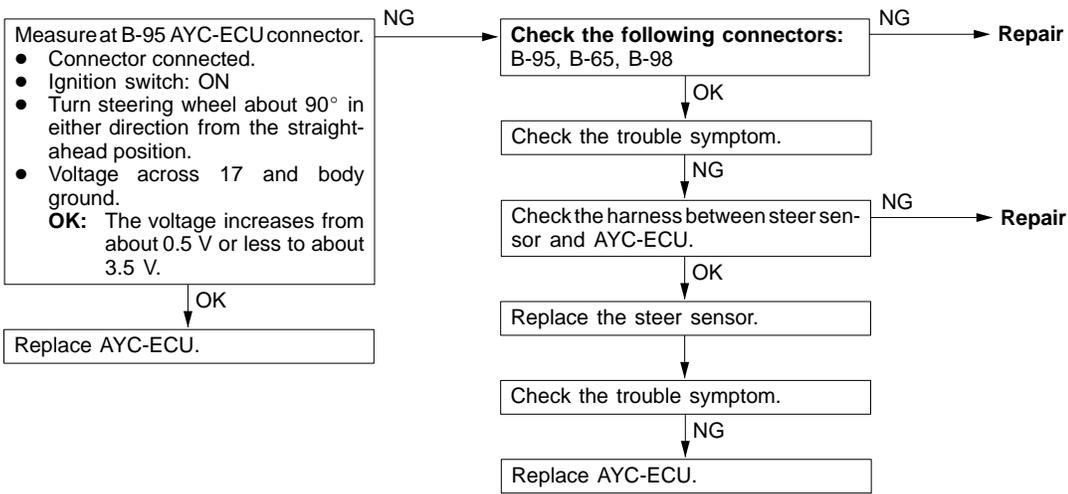
Code No. 31: Steer sensor (ST-1, ST-2, ST-N) system	Probable cause
This code is output when any of the steer sensors ST-1, ST-2, and ST-N is open-circuited or the steer sensor ground wire is open-circuited.	<ul style="list-style-type: none"> ● Defective steer sensor ● Defective harness or connector ● Defective AYC-ECU



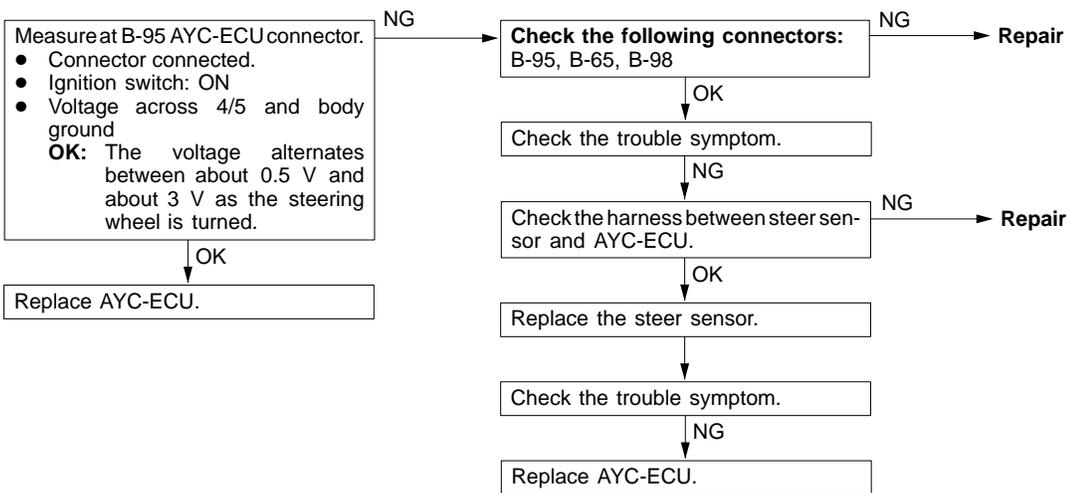
Code No. 32: Steer sensor (ST-N) system	Probable cause
This code is output when the steering wheel is considered to be turned 40° or more as determined with ST-1 and ST-2 with ST-N ON (LOW voltage).	<ul style="list-style-type: none"> ● Defective steer sensor ● Defective harness or connector ● Defective AYC-ECU



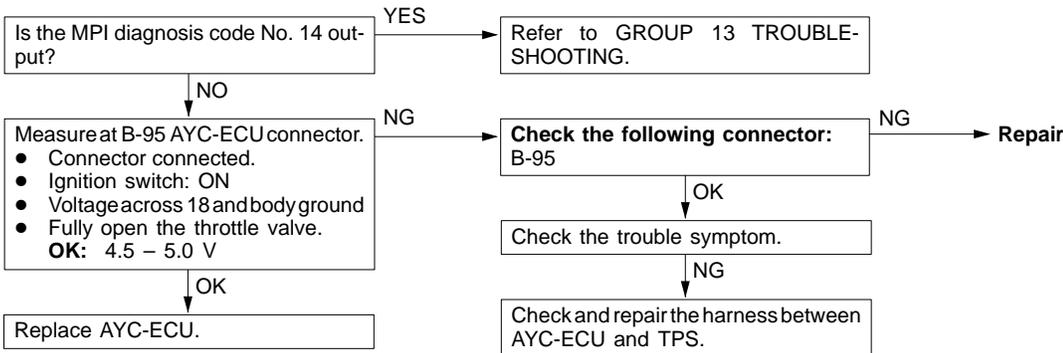
Code No. 33: Steer sensor (ST-N) system	Probable cause
This code is output when the steering wheel is turned 400° or more in the same direction with ST-N OFF (HIGH voltage).	<ul style="list-style-type: none"> ● Defective steer sensor ● Defective harness or connector ● Defective AYC-ECU



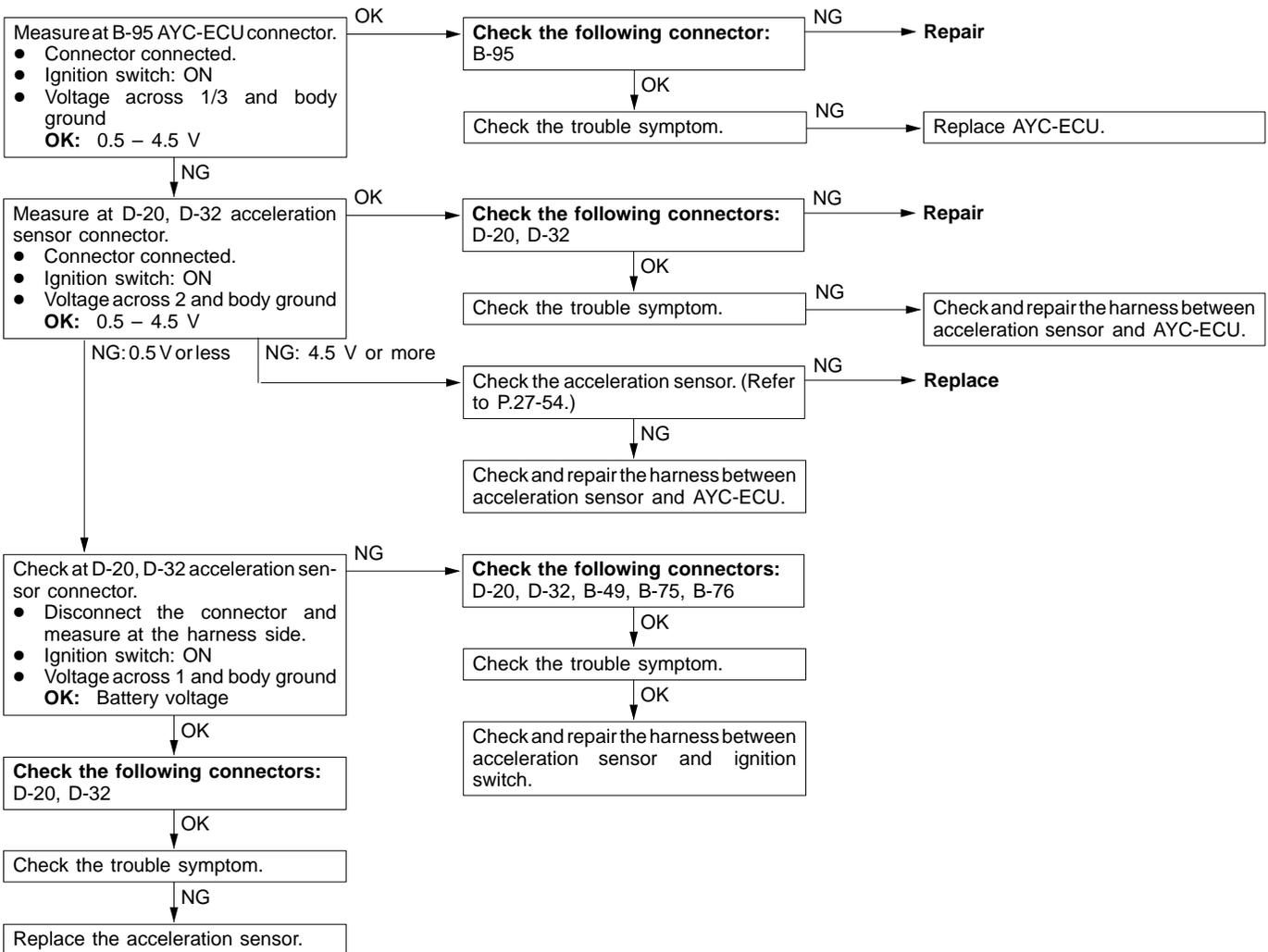
Code No. 34: Steer sensor (ST-1, ST-2) system	Probable cause
This code is output if a turning condition is detected for a cumulative period of time of 15 min. or more, during which there is no change in the steer sensor (ST-1, ST-2) signals with the wheel speed 15 km/h or more.	<ul style="list-style-type: none"> ● Defective steer sensor ● Defective harness or connector ● Defective AYC-ECU



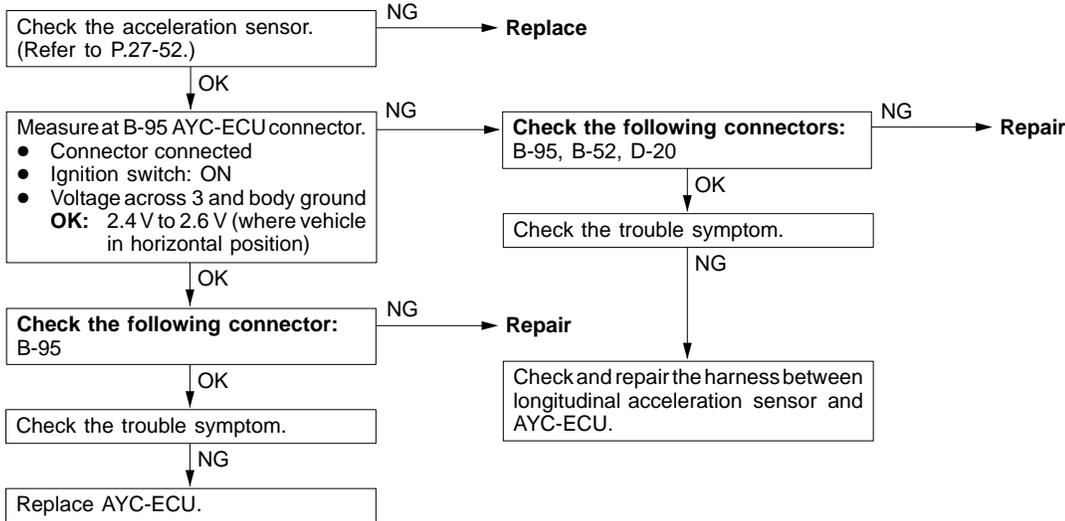
Code No. 41: TPS system	Probable cause
This code is output when the input from the throttle position sensor falls short of 0.2 V.	<ul style="list-style-type: none"> ● Defective TPS ● Defective harness or connector ● Defective AYC-ECU



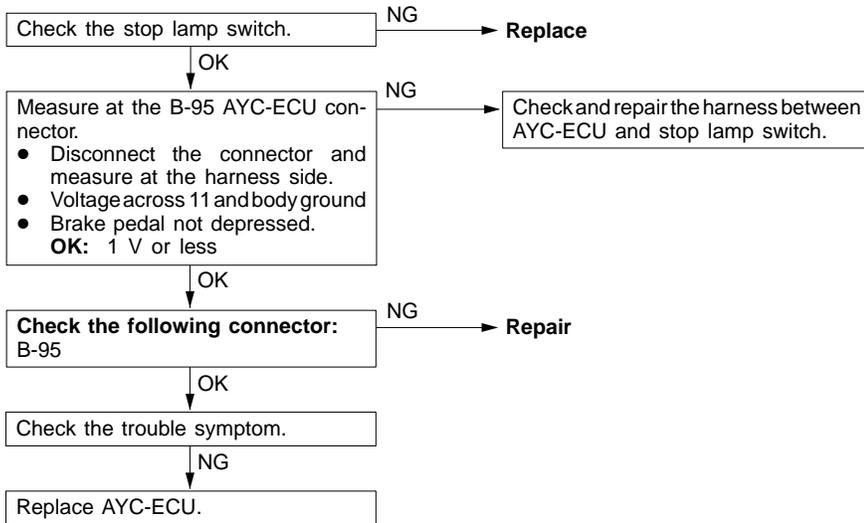
Code No. 51: Longitudinal acceleration sensor system	Probable cause
Code No. 56: Lateral acceleration sensor system This code is output when the output from the acceleration sensor becomes 0.5 V or less or 4.5 V or more.	<ul style="list-style-type: none"> ● Defective longitudinal acceleration sensor ● Defective lateral acceleration sensor ● Defective harness or connector ● Defective AYC-ECU



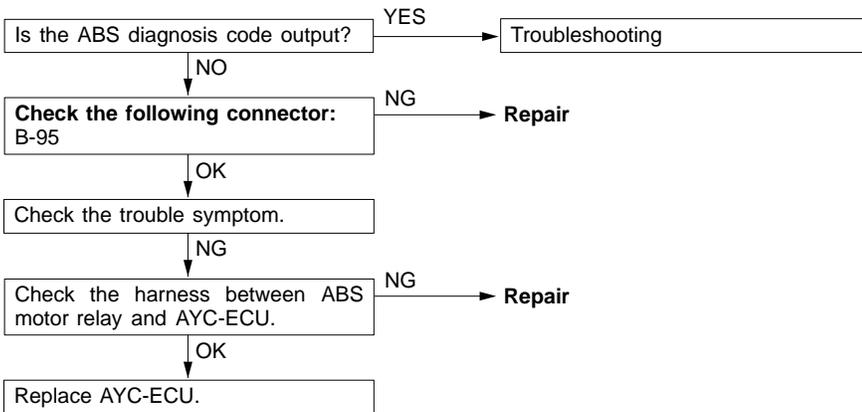
Code No. 52: Longitudinal acceleration sensor system	Probable cause
This code is output when the longitudinal acceleration exceeds a predetermined value while the vehicle is running with both ABS and brakes being inactive.	<ul style="list-style-type: none"> ● Defective longitudinal acceleration sensor ● Defective harness or connector ● Defective AYC-ECU



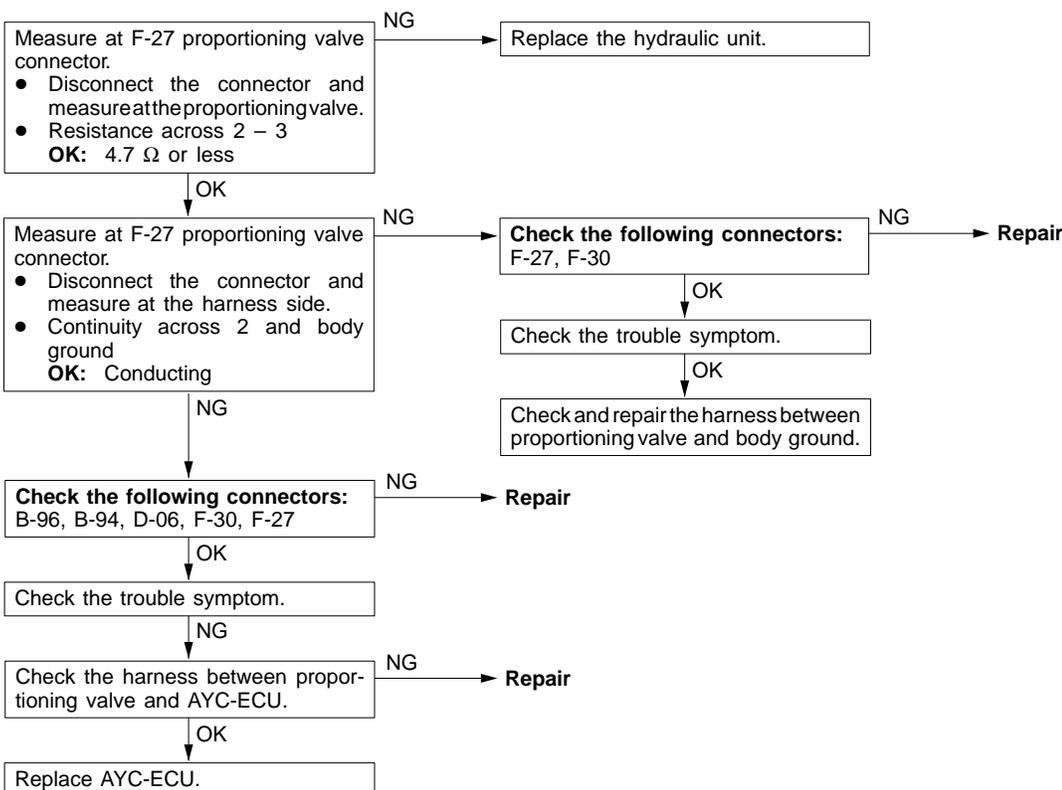
Code No. 61: Stop lamp switch system	Probable cause
This code is output under either of the following conditions: <ul style="list-style-type: none"> ● Stop lamp switch remains ON for 15 min. or more. ● There is an open-circuit in the harness between AYC-ECU and stop lamp switch. 	<ul style="list-style-type: none"> ● Defective stop lamp switch ● Defective harness or connector ● Defective AYC-ECU



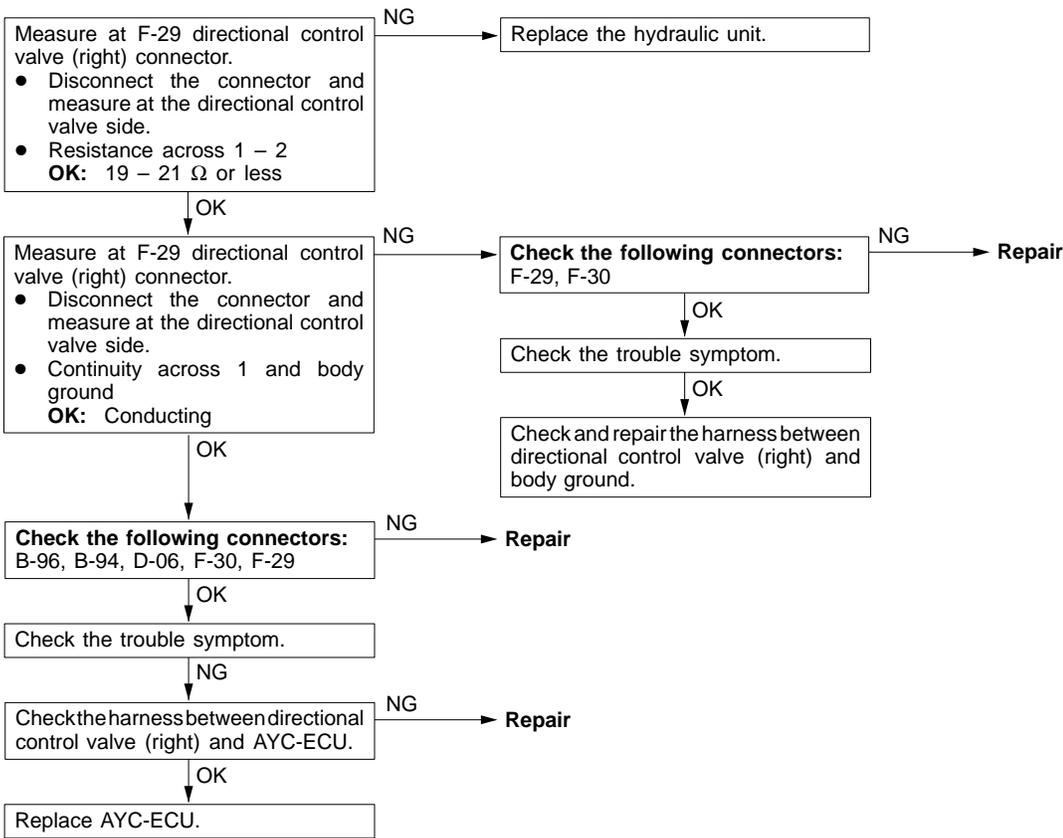
Code No. 65: ABS monitor system	Probable cause
This code is output when ABS is considered to remain activated (motor relay remains ON) for a continuous 1-min.-or-more period. It is output also when there is an open-circuit in the harness between ABS motor relay and AYC-ECU.	<ul style="list-style-type: none"> ● Defective harness or connector ● Defective AYC-ECU



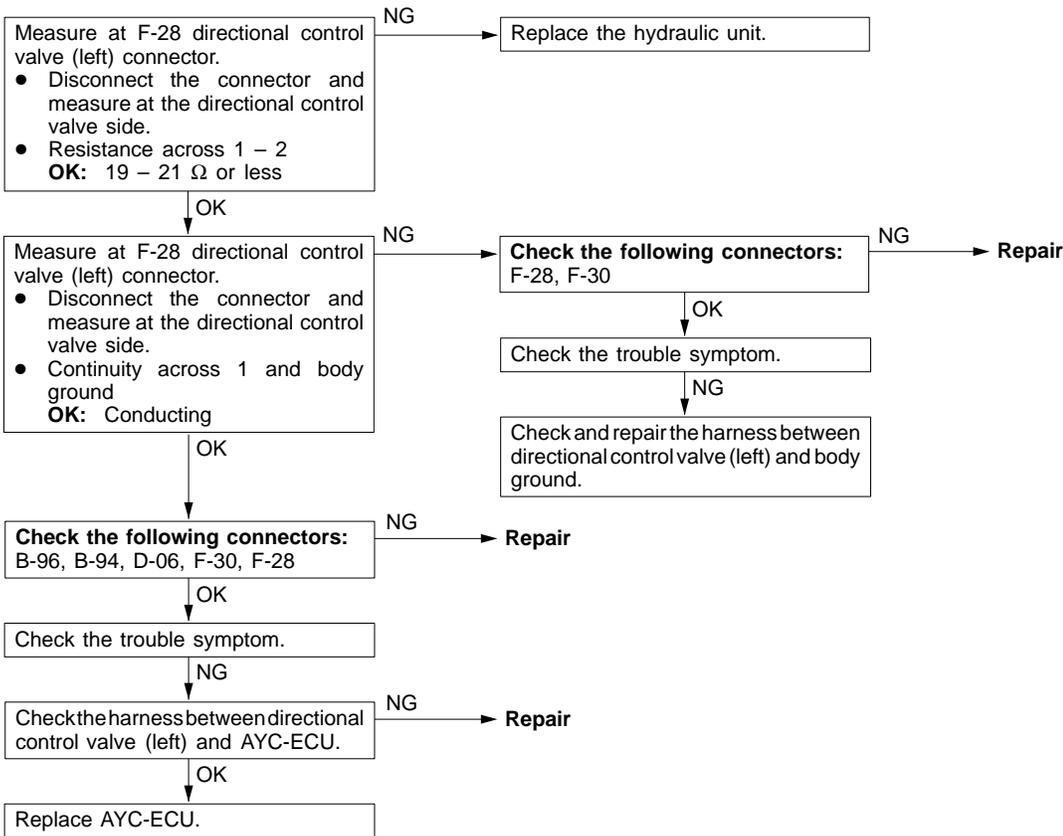
Code No. 71: Proportioning valve system	Probable cause
This code is output when the proportioning valve control circuit is open- or short-circuited.	<ul style="list-style-type: none"> ● Defective proportioning valve ● Defective harness or connector ● Defective AYC-ECU



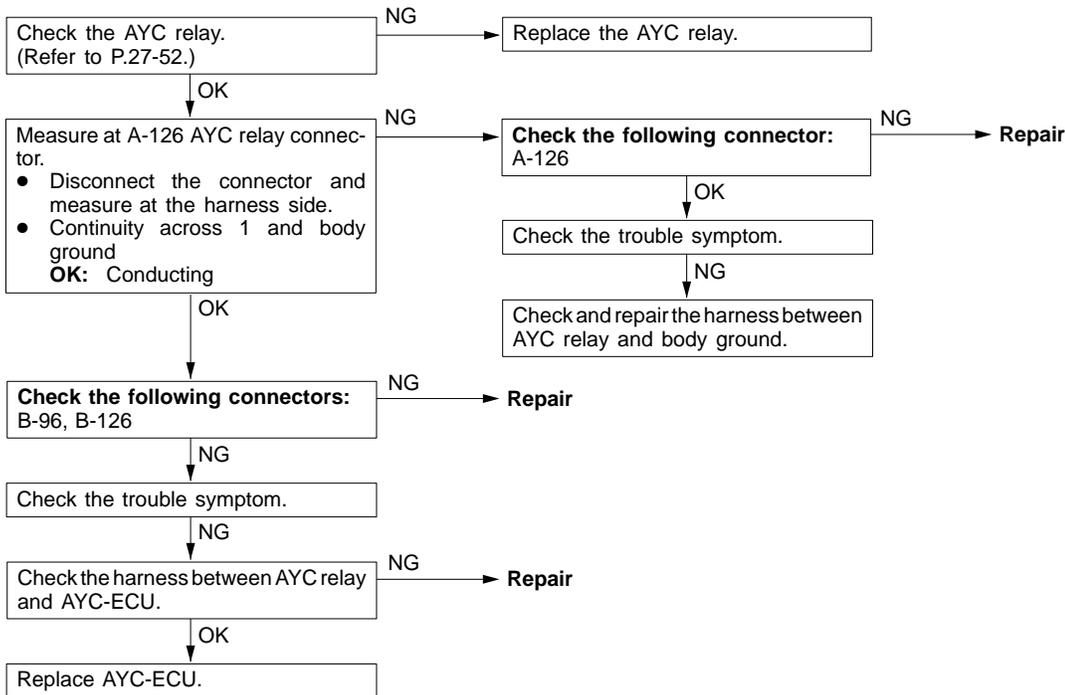
Code No. 72: Directional control valve (right) system	Probable cause
This code is output when the directional control valve (right) control circuit is open- or short-circuited.	<ul style="list-style-type: none"> ● Defective directional control valve (right) ● Defective harness or connector ● Defective AYC-ECU



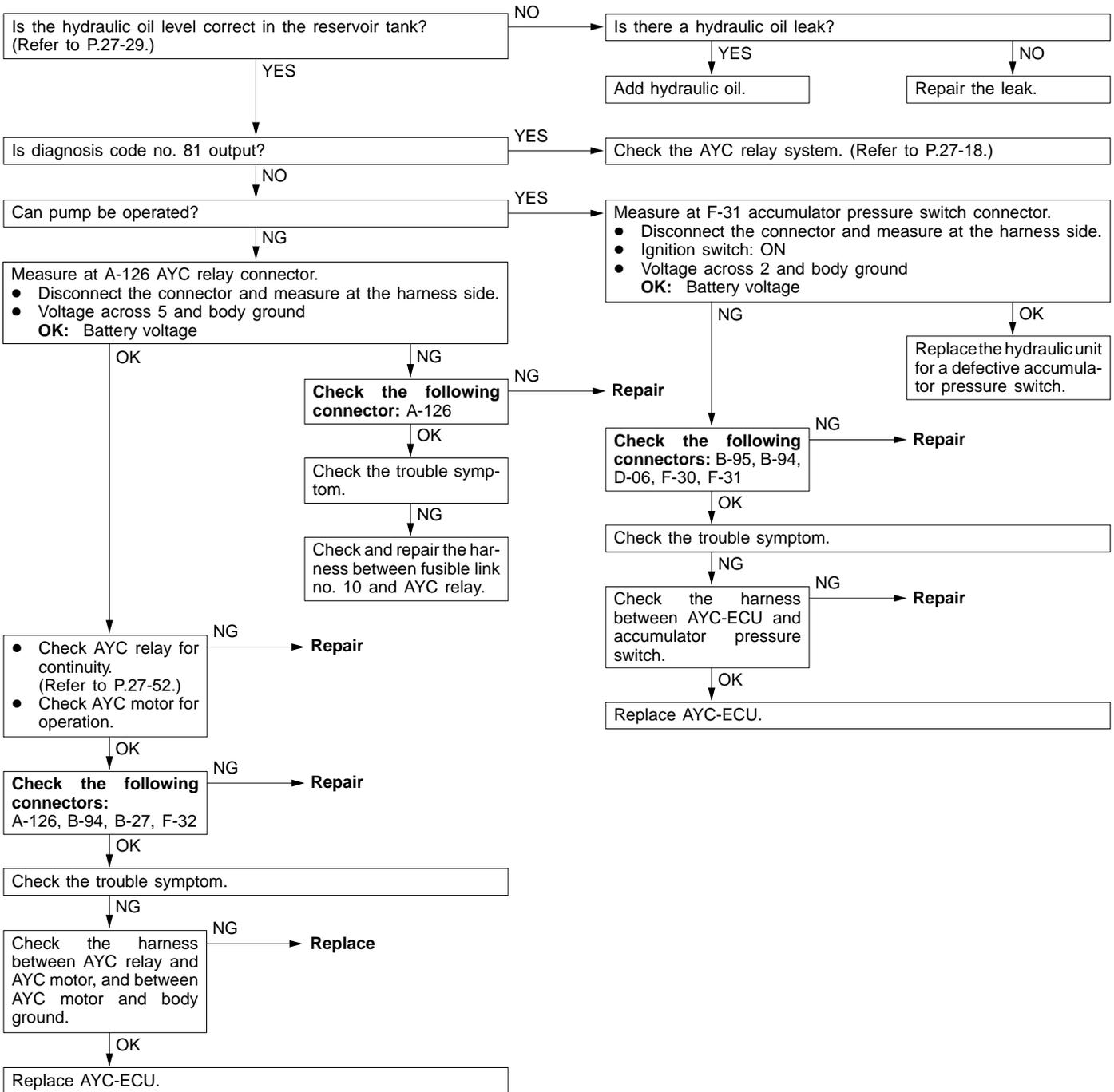
Code No. 73: Directional control valve (left) system	Probable cause
This code is output when the directional control valve (left) control circuit is open- or short-circuited.	<ul style="list-style-type: none"> ● Defective directional control valve (left) ● Defective harness or connector ● Defective AYC-ECU



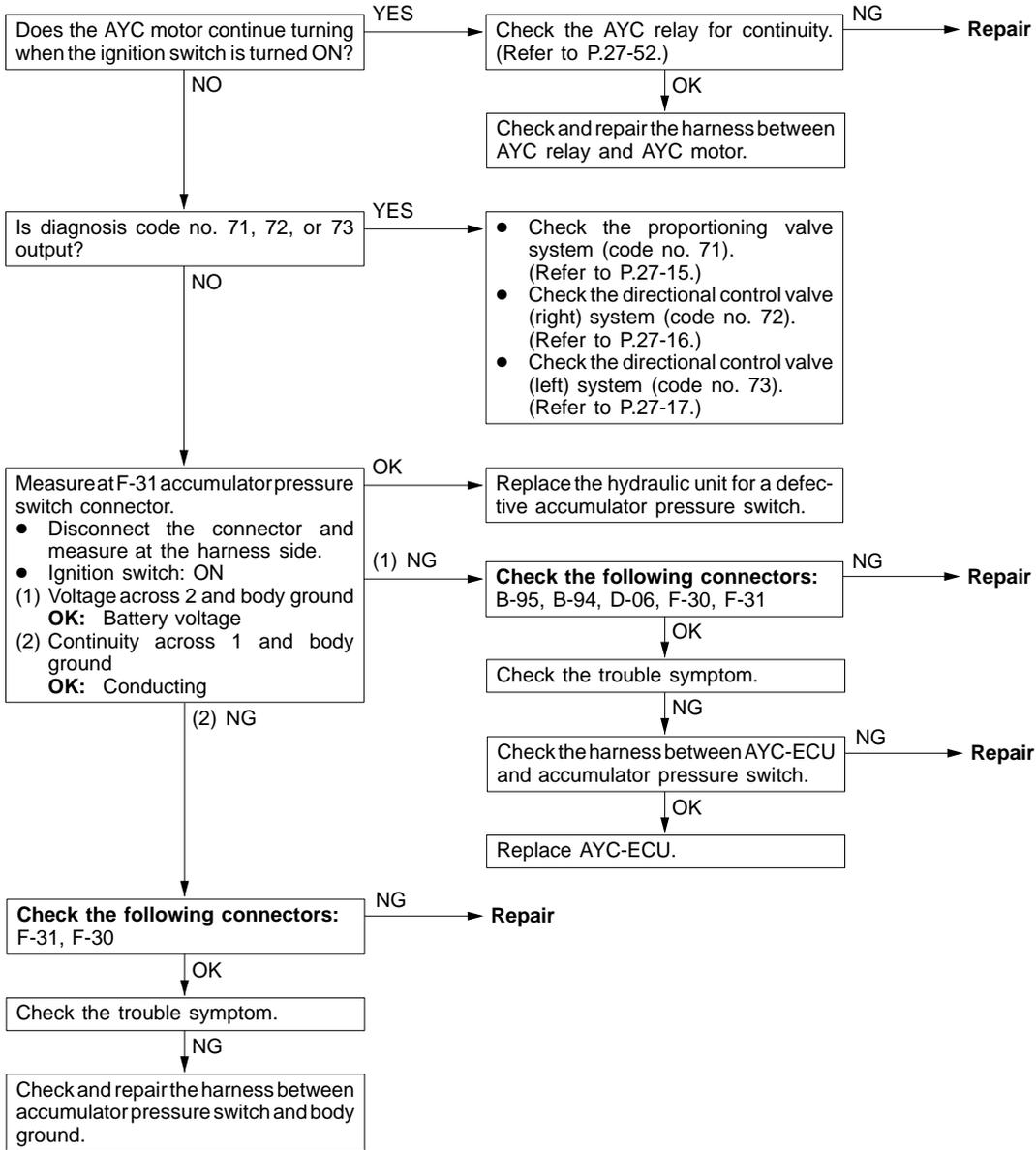
Code No. 81: AYC relay system	Probable cause
This code is output when the coil circuit of the AYC relay is open- or short-circuited.	<ul style="list-style-type: none"> ● Defective AYC relay ● Defective harness or connector ● Defective AYC-ECU



Code No. 82: Electric pump system	Probable cause
This code is output if the pressure switch is not set to high-pressure position despite the AYC-ECU's command to drive the AYC relay for a given period of time.	<ul style="list-style-type: none"> ● Low hydraulic oil level ● Oil leak ● Defective fusible link ● Defective AYC relay ● Defective harness or connector ● Defective AYC motor ● Defective accumulator pressure switch ● Defective AYC-ECU



Code No. 83: Electric pump system	Probable cause
This code is output if the pressure switch is not set to low-pressure position despite the AYC-ECU's command to change the driving force.	<ul style="list-style-type: none"> • Defective accumulator pressure switch • Defective harness or connector



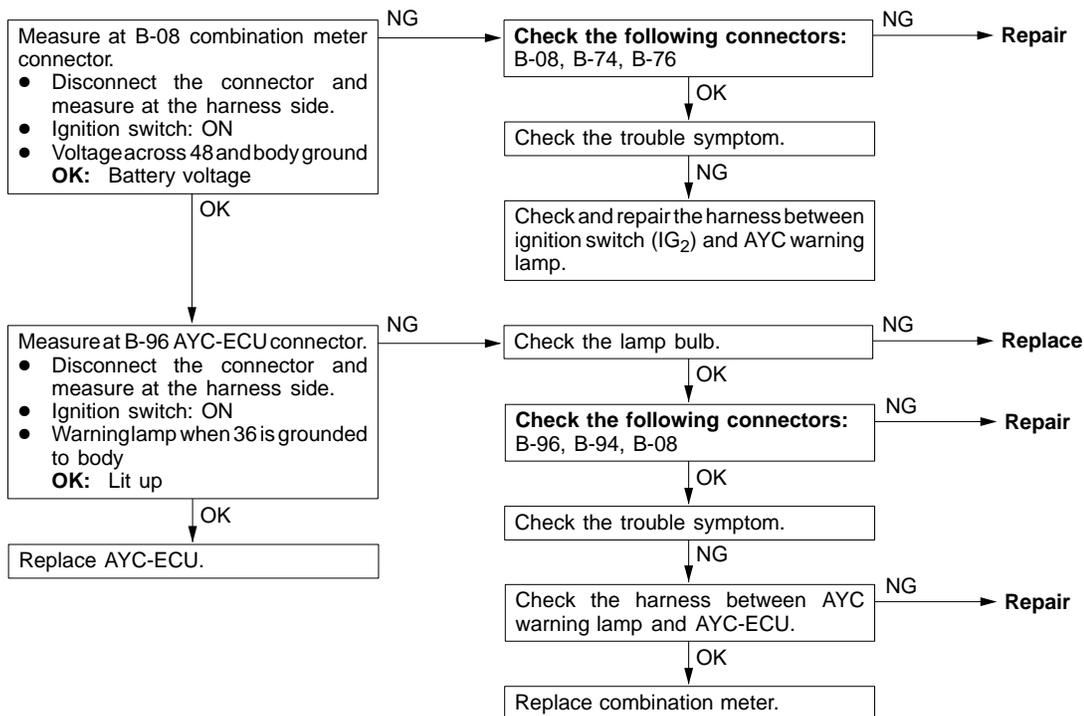
5. INSPECTION CHART FOR TROUBLE SYMPTOMS

Trouble symptom	Inspection procedure No.	Ref. page
AYC warning lamp does not light up when the ignition key is turned to "ON" (engine stationary).	1	27-21
AYC warning lamp remains lit up after the engine has started.	2	27-22
AYC is inoperative. Unable to start or accelerate on slippery road surfaces.	3	27-22
Rear tires are noisy during low-speed cornering. Vehicle skews.	4	27-23

6. INSPECTION PROCEDURE FOR TROUBLE SYMPTOMS

INSPECTION PROCEDURE 1

AYC warning lamp does not light up when the ignition key is turned to "ON" (engine stationary).	Probable cause
The lamp power supply circuit is probably open-circuited, lamp bulb is out, or the circuit between AYC warning lamp and AYC-ECU or AYC-ECU itself is defective.	<ul style="list-style-type: none"> • Blown fuse • AYC warning lamp out • Defective harness or connector • Defective AYC-ECU

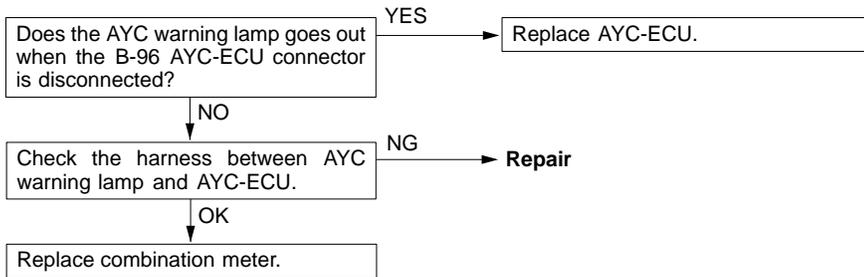


INSPECTION PROCEDURE 2

AYC warning lamp remains lit up after the engine has started.	Probable cause
The AYC warning lamp ON circuit is probably short-circuited.	<ul style="list-style-type: none"> ● Defective combination meter ● Defective harness (short-circuit) ● Defective AYC-ECU

NOTE

This symptom is limited only when AYC-ECU power supply is in normal condition and the diagnosis code is correct.

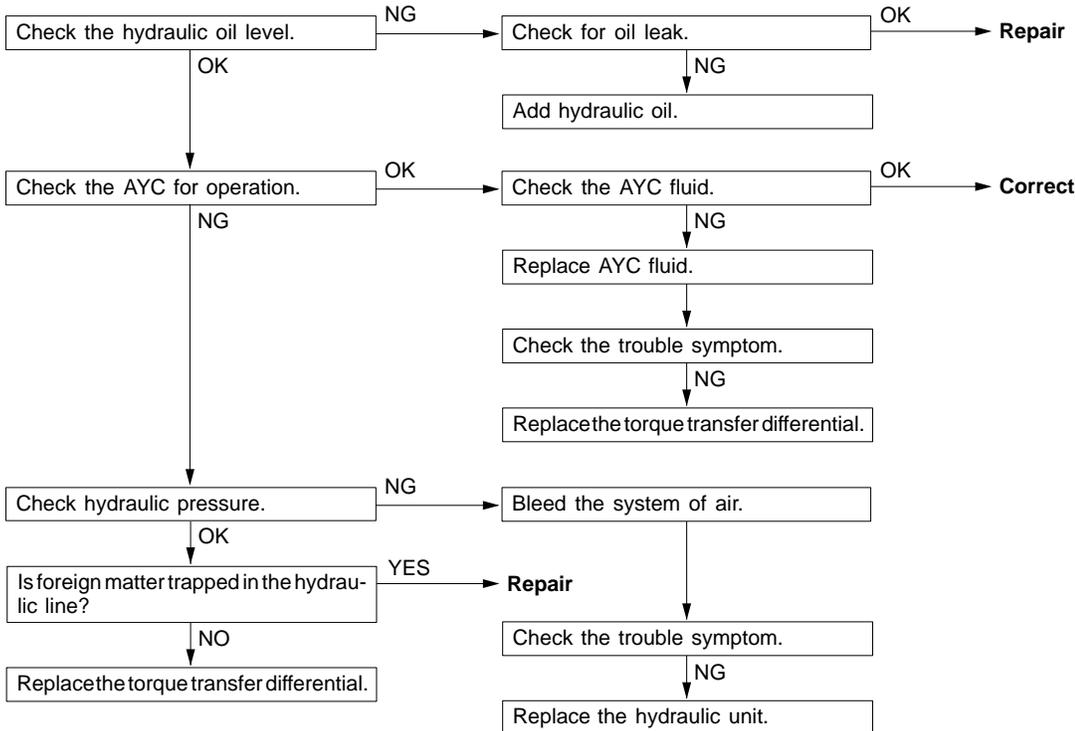


INSPECTION PROCEDURE 3

AYC is inoperative. Unable to start or accelerate on slippery road surfaces.	Probable cause
The hydraulic oil level is probably low, there is an oil leak, the hydraulic unit is defective, or the torque transfer differential is defective.	<ul style="list-style-type: none"> ● Low hydraulic oil level ● Oil leak ● Defective hydraulic unit ● Defective torque transfer differential

NOTE

This symptom is limited only when the diagnosis code is correct.

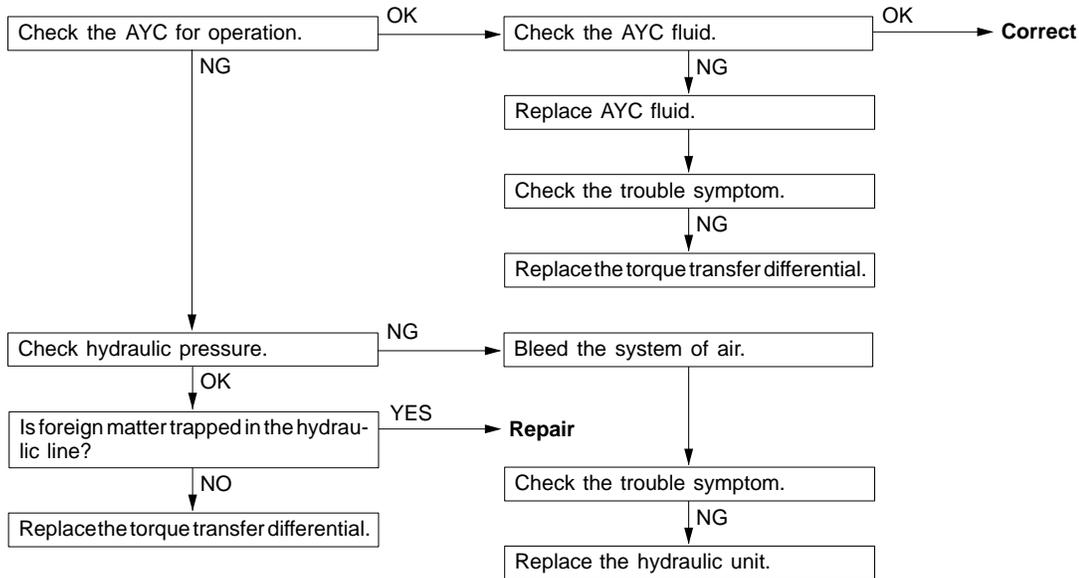


INSPECTION PROCEDURE 4

Rear tires are noisy during low-speed cornering.	Probable cause
The hydraulic unit or torque transfer differential is probably defective.	<ul style="list-style-type: none"> • Defective hydraulic unit • Defective torque transfer differential

NOTE

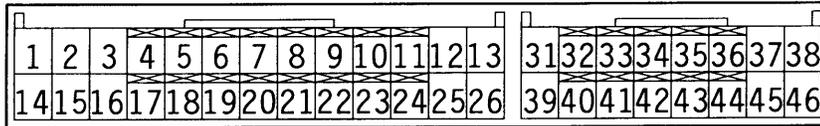
This symptom is limited only when the diagnosis code is correct.



7. CHECK AT AYC-ECU TERMINALS

7-1 TERMINAL VOLTAGE LISTING

- (1) The voltage is to be measured across each terminal and ground terminal.
 (2) Fig. below shows the arrangement of the terminals.



1110060

Terminal No.	Check item	Check requirement	Normally	
1	Lateral acceleration sensor	Ignition switch: ON	2.4 – 2.6 V (horizontal position)	
2	Longitudinal acceleration sensor ground Lateral acceleration sensor ground	At all times	0 V	
3	Longitudinal acceleration sensor	Ignition switch: ON	2.4 – 2.6 V (horizontal position)	
4	Steer sensor (ST-2)	Engine: Idle speed Turn steering wheel slowly.	0 V ↔ approx. 3 V flashing	
5	Steer sensor (ST-1)	Engine: Idle speed Turn steering wheel slowly.	0 V ↔ approx. 3 V flashing	
6*1	FR wheel speed	Vehicle stationary	1 V or less	
		Forward vehicle slowly.	0 – 5 V	
7*1	FL wheel speed	Vehicle stationary	1 V or less	
		Forward vehicle slowly.	0 – 5 V	
8*1	RR wheel speed	Vehicle stationary	1 V or less	
		Forward vehicle slowly.	0 – 5 V	
9*1	FL wheel speed	Vehicle stationary	1 V or less	
		Forward vehicle slowly.	0 – 5 V	
10	Diagnosis selection input		Battery voltage	
11	Stop lamp switch	Ignition switch: ON	Stop lamp switch: ON	Battery voltage
			Stop lamp switch: OFF	1 V or less
12*1	ABS monitor	When ABS monitor is activated	Battery voltage	
		When ABS monitor is deactivated	1 V or less	
17	Steer sensor (ST-N)	Engine: Idle speed	Steering wheel: Neutral position	0.5 V or less
			Steering wheel: Turned 90° from neutral position	2.5 – 3.5 V

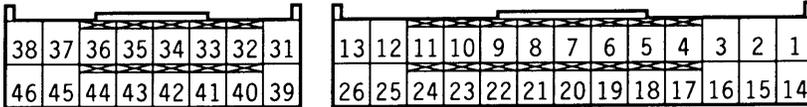
Terminal No.	Check item	Check requirement	Normally	
18	TPS	Ignition switch: ON	Accelerator pedal: Fully closed	0.3 – 1.0 V
			Accelerator pedal: Fully open	4.5 – 5.0 V
23	Diagnosis data input/output		1 V or less	
24	Idle position switch	Ignition switch: ON	Accelerator pedal: Fully closed	2 V or less
			Accelerator pedal: Fully open	4.5 – 5.0 V
25	Accumulator pressure switch	Ignition switch: ON	Accumulator internal pressure: Low	2 V or less
			Accumulator internal pressure: High	Battery voltage
26	ECU ground	At all times	0 V	
31	AYC-ECU power supply	Ignition switch: ON	Battery voltage	
		Ignition switch: OFF	0 V	
35	AYC motor relay	Ignition switch: ON	When motor is energized	Battery voltage
			When motor is deenergized	2 V or less
36	AYC warning lamp	Ignition switch: ON	When lamp is OFF	Battery voltage
			When lamp is ON	2 V or less
37	Directional control valve (right)	Ignition switch: ON	Right clutch: ON	Battery voltage
			Right clutch: OFF	0 V
38	Proportioning valve	Ignition switch: ON	AYC-ON	0 V to battery voltage
			AYC-OFF	0 V
39	ECU backup power supply	At all times	Battery voltage	
45	Directional control valve (left)	Ignition switch: ON	Left clutch: ON	Battery voltage
			Left clutch: OFF	0 V
46	ECU ground	At all times	0 V	

NOTE

*1: Indicates the vehicles with ABS.

7-2 LISTING OF RESISTANCE AND CONTINUITY ACROSS CONNECTOR TERMINALS ON HARNESS SIDE

- (1) Measure the resistance and check for continuity with the ignition switch in the “OFF” position and AYC-ECU connector disconnected.
- (2) Measure the resistance and check for continuity across terminals listed below.
- (3) Fig. below shows the arrangement of terminals.

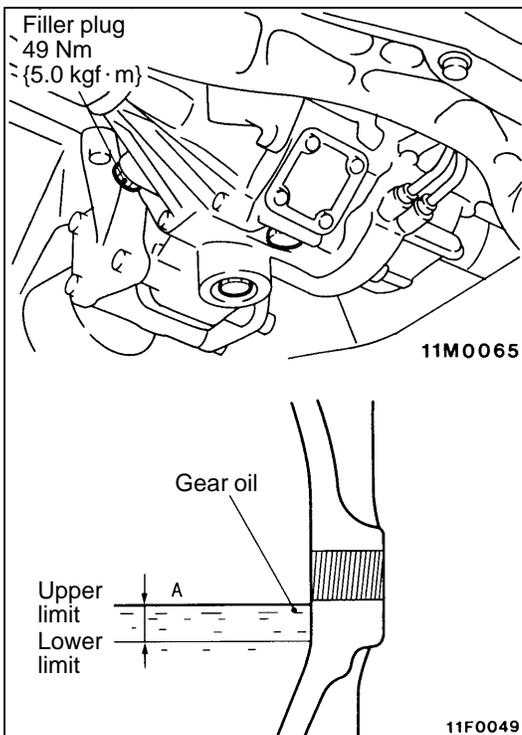
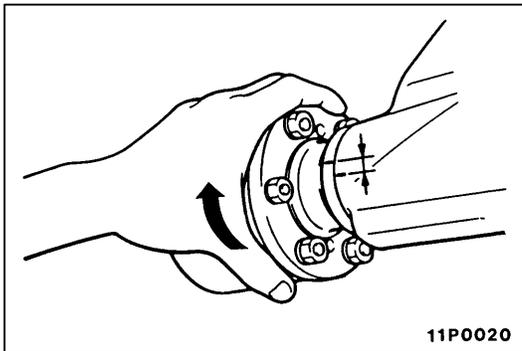
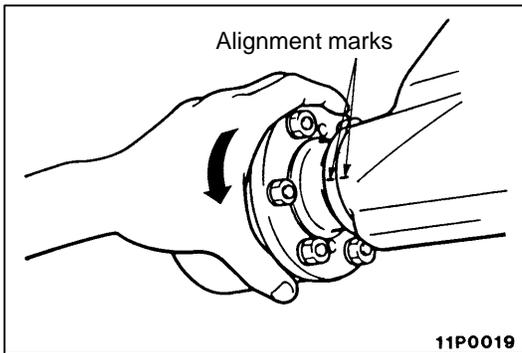


1110061

Terminal No.	Signal name	Normally
2 – body ground	Longitudinal acceleration sensor ground, lateral acceleration sensor ground	Conducting
26 – body ground	ECU ground	Conducting
35 – body ground	AYC motor relay	Conducting
37 – body ground	Directional control valve (right)	15.4 – 16.4 Ω
38 – body ground	Proportioning valve	3.4 – 4.0 Ω
45 – body ground	Directional control valve (left)	15.4 – 16.4 Ω
46 – body ground	ECU ground	Conducting
6 – 19*2	Speed sensor (front, RH)	1.4 – 1.8 Ω
7 – 20*2	Speed sensor (front, LH)	1.4 – 1.8 Ω
8 – 21*2	Speed sensor (rear, RH)	1.4 – 1.8 Ω
9 – 22*2	Speed sensor (rear, LH)	1.4 – 1.8 Ω

NOTE

*2: Indicates the vehicles without ABS.



ON-VEHICLE SERVICE <VEHICLES WITH AYC>

1. REAR AXLE TOTAL BACKLASH CHECK

If the drive system roars or the vehicle vibrates, use the following procedure to measure total backlash in the rear axle. Based on the measurement taken, determine whether the differential carrier assembly needs to be removed or not.

- (1) Place the shift lever in the neutral position and operate the parking brake.
- (2) Turn the propeller shaft fully clockwise and make an alignment mark on the companion flange dust cover and gear carrier.
- (3) Turn the propeller shaft fully counterclockwise and measure the deviation between the alignment marks.

Limit: 5 mm

- (4) If the backlash exceeds the limit, replace the differential carrier assembly.

2. GEAR OIL LEVEL CHECK

2-1 DIFFERENTIAL

- (1) Remove the filler plug.
- (2) Check that the gear oil level is within the specified range from the bottom end of the filler plug hole.

Standard value (A): 6 mm

- (3) If the gear oil level exceeds the standard value, add the specified gear oil up to the bottom end of the filler plug hole.

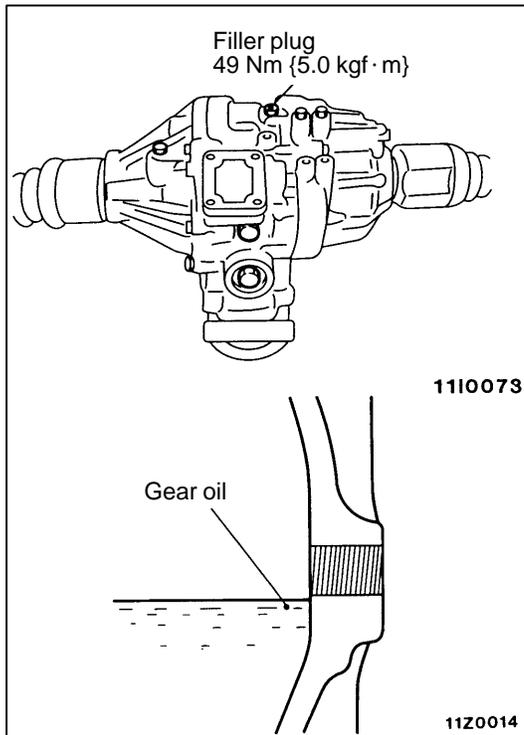
Specified gear oil:

**MITSUBISHI GENUINE DIA QUEEN SUPER
HYPOID GEAR OIL (GL-5)**

NOTE

10°C or more: #90, less than 10°C: #80

- (4) Fit the filler plug and tighten it to the specified torque.



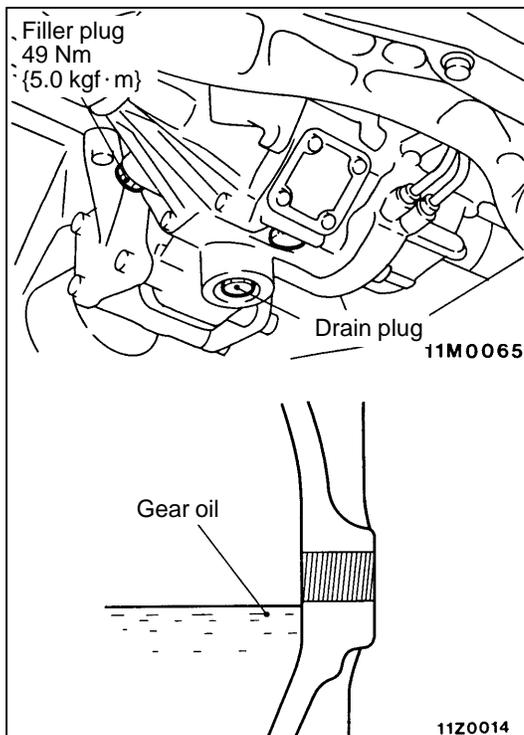
2-2 TORQUE TRANSFER MECHANISM

- (1) Remove the filler plug.
- (2) Check that the gear oil level is up to the bottom end of the filler plug hole.
- (3) If the gear oil level is lower than the bottom end of the filler plug hole, add the specified gear oil up to the bottom end of the filler plug hole.

Specified gear oil:

MITSUBISHI GENUINE DIA QUEEN SUPER AYC FLUID

- (4) Fit the filler plug and tighten it to the specified torque.



3. GEAR OIL CHANGE

3-1 DIFFERENTIAL

- (1) Remove the drain plug to discharge the gear oil.
- (2) Fit the drain plug and tighten it to the specified torque.

Tightening torque: 49 Nm {5.0 kgf·m}

- (3) Remove the filler plug and add the specified gear oil up to the bottom end of the filler plug hole.

Specified gear oil:

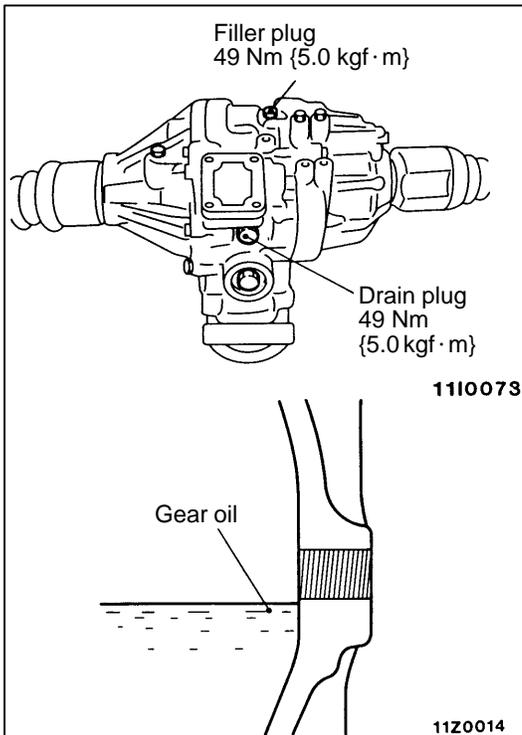
MITSUBISHI GENUINE DIA QUEEN SUPER HYPOID GEAR OIL (GL-5)

Quantity used: $0.41 \pm 0.02 \text{ dm}^3$ { $0.41 \pm 0.02 \text{ l}$ }

NOTE

10°C or more: #90, less than 10°C: #80

- (4) Fit the filler plug and tighten it to the specified torque.



3-2 TORQUE TRANSFER MECHANISM

- (1) Remove the drain plug to discharge the gear oil.
- (2) Fit the drain plug and tighten it to the specified torque.
- (3) Remove the filler plug and add the specified gear oil up to the bottom end of the filler plug hole.

Specified gear oil:

MITSUBISHI GENUINE DIA QUEEN SUPER AYC FLUID

Quantity used: $0.70^{+0}_{-0.05}$ dm³ { $0.70^{+0}_{-0.05}$ ℓ}

- (4) Fit the filler plug and tighten it to the specified torque.

4. FLUID LEVEL CHECK

- (1) Remove the maintenance lid located in the luggage compartment.
- (2) If the vehicle has been run, leave it for 5 min. or more in an ordinary temperature (10°C to 30°C) to allow the accumulator internal pressure to drop.

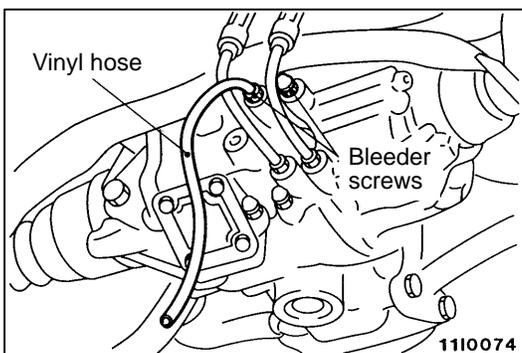
NOTE

If the ambient temperature is less than 10°C or less, allow more time to leave the vehicle to stand idle.

- (3) Check that the fluid level in the oil reservoir is in the range between MAX and MIN.
- (4) If the fluid level is lower than MIN, add the specified fluid.

Specified fluid: MITSUBISHI DIA QUEEN ATF-SPII

- (5) Reinstall the maintenance lid.



5. BLEEDING

- (1) Lift up the vehicle.
- (2) Remove the cap of the left bleeder screw on the torque transfer differential and connect a vinyl hose.
- (3) Gradually turn the steering wheel clockwise from the straight-ahead position. At this time, loosen the left bleeder screw and check that fluid is discharged with air.
- (4) After air has been completely discharged, tighten the bleeder screw.

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.

- (5) Repeat steps (3) and (4) 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.

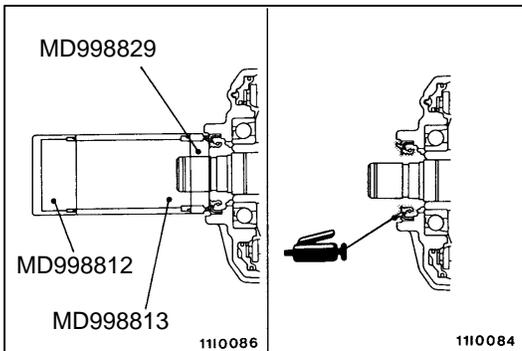
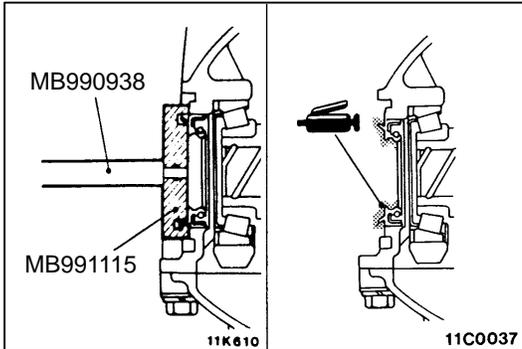
Tightening torque: 9 Nm {0.9 kgf·m}

- (6) Perform steps (2) through (5) for the right bleeder screw. Note, however, that the steering wheel should be turned counterclockwise.

- (7) After the system has been completely bled of air, check for the fluid level.

Caution

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



6. DIFFERENTIAL CARRIER OIL SEAL REPLACEMENT

6-1 DIFFERENTIAL

- (1) Remove the drive shaft. (Refer to p. 27-36.)
- (2) Remove the oil seal from the differential carrier.
- (3) Using the special tool, drive a new oil seal all the way into position.
- (4) Coat the oil seal lips and the drive shaft surface in contact with the oil seal with multi-purpose grease.
- (5) Replace the drive shaft circlip with a new one and mount the drive shaft to the differential carrier. (Refer to P.27-36.)
- (6) Check for correct wheel alignment. (Refer to GROUP 34 – On-vehicle Service.)

6-2 TORQUE TRANSFER MECHANISM

- (1) Remove the drive shaft. (Refer to p. 27-36.)
- (2) Remove the oil seal from the differential carrier.
- (3) Using the special tool, drive a new oil seal all the way into position.
- (4) Coat the oil seal lips and the drive shaft surface in contact with the oil seal with the specified grease.

Specified grease: Vaseline

- (5) Replace the drive shaft circlip with a new one and mount the drive shaft to the differential carrier. (Refer to P.27-36.)
- (6) Check for correct wheel alignment. (Refer to GROUP 34 – On-vehicle Service.)

7. SPEED SENSOR OUTPUT VOLTAGE MEASUREMENT <VEHICLES WITHOUT ABS>

- (1) Lift up the vehicle and release the parking brake.
- (2) Disconnect the AYC-ECU harness connector and take measurements on the harness side connector.

Caution

Insert the probe from the harness side with the double lock of the connector unlocked. Inserting it to the terminal side could result in poor contact.

- (3) Turn the wheel to be tested at about 1/2 to one revolution/sec. and check for the output voltage using a circuit tester (AC mV range) or oscilloscope.

Terminal nos.

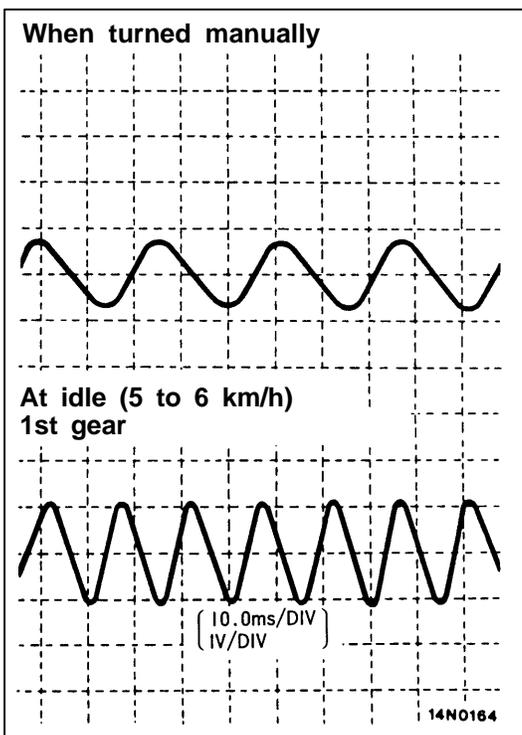
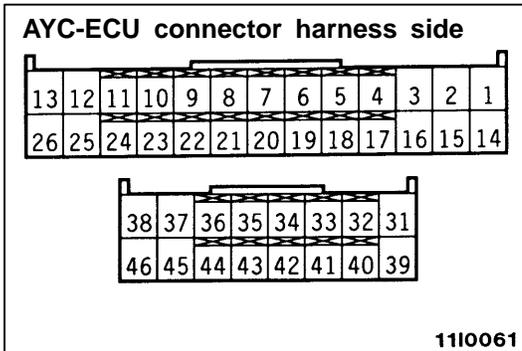
Front LH	Front RH	Rear LH	Rear RH
7	6	9	8
20	19	22	21

Output voltage:

When circuit tester is used: 70 mV or more

When oscilloscope is used: 200 mVp-p or more

- (4) If the output voltage is lower than the above value, it is probably attributable to the following faults. Check or replace the speed sensor as necessary.
 - Excessive clearance between the pole piece and rotor of the speed sensor
 - Defective speed sensor



Waveform Check Using Oscilloscope

Check the harness and connector of the speed sensor for connection. Then, use an oscilloscope to check for output voltage waveform of each speed sensor as follows. Start the engine and monitor the sensor by turning the wheel; for a driving wheel, let it turn by shifting into the 1st gear and for a driven wheel turn it manually at a constant speed.

NOTE

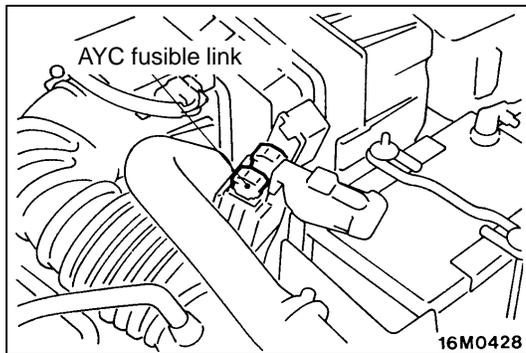
- (1) Waveform may be observed by actually running the vehicle.
- (2) The output voltage is low when the wheel speed remains low and builds up as the wheel speed increases.

Waveform Observation Points

Symptom	Probable cause	Action
Waveform amplitude is too small, or no waveform.	Defective speed sensor	Replace sensor.
Waveform amplitude varies greatly. (No problem if the smallest amplitude is 100 mV or more)	Excessive axle hub lateral and radial runout	Replace hub.
	Poor AYC-ECU grounding	Repair.
Noise on waveform or disturbed waveform	Open-circuited sensor	Replace sensor.
	Open-circuited harness	Repair harness.
	Improperly mounted speed sensor	Correct sensor installation.
	Missing or collapsed rotor tooth	Replace rotor.

Caution

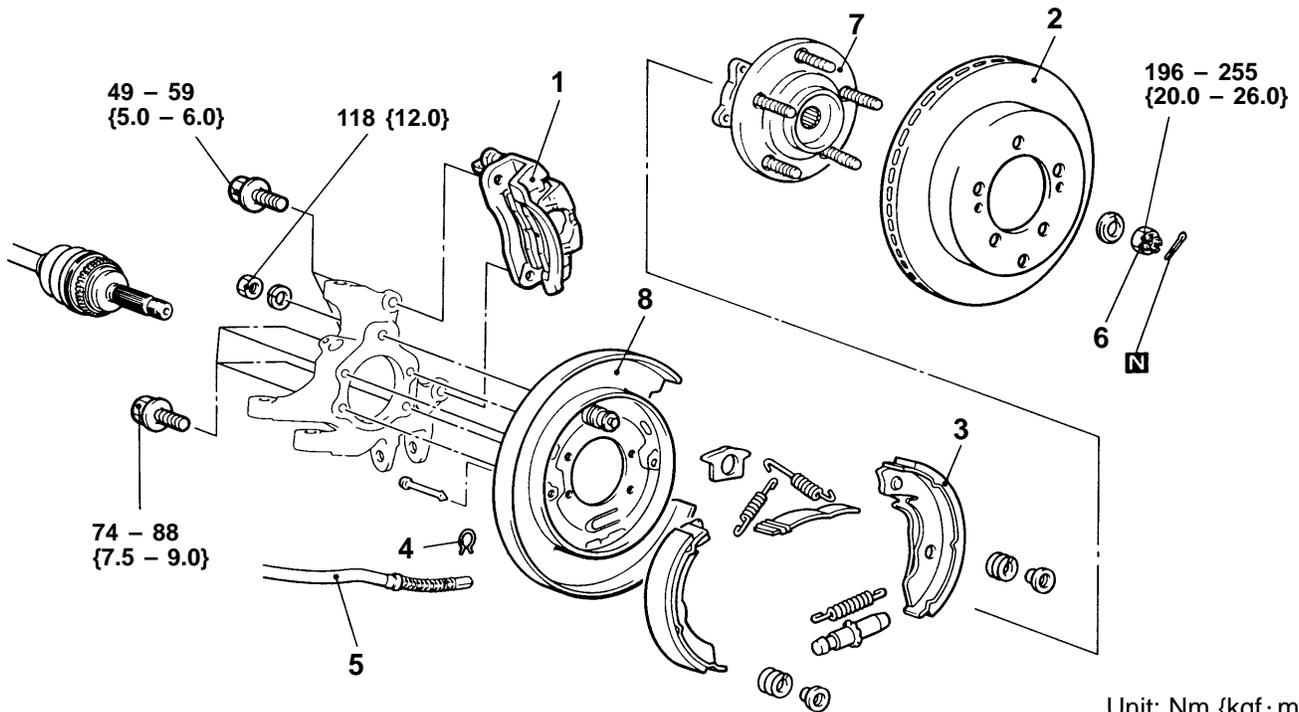
Since the speed sensor cable follows the movement of the front or rear suspension, it may be open-circuited only when the vehicle is run on rough roads and not on ordinary road. The speed sensor output voltage waveform should therefore be checked also by rocking the sensor harness so that driving on rough roads may be simulated.



8. ACTION WHEN BATTERY RUNS OUT

When the engine is started using a booster cable where the battery has completely run down and you attempt to start the vehicle without waiting for the battery to recover a certain charge, the engine can misfire and you just cannot start to move it. In such cases, charge the battery sufficiently; or, remove the AYC fusible link from the engine compartment relay box to make AYC inactive before attempting to start the vehicle. When the fusible link is removed, the AYC warning lamp lights up. After the battery has been recharged, fit the fusible link back again and start the engine to ensure that the AYC warning lamp is off.

**REAR HUB ASSEMBLY
REMOVAL AND INSTALLATION**



14M0117

Removal steps



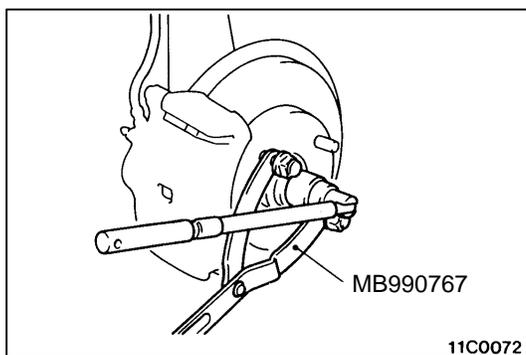
1. Caliper assembly
2. Brake disc
3. Shoe & lining assembly
(Refer to GROUP 36 – Parking Brake.)
4. Clip
5. Parking brake cable connection



6. Drive shaft nut
7. Rear hub assembly
8. Backing plate

Caution

Do not disassemble the rear hub assembly.

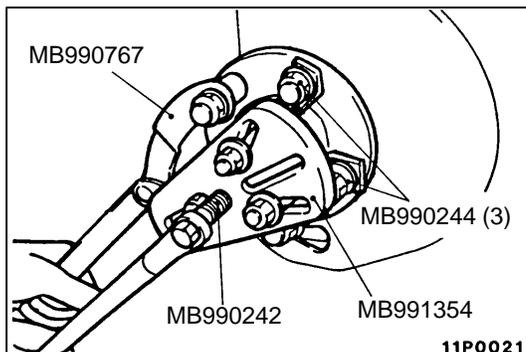


REMOVAL SERVICE POINTS

◀A▶ CALIPER ASSEMBLY REMOVAL

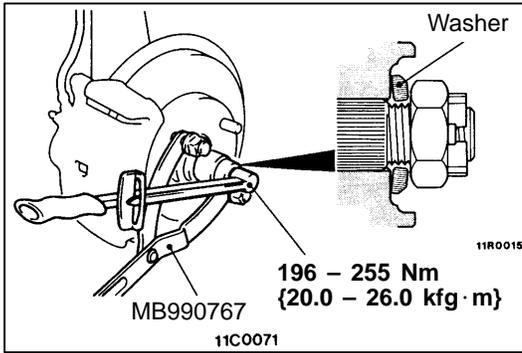
Secure the removed caliper assembly with a wire so that it will not fall.

◀B▶ DRIVE SHAFT NUT REMOVAL



◀C▶ REAR HUB ASSEMBLY REMOVAL

- (1) Using the special tool, remove the drive shaft from the rear hub assembly.
- (2) Remove the mounting bolts and remove the rear hub assembly from the knuckle.



INSTALLATION SERVICE POINT

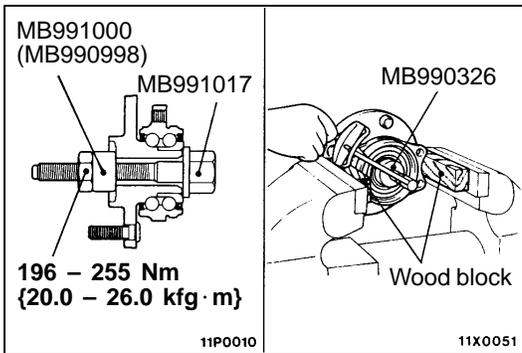
▶A◀ DRIVE SHAFT NUT INSTALLATION

- (1) Install the washer on the drive shaft in the direction shown on the left.
- (2) Using the special tool, tighten the drive shaft nut to the specified torque.

Caution

Before torquing the drive shaft nut to specification, do not apply vehicle weight to the wheel bearing.

- (3) If, at this time, the split pin holes are not aligned, tighten the nut further (within 255 Nm {26.0 kgf·m}), insert the split pin in the first matching holes, and bend it securely.



INSPECTION

1. REAR WHEEL BEARING ROTATION STARTING TORQUE

- (1) Install the special tool to the rear hub assembly and tighten it to the specified torque.
- (2) Using the special tool, measure the wheel bearing rotation starting torque.

Limit: 1.0 Nm {10.5 kgf·cm}

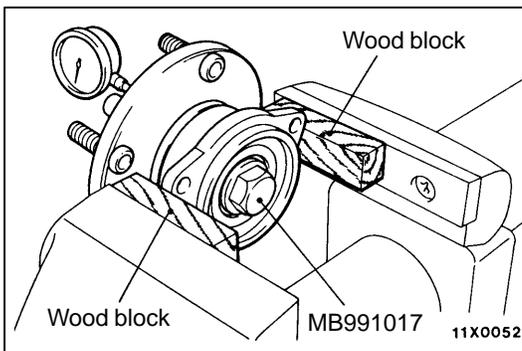
- (3) The wheel bearing starting torque should be within the limit and the hub should be free of binding or rough motion when turned.

2. WHEEL BEARING AXIAL PLAY CHECK

- (1) Check the wheel bearing for axial play.

Limit: 0.05 mm

- (2) If the specified torquing range (196 to 255 Nm {20.0 to 26.0 kgf·m}) does not bring the wheel bearing axial play into the limit, replace the rear hub assembly.



KNUCKLE

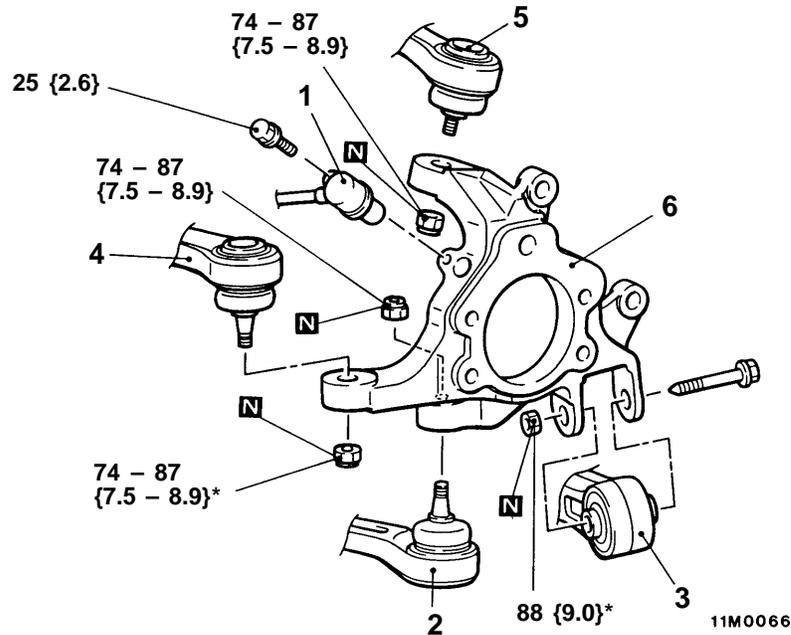
REMOVAL AND INSTALLATION

Pre-removal Operation

- Rear Hub Assembly and Backing Plate Removal (Refer to P.27-33.)

Post-installation Operation

- (1) Check Each Ball Joint Dust Cover for Cracks or Damage by Pushing It with Finger.
- (2) Rear Hub Assembly and Backing Plate Installation (Refer to P.27-33.)



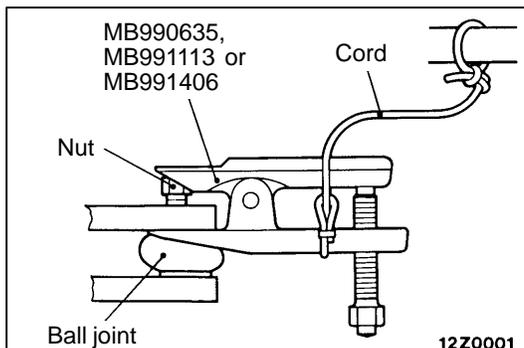
Unit: Nm {kgf·m}

Removal steps

1. Rear speed sensor connection <Vehicles with AYC>
2. Trailing arm connection
3. Lower arm connection
4. Toe control arm connection
5. Upper arm connection
6. Knuckle

Caution

*: Indicates parts which should be temporarily tightened, and then fully tightened with the vehicle on the ground in the unladen condition.



REMOVAL SERVICE POINT

◀A▶ TRAILING ARM / TOE CONTROL ARM / UPPER ARM DISCONNECTION

Caution

- (1) Use the special tool to loosen the nut only; do not remove it from the ball joint.
- (2) Tie the special tool with a cord not to let it fall off.

DRIVE SHAFT

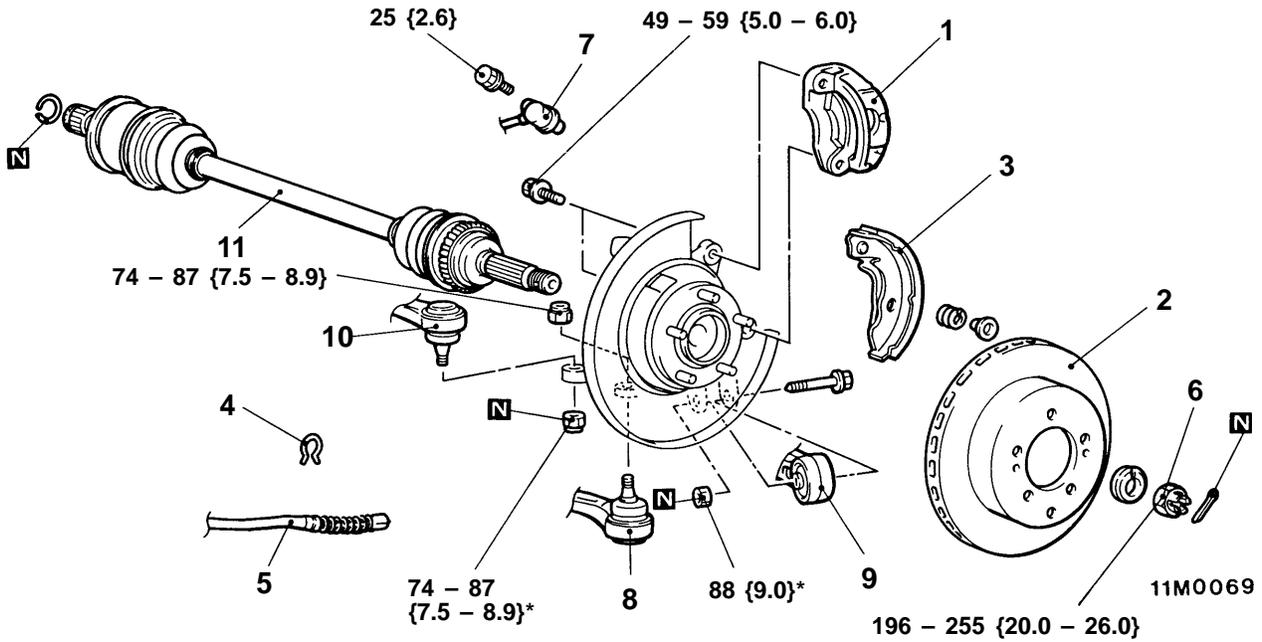
REMOVAL AND INSTALLATION

Pre-removal Operation

- (1) Gear Oil Draining (Refer to P.27-28.)
- (2) Center Exhaust Pipe Removal (Refer to GROUP 15.)

Post-installation Operation

- (1) Checking Each Ball Joint Dust Cover for Cracks and Damages by Pressing Dust Cover with Finger
- (2) Center Exhaust Pipe Installation (Refer to GROUP 15.)
- (3) Gear Oil Filling (Refer to P.27-28.)
- (4) Parking Brake Lever Stroke Check and Adjustment (Refer to GROUP 36 – On-vehicle Service.)
- (5) Wheel Alignment Check and Adjustment (Refer to GROUP 34 – On-vehicle Service.)



Unit: Nm {kgf · m}

Removal steps

1. Caliper assembly (Refer to P.27-33.)
2. Brake disc
3. Shoe & lining assembly (Refer to GROUP 36 – Parking Brake.)
4. Clip
5. Parking brake cable connection
6. Drive shaft nut
7. Rear speed sensor coupling <vehicles with AYC>
8. Trailing arm coupling
9. Lower arm coupling
10. Toe control arm coupling
11. Drive shaft

◀A▶ ▶B◀

◀B▶ ▶A◀

Caution

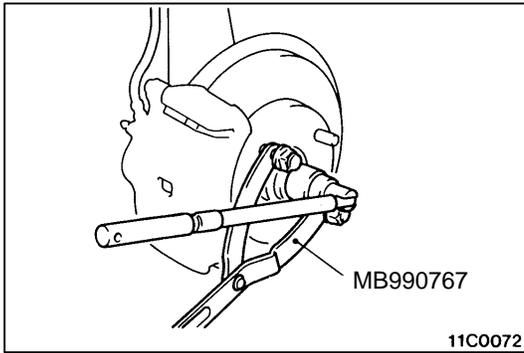
- (1) With the part marked with *, first temporarily tighten it, then ground the vehicle and tighten it to specification in unloaded condition.
- (2) When removing the drive shaft from, and reinstalling it to, a vehicle with AYC, use care not to damage the rotor mounted on the BJ outer race.

REMOVAL SERVICE POINTS

◀A▶ DRIVE SHAFT NUT REMOVAL

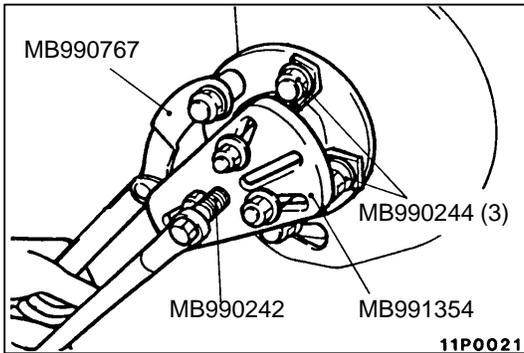
Caution

Do not apply the vehicle weight to the wheel bearing with the drive shaft nut loosened.



◀B▶ DRIVE SHAFT REMOVAL

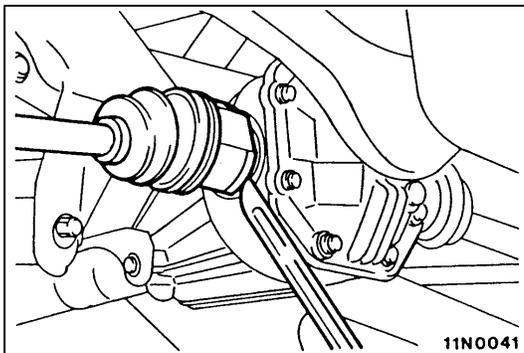
(1) Using the special tool, drive the drive shaft out of the hub.



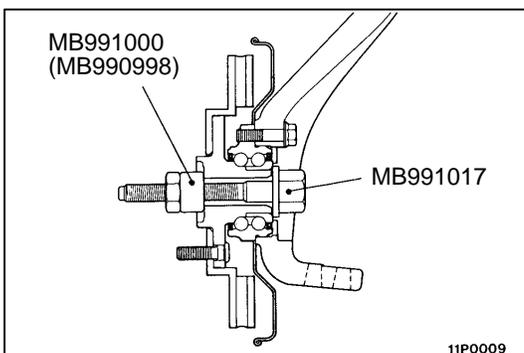
(2) Apply a lever to the protrusion of the drive shaft and remove the drive shaft from the differential carrier.

Caution

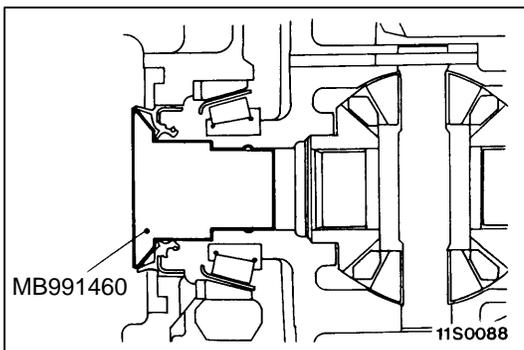
(1) Be sure to remove the drive shaft from the differential side using a lever. Removing it from the BJ side could damage the parts.



(2) Do not apply the vehicle weight to the wheel bearing with the drive shaft removed. If it is unavoidable to apply the weight for reasons of moving the vehicle, use the special tool to temporarily secure it in position.

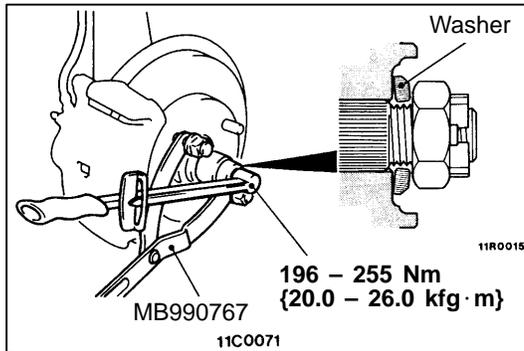


(3) To prevent entry of foreign matter into the differential carrier, use the special tool as a cover. <Except vehicles with AYC (RH)>



INSTALLATION SERVICE POINTS**►A◄ DRIVE SHAFT INSTALLATION****Caution**

Use care not to allow the drive shaft splines to damage the oil seal of the differential carrier.

**►B◄ DRIVE SHAFT NUT INSTALLATION**

- (1) Install the washer on the drive shaft in the direction shown on the left.
- (2) Using the special tool, tighten the drive shaft nut to the specified torque.

Caution

Before torquing the drive shaft nut to specification, do not apply vehicle weight to the wheel bearing.

- (3) If, at this time, the split pin holes are not aligned, tighten the nut further (within 255 Nm {26.0 kgf·m}), insert the split pin in the first matching holes, and bend it securely.

DIFFERENTIAL CARRIER <EVOLUTION-IV, EVOLUTION-V GSR>

REMOVAL AND INSTALLATION

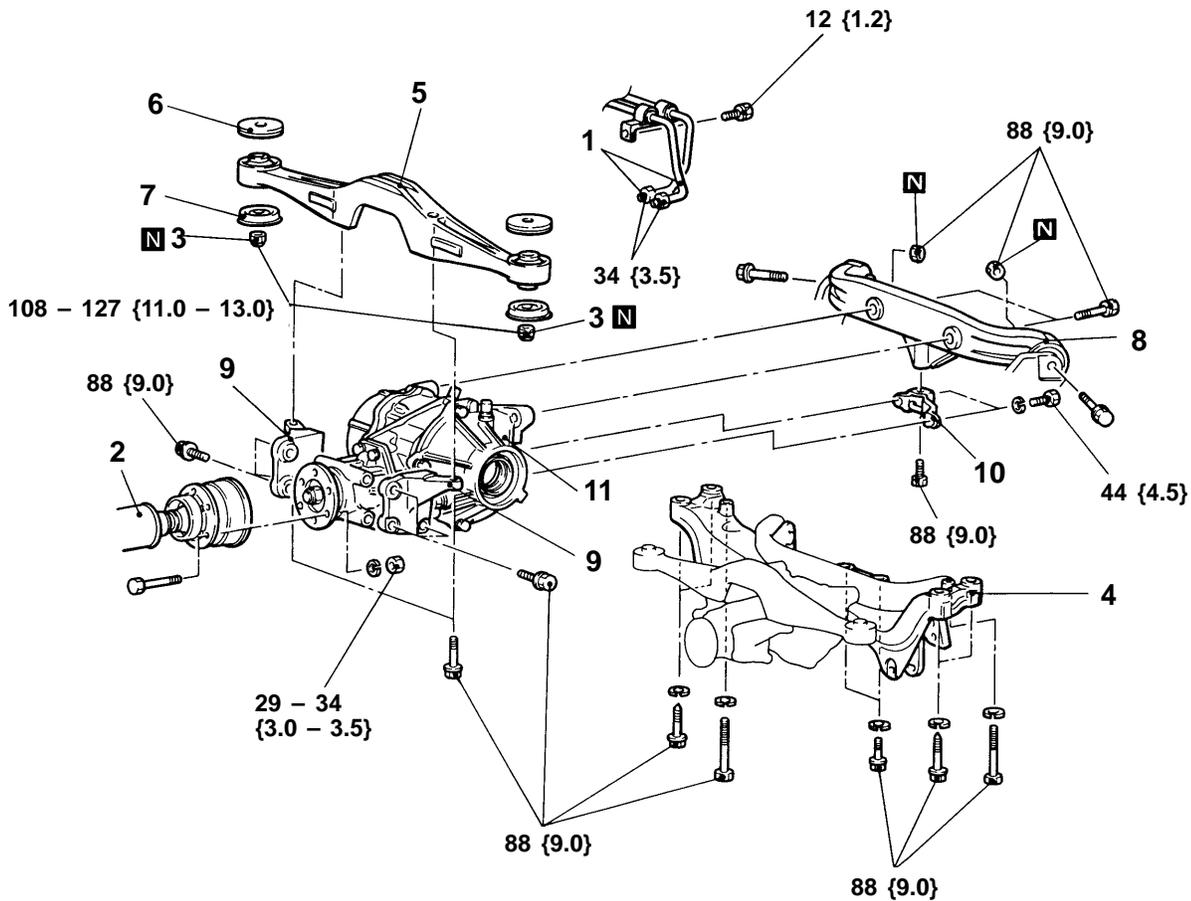
<Vehicles with AYC>

Pre-removal Operation

- (1) Hydraulic Piping Fluid Draining
- (2) Gear Oil Draining (Refer to P.27-28.)
- (3) Lower Arm Assembly Removal (Refer to GROUP 34.)
- (4) Rear Stabilizer Removal (Refer to GROUP 34.)
- (5) Drive Shaft Removal (Refer to P.27-36.)

Post-installation Operation

- (1) Drive Shaft Installation (Refer to P.27-36.)
- (2) Rear Stabilizer Installation (Refer to GROUP 34.)
- (3) Lower Arm Assembly Installation (Refer to GROUP 35.)
- (4) Gear Oil Filling (Refer to P.27-28.)
- (5) Hydraulic Piping Fluid Filling and Bleeding (Refer to P.27-29.)



11M0068

Unit: Nm {kgf·m}

Removal steps

1. Hydraulic unit hose assembly connection
- ◀B▶ 2. Propeller shaft connection
3. Differential support member mounting bolt
- ◀A▶ ▶A▶ 4. Rear crossmember and differential carrier assembly

5. Differential support member
6. Upper stopper
7. Lower stopper
8. Differential support arm
9. Differential mount bracket
10. Differential mount bracket
11. Differential carrier

REMOVAL SERVICE POINT

◀A▶ REAR CROSSMEMBER AND DIFFERENTIAL CARRIER ASSEMBLY REMOVAL

- (1) Using a jack, support the differential carrier from its underside.
- (2) Remove the rear crossmember mounting bolts and remove the differential carrier, where it is attached to the rear crossmember, from the vehicle.

INSTALLATION SERVICE POINTS

▶A◀ REAR CROSSMEMBER AND DIFFERENTIAL CARRIER ASSEMBLY

Tighten the rear crossmember mounting bolts in the numerical order shown.

NOTE

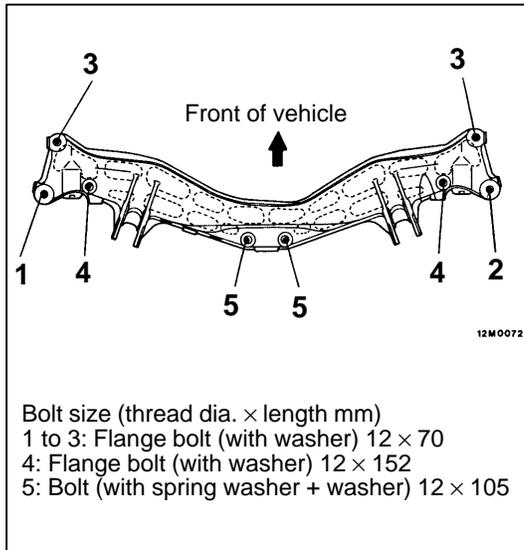
To ensure both good installation accuracy and ease of installation, the rear crossmember mounting holes have different diameters between front and rear. This is the reason for specifying the tightening sequence of the mounting bolts.

▶B◀ PROPELLER SHAFT CONNECTION

Align the alignment mark on the differential carrier with that of the propeller shaft at installation.

Caution

Oil or grease on the threads of the mounting bolt or nut can allow the bolt or nut to come loose. Be sure to degrease the threads before installation.



DIFFERENTIAL CARRIER <EVOLUTION-V RS>

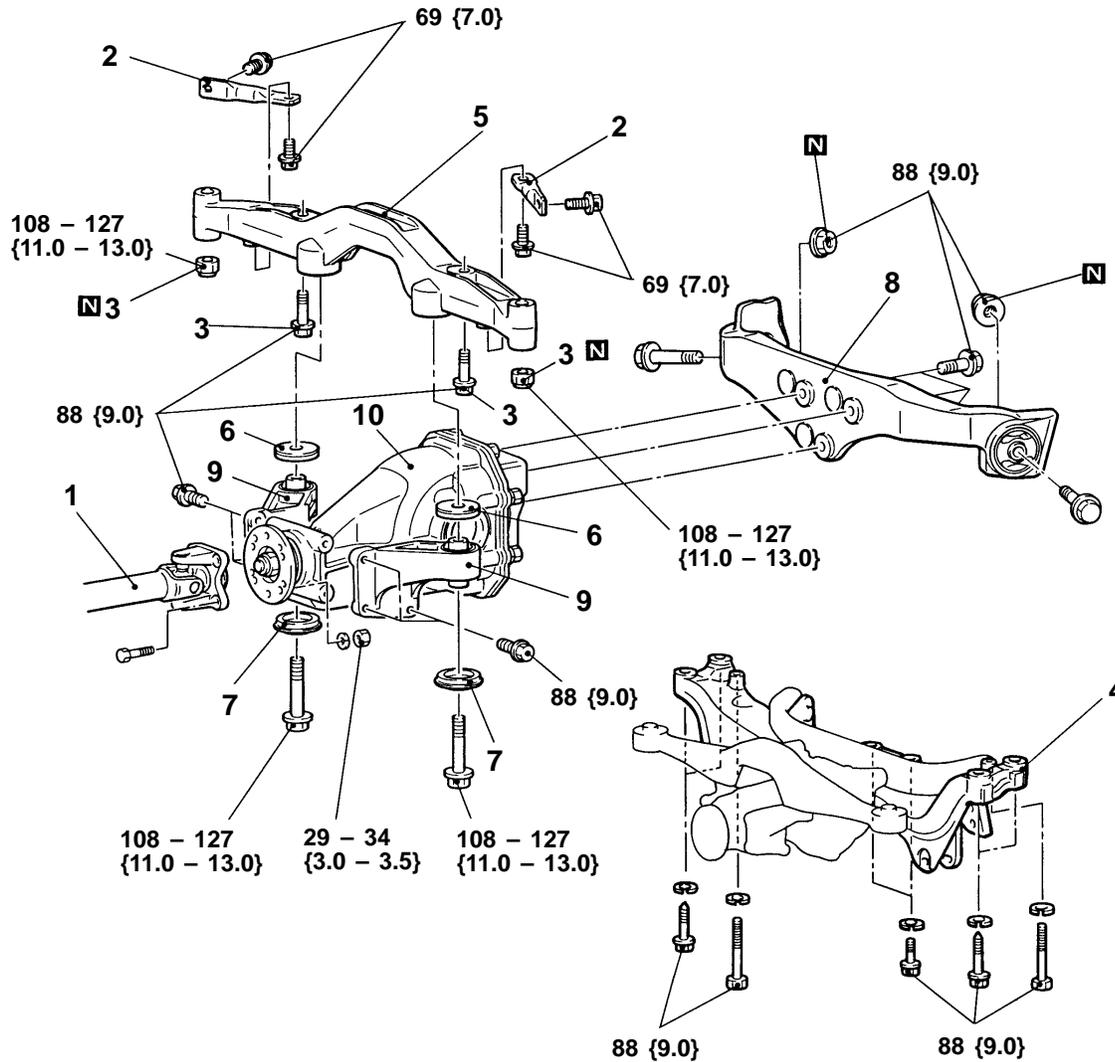
REMOVAL AND INSTALLATION

Pre-removal Operation

- (1) Differential Gear Oil Draining
- (2) Lower Arm Assembly Removal
- (3) Rear Stabilizer Removal
- (4) Drive Shaft Removal

Post-installation Operation

- (1) Drive Shaft Installation
- (2) Rear Stabilizer Installation
- (3) Lower Arm Assembly Installation
- (4) Differential Gear Oil Filling



Unit: Nm {kgf·m}

Removal steps

◀A▶ ▶B▶

1. Propeller shaft connection
2. Toe control bar
3. Differential support member mounting bolt and nut

◀B▶ ▶A▶

4. Rear crossmember and differential carrier assembly

5. Differential support member
6. Upper stopper
7. Lower stopper
8. Differential support arm
9. Differential mount bracket
10. Differential carrier

REMOVAL SERVICE POINTS**◀A▶ PROPELLER SHAFT DISCONNECTION**

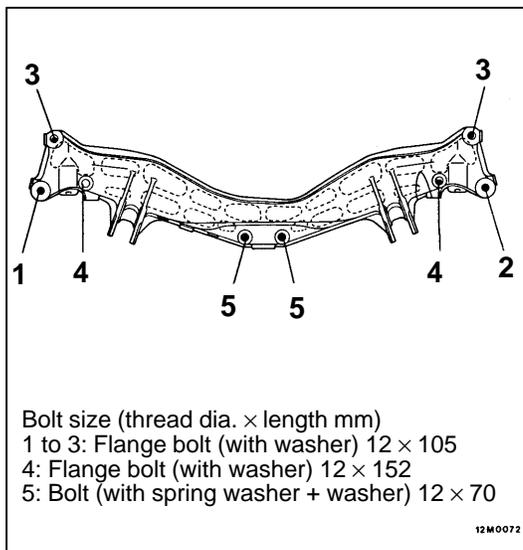
Make an alignment mark on the companion flange and flange yoke, then disconnect the propeller shaft from the companion flange.

Caution

Suspend the propeller shaft from the body with a wire to prevent the bend at the joint from catching and damaging the joint boot.

◀B▶ REAR CROSSMEMBER AND DIFFERENTIAL CARRIER ASSEMBLY REMOVAL

- (1) Using a jack, support the differential carrier from its underside.
- (2) Remove the rear crossmember mounting bolts and remove the differential carrier, where it is attached to the rear crossmember, from the vehicle.

**INSTALLATION SERVICE POINTS****▶A◀ REAR CROSSMEMBER AND DIFFERENTIAL CARRIER ASSEMBLY INSTALLATION**

Tighten the rear crossmember mounting bolts in the numerical order shown.

NOTE

To ensure both good installation accuracy and ease of installation, the rear crossmember mounting holes have different diameters between front and rear. This is the reason for specifying the tightening sequence of the mounting bolts.

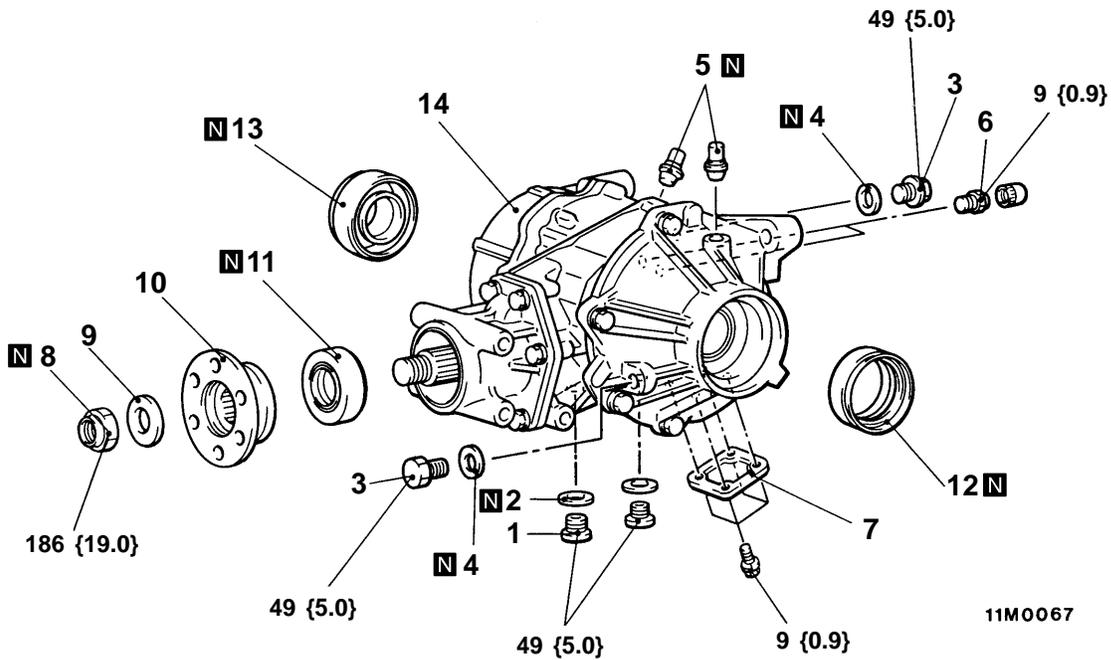
▶B◀ PROPELLER SHAFT CONNECTION

Align the alignment mark on the companion flange with that of the flange yoke at installation.

Caution

Oil or grease on the threads of the mounting bolt or nut can allow the bolt or nut to come loose. Be sure to degrease the threads before installation.

**TORQUE TRANSFER DIFFERENTIAL <VEHICLES WITH AYC>
DISASSEMBLY AND REASSEMBLY**



11M0067

Unit: Nm {kgf·m}

Disassembly steps

1. Drain plug
2. Packing
3. Filler plug
4. Gasket
5. Vent plug
6. Bleeder screw
7. Cover
8. Self-locking nut
9. Washer
10. Companion flange

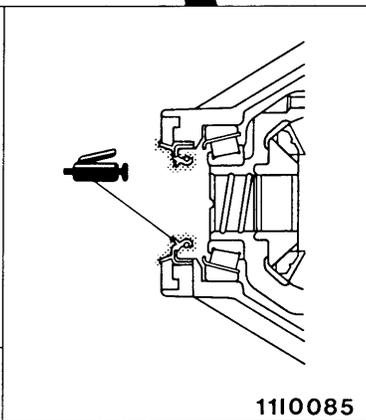
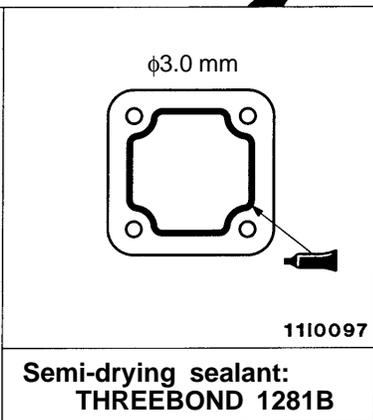
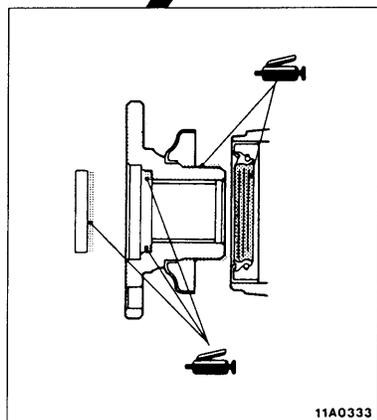
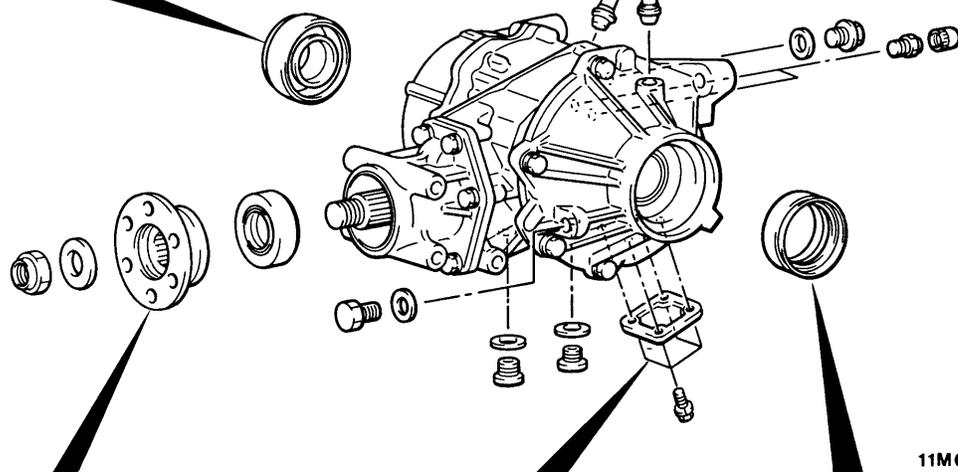
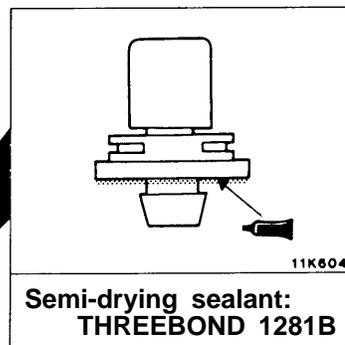
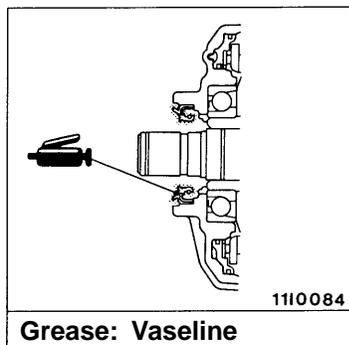
- ▶B◀ 11. Oil seal
- ▶A◀ 12. Oil seal
- ▶A◀ 13. Oil seal
- ▶A◀ 14. Differential carrier assembly

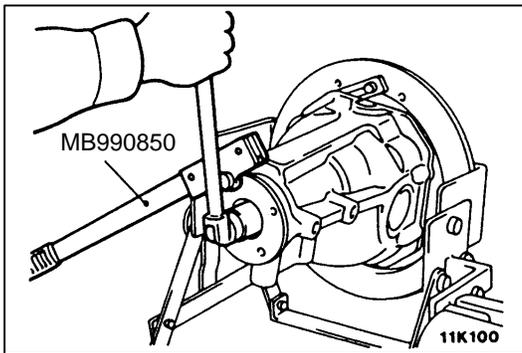
Caution

- (1) The differential carrier assembly is non-maintainable.
- (2) No foreign matter should be allowed inside and at the joints of the differential carrier assembly.



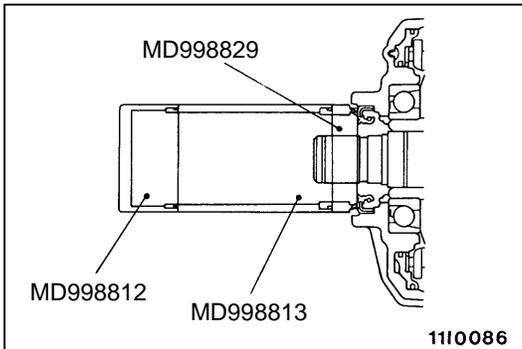
GREASE AND SEALANT APPLICATION POINTS





DISASSEMBLY SERVICE POINT

◀A▶ SELF-LOCKING NUT REMOVAL

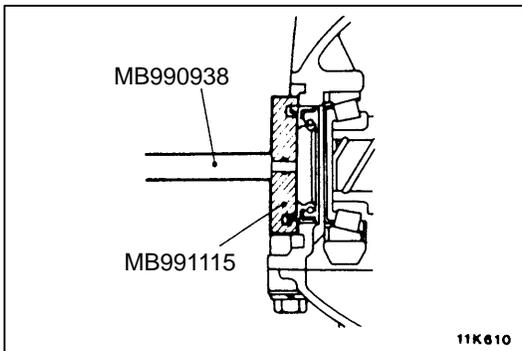


ASSEMBLY SERVICE POINTS

▶A◀ OIL SEAL INSTALLATION

- (1) Using the special tool, pressfit the oil seal as far as it will go.
- (2) Apply the specified grease to the oil seal lip.

Specified grease: Vaseline

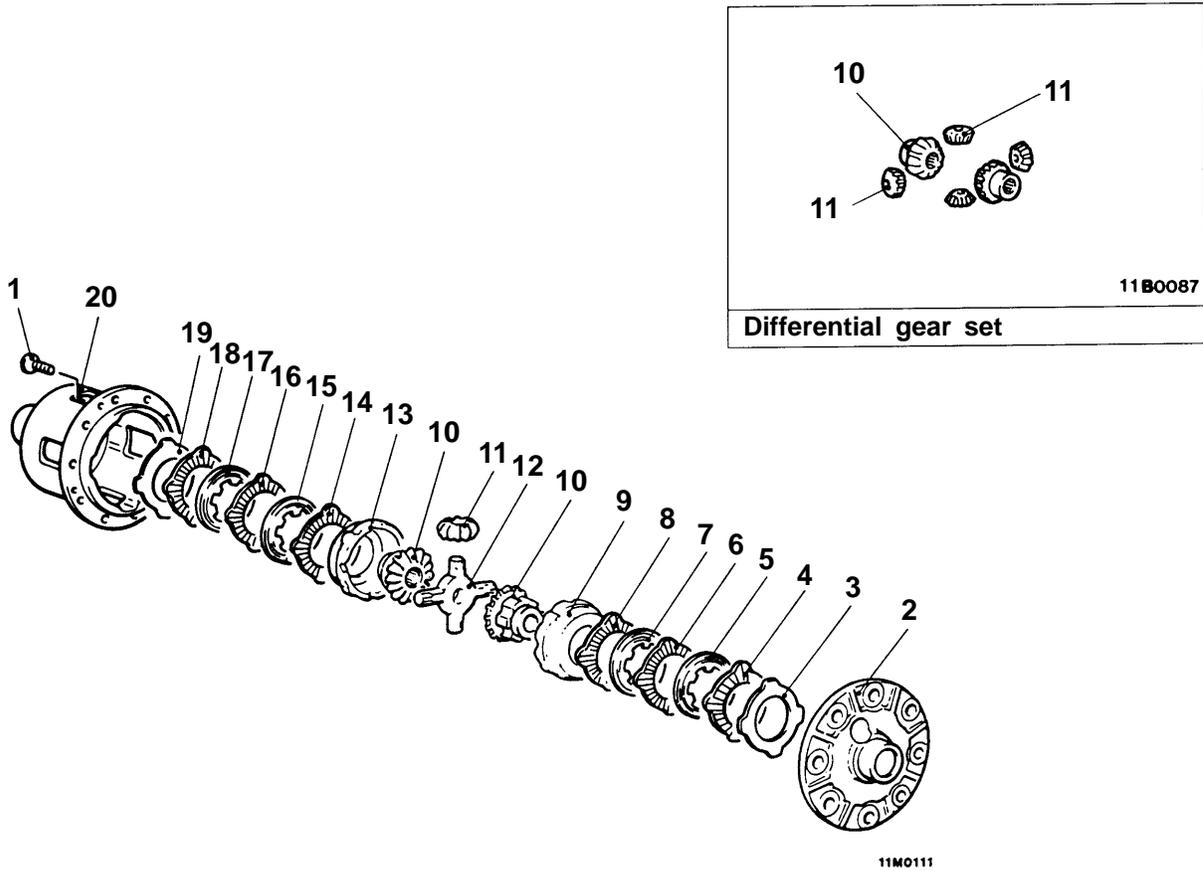


▶B◀ OIL SEAL INSTALLATION

- (1) Using the special tool, pressfit the oil seal as far as it will go.
- (2) Apply the multi-purpose grease to the oil seal lip.

LSD CASE ASSEMBLY <VEHICLES WITHOUT AYC>

DISASSEMBLY AND REASSEMBLY



Disassembly steps



• LSD differential torque check

- 1. Screw
- 2. Differential case A
- 3. Spring plate
- 4. Friction plate
- 5. Friction disc
- 6. Friction plate
- 7. Friction disc
- 8. Friction plate
- 9. Pressure ring
- 10. Side gear

- 11. Pinion gear
- 12. Pinion shaft
- 13. Pressure ring
- 14. Friction plate
- 15. Friction disc
- 16. Friction plate
- 17. Friction disc
- 18. Friction plate
- 19. Spring plate

- >>A<< 20. Differential case B

DISASSEMBLY SERVICE POINT

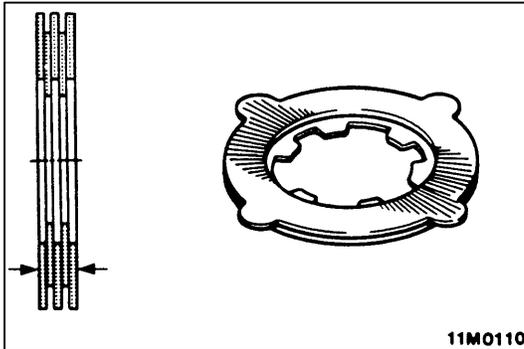
<A> SCREW REMOVAL

- (1) Check out the alignment marks.
- (2) Loosen a uniform amount little by little the screws securing differential case A to B.
- (3) Separate differential case B from differential case A and remove their components.
Keep the removed spring plates, friction plates, and friction discs organized in the order of removal and for right and left use.

ASSEMBLY SERVICE POINTS

▶A◀ INSTALLATION TO DIFFERENTIAL CASE B

Before starting the assembly procedure, perform the following steps to adjust dimensional differences (clutch plate friction force) in the axial direction of the components inside the differential case and axial clearance of the differential side gear.

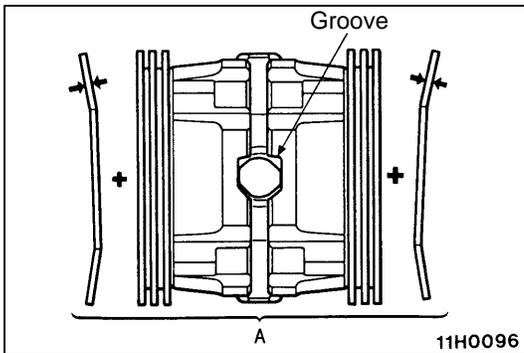


- (1) Place friction discs (two each) and friction plates (three each) one on top of another as illustrated and, using a micrometer, measure the thickness of each of the right and left assemblies. Select different discs and plates so that the difference between the right and left assemblies falls within the specified range.

Standard value: 0 – 0.05 mm

NOTE

If a new part is used, note that the friction disc comes in two thicknesses: 1.6 mm and 1.7 mm.

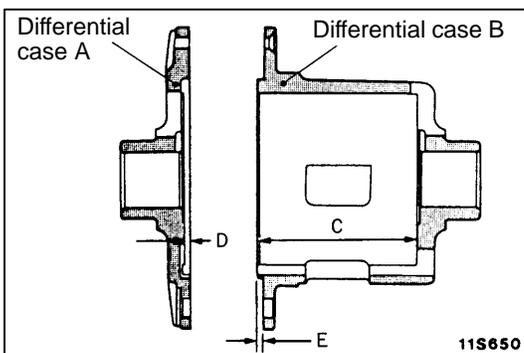


- (2) Measure the thickness of each of the right and left spring plates.
- (3) Assemble the pressure ring internal parts (pinion shaft and pressure ring), friction plates, and friction discs and, using a micrometer, measure the overall width.

NOTE

When taking measurements, press the assembly from both sides so that the pinion shaft makes a positive contact with the groove in the pressure ring.

- (4) Find value (A) which is the thickness measured in step (3) added to the thickness of two spring plates.

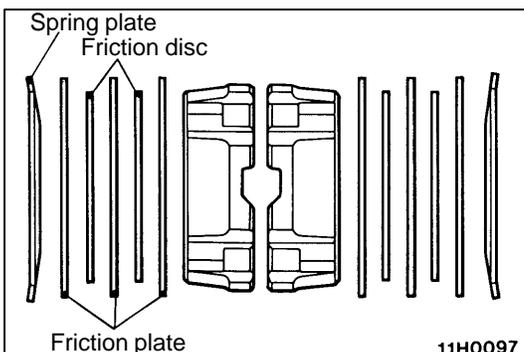


- (5) Find dimension (B) between the spring plate faying surfaces when differential case A and B are assembled together.

$$B = C + D - E$$

- (6) If the clearance between the spring plate and differential case (B – A) is outside the specified range, change the friction discs and make adjustments.

Standard value: 0.06 – 0.25 mm



- (7) Coat each part with the specified gear oil and mount it in the specified direction and order into differential case B.

Gear oil: DIA QUEEN LSD GEAR OIL

NOTE

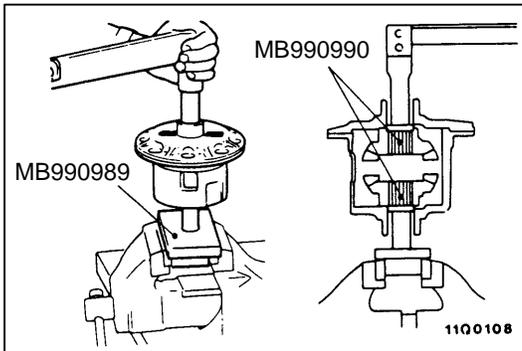
Apply a careful coat of gear oil to the contacting and sliding surfaces.

►B◄ SCREW TIGHTENING

- (1) Align the alignment mark on differential case A with that on differential case B.
- (2) Tighten the screws connecting differential case A and B a uniform amount little by little in the diagonal order.

NOTE

If tightening the screws does not bring the two cases properly together, spring plates are not probably assembled properly. Reassemble from the start.



►C◄ LSD DIFFERENTIAL TORQUE CHECK

- (1) Using the special tool, check for differential torque.

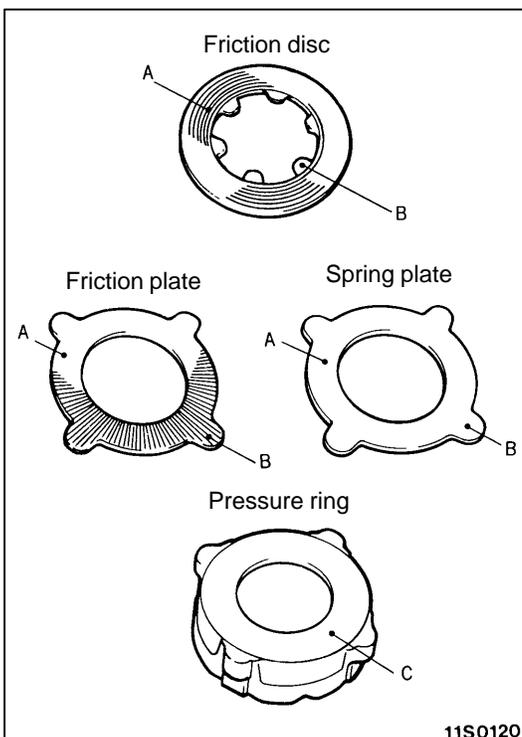
Standard value:

When new clutch plate is installed Nm {kgf·m}	When existing clutch plate is reused Nm {kgf·m}
5 – 19 {0.5 – 1.9}	2 – 19 {0.2 – 1.9}

NOTE

Before measuring the differential torque, first turn the gears so they snug each other, then take measurements during rotation.

- (2) If the measurement falls outside the specified range, disassemble the differential case assembly and repair or replace defective parts.



INSPECTION

1. DIFFERENTIAL CASE INTERNAL PARTS CONTACT/SLIDING SURFACE CHECK

- (1) Clean the disassembled parts with cleaning oil and dry them with compressed air.
- (2) Check each plate, disc, and pressure ring for the following:
 - A. Friction and sliding surfaces of friction discs, friction plates, and spring plates. Replace a defective part with heat discoloration and excessive wear with a new one, as it degrades locking performance.

NOTE

If the inner periphery of the friction face shows traces of harsh contact, it is because of the spring tension of each plate, disc and other part. Do not confuse this with abnormal wear.

- B. Inner periphery and outer periphery protrusions of friction discs, friction plates, and spring plates. Replace a cracked or damaged part with a new one.
- C. Friction and sliding surfaces between pressure rings and friction discs.

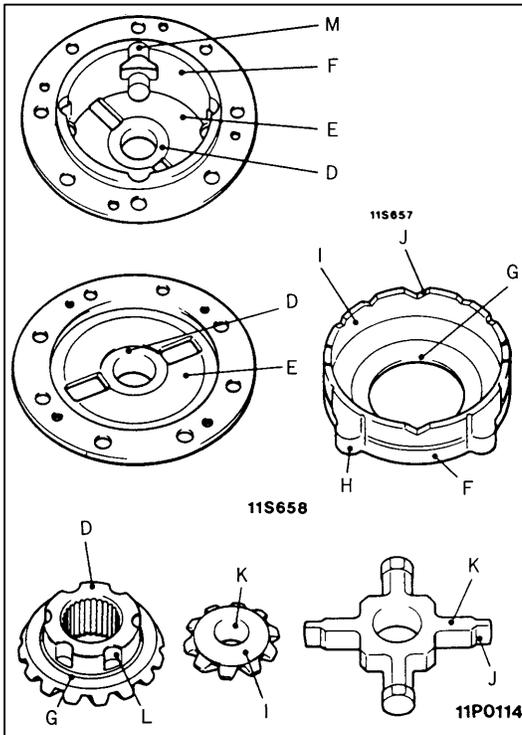
Grind a dented or scratched part with oil stone and then lap and correct with a compound on a surface plate.

NOTE

If the inner periphery of the friction face shows traces of harsh contact, it is because of the spring tension of each plate, disc and other part. Do not confuse this with abnormal wear.

- (3) Check the following parts for contact and sliding surfaces (D to M) and correct burrs and dents with oil stone.

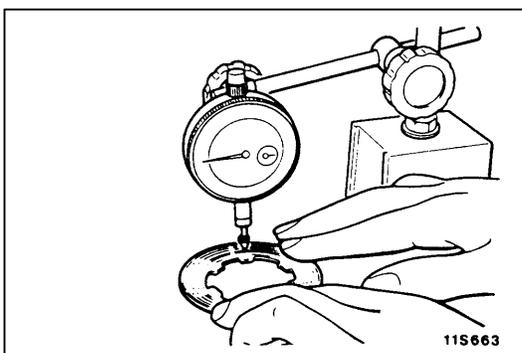
- D: Sliding surfaces of side gear and case
- E: Contacting surfaces of differential case and spring plate
- F: Contacting surfaces of pressure ring and differential case inner face
- G: Sliding surfaces of pressure ring hole and side gear
- H: Protrusions on outer periphery of pressure ring
- I: Pressure ring inner surface and differential pinion gear spherical surface
- J: Pressure ring V-groove and pinion shaft V
- K: Sliding surfaces of pinion shaft and differential pinion gear hole
- L: Side gear grooves on outer periphery
- M: Slits in inner periphery of differential



2. FRICTION PLATE AND FRICTION DISC DISTORTION CHECK

Apply a dial indicator to the friction plate or disc on a surface plate and, turning the friction plate or disc, measure the distortion (flatness).

Limit: 0.08 mm (total runout)

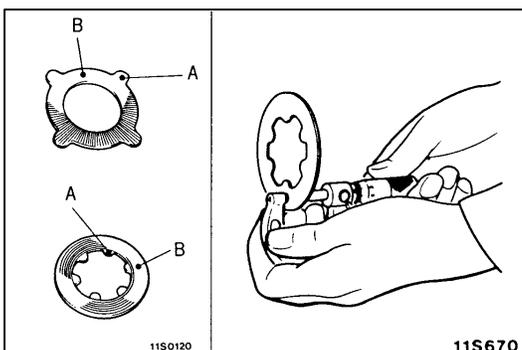


3. FRICTION PLATE, FRICTION DISC, AND SPRING PLATE WEAR CHECK

- (1) For the purpose of determining wear, measure thickness (A, B) of the friction surface and protrusion at several places and find the difference between the two.

Limit: 0.1 mm

- (2) If the wear exceeds the limit, replace the part with a new one.



HYDRAULIC UNIT <VEHICLES WITH AYC>

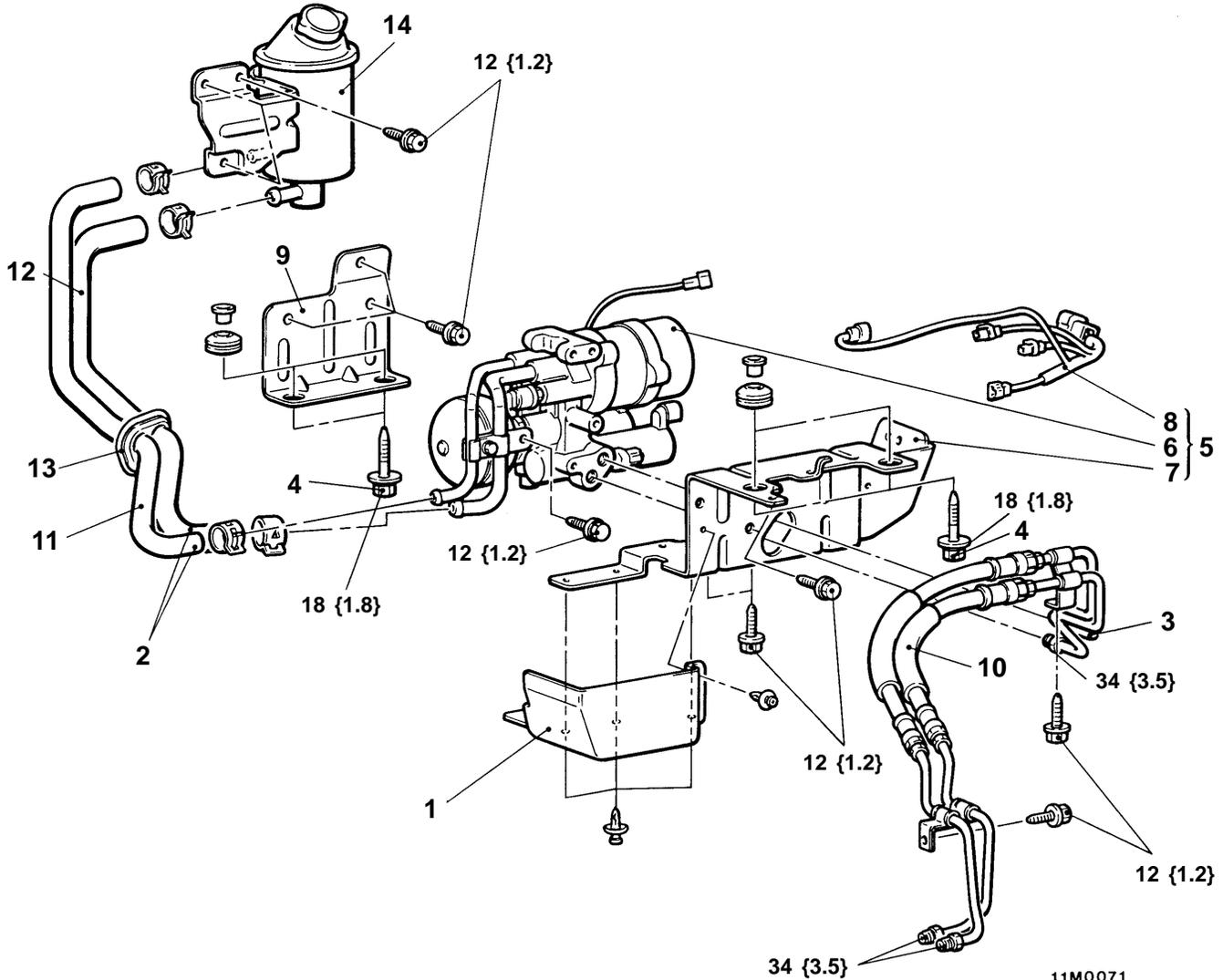
REMOVAL AND INSTALLATION

Pre-removal Operation

- (1) Trunk Side Trim Removal
- (2) Hydraulic Piping Fluid Draining

Post-installation Operation

- (1) Hydraulic Piping Fluid Filling and Bleeding (Refer to P.27-29.)
- (2) Trunk Side Trim Installation



Unit: Nm {kgf·m}

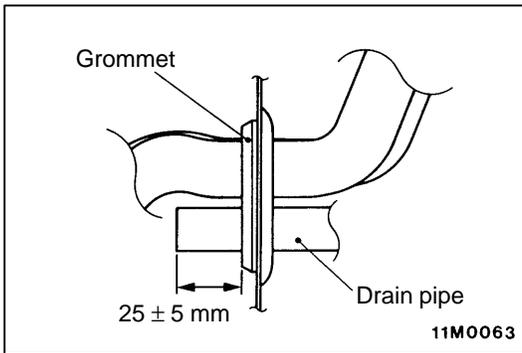
Removal steps

- 1. Dust guard
- 2. Suction hose and return hose connection
- 3. Hydraulic unit hose assembly connection
- 4. Hydraulic unit and bracket assembly mounting bolt
- ▶C◀ 5. Hydraulic unit and bracket assembly
- 6. Hydraulic unit
- 7. Hydraulic unit bracket
- 8. AYC harness

- 9. Hydraulic unit bracket
- 10. Hydraulic unit hose assembly
- ▶B◀ 11. Return hose
- ▶B◀ 12. Suction hose
- ▶A◀ 13. Grommet
- 14. Oil reservoir

Caution

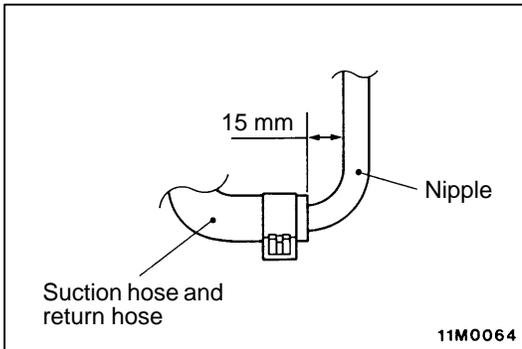
- (1) When connecting the return hose and suction hose, do not apply lubricant.
- (2) No foreign matter should be allowed in the hydraulic piping and joints.



INSTALLATION SERVICE POINTS

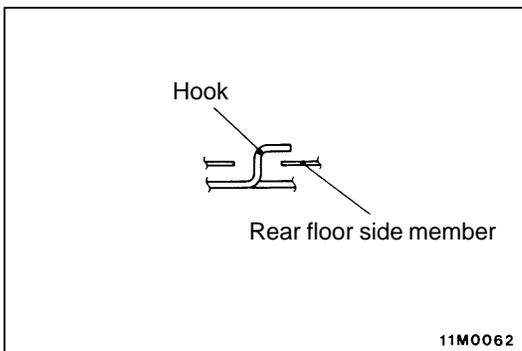
▶A◀ GROMMET INSTALLATION

On the vehicle mounted with a sun roof, mount the drain pipe to the grommet as illustrated.



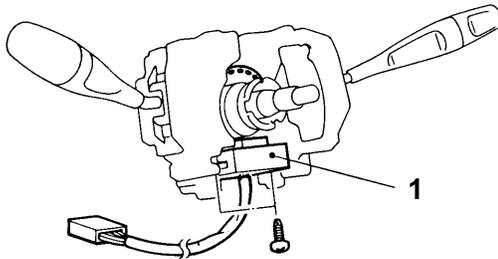
▶B◀ SUCTION HOSE / RETURN HOSE INSTALLATION

Fit the suction hose and return hose to the nipple of hydraulic unit as illustrated.

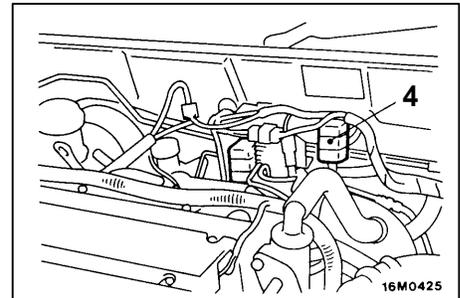
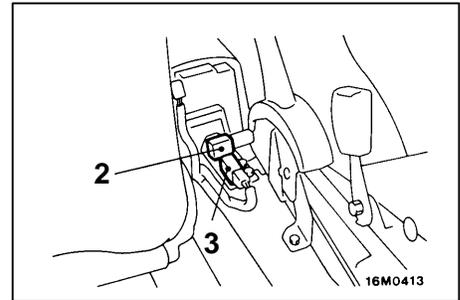


▶C◀ HYDRAULIC UNIT AND BRACKET ASSEMBLY INSTALLATION

Hook the hydraulic unit bracket hook to the rear floor side member and install the hydraulic unit and bracket assembly mounting bolt.

SENSOR RELAY <VEHICLES WITH AYC>**REMOVAL AND INSTALLATION**

14W0057

**Steer sensor removal steps**

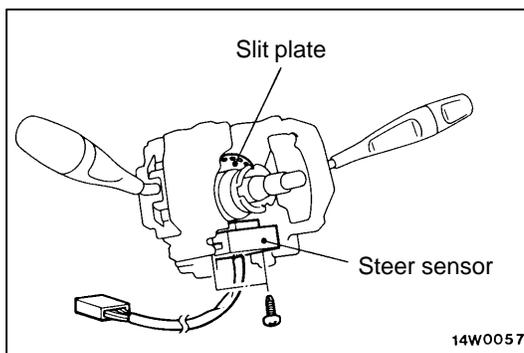
- Steering wheel and column cover (Refer to GROUP 37 – Steering Wheel and Shaft.)
1. Steer sensor

Acceleration sensor and AYC relay removal

2. Longitudinal acceleration sensor
3. Lateral acceleration sensor
4. AYC relay

**NOTE**

For the wheel speed sensor, refer to GROUP 35B.



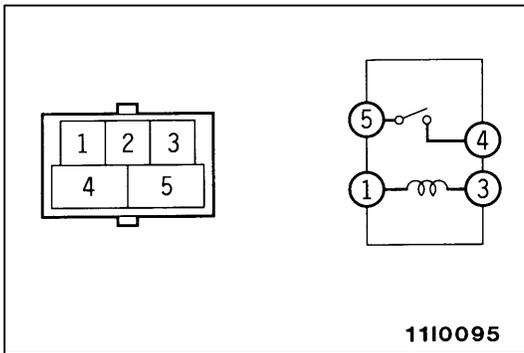
14W0057

REMOVAL SERVICE POINT**◀A▶ STEER SENSOR REMOVAL**

Remove the steer sensor from the column switch.

Caution

- (1) A photocoupler is used as the steer sensor. Use care not to allow dust or grease to be on the sensor.
- (2) Do not bend or dirty with grease the slit plate on the column switch side.



INSPECTION

1. LONGITUDINAL AND LATERAL ACCELERATION SENSOR CHECK

Refer to GROUP 35B – Acceleration Sensor.

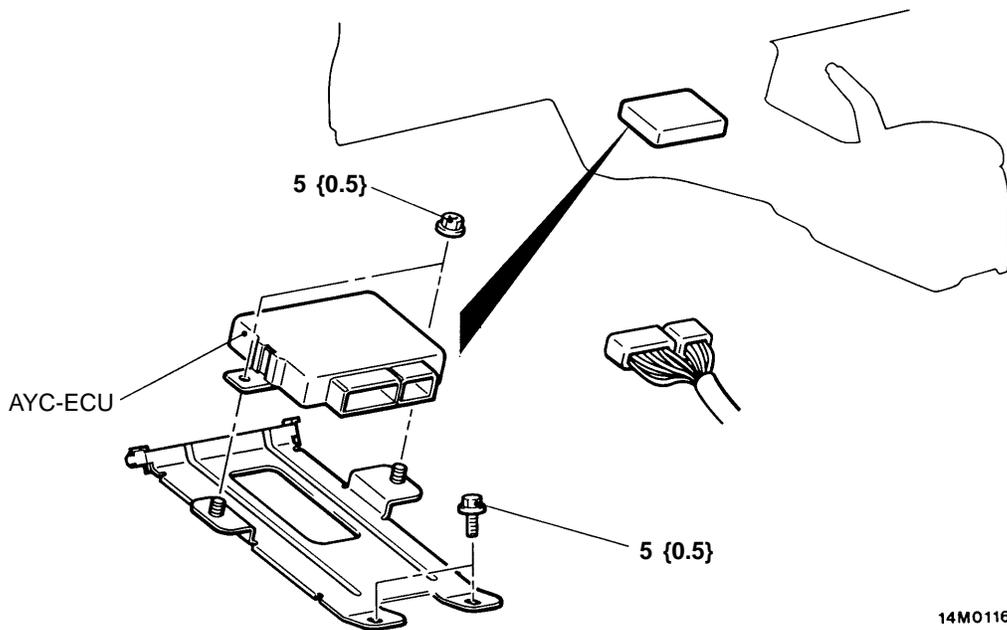
2. AYC RELAY CONTINUITY CHECK

Battery voltage	Terminal No.			
	1	3	4	5
When not energized	○	○		
When energized	⊖	⊕	○	○

AYC-ECU

REMOVAL AND INSTALLATION

- Pre-removal and Post-installation Operation**
- Front Floor Console Removal and Installation



14M0116

Unit: Nm {kgf·m}