

CHRYSLER CORP. POWER RACK & PINION

Dodge
Omni
Plymouth
Horizon

OVERHAUL

DESCRIPTION

Power assisted rack and pinion steering gear is mounted on front frame crossmember behind rear axle. Rotary turning motion of the steering shaft is converted to transverse movement of the rack through meshing of pinion and rack teeth. A rotary valve in the pinion assembly directs fluid to either side of the integral rack piston which is permanently secured to the rack. Tie rods and tie rod ends transmit movement to the steering arms and wheels while at the same time accommodating suspension movement. In event of drive belt or pump failure, manual steering control is accomplished through drive tangs on the pinion which are loosely mated with the stub shaft. (Steering effort will be increased.)

LUBRICATION, TROUBLE SHOOTING & TESTING

See *Power Steering General Servicing* in this section.

REMOVAL & INSTALLATION

Removal and installation of power rack and pinion is the same as for manual except for tubes to pump. See *Chrysler Corp. Rack & Pinion Steering Gear* in this section.

INNER TIE RODS

Removal — Slide shock dampener off inner tie rod and back onto rack. Hold flat of rack with wrench and unscrew housing until tie rod separates from rack.

Installation — Reverse removal procedure and tighten housing. Stake housing to rack flat on both sides and check that .010" feeler gauge will NOT fit between rack and housing stakes.

INPUT SHAFT & VALVE ASSEMBLY

Stub Shaft Seal Removal — 1) Remove retaining ring from upper end and dust cover from lower end of pinion shaft housing. Hold splined end of stub shaft with $1\frac{1}{16}$ " 12 point socket and remove pinion lock nut.

CAUTION — Damage to pinion teeth will occur if stub shaft is not held.

2) Press on threaded (bottom) end of pinion shaft until flush with ball bearing assembly and remove stub shaft dust seal, seal and, if required, needle bearing and race from splined end of shaft.

NOTE — Complete removal of valve and pinion assembly is not necessary.

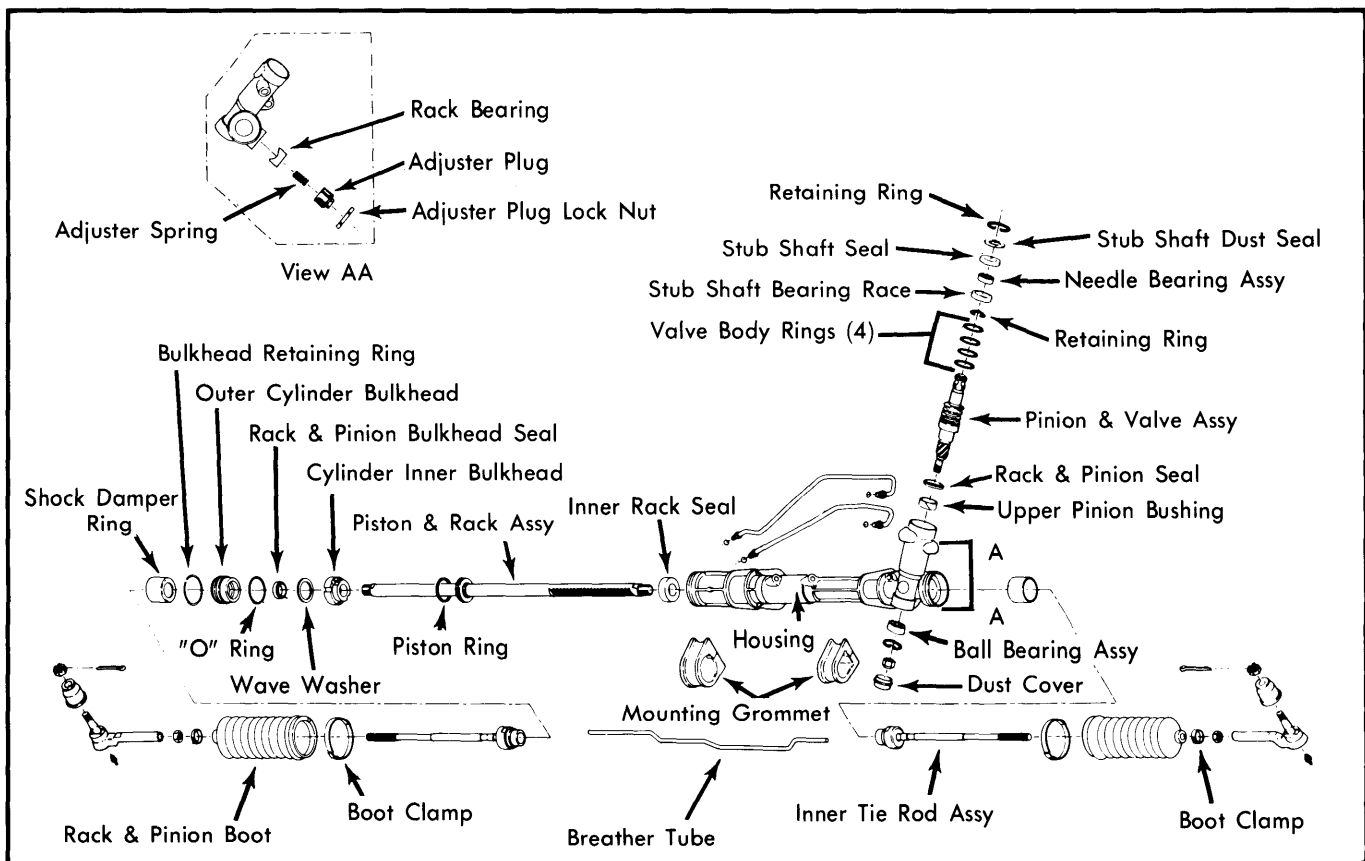


Fig. 1 Power Rack & Pinion Steering Assembly

CHRYSLER CORP. POWER RACK & PINION (Cont.)

Installation – To install, reverse removal procedure. Hold stub shaft to firmly seat and torque lock nut.

Valve Pinion Removal – 1) Turn stub shaft until rack extends equal distance from both sides of housing. Mark location of stub shaft flat on housing and press on threaded end of pinion to remove valve and pinion assembly. Carefully remove rings from valve body if replacement is necessary.

2) If ball bearing assembly (lower) requires replacement, remove retaining ring and tap out bearing with drift or punch. Use suitable socket to press on outer race of new bearing assembly, being careful not to cock bearing when installing in housing. Install retaining ring with large lug to right (counter-clockwise) side of gap.

3) Remove upper pinion bearing and seal with $\frac{1}{4}$ " punch. Install new bushing, then seat seal in housing with lip facing inward using seal installer.

Installation – Carefully place new rings on valve body assuring that they are not cut. With rack centered in housing, install valve and pinion assembly so that shaft flat and mark on housing line up when assembly is seated. Torque pinion lock nut and install dust cover.

Gear Housing and Rack Disassembly – 1) Use punch in access hole of housing and remove retaining ring. Remove fluid lines and finger tighten plugs in line holes of cylinder.

2) Remove adjuster plug and lock nut, spring and rack bearing. Turn pinion shaft to move rack to right, forcing bulkhead out of housing. Remove rack from housing, remove and dispose of piston ring. Pry seal from housing with screw driver.

Reassembly – 1) Install new piston ring on right (smooth) side of rack with care so as not to cut ring. Wrap card stock around rack teeth and slide seal, lip facing inward, onto stock. Slide stock and seal over rack teeth and bottom seal on rack piston.

2) Coat all parts with power steering fluid and place bullet seal protector over end of rack. Slide rack and seal in housing tapping with rubber mallet to seat seal.

3) Install in order: cylinder inner bulkhead, spring (wave) washer, bulkhead rack seal, "O" ring seal, cylinder outer bulkhead, bulkhead retaining ring and shock dampener. Retaining ring must be fully seated with end approximately $\frac{1}{2}$ " from access hole.

4) Coat adjuster plug with lithium base grease and install rack bearing, spring, adjuster plug and lock nut. Tighten adjuster plug until it bottoms, then back off 40° - 60° . Check torque on pinion and tighten lock nut while holding adjuster plug stationary.

5) Install fluid lines using new "O" rings. Finger tighten both ends of lines prior to tightening to final torque. Install grommets and breather tube in proper location; install tie rods and boot seals.

TIGHTENING SPECIFICATIONS

Application	Ft. Lbs.
Tie Rod End to Steering Arm	25
Tie Rod Jam Nuts	50
Adjuster Plug Lock Nut	50
Stub Shaft Lock Nut	26
Fluid Line Fittings	18
Mounting Bolts	250 INCH lbs.