



## MANUAL

### INSTALLATION – OPERATION

## PNEUMATIC SUSPENSION OVERRIDE KIT

October 2020  
Revision 4

**CONTINENTAL RAILWORKS**  
7380 Vérité, St-Laurent, QC, Canada, H4S 1C5  
Phone : 514-956-8081 Fax : 514-956-0737

## GENERAL DESCRIPTION

The Continental Railworks Pneumatic Suspension Kit has been designed to provide a means of regulating the chassis' air bag pressure to ensure a constant ride height and wheel pressure while traveling on rail. It offers additional guidance / traction adjustability, and is adaptable to many suspension types.

Some single axle trucks require a different system that diverts the air pressure going to the OEM leveling valve. This manual covers both systems:

**Part number for replacement of the Pneumatic Suspension Override Kit is H105E003 for tandem axle trucks.**

**Part number for replacement of the Pneumatic Suspension Override Kit is H105E004 for single axle trucks with air bag pressure sensors.**

## **! SAFETY WARNING !**

AIR NEEDS TO BE SOURCED FROM SECONDARY OR AUXILIARY AIR TANK

ENSURE AIR LINES AND WIRES ARE SECURED PROPERLY TO PREVENT PINCHING OR RUBBING WHICH MAY  
LEAD TO FAILURE

### **General Description**

Contents of Kit

## INSTALLATION – H105E003 TANDEM AXLE TRUCKS

### CONTENTS OF KIT



*Figure 1: Suspension Assembly with Regulator*

### INCLUDED

- Suspension Assembly with Regulator

**Note:** Components may be slightly different in appearance.

### NOT INCLUDED

- 3/8" OD Nylon Air Brake Tubing (SAE J844 compliant)
- Various fittings for connection to chassis air system
- Electrical proximity switch for hi-rail
- Electrical relays, wire and connectors
- Mounting hardware

**Note:** The electrical proximity switch for hi-rail (sending signal to the air valves) is not supplied. The choice of the type of switch is left to the customer / installer.

## LOCATION AND MOUNTING

- 1- Find a suitable location between the truck frame rails or in a compartment of the vehicle to mount the valve assembly.
- 2- Secure the mounting bracket to the vehicle in a way that allows access to the pressure regulator unit.

**Note** – The valve kit needs to be mounted with the quick exhaust valve (release port EXHAUST) pointing down, as shown in pictures and drawings below.

- 3- Select and install a proximity switch for the rear hi-rail.

**Note** – Mechanical proximity switches are not recommended for reliability reasons. Continental Railworks recommends the use of either magnetic or induction proximity switches.

**Note** – The proximity switch needs to be installed on the rear hi-rail so the system adjusts as soon as possible (rear hi-rail gets deployed first).

## ELECTRICAL

Refer to the electrical schematic in the next pages and to the following steps:

- 1- Select and install a method of activating the system:
  - a. A proximity switch installed on the rear hi-rail unit (magnetic or induction type recommended)
  - b. A toggle switch installed in the cab (not recommended)
- 2- The air solenoid valves need to be energized to redirect air pressure from the leveling valves (normal mode) to the air regulator (override mode).
- 3- Install a 12V automotive relay close to the Pneumatic Suspension Override Kit.
- 4- Feed the relay from the chassis' IGNITION ON circuit.
- 5- Connect the relay with:
  - a. The two (2) solenoid valves in parallel
  - b. The hi-rail sensor / switch in series with the solenoid valves

## PLUMBING

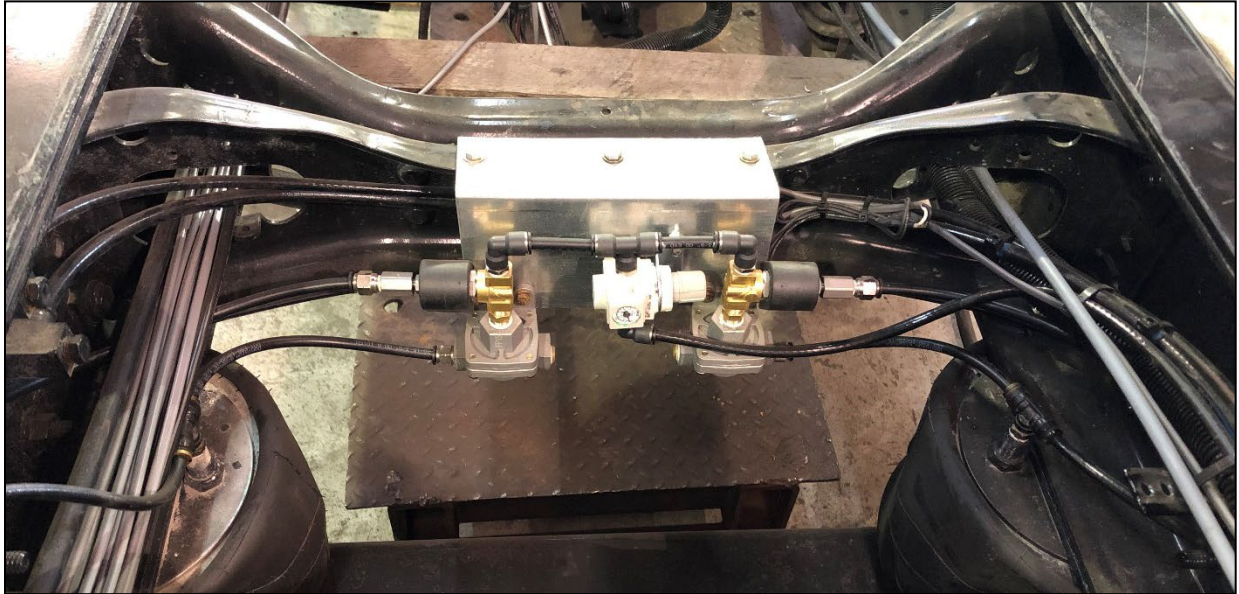


Figure 2: Typical air line routing

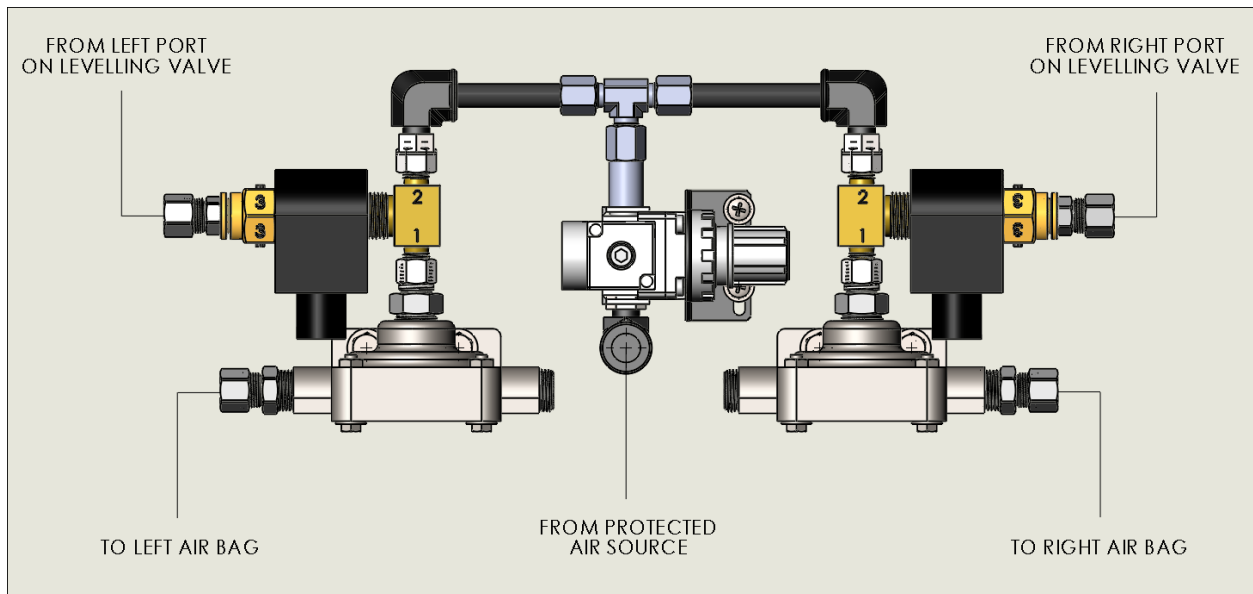


Figure 3: Simplified representation

Refer to the pneumatic schematic in the next pages and to the following steps:

- 1- Find an adequate air source to power the system:
  - a. The system needs to feed from the secondary or auxiliary air tanks
  - b. The air source needs to be pressure protected
  - c. DO NOT CONNECT DIRECTLY TO MAIN CHASSIS AIR BRAKE SYSTEM
  - d. DO NOT CONNECT TO THE CHASSIS' PRIMARY AIR TANK CIRCUIT

**NOTE** – The most convenient and safe place to connect the air source is to tee off from the supply line of the load leveling valve.

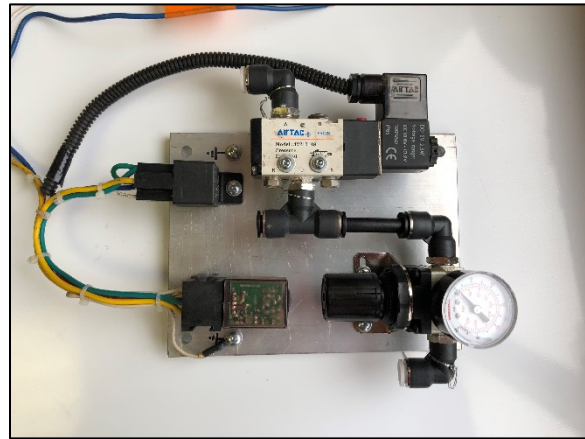
- 2- Using 3/8" air brake tubing, make the following connections:
  - a. Connect the main air source to the Pressure Regulator Unit.
  - b. Connect the left side output from the chassis' leveling valve to the left side Port #3 on the air solenoid valve.
  - c. Connect the right side output from the chassis' leveling valve to the right side Port #3 on the air solenoid valve.
  - d. Connect the left side chassis air bags to the DELIVERY port on the left side quick exhaust valve.
  - e. Connect the right side chassis air bag to the DELIVERY port on the right side quick exhaust valve.
- 3- Pressurize the system and verify for air leaks.

## INSTALLATION – H105E004 SINGLE AXLE TRUCKS

### CONTENTS OF KIT



*Figure 4: Suspension Assembly*



*Figure 5: Diverter Valve Assembly*

### INCLUDED

- Suspension Assembly
- Diverter Valve Assembly with Regulator

**Note:** Components may be slightly different in appearance.

### NOT INCLUDED

- 3/8" OD Nylon Air Brake Tubing (SAE J844 compliant)
- Various fittings for connection to chassis air system
- Electrical proximity switch for hi-rail
- Electrical relays, wire and connectors
- Mounting hardware

**Note:** The electrical proximity switch for hi-rail (sending signal to the air valves) is not supplied. The choice of the type of switch is left to the customer / installer.

## LOCATION AND MOUNTING

- 1- Find a suitable location between the truck frame rails or in a compartment of the vehicle to mount the Suspension Assembly.
- 2- Secure the mounting bracket to the vehicle.

**Note** – The valve kit needs to be mounted with the quick exhaust valve (release port EXHAUST) pointing down, as shown in pictures and drawings below.

- 3- Find a suitable location inside the vehicle cab or inside a compartment to mount the Diverter Valve Assembly.
- 4- Secure the plate to the vehicle in a way that allows access to the pressure regulator.
- 5- Select and install a proximity switch for the rear hi-rail.

**Note** – Mechanical proximity switches are not recommended for reliability reasons. Continental Railworks recommends the use of either magnetic or induction proximity switches.

**Note** – The proximity switch needs to be installed on the rear hi-rail so the system adjusts as soon as possible (rear hi-rail gets deployed first).

## ELECTRICAL

Refer to the electrical schematic in the next pages and to the following steps:

- 1- Select and install a method of activating the system:
  - a. A proximity switch installed on the rear hi-rail unit (magnetic or induction type recommended)
  - b. A toggle switch installed in the cab (not recommended)
- 2- The air solenoid valves need to be energized to redirect air pressure from the leveling valves (normal mode) to the air regulator (override mode).
- 3- Connect the IGN + wire to the vehicle's ignition on circuit.
- 4- Connect the GROUND VIA SENSOR wire to the proximity switch's ground lead.
- 5- Connect the TO SUSPENSION OVERRIDE VALVE wire to the solenoid wires on the Suspension Assembly (in parallel).



## PLUMBING

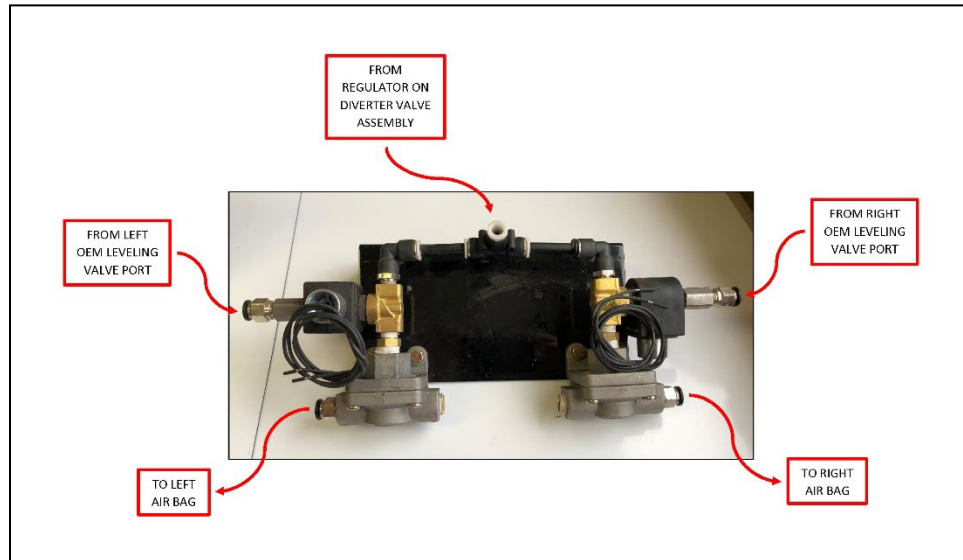


Figure 6: Suspension Assembly

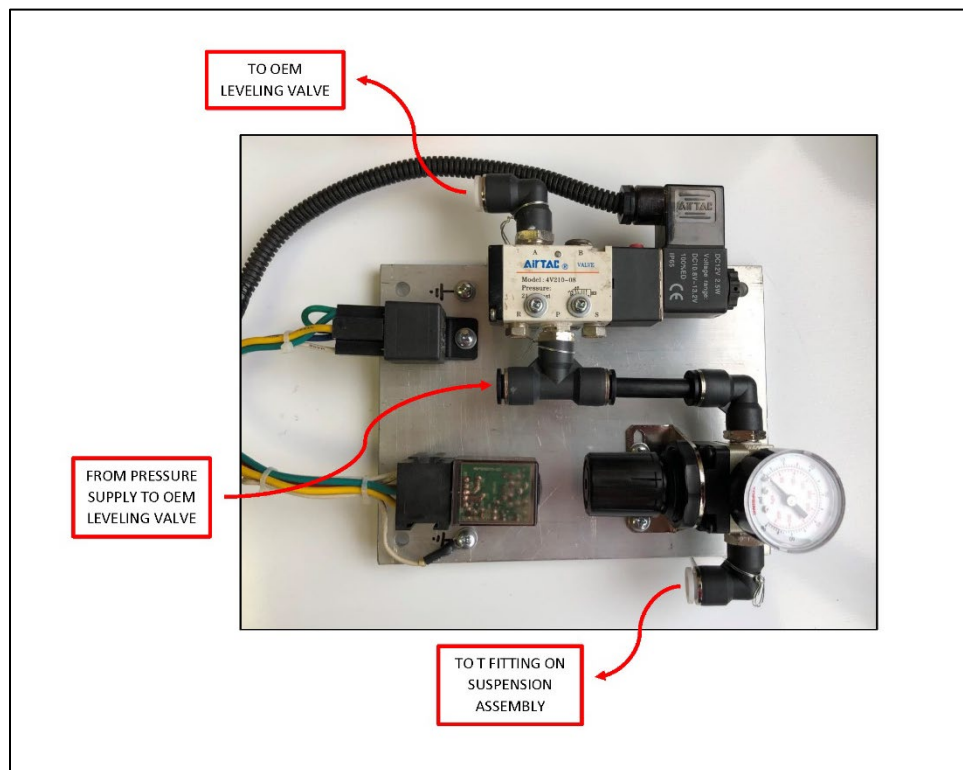


Figure 7: Diverter Valve Assembly with Regulator

Refer to the pneumatic schematic in the next pages and to the following steps:

- 1- Using 3/8" air brake tubing, divert the air pressure going to the OEM leveling valve.
  - a. Connect the air line leading to the leveling valve (pressure source) to the P port of the 5-way solenoid valve.
  - b. Connect an air line to feed the OEM leveling valve from the A port on the 5-way solenoid valve (neutral state).
- 2- Using 3/8" air brake tubing, connect the Diverter Valve Assembly to the Suspension Assembly
  - a. Connect an air line between the air regulator on the diverter valve assembly to the T fitting on the Suspension Assembly
- 3- Using 3/8" air brake tubing, make the following connections:
  - a. Connect the left side output from the chassis' leveling valve to the left side Port #3 on the air solenoid valve.
  - b. Connect the right side output from the chassis' leveling valve to the right side Port #3 on the air solenoid valve.
  - c. Connect the left side chassis air bags to the DELIVERY port on the left side quick exhaust valve.
  - d. Connect the right side chassis air bag to the DELIVERY port on the right side quick exhaust valve.
- 4- Pressurize the system and verify for air leaks.

## ADJUSTMENT

- 1- With the vehicle on rail (hi-rail deployed) and all air and electrical connections complete, perform initial adjustment to the Pneumatic Suspension Override Kit assembly as follows:
  - a. Ensure that the chassis air tanks are full before performing any tests or adjustments.
  - b. Pull up on the pressure regulator knob and adjust to approximately 25 psi.
  - c. Adjust air pressure as required in 5 psi increments until the tire contact patch reaches an acceptable dimension (see individual hi-rail manuals for details).
    - i. Raise pressure to increase contact patch and traction.
    - ii. Lower pressure to reduce contact patch and traction.
- 2- Ensure there are no air leaks in the system.
- 3- Ensure the air lines and wiring are properly secured and kept away from moving or rotating parts of the vehicle.
- 4- Perform a track test with the vehicle and ensure proper suspension functionality both on road and on rail.

## CONTACT INFORMATION

To order parts or for technical support, please contact Continental Railworks from Monday to Friday, 8:30 a.m. to 4:30 p.m. ET, by calling **(514) 956-8081** or faxing **(514) 956-0737**. Please have the hi-rail assembly's serial number available for easier tracking.

CANADA + US
Continental Railworks 7380 Vérité St-Laurent, QC, H4S 1C5 (514) 956-8081

## LIMITED WARRANTY INFORMATION

The following warranty applies to all products manufactured by Continental Railworks.

Continental Railworks (hereinafter referred to as “Continental”) warrants to the original purchaser that all equipment supplied shall be free from defects in material and workmanship for a period of 12 months from the date of purchase. If such a defect appears during the warranty period, Continental will repair or replace the defective part or product (at its option) without charge if applicable claim procedures are followed.

The product must have been properly installed, adjusted, maintained, and serviced in order to be eligible for warranty.

The warranty does not cover defects or damage to products that have been improperly installed, abused, misused, or damaged due to accident. Continental disclaims liability for indirect, incidental, and consequential damages, such as damage incurred during shipping and handling. This disclaimer applies during and after the warranty period.

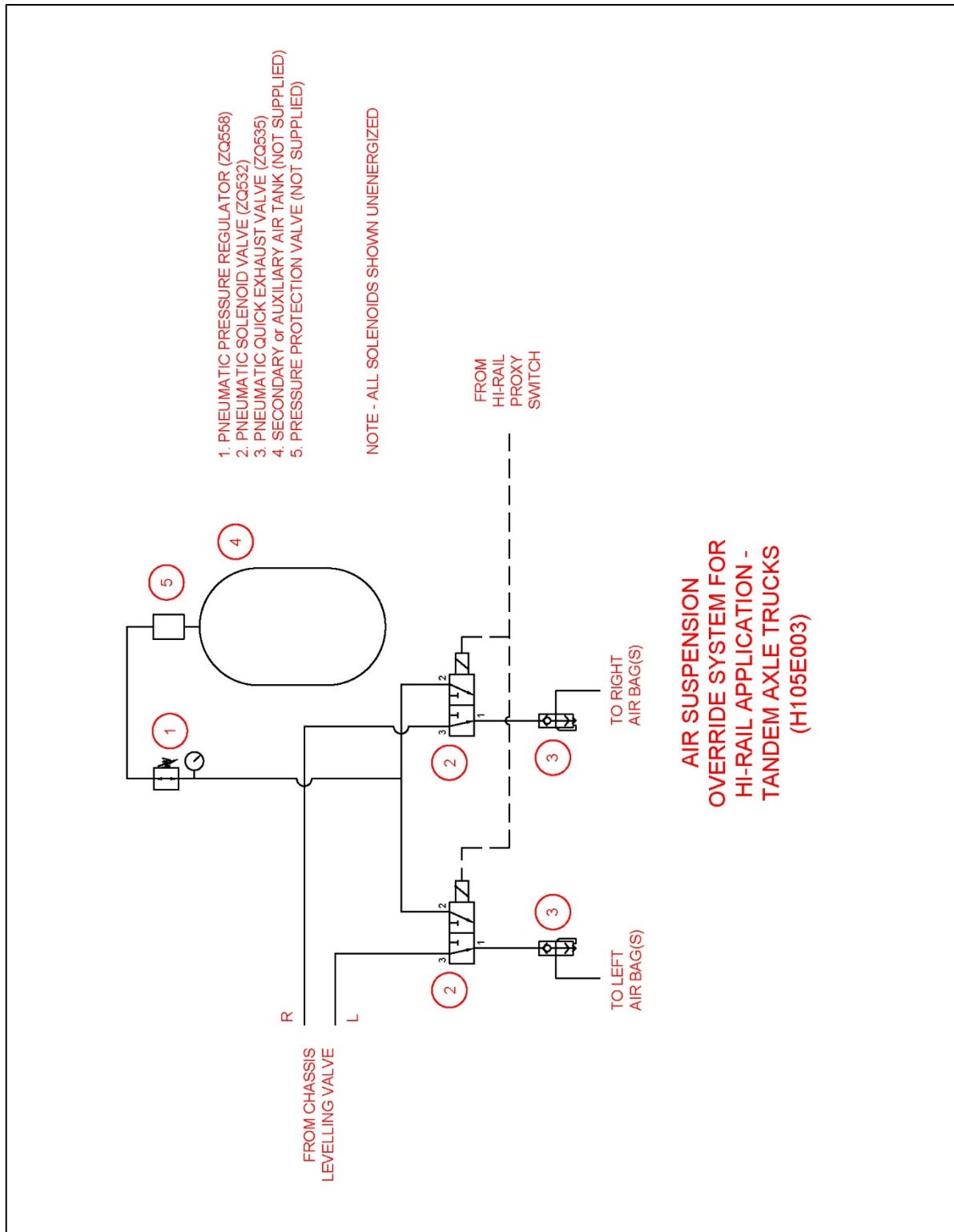
Warranty claims may be made by contacting our Customer Service Department at the address indicated above, or by calling (514) 956-8081. All claims must be made in writing.

Continental or its authorized representative reserves the right to inspect products claimed to be defective for warranty purposes and dispose of the claim as it sees fit, including repair or replacement. Unauthorized repair or replacement prior to inspection may void the warranty. Use of non-OEM parts will immediately void the warranty.

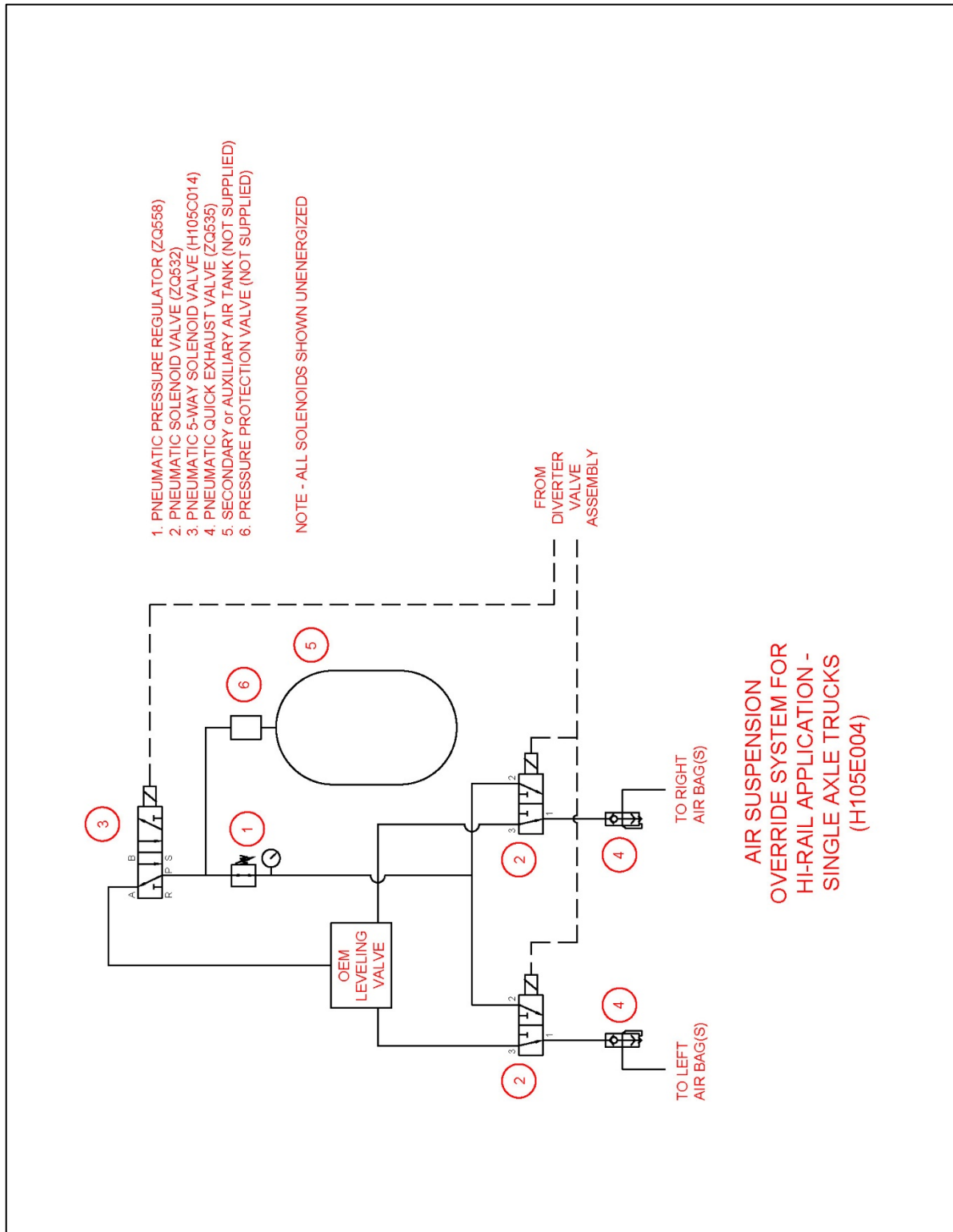
All products or parts claimed to be defective must be returned to Continental for warranty consideration within 30 days of the claim. All items shipped from Continental for warranty reasons will be sent freight prepaid, and all items returned to Continental must be sent freight prepaid.

Labor performed for warranty reasons must be done by an authorized Continental representative or by a person or company pre-approved by Continental in writing. Labor performed without prior written approval will not be warranted.

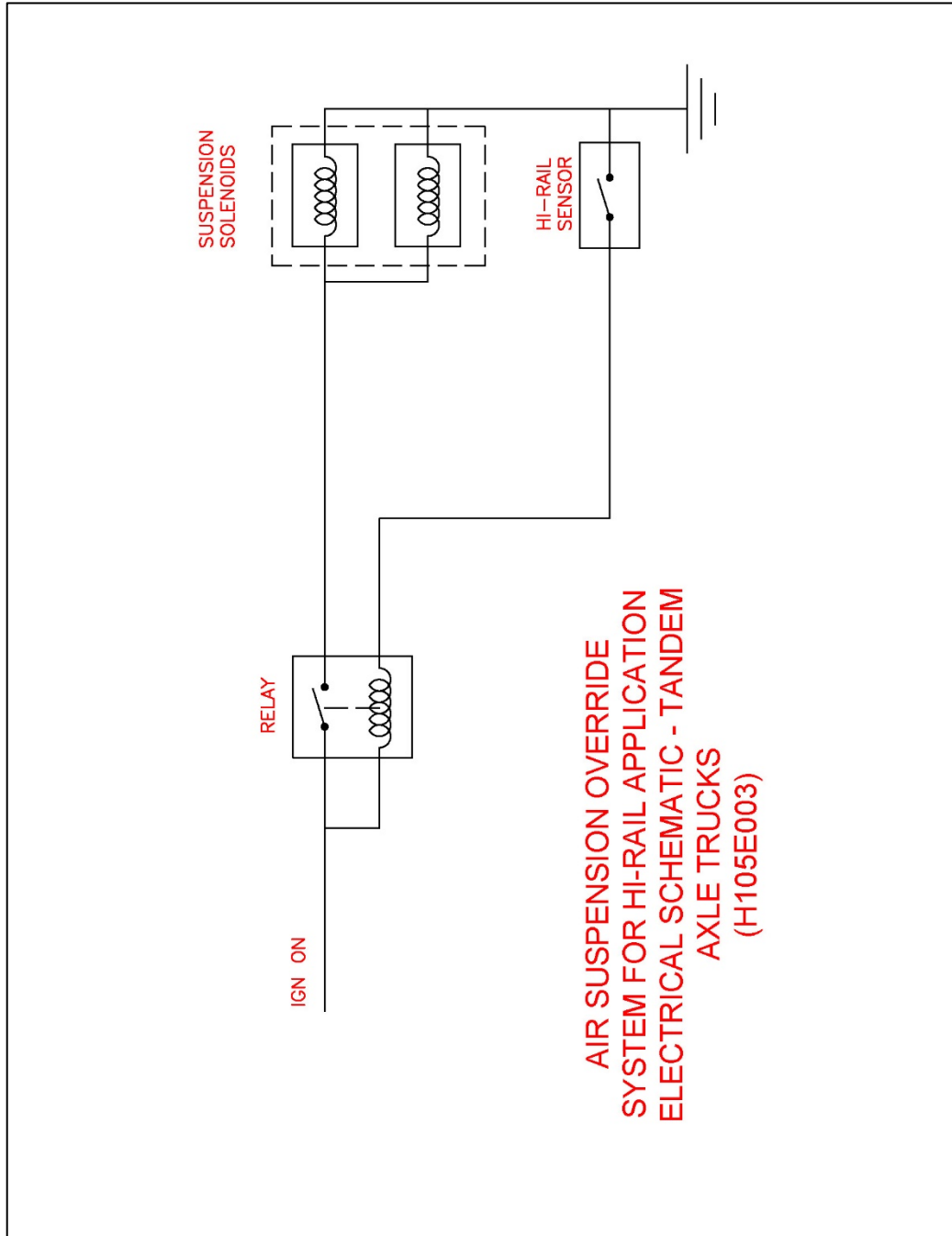
## PNEUMATIC SCHEMATICS – H105E003 TANDEM AXLE TRUCKS



## PNEUMATIC SCHEMATICS – H105E004 SINGLE AXLE TRUCKS



## ELECTRICAL SCHEMATICS – H105E003 TANDEM AXLE TRUCKS



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