



# Harsco Track Technologies

Harsco

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## SERVICE BULLETIN MAINTENANCE OF WAY EQUIPMENT

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**DATE:** 8-5-2003 **BULLETIN NO:** 03-013

**TITLE:** AXLE AND BEARING SET-UP PROCEDURE

**RATING:**

<input type="checkbox"/>	<b>DIRECTIVE</b> (Action Is Required)	<input type="checkbox"/>	<b>ALERT</b> (Potential Problem)
<input checked="" type="checkbox"/>	<b>INFORMATION</b> (Action Is Optional)	<input type="checkbox"/>	<b>PRODUCT IMPROVEMENT</b> (Enhance Product)

**PRODUCT SERIES / MODEL:** TR10 Tie Exchanger

**SERIAL NO:** All Models

**SUMMARY:** Due to installation problems experienced by some customers, a written procedure has been developed to aid in the assembly and set-up of the TR10 axles and bearings.

**OPERATIONAL IMPACT:** This procedure was written to alleviate difficulties arising from the incorrect positioning / installation of the axle and pillow block bearings.

**ACTION:** Follow the instructions in this Service Bulletin to position and install the axle and pillow block bearings.

**CONTACT:** If you have any questions or if we can be of any service, please contact the Service Department at the Columbia, SC. facility, (803) 822-9160.

## TR10 AXLE AND BEARING SET-UP PROCEDURE

The following TR10 Axle And Bearing Setup Procedure is for use on 56-1/2 inch track gauge machines that use a 48-5/8 inch dimension between the bearing mounting holes (see Figure 1).

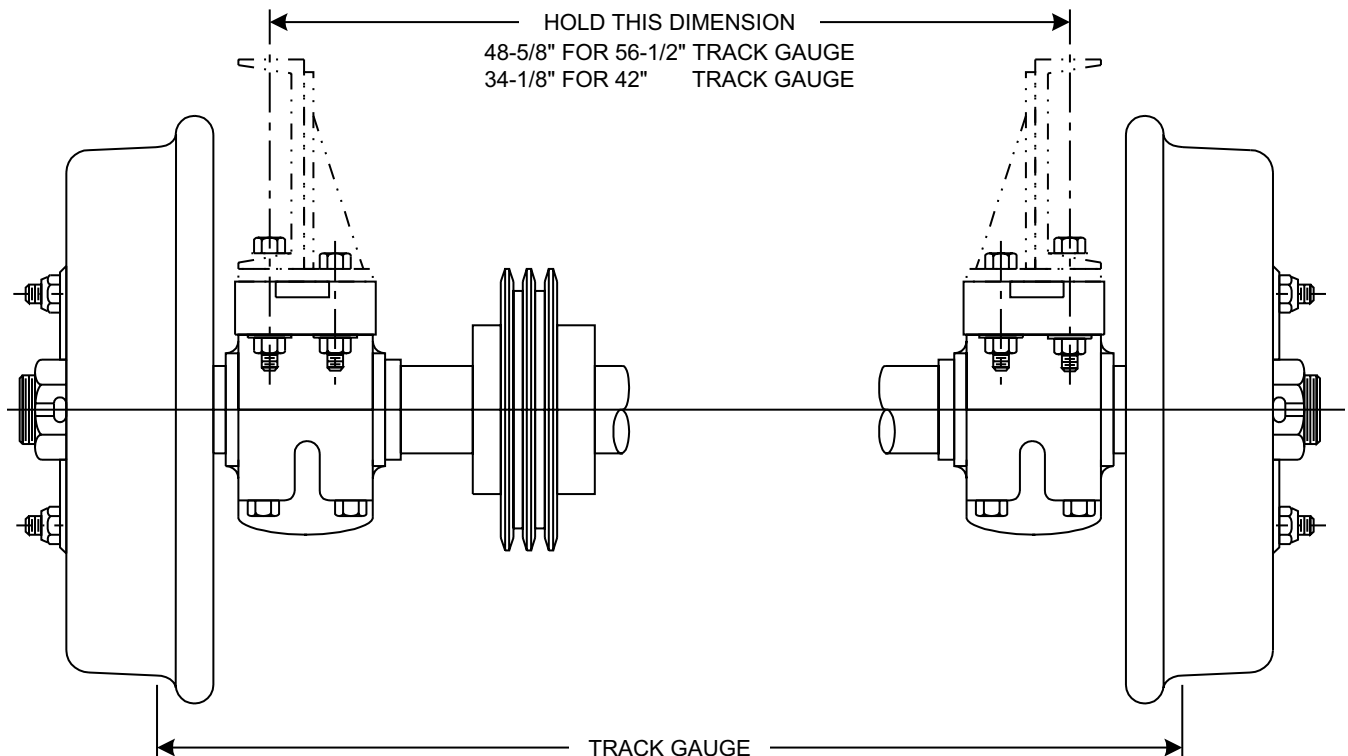
Note that this dimension will be 34-1/8 inches for 42 inch track gauge machines (see Figure 1 and Reference below).

**56-1/2 inch Track Gauge = 48-5/8 inch Dimension**  
Reference Axle Assembly Drawing No. B8441WAC / AD / AH)

**42 inch Track Gauge = 34-1/8 inch Dimension**  
Reference Axle Assembly Drawing No. B8441WAJ

1. Hold each bearing vertical and then tap it on a firm surface several times to displace the oil film between the bottom rollers and the outer race.
2. Measure the clearance between the top most roller and the outer race with a feeler gauge and then write the measurement with a magic marker on the bearing race.
3. Clean any oil; grease; or dirt from the axle bearing surfaces and the bores of the tapered sleeves using lacquer thinner (Loctite Primer).
4. Position the bottom halves of the split housings on a work bench (or bearing pedestal) and place them 48-5/8 inches apart (when measured from the outer most holes).
5. Mount the bearings to the work surface and tighten the bolts while maintaining the 48-5/8 inch dimension (see Figure 1).

FIGURE 1  
AXLE AND BEARING ASSEMBLY



**TR10 AXLE AND BEARING SET-UP PROCEDURE**

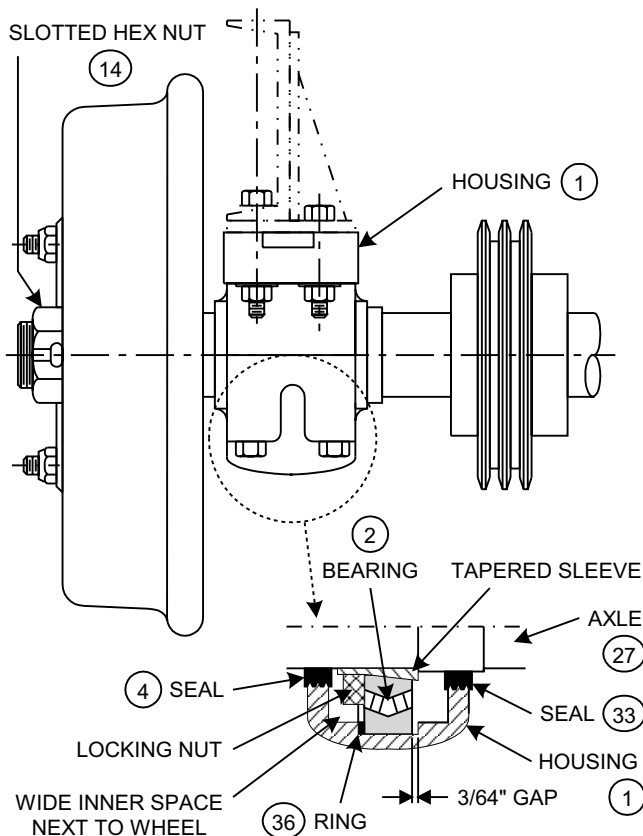
6. Slide the seals (triple-ect), tapered adapter sleeves and bearings onto the axle shaft and then hand-tighten the locking nuts into place.
7. Position the entire axle assembly into the bottoms halves of the (pillow block bearing) housings. The axle should be centered with an equal amount of shaft extending beyond each bearing half.

*Note: Tightening the bearing will force the axle to move. The axle will tend to exhibit both side-to-side and rotational movement. Use a fixture to prevent axle side-to-side movement. Axle rotation should be prevented by using a device designed to make use of the existing axle key-way.*

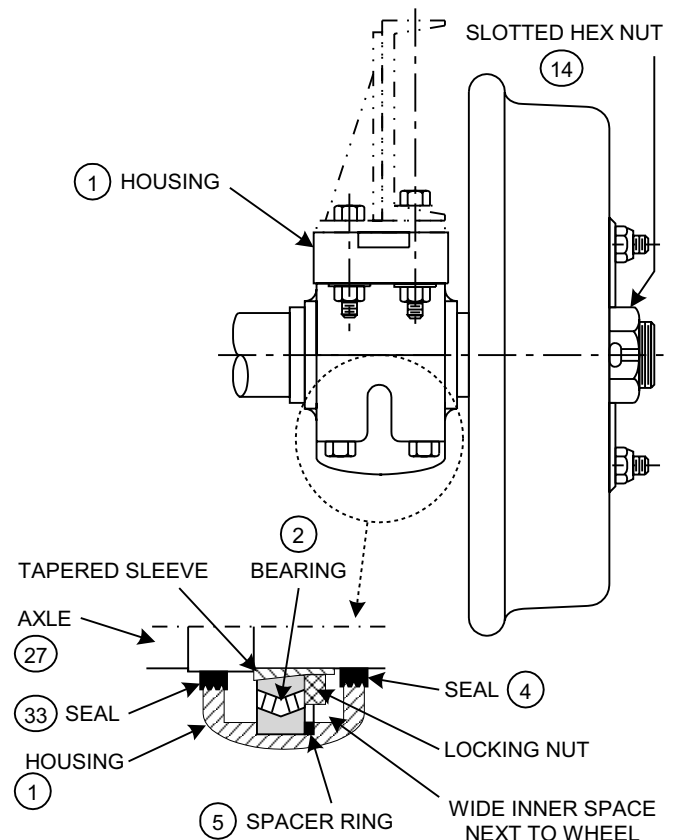
*Note: When installing bearings, the internal clearance should be (per specifications) as supplied with each bearing. Previously verified measurements should appear on the bearing race (refer to Step 2).*

8. Insert ring (item 36) into the bearing housing on the locknut side and use to obtain a 3/64 inch gap (see Figure 2).
9. Insert spacer ring (item 5) into the opposing bearing housing (other end of axle) on the locknut side (see Figure 3).

**FIGURE 2  
BEARING INSTALLATION  
LEFT SIDE**



**FIGURE 3  
BEARING INSTALLATION  
RIGHT SIDE**



**TR10 AXLE AND BEARING SET-UP PROCEDURE**

*Note: ASSEMBLY PROCEDURES AND INCLUSION OF STABILIZING AND SPACER RINGS INSIDE BEARINGS IS IMPERATIVE TO LIMITING AXLE SHIFT AND PROLONGING BEARING LIFE.*

- 10. Tighten the lock nuts by placing a brass drift against the slots (notches) of the nut and then strike the drift repeatedly with a hammer. Check the top roller to outer race clearance during tightening.
- 11. Follow Page 2 of the Instruction Manual supplied with the bearing housing assembly. Particularly Steps no. 1, 2, 3, and 3A through 3E.

*Note: Before striking the axle, be sure to install the slotted hex nut (item 14) on the end of the axle to protect the threads.*

- 12. With the slotted hex nut installed, occasionally strike the end of the axle with a plastic hammer and then rotate the axle. Continue this process of striking and rotating until the bearing is properly seated.
- 13. Continue back and forth between tapping the axle and tightening the bearing nut until the original clearance is reduced by .003 inch.

*Note: When installing bearings, the internal clearances should be adjusted as follows:*

<u>UNMOUNTED</u>	<u>TIGHTEN</u>	<u>MOUNTED</u>
<u>CLEARANCE</u>	<u>DOWN</u>	<u>CLEARANCE</u>
.007	.003	.004

- 14. Once the clearance has been reduced to the proper value, secure the lock nut by bending the lock washer tang into the slot of the lock nut.
- 15. Lubricate the bearing with grease or oil.
- 16. Check the bearing races to insure proper alignment; races should not be cocked or crooked. Apply Permatex on the housing mating surfaces and mount the top half of the pillow block housing to the bottom half.
- 17. If the bearing seals are free to rotate with the shaft and stop easily; tighten the hold down cap bolts.
- 18. Install both wheels (refer to applicable Axle Assembly Drawing No. B8441W\_\_). Torque the lug nuts to 450 ft/lbs.

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