



# Advanced Wheelend Technologies

## THI – 1500 series

Brake cam Tube enclosures for Hendrickson INTRAAX suspensions

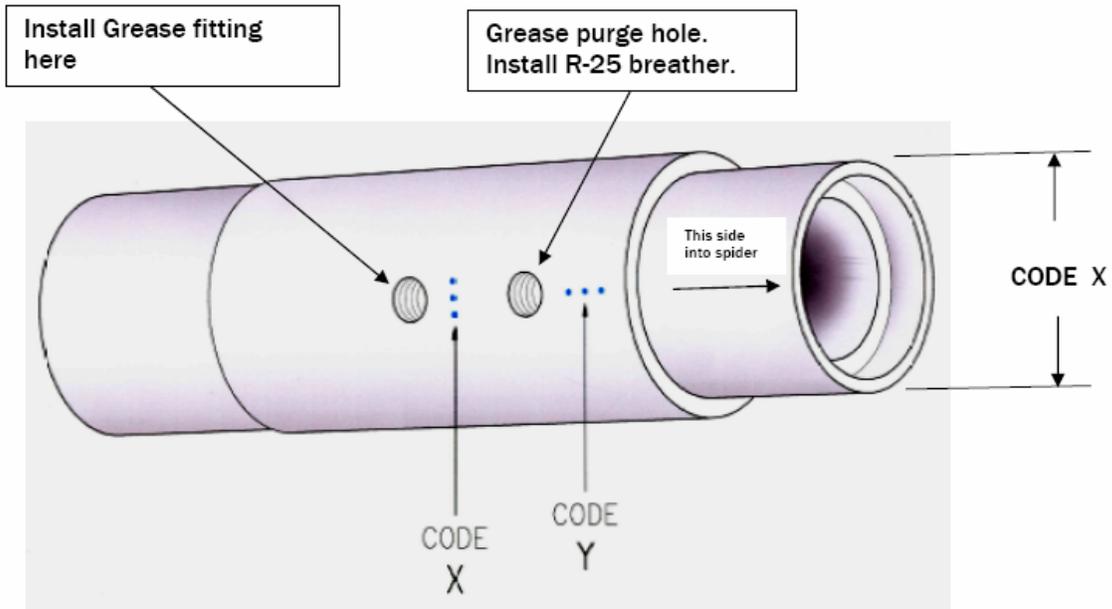


Fig. 1

|        |  |
|--------|--|
|        |  |
| Code X | * = Standard spider channel                      |
|        | ** = 1st oversize ( SPIDER + )                   |
|        | *** = 2nd oversize ( SPIDER + )                  |
| Code Y | *, **, *** = Cam matching code                   |
|        | see dots on end of cam are matched with the tube |

THIC-15 series cam tubes come with matching cams in the box. Recognition marks are present for identification.

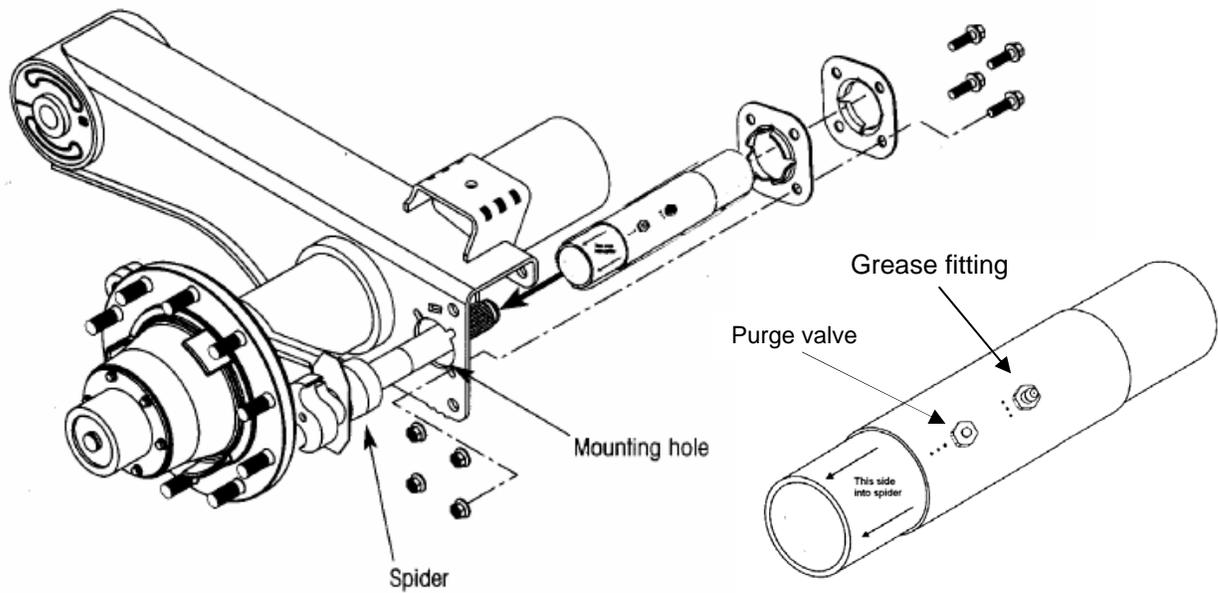


Fig. 2

THI 1500 series tube enclosures need to be press-fitted into the spider bracket channel. This press-fit is essential for the tube to be securely adapted to the spider bracket and to prevent damage inside the spider channel.

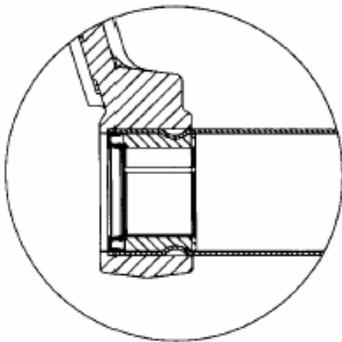


Fig. 3

Be sure to insert the extremity of the tube that is closest to the purge breather as described in fig. 1 & 2. This process is achieved by using a puller to insert the tube into the spider channel's bore until fully seated. Fig. 3

It is preferable to remove the wheel hub to perform this procedure easily and accurately. This replacement tube is intended to last many years and any rust damage or wear of the spider channels or to slack adjuster end bracket housing mounting hole must be dealt with before installation may resume. Take special care to rust proof your foundation parts prior to reassembly.

The puller kit shown below is specially designed for this tube installation, but any equivalent version of this tool can do the job as long as it can withstand the pull.

Tube Driver Kit # TDK-12250



Fig. 4

## Unique lubrication features

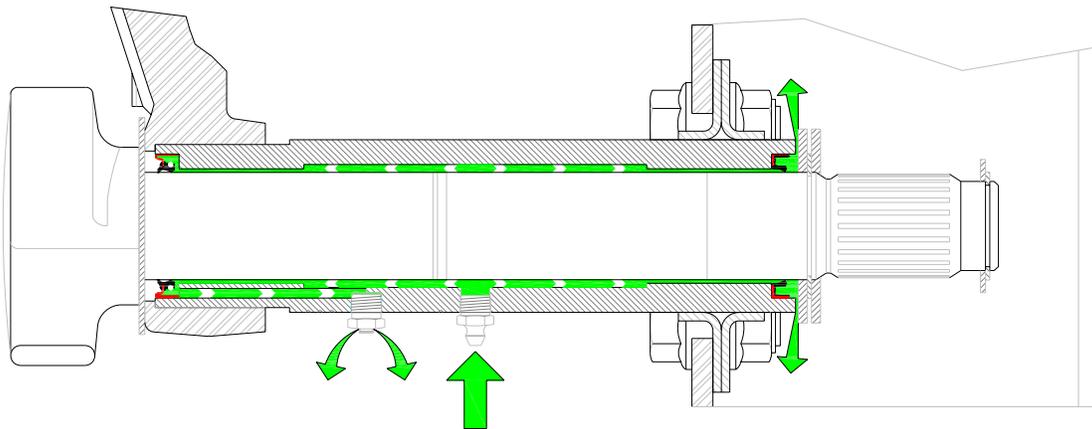


Fig. 5

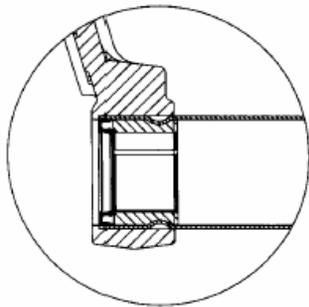
The THI-1500 series tube feature a lubricant purge system that allows proper lubricant flow to the spider cam bearing journals whenever lubricating the assembly. This ensures proper lubrication of both cam bearing journals.

### Conventional tube enclosure

Conventional cam-tube assemblies usually have new lubricant flowing to the spline end journal due to a positive seal at the spider end of the tube to prevent grease contamination of the brake foundation. This positive seal locks out new lubricant to be delivered to the spider bearing journal because the old lubricant cannot be purged out of the assembly.

### Installing the Cam Tube

This procedure doesn't change whether you are using a standard or oversize tube. The tube needs to be inserted at 5 – 15 ton pressure to ensure proper assembly.



1. Once all components are clean and dry, apply a thin film of lubricant to the spider channel's bore and onto the mating surface of the cam tube to be inserted.
2. Line up the tube to the channel and introduce the tube to the spider. Using tool # TDK-12250 (see fig. 4) or a suitable equivalent puller, install the puller to press fit the tube into the spider channel and align. Tighten the puller assembly until the tube is fully seated.

3. Align grease fitting to allow easy access (fig. 7)

Clean the inside of the tube and lubricate lightly both bearing journals in the tube and the double lip seal at the brake side of the tube with grease. Insert the cam and rotate the cam to make sure it spins freely.

**IMPORTANT:** Do not weld or otherwise fasten the cam tube assembly to the spider. The cam tube assembly simply "slip fits" into the spider.

4. Arrange the two cam tube brackets back to back and slide them onto the end of the cam tube assembly (Fig. 8). Slide the brackets onto the cam tube until they contact the suspension beam.
5. Rotate the cam tube brackets so their holes align with the holes (or slots) in the suspension beam. If necessary, rotate the cam tube so the grease fitting is accessible (either pointing down or to the rear) when the drums are installed.
6. Install the four nuts and bolts. Tighten to 35-45 ft. lbs. (48-61 N•m) of torque.

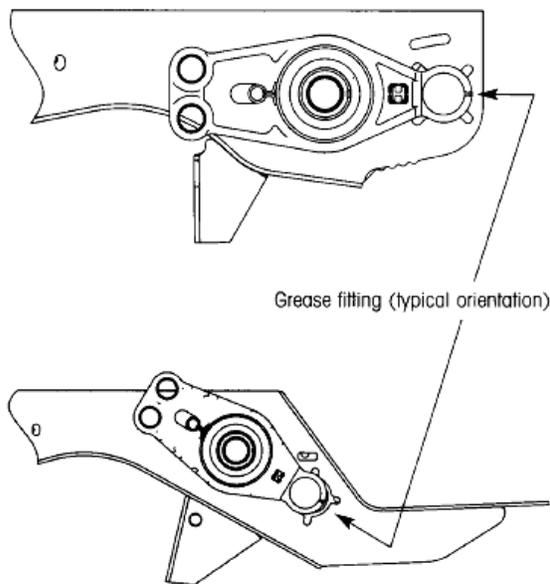


Fig. 7 Accessible grease fitting orientation

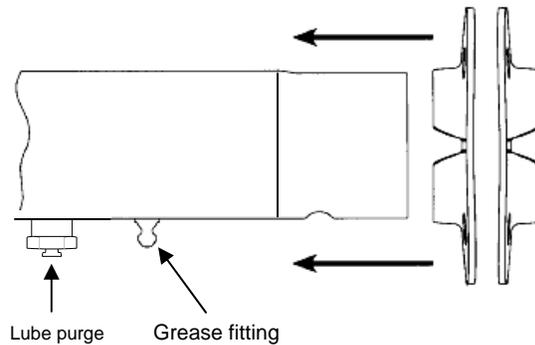


Fig. 8 Install brackets back to back on cam tube

If unable to align holding brackets with hole pattern in suspension beam refer to page 6.

7. Slide the S-cam journal washer (item 7, figure 4) onto the camshaft and seat it against the cam tube assembly.
8. Using retaining ring pliers, hold open the retaining ring (item 8, figure 4) and slide it on the end of the camshaft. Lock the retaining ring into the groove on the camshaft.
9. Slide the second S-cam journal washer (item 7, figure 4) onto the camshaft and seat it against the retaining ring (item 8, figure 4).
10. Lubricate the single, centrally located grease fitting with approximately four ounces of #2EP NLGI chassis lube. Add grease until it can be seen purging from the cam tube inboard seal (figure 4). Wipe away excess grease purged from joints. This will help prevent contaminants from being attracted to the lube points and grease from getting on the brake linings.
11. Complete the installation by installing the brake adjuster, spline inner washers and spline retaining ring. Refer to Hendrickson publication L496, *Wheel-End Maintenance Procedures* (available at [www.hendrickson-intl.com](http://www.hendrickson-intl.com)), for complete installation and safety instructions.

For steps 7 to 11 refer to figures 9 & 10 on next page.

See service bulletin SBOC-113-A for brake adjuster installation.

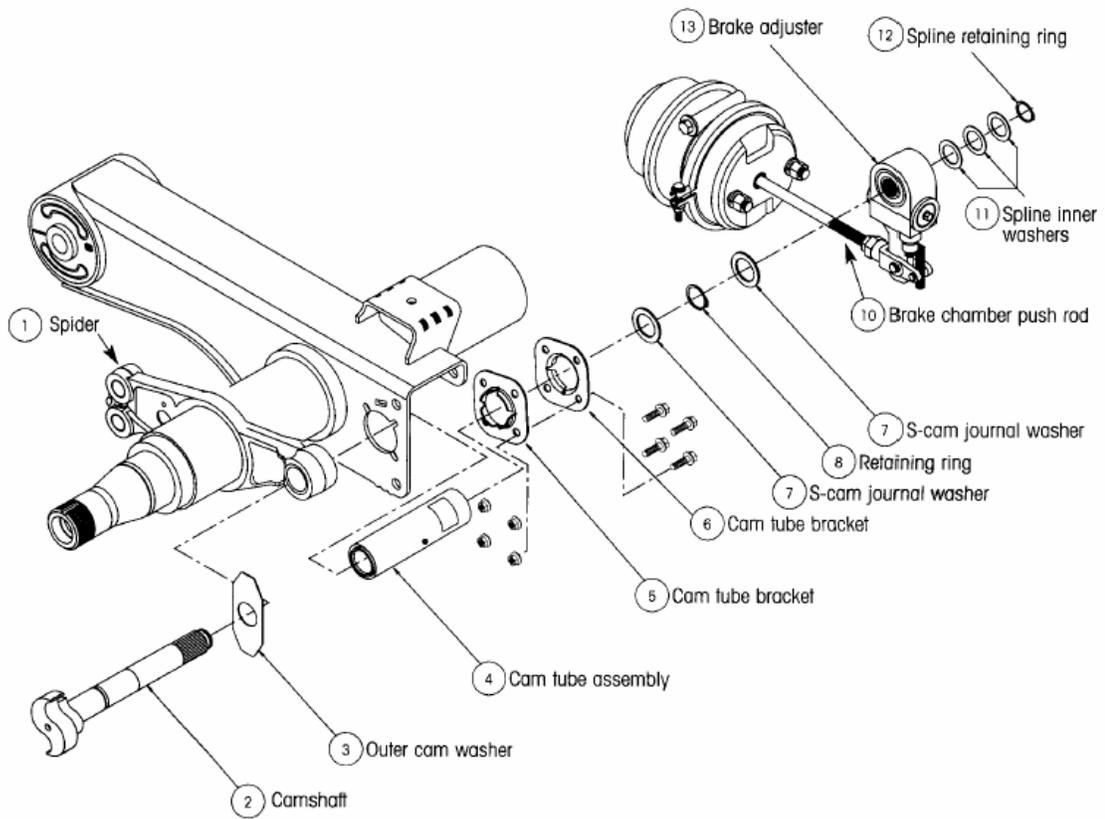


Fig. 9

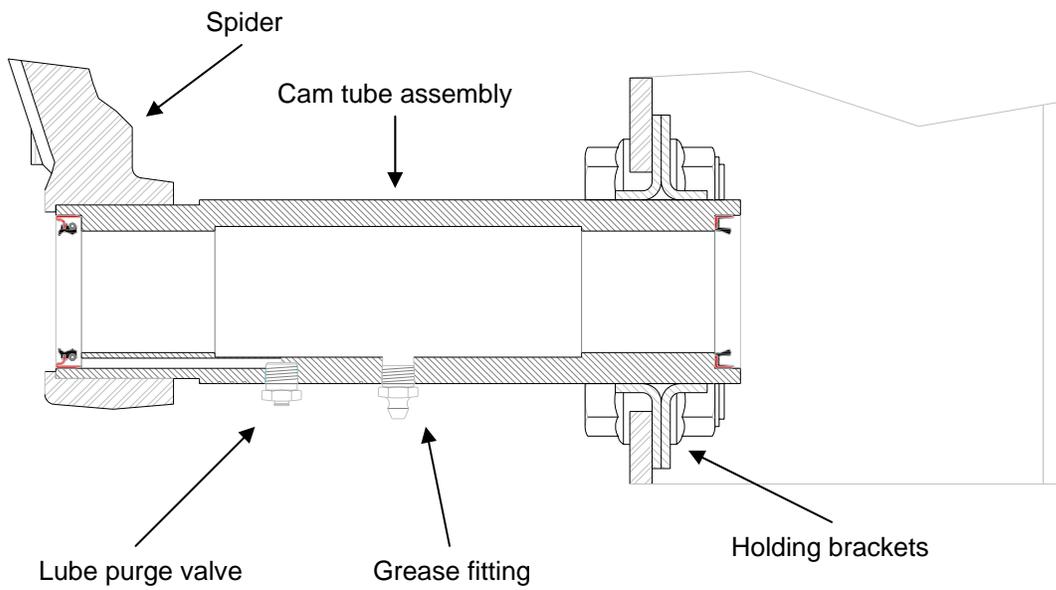


Fig. 10

This Cam Tube is designed to last longer than conventional replacement parts and special precautions are to be taken.

## Brake adjuster spline gear mounting to the cam spline

It may be necessary to remove the brake adjuster from the cam spline after many years of service, and to do that without damage to the cam splines requires special attention when assembling the brake adjuster. Please see service bulletin **SBOC 113A** for complete installation procedure.

## Spider bracket alignment

### If tube does not align with center of suspension beam's hole pattern

- Check for proper installation of the tube within the spider bracket's bore.
- Check for spider bracket alignment and repair adequately.

## Spider bracket tube channel damage

If spider channel is damaged and a standard tube can be inserted without at least 5 ton pressure, we recommend that you repair the channel or oversize it.

The THI-1500 series tube offers two oversize versions to repair your spiders and save your axles, with machine shop like quality results at reasonable cost.

Ask your tube supplier about **SPIDER +** or call the number below, and find out how you can do this repair “right on the spot” in your own shop, at a fraction of the cost to replace the axle.

## Maintenance

Inspect regularly as any other wheelend component.

Lubricant grade requirements may vary with applications.

Summer highway driving ; #2 non-EP / #0 non-EP

Winter highway driving ; #0 non-EP

See service bulletin **SBOC-117** for more information

For any questions regarding this service bulletin please use  
our toll free tech support line;

**1 - 877-765 -9629**