October 26, 2018 NO: WES2.027

AWES ROLLiant™ Hub Installation Procedure

ROLLiant hubs are pre-assembled and factory certified for endplay with matched bearing sets. Do not mix and match bearings between hubs.

WARNING: Oil is the only lubricant fully approved for KIC ROLLiant™ hub assemblies. Semi-Fluid Grease requires application approval. Please reference AWES bulletin WE2.028 for list of approved lubricants. Failure to fill the hub with the correct amount of lubricant can cause premature failure of the ROLLiant™ hub assembly which could result in death or serious injury.

Step 1: Clean the spindle to remove any lubricant, corrosion preventative, foreign material, or surface rust that may be present. Inspect spindle for burrs, nicks, roughness, deep scratches, etc. Clean or correct any imperfection.

Step 2: Lubricate the bearing journals on the spindle or the inside diameter of the bearing cones with clean lubricant of the same type used in the wheel end. Do not lubricate the seal journal on the spindle.

Step 3: Remove the inner packaging tube from ROLLiant™ hub assembly. This packaging is located on the end of the hub where the inboard seal is installed.

Step 4: Wipe an even thin film of clean hub lubricant around the entire inner diameter of the seal (360 degrees). Take care not to get oil on the face of the seal which can be perceived as leakage. Wipe off any excess oil from the seal face. **Never lift hub by the seal.**

Step 5: Leave the outer packaging plate & tube in place while installing the hub assembly on the spindle. Using a hoist, hold two hub studs by hand and use a smooth firm motion to position the hub all the way on the spindle. Use care to maintain alignment between the spindle, bearing cones, and hub to prevent damage to the seal or ABS tone ring.

- Use care to ensure the outer bearing stays in the hub assembly. If the outer bearing cone falls onto the floor, the complete hub assembly must be replaced.
- The outer packaging tube will be pushed out by the spindle, the outer packaging plate stays on the hub assembly. See Figure 1.
- Do not install with the drum attached to the hub.

Figure 1. Spindle pushing out outer packaging tube.

Step 6: Hand tighten the spindle nut, then remove the outer packaging plate.

Figure 2. With outer packaging plate.

Figure 3. Without outer packaging plate.

Step 7: Tighten the spindle nut to the following torque values:

- One Piece Spindle Nuts (Pro-Torq, Axilok, etc.): Tighten one-piece spindle nut to 300 ft. lbs. while rotating the hub. Engage any locking device that is a part of the spindle nut system. If the locking device cannot be engaged, advance the spindle nut until the lock can be engaged. **DO NOT BACK OFF THE SPINDLE NUT**.
- Double Jam Nut Systems: Tighten the inner spindle nut to 300 ft. lbs. while rotating the hub. Advance the inner nut as necessary to engage the locking ring. **DO NOT BACK OFF THE SPINDLE NUT**. Install the outer spindle nut and tighten to 200 ft. lbs. Be sure to engage any locking device.

Step 8: Install the hub cap or drive axle with a new gasket. Tighten the hub cap bolts in a star pattern to 12 to 18 ft. lbs. Tighten the drive axle bolts or nuts per the drive axle manufacturers recommendation.

Step 9: For Oil: Remove the fill plug in the hub or hub cap. Fill the hub with an approved oil up to the hubcap fill line. Allow oil to settle in hub and rotate hub back and forth to ensure the bearings are filled. Add additional oil as needed until level with hub cap fill line. Replace the fill plug and tighten:

- 30 ft. lbs. for hub fill plug
- 25 in. lbs. MAX for hub cap fill plug

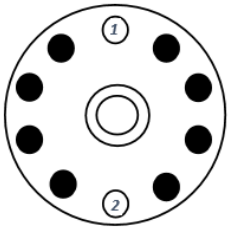
For Semi-Fluid Grease: *Semi-Fluid Grease is only to be used in approved trailer hub applications.* Remove the fill plug in the hub. Fill the hub with the proper amount of semi-fluid grease through the fill hole. The hub may need to be rotated or oscillated to distribute the grease and allow for the full amount to be added. Fill volumes:

- RLT-01025 Hub for SAE N (Tapered) Spindle: 20 fl. oz.
- RLT-01043 Hub for SAE P (Straight) Spindle: 45 fl. oz.

Step 10: Install drum using hoist with a hook:

WARNING: Check with Safety personnel for proper hoist and hook usage.

1. Inspect drum flange and pilot for damage before mounting to hub.
2. Slide drum onto hub making sure there is a wheel pilot at the 12 o'clock position. Use the brake linings to help center and guide the drum onto the pilots.
3. Push drum completely onto the hub until the flanges make solid contact.
4. Hold the drum against the hub flange and install a flange nut in the 12 o'clock position, tighten to a maximum of 50 ft. lbs.
5. Continue to hold the drum against the hub flange and install a flange nut in the 6 o'clock position, tighten to a maximum of 50 ft. lbs.
6. Visually check that the drum is positioned on the raised step (picture on left), not on the smaller hub/wheel pilot (picture on right).



2- Hole Sequence
Partial Line Assembly Only
Follow proper TMC procedures for final 10-Hole sequence installation

WARNING: Always tighten the top nut first to fully seat the brake drum on the drum pilot and against the hub face.

Endplay Verification:

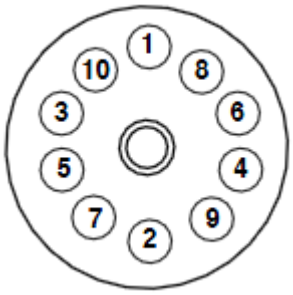
NOTE: KIC ROLLiant™ hub assemblies are manufactured and inspected for optimal endplay using precise measurement equipment. If a dial indicator is used to measure endplay in the field, the results are to be used as a reference only. Factory endplay measurement is included on ROLLiant™ hubs. Keep labels matched to the correct hub.

Attach a dial indicator to the hub or brake drum with a magnetic base. Adjust the dial indicator so the plunger is against the end of the spindle with the line of action approximately parallel to the axis of the spindle. Grasp the hub assembly at the 3 o'clock and 9 o'clock positions. Push the hub assembly in and out while oscillating it to seat the bearings. Read bearing endplay as the total indicator movement.

NOTE: Acceptable end-play is (negative) 0.002" to (positive) 0.005".

Wheel Installation:

- Install wheel(s) on hub assembly following TMC RP 222C.
- Most ROLLiant™ hubs feature M22 X 1.5 wheel studs which require 450-500 ft. lbs.
- Tighten wheel flange nuts in a star pattern as shown below:



Nut Tightening Sequence for Hub Pilot Wheels.