

Power Steering

CHRYSLER CORP. POWER RACK & PINION

Front Wheel Drive Models

DESCRIPTION

Power assisted rack and pinion steering gear is mounted on front frame crossmember behind left 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. Manual Rack & Pinion Steering Gear* in this Section.

INNER TIE RODS

Removal — On Horizon, Omni, and Rampage remove shock damper ring from inner tie rod housing and slide back on rack. On all other models, remove roll pin. On all models, hold flat

side of rack gear with a wrench and unscrew housing until tie rod separates from rack.

Installation — Reverse removal procedure and tighten housing. On Horizon, Omni and Rampage, stake housing to rack flat on both sides and check that .010" feeler gauge will not fit between rack and housing. On all other models, install roll pin.

OVERHAUL

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 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.

Installation — Prior to assembly, lubricate all seals with power steering fluid. On Horizon, Omni, and Rampage use seal installer and protector tools (L-4595 & L-4596) to install seal. On all other models, install seal with installer and protector tools (C-4667 & 4668).

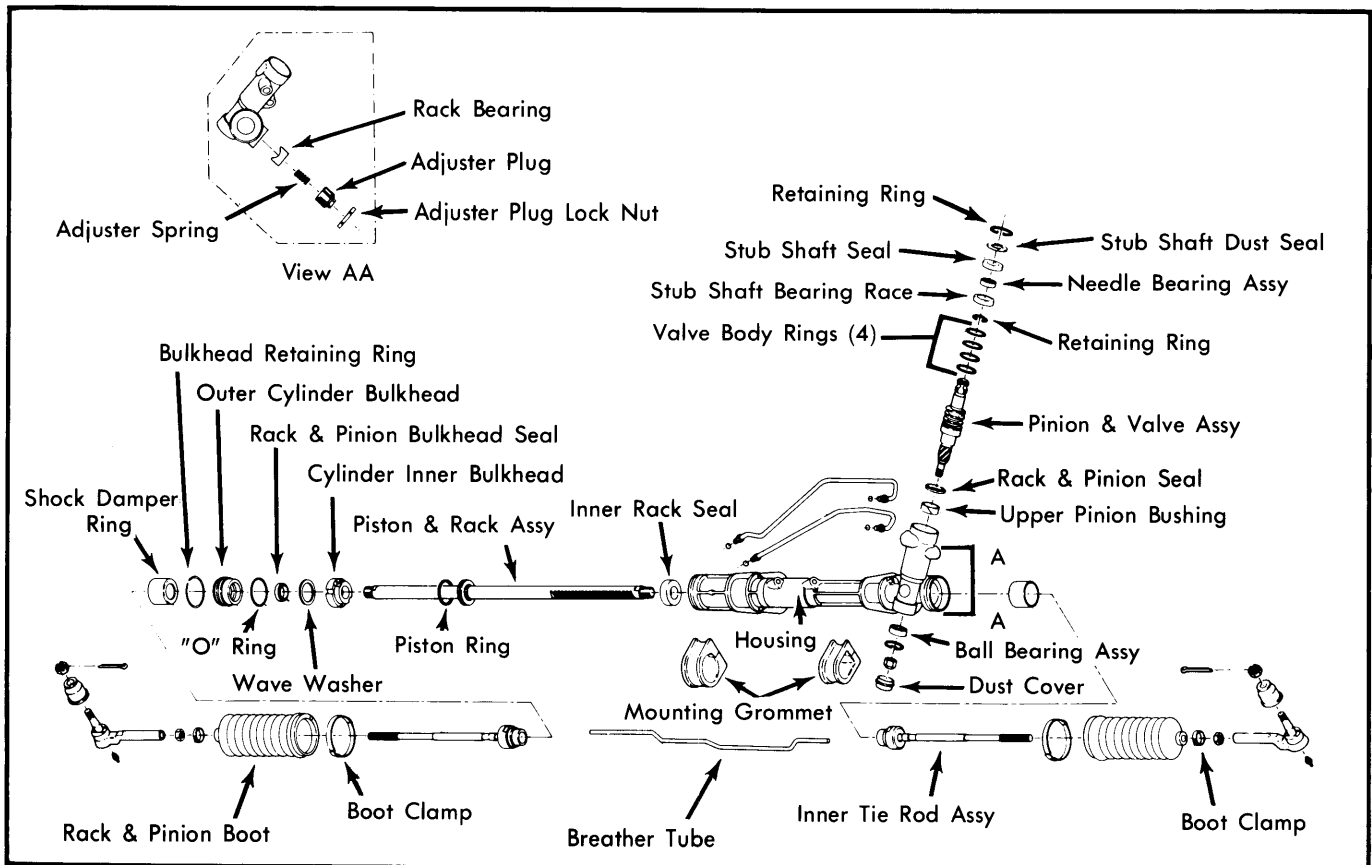


Fig. 1 Power Rack & Pinion Steering Assembly (Horizon, Omni & Rampage Shown, Others Similar)

CHRYSLER CORP. POWER RACK & PINION (Cont.)

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 or bearing cap and tap out bearing with a drift or punch. Use a socket to press on outer race of new bearing assembly, ensuring that bearing does not tilt when installing in housing. On Horizon, Omni, and Rampage, install retaining ring with large lug to right of gap. On all other models install bearing cap.

3) Remove upper pinion bearing and seal with 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) On Horizon, Omni and Rampage, use a punch in access hole of housing and remove retaining ring. On all other models use punch to rotate retaining wire clockwise to expose end. Pull wire out with pliers. Remove fluid lines and install plugs (finger tight) in cylinder line holes.

2) Remove adjuster plug and locknut, spring and rack bearing. Turn pinion shaft to move rack to right, forcing bulkhead out of housing. Remove rack from housing. Remove and dispose piston ring. On Horizon, Omni and Rampage, remove inner rack seal using seal driver (L-4627). On all other models, use seal driver (C-4665) to remove seal.

NOTE – Coat all seals with power steering fluid and use lithium base grease on rack teeth prior to assembly.

Reassembly – 1) Install new piston ring on rack, using care not to cut ring. Install seal protector (L-4600 for Horizon, Omni and Rampage; C-4666 for all others) over end of rack gear. Slide seal, with lip facing piston, over protector. Remove protector and bottom the seal on rack piston.

2) Slide plastic retaining ring on rack and onto seal. Slide rack and seal into housing, then tap rack with mallet to seat seal. On Horizon, Omni and Rampage, install the following parts in order shown: Cylinder inner bulkhead, spring washer, bulkhead rack seal, "O" ring seal, cylinder outer bulkhead, bulkhead retaining ring and shock dampener. Retaining ring must be fully seated with end about 1/2" from access hole.

3) On all except Horizon, Omni and Rampage, install bulkhead outer oil seal into bulkhead using installer tool (C-4669). Install bulkhead onto rack using protector tool (C-4670). Seat bulkhead assembly in rack tube using installer tool (C-4675) and install retaining wire by rotating bulkhead assembly counterclockwise.

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. (N·m)
Tie Rod End-to-Steering Arm	25 (34)
Tie Rod Jam Nuts	50 (68)
Adjuster Plug Lock Nut	50 (68)
Stub Shaft Lock Nut	26 (35)
Steering Gear Mounting Bolts	21 (28)