



H TECHNICAL PROCEDURE

Freightliner Vehicles equipped with AIRTEK® Suspension System

SUBJECT: Rear Shackle Bracket and Front/Rear
Spring Eye Connections: Pre-delivery
Inspection and Preventive Maintenance

LIT NO: 17730-236

DATE: December 2013

REVISION: B

IMPORTANT

INTRODUCTION

This publication primarily focuses on proper pre-delivery inspection and preventive maintenance of rear shackle bracket and front and rear spring eye components of AIRTEK® suspension systems as installed on applicable Freightliner vehicles built after May 2010. This information is intended as a supplement to Hendrickson Technical Procedure Literature No. 17730-243.

Following appropriate inspection and preventive maintenance procedures is important to help ensure the proper service and operation of the AIRTEK system. Hendrickson recommends the AIRTEK system is inspected at pre-delivery, the first 1,000 miles of service, and at the regular preventive maintenance intervals.

Carefully inspect the AIRTEK rear shackle brackets and front/rear spring eye connections using the following instructions, refer to Hendrickson Literature No. 17730-243 for complete AIRTEK suspension inspection procedures, important safety notices, and preventive maintenance details, available at www.hendrickson-intl.com.

NOTE

Torque values shown in this publication apply only if Hendrickson supplied fasteners are used. If non Hendrickson fasteners are used, follow the torque specification listed in the vehicle manufacturer's service manual.

SAFETY REMINDER

All applicable warnings and cautions should be read carefully to help prevent personal injury and to assure that proper methods are used. Improper maintenance, service or repair may damage the vehicle, cause personal injury, render the vehicle unsafe in operation, or void manufacturer's warranty.

Failure to follow the applicable safety precautions can result in personal injury and/or property damage. Carefully read and understand all safety related information within the applicable Hendrickson publications, on all decals and those materials provided by the vehicle manufacturer before operating the vehicle, or conducting any maintenance, service or repair.

HENDRICKSON RECOMMENDED PREVENTIVE MAINTENANCE INTERVALS

PRE-DELIVERY INSPECTION – First 100 Miles/150 kilometers or prior to vehicle in-service

- a. Visually inspect the suspension for proper assembly.
- b. Visually inspect the overall condition of the rear shackle brackets, shackle plates, and front/rear spring eye connections, front axle, leaf springs, and top pads for any damage.
- c. Check all fasteners for proper torque with special attention to the following suspension connections: rear shackle bracket connections, front/rear spring eye connections, and clamp group



mounting hardware. Use a calibrated torque wrench and a wrench to hold the fastener, check torque in a tightening direction.

- d. Verify the ride height is within specification by using ride height gauge 45745-159, for more details refer to the Alignment and Adjustment Section, Hendrickson Literature No. 17730-243.

INSPECTION – First 1,000 miles /1,600 kilometers of pre-delivery or suspension service

- a. Visually inspect suspension components. Check for:
 - Proper suspension function
 - Signs of unusual movement, or loose or missing components
 - Signs of abrasive or adverse contact between components
 - Damaged, bent or cracked parts
- b. Check all fasteners for proper torque with special attention to the following suspension connections: rear shackle bracket connections, front/rear spring eye connections, and clamp group mounting hardware. Use a calibrated torque wrench and a wrench to hold the fastener, check torque in a tightening direction.

PREVENTIVE MAINTENANCE – On-highway, visual inspection; every 50,000 miles (80,000 km) or six (6) months, whichever comes first. On-highway Physical Inspection every year or 100,000 miles (160,934 km), whichever comes first.

- a. Visual inspection, check suspension components for:
 - Proper suspension function
 - Signs of unusual movement, or loose or missing components
 - Signs of abrasive or adverse contact between components
 - Damaged, bent or cracked parts
- b. Physical inspection, check all fasteners for proper torque value with special attention to rear shackle bracket and front/rear spring eye connections. Use a calibrated torque wrench and a wrench to hold the fastener, check torque in a tightening direction.

SHACKLE BRACKET & FRONT/REAR SPRING EYE CONNECTION

VISUAL INSPECTION

In normal use these components will function satisfactorily, even though the components may show some wear.

Some signs of a loose or worn connection that can result in component damage may include the following, also see Figure 1. If any of the below are present, then a Torque Inspection is necessary.

- The vehicle exhibits a popping or clunking sound when turning.
- The rear spring eye is in contact with the shackle plates.
- Excessive lateral movement of the leaf spring.

TORQUE INSPECTION



WARNING

LOOSE OR OVER TORQUED FASTENERS CAN CAUSE COMPONENT DAMAGE, LOSS OF VEHICLE CONTROL, PROPERTY DAMAGE, OR SEVERE PERSONAL INJURY. MAINTAIN CORRECT TORQUE VALUES AT ALL TIMES. CHECK TORQUE VALUES ON A REGULAR BASIS AS SPECIFIED.

1. Chock the wheels.
2. Verify the ride height is within specification by using Ride Height Gauge 45745-159, for more details refer to the Alignment and Adjustment Section, Hendrickson Literature No. 17730-243.

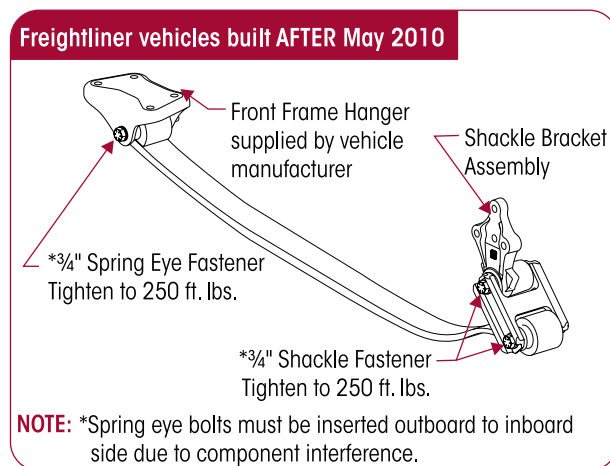


NOTE

Any adjustment of the ride height will still require a loosening and re-torque of the two (2) spring eye fasteners and the four (4) rear shackle bracket fasteners at the corrected ride height, regardless of prevailing torque.

3. If ride height is out of specification, adjust the ride height to the correct specification; refer to Ride Height Adjustment in the Alignment and Adjustment Section of Hendrickson Literature No. 17730-243. Any adjustment of the ride height will still require a loosening and re-torque of the two (2) spring eye fasteners and the four (4) rear shackle bracket fasteners at the corrected ride height, regardless of prevailing torque, **see Steps 7-9.**
4. Check prevailing torque load at the two (2) front spring eye fasteners and four (4) rear shackle bracket fastener locations.
5. Set the torque wrench to 200 foot pounds and check the torque at all six locations as shown in Figure 1. Use a calibrated torque wrench and a wrench to hold the fastener, check torque in a tightening direction.
 - If **no locknut movement is observed**, set the torque wrench to 250 foot pound and repeat until proper torque value is achieved. If proper torque is achieved, no further action is necessary.
 - If **locknut movement is observed**, torque value was below 200 foot pounds, proceed to **Step 6.**

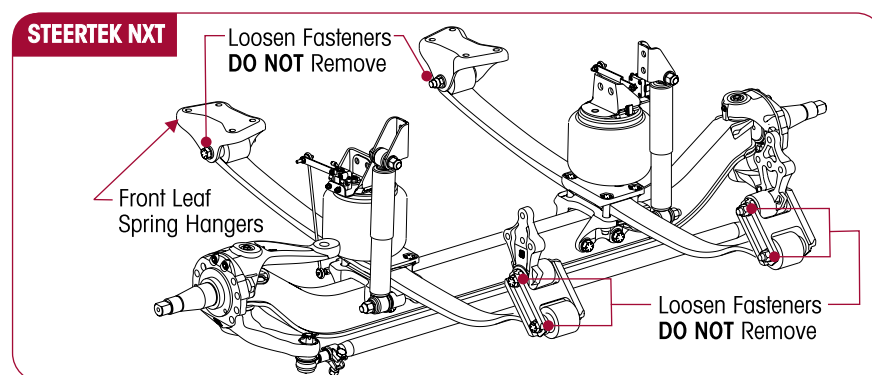
FIGURE 1



6. See the appropriate action below:
 - If the torque value is **below 200** foot pounds, disassemble the shackle/spring eye joint and remove and discard fasteners. Inspect all mating components for wear or damage, replace as necessary, see **Physical Inspection** in this publication.
 - If a **ride height adjustment** was performed, re-torque is necessary, see **Steps 7-9.**

7. With the truck at the correct ride height, loosen the two (2) spring eye fasteners and four (4) rear shackle bracket fasteners, see Figure 2.

FIGURE 2



8. With the truck at the correct ride height, tighten all six (6) fasteners to 250 foot pounds of torque.
9. Remove the wheel chocks.



PHYSICAL INSPECTION

1. Chock the wheels.
2. Remove fasteners from the spring eye connection(s). Discard fasteners.
3. Inspect the hanger, shackle plate, shackle bracket and mating components, if any of the components exhibit any signs of damage or excessive wear, the component and/or mating components require replacement, also see Figures 3 and 4. Refer to Hendrickson Literature No. 17730-243 for component replacement.
4. When component replacement is complete with new fasteners and the truck is at the correct ride height, tighten all six (6) fasteners to 250 foot pounds of torque.
5. Remove the wheel chocks.
6. ***If components replacement was performed***, follow initial 1,000 mile inspection procedure and preventive maintenance.

FIGURE 3

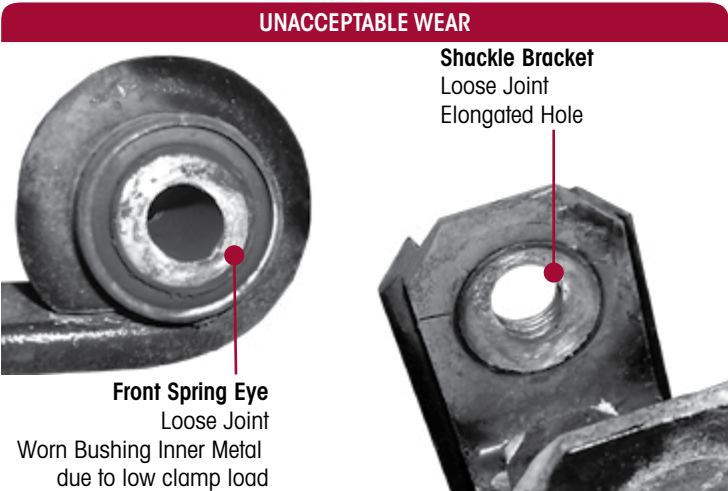
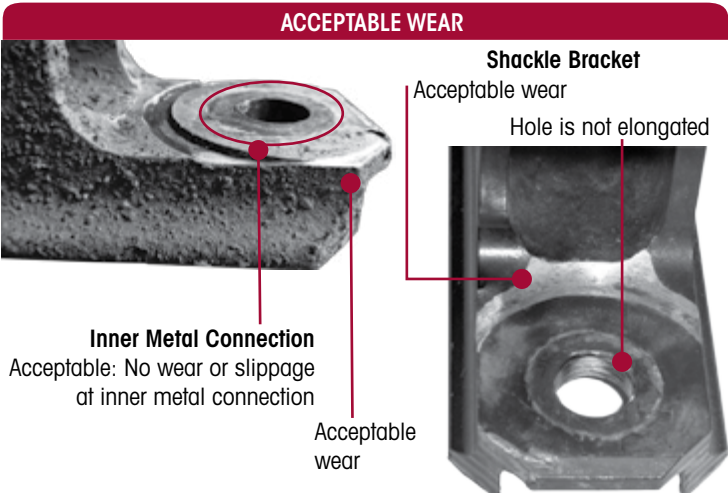


FIGURE 4



Refer any questions on this publication to Hendrickson Tech Services:



Toll-free U.S. and Canada
1.866.755.5968
Outside U.S. and Canada
1.630.910.2800



Parts Identification
truckparts@hendrickson-intl.com
Technical Support
techservices@hendrickson-intl.com



1.630.910.2899



Additional Hendrickson
Product Information
www.hendrickson-intl.com

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)
630.910.2800 (Outside U.S. and Canada)
Fax 1.630.910.2899