

ADJUSTMENTS

WORM AND SECTOR

The ball nut assembly and sector gear must be properly adjusted to steering shaft end play (a factor of preload adjustment) and backlash between the sector gear and ball nut. Only two adjustments can be made. Perform these operations in the following order to avoid damage to the gear.

1. Disconnect the linkage from the gear by removing the Pitman arm from the sector shaft (Fig. 4).
2. Loosen the nut that locks the sector adjusting screw (Fig. 2), and turn the screw counterclockwise.

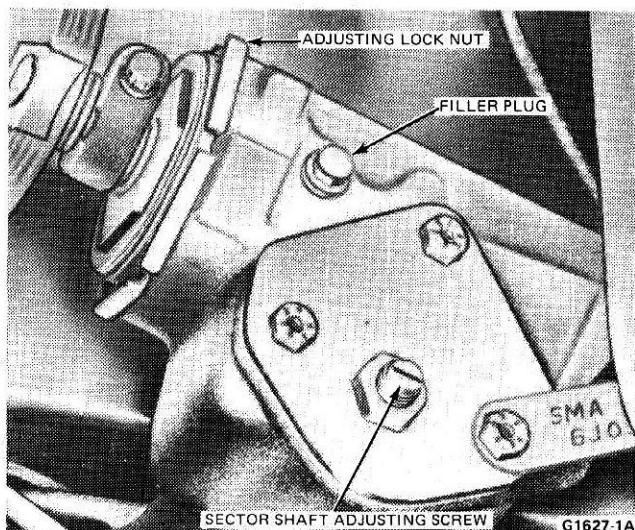


FIG. 2 Steering Gear Adjustments—Typical

Remove the horn pad from the steering wheel.

3. Measure worm bearing preload by attaching an in-lb. torque wrench to the steering wheel nut (Fig. 3). With the steering wheel off center, measure the pull required to rotate the input shaft approximately one and one-half turns to either side of center.
4. If preload is out of specification, loosen the worm shaft bearing adjuster lock nut and tighten or loosen the bearing adjuster (Fig. 1) (as required) to bring the preload within the specified limits.

5. Tighten the worm shaft bearing adjuster lock nut to 60-80 ft-lb. and recheck preload.
6. Turn the steering wheel slowly to one stop. **Turn gently against the stop to avoid damage to the ball return guides. Rotate the wheel to center the ball nut. Check the number of turns specified in the chart at end of this Part. Divide by two to determine the center position.** The blind tooth on the gear input shaft should be at the 12 o'clock position when centered.
7. Torque the sector adjusting screw clockwise until resistance is felt. Using an in-lb torque wrench, recheck the center mesh load by rotating the steering shaft approximately 90 degrees either way across center. If the meshload is not within specification, turn sector shaft adjusting screw until meshload is within specification. Hold the sector shaft adjusting screw and torque the locknut to 32-40 ft-lb.
8. Re-check preload adjustment by turning the steering wheel one and one-half turns from center.
9. Connect the Pitman arm to the sector shaft.

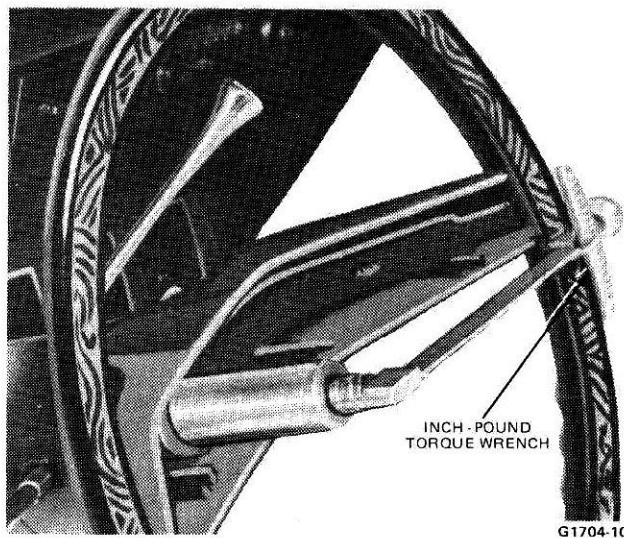


FIG. 3 Checking Steering Gear Preload—Typical

REMOVAL AND INSTALLATION

STEERING GEAR

Removal

1. Remove the bolt(s) that retains the flex coupling to the steering shaft.
2. Remove the nut and lock washer that secures the Pitman arm to the sector shaft. On vehicles equipped with power steering, the power cylinder mounting bracket must be removed and the power cylinder assembly lowered to provide access for the removal tool. Using Tool T64P-3590-F (Fig. 4), remove the Pitman arm from the sector shaft. **Do not hammer on the end of the puller as this can damage the steering gear.**

3. On vehicles with standard transmissions it may be necessary to disconnect the clutch linkage to obtain clearance. On 8-cylinder models, it may be necessary to lower the exhaust system.
4. Remove the bolts that attach the steering gear to the side rail. Remove the gear.

Installation

1. Position the steering gear and flex coupling on the steering shaft. Be sure that the missing tooth on the spline of the gear input shaft is pointing straight up and aligns with the blind tooth on the flex coupling. Install steering gear-to-side rail bolts and torque to specification (50-60 ft-lb).
2. Install the clutch linkage if disconnected. Reposition the exhaust system if it was lowered.

3. Place the Pitman arm on the sector shaft and install the attaching nut and lock washer. Align the blind tooth on the Pitman arm with the blind tooth on the steering sector shaft. Torque the nut to specification (200-225 ft-lb).
4. Install the flex coupling attaching nut(s) and torque to specification (Parts 13-03 and 13-04).
5. Install the power cylinder mounting bracket and power cylinder assembly to the frame side rail (if removed).

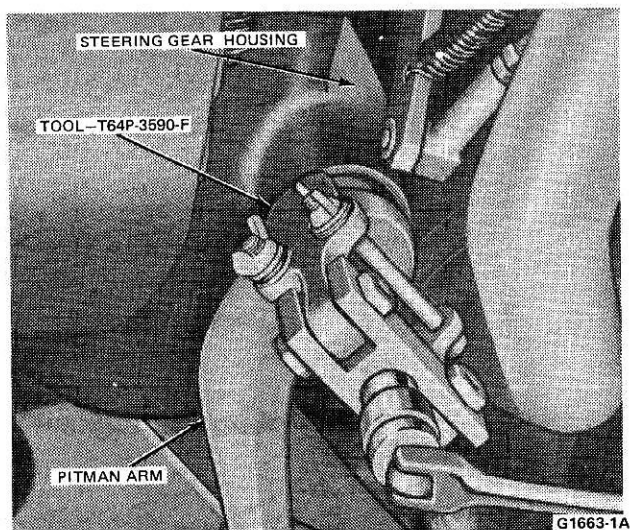


FIG. 4 Removing Pitman Arm

DISASSEMBLY AND ASSEMBLY

STEERING GEAR

Disassembly

1. Rotate the worm shaft to the center position.
2. Remove the sector adjusting screw locknut and housing cover bolts (Fig. 5). Remove the sector shaft with the cover. Remove the cover from the shaft by turning the screw clockwise. **Keep the shim with the screw.**

NOTE: Gear will normally be filled with lubricant.

3. Loosen the worm bearing adjuster locknut, and remove the adjuster assembly and worm shaft upper bearing (Fig. 6).
4. Carefully pull the worm shaft and ball nut assembly from the housing, and remove the worm shaft lower bearing. **To avoid damaging the ball return guides, keep the ball nut from running down to either end of the worm. Disassemble the ball nut only if there is binding or tightness.**
5. Remove the ball return guide clamp and ball return guides from the ball nut. Several of the balls may stay in the guides, so use caution when separating the two pieces of each guide to prevent the balls from falling out. **Keep the ball nut clamp side up until ready to remove the balls.**
6. Turn the ball nut over. Holding the ball nut over a clean pan, rotate the worm shaft from side to side until all the balls drop out of the nut. Slide the ball nut off the worm.
7. Remove the upper bearing cup from the bearing adjuster and the lower cup from the housing. It may be necessary to tap the housing or adjuster with a block of wood to jar the bearing cups loose.
8. If preliminary inspection of the sector shaft bearing journals or needle bearings shows damage, press

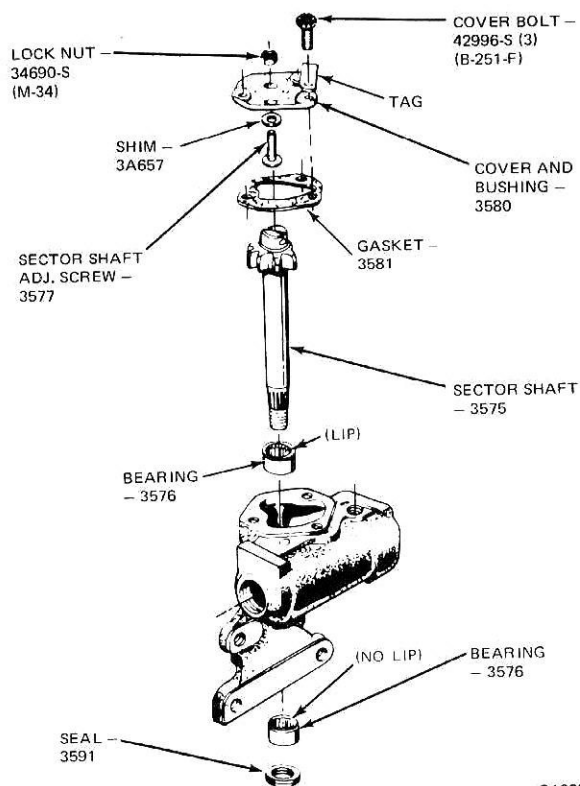


FIG. 5 Sector Shaft and Housing Disassembled

the sector shaft bearing and oil seal from the housing using tool number T62F-3576-A and press ram (Fig. 7).

Assembly

1. If the sector shaft bearing and oil seal were removed, press a new bearing into the housing and install a new oil seal. Do not clean the seal with