



# Service Data

SD-03-10432

## Bendix® SMS-9700™ Accessory Solenoid Manifold

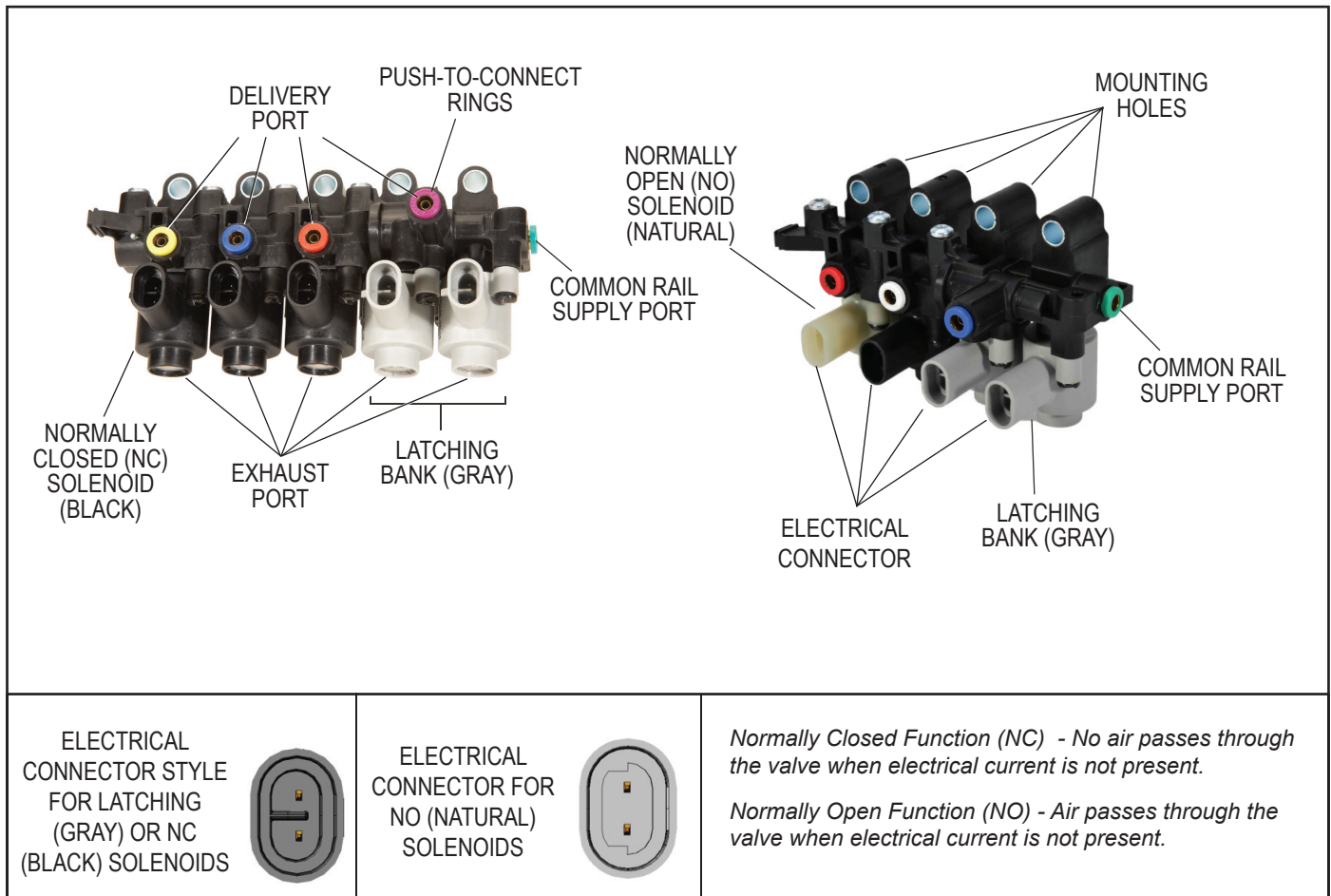


FIGURE 1 - BENDIX® SMS-9700™ ACCESSORY SOLENOID MANIFOLD

### DESCRIPTION

The Bendix® SMS-9700™ accessory solenoid manifold is a bank of low air flow solenoids used to control devices such as suspension dump, differential locks, transmission controls and other piloted chassis functions. Each solenoid is controlled by an electrical switch inside the cab of the vehicle.

Identifying the type of solenoid is essential for servicing and troubleshooting. Note that the individual solenoids in the bank can be replaced, but not repaired.

### BENDIX® SMS-9700™ ACCESSORY SOLENOID MANIFOLD

The SMS-9700 accessory solenoid manifold is a stackable assembly with up to five normally open (NO), normally closed (NC), or latching solenoid banks that can control various accessories. These banks can be identified by the electrical connector type and/or color (black, gray or natural), and delivery port pairings. See Figure 1.

The push-to-connect (PTC) rings come in a variety of colors and are used for OE installation purposes and do not depict features, or function, of the solenoid valve.

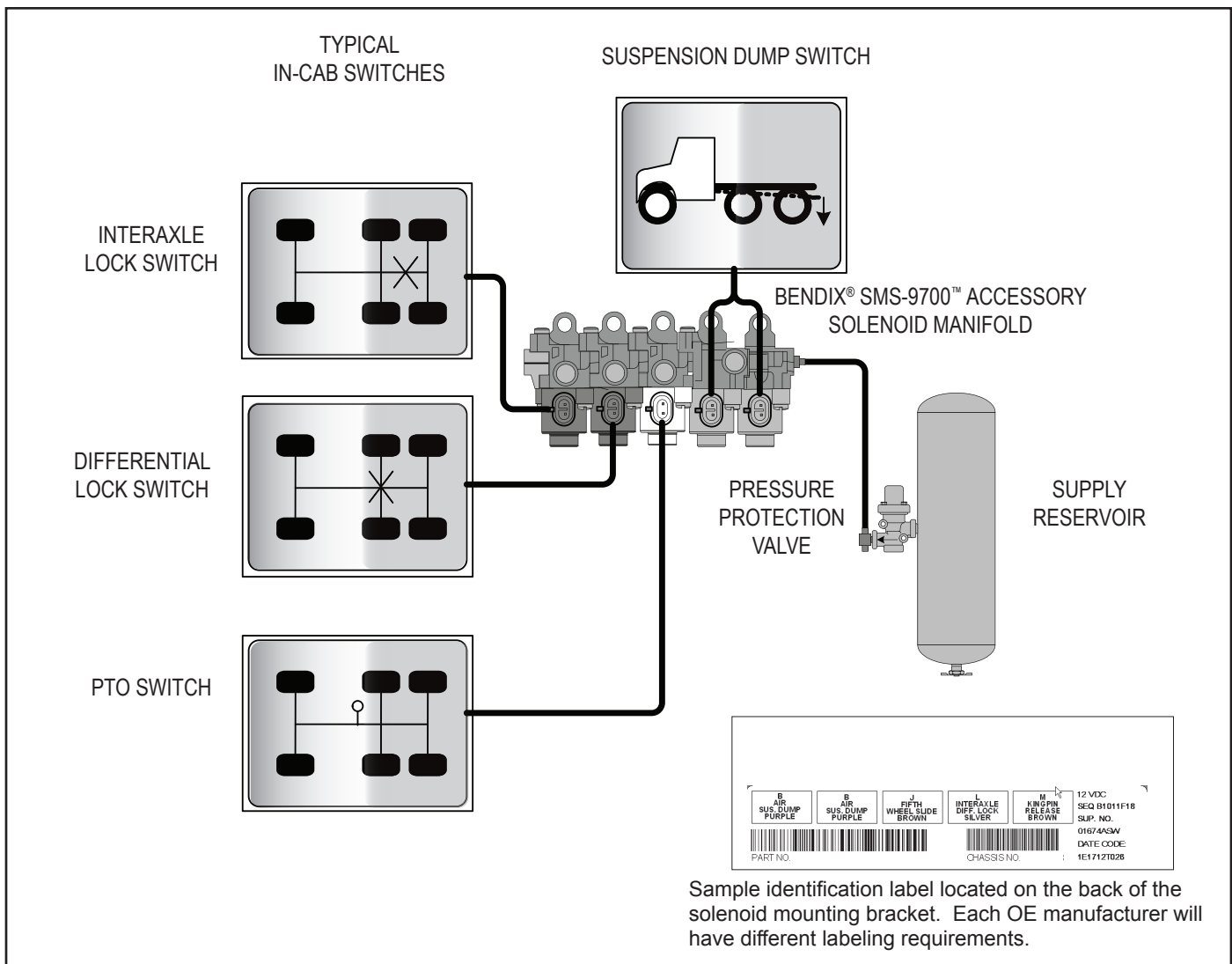


FIGURE 2 - TYPICAL SYSTEM CONFIGURATION

## OPERATION

Because these solenoid valves are used for auxiliary air functions, a pressure protection valve, such as a Bendix® PR-3™ valve, must be installed to protect the air brake system. The solenoids will deliver, exhaust, or latch air pressure to provide various functions on the air brake vehicle. See Figure 2 for a typical system configuration.

## PREVENTIVE MAINTENANCE

**Important:** Review the Bendix Warranty Policy before performing any intrusive maintenance procedures. The warranty may be voided if intrusive maintenance is performed during the warranty period.

No two vehicles operate under identical conditions; as a result, maintenance intervals may vary. Experience is a valuable guide in determining the best maintenance interval for air brake system components. At a minimum, the solenoid should be inspected every six (6) months or

1500 operating hours, whichever comes first, for proper operation. Should the solenoid not meet the elements of the operational tests noted in this document, further investigation and service of the valve may be required.

## SERVICE CHECKS

These service instructions are a general guideline, and should be consulted in conjunction with the OEM's service manual.

**ALERT:** When servicing accessory solenoid valves that control safety critical accessories (i.e., fifth wheel lock, king pin release, etc.), ensure that all components of the redundant / backup system (i.e., two-step release system) are functioning as intended by the original equipment manufacturer.

When the in-cab switches are pressed to activate or deactivate an accessory, the solenoids will promptly exhaust (NO), apply (NC), or pulse (latching) air pressure to an auxiliary device. Continuous exhausting of air pressure should not occur.

## LEAKAGE CHECKS

With the air system fully charged, coat the exhaust ports of the solenoid with a soap solution. A 1-inch bubble in three (3) seconds is permitted (175 SCCM).

If the solenoid does not function as described above, or if leakage is excessive, it is recommended that it be replaced with a genuine Bendix® service replacement.

## REMOVAL

1. Prior to removing a solenoid, apply the parking brakes and drain all the vehicle reservoirs. Refer to the General Safety Guidelines in this manual before performing any service.
2. Identify, mark, and disconnect all air lines to the solenoid. Push-to-connect fittings require the collar to be pressed toward the valve body before the nylon line can be pulled. Note that the braided hose version (Arctic) uses compression fittings.

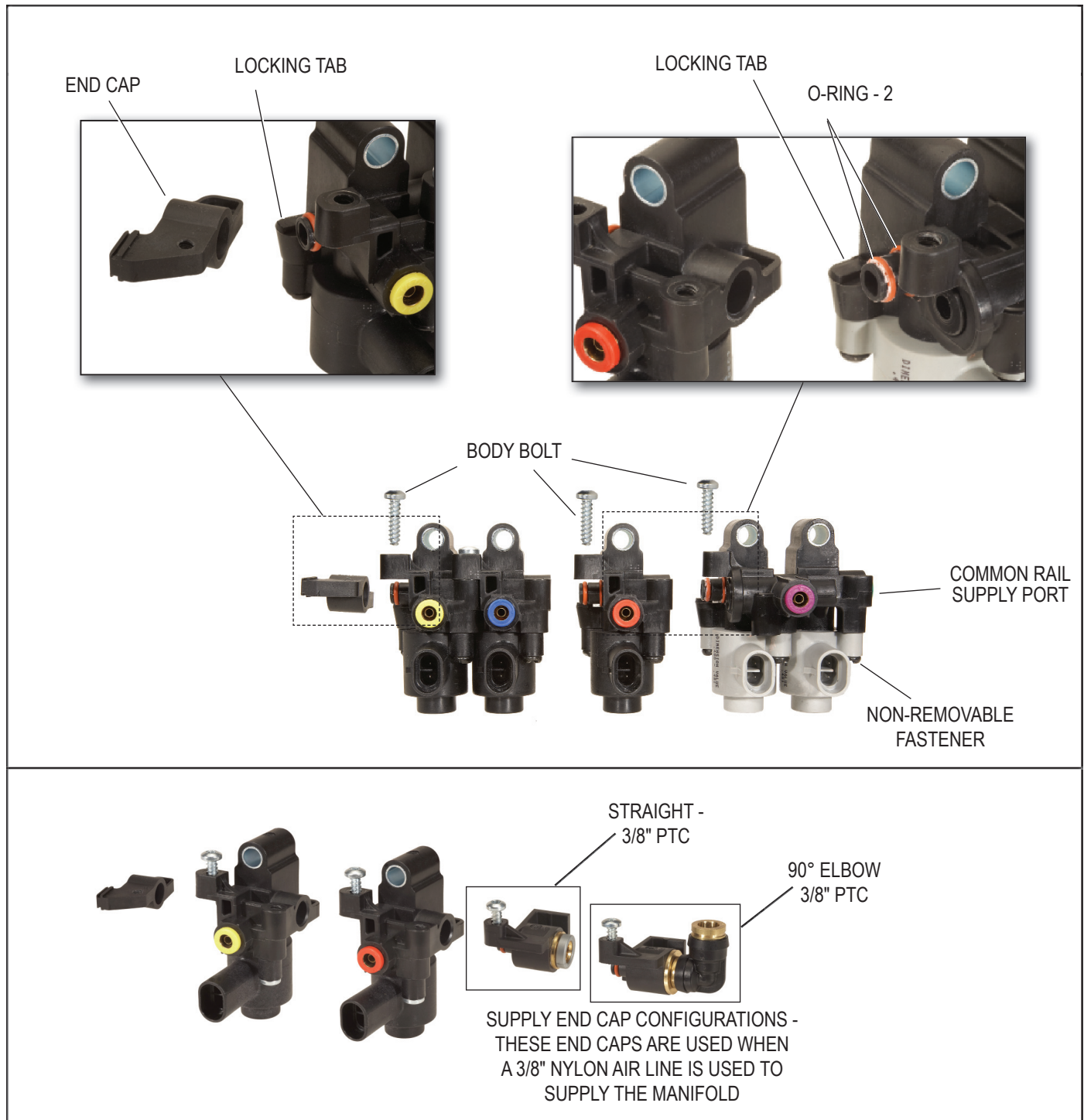


FIGURE 3 - SERVICING THE BENDIX® SMS-9700™ SOLENOID MANIFOLD

3. Identify, mark, and disconnect all electrical connector(s) from the solenoid(s).
4. Remove the mounting bolt(s) and remove the solenoid(s) from the vehicle.

## DISASSEMBLY

The Bendix® SMS-9700™ solenoids can not be serviced or repaired, they can only be replaced with service replacement solenoids. *Refer to Figure 3.*

1. The SMS-9700 solenoids are fastened together with a twist-to-lock feature. To disassemble the banks, remove the body mounting bolt and twist the banks slightly to separate. Note that only body bolts are designed to be removed. Other fasteners are designed to prevent removal.
2. If the solenoid being serviced is the last unit in a bank (opposite the supply port), it will have an end cap attached. This end cap is secured in the same manner as a solenoid and can be removed using the same procedure.

## CLEANING & INSPECTION

Once apart, the banks interconnecting o-ring seals can be serviced and the solenoid banks replaced. Internal solenoid components are not serviceable.

## ASSEMBLY

1. Lubricate the solenoid body o-rings before reassembly of the banks.
2. Align the solenoid locking stem, then twist the banks until line-to-line contact is made. Using the body bolts, fasten the assemblies together. Torque the bolts to 25-30 inch pounds.

## INSTALLATION

1. Install the valve on the vehicle by tightening the mounting bolts to 150-200 inch pounds.
2. Reconnect the air lines and electrical connectors.
3. Charge reservoirs, check for operation and leakage.

## 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 a 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.