

WABCO

Installation Guide

Installing and Configuring the WABCO Trailer ABS with Tire Inflation and Door Ajar Systems

Hazard Alert Messages

Read and observe all Warning and Caution hazard alert messages in this publication. They provide information that can help prevent serious personal injury, damage to components, or both.

How to Obtain Additional Maintenance, Service and Product Information

Refer to WABCO Maintenance Manual MM-0180, Enhanced Easy-Stop™ Trailer ABS with PLC, for system troubleshooting procedures. If you have any questions about the material covered in this publication, or for more information about the WABCO product line, please contact WABCO North America Customer Care at 855-228-3203 or visit our website: www.wabco-na.com

How to Obtain Tools, Kits and Supplies

Original equipment manufacturers may obtain kits through their standard WABCO purchasing channels.

Kit 1

Meritor Tire Inflation System and Door Ajar System Components

- 400 500 105 0 or 400 500 106 0 — Trailer ABS
- 449 324 XXX 0 — Power Cable
- 449 442 XXX 0 — Multi-generic I/O Cable
- 446 147 XXX 4 — Proximity Switch
- 449 428 030 0 — Generic I/O Cable
- 449 712 XXX 0 — Sensor Extension Cable (optional)
- Meritor Tire Inflation System (MTIS) (not included)

Kit 2

Compatible Tire Inflation and Door Ajar System Components (Hendrickson Tiremaax System or Stemco ATIS)

- 400 500 105 0 or 400 500 106 0 — Trailer ABS
- 449 324 XXX 0 — Power Cable
- 449 027 XXX 0 (STEMCO) or 449 025 XXX 0 (TIREMAAX) Jumper Harness
- 449 442 XXX 0 — Multi-generic I/O Cable
- 446 147 XXX 4 — Proximity Switch
- 449 428 030 0 — Generic I/O Cable
- Five-Pin ABS Power Cord (not included)
- STEMCO or TIREMAAX Tire Inflation System (not included)

NOTE: Please choose the appropriate kit that meets government regulations where the trailer will be in service.

Introduction

The Tire Inflation System uses compressed air from the trailer to inflate any trailer tire that falls below the tire air pressure setting during operation. Air from the existing trailer air supply is routed to a control box, then into each axle. WABCO InfoLink ABS can warn the driver of a tire inflation event through a warning lamp. Fleets have an option of transferring the event information through telematics. Please refer to the kit parts lists for the components required for the different tire inflation systems.

The door ajar system consists of magnetic switches that are used to monitor access/connection points. This is a normally closed switch. When an access point is open, an indicator light on the trailer is illuminated to signal the driver that the access point is open. Fleets have an option of transferring the event information through telematics.

Installation Procedures

Preparation for Service

WARNING

To prevent serious eye injury, always wear safe eye protection when you perform vehicle maintenance or service.

Park the vehicle on a level surface. Block the wheels to prevent the vehicle from moving. Support the vehicle with safety stands. Do not work under a vehicle supported only by jacks. Jacks can slip and fall over. Serious personal injury and damage to components can result.

Remove all pressure from the air system before you disconnect any component. Pressurized air can cause serious personal injury.

When you work on an electrical system, the possibility of electrical shock exists, and sparks can ignite flammable substances. You must always disconnect the battery ground cable before you work on an electrical system to prevent serious personal injury and damage to components.

1. Wear safe eye protection.
2. Park the vehicle on a level surface. Block the wheels to prevent the vehicle from moving.
3. Disconnect the electrical power.
4. Disconnect all telematics or diagnostic systems from the PLC line.

Meritor Tire Inflation and Door Ajar Systems via ABS Installation

Refer to Figure 1 for correct connection of the trailer ABS, part number 400 500 105 0 or 400 500 106 0, to the Tire Inflation and Door Ajar Systems.

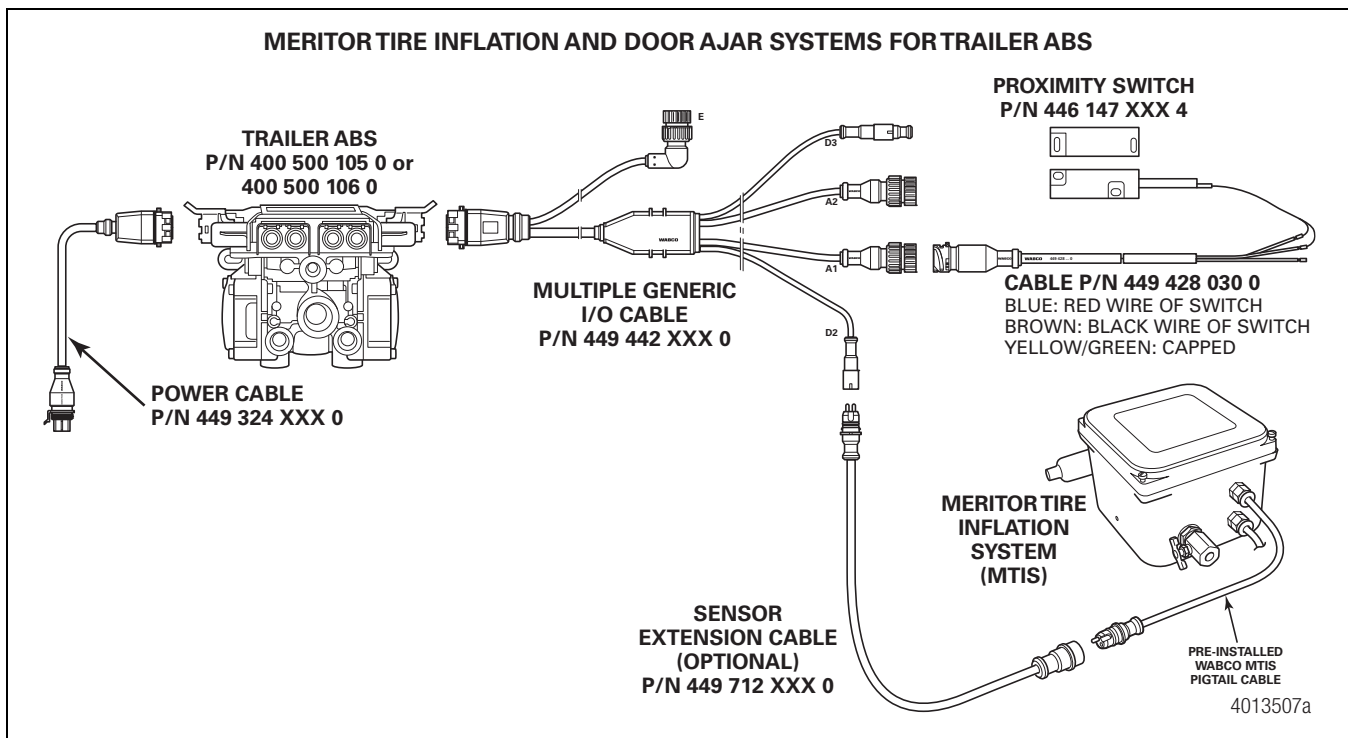


Figure 1

1. Connect the power cable, part number 449 324 XXX 0, into the ECU's power connector port and secure it with the locking tab.
2. Connect the multi-generic I/O cable, part number 449 442 XXX 0, into the ECU's modulator connector port and secure it with the locking tab.
3. Connect the Meritor Tire Inflation System (MTIS) to the D2 port of the multi-generic I/O cable, part number 449 442 XXX 0. You may use the optional sensor extension cable, part number 449 712 XXX 0, if needed.

NOTE: "D2" lettering is stamped in white on the female end of the multiple generic I/O cable.

- Connect the A1 port of the multi-generic I/O cable, part number 449 442 XXX 0, to the generic I/O cable, part number 449 428 030 0.

NOTE: "A1" lettering is stamped in white on end leads of the multiple generic I/O cable.

NOTE: Ports A2 and D1 of the multi-generic I/O cable, part number 449 442 XXX 0, are not used and must be capped.

- Connect the wire leads of the generic I/O cable, part number 449 428 030 0, to the proximity switch wire leads as follows.
 - Connect the blue wire of the generic I/O cable to the red wire of the proximity switch.

- Connect the brown wire of the generic I/O cable to the black wire of the proximity switch.

NOTE: The yellow/green wire of the generic I/O cable is not used and must be capped.

Compatible Tire Inflation and Door Ajar Systems via ABS Installation

Refer to Figure 2 for correct connection of the trailer ABS, part number 400 500 105 0 or 400 500 106 0, to the Tire Inflation and Door Ajar Systems.

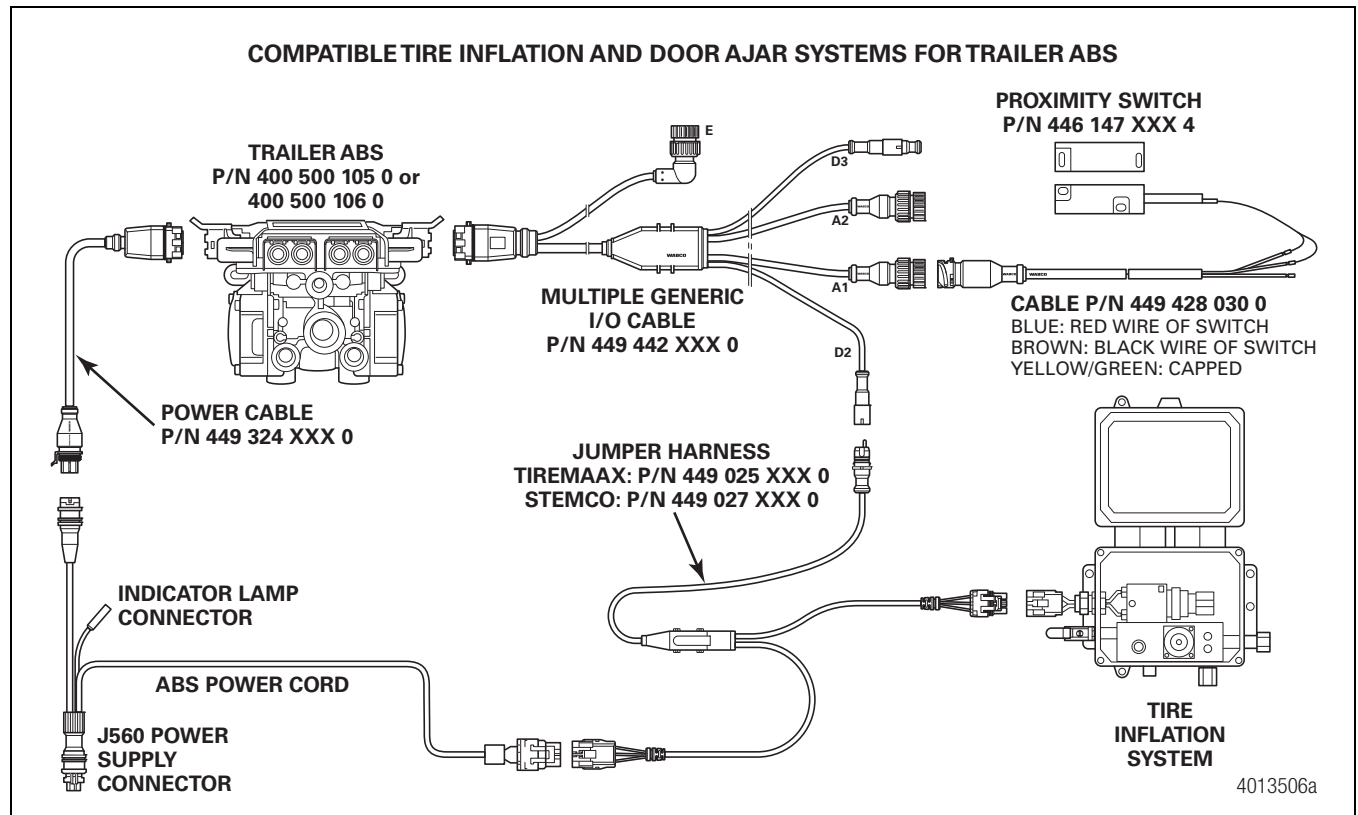


Figure 2

- Connect the power cable, part number 449 324 XXX 0, into the ECU's power connector port and secure it with the locking tab.
- Connect the multi-generic I/O cable, part number 449 442 XXX 0, into the ECU's modulator connector port and secure it with the locking tab.
- Connect the Tire Inflation System to the D2 port of the multi-generic I/O cable, part number 449 442 XXX 0, using the jumper harness, either TIREMAAX (449 025 XXX 0) or STEMCO (449 027 XXX 0).

NOTE: "D2" lettering is stamped in white on the female end of the multiple generic I/O cable.
- Connect the jumper harness between the five-pin ABS power cord and the tire inflation system Delphi connector.
- Connect the A1 port of the multi-generic I/O cable, part number 449 442 XXX 0, to the generic I/O cable, part number 449 428 030 0.

NOTE: "A1" lettering is stamped in white on end leads of the multiple generic I/O cable.

NOTE: Ports A2 and D1 of the multi-generic I/O cable, part number 449 442 XXX 0, are not used and must be capped.

6. Connect the wire leads of the generic I/O cable, part number 449 428 030 0, to the proximity switch wire leads as follows.
 - Connect the blue wire of the generic I/O cable to the red wire of the proximity switch.
 - Connect the brown wire of the generic I/O cable to the black wire of the proximity switch.

NOTE: The yellow/green wire of the generic I/O cable is not used and must be capped.

Installing the Proximity Switch

The proximity switch, part number 446 147 XXX 4, is comprised of two parts. One component (with the cable) is a magnetic switch and the other component is an actuator. The magnetic switch is mounted on the door frame of the trailer. The actuator is mounted on the swinging door. These two components are installed so that they align directly facing each other. Ensure that the distance between the components is not greater than 1.18-inches (30 mm) when the door is closed for correct operation.

Activating the Tire Inflation and Door Ajar Systems Option with TOOLBOX™ Software

Once the hardware has been installed, both the Tire Inflation and Door Ajar Systems options must be activated using WABCO TOOLBOX™ Software version 12.4 or later. When installing Tire Inflation and Door Ajar Systems option on new or replacement ECUs, the activation process is part of the normal programming procedure.

1. Click the **TOOLBOX** icon on the desktop and then click the **J1708/PLC** icon. Figure 3.

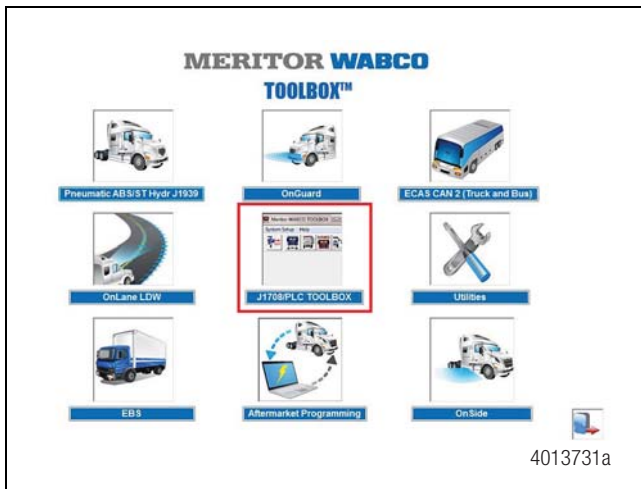


Figure 3

2. Click on the **Trailer ABS Diagnostics** icon to initiate the ABS portion of TOOLBOX™ Software. Figure 4.

NOTE: To enable trailer and TOOLBOX™ Software communication, make sure the correct adapter is selected under System Setup tab.

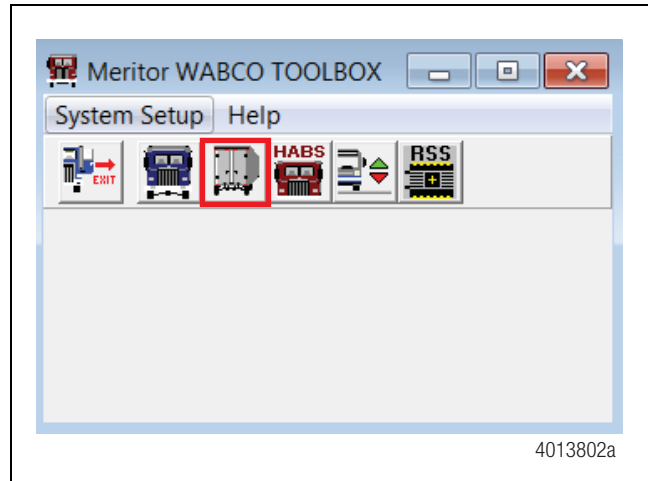


Figure 4

3. From the top menu bar, go to the **Modify** pull-down menu and select **GIO Configuration**. Figure 5.

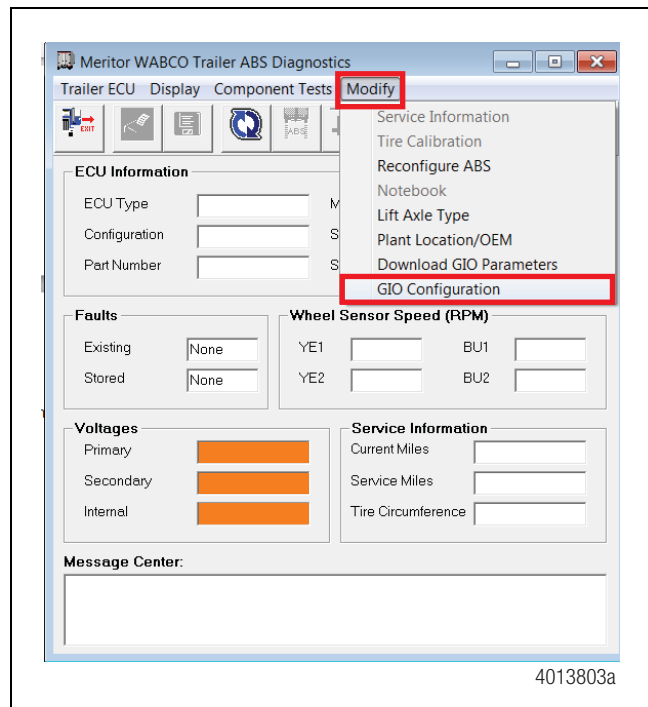


Figure 5

4. When the GIO Configuration screen is displayed, click the **Tire Inflation and Door Ajar** radial button. Ensure that a circle appears in the box. Then, press the **Download** button at the bottom of the screen. Figure 6.

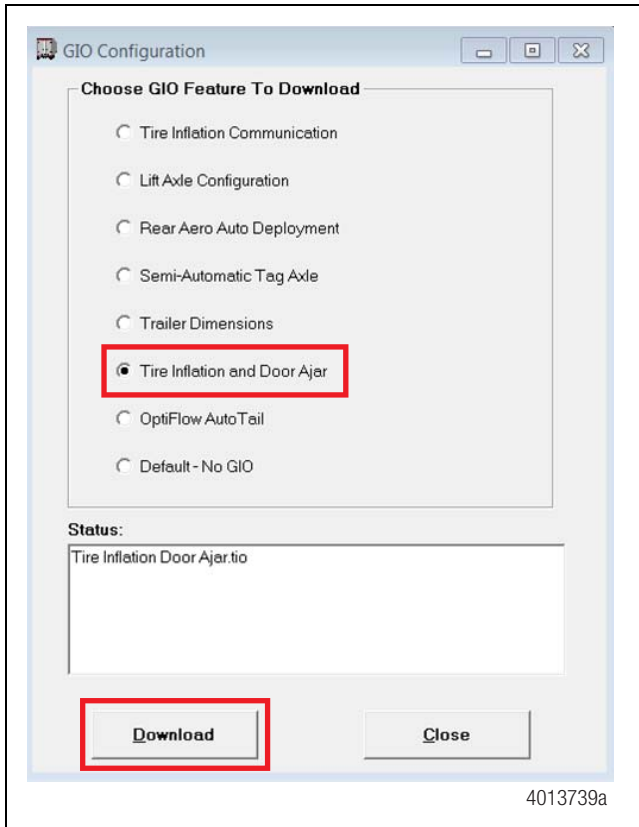


Figure 6

5. Once a message is displayed confirming a successful save, click **Exit** in the main screen to close the TOOLBOX™ Software.
6. Cycle the power on the trailer in order to reset the ECU.

Cable Routing Guidelines

All wires should be tightly secured to a solid member in intervals not greater than 18-inches (457 mm) to avoid excess cable vibration and potential snags with road debris. The correct cable installation should not allow the cable to slide through beam clamps/zip ties, but not tight enough to pinch the internal wires. Refer to technical bulletins TP-20212 and TP-1593 for more information. Figure 7.

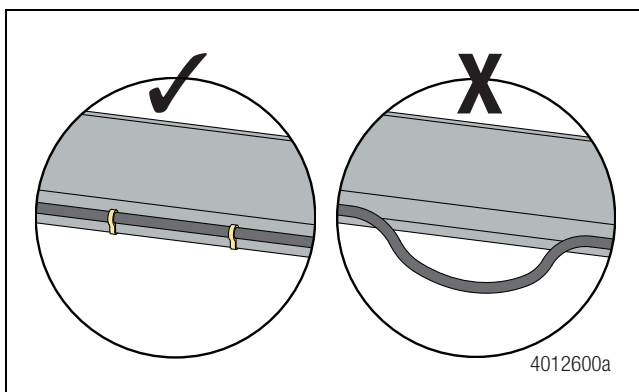


Figure 7

Wiring should NEVER go through any bare, unprotected metal holes. Use grommets, caulk or wire wrap to protect wire from premature wear. Figure 8.

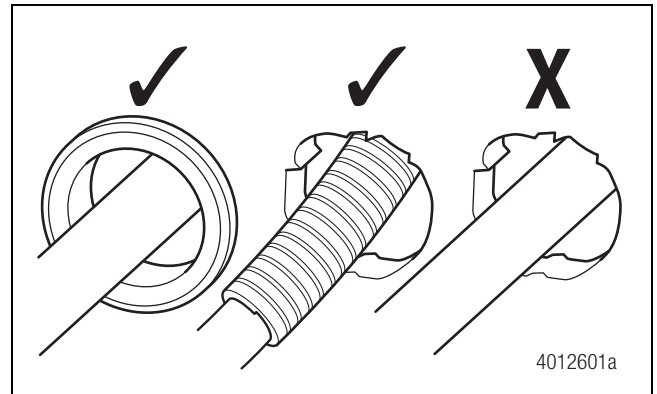


Figure 8

When routing the cable through the wiring channel on the edge or center of the trailer, secure the shorter leg of the latch connectors to the longer leg to ease wire routing. Figure 9.

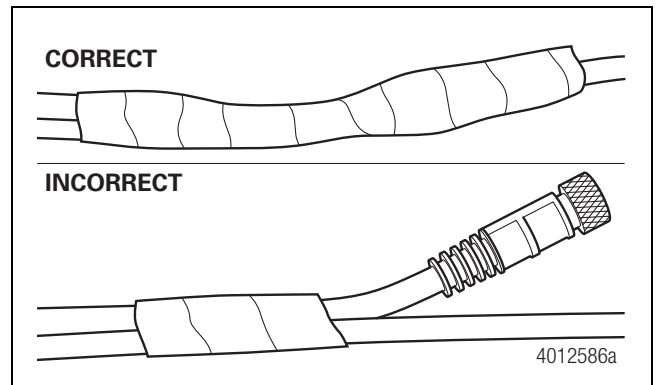


Figure 9

When using a wire snake to pull the cable up through the frame, make sure to tape the connectors correctly to the wire snake. Figure 10.

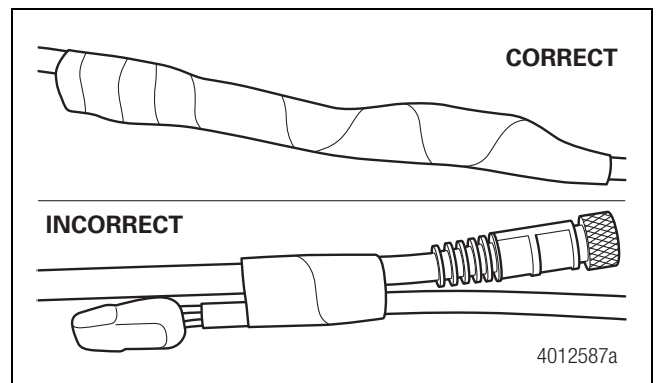


Figure 10

Vehicle Electrical Grounding Guidelines

Ensure that the vehicle includes a correct common chassis ground point. A common chassis ground point connects the trailer frame/ chassis to the ground pin of the J560 seven-way connector and will protect the vehicle electrical system from unwanted electrical noise.

Common chassis ground can be verified by measuring the resistance between the J560 ground pin and the vehicle chassis (or frame) and confirming that the resistance is less than 10 ohm (< 10 Ω). If this is not the case, the electrical contact at the common chassis ground point is not sufficient or not present. If a common chassis ground point is present, but not sufficient, ensure that there is no paint or debris inhibiting electrical contact at the ground point. If a common chassis ground point is not present, WABCO requires adding one. Consult your trailer manufacturer (OEM) for further instructions on how to perform this task. This ensures that the trailer OE warranty is not voided.

Parts List

WABCO Parts List

Part Number	Description	Detail
400 500 106 0	2S/1M Basic ECU	ECU/Valve Assembly
400 500 105 0	2S/2M-4S/3M Premium ECU	
449 324 005 0	Power Generic I/O "Y" Cable	0.5 meter
449 324 010 0	Power Generic I/O "Y" Cable	1.0 meter
449 324 030 0	Power Generic I/O "Y" Cable	3.0 meters
449 324 047 0	Power Generic I/O "Y" Cable	4.7 meters
449 324 060 0	Power Generic I/O "Y" Cable	6.0 meters
449 324 142 0	Power Generic I/O "Y" Cable	14.2 meters
449 324 152 0	Power Generic I/O "Y" Cable	15.2 meters

Part Number	Description	Detail
449 324 153 0	Power Generic I/O "Y" Cable	15.3 meters
449 442 010 0	Multi-Generic I/O Cable	1.0 meter
449 442 047 0	Multi-Generic I/O Cable	4.7 meters
446 147 030 4	Proximity Switch	3.0 meters
446 147 100 4	Proximity Switch	10.0 meters
446 147 160 4	Proximity Switch	16.0 meters
449 428 030 0	Generic I/O Cable	3.0 meters
449 712 008 0	Sensor Extension Cable	0.8 meter
449 712 013 0	Sensor Extension Cable	1.3 meters
449 712 018 0	Sensor Extension Cable	1.8 meters
449 712 038 0	Sensor Extension Cable	3.8 meters
449 712 051 0	Sensor Extension Cable	5.1 meters
449 712 064 0	Sensor Extension Cable	6.4 meters
449 712 100 0	Sensor Extension Cable	10.0 meters
449 027 000 0	STEMCO Cable	1.0 meter
449 025 010 0	TIREMAAX Cable	1.0 meter
449 025 025 0	TIREMAAX Cable	2.5 meters
449 025 050 0	TIREMAAX Cable	5.0 meters

WABCO

WABCO North America
 1220 Pacific Drive
 Auburn Hills, MI 48326 USA
 855-228-3203
 wabco-na.com

Information contained in this publication was in effect at the time the publication was approved for printing and is subject to change without notice or liability. WABCO reserves the right to revise the information presented or to discontinue the production of parts described at any time.

Copyright 2017
 WABCO, Inc.
 All Rights Reserved

Printed in USA

TP-17133
 Issued 10-17
 (16579)