

## SAFETY INFORMATION

### LUBRICANTS

Avoid prolonged and repeated contact with petroleum-based oils. Used oil may irritate the skin, and can cause skin cancer and other skin disorders.

Wash thoroughly after working with oil. We recommend water-soluble hand cleaners. Do not use kerosene, gasoline, or any other solvent to remove oil from your skin.

If repeated or prolonged contact with oil is necessary, wear protective clothing. Soiled clothing, particularly those soiled with used oils and greases containing lead, should be cleaned at regular intervals.

### JACKING POSITIONS

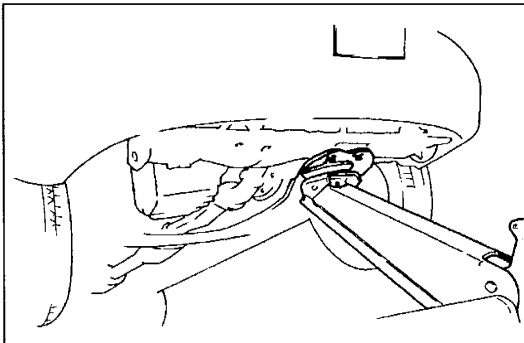
#### Warning

- **Improperly jacking a vehicle is dangerous. The vehicle can slip off the jack and cause serious injury. Use only the correct front and rear jacking positions and block the wheels.**

Use safety stands to support the vehicle after it has been lifted.

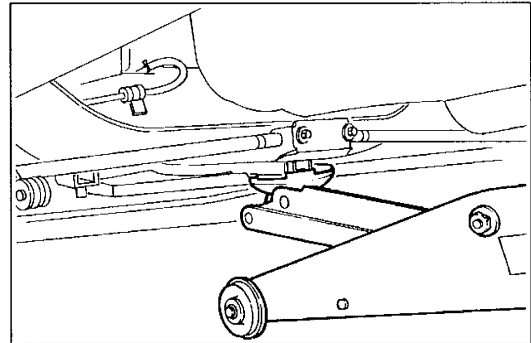
#### Front

At the front of the engine mount member



#### Rear

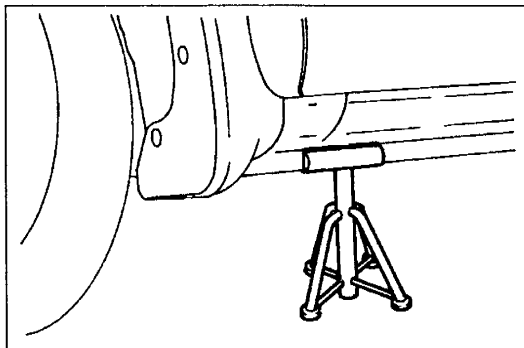
At the center of the crossmember



### SAFETY STAND POSITIONS

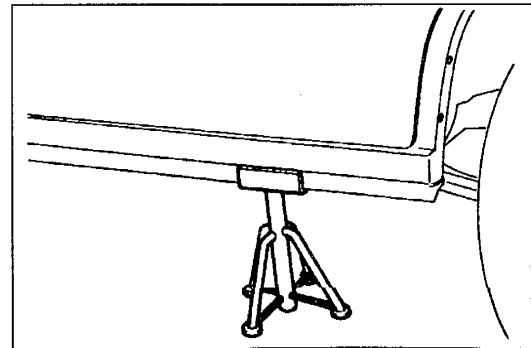
#### Front

Both sides of the side sill



#### Rear

Both sides of the side sill



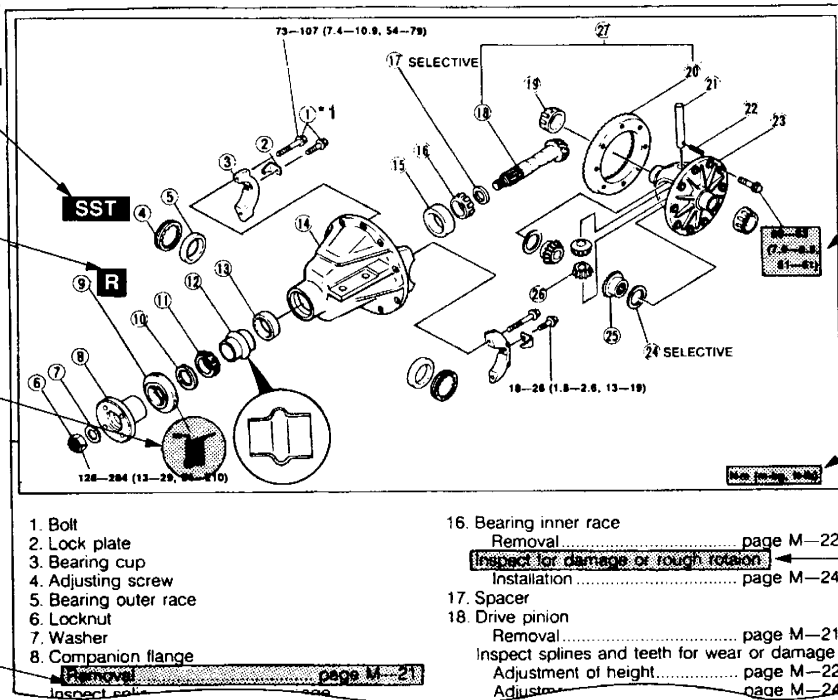
Example:

SHOWS SPECIAL SERVICE TOOL (SST) FOR SERVICE OPERATION

SHOWS EXPENDABLE PARTS

SHOWS APPLICATION POINT OF OIL, ETC.

SHOWS RELATED PAGE FOR SERVICE



SHOWS TIGHTENING TORQUE SPECIFICATIONS

SHOWS TIGHTENING TORQUE UNITS

SHOWS VISUAL INSPECTION INFORMATION

\*1: The numbers (①, etc.) refer to part identification and servicing procedures.

**SYMBOLS**

There are seven symbols indicating oil, grease, and sealant. These symbols show the points of applying such materials during service.

Symbol	Meaning	Kind
	Apply oil	New engine oil or gear oil as appropriate
	Apply brake fluid	FMVSS116: DOT-3
	Apply automatic transaxle fluid	M-III or Dexron®II
	Apply grease	Appropriate grease
	Apply sealant	Appropriate sealant
	Apply petroleum jelly	Appropriate petroleum jelly
	Replace part	O-ring, gasket, etc.

## PRE-DELIVERY INSPECTION

## PRE-DELIVERY INSPECTION TABLE

**EXTERIOR**

**INSPECT** and **ADJUST**, if necessary, the following items to specification:

- Glass, exterior bright metal, and paint for damage
- Wheel lug nuts
- Tire pressure
- All weatherstrips for damage or detachment
- Operation of hood release and lock
- Operation of fuel lid and trunk lid opener (if equipped)
- Door operation and alignment
- Headlight aiming

**INSTALL** the following parts:

- Wheel caps (if equipped)

**UNDER HOOD—ENGINE OFF**

**INSPECT** and **ADJUST**, if necessary, the following items to specification:

- Fuel, coolant, and hydraulic lines, fittings, connections, and components for leaks
- Engine oil level
- Power steering fluid level (if equipped)
- Brake and clutch fluid level
- Windshield washer reservoir fluid level
- Radiator coolant level and specific gravity
- Tightness of water hose clamps
- Tightness of battery terminals, electrolyte level, and specific gravity
- Manual transaxle oil level
- Drive belt(s) tension
- Accelerator cable and linkage for free movement

**INTERIOR**

**INSTALL** the following parts:

- Fuse for accessories

**CHECK** the operation of the following items:

- Seat controls (sliding and reclining) and headrest
- Air bag system using warning light
- Cruise set using indicator light (if equipped)
- Ignition switch and steering lock
- Power window (if equipped)
- Power door lock (if equipped)
- Door locks including child proof door locks
- Transaxle range switch (ATX only)
- All lights including warning and indicator lights
- Ignition key reminder buzzer (if equipped)
- Horn, wipers, and washers (front and rear, if equipped)

- Antenna
- Cigarette lighter and clock
- Power outside mirrors (if equipped)
- Heater, defogger, and air conditioner at various mode selections (if equipped)
- Sliding sunroof (if equipped)

**CHECK** the following items:

- Presence of spare fuse
- Upholstery and interior finish

**CHECK** and **ADJUST**, if necessary, the following items:

- Operation and fit of windows
- Pedal height and free play of brake and clutch pedal
- Parking brake

**UNDER HOOD—ENGINE RUNNING AT OPERATING TEMPERATURE**

**CHECK** the following items:

- Operation of idle-up system for electrical load, air conditioner or power steering (if equipped)
- Automatic transaxle fluid level
- Ignition timing
- Idle speed

**ON HOIST**

**CHECK** the following items:

- Underside fuel, coolant and hydraulic lines, fittings, connections, and components for leaks
- Tires for cuts or bruises
- Steering linkage, suspension, exhaust system, and all underside hardware for looseness or damage

**ROAD TEST**

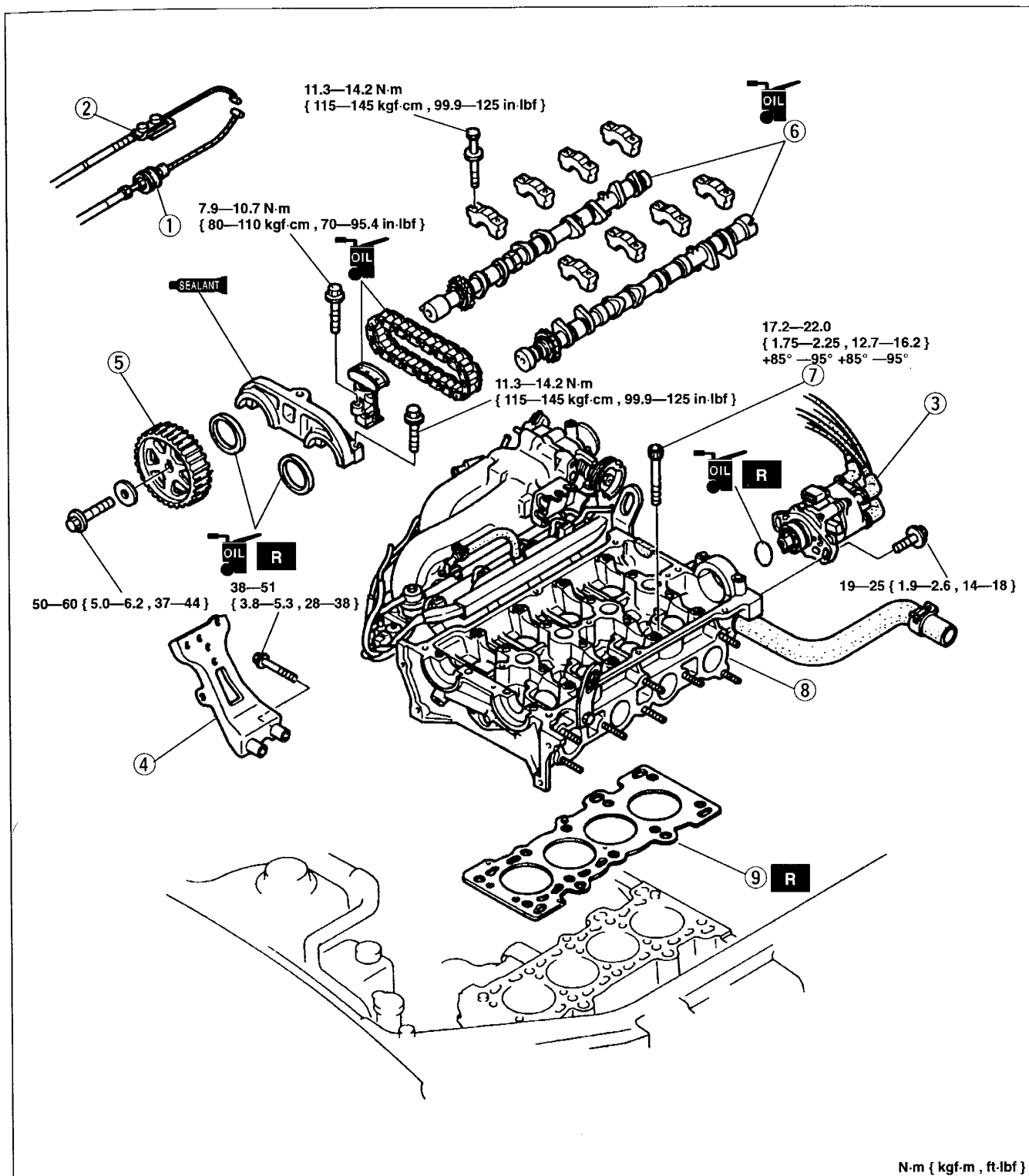
**CHECK** the following items:

- Brake operation
- Clutch operation
- Steering control
- Operation of meters and gauges
- Squeaks, rattles, or unusual noises
- Engine general performance
- Emergency locking retractors

**AFTER ROAD TEST**

**REMOVE** the seat and floor mat protective covers

**CHECK** for the necessary owner information materials, tools, and spare tire in vehicle



- 1. Accelerator cable  
Adjustment ..... section F1
- 2. Throttle cable (ATX)  
Adjustment ..... section K
- 3. Distributor
- 4. Intake manifold stay
- 5. Camshaft pulley  
Removal Note ..... page B1-16  
Installation Note ..... page B1-18

- 6. Camshaft  
Removal Note ..... page B1-16  
Installation Note ..... page B1-17
- 7. Cylinder head bolt  
Removal Note ..... page B1-16  
Installation Note ..... page B1-17
- 8. Cylinder head assembly
- 9. Cylinder head gasket

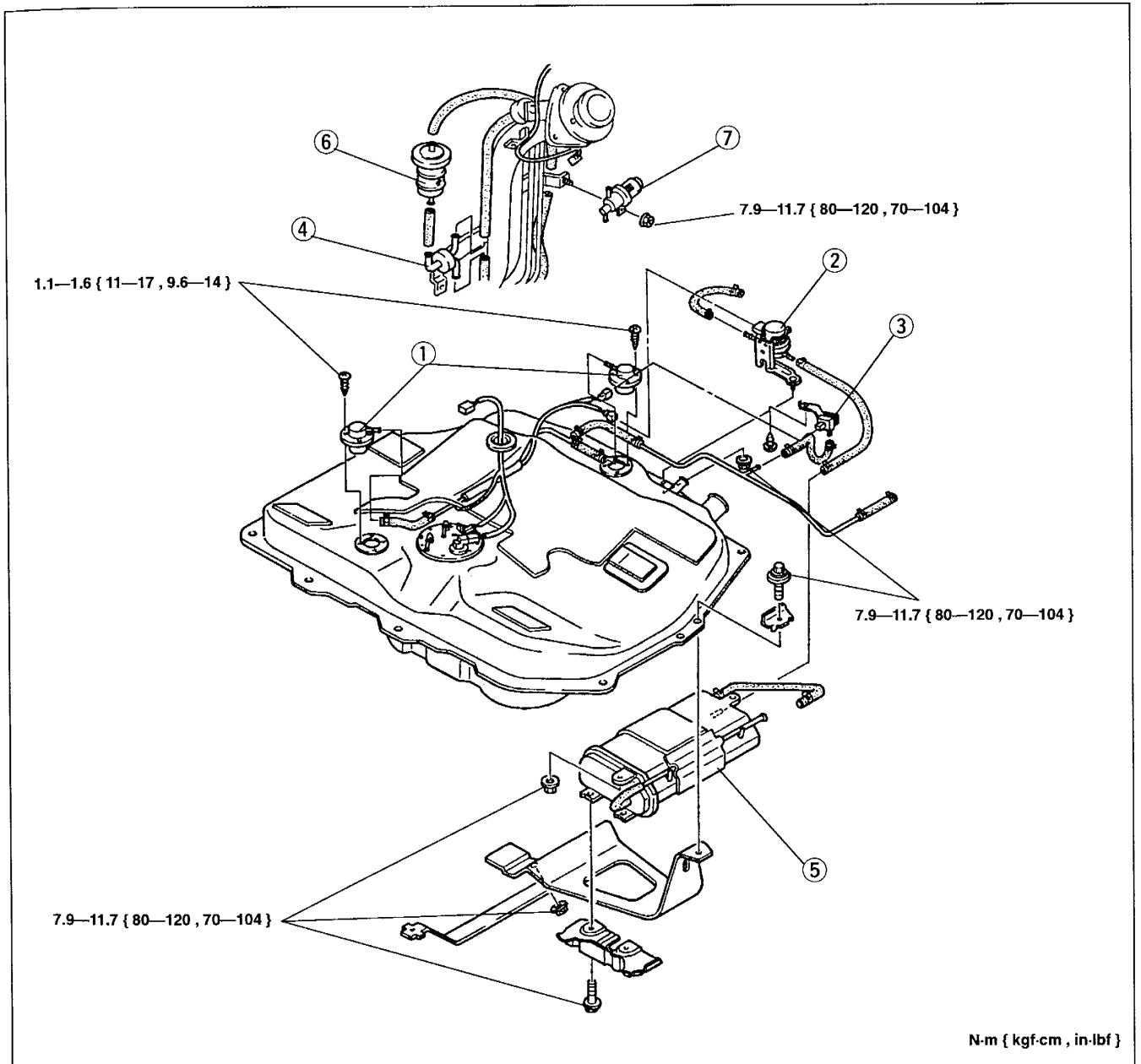
EMISSION SYSTEM

COMPONENT PARTS

Removal / Installation

Fuel tank side

1. Remove the fuel tank. (Refer to page F1-11.)
2. Remove in the order shown in the figure.
3. Install in the reverse order of removal, referring to **Installation note**.

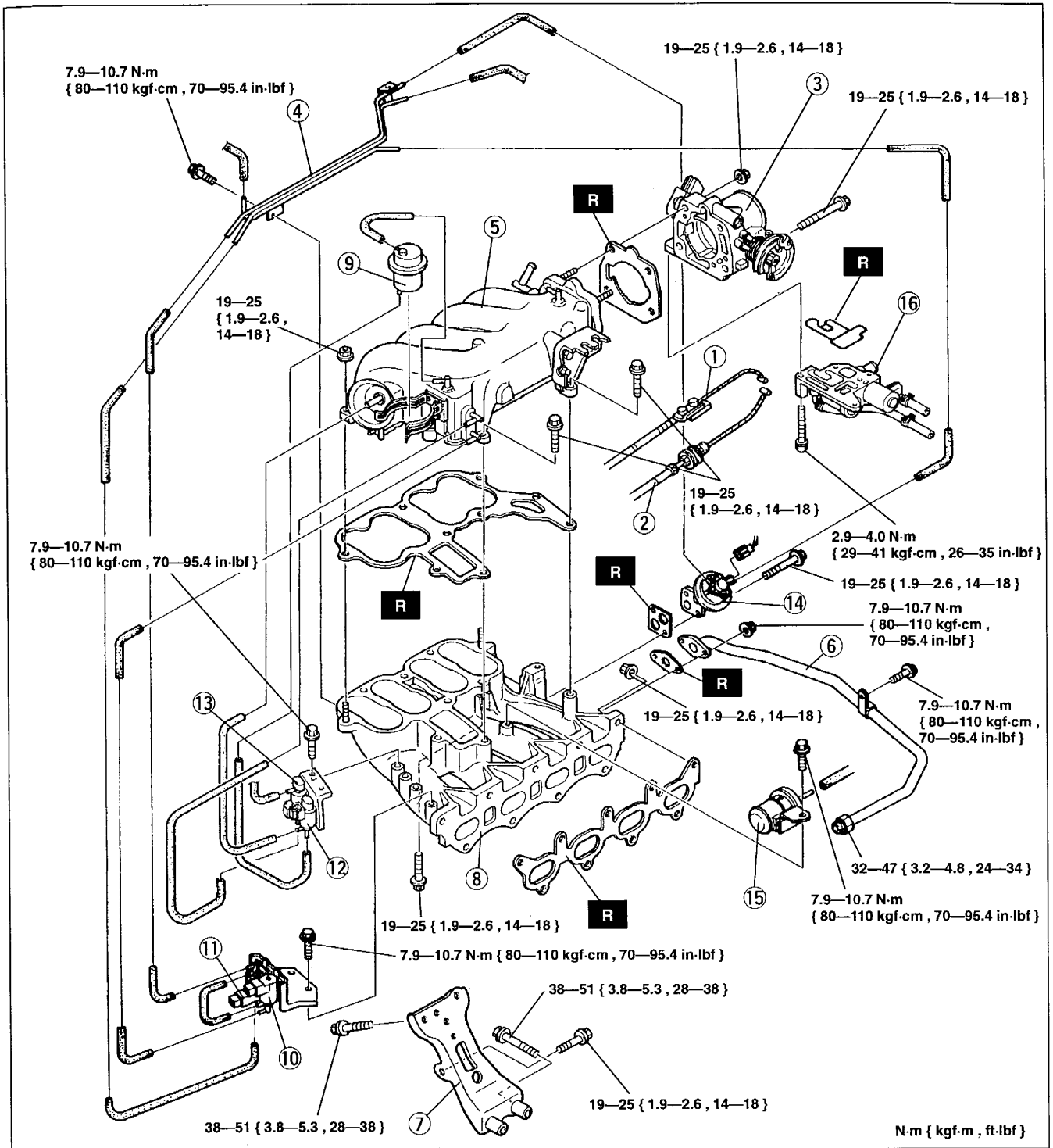


1. Rollover valve  
Installation note ..... page F1-28
2. Tank pressure control valve (TPCV)  
Installation note ..... page F1-28
3. Fuel tank pressure sensor
4. Check valve (two-way)  
Installation note ..... page F1-28

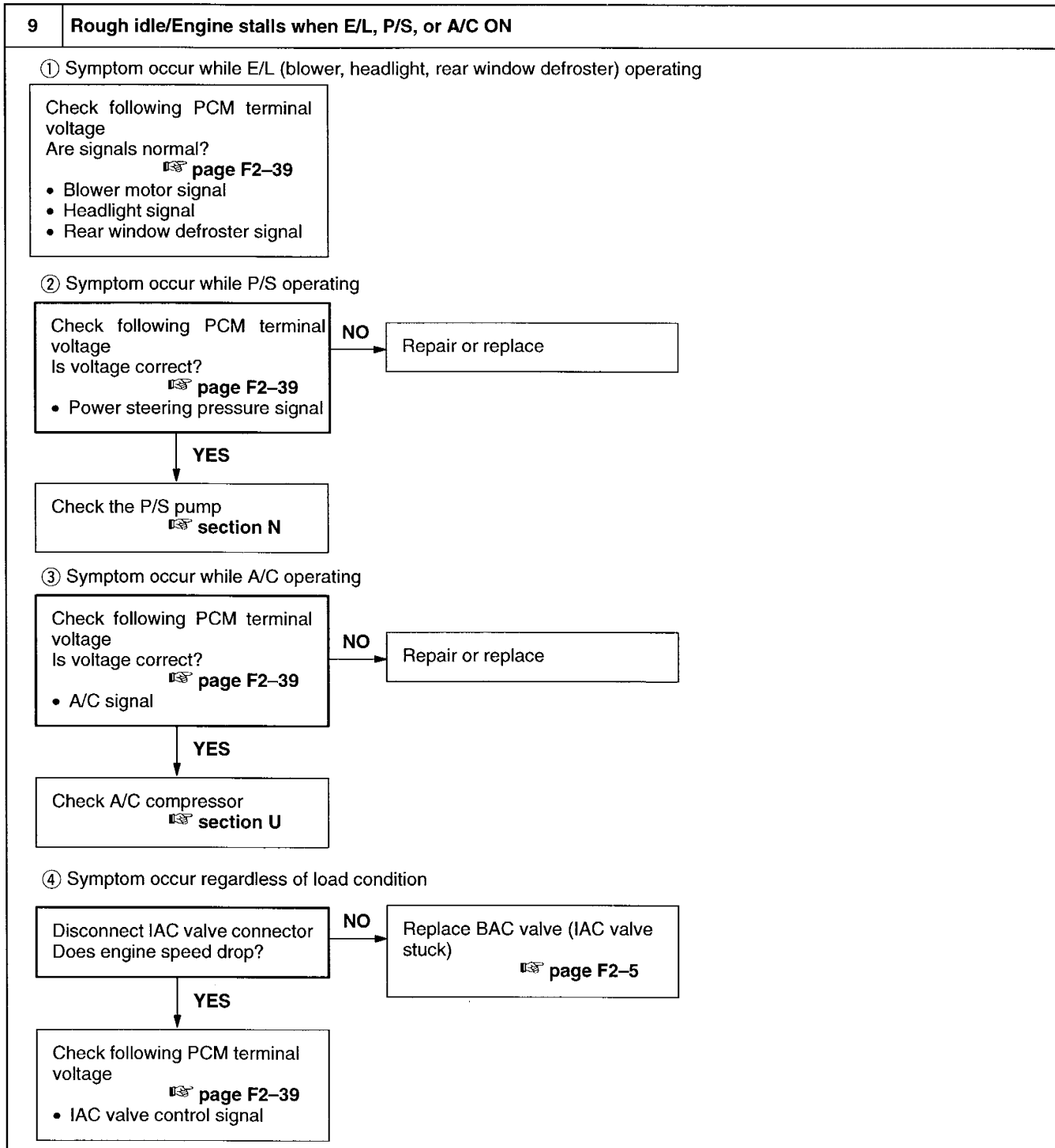
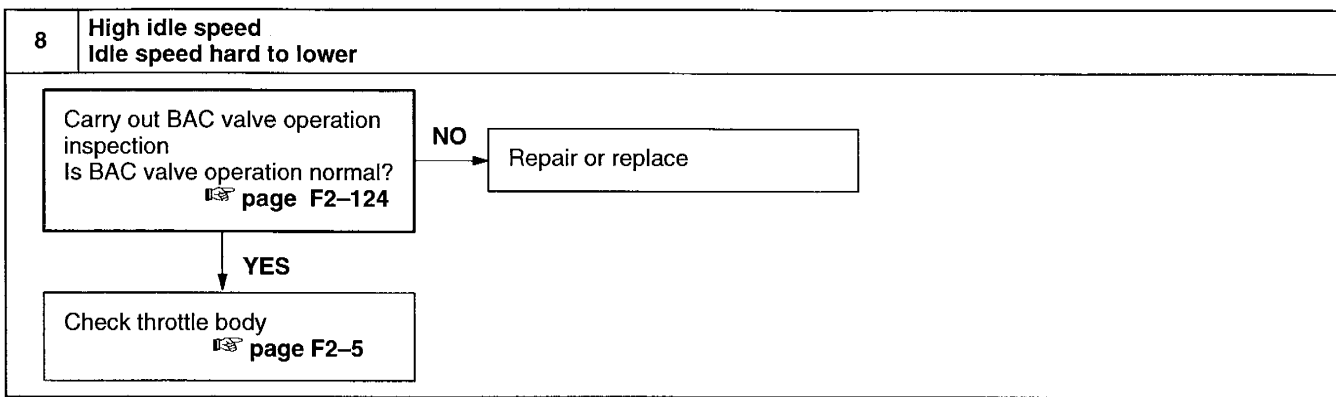
5. Charcoal canister  
Installation note ..... page F1-28
6. Air filter
7. Canister drain cut valve (CDCV)

													Possible factor				
													Troubleshooting item				
Fuel leakage													<input type="checkbox"/>	Discharged battery	Engine hard to start	1	
Improper fuel													<input type="checkbox"/>	Will not crank/ Crank slowly		Engine hard to start	2
Low fuel octane number													<input type="checkbox"/>	No combustion			3
PCM not actuated (Include CPU malfunction)													<input type="checkbox"/>	Combustion observed but engine will not start	Engine hard to start	4	
Improper PCM ground point													<input type="checkbox"/>	Crank normally but hard to start		5	
Not fuel cut during deceleration													<input type="checkbox"/>	Low idle speed/ Engine stalls or vibrates	Rough idle	6	
Delayed fuel injection recovery timing													<input type="checkbox"/>	High idle speed Idle speed remains high		7	
Incorrect fuel amount at fuel injection recovery													<input type="checkbox"/>	High idle speed Idle speed hard to lower		8	
Knocking													<input type="checkbox"/>	Rough idle/Engine stalls when E/L, P/S, or A/C ON		9	
Preignition													<input type="checkbox"/>	Rough idle/Engine stalls during N-D shift (ATX)		10	
Overheating													<input type="checkbox"/>	Engine stalls when vehicle about to run	Engine stalls	11	
Insufficient air flow amount													<input type="checkbox"/>	Engine stalls on acceleration and while cruising		12	
Inoperative radiator													<input type="checkbox"/>	Poor acceleration/ Insufficient power/ Surges while cruising/ Hesitates		13	
Coolant leakage													<input type="checkbox"/>	Runs rough during deceleration/Backfire		14	
Poor coolant circulation													<input type="checkbox"/>	Knocking		15	
Engine coolant temperature gauge needle points H													<input type="checkbox"/>	Overheating		16	
Excessive mechanical resistance													<input type="checkbox"/>	Poor fuel economy		17	
No compression in all cylinders													<input type="checkbox"/>	Fuel odor		18	
No compression in some cylinders													<input type="checkbox"/>				
High compression ratio													<input type="checkbox"/>				
High compression pressure													<input type="checkbox"/>				
Excessive valve overlap													<input type="checkbox"/>				
Incorrect valve timing													<input type="checkbox"/>				
Insufficient starter power													<input type="checkbox"/>				
Malfunction of starting system-related components													<input type="checkbox"/>				
Higher actual load													<input type="checkbox"/>				
A/C load will not turn off													<input type="checkbox"/>				
Warning light malfunction													<input type="checkbox"/>				
Clutch disc slipping (MTX)													<input type="checkbox"/>				
Brake dragging													<input type="checkbox"/>				
Low tire pressure													<input type="checkbox"/>				
Discharged battery													<input type="checkbox"/>				
Large dark current													<input type="checkbox"/>				

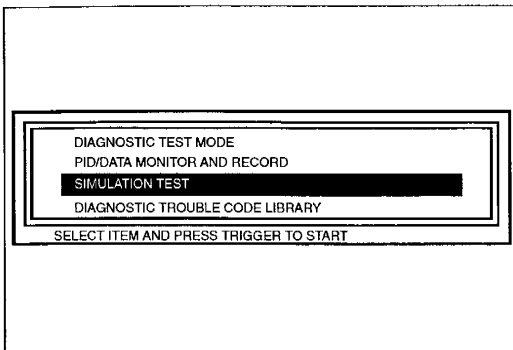
STEP 2



- |   |   |
|---|---|
| 1. Throttle cable (ATX)<br>Removal / Installation . . . . . section K | 8. Intake manifold<br>Installation note . . . . . page F2-8 |
| 2. Accelerator cable<br>Inspection / Adjustment . . . . . page F2-10  | 9. Vacuum chamber   |
| 3. Throttle body  | 10. EGR solenoid valve (vacuum)                             |
| 4. Vacuum pipe  | 11. EGR solenoid valve (vent)                               |
| 5. Dynamic chamber<br>Installation note . . . . . page F2- 8          | 12. VICS solenoid valve                                     |
| 6. EGR pipe   | 13. PRC solenoid valve                                      |
| 7. Intake manifold stay   | 14. EGR valve   |
|   | 15. Air filter  |
|   | 16. BAC valve   |



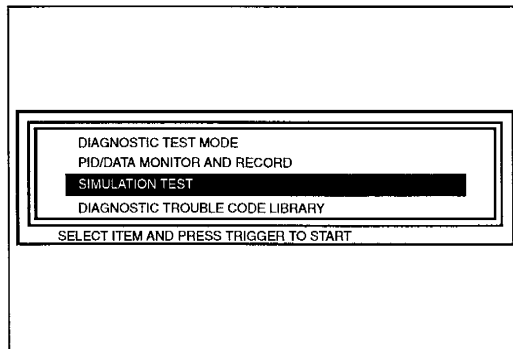




10. If the condition does not change, do as follows.
  - (1) Turn the ignition switch to ON.
  - (2) Verify that diagnostic trouble code No. P0443 is not displayed. If code No. P0443 is shown, carry out troubleshooting of the code No. P0443. (Refer to page F2-75.)
  - (3) Select the SIMULATION TEST function on the NGS display.
  - (4) Increase duty value of the purge solenoid valve from 0% to 100% by using the "PRGV". Operate the purge solenoid valve and check if the operation sound of the valve is heard.
    - I. If the operation sound is heard, check the following.
      - Loose or damaged vacuum hose
    - II. If the operation sound is not heard, check the following.
      - Purge solenoid valve (Refer to page F2-32.)

### Idle Air Control Inspection

1. Start the engine and run it at idle.
2. Disconnect the IAC valve connector and verify that the engine rotation changes.
3. If the engine condition will not change, do as follows.
  - (1) Connect the **SSTs** (NGS) to the data link connector-2. (Refer to page F2-38.)
  - (2) Verify that diagnostic trouble code No. P0505 is not displayed. If code No. P0505 is shown, carry out troubleshooting of the code No. P0505.
  - (3) Select the SIMULATION TEST function on the NGS display.
  - (4) Change the duty value of the IAC valve to 100% by using the "IACV" and verify that the idle speed increases.
    - a. If the idle speed increases, replace the PCM. (Refer to page F2-36.)
    - b. If the idle speed does not change. Replace the IAC valve. (Refer to page F2-7.)
4. Warm up the engine to normal operating temperature and run it at idle.
5. Turn the electrical loads ON and verify that the engine speed is within the specification.



### Engine speed (rpm)

Load condition	Idle speed (rpm)	
	MTX	ATX
Fan switch ON at 2nd or higher	700—800	700—800
Headlight switch ON		
Rear window defroster switch ON		
P/S ON		
A/C ON		

#### Note


- Excludes temporary idle speed drop just after the electrical loads are turned on.

6. If not as specified, check the related switches and wiring harnesses.

CLUTCH MASTER CYLINDER

PREPARATION

SST

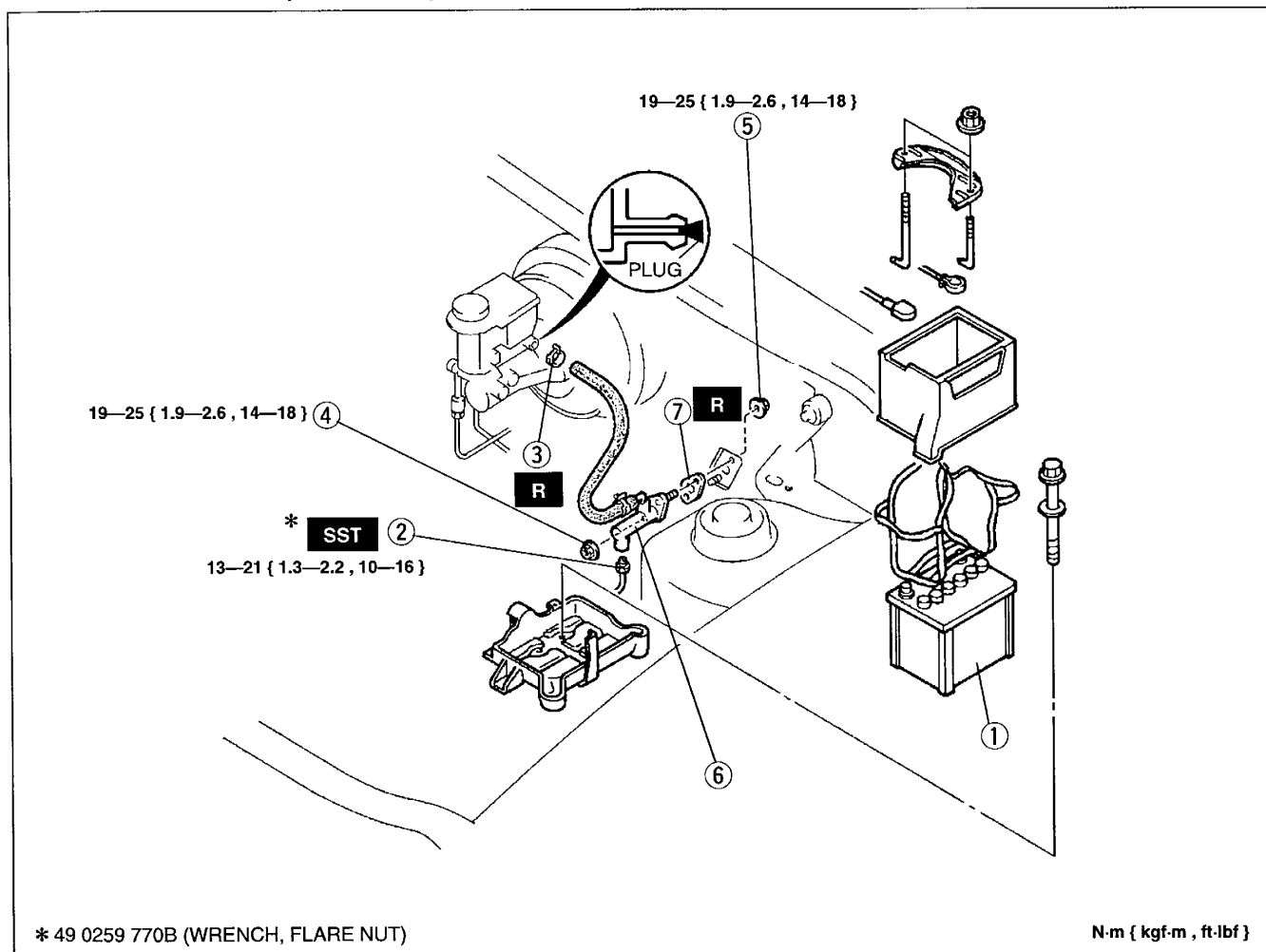
49 0259 770B		For disconnecting/ connecting clutch pipe
Wrench, flare nut		

REMOVAL / INSTALLATION

Caution

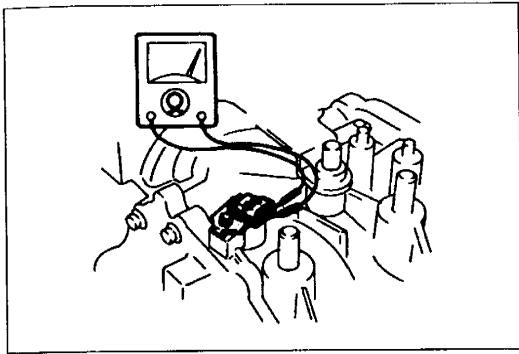
- Clutch fluid will damage painted surfaces. Be sure to use a container or rags to collect it. If fluid does get on a painted surface, wipe it off immediately with a rag.

1. Remove in the order shown in the figure.
2. Install in the reverse order of removal.
3. After installation, inspect and adjust the clutch pedal. (Refer to page H-3.)



1. Battery
2. Clutch pipe
3. Clip
4. Nut

5. Nut
6. Clutch master cylinder  
Disassembly / Assembly ..... page H-6
7. Gasket

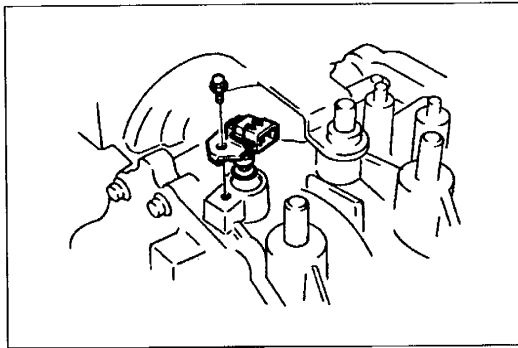
**INPUT/TURBINE SPEED SENSOR****Inspection****Inspection of resistance**

1. Disconnect the negative battery cable.
2. Remove the battery, air cleaner assembly, and battery carrier.
3. Disconnect the input/turbine speed sensor connector.
4. Measure the resistance between the terminals of the input/turbine speed sensor.

**Resistance: 200—400  $\Omega$**

**(ATF temperature: -40—160 °C { -40—320 °F })**

5. If not correct, replace the input/turbine speed sensor.
6. Connect the input/turbine speed sensor connector.
7. Install the battery carrier, air cleaner assembly, and battery.
8. Connect the negative battery cable.

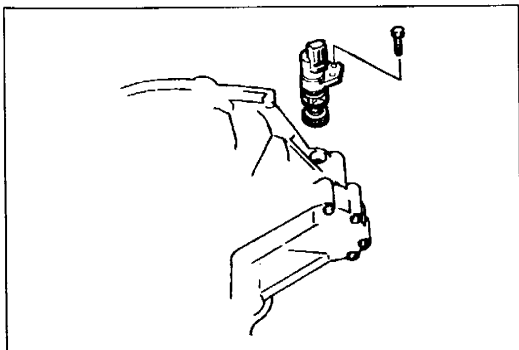
**Replacement**

1. Disconnect the negative battery cable.
2. Remove the battery, air cleaner assembly, and battery carrier.
3. Disconnect the input/turbine speed sensor connector.
4. Remove the input/turbine speed sensor.
5. Apply ATF to a new O-ring and install it on a new input/turbine speed sensor.
6. Install the input/turbine speed sensor.

**Tightening torque:**

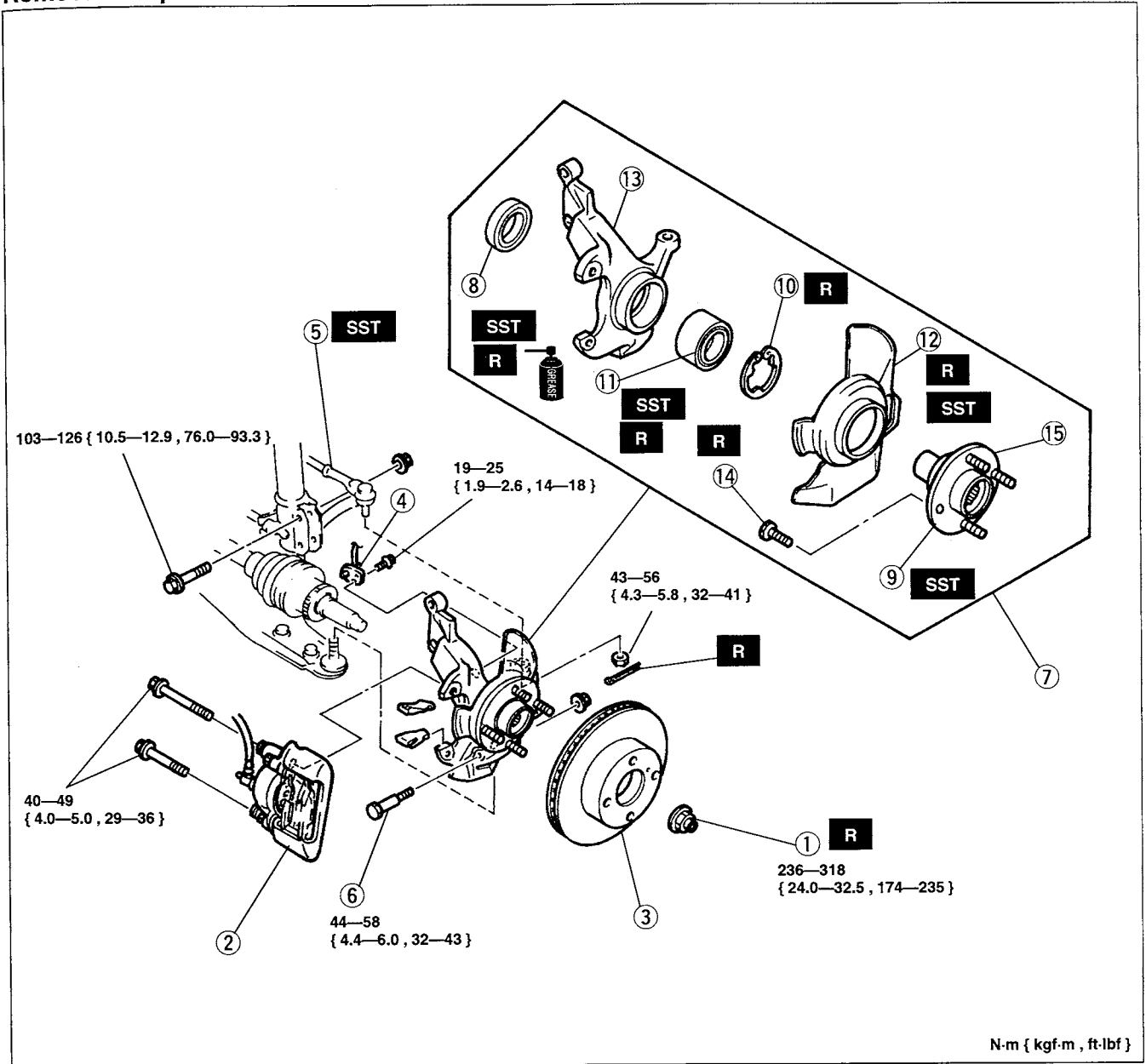
**7.9—10.7 N·m { 80—110 kgf·cm , 70—95 in·lbf }**

7. Connect the input/turbine speed sensor connector.
8. Install the battery carrier, air cleaner assembly, and battery.
9. Connect the negative battery cable.

**VEHICLE SPEEDOMETER SENSOR****Inspection****Inspection of voltage**

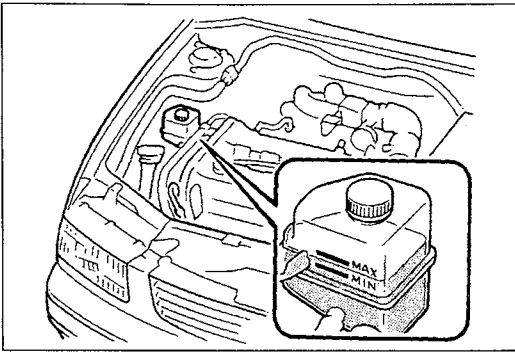
1. Remove the vehicle speedometer sensor.

Removal / Inspection / Installation



N·m { kgf·m , ft·lbf }

- |   |   |
|---|---|
| <p>1. Locknut<br/>Removal Note ..... page M-6<br/>Installation Note ..... page M-8</p> <p>2. Brake caliper assembly<br/>Service ..... section P</p> <p>3. Disc plate<br/>Service ..... section P</p> <p>4. ABS wheel-speed sensor<br/>Service ..... section P</p> <p>5. Tie-rod end<br/>Service ..... section N</p> <p>6. Lower arm ball joint bolt</p> <p>7. Front wheel hub, steering knuckle<br/>Inspect wheel hub for damage and rough rotation</p> <p>8. Oil seal<br/>Installation Note ..... page M-8</p> | <p>9. Wheel hub assembly<br/>Removal Note ..... page M-6<br/>Installation Note ..... page M-8</p> <p>10. Snap ring</p> <p>11. Wheel bearing<br/>Removal Note ..... page M-6<br/>Installation Note ..... page M-7</p> <p>12. Dust cover<br/>Removal Note ..... page M-6<br/>Installation Note ..... page M-7</p> <p>13. Steering knuckle<br/>Inspect for cracks and damage</p> <p>14. Hub bolt<br/>Removal Note ..... page M-7<br/>Installation Note ..... page M-7</p> <p>15. Wheel hub</p> |
|---|---|



### POWER STEERING FLUID

#### Inspection

#### Fluid level

Check the power steering fluid level. Add the specified power steering fluid if necessary.

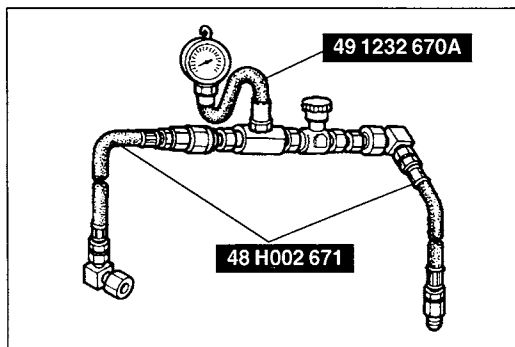
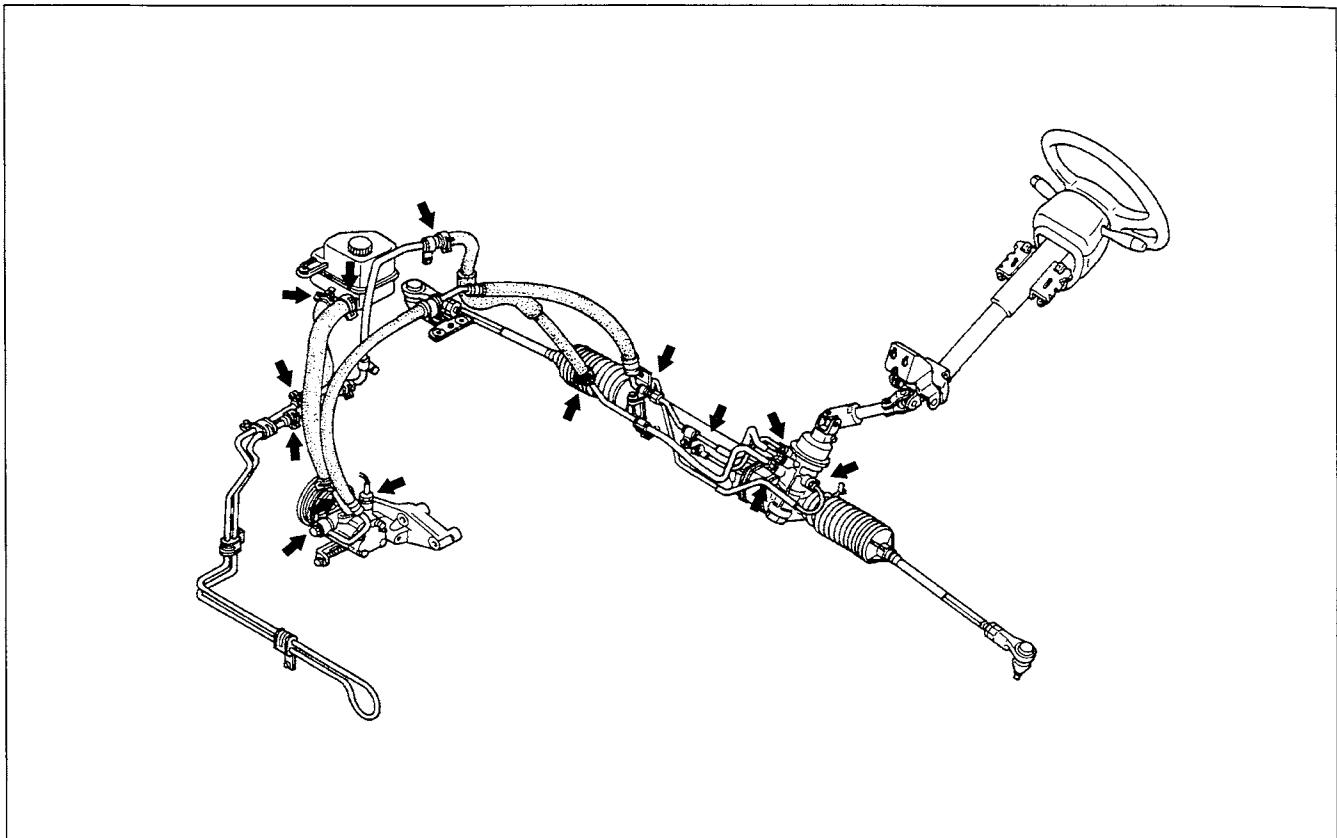
**Fluid specification: ATF Dexron® II or M-III**

### Fluid leakage

#### Caution

- Never hold the steering wheel to the extreme left or right for more than 5 seconds with the engine running. This could damage the power steering pump.

Start the engine and let it idle. Turn the steering wheel fully left and right to apply fluid pressure. Inspect the points shown in the figure for fluid leakage.

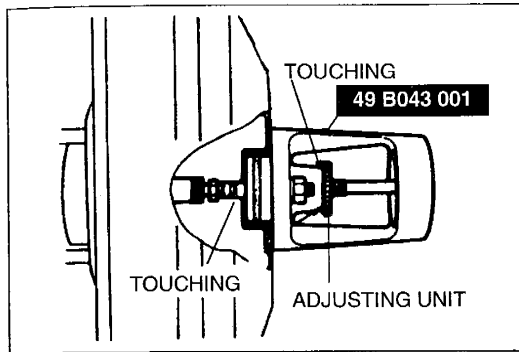


### Fluid pressure

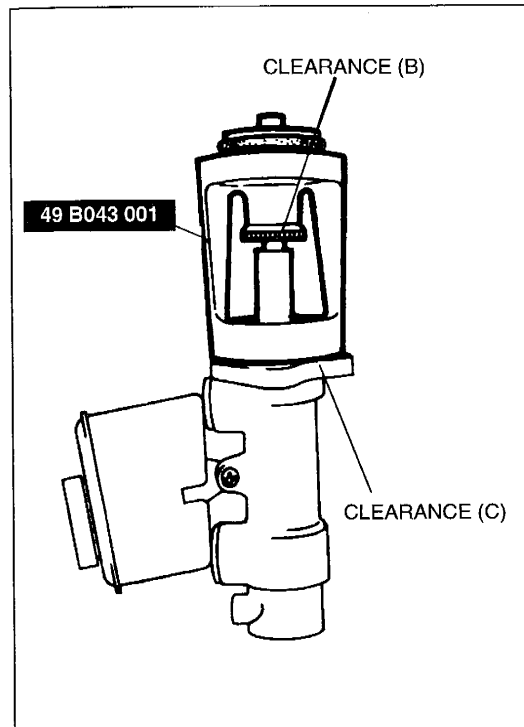
1. Assemble the SSTs as shown in the figure.

#### Tightening torque:

30—39 N·m { 3.0—4.0 kgf·m , 22—28 ft·lbf }



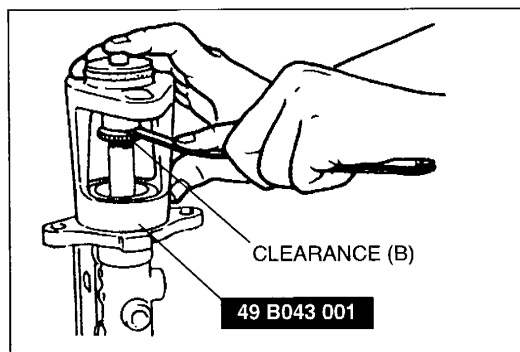
- Turn the adjusting nut of the **SST** counterclockwise until the gauge rod just contacts the push rod end of the power brake unit.  
Push lightly on the end of the gauge rod to be sure it is seated. Verify that there is no gap between the adjusting nut and **SST** body.



- Remove the **SST** from the power brake unit without disturbing the adjusting nut. Set the **SST** onto the master cylinder as shown in the figure.
- Push lightly on the end of the **SST** gauge rod to be sure it is bottomed in the master cylinder piston, but do not push so hard that the piston moves. Note any clearance between the **SST** body and the adjusting nut (clearance B) or between the body and the master cylinder (clearance C). Adjust the push rod as necessary as outlined in "Adjustment" below.

Measurement	Push rod
Clearance at (B)	Too short
Clearance at (C)	Too long
No clearance at (B) or (C)	OK

P

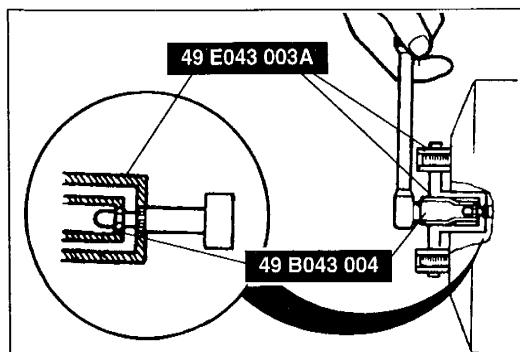


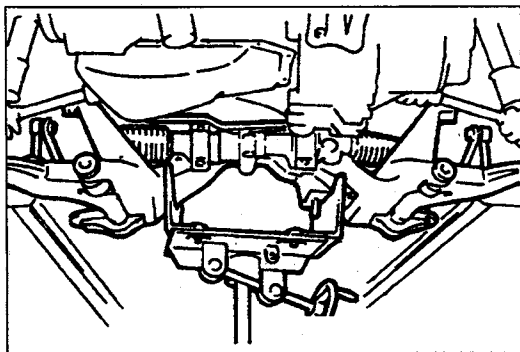
**Adjustment**

The threads of the push rod are specially designed so that the bolt becomes harder to turn past a certain point. This is to prevent the bolt from coming loose. Turn the bolt only within this range when adjusting.

**Clearance at B**

- Push lightly on the end of the **SST** gauge rod, and measure the clearance between the adjusting nut and the **SST** body.
- Using the **SSTs**, turn the nut to lengthen the power brake unit push rod to an amount equal to the clearance measured at B.





### Removal note

#### Front crossmember and steering gear assembly

1. Support the crossmember by using a jack and remove the bolts and nuts.

#### Caution


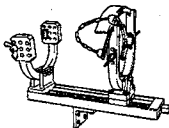

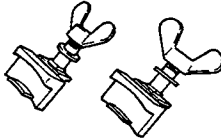
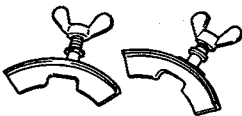
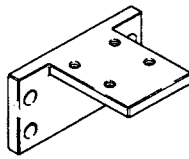




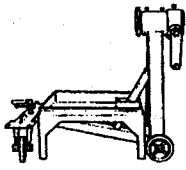
- Do not let the crossmember fall.

2. Remove the front crossmember and steering gear assembly.

## REAR SUSPENSION (STRUT)

### PREPARATION

#### SST

<p>49 T034 1A0</p> <p>Compressor, coil spring</p> 	<p>For removal and installation of coil spring</p>	<p>49 T034 101</p> <p>Compressor, spring (Part of 49 T034 1A0)</p> 	<p>For removal and installation of coil spring</p>
<p>49 T034 102</p> <p>Stand (Part of 49 T034 1A0)</p> 	<p>For removal and installation of coil spring</p>	<p>49 T034 103</p> <p>Hook (Part of 49 T034 1A0)</p> 	<p>For removal and installation of coil spring</p>
<p>49 T034 104</p> <p>Support (Parts of 49 T034 1A0)</p> 	<p>For removal and installation of coil spring</p>	<p>49 T034 105</p> <p>Attachment</p> 	<p>For removal and installation of coil spring</p>
<p>49 G034 1A0</p> <p>Compressor, coil spring</p> 	<p>For removal and installation of coil spring</p>	<p>49 G034 101</p> <p>Body (Part of 49 G034 1A0)</p> 	<p>For removal and installation of coil spring</p>
<p>49 G034 102</p> <p>Screw (Part of 49 G034 1A0)</p> 	<p>For removal and installation of coil spring</p>	<p>49 G034 103</p> <p>Arm (Part of 49 G034 1A0)</p> 	<p>For removal and installation of coil spring</p>
<p>49 0107 680A</p> <p>Engine stand</p> 	<p>For removal and installation of coil spring</p>	<p>—</p>	<p>—</p>