1965-73 THOMPSON SLIPPER

Ford Motor Co. (1965-73)

NOTE — Early Continental and Mark III use crankshaft mounted Eaton Roller. Other later Ford Motor Co. models may also use Saginaw Vane type pump.

►CHANGES, CAUTIONS, CORRECTIONS

►*1965-70 FORD MOTOR CO. POWER STEERING PUMP NOISE:* An out-of-flat flange on power steering pump inner housing may result in unsatisfactory pump operation. This condition may cause aeration of hydraulic fluid. Before disassembling housing from housing plate, check torque of four housing to housing plate screws. Torque must be 20 ft. lbs. minimum. If one or more of the attaching screws (or bolts) are below this torque, torquing to following specifications could eliminate cause of problem. Screw and washer assembly (28-32 ft. lbs.), washer head hex bolt (38-47 ft. lbs.). If housing screws or bolts were torqued to specification, then a check of housing flange flatness should be made.

►*1971 THUNDERBIRD POWER STEERING PUMP NOISE:* Whining noise at approximately 1,000 to 2,000 RPM may be caused by an improper integral upper pressure plate. Plates which do not have a "boot" indentation mark should be replaced with a new type plate, part No. D1AZ-3D590-A. Operate system to remove air after reassembly and installation of pump.

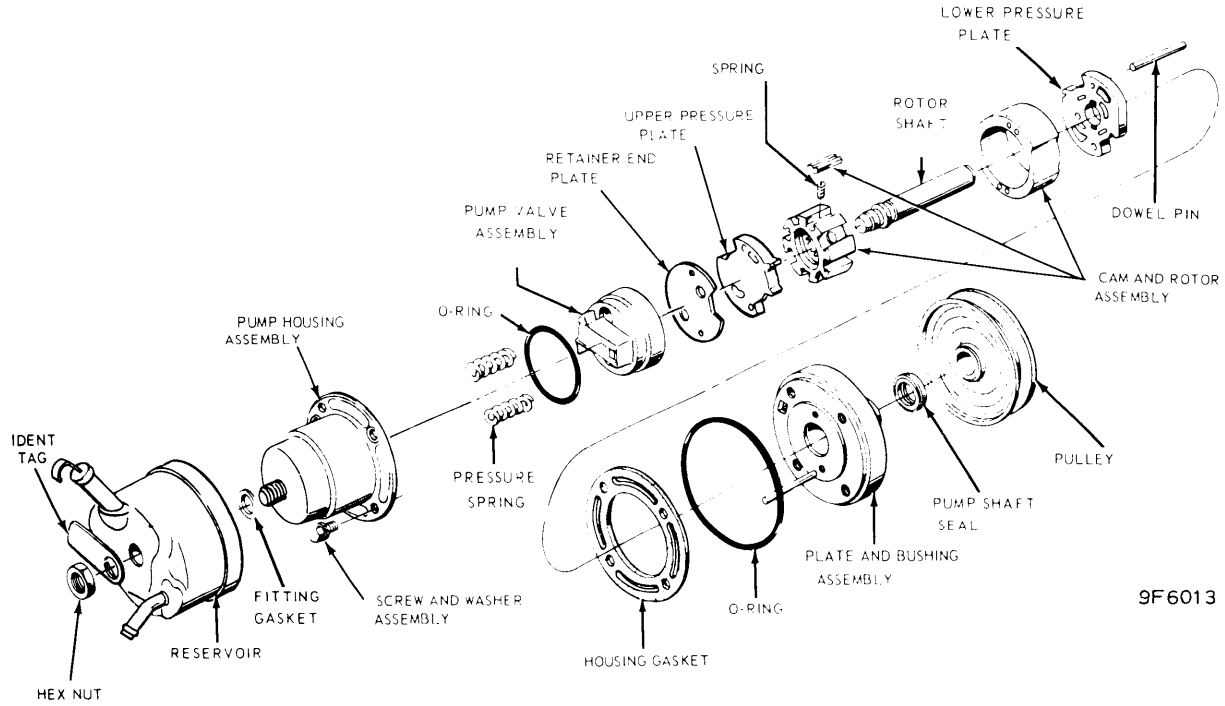
►*1971 MARK III AND LINCOLN POWER STEERING SYSTEM NOISE:* May be caused by pressure line vibrations being amplified by hose orientation clip at gear. Reposition clip or remove if necessary.

►*1970-71 MARK III POWER STEERING SYSTEM CONTAMINATION:* Contaminants trapped in filter inside inlet fitting assembly in hydraulically operated windshield motors can cause high pressures in the power steering system, and subsequent damage to pump and gear. Inlet fitting, Part No. D1SZ-17C600-A, must be replaced if contamination is suspected. The inlet fitting is larger of two fittings which screws into hydraulically operated motor, and is located in line from gear to wiper motor. New fitting should be torqued to 27 Ft. Lbs.

►*1965-1969 FORD MOTOR CO. ALL MODELS EQUIPPED WITH FORD-THOMPSON POWER STEERING PUMP:* New, thicker cover gasket now available to eliminate pump fluid aeration noise. Replace old gasket with new type whenever pump cover is removed. Part #C9AZ-3A760-A is new type gasket. Torque cover attaching screws to 28-32 Ft. Lbs. If bolt hex washer head type screws used torque to 38-47 Ft. Lbs.

►*1971 COUGAR WITH 351 CID ENGINE POWER STEERING SYSTEM MOAN AND CHATTER NOISES DURING STATIC TURNS:* Check idle speed and correct if required. If problem is not corrected, proceed as follows: Replace pressure hose with long looped pressure hose and retainer assembly No. D1ZZ-3A719-C and position retainer on top of fender apron to dash brace. Operate system to remove air and add fluid as required.

►*1969-71 LINCOLN-MERCURY DIVISION, ALL CAR LINES NEW OIL FILTER AND PUMP HOUSING FOR POWER STEERING PUMP:* A new housing No. D1AZ-3A643-A and oil filter assembly No. D1AZ-3C602-A have been installed on 1971 vehicles with power steering. This housing and filter may be used as service replacement for previous replacement housing (no filter) for 1969 and 1970 vehicles.



THOMPSON SLIPPER POWER STEERING PUMP

1965-73 THOMPSON SLIPPER (Cont.)

DESCRIPTION

Constant displacement rotary type pump, having spring-loaded "slippers" operating in slots of pump rotor. A pressure relief valve is located in pump body which also has an integral fluid reservoir.

LUBRICATION & TESTING

For bleeding, lubrication, pump pressure test and specifications, see "Ford Motor Co. Torsion Bar" in this section.

ADJUSTMENT

Pump Belt

Check belt tension using a suitable belt tension gauge (T63L-8620-A). On a new belt tension should be 120-150 pounds. On a used belt tension should be 90-120 pounds.

REMOVAL & INSTALLATION

Power Steering Pump

Remove fluid by disconnecting return hose. Disconnect pressure hose from pump. Remove bolts from front of pump and one nut at rear that attach pump to mounting bracket. Remove drive belt. If equipped with air conditioning, loosen upper pump bracket-to-engine attaching bolt and remove the bolt in the belt adjusting slot. Remove pump from vehicle. To install, reverse removal procedure.

Power Steering Pump Pulley

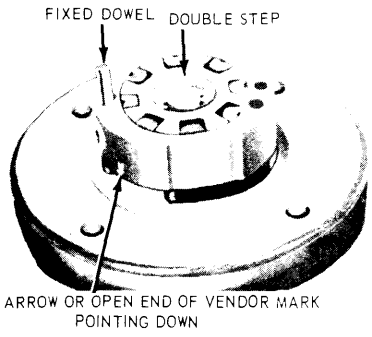
Drain as much fluid as possible from pump through filler pipe. Install a 3/8 - 16 inch capscrew in end of pump shaft to prevent damage to shaft end by tool screw. Install a suitable pulley remover (T69L-10300-A) on pulley hub and remove pulley. *CAUTION – Pulley must be removed without in and out pressure on shaft to prevent damage to internal thrust areas.* To install, use a suitable tool to press pulley onto hub.

OVERHAUL

Power Steering Pump

Disassemble 1) Remove outlet fitting and service identification tag. Invert pump assembly and remove pump reservoir and seal by tapping with a plastic hammer. Again invert assembly, loosen and remove pump housing retention bolts and remove pump housing.

2) If necessary, remove housing cover, "O" ring seal and pressure springs. Remove and discard pump cover gasket. Remove retainer end plate and upper pressure plate. Remove loose fitting dowel pin. *CAUTION – Do not bend the fixed dowel pin which remains in housing assembly.*



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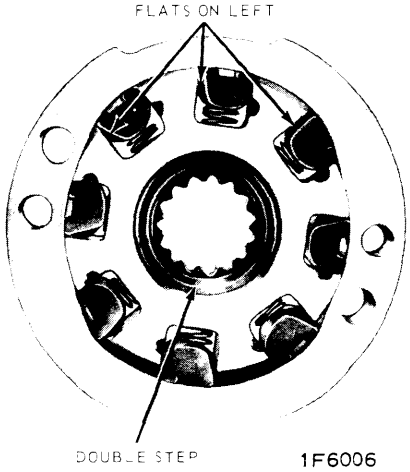
CAM & ROTOR INSTALLATION



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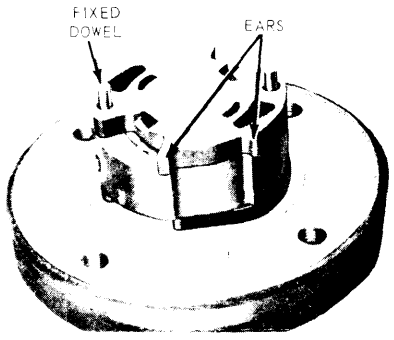
PUMP SLIPPER INSTALLATION



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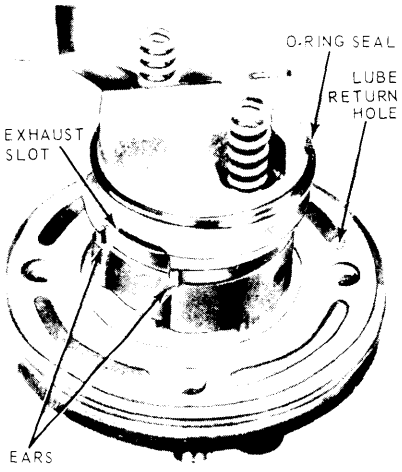
PRESSURE PLATE INSTALLATION



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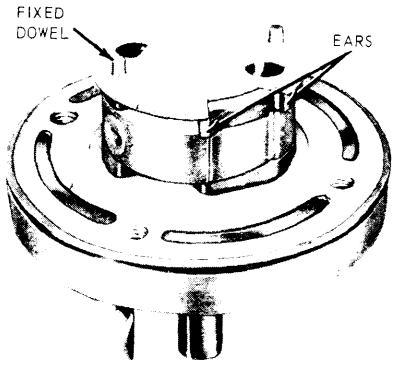
VALVE & PRESSURE SPRING INSTALLATION



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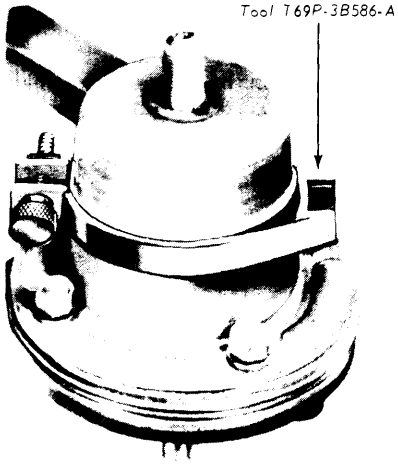
RETAINER END PLATE INSTALLATION



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PUMP HOUSING INSTALLATION

1965-73 THOMPSON SLIPPER (Cont.)

3) Remove rotor assembly being careful to prevent springs and slippers from falling out. *NOTE – Do not disassemble further unless lower pressure plate, housing plate, rotor shaft and/or seal is to be replaced.* Invert pump and using a suitable tool (T69L-10300-A) remove pulley. Clean pulley end of rotor shaft thoroughly, then remove pump rotor shaft. Remove lower pressure plate.

Rotor Shaft Seal

Remove pulley and install pump assembly in a suitable holding fixture, pulley end of shaft up. Clean any rust or dirt from shaft. To prevent scoring of shaft, wrap .005 shim stock (free of burrs) around rotor shaft and push it into ID of the seal until it is against bushing. Using a sharp tool, carefully pierce the metal seal body face and pry old seal out. *CAUTION – Do not damage bushing, housing or rotor shaft.* Remove shim stock. Position new seal on end of Seal Protector, Tool T68P-3B592-B, position tool and seal on shaft. Use seal installer tool, T68P-3B592-A and a soft hammer to tap lightly against seal until it is completely installed flush with end of seal bore.

Reassemble 1) Position pump assembly in suitable holding fixture, pulley side facing down. Insert lower pressure plate on anchor pin with wide chamfered slots at the center hole facing up. Lubricate, then insert rotor shaft into lower pressure plate and housing plate. If rotor assembly is disassembled, hold cam insert with notch on OD of cam at the top and arrow on OD of cam pointing downward.

2) Insert rotor in cam with the double step in the ID of the rotor facing upward. With rotor extended upward approximately one half way out of cam, insert a spring into a rotor spring pocket working in the rotor cavity directly beneath cam notch. Use one of the slippers to compress the spring and install the slipper with the groove in the slipper facing upward (toward cam notch). Flats on side of slipper should be on the left.

3) Hold cam stationary and turn rotor either right or left, one space at a time. Repeat until all cavities have been filled. *CAUTION – Be careful when turning rotor that springs and slippers already inserted do not fall out.* Install cam and rotor assembly onto pump housing plate with fixed dowel passing through the first hole to the left of the cam notch when the arrow on the cam OD is pointing toward the lower pressure plate. If cam and rotor will not seat, turn rotor shaft slightly until spline teeth mesh, allowing cam and rotor to drop down into position.

4) Insert loose fitting dowel through cam insert and lower plate into the hole in the housing plate assembly. Place upper pressure plate with face having the tapered notch down against cam insert. Fixed dowel should pass through round dowel hole and the loose dowel through elongated hole. Install retainer end plate so slot on end plate OD matches corresponding notches of upper pressure plate and cam.

5) Install pump valve assembly "O" ring seal into pump valve assembly. Place assembly on top of retainer end plate with the large exhaust slot on the pump valve in line with the OD notches of the previously assembled parts. The stack of parts must be fully seated.

6) Install gasket on pump housing plate. Insert pressure plate springs into the pockets in the pump valve assembly. Use vaseline as an aid to hold springs in position. Using a suitable tool (T69P-3B586-A) plug the intake hole in the housing. Lubricate inside of housing and housing cover seal. Fabricate two studs (3/8-16x1.55) to be used as positioning guides. Install one in housing plate bolt hole closest to drain hole and one in bolt hole diametrically opposite.

7) Align small diameter lube hole in housing rim with lube hole in housing plate. Install housing, applying even, downward pressure. *CAUTION – Pressure plate springs must not be jarred and moved out of position.* Remove guide studs. Install housing retaining bolts finger tight. Torque retaining bolts to 28-32 ft. lbs. until housing flange contacts gasket. Install a 3/8 x 16 hex head screw, finger tight, into end of rotor shaft. Using a torque wrench, check input torque of shaft. Torque should not exceed 15 INCH lbs. *NOTE – Pump must not be used if torque exceeds 15 INCH lbs.*

8) Shake pump assembly back and forth. If it rattles, pressure plate springs have fallen out of their seats and must be reinstalled. Install reservoir "O" ring on housing plate. Install reservoir, aligning notch in reservoir flange with notch in OD of pump housing plate and bushing assembly. Install identification tag and install outlet valve fitting nut and torque to 43-47 ft. lbs.