

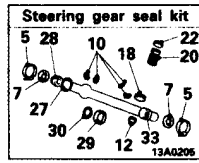
Indicates the group number. Indicates the page number. Indicates the group title. Indicates the section title.

This information is applicable for vehicles destined for Europe. This information is also applicable to vehicles (with specifications for Europe) that are shipped to General Export destinations.

37-24 STEERING – Power Steering Gear Box
POWER STEERING GEAR BOX <VEHICLES FOR EUROPE>

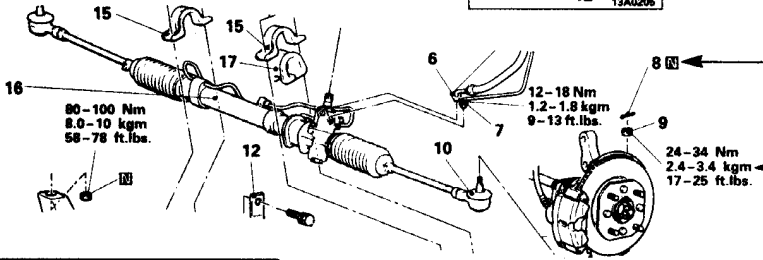
REMOVAL AND INSTALLATION

Pre-removal Operation
 • Draining of the Power Steering Fluid
 • Removal of the Air Cleaner <Vehicles with a Carburettor>



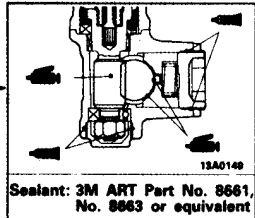
Repair kit or set parts are shown. (Only very frequently used parts are shown.)

<2WD>



Denotes non-reusable part.

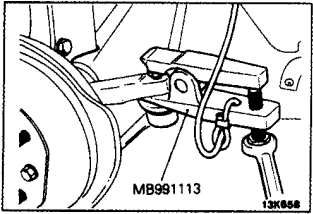
Denotes tightening torque.



Sealant: 3M ART Part No. 8661, No. 8663 or equivalent

- Removal steps**
1. Dust cover mounting bolts
 5. Connection for joint assembly and gear box
 6. Flare nut of return hose
 7. Flare nut of pressure hose assembly
 8. Split pins
 9. Tie-rod end and knuckle connecting nuts
 10. Tie-rod end ball joints
 11. Crossmember support bracket

Operating procedures, cautions, etc. on removal, installation, disassembly and reassembly are described.



SERVICE POINTS OF REMOVAL
5. DISCONNECTION OF JOINT ASSEMBLY AND GEAR BOX

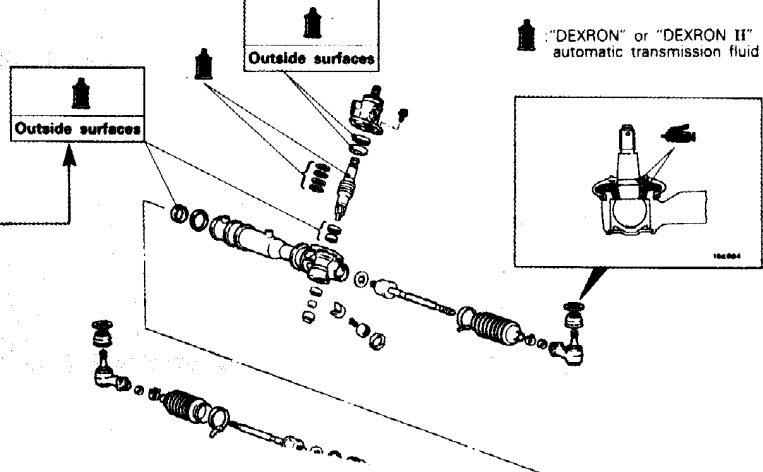
Before disconnecting the joint assembly from the gear box, loosen the steering column assembly mounting bolts.

10. REMOVAL OF TIE-ROD END BALL JOINTS
Caution
 To prevent the special tool from jumping out, secure it by cord to a nearby part.

This number corresponds to the number appearing in "Removal steps", "Disassembly steps", "Installation steps" or "Reassembly steps".

37-28 STEERING – Power Steering Gear Box

LUBRICATION AND SEALING POINTS



The title of the page (following the page on which the diagram of component parts is presented) indicating the locations of lubrication and sealing procedures.

SUPPLEMENTAL RESTRAINT SYSTEM (SRS)-AIR BAG

E01GA-A

The explanation below is for the vehicles without air bag in the passenger's side. As for the vehicles with air bag in the passenger's side, refer to the GROUP52B – General Information, SRS Service Precautions.

GENERAL INFORMATION

The Supplemental Restraint System (SRS) is designed to supplement the driver's seat belt to help reduce the risk or severity of injury to the driver by activating and deploying an air bag in certain frontal collisions.

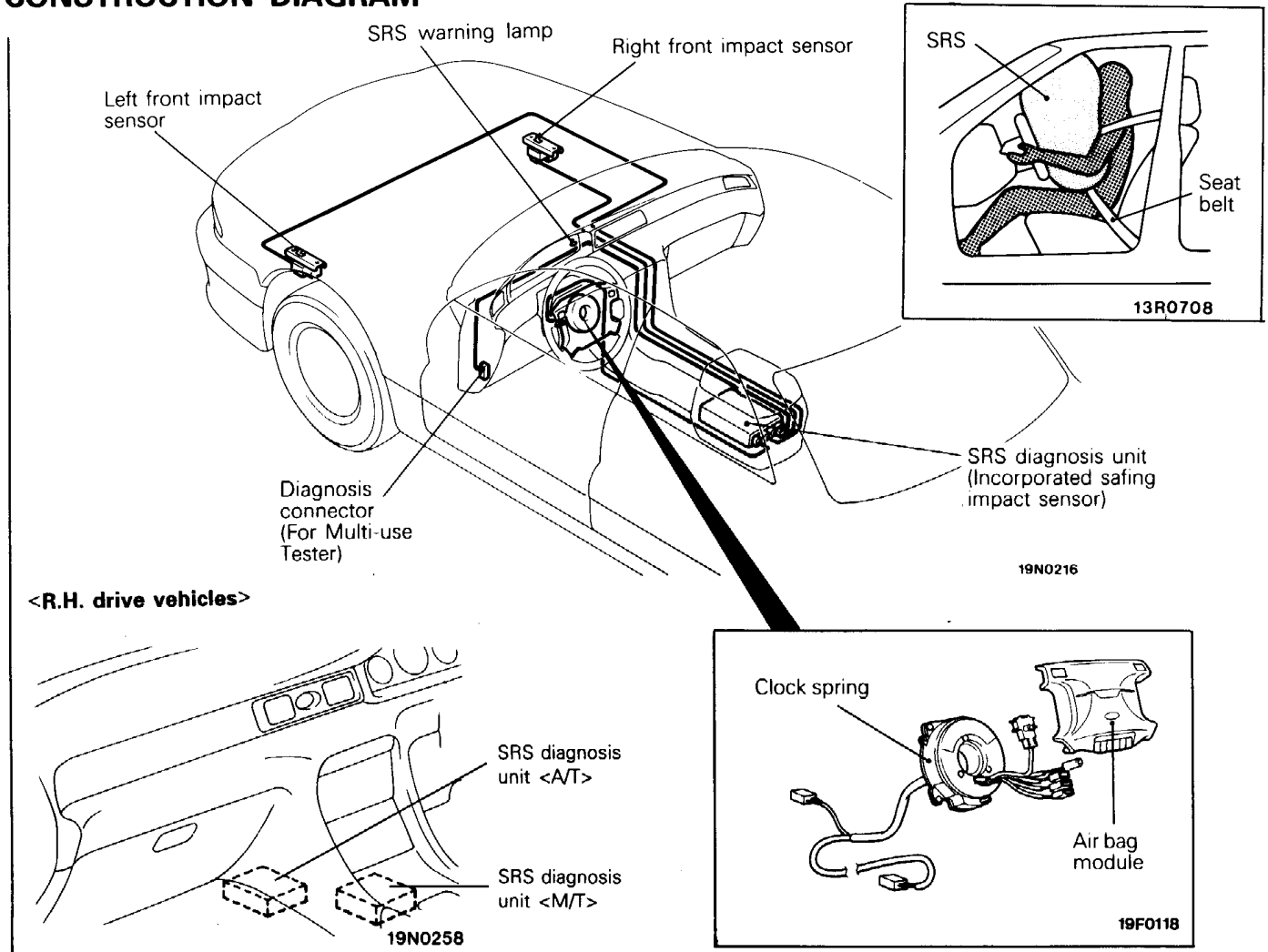
The SRS consists of: left front and right front impact sensors, one each located on the right and left side lower members; an air bag module which contains the folded air bag and an inflator unit located in the centre of the steering wheel; the SRS diagnosis unit located under the floor console assembly (underneath the centre of the instrument panel for R.H. drive vehicles), which monitors the system, and which contains a safing impact sensor; and SRS warning lamp located on the instrument panel, which indicates the

operational status of the SRS; a clock spring interconnection located within the steering column; wiring.

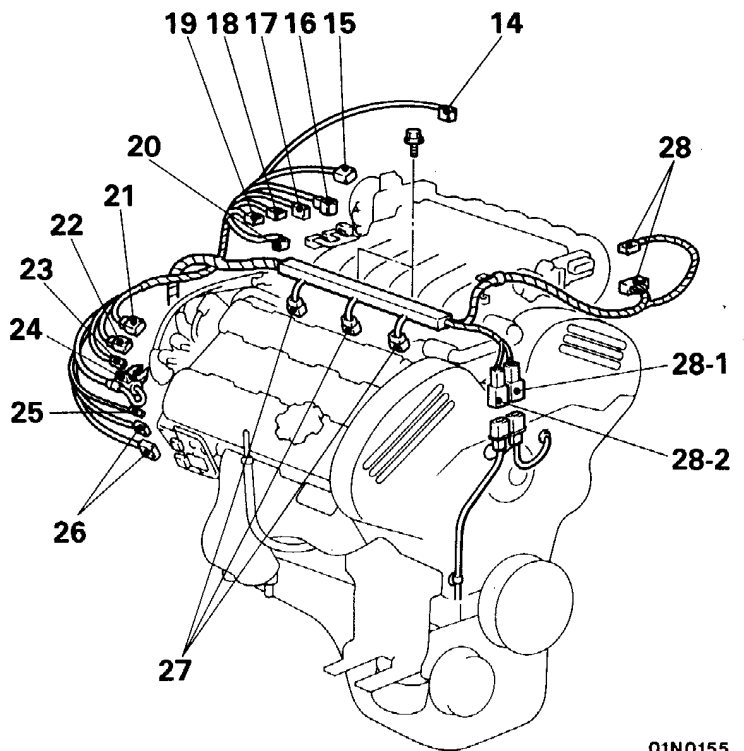
The SRS is designed so that the air bag will deploy when the safing sensor, plus either or both of the left front and right front impact sensors simultaneously activate while the ignition switch is "ON". That is designed to occur in frontal or near-frontal impacts of moderate to severe force.

Only authorized service personnel should do work on or around the SRS components. Those service personnel should read this manual carefully before starting any such work. Extreme care must be used when servicing the SRS, to avoid injury to the service personnel (by inadvertent deployment of the air bag) or the driver (by rendering the SRS inoperative).

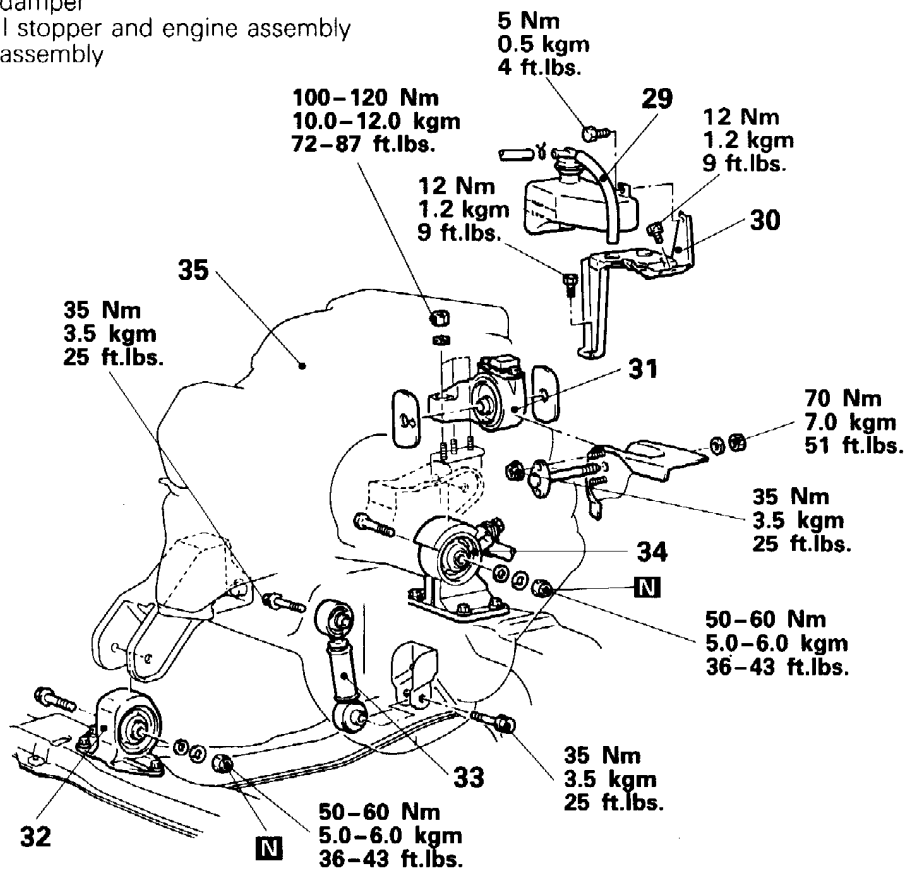
CONSTRUCTION DIAGRAM



- 14. APS connector
<Vehicles with traction control system>
- 15. ISC motor connector
- 16. TPS connector
- 17. Power steering switch and oil pressure switch connector
- 18. Injector harness connector
- 19. Knock sensor connector
- 20. Crank angle sensor connector
<Vehicles built up to October, 1992>
- 21. Engine coolant temperature switch connector
- 22. Engine coolant temperature gauge unit connector
- 23. Engine coolant temperature sensor connector
- 24. Condenser
- 25. Ignition coil connector
- 26. Power transistor connector
- 27. Injector connector
- 28. Variable induction motor connector
- 28-1. Camshaft position sensor connector
<Vehicles built from November, 1992>
- 28-2. Crank angle sensor connector
<Vehicles built from November, 1992>
- 29. Condense tank <Vehicles with ABS or headlamp washer>
- 30. Condense tank bracket <Vehicles with ABS or headlamp washer>
- ◆◆◆◆ 31. Engine mount bracket assembly
- 32. Front roll stopper and engine assembly
- 33. Engine damper
- 34. Rear roll stopper and engine assembly
- ◆◆◆◆ 35. Engine assembly



01N0155



01N0090

| | |
|------------|--|
| G-8 | When diagnosis code No. 25 <A/T> or No. 35 <M/T> is displayed |
|------------|--|

Comment: While driving at a speed of 20 km/h (12 mph) or over, this problem code is displayed when the pulse signal is stopped for an instant (0.015 sec.), due to a temporary disconnection in the sensor of both rear wheels. However, even when this code is displayed, the TCL OFF indicator will not illuminate or flash. Furthermore, the ABS warning lamp illuminates due to a broken sensor wire in the ABS hardware circuit, and TCL diagnosis code No. 62 (No. 76 for M/T) will be displayed.

Hint: When diagnosis code No. 25 (No. 35 for M/T) is displayed at the same time as code nos. 23 or 24 (nos. 33 or 34 for M/T), inspect according to the troubleshooting for code nos. 23 or 24 (nos. 33 or 34 for M/T).
When code No. 25 (No. 35 for M/T) is displayed by itself, the problem is likely to be a faulty contact in the rear wheel sensor circuit.

Remedy: Inspect according to the same procedure for the ABS wheel speed sensor (rear) inspection. (Refer to GROUP 35 – Serive Adjustment Procedures)

| | |
|------------|--|
| G-9 | When diagnosis code No. 26 <A/T> or No. 36 <M/T> is displayed |
|------------|--|

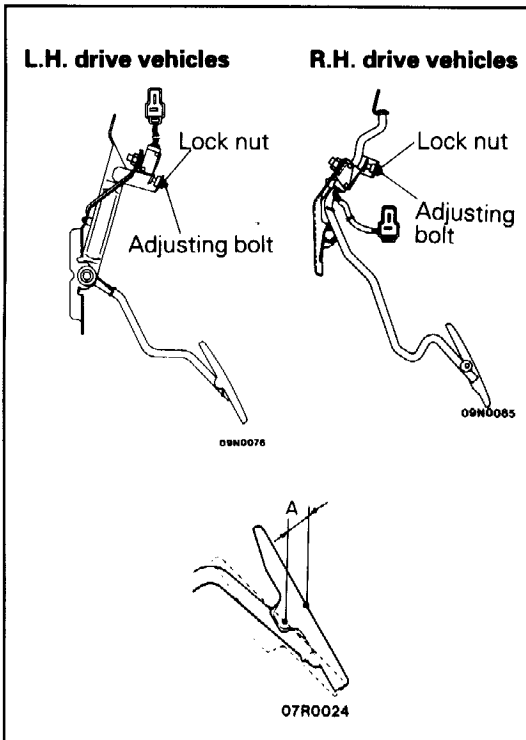
Comment: This problem code is displayed when an abnormality is diagnosed in the rear wheel sensor when the speed of both rear wheels is zero for 20 seconds while traction control is operating.

Hint: This problem occurs when there is a broken harness wire or short between the TCL-ECU and the ABS-ECU that leads to both rear wheels, or if the sensor harnesses for both rear wheel short at the same time.

NOTE

1. When the vehicle is stuck and only the front wheels are moving, or when the front wheels are jacked up and only the front wheels are moving, after 20 seconds the TCL indicator will begin to flash and the system will be isolated.
2. When this problem code is output, erase the problem code memory after fixing the cause of the problem, and carry out a driving test at a speed of 20 km/h (12 mph) or higher to check that the code is not output again.

Remedy: Inspect according to the inspection flowchart in Troubleshooting Chart G-7 for diagnosis code nos. 21, 22, 23 and 24 (nos. 31, 32, 33 and 34 for M/T).



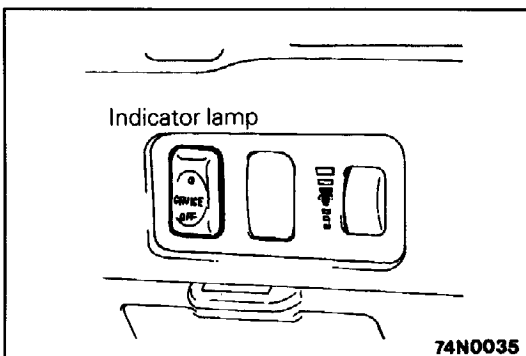
ACCELERATOR PEDAL SWITCH INSPECTION AND ADJUSTMENT

<A/T models built up to October, 1991>

- (1) Warm the engine until the engine coolant temperature reaches normal temperature [80–90°C (176–194°F)], and then stop the engine.
- (2) Check if there is continuity between the accelerator pedal switch terminals when the accelerator pedal is free.
- (3) Check if there is no continuity between the accelerator pedal switch terminals when the accelerator pedal switch is depressed, and the stroke A in the diagram is at the standard value.

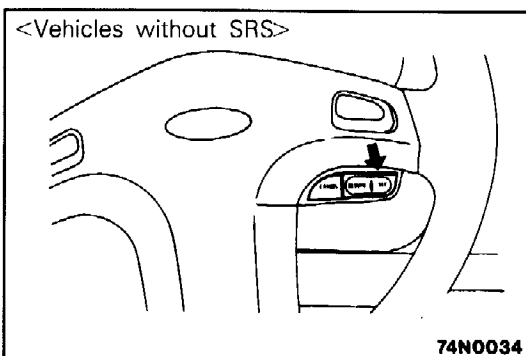
Standard value (A): 2–6 mm (0.08–0.24 in.)

- (4) If the stroke departs from the standard value, adjust with the adjusting bolt.



AUTO-CRUISE CONTROL MAIN SWITCH CHECK

- (1) Turn the ignition key to ON.
- (2) Check to be sure that the indicator lamp within the switch illuminates when the main switch is switched ON.

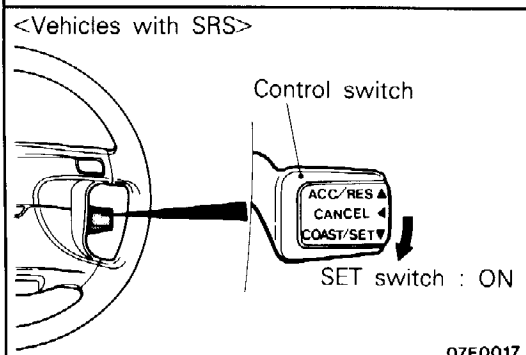


AUTO-CRUISE CONTROL SETTING CHECK

- (1) Switch ON the main switch.
- (2) Drive at the desired speed within the range of approximately 40–200 km/h (25–125 mph).
- (3) Switch ON the SET switch.
- (4) Check to be sure that when the switch is released the speed is the desired constant speed.

NOTE

If the vehicles speed decreases to approximately 15 km/h (9 mph) below the set speed because of climbing a hill for example, the automatic speed control will be cancelled.



TROUBLESHOOTING HINTS

Hint 1:

The exhaust gas purification performance will worsen if there is a malfunction of the oxygen sensor.

Hint 2:

If the oxygen sensor output voltage deviates from the standard value even though the results of the checking of the oxygen sensor are normal, the cause is probably a malfunction of a component related to air/fuel mixture ratio control.

Examples:

- (1) Malfunction of an injector.
- (2) Air leakage into the intake manifold from a leaking gasket.
- (3) Malfunction of the air-flow sensor, the intake air temperature sensor, the barometric-pressure sensor, or the coolant temperature sensor.

INSPECTION

Using Multi-use tester (MUT)

| Function | Item No. | Data display | Check condition | Engine condition | Standard value |
|--------------|----------|--------------------------|---|---|--|
| Data reading | 11 | Sensor detection voltage | Engine: Warm-up (Make the mixture lean by engine speed reduction, and rich by racing.) | When sudden deceleration from 4000 r/min. | 200 mV or lower |
| | | | | When engine is suddenly raced | 600–1,000 mV |
| | | | Engine: warm up (using the oxygen sensor signal, check the air/fuel mixture ratio, and also check the condition of control by the engine control unit.) | 700 r/min (idling) 2,000 r/min | 400 mV or lower ↕ (changes) 600–1,000 mV |

HARNESS INSPECTION

1

7FU0827

Measure the power supply voltage of the oxygen sensor.

- Connector: Disconnected
- Ignition switch: ON

| |
|----------------|
| Voltage (V) |
| System voltage |

OK

→ **2**

OK

→ Repair the harness. (B3) - Control relay

2

7FU0828

Check for an open-circuit, or a short circuit to earth between the engine control unit and the oxygen sensor.

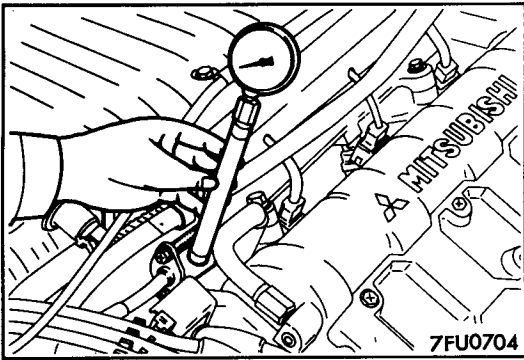
- Oxygen sensor connector: Disconnected
- Engine control unit connector: Disconnected

OK

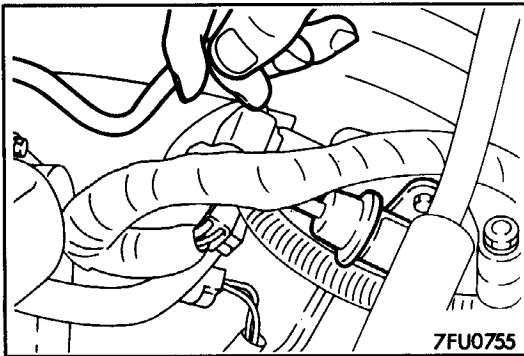
→ **3**

OK

→ Repair the harness. (A1-56)



- (9) Measure the fuel pressure during idling.
Standard value: Approx. 270 kPa (2.7 kg/cm², 38 psi) at curb idle



- (10) Disconnect the vacuum hose from the fuel pressure regulator, and then measure the fuel pressure while using finger to plug the end of the hose.
Standard value: 330–350 kPa (3.3–3.5 kg/cm², 47–50 psi) at curb idle speed
- (11) Check to be sure that the fuel pressure during idling does not decrease even after the engine is raced a few times.
- (12) Use a finger to gently press the fuel return hose while repeatedly racing the engine, and check to be sure that there is fuel pressure in the return hose also.

NOTE

There will be no fuel pressure in the return hose if there is insufficient fuel flow.

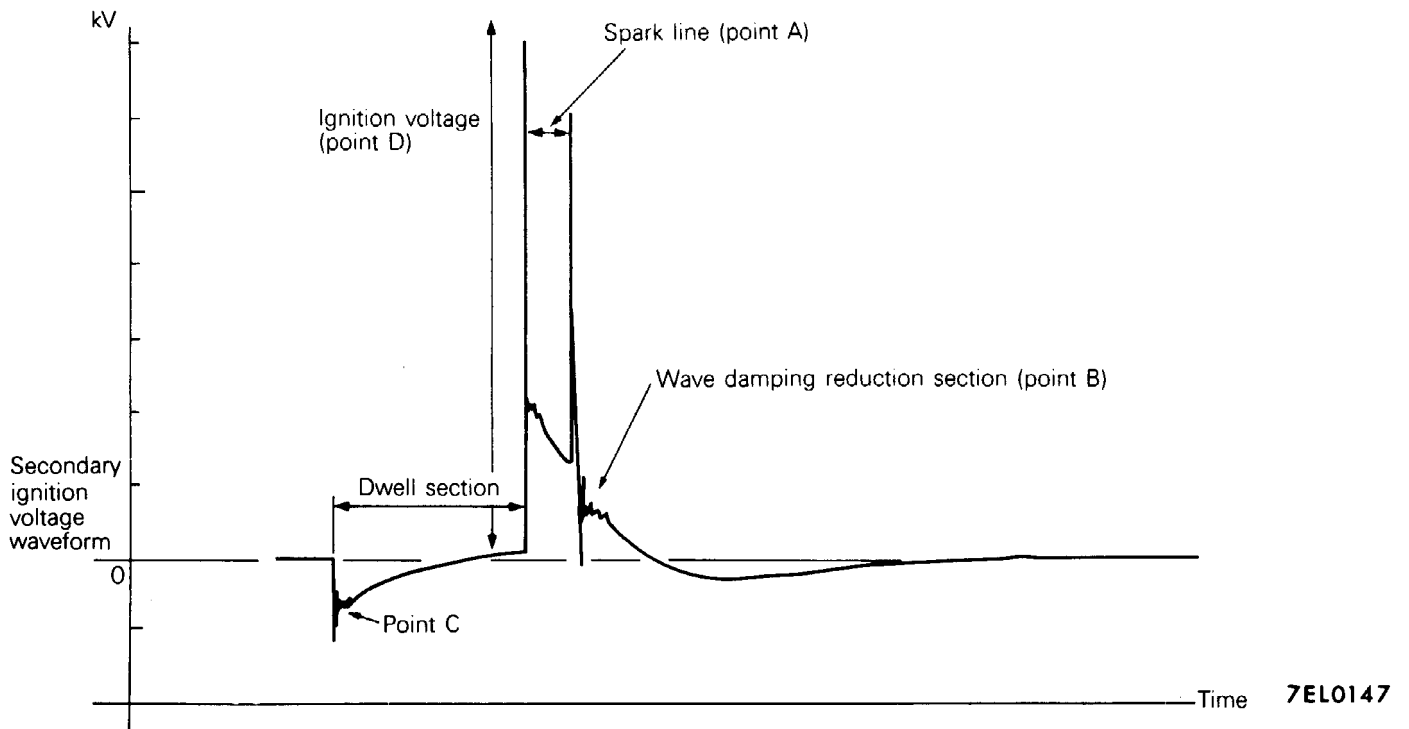
- (13) If the fuel pressure measured in steps (9) to (12) deviates from the standard value range, check for the probable cause by referring to the table below, and then make the appropriate repair.

| Condition | Probable cause | Remedy |
|--|--|---|
| <ul style="list-style-type: none"> • Fuel pressure is too low. • Fuel pressure drops during racing. • No fuel pressure in fuel return hose. | Fuel filter is clogged. | Replace the fuel filter. |
| | Malfunction of the valve seat within the fuel pressure regulator, or fuel leakage to return side caused by spring deterioration. | Replace the fuel pressure regulator. |
| | Fuel pump low discharge pressure. | Replace the fuel pump. |
| Fuel pressure is too high. | The valve within the fuel pressure regulator is sticking. | Replace the fuel pressure regulator. |
| | Clogging of the fuel return hose and/or the pipe. | Clean or replace the hose and/or pipe. |
| No change of the fuel pressure when vacuum hose is connected and when not connected. | Damaged vacuum hose or nipple clogging. | Replace the vacuum hose, or clean the nipple. |

STANDARD WAVEFORM

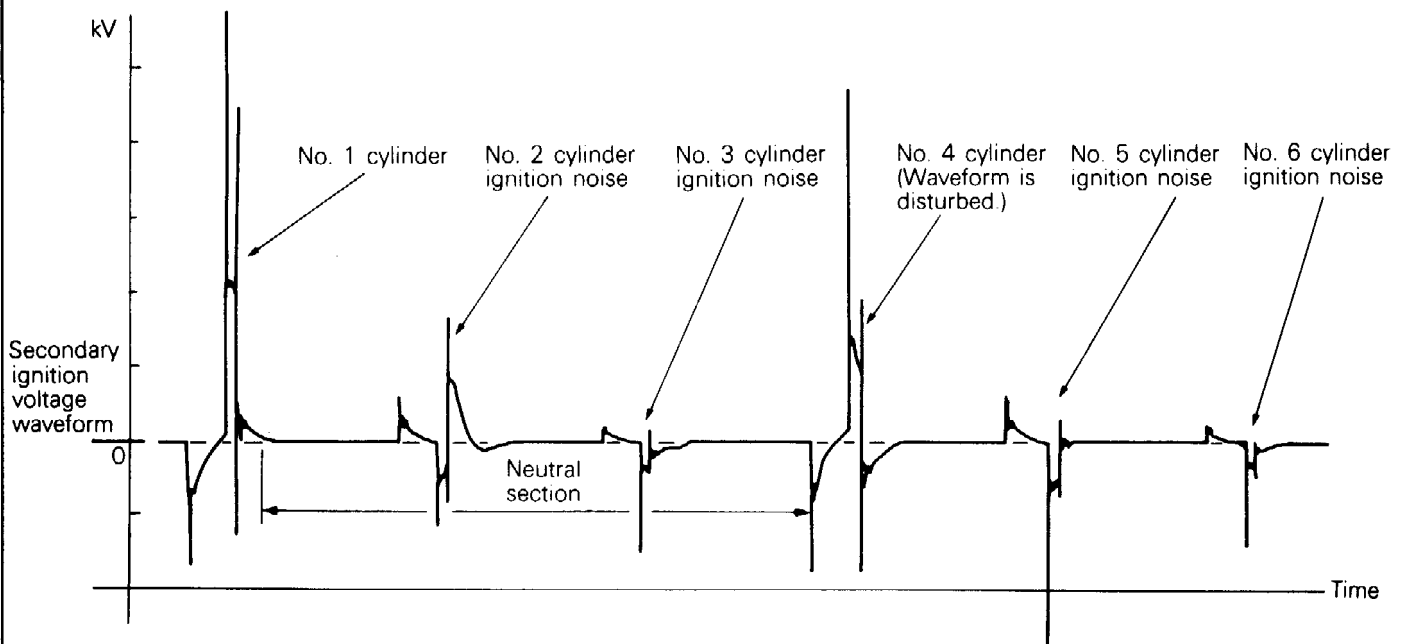
Observation Conditions

| | |
|--------------------|-------------------|
| Function | Secondary |
| Pattern height | High (or Low) |
| Pattern selector | Raster |
| Engine revolutions | Idle (700 r/min.) |

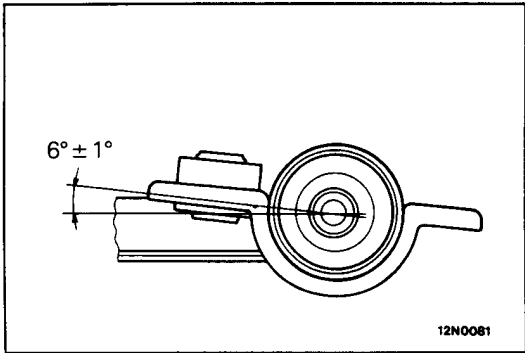


Observation Condition (Only pattern selector below changes from the above conditions.)

| Pattern selector | Display. |
|------------------|----------|
|------------------|----------|



7EL0148



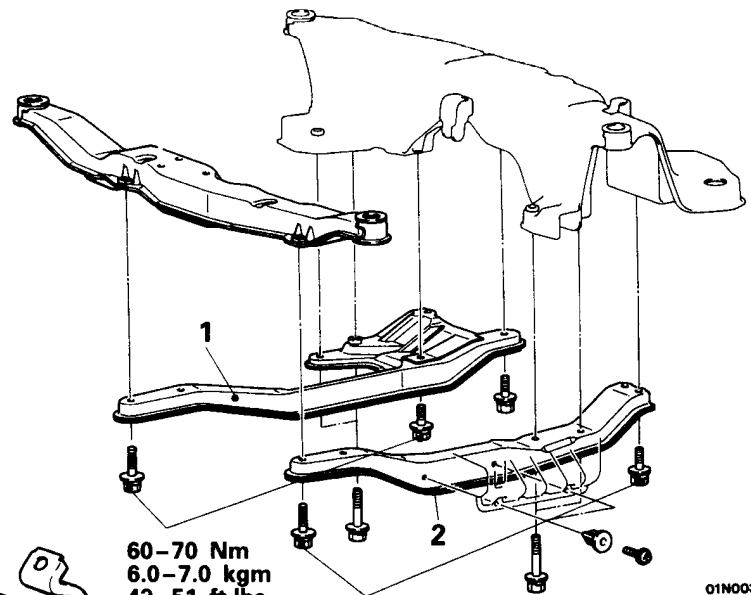
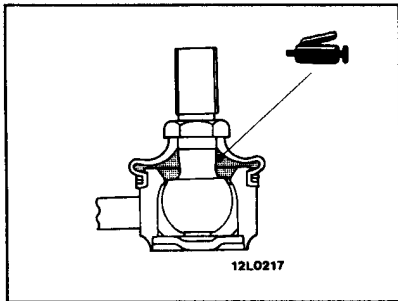
SERVICE POINTS OF INSTALLATION

10. INSTALLATION OF SELF LOCKING NUT

After positioning the clamp at the angle indicated in the illustration, install the self-locking nut.

STABILIZER BAR

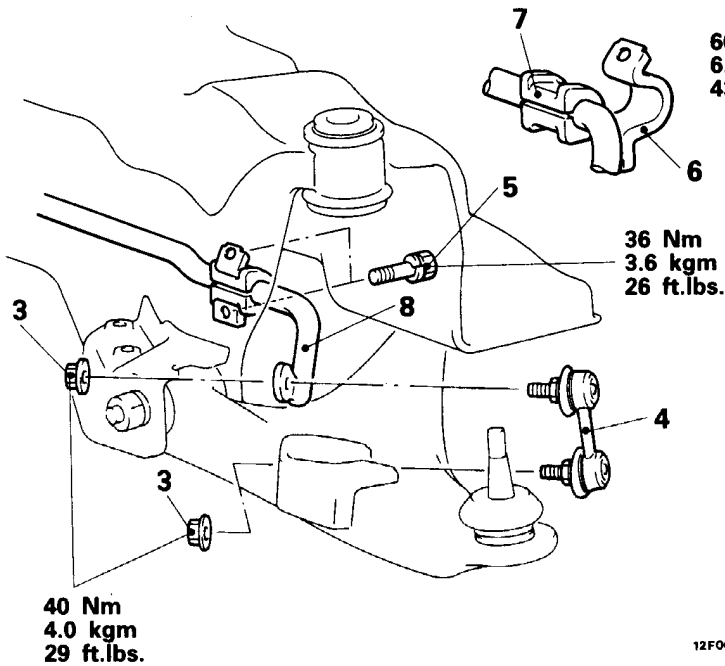
REMOVAL AND INSTALLATION



60-70 Nm
6.0-7.0 kgm
43-51 ft.lbs.

60-70 Nm
6.0-7.0 kgm
43-51 ft.lbs.

01N0035



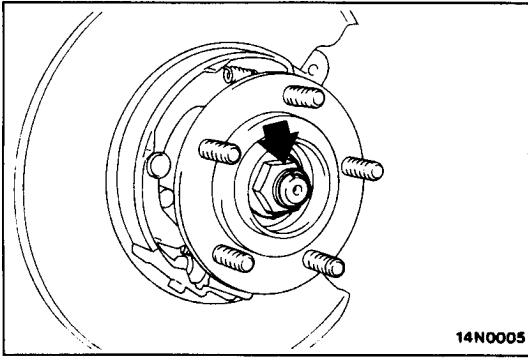
36 Nm
3.6 kgm
26 ft.lbs.

40 Nm
4.0 kgm
29 ft.lbs.

12F0023

Removal steps

- Removal of front exhaust pipe
(Refer to GROUP 15 – Exhaust Pipe)
- 1. Right member
- 2. Left member
- 3. Stabilizer link installation nuts
- 4. Stabilizer link
- 5. Stabilizer bar bracket installation bolt
- 6. Stabilizer bar bracket
- 7. Bushing
- 8. Stabilizer bar



SERVICE POINTS OF INSTALLATION

E340DA-B

9. INSTALLATION OF PARKING BRAKE CABLE END

Refer to GROUP 36 – Parking Brake.

6. INSTALLATION OF FLANGE NUT

After tightening the wheel bearing nut, align with the spindle's indentation and crimp.

SHOCK ABSORBER ASSEMBLY

E34MA---

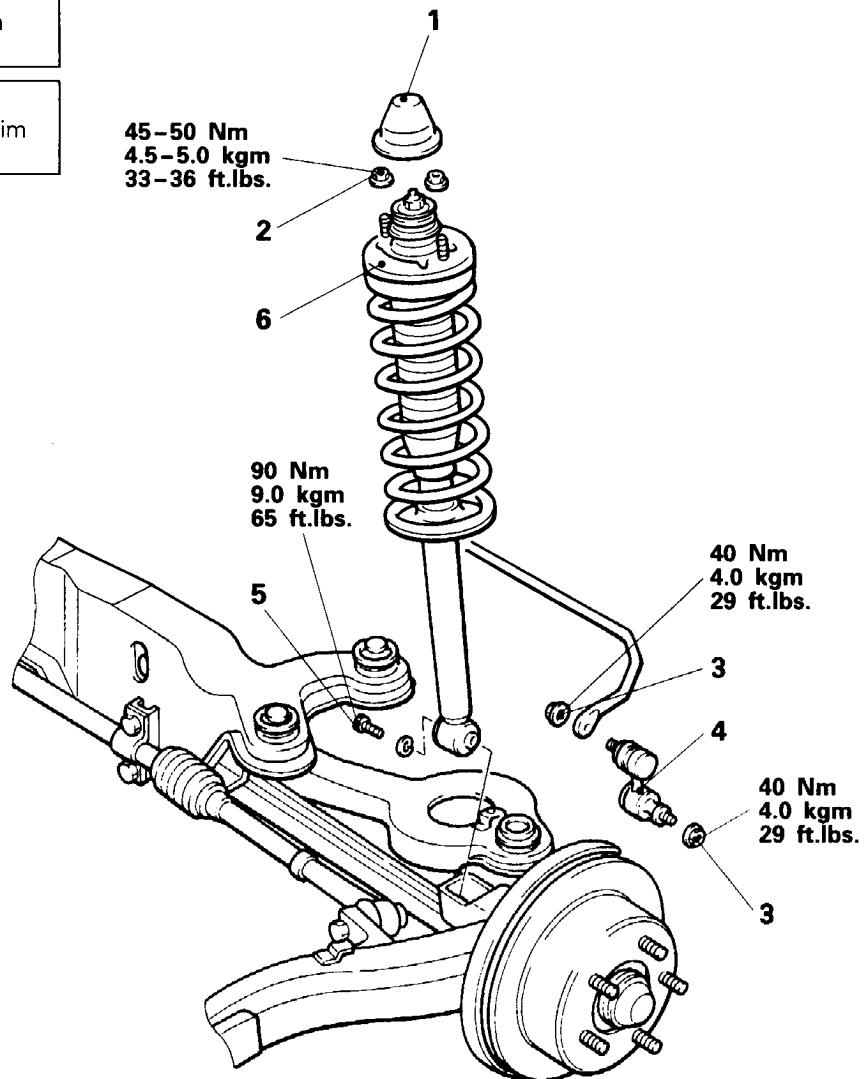
REMOVAL AND INSTALLATION

Pre-removal Operation

- Removal of the Trunk Side Trim (Refer to GROUP 52 – Trim.)

Post-installation Operation

- Installation of the Trunk Side Trim (Refer to GROUP 52 – Trim.)



Removal steps

1. Cap
2. Shock absorber upper mounting nuts
3. Stabilizer link mounting nuts
4. Stabilizer link
5. Shock absorber mounting bolt
6. Shock absorber assembly

12N0115

G-8 When diagnosis code No. 25 is displayed

Comment: While driving at a speed of 20 km/h (12 mph) or over, this problem code is displayed when the pulse signal is stopped for an instant (0.015 sec.), due to a temporary disconnection in the sensor of both rear wheels. However, even when this code is displayed, the TCL OFF indicator will not illuminate or flash. Furthermore, the ABS warning lamp illuminates due to a broken sensor wire in the ABS hardware circuit, and TCL diagnosis code No. 62 will be displayed.

Hint: When diagnosis code No. 25 is displayed at the same time as code nos. 23 or 24, inspect according to the troubleshooting for code nos. 23 or 24.

When code No. 25 is displayed by itself, the problem is likely to be a faulty contact in the rear wheel sensor circuit.

Remedy: Inspect according to the same procedure for the ABS wheel speed sensor (rear) inspection. (Refer to P.35-94.)

G-9 When diagnosis code No. 26 is displayed

Comment: This problem code is displayed when an abnormality is diagnosed in the rear wheel sensor when the speed of both rear wheels is zero for 20 seconds while traction control is operating.

Hint: This problem occurs when there is a broken harness wire or short between the TCL-ECU and the ABS-ECU that leads to both rear wheels, or if the sensor harnesses for both rear wheel short at the same time.

NOTE

1. When the vehicle is stuck and only the front wheels are moving, or when the front wheels are jacked up and only the front wheels are moving, after 20 seconds the TCL indicator will begin to flash and the system will be isolated.
2. When this problem code is output, erase the problem code memory after fixing the cause of the problem, and carry out a driving test at a speed of 20 km/h (12 mph) or higher to check that the code is not output again.

Remedy: Inspect according to the inspection flowchart in Troubleshooting Chart G-7 for diagnosis code nos. 21, 22, 23 and 24.

PARKING BRAKE LEVER AND PARKING BRAKE CABLE

REMOVAL AND INSTALLATION

E36LA--

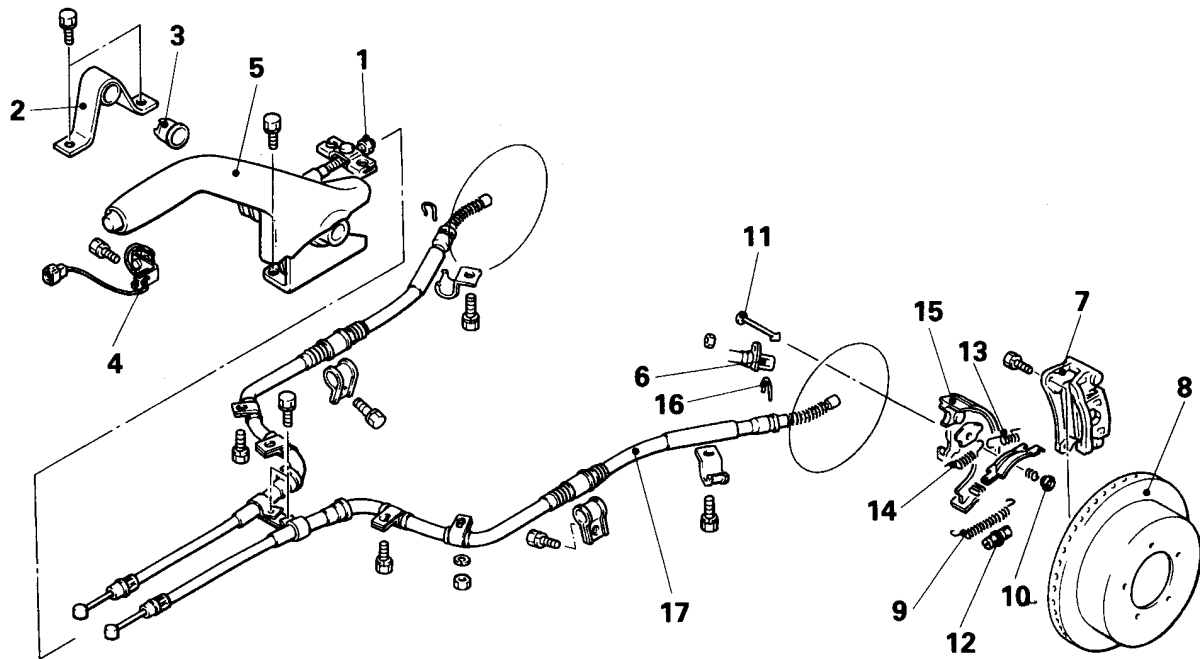
CAUTION: SRS <L.H.drive vehicles>
 1. When removing and installing the floor console in vehicles equipped with SRS, do not let it bump against the SRS diagnostic unit or other components.
 2. Before removal of SRS diagnosis unit, refer to GROUP 52B – SRS Diagnosis Unit.

Pre-removal Operation

- Removal of Floor Console (Refer to GROUP 52 – Console Box.)
- Removal of SRS diagnosis unit <Vehicles with SRS> (Refer to GROUP 52B – SRS Diagnosis Unit)
- Removal of Rear Seat (Refer to GROUP 52 – Seat.)

Post-installation Operation

- Parking Brake Lever Stroke Adjustment (Refer to P.36-2.)
- Installation of Floor Console (Refer to GROUP 52 – Console Box.)
- Installation of SRS diagnosis unit <Vehicles with SRS> (Refer to GROUP 52B – SRS Diagnosis Unit)
- Installation of Rear Seat (Refer to GROUP 52 – Seat.)



14N0198

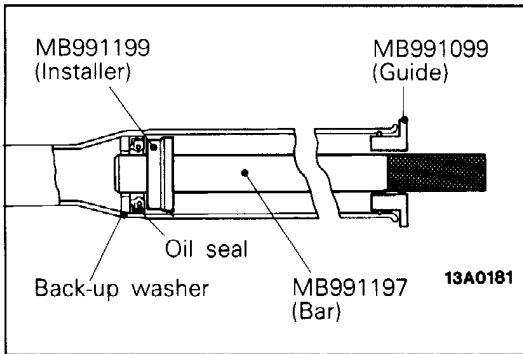
Parking brake lever removal steps

1. Adjusting nut
2. Parking brake stay
3. Bushing
4. Parking brake switch
5. Parking brake lever

Parking brake cable removal steps

1. Adjusting nut
6. Rear speed sensor <Vehicles with ABS>
7. Rear brake assembly
8. Rear brake disc
9. Adjusting wheel spring

- ◆◆ 10. Shoe hold-down cup
- ◆◆ 11. Shoe hold-down pin
- ◆◆ 12. Adjuster
- ◆◆ 13. Shoe-to-anchor spring (rear)
- ◆◆ 14. Shoe-to-anchor spring (front)
- 15. Shoe and lining assembly
- 16. Clip
- 17. Parking brake cable



SERVICE POINTS OF REASSEMBLY

E37PHA0

44. INSTALLATION OF BACK-UP WASHER/43. OIL SEAL

- (1) Apply a coating of the specified fluid to the outside of the oil seal.

Specified fluid: Automatic transmission fluid DEXRON or DEXRON II

- (2) Using the special tools, press the back-up washer and the oil seal into the rack housing to the specified position (where the upper surface of press-in guide coincides with the stepped part of the press-in tool).

42. INSTALLATION OF NEEDLE ROLLER BEARING

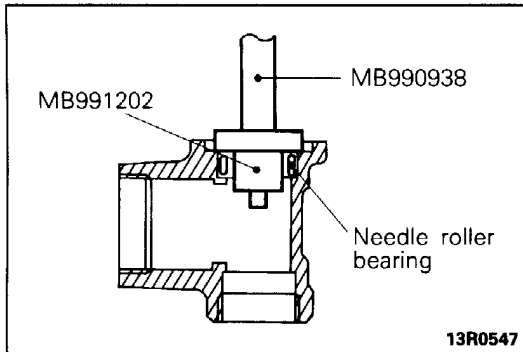
- (1) Apply specified fluid to housing, bearing and oil seal press fitting surface.

Specified fluid: Automatic transmission fluid DEXRON or DEXRON II

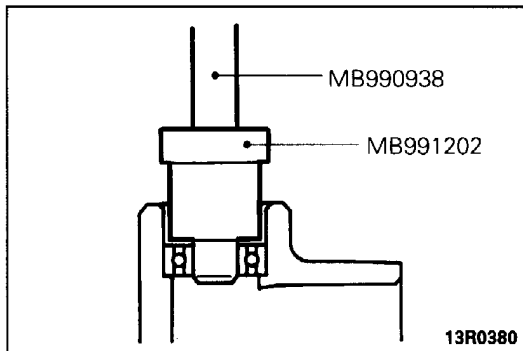
- (2) Press fit needle roller bearing with special tools.

Caution

Press fit straight as valve housing is aluminum.



41. INSTALLATION OF BALL BEARING

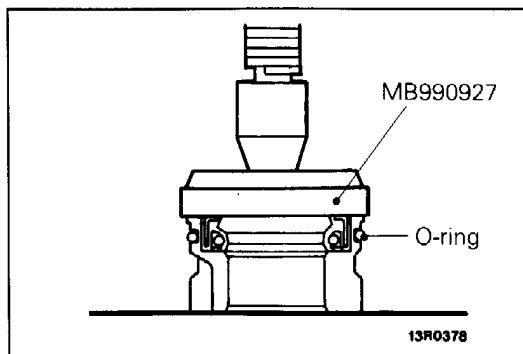


38. INSTALLATION OF OIL SEAL/37. O-RING

- (1) Apply a coating of the specified fluid to the outside of the oil seal and o-ring.

Specified fluid: Automatic transmission fluid DEXRON or DEXRON II

- (2) Use special tool to press fit oil seal until touches rack bush end.

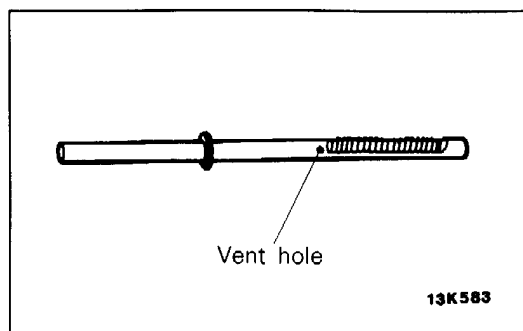


36. INSTALLATION OF RACK

- (1) Apply a coating of multipurpose grease to the rack teeth face.

Caution

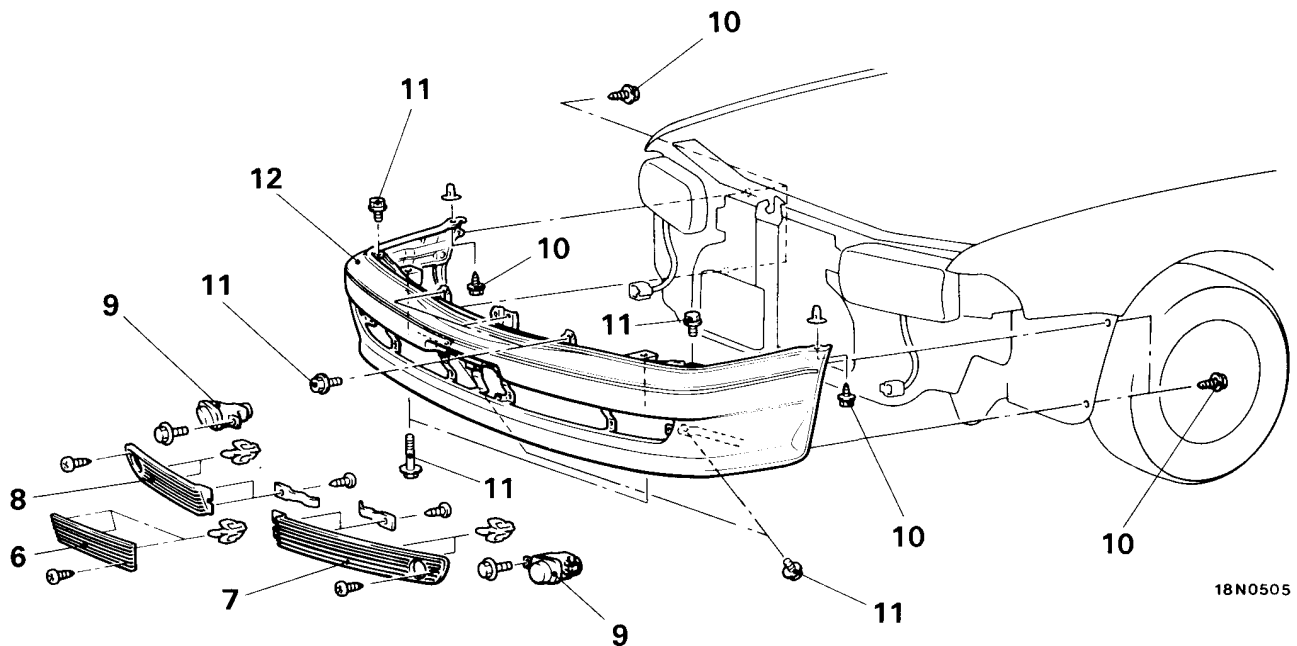
Do not close the vent hole in the rack with grease.



<Vehicles built from November, 1992>

Pre-removal and Post-installation Operation

- Removal and Installation of Radiator Grille
(Refer to P.51-8.)

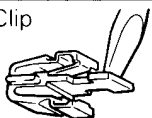


18N0505

Removal steps

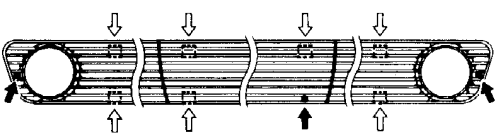
- ↔ 6. Under grille (Centre)
- ↔ 7. Under grille (L.H.)
- ↔ 8. Under grille (R.H.)
- 9. Fog lamps
- 10. Screws
- 11. Bolts
- 12. Bumper assembly

Clip



18N0501

- ↔ Clip
- ← Screw



18N0506

SERVICE POINTS OF REMOVAL

6. REMOVAL OF UNDER GRILLE (CENTRE)/7. UNDER GRILLE (L.H.)/8. UNDER GRILLE (R.H.)

Unscrew and push the tab of the clips with a flat-tipped screwdriver. Then remove the under grille by pulling it towards you.

ADDED

D. MOTOR ANTENNA

D-1 Motor antenna won't extend or retract.

Clean and polish the surface of the antenna rod.

