



Mazda 3 Workshop Manual – STEERING + DTC

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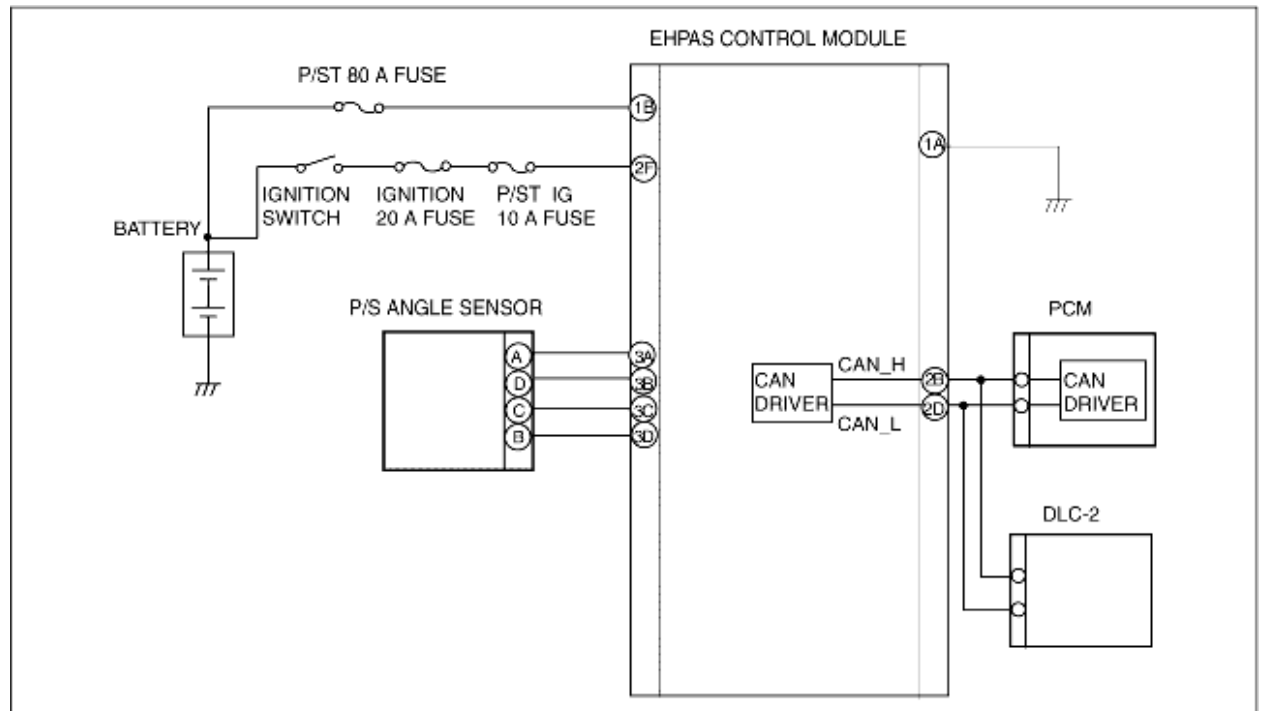
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ON-BOARD DIAGNOSTIC

ELECTRO HYDRAULIC POWER ASSIST STEERING (EHPAS) SYSTEM WIRING DIAGRAM

B3E060201038W01



B3E0602W006

ELECTRO HYDRAULIC POWER ASSIST STEERING (EHPAS) ON-BOARD DIAGNOSIS

B3E060201038W02

On-Board Diagnostic (OBD) Test Description

- The OBD test inspects the integrity and function of the EHPAS and outputs the results when requested by the specific tests.
- On-board diagnostic test also:
 - Provides a quick inspection of the EHPAS usually performed at the start of each diagnostic procedure.
 - Provides verification after repairs to ensure that no other faults occurred during service.
- The OBD test is divided into 2 tests:
 - Read/clear diagnostic results, PID monitor and record.

Read/clear diagnostic results

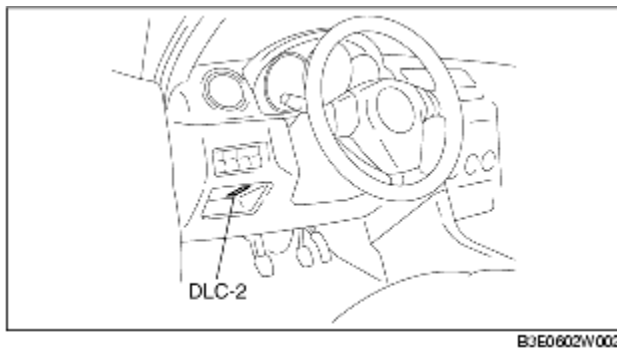
- This function allows reading or clearing of DTCs in the EHPAS control module memory.

PID/Data monitor and record

- This function allows access of certain data values, input signals, calculated values, and system status information.

Reading DTCs Procedure

1. Connect the WDS or equivalent to the vehicle DLC-2 connector.



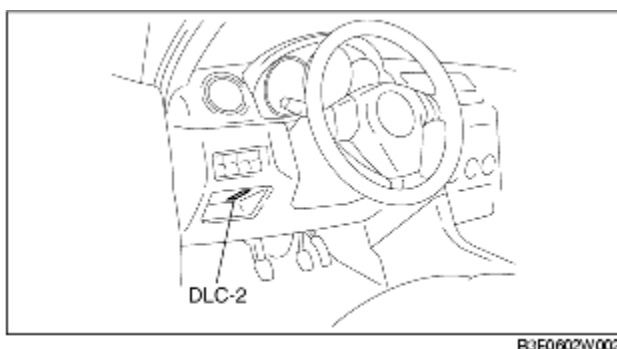
2. Retrieve DTCs using the WDS or equivalent.

Clearing DTCs Procedure

1. After repairs have been made, perform the **Reading DTCs Procedure**.
2. Clear DTCs using the WDS or equivalent.
3. Verify that the customer's concern has been resolved.

PID/Data Monitor and Record Procedure

1. Connect the WDS or equivalent to the vehicle DLC-2 connector.



2. Access and monitor PIDs using the WDS or equivalent.

DTC Table

DTC	Diagnosis system component	Page
-----	----------------------------	------

WDS or equivalent		
B1238	EHPAS control module	(See DTC B1238.)
B1317	Battery power supply	(See DTC B1317, B1318.)
B1318	Battery power supply	(See DTC B1317, B1318.)
B1342	EHPAS control module	(See DTC B1342.)
B1352	Ignition power supply	(See DTC B1352.)
B2477	EHPAS control module configuration	(See DTC B2477.)
C1099	Electric power steering oil pump (motor)	(See DTC C1099.)
C1278	P/S angle sensor	(See DTC C1278, C1956.)
C1956	P/S angle sensor	(See DTC C1278, C1956.)
U0073	CAN bus communication error	(See MULTIPLEX COMMUNICATION SYSTEM.)
U0100	CAN communication error	(See MULTIPLEX COMMUNICATION SYSTEM.)
U2023	CAN communication error	(See MULTIPLEX COMMUNICATION SYSTEM.)

PID/DATA Monitor Table

PID Name (Definition)	Unit/Condition	Condition/Specification	Action	EHPAS control module terminal
CCNT (Number of continuous codes)	-	- DTCs are detected: 1-255 - No DTCs are detected: 0	Perform inspection using appropriate DTC.	-
MTR_AMP (Pump Motor Operation Current)	A	Indicates pump motor operation current.	Replace the EHPAS control module. (See ELECTRIC POWER STEERING OIL PUMP (LF) REMOVAL/INSTALLATION.)	-
ENGRPM (Engine speed signal)	RPM	Engine speed 1,000 rpm: 1000RPM	Inspect the PCM. (See PCM INSPECTION [Z6].) (See PCM INSPECTION [LF].)	-
RPM_ACT (Actual pump motor)	RPM	Indicates pump motor revolution per minutes.	Replace the EHPAS control module. (See ELECTRIC POWER STEERING OIL	-

revolution per minutes)			PUMP (LF) REMOVAL/INSTALLATION.)	
RPM_TGT (Target pump motor revolution per minutes)	RPM	Indicates pump motor target revolution per minutes.	Replace the EHPAS control module. (See ELECTRIC POWER STEERING OIL PUMP (LF) REMOVAL/INSTALLATION.)	-
STEER_RATE (Steering wheel rotation rate)	degree/sec	Indicates steering wheel rotation rate.	Replace the EHPAS control module. (See ELECTRIC POWER STEERING OIL PUMP (LF) REMOVAL/INSTALLATION.)	3B, 3D
TEMP_BOARD (Printed circuit board temperature)	Celsius/Fahrenheit	Indicates circuit temperature.	Replace the EHPAS control module. (See ELECTRIC POWER STEERING OIL PUMP (LF) REMOVAL/INSTALLATION.)	-
VPWR (Module supply voltage)	Volt	IG switch ON: B+	Inspect the battery. (See BATTERY INSPECTION.) Inspect power supply circuit (such as IG switch, fuse).	1B, 2F
VSS (Vehicle speed)	KPH/MPH	- Vehicle is stopped: 0 KPH/0 MPH - Vehicle speed 20 km/h {12 mph}: 20 KPH/12 MPH	Inspect the PCM. (See PCM INSPECTION [Z6].) (See PCM INSPECTION [LF].)	-

DTC B1238

B3E060201038W03

DTC	B1238	EHPAS control module
DETECTION CONDITION	Excessive load to electric power steering oil pump	
POSSIBLE CAUSE	Due to the continuously static steering, being turned to the lock end, or other causes, the internal temperature of the electric power steering oil pump is more than the specified value.	

Diagnostic procedure

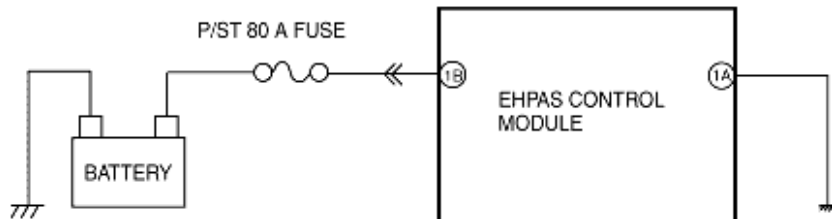
STEP	INSPECTION	ACTION
1	TURN IGNITION SWITCH OFF AND ALLOW ELECTRIC POWER STEERING OIL PUMP TO COOL DOWN.	

2	VERIFY THAT THE SAME DTC IS NOT PRESENT • Turn the ignition switch to the ON position. • Clear the DTC from the memory. (See Clearing DTCs Procedure.) • Is the same DTC present?	Yes	Replace the electric power steering oil pump, then go to the next step. (See ELECTRIC POWER STEERING OIL PUMP (LF) REMOVAL/INSTALLATION.)
		No	Go to the next step.
3	VERIFY THAT NO OTHER DTCS ARE PRESENT • Are any other DTCs output?	Yes	Go to the applicable DTC inspection. (See DTC Table.)
		No	DTC troubleshooting completed.

DTC B1317, B1318

B3E060201038W04

DTC	B1317, B1318	Battery power supply
DETECTION CONDITION	• Low voltage or high voltage are detected at the voltage monitor.	
POSSIBLE CAUSE	• Open or short circuit in wiring harness between EHPAS control module terminal 1B and battery positive terminal • Open circuit in wiring harness between body ground and EHPAS control module terminal 1A • Battery and/or generator malfunction	



EHPAS CONTROL MODULE HARNESS SIDE CONNECTOR









Diagnostic procedure

STEP	INSPECTION		ACTION
1	INSPECT BATTERY VOLTAGE Is the battery terminal voltage normal?	Yes	Make sure that battery terminal connection is okay. Go to the next step.
		No	Charge or replace the battery, then go to Step 6.
2	INSPECT BATTERY GRAVITY Is the battery specific gravity as specified?	Yes	Go to the next step.
		No	Replace the battery, then go to Step 6.
3	INSPECT CHARGING SYSTEM Are the generator and drive belt tension normal?	Yes	Go to the next step.
		No	Replace the generator and/or drive belt if necessary. Go to step 6.
4	INSPECT EHPAS CM POWER SUPPLY CIRCUIT FOR OPEN OR SHORT CIRCUIT - Start the engine. - Measure the voltage between following EHPAS control module terminal (wiring harness-side) and ground. - EHPAS control module : 1B-ground - Is the voltage 10 V or more?	Yes	Go to the next Step.
		No	Repair or replace the wiring harness for open circuit between the EHPAS control module and ground, then go to Step 6.
5	INSPECT EHPAS CONTROL MODULE GROUND CIRCUIT FOR POOR GROUND OR OPEN CIRCUIT - Turn the ignition switch off. - Measure the resistance between the following EHPAS control module terminal (wiring harness-side) and ground. - EHPAS control module : 1A-ground - Is the resistance within 0-1 ohm?	Yes	Go to the next step.
		No	If there is no continuity: - Repair or replace the wiring harness for open circuit between the EHPAS control module and ground, then go to the next step. If the resistance is not within 0-1 ohm: - Repair or replace the wiring harness for poor ground, then go to the next step.
6	VERIFY THAT THE SAME DTC IS NOT PRESENT - Make sure to reconnect all disconnected connectors. - Clear the DTC from the memory. (See Clearing DTCs Procedure.)	Yes	Replace the electric power steering oil pump, then go to the next step. (See ELECTRIC POWER STEERING OIL PUMP (LF) REMOVAL/INSTALLATION.)
		No	Go to the next step.

	• Is the same DTC present?		
7	VERIFY THAT NO OTHER DTCS ARE PRESENT • Are any other DTCS output?	Yes	Go to the applicable DTC inspection. (See DTC Table .)
		No	DTC troubleshooting completed.

DTC B1342

B3E060201038W05

DTC	B1342	EHPAS control module
DETECTION CONDITION	• The EHPAS control module on-board diagnostic function detects system malfunction.	
POSSIBLE CAUSE	• EHPAS control module internal malfunction • Poor connection at connectors	

Diagnostic procedure

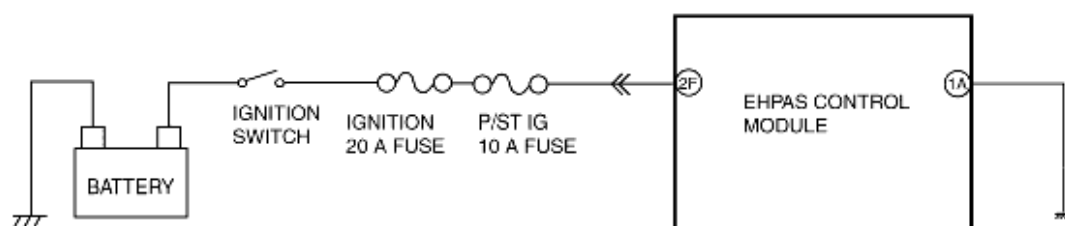
STEP	INSPECTION		ACTION
1	VERIFY THAT THE SAME DTC IS NOT PRESENT • Clear the DTC from the memory. (See Clearing DTCs Procedure .) • Is the same DTC present?	Yes	Replace the electric power steering oil pump, then go to the next step. (See ELECTRIC POWER STEERING OIL PUMP (LF) REMOVAL/INSTALLATION .)
		No	Go to the next step.
2	VERIFY THAT NO OTHER DTCS ARE PRESENT • Are any other DTCS output?	Yes	Go to the applicable DTC inspection. (See DTC Table .)
		No	DTC troubleshooting completed.

DTC B1352

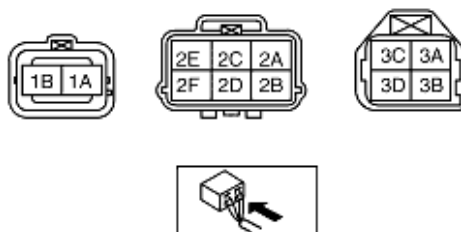
B3E060201038W06

DTC	B1352	Ignition power supply
DETECTION CONDITION	• Less than 2.5 V detected at the voltage monitor of the EHPAS control module	
POSSIBLE CAUSE	• Short to ground in wiring harness between EHPAS control module terminal 2F and ignition switch • Open circuit in wiring harness between EHPAS control module terminal 2F and ignition switch	

- Poor connection at connectors



EHPAS CONTROL MODULE HARNESS SIDE CONNECTOR



Diagnostic procedure

STEP	INSPECTION	ACTION	
1	INSPECT FUSES • Are the fuses normal?	Yes	Go to the next step.
		No	Repair or replace the fuses, then go to the step 3.
2	INSPECT EHPAS CONTROL MODULE POWER SUPPLY CIRCUIT FOR OPEN OR SHORT CIRCUIT • Start the engine. • Measure the voltage between following EHPAS control module terminal (wiring harness-side) and ground. - EHPAS control module : 2F-ground • Is voltage 10 V or more?	Yes	Go to the next step.
		No	Repair or replace the harness for open circuit between EHPAS CM and ground, then go to next step.
3	VERIFY THAT THE SAME DTC IS NOT PRESENT • Make sure to reconnect all disconnected connectors. • Clear the DTC from the memory. (See Clearing DTCs Procedure.) • Is same DTC present?	Yes	Replace the electric power steering oil pump, then go to the next step.
		No	Go to the next step.
4		Yes	Go to the applicable DTC inspection.

	VERIFY THAT NO OTHER DTCs ARE PRESENT • Are any other DTCs output?		(See DTC Table .)
		No	Troubleshooting completed.

DTC B2477

B3E060201038W07

DTC	B2477	EHPAS control module configuration
DETECTION CONDITION	• Configuration setting failure is detected.	
POSSIBLE CAUSE	• Module configuration procedure was not completed properly.	

Diagnostic procedure

STEP	INSPECTION		ACTION
1	VERIFY CONFIGURATION • Has the EHPAS control module configuration been performed?	Yes	Go to the next step.
		No	Perform configuration using the WDS or equivalent. (See ELECTRO HYDRAULIC POWER ASSIST STEERING (EHPAS) CONTROL MODULE CONFIGURATION .)
2	VERIFY THAT THE SAME DTC IS NOT PRESENT • Clear the DTC from the memory. (See Clearing DTCs Procedure .) • Is the same DTC present?	Yes	Repeat the inspection from Step 1. If the malfunction recurs, replace the EHPAS control module. (See ELECTRIC POWER STEERING OIL PUMP (LF) REMOVAL/INSTALLATION .)
		No	Go to the next step.
3	VERIFY THAT NO OTHER DTCs ARE PRESENT • Are any other DTCs output?	Yes	Go to the applicable DTC inspection. (See DTC Table .)
		No	DTC troubleshooting completed.

DTC C1099

B3E060201038W08

DTC	C1099	Electric power steering oil pump (motor)
DETECTION CONDITION	• The EHPAS control module detects that the motor speed is less than the specified value.	
POSSIBLE CAUSE	• Motor internal malfunction	

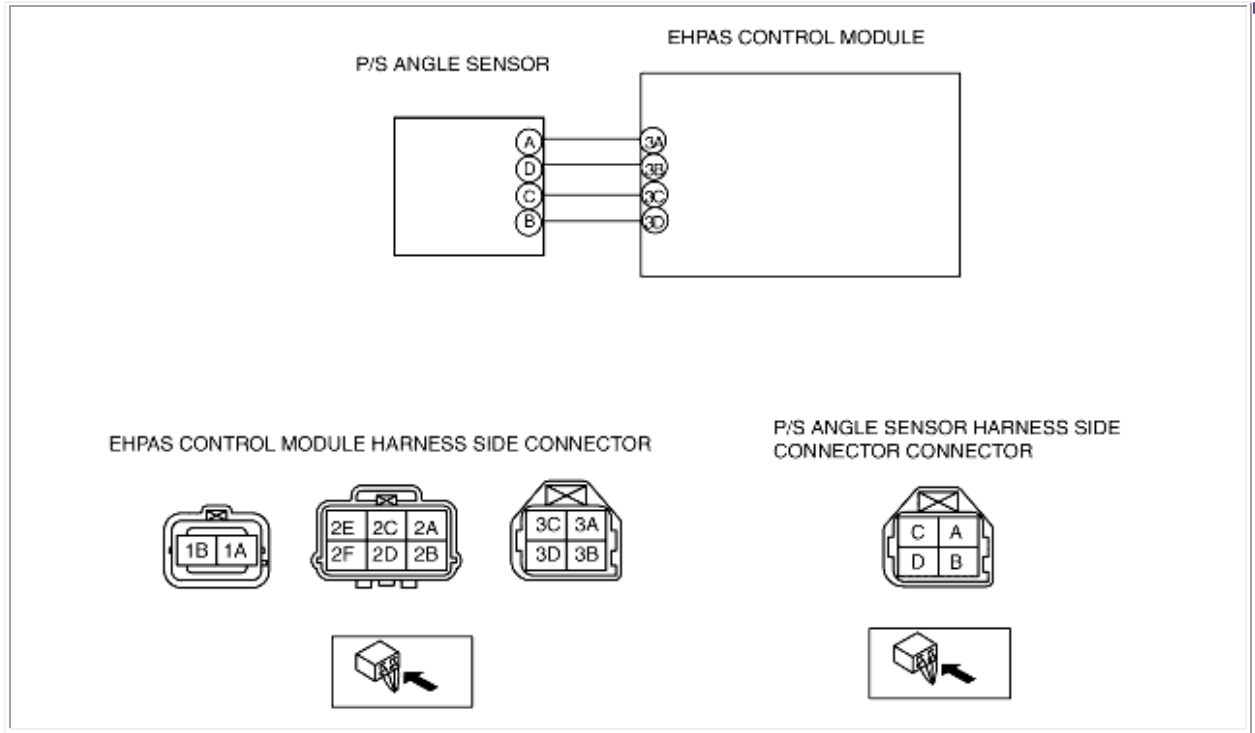
Diagnostic procedure

STEP	INSPECTION	ACTION	
1	REPLACE ELECTRIC POWER STEERING OIL PUMP • Replace the electric power steering oil pump. (See ELECTRIC POWER STEERING OIL PUMP (LF) REMOVAL/INSTALLATION.)		
2	VERIFY THAT NO OTHER DTCS ARE PRESENT • Are any other DTCs output?	Yes	Go to the applicable DTC inspection. (See DTC Table.)
		No	DTC troubleshooting completed.

DTC C1278, C1956

B3E060201038W09

DTC	C1278, C1956	P/S angle sensor
DETECTION CONDITION	- C1278 - The EHPAS control module detects that the monitor voltage from the P/S angle sensor is more than 4.25 V or less than 0.5 V. - The EHPAS control module detects that the two monitor voltages modulate at the same phase a specified amount of phases or more. - The EHPAS control module detects that the EHPAS sensor signal dose not change. - C1956 - The EHPAS control module detects that the power supply voltage of the P/S angle sensor is more than 5.5 V. - The EHPAS control module detects that the power supply voltage of the P/S angle sensor is less than 4.5 V.	
POSSIBLE CAUSE	- Short to power supply, open circuit, or short to ground in wiring harness between EHPAS control module terminal 3B and P/S angle sensor D - Short to power supply, open circuit, or short to ground in wiring harness between EHPAS control module terminal 3D and P/S angle sensor terminal B - Open circuit or short to ground in wiring harness between EHPAS control module terminal 3C and P/S angle sensor terminal C - Open circuit in wiring harness between EHPAS control module terminal 3A and P/S angle sensor terminal A - Short circuit in wiring harness between P/S angle sensor terminal B and D - P/S angle sensor ring has fallen off. - Power supply voltage of P/S angle sensor is more than the specified value.	



Diagnostic procedure

STEP	INSPECTION	ACTION
1	INSPECT POWER SUPPLY VOLTAGE OF P/S ANGLE SENSOR • Turn the ignition switch to the ON position (Engine off). • Measure the voltage between P/S angle sensor terminal C and ground. • Is the voltage 4.5-5.5 V?	Yes: Go to the next step. No: Repair or replace the wiring harness between EHPAS control module terminal 3C and P/S angle sensor terminal C, then go to the step 7.
2	INSPECT GROUND CIRCUIT OF P/S ANGLE SENSOR FOR OPEN CIRCUIT • Turn the ignition switch off. • Disconnect the EHPAS control module and P/S angle sensor connectors. • Inspect for continuity between EHPAS control module terminal 3A and P/S angle sensor terminal A. • Is there continuity?	Yes: Go to the next step. No: Repair or replace the wiring harness between EHPAS control module terminal 3A and P/S angle sensor terminal A, then go to the step 7.
3	INSPECT P/S ANGLE SENSOR SIGNAL CIRCUIT FOR SHORT TO POWER	Yes: Repair or replace the related wiring harnesses between the EHPAS control module and P/S angle sensor, then go to the step 7.

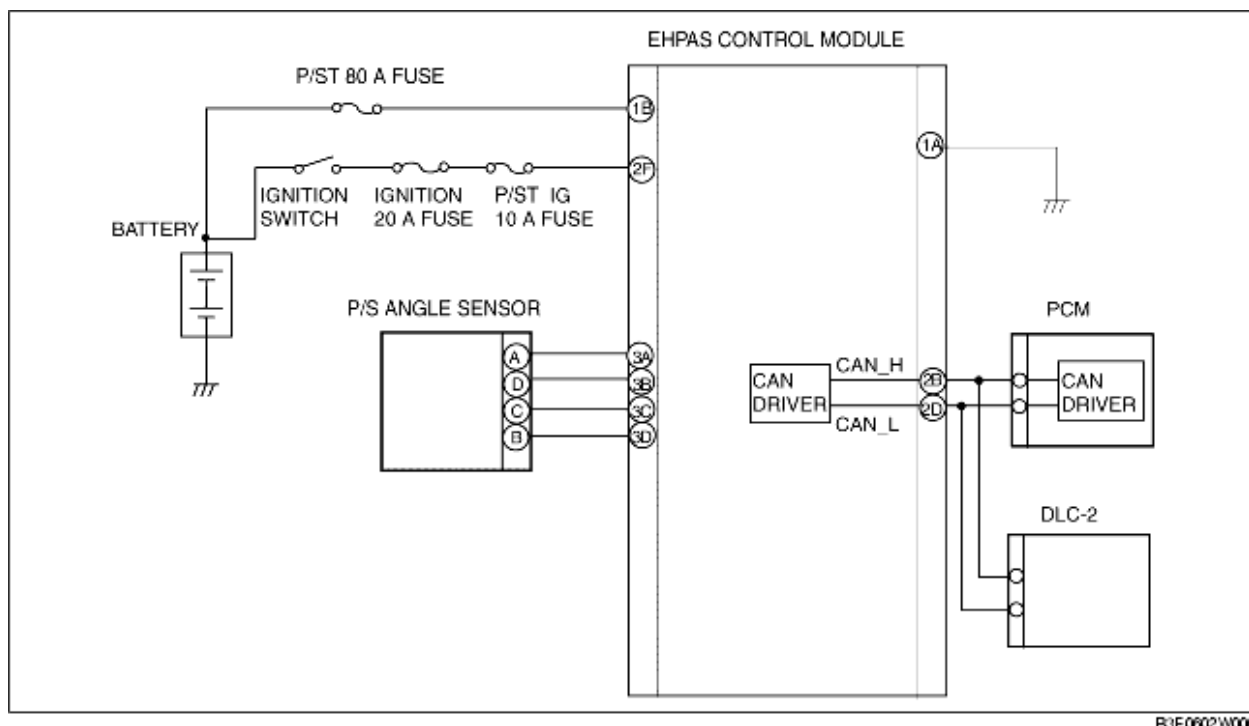
	• Turn ignition key to ON (engine OFF). • Measure the voltage between the EHPAS control module and body ground at the following: - Sensor 1: EHPAS control module terminal 3B and body ground - Sensor 2: EHPAS control module terminal 3D and body ground • Is voltage B+?	No	Go to next step.
4	INSPECT P/S ANGLE SENSOR SIGNAL CIRCUIT FOR SHORT TO GROUND • Turn the ignition switch off. • Inspect continuity between the EHPAS control module and body ground at the following: - Sensor 1: EHPAS control module terminal 3B and body ground - Sensor 2: EHPAS control module terminal 3D and body ground • Is there continuity?	Yes	Repair or replace the related wiring harnesses between the EHPAS control module and P/S angle sensor, then go to the step 7.
		No	Go to the next step.
5	INSPECT SENSORS 1 AND 2 OF THE P/S ANGLE SENSOR FOR CONTINUITY • Turn the ignition switch off. • Disconnect the EHPAS control module and P/S angle sensor connectors. • Inspect for continuity between P/S angle sensor terminals B and D. • Is there continuity?	Yes	Replace the P/S angle sensor, then go to the step 7. (See STEERING GEAR AND LINKAGE DISASSEMBLY.) (See STEERING GEAR AND LINKAGE ASSEMBLY.)
		No	Go to the next step.
6	INSPECT PID FOR P/S ANGLE SENSOR RING MALFUNCTION USING WDS OR EQUIVALENT • Turn the ignition switch off. • Connect the WDS or equivalent to the DLC-2. • Select the "STEER_RATE" PID.	Yes	Go to the next step.
		No	Replace the P/S angle sensor ring (built into the steering gear valve housing), then go to the next step. (See STEERING GEAR AND LINKAGE DISASSEMBLY.) (See STEERING GEAR AND LINKAGE ASSEMBLY.)

	• Verify that the WDS display changes correctly according to steering wheel operation. • Does it change correctly?		
7	VERIFY THAT THE SAME DTC IS NOT PRESENT • Reconnect all disconnected connectors. • Clear the DTC from the memory. (See Clearing DTCs Procedure.) • Is the same DTC present?	Yes	• Repeat the inspection from Step 1. • If the malfunction recurs, replace the electric power steering oil pump. (See ELECTRIC POWER STEERING OIL PUMP (LF) REMOVAL/INSTALLATION.)
		No	Go to the next step.
8	VERIFY THAT NO OTHER DTCS ARE PRESENT • Are any other DTCs output?	Yes	Go to the applicable DTC inspection. (See DTC Table.)
		No	DTC troubleshooting completed.

SYMPTOM TROUBLESHOOTING

ELECTRO HYDRAULIC POWER ASSIST STEERING (EHPAS) SYSTEM WIRING DIAGRAM

B3E060301038W01



FOREWORD

B3E060301038W02

- Before performing the steps in Symptom Troubleshooting, perform the On-board Diagnostic Inspection. To inspect the DTC, follow the DTC Inspection steps. (See [DTC Table](#).)

PRECAUTION

B3E060301038W03

Intermittent Concern Troubleshooting

Vibration method

- If a malfunction occurs or becomes worse while driving on a rough road or when the engine is vibrating, perform the following steps.

Note

- There are several reasons why vehicle or engine vibration could cause an electrical malfunction. Inspect the following:
 - Connectors not fully seated.
 - Wiring harnesses not having full play.
 - Wires laying across brackets or moving parts.
 - Wires routed too close to hot parts.
- An improperly routed, improperly clamped, or loose wiring harness can cause wiring to become pinched between parts.
- The connector joints, points of vibration, and places where wiring harness pass through the firewall, body panels and other panels are the major areas to be inspected.

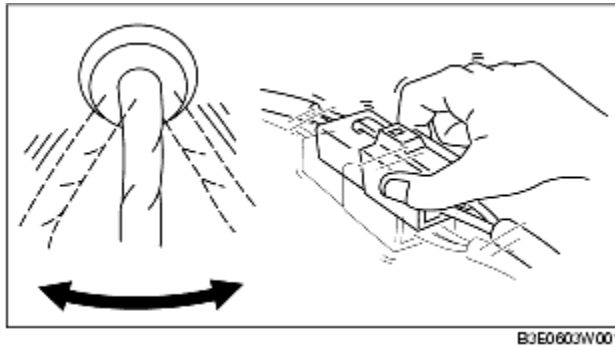
Inspection method for switch and/or sensor connectors or wires

1. Connect the WDS or equivalent to the DLC-2.
2. Turn the ignition switch to the ON position (engine off).

Note

- If the engine starts and runs, perform the following steps at idle.

3. Access PIDs for the switch you are inspecting.
4. Turn the switch on manually.
5. Slightly shake each connector or wiring harness vertically and horizontally while monitoring the PID.



B3E0603/W001

- If the PID value is unstable, inspect for poor connection.

Inspection method for sensors

1. Connect the WDS or equivalent to the DLC-2.
2. Turn the ignition switch to the ON position (engine off).

Note

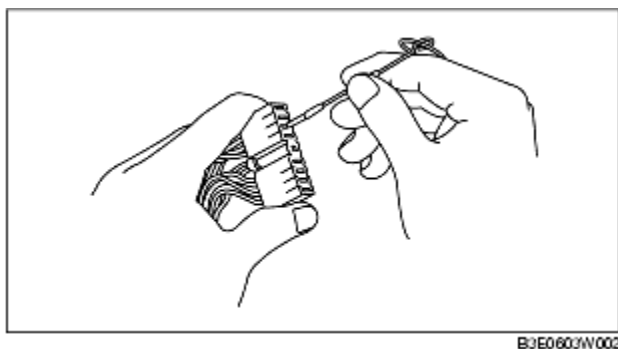
- If the engine starts and runs, perform the following steps at idle.

3. Access PIDs for the switch you are inspecting.
4. Vibrate the sensor slightly with your finger.

- If the PID value is unstable or a malfunction occurs, inspect for poor connection and/or poorly mounted sensor.

Connector terminal inspection method

1. Inspect the connection of each female terminal.
2. Insert the male terminal to the female terminal and inspect the female terminal for looseness.



SYMPTOM TROUBLESHOOTING

B3E060301038W04

- Verify the symptom, and perform troubleshooting according to the appropriate number.

No.	Symptom
1	Poor power steering assist

NO.1 POOR POWER STEERING ASSIST

B3E060301038W05

1	POOR POWER STEERING ASSIST
TROUBLESHOOTING HINTS	
• Power steering fluid leakage from EHPAS fluid line • Steering gear and linkage malfunction • EHPAS control module malfunction	

Diagnostic procedure

STEP	INSPECTION		ACTION
1	RETRIEVE DTC FROM EHPAS CONTROL MODULE • Are any DTCs present?	Yes	Record all DTC and go to the applicable DTC inspection.
		No	Go to the next step.
2	INSPECT STEERING WHEEL ASSIST FUNCTION • Disconnect the EHPAS control module connector (2-pin).	Yes	Go to the next step.
		No	Visually inspect the steering gear and linkage. Replace it if the malfunction is found.

	• Is the power steering assist function changed?		
3	INSPECT IF THERE IS ANY FLUID LEAK FROM THE EHPAS FLUID LINE • Is there fluid leakage?	Yes	Replace it if necessary.
		No	Replace the EHPAS control module.

GENERAL PROCEDURES

GENERAL PROCEDURES (STEERING)

B3E061001034W01

Wheel and Tire Installation

1. When installing the wheels and tires, tighten the wheel nuts in a criss-cross pattern to the following tightening torque.

Tightening torque

88.2-117.6 N·m

{9.00-11.99kgf·m, 65.06-86.73 ft·lbf}

Connectors Disconnection

1. Disconnect the negative battery cable before performing any work that requires handling of connectors. (See [BATTERY REMOVAL/INSTALLATION \[Z6\]](#).) (See [BATTERY REMOVAL/INSTALLATION \[LF\]](#))

Suspension Links Removal/Installation

1. For the joint sections with rubber bushings, raise the vehicle using a lift, and then temporarily tighten the installation bolts and nuts. Lower the vehicle to the ground and tighten them completely with the specified torque.

EHPAS Related Parts

Warning

- If the configuration procedure is not completed, the EHPAS will not operate properly and it might cause an unexpected accident. Therefore, when replacing or removing the electric power steering oil pump, make sure to perform the configuration procedure to ensure the proper EHPAS operation.

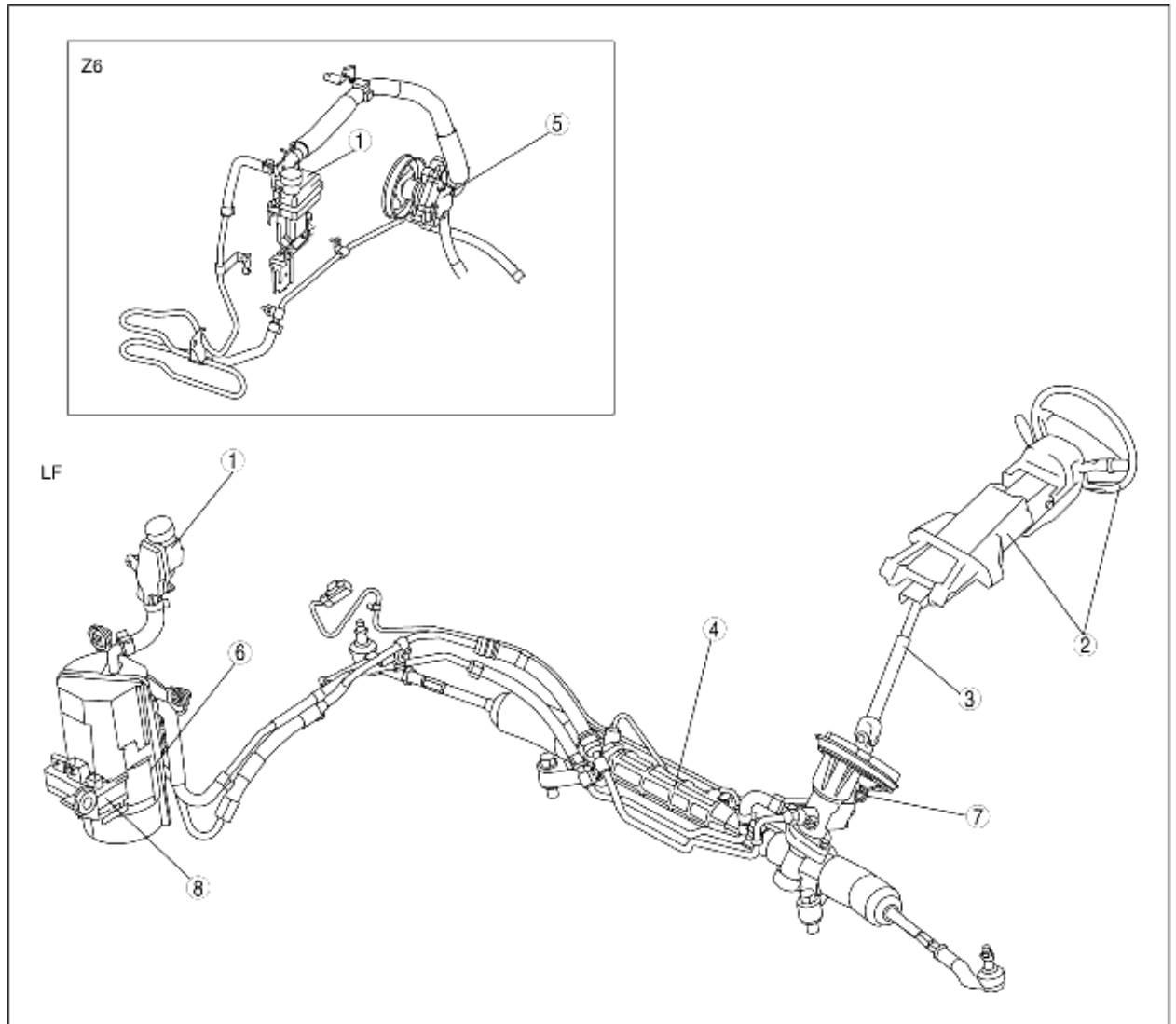
1. Make sure that there are no DTCs in the EHPAS memory after working on EHPAS related parts. If there are any codes in the memory, clear them.

2. When replacing or removing the electric power steering oil pump, perform the configuration procedures. (See [ELECTRO HYDRAULIC POWER ASSIST STEERING \(EHPAS\) CONTROL MODULE CONFIGURATION](#).)

POWER STEERING

STEERING LOCATION INDEX

B3E061401034W01



B3E0614W001

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 INSPECTION .)
	Steering gear and linkage (See STEERING GEAR AND LINKAGE REMOVAL/INSTALLATION .)
4	(See STEERING GEAR AND LINKAGE DISASSEMBLY .) (See STEERING GEAR AND LINKAGE INSPECTION .) (See STEERING GEAR AND LINKAGE ASSEMBLY .)
	Power steering oil pump (Z6) 5 (See POWER STEERING OIL PUMP (Z6) REMOVAL/INSTALLATION .) (See POWER STEERING OIL PUMP (Z6) DISASSEMBLY/ASSEMBLY .)
	Electric power steering oil pump (LF) 6 (See ELECTRIC POWER STEERING OIL PUMP (LF) REMOVAL/INSTALLATION .)
	P/S angle sensor 7 (See P/S ANGLE SENSOR INSPECTION .)
	EHPAS control module 8 (See ELECTRO HYDRAULIC POWER ASSIST STEERING (EHPAS) CONTROL MODULE INSPECTION .) (See ELECTRO HYDRAULIC POWER ASSIST STEERING (EHPAS) CONTROL MODULE CONFIGURATION .)

AIR BLEEDING

B3E061401034W02

Caution

- Do not maintain the steering wheel fully turned for 5 s or more. It is possible that oil temperature can rise and this will negatively affect the oil pump.

1. Inspect the fluid level. (See [POWER STEERING FLUID INSPECTION](#).)
2. Turn the steering wheel fully to the left and right several times.
3. Reinspect the fluid level.
 - If the fluid level has dropped, add fluid.
4. Repeat Steps 2-3 until the fluid level stabilizes.
5. Start the engine and let it idle.
6. Turn the steering wheel fully to the left and right several times.
7. Repeat Step 6 until the fluid is not foamy and the fluid level has not dropped.

8. Inspect the fluid level, and If the fluid level has dropped, add fluid to a level between MAX and MIN of the reserve tank.

POWER STEERING FLUID INSPECTION

B3E061432040W01

Fluid Level Inspection

1. Verify that the fluid level is between MAX and MIN of the reserve tank when the engine is cold.

- If the fluid is not at the specified level, adjust the fluid level (MIN-MAX on reserve tank) by adding/draining the fluid.

Fluid specification

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

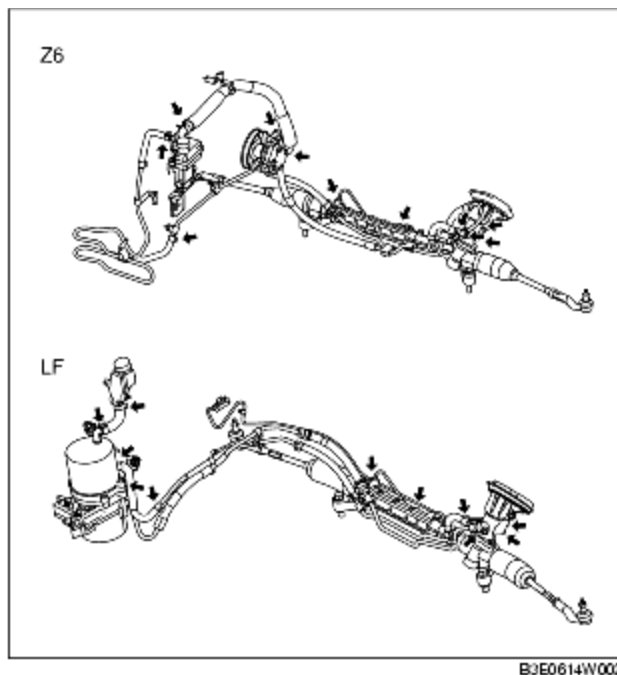
Fluid Leakage Inspection

1. Start the engine and idle it.
2. Turn the steering wheel fully to left or right, to generate the fluid pressure.

Caution

- Do not maintain the steering wheel fully turned for 5 s or more. It is possible that oil temperature can rise and this will negatively affect the oil pump.

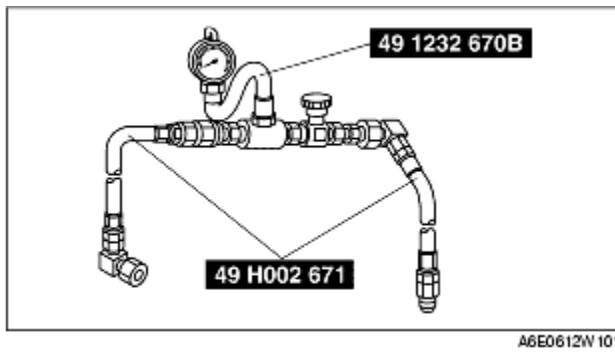
3. Inspect for the fluid leakage at the points indicated in the figure.



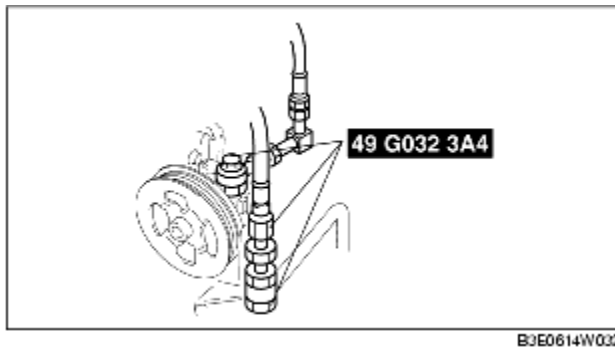
- If fluid leakage is found, repair the related parts.

Fluid pressure Inspection

1. Set the SSTs so that the valve of the SST faces toward the gear housing side as shown in the figure.



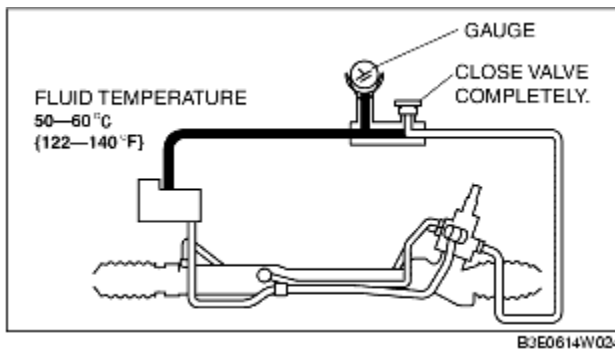
2. Disconnect the oil pump side joint of the pressure hose, connect the **SSTs** set in the Step 1. (Same procedure for LF engine)



Tightening torque

29.4-44.1 N·m {3.00-4.49 kgf·m, 21.6-32.5 ft·lbf}

3. Bleed the air from the system.
4. Open the gauge valve fully.
5. Start the engine, turn the steering wheel to the left and right to raise the power steering fluid to the appropriate temperature (**50-60 °C {°F}**).
6. Close the gauge valve fully.



7. Increase the engine speed to **1,000-1,500 rpm** and measure the fluid pressure generated at the oil pump.

- If it is less than the specification, replace the oil pump as a single unit.

Caution

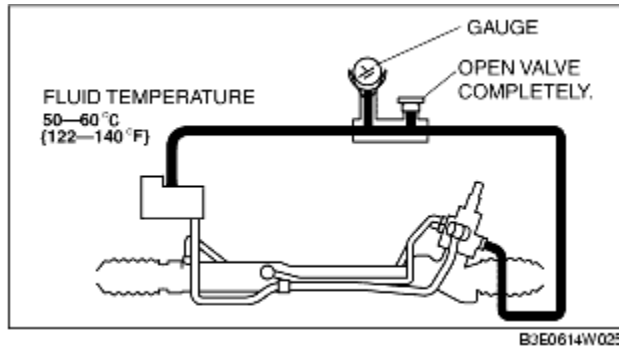
- Do not maintain the gauge valve fully closed for 5 s or more. It is possible that oil temperature can rise and this will negatively affect the oil pump.

Oil pump fluid pressure (oil temperature 50-60 °C {122-140 °F})

Z6: 8.5-9.0 MPa {87-91 kgf/cm², 1235-1305 psi}

LF: 10.4-11.0 MPa {107-112 kgf/cm², 1509-1595 psi}

8. Open the gauge valve fully and increase the engine speed to **1,000-1,500 rpm**.



9. Turn the steering wheel fully to the left and right, then measure the fluid pressure generated at the gear housing.

Caution

- Do not maintain the steering wheel fully turned for 5 s or more. It is possible that oil temperature can rise and this will negatively affect the oil pump.

Note

- If the fluid pressure is less than the specification, it is possible that the oil pump or gear housing is not operating correctly. Replace the oil pump as a single unit.

Gear housing fluid pressure (oil temperature 50-60 °C {122-140 °F})

Z6: 7.6-9.0 MPa {78-91 kgf/cm², 1103-1305 psi}

LF: 9.0-11.0 MPa {92-111 kgf/cm², 1306-1585 psi}

10. After removing the **SSTs**, tighten the oil pump side joint of the pressure hose to the specified torque.

Tightening torque

29.4-44.1 N·m {3.00-4.49 kgf·m, 21.6-32.5 ft·lbf}

11. Bleed the air from the system.

STEERING WHEEL AND COLUMN INSPECTION

B3E061432010W01

Play Inspection

1. With the wheels in the straight-ahead position, start the engine.

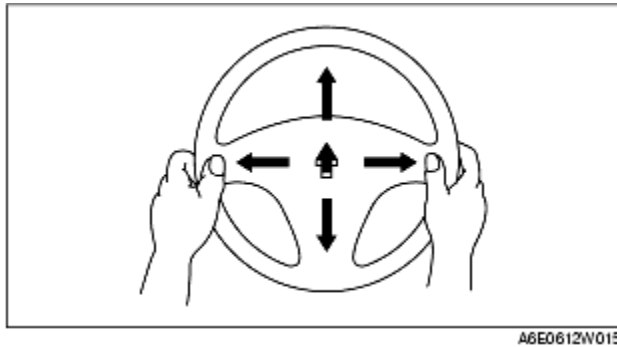
2. Turn the steering wheel to the left and right gently, then verify that the steering wheel play is within the specification.

Play

0-30 mm {0-1.18 in} (When hydraulic operating)

Looseness, Excessive Play Inspection

1. Inspect the steering wheel for looseness or excessive play in the axial direction of the shaft and four locations around the steering wheel.



- If there is any malfunction, inspect the following, and repair or replace the applicable part.
 - Column bearing wear
 - Looseness of the steering wheel installation part
 - Looseness of the column installation area
 - Excessive play of the steering shaft joint
 - Excessive play of the steering gear

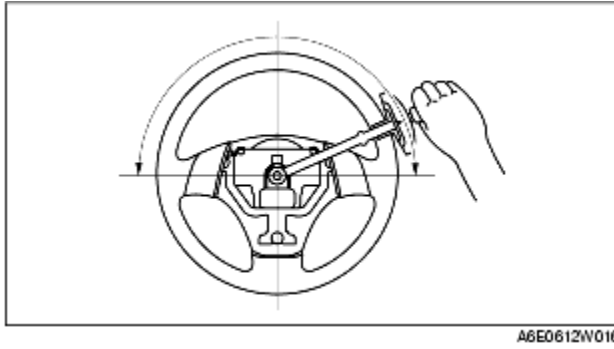
Steering Force Inspection

1. Verify that the equipped tire size and tire air pressure is as specified.
2. With the vehicle on a hard, level surface, put the wheels in the straight-ahead position.

Warning

- Handling the air bag module improperly can accidentally operate (deploy) the air bag module, which may seriously injure you. Read the service warnings before handling the air bag module. (See [SERVICE WARNINGS](#).)

3. Remove the air bag module. (See [DRIVER-SIDE AIR BAG MODULE REMOVAL/INSTALLATION](#).)
4. Start the engine and idle it.
5. Verify that the EHPAS warning light does not illuminate.
6. Inspect the steering force using a torque wrench.



- If not within the specification, verify the following:

- No air in steering system
- No fluid leakage at hose or connectors
- Function of oil pump and steering gear

Reference value

7.8 N·m {80 kgf·cm, 69 in·lbf} or less

Note

- Comparing another vehicle of the same model under the same conditions is an acceptable inspection method.
- The steering force varies with conditions indicated below.
 - Road conditions: Such as dry, wet, asphalt, or concrete
 - Tire condition: such as brand, wear, and tire pressure

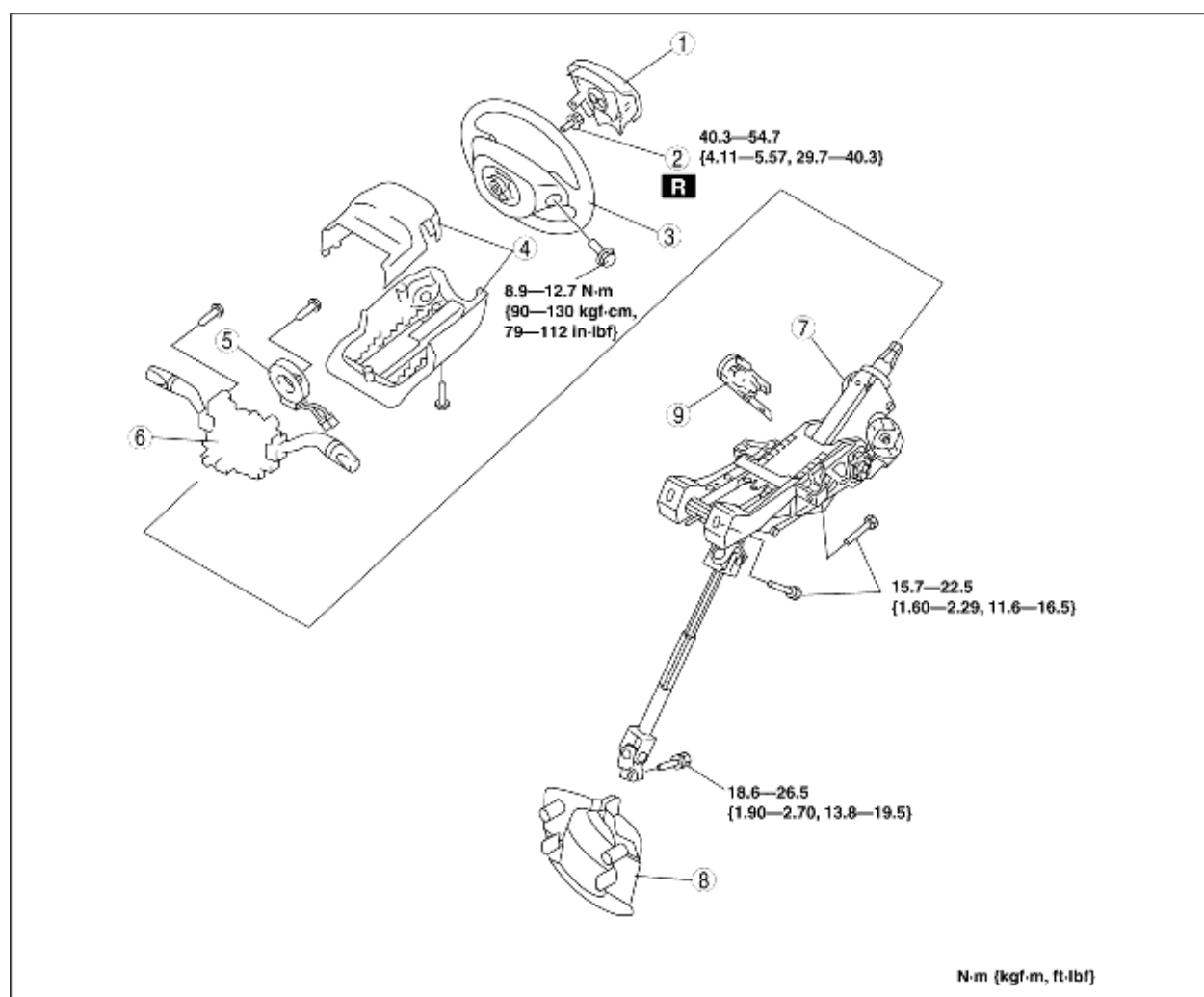
STEERING WHEEL AND COLUMN REMOVAL/INSTALLATION

B3E061432010W02

Warning

- Handling the air bag module improperly can accidentally operate (deploy) the air bag module, which may seriously injure you. Read the service warnings before handling the air bag module. (See [SERVICE WARNINGS](#).)

1. Remove in the order indicated in the table.
2. Install in the reverse order of removal.



B3E0614 W005

1	Air bag module (See DRIVER-SIDE AIR BAG MODULE REMOVAL/INSTALLATION.)
2	Lockbolt
3	Steering wheel (See Steering Wheel Removal Note.) (See Steering Wheel Installation Note.)
4	Column cover
5	Clock spring (See CLOCK SPRING REMOVAL/INSTALLATION.)
6	Combination switch
7	Steering shaft (See Steering Shaft Installation Note.)
8	Dust cover

- 9 Key cylinder
(See [Key Cylinder Removal Note.](#))

Steering Wheel Removal Note

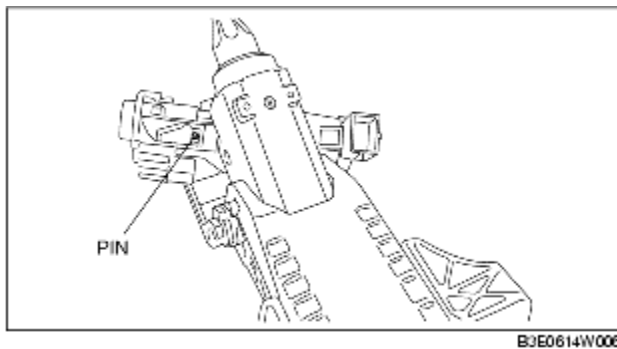
Caution

- Do not try to remove the steering wheel by hitting the shaft with a hammer. The column will be damaged.

1. Set the wheels in the straight-ahead position.
2. Remove the steering wheel using any commercially available puller.

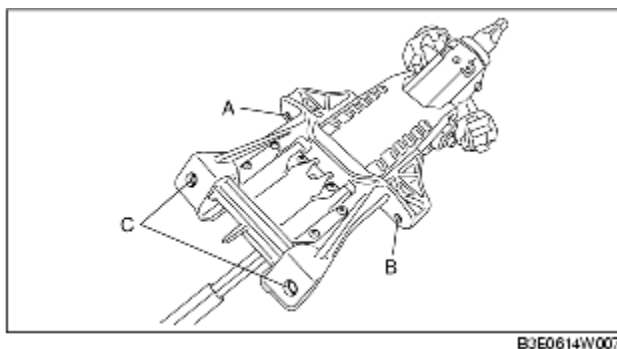
Key Cylinder Removal Note

1. Turn the key to the ACC position.
2. Push the pin and remove the key cylinder.



Steering Shaft Installation Note

1. Verify that the tilt lever is in the LOCK position.
2. Tighten the bolts in alphabetical order.

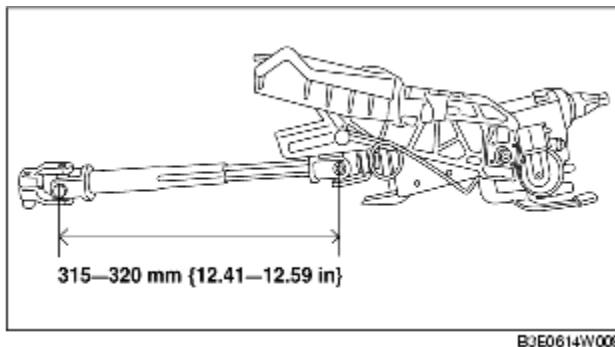


Steering Wheel Installation Note

1. Set the wheels in the straight-ahead position and install the steering wheel.

STEERING SHAFT INSPECTION

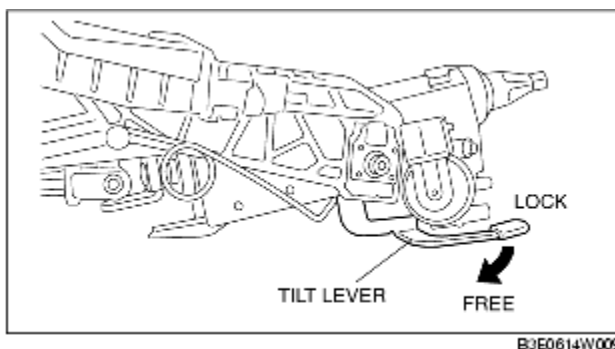
1. Inspect the column bearing for excessive play and damage.
2. Verify that the measurement of the steering shaft indicated in the figure is as specified.



- If not within the specification replace the steering shaft component.

Standard**315–320 mm {12.41–12.59 in}**

3. Inspect the tilt mechanism operation for the following.



- (1) Tilt lever moves smoothly from the lock to the unlock position.
 - (2) Steering shaft is fixed firmly when the tilt lever is locked.
- If there is any malfunction, replace the steering shaft.

STEERING GEAR AND LINKAGE REMOVAL/INSTALLATION

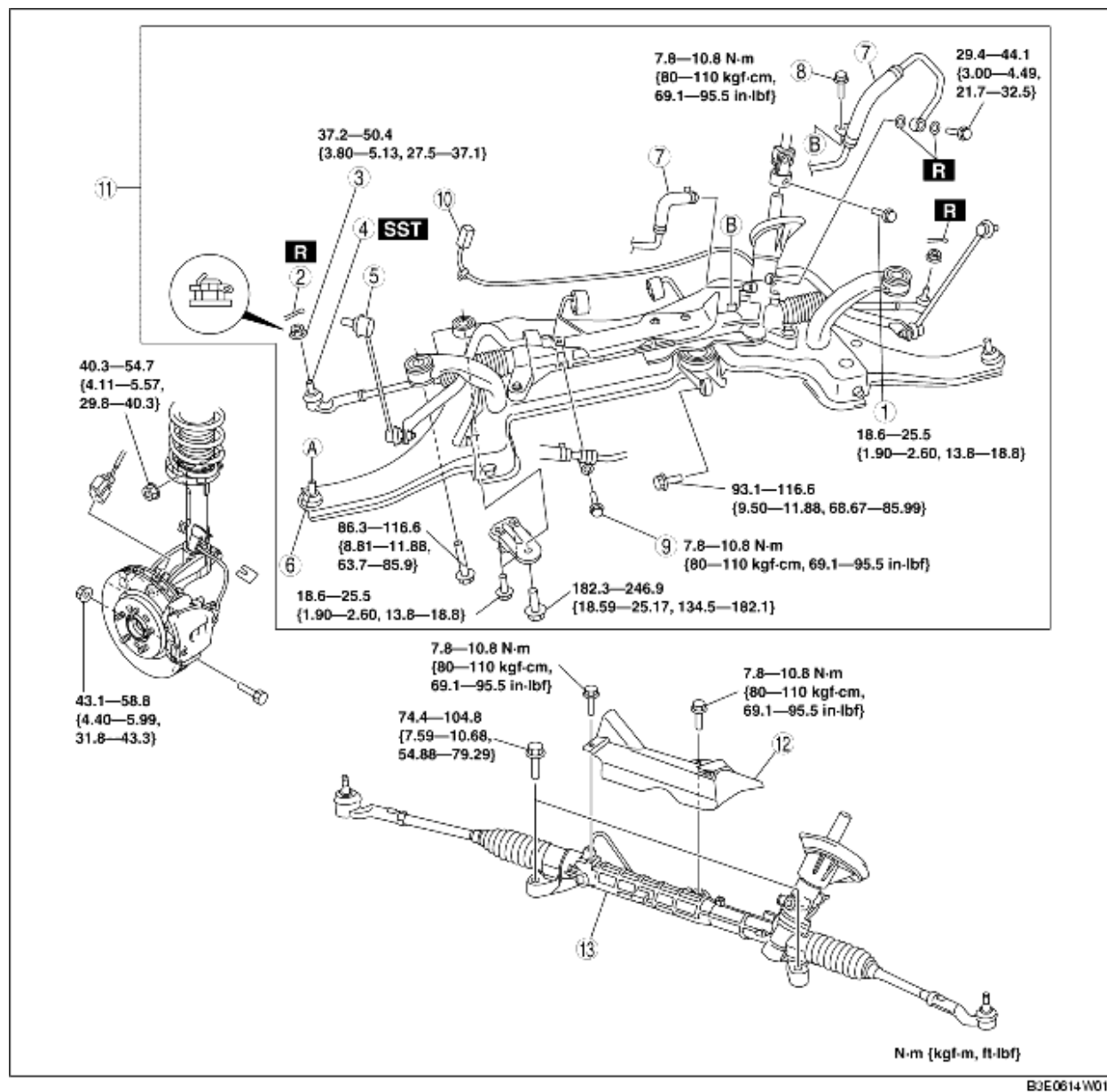
B3E061432960W01

Caution

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

1. Remove the under cover.

2. Remove in the order indicated in the table.
3. Install in the reverse order of removal.
4. After installation, inspect the front wheel alignment and adjust it if necessary. (See [FRONT WHEEL ALIGNMENT](#).)

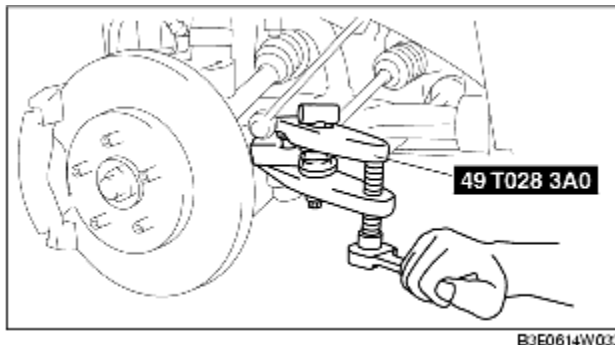


1	Bolt (intermediate shaft)
2	Cotter pin
3	Locknut (tie-rod end)
4	Tie-rod end (See Tie-rod End Removal Note .)
5	Stabilizer control link (upper part only)

6	Lower arm ball joint
7	Oil pipe, hose (gear side only)
8	Bolt (Z6 only)
9	Bolt
10	P/S angle sensor connector (LF only) (See P/S Angle Sensor Connector Removal Note .)
11	Front crossmember component, steering gear and linkage component (See Front Crossmember Component, Steering Gear and Linkage Removal Note .) (See Front Crossmember Component, Steering Gear and Linkage Installation Note .)
12	Dust cover
13	Steering gear and linkage

Tie-rod End Removal Note

1. Remove the tie-rod end locknut.
2. Detach the tie-rod end from the steering knuckle using the **SST**.

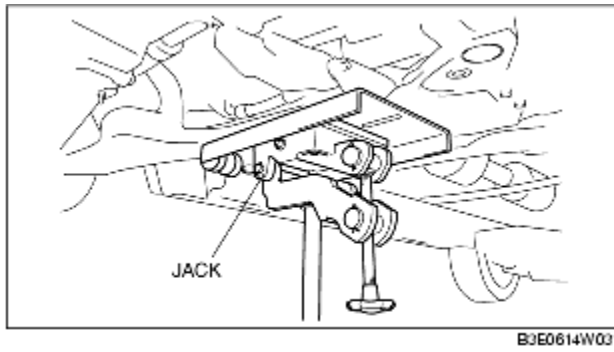


P/S Angle Sensor Connector Removal Note

1. Remove the coolant reserver tank. (See [COOLANT RESERVE TANK REMOVAL/INSTALLATION](#).)
2. Disconnect the P/S angle sensor connector.

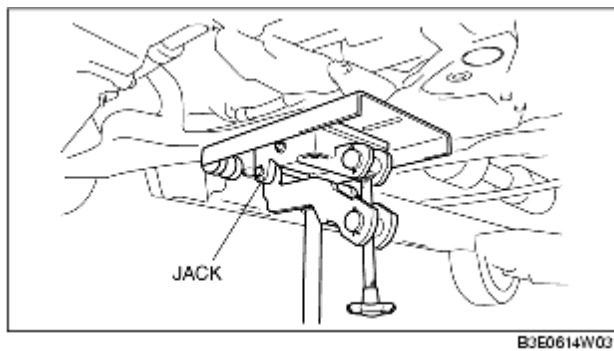
Front Crossmember Component, Steering Gear and Linkage Removal Note

1. Remove the front crossmember, front stabilizer, lower arm, and steering gear as a single unit using a transmission jack.



Front Crossmember Component, Steering Gear and Linkage Installation Note

1. Install the front crossmember, front stabilizer, lower arm, and steering gear as a single unit using a transmission jack.



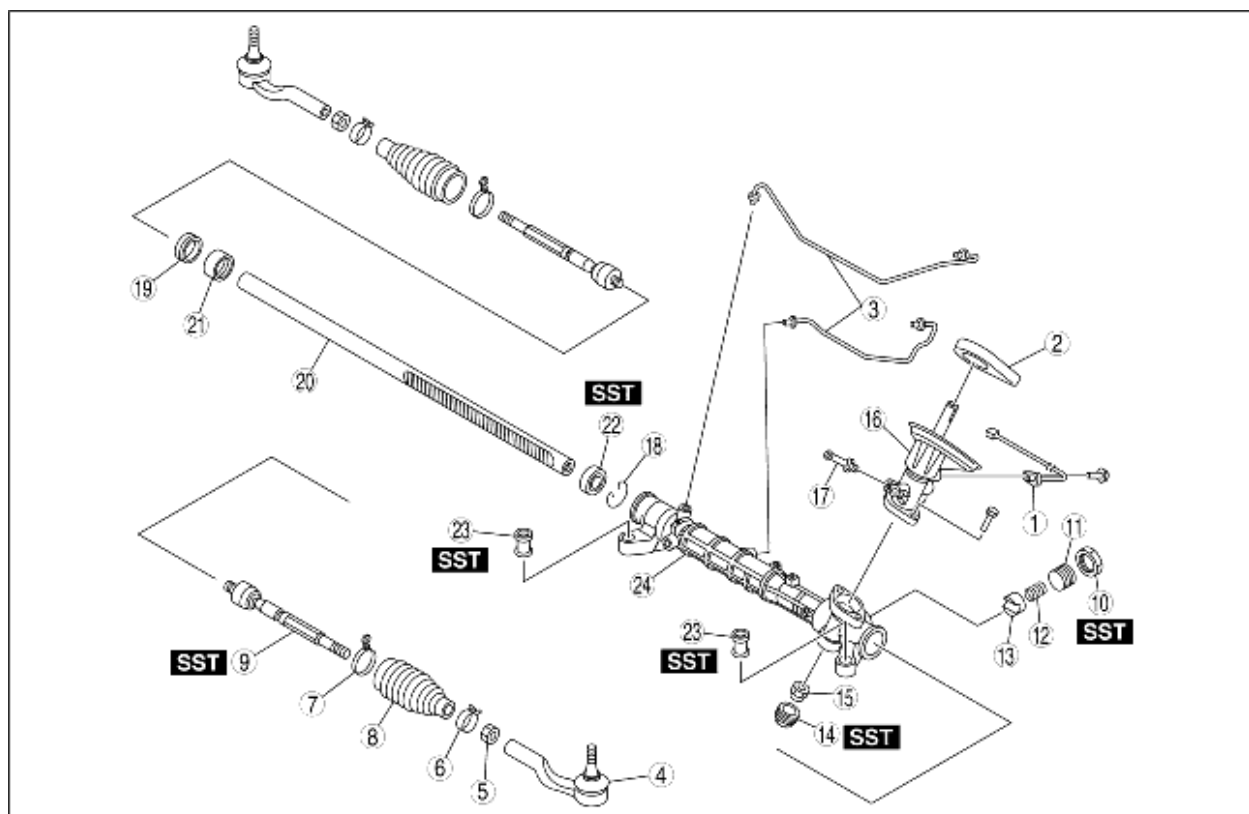
STEERING GEAR AND LINKAGE DISASSEMBLY

B3E061432960W02

Caution

- Place copper plates, rag, or similar material in a vise, when securing the mounting bracket portion of the steering gear.

1. Disassemble in the order indicated in the table.



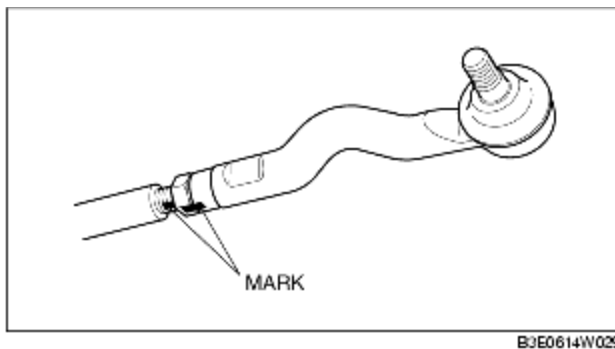
B3E0614 W011

1	P/S angle sensor (LF only)
2	Floor seal
3	Oil pipe
4	Tie-rod end (See Tie-rod End Disassembly Note.)
5	Locknut
6	Boot clamp
7	Boot band
8	Boot
9	Tie rod (See Tie Rod Disassembly Note.)
10	Locknut (on adjusting cover) (See Locknut (on Adjusting Cover), Adjusting Cover Disassembly Note.)
11	Adjusting cover (See Locknut (on Adjusting Cover), Adjusting Cover Disassembly Note.)
12	Yoke spring

13	Support yoke
14	Housing cover
15	Locknut (on pinion shaft)
16	Pinion shaft and valve housing component
17	Return pipe
18	Clip
19	Stopper
20	Steering rack
21	Rack bushing
22	Oil seal (See Oil Seal Disassembly Note .)
23	Mounting rubber (See Mounting Rubber Disassembly Note .)
24	Gear housing

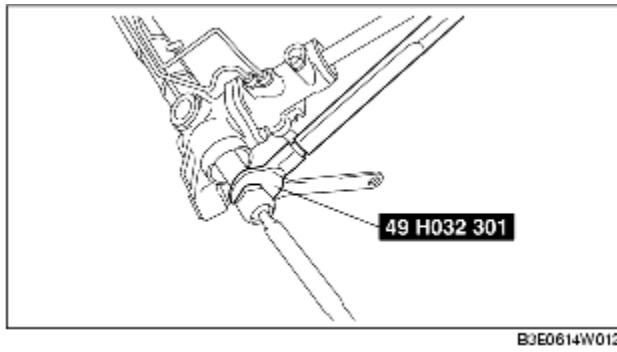
Tie-rod End Disassembly Note

1. Place alignment marks as shown in the figure for proper installation.



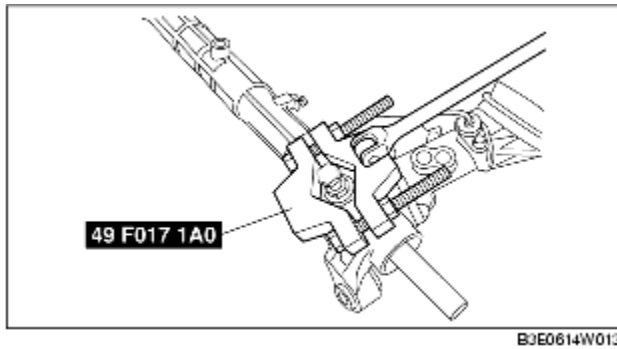
Tie Rod Disassembly Note

1. Fix the steering rack and remove the tie rod using the SST.



Locknut (on Adjusting Cover), Adjusting Cover Disassembly Note

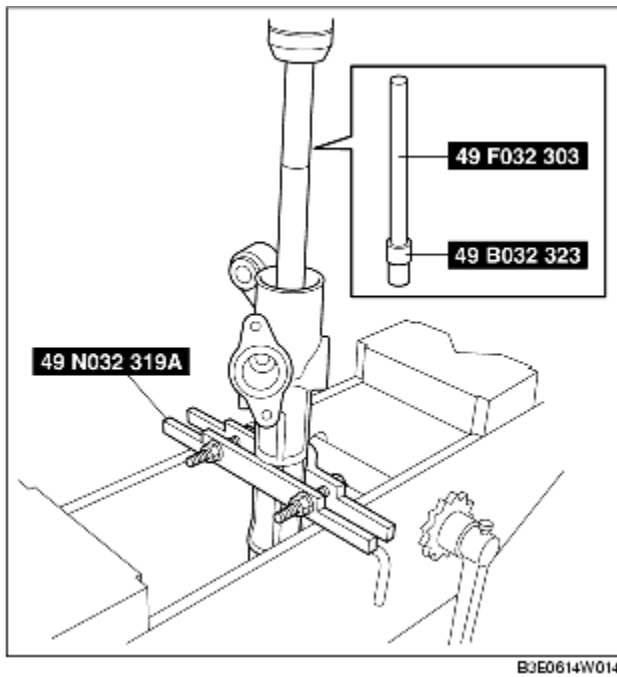
1. Remove the locknut using the **SST**.



2. Remove the adjusting cover.

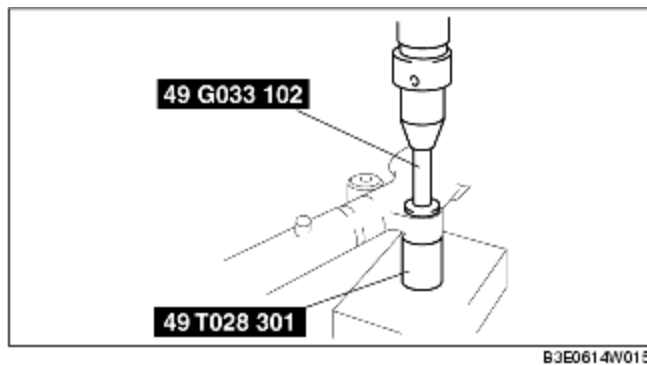
Oil Seal Disassembly Note

1. Install the **SST** (49 N032 319A) to the gear housing with the raised part facing up as shown in the figure.
2. Insert the **SSTs** (49 F032 303, 49 B032 323) into the valve housing side.
3. Remove the oil seal using a press.



Mounting Rubber Disassembly Note

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

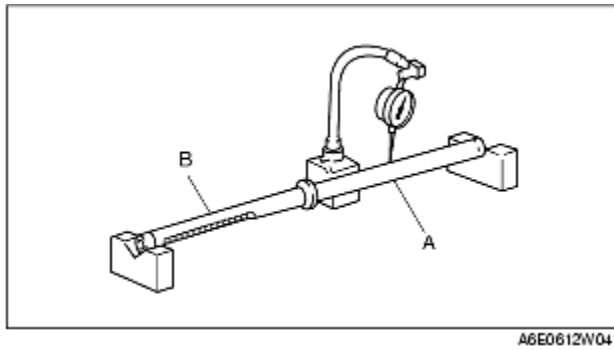


STEERING GEAR AND LINKAGE INSPECTION

B3E061432960W03

Steering Rack Inspection

1. Inspect for cracking, damage, and tooth wear.
 - If there is any malfunction, replace the steering rack.
2. Measure the steering rack warp.



- If it exceeds the maximum specification, replace the steering rack.

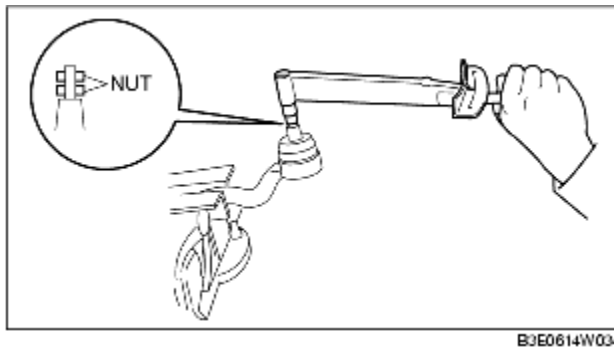
Minimum

Near point A: 0.15 mm {0.006 in}

Near point B: 0.20 mm {0.008 in}

Tie-rod End Inspection

1. Inspect the tie-rod end for damage and the boot for cracks.
 - If there is any malfunction, replace the tie-rod end.
2. Inspect for excessive play.
 - If there is any malfunction, replace the tie-rod end.
3. Rotate the ball joint **10 times**.
4. Install two nuts to the ball joint and measure the tie-rod end rotational torque using a torque wrench.



- If not within the specification, replace the tie-rod end.

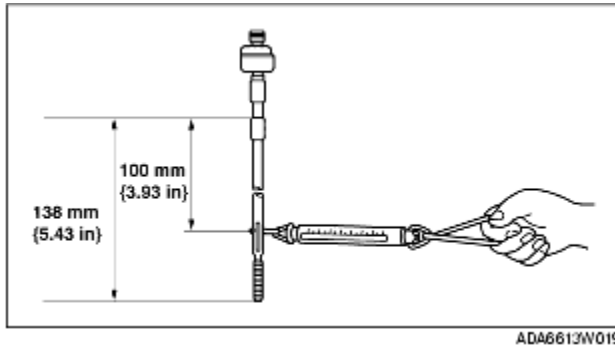
Standard rotational torque

0.5-3.0 N·m {6-30 kgf·cm, 5-26 in·lbf}

Tie rod Inspection

1. Inspect for bending and damage.
 - If there is any malfunction, replace the tie rod.
2. Inspect for excessive play.
 - If there is any malfunction, replace the tie rod.

3. Swing the ball joint **10 times**.
4. Measure the ball joint swing torque using a pull scale.



- If it exceeds the specification, replace the tie rod.

Standard swing torque

0.4-4.0 N·m {5-40 kgf·cm, 4-35 in·lbf}

Pull scale reading

0.6-29.3 N {0.06-2.98 kgf, 0.14-6.58 lbf}

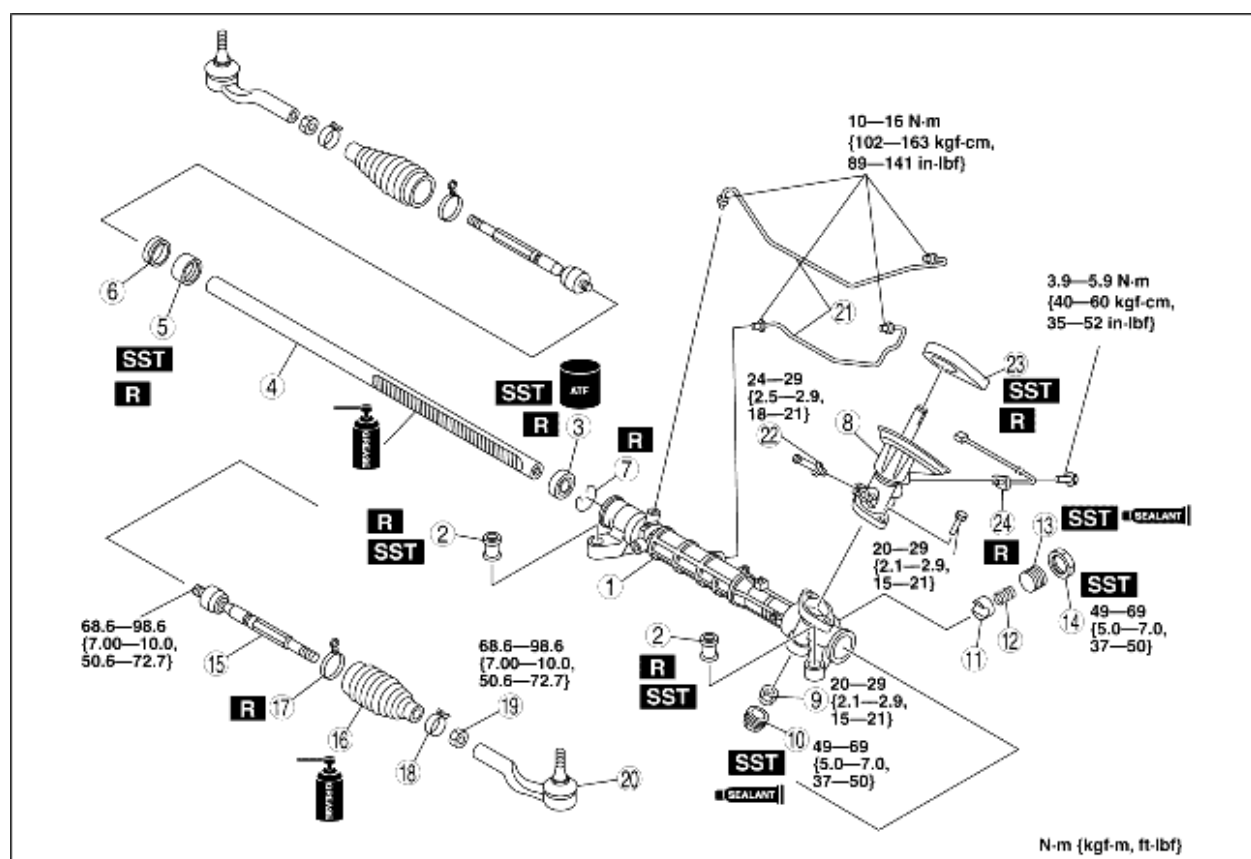
STEERING GEAR AND LINKAGE ASSEMBLY

B3E061432960W04

Caution

- Place copper plates, rag, or similar material in a vise, when securing the mounting bracket portion of the steering gear.

1. Assemble in the order indicated in the table.



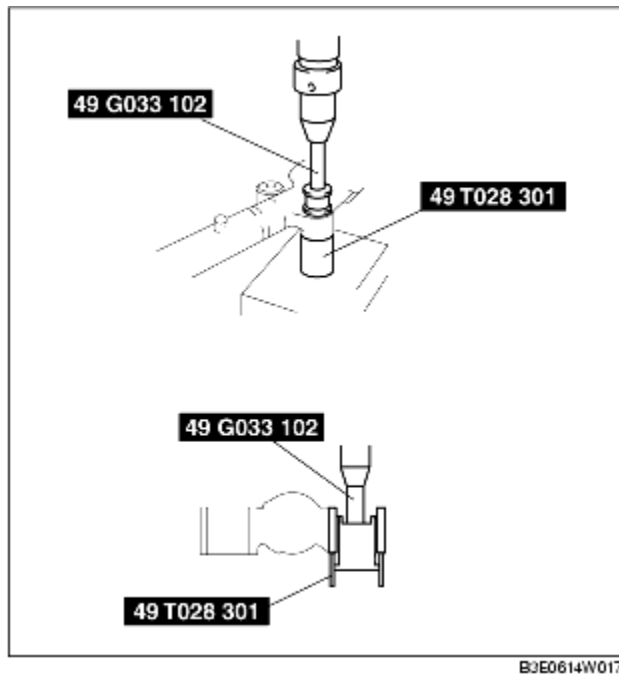
B3E0614 W016

1	Gear housing
2	Mounting rubber (See Mounting Rubber Assembly Note.)
3	Oil seal (See Oil Seal Assembly Note.)
4	Steering rack (See Steering Rack Assembly Note.)
5	Rack bushing (See Rack Bushing Assembly Note.)
6	Stopper
7	Clip
8	Pinion shaft and valve housing component (See Pinion Shaft and Valve Housing Component Assembly Note.)
9	Locknut
10	Housing cover (See Housing Cover Assembly Note.)

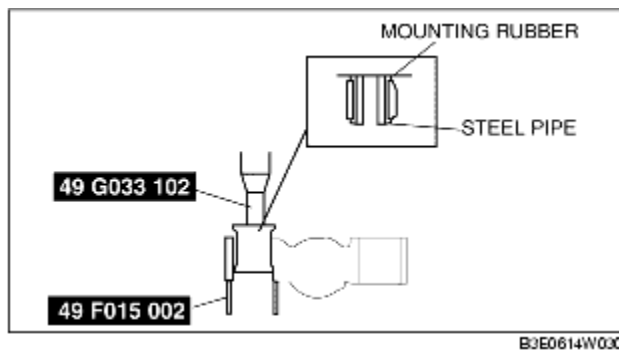
11	Support yoke
12	Yoke spring
13	Adjusting cover (See Adjusting Cover Assembly Note.)
14	Locknut (on adjusting cover) (See Locknut (on Adjusting Cover) Assembly Note.)
15	Tie rod
16	Boot (See Boot Assembly Note.)
17	Boot band
18	Boot clamp
19	Locknut
20	Tie-rod end
21	Oil pipe
22	Return pipe
23	Floor seal (See Floor Seal Assembly Note.)
24	P/S angle sensor (See P/S Angle Sensor Assembly Note.)

Mounting Rubber Assembly Note

1. Apply soapy water to the rubber part of the mounting rubber.
2. Install the mounting rubber so that two notches of the mounting rubber are parallel to the steering rack.
3. Press the mounting rubber until the mounting rubber end comes out completely from the gear housing using the **SSTs** and a press.

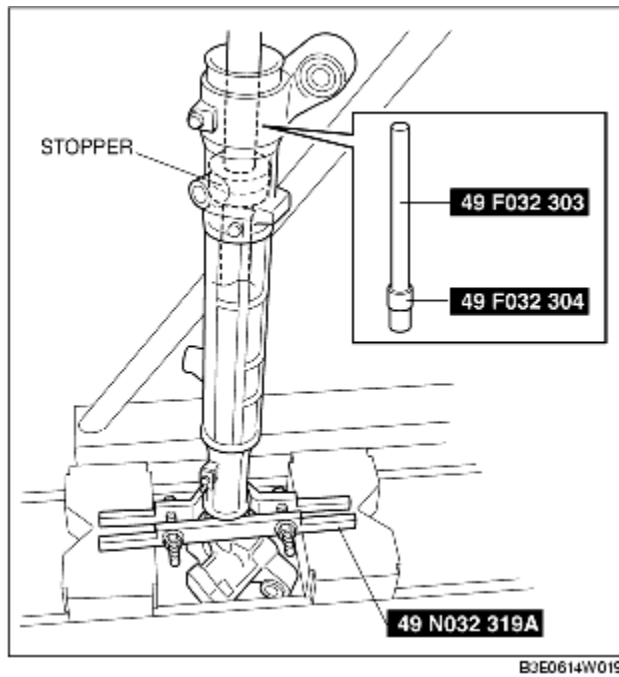


4. Reverse the gear housing, then press the mounting rubber until the mounting rubber end comes out completely from the other side. At this time, make sure that the mounting rubber and steel pipe are aligned.



Oil Seal Assembly Note

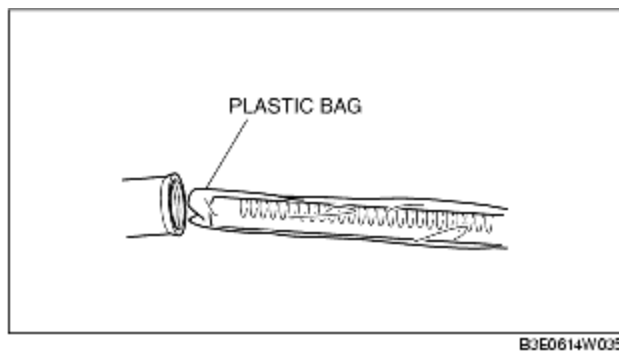
1. Apply ATF to the lip of a new oil seal.
2. Install the **SST** (49 N032 319A) to the gear housing with the raised part facing up as shown in the figure.
3. Set the stopper into the gear housing to hold the **SSTs** as shown in the figure.



4. Install the oil seal using the **SSTs** (49 F032 303, 49 F032 304) and a press.

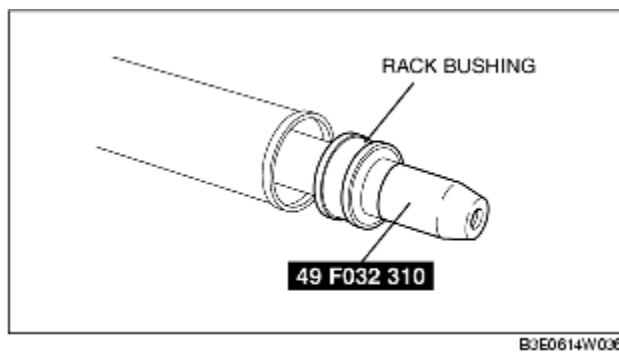
Steering Rack Assembly Note

1. Install a plastic bag to the rack teeth and insert the steering rack in the gear housing.



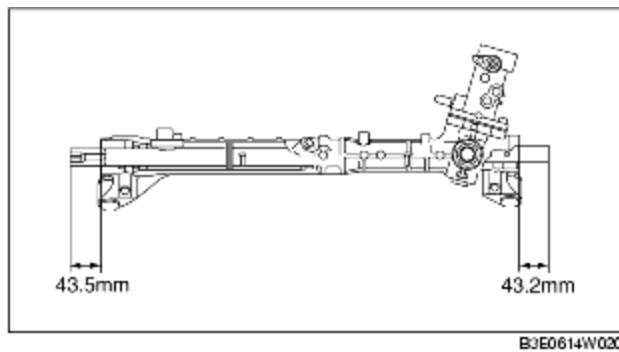
Rack Bushing Assembly Note

1. After installing the **SST** to the steering rack end, assemble the rack bushing to the rack housing.

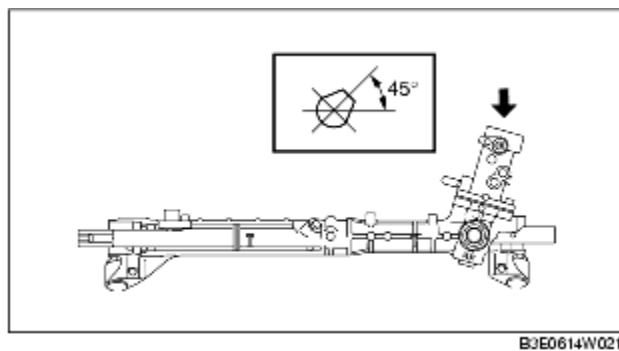


Pinion Shaft and Valve Housing Component Assembly Note

1. Set the rack in the center with the measurement between rack housing end and rack end as shown in the figure.



2. When the pinion shaft position is as shown in the figure with the rack in the center, insert the pinion shaft and valve housing component.

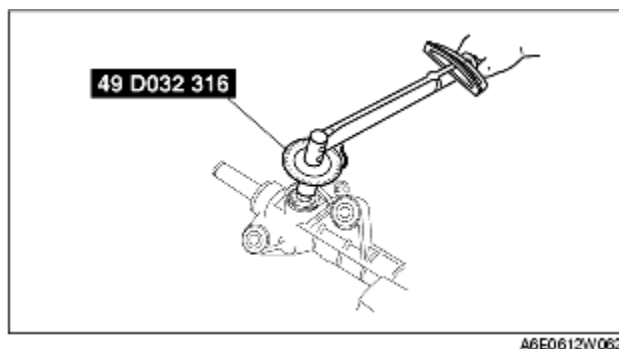


Housing Cover Assembly Note

1. Apply silicone sealant to the threads of the housing cover.
2. Assemble the housing cover.

Adjusting Cover Assembly Note

1. Apply sealant to the threads of the adjusting cover.
2. Using the **SST**, tighten the adjusting cover with a tightening torque of **20-29 N·m**.



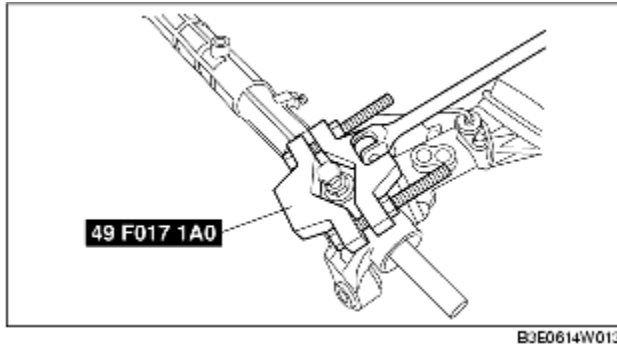
3. Using the **SST**, loosen the adjusting cover to **25-30°**.

Locknut (on Adjusting Cover) Assembly Note

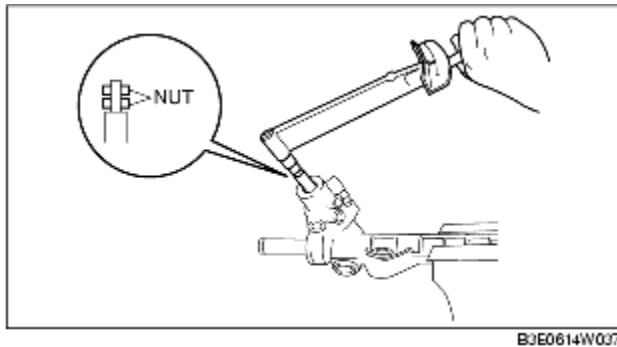
Caution

- Be sure that the adjusting cover will not turn together with the locknut.

1. Fix the adjusting cover and tighten the locknut.



2. Measure the pinion torque using the torque wrench.



Standard

Center of rack $\pm 90^\circ$

0.88-1.48 N·m

{8.98-15.0 kgf·cm, 7.79-13.0 in·lbf}

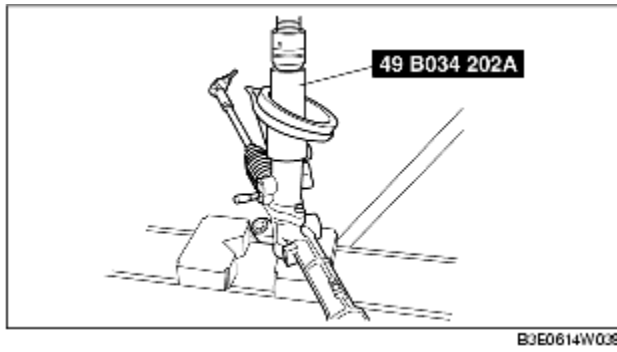
3. If not as specified, remove the locknut and adjust the adjust cover.

Boot Assembly Note

1. Apply silicone grease to the rubber lip groove.
2. Assemble the boot.

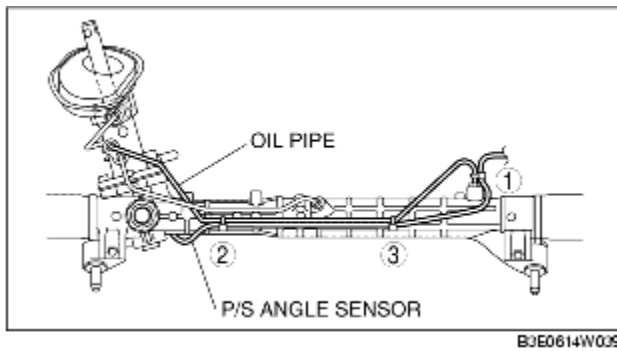
Floor Seal Assembly Note

1. Assemble a new floor seal using the **SST** and a press.



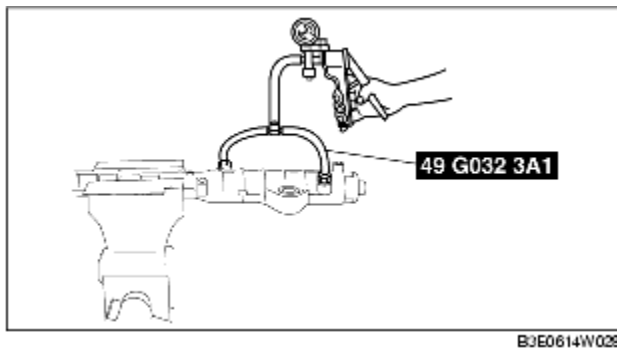
P/S Angle Sensor Assembly Note

1. Assemble a new P/S angle sensor in the order shown in the figure.



Airtightness Inspection

1. Connect the **SST** to the power cylinder section of the gear housing.
2. Apply **53.3 kPa {400 mmHg, inHg}** vacuum with a vacuum pump and verify that it is held for **30 s**.



P/S ANGLE SENSOR INSPECTION

B3E061432960W05

Installation Visual Inspection

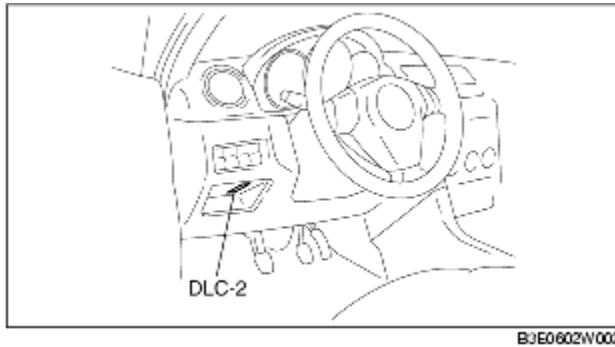
1. Inspect the following items:

- If there is any malfunction, replace the applicable part.

- (1) Excessive play of the P/S angle sensor
- (2) Deformation of the P/S angle sensor

Sensor Output Value Inspection

1. Turn the ignition switch off.
2. Connect the WDS or equivalent to the DLC-2.



3. Select the following PIDs using the WDS or equivalent:

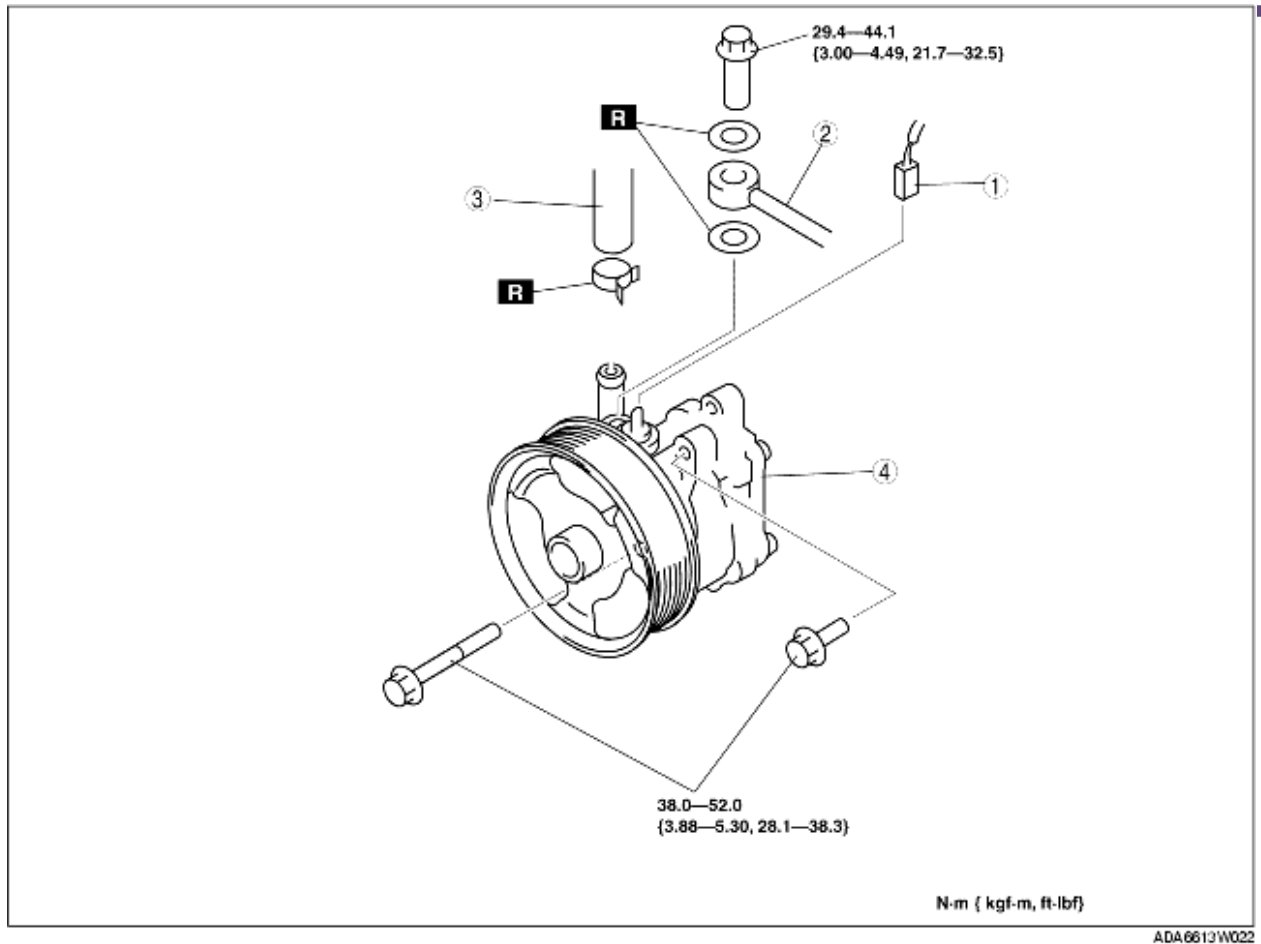
- STEER_RATE
(Steering wheel rotation rate)

4. Turn the ignition switch to the ON position.
 5. Verify that the display of the WDS or equivalent shows the same value as the operation of the steering wheel.
- If there is any malfunction, replace the P/S angle sensor.

POWER STEERING OIL PUMP (Z6) REMOVAL/INSTALLATION

B3E061432650W01

1. Remove the under cover and splash shield.
2. Remove the drive belt. (See [DRIVE BELT REPLACEMENT \[Z6\]](#).)
3. Remove in the order indicated in the table.
4. Install in the reverse order of removal.

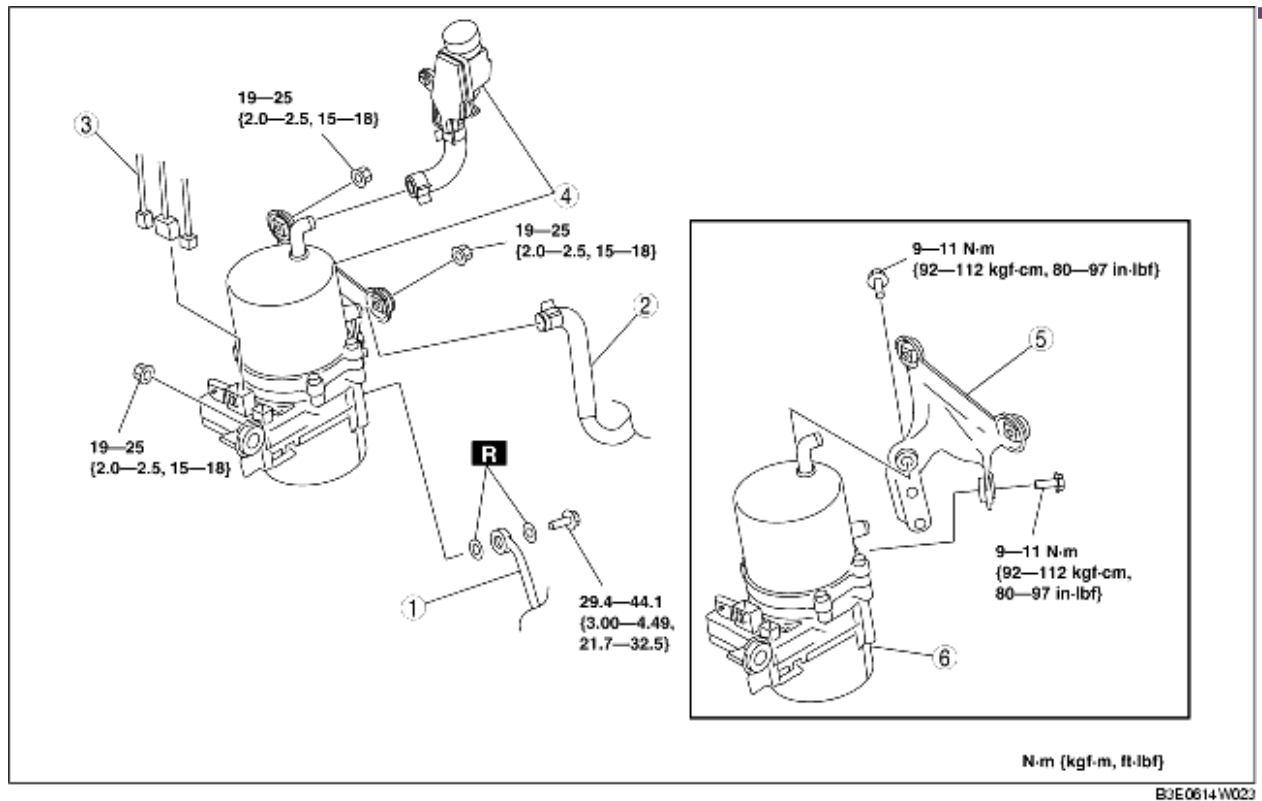


1	Pressure switch connector
2	Pressure pipe
3	Suction hose
4	Power steering oil pump

ELECTRIC POWER STEERING OIL PUMP (LF) REMOVAL/INSTALLATION

B3E061432650W02

1. Remove the under cover, splash shield and mudguard.
2. Remove the washer tank. (See [WASHER TANK REMOVAL/INSTALLATION](#).)
3. Remove in the order indicated in the table.
4. Install in the reverse order of removal.



1	Pressure pipe
2	Suction hose
3	Connector (See Connector Removal Note)
4	Electric power steering oil pump and bracket component
5	Bracket
6	Electric power steering oil pump

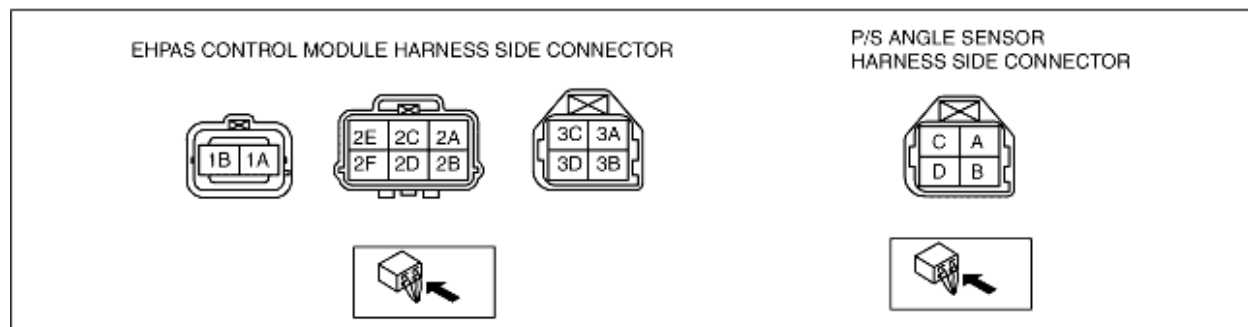
Connector Removal Note

1. Hold the electric power steering oil pump securely by hand, move it down slightly, and then disconnect the connectors.

ELECTRO HYDRAULIC POWER ASSIST STEERING (EHPAS) CONTROL MODULE INSPECTION

B3E061432650W03

Terminal Voltage Table (Reference)



B3E0614-W022

Terminal	Signal name	Connected to	Measured item	Measured terminal (measured condition)	Standard	Inspection item(s)
1A	Ground	Ground point	Voltage	Under any condition	1 V or less	• Wiring harness (1A-ground point)
1B	Battery power supply	Battery	Voltage	Under any condition	B+	• Wiring harness (1B-battery) • Fuse (P/ST 80 A)
2A	-	-	-	-	-	-
2B	CAN-L	-	Inspect under DTC inspection.			-
2C	-	-	-	-	-	-
2D	CAN-H	-	Inspect under DTC inspection.			-
2E	-	-	-	-	-	-
2F	Ignition power supply	Ignition switch	Voltage	Ignition switch is ON	B+	• Wiring harness (2F-ignition switch-battery)
				Ignition switch is OFF	1 V or less	• Fuse (IGNITION 20 A, P/ST IG 15 A)
3A	P/S angle sensor ground	P/S angle sensor	Continuity	Continuity	Continuity detected	• Wiring harness (3A-P/S angle sensor A)
3B	P/S angle sensor (signal 1)	P/S angle sensor	Continuity	Continuity	Continuity detected	• Wiring harness (3B-P/S angle sensor D)
3C	P/S angle sensor	P/S angle sensor	Voltage	Ignition switch is ON	4.6-5.4 V	• Wiring harness (3C-P/S angle sensor C)

	power supply					
3D	P/S angle sensor (signal 2)	P/S angle sensor	Continuity	Continuity	Continuity detected	Wiring harness (3D-P/S angle sensor B)

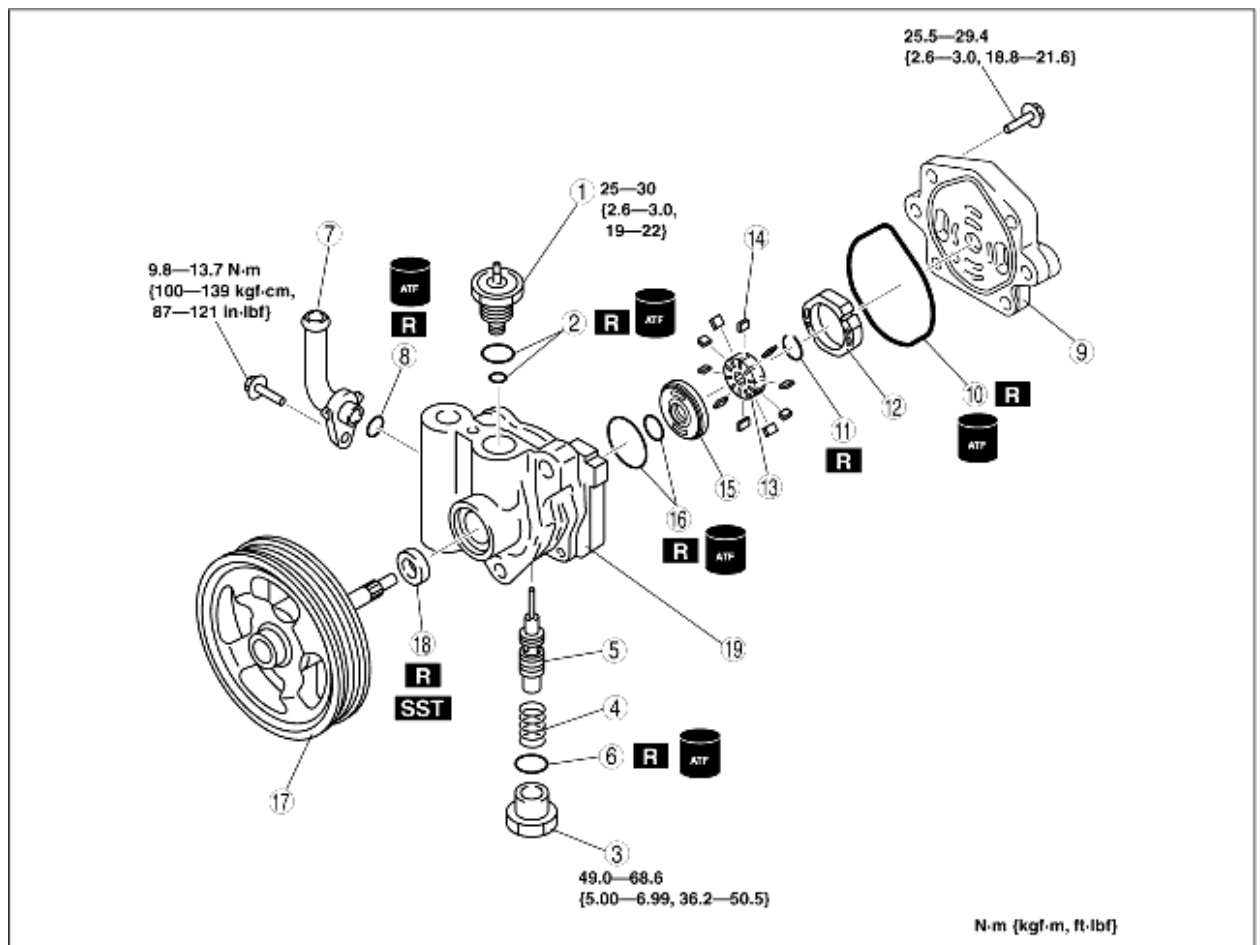
POWER STEERING OIL PUMP (Z6) DISASSEMBLY/ASSEMBLY

B3E061432650W04

Note

- The following procedure is for replacement of the O-ring, oil seal and shaft component only. Replace the oil pump as a single unit if there is a malfunction in the oil pump body, cam ring, side plate, rotor, or other parts of the component.

- Disassemble in the order indicated in the table.
- Assemble in the reverse order of disassembly.

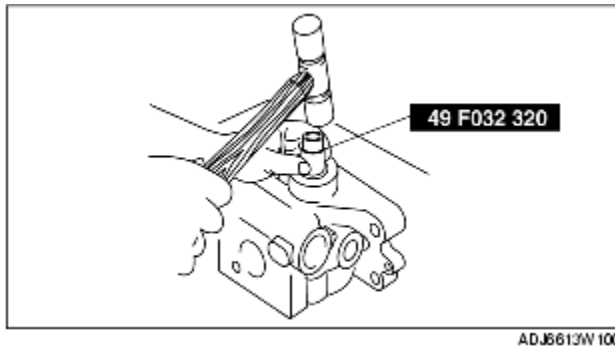


ADA6613W023

1	Pressure switch component
2	O-ring
3	Connector
4	Spring
5	Control valve
6	O-ring
7	Suction pipe
8	O-ring
9	Rear pump body (See Rear Pump Body Assembly Note)
10	Gasket
11	Clip
12	Cam ring (See Cam Ring Assembly Note)
13	Rotor
14	Vane
15	Side plate
16	O-ring
17	Shaft component
18	Oil seal (See Oil Seal Assembly Note)
19	Front pump body

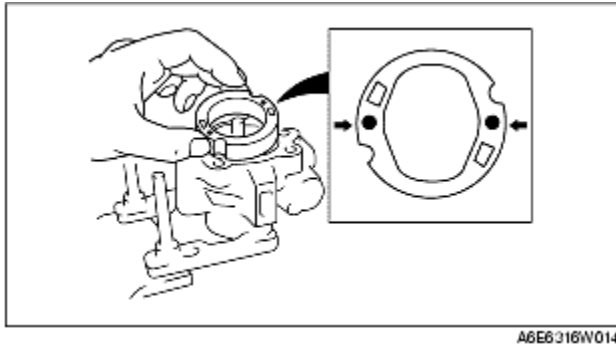
Oil Seal Assembly Note

1. Install a new oil seal in the front pump body using the **SST** and plastic hammer.



Cam Ring Assembly Note

1. Install the cam ring in the front pump body with the mark facing upward.



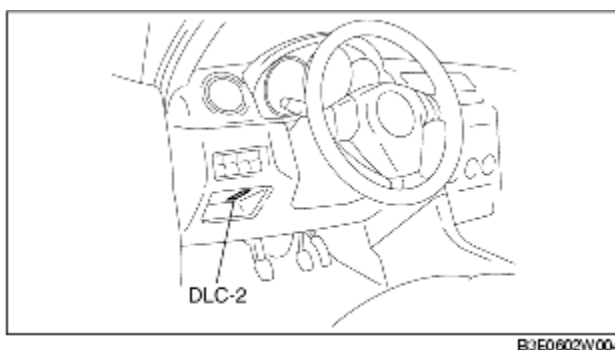
Rear Pump Body Assembly Note

1. After installing the rear pump body, manually turn the shaft component to verify that it rotates smoothly.

ELECTRO HYDRAULIC POWER ASSIST STEERING (EHPAS) CONTROL MODULE CONFIGURATION

B3E061432650W05

1. Turn the ignition switch off.
2. Connect the WDS or equivalent to the DLC-2.



3. Input vehicle information following the directions on the screen of the WDS or equivalent.

4. Select "Module programming" from the WDS or equivalent menu.
5. Select "Programmable Module Installation".
6. Select "EPS".
7. Clear DTCs using the WDS or equivalent, then verify that there is no DTC present.

TECHNICAL DATA

STEERING

B3E065001034W01

Item			Specification
POWER STEERING			
Steering wheel	Play		(mm {in}) 0-30 {0-1.18}
	Effort		(N·m {kgf·cm, in·lbf}) 7.8 {80, 69} max. (reference value)
Steering shaft	Standard length		(mm {in}) 315-320 {12.41-12.59}
Steering gear	Tie-rod end	Rotation torque	(N·m {kgf·cm, in·lbf}) 0.5-3.0 {6-30, 5-26}
	Tie rod	Swinging torque	(N·m {kgf·cm, in·lbf}) 0.4-4.0 {5-40, 4-35}
		[Pull scale reading]	(N {kgf, lbf}) 0.6-29.3 {0.06-2.98, 0.14-6.58}
	Steering rack	Runout	Large diameter portion 0.15 {0.006} max.
		(mm {in})	Small diameter portion 0.20 {0.008} max.
Power steering oil pump	Oil pump fluid pressure		(MPa {kgf·cm ² , psi}) 8.5-9.0 {87-91, 1235-1305} (Z6) 10.4-11.0 {107-112, 1509-1595} (LF)
	Gear housing fluid pressure		(MPa {kgf·cm, psi}) 7.6-9.0 {78-91, 1103-1305} (Z6) 9.0-11.0 {92-111, 1306-1585} (LF)

Power steering system	Fluid	Type		ATF M-III or equivalent (e.g. DexronII)
		Capacity* (Approximate quantity)	(L {US qt, Imp qt})	1.20 {1.27, 1.06} (Z6) 0.80 {0.84, 0.70} (LF)

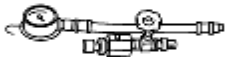
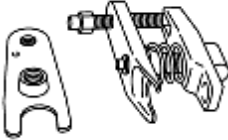
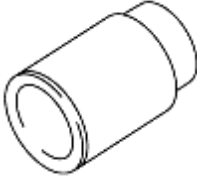
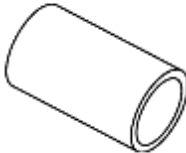
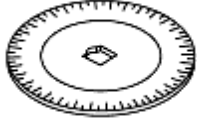
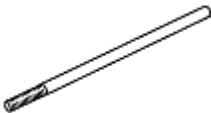
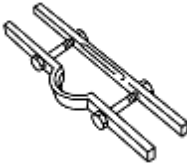
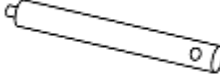
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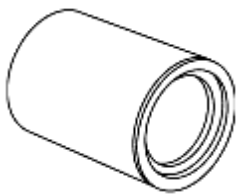
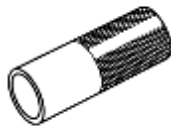
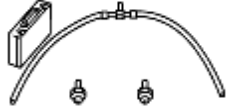
When reservoir tank is at maximum volume

SERVICE TOOLS

STEERING SYSTEM

B3E066001034W01

49 1232 670B Power steering gauge set		49 H002 671 Adapter		49 G032 3A4 Power steering gauge adapter set	
49 T028 3A0 Ball joint puller set		49 F032 320 Installer A		49 B034 202A Support block	
49 F017 1A0 Universal wrench		49 D032 316 Protractor		49 F032 303 Handle	
49 B032 323 Rod seal remover body		49 N032 319A Support plate		49 G033 102 Handle	

49 T028 301 Dust boot installer		49 F015 002 Water seal installer		49 F032 304 Body	
49 F032 310 Protector		49 H032 301 Wrench		49 G032 3A1 Joint hose set	
WDS		-	-	-	-

