



H[®] ASSEMBLY INSTRUCTIONS

ULTRA ROD[®] PLUS[™] Two-piece Torque Rods

SUBJECT: Welding Instructions and Selection Guide

LIT NO: 59310-024

DATE: June 2021

REVISION: B



INTRODUCTION

Hendrickson ULTRA ROD[®] PLUS[™] two-piece torque rods are a heavy-duty product. The forged spacer end body and corresponding tube end each include an integrated forged end hub to eliminate the need to carry a vast array of one piece torque rods in inventory. ULTRA ROD PLUS torque rods, available with or without factory installed bushings, provide the ability to assemble a wide range of torque rod lengths and bushing configurations.

Two-piece torque rods are an excellent replacement option for one-piece torque rods for both on-highway and vocational applications. ULTRA ROD PLUS two-piece torque rods can service a wide range of trucks up to a 52,000 pound capacity and are designed for up to 30 inch hub centers for a variety of applications. Please see details inside this publication for selection guidelines and instructions.

CAUTION

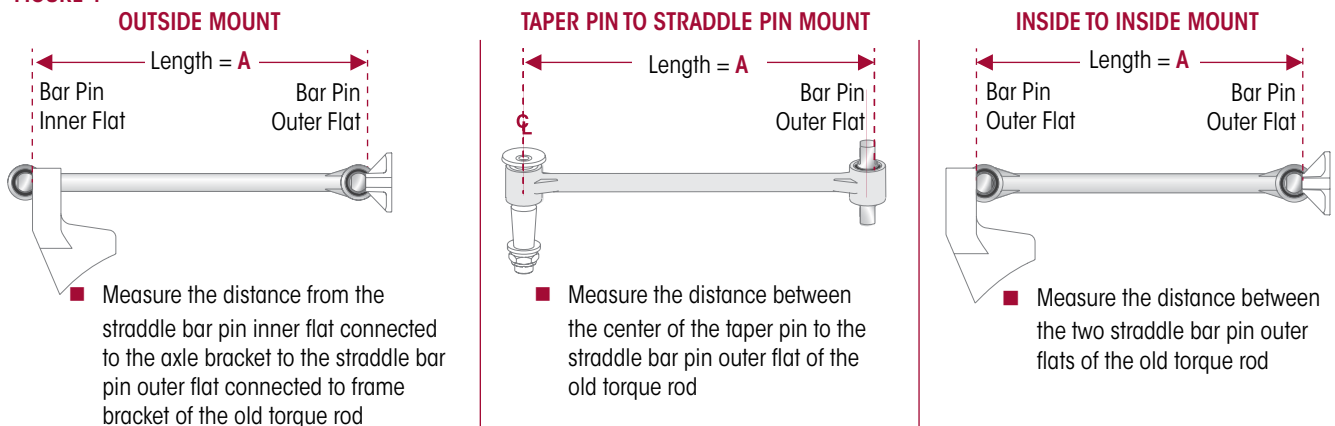
A TECHNICIAN USING A SERVICE PROCEDURE OR TOOL WHICH HAS NOT BEEN RECOMMENDED BY HENDRICKSON MUST FIRST SATISFY HIMSELF THAT NEITHER HIS SAFETY NOR THE VEHICLE'S SAFETY WILL BE JEOPARDIZED BY THE METHOD OR TOOL SELECTED. INDIVIDUALS DEVIATING IN ANY MANNER FROM THE INSTRUCTIONS PROVIDED ASSUME ALL RISKS OF POTENTIAL PERSONAL INJURY OR DAMAGE TO EQUIPMENT INVOLVED.

TWO-PIECE TORQUE RODS | How to Measure

Due to variances in straddle pin thickness amongst Hendrickson torque rods and various manufacturers, it is important to measure to determine the proper torque rod length. On the torque rod assembly being replaced, if there is:

- No damage to the existing torque rod body where measurement is not affected, first verify how the torque rod is mounted and then calculate the proper length measurement and make the new torque rod the same length, refer to Figure 1.
- Visible damage to the existing torque rod body, (bent, cracked or broken) it will be necessary to measure the physical dimensions on the vehicle to determine the proper length.

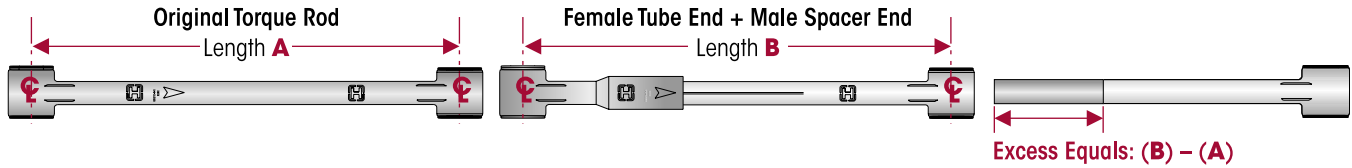
FIGURE 1



PRE-ASSEMBLY | Metal Preparation

1. Identify the proper torque rod mount currently on your vehicle (see Dimension A in Figure 1).
2. Assemble the male spacer end into the base of the female tube end until it bottoms out. Measure for excess, see Figure 2.

FIGURE 2



CAUTION

BE SURE TO WEAR PROPER EYE AND HEARING PROTECTION, AND WEAR THE PROPER PERSONAL CLOTHING PROTECTION WHEN PERFORMING STEPS 3 AND 4.

3. Remove the excess material (as shown in Figure 2) from the male spacer end using an abrasive cutting or sawing method. End face of the male spacer end should be cut square. **DO NOT** use flame or arc cut methods.
4. Remove all grease, oil, rust, or oxides from the metal surfaces to be welded by grinding, filing or power brushing.

WELDING PROCESS | Prior to Bushing Installation

WARNING

THE WELDING PROCEDURE DESCRIBED MUST BE PERFORMED BY AN ASME OR AWS QUALIFIED WELDING OPERATOR. AN EFFECTIVE WELD BETWEEN SPACER BAR AND TUBULAR END IS CRITICAL TO SAFE OPERATION OF THESE PARTS. HENDRICKSON TRUCK COMMERCIAL VEHICLE SYSTEMS SHALL NOT BE RESPONSIBLE FOR WELDING AND FABRICATION PERFORMED BY THE PURCHASER OR USER OF THIS PRODUCT.

TYPE: *Preferred:* GMAW (Gas Metal Arc Welding), commonly referred to as MIG welding.

Alternate: SMAW (Shielded Metal Arc Welding), commonly referred to as stick, arc or coated electrode.

CURRENT: DC reverse polarity.

SHIELDING GAS: (GMAW process only) 100% CO2 or 75% Argon - 25% CO2 (C25) at 30 CFH flow.

FILLER METAL: GMAW - AWS #ER70S-6, SMAW - (Coated electrode), AWS #E6010 or E7018.

NOTE

Preheating and post-heating of metal is required. Prior to welding both the male spacer and female tube ends should be preheated within the range of 200°-400° Fahrenheit. Post heating should be within the range of 1100°-1200° Fahrenheit. SMAW (coated electrodes) should be stored in a warming oven to minimize moisture absorption.

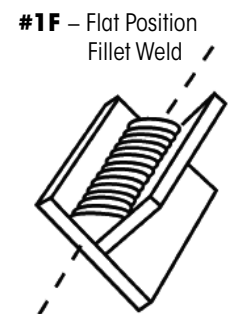
COMPONENT POSITION:

All components are to be positioned so the welding can be performed in the #1F (Flat Roller Fillet) position only. see Figure 3.

BASE METAL:

Male Spacer Bar and Female Sleeve: SAE 1030

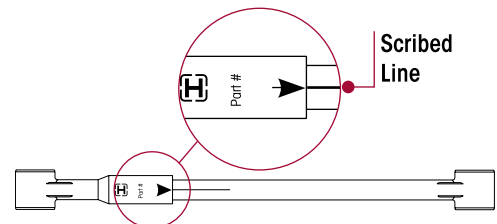
FIGURE 3



WELDING ASSEMBLY | Prior to Bushing Installation

FIGURE 4

1. Assemble the male spacer end into the base of the female tube end. Check for correct length, see Figure 1.
2. Rotate the male spacer end until the scribed line is positioned with the arrow on the female tube end, see Figure 4. Hold in position for fillet weld.



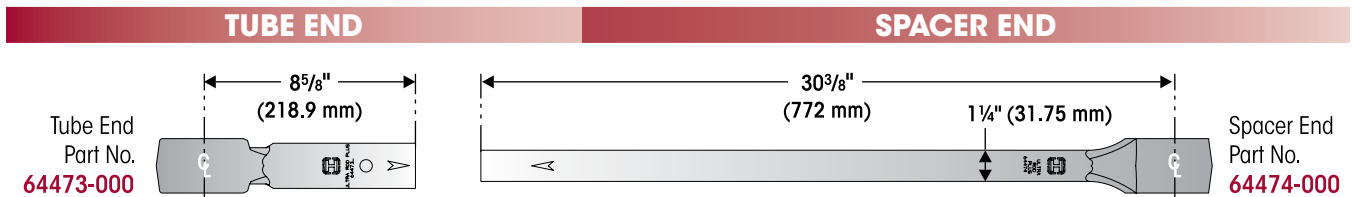


- Complete assembly by welding a minimum ¼" convex fillet weld around the entire circumference of the tube. This weld must obtain full root penetration with equal legs sufficient to provide metallurgical fusion between weld and base metal. **DO NOT** undercut or overlap.
 - For maximum security welded assembly should be NDT inspected with dye penetrant, fluorescent penetrant or magnetic particle techniques. Any ¼" or larger weld defect must be repaired and reinspected.

ULTRA ROD PLUS | Two-piece Torque Rods Selection Guide

Empty End Hubs offer added versatility to ULTRA ROD PLUS torque rods. Ordering empty end hubs allow the installation and use of any applicable Hendrickson **ULTRA ROD PLUS** and **XTRB** bushings. The two-piece design requires stocking only two part numbers, eliminating multiple torque rod inventory. Refer to Hendrickson Literature no. 45745-148 for more information.

EMPTY END HUBS



PRE-ASSEMBLED WITH BUSHINGS

Tube End Part No.	Replacement Bushing			
	Part No.	A Mounting Center	Hole Diameter	
46610-001	64400-002L	4 3/8" 111.13 mm	16.6	5/8
46610-003	◆ 66649-002L			
46610-004	◆ 66649-005L			
*46610-005	64400-002L			

Spacer End Part No.	A Length		Part No.	B Mounting Center	Hole Diameter	
	mm	inch			mm	inch
46661-001H	772	30 3/8	64400-002L	4 3/8"	16.6	5/8
46661-002H			◆ 66649-002L	111.13 mm		
46661-005H			◆ 66649-003L	5 1/4" 133.4 mm	23.1	15/16

Spacer End Part No.	A Length		Part No.	B Taper Pin		C Thread
	mm	inch		mm	inch	
46681-001H	772	30 3/8	64400-004L	73.66	2 7/8	1 1/4
46681-002H			◆ 66649-004L			

* 5° Clocking angle
◆ XTRB Bushings



ULTRA ROD PLUS | Bushing Installation

Hendrickson ULTRA ROD PLUS torque rod bushing installation is easier with the use of a funnel tool. To order funnel tool Part No. 66086-001L, contact your local truck dealer or authorized Hendrickson distributor. It helps prevent damage to the torque rod bushing during installation.

Refer any questions on this publication, contact Hendrickson Tech Services:



Toll-free U.S. and Canada
1.866.755.5968

Outside U.S. and Canada
1.630.910.2800



1.630.910.2899



PARTS IDENTIFICATION
truckparts@hendrickson-intl.com



TECHNICAL SUPPORT
techservices@hendrickson-intl.com



**Additional Hendrickson
Product Information**
www.hendrickson-intl.com

Actual product performance may vary depending upon vehicle configuration, operation, service and other factors. All applications must comply with applicable Hendrickson specifications and must be approved by the respective vehicle manufacturer with the vehicle in its original, as-built configuration. Contact Hendrickson for additional details regarding specifications, applications, capacities, and operation, service and maintenance instructions.

Call Hendrickson at 1.866.755.5968 (toll-free) or 1.630.910.2800 for additional information.



www.hendrickson-intl.com

TRUCK COMMERCIAL VEHICLE SYSTEMS
800 South Frontage Road
Woodridge, IL 60517-4904 USA
1.866.755.5968 (Toll-free U.S. and Canada)
1.630.910.2800 (Outside U.S. and Canada)
Fax 1.630.910.2899

59310-024 Rev B 06-21

© 2004 – 2021 Hendrickson USA, L.L.C. All Rights Reserved. All trademarks shown are owned by Hendrickson USA, L.L.C., or one of the affiliates, in one or more countries. Information contained in this literature was accurate at the time of publication. Product changes may have been made after the copyright date that are not reflected.

Printed in United States of America