

# AUTOMATIC TRANSMISSION

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E23AA--

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## GENERAL INFORMATION

E23BAAB

AW 372 and R4AW2 type 4-speed automatic transmission employs cable type shift control. An overdrive switch is installed on selector handle. When the vehicle runs in "D" range with the overdrive switch ON, the vehicle speed changes automatically from 1st to 4th. When the vehicle runs in "D" range with the overdrive switch OFF, the vehicle speed changes automatically from 1st to 3rd.

Automatic transmission fluid is cooled by a water cooling type oil cooler installed in the radiator.

## SPECIFICATIONS

## GENERAL SPECIFICATIONS

E23CA--

Items	Specifications
Torque converter	
Type	3 elements, 1 stage, 2 phase type (damper clutch is built)
Nominal diameter	mm (in.) 254 (10.0)
Stall torque ratio	2.26
Transmission	
Type	Forward 4 stages Reverse 1 stage Single row planetary gear and Simpson planetary gear type
Control element	
Clutch	Multi disc type, 3 sets
Brake	Multi disc type, 4 sets
One-way clutch	Sprag type, 3 sets.
Gear ratio	
1st	2.826
2nd	1.493
3rd	1.000
4th	0.688 (AW372), 0.730 (R4AW2)
Reverse	2.703
Shift control method	Floor shift type
Select pattern	P-R-N-D-2-L and overdrive switch
Oil pump	
Type	Involute gear type
Driving method	Directly connected to engine via torque converter
Hydraulic control method	Detection of throttle opening and vehicle speed
Governor valve	3 stages type
Oil cooling method	Water cooling type oil cooler

## SERVICE SPECIFICATIONS

E23CB--

Items		Specifications
Standard value		
Throttle cable set measurements	mm (in.)	
4G63 engine		52–53 (2.05–2.09)
4G64 engine		0–1 (0–0.04)
Stall speed	r/min	
4G63 engine		1,800–2,100
4G64 engine		2,050–2,350
4D56 engine		1,700–2,000
Governor pressure	kPa (kg/cm <sup>2</sup> , psi)	
At output shaft rpm/vehicle speed		
1,000 r/min/26km/h (16 mph)		130–160 (1.3–1.6, 18–23)
2,000 r/min/51km/h (32 mph)		230–270 (2.3–2.7, 33–38)
3,200 r/min/82km/h (51 mph)		380–440 (3.8–4.4, 54–63)
Line pressure	kPa (kg/cm <sup>2</sup> , psi)	
"D" range		
At idle		460–540 (4.6–5.4, 65–77)
At stall		1,010–1,190 (10.1–11.9, 144–169)
"R" range		
At idle		700–820 (7.0–8.2, 100–117)
At stall		1,500–1,900 (15–19, 213–270)
Sleeve and selector lever end measurements	mm (in.)	14.2–14.9 (0.559–0.5866)

## TORQUE SPECIFICATIONS

E23CC--

Items	Nm	kgm	ft.lbs.
Drain plug	18–23	1.8–2.3	13–17
Inhibitor switch installing bolt	4–7	0.4–0.7	3–5
Plug (for hydraulic pressure test)	6–8.5	0.6–0.85	4.5–6.5
Selector handle installing screw	2 or more	0.2 or more	1.4 or more
Shift lever shaft	18–24	1.8–2.4	13–17
Oil cooler tube flare nut	40–50	4.0–5.0	29–36
Oil cooler tube clamp	3–5	0.3–0.5	2–4
Oil cooler tube bracket	9–14	0.9–1.4	7–10
Propeller shaft installing bolt	50–60	5.0–6.0	36–43
Rear engine mount installing bolt	70–95	7.0–9.5	50–65
Exhaust pipe clamp bolt	20–30	2.0–3.0	14–22
Starter motor installing bolt	27–34	2.7–3.4	20–25
Torque converter installing bolt	35–42	3.5–4.2	25–30
Engine and transmission tightening bolt			
Bolts with 10 mm (0.4 in.) outside diameter	43–55	4.3–5.5	31–40
Bolts with 8 mm (0.3 in.) outside diameter	20–27	2.0–2.7	14–20

## 23-4 AUTOMATIC TRANSMISSION – Specifications/Special Tools/Troubleshooting

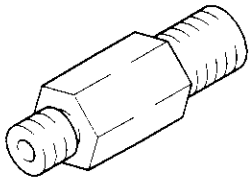


### LUBRICANTS

E23CD-

Items	Specified lubricant	Quantity lit.(U.S.qts.,Imp.qts.)
Transmission fluid	Automatic transmission fluid "DEXRON" or "DEXRON II"	6.8 (7.2, 6.0)
Selector lever sliding parts	Multipurpose grease SAE J310, NLGI No.2	As required

### SPECIAL TOOLS

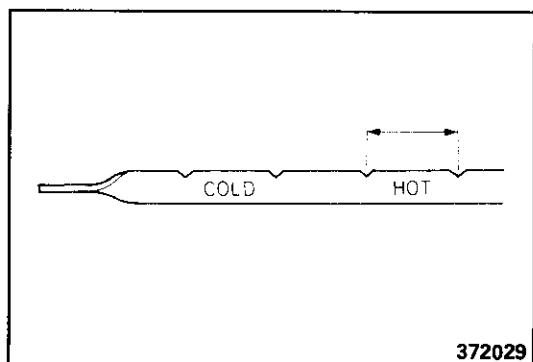
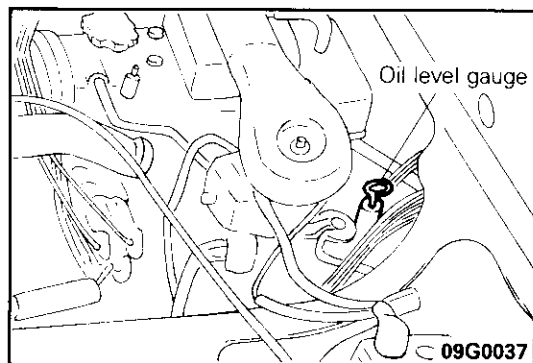
E23DA-

Tool (Number and name)	Use	Tool (Number and name)	Use
MD998920 Adaptor 	To relieve line pressure, governor pressure	MD998330 MD999563 Oil pressure gauge 	Hydraulic pressure mea- surement of line pressure etc.
MD998331 Joint 	Hydraulic pressure mea- surement of line pressure etc.		

### TROUBLESHOOTING

E23EAAA

Symptom	Probable cause	Remedy	Reference page
Selector lever operation is stiff	Incorrect adjustment of sleeve	Adjust	23-25
	Incorrect adjustment of control cable	Adjust	23-7
	Excessive wear of detent plate	Replace	23-21
	Excessive wear of pin at end of selector lever		
	Worn contact surfaces of pushbutton and sleeve		
Starter motor does not operate with the selector lever in the "N" or "P" position	Malfunction in inhibitor switch	Replace	—
	Incorrect adjustment of control cable	Adjust	23-7
	Malfunction of starter relay	Replace	23-20
Will not shift to 4-speed	Malfunction of OD switch	Replace	23-21
	Malfunction of OD relay	Replace	23-19
	Malfunction of water temperature switch	Replace	—



## SERVICE ADJUSTMENT PROCEDURES

E23FLA8

### INSPECTION OF AUTOMATIC TRANSMISSION FLUID

1. Place the vehicle on a level surface.
2. Before removing the dipstick, wipe all dirt from area around the dipstick.
3. With the selector lever in the "P" position and the parking brake applied, start the engine.
4. The engine should be running at idle and the transmission should be warmed up sufficiently.
5. Move the selector lever through all positions to fill the torque converter and hydraulic circuit with fluid. Then, place the lever in the "N" or "P" position.
6. Check that fluid level is at oil level gauge "HOT". If fluid level is low, add fluid to "HOT" level.

#### NOTE

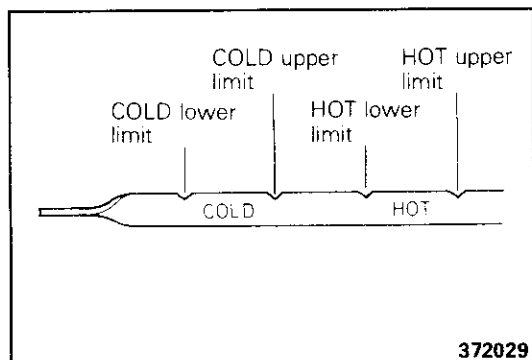
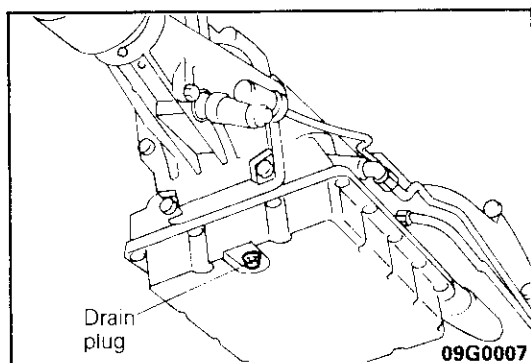
Low fluid level can allow the oil pump to take in air together with fluid, leading to various troubles. Air trapped in hydraulic circuit forms bubbles which make the fluid spongy. This lowers pressure and slows down pressure buildup. If the transmission has too much fluid, gears churn up foam and cause same conditions as when the fluid level is low, resulting in premature deterioration of ATF. In either case, air bubbles can cause overheating and fluid oxidation and varnishing, which can interfere with normal valve, clutch and servo operation. Foaming can also result in fluid escaping from the transmission vent where it may be mistaken for a fluid leak.

7. Check fluid condition.

#### NOTE

When fluid smells burned, it is contaminated with metal bushing or friction material particles and hence a complete overhaul of the transmission is needed. Be sure to examine fluid on the dipstick closely.

8. After fluid has been checked, insert the dipstick until it is seated fully to seal out water and dirt.



## CHANGING AUTOMATIC TRANSMISSION FLUID

E23FMAB

### Caution

If ATF change is required due to damage to the transmission, be sure to clean the cooler system.

1. Raise the vehicle on hoist. Place a drain container with large opening under the drain plug (located in bottom of the oil pan).
2. Remove the drain plug to let ATF drain.
3. Tighten drain plug to specified torque.

**Tightening torque: 18–23Nm (1.8–2.3kgm, 13–17ft.lbs.)**

4. Pour ATF through the oil level gauge hole until its level reaches the COLD lower limit of the level gauge.

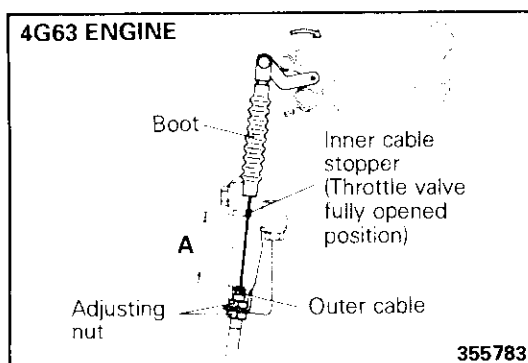
**Specified fluid: Automatic transmission fluid "DEXRON" or "DEXRON II"**

### NOTE

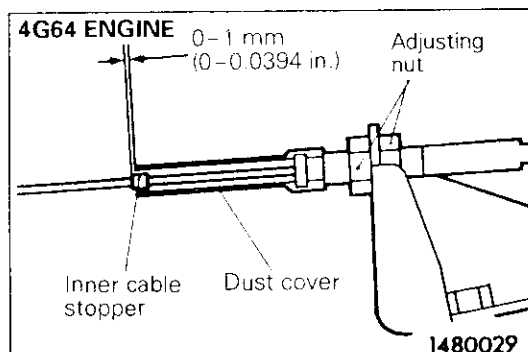
The total capacity is about 6.8 litres (7.2 U.S.qts., 6.0 Imp.qts.) but some fluid will remain in the torque converter etc., so the actual dischargeable amount is 4.5–5.5 litres (4.8–5.8 U.S.qts., 4.0–4.8 Imp.qts.).

5. Start the engine and allow to idle for at least two minutes. Then, with the parking brake and service brake applied, move the selector lever through all positions and finally place in the "N" or "P" position.
6. Add fluid to bring the level to the "COLD" mark. With transmission at normal operating temperature, re-check fluid level. Fluid level must be between the "HOT" marks.
7. Insert oil level gauge securely to avoid water and dust from entering.

### 4G63 ENGINE



### 4G64 ENGINE



## CHECK AND ADJUSTMENT OF THROTTLE CABLE

E23FGAB

### 4G63 ENGINE

1. Check for defective or bent carburetor throttle lever or throttle cable bracket.
2. Remove outer cable side of boot to expose inner cable stopper.
3. Pull throttle lever to fully open throttle valve and check that the distance between the inner cable stopper and outer cable ends is within the standard value.

#### Standard value (A):

8 valve engine	52–53 mm (2.05–2.09 in.)
16 valve engine	54–55 mm (2.13–2.17 in.)

4. If outside the standard value, adjust with adjusting nut.

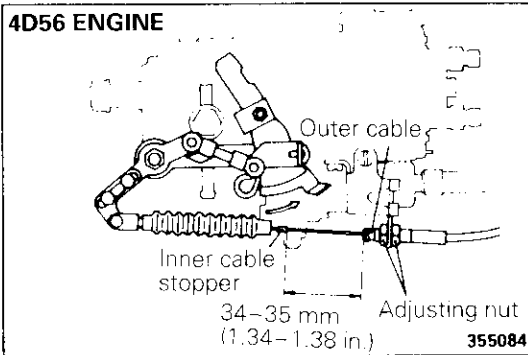
### 4G64 ENGINE

1. Check for defective or bent throttle lever or throttle cable bracket.
2. Pull throttle lever to fully open throttle valve and check that the distance between the inner cable stopper end and dust cover surface is within the standard value.

**Standard value: 0–1 mm (0–0.04 in.)**

3. If outside the standard value, adjust with adjusting nut.

**4D56 ENGINE**



**4D56 ENGINE**

1. Check for defective or bent carburetor throttle lever or throttle cable bracket.
2. Remove outer cable side of boot to expose inner cable stopper.
3. Pull throttle lever to fully open throttle valve and check that the distance between the inner cable stopper and outer cable ends is within the standard value.

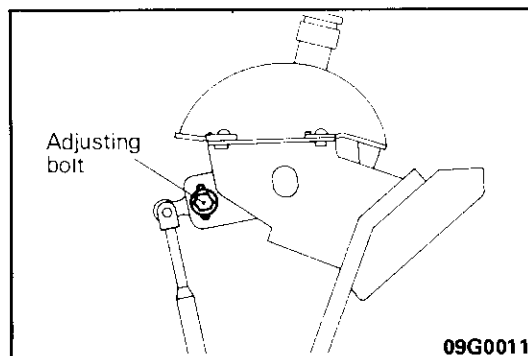
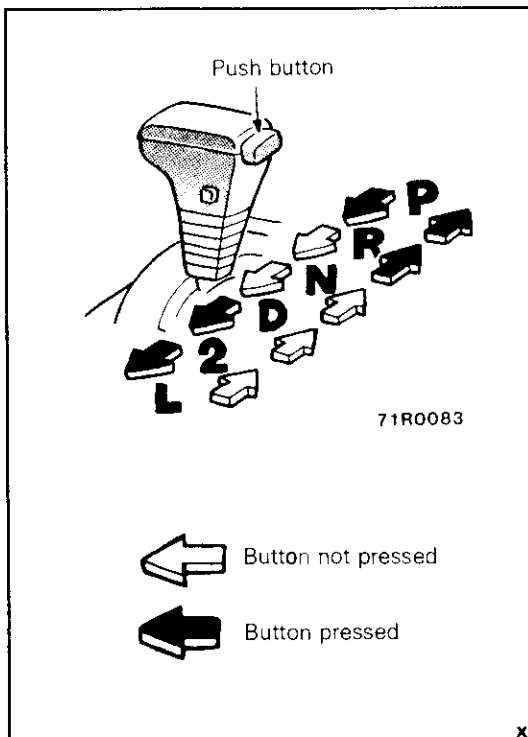
**Standard value: 34-35 mm (1.34-1.38 in.)**

4. If outside the standard value, adjust with adjusting nut.

**CHECK OF SELECTOR LEVER OPERATION**

E23FQAA

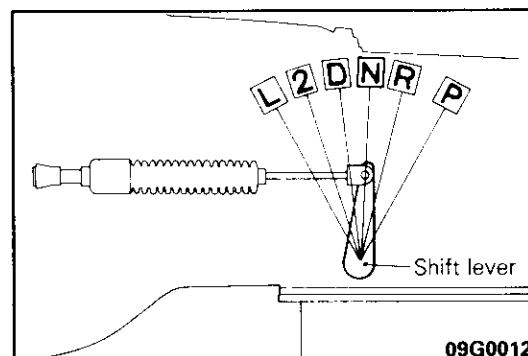
1. Shift selector lever to each range and check that lever moves smoothly and is controlled. Check that position indicator is correct.
2. Check that lever shifts to ranges P,R,2,L only when the selector handle push button is pressed. (L→2, can be shifted without pressing the button.)
3. Start the engine and check if the vehicle moves forward when the selector lever is shifted from N to D, and moves backward when shifted to R.
4. When the shift lever malfunctions, adjust control cable and selector lever sleeve. Check for worn shift lever assembly sliding parts.



**ADJUSTMENT OF CONTROL CABLE**

E23FRAA

1. Remove floor console.
2. Shift selector lever to N.
3. Unfasten adjusting bolt.



4. Shift transmission side lever to N.
5. Tighten adjusting bolt.

## INSPECTION AND ADJUSTMENT OF INHIBITOR SWITCH

E23FDAB

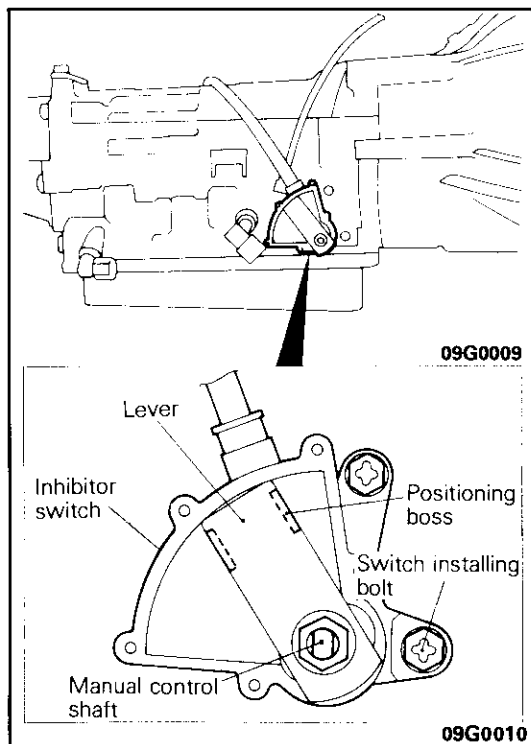
1. Confirm engine only starts with selector lever in N or P and not in any other range.
2. Confirm that the back-up lamp lights up only with selector lever in R and not in any other range. Confirm all indicators light in P-L.

3. When faulty, adjust as follows:

- (1) Adjust control cable.
- (2) Shift lever on transmission side to N range.
- (3) Unfasten switch installing bolt.
- (4) Move inhibitor switch. Match lever and positioning boss.
- (5) Tighten switch installing bolt to specified torque.

**Tightening torque: 4–7 Nm  
(0.4–0.7 kgm, 3–5 ft.lbs.)**

- (6) Check for correct inhibitor switch operation.

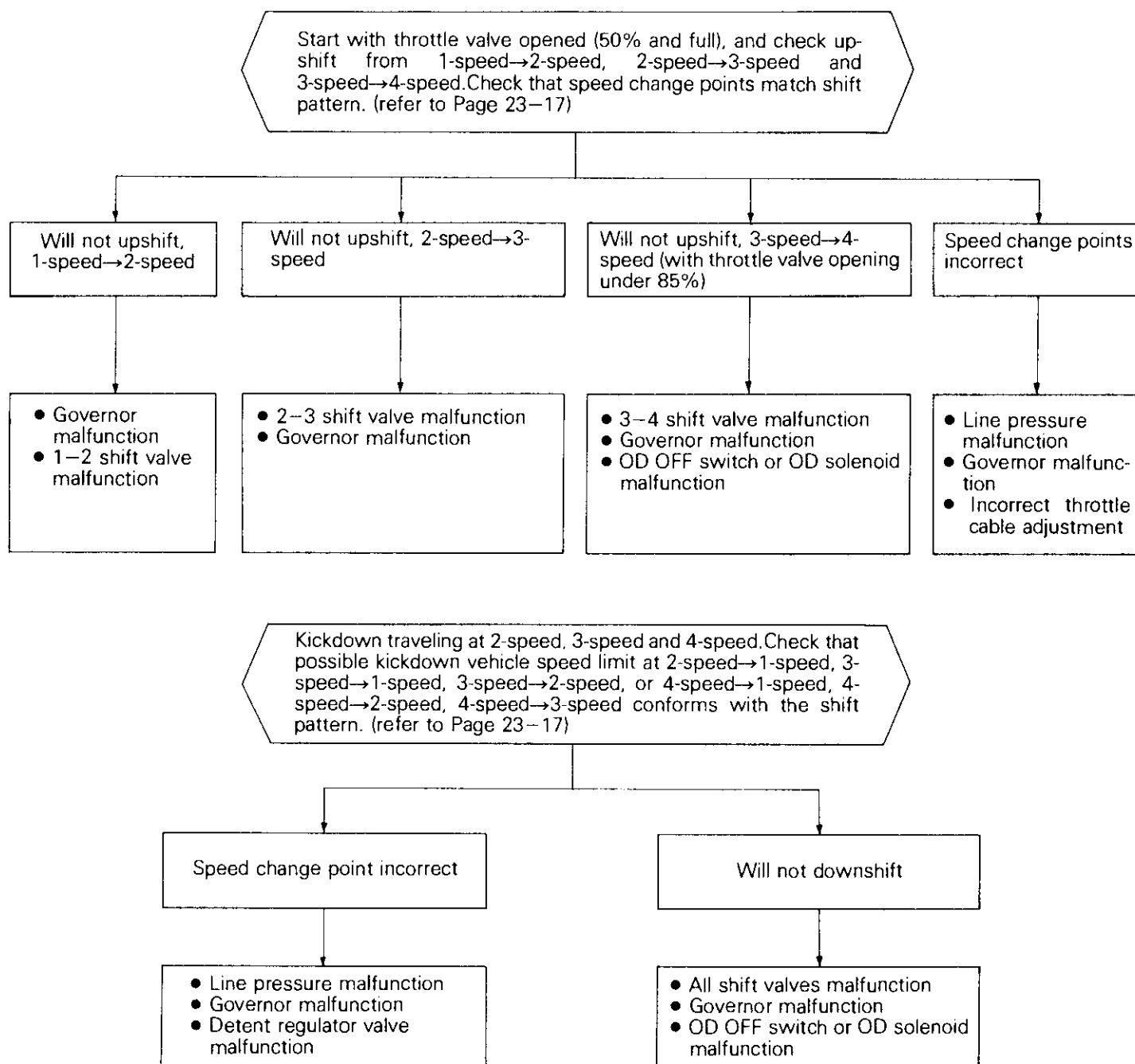


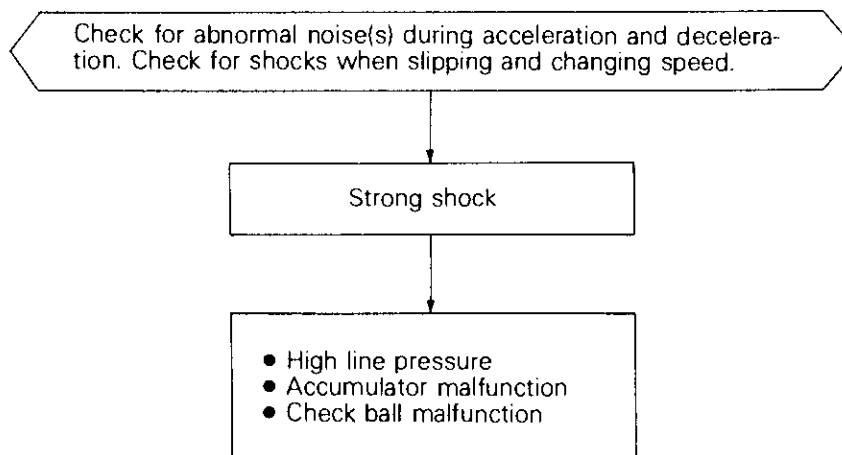
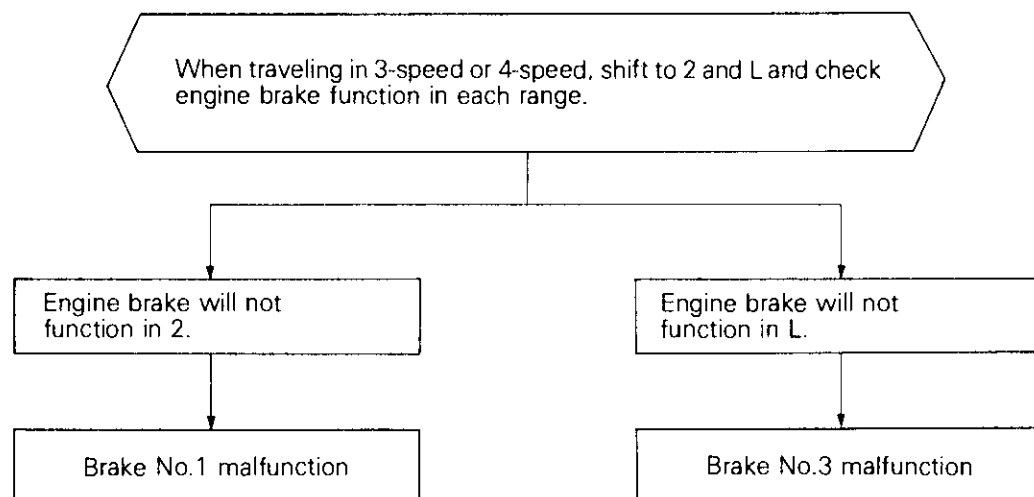
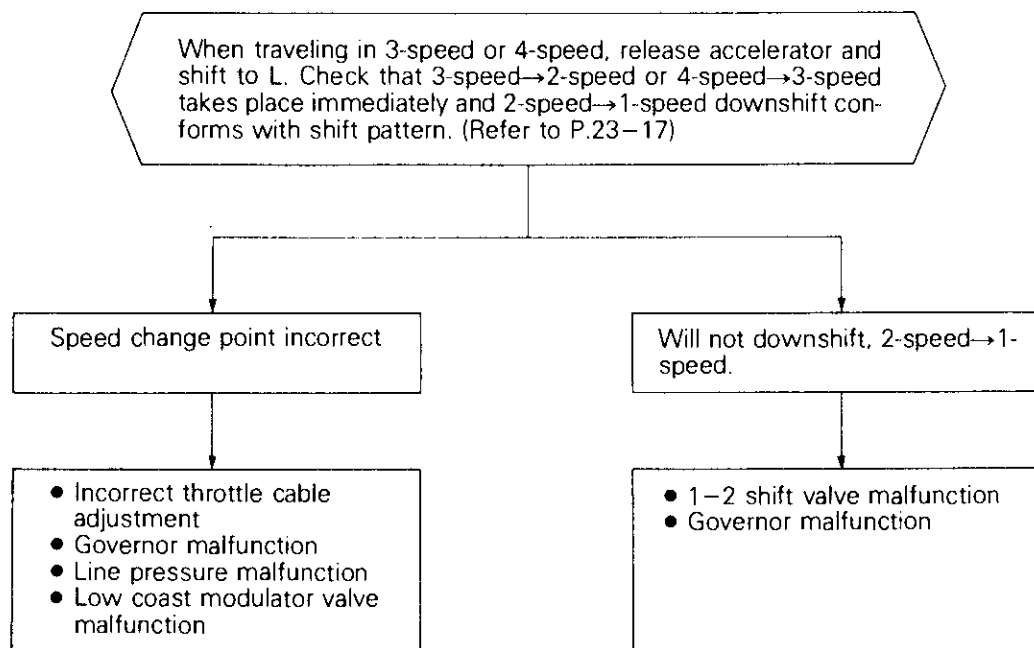


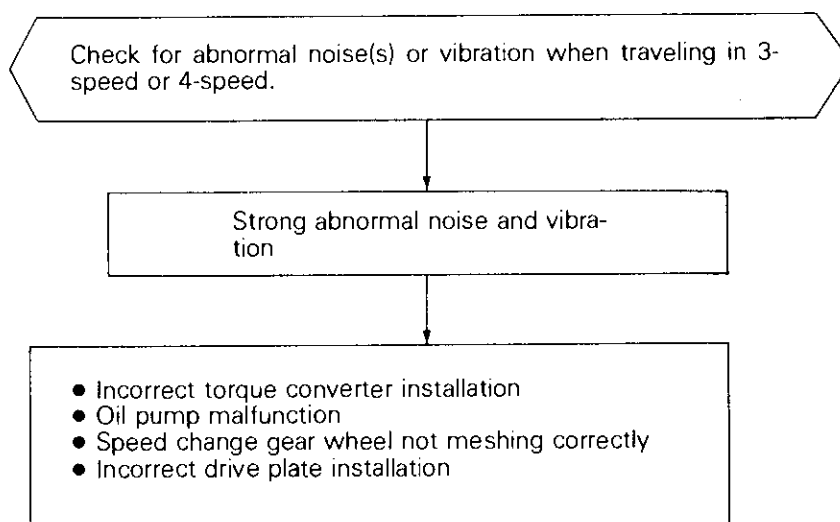
**CRUISE TEST**

E23FAAB

- Before conducting cruise test, check the following:
  - Fluid level and condition of fluid
  - Throttle cable
  - Shift lever
  - Inhibitor switch
- Test at fluid temperature during normal travel condition [50–80°C (122–176°F)]

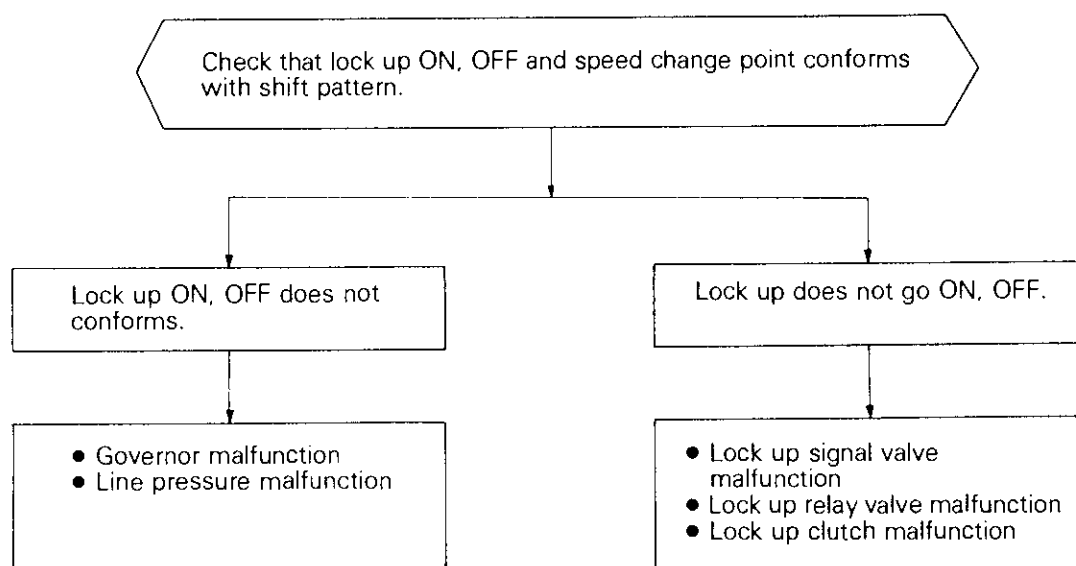
**D RANGE TEST**





**NOTE**

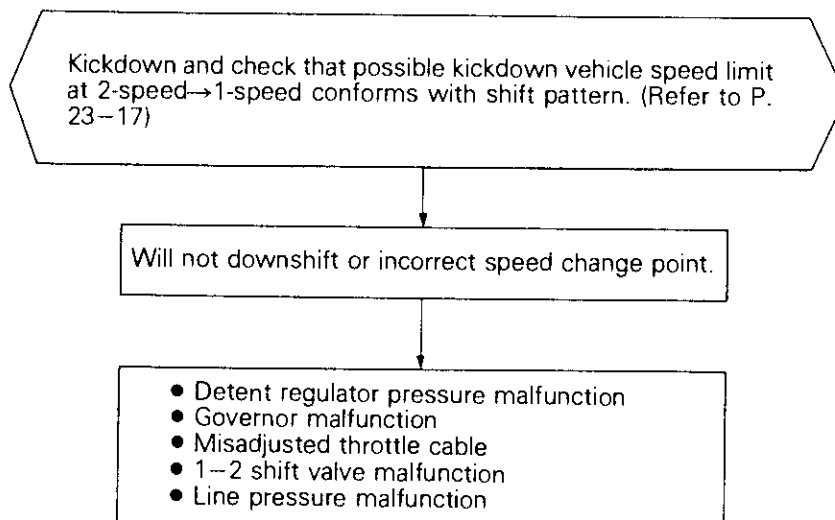
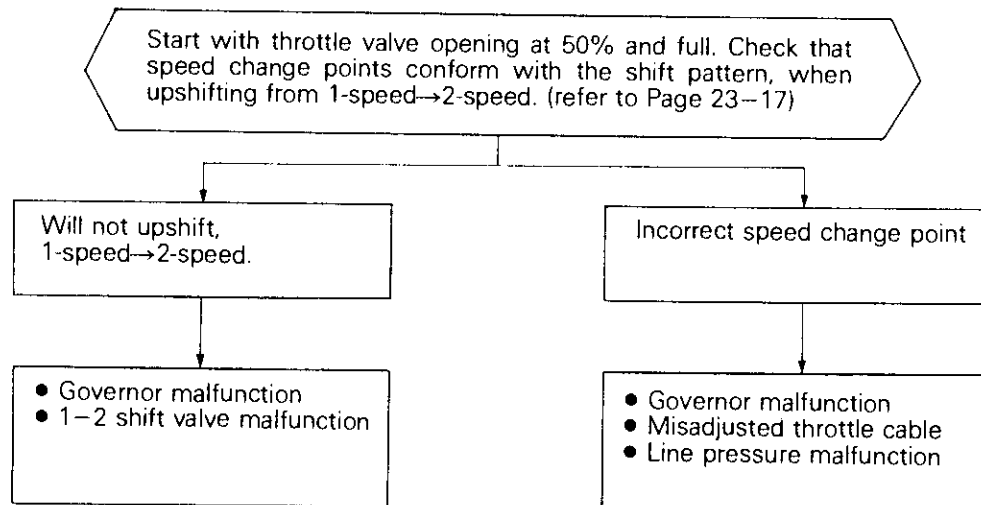
Abnormal noises and vibrations are often caused by an unbalanced propeller shaft, differential, tire, torque converter, engine etc. Extremely thorough inspection is therefore required.



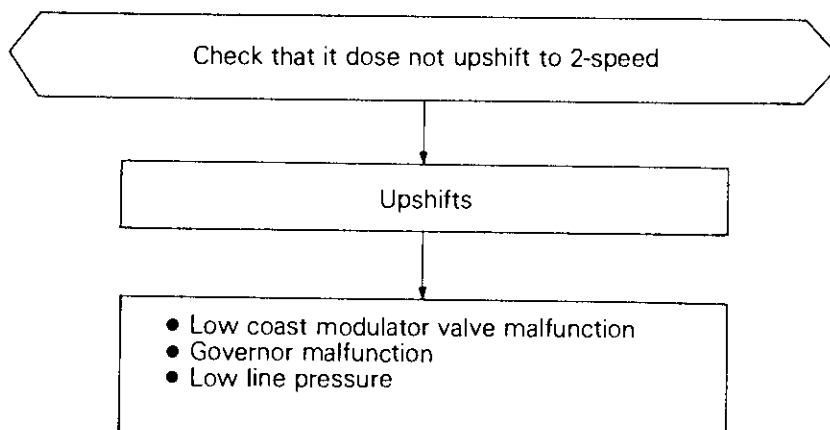
**NOTE**

- (1) Determine the moment when lock up turns ON by decreased engine rpm or by a slight shock back and forth.
- (2) Determine the moment when lock up turns OFF by increased engine rpm.
- (3) Check lock up condition by pumping the accelerator slightly. If engine rpm rises in accordance with throttle valve opening size, determine that the lock up is OFF, if not, determine it ON.  
(When lock up is OFF, drive power is transferred through the fluid in the torque converter and therefore, when the accelerator pedal is depressed, slipping occurs inside the torque converter with a resulting large increase in engine rpm.)

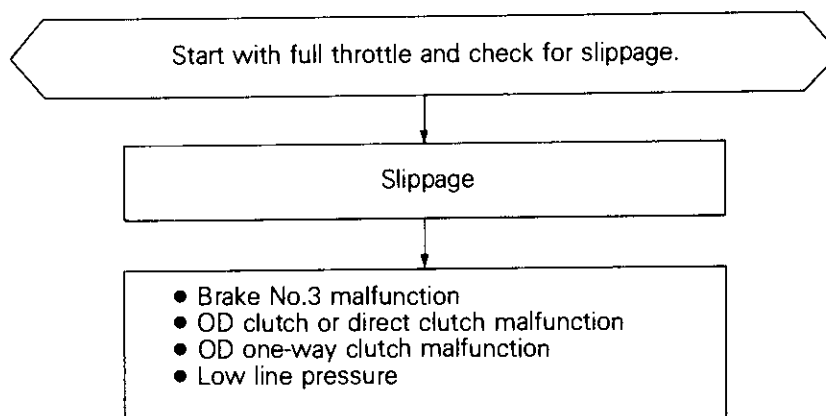
## 2 RANGE TEST



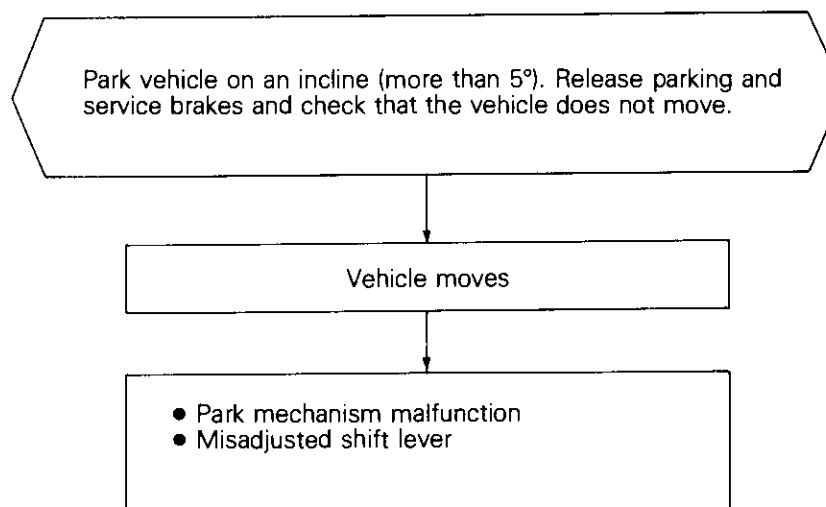
## L RANGE TEST

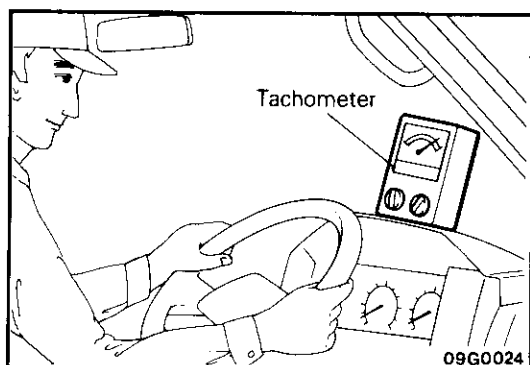


**R RANGE TEST**



**P RANGE TEST**





## CONVERTER STALL TEST

E23FEAA

In this test, the engine maximum speed when the torque converter stalls with the shift lever in the "D" or "R" range is measured to check operation of the torque converter, stator and one-way clutch and check holding performance of the transmission clutch (including brake).

### Caution

**Do not stand in front or at rear of the vehicle during this test.**

1. Check the transmission fluid level. The fluid temperature should be at the level after normal operation [50 to 80°C (122 to 176°F)]. The engine coolant temperature should also be at the level after normal operation [80 to 90°C (176 to 194°F)].
2. Apply chocks to the rear wheels (right and left).
3. Mount an engine tachometer.
4. Apply fully the parking and service brakes.
5. Start the engine.
6. With the selector lever in the "D" range, fully depress the accelerator pedal and read off the engine maximum speed.

### Standard value:

<b>Vehicles with 4G63 engine</b>	<b>1,800–2,100 r/min</b>
<b>Vehicles with 4G64 engine</b>	<b>2,050–2,350 r/min</b>
<b>Vehicles with 4D56 engine</b>	<b>1,700–2,000 r/min</b>

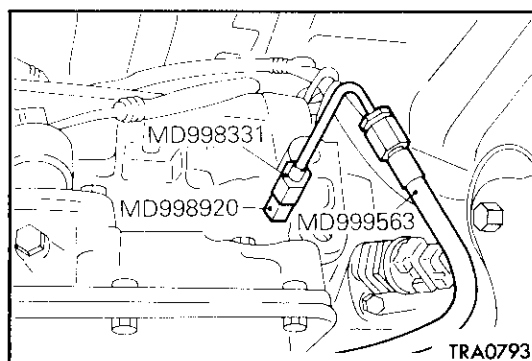
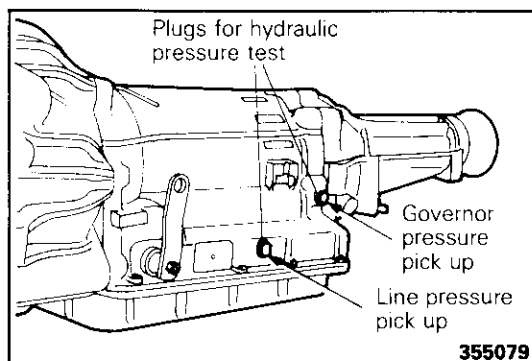
### NOTE

When doing so, do not keep the engine running with throttle full open for more than necessary duration (5 seconds or more). If two or more stall tests are needed, place the selector lever in the "N" position and run the engine at about 1,000 r/min to allow the transmission fluid to cool before another stall test.

7. Place the selector lever in the "R" range and perform the test as above.

## JUDGEMENT OF STALL TEST RESULTS

Stall speed in "D" and "R" range is equal to each other but lower than the nominal value.	(1) Engine output is low (2) Stator one-way clutch is faulty. (Faulty torque converter is suspected if it is lower than nominal by more than 600 r/min.)
Stall speed in "D" range is higher than nominal.	(1) O.D. clutch slipping. (2) O.D. one-way clutch faulty (3) Forward clutch slipping (4) One-way clutch No.2 faulty (5) Low line pressure
Stall speed in "R" range is higher than nominal.	(1) O.D. clutch slipping. (2) O.D. one-way clutch faulty (3) Direct clutch slipping (4) Brake No.3 slipping (5) Low line pressure



## HYDRAULIC PRESSURE TEST

E23FBAB

The hydraulic pressure tests (governor pressure and line pressure tests) are important in determining the causes of transmission failures.

Before conducting these tests, fluid level and condition and throttle cable adjustment etc. must be checked for defects or abnormalities. When conducting the tests, the engine and transmission should be at correct operating temperatures, [engine cooling water 80–90°C (176–194°F), transmission fluid 50–80°C (122–176°F)].

## GOVERNOR PRESSURE TEST

1. Place vehicle on a chassis dynamometer.
2. Remove plug from governor pressure takeoff port.
3. Install special tool as shown in figure and place the meter inside vehicles.

### NOTE

When the adapter interferes with the extension housing, repair the tool as shown in figure.

4. Apply parking brake.
5. Start engine.
6. Release parking brakes.
7. Shift to D and measure governor pressure at each output shaft rpm.

### Standard value:

Output shaft speed	Vehicle speed km/h (mph)	Governor pressure kPa (kg/cm <sup>2</sup> , psi)
1,000	26 (16)	130–160 (1.3–1.6, 18–23)
2,000	51 (32)	230–270 (2.3–2.7, 33–38)
3,200	82 (51)	380–440 (3.8–4.4, 54–63)

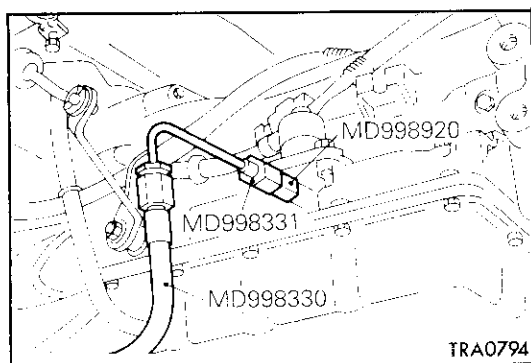
### NOTE

Vehicle speed when the differential ratio is 4.625 and 185 R14 tires are used.

## JUDGEMENT BY GOVERNOR PRESSURE

Governor pressure is not within the standard value

- Line pressure malfunction
- Oil leak in governor circuit
- Governor malfunction

**LINE PRESSURE TEST**

1. Place the vehicle on a chassis dynamometer.
2. Remove the plug from the line pressure takeoff port.
3. Install special tool as shown in the figure and place the meter inside vehicle.
4. Apply the parking brake.
5. Start the engine.
6. Place the selector lever in the "D" range.
7. Depress the brake pedal firmly by the left foot and operates the accelerator pedal by the right foot to measure the line pressure at each engine rpm. If the measured pressure is not nominal, check adjustment of the throttle cable and readjust if necessary before conducting the test again.
8. Place the selector lever in the "R" range and test as above.

**Standard value:**

	Line pressure kPa (kg/cm <sup>2</sup> , psi)	
	"D" range	"R" range
At idle	460–540 (4.6–5.4, 65–77)	700–820 (7–8.2, 100–117)
At stall	1,010–1,190 (10.1–11.9, 144–169)	1,500–1,900 (15–19, 213–270)

**JUDGEMENT BY LINE PRESSURE**

Hydraulic pressure higher than nominal in all ranges	(1)Regulator valve faulty (2)Throttle valve faulty (3)Throttle control cable incorrectly adjusted
Hydraulic pressure lower than nominal in all ranges	(1)Oil pump faulty (2)Regulator valve faulty (3)Throttle valve faulty (4)Throttle control cable incorrectly adjusted (5)O.D.clutch faulty
Hydraulic pressure lower than nominal in "D" range	(1)Large fluid leaks in "D" range hydraulic circuit (2)Forward clutch faulty (3)O.D.clutch faulty
Hydraulic pressure lower than nominal in "R" range	(1)Large fluid leaks in "R" range hydraulic circuit (2)Brake No.3 faulty (3)Direct clutch faulty (4)O.D.clutch faulty

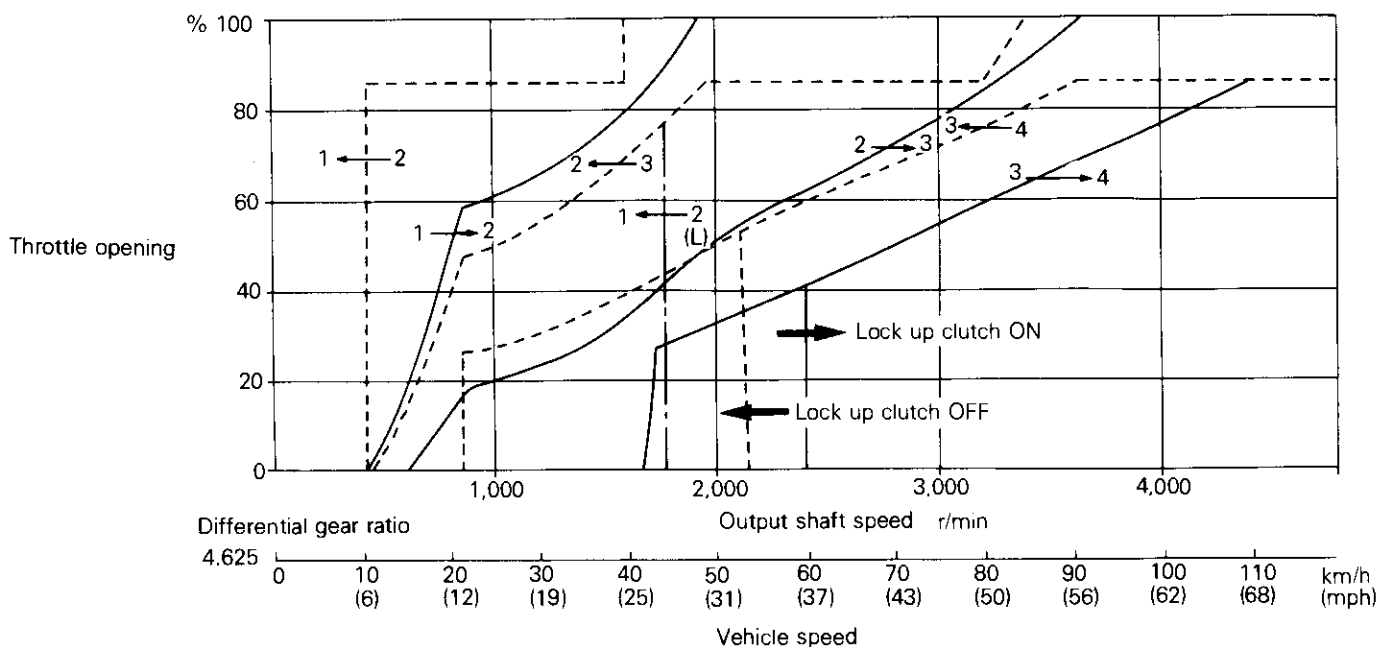


## SHIFT PATTERN

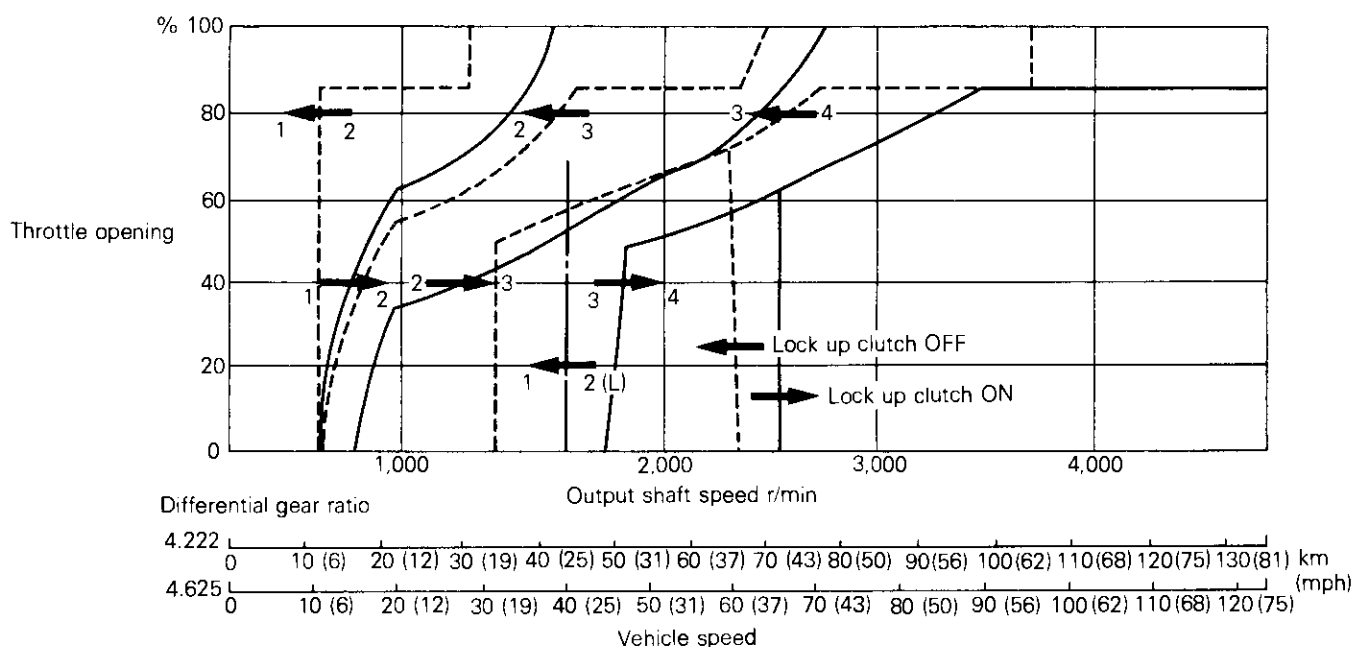
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Shift pattern is provided to ensure that optimum gearshifting can be performed according to the engine performance. The bold line indicates upshifting and the dotted line downshifting. There are difference in shift points provided between up- and downshifting to prevent gearshifting from being performed frequently when the vehicle is in motion near these shift points.

### Petrol-powered Vehicles



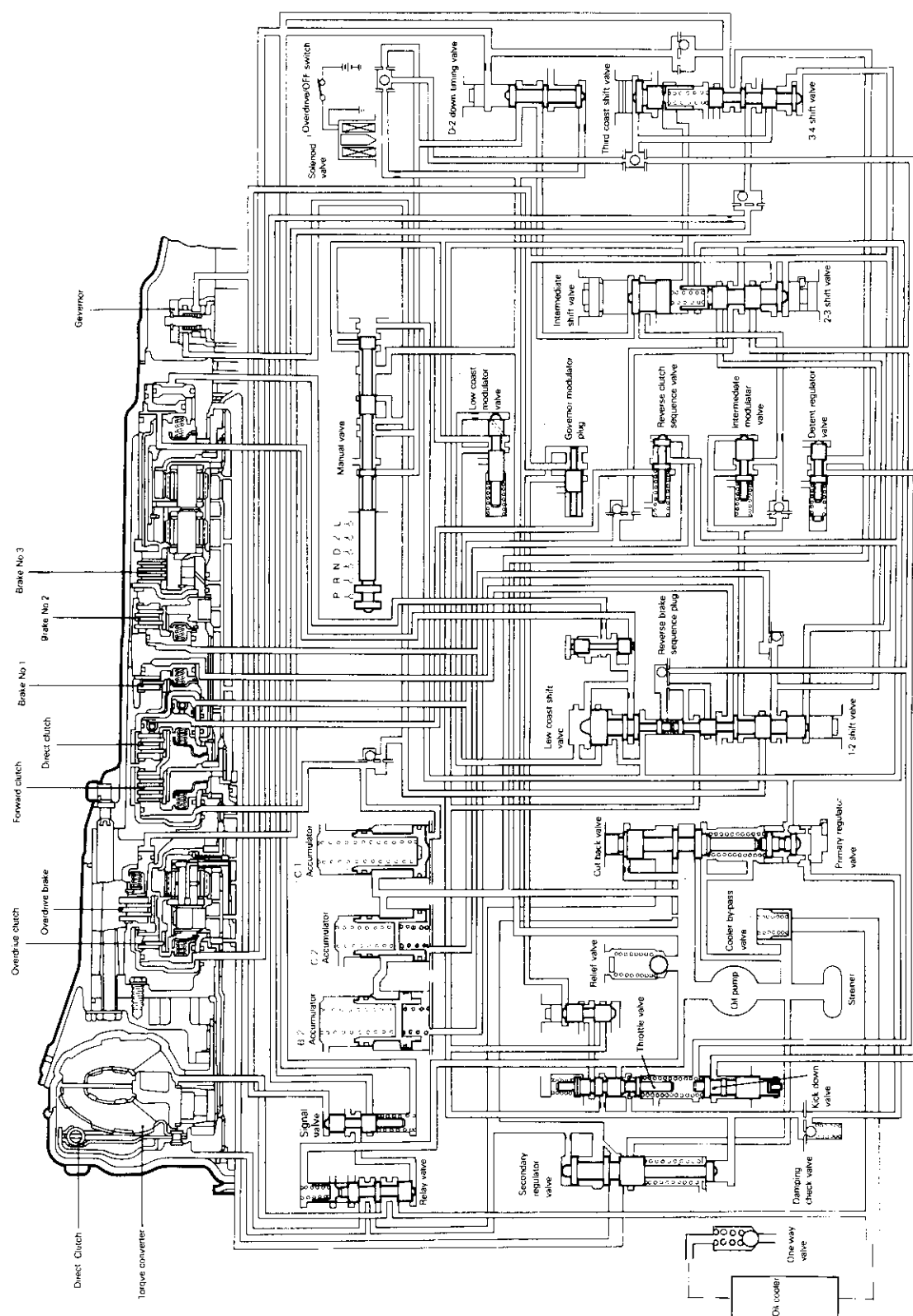
### Diesel-powered Vehicles



TRA0161

## HYDRAULIC CIRCUIT DIAGRAM

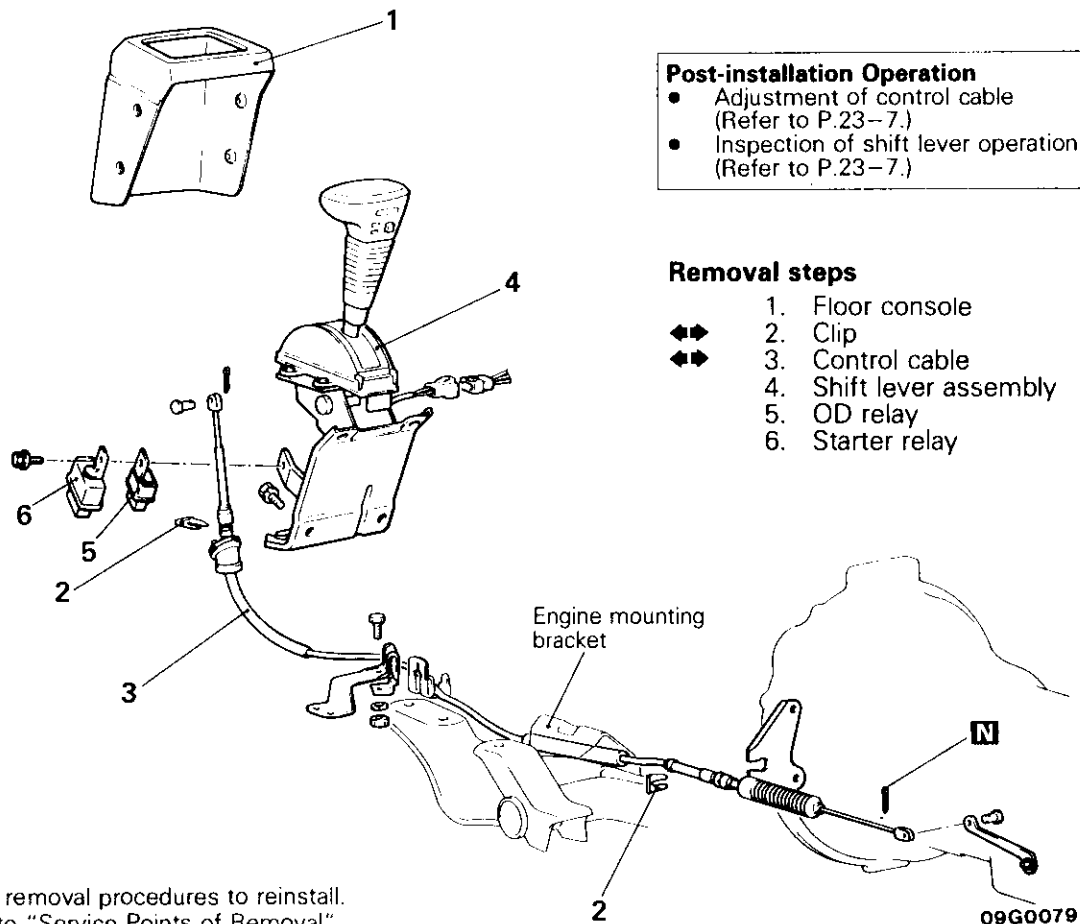
E23FT--



## TRANSMISSION CONTROL

### REMOVAL AND INSTALLATION

E231A---



#### Post-installation Operation

- Adjustment of control cable (Refer to P.23-7.)
- Inspection of shift lever operation (Refer to P.23-7.)

#### Removal steps

1. Floor console
2. Clip
3. Control cable
4. Shift lever assembly
5. OD relay
6. Starter relay

#### NOTE

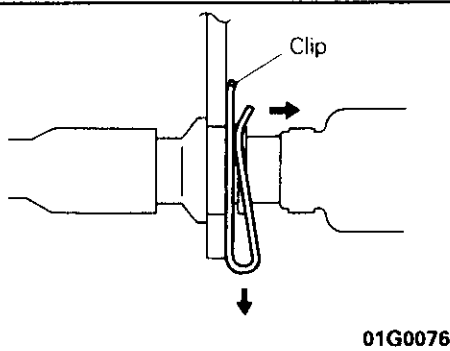
- (1) Reverse the removal procedures to reinstall.
- (2) : Refer to "Service Points of Removal".
- (3) **N** : Non-reusable parts

## SERVICE POINTS OF REMOVAL

E231BAA

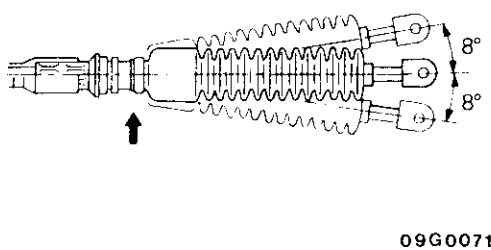
### 2. REMOVAL OF CLIP

Expand end and remove clip.



### 3. HANDLING OF CONTROL CABLE

Be careful not to bend the part indicated by the arrow more than 8°.



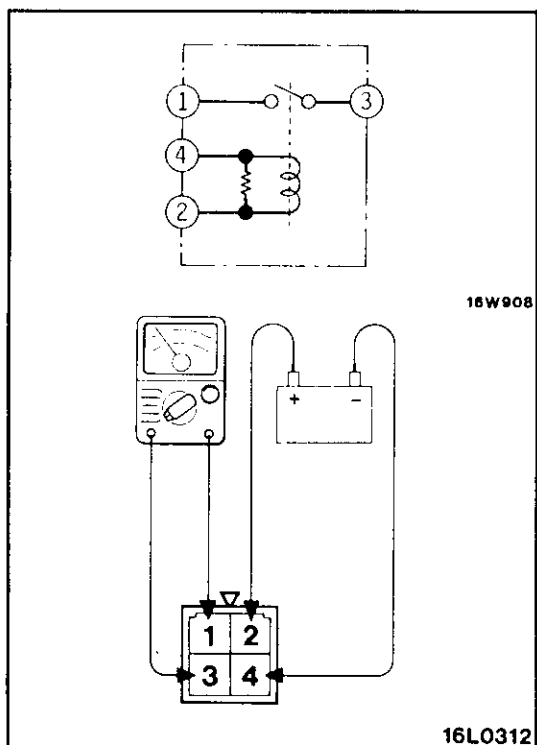
**INSPECTION**

- Check the control cable for wear or operation.
- Check the boots for damage.

**INSPECTION OF OD RELAY**

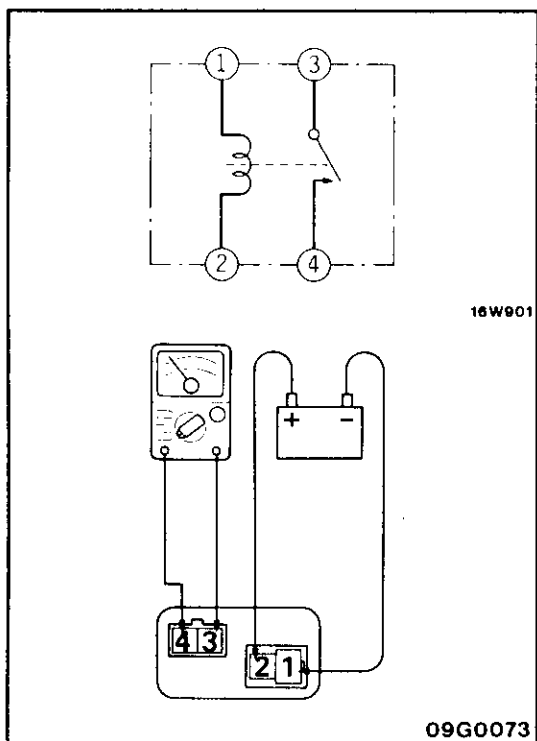
- (1) Remove floor console. Remove OD relay.
- (2) Connect terminal 2 to battery and earth terminal 4. Check continuity between the two terminals.

Power is supplied	1-3 terminals	Continuity
Power is not supplied	1-3 terminals	No continuity
	2-4 terminals	Continuity

**INSPECTION OF STARTER RELAY**

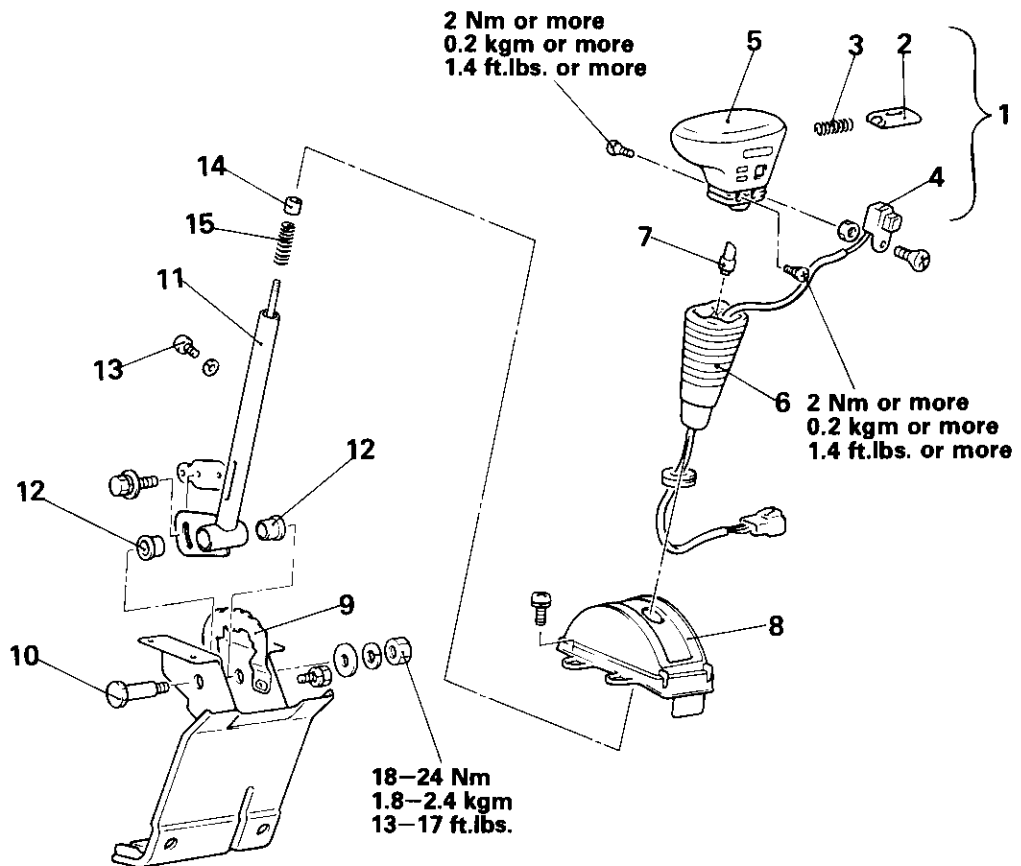
- (1) Remove floor console. Remove starter relay.
- (2) Connect terminal 1 to battery and earth terminal 2. Check continuity between the two terminals.

Power is supplied	3-4 terminals	Continuity
Power is not supplied	1-2 terminals	Continuity
	3-4 terminals	No continuity



# DISASSEMBLY AND REASSEMBLY

E231E--



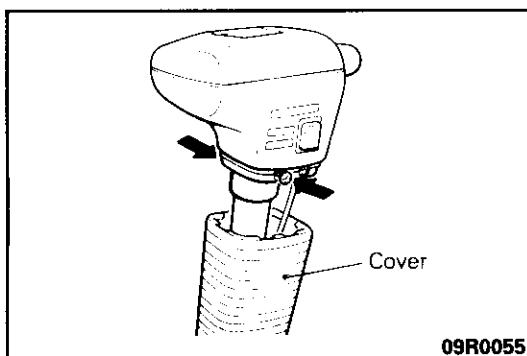
09G0057

## Disassembly steps

- |                                  |                |
|----------------------------------|----------------|
| ◆◆◆◆ 1. Selector handle assembly | ◆◆ 12. Bushing |
| ◆◆ 2. Push button                | ◆◆ 13. Screw   |
| ◆◆ 3. Spring                     | ◆◆ 14. Guide   |
| ◆◆ 4. OD switch                  | ◆◆ 15. Spring  |
| ◆◆ 5. Selector handle            |                |
| ◆◆ 6. Cover                      |                |
| ◆◆ 7. Sleeve                     |                |
| ◆◆ 8. Indicator panel            |                |
| ◆◆ 9. Detent plate               |                |
| ◆◆ 10. Shaft                     |                |
| ◆◆ 11. Shift lever               |                |

## NOTE

- (1) Reverse the disassembly procedures to reassemble.
- (2) ◆◆ : Refer to "Service Points of Disassembly".
- (3) ◆◆ : Refer to "Service Points of Reassembly".

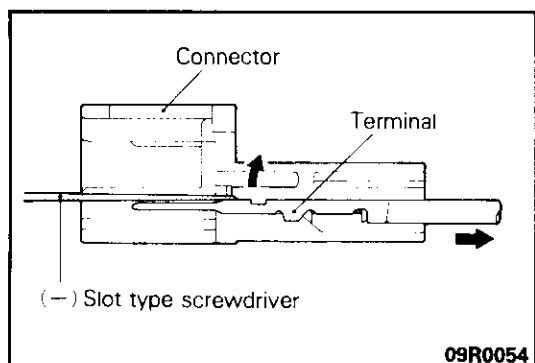


## SERVICE POINTS OF DISASSEMBLY

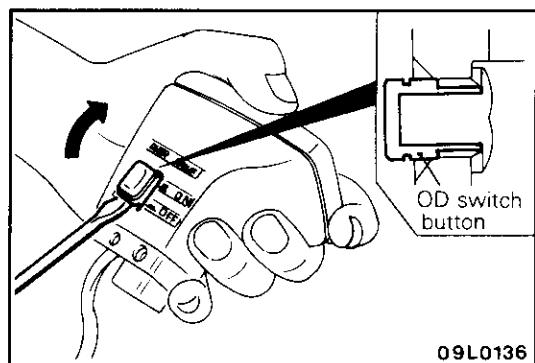
E231FAA

### 1. REMOVAL OF SELECTOR HANDLE ASSEMBLY

- (1) Push the cover down.
- (2) Remove selector handle installation screw.

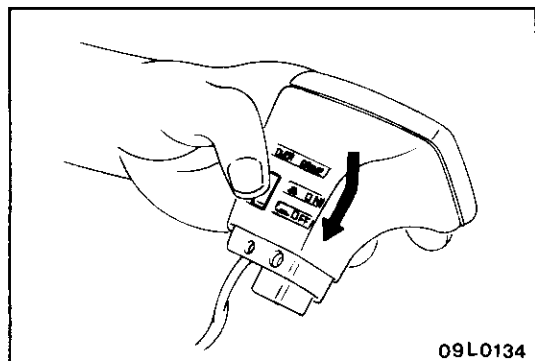


- (3) Pull terminal from OD switch connector case.
- (4) Remove selector handle assembly from shift lever.



#### 4. REMOVAL OF OD SWITCH

- (1) Set the OD switch to OFF (state in which the OD switch is pruded).
- (2) Use a (-) screwdriver, and remove the OD switch button.



- (3) Pressing the switch, remove the OD switch from the selector handle.

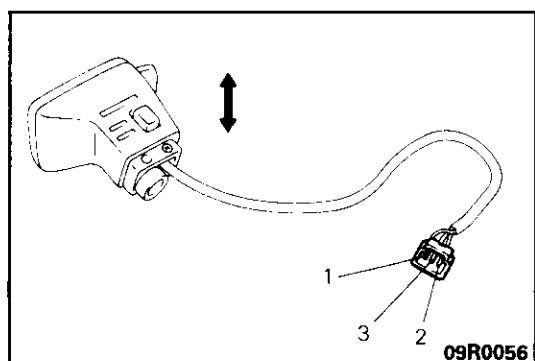
#### INSPECTION

E23IGAA

- Check the detent plate for wear.
- Check the rod end pin for wear.
- Check the push button/sleeve contact surface for wear.
- Check the spring for weakness.
- Check the bushing for wear.

#### OD SWITCH CHECK

- (1) Remove floor console.
- (2) Unplug OD switch connector.
- (3) Check continuity between terminals by operating the switch.



Switch Position	1	2	3
Switch not pressed (OD in operation)	○—○	○—○	
Switch pressed (OD not in operation)	○—○		○—○

#### NOTE

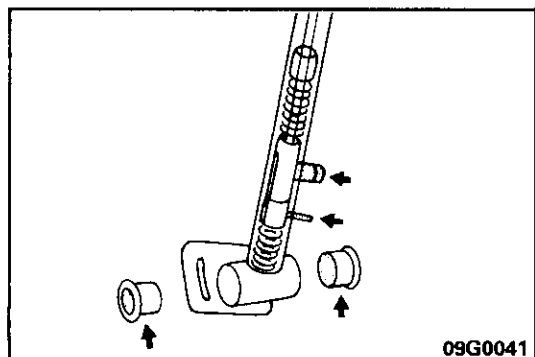
○—○ indicates there is continuity between the terminals.

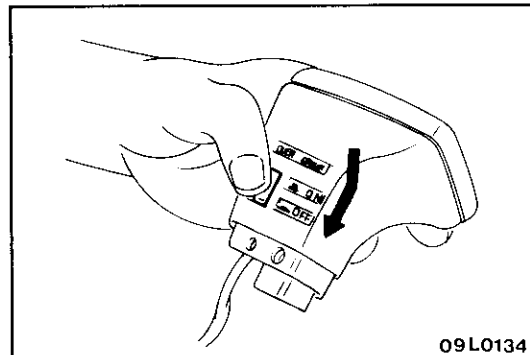
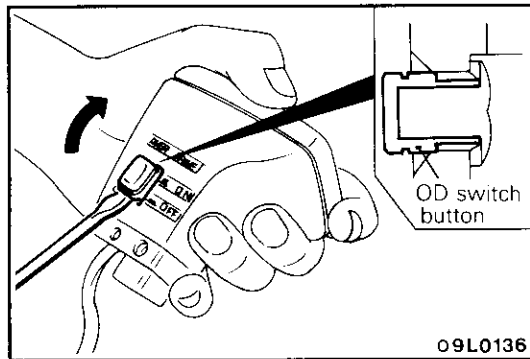
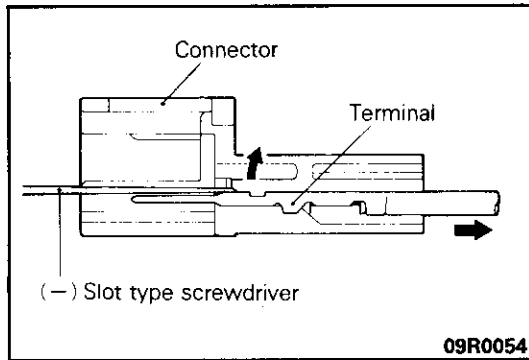
#### SERVICE POINTS OF REASSEMBLY

E23IHAA

#### 15. APPLICATION OF GREASE TO SPRING/12.BUSHIN-G/11.SHIFT LEVER

Apply multipurpose grease to parts indicated in the figure.





- (3) Pull terminal from OD switch connector case.
- (4) Remove selector handle assembly from shift lever.

#### 4. REMOVAL OF OD SWITCH

- (1) Set the OD switch to OFF (state in which the OD switch is pruded).
- (2) Use a (-) screwdriver, and remove the OD switch button.

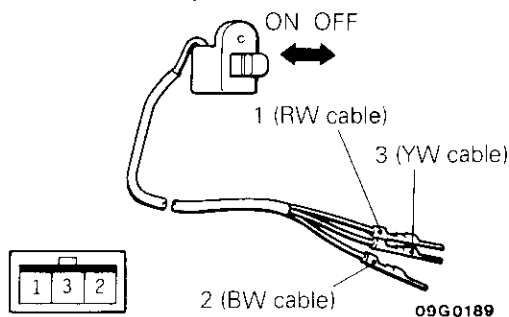
- (3) Pressing the switch, remove the OD switch from the selector handle.

#### INSPECTION

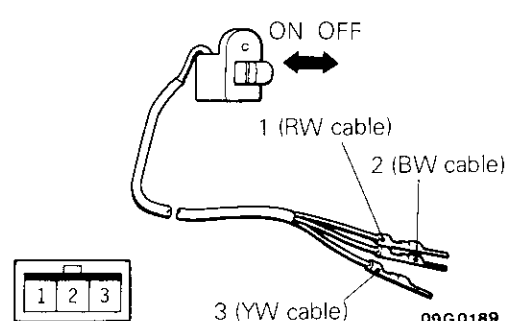
E23IGAA

- Check the detent plate for wear.
- Check the rod end pin for wear.
- Check the push button/sleeve contact surface for wear.
- Check the spring for weakness.
- Check the bushing for wear.

##### <Vehicles built up to May 1994>



##### <Vehicles built from June 1994>



#### OD SWITCH CHECK

- (1) Remove floor console.
- (2) Unplug OD switch connector.
- (3) Check continuity between terminals by operating the switch.

##### <Vehicles built up to May 1994>

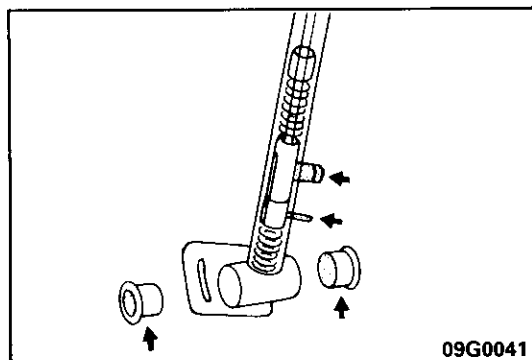
Switch Position	1	2	3
Switch not pressed (OD in operation)	○—○	○—○	
Switch pressed (OD not in operation)	○—○		○—○

##### <Vehicles built from June 1994>

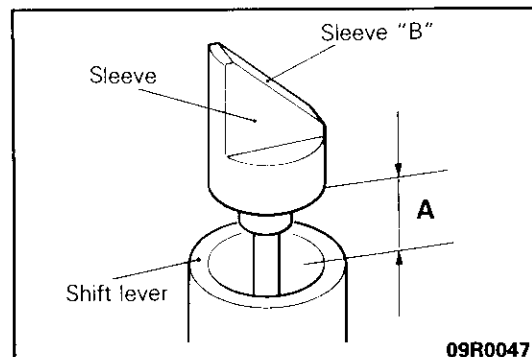
Switch Position	1	2	3
Switch not pressed (OD in operation)	○—○		○—○
Switch pressed (OD not in operation)	○—○	○—○	

#### NOTE

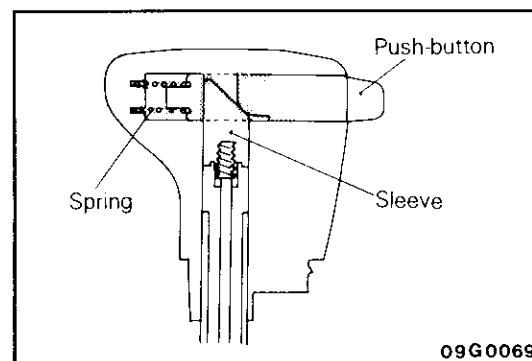
○—○ indicates there is continuity between the terminals.



09G0041

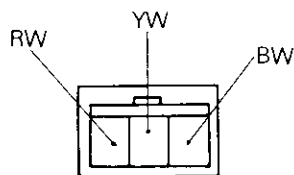


09R0047



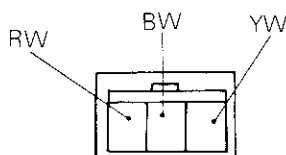
09G0069

## &lt;Vehicles built up to May 1994&gt;



09G0065

## &lt;Vehicles built from June 1994&gt;



09G0065

## SERVICE POINTS OF REASSEMBLY

E23IHAA

## 15. APPLICATION OF GREASE TO SPRING/12.BUSHING/11.SHIFT LEVER

Apply multipurpose grease to parts indicated in the figure.

## 7. INSTALLATION OF SLEEVE

- (1) Put selector lever in "N". Turn sleeve and adjust till the distance between sleeve and shift lever end is within the standard value.

**Standard value (A): 14.2–14.9 mm (0.559–0.587 in.)**

## NOTE

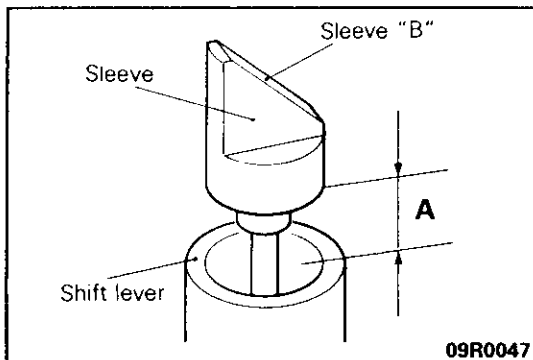
Position so that sleeve B is on the push button side (driver's side).

## 1. INSTALLATION OF SELECTOR HANDLE ASSEMBLY

- (1) Install OD switch on selector handle.
- (2) Apply multipurpose grease to sliding parts of spring, push button and sleeve.
- (3) Press push button slightly so that sleeve fits in push button hole and install selector lever onto shift lever.

- (4) Insert OD switch terminal to the connector case with wire colors matching the figure.
- (5) Plug in the connector.





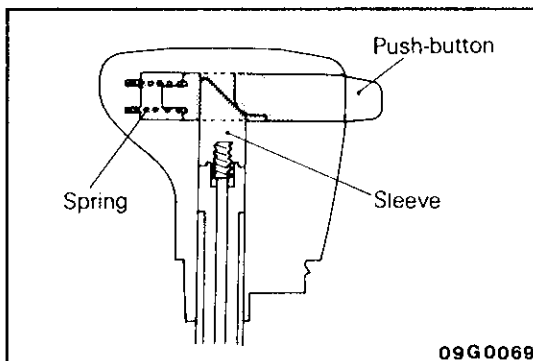
## 7. INSTALLATION OF SLEEVE

- (1) Put selector lever in "N". Turn sleeve and adjust till the distance between sleeve and shift lever end is within the standard value.

**Standard value (A): 14.2–14.9 mm (0.559–0.587 in.)**

### NOTE

Position so that sleeve B is on the push button side (driver's side).

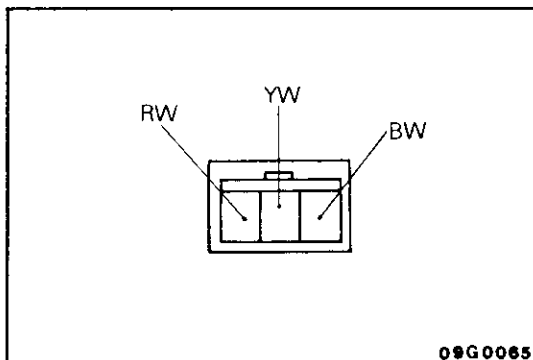


## 1. INSTALLATION OF SELECTOR HANDLE ASSEMBLY

- (1) Install OD switch on selector handle.
- (2) Apply specified grease to sliding parts of spring, push button and sleeve.

**Specified grease: Multipurpose grease, SAE J310, NLGI No.2**

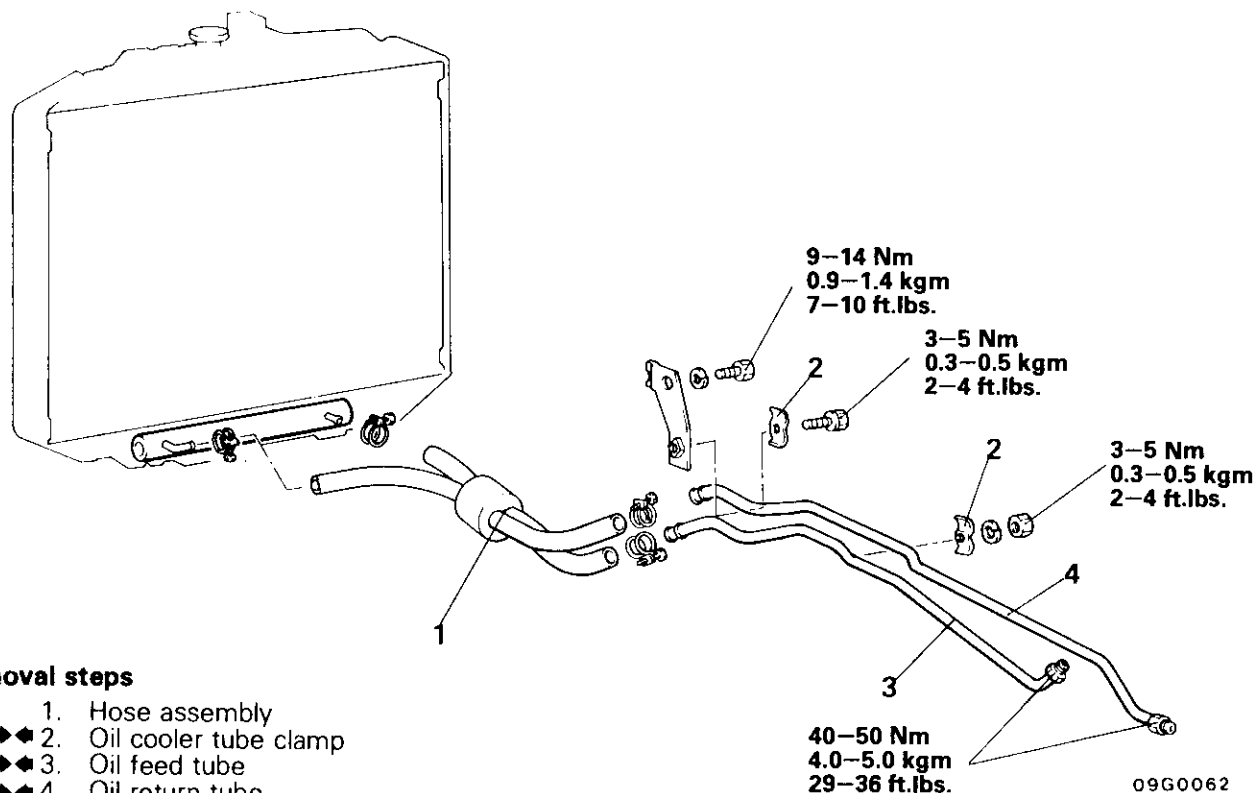
- (3) Press push button slightly so that sleeve fits in push button hole and install selector lever onto shift lever.



- (4) Insert OD switch terminal to the connector case with wire colors matching the figure.
- (5) Plug in the connector.

## TRANSMISSION OIL COOLER

## REMOVAL AND INSTALLATION



## Removal steps

1. Hose assembly
- ◆◆ 2. Oil cooler tube clamp
- ◆◆ 3. Oil feed tube
- ◆◆ 4. Oil return tube

## NOTE

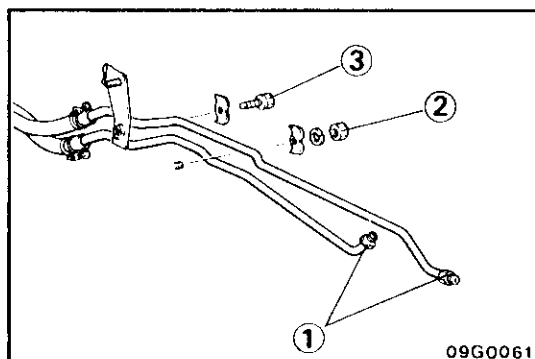
- (1) Reverse the removal procedures to reinstall.
- (2) ◆◆ : Refer to "Service Points of Installation".

## Pre-removal Operation

- Drainage of automatic transmission fluid (Refer to P.23-6.)

## Post-installation Operation

- Filling of automatic transmission fluid (Refer to P.23-6.)



## INSPECTION

- Check the hose and tube for crack, damage and clog.
- Check for rusted or clogged radiator oil cooler.

E23KCAA

## SERVICE POINTS OF INSTALLATION

E23KDAA

## 4. INSTALLATION OF OIL RETURN TUBE/3.OIL FEED TUBE/2.OIL COOLER TUBE CLAMP

- (1) Temporarily fasten tube flare nuts and clamps.

## Caution

Temporarily screw in flare nut by hand. If unable to screw in smoothly by hand, check tube direction or for deformed tube.

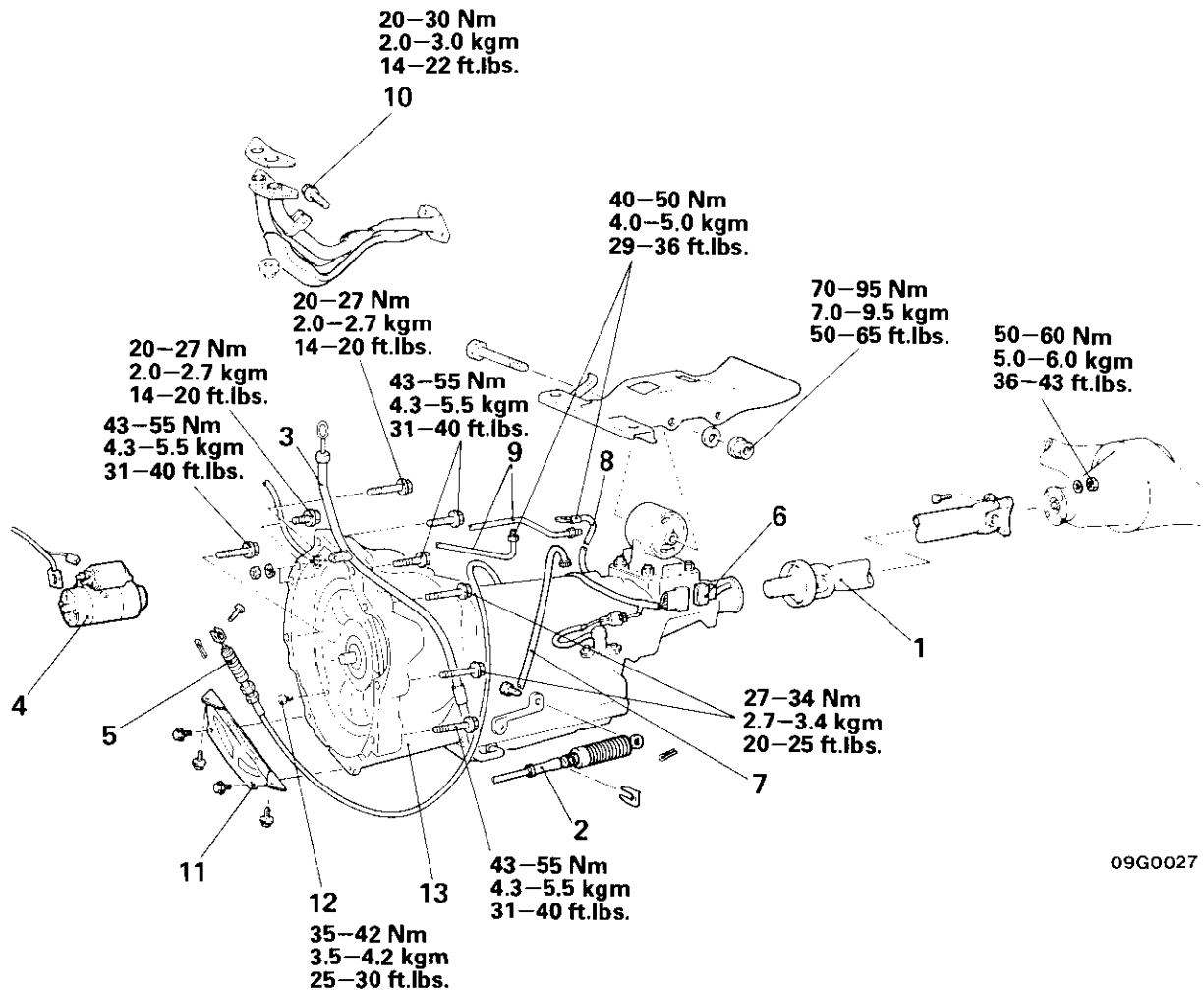
- (2) Tighten parts to specified torque in the order shown in the figure.

## TRANSMISSION ASSEMBLY

E23LA---

## REMOVAL AND INSTALLATION

&lt;Vehicles built up to May 1994&gt;



09G0027

## Removal steps

1. Propeller shaft
2. Shift control cable
3. Oil filler tube
4. Starter motor
5. Throttle cable
6. OD solenoid wiring harness
7. Speedometer cable
8. Earth cable
9. Oil cooler tube
10. Exhaust pipe clamping bolt
11. Bell housing cover
12. Torque converter installing bolt
13. Transmission assembly

## NOTE

- (1) Reverse the removal procedures to reinstall.
- (2) ♦♦ : Refer to "Service Points of Removal".
- (3) ♦♦♦ : Refer to "Service Points of Installation".

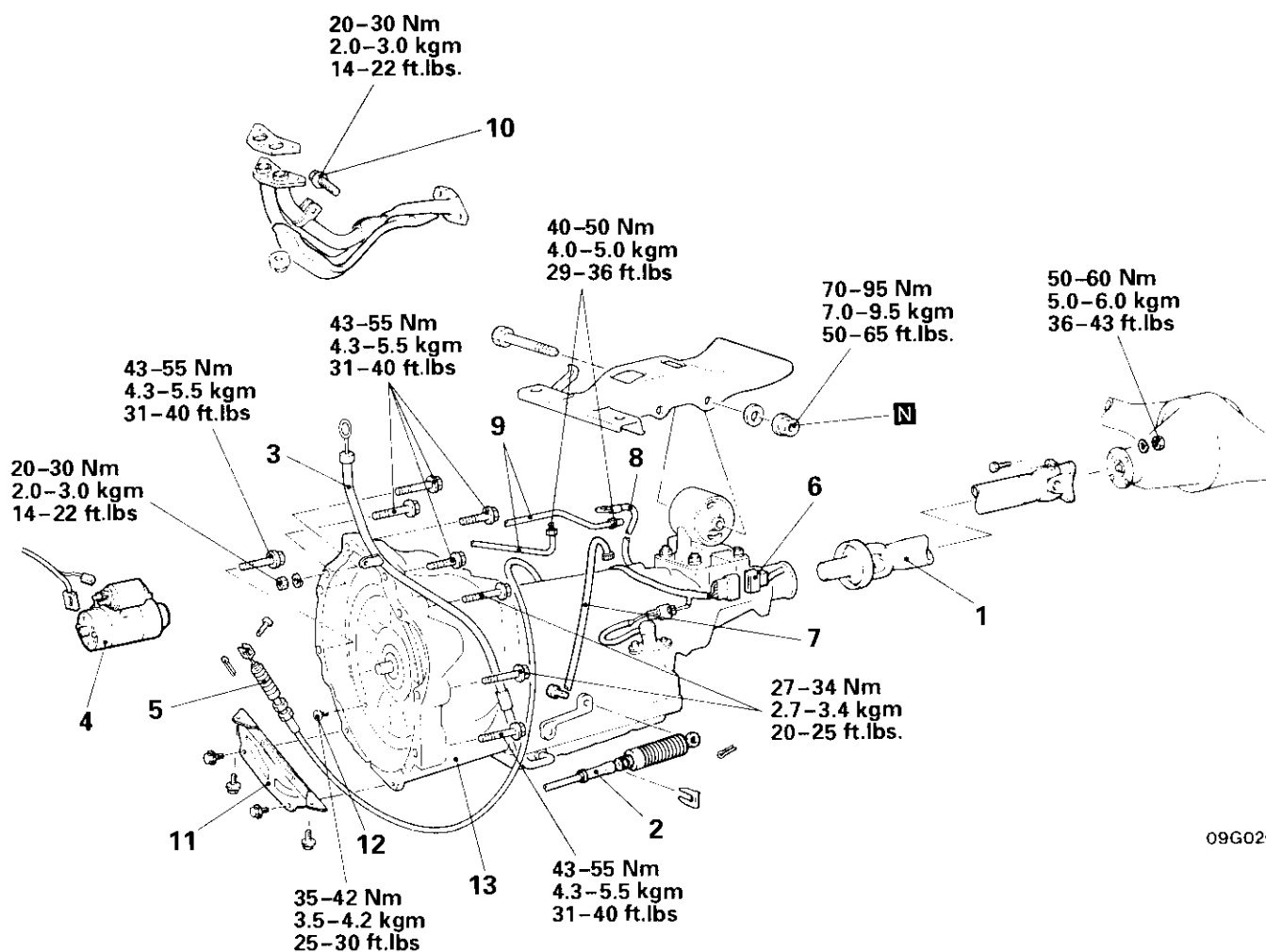
## Pre-removal Operation

- Drainage of automatic transmission fluid. (Refer to P.23-6.)

## Post-installation Operation

- Filling of automatic transmission fluid. (Refer to P.23-6.)
- Adjustment of throttle cable (Refer to P.23-6.)
- Adjustment of shift control cable (Refer to P.23-7.)
- Inspection of functions of each gauge

&lt;Vehicles built from June 1994&gt;



09G0201

**Removal steps**

1. Propeller shaft
2. Shift control cable
3. Oil filler tube
4. Starter motor
5. Throttle cable
6. OD solenoid wiring harness
7. Speedometer cable
8. Earth cable
9. Oil cooler tube
10. Exhaust pipe clamp bolt
11. Bell housing cover
12. Torque converter installing bolt
13. Transmission assembly

**NOTE**

- (1) Reverse the removal procedures to reinstall.
- (2) ♦♦: Refer to "Service Points of Removal".
- (3) ♦♦♦: Refer to "Service Points of Installation".
- (4) N: Non-reusable parts.

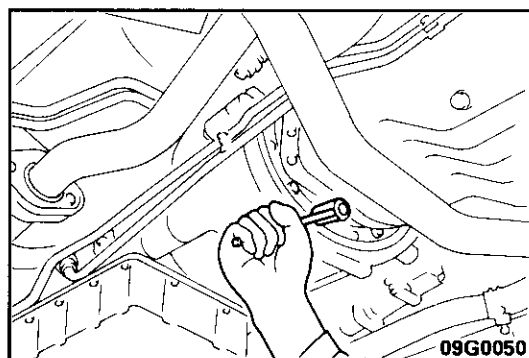
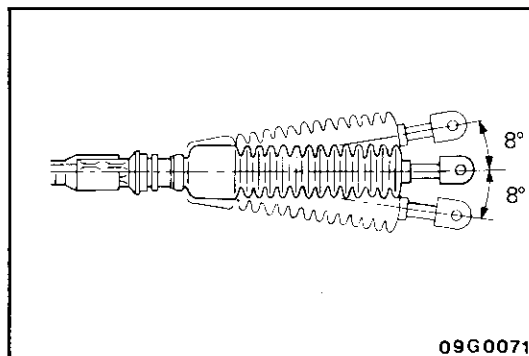
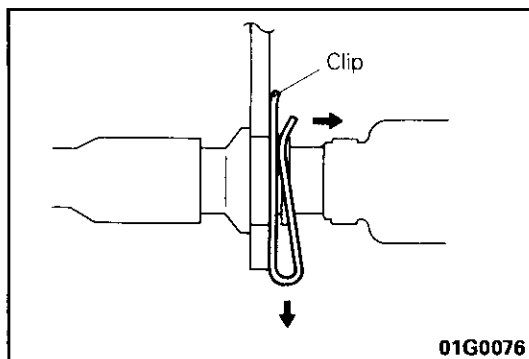
**Pre-removal Operation**

- Drainage of automatic transmission fluid.  
(Refer to P.23-6.)

**Post-installation Operation**

- Filling of automatic transmission fluid.  
(Refer to P.22–6)
- Adjustment of throttle cable  
(Refer to P.23-6.)
- Adjustment of shift control cable  
(Refer to P.23-7.)
- Inspection of functions of each gauge

NOTES



## SERVICE POINTS OF REMOVAL

E23LBAB

### 2. REMOVAL OF SHIFT CONTROL CABLE

- (1) Expand end and remove clip.

- (2) Be careful not to bend the part indicated by the arrow more than 8°.

### 12. REMOVAL OF TORQUE CONVERTER INSTALLING BOLT

Remove installing bolt (6) by turning flywheel.

### 13. REMOVAL OF TRANSMISSION ASSEMBLY

Move the transmission backward and separate from the engine.

#### Caution

Separate the torque converter not to be left on the flywheel.

## SERVICE POINTS OF INSTALLATION

E23LDAB

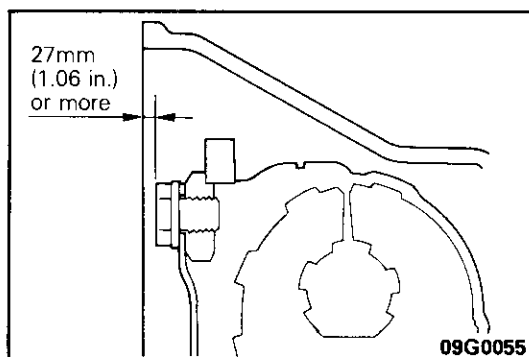
### 13. INSTALLATION OF TRANSMISSION ASSEMBLY

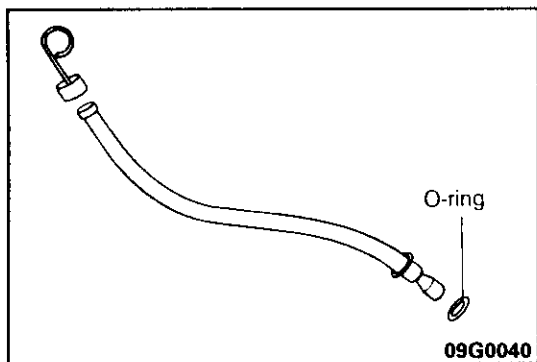
- (1) Before installing, check that torque converter is fully assembled in the transmission.

#### NOTE

Tighten torque converter installing bolt and confirm that the measurement is as shown in figure. If below the measurement, torque converter is not fully assembled in the transmission.

- (2) Temporarily tighten all the engine install bolts. Confirm that transmission is set correctly. Tighten to specified torque.





**3. INSTALLATION OF OIL FILLER TUBE**

Confirm that O ring is fully inserted. Install oil filler tube.

