

# Voyager® and Discover® Hub-Seal Installation

**Step 1** Remove all burrs from the hub bore and spindle. Thoroughly clean hub cavity and spindle.

**NOTE:** *Do not apply any sealant to the spindle shoulder.*

**Step 2** With the wheel in horizontal position, pre-lube the inner bearing and place it into the bearing cup.

[Photo 1] **NOTE:** *When using grease, pre-pack the inner bearing before placement into the hub.*

**Step 3** Place the seal on the recommended Stemco Installation Tool, with the correct head, so that the words “Air Side” face into the tool. Place the tool (with the seal correctly mounted in the tool head) over the hub bore. Use a 3 to 5 pound hammer to drive against the end of the tool.

Drive seal into bore until complete bottoming is assured. [Photo 2] Remove Tool. Apply a thin layer of lubricant on the ID surface of the seal.

**NOTE:** *Do not apply lubricant to the OD of the seal.*

**Step 4** With the wheel mounted on a dolly, carefully align the bore with the spindle. [Photo 3] Gently push the wheel assembly onto the spindle to the proper position. Fill the hub cavity with lubricant until it runs over the outer bearing cup. Coat the outer bearing with lubricant and place it on the spindle and into the bearing cup.

**NOTE:** *When using grease, pre-pack the outer bearing before placement into the hub.*

**Step 5** Assemble the inner nut and tighten it to 200 ft/lbs. [Photo 4] Rotate the wheel several times and then back-off nut one full turn. Make final bearing adjustment according to TMC recommended bearing adjustment procedure. Install the appropriate axle fastener.

**Step 6** Install the hub cap with a new gasket and fill the cavity with lubricant to the proper level. On drive axles, be sure the differential oil level is high enough (manufacturer’s recommended level) to ensure oil flow through the tube to the wheels. It is recommended to jack-up one side and then the other until flow starts. Make certain the breather plug is clear. Recheck steers and trailers to insure proper fill levels.



# INSTALLATION

September 2008

**Tech Tip #33**

**Product Improvement – Voyager Hub Seals**

STEMCO has made a significant product improvement to several popular Voyager seals which increases both reliability and durability. This was accomplished by increasing the seals ability to resist penetration of air and water borne contamination while simultaneously allowing the seal to run cooler. The seal looks the same and maintains all of the same Voyager features:

- *Hub-installed*
- *Smart features*
- *Unitized design*
- *Uses the same installation tools & procedure*
- *4-Zone labyrinth contamination exclusion system*

**Release Schedule**

373-0143 – Apr.'08

383-0136 – Jul.'08

393-0173 – Jul. '09

373-0123 – Oct. '09

**Contamination Resistance**

With the new design, the contamination entrance is moved from the ID of the seal to the OD. Centrifugal force is now used to positively impact the seal by throwing contamination outbound of the seal area. This works to keep debris out of the seal and extending life.

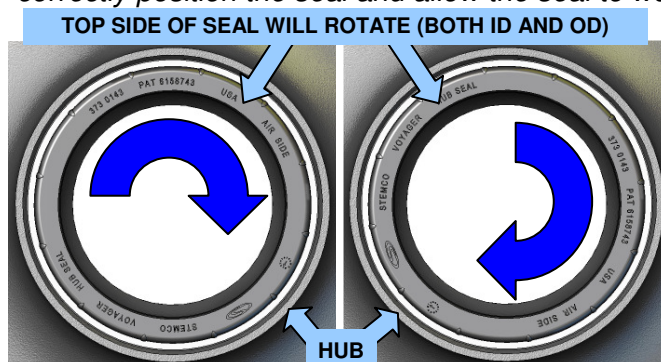
The contact point between the two primary seal components has been moved outward (still within the seal), and is now closer to the bore. This change provides several improvements:

- *Moves any potential for rubber debris away from the main sealing lip area*
- *Generates less friction, less heat, and allows the seal to run cooler – extending life*

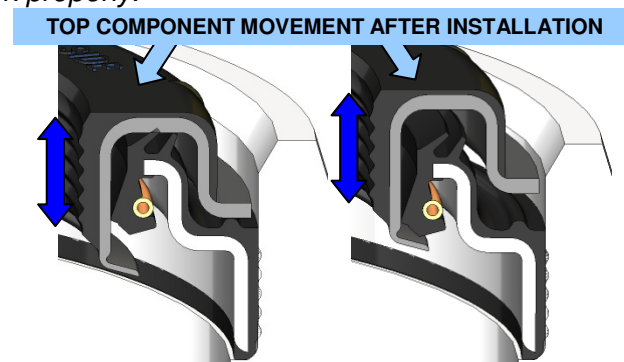
**Installation**

The improved Voyager seal is still a fully unitized hub installed seal that utilizes the same installation tools and procedures. There are two differences that might be observed during installation as described below:

- *The top portion of the seal (as shown in the Figure 1) will rotate after the seal has been installed in the hub. Once the hub is installed over the spindle the seal ID will grab onto the spindle to correctly position the seal and allow the seal to work properly.*



**Figure 1**



**Figure 2**

- *It's normal to have movement or slack between the top and bottom seal components. When the wheel end is assembled, the components will be compressed together to ensure optimum seal performance.*

an EnPro Industries company