

TECHNICAL PROCEDURE

TRLAXLE™, HCA™ CAM TUBE KIT

SUBJECT: Weld Mount Cam Tube Installation

LIT NO: T71003

DATE: June 2011

CAM TUBE KIT INSTALLATION FOR WELDED MOUNTING PLATE

This procedure is for cam tube service kits with a weld mount bracket bolted to the Cam Bracket L Leg on a TRLAXLE™ or HCA™ axle model, as shown in Figure 1 and Figure 3.

Refer to Hendrickson publication L974 Drum Brake Maintenance Procedures (available at www.hendrickson-intl.com) for complete slack adjuster and S-cam removal and safety instructions.

PREPARATION

If the S-cam did not previously include a cam tube, the spider will have a bushing with a seal on each side.

The bushing and both seals must be removed. To do so, the S-cam must be removed first.

NOTE: Depending on S-cam length, it may be necessary to remove wheel, hub and brakes to remove S-cam from spider.

If cam tube exists:

- A. To replace outboard seal (item 4 of Figure 3, included in kit), the S-cam will need to be removed.
- B. To replace cam tube only, the cam tube can be removed and replaced without removing the S-cam.

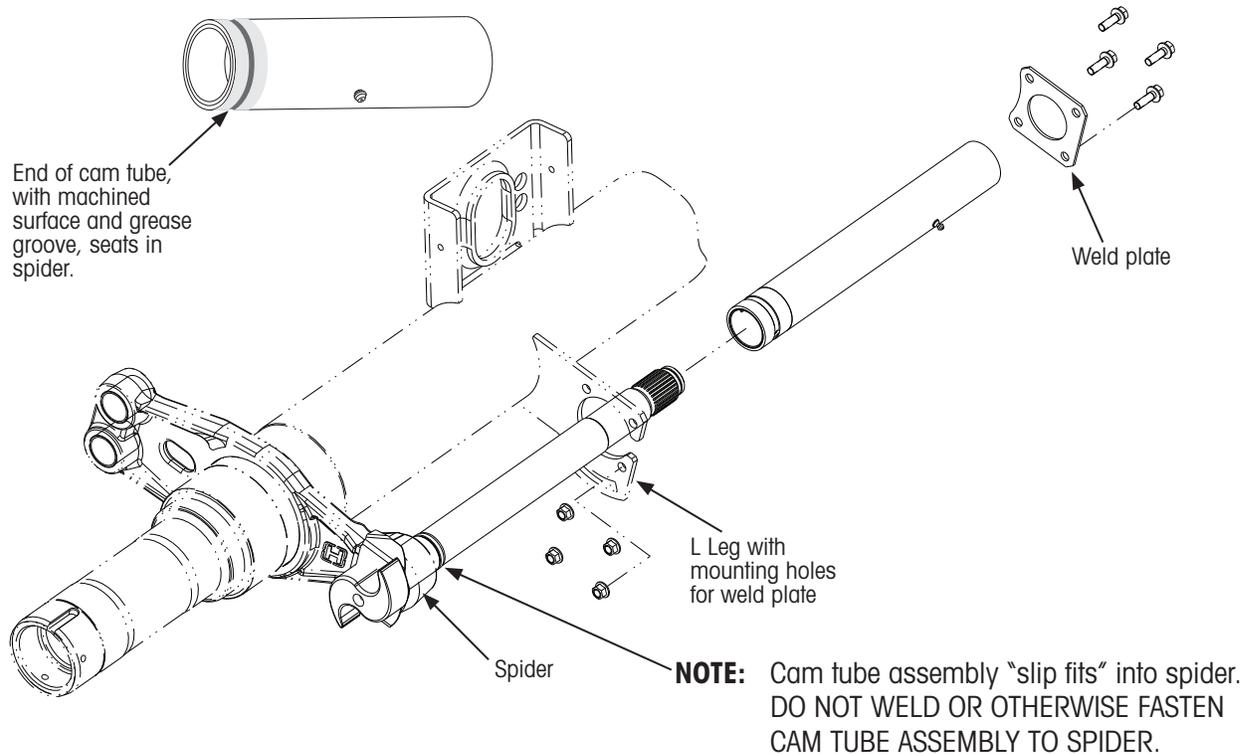


Figure 1: Cam tube assembly installation overview



REINSTALL S-CAM

If replacing existing cam tube only and not replacing outboard seal it is assumed the S-cam was not removed; skip this procedure.

1. Install new seal (item¹ 4) on outboard side of spider cam bore:

NOTE: Do NOT prelube seal before installing.

- A. Orient seal as shown in View B of Figure 3.
- B. Press into spider bore.
- C. Prelube seal lip prior to installing S-cam.

2. Slide S-cam into spider cam bore and "Cam bracket L leg" (Item 7).

INSTALLING CAM TUBE COMPONENTS

1. If not previously removed, remove slack adjuster and hardware from end of S-cam.
2. Referring to Figure 1 on page 1, from the inboard side of the axle, slide the new cam tube assembly (machined end first), through the "Cam bracket L leg" (item 7) and into the spider. The machined end should slip completely into the spider boss, but **not press fit**.

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

3. Rotate the cam tube so the grease fitting is accessible and pointing rearward (refer to Figure 4).

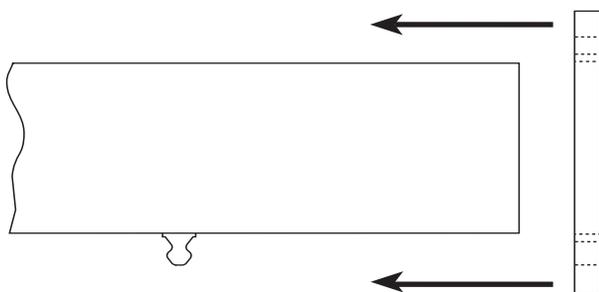


Figure 2: Install weld-mount bracket on cam tube

4. Slide the "Cam tube mounting bracket" (Item 10) onto the end of the cam tube assembly (Figure 2) until it contacts the "Cam bracket L leg" (Item 7).

5. Rotate the "Cam tube mounting bracket" so holes align with corresponding holes in the "Cam bracket L leg". If necessary, repeat step 3 to reorient grease fitting.
6. Install the four $\frac{5}{16}$ inch nuts and bolts (items 6 & 11). Tighten to 24-29 ft. lbs. (32.5-40 N•m) of torque.
7. Confirm Step 2 and Step 3 positions before welding. Rotate S-cam to ensure no binding is present.

NOTICE: Be sure to cover and protect S-cam spline gear from weld spatter.

8. Referring to the View A in Figure 3, weld the "Cam tube mounting bracket" to the cam tube by placing two fillet type weld beads at accessible locations around the cam tube.

INSTALLING "SLACK ADJUSTER"

1. Slide the "S-cam journal washer" (item 12) onto the S-cam and seat it against the end of the cam tube assembly.

NOTE: Always use new washers supplied with the kit. The snap-ring groove is covered by the cam tube and not required for this installation.

2. Slide the correct amount of "Shims" (item 13) onto the S-cam to align "Slack adjuster" (item 16) to brake chamber push rod and clevis.

NOTE: 6 shims (hardened washers) are included with the kit. Not all may be required to align slack adjuster and minimize lateral movement.

3. Install "Slack adjuster" (item 16) over the spline gear according to manufacturer's instructions.
4. Install enough "Shims" (item 13) and the "Spline inner washer" (item 14) to leave room for the "Spline retaining ring" (item 15) to fit in the snap-ring groove. Refer to Figure 3.
5. Complete the installation by placing the "Spline retaining ring" (item 15) in the groove at the end of the "S-cam" shaft.
6. Check for end play to be less than 0.06 inch (1.5 mm). Adjust shims (item 13) as needed.

¹ Item refers to numbered items in Figure 3 on page 3.



WELD MOUNT CAM TUBE INSTALLATION

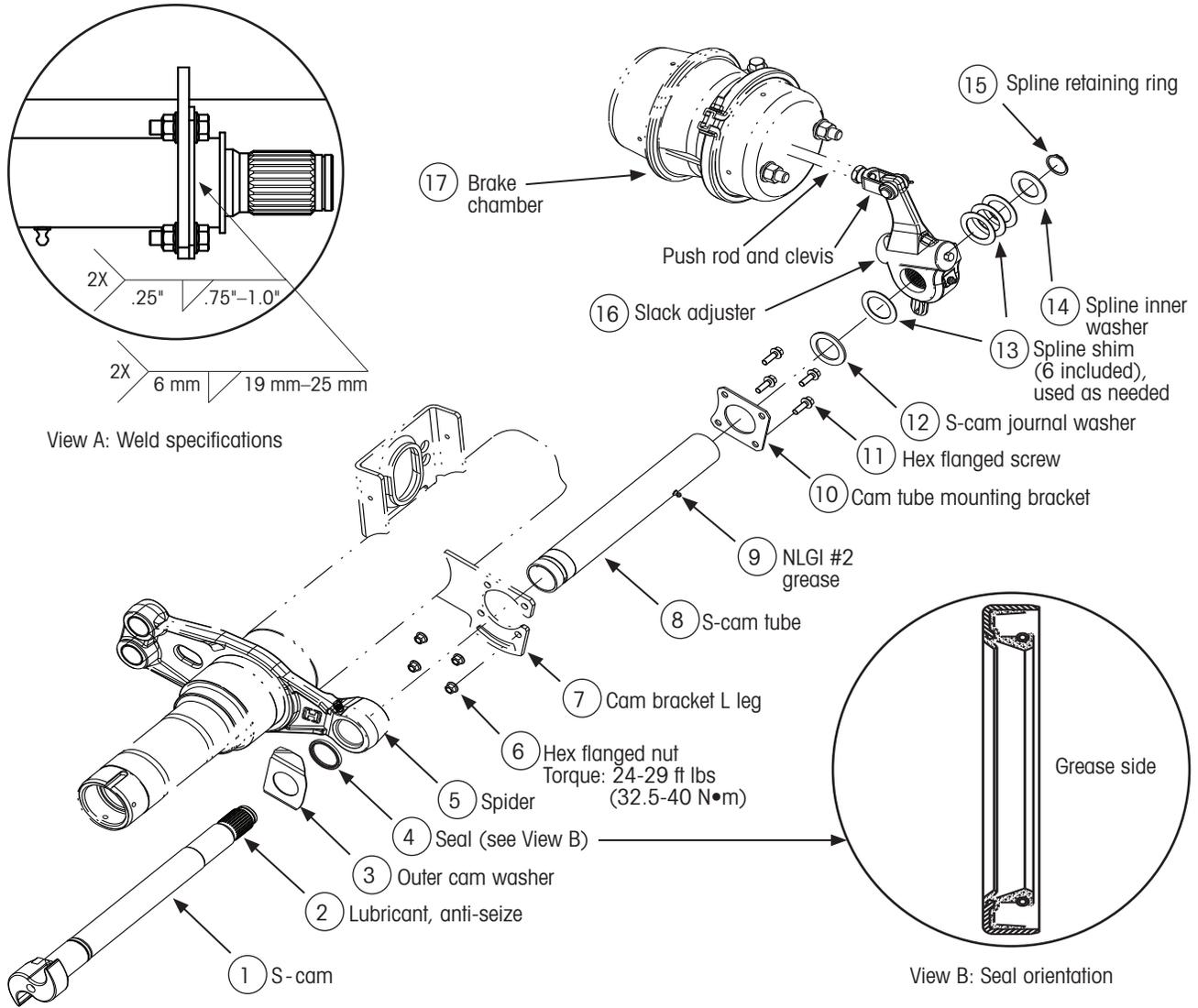


Figure 3: Cam tube system part identification and weld information

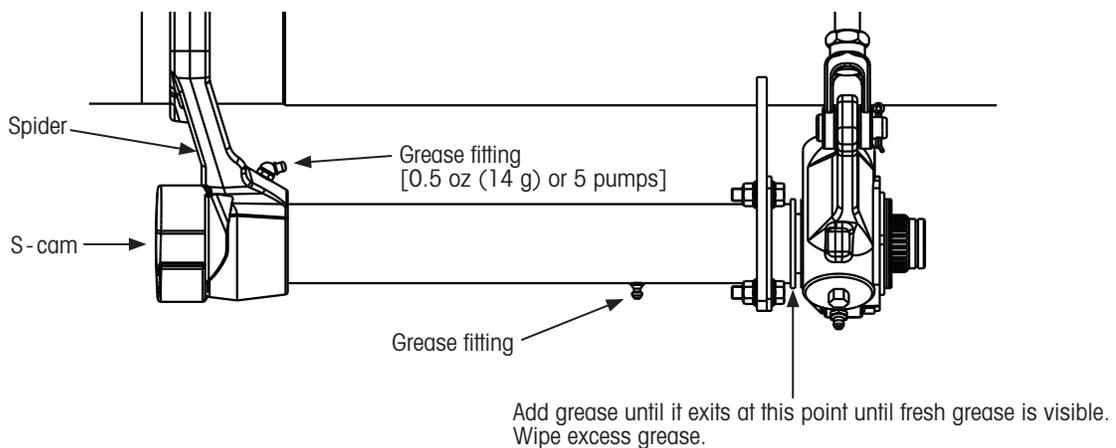


Figure 4: Cam tube weld mount assembly (top view)

LUBRICATION

Grease points include cam tube grease fitting and spider grease fitting (if exists), refer to Figure 4. Each is filled with #2EP NLGI chassis lube:

1. Lubricate the single, centrally located grease fitting on the cam tube. Add grease to cam tube until **fresh** grease can be seen purging from the end of cam tube at points shown in Figure 4.
2. Apply 0.5 oz. (14 g or 5 pumps) of grease to spider fitting.
3. 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.

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