



C: HUB OR HUB DRUM PACKING AND INSTALLATION PROCEDURE FOR A STANDARD (NON SPINDLE-LUBE AXLE)

1. When installing bearings in a hub or hub drum for a "plain" spindle axle, it is necessary to prepack the bearings prior to installing them in the hub. To prepack your bearings, you can buy a bearing packer at your local auto parts store, or you can pre-grease your bearings using the grease in the palm method.

The standard bearing packing tool contains two convex shaped plates attached to a threaded rod with a grease zerk fitting on the end of the threaded rod. With the bearings in place in the packing tool, you pump grease into the zerk fitting forcing grease through the rollers of the bearing. This bearing is now ready for installation into the hub.

2. If you do not have a bearing packing tool, you can achieve the same results with the ***grease in palm*** method. Although a messy process, it is equally effective if done properly and carefully. As the name infers, you put grease in the palm of one hand and then with the other hand, you methodically roll and rotate the bearing into the grease, carefully forcing grease through all rollers. Once you have prepacked both the inner and outer bearings, carefully lay them on a totally clean surface. Dirt in the greased bearing will act as an abrasive on the bearings and races and can drastically shorten bearing life.
3. Next lay the hub or hub drum face down on a table and fill the rear of the hub cavity with liberal amounts of grease, carefully coating the rear race surface. Now install the inner bearing (bearing next to the seal) into the rear of the hub, matching the cone of the bearing to the race. **(DO NOT INSTALL THE BEARING BACKWARDS!)**
4. Now, with the pre-greased inner bearing sitting in the hub drum, add more grease on top of the rear bearing. There will be a space of about 1/4" between the inner bearing and the seal. It is essential that this cavity be filled with grease.
5. Now set the double lip seal (the inner lip with the spring goes inside the hub) squarely atop the rear hub bore. Set a wood block on top of the seal and tap with a hammer until the seal is flush with the rear hub bore.

This completes the rear bearing and seal installation. At this point, turn the hub over on the table, being careful not to get dirt into the grease at the rear of the hub. Now pack liberal amounts of grease in the inner hub cavity.



NOTE: Be sure that the grease you use is a **low to medium viscosity** (high temperature) grease. Low to medium viscosity grease will flow around and through the hub cavity and bearings providing more total lubricant to the bearings than a high viscosity grease. High viscosity greases tend to centrifuge to the outer hub cavity wall where they stick and stay with only the small amount of grease in the bearing rollers providing lubrication.

D: PRE-LOAD BEARINGS

1. You are now ready to slide the hub or hub drum onto the spindle. Clean the spindle with a rag. (NOTE: The inner surface of the bearing and the spindle shaft are machined to close tolerances. If the spindle is marred, unclean, or if the rear bearing is not square with the spindle shaft, the bearings may temporarily hang up as you slide the hub in place. Once the hub or hub drum is fully in place on the spindle, slide the outer bearing onto the spindle and into the hub. (Match the cone of the bearing to the race. **DO NOT INSTALL THE BEARINGS BACKWARD!**)
2. At this point you are ready to **pre-load** the bearings. Whenever you install new hubs onto an axle, or whenever you install new bearings and races into existing hubs, you should *pre-load* the bearings. Pre-loading the bearings assures that the races in the hub are 100% in place against their machined stop points and keeps the hub from wobbling after a few miles.
3. To pre-load the bearings, install the spindle washer and spindle nut onto the spindle with the hub and bearings in place. Tighten the spindle nut *finger tight* (until snug) and then with channel-lock pliers or a crescent wrench, tighten the spindle nut another 1/4 turn or about 15 to 20 ft pounds of torque. Now turn the hub five to ten revolutions. This will fully seat the races. Now **loosen** the spindle nut very loose, then *re-slug* to finger tight, and engage the nut retaining device. (Some reverse lubricating spindles use a tab washer for the retaining device)
4. After 20 to 40 miles of highway travel, check to see if the hub is loose on the spindle. Pull the tire in and out a few times. If your hub is loose, you will need to re-slug the spindle nut and re-engage the nut retaining cotter pin or tab washer. NOTE: Never reuse the same tab on the tab washer. They are designed to be used one time only).

Never run your spindle nut *to tight*, this will cause your bearings to over heat. And never run your bearings too loose. A very slightly loose spindle nut will run adequately, but too loose and the individual rollers may come apart in the bearings, causing the hub to fracture.

You are now ready to install your dust cap. A short piece of 2" I.D. water pipe makes a good tool to install either a plain dust cap or the bearing buddy® dust cap for the 3500# axle.

If you are installing brakes on a "plain" spindle axle, we recommend that you use plain dust caps and not "bearing protectors" (Bearing protector refers to the spring loaded dust cap device with a grease zerk fitting in the piston.) Bearing protectors add two to four PSI of pressure inside the hub cavity and in many cases, they cause grease to leak past the seal. If sufficient grease leaks past the seal on a brake hub drum, it will centrifuge out with some grease getting on the brake shoes. Grease on your brake shoes will drastically decrease your braking capacity.