

## ALL MODELS

Chrysler Corp.  
 Dodge  
 Plymouth  
 Ford Motor Co.  
 General Motors  
 Chevrolet  
 GMC  
 International Harvester  
 Jeep

### LUBRICATION

#### SERVICE INTERVALS

- Chrysler Corp.** – Check fluid level every oil change.
- Ford Motor Co.** – Check periodically or if leakage is observed.
- General Motors** – On all except motor home chassis, check fluid level every 6 months or 7,500 miles. On motor home chassis, check fluid level every 6 months or 6,000 miles.
- International Harvester** – Check fluid level periodically.
- Jeep** – Check fluid level every 5,000 miles.

#### CHECKING FLUID LEVEL

- Chrysler Corp.** – Check fluid level with engine stopped and fluid at ambient temperature (70-80°F). Fluid level must be to "FULL COLD" mark on dipstick.
- Ford Motor Co.** – With fluid at normal operating temperature and system properly bled, shut off engine. Fluid level on dipstick must show on cross hatching between bottom of stick and full mark. Do not overfill.
- General Motors, International Harvester & Jeep** – Check fluid level with engine stopped and fluid either hot or cold. Fluid level must be to "FULL HOT" or "FULL COLD" mark on dipstick.

#### RECOMMENDED FLUID

Application	Fluid Type
Chrysler Corp. ....	Power Steering Fluid (2084329)
Ford ....	① Power Steering Fluid (C1AZ-19582-A,C,D) (Type F)
General Motors ....	Power Steering Fluid (1050017)
International Harvester ....	Automatic Transmission Fluid
Jeep ....	② Power Steering Fluid

- ① – Automatic Transmission Fluid.
- ② – AMC/Jeep Power Steering Fluid or equivalent.

#### REFILLING & BLEEDING SYSTEM

**Chrysler Corp. (Exc. M400, 500 & 600)** – Fill pump reservoir with power steering fluid, start engine and check for leaks. Bleed system by turning wheels from stop to stop several times. Shut off engine and recheck fluid level.

**Chrysler Corp. M400, 500 & 600** – 1) Fill pump reservoir with Hydroboost power steering fluid and allow fluid to remain undisturbed for two minutes. Start and run engine for ten seconds. Check fluid level and add fluid, if necessary. Repeat this procedure until fluid level remains constant. Raise front of vehicle until tires are clear of ground.

2) Start engine and run at 1500 RPM. Apply and release brake pedal several times while turning steering lightly to stops in both directions. Turn off engine and check fluid level, top up if necessary. Lower vehicle, run engine at 1500 RPM and again cycle brakes and steering several times. Turn off engine and recheck fluid level, top up if necessary. If fluid is very foamy, allow vehicle to stand for one hour with engine off. If fluid is low, repeat bleeding process.

**Ford Motor Co.** – Fill pump reservoir with fluid and run engine until fluid reaches operating temperature (165-175°). Turn steering wheel all the way to the left then all the way to the right without hitting stops several times. Check fluid and add if necessary.

**General Motors** – 1) Fill reservoir to correct level. Let oil settle for two minutes. Start engine and run for two seconds. Check reservoir and add oil if necessary. Repeat procedure until level in reservoir remains constant after running engine.

2) Raise front of vehicle so that both wheels are off ground. Start engine and increase engine speed to 1500 RPM. Turn wheels right and left, lightly contacting stops. Check reservoir level and add oil if necessary.

3) If oil is foamy, allow vehicle to stand still for a few minutes with engine off. Repeat procedure with vehicle raised. Again check fluid level and for air in system. If level is low or there is air in system, repeat complete procedure.

**International Harvester** – Fill reservoir to correct level. With power steering pump belt removed, turn pulley backwards (counterclockwise viewed from front) until air bubbles no longer appear in reservoir.

**Jeep** – Fill reservoir to correct level. Turn wheels from right to left without hitting wheel stops. Maintain fluid level just above pump housing. Fluid with air will have a red or light tan appearance.

### SERVICE

#### BELT TENSION

##### Tension (Lbs.) Using Strand Tension Gauge

Application	New Belt	Used Belt
Chrysler Corp. ....	120	70
Ford Motor Co.		
1/4" Belt .....	80	60
All Other Belts .....	110	140
General Motors .....	125±5	75±5
International Harvester.....	①	①
Jeep .....	125-155	90-115

- ① – Belt Deflection should be 3/8".

## ALL MODELS (Cont.)

### TROUBLE SHOOTING

#### RATTLE OR CHUCKLE NOISE

Loose steering gear mountings. Worn steering linkage. Loose pitman shaft. Incorrect overcenter adjustment. Pressure hose touching body or frame.

#### SQUAWK IN GEAR WHEN TURNING

Worn spool valve damper "O" ring.

#### CHIRP OR SQUEAL AT FULL WHEEL TRAVEL

Loose drive belt tension.

#### WHINE OR GROWL NOISES

Low fluid level. Hose restriction or kink. Pressure hose touching body or frame. Worn or damaged pump.

#### GROANING NOISE

Low fluid level. Air in system. Worn or damaged pump.

#### POOR STEERING RETURN

Binding in steering column or linkage. Incorrect tire pressure. Incorrect wheel alignment. Power cylinder damaged. Defective spool valve. Steering gear damaged or adjusted too tight. Bent power cylinder rod (non-integral steering only). Hose restriction or kink.

#### STEERING WANDER

Incorrect tire pressure. Incorrect wheel bearing adjustment. Defective valve body. Incorrect steering gear adjustment. Incorrect wheel alignment. Loose steering gear mountings.

#### HARD STEERING OR LACK OF ASSIST

Incorrect tire pressure. Loose drive belt tension. Low fluid level. Sticking flow control valve. Low pump pressure. Internal steering gear leakage. Steering column misalignment. Incorrect wheel alignment. Hose restriction or kink.

#### KICKBACK OR LOOSE STEERING

Air in system. Loose steering gear mountings. Loose flexible coupling. Steering linkage worn. Incorrect wheel bearing adjustment. Worn poppet valve. Excessive overcenter lash. Loose steering gear preload.

#### STEERING WHEEL JERKS

Low fluid level. Loose drive belt tension. Low pump pressure. Steering linkage hitting chassis or engine at turn wheel travel.

### LOW PUMP PRESSURE

Defective flow control valve. Defective pressure plate. Worn cam ring. Scored pressure plate, thrust plate or rotor. Defective or mis-assembled vanes (vane type pump).

### TESTING

#### PRESSURE TEST

**All Except Ford Motor Co. – 1)** With belt tension correct, disconnect power steering pump press hose, keeping hose end raised to prevent excess fluid loss. Connect pressure hose of suitable power steering pressure gauge to power steering pump fitting. Connect a second pressure hose from valve side of tester to steering gear inlet. Open valve fully and run engine until fluid obtains normal operating temperature. Check fluid level and add fluid if necessary.

**2)** On all models except Chrysler Corp., note pressure reading with valve open and engine idling. This pressure should be 80-125 psi. If pressure is in excess of 200 psi, check hoses for restrictions and poppet valve (in gear) for proper assembly. On all models, close tester valve fully and re-open three times. Record highest pressure noted each time. **CAUTION** – Do not hold valve closed for more than five seconds as pump damage may result. If pressures are within specifications and range of readings is within 50 psi, pump is operating satisfactory.

**3)** If pressures recorded are high, but do not repeat within 50 psi, flow control valve is sticking. If pump performance is to specifications, turn steering wheel to both stops with valve open and note highest pressures. Compare readings with maximum pump output. **CAUTION** – Do not hold wheel against stops over 5 seconds as pump may be damaged. If pump output cannot be met in either side of gear, gear is leaking internally. Shut off engine and remove tester. Reconnect all hoses and recheck fluid level.

#### PRESSURE TEST SPECIFICATIONS

Application	Pump Output Pressure (psi)	
	Idle Pressure	Relief Pressure
Chrysler Corp. ....	900	1350-1450
General Motors		
C10-C30 .....	80-125	1200 1300
G10-G20 .....	80-125	900-1000
G30 .....	80-125	1200-1300
P10-P30 .....	80-125	1200-1300
Motor Home & "K" Models .....	80-125	1350-1450
International Harvester .....		1200
Jeep		
CJ Models .....	80-125	1100-1200
All Other Models .....	80-125	1400-1500