



# Installation Instructions

Bendix® AT-30™ Traction Relay Valve Service Replacement Kit

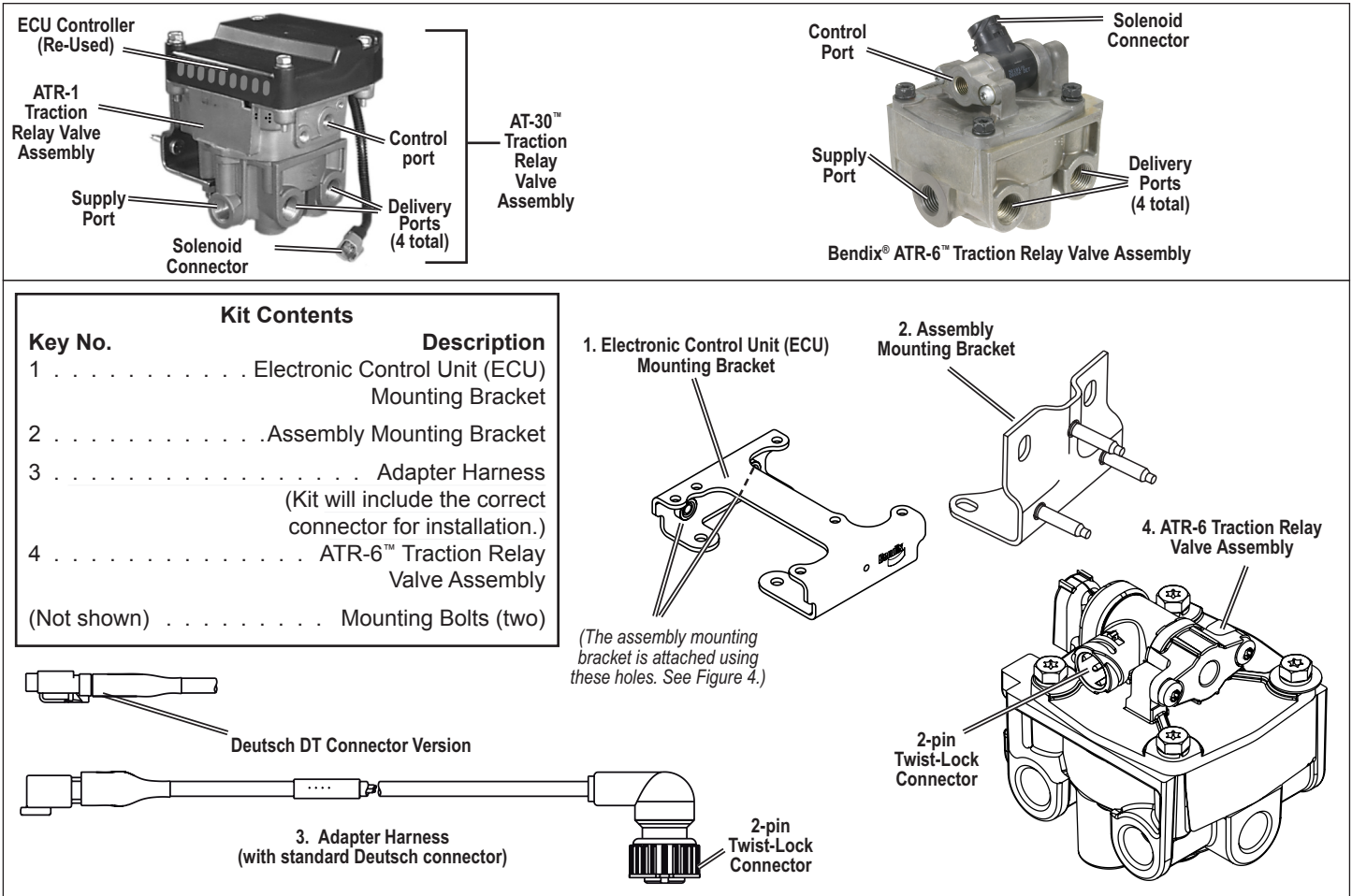


FIGURE 1 - BENDIX® ATR-6™ ANTILOCK TRACTION RELAY VALVE AND KIT CONTENTS

This kit is intended for the replacement of the Bendix® ATR-1™ Traction Relay Valve by a Bendix® ATR-6™ Traction Relay Valve.

## PREPARATION:

**Follow all standard industry safety precautions, including, but not limited to, those listed on page two of this document.** Park the vehicle on level ground, chock the wheels, drain the reservoirs, and turn off the ignition. Locate the Bendix® AT-30™ Relay Valve on the vehicle.

**CAUTION:** It is very important to be sure that the air pressure has been completely drained from all vehicle reservoirs. Any remaining air pressure would be present in the relay valve, presenting a hazard to the technician during the valve disassembly steps.

1. Clean the exterior of the valve, removing contamination, road dirt, etc. to avoid any debris entering the valve body during disassembly.
2. Disconnect the vehicle electrical harness from the valve assembly and ECU.

3. Remove the air hoses from the relay valve body, labeling them to aid in re-installation.
4. Disconnect the bracket(s) attaching the valve body to the vehicle and remove the relay valve assembly from the vehicle.
5. The ECU, and potentially one or more bracket(s), will be reused for the replacement valve installation. Remove them from the valve body. Retain the fasteners.
6. Discard the valve assembly.

## CLEANING AND INSPECTION

1. Inspect the wire harnesses, air hoses and ECU for corrosion, damage, etc. Replace as necessary.
2. Inspect the mounting location for corrosion, etc.

## ASSEMBLY

**Note:** All torques specified in this document are assembly torques and can be expected to fall off slightly after assembly. **Do not re-torque** after initial assembly torque fall off. For assembly, hand wrenches are recommended.

## GENERAL SAFETY GUIDELINES

### **WARNING! PLEASE READ AND FOLLOW THESE INSTRUCTIONS TO AVOID PERSONAL INJURY OR DEATH:**

When working on or around a vehicle, the following general precautions should be observed at all times.

1. Park the vehicle on a level surface, apply the parking brakes, and always block the wheels. Always wear safety glasses.
2. Stop the engine and remove ignition key when working under or around the vehicle. When working in the engine compartment, the engine should be shut off and the ignition key should be removed. Where circumstances require that the engine be in operation, **EXTREME CAUTION** should be used to prevent personal injury resulting from contact with moving, rotating, leaking, heated or electrically charged components.
3. Do not attempt to install, remove, disassemble or assemble a component until you have read and thoroughly understand the recommended procedures. Use only the proper tools and observe all precautions pertaining to use of those tools.
4. If the work is being performed on the vehicle's air brake system, or any auxiliary pressurized air systems, make certain to drain the air pressure from all reservoirs before beginning **ANY** work on the vehicle. If the vehicle is equipped with an Bendix® AD-IS® air dryer system or a dryer reservoir module, be sure to drain the purge reservoir.
5. Following the vehicle manufacturer's recommended procedures, deactivate the electrical system in a manner that safely removes all electrical power from the vehicle.
6. Never exceed manufacturer's recommended pressures.
7. Never connect or disconnect a hose or line containing pressure; it may whip. Never remove a component or plug unless you are certain all system pressure has been depleted.
8. Use only genuine Bendix® brand replacement parts, components and kits. Replacement hardware, tubing, hose, fittings, etc. must be of equivalent size, type and strength as original equipment and be designed specifically for such applications and systems.
9. Components with stripped threads or damaged parts should be replaced rather than repaired. Do not attempt repairs requiring machining or welding unless specifically stated and approved by the vehicle and component manufacturer.
10. Prior to returning the vehicle to service, make certain all components and systems are restored to their proper operating condition.
11. For vehicles with Automatic Traction Control (ATC), the ATC function must be disabled (ATC indicator lamp should be ON) prior to performing any vehicle maintenance where one or more wheels on a drive axle are lifted off the ground and moving.

See the system schematic (Figure 5) on the last page.

1. Inspect the location where the valve is to be installed. Drill holes as necessary for the supplied mounting bracket or, if necessary, to re-use the original bracket(s). Wherever possible, select a location that allows the original hoses, harnesses etc. to be re-used. The steps that follow assume that the technician is able to use the supplied brackets for this installation.
2. Attach the Adapter Harness (3) to the traction solenoid receptacle. See Figure 2. To have the proper clearance for the Controller Mounting Bracket (1), turn the receptacle to one side or the other.
3. Remove the four fasteners attaching the valve cover. Note: One of the fasteners will typically have an I.D. washer to show the crack pressure. (Be sure to re-use the I.D. washer, if one is present.)

**CAUTION: When removing the last fastener, hold the cover down since there may be a spring under the relay piston beneath the cover.**

4. See Figure 3. Secure the Controller Mounting Bracket (1) by re-using two of the fasteners — in the locations farthest away from where the mounting bracket is to be attached. Torque to 120-160 in-lbs.

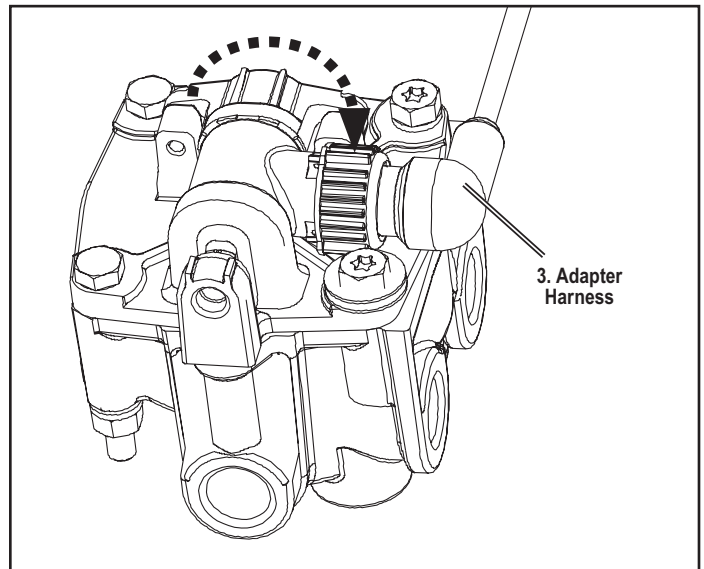
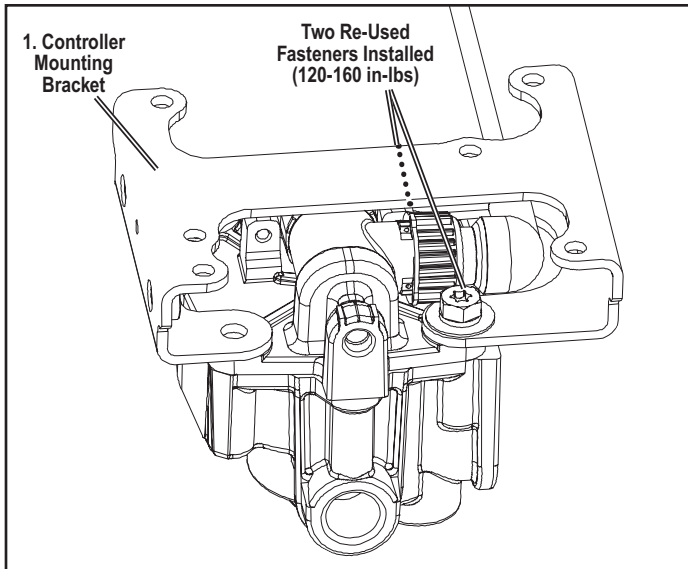
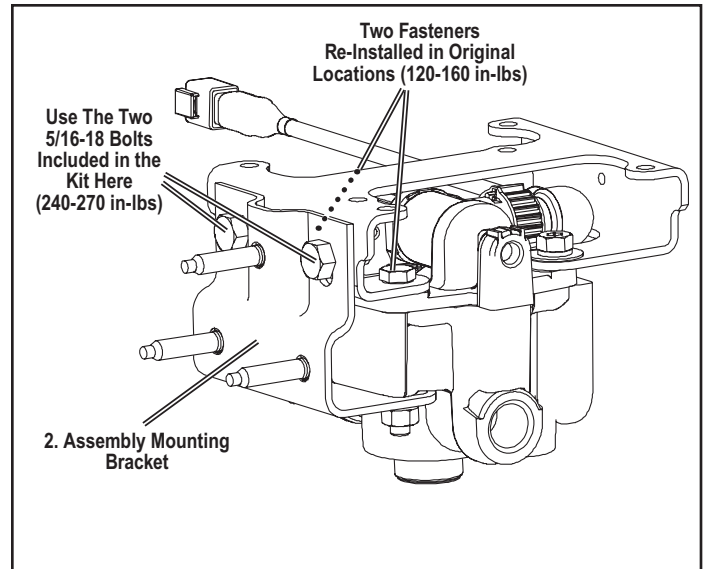


FIGURE 2 - ANTILOCK TRACTION RELAY VALVE WITH HARNESS ATTACHED AND CONNECTOR MOVED TO THE SIDE



**FIGURE 3 - VIEW SHOWING CONTROLLER MOUNTING BRACKET INITIAL INSTALLATION**



**FIGURE 4 - VIEW SHOWING CONTROLLER BRACKET AND ASSEMBLY MOUNTING BRACKET INSTALLED**

5. Attach the Assembly Mounting Bracket (2), re-using the fasteners with locking nuts or lockwashers; torque to 120-160 in-lbs.
6. Attach the brackets together using the supplied 5/16-18 bolts with locking nuts (or lockwashers); torque to 240-270 in-lbs.
7. Mount the assembly to the vehicle using a torque of 200-240 in-lbs.
8. Connect the air hoses to the valve, using the labels applied, to assist in identification.
9. Connect the adapter harness (3) and 2-pin controller harness to the vehicle harnesses. Secure harnesses with tie-wraps as needed.
10. Test the valve as outlined in the Operational and Leakage Tests section before returning the vehicle to service.

## GENERAL

Always check the vehicle brake system for proper operation after performing brake work and before returning the vehicle to service.

## OPERATIONAL AND LEAKAGE TESTS

1. Chock the wheels, and fully charge the air brake system.

### OPERATION TEST

1. Apply and release the brakes several times and check for prompt application and release at each wheel.

If an incomplete or sluggish release of the brakes is noted at some, but not all wheels, test the Antilock Modulator Valve(s) operating those wheels for proper operation, and inspect for kinked or obstructed air hose leading to, or from, the Modulator(s).

If an incomplete or sluggish release is noted at all wheels, inspect for kinked or obstructed air hose leading to, or from, the ATR-6™ valve.

2. Disconnect the ATR-6™ valve's two pin solenoid connector from the Controller wire harness.
3. Apply and remove vehicle power (12 VDC) to the two pin connector while observing the brake chambers. Note that a brake application is made and held while power is applied to the ATR-6™ valve's solenoid and that it is released when power is removed.

Refer to the ATR-6™ Antilock Traction Controller Service Data sheet (SD-13-4861) for additional traction functionality.

## LEAKAGE TESTS

1. With the air system pressure charged to governor cutout, apply a soap solution to the exhaust port. The leakage noted should not exceed a one-inch bubble in 3 seconds.
2. Make and hold a full brake application and apply a soap solution to the exhaust port and around the cover where it joins the body. The leakage noted should not exceed a one-inch bubble in 3 seconds at the exhaust port.
3. Check for inlet valve and O-ring leakage. Make this check with the service brakes released. Coat the exhaust port and the area around the retaining ring with a soap solution; leakage of a one-inch bubble in 3 seconds is permitted.

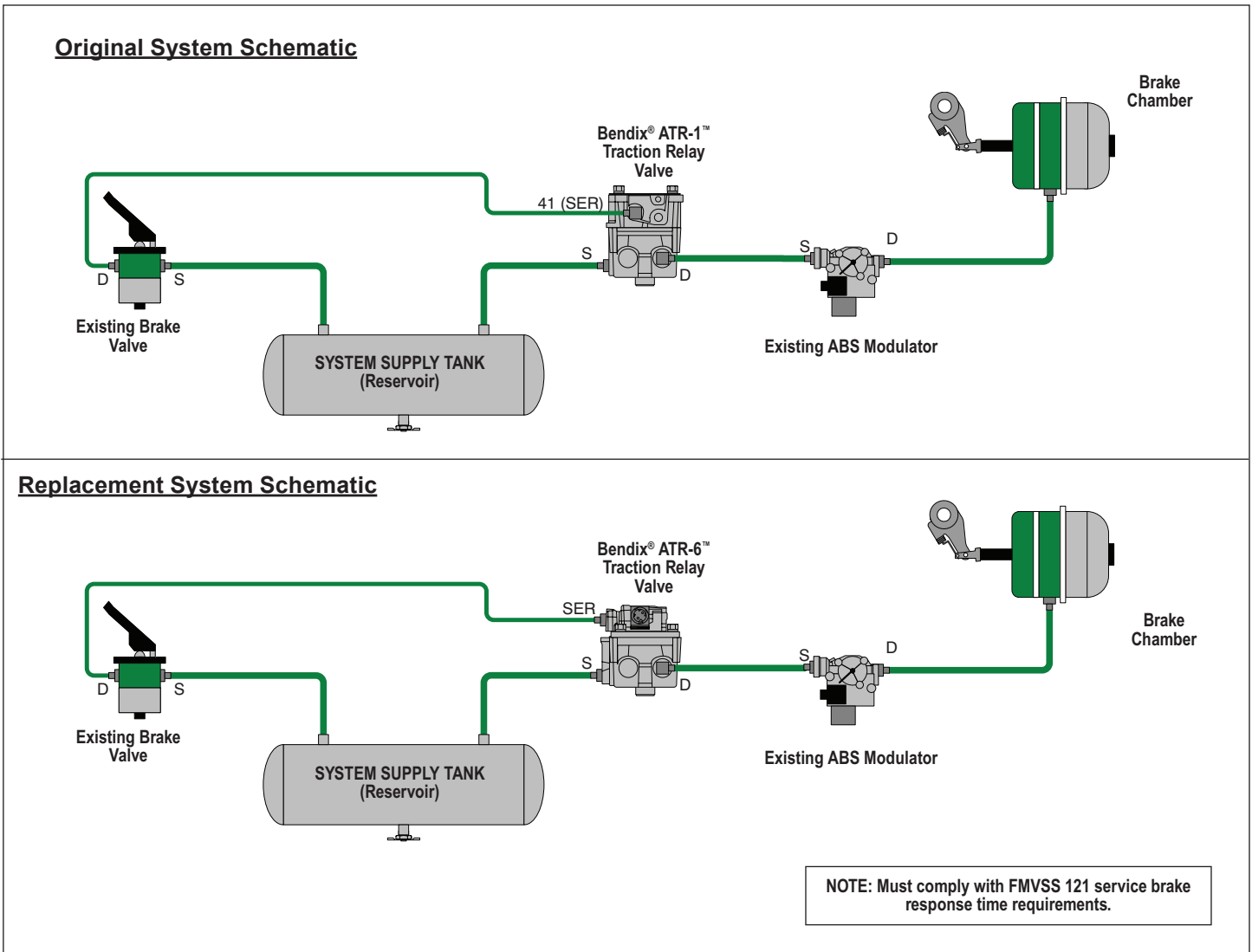


FIGURE 5 - SYSTEM SCHEMATICS

**Bendix Technical Assistance Team**

For direct telephone technical support, call the Bendix Tech Team at:

1-800-AIR-BRAKE (1-800-247-2725),

Monday through Friday, 8:00 A.M. to 6:00 P.M. EST, and follow the instructions in the recorded message.

Or, you may e-mail: [techteam@bendix.com](mailto:techteam@bendix.com)

Please have the following information ready when you call: Bendix product model number, part number and configuration, vehicle make and model, vehicle configuration (number of axles, tire size, etc.).

**Reference:**

The full Service Data sheet for the Bendix® ATR-6™ Antilock Traction Relay Valve is SD-13-4861 (BW2598) and is available for download on [www.bendix.com](http://www.bendix.com), or order copies from the Literature Center at the web site.

