CHRYSLER CORP. ROLLER

Chrysler Corp. Model 1.06

NOTE – Saginaw Vane Type with integral reservoir, Chrysler Corp. model .94 used on some models.

DESCRIPTION

Roller type pump can be identified by a 3/8" threaded hole in pulley end of drive shaft. Star shaped rotor propels 12 steel rollers against inside surface of a cam ring. As rollers follow eccentric pattern of cam ring, oil is drawn into inlet ports and exhausted through discharge ports while the rollers are forced into vee shaped cavities of the rotor, forcing oil into high pressure circuit. A flow control valve permits a regulated amount of oil to return to intake side of pump when excess output is generated during high speed operation.

LUBRICATION

Check fluid every 3 months, or at each oil change. Start engine, turn steering wheel from stop to stop several times to expel air from system. Remove oil filler cap and inspect oil level in reservoir.

TROUBLE SHOOTING

INTERMITTENT OR NO ASSIST

Loose belt. Low fluid level. Pump seizure. Flow control bore plug ring not in place. Flow control valve sticking. Wrong pressure relief valve setting. Plugged metering orifices or trigger orifice. Damaged or leaky pressure relief valve seat plug or ball. Scored pressure plate, thrust plate, cam, rotor or rollers. Damaged housing bore "O" ring or pressure plate "O" ring.

NOISY PUMP

Low fluid level. Belt noise. Belt loose. Pressure plate, thrust plate, cam, rotor or rollers scored. Pump hose interference with sheet metal or brake lines.

PUMP VIBRATION

Pump hose interference with sheet metal or brake lines. Faulty or loose belt. Pulley loose or out of round. Crankshaft pulley loose or damaged.

PUMP LEAKS

Cap or filler neck leaks. Reservoir solder joints leak. Reservoir "O" ring leaking. Shaft seal leaking. Loose rear bracket bolts. Loose or faulty pressure hose ferrule. Damaged pressure hose "O" ring. Housing ball plug leaking. Rear bolt holes stripped or casting cracked.

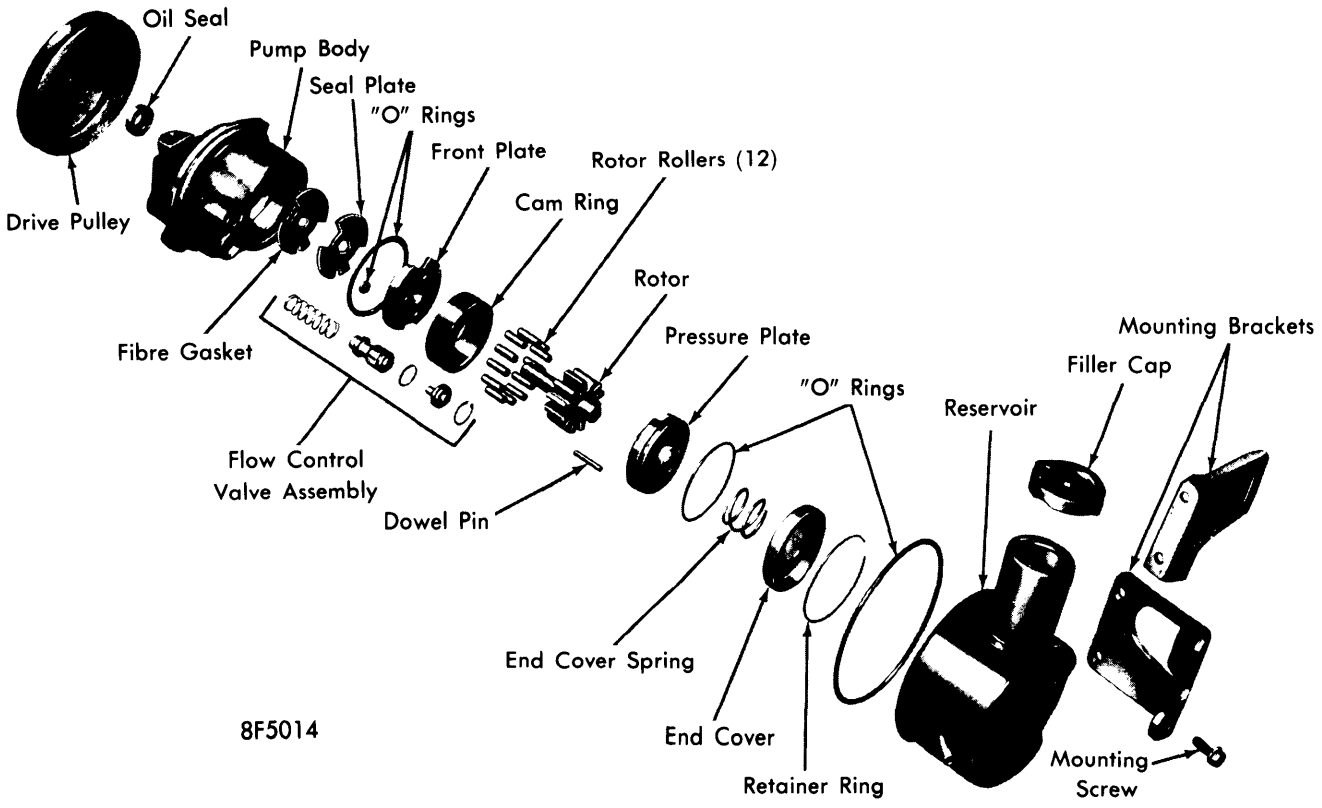
TESTING

See Chrysler Corp. Constant Control in this section for testing procedures and pressure specifications.

REMOVAL & INSTALLATION

POWER STEERING PUMP

Loosen pump mounting and locking bolts, remove belt. Disconnect both hoses at pump. Remove mounting and locking bolts, remove pump and bracket. To install, reverse removal procedures and tighten pump bracket bolts to 30 ft. lbs. When connecting hoses, use a new pressure hose "O" ring.



CHRYSLER CORP. ROLLER TYPE MODEL 1.06 PUMP

CHRYSLER CORP. ROLLER (Cont.)

OIL SEAL REPLACEMENT

Remove pump, drain reservoir and clean exterior. Using a suitable puller remove pulley. Using a suitable remover tool (C-4062), remove seal. Inspect seal bore in housing for burrs, nicks or score marks that would allow oil to by-pass outer seal surface. Inspect shaft for scratches or burrs and remove with crocus cloth. Lubricate new seal and install with lip toward pump using Tool C-4061 to drive seal in flush with housing. Install pump pulley (see Pump Reassembly for required tool set-up) so that pulley is correctly positioned on shaft. *NOTE – Correct pulley position will provide slight amount of shaft endplay which will be taken up by oil film within pump when pump operating.*

OVERHAUL

DISASSEMBLY

1) Clamp pump securely in vise at mounting bracket, remove pulley using suitable puller (C-4068). Remove oil seal (see "Oil Seal Replacement" above). Remove pump from vise and remove mounting bracket. Remove reservoir.

2) Clamp pump in vise (shaft down) making sure vise has soft protective jaws. Discard mounting bolt and reservoir "O" rings. Using a punch, tap end cover retaining ring around until one end lines up with hole in pump body, then insert punch through hole to disengage ring from pump bore groove, remove ring from body. Tap end cover with plastic hammer to jar it loose (spring under cover should push cover up out of pump bore).

3) Remove pump body from vise and place in inverted position on clean flat surface. Tap end of drive shaft to loosen shaft and internal parts, then lift pump off this rotating group. Remove and discard brass seal plate and fibre gasket (some pumps assembled without this fibre gasket). If fibre gasket stuck to pump housing floor, make certain that all portions of gasket removed. *CAUTION – Do not scratch or damage floor of pump housing.*

4) Discard pressure plate and end cover "O" rings. Remove snap ring, bore plug, flow control valve and spring from housing, discard "O" ring.

INSPECTION

Wash all parts in clean solvent, blow out all passages with compressed air and air dry all parts. Inspect drive shaft for excessive wear and seal area for nicks or scoring. Replace if necessary. Inspect end plates, rollers, rotor and cam ring for nicks, burrs, or scratches. If any of the components are damaged to a degree that the efficiency of the pump is affected, it is recommended that all the interior parts be replaced. Inspect pump body drive shaft bushing for excessive wear. If worn or scored, install pump partial assembly (entire pump less reservoir, filler cap, mounting brackets, and drive pulley).

REASSEMBLY

1) Install 1/8" pipe clean-out plug, tighten to 80 inch pounds. Place pump body on flat surface and drive new shaft seal into bore with Tool C4061. Install new end cover "O" ring in groove in pump bore and lubricate with power steering fluid. Lubricate new large pump body-to-reservoir "O" ring and install on pump body.

2) Install new fibre gasket and brass seal plate on floor of pump housing *(CAUTION – Pumps originally assembled with brass plate only must be reassembled with BOTH fibre gasket and brass seal plate).* Align index notches in plate and gasket with dowel pin hole in housing and note that cut-out sections of gasket and plate are in line with core pockets on side of housing bore.

3) Install front plate in pump bore with chamfered edge in and index notch in plate aligned with dowel pin hole *(CAUTION – Use extreme care in aligning dowel pin holes – it is possible to completely assemble pump with dowel pin improperly positioned in end plates and not engaging indexing hole in the pump housing).* Place the dowel pin in the cam ring and position the cam ring inside pump bore (notch on cam ring must be up or away from pulley end of pump). If cam ring has two notches (one machined and one cast), install with machined notch up. Machined notch has sharp corners and cast notch rounded corners. If end of dowel pin in cam ring is more than 3/16 inch above surface of installed cam ring, it is not seated in index hole in housing. Install rotor and shaft in cam ring and carefully place 12 rollers in cavities of rotor. Lubricate rotor, rollers and cam ring with power steering fluid.

4) To insure proper alignment of pressure plate to dowel pin, insert the largest possible drill (No. 13 through 16) into the 3/16" diameter hole in cam ring next to cam notch and bottom the drill on the pump housing floor. Install a new "O" ring on pressure plate, lubricate assembly with power steering fluid and carefully position plate in pump bore with index notch in plate aligned with dowel pin and oil passage slot with numbered drill. Use a clean 1 1/8" socket and soft hammer to seat plate on cam ring. Remove drill and inspect pressure plate at both oil passage slots to insure that plate is squarely seated on cam ring end face.

5) Place large coil spring over raised portion of pressure plate. Position end cover (lip edge UP) over spring. Press end cover down below retaining ring groove with thumb and install ring making sure it is seated in groove. Replace reservoir mounting bolt seal. Lubricate flow control valve with power steering fluid and insert valve spring and valve into bore (spring first, then hex plug end of valve), install new "O" ring on bore plug, lubricate assembly with power steering oil and carefully install in valve bore, install snap ring with sharp edge upward. *CAUTION – Do not depress bore plug more than 1/16" beyond snap ring groove.* Place reservoir on pump body and align mounting bolt hole, then tap reservoir down in place on pump with a plastic hammer. Remove pump from vise and install mounting bracket, tighten bracket bolts to 18 ft. lbs.

Pulley Installation – *CAUTION – Special tools and specified procedure must be used when installing pulley or serious damage may result to interior of pump.* Place drive pulley on end of shaft, thread installer tool C-4063 **without** adapter securely into 3/8" threaded hole on end of pump shaft (6 Cyl. Models), thread installer tool C-4063 **with** Adapter SP-5399 into 3/8" threaded hole on end of shaft (V8 Models). On all models, clamp installer shaft securely in vise, tighten tool drive nut against thrust bearing to press pulley on shaft. Remove tools. With pulley correctly installed, pulley will be flush with end of shaft (V8 Models), but will not be flush with end of shaft (6 Cyl. Models) and slight amount of shaft endplay will be noted (this clearance will be minimized by oil cushion between rotor and end plates when pump is operated).