TECHNICAL PROCEDURE

TIREMAAX® TIRE INFLATION SYSTEM

SUBJECT: Tire Inflation System Controller Assembly Replacement Procedure
LIT NO: L865
DATE: April 2004

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This document focuses on the tire inflation system controller assembly replacement procedure. Before conducting any work on the system:

- Read and understand Hendrickson publication L818, *TIREMAAX® Installation, Service and Troubleshooting Procedures* (available at www.hendrickson-intl.com) for additional instructions and safety information.
- Read and understand all applicable work instructions and safety information provided by the trailer or tractor manufacturer.
- Park the trailer on a flat, level, debris-free surface.
- Remove electrical power from the trailer. Shut off the tractor and disconnect the electrical power supply cable from the SAE J560 trailer connector.
- Chock the trailer wheels to prevent the trailer from moving.

The controller assembly in this kit is a direct replacement for the controller assembly on either the HTIS™ or TIREMAAX tire inflation systems.

Controller assembly replacement consists of three broad steps: removing the existing controller assembly, installing the new TIREMAAX controller assembly and connecting the new TIREMAAX premium wiring harness. The following procedures describe each of these broad steps in more detail.

REMOVING AN EXISTING HTIS CONTROLLER ASSEMBLY

1. Exhaust the trailer air tank.
2. Disconnect the pressure transducer connector (figure 1).
3. Disconnect the manifold valve connector.
4. Disconnect the ECU connector.
5. Disconnect the air supply line (air IN). Label the line "IN" to avoid confusion when installing the replacement controller assembly.
6. Disconnect the air delivery line (air OUT). Label the line "OUT" to avoid confusion when installing the replacement controller assembly.
7. Remove and discard the air line fittings, they cannot be reused. The replacement TIREMAAX controller uses $^{1}/_{8}$-inch NPT fittings whereas the HTIS controller used $^{3}/_{8}$-inch NPT fittings.

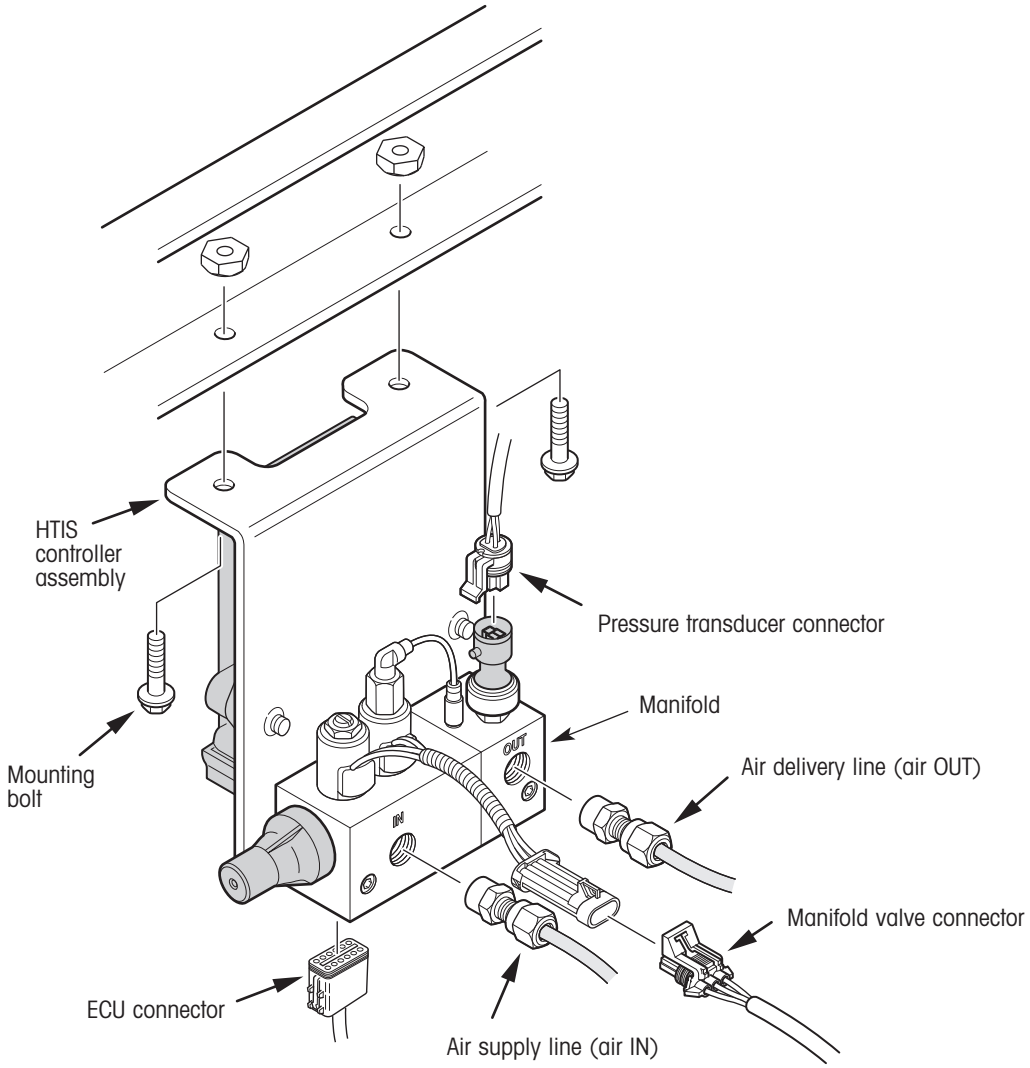

Figure 1. Removing an existing HTIS controller assembly

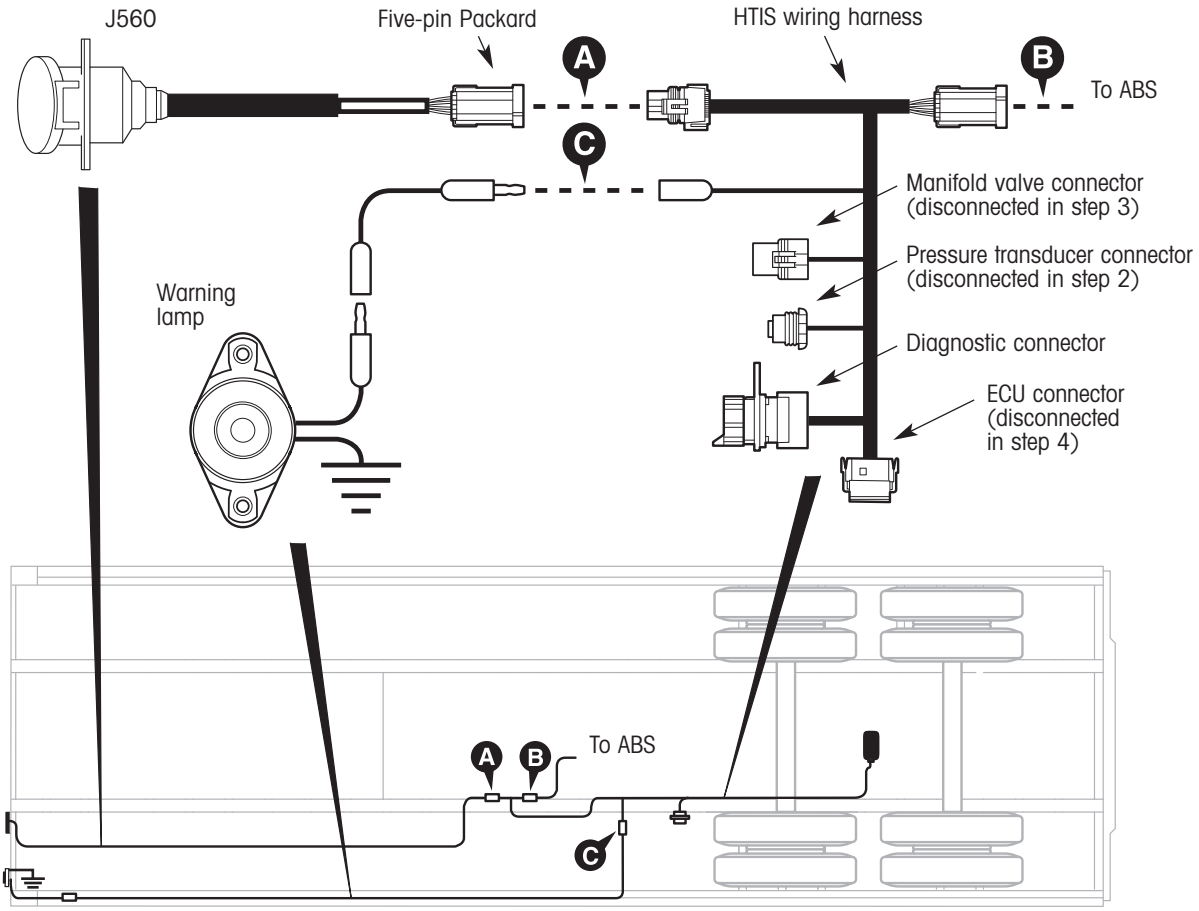

Figure 2. Disconnecting the existing HTIS wiring harness

8. Remove the two bracket-to-frame mounting bolts and remove the HTIS™ controller from the trailer.

9. Disconnect the harness power connector from the five-pin Packard connector on the J560 interface (A, figure 2), disconnect the harness five-pin Packard connector from the ABS wiring harness (B, figure 2) and disconnect the warning lamp power wire from the HTIS wiring harness (C, figure 2). The existing HTIS wiring harness (figure 2) can be left in place on the trailer or completely removed. If you choose to leave the existing HTIS harness in place, tie and secure or cut and remove the loose connector ends.

REMOVING AN EXISTING TIREMAAX® CONTROLLER ASSEMBLY

1. Exhaust the trailer air tank.
2. Disconnect the ECU power connector (figure 3).
3. Disconnect the air supply line (air IN). Label the line "IN" to avoid confusion when installing the replacement controller assembly.
4. Disconnect the air delivery line (air OUT). Label the line "OUT" to avoid confusion when installing the replacement controller assembly.
5. If reusing the air line fittings, remove them from the tee fittings on the controller assembly.
6. Remove the two bracket-to-frame mounting bolts and remove the TIREMAAX controller from the trailer.

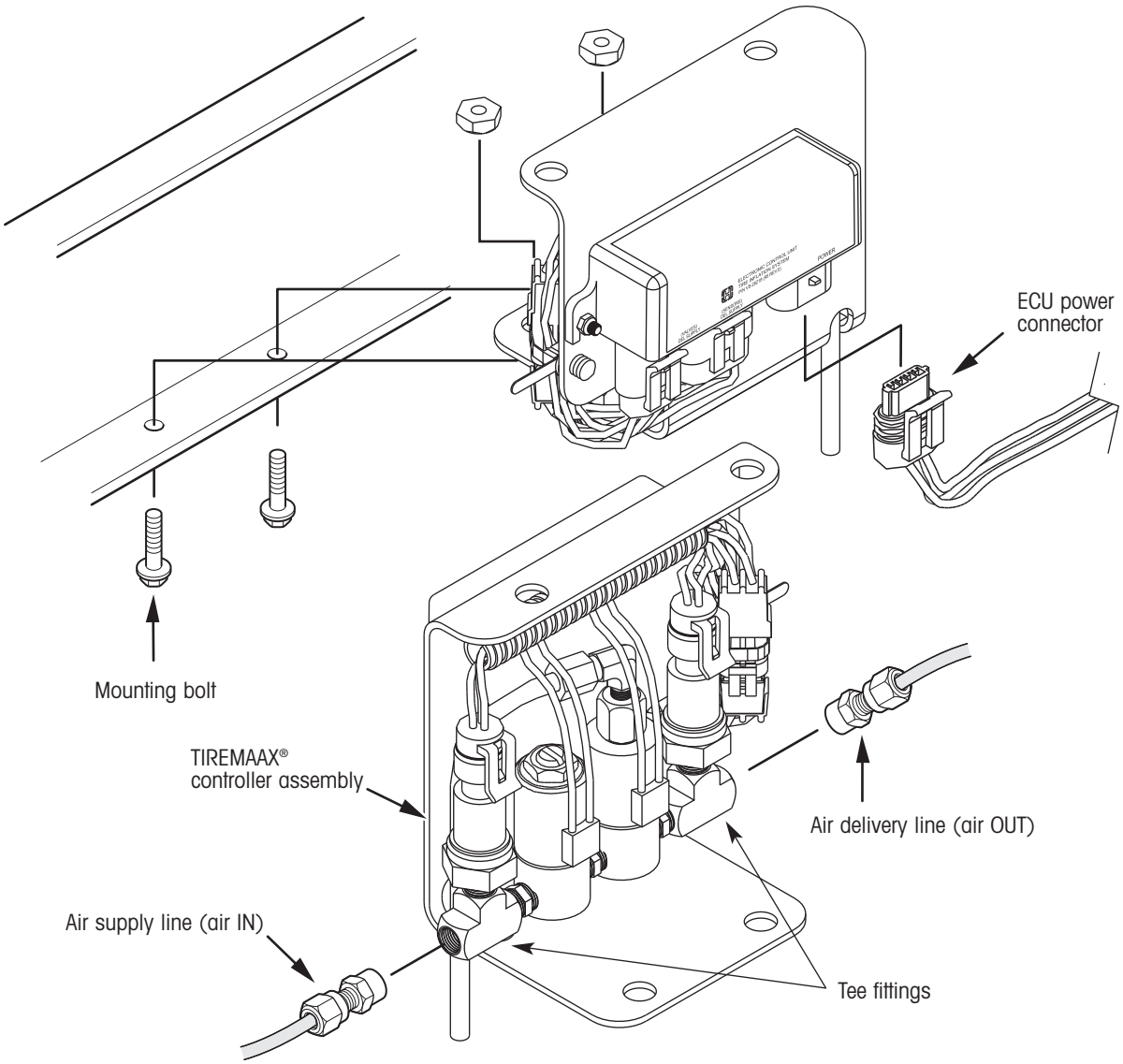

Figure 3. Removing an existing TIREMAAX controller assembly

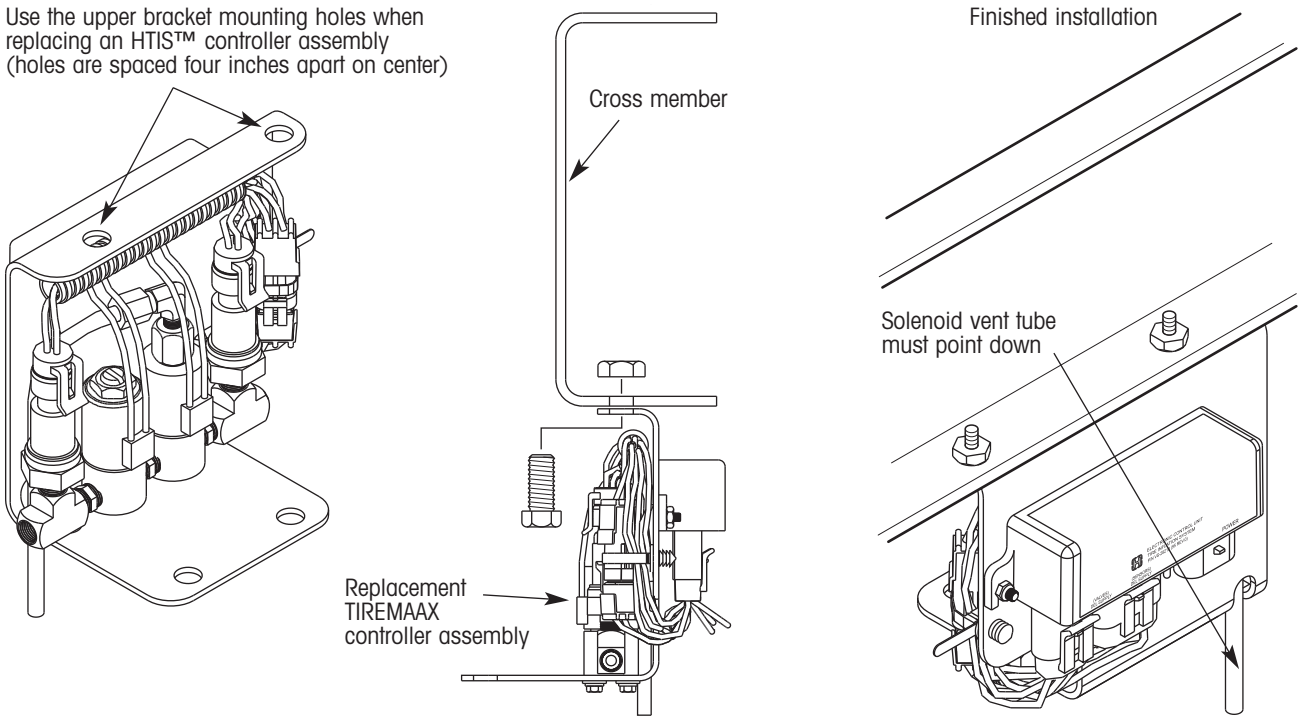

Figure 4. Installation details when replacing an HTIS controller assembly

INSTALLING THE REPLACEMENT TIREMAAX® CONTROLLER ASSEMBLY

If replacing an HTIS controller, use the upper bracket mounting holes to attach the replacement TIREMAAX controller assembly underneath the cross member (figure 4).

If replacing a TIREMAAX controller, use the lower bracket mounting holes to attach the replacement TIREMAAX controller assembly within the cross member (figure 5).

⚠**CAUTION: The controller assembly (HTIS or TIREMAAX) must be mounted vertically with the solenoid vent tube pointing down. This orientation helps prevent debris from plugging the vent tube.**

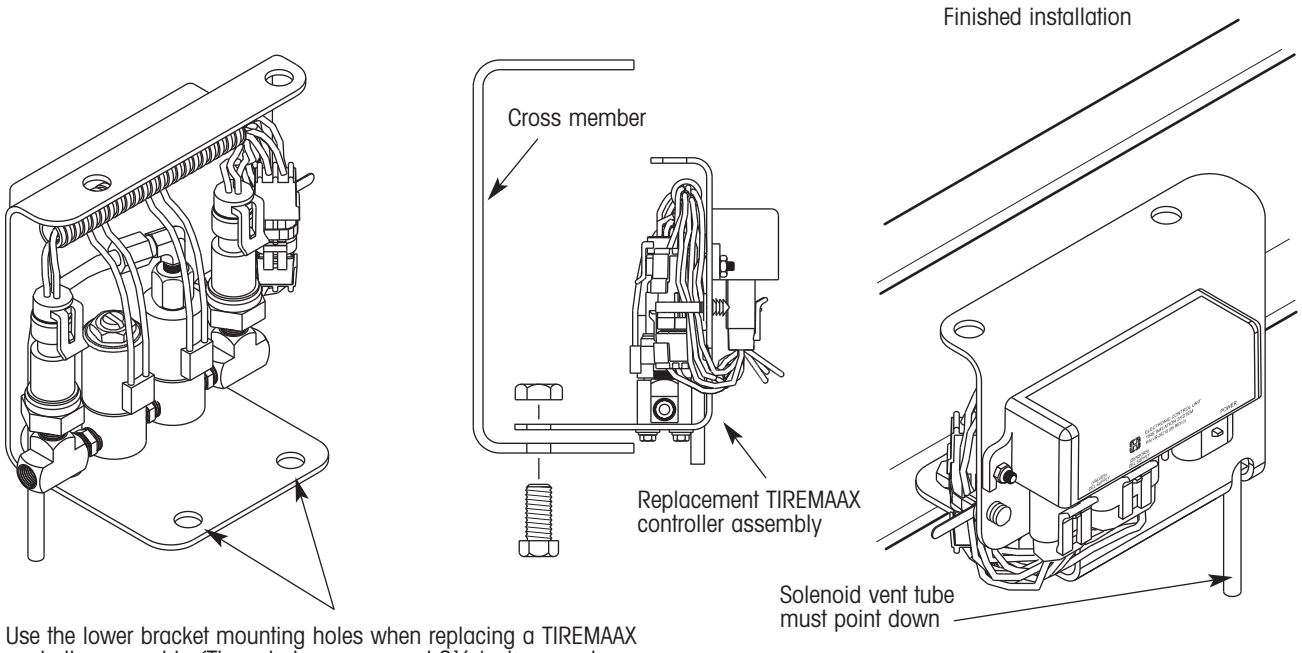

Figure 5. Installation details when replacing a TIREMAAX controller assembly

CONNECTING THE NEW TIREMAAX® WIRING HARNESS

If replacing a TIREMAAX controller, the existing wiring harness can be reused or it can be replaced with the harness in this kit. If replacing an HTIS™ controller, use the replacement harness in this kit.

1. Connect the harness five-pin Packard connector to the ABS system wiring (B, figure 6).

2. Connect the harness power connector to the five-pin Packard connector on the J560 interface (A, figure 6).

3. Connect the harness single wire to the warning lamp power wire (C, figure 6).

4. Connect the harness ECU connector to the four-pin POWER socket on the controller assembly ECU (D, figure 6).
5. Secure harness and connector ends as required.

6. If necessary, apply thread sealant to air fittings. Install air line fittings on tee fittings.

IMPORTANT: Use a back-up wrench on the tee fittings to keep them from rotating when installing the air line fittings.

Allowing the tee fitting to rotate and contact the mounting bracket while installing the air line fitting could cause the connecting pipe nipple to be damaged (the connecting pipe nipple is the small fitting used to connect the solenoid to the tee fitting).

7. Connect the air IN and air OUT lines to the appropriate ports (see figure 3).

8. Fill the trailer air system. Test for air leaks using the SYSTEM INTEGRITY CHECK on the following page.

9. Manually measure tire pressure:
   - Make sure vehicle power is off
   - Disconnect tire hose from tee at hubcap, or from valve stem
   - Use a conventional gage to measure tire pressure at hose end or at valve stem

10. Verify that the target tire pressure matches the desired operating tire pressure. Reattach and firmly hand-tighten tire hose.

SYSTEM INTEGRITY CHECK

After the installation is complete but before the trailer is put into service, all air system connections must be checked for leaks. This is done by manually pressurizing the system from a shop air supply and applying soapy water to all air connections. A hissing sound or bubbles in the soapy water will provide audio and visual indications of air leaks.

The TIREMAAX® system can be manually pressurized without applying electrical power. An air chuck with a ¼-inch push-to-connect fitting can be attached to the vent tube on the delivery solenoid valve, conveniently allowing shop air to pressurize the system. The push-to-connect fitting also has the added benefit of being easy to install and remove from the vent tube. Manually pressurize the TIREMAAX system as follows:

1. Remove electrical power to the controller.

2. Connect an air chuck with a ¼-inch push-to-connect fitting to the vent tube on the delivery solenoid valve (figure 7).

3. Connect a **regulated** shop air supply to the air chuck. **Regulate the air supply pressure so it is at or below the desired target pressure.**

   The shop air supply provides a constant source of air pressure to the system, overriding the 10 minute pressure check intervals provided by the controller assembly. This allows one person to thoroughly check all air-fitting connections for leaks.

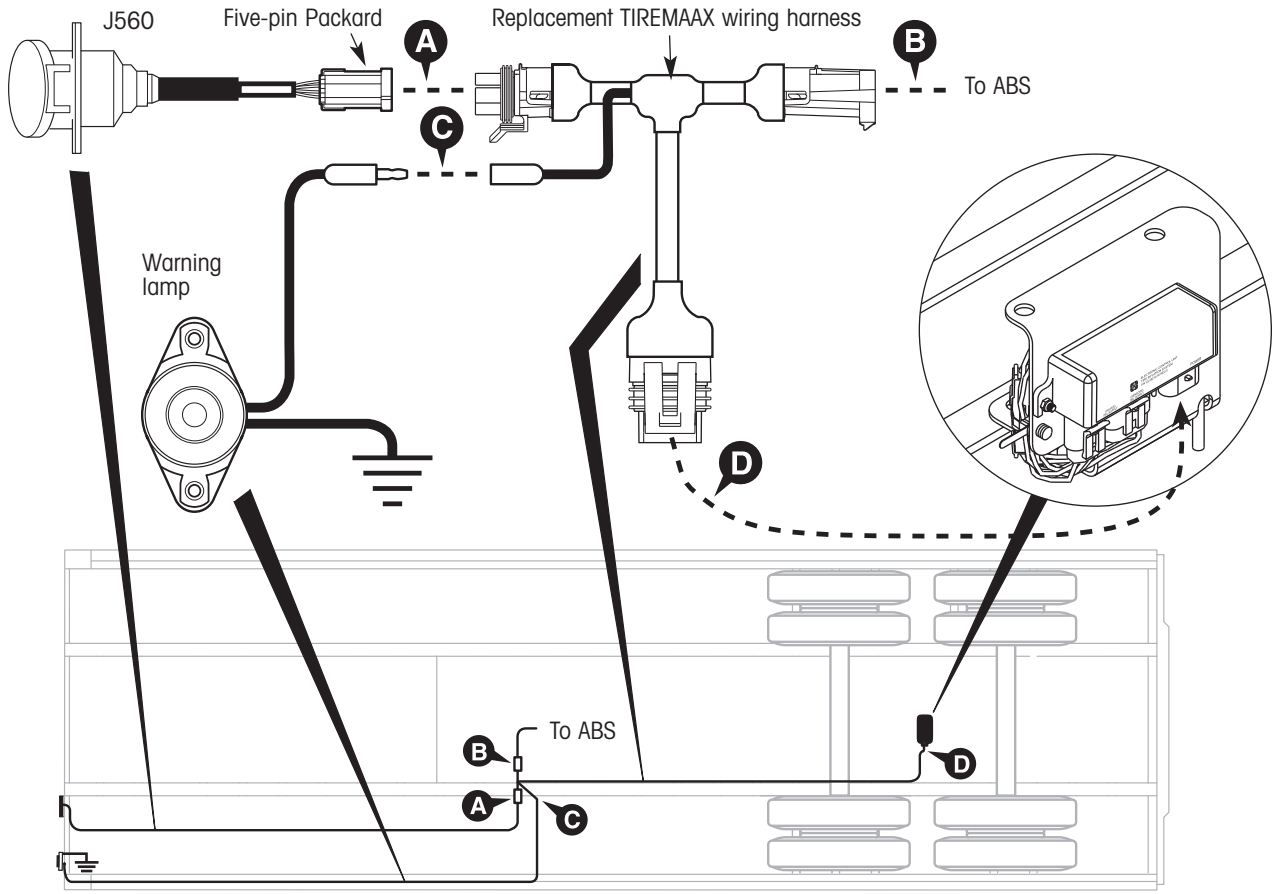

Figure 6. Connecting the replacement TIREMAAX wiring harness

4. Apply soapy water to all air-fitting connections. Bubbles in the soapy water will provide a visual indication of an air leak. Fix if necessary. All connections must be air tight.

An additional benefit of the system integrity check is balanced tire pressures. For example, assume that eight new tires were added to the trailer and the desired target tire pressure is 95 psi. The new tires could conceivably have pressures of 89, 91, 94 or anywhere near the desired 95 psi target pressure. While you are using the system integrity check to identify possible leaks, it will simultaneously inflate any low tires to the 95 psi target tire pressure (there will be no change to tires already at or above 95 psi).

⚠**CAUTION: Potential overinflation hazard. When performing the system integrity check, the shop air supply MUST NOT be higher than the target pressure setting.**

If the shop air supply is higher, the tires will overinflate during the system integrity check. No method exists to exhaust the overinflated tires, other than disconnecting the tire hoses and manually depressing the valve stem core at each tire.

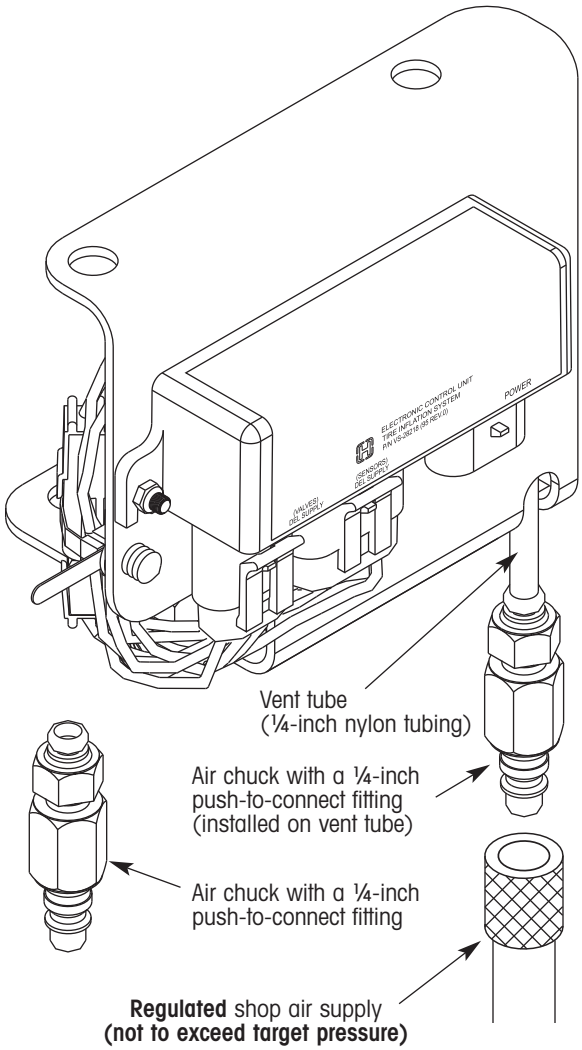

Figure 7. Manually pressurizing the system to check for air leaks

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