
SERVICE BULLETIN

MAINTENANCE OF WAY EQUIPMENT

DATE: 09 - 2021

BULLETIN NO: 21-007

TITLE: HR1500C1 Rail Unit Inspection and Product Improvements

RATING:

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

PRODUCT SERIES / MODEL: HR1500C1 Guide Wheel Unit

SERIAL NO: All HR1500C1 mounted on Trucks Model year 2014-Current

SUMMARY: Harsco Rail is aware of several recent issues on trucks equipped with HR1500C1 Guide Wheel Units. As a proactive measure, Harsco Rail has issued this bulletin to provide guidance for immediate Guide Wheel Unit inspection, reminder to perform routine inspections and maintenance, and product improvements that may reduce field issues.

Harsco Rail directs customers to read and understand the content of this bulletin and take action on these recommendations.

OPERATIONAL IMPACT:

In unknown field usage, Guide Wheel Unit damage may occur that could propagate to total Guide Wheel Unit failure.

ACTION: Follow the recommended procedures for inspections, maintenance, and product improvements in this Service Bulletin.

CONTACT: Harsco Rail Service Department
(803) 822-7546

Harsco Rail Parts Department
(800) 800-6410

Safety Information

- **FOLLOW APPLICABLE RAILROAD LOCKOUT - TAGOUT PROCEDURES TO DISABLE ENERGY SOURCES WHEN PERFORMING MAINTENANCE, MAKING ADJUSTMENTS OR REPAIRS TO THE VEHICLE OR EQUIPMENT. FAILURE TO HEED THIS WARNING COULD RESULT IN SEVERE BODILY INJURY.**

1 INSPECT FOR DAMAGE: - See Figures 1 & 2

- 1.1 Harsco recommends an immediate thorough inspection of the Rail Guide Wheel Unit. If necessary, clean the rail guide wheel unit to properly inspect.

The following must be inspected on all units:

- a. Any damaged or missing parts.
- b. Excessive or uneven wear of rail wheels and flanges.
- c. Excessive play or difficult rotation of the guide wheels.
- d. Loose or missing hardware on the stub axles.
- e. Inspect stub axle and weld seams for any signs of cracks in the areas highlighted Red and Blue in Figure 1 below.
- f. Axle stub nuts highlighted Green should always be torqued to 110 lb-ft.
- g. Clean cross tube and inspect for cracks/damage around the weld joint to the upper spring can highlighted Blue in Figure 2 below.
- h. Perform Daily / Weekly Inspection and measure guide wheel wear as found in HR1500C1 Operator's Guide (BUL001587). (For your convenience, these instructions have been added to the end of this service bulletin)

FIGURE 1
AXLE STUB COMPONENTS
INSPECT IMMEDIATELY AND DAILY / WEEKLY / ROUTINELY

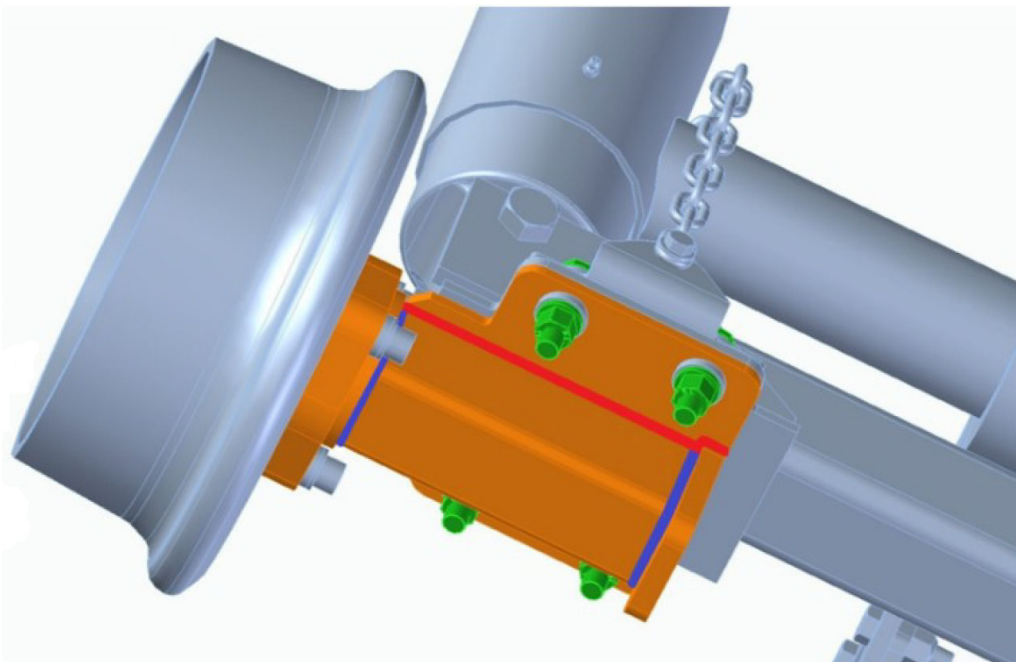
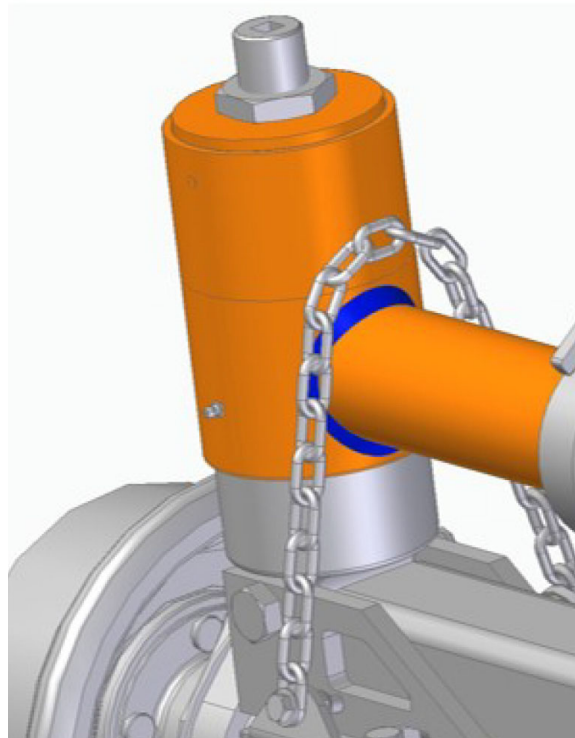


FIGURE 2
CROSS TUBE COMPONENTS
INSPECT IMMEDIATELY AND DAILY / WEEKLY / ROUTINELY



2 Additional Recommendations And Warnings - See Figure 3

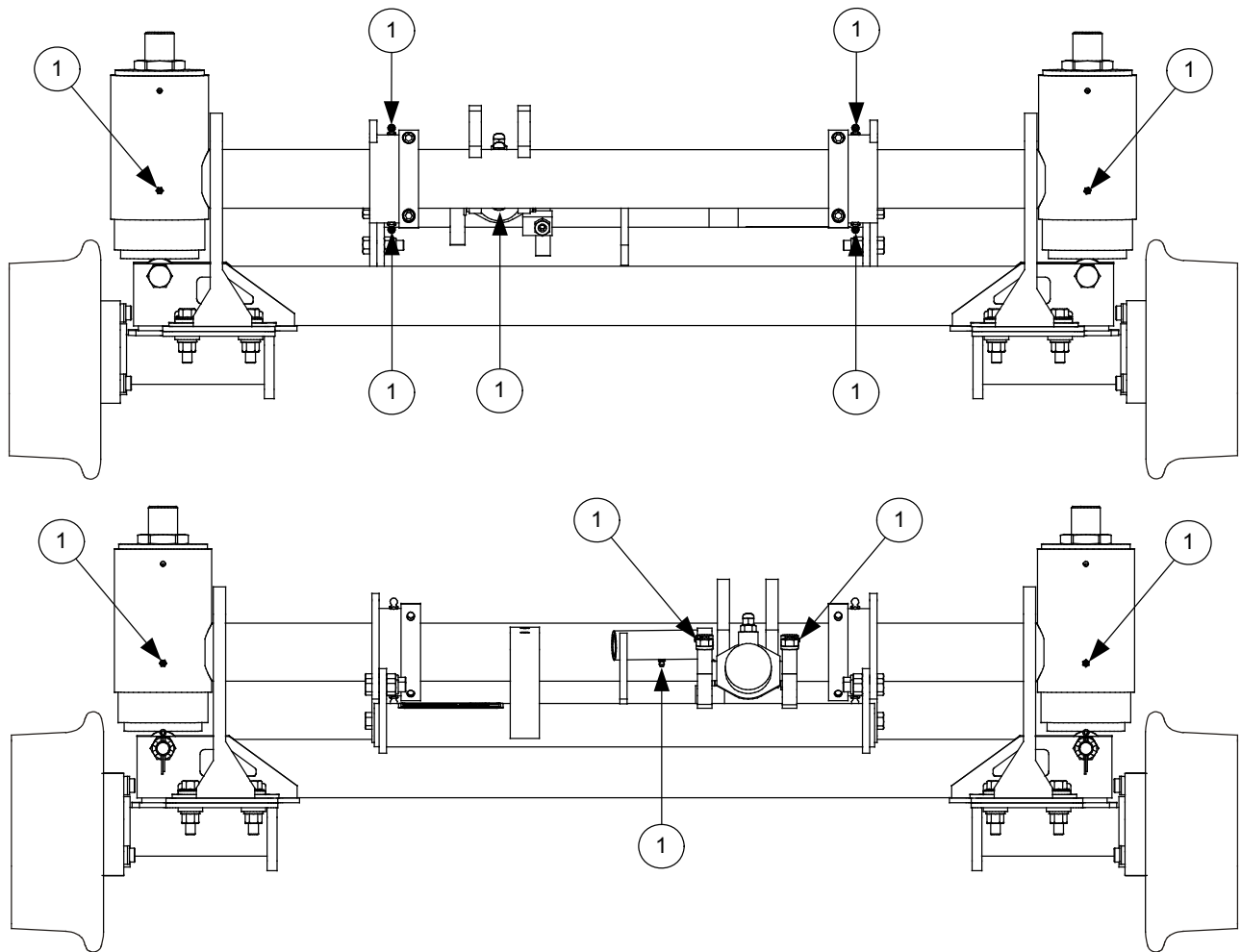
- 2.1 Harsco Rail recommends that routine maintenance always be observed, including but not limited to: routine inspections that include routine lubrication of the Guide Wheel Unit at grease points (1) shown in Figure 3 below.
- 2.2 Harsco Rail also recommends that customers always never exceed the vehicle maximum Gross Vehicle Weight Rating (GVWR) or Gross Axle Weight Rating (GAWR) when on road or on rail. Overloaded vehicles pose a safety risk for those traveling in the vehicle.
- 2.3 Harsco Rail recommends proper railgear alignment and rail wheel weight loading. Any indication of uneven wear or side to side motion (“Hunting”) when traveling on track should be properly addressed with the instructions for rail alignment provided in HR1500C1 Operator’s Guide (BUL001587).

Minimum and maximum rail wheel loadings should be routinely checked and adjusted as needed to maintain proper contact with the rail when in use. See 2.4 Weight Recommendations and Limits. Continued use of railgear that is misaligned, incorrectly loaded, or unsafe truck conditions, pose a significant risk of damage, derailment, and injury to those traveling in the vehicle.

The vehicle's GVWR (Gross Vehicle Weight Rating) and/or GAWR (Gross Axle Weight Rating) must comply with specifications recommended by Harsco Rail. For information regarding special applications, contact Harsco Rail.

2 Additional Recommendations And Warnings - (continued)

FIGURE 3
GUIDE WHEEL UNIT LUBRICATION



2.4 Weight Recommendations and Limits

Recommended Load Per Guide Wheel - All Tread Types 500 ± 25 lbs (227 ± 11 kg)

Maximum Load Per Guide Wheel:

Steel Tread Guide Wheels	1,500 lbs	(680 kg)
Rubber Tread Guide Wheels	700 lbs	(318 kg)

3 Installation Requirement: Rear Mounting Cross Brace - See Figures 4 and 5

- 3.1 Verify that the rear mounting of the Rail Guide Wheel Equipment has at least one cross brace installed. If there is room, two cross braces are preferred.
- 3.2 Beginning in 2017, Harsco Rail recommended that all HR1500C1 Rail Guide Wheel Unit installations include at least one cross brace as a product improvement. The cross brace helps improve vehicle dynamic stability when operating on rail. See 3.3 - HR1500C1 Installation Drawings below for your model vehicle - contact Harsco Rail to obtain a drawing.

See 3.4 - Service Group Parts List below - contact Harsco Rail to place an order for cross braces if not currently installed or if current installed cross brace is damaged.

3.3 HR1500C1 Installation Drawings:

Refer to the following Harsco Rail HR1500C1 Rear Installation Drawings for your truck model:

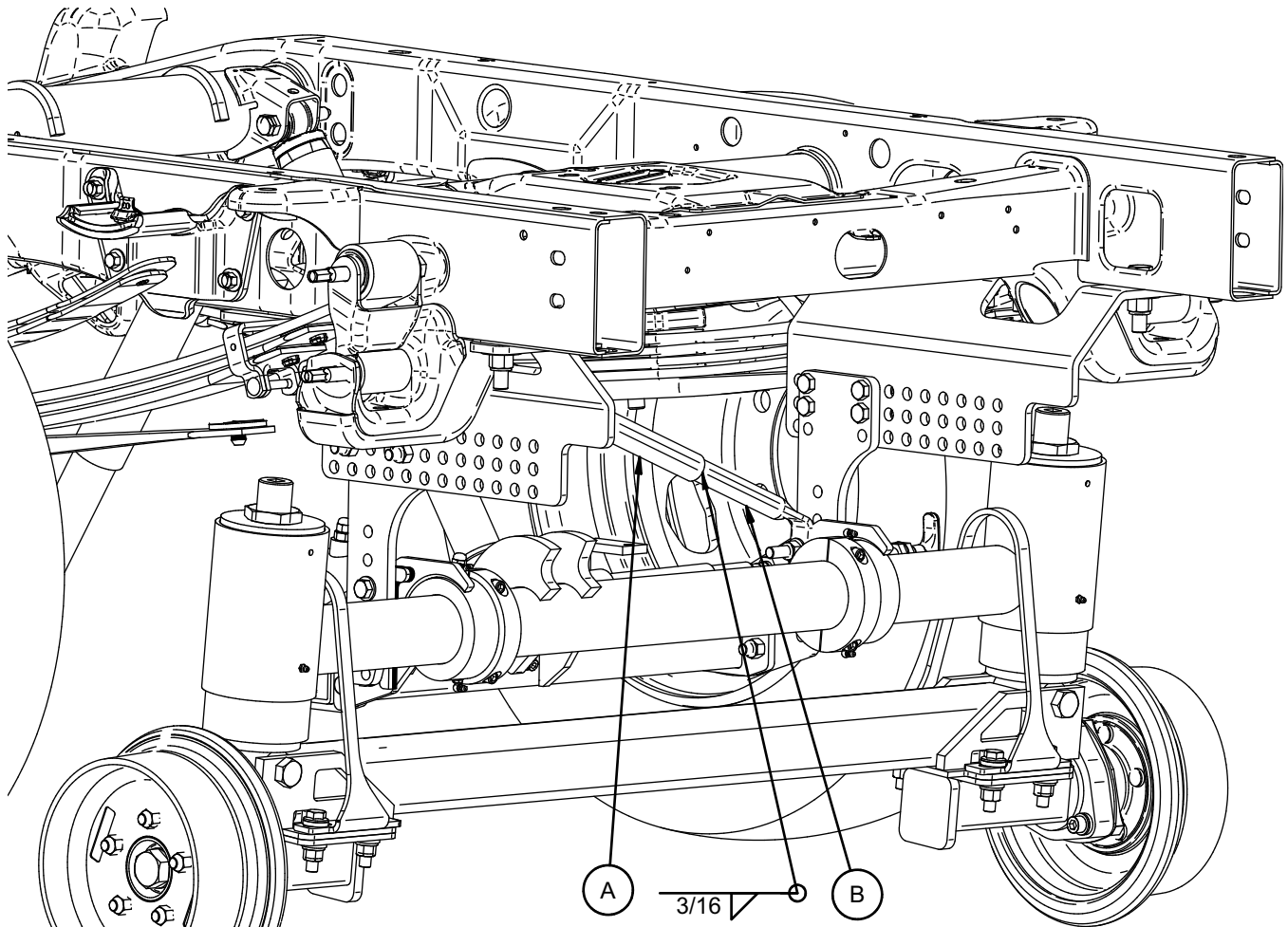
2011-2016 Ford F250/F350 Truck	3421809
2011-2016 Ford Chassis	3427619
2017-2021 Ford F250/F350 Truck.....	5067512
2017-2021 Ford Chassis	5074535
2011-2013 Chevrolet 2500HD/3500HD Truck	5013663
2014-2019 Chevrolet 2500HD/3500HD Truck.....	5052577
2020-2021 Chevrolet 2500HD/3500HD Truck.....	5107448
2015-2021 RAM 2500/3500 Truck.....	5065758

3.4 Service Group Parts List:

PART NO	DESCRIPTION	QTY
163634	BRACE END	2
163636	BRACE END	2

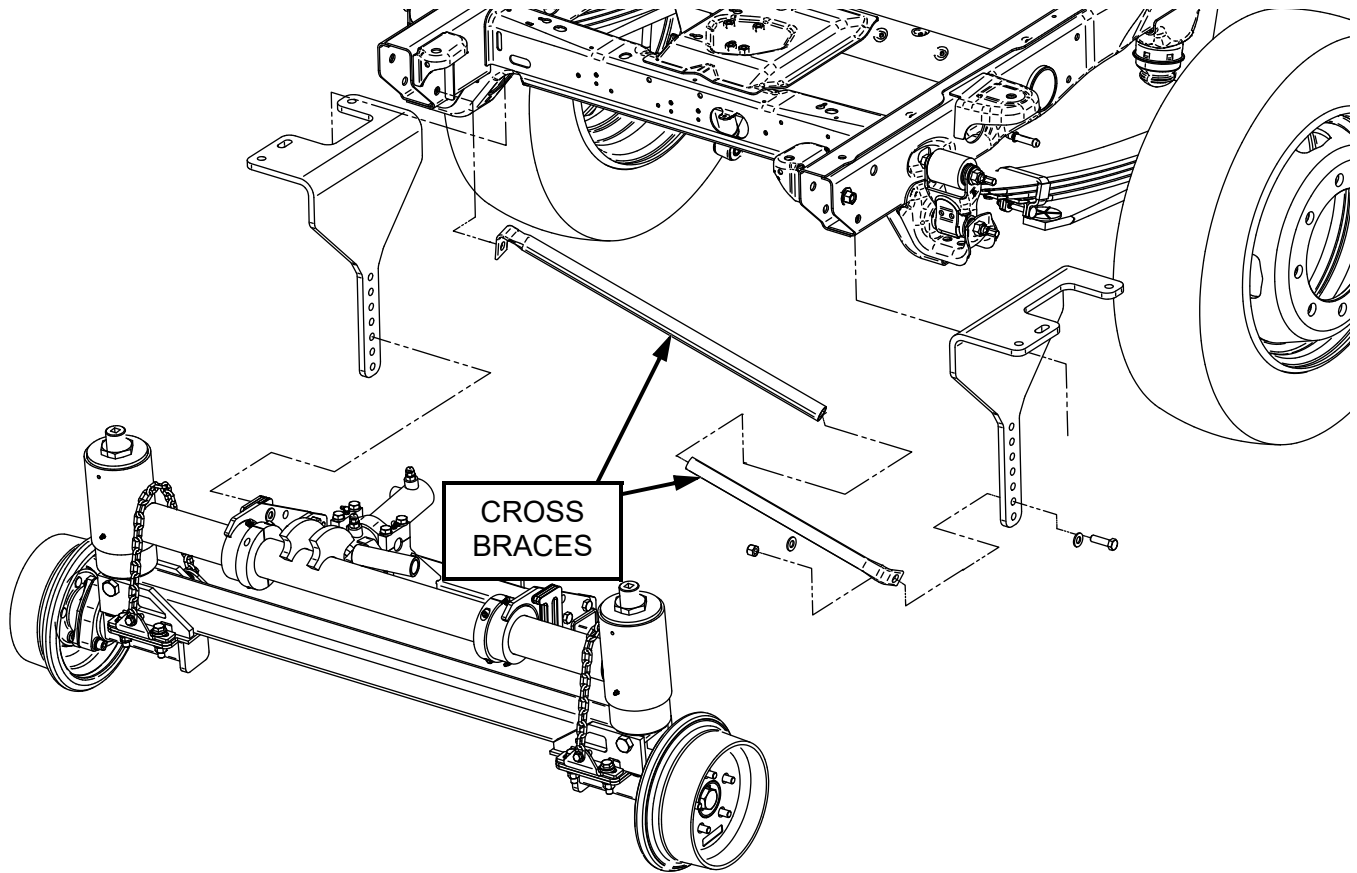
Note:
Require minimum one each of P/N per truck

FIGURE 4
REAR UNIT CROSS BRACE INSTALLATION



AFTER RAIL EQUIPMENT HAS BEEN ALIGNED AND TRACKED,
WELD CROSS BRACES (A) AND (B) TOGETHER WHEN APPROPRIATE
LENGTH IS ACHIEVED BETWEEN FRAME AND SIDEBAR.
MINIMUM OF ONE CROSS BRACE IS REQUIRED IN THIS APPLICATION.

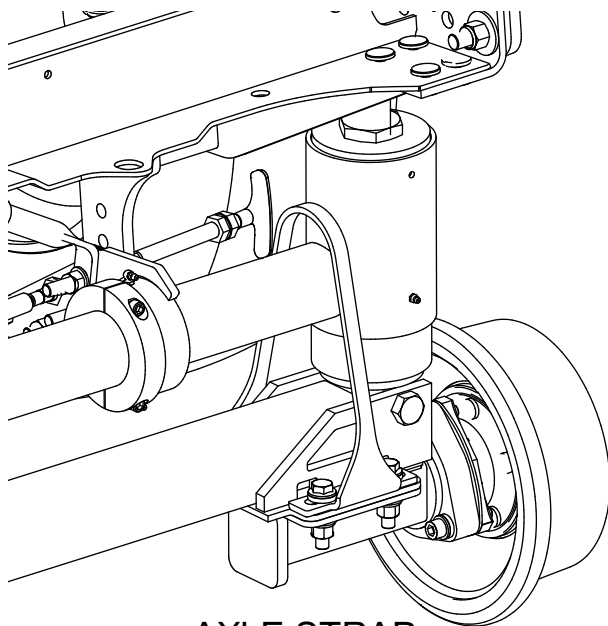
FIGURE 5
TYPICAL HR1500C1 CROSS BRACE INSTALLATION



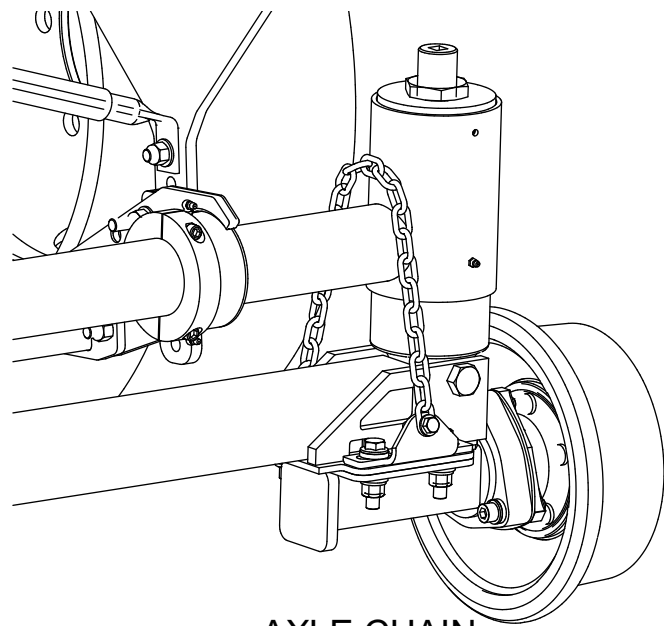
4 Product Improvement: Axle Retention Chain - See Figure 6

- 4.1 HR1500C1 rail guide wheel equipment received a product improvement to the axle retention method. Beginning with 2019 model year, the HR1500C1 rail guide wheel equipment changed from a metal strap for axle retention to a chain. This product improvement provides for less relative movement between the axle and cross-tube during deployment of the railgear and, as a non-rigid member, it is less likely to become damaged in use.
- 4.2 It is recommended to order axle retention chains to replace the axle retention strap on all vehicles as a product improvement. Any Guide Wheel Unit supplied prior to 2019 were assembled with an axle retention strap. Please contact Harsco Rail to place an order for the axle retention chains. See 4.3 - Service Group Parts List below.

FIGURE 6
AXLE RETENTION STRAP AND AXLE RETENTION CHAIN



AXLE STRAP



AXLE CHAIN

4.3 Service Group Parts List:

PART NO	DESCRIPTION	QTY
5091061	AXLE CHAIN STRAP, HR1500C1	4

Note:
Require four per truck

Appendix



- **RE-TORQUE VEHICLE WHEEL LUG NUTS, WHEEL SPACER LUG NUTS AND GUIDE WHEEL LUG NUTS AFTER FIRST 50 MILES OF OPERATION. THEREAFTER TORQUE WHEEL NUTS ACCORDING TO RECOMMENDED MAINTENANCE SCHEDULE. FAILURE TO HEED THIS WARNING COULD RESULT IN SEVERE BODILY INJURY.**

A Maintenance Schedule

A.1 Daily:

1. Inspect both front and rear guide wheel units for damaged or missing parts.
2. Check the mechanical locks for proper operation. If the locks do not operate properly, repair or replace the lock mechanism.
3. Check the hydraulic fluid reservoir to ensure that the oil level is full. If low, fill to the proper level with the correct fluid.
4. When the vehicle is operated on the track, listen for unusual noises. Unusual noises may indicate incorrectly lowered guide wheels, or damaged or missing parts. Pay attention to the quality of the ride. Check alignment if the vehicle crowds one side of the track instead of floating from side to side. See Adjustments - Guide Wheel Equipment Alignment Procedure described in BUL001587 Operator's and Parts Manual HR1500C1.

A.2 Weekly:

1. Check guide wheel equipment alignment. See Adjustments, Guide Wheel Equipment Alignment Procedure - Vehicle Track Test in HR1500C1 Operator's Guide (BUL001587).
2. Inspect guide wheel tread and flanges for wear or damage. See Maintenance - Guide Wheels - Allowable Wear in HR1500C1 Operator's Guide (BUL001587).
3. Spin each guide wheel by hand, checking for ease of rotation or excessive play. If the guide wheel does not rotate properly, the bearings and spindle may be damaged. Replace the bearing/spindle assembly if necessary.
4. Inspect vehicle wheels, studs, lug nuts and tires for wear, damage, cuts, etc.
5. Check that the tires are properly inflated: 80 PSI for Chevrolet vehicles.
95 PSI for Ford vehicles.
6. Check all bolts for tightness. See Appendices, Appendix A - Bolt Torque Requirements Chart in HR1500C1 Operator's Guide (BUL001587).

B Allowable Guide Wheel Wear

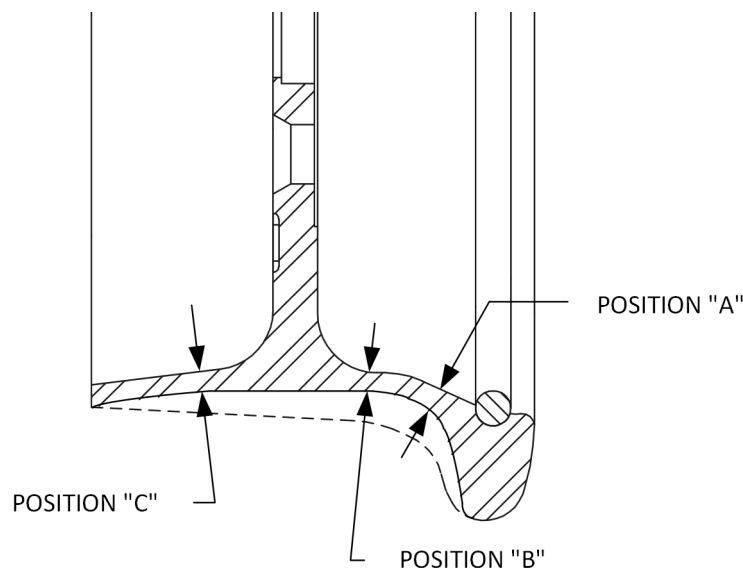
B.1 198690 Steel Tread Guide Wheel - See Figure 7



- **REPLACE ANY GUIDE WHEEL IMMEDIATELY WHICH SHOWS DAMAGE AND/OR HAS WORN MORE THAN THE ALLOWABLE LIMITS. FAILURE TO COMPLY COULD RESULT IN DERAILMENT OF THE VEHICLE, AND SEVERE BODILY INJURY.**

1. Tools needed: Harsco Rail wheel caliper # M019889, or equivalent.
2. Measure the guide wheel flange at position "A" with the wheel caliper. The minimum allowable flange dimension at Position "A" is 1/4 inch (6.4 mm). If the wheel flange dimension is less than the allowable limit, replace the wheel immediately.
3. Measure the wheel tread at positions "B" and "C" with the wheel caliper. The minimum allowable tread dimension at Positions "B" and "C" is 1/4 inch (6.4 mm). If any of the guide wheel tread dimensions are less than the allowable limits, replace the wheel immediately.
4. The entire wheel must not have any gouges or cracks. If any of these are evident, replace the wheel immediately.

FIGURE 7
ALLOWABLE WEAR - 198690 STEEL TREAD GUIDE WHEEL

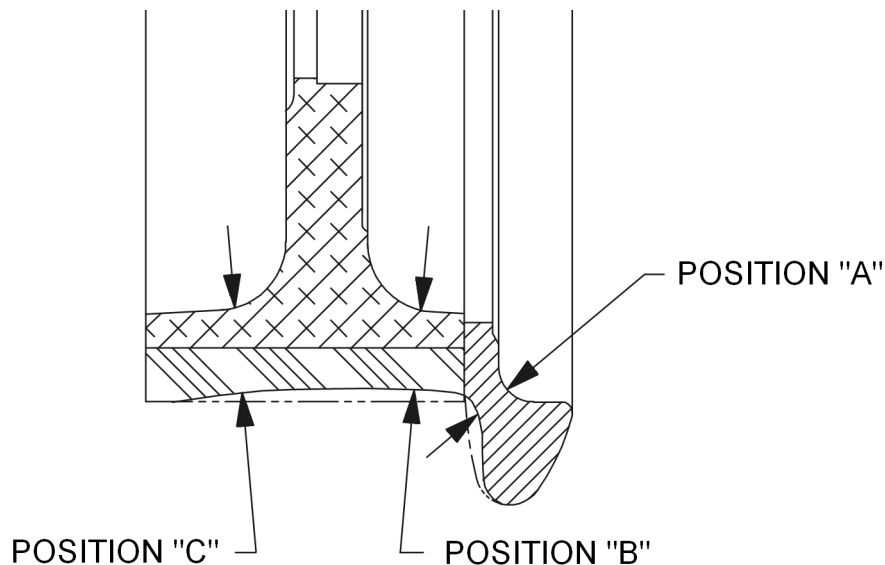


B.2 198510 Rubber Tread Guide Wheel - See Figure 8

- **REPLACE ANY GUIDE WHEEL IMMEDIATELY WHICH SHOWS DAMAGE AND/OR HAS WORN MORE THAN THE ALLOWABLE LIMITS. FAILURE TO COMPLY COULD RESULT IN DERAILMENT OF THE VEHICLE, AND SEVERE BODILY INJURY.**

1. Tools needed: Harsco Rail wheel caliper # M019889, or equivalent.
2. Measure the guide wheel flange at position "A" with the wheel caliper. The minimum allowable flange dimension at Position "A" is 1/4 inch (6.4 mm). If the guide wheel flange dimension is less than the allowable limit, replace the wheel immediately.
3. Measure the wheel tread at positions "B" and "C" with the wheel caliper. The minimum allowable tread dimension at Positions "B" and "C" is 11/16 inch (17.5 mm). If the guide wheel tread dimensions are less than the allowable limits, replace the wheel immediately.
4. The rubber tread must not have gouges. The aluminum wheel and/or flange must not have hairline cracks. If any of these are evident, replace the wheel immediately.

FIGURE 8
ALLOWABLE WEAR - 198510 RUBBER TREAD GUIDE WHEEL



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