

PEUGEOT POWER-ASSISTED RACK & PINION

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.

LUBRICATION

CAPACITY

504 and 604 models .69 qts. (.66L)

505 models .74 qts. (.70L)

ADJUSTMENTS

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 from front crossmember and install longer bolts. Remove front crossmember from bolts. 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 retaining 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

1) To install, reverse removal procedures. When installing crossmember on 604 models, make sure steering column is correctly aligned with power assisted steering valve.

2) Use new nuts when installing ball joints. Bleed steering system after installation. Check wheel alignment.

POWER STEERING PUMP

Removal

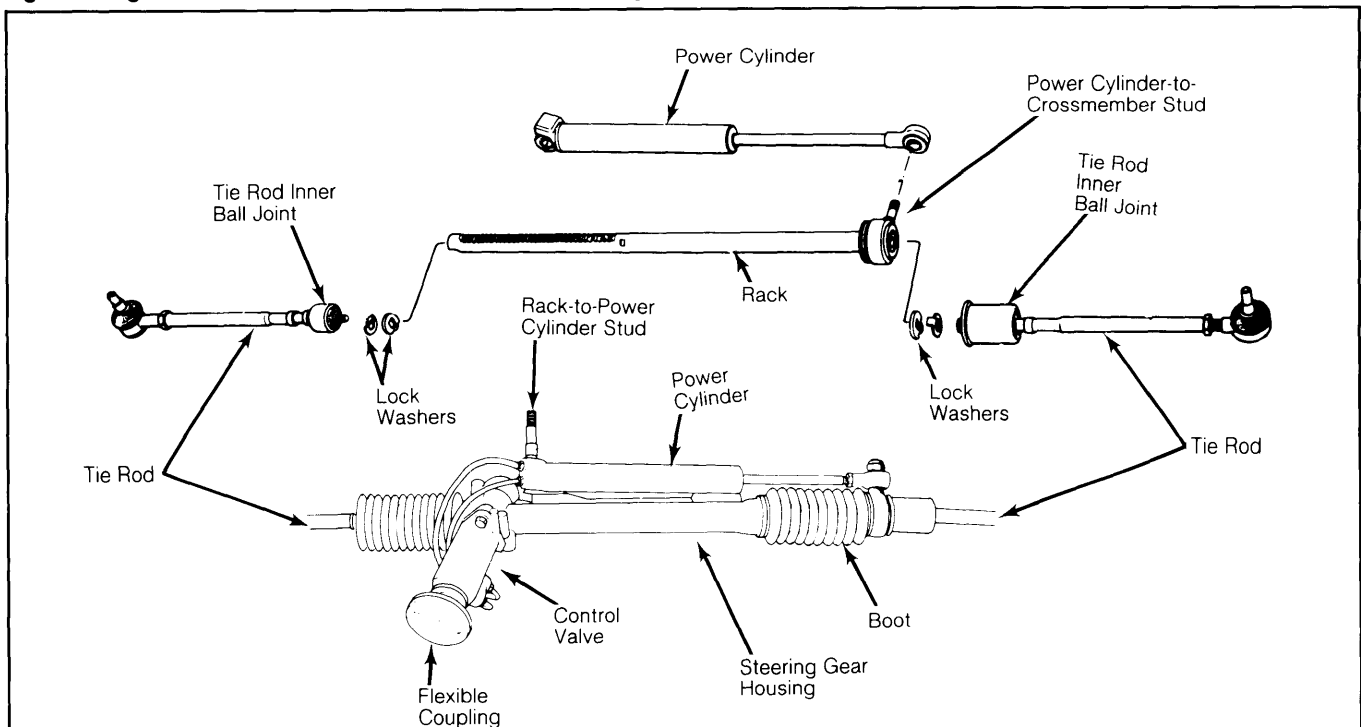
1) Remove air cleaner and connecting hoses. Remove pressure lines from pump. Loosen drive belt tensioner bolts and remove drive belt.

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

3) On 504 models, remove pump pulley with gear puller (555 TAX). On 505 models, remove pulley by removing bolts retaining pulley to pump.

4) On 604 models, on pumps with extractor groove, use extractor tool (80706 H1, H2, H5) and pull pulley out as far as possible. Tap pulley off with mallet. On 604 models without extractor groove, use gear puller (555 TAX) and remove pulley.

Fig. 1: Peugeot Power-Assisted Rack and Pinion Steering Gear



Power Steering

PEUGEOT POWER-ASSISTED RACK & PINION (Cont.)

Installation

To install, reverse removal procedures. Make sure hose connections are clean before installing. Fill system with fluid. Bleed system. See System Bleeding in this article.

OVERHAUL

POWER STEERING PUMP

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 lines from power cylinder and plug all openings.

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

2) Remove nut retaining power cylinder to rack. Remove power cylinder. Loosen lock nut on right tie rod inner ball joint. Disconnect tie rod from rack.

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

NOTE: Be careful not to bend or twist lines 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 and nut. Remove bolts retaining control valve-to-steering gear. Remove control valve from gear housing.

6) Withdraw rack from housing. Remove snap ring and remove pinion gear bearing.

7) If control valve is to be rebuilt, proceed by removing flexible coupling. Remove snap ring and thrust washer. 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.

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

Inspection

1) 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.

2) 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.

2) 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.

3) Install flexible coupling to control valve housing. Install new pinion gear bearing into steering gear housing. Install snap ring. Insert rack into housing.

4) 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.

5) 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.

6) Rotate control valve 90° clockwise. This will properly align rack teeth with pinion teeth. Hold flexible coupling and install pinion nut, grease bearing location and install grease cap.

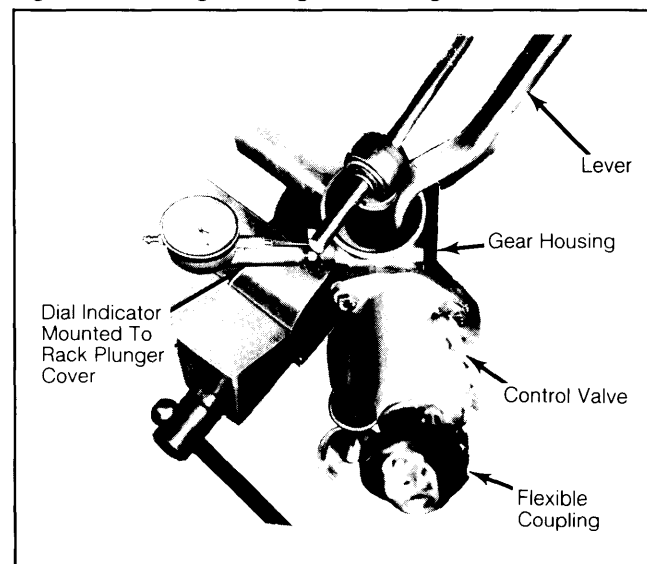
7) Temporarily place plunger and spring in housing. Install rack plunger cover, upper bolt and dial indicator mount into lower bolt hole.

8) Install dial indicator on mount and tighten down cover. Using flexible coupling, turn steering rack from lock-to-lock and zero dial indicator on maximum deflection indicated.

9) Using lever, push steering rack in direction of plunger and record dial indicator reading. Remove dial indicator, rack cover and rack plunger from housing.

10) 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



Plunger clearance should be .002-.006" (.05-.15 mm).

11) Steering rack plunger clearance should be .002-.006" (.05-.15 mm) at maximum point along rack travel. To obtain required clearance, subtract .004" (.1 mm) from dial indicator reading obtained in step 8).

12) Measurement indicates the thickness of shim washers needed in plunger. Install shim pack selected, stop and spring to rack plunger. Install rack plunger assembly to gear housing.

13) Install grease nipple to cover. Install cover over rack plunger assembly and tighten bolts. Install rubber boots, with clamps, to steering gear housing.

14) Push boots out of way when installing tie rod inner ball joints. Install stop plate and lock washer. Install tie rod inner ball joints to rack.

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15) 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.

16) Do not bend or deform pressure lines when installing and tightening connections. With pressure lines installed, tighten rack bolt nut. Install pressure lines to control valve.

17) Before installing steering gear 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)
