

# Jeep Closed-Steering Knuckle Repair

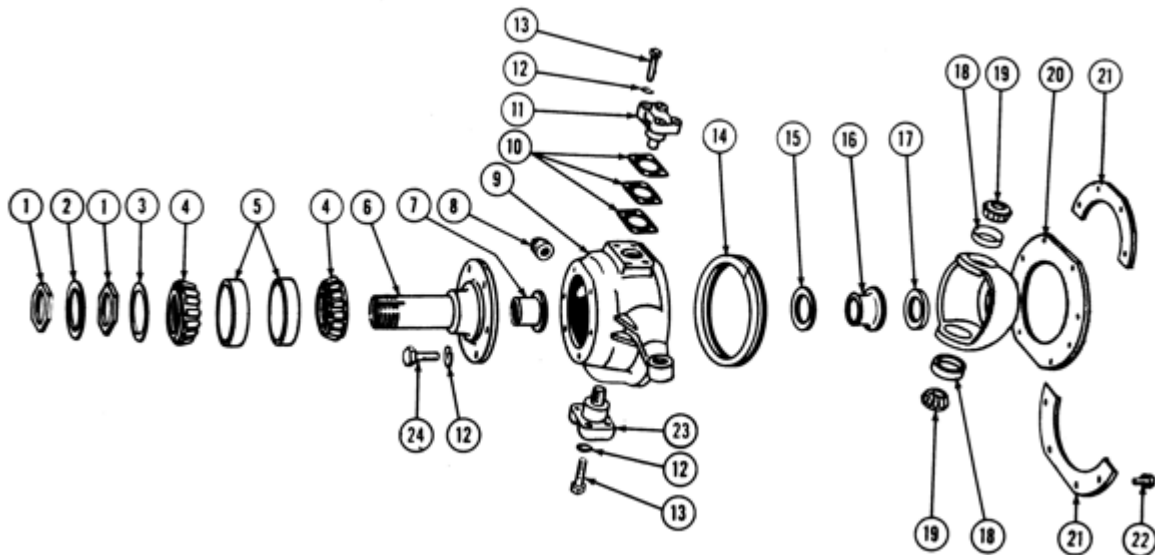
These instructions apply to all 4-wheel-drive Jeep® vehicles with closed-type steering knuckles. The steering knuckles pivot on tapered roller bearings. The condition and adjustment of these bearings has a considerable effect on the way the vehicle steers. Bearings that are in poor condition or that are improperly adjusted are the main causes of low speed shimmy of the front wheels. Jeep owners often mask the effects of poor handling and steering with the use of steering stabilizers or complex steering conversions. This procedure is often all it takes to make the handling good again.

Inspection or replacement of the steering knuckle bearings requires disassembly of the steering knuckle. Preload adjustment on the bearings is accomplished by the use of shims.

When reading this information, bear in mind that although referral is made to one side of the vehicle, the procedure described must be performed on both sides of the vehicle.

## Disassembly

1. Remove the wheel bearing adjusting nuts, hub, and brake drum assembly and wheel bearings.
2. Remove the 6 bolts that retain the brake backing plate and spindle to the steering knuckle.
3. Take the backing plate/brake assembly off the spindle and tie it back out of the way. On most models it is not necessary to disconnect the brake line to remove the brake assembly. If the brake line is disconnected it will be necessary to bleed air from the brake system before the vehicle can be driven.
4. Remove the spindle from the steering knuckle casting. This may require rapping with a block of wood or soft-faced hammer if the spindle is stuck in the knuckle.
5. Remove the axle from the housing.
6. Disconnect the steering tie rod from the knuckle.
7. Remove the 8 bolts that hold the oil seal retainer (#22 on diagram) to the knuckle casting. Remove the retainer and seal. Note that several type seal designs were used, all accomplishing the same result.
8. Remove the 4 bolts retaining the lower pivot pin bearing cap (#13 on diagram). The bolts that attach the steering knuckle bearing cap to the knuckle are a particular length. These should not be replaced with longer bolts as they may protrude through the knuckle and damage the bearing. On the other hand, if they are too short, there will be insufficient strength and the bolts may pull out of the casting. Proper length of these bolts varies with the vehicle but generally if full thread engagement in the steering knuckle is obtained and the bolt does not protrude through the knuckle, the bolts will be suitable.
9. Remove the 4 bolts retaining the upper bearing cap. Remove the bearing cap. Remove the steering knuckle (#9 on diagram) from the axle housing.
10. Remove the upper and lower bearing races from the axle housing with a hammer and drift punch if the special removal tool (Jeep tool #W-138) is not available.
11. Wash all parts, including the balls on the axle housing with solvent. If the ball part of the housing is rusty it would be a good idea to polish it with fine emery paper until it is clean. Coat the ball with a light coat of grease (such as chassis lube) so it doesn't tear up the neoprene seal when it is installed.



## Reassembly

1. Install the new bearing races in the axle housing using a suitable driver.
2. Reinstall the parts, reversing the procedure of disassembly after coating the new steering knuckle bearings with wheel bearing grease.
3. Adjustment: Note that a shim pack of .058" (1.47mm) thickness is added to the bottom face of the king pin boss on the steering knuckles at production. Maintain this shim pack at the bottom and make adjustments at the top bearing cap only. Somewhere around 1963 this .058" was added to the knuckle at the time of manufacture. Vehicles made after this time use no shims on the lower bearing boss. Knuckle bearing adjustment on these later models is also done at the top bearing cap only.
4. Install the bearing cap, lockwashers, and bolts. Tighten bolts to 40 ft. lbs.
5. Check the preload on the bearings by hooking a spring scale in the hole in the knuckle arm for the tie rod socket. Take the scale reading when the knuckle has just started its sweep. The scale reading should be 12 to 16 pounds (5.4 to 7.3 kg.) with the axle shaft and oil seal removed. Remove or add shims to obtain a scale reading within these limits. If all shims are removed and adequate preload is still not obtained, a washer may be used under the top bearing cap to increase preload. When a washer is used, shims may have to be reinstalled to obtain proper adjustment.
6. When proper preload has been obtained, replace the parts previously removed in the reverse order of disassembly. It is advisable to re-pack the front wheel bearings and install new wheel bearing grease seals (#17 on diagram). If the vehicle has Spicer U-joints on the front axle they should be checked and replaced if required. This U-joint is fairly common and should be available from most full service auto parts stores. If the Jeep has Rzeppa or Bendix axle U-joints you will probably not be able to find replacements.

## Lubrication

Use of the proper lubricant for the steering knuckle bearings is very important. The lubrication section of the Jeep Service Manual specifies Universal Joint Lubricant #0 for winter and #1 for summer. This material is a semi-liquid grease. Unfortunately, this semi-liquid grease has not been available for some time. An acceptable substitute can be made by mixing chassis lube grease with SAE 140 gear lube until you have the consistency of cold molasses. A half pint of this should be pumped into each knuckle housing with a grease gun. A putty knife can be used to load it into the grease gun. Any lubricant thinner than that described above will leak from the knuckle seal. It will also work its way out into the hub area and contaminate the brake shoes. DO NOT use SAE 90 or 140 gear lube by itself as it is not the proper lubricant.