PREVOST HUB SEAL REPLACEMENT

This instruction is generic and details specific to a particular model year or hub position may vary from what is described. The included photos and descriptions are of a drum brake drive axle. A disk brake drive axle or tag or steer axle procedure may vary slightly.

Preparation: This procedure will require the technician to get under the coach to the extent that it is important to have the chassis supported at the Prevost support points. Do not get under the coach, or place parts of your body in pinch points unless and until the coach is properly supported.

Raise the coach as high as possible at the position of the hub seal. Support the chassis of the coach. Exhaust the air in the air bags at the hub seal location to allow jacking the axle to raise the wheel(s) off the ground. Remove the wheel(s).

The following is written primarily about an XL coach drive axle with drum brakes. The procedures may vary slightly for other models with disk brakes or other axles.

Cage the emergency brake: After chocking the wheels, release the emergency brake. To insure it does not reapply “cage” the brake by inserting the “T” bolt into the slot inside the brake chamber through the rear hole. Once the “T” bolt is inserted, turn it 90 degrees clockwise and pull back to insure it is secure. Thread the nut and washer all the way down and tighten it slightly. Reapply the emergency brakes. The brake just caged should rotate freely.

Remove the brake drum: Remove 5 screws retaining the drum to the hub. With the emergency brake caged the drum should then pull off of the threaded studs. If the drum is hung up it might be necessary to back off the brake shoes. This adjustment is done at the slack adjuster. If the adjuster is a manual adjust, use a 9/16 wrench and press in on the spring loaded keeper. Then back off by turning the wrench counterclockwise. If the adjusters are self adjusting, lift the sheet metal disc with a flat screwdriver or putty knife and turn the square adjuster nut counter clockwise.

Remove the axle: At the face of the hub the axle flange is retained to the hub with 10 nuts. Remove them. The axle can sometimes be removed by striking the center of the hub face with a heavy sledge hammer, or it can be pushed loose for removal by using 3 bolts threaded into the hose in the flange for that purpose. If using bolts to push the axle out thread them in by working gradually around the flange a turn at a time so as to not bend the flange.

Prior to pushing the axle out it is suggested a pan be placed under the hub to catch
gear lube oil.

Pull the axle out once it is loose.
**Remove the hub:** After completing the above steps bend the axle nut lock washer ears out of the way. Use a chisel or other tool to lift the ears and flatten them against the next large lock washer using a hammer and drift.

Remove the outer nut using a socket of the appropriate size. Then remove the balance of the stack of nuts and washers. Note their order on the spindle.

With the drum and all nuts and locking rings and washers removed pull the hub from the coach. It is heavy and likely has a lot of grease so be prepared to deal with the grease and weight. It is suggested you pull the outer bearing and set it in a clean place for inspection. A good place to set the hub when removed is in a large pan on the studs so the back of the hub is facing up.

This is a good time to clean any grease that may have gotten on the brake drum or shoes. If the leak has been going on for a long time the accumulated grease and road dirt may take multiple applications of solvent and a lot of scraping to remove. Once clean this is an excellent time to inspect the drum for cracks or excessive wear and to look carefully at the brake shoe friction material to make certain it is sound and not beginning to crack and fail.
With the dust cover removed the seal can be removed from its retainer.
When the seal has been removed the seal retainer can be removed and the inner bearing inspected. If any bearing or bearing race defects are noted replace them.
Prior to replacing the inner bearing pack it with an appropriate high temperature bearing grease. The bearings should be lubricated with differential gear oil from the differential, but if an insufficient amount gets into the hub before driving packing the bearings protects them from damage. Pack the outer bearing as well.

I has been recommended that if possible use a bearing grease (if packing the bearings) that is compatible with the differential gear lube.

Clean and replace the seal retainer.

**Seal replacement:** Note that the seal consists of an outer and inner ring, both of which rotate independently. Insertion of the seal in the retainer must be done carefully so the two seal rings can rotate and there is no pinching of the two.

There are various ways to press the seal into the retainer. Tools specifically for the insertion are available and the seal supplier may make them available at no charge. In the absence of tools I have had 100% success at placing the seal on the retainer and placing a short section of 2 X 6 on top of it, and tapping slowly and steadily in a circular pattern to “slide” the seal down into position.
A very smart airline pilot and Prevost owner has recommended freezing the seal and the resulting shrinkage should allow its insertion with a gentle push. However seal insertion into the retainer is done make sure it does not get cocked sideways. It must be inserted evenly all the way into the retainer and the two rings still rotate freely with respect to one another. The seal is marked with respect to which side is toward the bearings.

**Reassembly:** There is nothing special about reassembly except to make sure all parts are clean and no dirt or debris gets on or in the bearings, the seal or the seal mounting surface.

To prevent damage to the seal, keep the hub centered and do not allow the seal to touch the spindle. The inner bearing should slide onto the spindle. At that point hold the outer bearing in place and as the hub is slid further into position allow the outer bearing to support the outer end of the hub. This should align the hub seal with its mounting surface so it can be slid in place without binding or damage. Do not allow the outer bearing to slip from its position and allow the hub to tip downward since seal damage could occur.

Re-install the hub nuts, keepers, and lock washers in the sequence they were when removed.

The tightening of the hub nut must be as called out in the Prevost shop manual for the specific model year and chassis. Make certain the nuts holding the hub on the spindle are locked to prevent turning. Install the axle using a new gasket.

With the hub in place lower that side of the axle to enable the flow of gear oil into the hub. Some axle flanges have a removable plug and in lieu of tipping the axle so gear lube flows into the hub you may add one quart of gear oil through the plug. Excess gear oil will flow into the differential.

Install the brake drum. Use an anti-seize compound on the five screws which retain the drum.

**Brake adjustment:** If you had to back off the brake at the slack adjuster to allow drum removal the brake will need to be adjusted. On non-self adjusting slack adjusters use a 9/16 wrench, press in the locking sleeve and tighten clockwise until the wrench will no longer turn, and then back off 1/3 of a turn.

The same procedure can be employed on self adjusting slack adjusters but note that it is not recommended. The slack adjuster will adjust itself with repeated applications of the service brake. As the brakes are applied and released you should be able to
see the brake chamber push rod travel shorter and shorter distances. Consider the brake properly adjusted if the travel of the push rod is approximately 1”. I have successfully adjusted self adjusting brakes by applying shop air to the service brake side of the brake chamber and releasing as often as required to adjust the brake.

After the brakes have been adjusted the parking brake caging “T” bolt can be removed. Releasing the parking brake prior to its removal might save a little effort.

**Refill the differential:** It is presumed that a leaky hub seal resulted in the loss of differential gear lube. Prior to driving the coach insure the gear lube level in the differential is correct.

**Notes:**


Coaches with disk brakes may require removal of the brake caliper to be able to remove the disk prior to hub removal. Coaches with Knorr-Bremse disk brakes on the drive axle will not require disk removal as long as the hub is separated from the disk.

Minor surface cracks in drums or disks is common. The drum or disk needs to be replaced if a crack is all the way through.

Jon Wehrenberg with assistance from John Giehm
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