

Power Steering

PORSCHE POWER-ASSISTED RACK & PINION

928

DESCRIPTION

A power-assisted rack and pinion steering gear is used as standard equipment on Porsche 928 models. The power assistance decreases with engine speed to provide a better road feel at high speeds.

The system consists of a belt driven vane pump mounted on the engine, a fluid reservoir located in the left front engine compartment, and a rotary piston pinion steering gear.

LUBRICATION

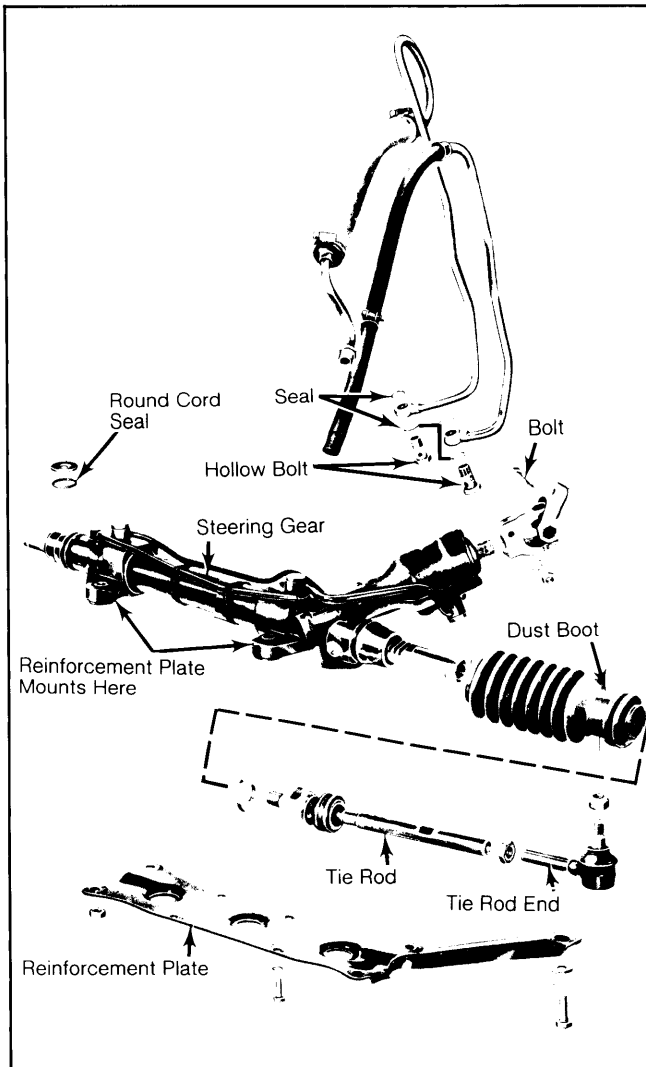
FLUID TYPE

ATF Dexron

FLUID LEVEL CHECK

Remove reservoir cap and start engine. Check that fluid level is up to embossed mark on inside of reservoir.

Fig. 1: Disassembled View of Power Steering Gear



ADJUSTMENTS

HYDRAULIC SYSTEM BLEEDING

1) Start engine, set to idle. Check fluid level. Turn steering wheel lock to lock several times quickly. Do not turn wheel harder than necessary.

2) Check fluid and add if needed. No air bubbles should rise in reservoir. Shut off engine.

3) Check that fluid level does not rise more than 3/8" (9.5 mm). If level rises, repeat procedure.

PUMP BELT

Check belt deflection at center of belt between pump pulley and crankshaft pulley. Correct deflection is 3/8" (9.5 mm). Adjust by loosening pump mounting bolts and moving pump.

PRESSURE CHECK

1) Unscrew bolts from stabilizer bushings. Pull stabilizer down to expose pressure line hollow bolt. Detach pressure line at steering gear. Pull down on line.

2) Connect a 4 1/2 ft. long hose to pressure line with hollow bolt and adapter. Attach hose with pressure gauge between steering gear and pressure line.

3) Bleed system. Run engine at idle speed and close pressure gauge valve. Check pressure gauge reading. Pressure should be 986-1189 psi (69-84 kg/cm²).

NOTE: Do not keep valve closed for more than 5 seconds.

4) With pressure gauge valve open, turn wheel lock-to-lock and hold in lock position at a force of 22 lbs. (9.97 kg). Read pressure gauge. Pressure should be 986-1189 psi (69-84 kg/cm²).

SYSTEM LEAKS

With engine running, turn steering to full lock position and hold. This produces maximum pressure in lines. Check all hose connections and tighten, if necessary.

REMOVAL & INSTALLATION

STEERING GEAR

Removal

1) Drain fluid from system. Raise vehicle and support with safety stands. Press out tie rods with standard extractor. Remove bolt retaining hose strap, and pull back hose and harness.

2) Remove bolts from stabilizer bar mounts. Allow stabilizer to hang down. Disconnect pressure and return lines from steering gear.

3) Remove bolts retaining reinforcement plate on engine crossmember. Loosen self-locking nuts on steering gear, but do not remove.

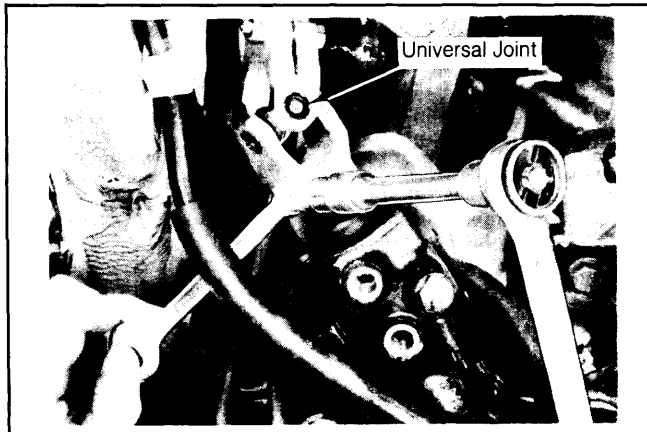
4) Remove bolt on universal joint which connects to steering intermediate shaft and pull off shaft. Remove lock nuts on steering gear and lower steering gear off studs on engine crossmember.

Installation

To install, reverse removal procedures. Position steering intermediate shaft correctly and install bolt to universal shaft. Add fluid to reservoir. Check for leaks after reinstalling. Check wheel alignment.

PORSCHE POWER-ASSISTED RACK & PINION (Cont.)

Fig. 2: Steering Intermediate Shaft Removal



Hold bolt on backside of universal joint with wrench.

STEERING PUMP

Removal

1) Detach intake hose from air cleaner on left side. Drain fluid from reservoir. Remove splash shield. Loosen front bolts on pump, but do not remove.

2) Remove rear bolt from pump. Remove "V" belt. Take off upper left section of drive belt cover. Disconnect pressure hose from pump.

3) Loosen clip holding suction hose and remove hose. Remove front bolts holding pump. Remove pump.

Installation

1) To install, reverse removal procedures. Install pressure hose so that not more than 1" (25 mm) is provided between inner wheel well and hose when pump is installed.

2) If hose is too close to exhaust manifold it could slip from its holder. Adjust belt tension, add fluid and bleed system. Check for leaks.

OVERHAUL

Manufacturer does not recommend disassembly or overhaul of power steering gears or pumps.

TIGHTENING SPECIFICATIONS

Application	Ft. Lbs. (N.m)
Tie Rod-to-Steering Arm	61 (83)
Tie Rod-to-Steering Rack	108 (147)
Tie Rod End-to-Tie Rod	33 (45)
Universal Joint-to-Steering Column	17 (23)
Steering Rack-to-Crossmember	33 (45)
Pressure/Return Lines-to-Steering Rack	22 (30)