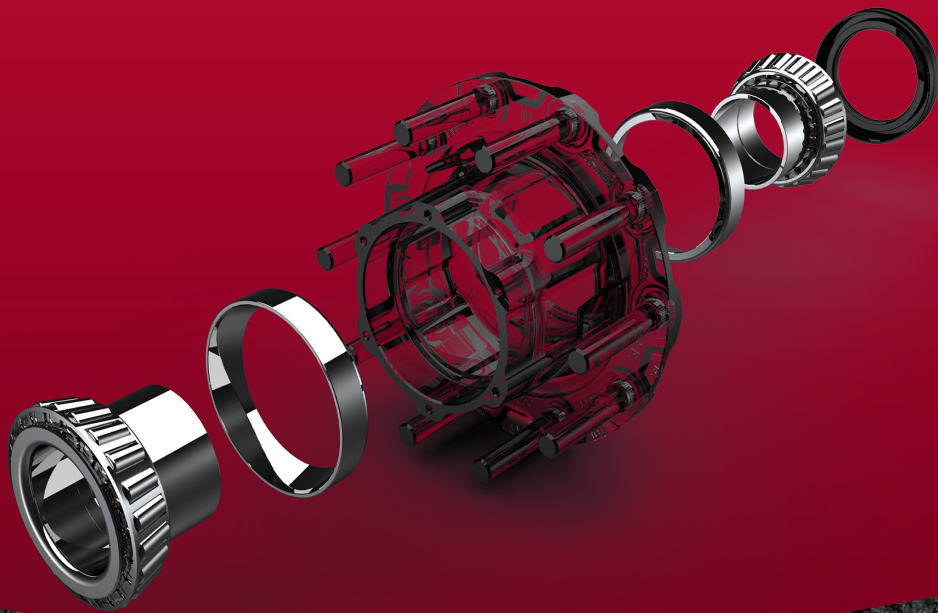


ROLLiant™ Disc Wheel Hubs

ROLLiant™ Extended Life Maintenance Procedures



Your only single source for industry-leading wheel end solutions.
STEEL & ALUMINUM WHEELS | DRUMS | HUBS | ROTORS | SLACK ADJUSTERS

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Service Notes

Before inspecting or performing any maintenance on your ROLLiant™ hub assemblies, read, understand and comply with this manual and the terms of the ROLLiant™ limited warranty. **FAILURE TO COMPLY WITH THE INSTRUCTIONS IN THIS MANUAL OR THE TERMS OF THE LIMITED WARRANTY WILL VOID THE LIMITED WARRANTY.**

Inspections and maintenance are to be carried out by trained personnel at Accuride certified facilities.

Proper inspections and maintenance are required to ensure long-life and proper operation of your ROLLiant™ wheel ends per ROLLiant™ warranty requirement.

This manual presents recommended inspections and maintenance for typical on-highway applications based on operation of 100,000 miles/year. Off-highway, severe service, and other abusive applications may require additional maintenance and are subject to different warranty periods.

Please contact Accuride Technical Service in the event the hub needs to be removed for service during the warranty period. Hub removal will void the warranty and should only be performed at the recommended service interval unless a previously identified condition has necessitated this service.

Contacting Accuride

Contact Accuride Technical Service through the following channels as required for assistance:

- Field Engineering: (800) 869-2275
- Customer Service: (800) 626-7096
- Warranty Group: warrantyadmin@accuridecorp.com

Before contacting Technical Service, please have the following information:

- Vehicle or trailer make and model and Vehicle Identification Number (VIN)
- ROLLiant™ hub serial number laser etched on flange, if possible
- In-service date, or build date if in-service date is not known
- Approximate mileage on vehicle
- Date of problem and wheel end position on vehicle
- Description of problem with wheel end

Related Literature

Refer to Accuride website for most up-to-date versions of literature:

- <https://www accuridewheelendsolutions.com/products/rolliant-bearing-spacer-system/>

Accuride Documentation:

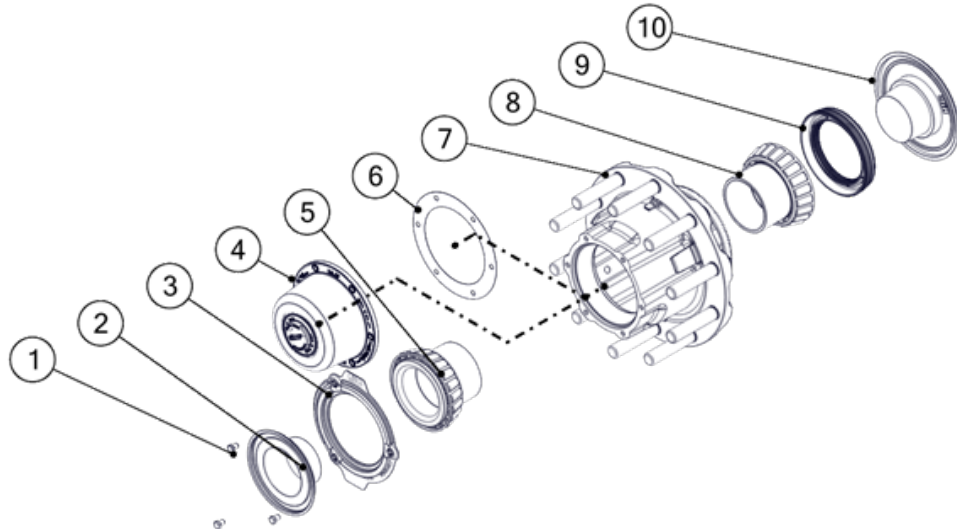
- WES2.027 AWES ROLLiant™ Hub Installation Procedure
- WES2.027S AWES ROLLiant™ Hub Installation Procedure (Spanish)
- WES2.028 AWES ROLLiant™ Hub Approved Lubricant Listing
- KIC General Hub Service Manual, pages 73-92, <https://www accuridecorp.com/files/2018/10/2015-KIC-Full-Line-Catalog-20180924.pdf>

TMC Recommended Practices (RPs):

- 222 – User's Guide to Wheels and Rims
- 608 – Brake Drums and Rotors
- 622 – Wheel Seal and Bearing Removal, Installation and Maintenance
- 624 – Lubricant Fundamentals
- 631 – Recommendations for Wheel End Lubrication
- 644 – Wheel End Conditions Analysis Guide
- 655 – Drive Axle Maintenance Guidelines
- 656 – Hub and Spoke Wheel Fastener Maintenance
- 662 – Outboard Drum Removal and Installation Procedures
- TMC RPs are intended for reference only. Accuride documentation takes precedence during inspection and maintenance of ROLLiant™ wheel ends.

ROLLiant™ Wheel Hub Introduction

Accuride Wheel End Solutions ROLLiant™ wheel hubs are a complete, factory certified unit ready for assembly onto a spindle. Each assembly includes a precision-machined hub, premium, extended cone bearings, and a long-life oil seal. Endplay verification during manufacture eliminates the need to manually set or check endplay during hub installation. Custom packaging closes off both ends of the hub to ensure no contamination or debris enters the hub during transit.



| Item | Number | Item | Number | Item | Number |
|-------------------------|--------|---------------------------------|--------|----------------------------|--------|
| Packaging Screws | 1 | ROLLiant™ Extended Bearing Cone | 5 | Oil Seal | 9 |
| Packaging End Cap | 2 | Hubcap Gasket | 6 | Inboard Packaging Retainer | 10 |
| Packaging Retainer Ring | 3 | KIC 1025K Series Hub | 7 | | |
| Hubcap | 4 | ROLLiant™ Extended Bearing Cone | 8 | | |

Figure 1. ROLLiant™ components. SAE P spindle hub shown, other configurations are similar.

Maintenance and Inspection Guidelines

ROLLiant wheel end maintenance and service is dependent on vehicle application and operating conditions. Accuride Wheel End Solutions recommends the following based on TMC RP631B for on-highway applications with an average usage of 100,000 miles/year. Off highway or severe service applications may require more frequent or additional service.

Warning: Always wear safety glasses and other required personal protective equipment (PPE) when performing maintenance and service to prevent injury.

Warning: The vehicle must be properly prepared before performing service or maintenance, which includes, but may not be limited to, the following:

1. Park on a level, clear surface.
2. Block the wheels and set parking brake as required so that wheels to be inspected are still free to rotate.
3. Raise the axle(s) to be inspected with a jack and support with jack stands.
4. Cage the parking brake so wheels to be inspected are still free to rotate.
5. Remove wheels and other brake components as needed to view areas of inspection while not disturbing or removing hub.

Caution: If any of the following inspections reveal the hub is damaged or out of specification, the vehicle should immediately be removed from service and repaired. Refer to Recommended Service on page six for proper procedures.

Pre-Trip/In-Service/Post-Trip Visual Inspection

The driver must visually inspect the vehicle prior to operation. Inspect for the following:

1. Broken, damaged, or missing components including wheel studs and nuts, hubcap screws, and drive flange studs and nuts.
2. Lubrication leaks visible around the hub cap or drive axle flange, fill plug, and hub oil seal. Lubricant visible on the brake components or inside of wheel is a typical indication of a leaking hub seal.
3. For oil lubricated hubs:
 - Lubricant condition via the hubcap window on steer and trailer hubs. Lubricant that has changed color, become cloudy, or shows particles, indicates a problem with the hub system.
 - Lubricant level via the hubcap window on steer and trailer hubs. If low, refill to the proper level with an approved lubricant⁽¹⁾. It is recommended to use the same approved lubricant that is already in the hub system.

Note: Oil residue may be present in the hubcap vent area. This is an indication the venting system is functioning properly and should not be construed as a leak.

In Service Inspection: After sustained operation, check the hubs for significant difference in temperature or excessive temperature (greater than 150°F above ambient). This can indicate internal damage to the hub system and the hub should be repaired or replaced immediately.

If the above inspections reveal problems with the wheel end, remove the vehicle from service and repair or replace the wheel end. Refer to Recommended Service on page six for proper procedures.

Preventative Maintenance

During any routine vehicle or wheel end maintenance, the following should be performed. At a minimum, these steps should occur every 100,000 miles or annually, whichever comes first.

1. The four visual inspections listed in the pre-trip/in-service/post-trip (previous) section.
2. A more thorough inspection of the lubricant⁽¹⁾ condition:
 - For oil lubricated hubs, remove any fill plug in the hub and check for metallic particles if the plug has a magnet. If a magnetic fill plug is not present, a magnetic pick up tool may be placed in the lubricant to check for metallic particles. If particles are present, remove them from the plug. A small quantity of fine particles may be present in drive hubs from the carrier housing. If large particles or chunks are found in any hub, the vehicle should be removed from service until the hub can be repaired or serviced. Refer to Recommended Service on page six for proper procedures.
 - i. Tighten fill plugs in the hub to 30 ft. lbs. (40 Nm)
 - ii. Tighten fill plugs in the SKF hubcap to 20-25 in. lbs. (2.3-2.8 Nm) or as indicated on the hubcap
 - For semi-fluid grease lubricated⁽¹⁾ hubs, remove the hubcap and inspect the lubricant condition. **Do not remove the spindle nut.** Grease should be present on the ends of the bearing rollers. If the lubricant is in good condition, add more semi-fluid grease of the same type through the fill plug until it pushes grease through the rollers. If the grease has a dry and caked appearance, the wheel end must be removed for service. Refer to Recommended Service on page six for proper procedures.
3. Non-Driven Axles: Raise the vehicle and support with jack stands.
 - Check for smooth rolling of wheels. Listen and feel for signs of vibration or bearing damage.
 - Check for signs of excessive endplay. With one hand on the top of the tire, lift the bottom of the tire with a pry bar and feel for "chucking" or loose bearings.

If the above inspections reveal problems with the wheel end, remove the vehicle from service and repair or replace the wheel end. Refer to Recommended Service on page six for proper procedures.

⁽¹⁾ Only approved lubricant can be used with the ROLLiant™ System. Please view the list of approved lubricants in WES2.028 AWES ROLLiant™ Hub Approved Lubricant listing, found at: <https://www.accuridewheelsendsolutions.com/files/2018/11/WES2.028-ROLLiant-Approved-Lubricants.pdf>

Five Year Service

As a preventative measure, the hubcap gasket is to be replaced at five years by an Accuride-approved facility. Accuride will provide a hubcap gasket for this replacement. See Hubcap or Drive Flange Gasket Replacement on page seven for instructions. For hubs sold with a tire air inflation system by Accuride Wheel End Solutions, the stator is also to be replaced at the five year service period.

Complete Internal Inspection/Service Interval

The recommended service interval for on-highway trailer wheel ends is ten years or 1,000,000 miles and seven years or 750,000 miles for on-highway tractor wheel ends. If previous inspections have not revealed issues with the hub, it is recommended that the hub is removed and inspected and the lubricant⁽¹⁾ is changed at this point. Refer to the KIC Service Manual for hub removal and inspection and WES2.027 for ROLLiant™ hub installation procedure.

Hub removal will void the warranty and should only be performed at the recommended service interval unless a previously identified condition has necessitated this service. Please contact Accuride Technical Service in the event the hub needs to be removed for service during the warranty period.

To maintain optimum wheel end performance and not void the limited warranty, Accuride Wheel End Solutions recommends only approved service parts are used to replace critical components.

Recommended Service

To maintain warranty coverage, contact Accuride Technical Service for any service that requires the hub to be removed from the vehicle. This includes but is not limited to: excessive endplay or other bearing issues, hub oil seal leakage, tone ring loss of signal due to damage or corrosion, or lubricant issues. In the event of these conditions, Accuride will provide a complete hub assembly if the issue is deemed warrantable.

Components that are replaced or repaired without hub removal will not void warranty coverage if the repair is performed as outlined below at an Accuride-approved facility. These components include hub cap and drive flange gaskets, wheel nuts, wheel and drive studs, and PSI inflation system stators.

⁽¹⁾ Only approved lubricant can be used with the ROLLiant™ System. Please view the list of approved lubricants in WES2.028 AWES ROLLiant™ Hub Approved Lubricant listing, found at: <https://www accuridewheelsendsolutions.com/files/2018/11/WES2.028-ROLLiant-Approved-Lubricants.pdf>

Hubcap or Drive Flange Gasket Replacement

If a hubcap or drive flange gasket leak is identified, follow the below procedure to replace. Accuride will provide one hubcap gasket replacement free of charge after the five year mark as a paper gasket will likely not last for the warranty period.

1. Follow proper procedures to prepare the vehicle for service, which included, but may not be limited to, parking on a level surface, blocking the wheels, and setting the parking brake.
2. Position an oil catch bin under the hub.
3. Remove the hubcap screws or drive flange nuts and remove the hubcap or axle shaft from the vehicle.
4. Remove the damaged gasket and clean the mating surfaces on the hub and hubcap or drive flange. Use caution not to damage either surface.
5. Reinstall the hubcap or axle shaft with the new gasket. Tighten the fasteners in a star pattern to the following values:
 - Hub cap screws: 15 ft. lbs. (20 Nm)
 - Drive flange nuts: (per TMC RP 656)

Drive Stud Nut Installation Torque Values

| Non-tapered Dowel Applications | | |
|--------------------------------|------------------------------|--------------------|
| Thread Size | Torque Values - Grade 8 Nuts | |
| | Plain Nut | Lock Nut |
| 5/8" - 18 | 150 - 230 ft. lbs. | 130 - 190 ft. lbs. |
| 3/4" - 16 | 310 - 400 ft. lbs. | 270 - 350 ft. lbs. |

6. For oil lubricated⁽¹⁾ hubs: Fill the hub with oil to the correct level.
 - Front and trailer hubs: fill hub to up to the fill line on the hub cap.
 - Drive hubs: ensure the differential is filled to the correct level (see TMC RP 655). Raise the opposite end of the drive axle a minimum of eight inches and hold for at least one minute to allow oil to fill the hub. Lower the axle and refill the differential to the correct level.
7. For semi-fluid grease lubricated⁽¹⁾ trailer hubs: add grease as described in Preventative Maintenance Section.

⁽¹⁾ Only approved lubricant can be used with the ROLLiant™ System. Please view the list of approved lubricants in WES2.028 AWES ROLLiant™ Hub Approved Lubricant listing, found at: <https://www accuridewheelsendsolutions.com/files/2018/11/WES2.028-ROLLiant-Approved-Lubricants.pdf>

Wheel Studs

Replace wheel studs when threads are damaged or distorted, or are broken, bent, or severely corroded. Replace both studs adjacent to the damaged stud. If two or more studs are damaged, replace all studs in the hub. Stud damage is often an indicator of improper wheel nut torque.

Caution: Do not use a hammer to drive wheel studs out of the hub. This can cause damage to the hub and will void the warranty.

Warning: Ensure all replacement wheel studs have the same dimensions and standout as the original studs. This will ensure correct wheel nut torque can be achieved.

Remove wheels per TMC RP 222. If a drum brake system, remove brake drum from wheel hub per TMC RP 662. Use care not to damage additional studs while removing the wheels and brake drum.

Stud Removal

With the hub still installed on the vehicle use a stud extractor that wraps around the backside of the flange and pushes the stud out of the hub. Use caution not to damage either side of the hub flange face.

Stud Installation

Before reinstalling wheel bolts, thoroughly clean wheel bolt hole on the hub to remove any foreign material. Inspect the bolt hole for damage that may affect the press-fit between the hole and the wheel stud. Use the stud removal tool in reverse to push the stud into the hub. After installation, a feeler gage should be used under the head of the bolt to ensure the wheel bolts are fully seated. A maximum gap of 0.002" is normally allowed.

After the damaged studs are replaced, reinstall the brake drum per TMC RP 662 and the wheels per TMC RP 222. Apply the proper torque to the wheel nuts per TMC RP 222. Alternatively, refer to WES2.027, ROLLiant™ Hub Installation Procedure.

Driver Studs

Remove the axle shaft per the instructions in "Recommended Service – Hubcap or Drive Flange Gasket Replacement," on page seven. For drive stud removal and replacement, reference TMC RP 656. Make sure replacement studs have same dimensions to studs that are removed.



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