

25. Steering System (Power Steering)

A: INSPECTION

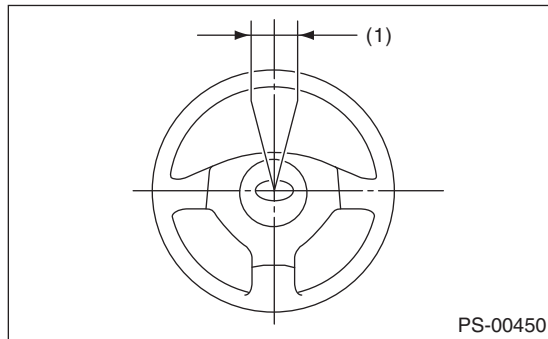
1. STEERING WHEEL

- 1) Set the steering wheel in a straight-ahead position, and check the wheel spokes to make sure they are correctly set in their specified positions.
- 2) Lightly turn the steering wheel to the left and right to determine the point where front wheels start to move.

Measure the distance of the movement of steering wheel (outer periphery).

Steering wheel free play:

0 — 17 mm (0 — 0.67 in)



(1) Steering wheel free play

Move the steering wheel vertically toward the shaft to check if there is play in the direction.

Limit of play:

0.5 mm (0.020 in)

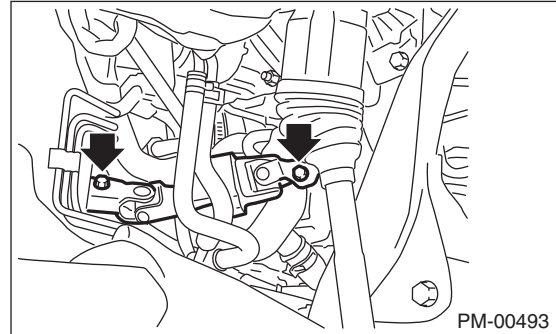
- 3) Drive the vehicle and check the following items.
 - (1) Steering force:
The effort required for steering should be smooth and even at all points, and should not vary.
 - (2) Pulled to one side:
Steering wheel should not be pulled to either side while driving on a level surface.
 - (3) Wheel runout:
Steering wheel should not show any sign of runout.
 - (4) Return shape:
The steering wheel should return to its original position after it has been turned by hand and then released.

2. STEERING SHAFT JOINT

When the steering wheel free play is excessive, disconnect the universal joint of steering shaft and check it for any play and yawing torque (at the point of the crossing direction). Also inspect for any damage to sealing or worn serrations. If the joint is loose, retighten the mounting bolts to the specified torque.

Tightening torque:

24 N·m (2.4 kgf-m, 17.4 ft-lb)

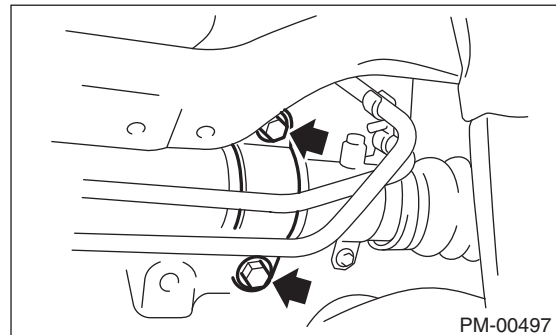
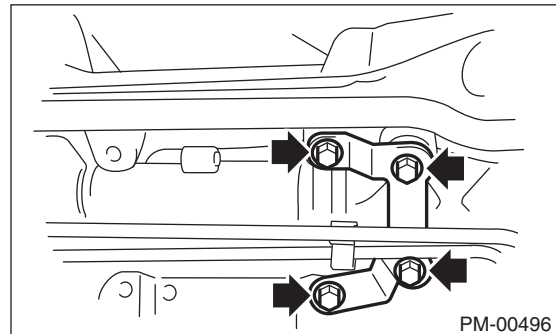


3. GEARBOX

- 1) Set the steering wheel in the straight position, then rotate it 90° in both the left and right directions. While steering wheel is being rotated, check the looseness of the gear box.

Tightening torque:

60 N·m (6.1 kgf-m, 44.3 ft-lb)



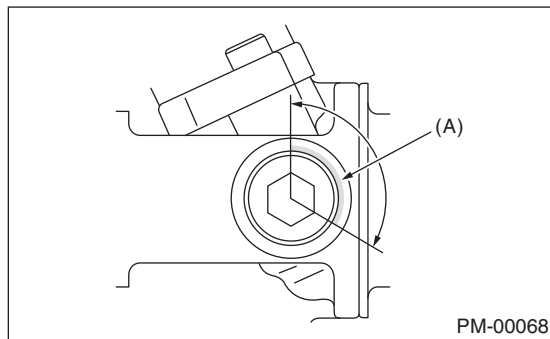
- 2) Check the boot for damage, cracks or deterioration.

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PERIODIC MAINTENANCE SERVICES

3) With the vehicle stopped on a level surface, quickly turn the steering wheel to the left and right. While steering wheel is being rotated, check the gear backlash. If any noise is noticed, adjust the gear backlash in the following manner.

- (1) Tighten the adjusting screw to 9.8 N·m (0.99 kgf-m, 7.2 ft-lb) and then loosen.
- (2) Tighten the adjusting screw to 4.9 N·m (0.49 kgf-m, 3.6 ft-lb) and then loosen.
- (3) Tighten the adjusting screw to 4.9 N·m (0.49 kgf-m, 3.6 ft-lb) and then loosen 37°.
- (4) Apply liquid gasket to at least 1/3 of entire perimeter of adjusting screw thread.



(A) Apply liquid gasket to at least 1/3 of entire thread.

- (5) Install the lock nut. While holding the adjusting screw with a wrench, tighten the lock nut using ST.

ST 926230000 SPANNER

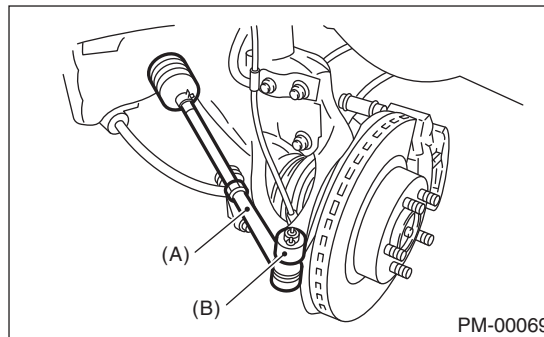
Tightening torque (lock nut):

39 N·m (4.0 kgf-m, 29 ft-lb)

Hold the adjusting screw with a wrench to prevent it from turning while tightening the lock nut.

4. TIE-ROD

- 1) Check the tie-rod and tie-rod ends for bends, scratches or other damage.



(A) Tie-rod end
(B) Knuckle arm

- 2) Check the connections of the knuckle ball joints for play, inspect for damage on dust seals, and check that there is no free play in the ball studs. If castle nut is loose, retighten it to the specified torque, then tighten further up to a maximum of 60° until the cotter pin hole is aligned.

Tightening torque:

27 N·m (2.75 kgf-m, 19.9 ft-lb)

- 3) Check the lock nut on the tie-rod end for tightness. If it is loose, retighten it to the specified value.

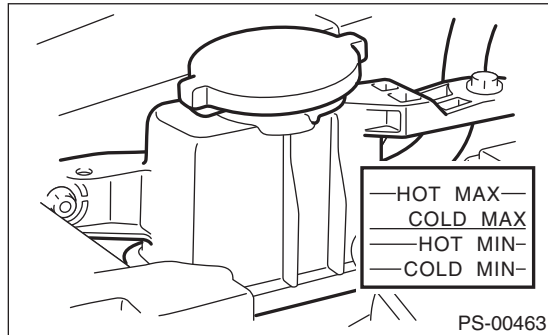
Tightening torque:

85 N·m (8.7 kgf-m, 62.7 ft-lb)

5. POWER STEERING FLUID LEVEL

NOTE:

- When power steering fluid temperature is 20°C (68°F), read the fluid level on the “COLD” side.
 - When power steering fluid temperature is 80°C (176°F), read the fluid level on the “HOT” side.
- 1) Stop the engine to park the vehicle on a level surface.
 - 2) Check the fluid level using the scale on the outside of the reservoir tank. If the level is below “MIN”, fill fluid up to “MAX” level.



CAUTION:

If any power steering fluid is spilt on the exhaust pipe, wipe it off with a clean cloth to avoid emitting smoke or causing a fire.

NOTE:

If fluid level is at “MAX” level or above, drain fluid to keep the level in the specified range of indicator by using a syringe or the like.

Recommended fluid:

<Ref. to RM-4, FLUID, RECOMMENDED MATERIALS, Recommended Materials.>

Fluid capacity:

<Ref. to SPC-4, CAPACITY, Forester.>

6. POWER STEERING FLUID FOR LEAKS

Inspect the underside of oil pump and gearbox of power steering system, hoses, pipes and their couplings for fluid leaks.

If the fluid leaks are found, retighten their fitting bolts (or nuts) and/or replace their parts.

CAUTION:

Also pay attention to interference between hoses or pipes and other parts when inspecting fluid leaks.

7. HOSES OF OIL PUMP FOR DAMAGES

For the hydraulic power steering model, check the pressure hose and return hose of oil pump for crack, swell or damage. Replace the hose with a new part if necessary.

CAUTION:

Prevent hoses from turning and/or bending when installing hoses.

8. POWER STEERING PIPES FOR DAMAGES

Check the power steering pipes for corrosion and damage.

Replace the pipes with new parts if necessary.

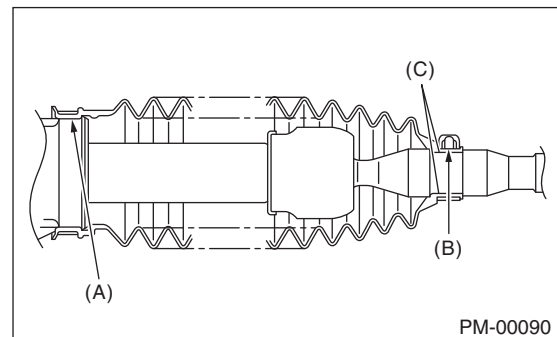
9. GEARBOX BOOTS

For the hydraulic power steering model, inspect both sides of the gearbox boot as follows, and correct the defects if necessary.

- 1) The (A) and (B) positions of the gearbox boot are fitted in (A) and (C) grooves of gearbox and the rod.
- 2) Clips are fitted outside of positions (A) and (B) of boot.
- 3) Check that there is no cracks or holes in the boot.

NOTE:

Rotate (B) position of gearbox boot against the torsion produced by the adjustment of toe-in etc. Apply grease to the groove (C).



10. FITTING BOLTS AND NUTS

Inspect the installation bolts and nuts of the oil pump and bracket for looseness, and retighten them if necessary.

NOTE:

Inspect and/or retighten the bolts and nuts when the engine is cold.

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PERIODIC MAINTENANCE SERVICES

ENGINE 1 SECTION

This service manual has been prepared to provide SUBARU service personnel with the necessary information and data for the correct maintenance and repair of SUBARU vehicles.

This manual includes the procedures for maintenance, disassembling, reassembling, inspection and adjustment of components and diagnostics for guidance of experienced mechanics.

Please peruse and utilize this manual fully to ensure complete repair work for satisfying our customers by keeping their vehicle in optimum condition. When replacement of parts during repair work is needed, be sure to use SUBARU genuine parts.

All information, illustration and specifications contained in this manual are based on the latest product information available at the time of publication approval.

FUEL INJECTION (FUEL SYSTEMS)**FU(H4SO)****EMISSION CONTROL
(AUX. EMISSION CONTROL DEVICES)****EC(H4SO)****INTAKE (INDUCTION)****IN(H4SO)****MECHANICAL****ME(H4SO)****EXHAUST****EX(H4SO)****COOLING****CO(H4SO)****LUBRICATION****LU(H4SO)****SPEED CONTROL SYSTEMS****SP(H4SO)****IGNITION****IG(H4SO)****STARTING/CHARGING SYSTEMS****SC(H4SO)****ENGINE (DIAGNOSTICS)****EN(H4SO)(diag)****GENERAL DESCRIPTION****GD(H4SO)**

FUEL INJECTION (FUEL SYSTEMS)

FU(H4SO)

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