MANUAL TRANSMISSION

CONTENTS

E22AA--

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

WARNING!

(1) Improper service or maintenance of any component of the SRS, or any SRS-related component, can lead to personal injury or death to service personnel (from inadvertent firing of the air bag) or to the driver and passenger (from rendering the SRS inoperative).

(2) Service or maintenance of any SRS component or SRS-related component must be performed only at an authorized MITSUBISHI dealer.

(3) MITSUBISHI dealer personnel must thoroughly review this manual, and especially its GROUP 52B – Supplemental Restraint System (SRS) before beginning any service or maintenance of any component of the SRS or any SRS-related component.

NOTE

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

SPECIFICATIONS

GENERAL SPECIFICATIONS

E22CA--

Items	Specifications
Model	F5M33
Applicable engine	6G72
Type	5-speed floor shift
Gear ratio	
1st	3.090
2nd	1.833
3rd	1.217
4th	0.888
5th	0.741
Reverse	3.166
Final reduction ratio	4.153
Speedometer gear ratio (driven/drive)	28/36

SERVICE SPECIFICATIONS

E22CB--

Items	Specifications
Standard value	
Length of front height sensor rod mm (in.)	269–270 (10.6–11.0)

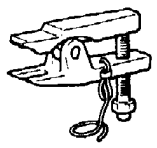
LUBRICANTS

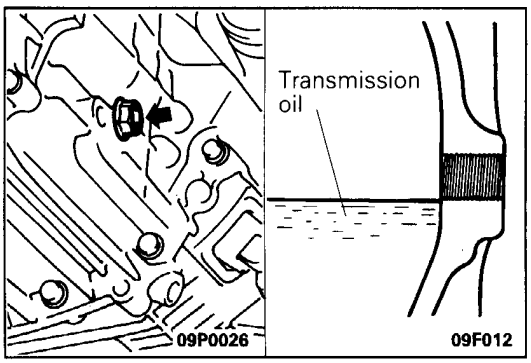
E22CD--

Items	Specified lubricant	Quantity lit. (U.S.qts., Imp.qts.)
Transmission oil	Hypoid gear oil, SAE 75W-90 or 75W-85W conforming to API classification GL-4	2.0 (2.1, 1.8)

SPECIAL TOOL

E22DA--

Tool	Number	Name	Use
	MB991113 or MB990635	Steering linkage puller	• Disconnection of the coupling of the knuckle and lower arm ball joint • Disconnection of the coupling of the knuckle and tie-rod end ball joint



SERVICE ADJUSTMENT PROCEDURES

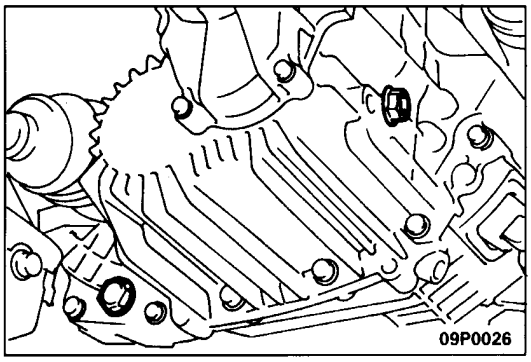
E22FDAO

OIL LEVEL CHECK

Inspect each component for evidence of leakage, and check the oil level by remaining the filler plug. If the oil is contaminated, it is necessary to replace it with new oil.

(1) Oil level should be at the lower portion of the filler plug hole.
(2) Check that the transmission oil is not noticeably dirty, and that it has a suitable viscosity.
(3) Tighten filler plug to specified torque.

Specified torque: 30–35 Nm (3.0–3.5 kgm, 22–25 ft.lbs)



CHANGING OIL

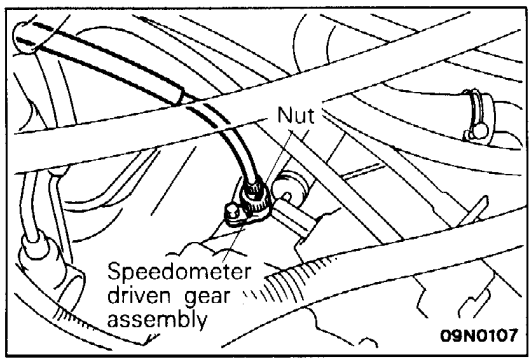
1. Remove transmission drain plug.
2. Drain oil.
3. Tighten drain plug to specified torque.

   Specified torque: 30–35 Nm (3.0–3.5 kgm, 22–25 ft.lbs)
4. Remove filler plug and fill with specified oil till the level comes to the lower portion of filler plug hole.

   Specified oil: Hypoid gear oil SAE 75W-85W conforming to API GL-4

   Quantity: 2.0 lit. (2.1 U.S.qts., 1.8 Imp.qts.)
5. Tighten filler plug to specified torque.

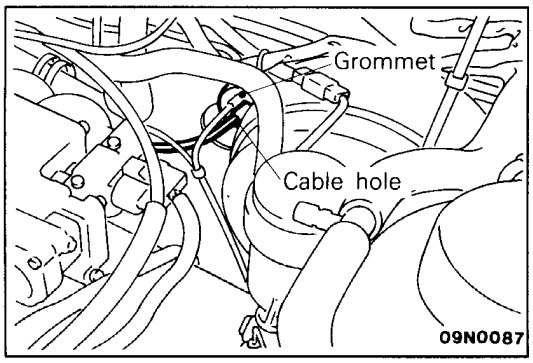
   Specified torque: 30–35 Nm (3.0–3.5 kgm, 22–25 ft.lbs)



SPEEDOMETER CABLE REPLACEMENT

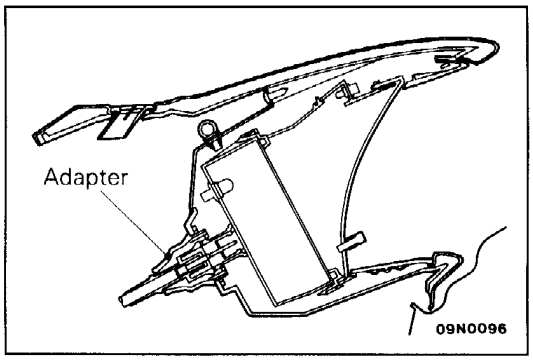
E22FCBH

1. Remove the combination meter and the adapter, and then disconnect the speedometer cable.
   (Refer to GROUP 54 – Meters and Gauges.)
2. Connect the new speedometer cable to the speedometer driven gear assembly of the transmission, and secure it with the nut.



3. Install the grommet so that the hole through which the cable goes, faces toward the center of the body, as shown in the figure.

Caution
1. The cable arrangement should be made so that the radius of cable bends is 150 mm (5.9 in.) or more.
2. The arrangement of the speedometer cable should be such that it does not interfere with brake tubes, etc.



4. Insert the adapter into the instrument panel, and fasten the new speedometer cable.

Caution
If the speedometer cable is not correctly and securely connected, it may cause incorrect indication by the speedometer, or abnormal noise. Be sure to connect it correctly.

5. After connecting the speedometer, pull the speedometer cable out from the engine compartment unitl the mark (white) on the calbe is fully out from the grommet, to ensure that there are no bends in the cable inside the instrument panel.

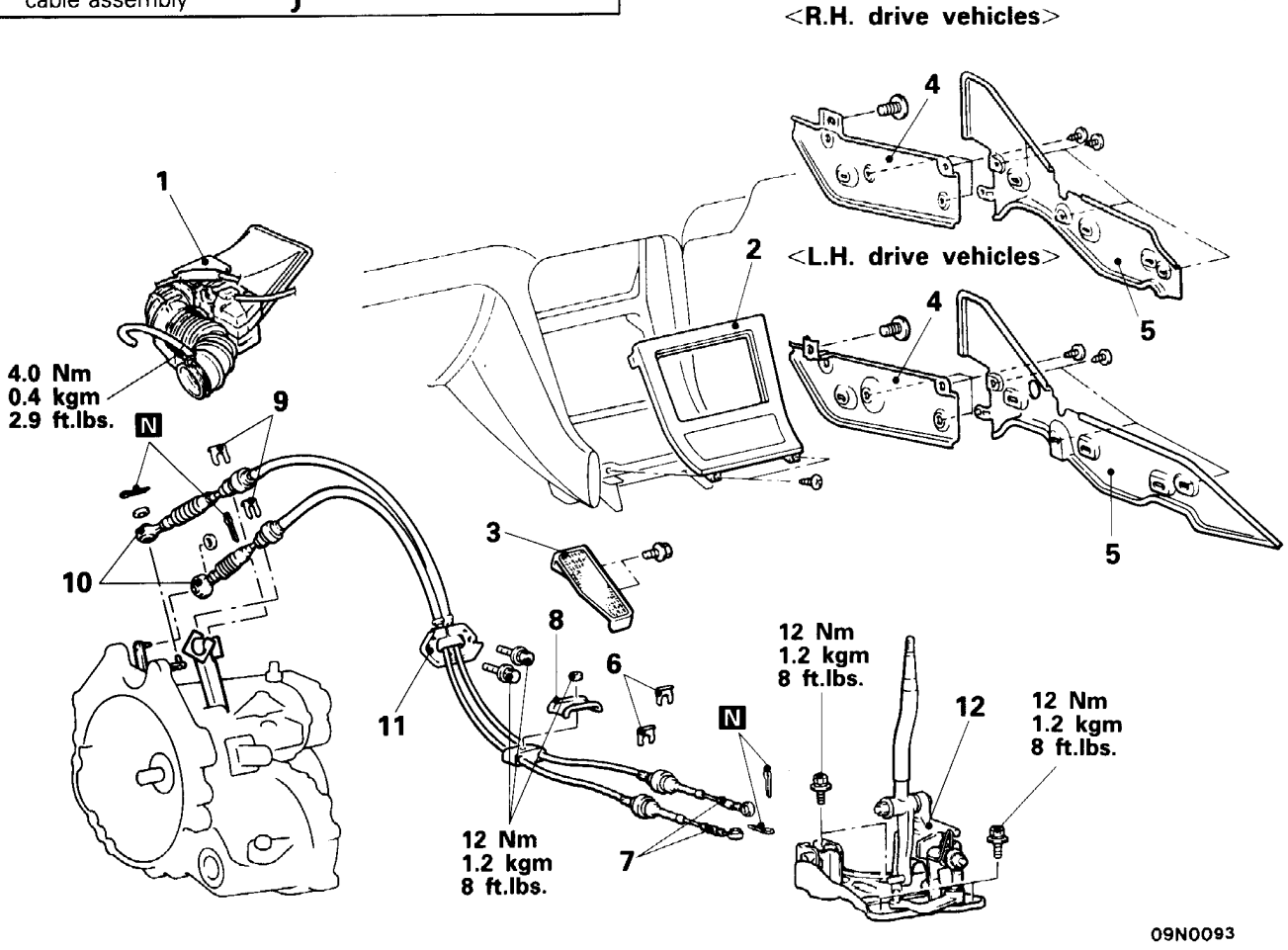
TRANSMISSION CONTROL

E22HA--

REMOVAL AND INSTALLATION

CAUTION: SRS
When removing and installing the following parts from vehicles equipped with SRS, do not let it bump against the SRS diagnostic unit or other components.
- Floor console assembly <L.H. drive vehicles>
- Shift lever assembly
- Transmission control cable assembly } <R.H. drive vehicles>

Pre-removal and Post-installation Operation
- Removal and Installation of Floor Console Assembly (Refer to GROUP 52 – Floor Console.)
- Removal and Installation of Passenger Side Under Cover and Foot Shower Duct <L.H. drive vehicles> (Refer to GROUP 55 – Ventilators.)

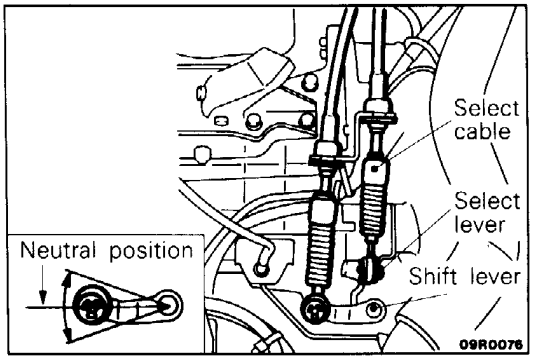


Removal steps of the transmission control cable assembly
1. Air cleaner cover, air intake hose
2. Audio panel
3. Foot rest <R.H. drive vehicles>
4. Front center reinforcement (right side)
5. Rear center reinforcement (right side)
6. Clip
7. ◆◆ Connection for transmission control cable assembly (shift lever side)
8. Retainer
9. Clip
10. Connection for transmission control cable assembly (transmission side)
11. Transmission control cable assembly

Removal steps of the shift lever assembly
1. Air cleaner cover, air intake hose
2. Audio panel
6. Clip
7. ◆◆ Connection for transmission control cable assembly (shift lever side)
12. Shift lever assembly

INSPECTION E22HCAJ

- Check the transmission control cable assembly for function and for damage.
- Check the boot for damage.
- Check each bushing for wear or abrasion, sticking, impeded action, and damage.

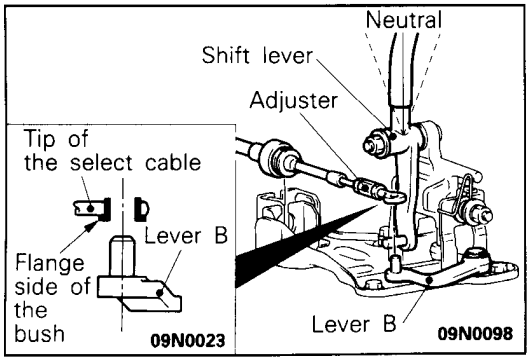


SERVICE POINTS OF INSTALLATION E22HDAM

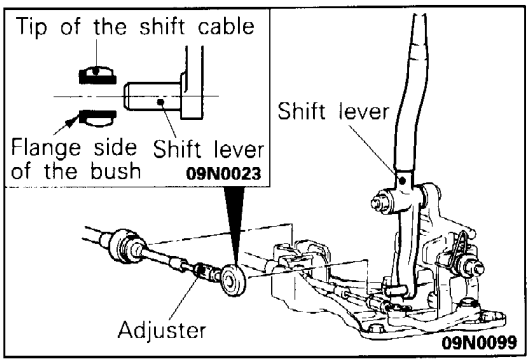
7. INSTALLATION OF TRANSMISSION CONTROL CABLE ASSEMBLY (SHIFT LEVER SIDE)

(1) Set the shift lever of the transmission side at the neutral position.

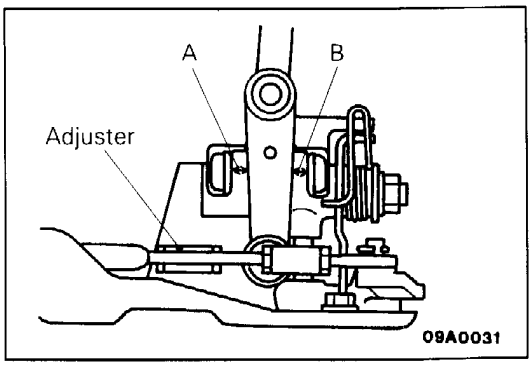
NOTE
When the shift lever of the transmission side is set at the neutral position, the select lever of the transmission side is also set at the neutral position.



(2) While leaving the shift lever inside at neutral, place the tip of the select cable in position, in relation to the lever B of the shift lever assembly, as shown in the figure by using the adjuster of the select cable.
(3) Install the select cable so that the flange side of resin bushing is positioned at the edge of lever B side.



(4) Adjust the tip of the shift cable to the position shown in the figure, in relation to the inside the shift lever, using the adjuster of the shift cable.
(5) Install the shift cable so that the flange side of resin bushing at the tip of shift cable is positioned at the split pin side.

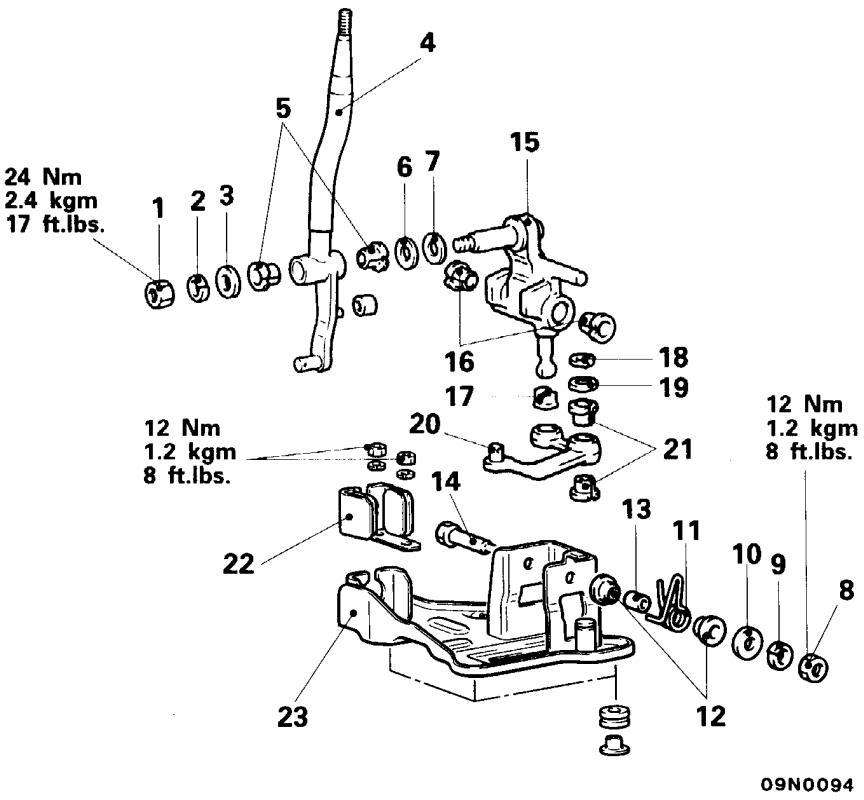


(6) Adjust the position of the shift cable so that the clearance of A and B in the figure will be equal.
(7) Put the shift lever to all the positions and make sure that the operation is smooth.

SHIFT LEVER ASSEMBLY

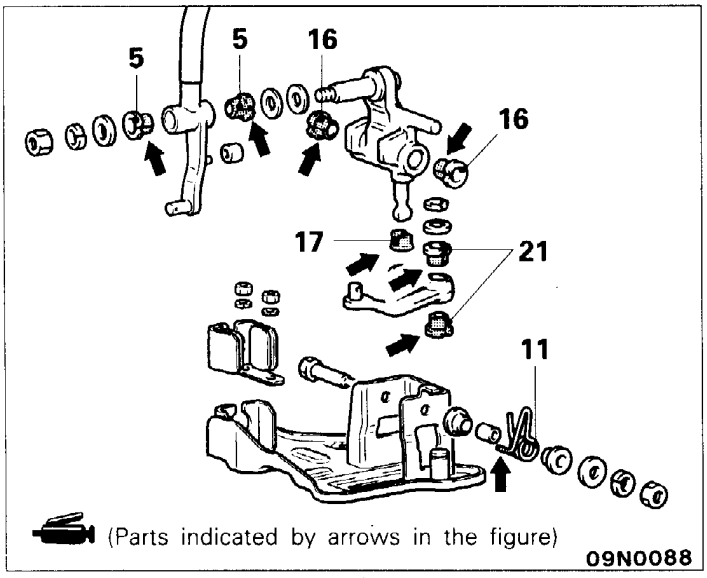
E22HE--

DISASSEMBLY AND REASSEMBLY



Disassembly steps

1. Nut
2. Spring washer
3. Plain washer
4. Shift lever
5. Bushing
6. Plain washer
7. Wave washer
8. Nut
9. Spring washer
10. Plain washer
11. Return spring
12. Bushing
13. Pipe
14. Bolt
15. Lever A
16. Bushing
17. Bushing
18. Snap ring
19. Washer
20. Lever B
21. Bushing
22. Cable bracket
23. Bracket assembly

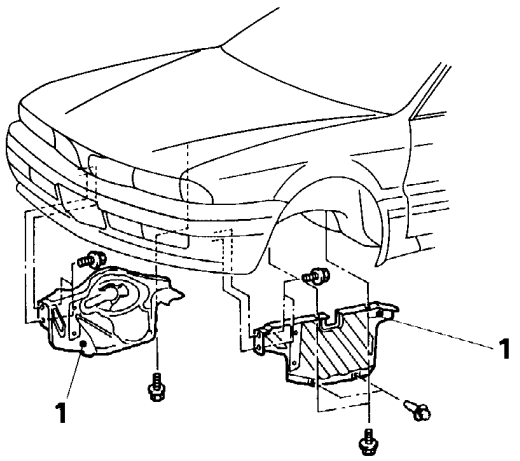


TRANSMISSION ASSEMBLY

E22JA--

REMOVAL AND INSTALLATION

Pre-removal Operation
(1) Drainage of Engine Coolant <SOHC> (Refer to GROUP 14 – Service Adjustment Procedures.)
(2) Drainage of Transmission Oil (Refer to P.22-3.)
(3) Removal of Front Under Cover <Vehicles Equipped with Front Under Cover>



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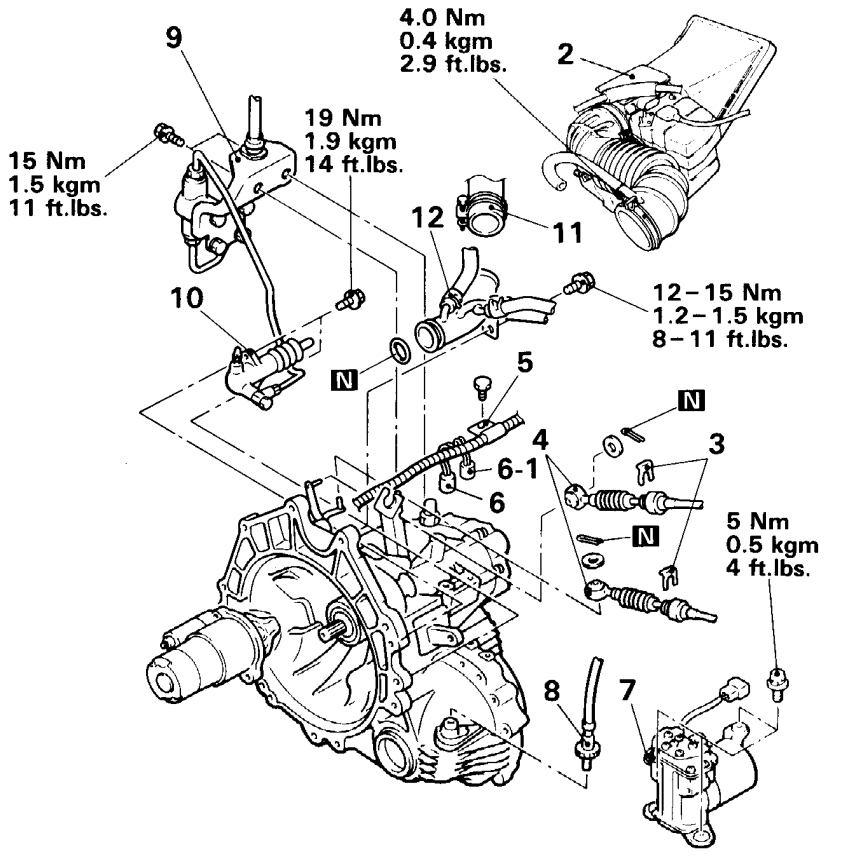

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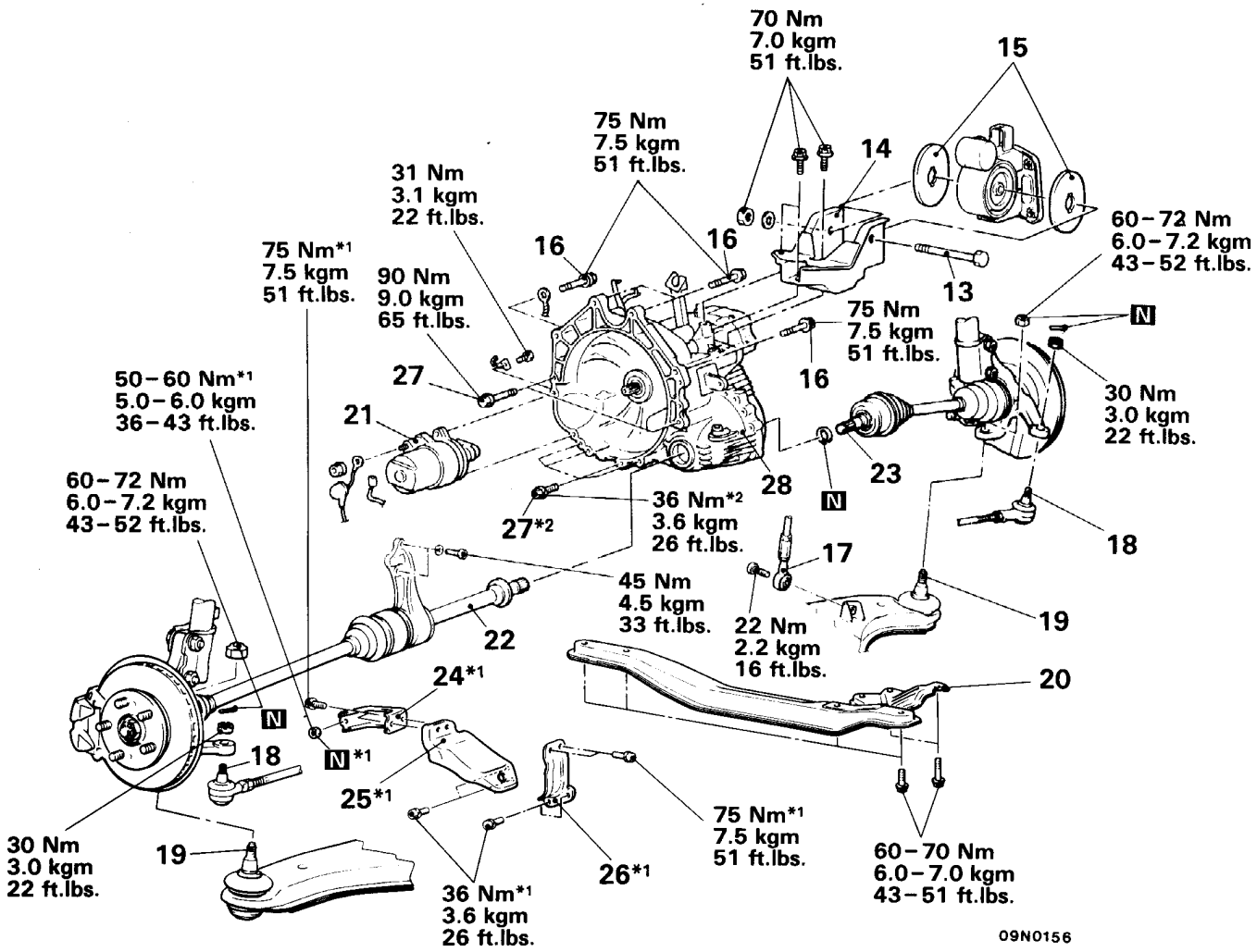
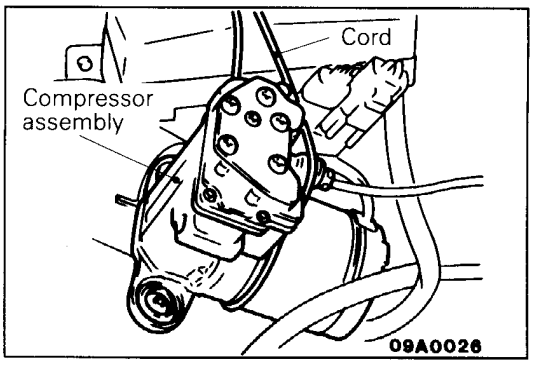
Removal steps
1. Side under cover
2. Air cleaner cover, air intake hose
3. Clip
4. Connection for transmission control cable (transmission side)
5. Engine harness connection
6. Backup lamp switch connector
6-1. First detection switch connector <Vehicles equipped with TCL>
◆◆ 7. Compressor assembly <Vehicles equipped with Active-ECS>
8. Speedometer cable connection
9. Connection for clutch oil line bracket
◆◆ 10. Connection for clutch release cylinder
11. Radiator lower hose connection <SOHC>
◆◆ 12. Connection for water inlet pipe B <SOHC>

Post-installation Operation
(1) Installation of Front Under Cover <Vehicles Equipped with Front Under Cover>
(2) Filling in Transmission Oil (Refer to P.22-3.)
(3) Filling in Engine Coolant <SOHC> (Refer to GROUP 14 – Service Adjustment Procedures.)
(4) Confirmation of Shift Lever Operation and of Its Proper Functioning at Each Shift Position
(5) Confirmation of Speedometer Function



◆◆ 13. Installation of transmission mount
14. Transmission mount bracket
◆◆ 15. Transmission mount stoppers
16. Transmission assembly upper joint bolt
◆◆ 17. Front height sensor rod <Vehicles equipped with Active-ECS>
◆◆ 18. Connection between tie rod end and knuckle
◆◆ 19. Connection lower arm ball joint and knuckle
20. Right member
21. Starter
◆◆ 22. Drive shaft (left side), inner shaft assembly
◆◆ ◆◆ 23. Drive shaft (right side)
24. Roll stopper stay A*1
25. Transmission stay (front bank)*1
26. Transmission stay (rear bank)*1
27. Bolts for transmission assembly lower joint
28. Transmission assembly

NOTE
*1 : DOHC built up to October, 1992 and SOHC
*2 : DOHC built from November, 1992



SERVICE POINTS OF REMOVAL E22JBCI

7. REMOVAL OF COMPRESSOR ASSEMBLY <VEHICLES EQUIPPED WITH ACTIVE-ECS>

Remove the compressor assembly from the bracket and fix it on the body side without disconnecting the air hose.

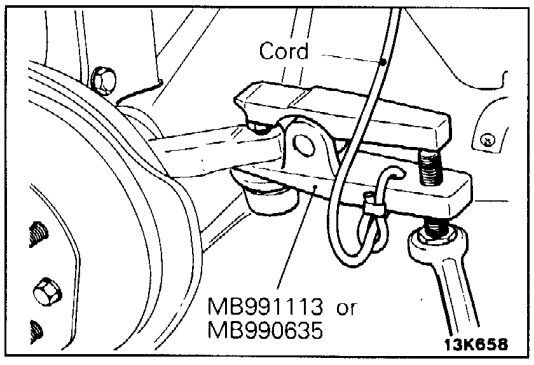
10. DISCONNECTION OF CLUTCH RELEASE CYLINDER FROM TRANSMISSION ASSEMBLY

Remove the clutch release cylinder and clutch oil line bracket installation bolt, and then secure at the body side without disconnecting the oil line coupling.

13. REMOVAL OF TRANSMISSION MOUNT

Jack up the transmission assembly to the point that would release a weight on the insulators, and remove the transmission mount insulator bolt.

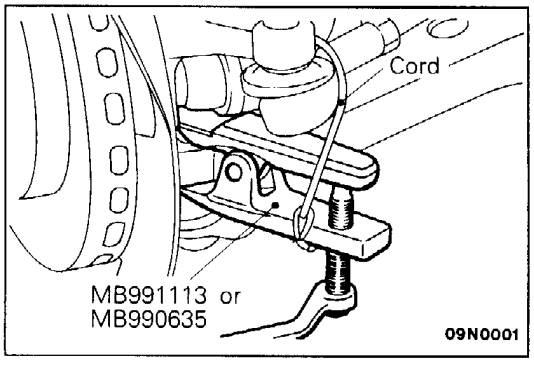
NOTE
For jacking up, be sure to support a large area of the transmission assembly, the transmission should not be supported at only one point.



18. REMOVAL OF JOINT OF TIE ROD END FROM THE KNUCKLE

Caution

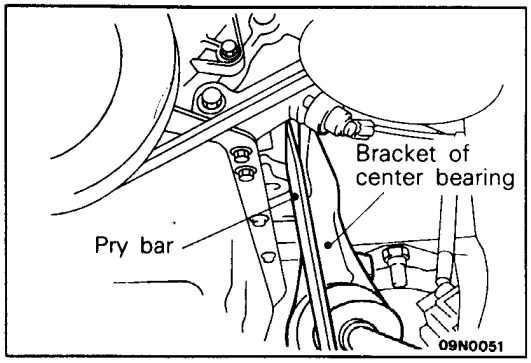
1. **Loosen the nut only, don't remove it from the tie rod end.**
2. **Fix the special tool at the strut, etc by a cord in order to avoid dropping it.**



19. REMOVAL OF LOWER ARM BALL JOINT FROM KNUCKLE

Caution

1. **Loosen the nut only, don't remove it from the knuckle.**
2. **Fix the special tool at the strut, etc by a cord in order to avoid dropping it.**



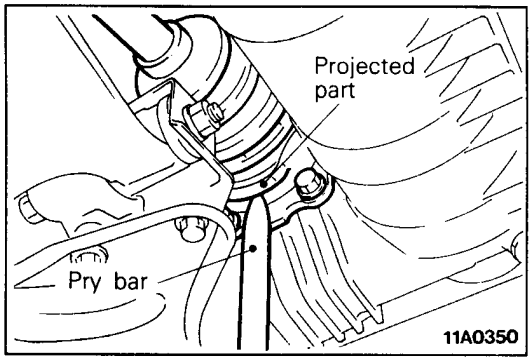
22. REMOVAL OF DRIVE SHAFT (LEFT SIDE) AND INNER SHAFT ASSEMBLY

(1) Remove the bolts fixing the center bearing bracket, and insert a pry bar between the center bearing bracket of the inner shaft assembly and the cylinder block to remove the center bearing bracket from the cylinder block.

(2) Pull out the left drive shaft and inner shaft assembly from the transmission assembly.

NOTE
The left drive shaft and inner shaft assembly must be pulled out as a whole, including hub and knuckle, etc.

(3) Do not sharply bend the left drive shaft and inner shaft assembly which have been pulled out. Fix them with a wire, etc.



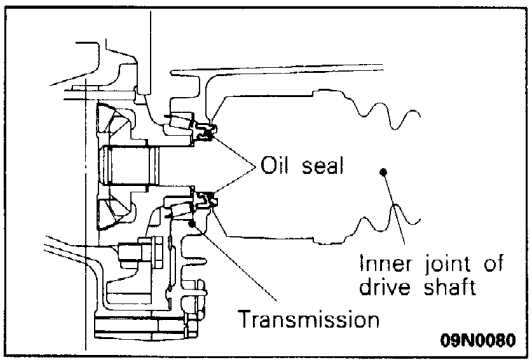
23. REMOVAL OF DRIVE SHAFT (RIGHT SIDE)

(1) Pull out the right drive shaft from the transmission assembly by inserting a pry bar at the projected part of the right drive shaft.

NOTE
The right drive shaft must be pulled out as a whole assembly, including hub and knuckle, etc.

(2) Do not sharply bend the joints of the right drive shaft which has been pulled out. Fix it with a wire, etc.

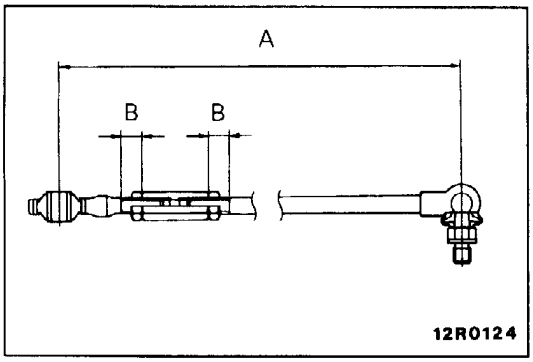
SERVICE POINTS OF INSTALLATION E22JDBG



23. INSTALLATION OF DRIVE SHAFT (RIGHT SIDE)

Insert the right drive shaft straight so that the shaft is not bend toward or against the transmission at the inner joint.

Caution
Do not damage the lip of oil seal of the transmission at the serration part of the right drive shaft.

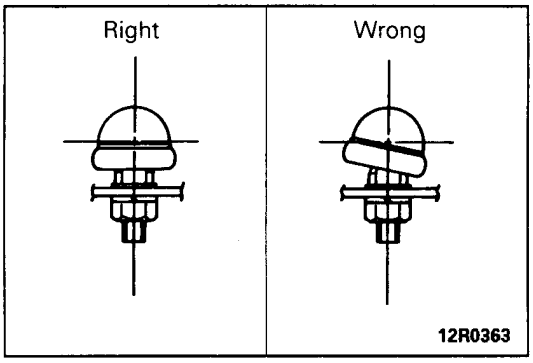


17. INSTALLATION OF FRONT HEIGHT SENSOR ROD<VEHICLES EQUIPPED WITH ACTIVE-ECS>

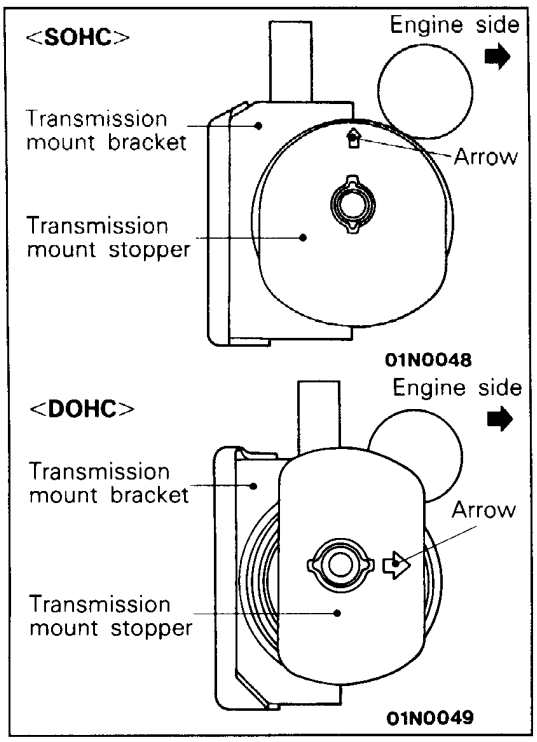
When install, adjust the length A should be adjusted to the standard value as shown in the figure.

Standard value (A): 269–270 mm (10.6–11.0 in.)

Caution
1. **When adjust the length of the front height sensor rod, be sure to keep the length of B (in the figure) equal.**

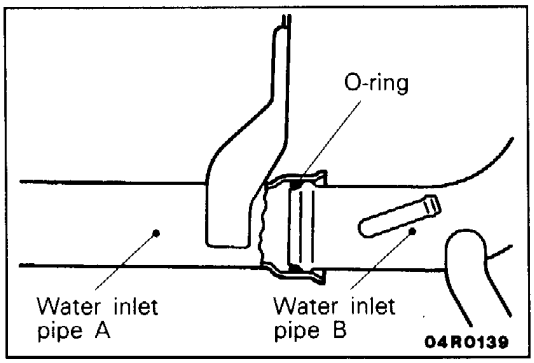


2. The ball joint at the tip of the front height sensor rod should be installed at the center (fulcrum).



15. INSTALLATION OF TRANSMISSION MOUNT STOPPER

The transmission mount stopper should be installed as shown in the figure.



12. INSTALLATION OF WATER INLET PIPE B <SOHC>

Insert water inlet pipe B into the O-ring, and apply water to the outer surface of the O-ring, then connect it with the water inlet pipe A.

Caution
Do not apply any kinds of oil, such as engine oil, on the O-ring.