

## UNIVERSAL JOINTS

### All Models

### MAINTENANCE

If slip yoke has a tendency to stick in extension housing seal, remove propeller shaft from vehicle and clean yoke with solvent. Lubricate inside diameter of seal with synthetic oil seal lubricant, and outside diameter of seal with transmission fluid.

**NOTE:** This procedure should also be followed, whenever shaft is removed from vehicle.

### OVERHAUL

#### ALL MODELS

**NOTE:** Universal joints should not be disassembled or lubricated, unless external leakage or damage has occurred.

Before disassembly, scribe alignment marks on yoke and shaft to allow reassembly in original position. If joints are rusted or corroded, apply penetrating oil before pressing out bearing cups or trunnion pin.

#### CROSS & ROLLER TYPE

Two different retaining methods are used for bearing cups, either snap rings or nylon retainers. Joints with snap rings may be taken apart and reassembled, using same cross and bearings. Joints with nylon retainers are disassembled by breaking nylon retainers. Retainers must be replaced after service.

#### Disassembly

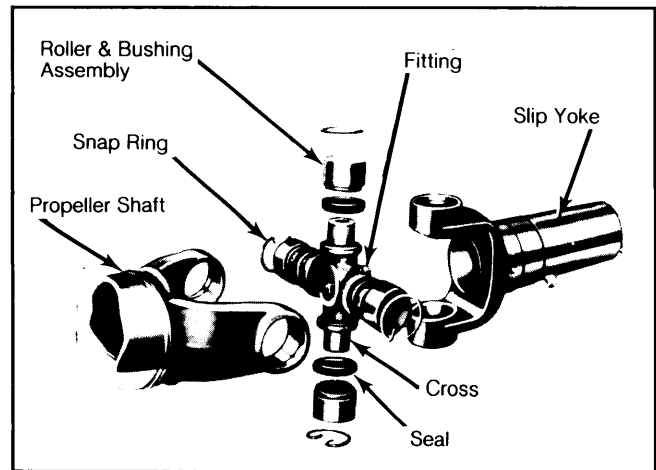
1) Disconnect yoke attaching bolts or flange attaching bolts and remove propeller shaft from vehicle.

**NOTE:** Do not use pry bar to hold propeller shaft while loosening bolts. Damage to bearing seals may result.

2) Remove retaining strap (if equipped). Remove bushing retainers from yoke, and press out rollers and bearings. Remove last roller and bushing assembly by pressing on end of cross.

3) Remove cross assembly from yoke. Do not remove seal retainers from cross. Cross and retainers are serviced as an assembly.

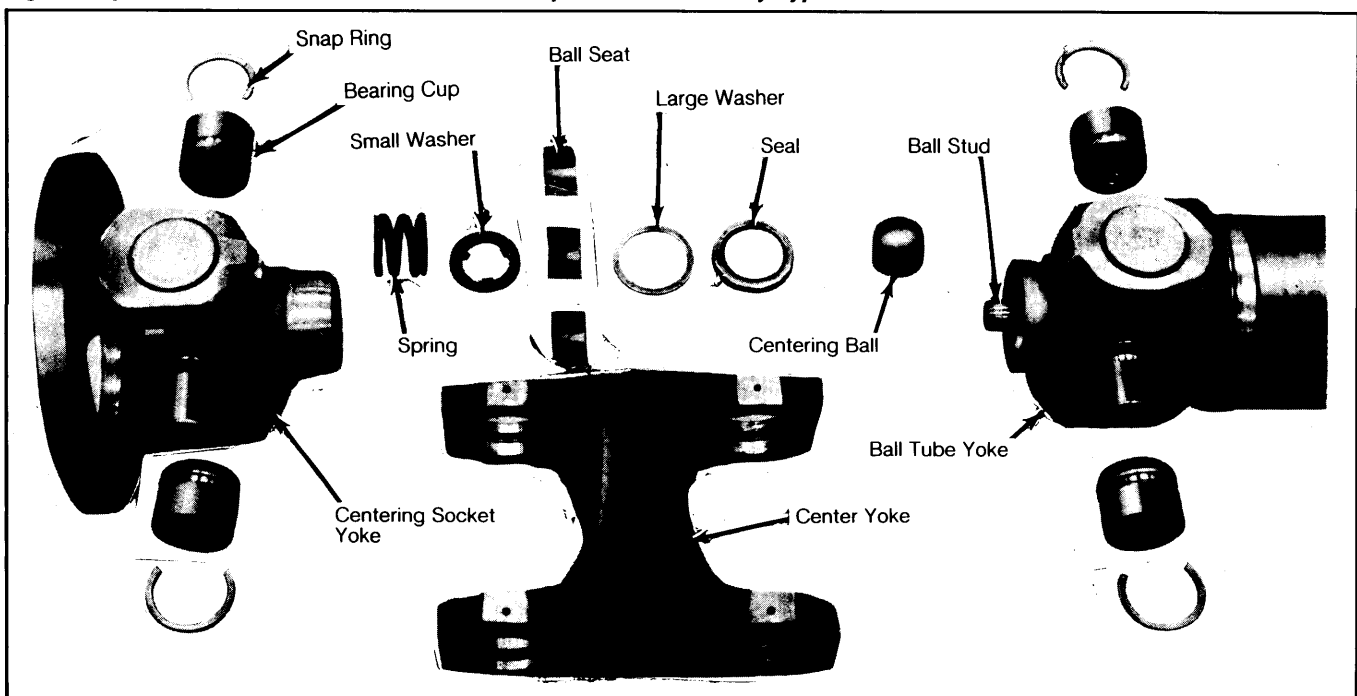
**Fig. 2: Exploded View of General Motors Universal Joint**



#### Reassembly

1) Coat roller and bearing assemblies with lubricant, and fill reservoirs in ends of cross. Place cross assembly in propeller shaft yoke, and place roller and bushing assemblies into position.

**Fig. 1: Exploded View of General Motors and Jeep Constant Velocity Type Universal Joint**



# Propeller Shafts

## UNIVERSAL JOINTS (Cont.)

2) Press both bushing assemblies into yoke until retainers can be installed, being careful to keep cross aligned in center of bushings.

3) Install retainers, then repeat procedure for remaining bushings. Install strap (if equipped). Install propeller shaft in vehicle, aligning scribe marks.

### CONSTANT VELOCITY TYPE

**NOTE:** To prevent damage to constant velocity joints, center ball when removing propeller shaft assembly. When handling shaft after removal, support shafts on both sides of constant velocity joint if shaft is being moved horizontally. Do not allow 1 end to hang free or 1 shaft to bend at a sharp angle. After removal, shaft may be carried vertically without damage.

#### Disassembly (General Motors & Jeep)

1) Disconnect yoke attaching bolts and flange attaching bolts, and remove propeller shaft from vehicle. Mark joint so that center yoke, end yoke, and crosses will be installed in original positions.

2) Pry out all snap rings and press bearing out enough to allow bearing end to be clamped in a vise. Tap on yoke until it is free of bearing.

3) Repeat procedure for remaining bearings. Remove remaining parts from center yoke assembly.

#### Reassembly (General Motors & Jeep)

1) Pack all bearings with proper grease, and assemble center yoke components in reverse order of disassembly.

2) Using arbor press or vise, press 2 opposing bearings into position at same time until all bearings are installed. Be sure crosses and yokes remain aligned during this process.

3) Check for free movement of joint. If bind exists, seat bearings by sharply rapping yokes with a brass hammer. Never hammer on bearings.

4) Install propeller shaft in vehicle, making sure marks made during disassembly are aligned.

#### Disassembly (Ford)

1) With propeller shaft removed from vehicle, position assembly in a vise. Mark position of crosses, center yoke, and center socket in relationship with stud yoke welded to propeller shaft tube.

**NOTE:** To obtain correct clearance, crosses must be installed on bosses in original positions.

2) Remove snap rings in front of center yoke. Using a "C" clamp type tool (CJ91B or equivalent), tighten screw in tool until bearing protrudes  $\frac{3}{8}$ " (10 mm).

3) Remove propeller shaft from vise. Tighten protruding part of bearing in vise. Rap against center yoke with hammer until bearing is free of yoke. Remove all bearings from cross in this manner.

4) Remove cross from center yoke. Remove centering socket from stud, and remove rubber seal from centering ball stud.

5) Remove snap rings from center and drive shaft yokes. Install "C" clamp tool, and tighten screws until bearing is pressing outward and center yoke contacts slinger ring. Do not press beyond this point or slinger will be damaged.

6) Clamp exposed end of bearing in vise, and hammer on center yoke until bearing is free. Press against cross with "C" clamp tool to remove remaining bearing.

7) Remove center yoke from cross, and remove cross from propeller shaft using same procedure.

#### Reassembly (Ford)

1) Clean all components in cleaning solvent. Place cross in propeller shaft yoke. Make sure cross bosses are installed in original position.

**NOTE:** If a repair kit is being installed, bosses will be lubrication plugs.

2) Press in bearings, and install snap rings. Fill socket relief and coat ball with proper grease. Position center yoke over cross. Press in bearings and install snap rings.

3) Install a new seal on centering ball stud. Place centering socket over stud. Place front cross in yoke. Make sure cross bosses (or lubrication plugs) are installed in original position.

4) Place cross loosely on center stop. Press first set of bearings into center yoke, then install second set. Install snap rings. Apply pressure to center yoke socket, and install remaining bearing cup. If replacement kit is used, remove plugs, and lubricate "U" joints. Reinstall plugs.

**Fig. 3: Exploded View of Ford Constant Velocity Type Universal Joint**

