

# **ASSEMBLY INSTRUCTIONS**

## Transverse Torque Rods for U.S. and Canada

**SUBJECT:** Requirements and Guidelines

**LIT NO:** 59310-004

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**REVISION:** F

### INTRODUCTION

Transverse torque rods provide lateral support for Hendrickson suspensions. They also provide greater stability and roll stiffness as well as keep the axle centered laterally and control axle walk-out on rear suspensions.

### SAFETY PRECAUTIONS



#### WARNING

TRANSVERSE TORQUE RODS ARE INCORPORATED FOR VEHICLE STABILITY. IF THESE COMPONENTS ARE DISCONNECTED OR ARE NONFUNCTIONAL THE VEHICLE SHOULD NOT BE OPERATED. FAILURE TO DO SO CAN RESULT IN ADVERSE VEHICLE HANDLING AND POSSIBLE TIRE CONTACT WITH THE FRAME. OPERATING A VEHICLE WITH NON-FUNCTIONAL TRANSVERSE TORQUE RODS CAN RESULT IN LOSS OF VEHICLE CONTROL, SEVERE PERSONAL INJURY, AND PREMATURE COMPONENT DAMAGE.



#### WARNING

DO NOT MODIFY OR REWORK PARTS WITHOUT AUTHORIZATION FROM HENDRICKSON OR THE ORIGINAL EQUIPMENT MANUFACTURER. DO NOT SUBSTITUTE OR USE REPLACEMENT COMPONENTS NOT AUTHORIZED BY HENDRICKSON OR THE ORIGINAL EQUIPMENT MANUFACTURER. USE OF MODIFIED, REWORKED, SUBSTITUTE OR REPLACEMENT PARTS NOT AUTHORIZED BY HENDRICKSON MAY NOT MEET HENDRICKSON'S OR THE ORIGINAL VEHICLE MANUFACTURER'S SPECIFICATIONS, AND CAN RESULT IN FAILURE OF THE PART, LOSS OF VEHICLE CONTROL, AND POSSIBLE PERSONAL INJURY OR PROPERTY DAMAGE. USE ONLY HENDRICKSON AUTHORIZED REPLACEMENT PARTS.

### TRANSVERSE TORQUE ROD RESTRICTIONS

#### NOTE

Transverse torque rods **ARE NOT** allowed to be used in conjunction with bronze center bushings.



#### CAUTION

WHEN TRANSVERSE TORQUE RODS ARE USED ON WALKING BEAM SERIES SUSPENSIONS, THE EQUALIZING BEAM MUST USE A RUBBER CENTER BUSHING. EQUALIZING BEAMS THAT CONTAIN A BRONZE CENTER BUSHING MUST BE CONVERTED TO A RUBBER CENTER BUSHING PRIOR TO INSTALLING TRANSVERSE TORQUE RODS. FAILURE TO DO SO CAN CAUSE PREMATURE COMPONENT WEAR AND/OR ADVERSE VEHICLE HANDLING.

### TRANSVERSE TORQUE ROD REQUIREMENT

Transverse torque rods are **REQUIRED** for vehicles equipped with the following Hendrickson rear suspensions:

- |                   |             |             |                |
|-------------------|-------------|-------------|----------------|
| • AR2™            | • HAS™      | • HN®       | • PRIMAAX® EX  |
| • COMFORT AIR®    | • HAS™ 40LH | • HAULMAAX® | • FIREMAAX® EX |
| • AL 405 / MAXAIR | • HA™       |             | • PRIMAAX      |
|                   |             |             | • FIREMAAX     |

### TRANSVERSE TORQUE ROD REQUIREMENT (contd.)

Transverse torque rods are **REQUIRED** for vehicles equipped with walking beams and rubber center bushings for Hendrickson rear suspensions as specified in Table 1.

TABLE 1		EQUALIZING BEAM LENGTH	
SUSPENSION	CAPACITY	Less than 60"	60" and longer
R, RS, RT, RTE	34K	★	Required
	40K	★	
	44K – 52K	Required	
R, RS, RT	65K	★	
RT	70K	Required	
SUSPENSION	CAPACITY	64" and Less	Longer than 64"
R, RS	85K – 120K	★	Required

★ Transverse torque rods **ARE REQUIRED** in all refuse, mining, and logging applications, although available for vehicles in other applications.

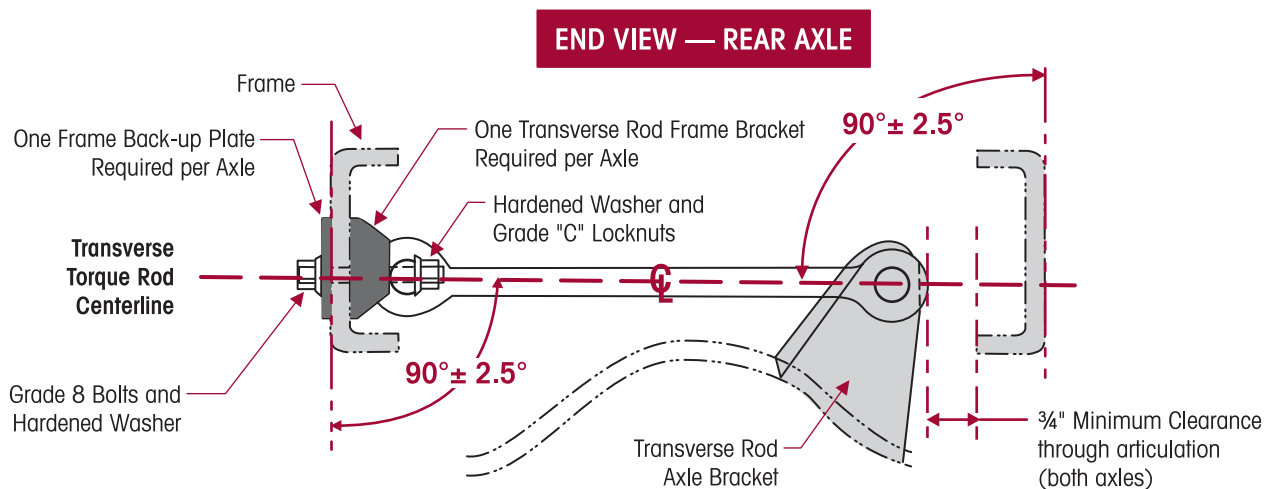
### TRANSVERSE TORQUE ROD RECOMMENDED GUIDELINES

Transverse Torque Rods are recommended where it is necessary to restrict the lateral movement of the axles to prevent interference of the tires, brakes, axle housings, etc. with the frame, body, or suspension components. The proper clearance is determined by the vehicle manufacturer prior to vehicle assembly.

**NOTE** Hendrickson recommends the use of Grade 8 bolts, Grade C locknuts and hardened washers for all transverse torque rod attachments.

- With the vehicle at loaded ride height, the transverse torque rod horizontal centerline has an angle of  $90^\circ \pm 2.5^\circ$  to the frame, see Figure 1.
- The transverse torque rod frame brackets are mounted to the frame and located as close as possible to either the bottom frame flange (preferably) or top frame flange, see Figure 1.
- Frame backup plates are required with transverse torque rod frame brackets, see Figure 1.

FIGURE 1

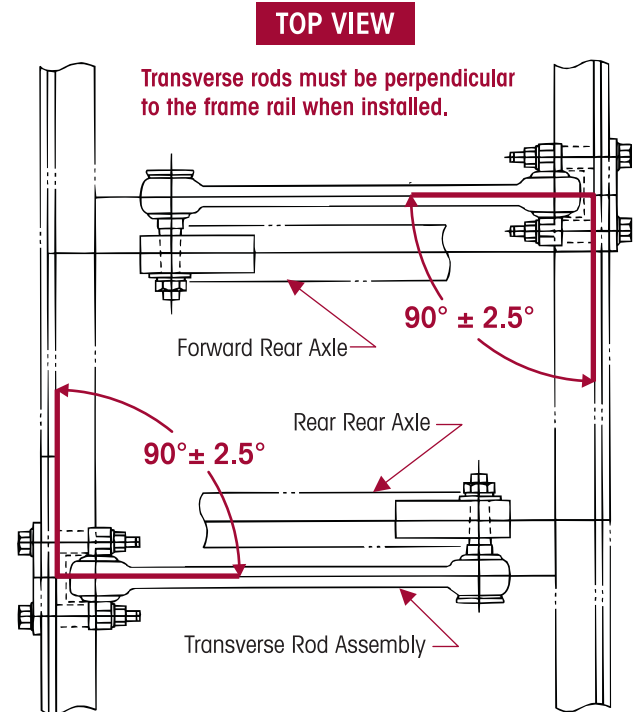


- Transverse torque rods should be positioned as low as possible to the horizontal center-line of the axle, but high enough as not to interfere with axle components during articulation.
- Install transverse torque rods perpendicular to the frame rails ( $90^\circ \pm 2.5^\circ$ ) as shown in Figure 2.

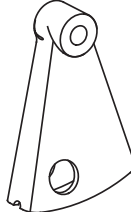
**NOTE**

A vehicle equipped with transverse torque rods may experience some reduction in suspension articulation or increased lateral stiffness and resistance to turning, especially with radial ply tires.

**FIGURE 2**



**FIGURE 3**

Hendrickson Non-specific Transverse Torque Rod Axle Brackets			
	Axle Bracket Part Number	Axle Model Number	
	48042-000	*Dana (Eaton)	Eaton D460
Rockwell SL100			Rockwell SQ100
46868-000	*Meritor (Rockwell)	Rockwell SQ100	Rockwell SQHP

\* It may be necessary to cross-reference the provided axle model number to the current manufacturer's model number.

Hendrickson Truck Commercial Vehicle Systems engineering supplies non-specific transverse torque rod axle brackets as shown in Figure 3.

Hendrickson does not set the guidelines with regard to transverse torque rod axle bracket heights or footprints, due to the many variations of axle combinations, frame widths, and suspension ride heights. Refer to the vehicle manufacturer for component specifications.

Refer any questions on this publication to Hendrickson Tech Services:



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