

# Manual Steering Gears

## JEEP (GEMMER/ROSS) WORM & ROLLER

Jeepster (1967-71)  
"J" Models (1969-71)

**NOTE** — Some models may use other units. See Jeep (Saginaw) Recirculating Ball or Jeep (Gemmer/Ross) Cam and Lever in this Section.

### DESCRIPTION

Worm and roller type manual steering gear consists of a worm gear, sector shaft assembly and steering linkage. Worm gear, which is part of the input shaft, rotates on ball bearings. Roller, which rides on worm gear, is mounted to sector shaft. Sector shaft and roller assembly rotates as a unit in bearings mounted in housing. Rotation of worm gear is transmitted to sector shaft through roller assembly, and is then relayed to steering linkage through pitman arm.

### ADJUSTMENT

#### WORM BEARING PRELOAD

Disconnect drag link from pitman arm and loosen adjusting screw on side cover to release sector shaft preload. Position worm gear to center of travel and using a suitable INCH pound torque wrench, rotate worm gear approximately  $\frac{1}{2}$  turn. Preload should be 2-5 INCH pounds. To adjust preload, remove top cover and add or remove shims as required. Shims are available in thickness of .002", .005" and .010".

#### WORM & ROLLER MESH PRELOAD

Disconnect drag link from pitman arm. Center the sector shaft by turning through full travel and counting number of turns. Rotate back  $\frac{1}{2}$  of total travel which will place shaft in center position. Use a suitable INCH pound torque wrench to check the torque required to turn shaft through center position. Preload should be 7-18 INCH pounds. Loosen adjusting screw on side cover to decrease preload or tighten to increase.  
**NOTE** — Adjust with sector shaft in center position only.

### REMOVAL & INSTALLATION

#### STEERING GEAR

**All Models** — Remove bolts securing flexible coupling to steering gear. Disconnect drag link from pitman arm. Remove

steering gear-to-frame attaching bolts. Remove steering gear by moving it to the left and lifting from engine compartment. To install, reverse removal procedure.

### OVERHAUL

#### DISASSEMBLY

1) Drain lubricant and remove pitman arm from sector shaft. Remove side cover attaching screws. Remove side cover with sector shaft from housing. Remove adjusting screw lock nut and turn adjusting screw clockwise until it is completely unthreaded from side cover which will release sector shaft from side cover.

2) Remove top cover attaching bolts, top cover and shims. **NOTE** — Do not discard shims. Remove worm gear assembly from housing. Remove bearing cups and ball bearings from worm gear assembly. Remove oil seals and discard.

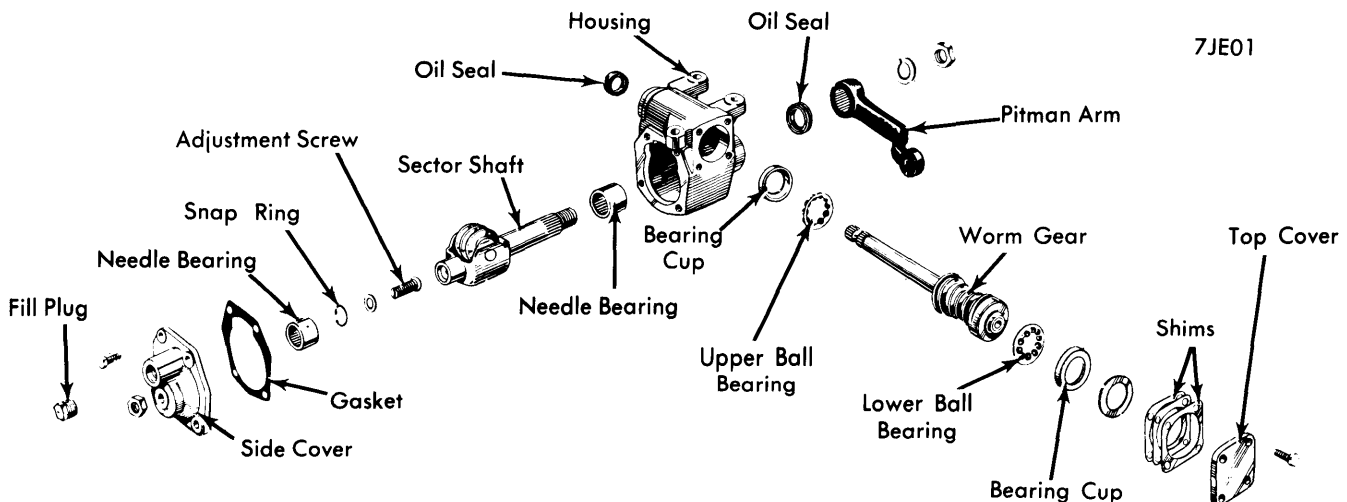
#### INSPECTION

Use cleaning solvent to clean parts and dry with compressed air, taking care not to spin bearings. Inspect worm gear for chipping, scoring or binelling and condition of splines and threads. Check all bearings and bearing surfaces for wear. Check sector shaft for burrs on splines, twisted splines and wear on bearing surfaces. Check housing for strain at mounting flanges.

#### REASSEMBLY

1) Install new oil seals with the longer lip of each seal facing into the housing. Install ball bearings and cups on worm gear assembly and lubricate the assembly. Install worm gear assembly into housing. Install shims and top cover. Check worm bearing preload. See *Adjustments*.

2) Thread sector shaft with adjusting screw into side cover until end of shaft just touches inner face of side cover. Install lock nut loosely on adjusting screw and lubricate sector shaft assembly. Install sector shaft assembly with side cover and new gasket in housing. Adjust worm and roller mesh preload. See *Adjustments*. Install pitman arm on sector shaft.



### STEERING GEAR ASSEMBLY