

## PEUGEOT POWER-ASSISTED RACK & PINION

504  
604

### DESCRIPTION

Vehicles are equipped with a power assisted rack and pinion type steering system. The system consist of two main components: the rack and pinion steering gear and the power assist pump. The two components are connected by rigid and flexible fluid lines. The power assist pump and fluid reservoir are combined.

### GENERAL SERVICE

#### HYDRAULIC SYSTEM LUBRICANT

**Capacity** – 0.7 qts.

#### SYSTEM BLEEDING

Fill reservoir to full mark on dipstick. Start engine and turn steering wheel from lock-to-lock several times (to expel all air). Recheck fluid level and refill as required.

### REMOVAL & INSTALLATION

#### STEERING GEAR

**Removal** – 1) Remove bolt and nut from pinch clamp on steering shaft coupling. Disconnect high and low pressure lines and drain oil, block off line connections. Using stand, support engine and remove engine mounting bolts to crossmember. Loosen rear and remove front crossmember bolts.

2) Remove clips from rack mounting bolts and remove bolts. Loosen ball joint nuts and remove ball joints with suitable ball joint remover. Remove nut from steering damper bolt. Pull rack assembly to the rear and remove from vehicle.

**Installation** – 1) Adjust length of left and right tie rods to 10.97" (278.6 mm) on 504 models or 11.73" (298 mm) on 604 models. On right tie rod, measure from center of ball joint bolt to center of steering link bolt hole. On left tie rod, measure from center of ball joint bolt to center of bolt hole in yoke.

2) Place steering wheel and front wheels in straight ahead position. Remove steering column lower cover. Install steering damper spacer and bolt into crossmember.

**NOTE** – Use new nuts when installing ball joints.

3) Install ball joints and nuts. Install new lock nut on steering damper bolt. Install steering rack mounting bolts with new washers.

**NOTE** – When installing crossmember ensure that steering column is correctly aligned with power assisted steering valve.

4) Install front and rear crossmember bolts. Install bolt and nut on pinch clamp on flex coupling. Ensure clearance of .079" (2 mm) between column and steering wheel. Install engine mounting bolts in crossmember. Connect high and low pressure lines. Install steering column cover. Torque all bolts.

#### POWER STEERING PUMP

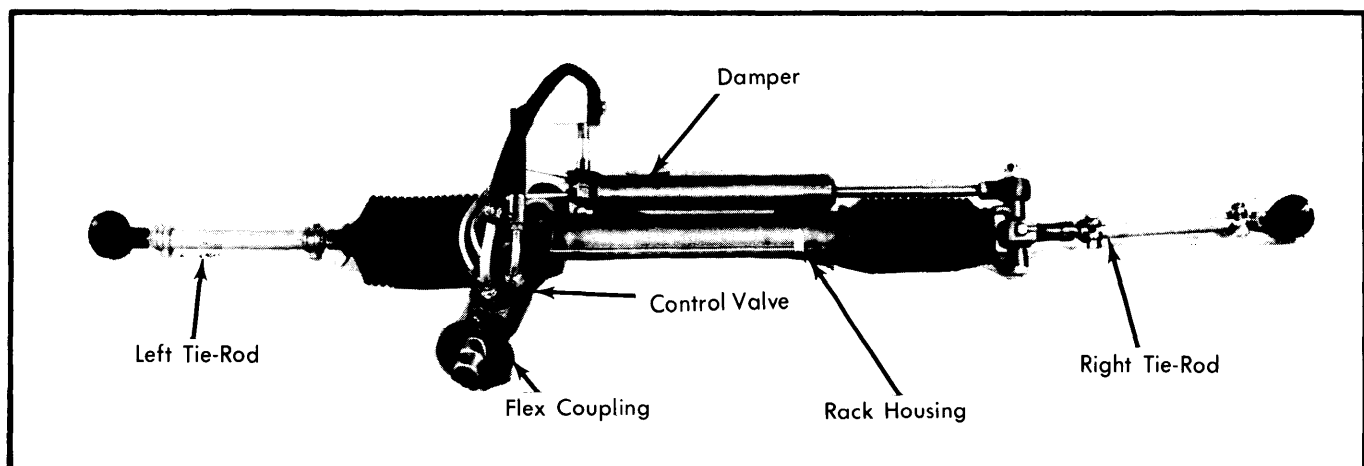
**Removal** – Remove air cleaner and connecting hoses. Remove low and high pressure lines and drain oil. Loosen adjusting bolt, mounting bolts and remove drive belt. Using puller 8.0706, remove pulley off of pump. Remove mounting bolts and remove pump.

**Installation** – Install pump in reverse of removal procedure, noting the following: Ensure hose connections are clean before installing. Fill reservoir with fluid and bleed system. See *System Bleeding in this article*.

### OVERHAUL

#### POWER STEERING PUMP

No overhaul procedures available.



**Fig. 1 Steering Rack Assembly**

## PEUGEOT POWER-ASSISTED RACK &amp; PINION (Cont.)

## POWER STEERING GEAR

**NOTE** — Manufacturer recommends using tool kit 8.0706 to aid in disassembly and reassembly of power steering rack.

**Disassembly** — 1) Thoroughly clean outside of rack assembly before attempting to dismantle. Install stud tool in rack housing and clamp housing in vise by stud tool. Remove fluid lines to steering damper and block ports.

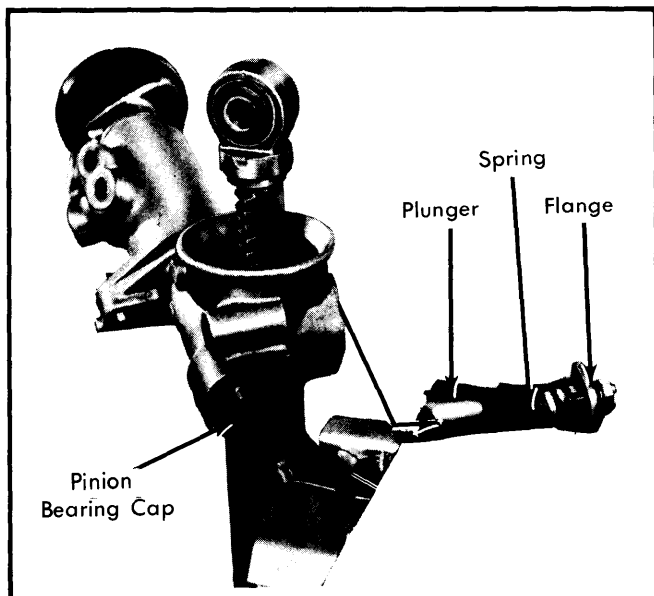
**NOTE** — Do not disconnect fluid lines from control valve if valve is being reused.

**NOTE** — Manufacturer has installed a preset piston rod on steering damper, do not loosen lock nut.

2) Remove bolt from right steering link to damper piston rod, and bolt from damper to rack housing. Remove damper and right steering link from rack assembly. Loosen bolt in pinch clamp on left steering link and unscrew link (left hand thread).

3) Remove left ring clip, retainer ring and bellows, then remove bolt from yoke to steering link. Free retaining rings from right bellows, push bellows back, loosen yoke lock nut and remove yoke, lock nut, bellows, and retaining rings.

4) Install rack assembly vertically in vise (control valve up), remove flange (with grease fitting), spring, and plunger. Remove pinion bearing cover, hold flex coupling and using a 30 mm wrench remove pinion retaining nut.



**Fig. 2** Removing Flange, Spring, and Plunger

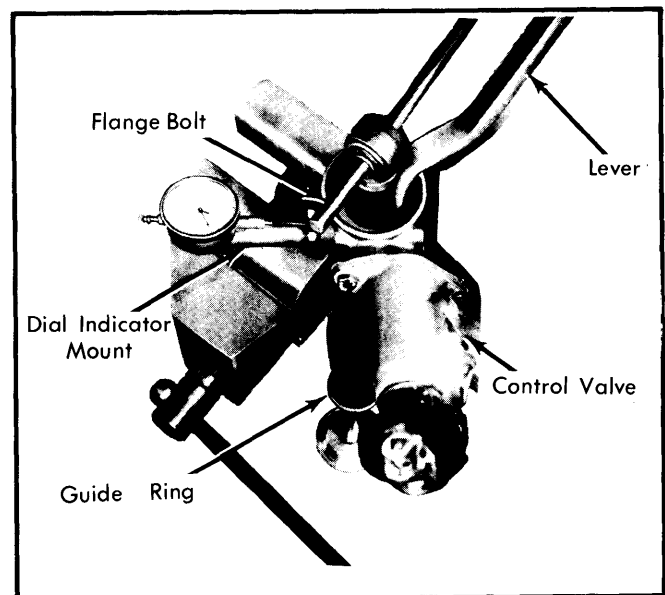
5) Remove control valve mounting bolts. Hold steering rack in housing with pin 0.0707. Remove control valve from housing. Remove pinion bearing circlip and bearing from housing.

**NOTE** — If control valve is defective, replace complete valve assembly.

**Reassembly** — 1) Using bearing installation tools and arbor press, install new pinion bearing in housing and circlip. Install control valve, turn valve clockwise and ensure meshing of steering rack gears and pinion gears. Install valve mounting bolts.

2) Hold flex coupling and install pinion nut, grease bearing location and install grease cap. Install guide and ring tool on lower end of steering rack (opposite end of control valve).

3) Temporarily place plunger and spring in housing. Install flange, upper bolt and dial indicator mount in lower bolt hole. Install dial indicator on mount and tighten down flange.



**Fig. 3** Measuring Steering Rack Clearance

**NOTE** — Tap rack housing lightly with a mallet, this will tend to reduce sticking effect of the grease and will stabilize dial indicator reading.

4) Using flex coupling, turn steering rack from lock-to-lock and zero dial indicator on farthest point indicated. Using lever, push steering rack in direction of plunger and record dial indicator reading.

5) Steering rack plunger clearance should be  $.002'' \pm .004''$  ( $0.10 \pm 0.05$  mm) at maximum point along rack travel. To obtain required clearance subtract  $.004''$  ( $0.10$  mm) from dial indicator reading, this measurement indicates the thickness of shim washers needed in plunger.

**NOTE** — Shim washers are available in,  $.004''$  ( $0.10$  mm),  $.008''$  ( $0.20$  mm) and  $.020''$  ( $0.50$  mm) thicknesses.

6) Remove indicator, flange, spring, and plunger. Place nylon stop inside of plunger and place a straight edge on top of plunger. Space between straightedge and nylon stop is where shim washers are installed.

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7) Screw grease fitting in flange, install plunger, spring, flange, and mounting bolts with new washers. Remove tools from steering rack. Install right bellows and retaining rings.

8) Install right lock nut and yoke on rack. Measure distance between center of yoke bolt hole and center of left rack bolt for 25.55" (649 mm). Ensure both holes are aligned. Tighten yoke lock nut.

9) Install left yoke, bolt and lock plate on left rack bolt. Adjust tie rod distance to 10.97" (278.6 mm) on 504 models or 11.73" (298 mm) on 604 models. Ensure both holes align. Tighten yoke lock nut.

10) Install left bellows, retaining ring and clip. Install right tie rod and set distance equal to left tie rod. Install damper mounting bolt and install damper piston end to yoke on rack. Insert lines in damper housing. Tighten all bolts.

### TIGHTENING SPECIFICATIONS

Application	Ft. Lbs. (mkg)
Ball Joint Nut .....	31 (4.3)
Steering Damper Nut .....	40 (5.5)
Steering Rack Bolts .....	24 (3.3)
Crossmember Bolts .....	31 (4.3)
Flex Coupling Bolt .....	11 (1.5)
Engine Mounting Bolts .....	25 (3.5)
Power Steering Pump Mounting Bolts .....	13 (1.8)
Control Valve Mounting Bolts .....	13 (1.8)
Pinion Shaft Nut .....	13 (1.8)
Plunger Flange Bolts .....	7 (1)
Right Yoke Lock Nut .....	58 (8)
Left & Right Eye Bolts .....	33 (4.5)