

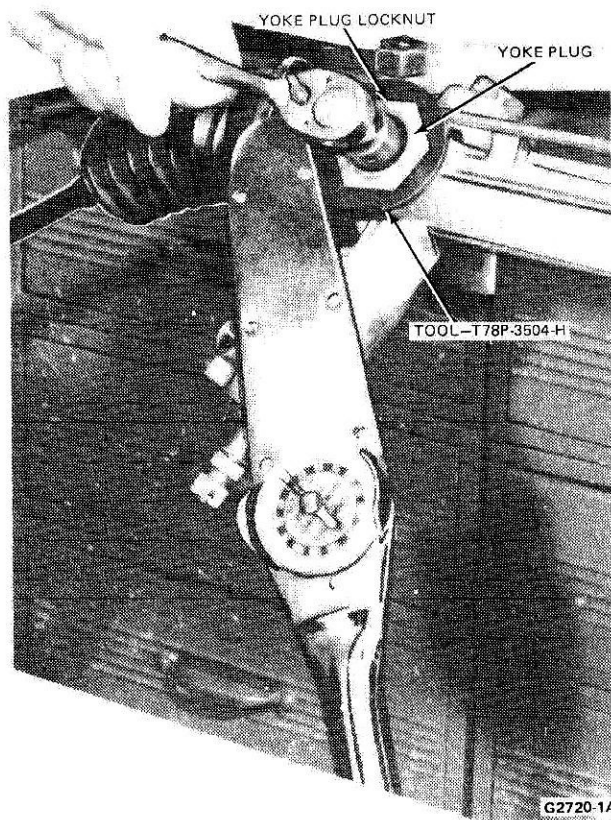


FIG. 5 Loosening/Tightening Yoke Plug Locknut

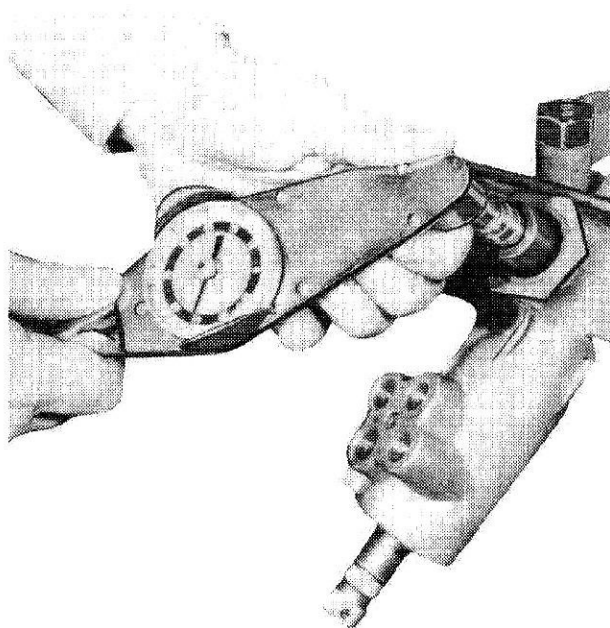


FIG. 6 Adjusting Yoke Bearing Preload

REMOVAL AND INSTALLATION

STEERING GEAR

Removal

1. Disconnect the negative battery cable from the battery.
2. Remove the one bolt retaining the flexible coupling to the input shaft.
3. Leave the ignition key in the ON position and raise the vehicle on a hoist.
4. Remove the two tie rod end retaining cotter pins and nuts. Separate the studs from the spindle arms, using the ball joint separator tool.
5. Support the steering gear and remove the two nuts, insulator washers and bolts retaining the steering gear to the No. 2 crossmember (Fig. 1). Lower the gear slightly to permit access to the pressure and return line fittings.
6. Disconnect the pressure and return lines from the steering gear valve housing. **PLUG THE LINES AND PORTS IN THE VALVE HOUSING TO PREVENT ENTRY OF DIRT.**
7. Remove the steering gear assembly from the vehicle.

Installation

1. Support the steering gear and position it so that the pressure and return line fittings can be connected to the valve housing. Torque the fittings to specification (10-15 ft-lb). The 1978 design allows the hoses to swivel when torqued properly. Do not attempt to eliminate looseness by overtightening, since this can cause damage to the fittings.

2. **THE RUBBER INSULATORS (3K576 in Fig. 1) MUST BE PUSHED COMPLETELY INSIDE THE GEAR HOUSING BEFORE THE INSTALLATION OF THE GEAR HOUSING ON NO. 2 CROSSMEMBER.** No gap is allowed between the insulator and the face of the gear boss. A rubber lube such as Ruglyde or equivalent should be used to facilitate proper installation of the insulators in the gear housing. Insert the input shaft into the flexible coupling and position the steering gear to the No. 2 crossmember. Install the two bolts, insulator washers and nuts. Torque the two nuts to specifications.
3. Connect the tie rod ends to the spindle arms and install the two retaining nuts. Torque the nuts to specifications and install two new cotter pins.
4. Lower the vehicle and install the one bolt retaining the flexible coupling to the input shaft. Torque the bolt to specifications.
5. Turn the ignition key to the OFF position.
6. Connect the negative battery cable to the battery.
7. Remove the coil wire.
8. Fill the power steering pump reservoir.
9. Engage the starter and cycle the steering wheel to distribute the fluid. Check the fluid level and add as required.
10. Install the coil wire, start the engine and cycle the steering wheel. Check for fluid leaks.
11. If the tie rod ends were loosened, check the wheel alignment as outlined in Part 14-01 and reset if necessary.

DISASSEMBLY AND ASSEMBLY

STEERING GEAR

Take the following precautions when servicing the steering gear:

1. Use a clean workbench and tools.
2. Thoroughly clean the exterior of the unit with solvent. Drain off excess hydraulic fluid.
3. Handle all parts carefully to avoid nicks, burrs, scratches and dirt.
4. Do not use solvent on seals.
5. Impact tools must not be used during any of the following operations:

TIE ROD ENDS, BELLOWS AND TIE ROD BALL JOINT SOCKETS

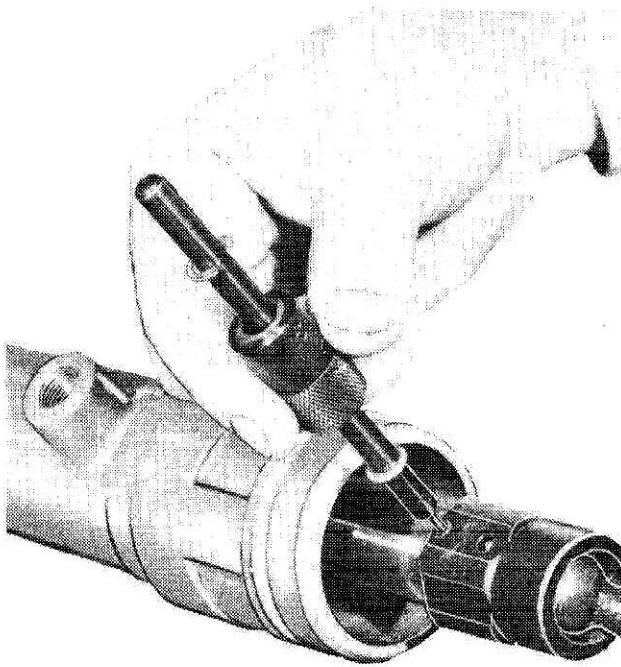
Disassembly

1. Install two long bolts and washers through the bushings and attach to Tool T57L-500-B (Fig. 4).
2. Loosen the jam nuts on the outer ends of the tie rods adjacent to the tie rod ends and remove the ends and jam nuts.
3. Remove the four clamps, retaining the bellows to the gear housing and the tie rods. Discard the clamps.

4. Drain the lubricant and remove the bellows along with the breather tube. Use care not to damage the bellows.
5. If pinion requires removal, remove pinion before proceeding. Follow procedure described in the Input Shaft and Valve Assembly section.
6. Thread point of the roll pin remover Tool, T78P-3504-N, into roll pin in ball joint nut and tighten the tool finger tight only. Use extreme care when using this tool since the point is fragile. Pull pin by working the slide hammer. Refer to Fig. 7 for illustration.
7. If pinion was not removed in Step 5, remove housing from the holding fixture and lay on the bench before proceeding. This prevents gear teeth damage from rack twisting when removing the tie rods in Step 8.
8. Position rack so that several rack teeth are exposed. Hold rack with an adjustable wrench on the end teeth only, while loosening ball joint nuts with Tool, T74P-3504-U (Fig. 8).

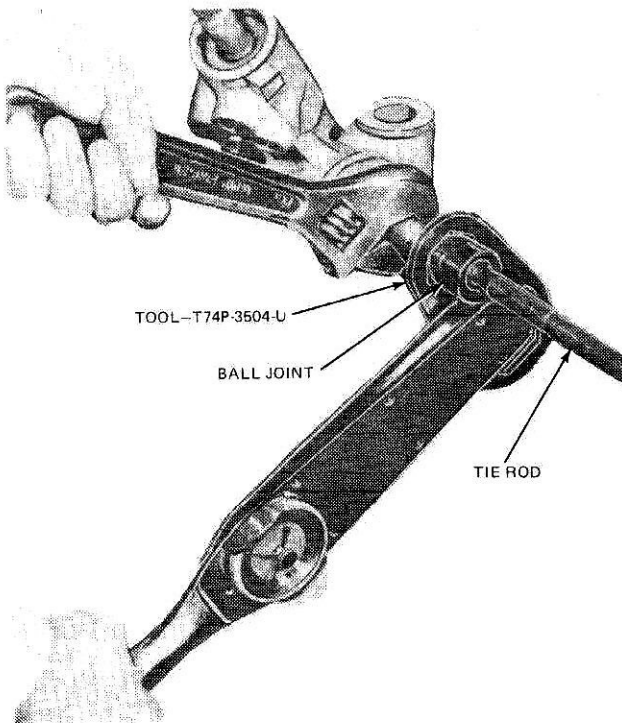
Assembly

If pinion is assembled to the housing, Step 1 must be performed with the gear removed from the holding fixture to prevent gear teeth damage.



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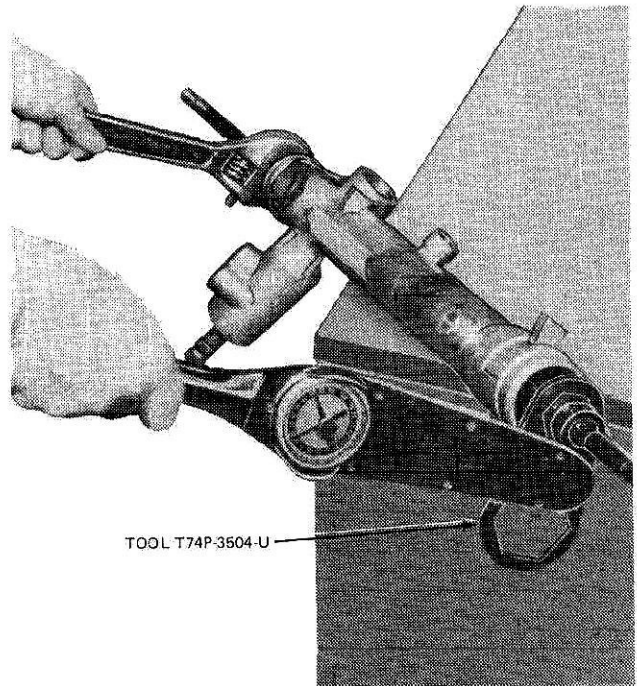
FIG. 7 Removing Roll Pin With Tool T78P-3504 or Equivalent



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FIG. 8 Removing/Installing Tie Rod Ball Joint Assembly

1. Install tie rods. Hold one ball joint nut with a 1-5/16" open end or box wrench while torquing the other nut to specification with Tool, T74P-3504-U or equivalent (Fig. 9). Both ends are torqued simultaneously by this method.
2. Support the ball housing with a block of wood. Install new roll-pins in the tie rod ball housing by tapping lightly with a plastic hammer (Fig. 10).



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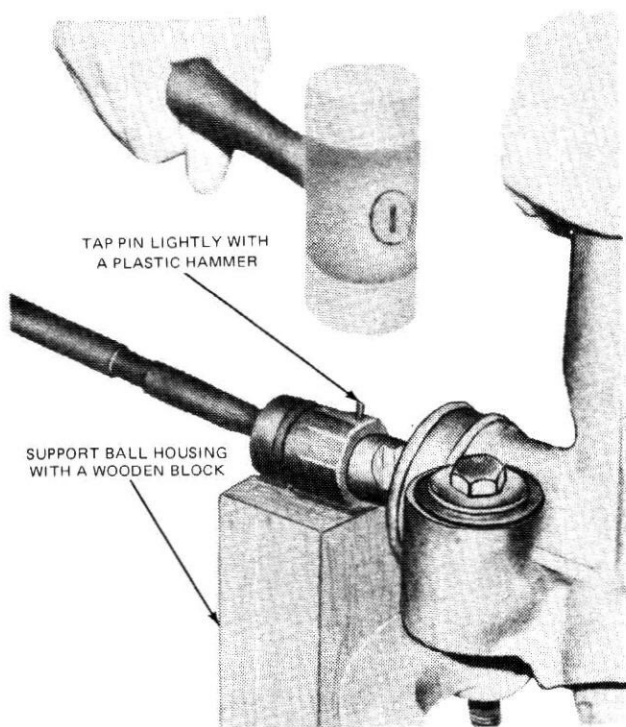
FIG. 9 Torquing Both Tie Rod Ball Joints Simultaneously

3. If pinion was removed, install pinion as described in the Input Shaft and Valve Assembly section.
4. Thoroughly clean the rack and housing bore of any foreign material. Any abrasive material is extremely harmful to the high pressure oil seals.
5. Apply specified lube to under cut in the rods where the bellows clamp to the tie rod. This allows for toe-in adjustment without twisting the bellows.
6. Install bellows and breather tube. Install new clamps retaining the bellows to the gear housing. Orient bellows, tube and clamps as illustrated in Fig. 11. Use existing Tool, T63P-9171-A or equivalent, to secure the clamps properly (Fig. 12).
7. Install new clamps retaining the bellows to the tie rods.
8. Install the jam nuts and tie rod ends on the tie rods.

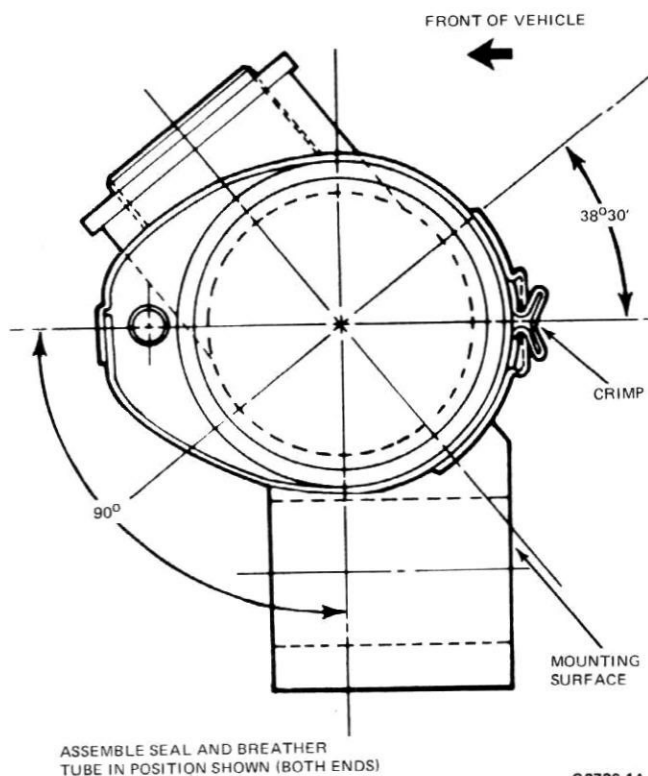
INPUT SHAFT AND VALVE ASSEMBLY

Disassembly

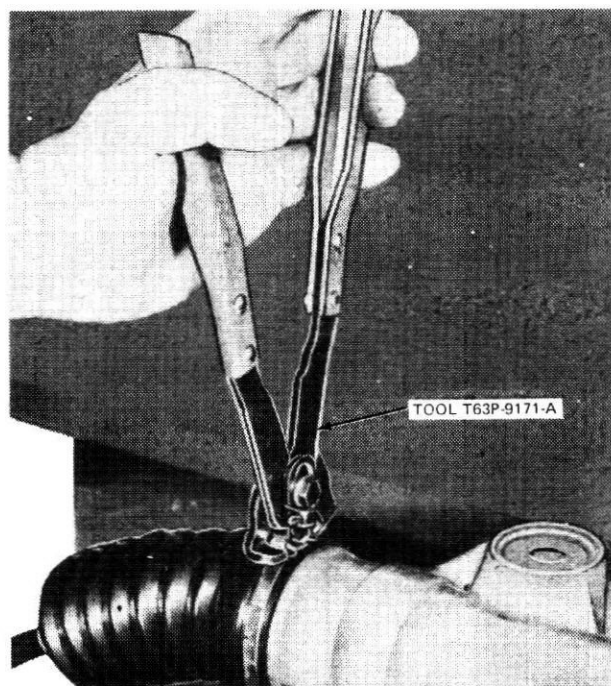
1. Thoroughly clean the areas of the input shaft valve housing, yoke locknut and plug, and pinion bearing plug.



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FIG. 10 Installing Roll Pin In Tie Rod Ball Joint

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FIG. 11 Bellows, Breather Tube, and Clamp Orientation

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FIG. 12 Installing Bellows Clamp

2. Mount gear in the bench mounted holding fixture, Tool, T57L-500-B (Fig. 4).
3. Remove the external pressure lines from the gear housing.
4. Loosen the yoke plug locknut and the yoke plug to relieve the preload on the rack.
5. Remove the pinion bearing plug.
6. Install Tool, T74P-3504-R, on the input shaft. Hold the input shaft and remove the pinion bearing locknut with an 11/16" socket (Fig. 13). Discard the locknut.
7. Pry the input shaft dust seal out of the valve housing with a small, sharp chisel (Fig. 14). Use care not to damage any of the valve housing surfaces.
8. Remove snap ring located beneath the dust seal, from the valve housing (Fig. 15).
9. Attach input shaft and valve body puller Tool, T78P-3504-B, to input shaft (Fig. 16). Turn nut to remove valve. Input shaft seal and bearing will come out with the valve body.
10. To remove the lower pinion shaft seal, insert Tool T78P-3504-E until it bottoms along with the spacer collet. Activate the expander with a pair of wrenches (Fig. 17) by holding the large nut and turning the small nut until expander fully tightens. Pull tool and seal with slide hammer T50T-100-A (Fig. 18).
11. Remove the pinion bearing from the gear housing with slide hammer, Tool T50T-100-A and attachment Tool, T58L-101-A (Fig. 19).