

Power Steering Fluid

POWER ASSISTED SYSTEM (POWER STEERING)

9. Power Steering Fluid

A: SPECIFICATION

Recommended power steering fluid <Ref. to PS-2, SPECIFICATION, General Description.>

B: INSPECTION

1) Check the power steering fluid for deterioration or contamination. If the fluid is highly deteriorated or contaminated, drain it and refill with new fluid.

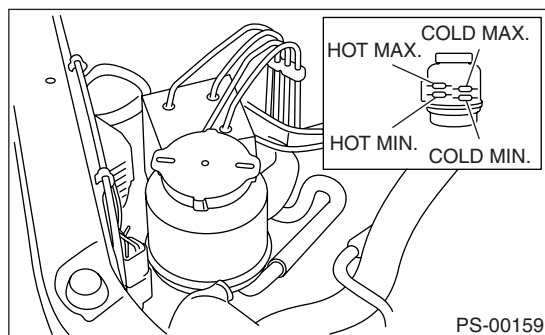
2) Check the joints and units for oil leakage. If any oil leaks are found, repair or replace the applicable part.

3) Inspect the fluid level of reservoir tank with vehicle on level surface and engine stopped.

If the level is at "MIN." point or below, add fluid to keep the level in the specified range of the indicator. If at "MAX." point or above, drain fluid by using a syringe or the like.

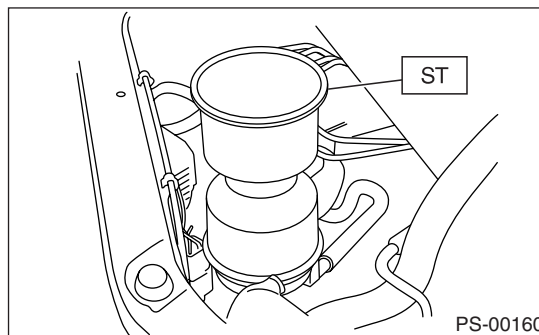
(1) If the power steering fluid temperature is 20°C (68°F) or less, read the fluid level on the "COLD" side.

(2) If the power steering fluid temperature is 80°C (176°F) or more, inspect the fluid level on the "HOT" side.



C: REPLACEMENT

- 1) Lift-up the vehicle.
- 2) Remove the jack-up plate.
- 3) Remove the pipe joint in the center of gearbox assembly, and connect the vinyl hose to the pipe and joint. Drain fluid out while turning the steering wheel.
- 4) Set ST on the top of reservoir tank and fill it about half way with the specified fluid.
ST 34199AE040 OIL CHARGE GUIDE



5) Maintaining the fluid level of Step 4), continue to turn the steering wheel slowly from lock to lock until the bubbles stop appearing on oil surface.

6) If the steering wheel is turned in a low fluid level condition, air will be sucked into the pipe. If air has entered, leave it for about half an hour and then repeat step 5) again.

7) Start the engine and let it idle.

8) Continue to turn the steering wheel slowly from lock to lock again until the bubbles stop appearing on oil surface, while keeping the fluid at the level in Step 4).

Normally bubbles will stop appearing after turning the steering wheel from lock to lock three times.

9) In case bubbles do not stop appearing in the tank, leave it for about half an hour and then repeat step 4) again.

10) Lower the vehicle, and then idle the engine.

11) Continue to turn the steering wheel from lock to lock until the bubbles stop appearing and change of the fluid level is within 3 mm (0.12 in).

12) In case the following happens, leave it about half an hour and then do step 8) to 11) again.

(1) The fluid level changes over 3 mm (0.12 in).

(2) Bubbles remain on the upper surface of the fluid.

(3) Screeching noise is generated from oil pump.

13) Check for fluid leakage after turning steering wheel from lock to lock with the engine running.

General Diagnostic Table

POWER ASSISTED SYSTEM (POWER STEERING)

10. General Diagnostic Table

A: INSPECTION

Trouble	Possible cause	Corrective action
<ul style="list-style-type: none"> Steering effort is heavy in all ranges. Steering effort is heavy at stand still. Steering wheel vibrates when turning. 	1. Pulley belt <ul style="list-style-type: none"> Unequal length of pulley belts Contact with oil or grease Looseness or damage of the pulley belt Poor uniformity of the pulley belt cross section Pulley belt is touching the pulley bottom. Poor revolution of pulleys (except oil pump pulley) Poor revolution of oil pump pulley 	Adjust or replace.
	2. Tire and wheel <ul style="list-style-type: none"> Improper tires out of specifications Improper wheels out of specification Tires not properly inflated*1 	Replace or reinflate.
	3. Fluid <ul style="list-style-type: none"> Low fluid level Air entry in fluid Dust entry in fluid Fluid deterioration Inadequate warm-up of fluid *2 	Refill, bleed air, replace or instruct customer.
	4. Idle speed <ul style="list-style-type: none"> Low idle speed Excessive drop of idle speed at start or when turning the steering wheel *3 	Adjust or instruct customer.
	5. Measure the hydraulic pressure. <Ref. to PS-44, INSPECTION, Oil Pump.>	Replace the problem parts.
	6. Measure the steering wheel effort. <Ref. to PS-49, INSPECTION, General Diagnostic Table.>	Adjust or replace.
<ul style="list-style-type: none"> Vehicle leads to one side or the other Returning force of steering wheel to center is poor. Steering wheel vibrates when turning. 	1. Fluid line <ul style="list-style-type: none"> Folded hose Flattened pipe 	Correct or replace.
	2. Tire and wheel <ul style="list-style-type: none"> Flat tire Mixed use of different tires Mixed use of different wheels Uneven tire wear Unequal tread remaining Unequal pressure of tire 	Correct or replace.
	3. Front alignment <ul style="list-style-type: none"> Improper or unequal caster Improper or unequal toe-in Loose suspension connections 	Adjust or retighten.
	4. Others <ul style="list-style-type: none"> Damaged joint assembly Unbalanced height Unbalanced weight 	Replace, adjust or instruct customer.
	5. Measure the steering wheel effort. <Ref. to PS-49, INSPECTION, General Diagnostic Table.>	Adjust or replace.

*1 If the tires or wheels are wider than standard, the load to power steering system is increased. Accordingly, in a condition where the fluid has not yet warmed up, the relief valve may work before reaching the maximum turning angle. In this case, steering effort may be heavy. When the measured hydraulic pressure is normal, there is no problem.

*2 In cold weather, steering effort may be heavy due to increased flow resistance of cold fluid. After warming-up engine, turn the steering wheel from stop to stop several times to warm-up the fluid. If steering effort reduces normally, the power steering is functioning normally.

*3 In cold weather or with insufficient warm-up of the engine, steering effort may be heavy due to excessive drop of idling when turning the steering wheel. In this case, it is recommended to start the vehicle by increasing engine RPM a little higher than usual. If steering effort reduces normally, the power steering is functioning normally.