

The ConMet Connection

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Part I of a Three Part Series on Types of Hub Assemblies

Hubs with Manually Adjusted Bearings

The next three issues of the ConMet Connection will be devoted to describing the different hub assembly options for today's commercial transportation vehicles. They include

- Hubs with manually adjusted bearings
- Hubs with pre-adjusted bearings
- Unitized hubs

This issue of the ConMet Connection will profile hub assemblies with manually adjusted bearings, or what's often referred to as traditional hubs. These are the most common wheel hubs on trailers and some tractor applications today.

It's not always easy to identify the type of hub assembly from just an external visual inspection. Therefore, we recommend one of the following ways to positively identify the hub on your vehicles:

- Make note of the Vehicle Identification Number (VIN) and contact either the manufacturer or OEM dealership.
- Look for a decal on the trailer body that identifies the hub assembly type, manufacturer and lubrication.
- Look for an identification ring, which would be near the nut pack. If a yellow ring is present, you have a Dana LMS hub assembly, which is not a hub with manually-adjusted bearings.
- Look for any markings or decals on the hub cap that identify the hub product

Hub assemblies are just a portion of the entire wheel end. A wheel end is made up of a hub, bearings, seal, lubricant, spindle, axle nut and hub cap. The hub assembly is made up of five of these components: the hub itself, bearings (cone and cup), seal, axle nut and hub cap. These items, minus the axle nut and hub cap, are illustrated in Figure 1.

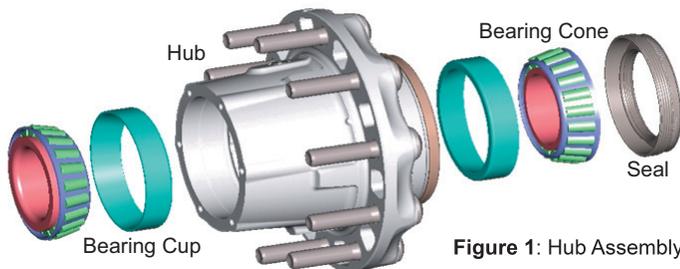


Figure 1: Hub Assembly.

An axle nut (sometimes called spindle nut) keeps the bearings in adjustment inside the hub while retaining the hub assembly onto the axle. There are two common types of axle nut systems on the market:

- Conventional four-piece nut pack includes an inner nut, a perforated washer, an outer nut and either a set screw or a tang washer (see figure 2).



Figure 2: Four-piece nut packs.

- A Single Nut System includes two types. One type utilizes a nut, a snap ring and a set of installation instructions (see Figure 3).
- The other system includes a one-piece nut with a built-in locking device (see Figure 4). Both systems have a secondary lock that must be engaged for proper installation.



Figure 3.

The Technology Maintenance Council (TMC), North America's technical society for truck equipment and information technology, has a recommended practice (RP 618) that outlines the proper procedures for bearing adjustment for manually adjusted hubs with the use of a conventional axle nut. ConMet provides RP 618 instructions in a service manual, on the company's web site at www.conmet.com and on printed service cards (ConMet part #10008690).



Figure 4.

For single nut products or alternative nuts, consult with the manufacturer for recommendations on bearing adjustment. A dial indicator should always be used when setting manually adjusted hubs with a target end-play of between .001" to .005" for maximum wheel end performance.

Besides providing TMC RP618 instructions, ConMet's service manual for hubs with manually adjusted bearings (ConMet part #10008647) outlines detailed instructions for hub lubrication, inspection, periodic maintenance, removal, disassembly, repair, replacement and reinstallation.

Next issue of the ConMet Connection: Part II of Hub Assemblies - Hubs with pre-adjusted bearings.