FIGURE 33.1 Notice how the needle bearings have worn grooves, called Brinelling, into the bearing surface of the U-joint.

FIGURE 33.2 All U-joints and spline collars equipped with a grease fitting should be greased four times a year as part of a regular lubrication service.
FIGURE 33.3 Many U-joints require a special grease gun tool to reach the grease fittings.

FIGURE 33.4 Always mark the original location of U-joints before disassembly.

FIGURE 33.5 Two types of retaining methods that are commonly used at the rear U-joint at the differential.
FIGURE 33.6 The best way to check any U-joint is to remove the driveshaft from the vehicle and move each joint in all directions. A good U-joint should be free to move without binding.

FIGURE 33.7 Typical U-joint that uses an outside snap ring. This style of joint bolts directly to the companion flange that is attached to the pinion gear in the differential.

FIGURE 33.8 A U-joint that is held together by nylon and usually requires that heat be applied to remove from the yoke.
FIGURE 33.9 Use a vise and two sockets to replace a U-joint. One socket fits over the bearing cup and the other fits on the bearing to press-fit the cups from the crosspiece.

FIGURE 33.10 Taping the U-joint to prevent the caps from coming off.

FIGURE 33.11 A special tool being used to press apart a U-joint that is retained by injected plastic.
FIGURE 33.12 Removing the worn cross from the yoke.

FIGURE 33.13 When installing a new U-joint, position the grease fitting on the inboard side (toward the driveshaft tube) and in alignment with the grease fitting of the U-joint at the other end.

FIGURE 33.14 The working angle of most U-joints should be at least 1/2 degree (to permit the needle bearing to rotate in the U-joints) and should not exceed 3 degrees or a vibration can occur in the driveshaft, especially at higher speeds.
FIGURE 33.15 An inclinometer with a magnetic base is being used to measure the angle of the driveshaft at the rear U-joint.

FIGURE 33.16 Placing a tapered metal wedge between the rear leaf spring and the rear axle pedestal to correct rear U-joint working angles.

FIGURE 33.17 A transmission oil pan gasket leak allowed automatic transmission fluid (ATF) to saturate the rear transmission mount rubber, causing it to collapse.
FIGURE 33.18 The hub nut must be removed before the hub bearing assembly or drive axle shaft can be removed from the vehicle.

FIGURE 33.19 Many knuckles are attached to the ball joint on the lower control arm by a pinch bolt.

FIGURE 33.20 The preferred method for separating the tie rod end from the steering knuckle is to use a puller such as the one shown.
FIGURE 33.21 Many drive axles are retained by prevailing torque nut that must not be reused.

FIGURE 33.22 A special General Motors tool is being used to separate the drive axle shaft from the wheel hub bearing.

FIGURE 33.23 Most inner CV joints can be separated from the transaxle with a prybar.
FIGURE 33.24 When removing a drive axle shaft assembly, use care to avoid pulling the plunge joint apart.

FIGURE 33.25 If other service work requires that just one end of the drive axle shaft be disconnected from the vehicle, be sure that the free end is supported to prevent damage to the protective boots or allow the joint to separate.

FIGURE 33.26 With a scribe, mark the location of the boots before removal. The replacement boots must be in the same location.
FIGURE 33.27 Most CV joints use a snap ring to retain the joint on the drive axle shaft.

FIGURE 33.28 After releasing the snap ring, most CV joints can be tapped off the shaft using a brass or shot-filled plastic (dead-blow) hammer.

FIGURE 33.29 Typical outer CV joint after removing the boot and the joint from the drive axle shaft.
FIGURE 33.30 The cage of this Rzeppa-type CV joint is being carefully inspected before being reassembled.

FIGURE 33.31 Be sure to use all of the grease supplied with the replacement joint or boot kit. Use only the grease supplied and do not use substitute grease.

FIGURE 33.32 A punch being used to keep the rotor from rotating while torquing the axle shaft spindle nut.
FIGURE 33.33 The engine had to be raised higher to get the new (noncollapsed) engine mount installed.

Tools needed to replace a drive axle shaft on a General Motors vehicle include a drift, sockets, plus a prybar bearing/axle shaft special tool.

The drive axle shaft retaining nut can be loosened with the tire on the ground, or use a drift inserted into the rotor cooling fins before removing the nut.
Using a special tool to push the drive axle splines from the bearing assembly.

Remove the disc brake caliper and support it out of the way. Then, remove the disc brake rotor.

To allow for the removal of the drive axle shaft, the strut is removed from the steering knuckle assembly.
A prybar is used to separate the inner drive axle shaft joint from the transaxle.

After the inner joint splines have been released from the transaxle, carefully remove the drive axle shaft assembly from the vehicle.

To install, reverse the disassembly procedure and be sure to install the washer under the retainer nut, and always use a new prevailing torque nut.
Reinstall the disc brake rotor and caliper and then torque the drive axle shaft retaining nut to factory specifications.