MERITOR WABCO

Installation Guide

Hydraulic Anti-Lock Braking System (HABS) Installation Guide for OEMs and Body Builders (Includes Body Builder Installation Information)

D Version Hydraulic ABS

This guide addresses frequently asked questions regarding Meritor WABCO D Version Hydraulic ABS components and installation procedures for trucks, buses, and motor home chassis. It also includes information for body builders who are modifying or altering vehicle chassis equipped with Meritor WABCO Hydraulic ABS. An example of a typical hydraulic ABS installation appears on page 4 of this bulletin.

This publication is to be used as an OEM installation reference guide only. If service or maintenance is required on Hydraulic ABS and related components, follow the complete instructions and procedures found in Maintenance Manual 39, *Hydraulic ABS for Medium-Duty Trucks, Buses and Motor Home Chassis*.

Contents

WARNING

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

To avoid damage to the electrical system or ABS components when welding on an ABS-equipped vehicle, disconnect the power connector from the ECU.

General Guidelines

- To avoid damage to internal components, do not store ABS parts in areas where temperatures exceed 194°F (90°C).
- ABS components must be installed where they are best protected from the environment, yet accessible for service.
- Inspect each vehicle installation using the Meritor WABCO Diagnostic Controller with Hydraulic ABS program card or Meritor WABCO TOOLBOX Software, a PC-based diagnostics program. A sample checklist that can be used to record the results of these inspections appears on page 11. You may want to make extra copies of this form.

Electronic Control Unit (ECU)

- To protect the internal components of the ECU, mount it away from extreme heat sources such as cab heaters, engine exhaust, radiators, etc. Maximum heat tolerance for the ECU is 158°F (70°C).
- To help isolate the system from electrical interference, install the ECU, ABS wire harnesses and all other ABS components away from Radio Frequency Interference (RFI) emitting devices, such as radios, electric motors or pumps.
- To avoid water penetration, cab-mounted ECUs must be installed with the connectors facing down or to the side. Do not mount the ECU with the connectors facing up. Frame-mounted ECUs must be installed with connectors parallel to the ground, not facing up.
- Secure the ECU so that 5g permissible acceleration is not exceeded.
- The ABS controls the vehicle retarder system (if installed). These include engine compression brakes, exhaust brakes, transmission retarders or drive line retarder. An electronic relay controlled by the ECU is required.

Electrical Wiring, Cables and Connectors

- Use weatherproof connectors when electrical connections are exposed to outdoor environmental conditions.
- Protect wiring exposed to extreme environmental or mechanical conditions. For example, wiring routed near an engine exhaust must be shielded from heat.
- Secure excess component wiring lengthwise to the frame rail. Do not coil wiring. Coiled wire can act as an antenna and increase susceptibility to RFI.
- Route all wiring within strain relief and bend radius allowance. Keep bend radius approximately seven times the cable diameter minimum.
- Use cable clamps, grommets and tie straps to properly route and secure ABS component wiring. Verify sufficient cable length is available for steering and suspension travel. Route single cables (such as sensor leads) along hydraulic brake flexible hoses. Support wiring every 8 to 12 inches. Loose, dangling cables are unacceptable.
- Sensor cable must be twisted pair wire with a minimum of 20 turns per meter. Do not splice these wires.
- All ground connections of the modulator assembly and ECU must have separate grounding points. It is recommended no other loads be connected to the grounds.

Tire Size Range and Mismatch

For proper ABS operation with Meritor WABCO Hydraulic D version ECU, all tire sizes must be within the appropriate range, as listed in **Table A** or **Table B**.

Table A: Cab-Mounted ECU

ECU Number	Nominal Value	Range
446 044 081 0	598	658-550 revolutions/mile
446 044 082 0	501	549-460 revolutions/mile

Table B: Frame-Mounted ECU

ECU Number	Nominal Value	Range
446 109 003 0	598	658-550 revolutions/mile
446 109 004 0	501	549-462 revolutions/mile
446 109 005 0	694	757-632 revolutions/mile

ABS Indicator Lamp

- ABS indicator lamp must be amber or yellow.
- Mount ABS indicator lamp in front, and in clear view, of the driver.
- Select lamp easily seen in daylight but not excessive at night, 2 watt max. Follow OEM lumens rating recommendations.

Sensor/Tooth Wheel

- Ensure total tooth wheel runout does not exceed 0.008-inch.
- Do not install tooth wheels that show signs of damage such as chipped, deformed or missing teeth.
- At installation, the sensor must be installed to initially contact the tooth wheel. The center of the sensor must contact the tooth wheel near the center of the tooth width, at least 0.12-inch (3 mm) from the edge of the tooth.

Meritor WABCO specifications call for a sensor lubricant with the following characteristics:

Lube must be mineral oil-based and contain molydisulfide. It should have excellent anti-corrosion and adhesion characteristics and be capable of continuous function in a temperature range of –40° to 300°F (–40° to 150°C).

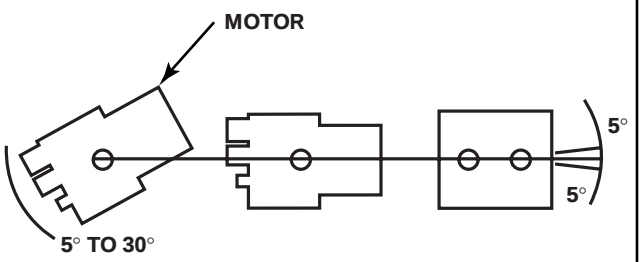
ABS Modulator Assembly

CAUTION

The modulator assembly contains hydraulic brake fluid, a caustic substance. Remove the valve carefully so that fluid does not leak and cause skin irritation or damage to components.

- Operating temperature of the modulator assembly is –40°F to 176°F (–40°C to 80°C).
- Maximum operating pressure of the modulator assembly is 3335 psi (230 bar).
- Use only brake fluid equivalent to DOT 3 or DOT 4 in accordance with Federal Motor Vehicle Safety Standard 116. Refer to the vehicle specifications to determine which fluid to use.
- DO NOT mount proportioning valves downstream from the ABS modulator assembly.
- Plumb hydraulic lines so fluid will continually run down from the master cylinder, the highest point, to the wheel end brake, the lowest point. This helps prevent air from being trapped in the system.
- To provide proper fluid drainage, mount the ABS modulator assembly within 5 degrees of horizontal from side to side and 5 to 30 degrees of horizontal (maximum) from front to back. **Figure 1**.

Figure 1



- Mount hydraulic brake lines on the chassis in areas where they will not be pinched or scraped. The inside of the frame rail is ideal for mounting hydraulic brake lines.
- Whenever any hydraulic brake system components are installed, fittings are loosened, or lines are disconnected, air can enter the system. This air must be removed from the brake system to allow sufficient hydraulic pressure for applying the brakes. Follow the instructions in “Hydraulic ABS Bleeding Procedures for Prefilled (Wet) Modulator Assembly/’ found in this installation guide (pages 13-15), or in Maintenance Manual 39.
- All prefilled (Wet) modulators require a manual or pressure bleed procedure. Follow the instructions in “Hydraulic ABS Bleeding Procedures for Prefilled (Wet) Modulator Assembly” on page 13.
- All unfilled (Dry) modulators require a fill and bleed procedure that activates each solenoid valve in order to remove air trapped in the valve cavities. Follow the instructions in “Hydraulic ABS Bleeding Procedure for Unfilled (Dry) Modulator Assembly” on page 15.

Blink Code Diagnostic Switch

- Install the blink code diagnostic switch for on-board diagnostics in a location accessible for service but not easily accessible to the driver.

NOTE: Blink Codes are displayed using the dash-mounted ABS Indicator Lamp.

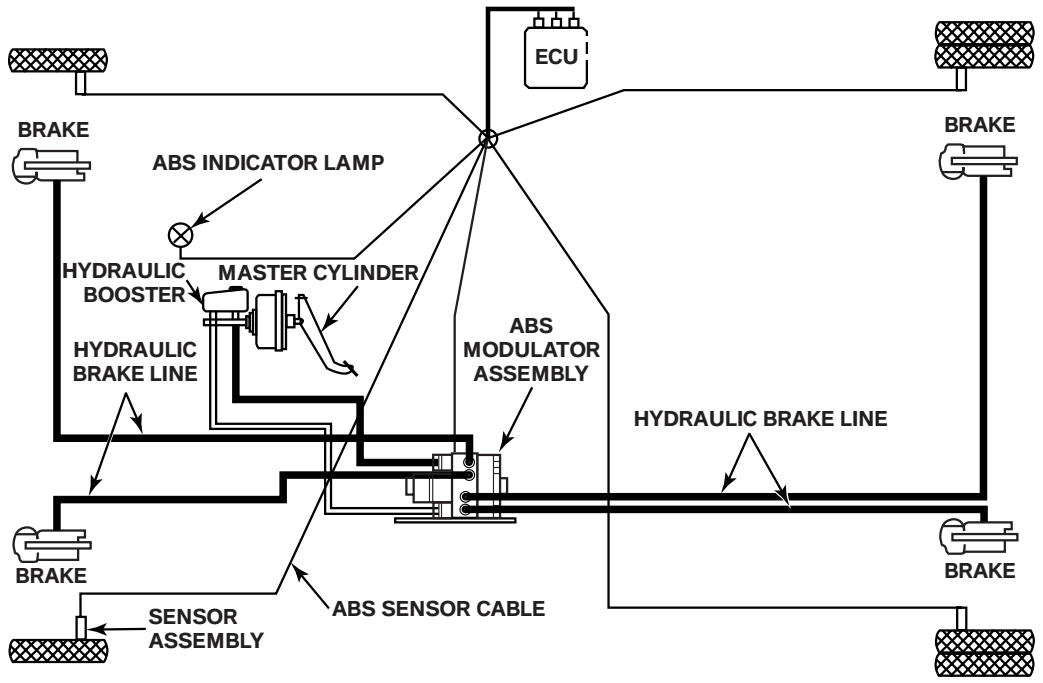
SAE J1587 Diagnostics Data Link

- This is the SAE standard heavy vehicle data link used for communicating diagnostic information to diagnostic tools. The standard connector is a 6-pin Deutsch, part number HD10-6-12P. An AMP connector, part number TMC RP1202, may also be used.
- Install the data link connector for easy access to technicians, normally under the dash on left of steering wheel.
- Per SAE J1708, use a minimum of 18 gauge cable wiring with no less than one turn per inch to connect the HABS ECU to the J1587 connector.

System Layouts

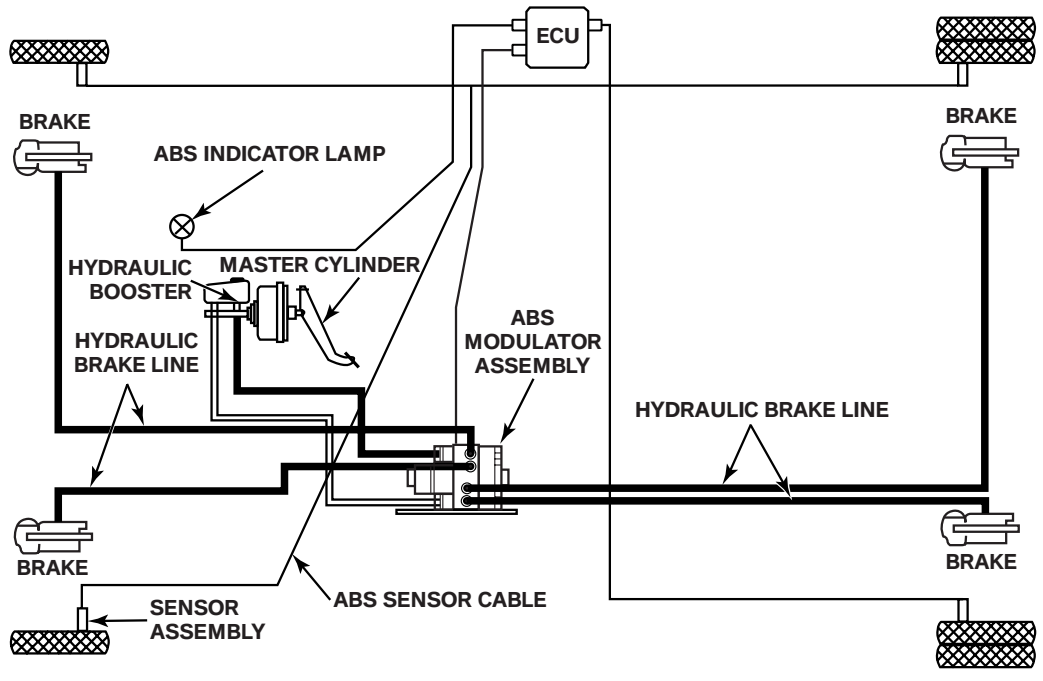
A typical Meritor WABCO Hydraulic ABS with cab-mounted ECU is illustrated below. **Figure 2**.

Figure 2



A typical Meritor WABCO Hydraulic ABS with frame-mounted ECU is illustrated below. **Figure 3**.

Figure 3

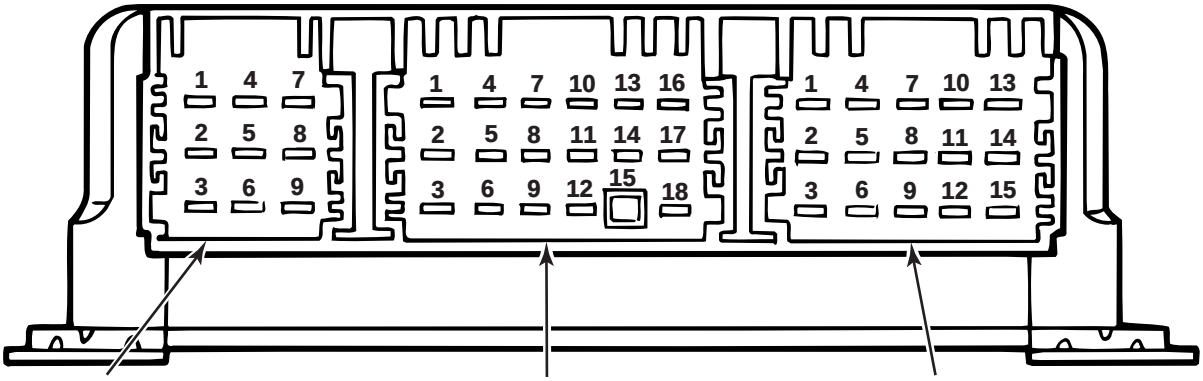


System Wiring Information

- Pin Numbers and Locations
- Wiring Diagrams
  - — Cab-Mounted ECU
  - — Frame-Mounted ECU
- Modulator Assembly Connector Pin Assignment

Table C: Pin Numbers and Locations (Cab-Mounted ECU)

CAB



9-Pin ECU Connector

Pin Number	Circuit Description
1	Left Front Sensor
2	Left Front Sensor
3	Right Rear Sensor
4	Right Front Sensor
5	Right Front Sensor
6	Right Rear Sensor
7	Left Rear Sensor
8	Left Rear Sensor
9	Not Used

18-Pin ECU Connector

Pin Number	Circuit Description
1	+12 Battery
2	+12 Ignition
3	Not Used
4	Not Used
5	SAE J1587 (–)
6	SAE J1587 (+)
7	Not Used
8	Motor Monitor
9	Not Used
10	Not Used
11	Not Used
12	Ground
13	Not Used
14	Not Used
15	Jumper
16	Not Used
17	Not Used
18	ABS Indicator Lamp and Blink Code Switch

15-Pin ECU Connector

Pin Number	Circuit Description
1	Left Front Outlet Valve
2	Left Front Inlet Valve
3	Ground
4	Right Front Outlet Valve
5	Right Front Inlet Valve
6	Not Used
7	Left Rear Outlet Valve
8	Left Rear Inlet Valve
9	Not Used
10	Right Rear Outlet Valve
11	Right Rear Inlet Valve
12	Retarder
13	Not Used
14	Not Used
15	Pump Relay

Figure 4

4S/4M D Version Hydraulic ABS Wiring Diagram (Cab-Mounted ECU)

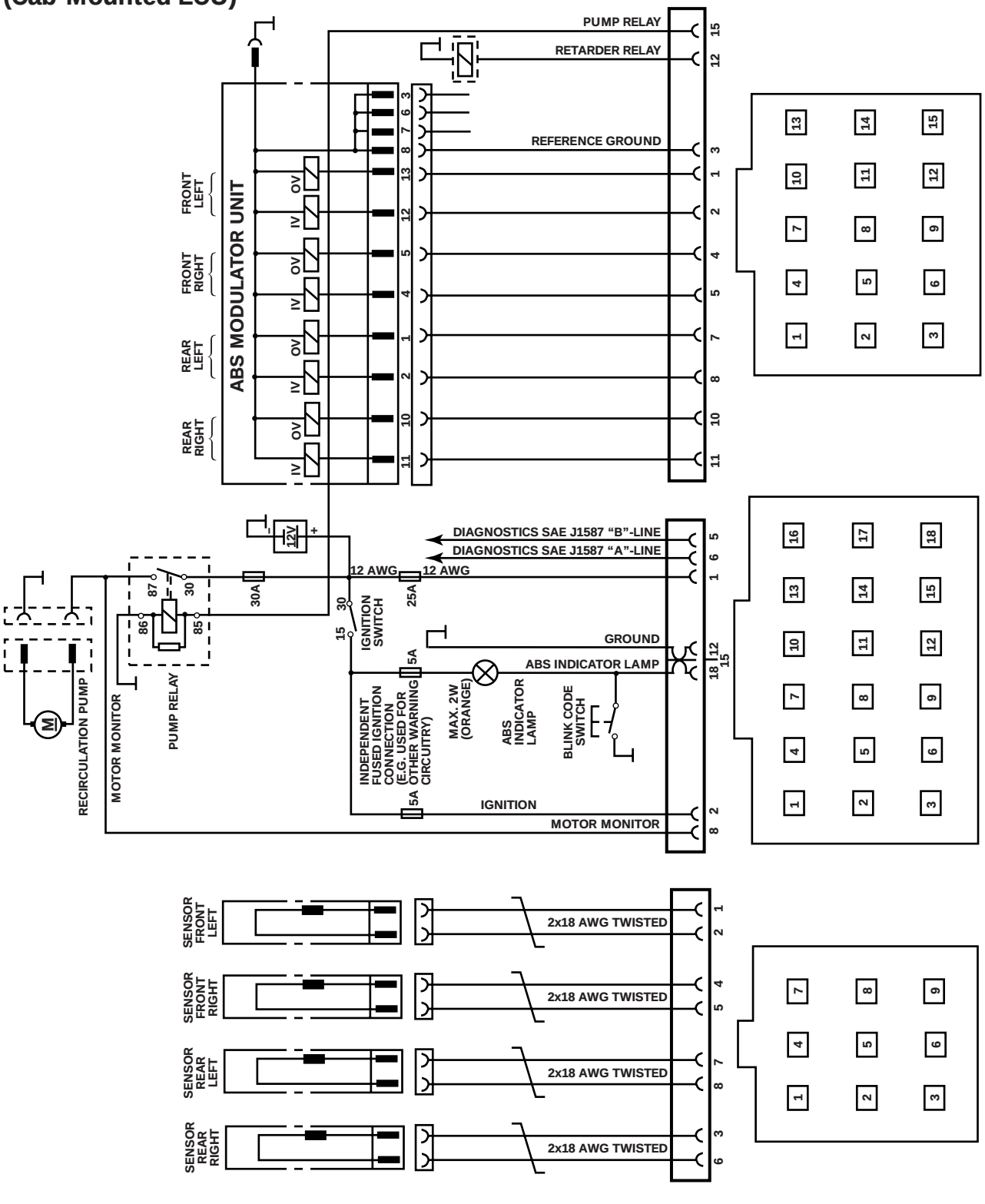
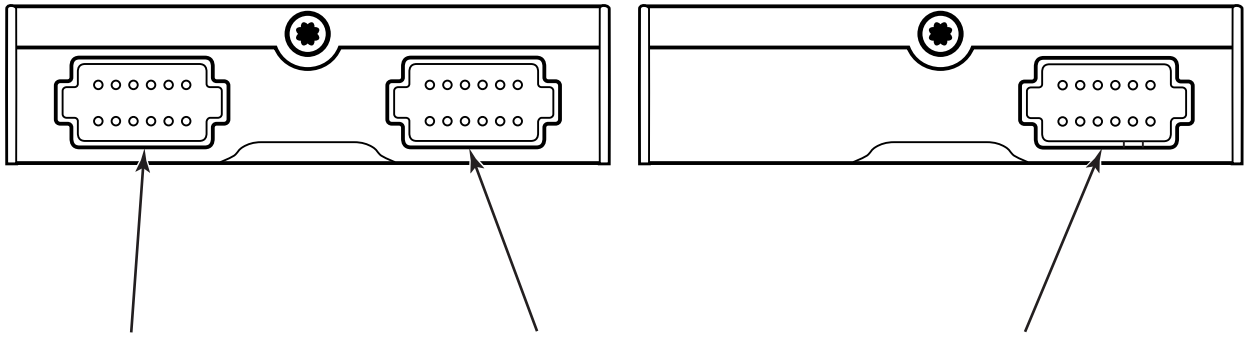


Table D: Pin Numbers and Locations (Frame-Mounted ECU)

FRAME



Black X-2 Connector

Pin Number	Circuit Description
1	SAE J1587 (–)
2	+12 Ignition
3	+12 Battery
4	Warning Lamp Relay
5	X
6	Pump Relay
7	Retarder
8	ABS Indicator Lamp and Blink Code Switch
9	Ground
10	Motor Monitor
11	+12 Battery
12	SAE J1587 (+)

Gray X-1 Connector

Pin Number	Circuit Description
1	X
2	Ground
3	Left Front Inlet Valve
4	Right Front Inlet Valve
5	Left Rear Inlet Valve
6	Right Rear Inlet Valve
7	Right Rear Outlet Valve
8	Left Rear Outlet Valve
9	Right Front Outlet Valve
10	Left Front Outlet Valve
11	X
12	X

Green X-3 Connector

Pin Number	Circuit Description
1	X
2	X
3	Left Rear Sensor
4	Right Front Sensor
5	Left Front Sensor
6	Right Rear Sensor
7	Right Rear Sensor
8	Left Front Sensor
9	Right Front Sensor
10	Left Rear Sensor
11	X
12	X

Figure 5

4S/4M D Version Hydraulic ABS Wiring Diagram (Frame-Mounted ECU)

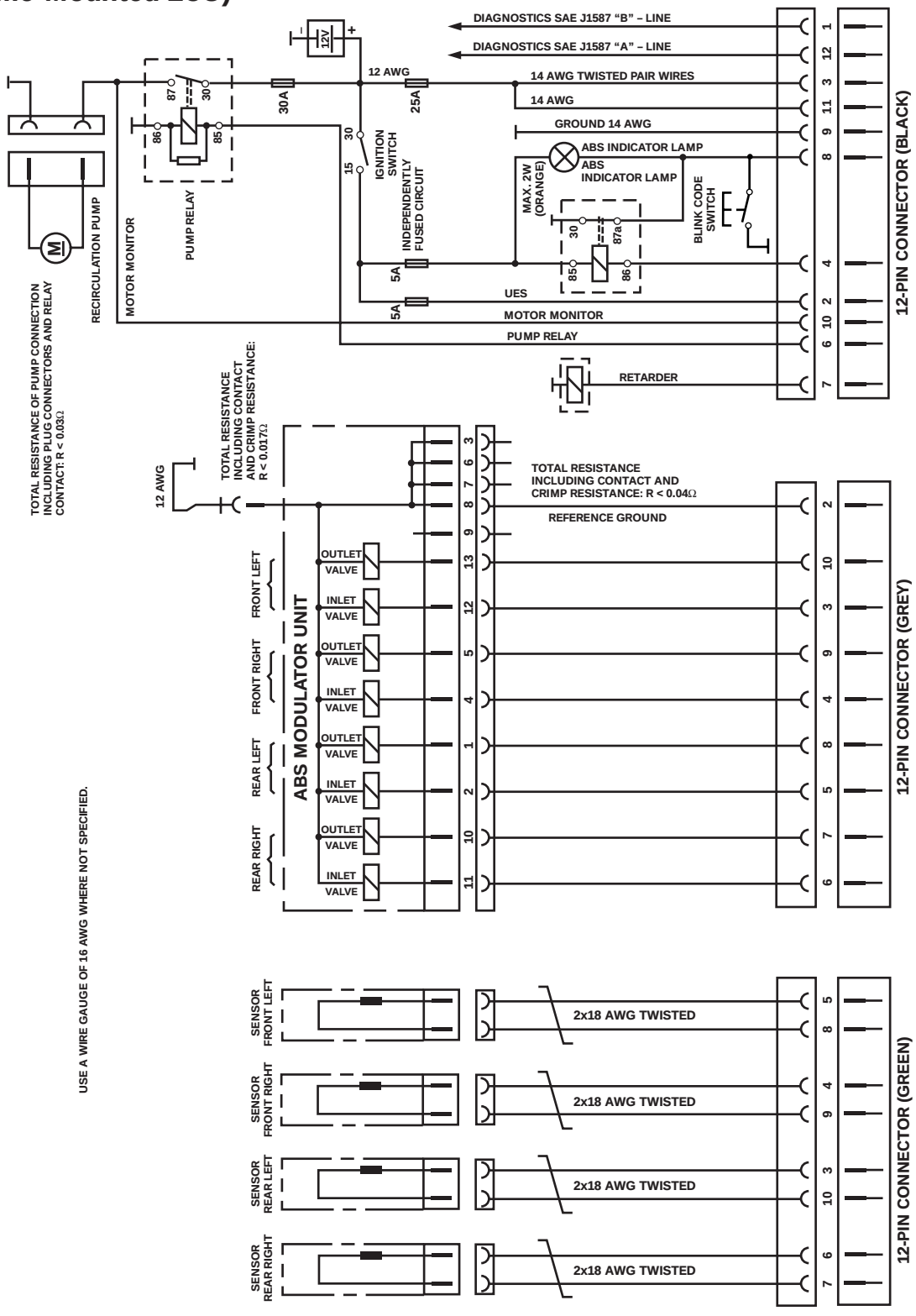
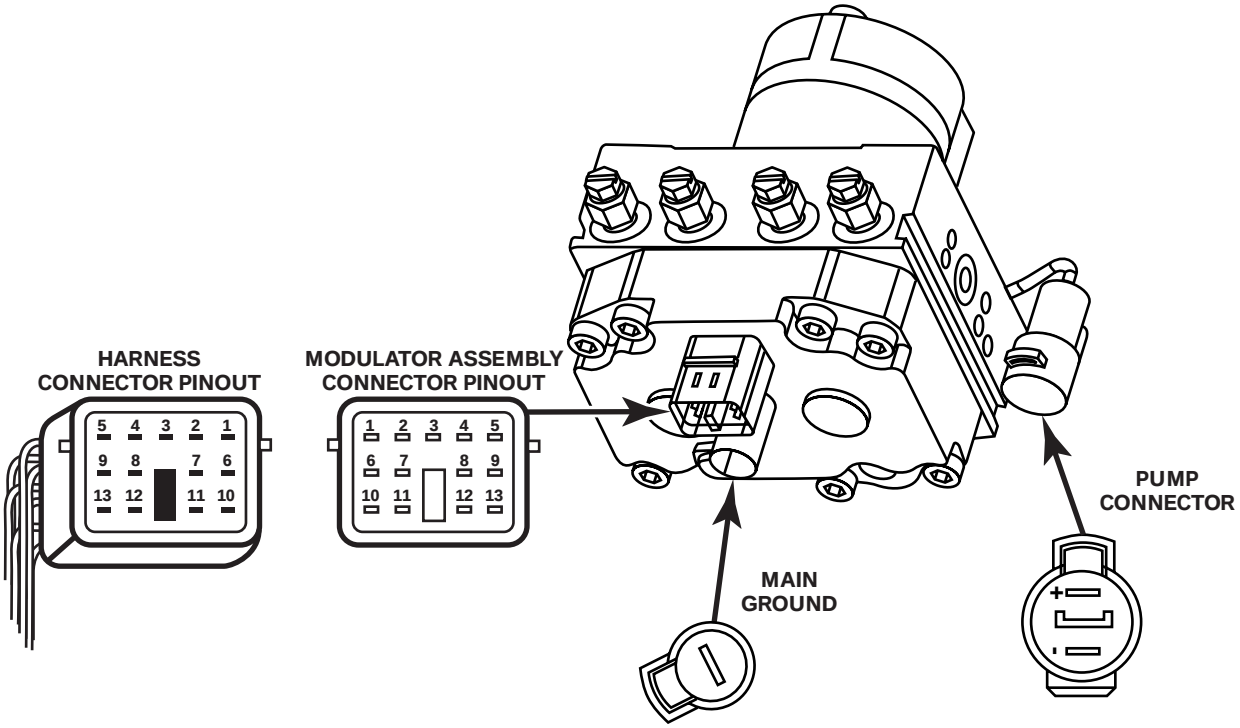


Table E: Modulator Assembly Connector Pin Assignment



Pin Number	Circuit Description	Pin Number	Circuit Description
1	Outlet Valve RL	8	Reference Ground
2	Inlet Valve RL	9	– – – – –
3	– – – – –	10	Outlet Valve RR
4	Inlet Valve FR	11	Inlet Valve RR
5	Outlet Valve FR	12	Inlet Valve FL
6	– – – – –	13	Outlet Valve FL
7	– – – – –		

Meritor WABCO D Version Hydraulic ABS Checklist

Vehicle ID# _____ Inspector's Name _____ Date_____

TOOLBOX Software: Select HABS from the main menu and follow the on-screen instructions to test the installation. Use this sheet to record the results. For additional information, refer to the Software Manual, TP-99102.

Meritor WABCO Diagnostics Controller: Follow the procedure listed below.

1. Start WABCO HABS testing using Diagnostic Controller.
   a. Connect Diagnostic Controller cable.
   b. Install diagnostic Card.
   c. Turn ignition on.
   d. Press **Start** and read instructions.
   e. Select **System Check** and press **Start**.
2. Verify correct ECU is selected. Record Part # _____ and S/N _____.
3. Clear faults if present (refer to Maintenance Manual 39 for instructions). Existing faults MUST be repaired.
4. Complete test for ABS Lamp and modulator pump circuits.

Function Tested	System Performs as Described	YES	NO (Repair and retest.)
ABS lamp	Lamp on / off / on		
Modulator Pump	Listen for pump running		

5. Perform component tests for each sensor and modulator valve operation which checks both the location and function. For sensors, spin each wheel indicated at 1/2 revolution per second, approximately 30 rpm, which should indicate about 2 mph on the Diagnostic Controller screen. For modulator valves, lightly depress brake pedal until indicated wheel is hard to turn. Press **Continue** on Diagnostic Controller. The brake should release and reapply four times during the first part of the test (T1) and should not release during the second part of the test (T2).

Function Tested	System Performs as Described	YES	NO (Repair and retest.)
Front Right Sensor (FR)	3 mph indicated		
FR Modulator Valve	Brake performs as described		
Front Left Sensor (FL)	3 mph indicated		
FL Modulator Valve	Brake performs as described		
Rear Right Sensor (RR)	3 mph indicated		
RR Modulator Valve	Brake performs as described		
Rear Left Sensor (RL)	3 mph indicated		
RL Modulator Valve	Brake performs as described		

6. ABS Lamp goes out approximately four seconds after turning ignition on. (After initial drive exceeding speed of 5 mph.) ☐ **YES** ☐ **NO**

Notes

Hydraulic ABS Bleeding Procedures for Prefilled (Wet) Modulator Assembly

General

The following brake bleeding methods explain how to bleed an add-on hydraulic ABS wet modulator assembly during installation, or in the event of air in the brake system. There are instructions for both pressure and manual bleeding procedures.

These instructions include the procedure for bleeding both the master cylinder and the brake system. In some cases, for example if you are replacing only the modulator assembly, it may not be necessary to bleed the master cylinder. If you have any questions, please contact the customer service center at 800-535-5560.

NOTE: Wet modulator assembly refers to a prefilled component; dry refers to a component shipped without hydraulic brake fluid. The modulator must be handled with appropriate care and should not be exposed to excessive impact or compressed air at the hydraulic ports prior to assembly.

⚠ *WARNING*

Failure to bleed the system whenever any hydraulic system fitting is loosened or disconnected will allow air to remain in the system. This will prevent the hydraulic pressure in the brake system from rising enough to apply the brakes properly. This will cause the stopping distance to increase and can result in serious personal injury.

Properly discard hydraulic brake fluid that is removed from the brake system. Hydraulic brake fluid that is removed can be contaminated and can cause damage, loss of braking and serious personal injury.

Use only DOT 3 or DOT 4 hydraulic brake fluid, as specified by the original equipment manufacturer. Do not use or mix different types of hydraulic brake fluid. The wrong hydraulic brake fluid will damage the rubber parts of the brake caliper and can cause damage, loss of braking and serious personal injury.

NOTE: Use DOT 3 or DOT 4 hydraulic brake fluid. Refer to the vehicle specifications to determine which fluid to use.

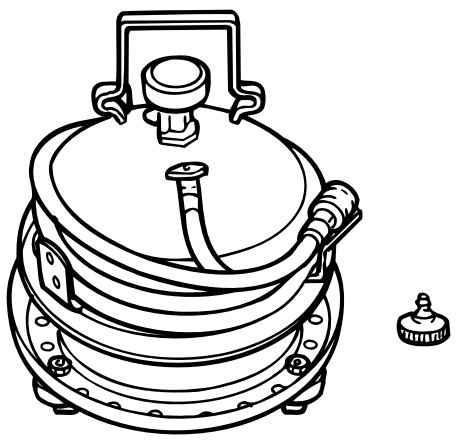
⚠ *CAUTION*

Hydraulic brake fluid is a caustic substance. Contact with hydraulic brake fluid can case skin irritation. Do not let hydraulic brake fluid touch any painted surfaces, as it will remove the paint. Hydraulic brake fluid may also damage certain non-metal surfaces. Do not let fluid get on brake pads, shoes, rotors or drums.

Pressure Fill and Bleed (Wet Modulator Assembly)

Pressure fill and bleed is the preferred method for bleeding the service brake system. It requires the use of a special pressure bleeder kit, consisting of a tank, pressure pump and valve, gauge, tubing and adapter. These kits are available from a number of manufacturers and include instructions for use. **Figure 6**.

Figure 6



Pressure Fill and Bleed Procedure:

1. Apply the parking brake and chock the tires. Turn the ignition OFF and disconnect the battery terminals.

   NOTE: The ignition must remain off for the entire bleed procedure; energizing the unit during bleeding must be impossible.

2. Fill the pressure bleeder with new DOT 3 or DOT 4 hydraulic brake fluid. Refer to the vehicle specifications to determine which fluid to use.
3. Follow the manufacturer's instructions to connect the pressure bleeder to the brake master cylinder reservoir.
4. Set filling pressure to 20 to 30 psi (1.5 to 2.0 bar).

5. Turn on bleed equipment until fluid level in reservoir reaches approximately 0.875-inches (20 mm).
6. Release pressure for 3 to 5 seconds. Apply pressure for 5 to 10 seconds.
7. Repeat Steps 5 and 6 approximately 10 times. After releasing the pressure, air bubbles should rise up into the reservoir.

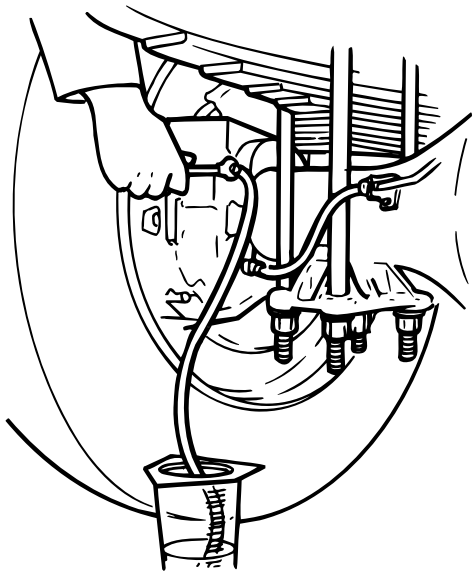
⚠ *WARNING*

Do not let the brake master cylinder fluid get below the minimum level during the bleeding operation. Keep the master cylinder reservoir filled with new DOT-approved brake fluid as specified by the original equipment manufacturer. Failure to keep the brake reservoir level above minimum could result in more air entering system, making it impossible to effectively bleed the system.

8. Bleed the brake system:
   - Set filling pressure to 20 to 30 psi (1.5 to 2.0 bar).
   - Put a wrench on the brake actuator bleeder fitting. Start with the farthest from the modulator, (typically the right rear), then attach a length of clear plastic tubing to the bleeder fitting. Make sure the tube fits snugly.
9. Submerge the tubing in a container of clean hydraulic brake fluid. **Figure 7**.

   NOTE: Both the tubing and container must be able to withstand the effects of hydraulic brake fluid.

Figure 7



   Loosen the bleeder fitting until the fluid begins to flow (about 3/4 turn). Let the hydraulic fluid flow out of the fitting until it is free of air bubbles.
10. Tighten firmly to secure the fitting.
11. Repeat Steps 5 through 8 to bleed the remaining three brake actuators. Bleed in sequence of the longest to shortest circuit from the modulator assembly.
12. Turn off bleed equipment and remove pressure. Remove bleed device and check fluid level in reservoir. Fill if required. Replace reservoir cap and dispose of used brake fluid.
13. Remove wheel chocks.

Manual Bleed Procedure (Wet Modulator Assembly)

1. Apply the parking brake and chock the tires. Turn the ignition OFF and disconnect the battery terminals.

   NOTE: The ignition must remain off for the entire bleed procedure; energizing the unit during bleeding must be impossible.

2. Fill the reservoir with DOT-approved hydraulic brake fluid.
3. Depress the brake pedal five times using the stroke between 1/3 travel and maximum travel in 5 seconds.
4. Release the pedal for 5 to 10 seconds. Air bubbles will rise into the reservoir while depressing and releasing pedal.
5. Repeat Steps 3 and 4 another three times, or until sufficient pedal resistance is felt.

⚠ *WARNING*

Do not let the brake master cylinder fluid get below the minimum level during the bleeding operation. Keep the master cylinder reservoir filled with new DOT-approved brake fluid as specified by the original equipment manufacturer. Failure to keep the brake reservoir level above minimum could result in more air entering system, making it impossible to effectively bleed the system.

6. Bleed the brake system. Put a wrench on the brake actuator bleeder fitting. Start with the farthest from the modulator, (typically the right rear), then attach a length of clear plastic tubing to the bleeder fitting. Make sure the tube fits snugly.
7. Submerge the tubing in a container of clean brake fluid. **Figure 7**.

   NOTE: Both the tubing and container must be able to withstand to the effects of brake fluid.

8. Depress the brake pedal 10 to 15 times, using the maximum available stroke.
9. Loosen the bleeder fitting until the fluid begins to flow, (about 3/4 turn), while depressing the brake pedal through its maximum available stroke.
10. Tighten the fitting firmly prior to releasing the brake pedal.
11. Repeat Steps 6 through 8 several times until the discharged fluid is free of air bubbles.
12. Repeat Steps 3 through 9 to bleed the remaining three brake actuators. Bleed in sequence of the longest to the shortest circuit from the modulator.
13. Check the travel of the brake pedal. If a firm resistance is felt the manual bleeding procedure is complete.
14. Check the fluid level in reservoir and fill if required. Replace reservoir cap and dispose of used brake fluid.
15. Remove wheel chocks.

Hydraulic ABS Bleeding Procedure for Unfilled (Dry) Modulator Assembly

Brake Bleeding Procedure

The following brake bleeding methods explain how to bleed an add-on hydraulic ABS dry modulator assembly during installation, or in the event of air in the brake system. These instructions are for manual bleeding with electronic control equipment and include the procedure for bleeding both the master cylinder and the brake system. In some cases, for example if you are replacing only the modulator assembly, it may not be necessary to bleed the master cylinder. If you have any questions, please contact the ArvinMeritor Service Center at 800-535-5560.

NOTE: Wet modulator assembly refers to a prefilled component; dry refers to a component shipped without hydraulic brake fluid. The modulator must be handled with appropriate care and should not be exposed to excessive impact or compressed air at the hydraulic ports prior to assembly.

⚠ *WARNING*

Failure to bleed the system whenever any hydraulic system fitting is loosened or disconnected will allow air to remain in the system. This will prevent the hydraulic pressure in the brake system from rising enough to apply the brakes properly. This will cause the stopping distance to increase and can result in serious personal injury.

Properly discard hydraulic brake fluid that is removed from the brake system. Hydraulic brake fluid that is removed can be contaminated and can cause damage, loss of braking and serious personal injury.

Use only DOT 3 or DOT 4 hydraulic brake fluid, as specified by the original equipment manufacturer. Do not use or mix different types of hydraulic brake fluid. The wrong hydraulic brake fluid will damage the rubber parts of the brake caliper and can cause damage, loss of braking and serious personal injury.

⚠ *CAUTION*

Hydraulic brake fluid is a caustic substance. Contact with hydraulic brake fluid can case skin irritation. Do not let hydraulic brake fluid touch any painted surfaces, as it will remove the paint. Hydraulic brake fluid may also damage certain non-metal surfaces. Do not let fluid get on brake pads, shoes, rotors or drums.

Evacuation and Fill Procedure

Meritor WABCO recommends using the Evacuation and Fill Method for filling the dry modulator and brake system simultaneously. This method requires special equipment capable of vacuuming air from the entire brake system. If you do not have this special equipment, follow the “Manual Bleed Procedure with Electronic Control Equipment“ on page 16.

The evacuation and fill procedure is as follows:

1. During the evacuation and fill cycle the following conditions apply:
   a. Inlet valves deactivated, power off.
   b. Outlet valves continually activated, cycled with power on for one second and power off for one second.
   c. Recirculation pump deactivated, power off.
   d. The total outlet valve pulse time must not exceed more than 150 seconds for 12-volt systems at temperatures of 68°F (20°C).

   NOTE: The valve pulse time may be different for various conditions.

2. Evacuate system to 2.2 mmHg (0.0425 lbs per square inch absolute [psia]/3 mbar), measured at the furthest brake, for approximately 60 seconds.
3. Check for vacuum leakage for 10 seconds. If pressure rises above 6.65 mmHg (0.13 psia/9 mbar), then additional evacuation is required for approximately 10 seconds.
4. Brake fluid filling phase requires pressure to reach 14.5 to 43.5 psi (1 to 3 bar) measured at the brake. Filling time approximately 30 to 60 seconds.

Manual Bleed Procedure with Electronic Control Equipment

NOTE: The electronic control equipment must be capable of actuating (energizing) the outlet solenoid valves for each wheel for approximately 10 seconds and activating the pump of the modulator. The inlet solenoid valve should be open (de-energized). The Meritor WABCO Diagnostic Controller can be used to do this.

1. Apply the parking brake and chock the tires. Turn the ignition OFF.

   NOTE: The ignition must remain off for the initial bleed procedure; energizing the unit during bleeding must be impossible.

2. Perform brake bleed procedure for wet module, bleeding the circuit and master cylinder if required prior to connecting electronic control equipment. Use Pressure Bleed Method if equipment is available; if not, use the Manual Bleed Method.
3. Install electronic control equipment to ECU, or to the modulator assembly and pump.
4. Turn ignition switch ON or power electronic control equipment.
5. Push on brake pedal with maximum force (firm pedal) and hold.
6. Activate the pulse function on the electronic control equipment starting with the longest brake circuit, typically the rear.
7. Release brake pedal for 5 seconds and activate the pump of the modulator for approximately 5 seconds.
8. Repeat Steps 5 through 7 three additional times.
9. Perform manual bleed on appropriate wheels.

   NOTE: To perform a manual bleed, follow Steps 2 through 8 under “Manual Bleed Procedure (Wet Modulator Assembly)” on page 14.

10. Repeat Steps 5 through 9 for the remaining 2 brake actuators.

NOTE: If a firm brake pedal resistance is felt and the brake pedal pushes back when the solenoids and pump are simultaneously actuated for each brake circuit, the system bleed procedure is complete. If there is no firm pedal resistance, repeat the bleed procedure and/or look into brake system defect, (leaks, etc.).

MERITOR WABCO

D Version Hydraulic ABS

Body Builder Information

Before modifying a bus, truck or motor home chassis equipped with Meritor WABCO D version hydraulic ABS, review the following information. These tips will help you understand the ABS system and help avoid possible damage to that system when the chassis is altered. A typical Meritor WABCO Hydraulic ABS system is illustrated on page 4.

- ✓ Do not mount extreme heat sources (sources exceeding 158°F, 70°C) near the ECU. These include cab heater, engine exhaust, etc.
- ✓ Do not install RFI-emitting devices (such as radios, electric motors or pumps) on or near the ECU or other ABS components to help isolate the system from electrical interference.
- ✓ Perform all chassis welding with all connections to the ECU disconnected.
- ✓ When installing other components, be aware of — and do not damage — the ABS harness or connectors.
- ✓ Do not cut or splice the ABS harness to provide power to other sources on the vehicle. Cutting or splicing the ABS harness may cause the system to malfunction.
- ✓ When extending an OEM chassis, use the appropriate ABS harness extension cables and connectors. Maintenance Manual 39, available from Meritor WABCO, provides installation information.
- ✓ All ground connections of the modulator assembly and ECU MUST have separate grounding points. Meritor WABCO recommends that no other loads be connected to the grounds.
- ✓ When painting or undercoating, make sure all connections are securely fastened. Protect unfastened or exposed connectors.
- ✓ Any ABS component removed during modification must be reinstalled per Meritor WABCO specifications.
- ✓ Before putting the vehicle into operation, perform the appropriate end of line test to ensure proper hydraulic ABS operation.

Notes

Notes

MERITOR WABCO

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