

### TEST THE ABS SYSTEM:

Two simple tests will ensure proper operation of the Haldex PLC Select ABS System.

While still in the shop with the air system fully charged, apply 12 volt permanent power only from a battery charger. The valve should "Blow Down" and you should hear a brief shot of exhaust air. The ABS lamp should illuminate for about 3 seconds and then turn off. Repeat test with stoplight power only.

Road test the trailer and its ABS system. Use a late model tractor to power up the system. When the ABS lamp turns off, bring the vehicle up over 6 miles per hour. Hard stop the vehicle to activate an ABS event. If the ABS lamp remains off, the system is functioning correctly.

In the event that either test failed, refer to detailed testing procedures in the enclosed Service Manual (L30041).

Congratulations this replacement kit has upgraded this vehicle's braking system to the newest technology available - Power Line Carrier or PLC. Haldex stands behind the product with the strongest warranty available for In-Service repair kits, up to three full years.

Additionally, you may find valuable other options available from the Haldex ABS Family of products that include an E-Odometer which keeps On-Board mileage and is readable with either the Info Center or the ABS PC Program.

### AQ960503 - Kit Contents:

- 6-Port ABS Relay Valve with ECU
- 6.0 Meter Power Cord Extension (1)
- 3.0 Meter Sensor Extensions (2)
- E-Odometer Ready
- Installation Instruction (L31203)
- PLC Select Manual (L30041)

### Haldex Optional Diagnostic Tools (Not Included):

- PLC PC Computer Program - AQ15848
- PLC Info Center - Hand Held Unit - AQ15849
- Blink Code Diagnostics are Standard

If you have any question on this product or any of the Innovative Products offered by Haldex, contact your local distributor for complete details. Technical Service or Troubleshooting help can be obtained by calling Haldex and asking for the ABS Technical Support Line at (800) 643-2374.



L31203 US 6/08 2M CUT

### Haldex Commercial Vehicle Systems

**Haldex Brake Products Corporation**  
10707 NW Airworld Drive  
Kansas City, MO 64153-1215  
Phone: 816-891-2470  
Fax: 816-801-4198

**Haldex Limited**  
525 Southgate Drive, Unit 1  
Guelph, ON  
Canada N1G 3W6  
Phone: 519-826-7723  
Fax: 519-826-9497

[www.haldex.com](http://www.haldex.com) - [www.hbsna.com](http://www.hbsna.com)

## Haldex PLC Select ABS Universal 2S/1M Trailer Replacement Kit AQ960503

L31203

6/08



6-Port ABS Relay Valve  
with ECU



E-Odometer Ready

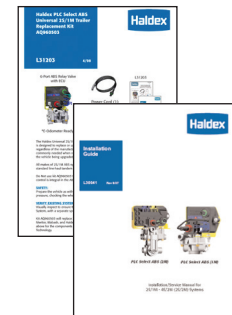


Power Cord (1)



Sensor Extension (2)

L31203



L30041

The Haldex Universal 2S/1M PLC Select ABS Replacement Kit, part number AQ960503, is designed to replace or upgrade to PLC Technology all 2S/1M multiple axle trailer systems, regardless of the manufacturer or year of production. The kit includes items most commonly needed when replacing competitive units. Some additional components unique to the vehicle being upgraded should be expected.

All makes of 2S/1M ABS systems utilizing a separate spring brake control valve, in a standard line-haul tandem trailer configuration can be replaced with this kit.

Do Not use kit AQ960503 to replace the Haldex FFABS System, as the spring brake control is integral in the ABS Valve and not controlled separately.

### SAFETY:

Prepare the vehicle as with any valve replacement procedure, by releasing all air pressure, chocking the wheels, and ensuring adequate vehicle support.

### VERIFY EXISTING SYSTEM TO BE REPLACED:

Visually inspect to ensure the trailer uses a 2 Sensor/1 Modulator Valve (2S/1M) ABS System, with a separate spring brake control valve.

Kit AQ960503 will replace 2S/1M multiple axle trailer ABS systems made by Bendix®, Eaton, Bosch, Meritor, Wabash and Haldex Mod 1. Contact Haldex if the existing system is not one mentioned above for the components required to retro-fit and upgrade the system to PLC Technology.

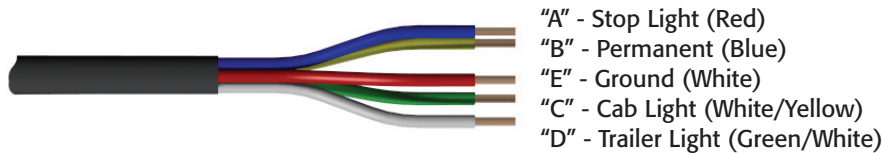
### REMOVE EXISTING ABS SYSTEM:

1. Remove the ABS Power Cord from the Valve/ECU assembly and the trailer harness if equipped.
2. Remove the 2 Sensors from the ECU only, not the wheel end.
3. Remove the Air Delivery Hoses from the bottom of the valve only, not the brake chambers.
4. Remove the Air Control Line from the top of the valve.
5. Remove the existing Valve/ECU assembly (Note: The Wabash Valve and ECU may be separate, remove both pieces).

### Pin Out for ABS Power Cord:



Haldex recommends that the Red, White and Blue should be 12 AWG Min.



### VERIFY AND TEST EXISTING POWER CORD:

1998 or Newer trailers should be equipped with a standard 5 way round power cord drop-out from a harness. Test each pin to ensure proper operation.

On Older trailers, use Haldex Kit No. AQ15473 to add the standard 5 way power cord drop-out. Then test each pin to ensure proper operation.

### VERIFY AND TEST SENSOR:

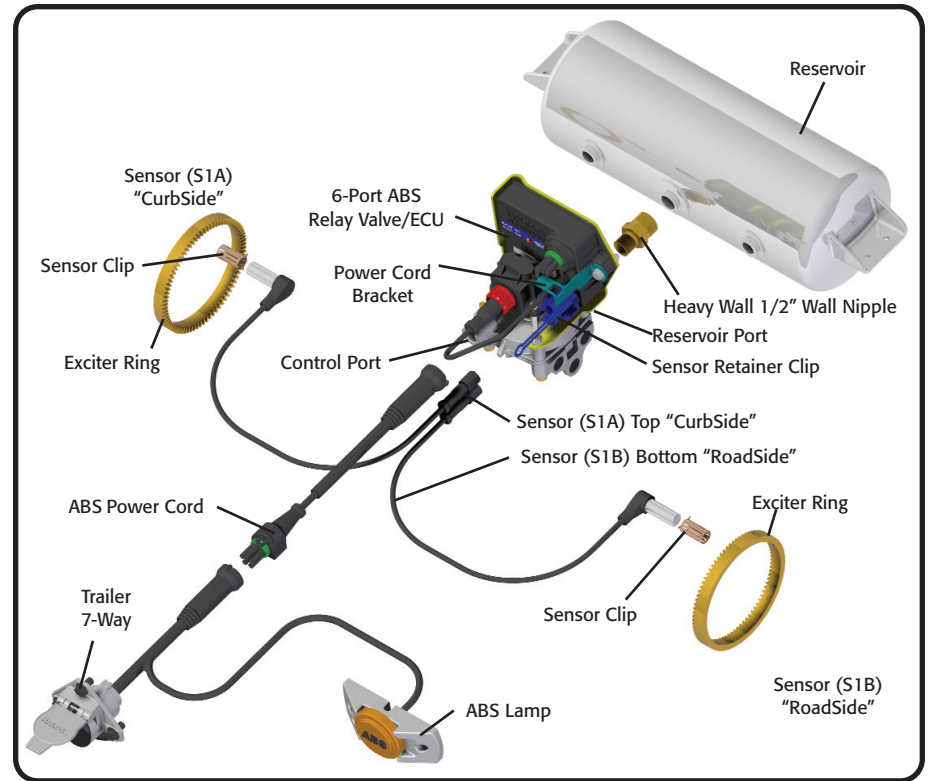
Note: Old Bendix® sensors with the "Square Connector" **CAN NOT** be used with this kit and should be replaced **BEFORE PROCEEDING**. Others are interchangeable and may be re-used.

Test for OHM resistance of the sensor at the valve end. Ensure the OHM reading is between 980 and 2350. Replace and test new sensor if OHM readings are outside **BEFORE PROCEEDING**.

Properly seat the sensors at the hub by pressing the sensor against the exciter ring.

Test for sensor voltage output by elevating the wheel end and spinning the wheel at least one revolution per two seconds. Output must exceed 200 millivolts. Low output is caused by either contaminate build-up on the exciter ring, or a faulty sensor. If output is below 200 millivolts, correct and re-test **BEFORE PROCEEDING**.

If more service is required to bring sensors up to satisfactory performance levels, additional detailed technical service information is included in the enclosed Service Manual (L30041).



### INSTALL THE NEW HALDEX 6-PORT ABS VALVE:

Note: Haldex suggests a light application of "dielectric grease" to all terminal connections on ABS systems during assembly.

1. Install the new Haldex PLC Select ABS Valve/ECU Assembly on the air tank utilizing a heavy wall nipple.
2. Replace the "Air Control" line to the control port on the front of the new valve.
3. Replace the "Air Delivery Hose" to the bottom of the valve. Plug all un-used delivery ports.
4. Install the "CurbSide" sensor to the Upper Terminal (S1A) on the ECU, utilizing the 6.0 Meter extension if needed to prevent interference.
5. Install the "RoadSide" sensor to the Bottom Terminal (S1B) on the ECU, utilizing the 6.0 Meter extension if needed to prevent interference.
6. Install the "Blue Sensor" sensor retainer clip to both sensors or extension cable.
7. Install the new 6.0 Meter Power Cord from the trailer harness, to the ECU "Power Connection" and secure with a tie strap.

### TEST AIR SYSTEM OPERATION:

1. Visually inspect to ensure no hoses or wires are left unattached.
2. All loose hoses and wires need to be secured to prevent problems. Haldex suggests sensor wires be attached to the brake hoses 8 inches -12 inches apart. With Haldex sensors, use clip AL920809, other sensor cables with smaller O.D. use clip AL920810.
3. Fully charge the trailer air system and test for leaks.
4. Operate the "Spring Brake System", test for leaks and proper application and release of the Spring Brakes.
5. Operate the "Service Brake System", test for leaks and proper application and release of the Service Brakes.