

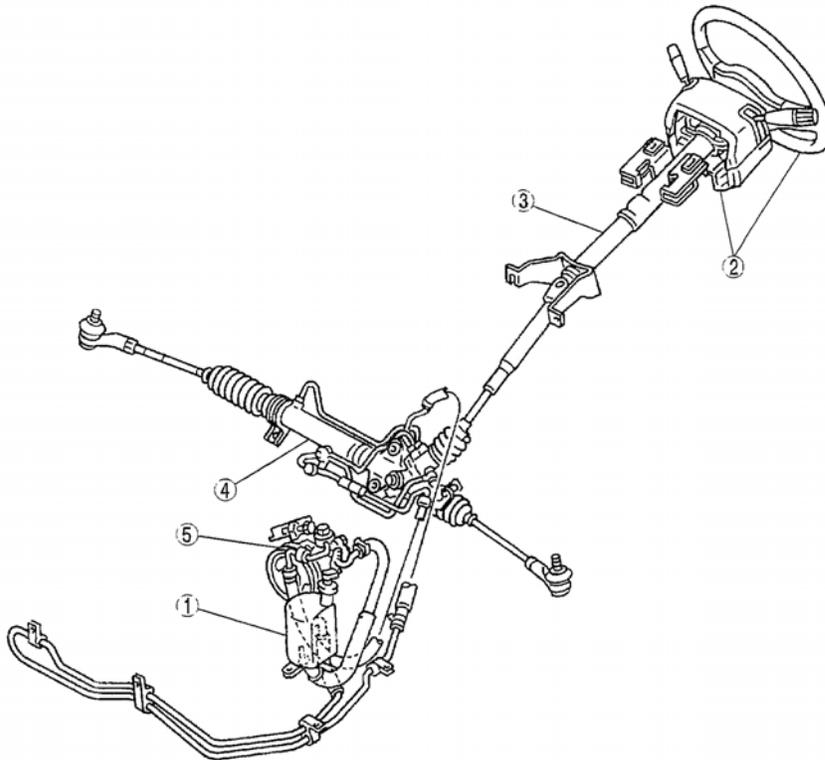
2005 Mazda MX-5 Miata

2005 STEERING Engine Speed Sensing Power Steering - MX-5 Miata

2005 STEERING

Engine Speed Sensing Power Steering - MX-5 Miata

ENGINE SPEED SENSING POWER STEERING LOCATION INDEX



1	Power steering fluid (See POWER STEERING FLUID INSPECTION.)
2	Steering wheel and column (See STEERING WHEEL AND COLUMN INSPECTION.) (See STEERING WHEEL AND COLUMN REMOVAL/INSTALLATION.)
3	Steering shaft (See STEERING SHAFT DISASSEMBLY/ASSEMBLY.) (See STEERING SHAFT INSPECTION.)

4	Steering gear and linkage (See STEERING GEAR AND LINKAGE REMOVAL/INSTALLATION.) (See STEERING GEAR AND LINKAGE DISASSEMBLY/ASSEMBLY.) (See STEERING GEAR AND LINKAGE INSPECTION.)
5	Power steering oil pump (See POWER STEERING OIL PUMP REMOVAL/INSTALLATION.) (See POWER STEERING OIL PUMP DISASSEMBLY/ASSEMBLY.)

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Fig. 1: Identifying Engine Speed Sensing Power Steering Components
Courtesy of MAZDA MOTORS CORP.

AIR BLEEDING

1. Inspect the fluid level.
2. Jack up the front of the vehicle and support it on safety stands.

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3. Turn the steering wheel fully to the left and right several times with the engine not running.
4. Reinspect the fluid level.
 - If it has dropped, add fluid.
5. Repeat Steps 3 and 4 until the fluid level stabilizes.
6. Lower the vehicle
7. Start the engine and let it idle.
8. Turn the steering wheel fully to the left and right several times.
9. Verify that the fluid is not foamy and that the fluid level has not dropped.
 - Add fluid as necessary and repeat Steps 8 and 9.

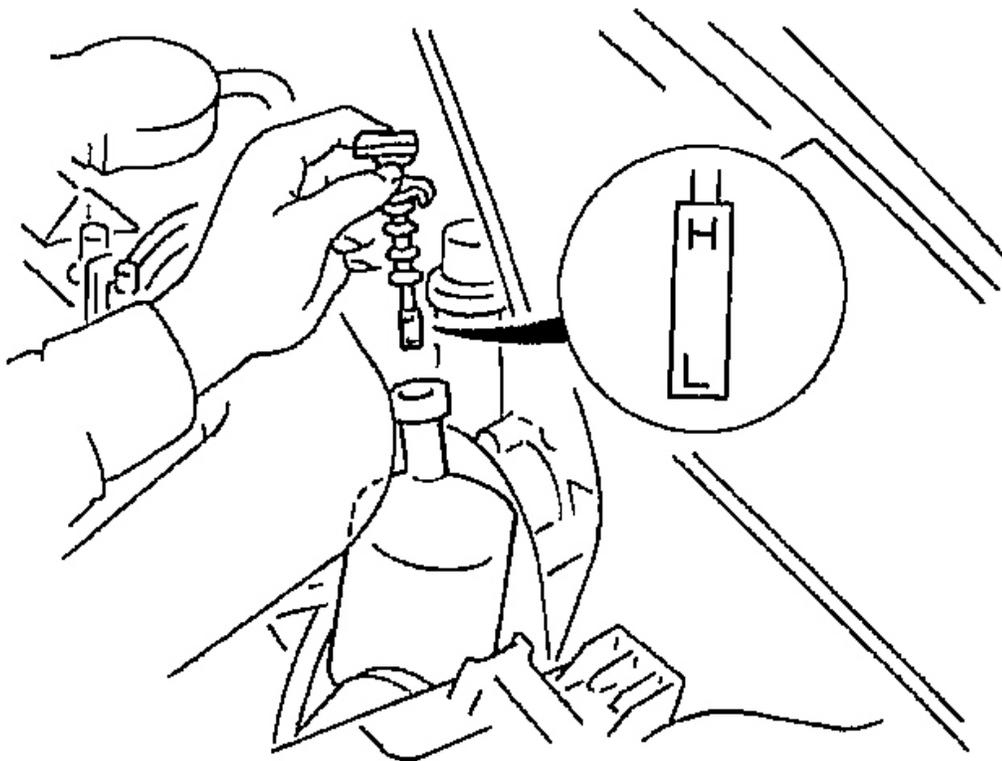
POWER STEERING FLUID INSPECTION

FLUID LEVEL INSPECTION

1. Inspect the power steering fluid level.
 - Add the specified power steering fluid if it is below the L mark. Remove the fluid if it is above the H mark.

FLUID SPECIFICATION

ATF M-III or equivalent (e.g.Dexron(R)III)



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Fig. 2: Inspecting Power Steering Fluid Level
Courtesy of MAZDA MOTORS CORP.

FLUID LEAKAGE INSPECTION

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.

1. Start the engine and let it idle. Turn the steering wheel fully to the left and right to apply fluid pressure.

NOTE:

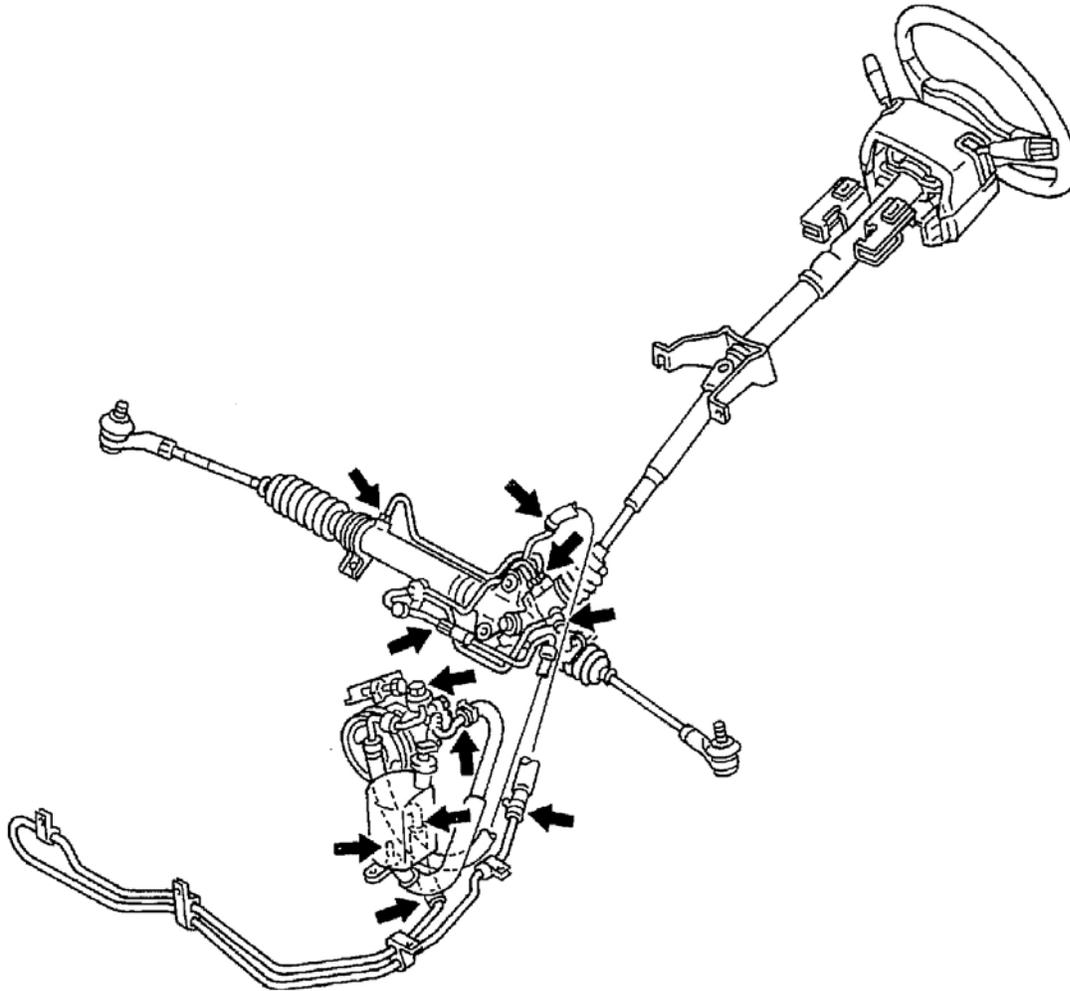
- The points where fluid leakage may occur are indicated in the table.

2. Inspect for fluid leakage.

- If fluid leakage is found replace related pipe or hose.

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Fig. 3: Identifying Fluid Leakage Areas
Courtesy of MAZDA MOTORS CORP.

FLUID PRESSURE INSPECTION

1. Assemble the SSTs as shown in **Fig. 4**.

Tightening torque

40-49 N.m {4.0-5.0 kgf.m, 29-36 ft.lbf}

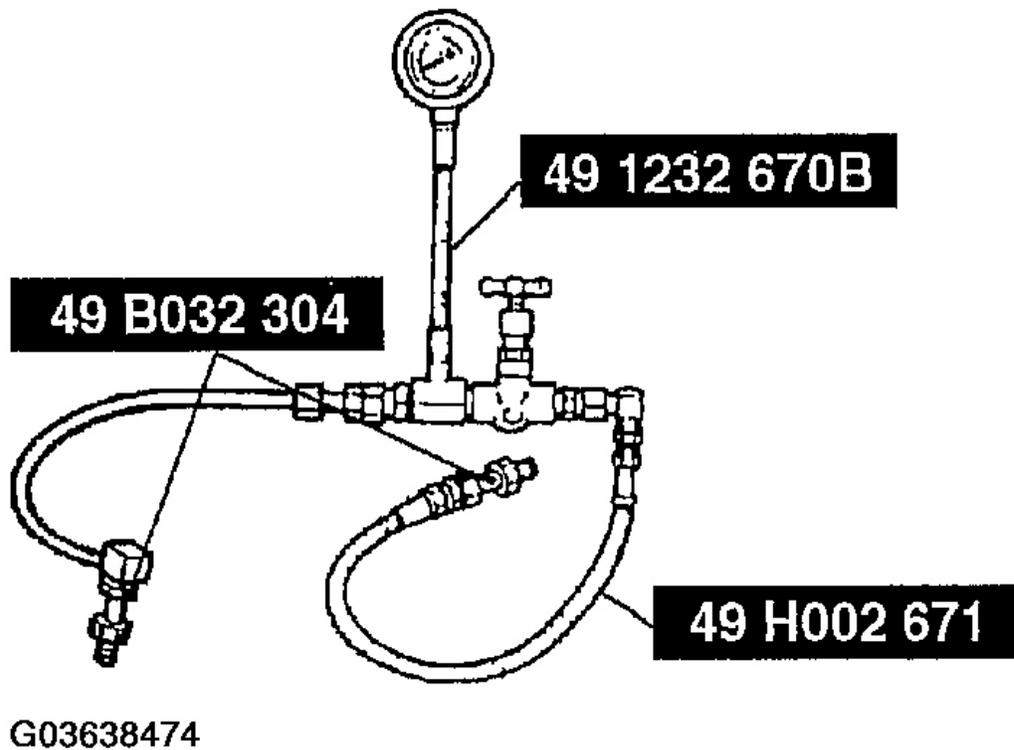
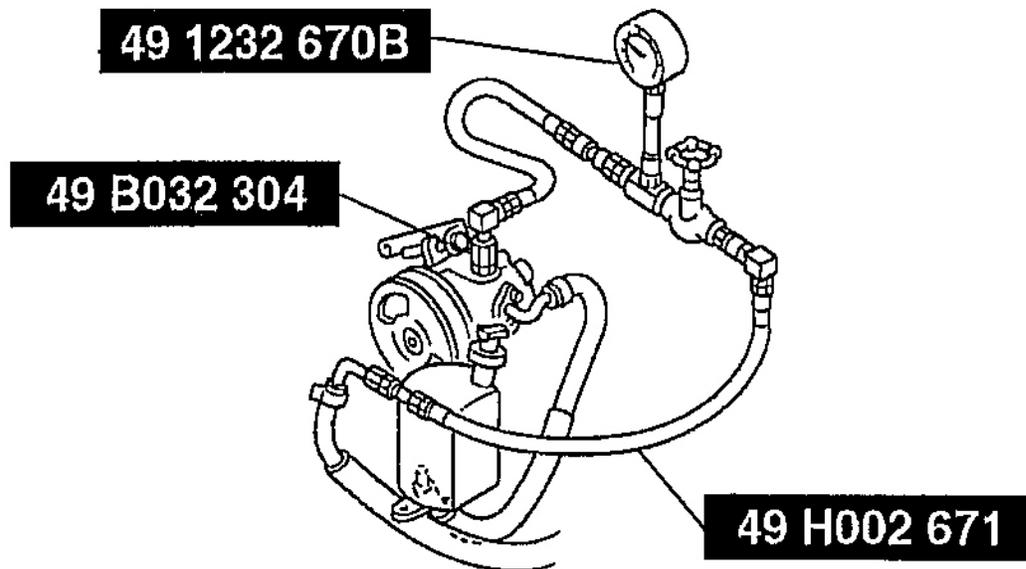


Fig. 4: Assembling SSTs

Courtesy of MAZDA MOTORS CORP.

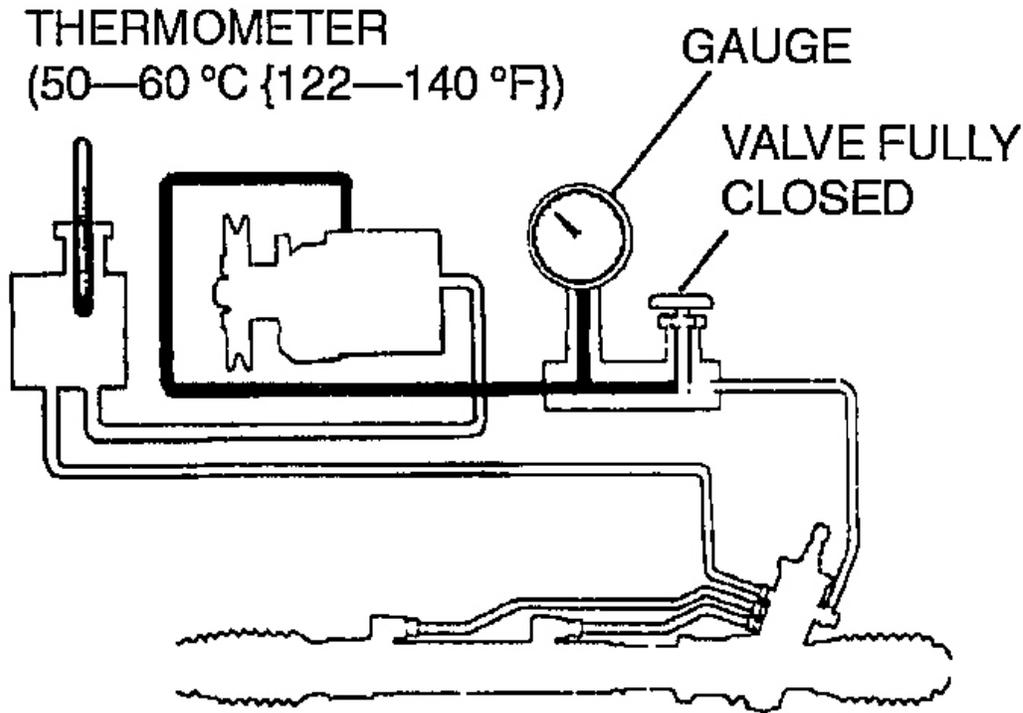
2. Mark both hose connections to ensure that the hose is reinstalled in its original position.
3. Disconnect the pressure pipe from the oil pump, and connect the SSTs .
4. Bleed the air from the system.



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Fig. 5: Disconnecting Pressure Pipe From Oil Pump
Courtesy of MAZDA MOTORS CORP.

5. Open the gauge valve fully. Start the engine and turn the steering wheel fully left and right to raise the fluid temperature to **50-60°C {122-140°F}** .
6. Close the gauge valve completely. Increase the engine speed to **1,000-1,500 RPM** and measure the fluid pressure generated by the oil pump.
 - If the pressure is not within specification, replace the oil pump component.



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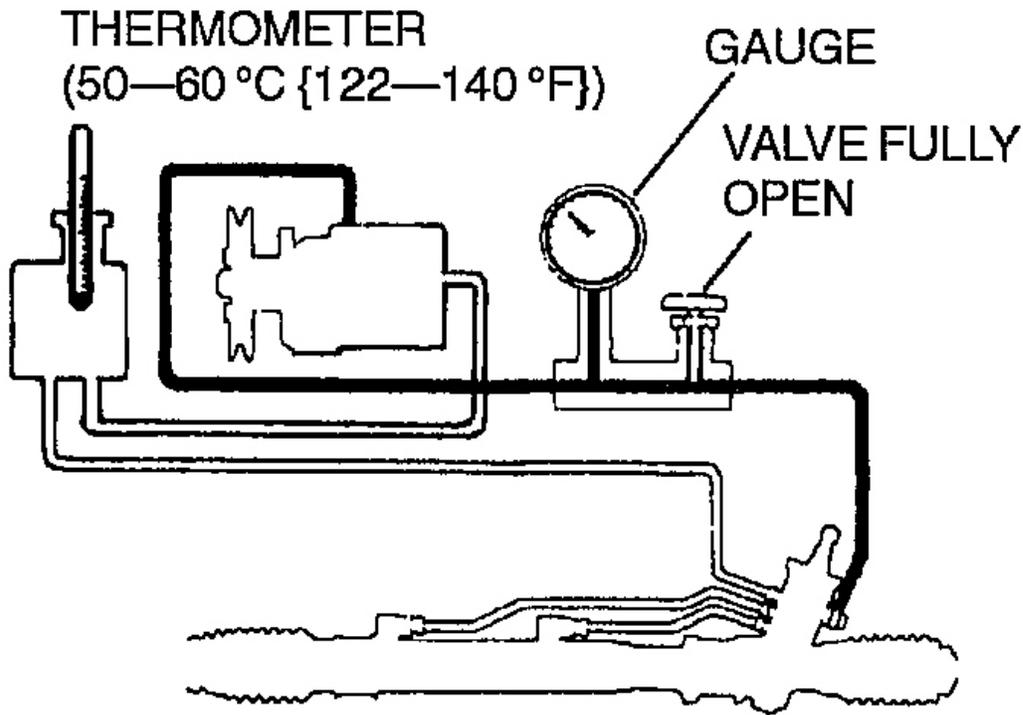
Fig. 6: Measuring Fluid Pressure
 Courtesy of MAZDA MOTORS CORP.

- CAUTION:**
- If the valve is left closed for more than 5 seconds, the fluid temperature will rise excessively and adversely affect the oil pump.

Oil pump fluid pressure

8.33-9.06 MPa {85.0-92.3 kgf/cm², 1,209-1,314 psi}

7. Open the gauge valve fully and increase the engine speed to **1,000-1,500 RPM** .
8. Turn the steering wheel fully to the left and right, then measure the fluid pressure generated at the gear housing.
 - If the pressure is not within specification, repair or replace the gear housing component.



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Fig. 7: Measuring Fluid Pressure
Courtesy of MAZDA MOTORS CORP.

- CAUTION:**
- If the steering wheel is kept in the fully turned position for more than 5 seconds, the fluid temperature will rise excessively and adversely affect the oil pump.

Gear housing fluid pressure

8.33-9.06 MPa {85.0-92.3 kgf/cm², 1,209-1,314 psi}

9. Remove the SSTs . Install and tighten the pressure pipe to the specified torque.

Tightening torque

32-47 N.m {3.2-4.8 kgf.m, 24-34 ft.lbf}

10. Bleed the air from the system.

STEERING WHEEL AND COLUMN INSPECTION

STEERING WHEEL PLAY INSPECTION

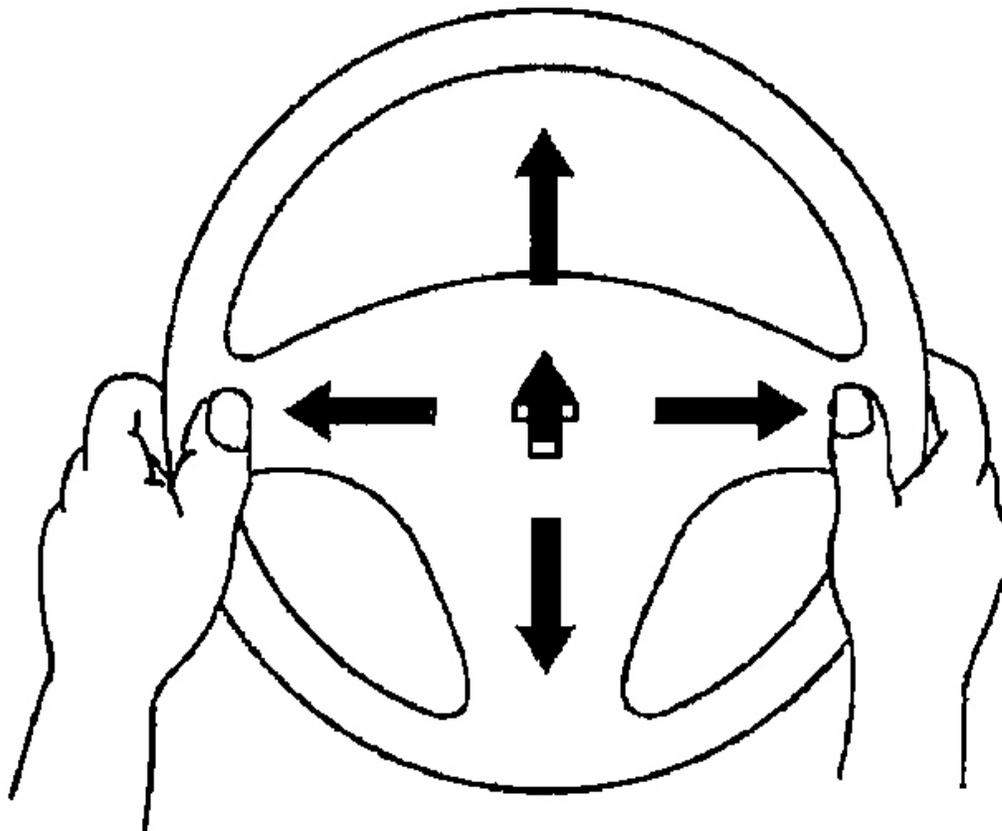
1. If the play exceeds specification, either the steering joints are worn or the backlash of the steering gear is excessive. With the wheels in the straight-ahead position, gently turn the steering wheel to the left and right and verify that the play is within specification.

Play

0-30 mm {0-1.18 in}

STEERING WHEEL LOOSENESS INSPECTION

1. Move the steering wheel as shown in the figure to inspect for column bearing wear, steering shaft joint play, steering wheel looseness, and column looseness.



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Fig. 8: Inspecting Steering Wheel Looseness
Courtesy of MAZDA MOTORS CORP.

STEERING WHEEL EFFORT INSPECTION

1. Inspect the following points:
 - Tire size and tire pressure
 - Fluid level
 - Drive belt deflection
2. With the vehicle on a hard, level surface, put the wheels in the straight-ahead position.
3. Start the engine and warm the power steering fluid to **50-60°C {122-140°F}** .
4. Remove the air bag module. (See **DRIVER-SIDE AIR BAG MODULE REMOVAL/INSTALLATION** .)

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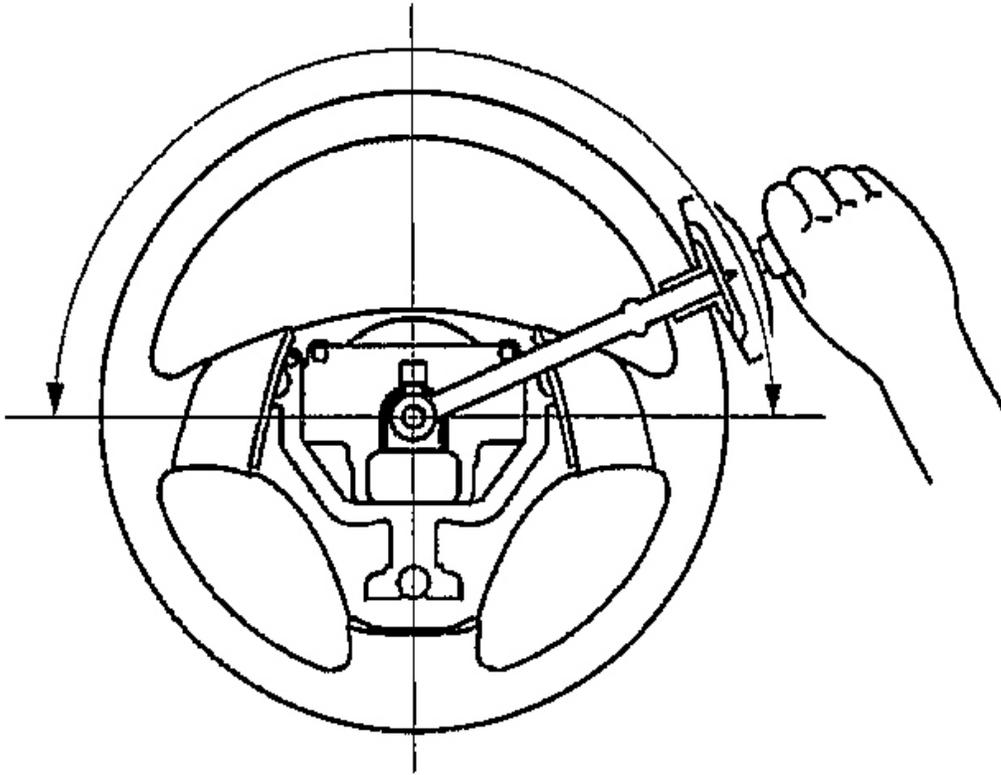
5. Measure the steering wheel effort using a torque wrench.
 - If not within the specification, note the following:
 - Air in system
 - Function of oil pump and steering gear
 - Fluid leakage at hose or connectors

Steering wheel effort

7.8 N.m {80 kgf.cm, 69 in.lbf} max.

NOTE:

- **To determine whether the steering effort is satisfactory or not, perform the inspection on another vehicle of the same model and under the same conditions, and compare the results.**
- **The steering wheel effort varies with conditions as shown below.**
 - **Road conditions, such as dry or wet, and asphalt or concrete.**
 - **Tire conditions, such as brand, wear, and tire pressure.**



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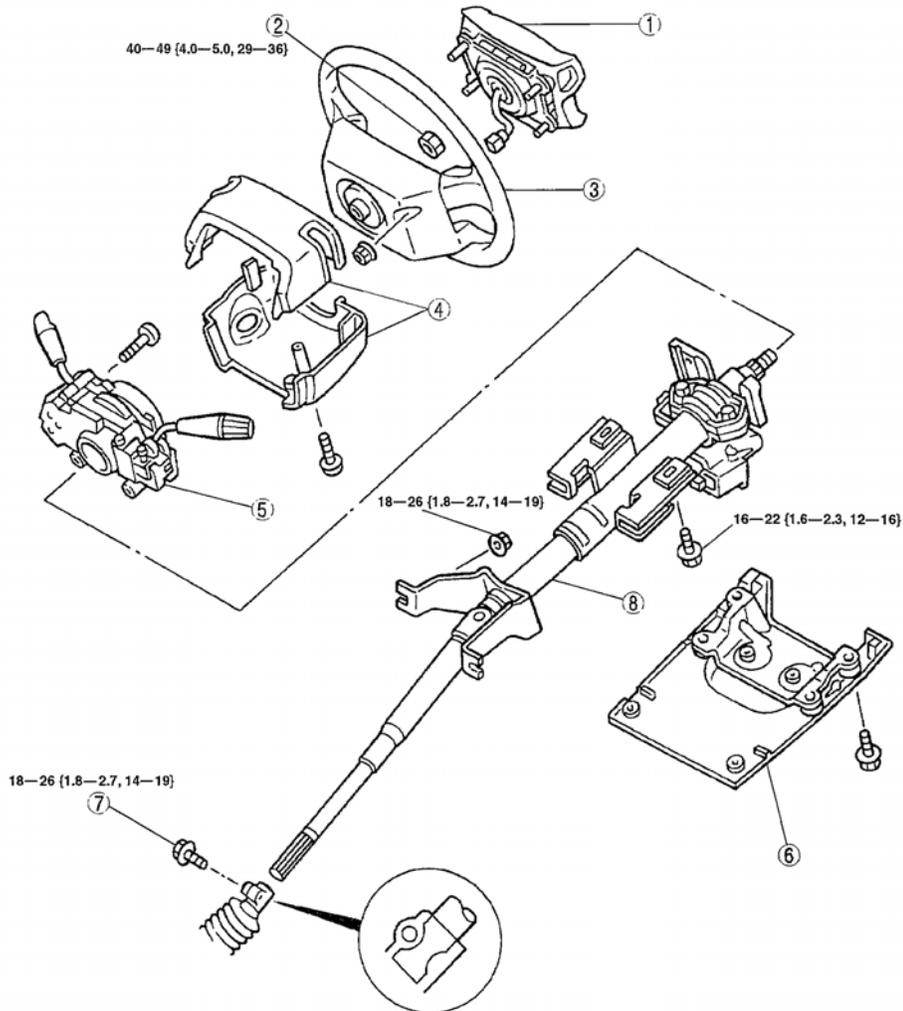
Fig. 9: Checking Steering Wheel Effort
Courtesy of MAZDA MOTORS CORP.

STEERING WHEEL AND COLUMN REMOVAL/INSTALLATION

1. Remove in the order indicated in the table.

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1	Air bag module (See DRIVER-SIDE AIR BAG MODULE REMOVAL/INSTALLATION)
2	Locknut
3	Steering wheel (See Steering Wheel Removal Note)

4	Column cover
5	Combination switch
6	Lower panel
7	Intermediate shaft bolt
8	Steering shaft

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Fig. 10: Removing Steering Wheel And Column - With Torque Specifications
Courtesy of MAZDA MOTORS CORP.

2. Install in the reverse order of removal.
3. After installation, verify that the horn sounds.
 - If the horn does not sound, remove the air bag module and connect the module connectors.

STEERING WHEEL REMOVAL NOTE

1. Set the wheels in the straight-ahead position and remove the steering wheel using a suitable puller.

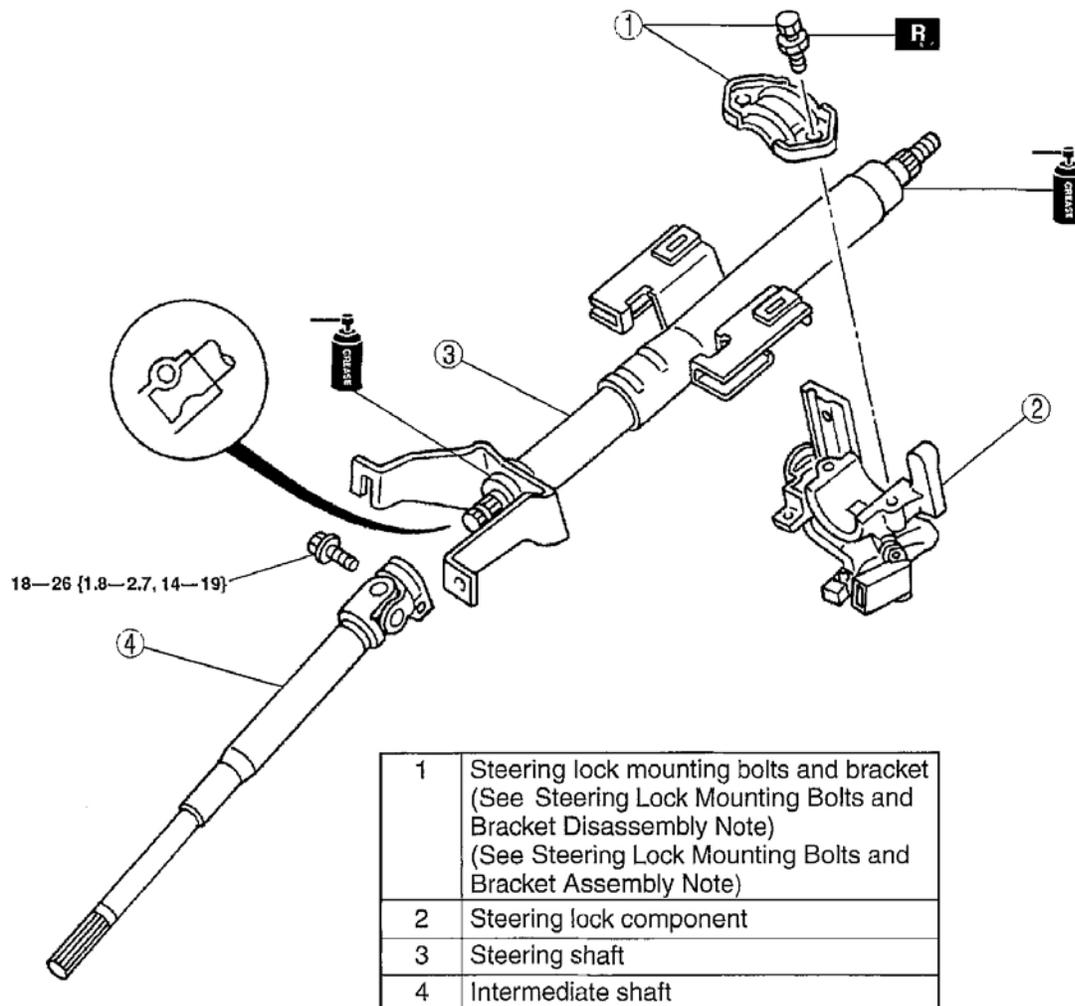
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- CAUTION:**
- Do not try to remove the steering wheel by hitting the shaft with a hammer. The column will collapse.

STEERING SHAFT DISASSEMBLY/ASSEMBLY

1. Disassemble in the order indicated in the table.



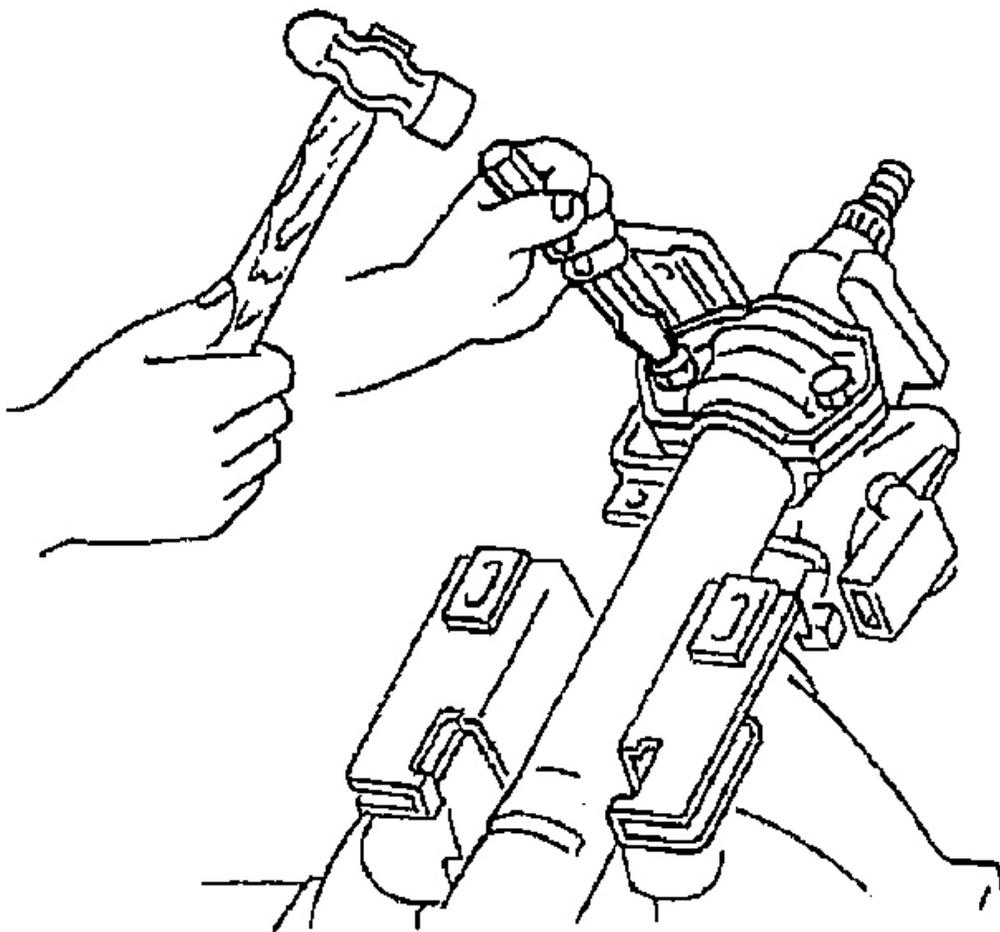
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Fig. 11: Disassembling Steering Shaft
Courtesy of MAZDA MOTORS CORP.

2. Assemble in the reverse order of disassembly.

STEERING LOCK MOUNTING BOLTS AND BRACKET DISASSEMBLY NOTE

1. Use a chisel to make a groove in the heads of the steering lock mounting bolts. Remove the bolts with a screwdriver. Remove the steering lock component.

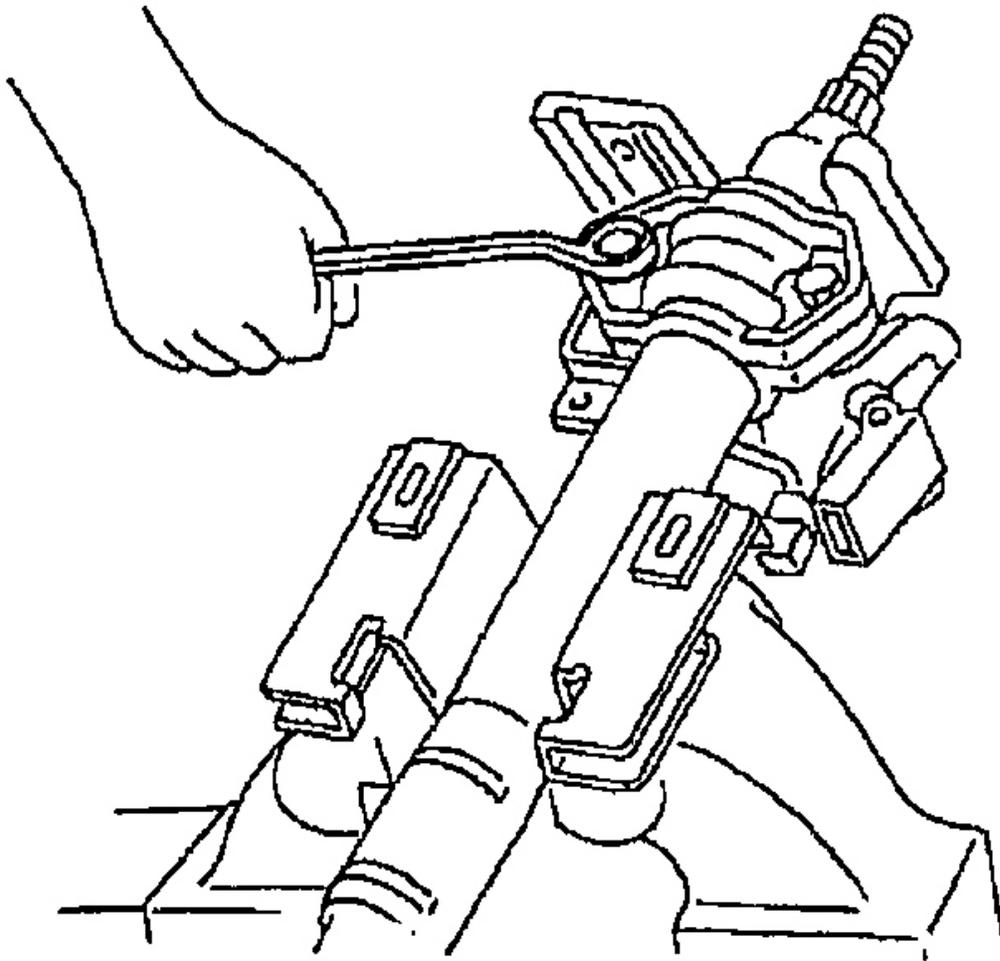


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Fig. 12: Using Chisel To Make A Groove In Heads Of Steering Lock Mounting Bolts
Courtesy of MAZDA MOTORS CORP.

STEERING LOCK MOUNTING BOLTS AND BRACKET ASSEMBLY NOTE

1. Install the steering lock component. Install the new steering lock mounting bolts. Tighten the bolts until the heads break off.



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Fig. 13: Installing Steering Lock Mounting Bolts
Courtesy of MAZDA MOTORS CORP.

STEERING SHAFT INSPECTION

1. Inspect the following, and replace the column component as necessary.
 1. Column bearing damage.

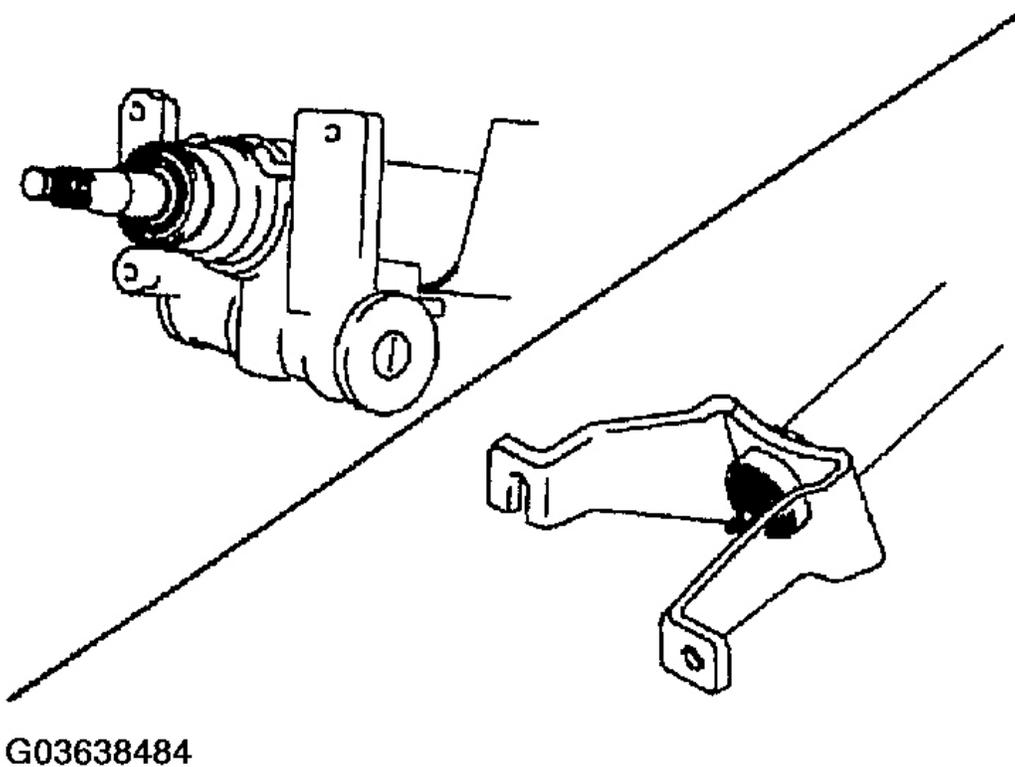
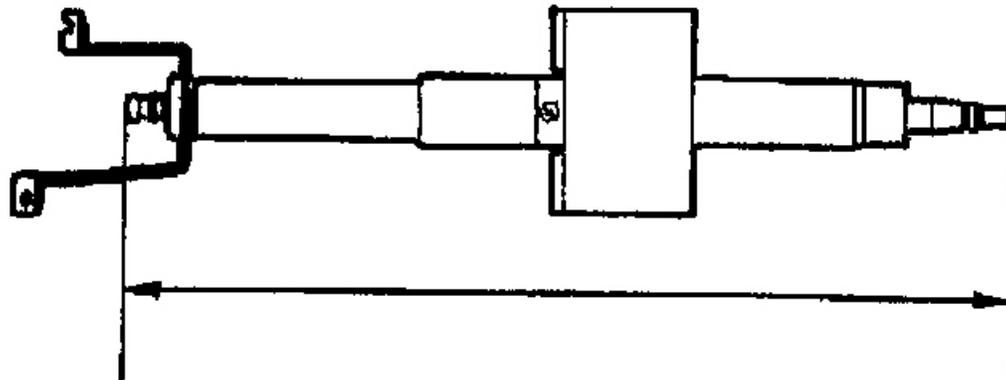


Fig. 14: Inspecting Column Bearing Damage
Courtesy of MAZDA MOTORS CORP.

2. Steering shaft length.

Length

593.8-595.8 mm {23.38-23.45 in}



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Fig. 15: Identifying Steering Shaft Length
Courtesy of MAZDA MOTORS CORP.

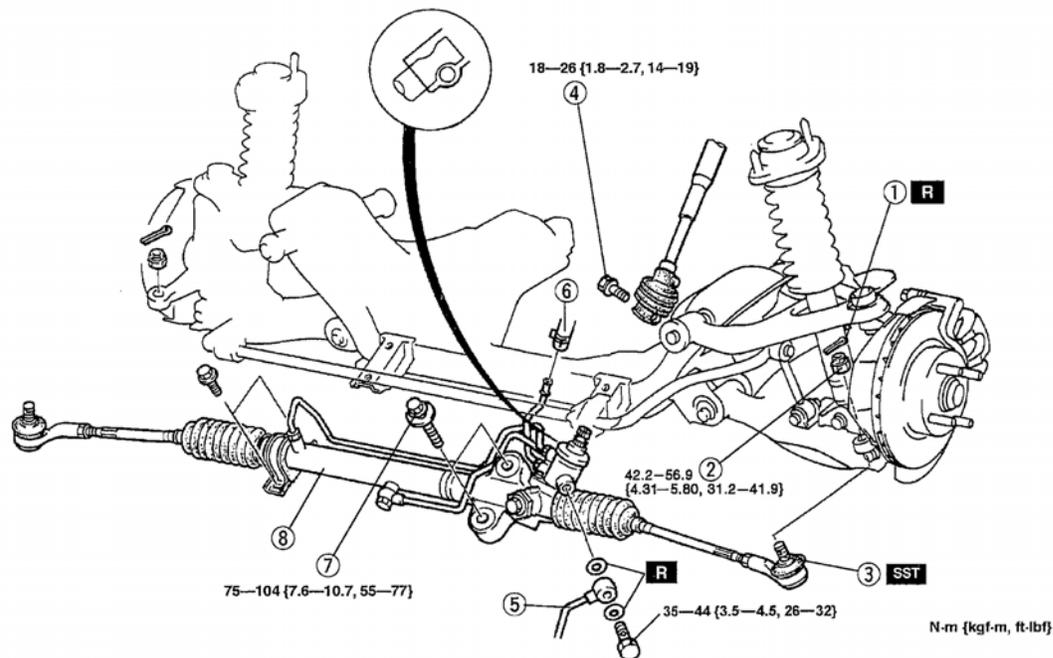
STEERING GEAR AND LINKAGE REMOVAL/INSTALLATION

- CAUTION:**
- Performing the following procedures without first removing the ABS wheel-speed sensor may possibly cause an open circuit in the harness if it is pulled by mistake. Before performing the following procedures, remove the ABS wheel-speed sensor (axle side) and fix it to an appropriate place where the sensor will not be pulled by mistake while servicing the vehicle.

1. Remove in the order indicated in the table.

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1	Cotter pin
2	Nut
3	Tie-rod end ball joint (See Tie-rod End Ball Joint Removal Note)

4	Bolt
5	Pressure pipe
6	Return hose
7	Mounting bracket bolt
8	Steering gear and linkage

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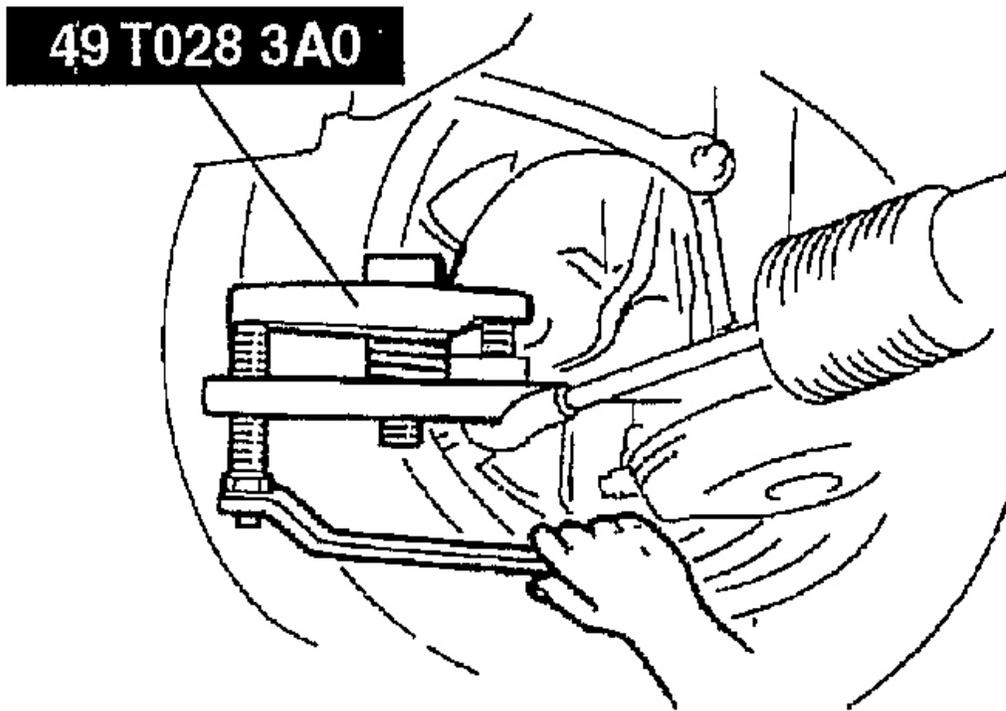
Fig. 16: Removing Steering Gear And Linkage - With Torque Specifications
 Courtesy of MAZDA MOTORS CORP.

2. Install in the reverse order of removal.
3. After installation, inspect the toe-in.

(See **FRONT WHEEL ALIGNMENT** .)

TIE-ROD END BALL JOINT REMOVAL NOTE

1. Separate the tie-rod end ball joint from the knuckle using the **SST** .



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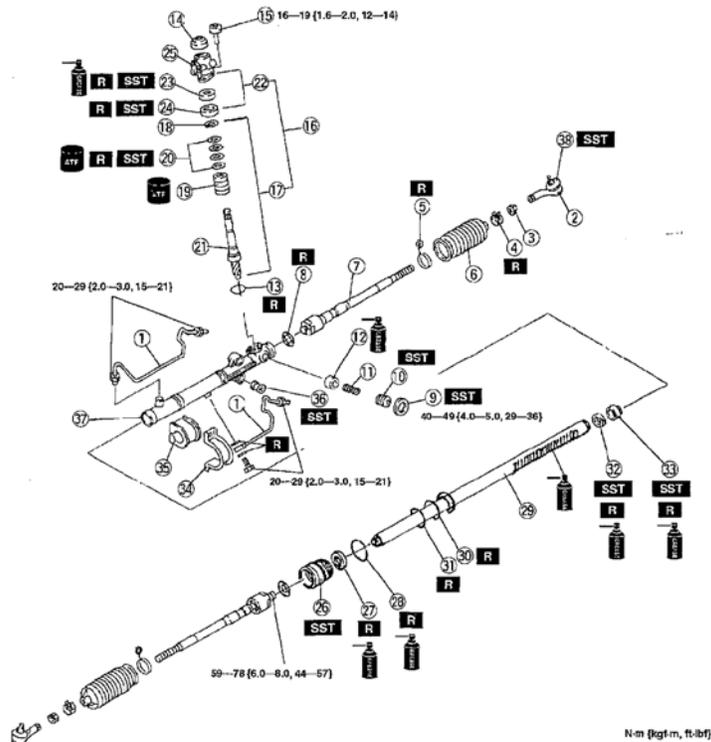
Fig. 17: Separating Tie-Rod End Ball Joint From Knuckle
Courtesy of MAZDA MOTORS CORP.

STEERING GEAR AND LINKAGE DISASSEMBLY/ASSEMBLY

1. Disassemble in the order indicated in the table.

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N-m (kgf-m, ft-lbf)

1	Oil pipe
2	Tie-rod end
3	Locknut (Tie-rod end)
4	Boot band
5	Boot wire
6	Boot
7	Tie rod (See Tie Rod Disassembly Note.)
8	Washer
9	Locknut (Adjusting cover) (See Locknut Disassembly Note.)
10	Adjusting cover (See Adjusting Cover Assembly Note.)
11	Yoke spring
12	Support yoke
13	O-ring
14	Dust cover
15	Socket bolt
16	Pinion shaft and housing component (See Pinion Shaft and Housing Component Disassembly Note.)
17	Pinion shaft component (See Pinion Shaft Component Disassembly Note.)
18	Snap ring (See Snap Ring Disassembly Note.)
19	Control valve component
20	Seal ring (See Seal Ring Assembly Note.)
21	Pinion shaft
22	Valve housing component

23	Upper bearing (See Upper Bearing, Oil Seal Disassembly Note.) (See Upper Bearing Assembly Note.)
24	Oil seal (See Upper Bearing, Oil Seal Disassembly Note.) (See Oil Seal Assembly Note.)
25	Valve housing
26	Holder (See Holder Disassembly Note.) (See Holder Assembly Note.)
27	U gasket
28	O-ring
29	Steering rack
30	Seal ring
31	O-ring
32	Oil seal (See Oil Seal, Inner Guide Disassembly Note.) (See Oil Seal Assembly Note.)
33	Inner guide (See Oil Seal, Inner Guide Disassembly Note.) (See Oil Seal, Inner Guide Assembly Note.)
34	Mounting bracket
35	Mount
36	Mounting rubber (See Mounting Rubber Disassembly Note.) (See Mounting Rubber Assembly Note.)
37	Gear housing
38	Tie-rod end boot (See Tie-rod End Boot Disassembly Note.) (See Tie-rod End Boot Assembly Note.)

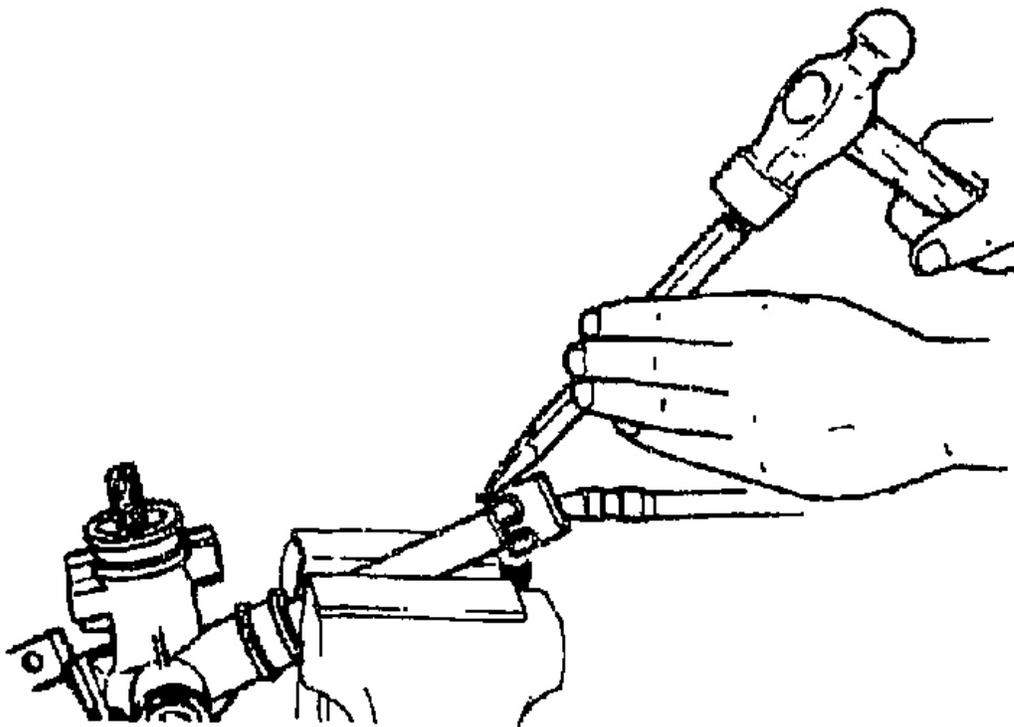
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Fig. 18: Disassembling Steering Gear And Linkage - With Torque Specifications
 Courtesy of MAZDA MOTORS CORP.

2. Assemble in the reverse order of disassembly.

TIE ROD DISASSEMBLY NOTE

1. Unclamp the washer.
2. Remove the tie rod.

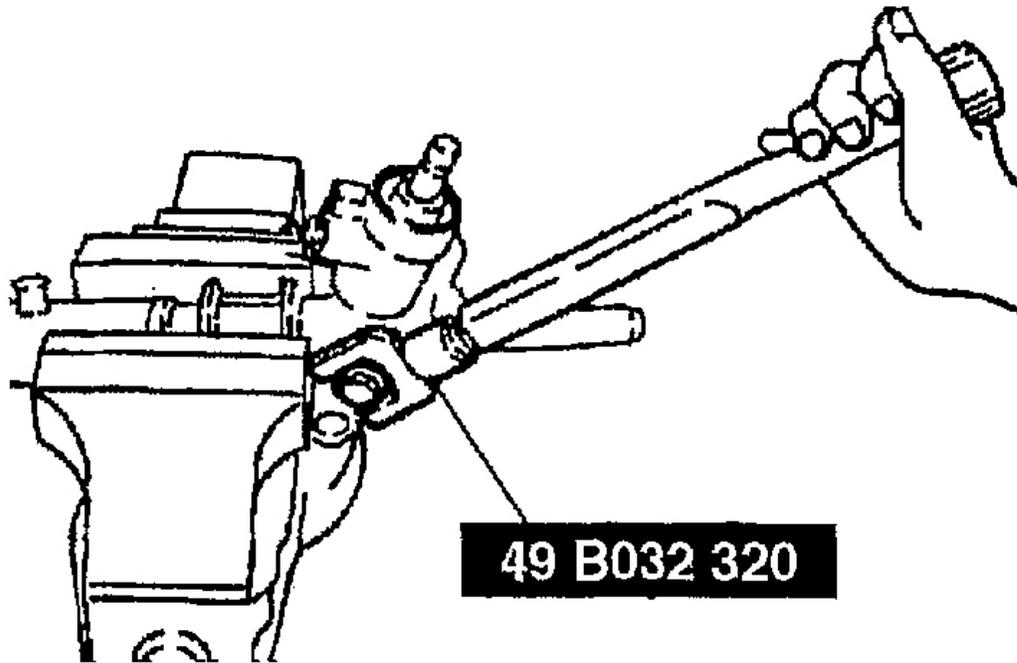


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Fig. 19: Removing Tie Rod
Courtesy of MAZDA MOTORS CORP.

LOCKNUT DISASSEMBLY NOTE

1. Remove the locknut using the SST .

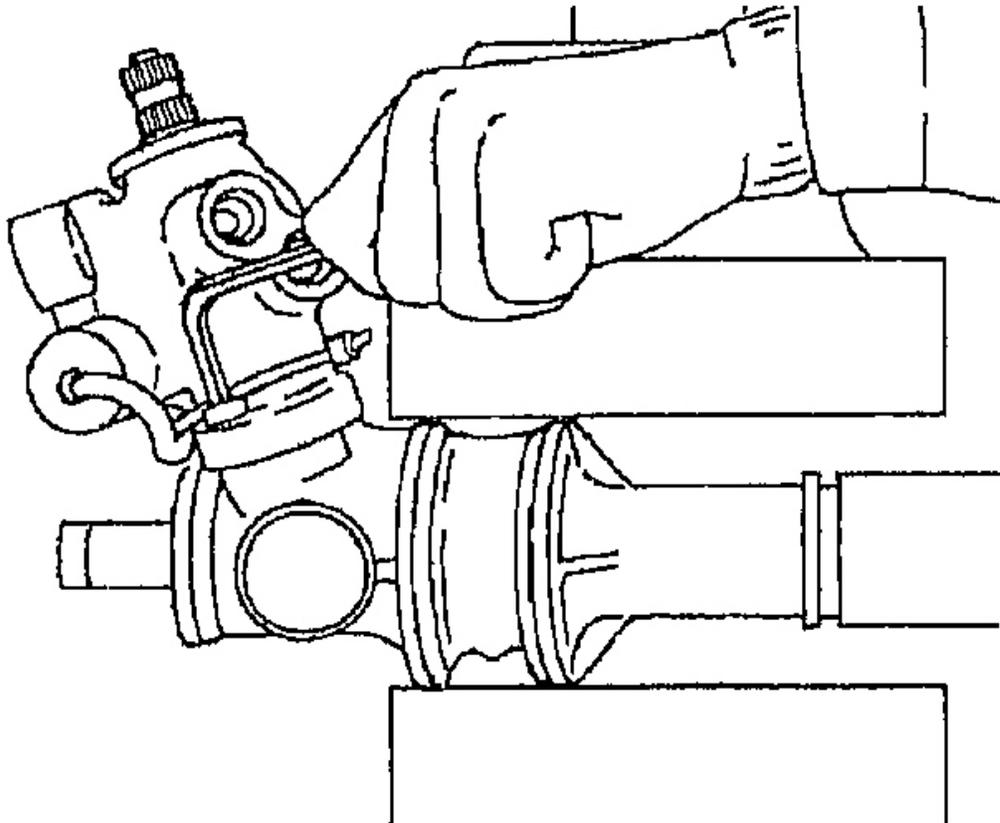


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Fig. 20: Removing Locknut
Courtesy of MAZDA MOTORS CORP.

PINION SHAFT AND HOUSING COMPONENT DISASSEMBLY NOTE

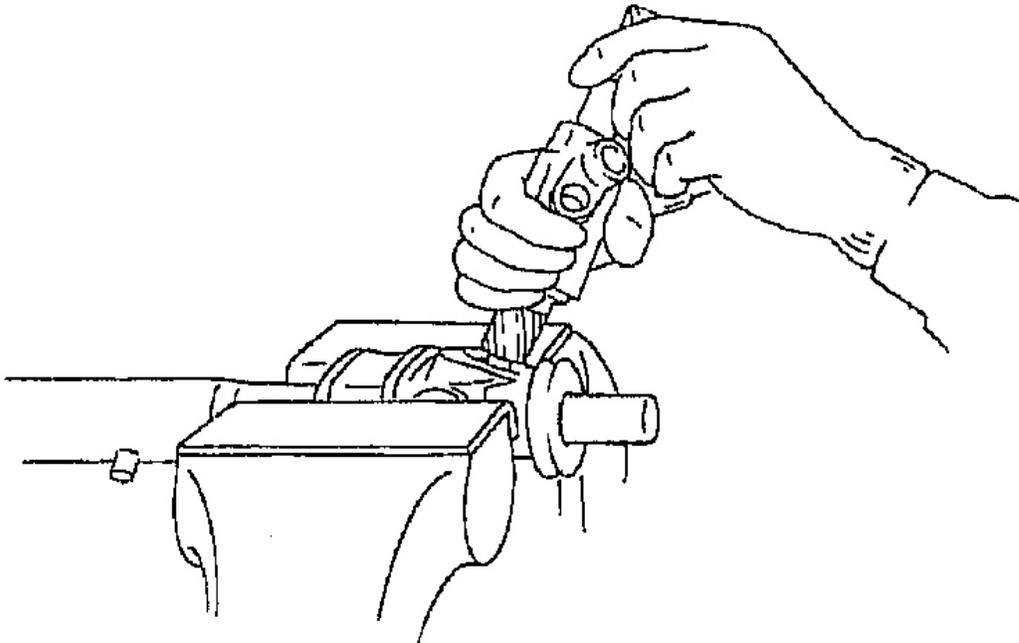
1. Remove the socket bolts (2 points) fixing the pinion shaft and housing.



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Fig. 21: Removing Socket Bolts Fixing Pinion Shaft And Housing
Courtesy of MAZDA MOTORS CORP.

2. Hold the pinion shaft as shown, and pull out the pinion shaft and housing component.



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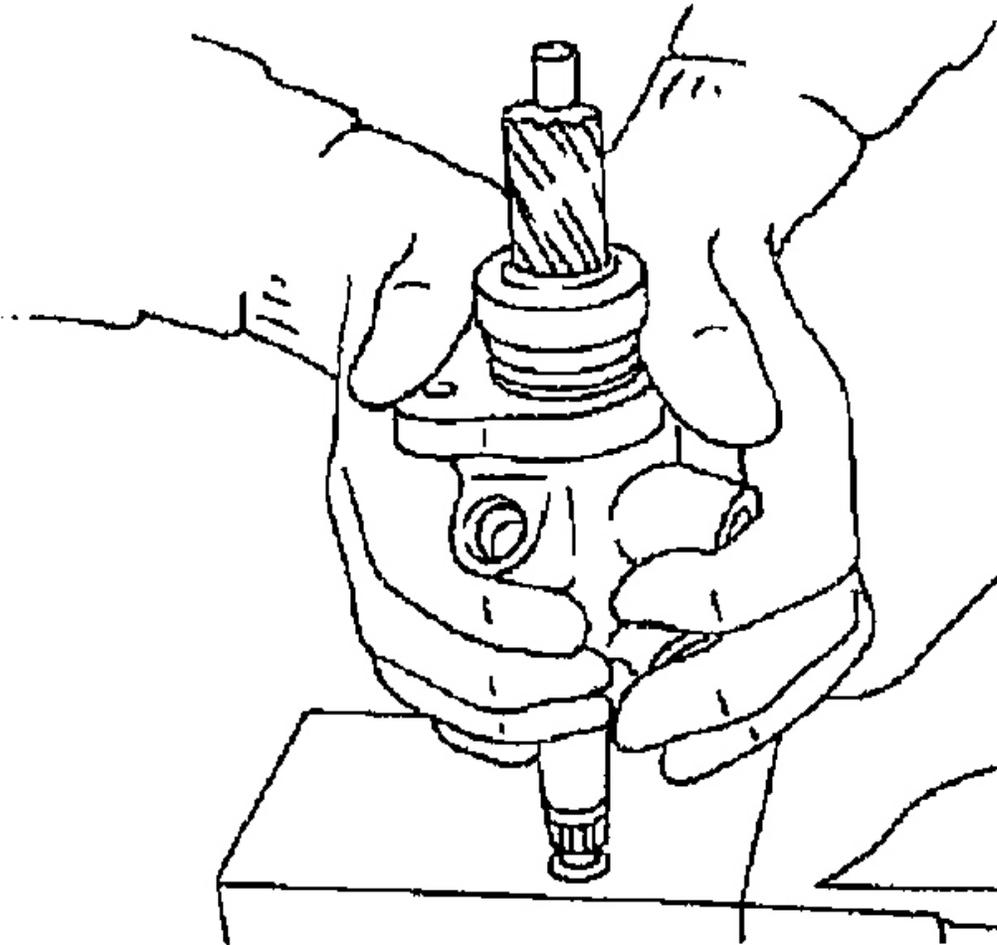
Fig. 22: Pulling Out Pinion Shaft And Housing Component
Courtesy of MAZDA MOTORS CORP.

PINION SHAFT COMPONENT DISASSEMBLY NOTE

1. Push out the pinion shaft component from the valve housing as shown.

NOTE:

- If the pinion shaft does not come out easily, remove it using a press.

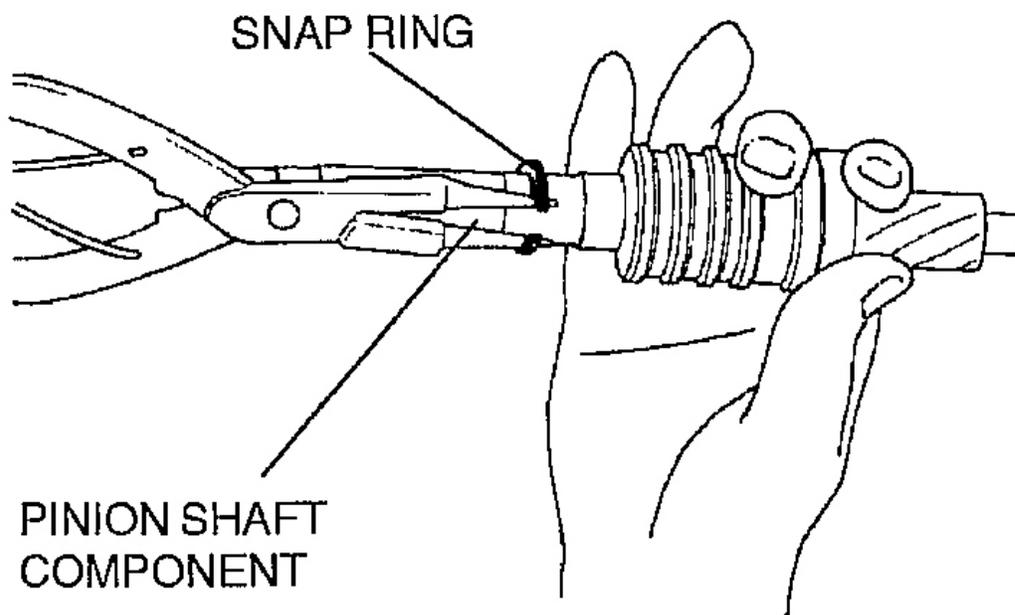


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Fig. 23: Pushing Out Pinion Shaft Component From Valve Housing
Courtesy of MAZDA MOTORS CORP.

SNAP RING DISASSEMBLY NOTE

1. Carefully remove the snap ring without damaging the pinion shaft component.



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Fig. 24: Removing Snap Ring Without Damaging Pinion Shaft Component
Courtesy of MAZDA MOTORS CORP.

UPPER BEARING, OIL SEAL DISASSEMBLY NOTE

1. Press out the upper bearing and oil seal from the valve housing using the **SST** .

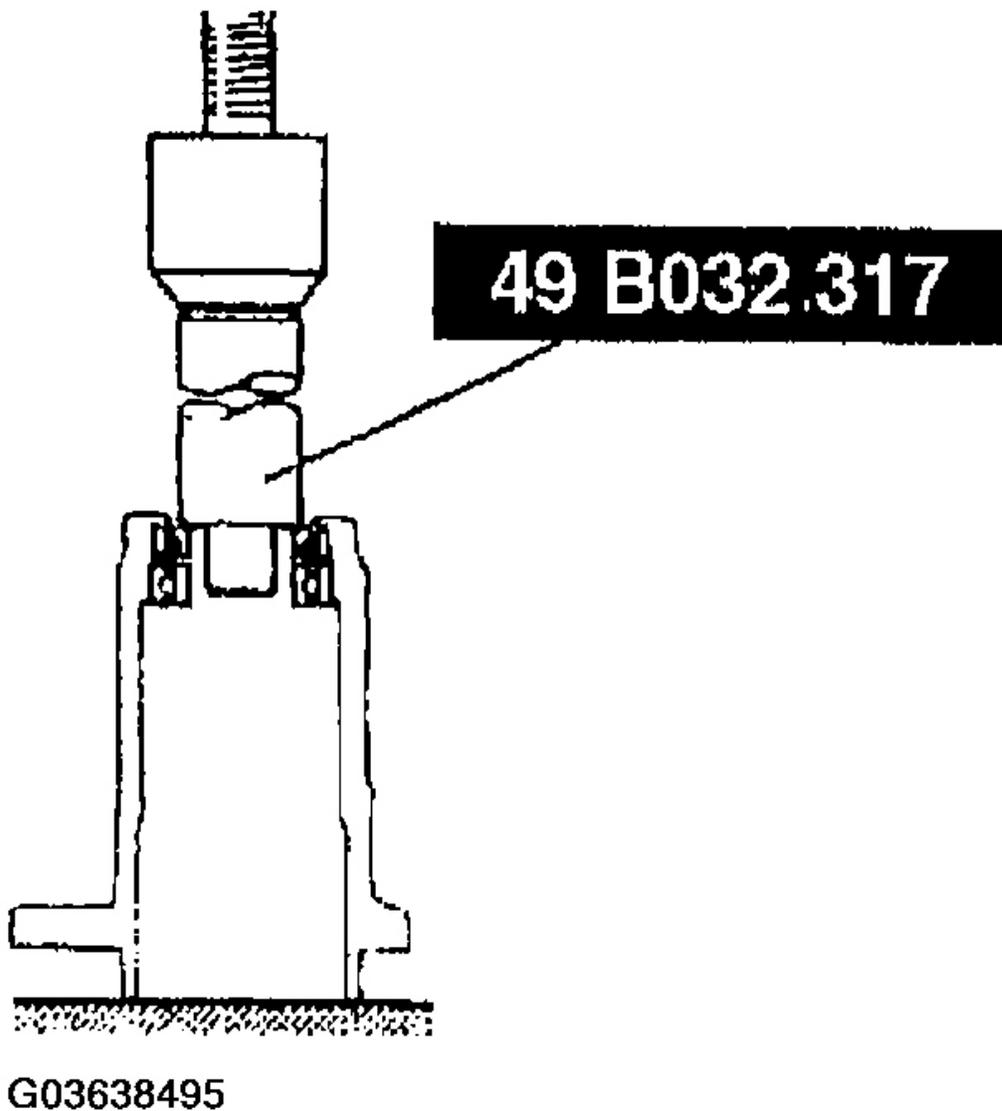
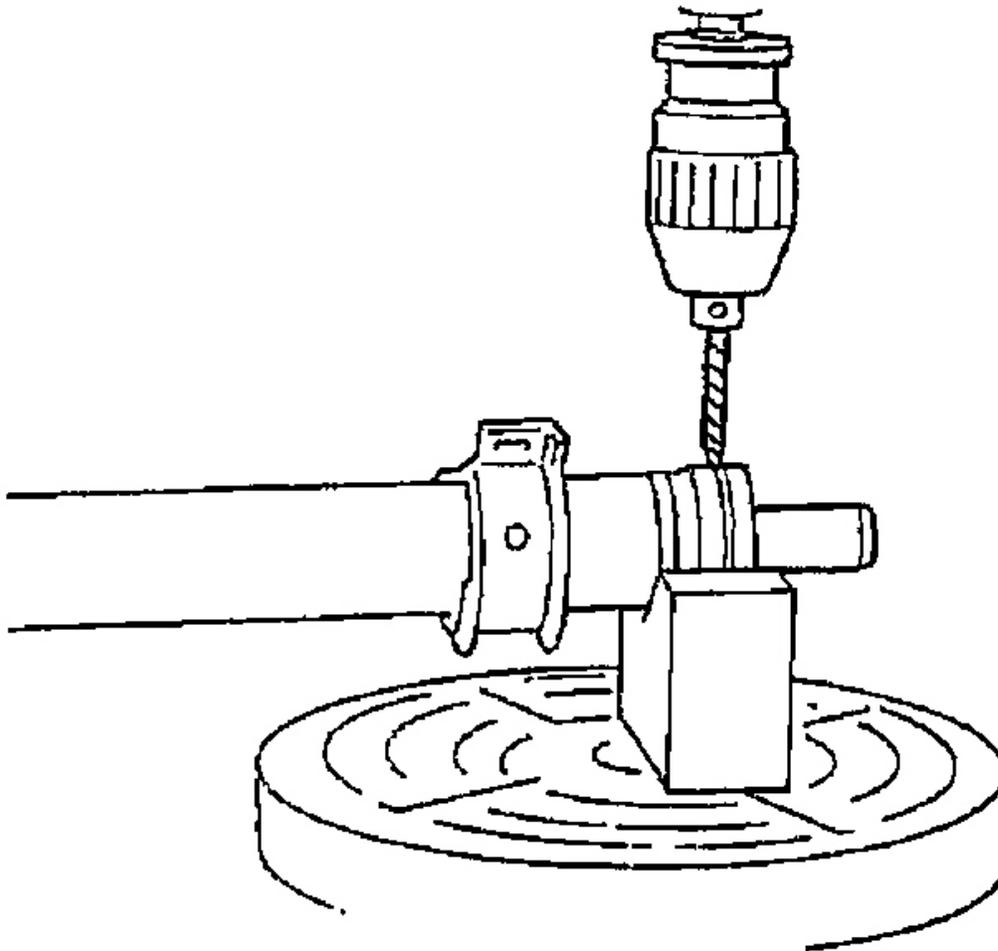


Fig. 25: Pressing Out Upper Bearing And Oil Seal From Valve Housing
Courtesy of MAZDA MOTORS CORP.

HOLDER DISASSEMBLY NOTE

1. Cut away the staked area using a drill.

CAUTION: • Carefully pull out the holder without damaging the U gasket.



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Fig. 26: Cutting Staked Area Using A Drill
Courtesy of MAZDA MOTORS CORP.

2. Remove the holder.

OIL SEAL, INNER GUIDE DISASSEMBLY NOTE

1. Set the SSTs into the valve side.
2. Press out the oil seal and inner guide.

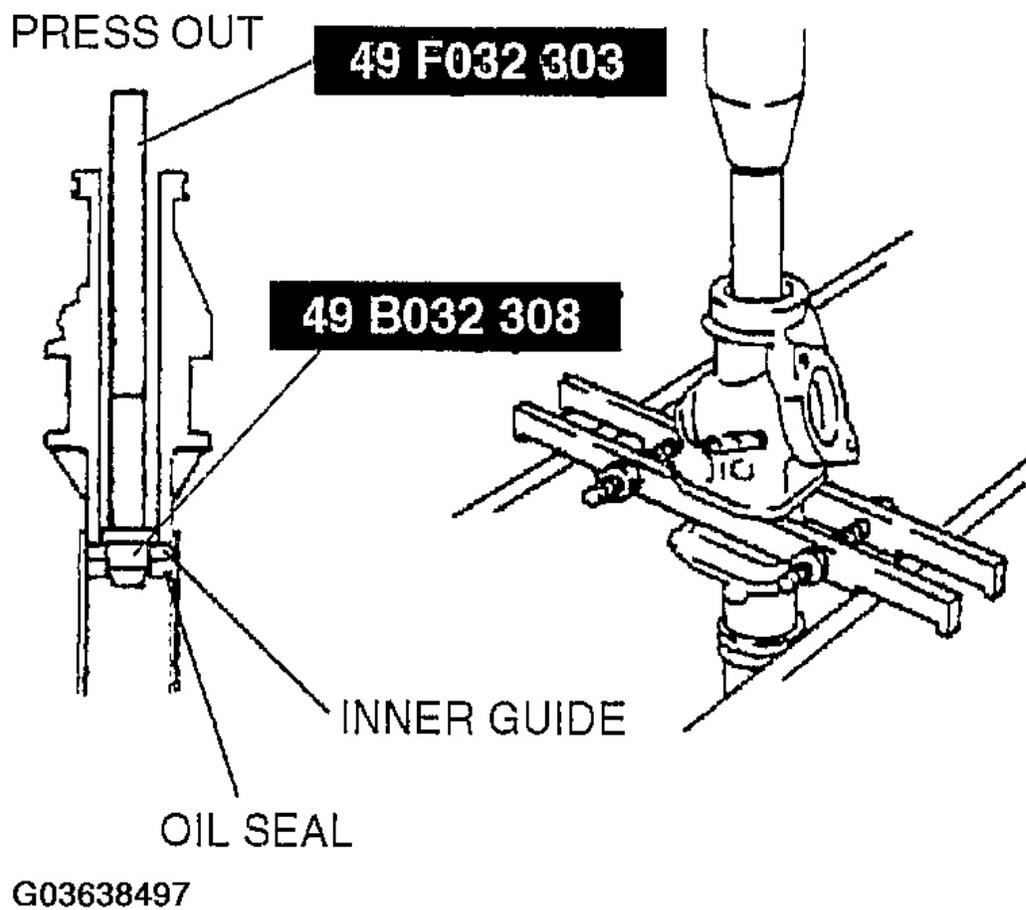


Fig. 27: Pressing Out Oil Seal And Inner Guide
Courtesy of MAZDA MOTORS CORP.

MOUNTING RUBBER DISASSEMBLY NOTE

1. Press the mounting rubber out from the gear housing using the SSTs and a press.

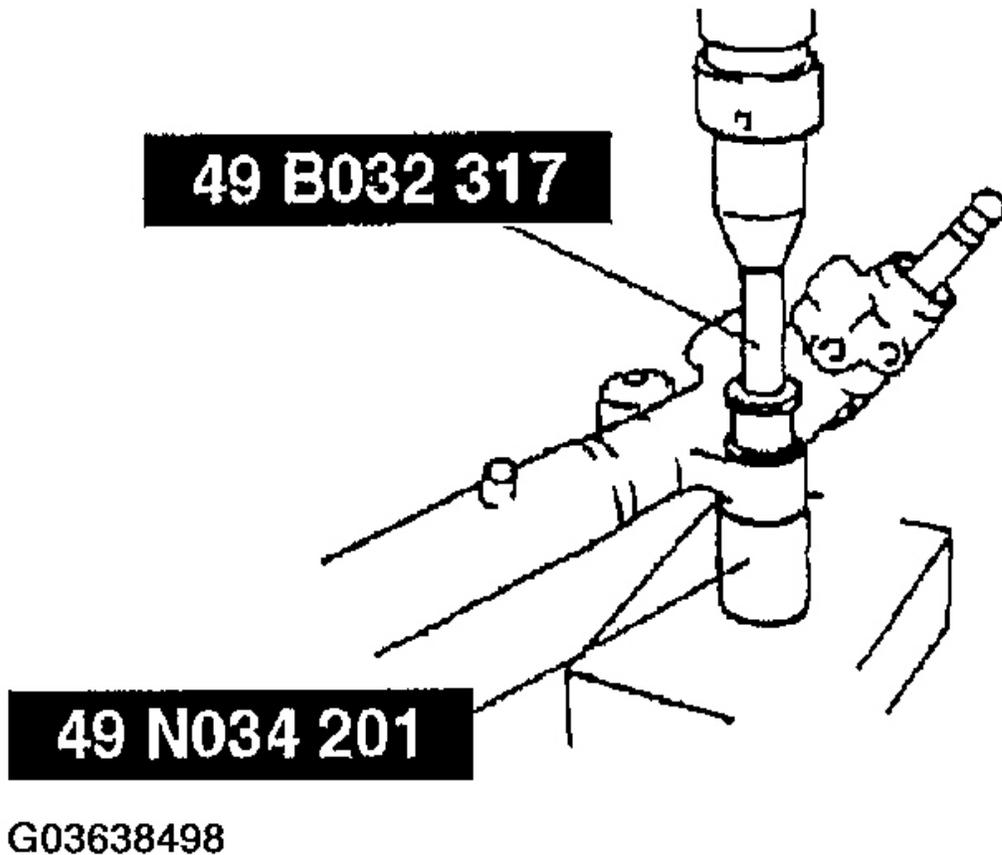
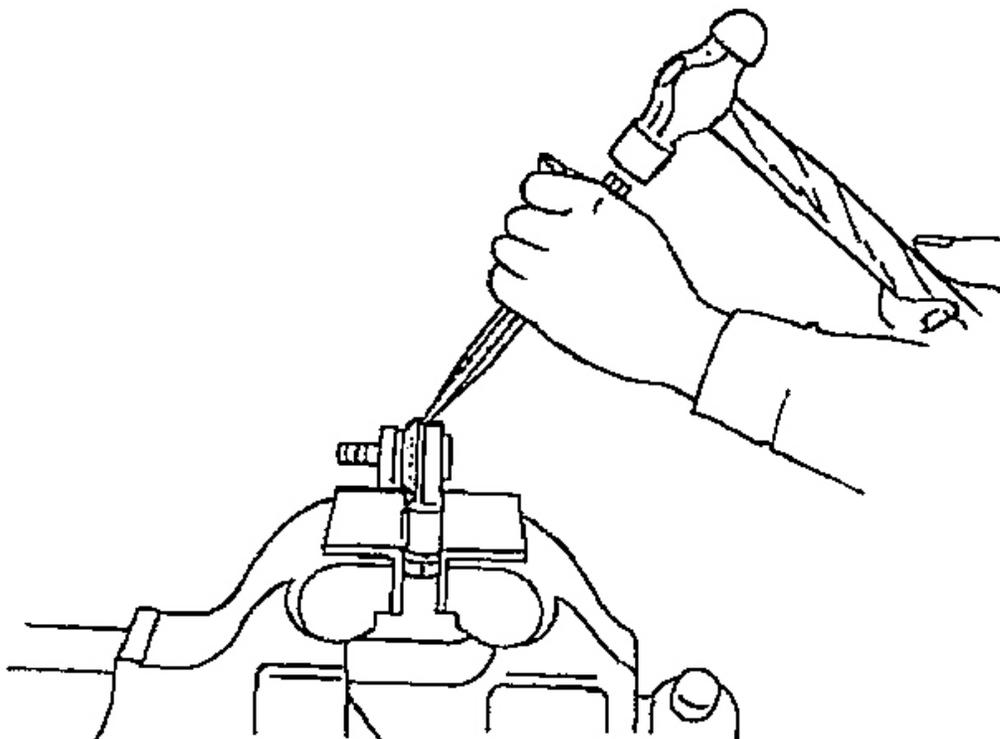


Fig. 28: Pressing Mounting Rubber Out From Gear Housing
Courtesy of MAZDA MOTORS CORP.

TIE-ROD END BOOT DISASSEMBLY NOTE

1. Secure the tie-rod end in a vise.
2. Place a chisel against the boot and hold it at the angle shown.



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Fig. 29: Removing Boot By Tapping With A Hammer
Courtesy of MAZDA MOTORS CORP.

3. Remove the boot by tapping it with a hammer.

TIE-ROD END BOOT ASSEMBLY NOTE

1. Wipe the grease off the ball joint.
2. Put a small amount of lithium-based grease into a new dust boot.
3. Install the dust boot onto the tie-rod end using the **SST** and a press.

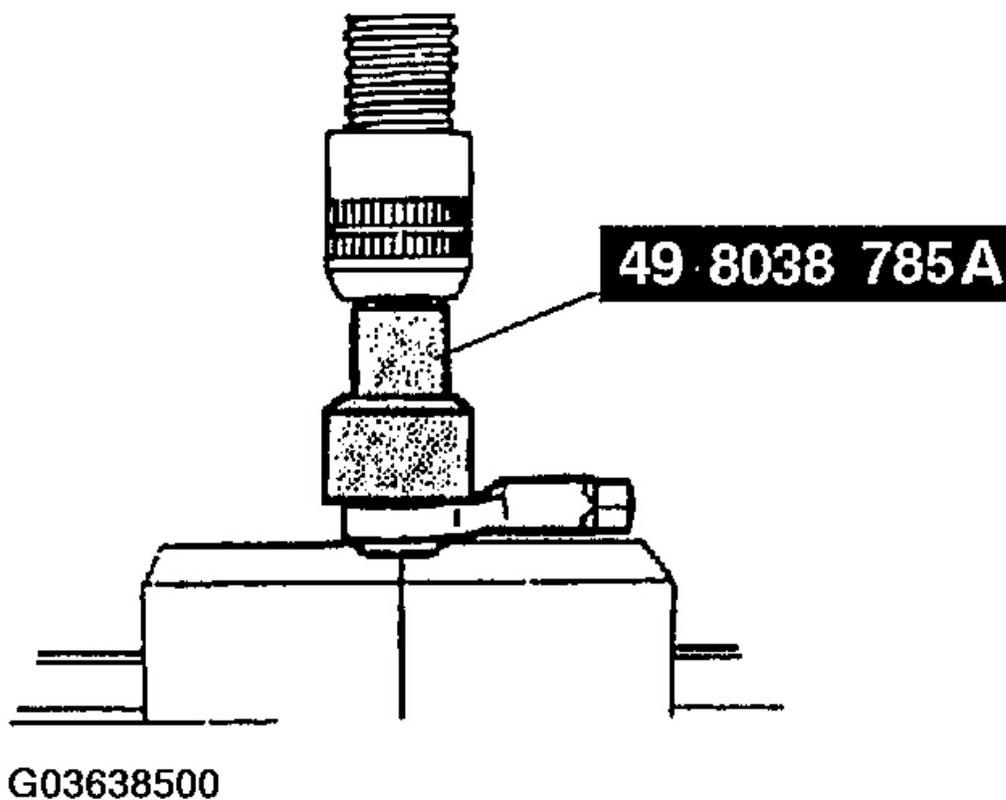
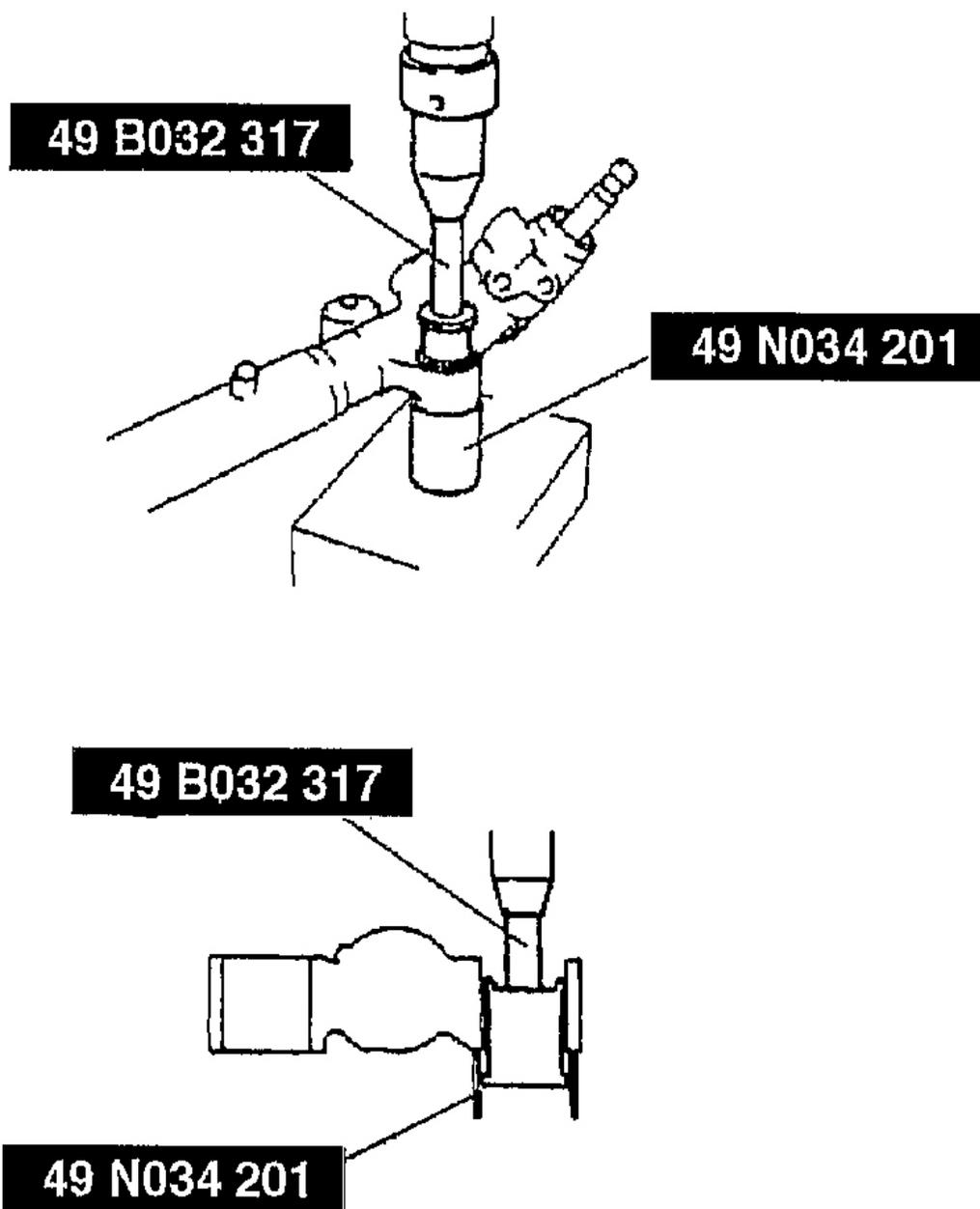


Fig. 30: Installing Dust Boot Onto Tie-Rod End
Courtesy of MAZDA MOTORS CORP.

4. Wipe away any excessive grease.

MOUNTING RUBBER ASSEMBLY NOTE

1. Apply soapy water to the rubber part of the mounting rubber.
2. Press the mounting rubber until the mounting rubber end comes out completely from the gear housing using the SSTs and a press.



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Fig. 31: Pressing Out Mounting Rubber
Courtesy of MAZDA MOTORS CORP.

3. Reverse the gear housing, then press the mounting rubber until the mounting rubber end comes out completely from the other side. At this time, mounting rubber end and steel pipe are aligned.

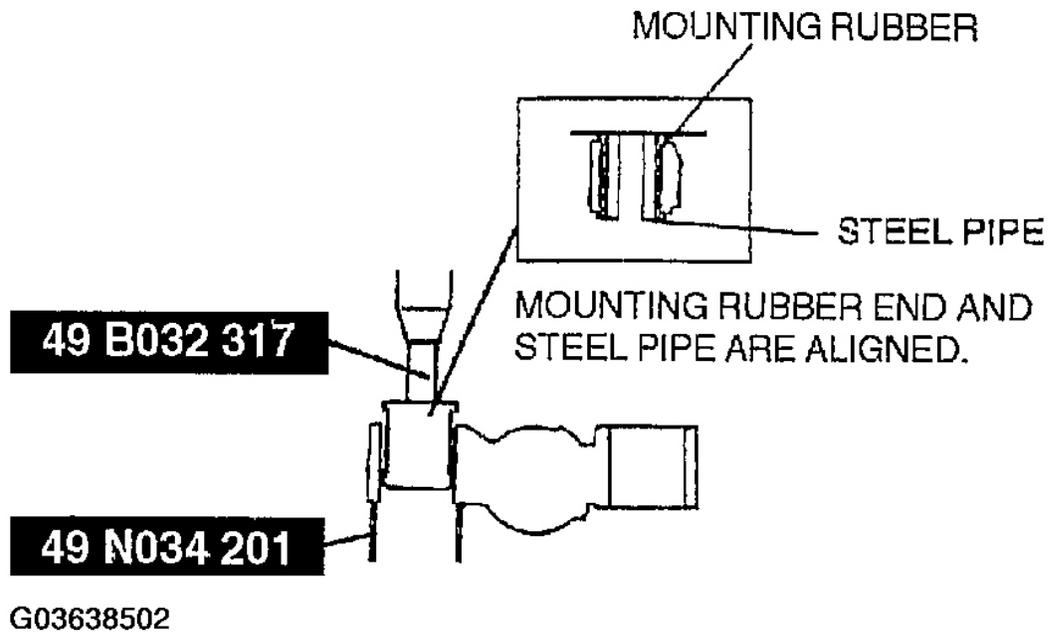


Fig. 32: Pressing Mounting Rubber
Courtesy of MAZDA MOTORS CORP.

OIL SEAL, INNER GUIDE ASSEMBLY NOTE

1. Install a new O-ring and new seal ring to the rack's piston.
2. After installing the seal ring, seat it properly at the piston circumference.
3. Install a new oil seal and inner guide to the SST .

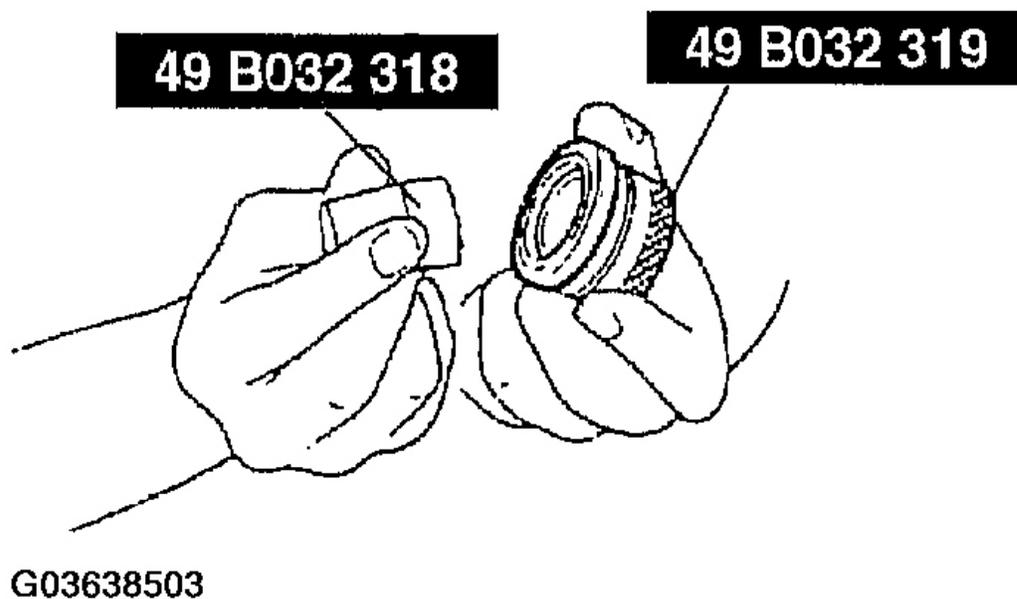


Fig. 33: Installing New Oil Seal And Inner Guide To SST
Courtesy of MAZDA MOTORS CORP.

4. Using the **SST** , place the oil seal and inner guide at the edge of the steering rack's pinion, and remove the **SST** .
5. After mounting the steering rack to the gear housing, use a press to install the oil seal and inner guide to the correct position.

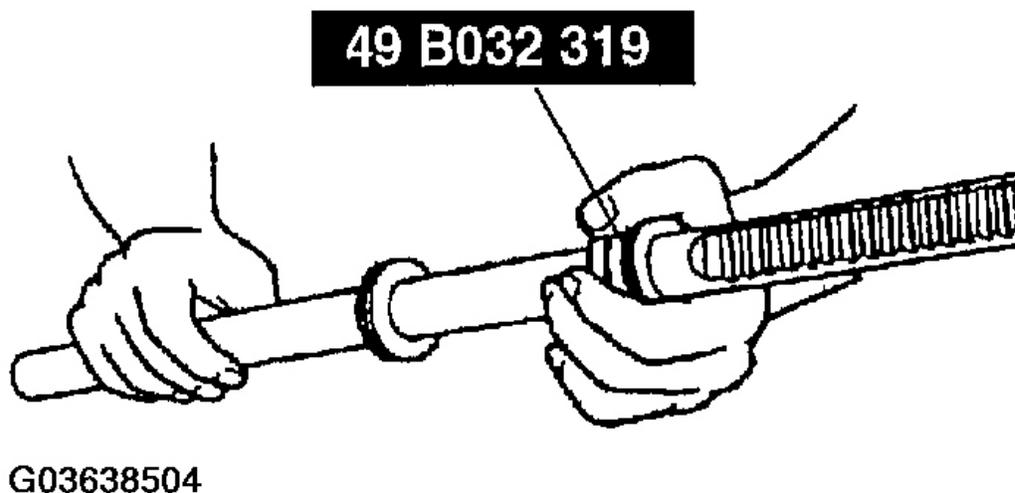


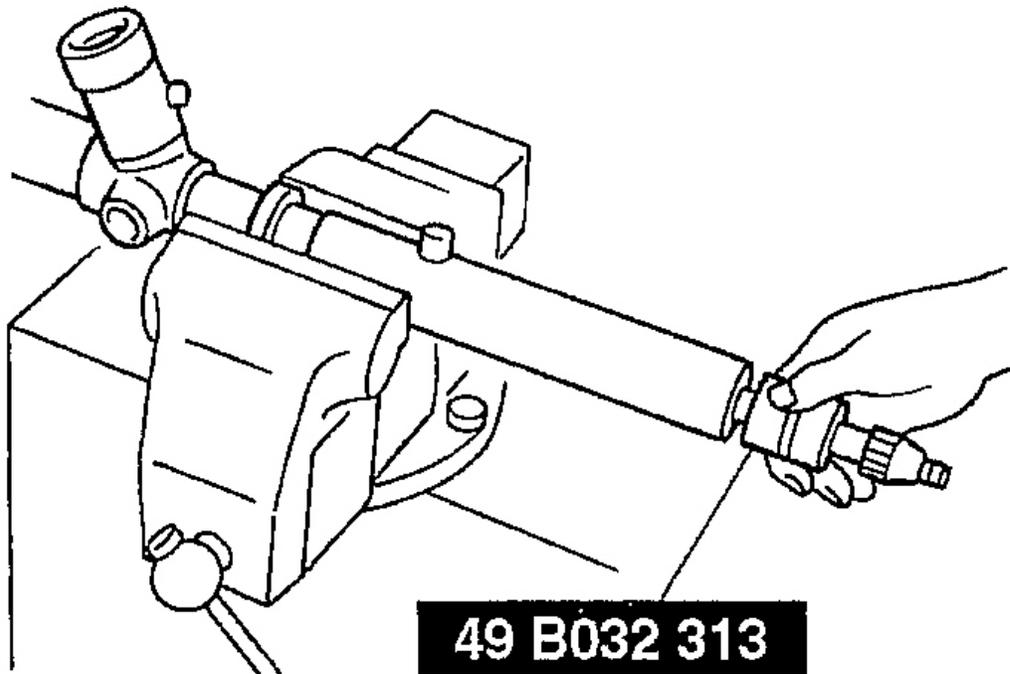
Fig. 34: Placing Oil Seal And Inner Guide At Edge Of Steering Rack's Pinion
Courtesy of MAZDA MOTORS CORP.

CAUTION:

- When pressing in, do not apply a load pressure of more than 39,227 kPa {400 kgf/cm², 5,688 psi}.
- Doing so will damage the oil seal and inner guide.
- Apply grease to the seal ring, oil seal and inner guide.

HOLDER ASSEMBLY NOTE

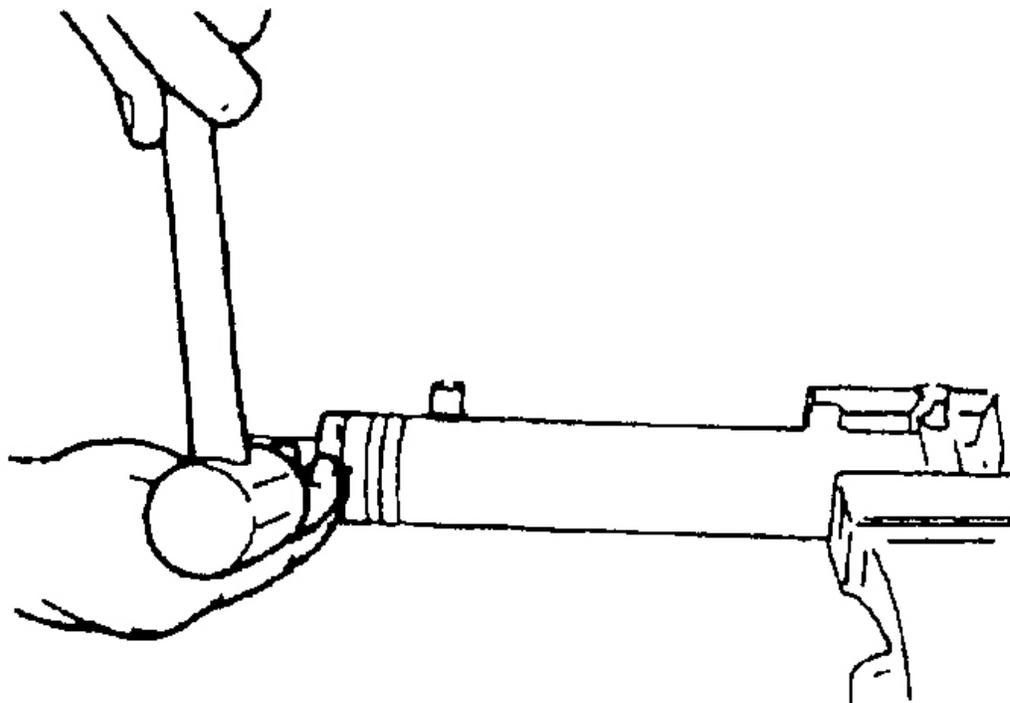
1. Apply grease to the U-gasket and O-ring.
2. Assemble the U-gasket and O-ring into the holder.
3. Assemble the holder using the SST .



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Fig. 35: Assembling Holder
Courtesy of MAZDA MOTORS CORP.

4. Stake the holder to the cylinder using a punch.



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Fig. 36: Staking Holder To Cylinder Using A Punch
Courtesy of MAZDA MOTORS CORP.

OIL SEAL ASSEMBLY NOTE

1. Apply grease to a new oil seal.
2. Press in the new oil seal using the SSTs .

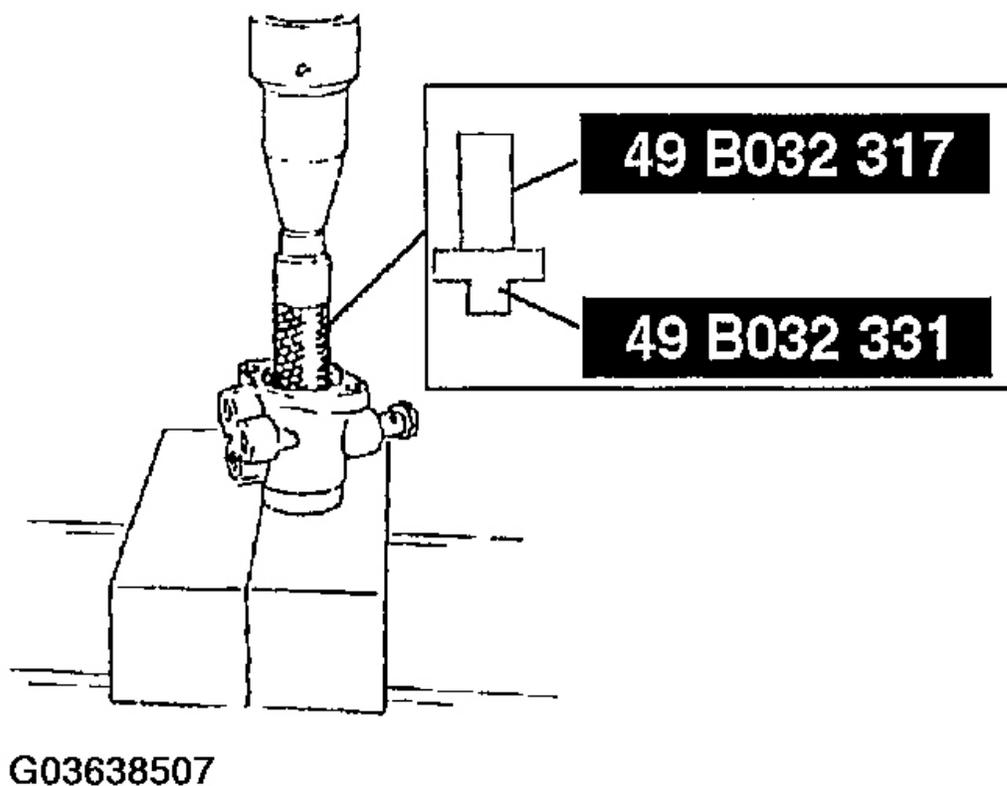


Fig. 37: Pressing In Oil Seal
Courtesy of MAZDA MOTORS CORP.

UPPER BEARING ASSEMBLY NOTE

1. Apply grease to a new upper bearing.
2. Press in the upper bearing using the SST .

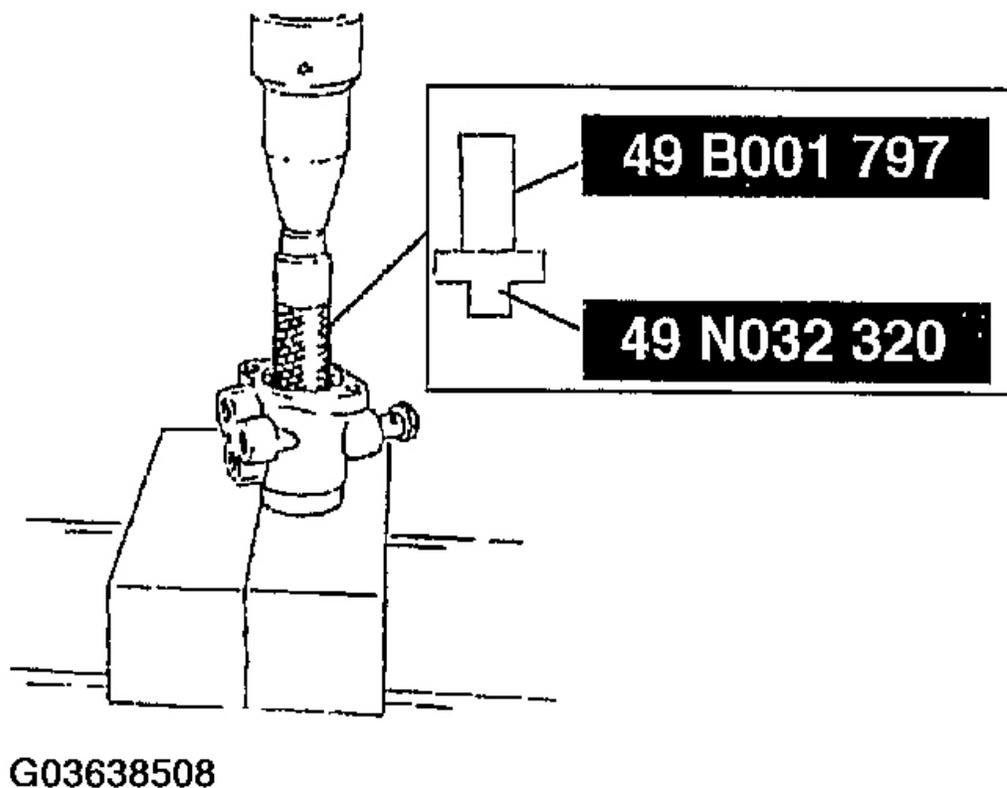


Fig. 38: Pressing In Upper Bearing
Courtesy of MAZDA MOTORS CORP.

SEAL RING ASSEMBLY NOTE

1. Install a new seal ring to the valve part of the pinion shaft using the SST .
2. After installing it, seat it properly using the SST .
3. Install the snap ring.

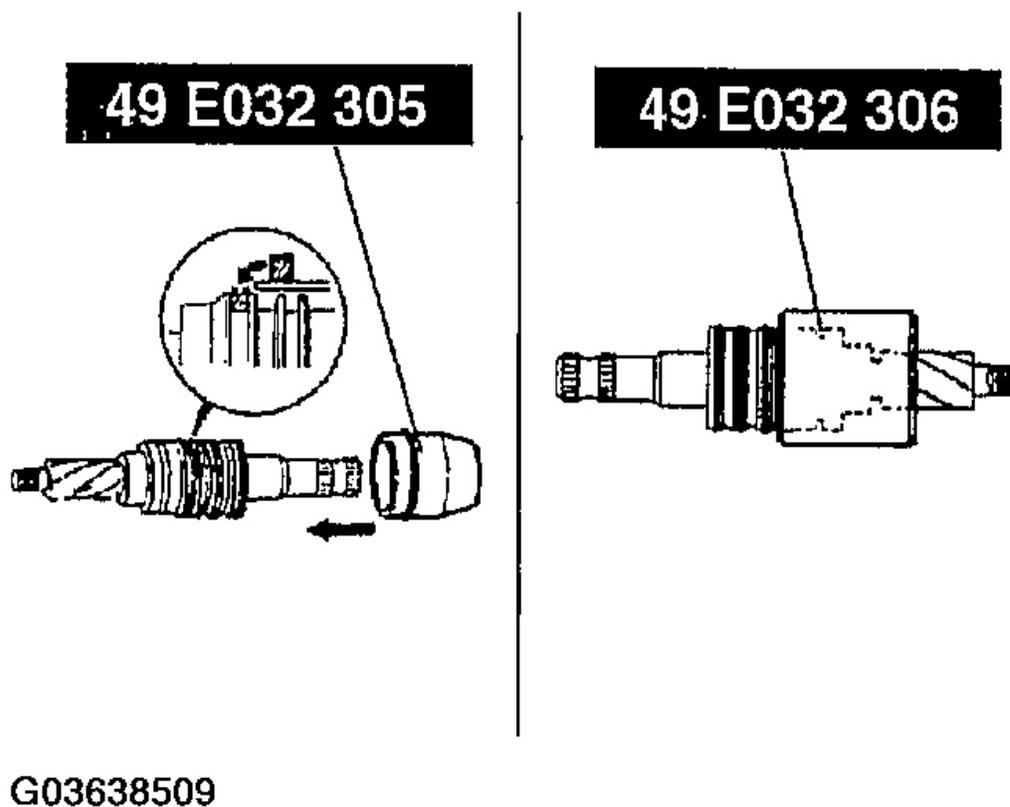


Fig. 39: Installing Snap Ring
Courtesy of MAZDA MOTORS CORP.

ADJUSTING COVER ASSEMBLY NOTE

1. Set the rack to the center position.
2. Tighten the adjusting cover to a torque of **4.9 N.m {50 kgf.cm, 43 in.lbf}** three times, then return it 25° using the **SST** .
3. Apply sealant to the threads of the locknut.
4. Attach the locknut.

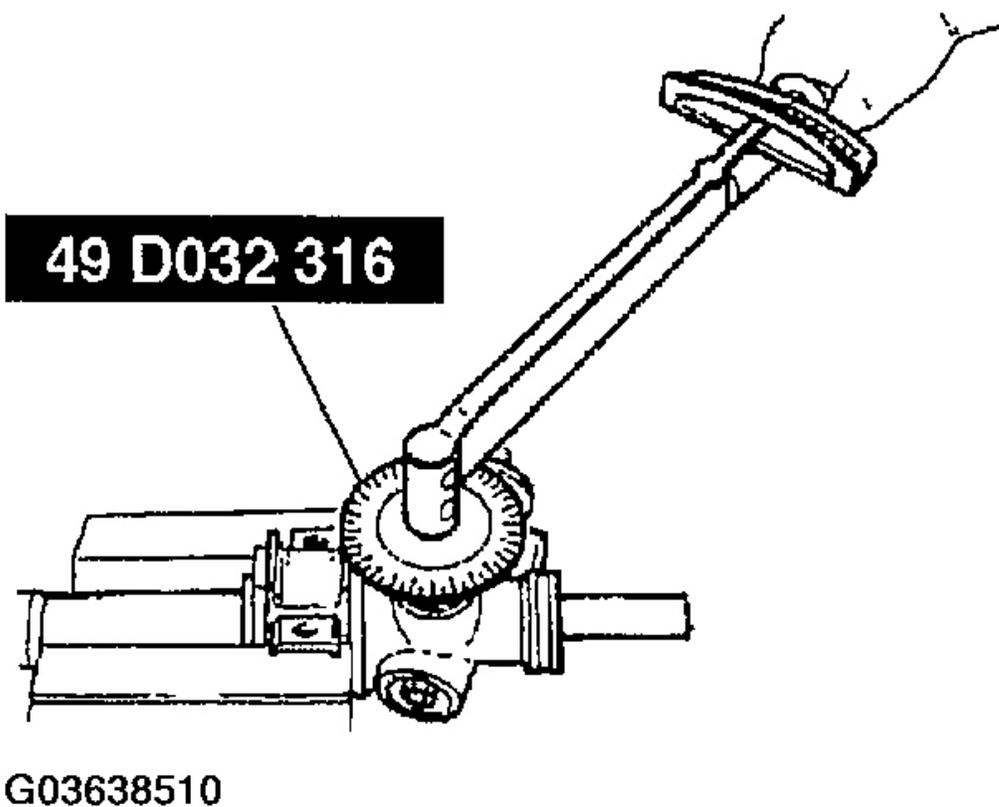


Fig. 40: Tightening Adjusting Cover
Courtesy of MAZDA MOTORS CORP.

5. Measure the pinion torque using the SST and a pull scale.
 - If not as the specified, repeat steps 2 through 5.

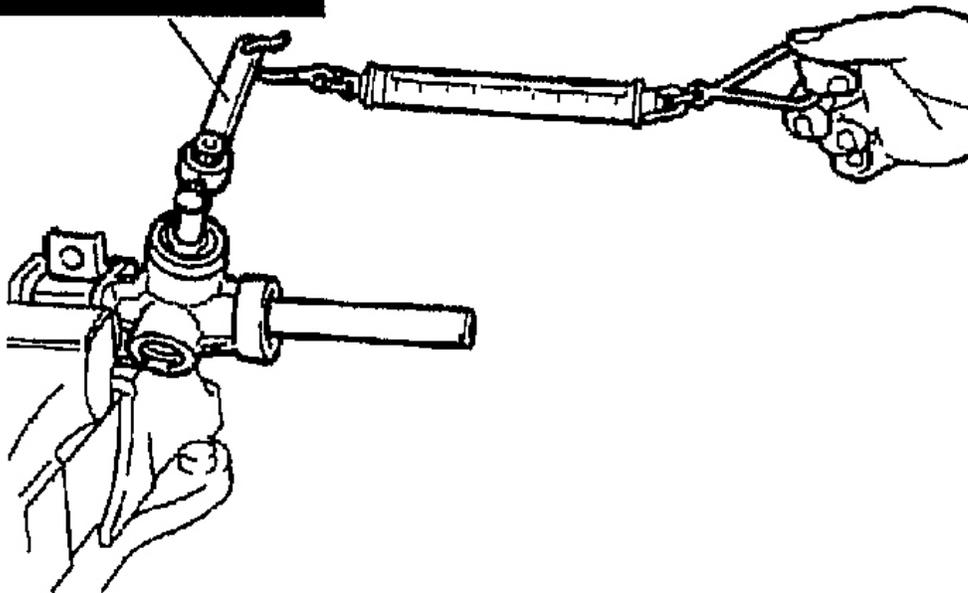
Standard

Center of rack +/-90° 1.0-1.1 N.m
{10-12 kgf.cm, 8.7-10.4 in.lbf}

Pull scale reading

10-11 N {1.0-1.2 kgf, 2.2-2.4 lbf}

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Fig. 41: Measuring Pinion Torque
Courtesy of MAZDA MOTORS CORP.

6. Install the locknut using the SST (49 B032 320).

Tightening torque

40-49 N.m {4.0-5.0 kgf.m, 29-36 ft.lbf}

HERMETIC SEALING INSPECTION

1. Connect the SSTs to the power cylinder section of the gear housing.
2. Apply **53.3 kPa {400 mmHg, 15.7 inHg}** vacuum with a vacuum pump and verify that it is held for at least **30 seconds** .
 - If the vacuum is not held, replace the oil seal.

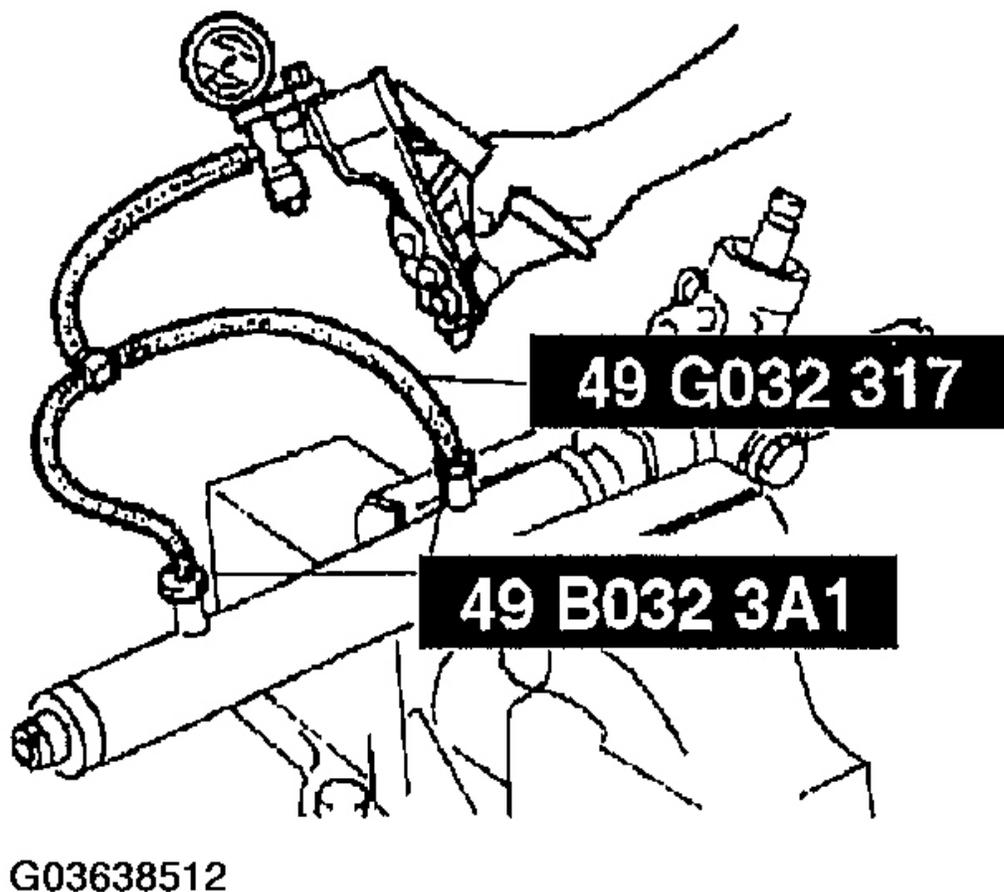


Fig. 42: Applying Vacuum
Courtesy of MAZDA MOTORS CORP.

STEERING GEAR AND LINKAGE INSPECTION

TIE-ROD END INSPECTION

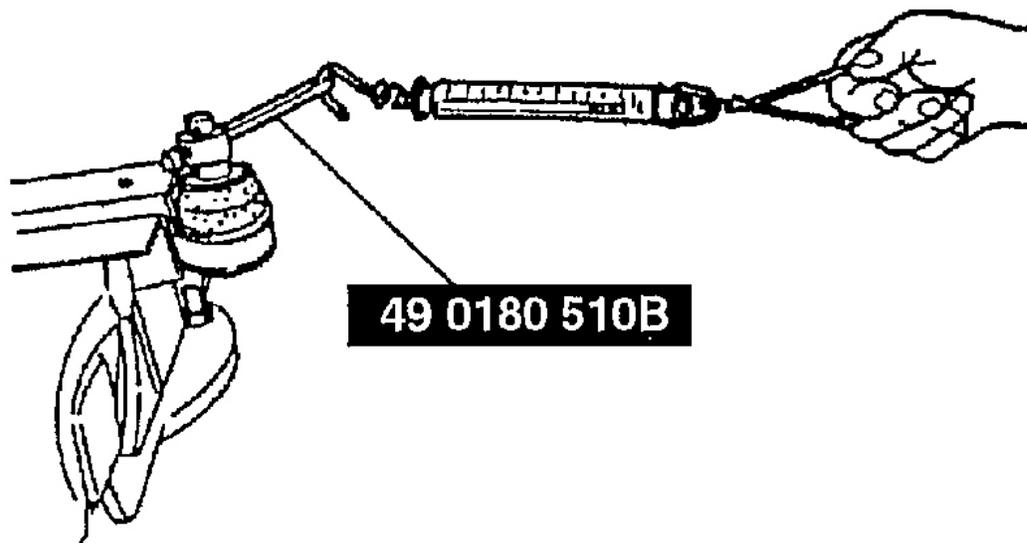
1. Inspect the tie-rod end for damage and boot cracks. Replace it as necessary.
2. Inspect the ball joint for looseness. Replace the tie-rod end as necessary.
3. Rotate the ball joint 5 times.
4. Measure the rotation torque of the ball joint using the SST and pull scale.
 - If not as specified, replace the tie-rod end.

Rotation torque

0.1-3.1 N.m {1-32 kgf.cm, 0.9-27.7 in.lbf}

Pull scale reading

0.5-15.4 N {0.05-1.58 kgf, 0.2-3.4 lbf}



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Fig. 43: Measuring Rotation Torque Of Ball Joint
Courtesy of MAZDA MOTORS CORP.

TIE ROD INSPECTION

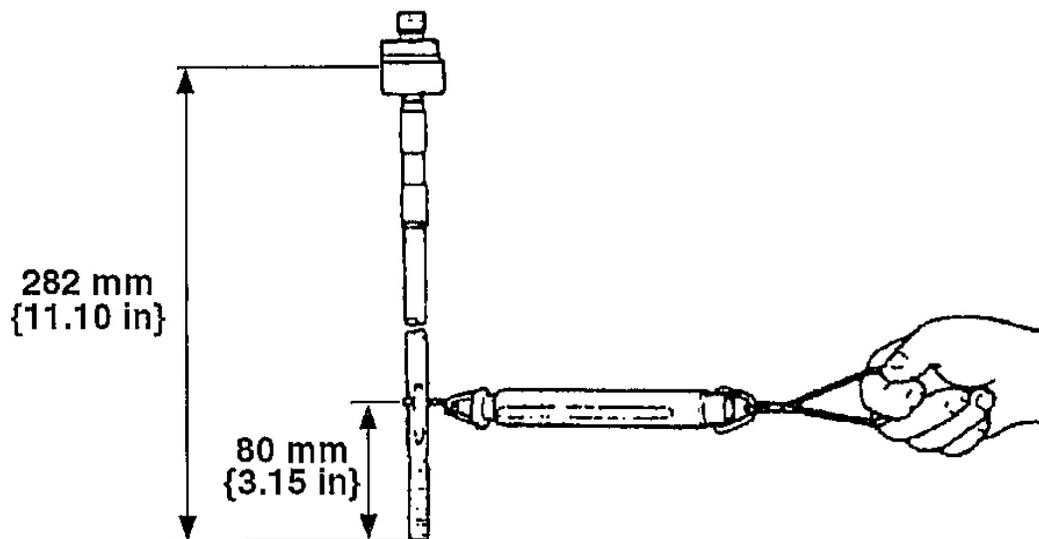
1. Inspect the tie rod for bending and damage. Replace it as necessary.
2. Inspect the ball joint for looseness. Replace the tie rod as necessary.
3. Swing the tie rod 5 times.
4. Measure the swing torque using a pull scale.
 - If not as specified, replace the tie rod.

Swinging torque

0.1-3.4 N.m {1-35 kgf.cm, 0.9-30.3 in.lbf}

Pull scale reading

0.7-21.5 N {0.07-2.20 kgf, 0.16-4.84 lbf}



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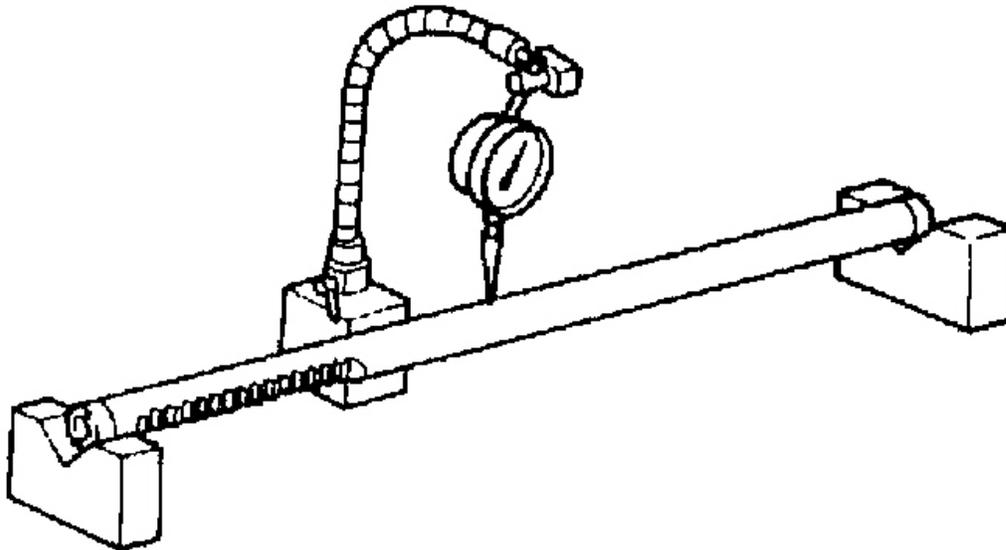
Fig. 44: Measuring Swing Torque Using A Pull Scale
Courtesy of MAZDA MOTORS CORP.

STEERING RACK INSPECTION

1. Inspect for cracks, damage, and tooth wear. Replace as necessary.
2. Measure runout of the rack.
 - If not as specified, replace the rack.

Runout

0.3 mm {0.012 in} max.



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Fig. 45: Measuring Runout Of Rack
Courtesy of MAZDA MOTORS CORP.

POWER STEERING OIL PUMP REMOVAL/INSTALLATION

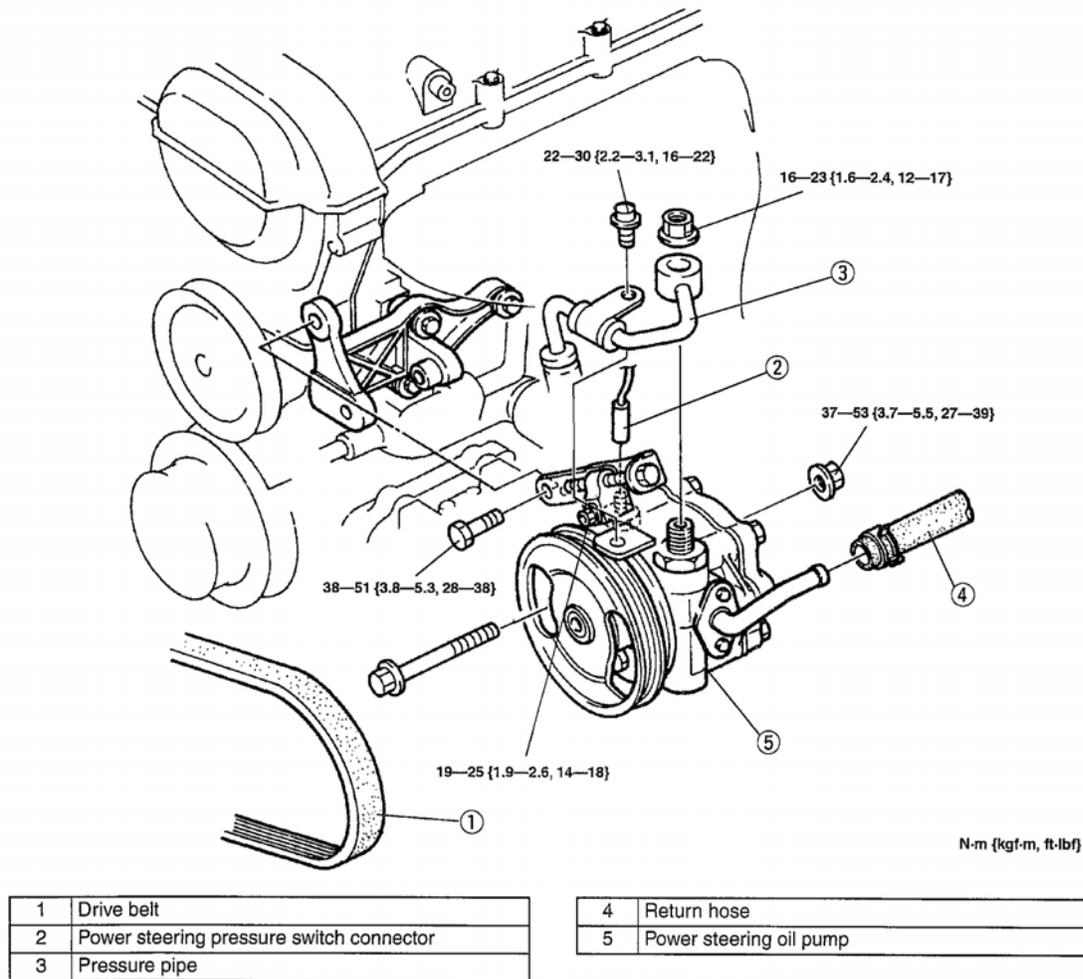
1. Remove the air cleaner, MAF sensor, air hose No.2, air hose No.1, air pipe No.1, air bypass valve. (BP with TC)

(See INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [BP WITH TC] .)

2. Remove the cooling fan. (See RADIATOR REMOVAL/INSTALLATION [BP] .) (See RADIATOR REMOVAL/INSTALLATION [BP WITH TC] .)
3. Remove in the order indicated in the table.

2005 Mazda MX-5 Miata

2005 STEERING Engine Speed Sensing Power Steering - MX-5 Miata



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Fig. 46: Removing Power Steering Oil Pump - With Torque Specifications
 Courtesy of MAZDA MOTORS CORP.

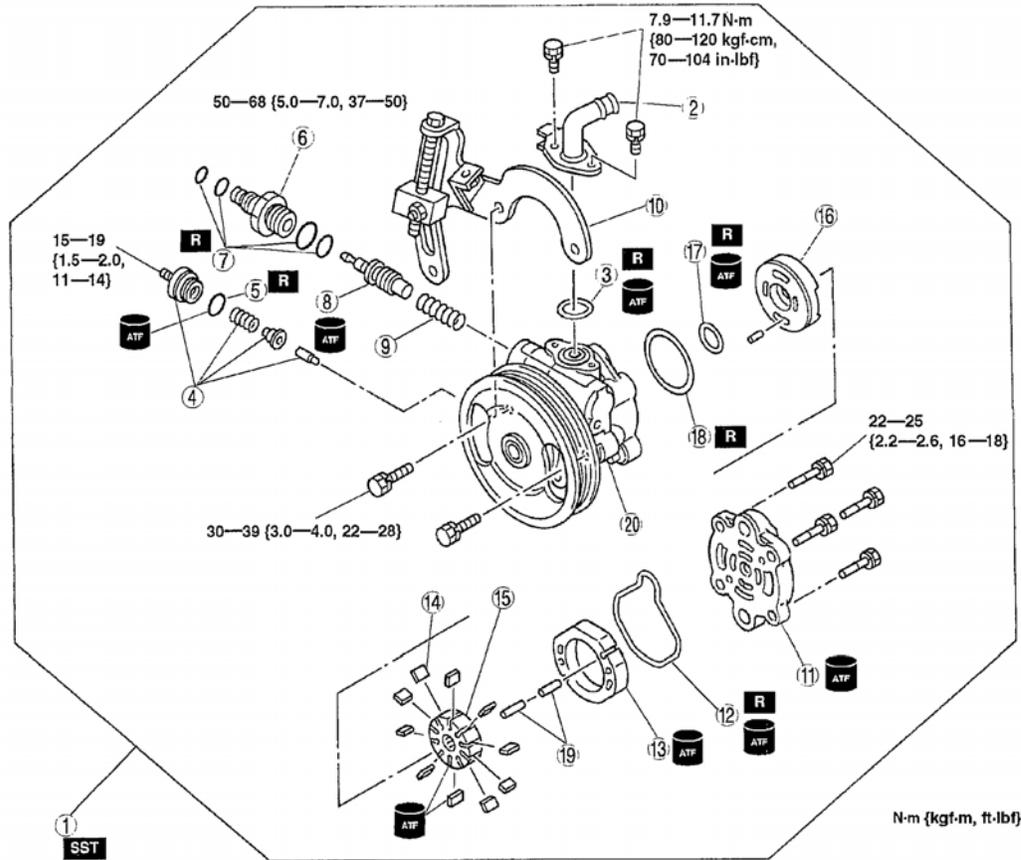
4. Install in the reverse order of removal.
5. Adjust the drive belt. (See **DRIVE BELT ADJUSTMENT** .)

POWER STEERING OIL PUMP DISASSEMBLY/ASSEMBLY

1. The following procedure is for replacement of the O-rings only. Replace the pump component if other repairs are necessary.
2. Disassemble in the order indicated in the table.

2005 Mazda MX-5 Miata

2005 STEERING Engine Speed Sensing Power Steering - MX-5 Miata



1	Power steering oil pump (See Power Steering Oil Pump Disassembly Note)
2	Suction pipe
3	O-ring
4	Power steering pressure switch component
5	O-ring
6	Connector
7	O-ring
8	Control valve
9	Spring
10	Bracket

11	Rear pump body
12	O-ring
13	Cam ring (See Cam Ring Assembly Note)
14	Vane (See Vane Assembly Note)
15	Rotor (See Rotor Assembly Note)
16	Side plate
17	O-ring
18	O-ring
19	Pin
20	Front pump body

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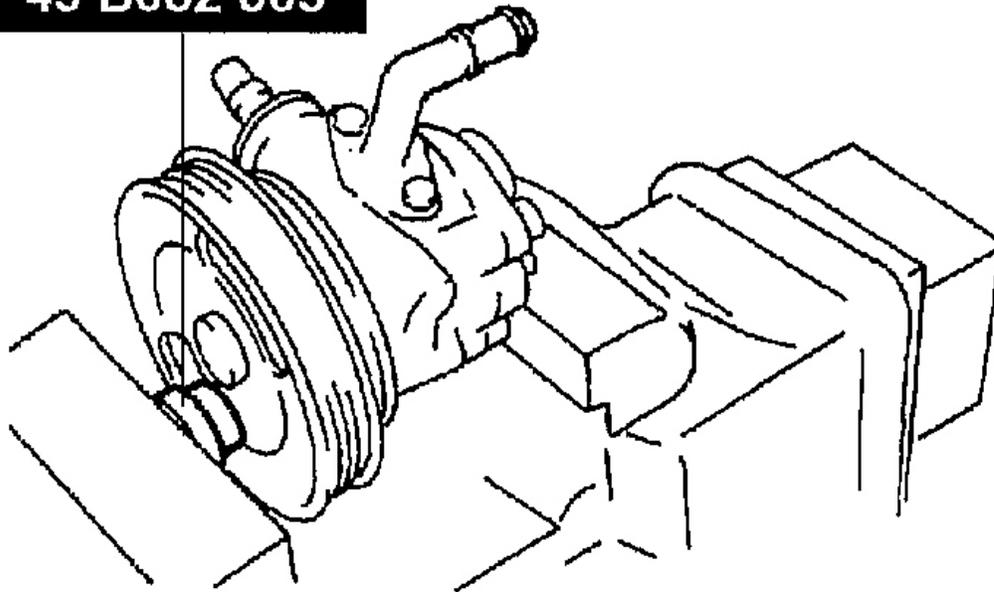
Fig. 47: Disassembling Power Steering Oil Pump
Courtesy of MAZDA MOTORS CORP.

3. Assemble in the reverse order of disassembly.

POWER STEERING OIL PUMP DISASSEMBLY NOTE

1. Use the SST when securing the oil pump in a vise, so that force is not applied to the pulley or shaft.

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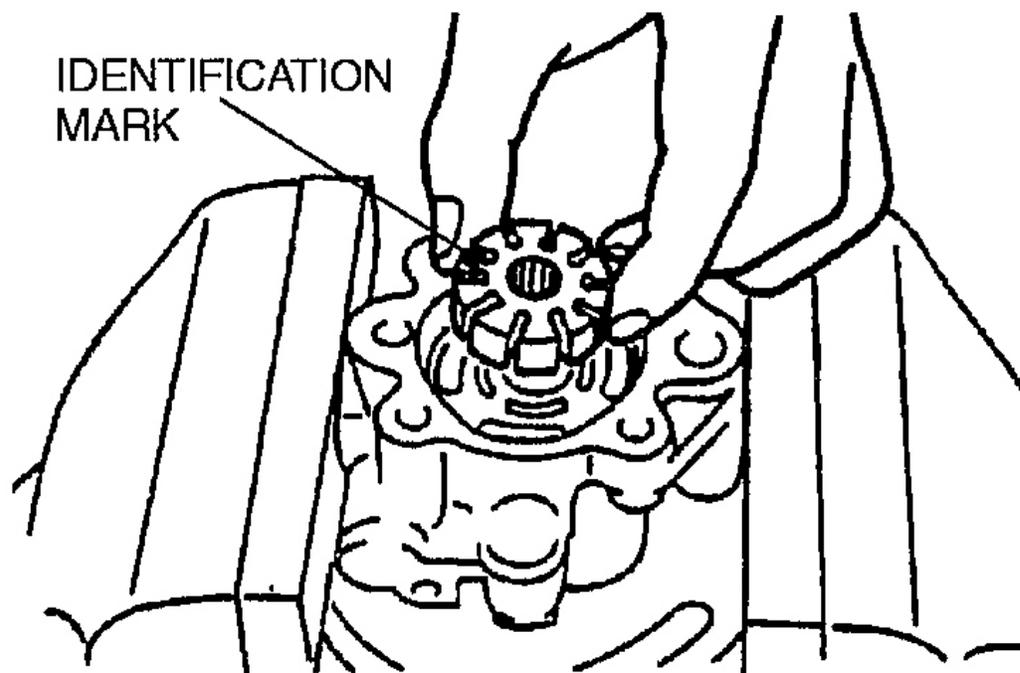


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Fig. 48: Securing Oil Pump In A Vise
Courtesy of MAZDA MOTORS CORP.

ROTOR ASSEMBLY NOTE

1. Install the rotor with the identification mark facing upward.

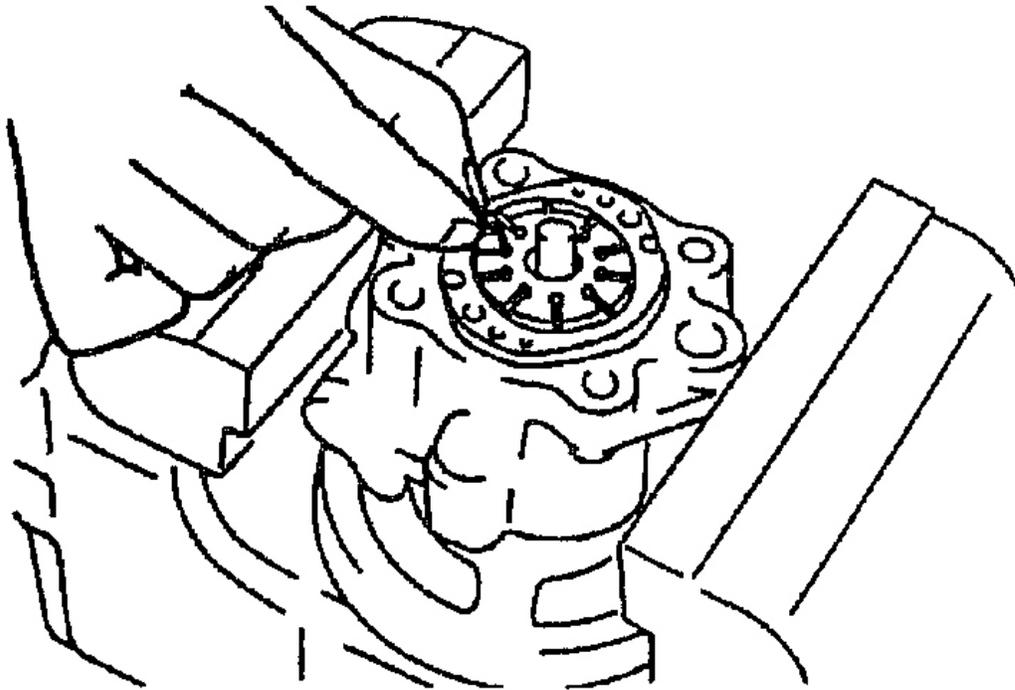


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Fig. 49: Installing Rotor With Identification Mark Facing Upward
Courtesy of MAZDA MOTORS CORP.

VANE ASSEMBLY NOTE

1. Place the vanes in the rotor with the rounded edges contacting the cam.

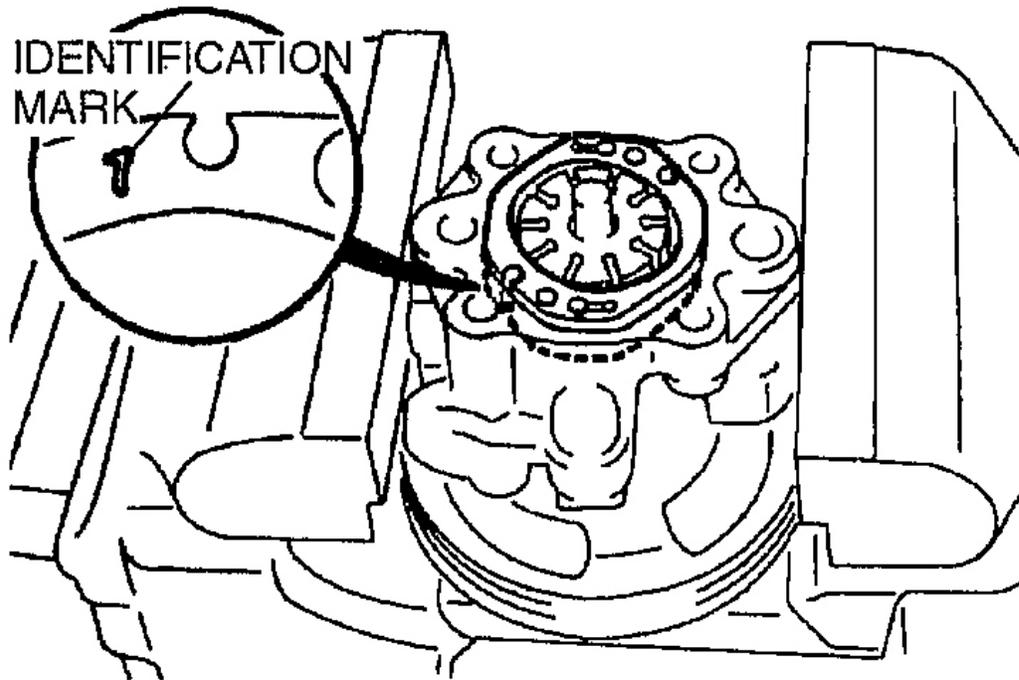


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Fig. 50: Placing Vanes In Rotor With Rounded Edges Contacting Cam
Courtesy of MAZDA MOTORS CORP.

CAM RING ASSEMBLY NOTE

1. Install the cam ring with the identification mark facing downward.



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Fig. 51: Installing Cam Ring With Identification Mark Facing Downward
Courtesy of MAZDA MOTORS CORP.