Section 1 – Rebuilding a PreSet Hub

Disassembly

1. Use a jack to raise the axle until the wheels are off the ground and support the axle properly with a jack stand.
2. Remove the wheels and the brake components.
3. Examine the spindle nut to determine the type of locking device.
4. Remove the spindle nut system.
5. Slide the hub off the spindle.
   a. If the hub is difficult to remove because the seal is stuck on the spindle, use a mechanical puller to remove the hub (see Figure 2.)
   b. If part of the seal remains on the spindle, carefully remove the part of the seal that remains.
6. Remove the outer bearing cone and discard.
7. Place the hub on its outboard end and remove and discard the seal.
8. If present, remove and discard the inner bearing retainer. The stamped steel retainer secures the inner cone during shipment and has no purpose in service (see Figure 3).
9. Remove the inner bearing cone and spacer from the hub assembly and discard.

Replacing Cups in Iron Hubs

1. Remove the bearing cup using a large hammer and a heavy drift or a hydraulic press. Take precaution to avoid damaging the bearing cup bore and shoulder.
2. Inspect the bearing cup bores for evidence of cup rotation or spun cups. If cup rotation exists, replace the hub.
3. To install a new cup in an aluminum hub, it is recommended that the hub be heated in boiling water (212°F) or in an oven at a temperature not to exceed 300°F. Cooling the cup in a freezer to 32°F or below will further ease the installation.
4. Remove the aluminum hub from the oven or water and once aligned, quickly slide in the new bearing cup being certain it is fully seated. If the cup is loose, allow a few seconds for it to heat up and secure itself before moving the hub. After both bearings are secured, use a 0.001” to 0.002” feeler gauge to ensure each cup is fully seated against the shoulder of the bearing bore.

Replacing Cups in Aluminum Hubs

1. The bearing cup can be removed from an aluminum hub by welding a large bead around the bearing surface of the steel bearing cup. Once cooled, the bearing cup will shrink enough to be easily removed. (see Figure 4.)
2. Inspect the bearing cup bores for evidence of cup rotation or spun cups. If cup rotation exists, replace the hub.
3. Iron hubs do not need to be heated for bearing cup installation. Press the bearing cup into the hub, being certain that it is fully seated (see figure 5). Use a 0.001” to 0.002” feeler gauge to ensure the cup is fully seated against the shoulder of the bearing bore.
Reassembly

1. Place the hub, seal end up, on a clean work surface.

2. Lubricate the inner bearing cone with the same lubricant as will be used in the hub and install it into the inner bearing cup (see figure 6).

3. Ensure the hub seal bore is free of rust, dirt, scratches and sharp edges. Apply thin coat of lubricant on the entire seal OD.

4. Install the seal into the hub with “AIR SIDE” visible using a seal installation tool of appropriate size or flat plate. Do not hammer directly on the seal. Make sure the seal is uniformly bottomed out in the bore (see figure 7).

5. Turn the hub over, and place it seal end down. Place the bearing spacer in the hub cavity ensuring that the tapered end, if present, faces the outboard end of the hub (see figure 8).

6. Lubricate the outer bearing cone with the same lubricant as will be used in the hub and install it into the hub assembly (see figure 9).

When using an oil bath system, do not pack the bearings with grease. Grease will prevent the proper circulation of axle lubricant and can cause premature wheel seal and bearing failure.

When using an oil bath system, do not pack the bearings with grease. Grease will prevent the proper circulation of axle lubricant and can cause premature wheel seal and bearing failure.

Failure to lubricate the inner diameter of the seal will cause premature seal failure and can lead to seal failure and loss of a wheel, creating a risk of serious bodily injury.

CAUTION

Failure to lubricate the inner diameter of the seal may result in premature seal failure.

4. Mount the hub assembly onto the axle spindle with a smooth, firm motion while holding the outer bearing in place. Use care to maintain alignment between the bearing cones, spacer, and spindle and to avoid seal damage.

5. Install the spindle nut. PreSet spindle nuts are available as a separate service part for this kit (see page 4):

   a. ConMet PreSet spindle nut. Seat the flat inner washer into the back of the spindle nut (see Figure 10).

   b. One-Piece Spindle Nut System. For one-piece spindle nut systems torque the nut to a minimum of 300 ft. lbs. DO NOT BACK OFF THE SPINDLE NUT. Engage any locking device that is part of the spindle nut system. If the locking device cannot be engaged when the nut is at 300 ft. lbs., ADVANCE THE NUT UNTIL ENGAGEMENT TAKES PLACE AND THE NUT IS LOCKED.

   c. Double Nut or Jam Nut System. If a double nut or jam nut system is being used, torque the inner nut to 300 ft. lbs. DO NOT BACK OFF THE SPINDLE NUT. Advance the inner nut as necessary to install the locking ring. Install the outer nut with 200 ft. lbs. of torque. Be sure to engage any secondary locking device.

6. Rotate the hub assembly checking for smooth and free rotation.

WARNING

Verify the hub will rotate by hand before placing it in service. Some drag is normal for a new seal, but excessive drag or roughness may indicate excessive bearing preload which could result in premature bearing failure. An incorrect combination of parts or the use of one or more non-PreSet parts may cause this condition.

Lubrication

1. Install the hub cap or drive axle with a new gasket. Torque the hub cap bolts in a star pattern to 12 to 18 ft-lbs. Torque the drive axle bolts or nuts per the drive axle manufacturer’s recommendation.

NOTE

Use the proper hubcap for the type of lubricant intended to be used.

Failure to fill the hub with the correct amount of lubricant can cause premature failure of the PreSet hub assembly, which could result in a wheel loss and possible death or serious injury.
2. Drive Hub - Drive hubs can be lubricated by installing one quart of oil through the fill plug in the barrel of the hub. If no fill plug is present, the drive hub can be lubricated by lifting the opposite side of the axle 8 inches to allow the lubricant to run down the axle housing and into the hub assembly. Elevate the axle for two minutes to allow the lubricant time to fill the hub. Repeat the process for the opposite side of the vehicle. The rear axle carrier should be filled to the proper level to ensure adequate lubricant is available to fill the entire hub. Refill the carrier to the proper level after this procedure is completed.

3. Steer and Trailer hubs lubricated with oil.
   a. Fill the hub through the hubcap center hole to the “oil level” mark on the face of the cap (see Figure 12).

   ![Figure 12](image)

   b. Allow oil to settle for ten minutes. Repeat the fill procedure until the oil is at the fill line.

   See ConMet service manual recommendations for trailer hubs lubricated with semi-fluid grease. ConMet service manuals can be found online at www.conmet.com.

Section 2 - Rebuilding a PreSet Plus Hub.

PreSet Plus wheel hubs are installed at the factory with an integrated spindle nut. This spindle nut in many cases can be reused during a rebuild. In the event the PreSet Plus spindle nut needs replacement, it is available as a separate service part (see Figure 13).

![Figure 13](image)

Disassembly

1. Use a jack to raise the axle until the wheels are off the ground and support the axle properly with a jack stand.

2. Remove the wheels and the brake components.

3. Remove the red locking ring from the spindle nut assembly. Use caution not to damage the locking ring.

4. Loosen the spindle nut to remove the hub from the spindle. The internal snap ring will allow the spindle nut to act as a hub puller with up to 50 ft-lbs loosening torque. Exceeding 50 ft-lbs will damage the internal hub snap ring. If the hub will not come off of the spindle with 50 ft-lbs of torque, remove the spiral snap ring and the spindle nut assembly and use a conventional hub puller to remove the hub from the spindle. Once the hub is removed, the internal hub snap ring can be removed by prying one end out of the groove and spiraling out the remaining length.

5. If part of the seal remains on the spindle, carefully remove the part of the seal that remains.

6. Remove the outer bearing cone and discard.

7. Place the hub on its outboard end and remove and discard the seal.

8. If present, remove and discard the inner bearing retainer. The stamped steel retainer secures the inner cone during shipment and has no purpose in service (see Figure 14).

![Figure 14](image)

9. Remove the inner bearing cone and spacer from the hub assembly and discard.

![Figure 15](image)

Reassembly

1. Place the hub, seal end up, on a clean work surface.

2. Lubricate the inner bearing cone with the same lubricant as will be used in the hub and install it into the inner bearing cup (see figure 15).

![Figure 16](image)

3. Ensure the hub seal bore is free of rust, dirt, scratches and sharp edges. Apply thin coat of lubricant on the entire seal OD. Do not apply any gasket sealant to the seal outer or inner diameter.

4. Install the seal into the hub with “AIR SIDE” visible using a seal installation tool of appropriate size or flat plate. Do not hammer directly on the seal. Make sure the seal is uniformly bottomed out in the bore.

5. Turn the hub over, and place it seal end down. Place the bearing spacer in the hub cavity ensuring that the tapered end, if present, faces the outboard end of the hub (see Figure 16).

![Figure 17](image)

6. Lubricate the outer bearing cone with the same lubricant as will be used in the hub and install it into the hub assembly (see Figure 17).

![Figure 18](image)

7. Seat the flat washer into the back of the spindle nut (see figure 18).
1. For proper reassembly of the bearings, bear-
ing the spindle with just the inner bearing and seal. This can damage the seal by cocking the seal in the seal bore and lead to seal failure and loss of a wheel, creating a risk of serious bodily injury.

2. Lubricate the bearing journals on the spindle, or the inside diameter of the bearing cones with Grade 2 grease or the lubricant that will be used in the wheel end. Do not coat the seal journal on the spindle.

3. Lubricate the inside diameter of the seal with the same lubricant that will be used in the wheel end.

4. If present, remove the red locking snap ring from the spindle nut. Verify that the bearing spacer is in proper alignment. Align the key or flat on the washer with the keyway or flat on the spindle as the hub is placed onto the spindle. Use a smooth firm motion and place the hub onto the spindle. When the threads on the nut engage the threads on the spindle, rotate the nut in a clockwise direction to fully engage the threads.

5. Torque the spindle nut to the following torque values:
   - a. Steer Hub – Torque the spindle nut to 300 ft-lbs. while rotating the hub. DO NOT BACK OFF THE SPINDLE NUT.
   - b. Drive or trailer hub – Torque the spindle nut to 500 ft-lbs. while rotating the hub. DO NOT BACK OFF THE SPINDLE NUT.

6. Visually examine the three holes in the face of the spindle nut. One of the holes will line up with the holes in the inner washer. Install the tab of the red locking snap ring through the hole in the nut and washer that are aligned. Spread the locking ring, push it over the spindle nut and in to the machined grooves in the spindle nut. Use caution not to bend the locking ring permanently.

7. Install the hub cap or drive axle with a new gasket. Torque the hub cap bolts in a star pattern to 12 to 18 ft-lbs. Torque the drive axle bolts or nuts per the drive axle manufacturer’s recommendation.

8. Rotate the hub assembly checking for smooth and free rotation.

### PreSet® Spindle Nut Kits (kit includes lock ring, nut and washer)

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<th>Socket Sizes (6 Point)</th>
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<td>10080653</td>
<td>FF PreSet® Spindle Nut Assy - D Flat (Type Commonly used on Meritor® Axles)</td>
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<td>10080654</td>
<td>FL PreSet® Spindle Nut Assembly</td>
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<td>10080655</td>
<td>R Drive PreSet® Spindle Nut Assembly</td>
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<td>TP PreSet® Spindle Nut Assembly</td>
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### PreSet® / PreSet Plus® Hub Service & Rebuild Kits

#### Hub Seal & Spacer Kits

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<th>Application</th>
<th>Bearing Combination Cross Reference</th>
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<td>FF Front</td>
<td>HM212011 PS / HM212049 PS</td>
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<tr>
<td>10081519</td>
<td>FL Front</td>
<td>6420 PS / 6461A PS</td>
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<td>10081520</td>
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<td>10081521</td>
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#### Bearing Combination Cross Reference

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### PreSet® Complete Hub Rebuild Kits

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<td>10045882</td>
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</tr>
</tbody>
</table>

**CAUTION**

Failure to lubricate the inner diameter of the seal may result in premature seal failure.

1. Clean the spindle to remove any lubricant, corrosion prevention coating, foreign material, or surface rust that may be present.
2. Seat the flat washer into the groove in the hub. (see figure 38).
3. Position the spindle nut and washer against the outer bearing (see figure 39).
4. Install the spiral snap ring into the groove in the hub. Make sure that the snap ring is fully seated into the groove in the hub. (see figures 40 and 41).
5. Visually examine the three holes in the face of the spindle nut. One of the holes will line up with the holes in the inner washer. Install the tab of the red locking snap ring through the hole in the nut and washer that are aligned. Spread the locking ring, push it over the spindle nut and in to the machined grooves in the spindle nut. Use caution not to bend the locking ring permanently.
6. Install the hub cap or drive axle with a new gasket. Torque the hub cap bolts in a star pattern to 12 to 18 ft-lbs. Torque the drive axle bolts or nuts per the drive axle manufacturer’s recommendation.
7. Rotate the hub assembly checking for smooth and free rotation.

**WARNING**

Verify the hub will rotate by hand before placing it in service. Some drag is normal for a new seal, but excessive drag or roughness may indicate excessive bearing preload. An incorrect combination of parts or the use of one or more non-PreSet parts may cause this condition.

### Lubrication

The same lubricant fill procedures as detailed in Section 1 should be used for PreSet Plus hub assemblies.

See ConMet service manual recommendations for trailer hubs lubricated with semi-fluid grease. ConMet service manuals can be found online at www.conmet.com.

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