

TECHNICAL PROCEDURE

TRAILER SUSPENSION SYSTEMS ZMD® ZERO MAINTENANCE DAMPING®

SUBJECT: INTRAAX®/VANTRAAX® Retrofit Kit
Installation Procedures

LIT NO: T81001

DATE: October 2018

REVISION: D

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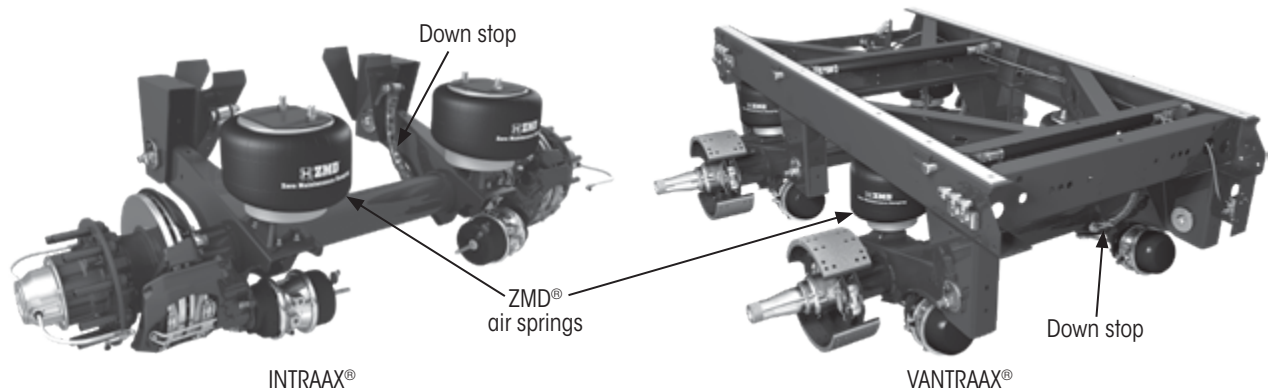


Figure 1: ZMD installed on INTRAAX and VANTRAAX suspensions

IMPORTANT SAFETY NOTICES

Hendrickson literature number [T12007 Technical Procedure General Safety Precautions and Information](#), available at www.Hendrickson-intl.com/TrailerLit, includes important preparation, precautionary and safety information pertaining to the procedures included in this document. **Warnings, cautions and other relative statements included in T12007 should be read carefully to help prevent personal injury and equipment damage.**

Improper maintenance, service or repair can cause damage to the vehicle and other property, personal injury, unsafe operating conditions and potentially void the manufacturer's warranty.

INTRODUCTION

ZMD® ZERO MAINTENANCE DAMPING® Technology includes two major components: ZMD air springs and down stops (Figure 1). **DO NOT** mix ZMD air springs with standard air springs on a trailer. Retrofit kits¹ are currently available for select VANTRAAX® and INTRAAX® models.

To install the retrofit kit, use the procedures in this document and installation drawing [D-25266](#)² *Common Component Installations*.

¹ Refer to [L1073](#) or [L1074](#) for applicable OEM unassembled installation drawings.

² Installation drawing [D-25266](#) is provided with each ZMD down stop and available online at www.Hendrickson-intl.com/TrailerLit. Where duplication exists, refer to the installation drawing.



REMOVE ORIGINAL COMPONENTS

During this procedure, original air springs and shocks must first be removed from the suspension or slider.

1. **Support** trailer at the ride height position.
2. **Exhaust** air from air springs.
3. **Disconnect** air spring air lines and **remove** fittings (unless damaged or unusable, **do not** discard fittings)
4. **Remove** existing air springs and shocks.
5. **Discard** the original air springs, shocks and mounting hardware.

ZMD® DOWN STOP

Installation of ZMD down stops is identical to installing standard shock absorbers on INTRAAX® suspensions or VANTRAAX® sliders. However, INTRAAX suspensions with winged frame brackets require a reinforcement bolt.

INSTALLING SELF-TAPPING REINFORCEMENT BOLT

This procedure is only required for INTRAAX AANT 23K suspensions with winged frame brackets (Figure 2). For INTRAAX suspensions with wingless frame brackets (Figure 3), a gusset in front of the wing provides adequate upper clevis support.

NOTICE: DO NOT install self-tapping reinforcement bolt on VANTRAAX or INTRAAX AAT 23K suspensions.

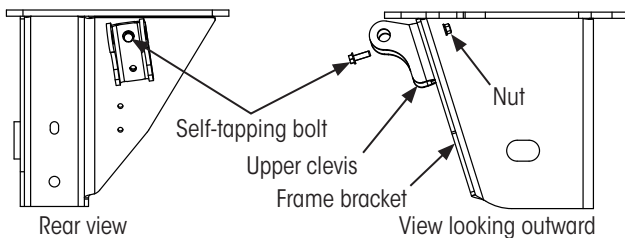


Figure 2: INTRAAX winged frame bracket requiring upper clevis reinforcement bolt

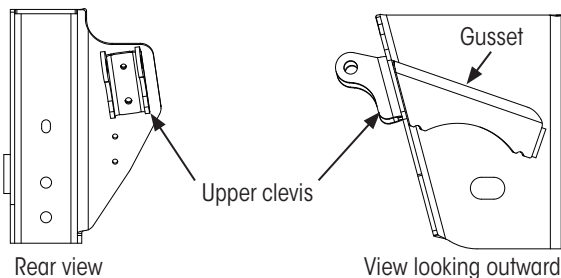


Figure 3: INTRAAX wingless frame bracket

NOTICE: Failure to follow these instructions could result in damage to the suspension and/or its components.

Install the self-tapping reinforcement bolt, provided with the kit¹, as follows:

1. **Verify** the self-tapping bolt is not present (Figure 2).
If present, it is not necessary to replace the bolt. Continue with **INSTALLING ZMD® DOWN STOP**.
2. **Insert** the self-tapping bolt into the upper clevis hole, as shown in Figure 2.
3. **Ensure** the bolt head is fully seated against the clevis.
4. To avoid cross threading, **thread** the nut onto the self-tapping bolt two full turns, by hand.
5. **Tighten** the lock nut to a torque of 25 ft. lbs. (34 Nm).

After the reinforcement self-tapping bolt is installed, the ZMD down stop can be installed in the next procedure.

INSTALLING ZMD® DOWN STOP

The ZMD down stop is installed using existing upper and lower mount locations (Figure 4 and Figure 5) and the hardware provided with the kit.

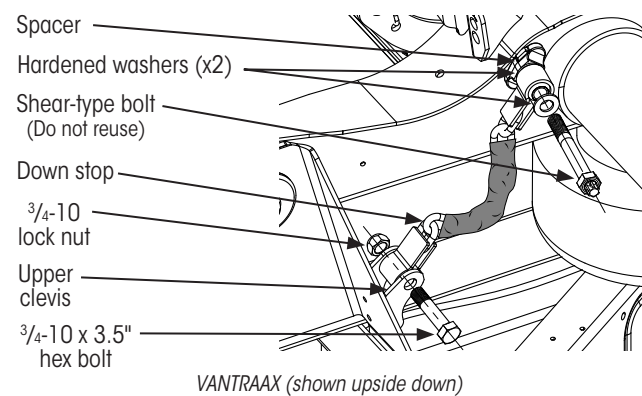
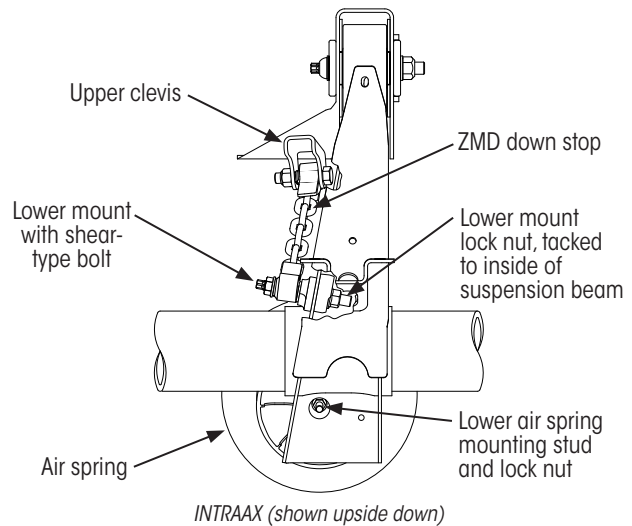


Figure 4: ZMD® down stop mounting to existing shock mounts

¹ Refer to D-28108 for installing self-tapping bolt on unassembled INTRAAX suspensions.

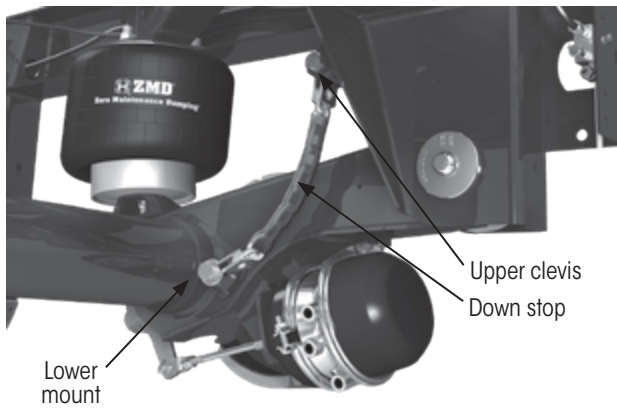


Figure 5: ZMD® down stop connection (VANTRAAX® shown)

1. **Install** one eyelet of the down stop in the **upper** clevis (Figure 4) using the 3/4-10 x 3.5 hex bolt and lock nut provided with the kit.
2. **Tighten** to a torque of 225±10 ft. lbs. (300±10 Nm).
3. Using the hardware provided with the kit, **slide** a hardened washer onto the shear-type bolt (Figure 4).
4. **Insert** the shear-type bolt through the lower eyelet of the down stop.
5. **Slide** the second hardened washer onto the shear-type bolt.
6. **Thread** the shear-type bolt into the lower mount nut as shown in (Figure 4) and hand tighten.

NOTE: For the suspension beam lower mount, the nut is tack welded inside the beam (Figure 4). If the threads are damaged and the nut is not reusable, refer to APPENDIX A: LOWER MOUNT REPAIR, IF REQUIRED on page 4.

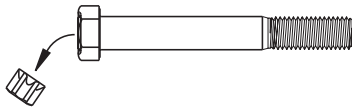


Figure 6: Shear bolt Torx head separation

7. Use an E20 Torx® socket to **tighten** the shear-type bolt until the bolt's Torx head shears off, as shown in Figure 6.
8. **Repeat** this procedure for the other frame brackets and suspension beams on the trailer.

INSTALLING ZMD® AIR SPRING

Replace the original air springs with the ZMD air springs and hardware provided with the kit.

1. **Install** replacement ZMD air spring using replacement top and bottom hardware.
2. **Tighten** the lower air spring lock nut (Figure 4) to a torque of 58±2 ft. lbs. (79±2 Nm).
3. **Tighten** the upper air spring nuts to a torque of 90±10 ft. lbs. (125±10 Nm).
4. **Reconnect** air line fittings and hoses to the air spring.
5. **Repeat** this procedure for the other original air springs on the trailer.
6. **Return** trailer to normal operating state.
7. **Check** for air leaks.
8. Refer to L459 to **ensure** the trailer is at proper ride height.

For assistance in the United States and Canada, call Hendrickson Trailer Technical Services at 866-RIDEAIR (743-3247) or email HTTS@Hendrickson-intl.com.

APPENDIX A: LOWER MOUNT REPAIR, IF REQUIRED

If the nut on the inside of the suspension beam, lower mount, is damaged or cannot be reused (i.e., threads are stripped, nut is cracked, etc.); drill out the threads in the lower mounting block inside the suspension beam (Figure 7) and use the extra washer and nut provided in the hardware kit to complete the lower mount.

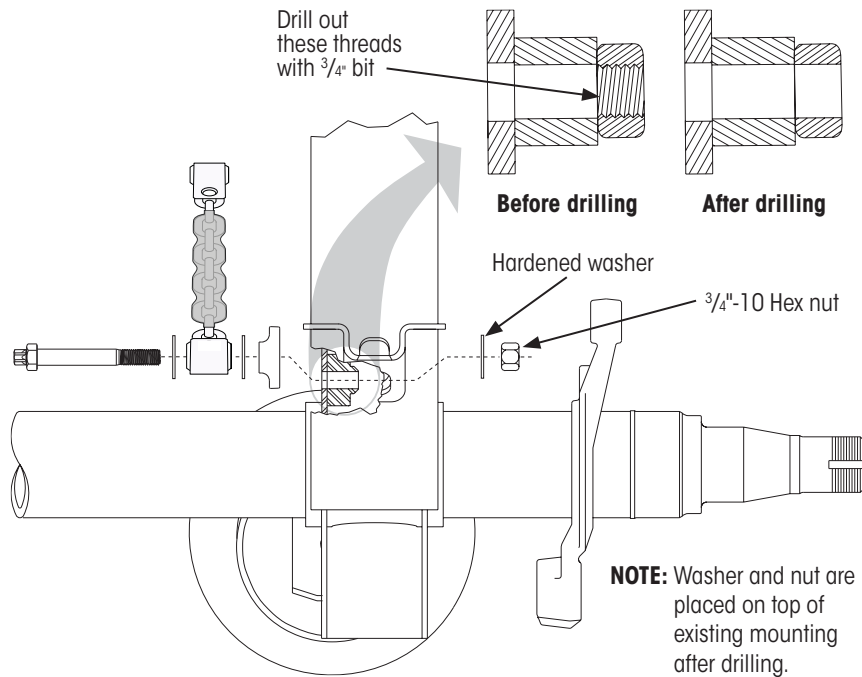


Figure 7: Damaged thread hardware assembly for lower mounting bolt

For more details relative to this repair, refer to [L635](#) provided with the kit and available at www.Hendrickson-intl.com/TrailerLit.

Call Hendrickson at **866.RIDEAIR (743.3247)** for additional information.



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