

Fig. 2—Steering Gear Housing

bottom of valve body nests with the keyway in housing.

CAUTION: These parts should go together with relative ease. Use of force may damage the lever. If they do not go together easily, lift off valve assembly, realign valve spool hole with lever opening in valve body and install valve body.

(16) Install two screws and tighten to 7 foot-pounds to prohibit leakage during valve centering operation.

(17) Connect high pressure and return hoses to valve body.

(18) Start engine. If unit is self-steering tap the valve up or down to correct. When tapping valve "down," hit valve body on end plug. When tapping valve "up," tap on head of the screw attaching valve body to main valve body. Do not hit control valve body.

(19) Turn steering wheel from stop to stop several times to expel air from system. Refill reservoir as required.

CAUTION: Do not turn hard against ends of travel. This will generate high pressure and may blow out

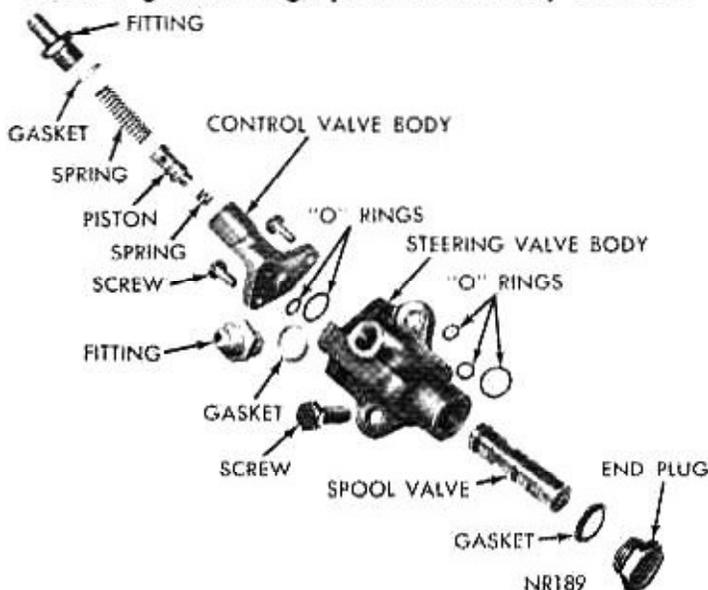


Fig. 3—Valve Body (Disassembled View)

the "O" rings since the valve body screws have not been finally tightened.

(20) With steering wheel in straight ahead center position, start and stop the engine several times, tapping the valve body up or down as required until there is no movement of the steering wheel when the engine is started or stopped.

(21) The valve is now centered. Tighten the two screws attaching valve body to housing to 200 inch-pounds.

Cross Shaft Oil Seal Replacement

The cross shaft oil seal may be replaced without removing the steering gear from the vehicle. Note: Tools designated in the following procedure are used on Fury and V.I.P. Models which have 1-1/4 inch diameter cross shaft. The same procedure may be followed for Valiant, Barracuda and Satellite models, which have a 1-1/8 inch cross shaft, using Tool C-3880 with appropriate adapters.

CAUTION: When replacing oil seal in vehicle, clean the exposed portion of cross shaft to help prolong oil seal life.

- (1) Remove steering arm nut.
- (2) Disconnect steering gear arm from sector shaft with Tool C-3646 (Fig. 4).
- (3) Slide threaded adapter SP-3056 of Tool C-3350-A over end of cross shaft and thread tool nut on cross shaft. Maintain pressure on threaded adapter with tool nut while screwing adapter far enough to engage metal portion of grease retainer. Place the two half rings SP-1932, and Tool retainer ring over both portions of the Tool (Fig. 5). Turn the tool nut counter-clockwise to withdraw grease retainer from housing.
- (4) Remove oil seal snap ring with snap ring pliers and remove seal back-up washer.
- (5) Use Tool C-3350-A in same manner as outlined

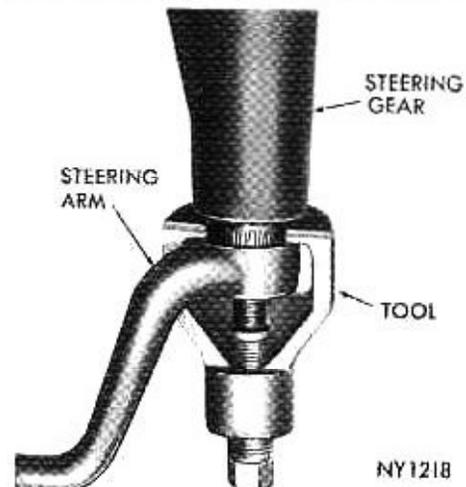


Fig. 4—Removing Steering Gear Arm

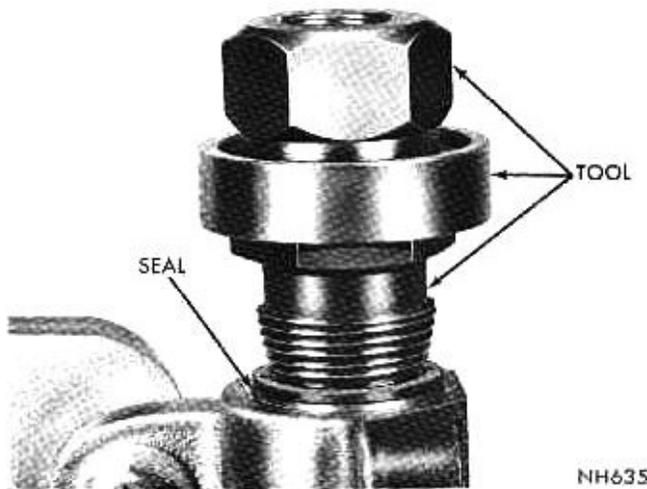


Fig. 5—Removing Gear Shaft Oil Seal

in step (3) to remove inner seal.

(6) Place new oil seal on flat surface, lip down, lubricate inside diameter with power steering fluid and insert seal protector sleeve SP-1601.

(7) Position seal with protector over cross shaft with lip of seal toward housing.

(8) Place tool adapter SP-3052 with long step of adapter against new seal (Fig. 6). Install tool nut on cross shaft and tighten tool nut until shoulder of tool adapter contacts gear housing.

(9) Remove tool nut, adapter and protector. Install seal back-up washer and oil seal snap ring with sharp edge out.

(10) Position grease retainer in housing bore. Place tool adapter SP-3052 with short step of lip against seal (Fig. 7). Install tool nut on cross shaft and tighten until shoulder of tool adapter contacts gear housing.

(11) Place steering gear and front wheels in straight ahead position and install steering gear arm and nut.

(12) Tighten steering gear arm nut to 180 foot-pounds.



Fig. 6—Installing Cross Shaft Inner Oil Seal

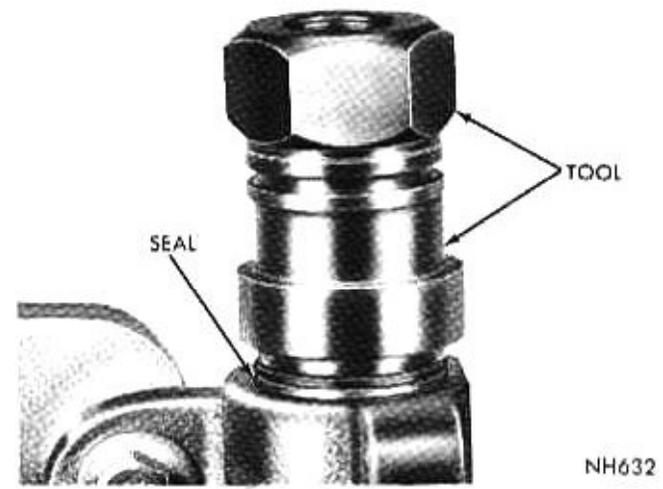


Fig. 7—Installing Cross Shaft Grease Retainer

Worm Shaft Oil Seal Replacement

The worm shaft oil seal may be replaced without removing gear from vehicle. Remove steering column as outlined under "Steering Columns" and remove oil seal with Tool C-3638 (Fig. 8). Drive new oil seal in place (lip of seal toward housing) with Tool C-3650 (Fig. 9). Install and align steering column as described in "Steering Columns".

SERVICE OUT OF VEHICLE

Worm Shaft and Piston Replacement

The master serration on the power steering gear worm shaft spline, used for centering the steering shaft coupling, is machined after the steering gear is completely assembled.

If it should become necessary to replace a power steering gear worm shaft and piston assembly, it will be necessary to file a master serration on the spline of the worm shaft, since the replacement part does not have a master serration machined in the spline.

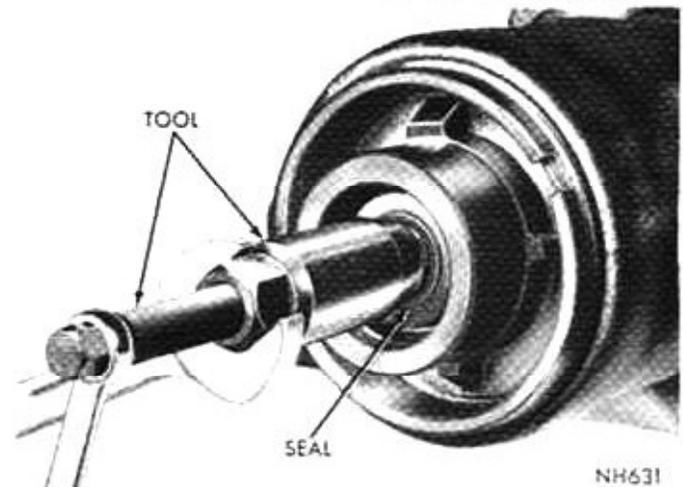


Fig. 8—Removing Worm Shaft Oil Seal

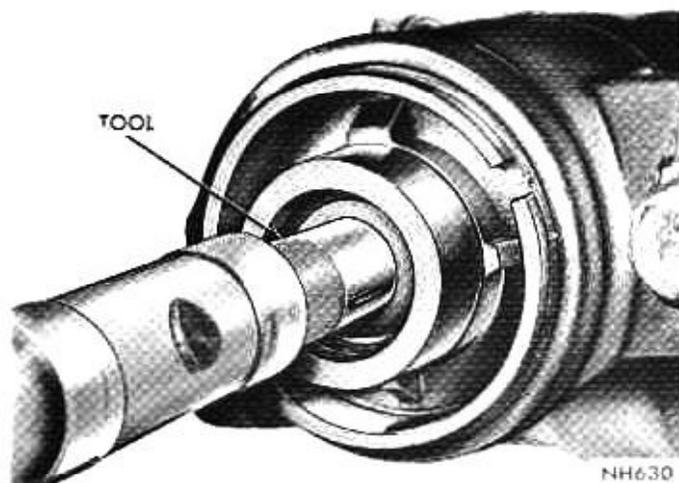


Fig. 9—Installing Worm Shaft Oil Seal

To file a master serration on a worm shaft spline, the power steering gear must be completely assembled and the worm shaft centered in its travel, then with the steering gear in its normal upright position remove one tooth of the spline, at the 12 o'clock position, with a suitable file.

Gear Removal

To avoid damage to the energy absorbing steering column, it is recommended that the steering column be completely detached from floor and instrument panel before steering gear is removed. See Steering Column Section of this Manual for proper removal, alignment and installation procedure.

- (1) Remove steering column.
- (2) Disconnect power steering pressure and return hoses at centering valve on gear. Tie free ends of hoses above pump level to avoid loss of fluid.
- (3) From under vehicle, remove steering arm retaining nut and lock washer. Remove steering arm with tool C-3646.
- (4) Remove three gear to frame retaining bolts (use 1/2 inch twelve point socket) remove gear.

Gear Reconditioning

Clean the gear assembly thoroughly in a suitable solvent and install unit in holding fixture Tool C-3323.

- (1) Drain steering gear through the pressure and return connections by turning steering wormshaft from one extreme of travel to the other.
- (2) Remove valve body attaching screws, and remove valve body and three "O" rings (Fig. 10).
- (3) Remove pivot lever and spring. Pry under spherical head with a screw driver (Fig. 11).

CAUTION: Use care not to collapse slotted end of the valve lever as this will destroy the bearing tolerances of the spherical head.

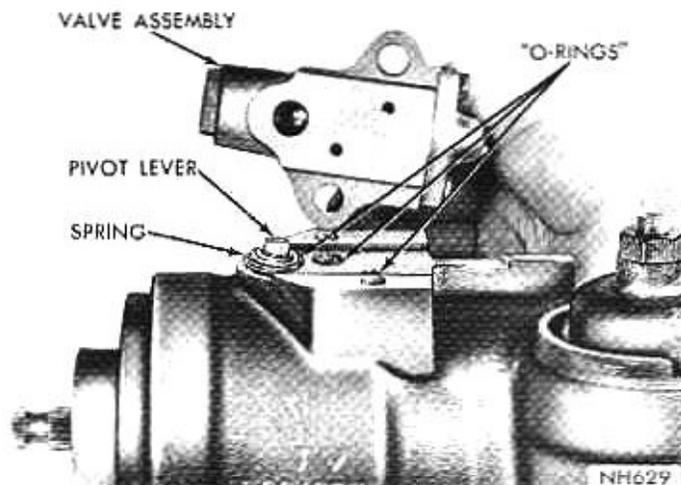


Fig. 10—Removing Valve Body Assembly

(4) Remove cross shaft grease retainer and oil seal as outlined in "Cross Shaft Oil Seal Replacement."

(5) Loosen cross shaft adjusting screw locknut and remove cross shaft cover spanner nut with Tool C-3988.

(6) Rotate wormshaft to position cross shaft sector teeth at center of piston travel. Loosen steering power train retaining nut with Tool C-3989.

(7) Position holding Tool C-3323 so cross shaft is in a horizontal position. Place Tool C-3875 on threaded end of cross shaft and slide tool into housing until both tool and shaft are engaged with bearings.

(8) Turn wormshaft to full left turn position to compress power train parts. Remove power train retaining nut with Tool C-3989. Remove housing head tang washer.

(9) While holding power train firmly compressed, pry on piston teeth with a screw driver using gear shaft as a fulcrum and remove complete power train (Fig. 12). It is important that cylinder head, center race and spacer assembly and housing head be main-

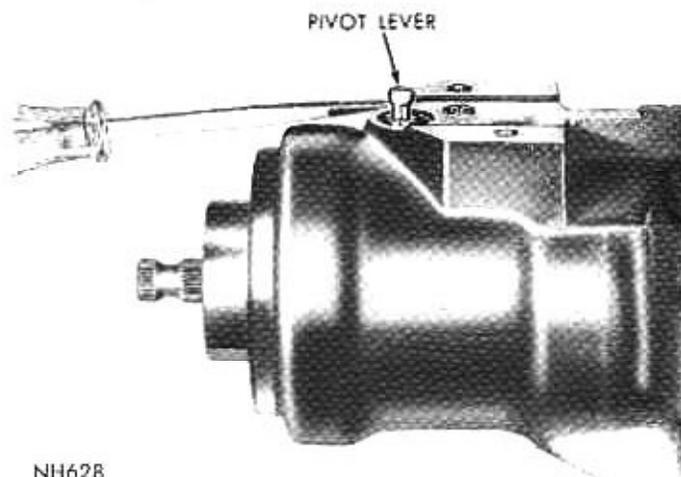


Fig. 11—Removing Pivot Lever