

MANUAL TRANSMISSION

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Model	400	400	400	400	400	400
Transmission	400	400	400	400	400	400
Type	400	400	400	400	400	400
Gear ratio	400	400	400	400	400	400
1st	3.90	3.90	3.90	3.90	3.90	3.90
2nd	2.50	2.50	2.50	2.50	2.50	2.50
3rd	1.76	1.76	1.76	1.76	1.76	1.76
4th	1.28	1.28	1.28	1.28	1.28	1.28
5th	0.90	0.90	0.90	0.90	0.90	0.90
Reverse	3.50	3.50	3.50	3.50	3.50	3.50
Final gear ratio	4.11	4.11	4.11	4.11	4.11	4.11
Transfer gear ratio	1.00	1.00	1.00	1.00	1.00	1.00
Speedometer gear ratio	31.25	31.25	31.25	31.25	31.25	31.25

NOTE

* Vehicles with FBC
 * Vehicles with conventional camshaft
 * Vehicles with MPI

SPECIFICATIONS

GENERAL SPECIFICATIONS

VEHICLES FOR EUROPE

<Vehicles built up to May 1990>

Items	4G16	4G13* ¹	4G13* ² 4G15	4G61 4G67	4G37-4WD	4D65
Transmission model	F5M21 (KM201)	F4M21 (KM200)	F5M21 (KM201)	F5M22 (KM206)	W5M31	F5M22 (KM206)
Type	5-speed floor-shift	4-speed floor-shift	5-speed floor-shift	5-speed floor-shift	5-speed floor-shift	5-speed floor-shift
Gear ratio						
1st	3.363	3.363	3.363	3.083	3.038	3.363
2nd	1.947	1.947	1.947	1.947	1.684	1.947
3rd	1.285	1.285	1.285	1.285	1.115	1.285
4th	0.939	0.939	0.939	0.939	0.806	0.939
5th	0.777	—	0.777	0.777	0.651	0.756
Reverse	3.083	3.083	3.083	3.083	3.166	3.083
Final gear ratio	4.322	4.021	4.021	4.592	5.084	3.752
Transfer gear ratio	—	—	—	—	1.090	—
Speedometer gear ratio (driven/drive)	31/36	31/36	31/36	31/36	31/36	31/36

NOTE

*¹: C51VMFMCL6, C51AMFML6, C61ASFML6*²: Except C51VMFMCL6, C51AMFML6, C61ASFML6

Old model name is shown in ().

<Vehicles built from June 1990 up to May 1992>

Items	4G16 4G13	4G15* ²	4G15* ³	4G67	4G37-4WD	4D65
Transmission model	F5M21	F5M21	F5M21	F5M22	W5M31	F5M22
Type	5-speed floor-shift	5-speed floor-shift	5-speed floor-shift	5-speed floor-shift	5-speed floor-shift	5-speed floor-shift
Gear ratio						
1st	3.363	3.083	3.363	3.083	3.038	3.363
2nd	1.947	1.947	1.947	1.947	1.684	1.947
3rd	1.285	1.285	1.285	1.285	1.115	1.285
4th	0.939	0.939	0.939	0.939	0.806	0.939
5th	0.777	0.756	0.756	0.756	0.651	0.756
Reverse	3.083	3.083	3.083	3.083	3.166	3.083
Final gear ratio	4.322, 4.592* ¹	4.322	4.021	4.592	5.084	3.752
Transfer gear ratio	—	—	—	—	1.090	—
Speedometer gear ratio (driven/drive)	31/36	31/36	31/36	31/36	31/36	31/36

NOTE

*¹: Vehicles with FBC*²: Vehicles with conventional carburettor*³: Vehicles with MPI

<Vehicles built from June 1992>

Items	4G13	4G92	4G92-4WD	4G93	4D68
Transmission model	F5M21	F5M21	W5M31	F5M22	F5M22
Type	5-speed floor-shift	5-speed floor-shift	5-speed floor-shift	5-speed floor-shift	5-speed floor-shift
Gear ratio					
1st	3.363	3.083	3.038	3.083	3.363
2nd	1.947	1.947	1.684	1.947	1.947
3rd	1.285	1.285	1.115	1.285	1.285
4th	0.939	0.939	0.833	0.939	0.939
5th	0.777	0.756	0.651	0.777	0.756
Reverse	3.083	3.083	3.166	3.083	3.083
Final gear ratio	4.322	4.322	5.208	4.322	3.752
Transfer gear ratio	—	—	1.090	—	—
Speedometer gear ratio (driven/drive)	31/36	31/36	31/36	31/36	31/36

VEHICLES FOR GENERAL EXPORT AND AUSTRALIA

<Vehicles built up to May 1990>

Items	4G13*1	4G13*2 4G15	4G61	4D65	4D65 (TAXI)
Transmission model	F4M21 (KM200)	F5M21 (KM201)	F5M22 (KM206)	F5M21 (KM201)	F5M22 (KM206)
Type	4-speed floor-shift	5-speed floor-shift	5-speed floor-shift	5-speed floor-shift	5-speed floor-shift
Gear ratio					
1st	3.363	3.363	3.083	3.363	3.363
2nd	1.947	1.947	1.947	1.947	1.947
3rd	1.285	1.285	1.285	1.285	1.285
4th	0.939	0.939	0.939	0.939	0.939
5th	—	0.777	0.756	0.756	0.756
Reverse	3.083	3.083	3.083	3.083	3.083
Final gear ratio	4.021	4.322	4.592	3.752	3.752
Speedometer gear ratio (driven/drive)	31/36	31/36	31/36	31/36	31/36

NOTE

*1: C61ASFMLW

*2: Except C61ASFMLW

Old model name is shown in ().

<Vehicles built from June 1990 up to May 1992>

Items	4G13*1	4G13*2	4G15*3	4G15*4	4G61, 4G67	4D65
Transmission model	F4M21	F5M21	F5M21	F5M21	F5M22	F5M21, F5M22*5
Type	4-speed floor-shift	5-speed floor-shift	5-speed floor-shift	5-speed floor-shift	5-speed floor-shift	5-speed floor-shift
Gear ratio						
1st	3.363	3.363	3.083	3.363	3.038	3.363
2nd	1.947	1.947	1.947	1.947	1.947	1.947
3rd	1.285	1.285	1.285	1.285	1.285	1.285
4th	0.939	0.939	0.939	0.939	0.939	0.939
5th	—	0.777	0.756	0.777	0.756	0.756
Reverse	3.083	3.083	3.083	3.083	3.083	3.083
Final gear ratio	4.322	4.322	4.322	4.021	4.592	3.752, 4.021*5
Speedometer gear ratio (driven/drive)	31/36	31/36	31/36	31/36	31/36	31/36

NOTE

*1: C61ASFMLW

*2: Except C61ASFMLW

*3: Vehicles for General Export with MPI

*4: Except vehicles for General Export with MPI

*5: Taxi

<Vehicles built from June 1992>

Items	4G15	4G92*1
Transmission model	F5M21	F5M22
Type	5-speed floor-shift	5-speed floor-shift
Gear ratio		
1st	3.083	3.083
2nd	1.947	1.947
3rd	1.285	1.285
4th	0.939	0.939
5th	0.756	0.756
Reverse	3.083	3.083
Final gear ratio	4.322	4.021
Speedometer gear ratio (driven/drive)	31/36	31/36

NOTE

*1: Vehicles for Hong Kong and Australia

TORQUE SPECIFICATIONS

E22CC-

Items	Nm	kgm	ft.lbs.
Retainer to body	9.0 – 14	0.9 – 1.4	7 – 10
Shift lever assembly to body	9.0 – 14	0.9 – 1.4	7 – 10
Shift lever to lever (A)	19 – 28	1.9 – 2.8	13 – 20
Lever (A) to bracket assembly	19 – 28	1.9 – 2.8	13 – 20
Select cable and shift cable to transmission assembly	15 – 22	1.5 – 2.2	11 – 16
Clutch tube and clutch release cylinder to transmission assembly	15 – 22	1.5 – 2.2	11 – 16
Tie rod end to knuckle	15 – 34	1.5 – 3.4	11 – 25
Lower arm ball joint to knuckle	60 – 72	6.0 – 7.2	43 – 52
Transmission mount bracket to transmission assembly	60 – 80	6.0 – 8.0	43 – 58
Transmission mount bracket to body	90 – 110	9.0 – 11	65 – 79
Tension rod to transmission mount bracket	75 – 95	7.5 – 9.5	54 – 68
Tension rod to engine assembly	35 – 55	3.5 – 5.5	25 – 39
Bell housing installation bolt			
8 mm (0.31 in.) diameter bolt	12 – 15	1.2 – 1.5	9 – 11
6 mm (0.24 in.) diameter bolt	8 – 10	0.8 – 1.0	6 – 7
Starter motor to transmission	27 – 34	2.7 – 3.4	20 – 25
Filler plug	30 – 35	3.0 – 3.5	22 – 25
Drain plug	30 – 35	3.0 – 3.5	22 – 25
Transmission mounting bolt [12 mm (0.47 in.) diameter bolt]	43 – 55	4.3 – 5.5	31 – 39
Transmission mounting bolt [10 mm (0.39 in.) diameter bolt]	30 – 35	3.0 – 3.5	21 – 25
Transmission mounting bolt [8 mm (0.31 in.) diameter bolt]	10 – 12	1.0 – 1.2	7 – 8
Front roll stopper insulator nut	45 – 60	4.5 – 6.0	33 – 43
Rear roll stopper insulator nut	45 – 60	4.5 – 6.0	33 – 43
Tie rod end to knuckle	15 – 34	1.5 – 3.4	11 – 25
Lower arm ball joint to knuckle	60 – 72	6.0 – 7.2	43 – 52
Center member to body	60 – 80	6.0 – 8.0	43 – 58
Drive shaft center bearing to engine	36 – 46	3.6 – 4.6	26 – 33
Transfer assembly to transmission assembly	55 – 60	5.5 – 6.0	40 – 43
Front exhaust pipe to exhaust manifold	30 – 40	3.0 – 4.0	22 – 29
Front exhaust pipe clamp bolt	20 – 30	2.0 – 3.0	14 – 22

LUBRICANTS

E22CD..

Items	Specified lubricant	Quantity lit. (U.S.qts., Imp.qts.)
Manual transmission oil		
2WD	Hypoid gear oil SAE 75W-90* or 75W-85W conforming to API GL-4	F4M21 (KM200): 1.7 (1.8, 1.5) F5M21 (KM201), F5M22 (KM206): 1.8 (1.9, 1.6)
4WD	Hypoid gear oil SAE 75W-90* or 75W-85W conforming to API GL-4	2.2 (2.3, 1.9)
Transfer oil	Hypoid gear oil SAE 75W-90* or 75W-85W conforming to API GL-4	0.5 (0.53, 0.44)

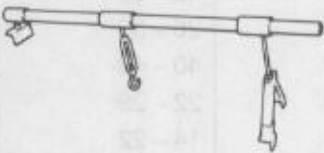
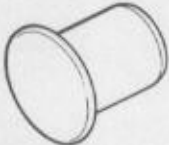
NOTE

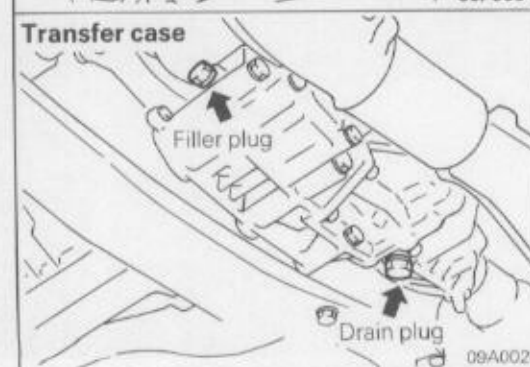
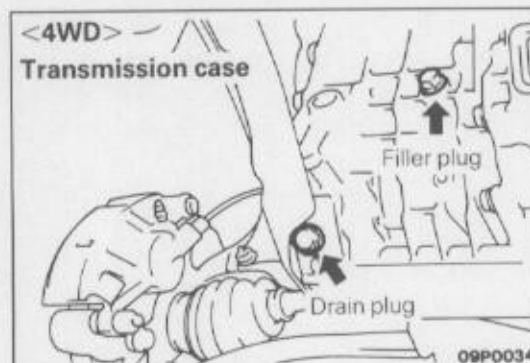
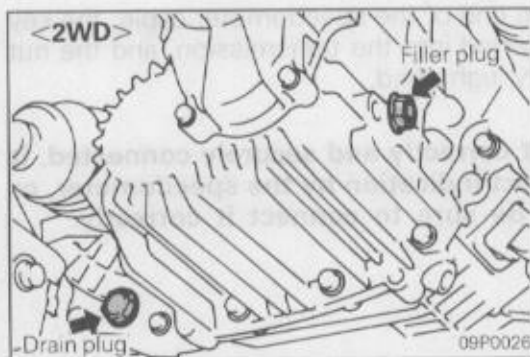
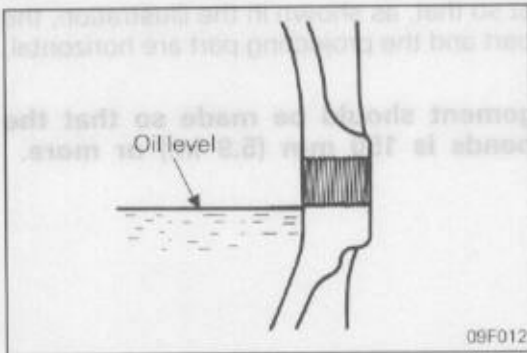
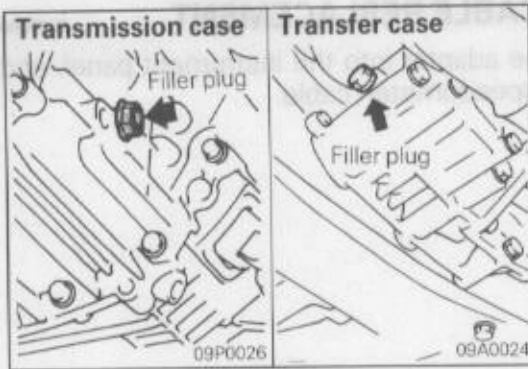
(1) Old transmission model name is shown in ().

(2) *: Vehicles for Europe

SPECIAL TOOLS

E22DA..

Tool	Number	Name	Use
	MB990784	Ornament remover	Removal of the switch panel
	MB991113 (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
	MB991191	Engine hanger	To support the engine assembly during removal and installation of the transmission
	MB991193	Plug	Preventing foreign substances from entering transmission and transfer



SERVICE ADJUSTMENT PROCEDURES

OIL LEVEL CHECK

Inspect each component for evidence of leakage, and check the oil level by removing 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.

CHANGING OIL

1. Remove transmission and transfer drain plug.
2. Drain oil.
3. Tighten drain plug to specified torque.
4. Remove filler plug and fill with specified oil till the level comes to the lower portion of filler plug hole.

Specified transmission oil:

<2WD>

Hypoid gear oil SAE 75W-90* or 75W-85W conforming to API GL-4

<4WD>

Hypoid gear oil SAE 75W-90* or 75W-85W conforming to API GL-4

NOTE

*: Vehicles for Europe

Quantity:

<2WD>

F4M21 (KM200) 1.7 lit. (1.8 U.S.qts., 1.5 Imp.qts.)

F5M21 (KM201), F5M22 (KM206)

1.8 lit. (1.9 U.S.qts., 1.6 Imp.qts.)

<4WD>

Transmission case

2.2 lit. (2.3 U.S.qts., 1.9 Imp.qts.)

Transfer case

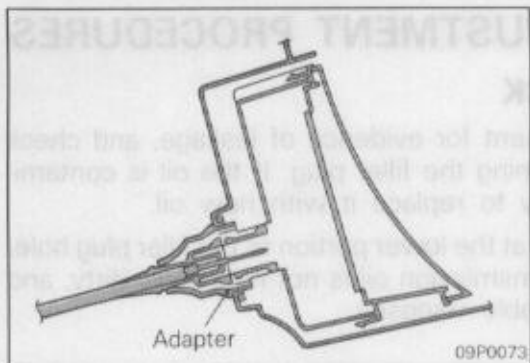
0.5 lit. (0.53 U.S.qts., 0.44 Imp.qts.)

5. Tighten filler plug to specified torque.

SPEEDOMETER CABLE REPLACEMENT

E22FCBD

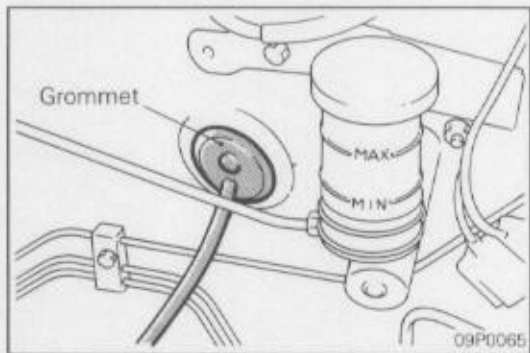
1. Correctly insert the adapter into the instrument panel, and fasten the new speedometer cable.



2. Install the grommet so that, as shown in the illustration, the cable attachment part and the projecting part are horizontal.

Caution

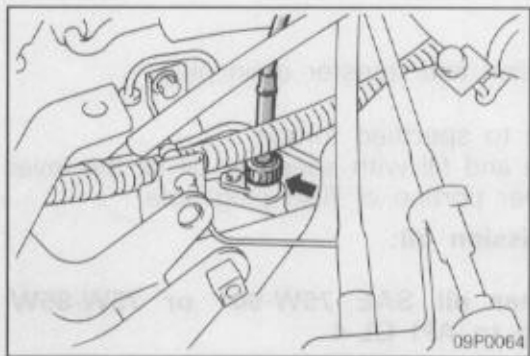
The cable arrangement should be made so that the radius of cable bends is 150 mm (5.9 in.) or more.



3. At the transmission end of the speedometer cable, the key joint should be inserted into the transmission, and the nut should be securely tightened.

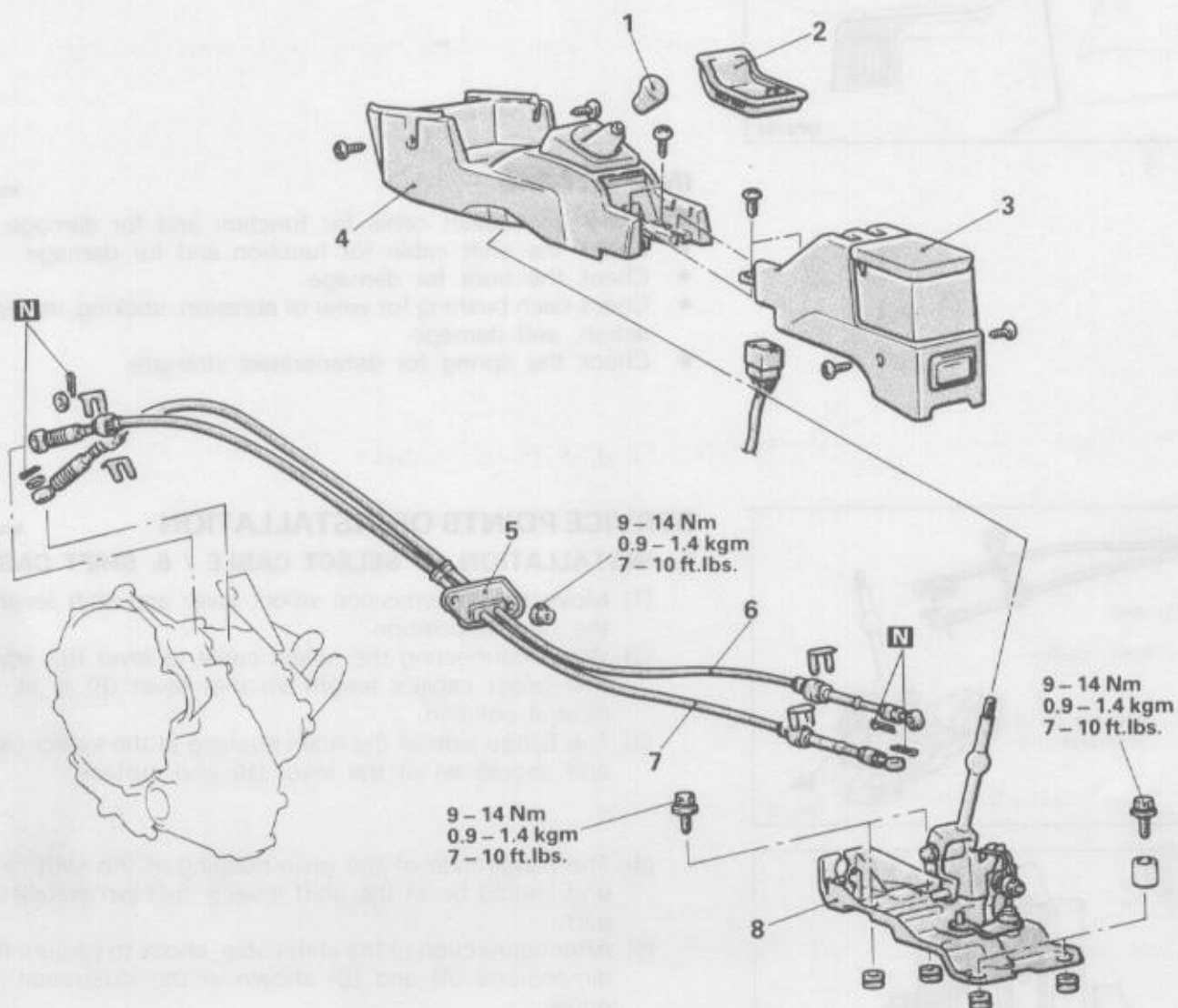
Caution

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



TRANSMISSION CONTROL REMOVAL AND INSTALLATION

E22HA-



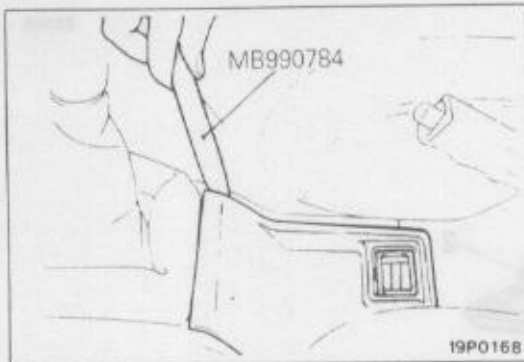
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Removal steps

- 1. Shift lever knob
- 2. Floor console tray
- 3. Rear floor console assembly
- 4. Front floor console assembly
- 5. Retainer
- 6. Shift cable
- 7. Select cable
- 8. Shift lever 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.

**SERVICE POINT OF REMOVAL**

E22HBBB

2. REMOVAL OF FLOOR CONSOLE TRAY

Using the special tool, remove the floor console tray from the floor console.

INSPECTION

E22HCAI

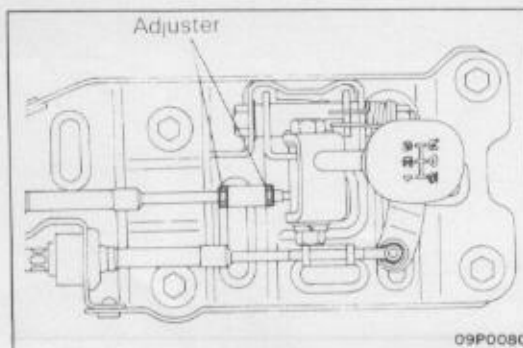
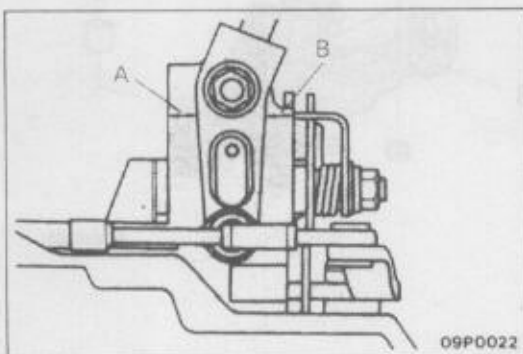
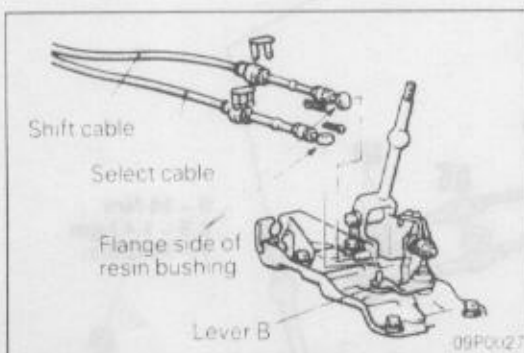
- Check the select cable for function and for damage.
- Check the shift cable for function and for damage.
- Check the boot for damage.
- Check each bushing for wear or abrasion, sticking, impeded action, and damage.
- Check the spring for deteriorated strength.

SERVICE POINTS OF INSTALLATION

E22HDAI

7. INSTALLATION OF SELECT CABLE / 6. SHIFT CABLE

- (1) Move the transmission select lever and shift lever to the neutral position.
- (2) When connecting the select cable to lever (B), adjust the select cable's length so that lever (B) is at the neutral position.
- (3) The flange side of the resin bushing at the select cable end should be at the lever (B) end surface.
- (4) The flange side of the resin bushing at the shift cable end should be at the shift lever's split pin installation part.
- (5) After connection of the shift cable, check to be sure that dimensions (A) and (B) shown in the illustration are equal.
- (6) If dimensions (A) and (B) shown in the illustration are not equal, use the shift cable's adjuster to make the necessary adjustment.
- (7) Move the shift lever to each position and check that the shifting is smooth.



SHIFT LEVER ASSEMBLY

DISASSEMBLY AND REASSEMBLY

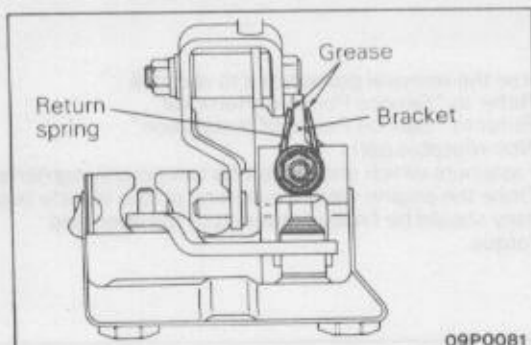
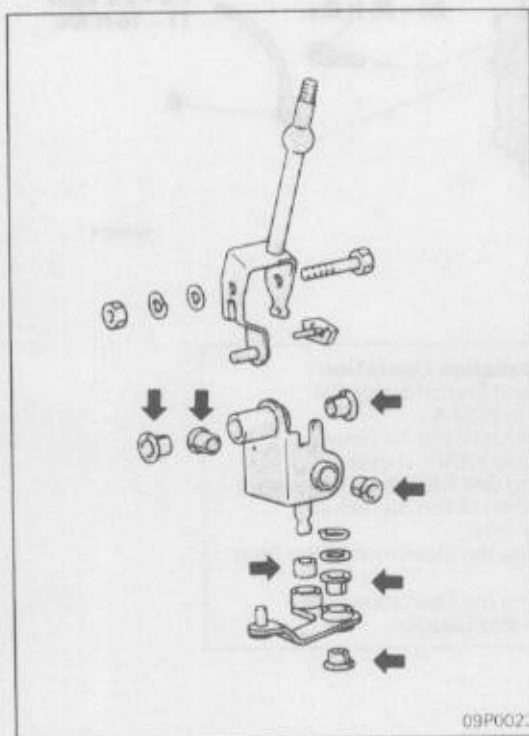
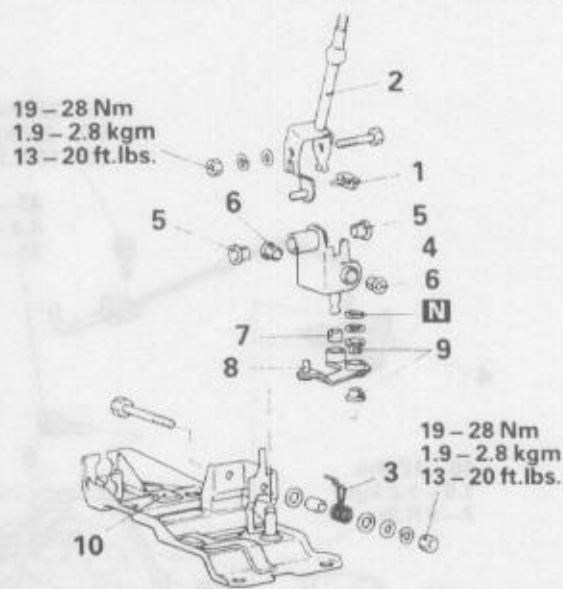
E22HE

Disassembly steps

1. Stopper
2. Shift lever
- ◆◆ 3. Return spring
4. Lever (A)
- ◆◆ 5. Bushing
- ◆◆ 6. Bushing
- ◆◆ 7. Bushing
8. Lever (B)
- ◆◆ 9. Bushing
10. Bracket assembly

NOTE

- (1) Reverse the disassembly procedures to reassemble.
- (2) ◆◆ Refer to "Service Points of Reassembly".
- (3) **N**: Non-reusable parts



SERVICE POINTS OF REASSEMBLY

E22HFAB

9. 7. 6. 5. APPLICATION OF GREASE TO BUSHINGS

Apply multi-purpose grease to the sliding part of the bushings shown in the illustration.

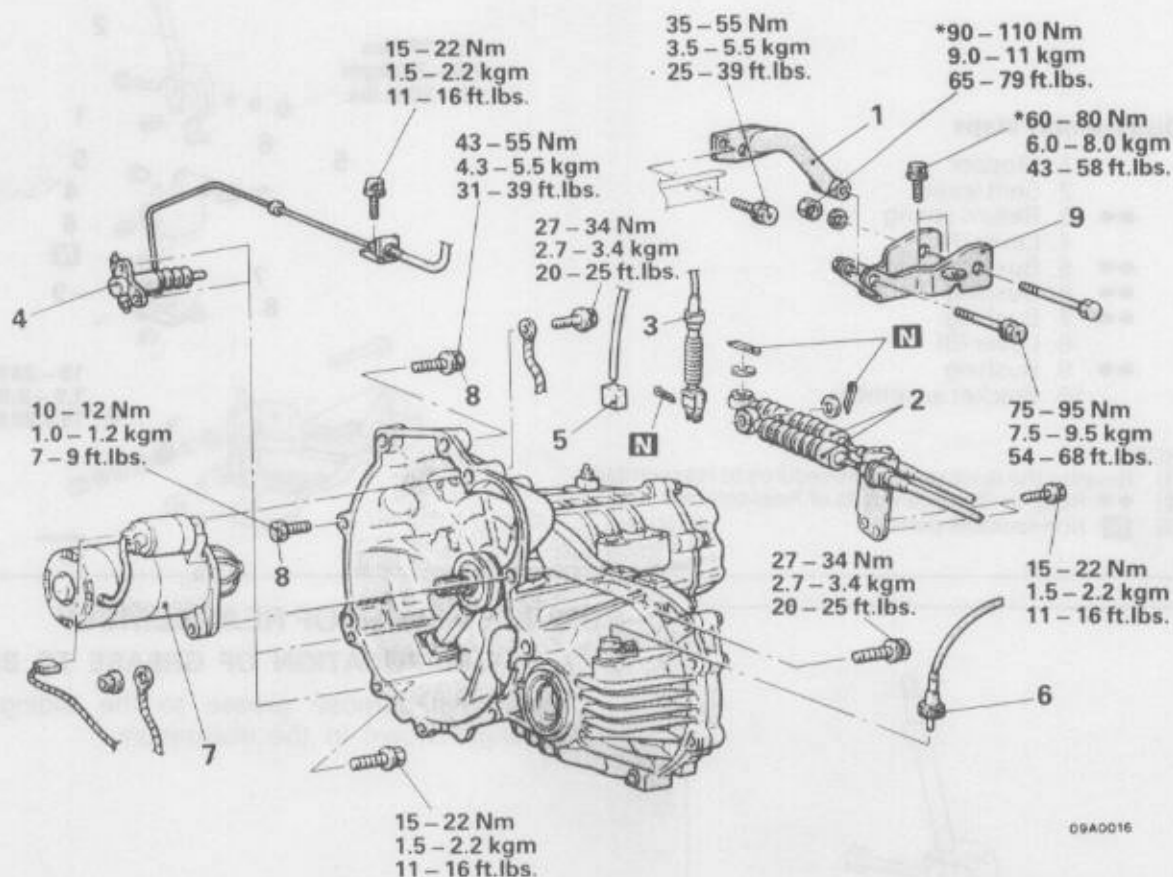
3. INSTALLATION OF RETURN SPRING

Apply multi-purpose grease to the part (shown in the illustration) of the return spring, and be sure that the end of the spring contacts the part (shown in the illustration) of the bracket.

TRANSMISSION ASSEMBLY

REMOVAL AND INSTALLATION

E22JA



09A0016

Pre-removal Operation

- Draining Transmission Oil (Refer to P.22-4.)
- Removal of the Battery and Battery Tray
- Removal of the Air Cleaner Assembly <MPI, diesel> (Refer to GROUP 15 – Air Cleaner.)

Post-installation Operation

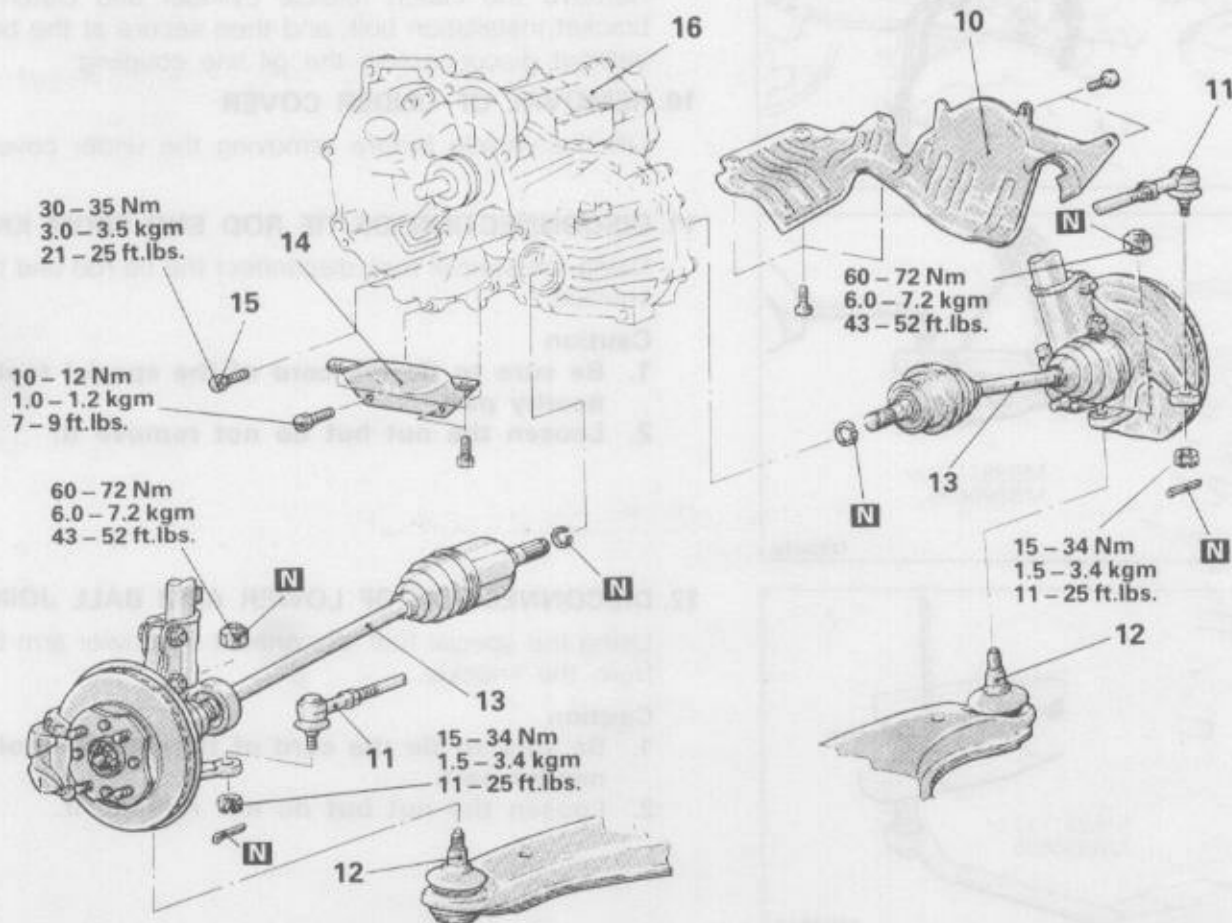
- Supplying Transmission Oil (Refer to P.22-4.)
- Installation of the Air Cleaner Assembly <MPI, diesel> (Refer to GROUP 15 – Air Cleaner.)
- Installation of the Battery and Battery Tray
- Checking the Operation of the Shift Lever
- Checking the Operation of the Meters and Gauges

Removal steps

1. Tension rod
2. Control cable connection
3. Clutch cable connection <cable control type>
- ♦♦ 4. Clutch release cylinder connection <hydraulic control type>
5. Backup lamp switch connector connection
6. Speedometer cable connection
- ♦♦ 7. Starter motor
8. Transmission assembly upper connecting bolt
9. Transmission mounting bracket

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
- (5) * Fasteners which should first be temporarily tightened. Once the engine weight is resting on the vehicle body, they should be finally tightened to the specified torque.

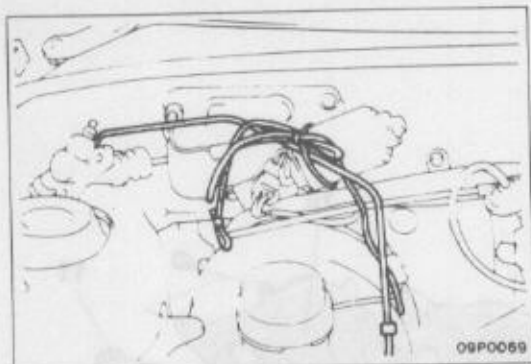


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- ◆◆ 10. Under cover
- ◆◆ 11. Tie rod end connection
- ◆◆ 12. Lower arm ball joint connection
- ◆◆ ◆◆ 13. Drive shaft connection
- ◆◆ 14. Bell housing cover
- ◆◆ 15. Transmission assembly lower connecting bolt
- ◆◆ 16. Transmission assembly

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



SERVICE POINTS OF REMOVAL

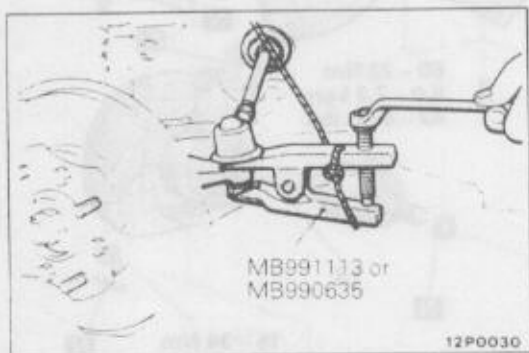
E22JBCF

4. DISCONNECTION OF CLUTCH RELEASE CYLINDER FROM TRANSMISSION ASSEMBLY <HYDRAULIC TYPE CLUTCH>

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.

10. REMOVAL OF UNDER COVER

Lift the vehicle before removing the under cover.

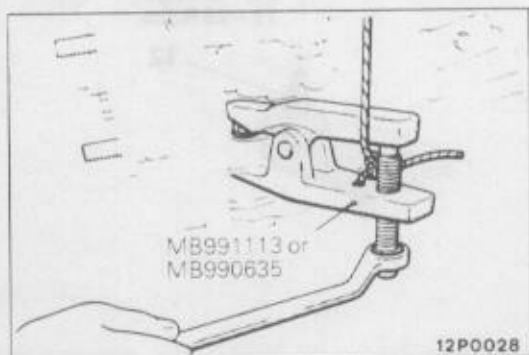


11. DISCONNECTION OF TIE ROD END FROM KNUCKLE

Using the special tool, disconnect the tie rod end from the knuckle.

Caution

1. Be sure to tie the cord of the special tool to the nearby part.
2. Loosen the nut but do not remove it.

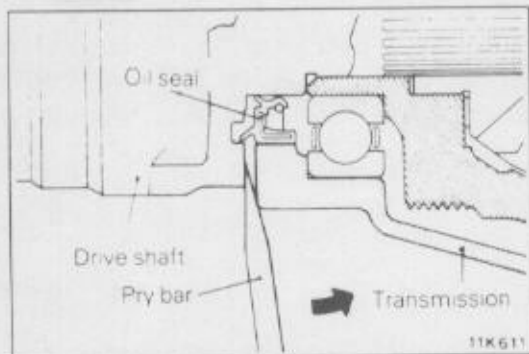


12. DISCONNECTION OF LOWER ARM BALL JOINT

Using the special tool, disconnect the lower arm ball joint from the knuckle.

Caution

1. Be sure to tie the cord of the special tool to the nearby part.
2. Loosen the nut but do not remove it.



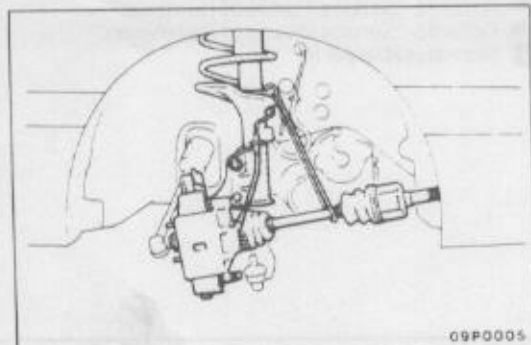
13. DISCONNECTION OF DRIVE SHAFT

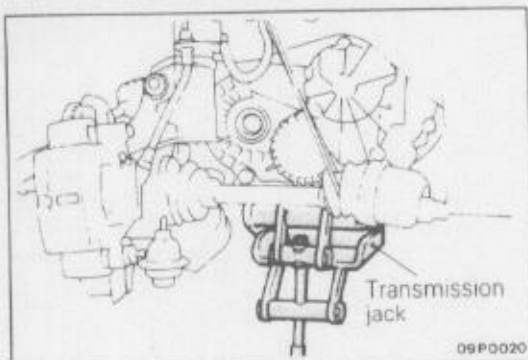
- (1) Insert a pry bar between the transmission case and the drive shaft, and then pry the drive shaft from the transmission.

Caution

1. Do not pull on the drive shaft; doing so will damage the inboard joint; be sure to use the pry bar.
2. Do not insert the pry bar so deep as to damaged the oil seal.

- (2) Keep the removed drive shaft as far away from the transmission case as possible, and secure (by using rope, etc.) the joints to the body so that it does not fall.



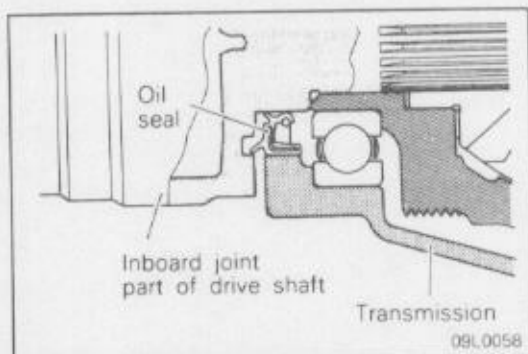


16. REMOVAL OF TRANSMISSION ASSEMBLY

Support the transmission assembly by using a transmission jack; then, after moving the transmission assembly to the right, lower it.

NOTE

When supporting the transmission assembly by the transmission jack, take care to be sure that the jack's force is applied to a wide area, not to only a small localized area.



SERVICE POINTS OF INSTALLATION

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13. INSTALLATION OF DRIVE SHAFT

- (1) Provisionally install the drive shaft so that the inboard joint part of the drive shaft is straight, and not bent relative to the transmission.

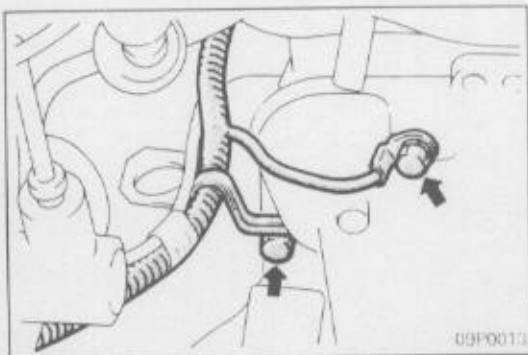
Caution

Care must be taken to ensure that the oil seal lip part of the transmission is not damaged by the serrated part of the drive shaft.

- (2) Align the serrations and securely insert the drive shaft into the transmission.

7. INSTALLATION OF STARTER MOTOR

Tighten with the lower starter installation the wiring harness clip bolt.



16. REMOVAL OF TRANSMISSION ASSEMBLY

Support the transmission assembly by using a transmission jack. Then, after raising the transmission assembly to the lift, lower it.

NOTE

When supporting the transmission assembly by the transmission jack, take care to be sure that the jack is placed on a wide area and is only a small distance from the ground.



SERVICE POINTS OF INSTALLATION

17. INSTALLATION OF DRIVE SHAFT

(1) Properly install the drive shaft so that the output end of the drive shaft is straight and not bent relative to the transmission.

Caution

Take care to ensure that the oil seal lip part of the transmission is not damaged by the output end of the drive shaft.

(2) After the seal lip and seal lip lip are installed, the oil seal lip should be checked.

18. INSTALLATION OF STARTER MOTOR

Install the starter motor on the engine block and connect the wiring to the battery.

