

PEUGEOT POWER-ASSISTED RACK & PINION

504
505
604

DESCRIPTION

Vehicles are equipped with a power assisted rack and pinion type steering system. The system consists of 2 main components: Rack and steering gear, and the power assisted pump. Steering gear and pump are connected by flexible lines. Power steering pump has an integral reservoir on 504 and 604 models. The 505 model has a separate reservoir.

GENERAL SERVICE

HYDRAULIC SYSTEM LUBRICANT

Capacity

504 and 604 — .69 qts.
505 — .74 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) Drain steering system and disconnect pressure lines between pump and gear. Disconnect bolt at flexible coupling. Disconnect tie rod ball joints at steering knuckle.

2) On 604 models, remove rear bolts of front crossmember and install longer bolts. Remove front crossmember from bolts, then loosen rear bolts until a gap of approximately 1.5" (40 mm) exists between crossmember and frame.

3) On all models, remove steering gear to crossmember mounting bolts. Remove bolt securing power cylinder to crossmember. On 604 models, remove safety clips from pins on steering gear.

4) On all models, remove steering gear from vehicle by pulling gear backwards and down.

Installation — To install power steering gear, reverse removal procedures, noting the following:

- Use new nuts when installing ball joints.
- When installing crossmember on 604 models, make sure steering column is correctly aligned with power assisted steering valve.
- Bleed steering system after installation.
- Toe-in adjustment is made after installation by turning tie rods. Turn tie rods equal amounts to maintain centered steering wheel. One turn of tie rod equals .118" (3 mm) of toe adjustment.

POWER STEERING PUMP

Removal — 1) Remove air cleaner and connecting hoses. Remove pressure lines from pump. Loosen drive belt tensioner bolts and remove drive belt.

2) Remove pump attaching bolts. On 505 models, disconnect hose from reservoir to pump. On all models, remove pump from vehicle.

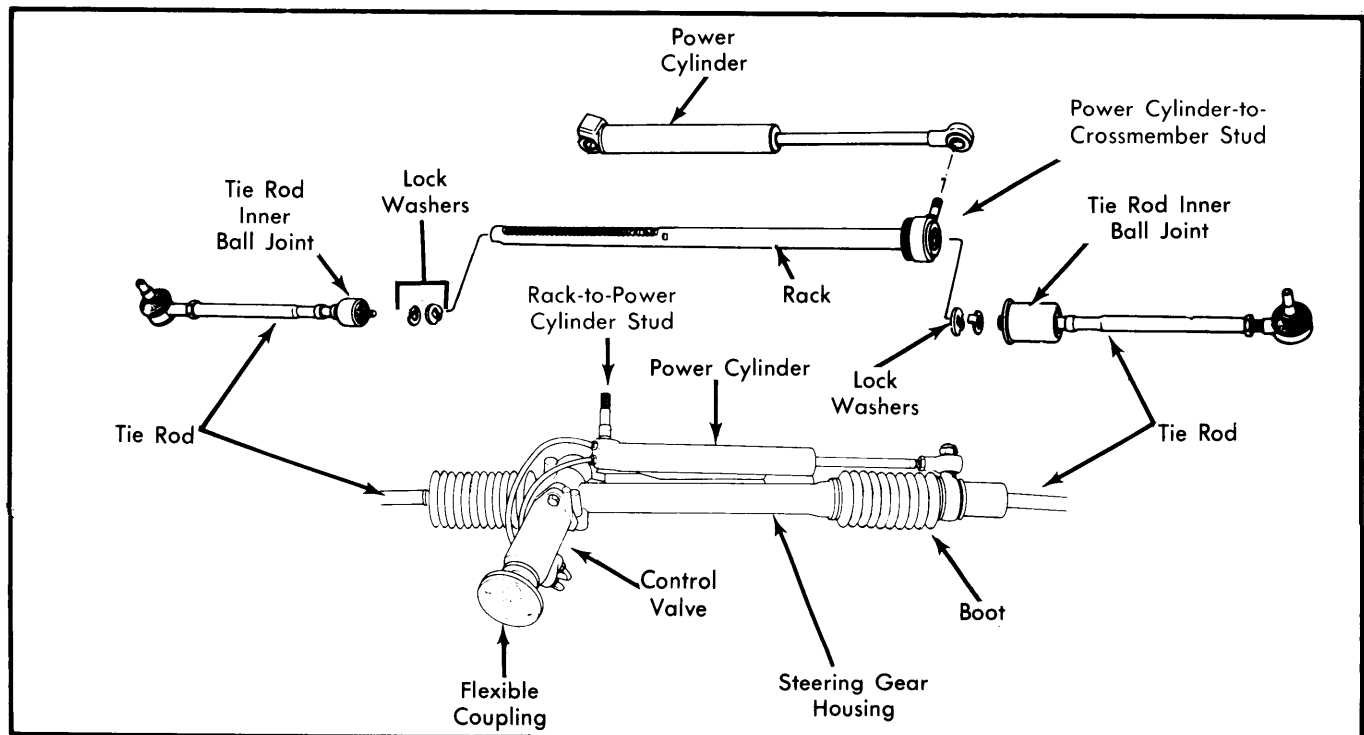


Fig. 1 Peugeot Power Assisted Rack and Pinion Steering Gear

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3) On 504 models, remove pump pulley with suitable gear puller (555 TAX). On 505 models, remove pulley by removing 4 bolts attaching pulley to pump. On 604 models, on pumps with extractor groove, use extractor tool (80706 H1, H2, H5) and pull pulley out as far as possible. Then tap pulley off with mallet. On 604 models without extractor groove, use suitable gear puller (555 TAX) and remove pulley.

Installation — To install steering pump, reverse removal procedures noting the following: Make sure hose connections are clean before installing. Fill system with fluid, then bleed system. See *System Bleeding in this article*.

OVERHAUL

POWER STEERING PUMP

NOTE — Manufacturer does not recommend overhaul of power steering pump.

POWER STEERING GEAR

Disassembly — 1) Clean steering gear assembly before starting disassembly. Place steering gear assembly in a padded vise. Disconnect pressure pipes from power cylinder and plug ports in power cylinder and cap pressure pipes.

NOTE — Do not disconnect pressure pipes from control valve if valve is to be reused. Do not loosen lock nut on power cylinder attaching joint.

2) Remove nut securing power cylinder to rack and remove power cylinder. Loosen lock nut on right tie rod inner ball joint, then disconnect tie rod from rack.

3) If control valve is to be replaced, remove pressure pipe connections.

NOTE — Be careful not to bend or twist pipes connecting control valve to power cylinder.

4) Remove left boot clamp and push boot toward steering gear. Disconnect left tie rod inner ball joint from rack. Remove rack piston cover, spring and rack piston from steering gear housing.

5) Remove control valve bearing cap cover, then remove nut. Remove bolts attaching control valve-to-steering gear. Carefully remove control valve from gear housing. Carefully withdraw rack from housing. Remove snap ring and remove pinion gear bearing.

6) If control valve is to be rebuilt, proceed as follows: Remove flexible coupling. Remove snap ring and thrust washer, then withdraw control valve piston from control valve housing.

NOTE — Do not tap on shaft to aid removal or damage to shaft will occur. Do not remove piston rotor segments from shaft.

7) From control valve housing, remove snap ring, scraper seal and oil seal.

Inspection — Check steering gear housing and rack for any damage, scoring or any signs of excessive wear. Check control valve housing and shaft for damage, wear or scoring. Replace components as necessary. Always replace all washers, nuts, seals and bearings when reassembling steering gear.

Reassembly — 1) If control valve was disassembled, install oil seal (soaked in oil) to piston/pinion gear assembly with seal lip facing pinion gear. Install piston in control valve. Install thrust washer and snap ring on pinion end of control valve housing. Install oil seal, scraper ring, and snap ring on flexible coupling end of valve housing. Install flexible coupling to control valve housing.

2) Install new pinion gear bearing into steering gear housing, then install snap ring. Insert rack into housing, align rack teeth with pinion gear/control valve mounting hole. Align flexible coupling pinch bolt with pressure pipe holes (holes that connect control valve with power cylinder) on control valve.

3) Insert control valve/pinion gear into steering gear housing. To make sure control valve is properly aligned with rack, line up control valve flange bolt holes with gear box holes. Then rotate control valve 90° counterclockwise. Insert control valve into gear box while rotating control valve 90° clockwise. This will properly align rack teeth with pinion teeth.

4) Hold flexible coupling and install pinion nut, grease bearing location and install grease cap. Temporarily place plunger and spring in housing. Install rack plunger cover, upper bolt and dial indicator mount into lower bolt hole. Install dial indicator on mount and tighten down cover.

5) Using flexible coupling, turn steering rack from lock-to-lock and zero dial indicator on maximum deflection indicated. Using lever, push steering rack in direction of plunger and record dial indicator reading. Remove dial indicator, rack cover and rack plunger from housing.

6) Install stop to rack plunger and lay straight edge over stop and plunger. Select shim pack to eliminate clearance between stop and straight edge.

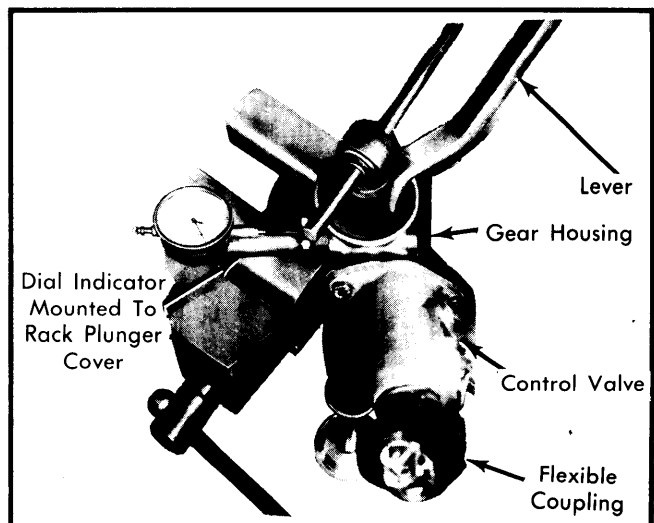


Fig. 2 Measuring Steering Rack Plunger Clearance

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7) Steering rack plunger clearance should be $.004 \pm .002$ " ($.1 \pm .05$ mm) at maximum point along rack travel. To obtain required clearance, subtract $.004$ " (.1 mm) from dial indicator reading obtained in step **5)**, this measurement indicates the thickness of shim washers needed in plunger.

8) Install shim pack selected, stop and spring to rack plunger. Install rack plunger assembly to gear housing. Install grease nipple to cover then install cover over rack plunger assembly and tighten bolts. Install rubber boots, with clamps, to steering gear housing. Push boots out of way when installing tie rod inner ball joints.

9) Install stop plate and lock washer, then install tie rod inner ball joints to rack. Insert bolt into power cylinder. Attach power cylinder to bolt on rack end and tighten nut finger tight. Install pressure pipes from control valve to power cylinder. Do not bend or deform pressure pipes when installing and tightening connections.

10) With pressure pipes installed, tighten rack bolt nut. Install pressure lines to control valve. Before steering gear installation in vehicle, install spacer on power cylinder to crossmember bolt.

TIGHTENING SPECIFICATIONS

Application	Ft. Lbs. (N·m)
Ball Joint Nut	31 (42)
Crossmember-to-Frame	31 (42)
Engine Mount-to-Crossmember	25 (34)
Gear Housing-to-Crossmember	24 (33)
Inner Ball Joint-to-Rack	36 (49)
Power Cylinder-to-Crossmember	40 (54)
Power Cylinder-to-Rack	33 (45)
Tie Rod Lock Nut (Outer)	58 (79)