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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-25266² 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.

Figure 1: ZMD installed on INTRAAX and VANTRAAX suspensions
**INTRAAX®/VANTRAAX® RETROFIT KIT INSTALLATION PROCEDURES**

**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](image)

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

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

**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.
INTRAAX®/VANTRAAX® RETROFIT KIT INSTALLATION PROCEDURES

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.

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.
**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.

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

*NOTE:* Washer and nut are placed on top of existing mounting after drilling.

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**Figure 7: Damaged thread hardware assembly for lower mounting bolt**

Drill out these threads with \( \frac{3}{4} \)" bit

**Before drilling**

**After drilling**

Hardened washer

\( \frac{3}{4} \)-10 Hex nut

Hardened washer

**Washer and nut are placed on top of existing mounting after drilling.**