

# Steering System (Power Steering)

## PERIODIC MAINTENANCE SERVICES

### 24. Steering System (Power Steering)

#### A: INSPECTION

##### 1. STEERING WHEEL

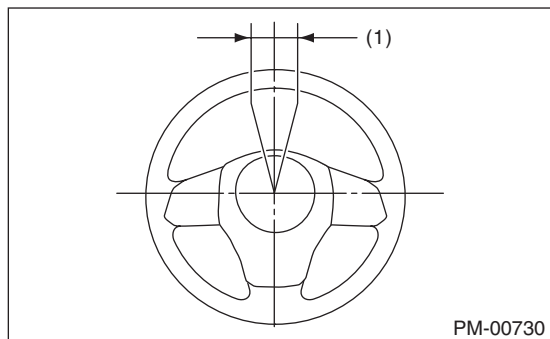
1) Set the steering wheel in a straight-ahead position, and check the wheel spokes to make sure they are correctly set in their specified positions.

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 (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.

##### **Play limit:**

**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 one side while driving on a level surface.

(3) Wheel runout:

Steering wheel should not show any sign of runout.

(4) Return status:

Steering wheel should return to its original position after it has been turned 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. <Ref. to PS-13, Universal Joint.>

##### **Tightening torque:**

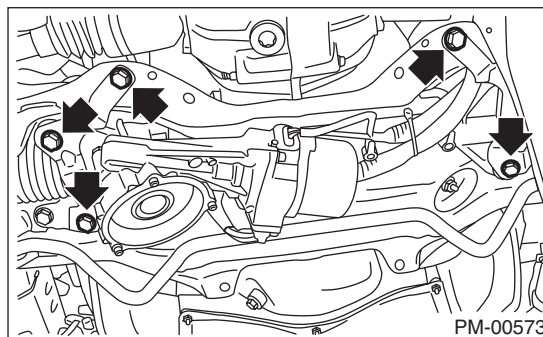
**24 N·m (2.4 kgf-m, 17.4 ft-lb)**

##### 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 gearbox.

##### **Tightening torque:**

**60 N·m (6.1 kgf-m, 44.3 ft-lb)**

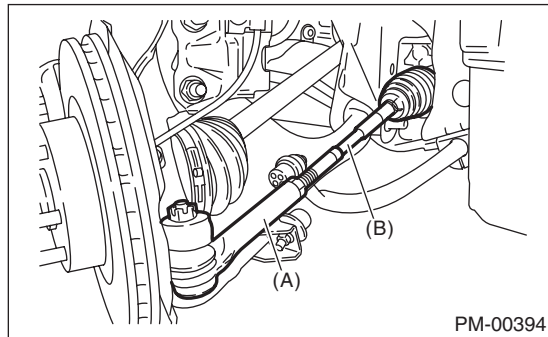


2) Check the boot for damage, cracks or deterioration.

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. <Ref. to PS-40, GEARBOX BACKLASH ADJUSTMENT, ADJUSTMENT, Electric Power Steering Gearbox.>

## 4. TIE-ROD

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



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

2) Confirm that the connections of knuckle ball joints for play, and then check for damage on dust boots and free play of ball studs. If castle nut is loose, retighten it to the specified torque, then tighten further up to a maximum of  $60^\circ$  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 torque.

### **Tightening torque:**

**85 N·m (8.7 kgf·m, 62.7 ft·lb)**

## 5. GEARBOX BOOTS

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).

