ELECTRO-MOTIVE DIVISION • GENERAL MOTORS CORPORATION
SERVICE DEPARTMENT

MAINTENANCE INSTRUCTION

PRESSURE CONTROL SWITCH-TYPE 9012

DESCRIPTION

The pressure control switch illustrated in Fig. 1 is a pressure operated switch. All operating parts of this switch are enclosed in a dust-proof case of compact size. This type of pressure switch is designed to cover the wide range of requirements encountered in the control of pneumatic or hydraulic machines.

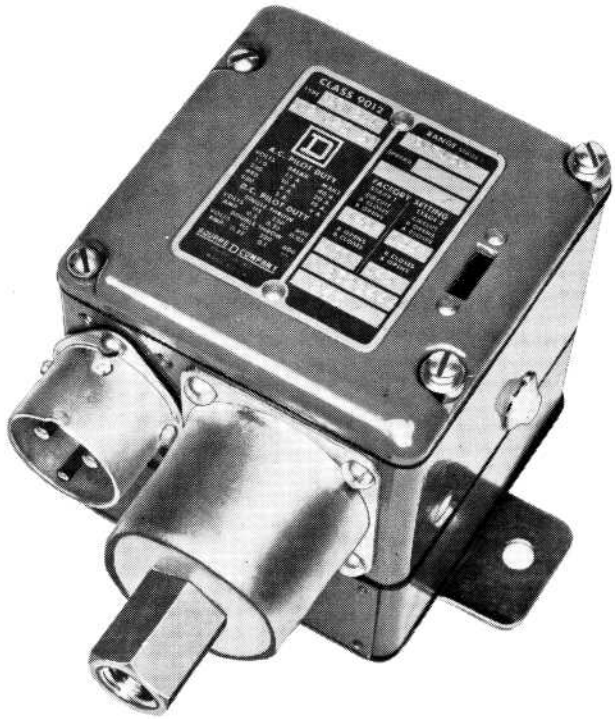

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Fig. 1 — Pressure Control Switch — Type 9012

MAINTENANCE

During periodic inspections of the pressure control switch or when faulty operation is suspected, the switch should be removed from the product and a bench test made. Fig. 2 shows a schematic diagram of a recommended bench set-up for testing this switch.

SWITCH REPLACEMENT

The snap switch serves as the basic contact mechanism and must be replaced as a complete unit, see Fig. 3. The wiring diagram located on the back of the cover assembly indicates that the terminals marked "A" provide for a normally open circuit (contacts open on falling pressure); the terminals marked "B" provide for a normally closed circuit (contacts close on falling pressure). These circuits are separate electrically, but cannot be used on opposite polarities or different voltages.

When replacing the snap switch, it is necessary to readjust the switch operating screw to obtain proper switch over-travel. This is accomplished with a .050" hexagon Allen wrench, and the backplate removed. The adjustment is made by turning the screw in clockwise, as viewed from the back, one turn beyond the point where the switch just trips, with the operating lever at its lowest position (no pressure on bellows).

NOTE: Information contained herein is applicable to equipment being produced as of the date of publication.

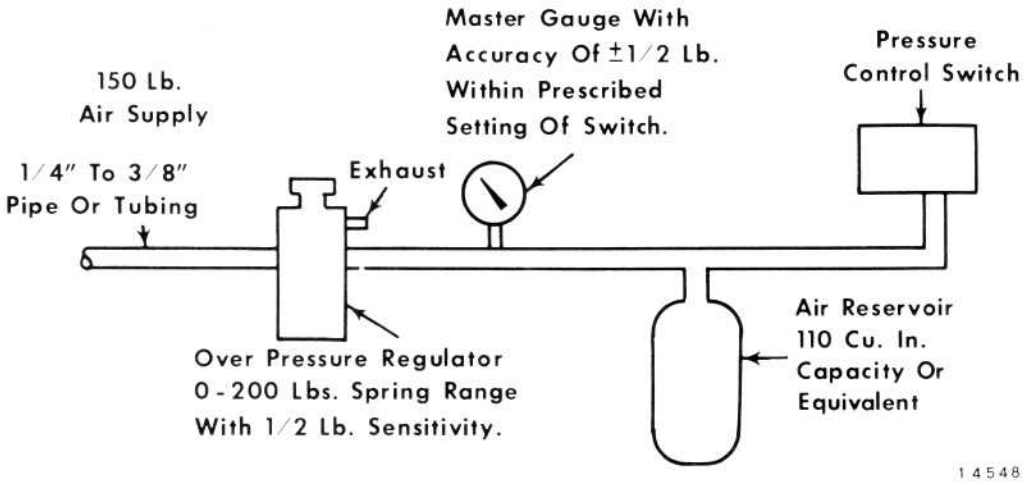


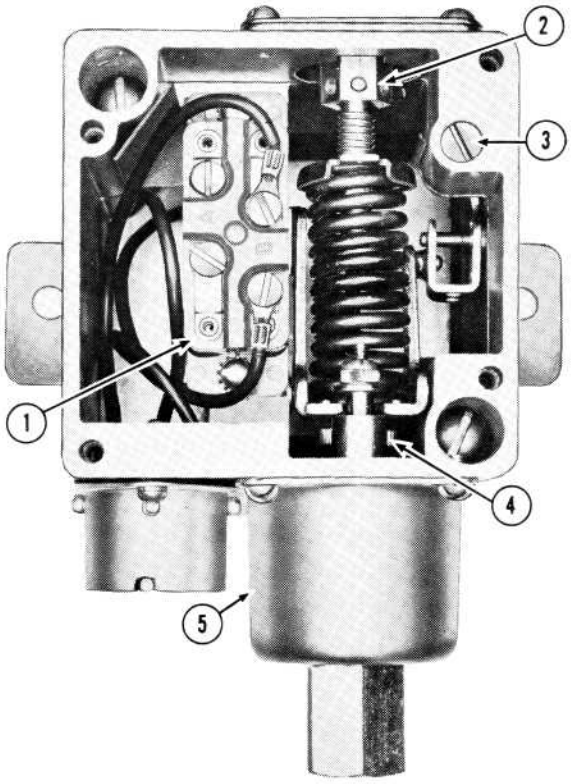
Fig. 2 — Schematic - Bench Test

A dual pressure control switch is also available. The dual switch portion is added to the back of the single switch. When the adjustments are made for a single switch the settings for the dual portion of the switch are automatically made. The purpose of the additional switch is to provide another set of contact settings to control equipment when in multiple operation. A typical example is when several air compressors are operating synchronously in a consist of locomotives, if one of the air compressors reaches the upper limit of the dual switch setting it will cease to operate even if another compressor within the consist is calling for continued operation. This is to prevent the continued "popping" of the main reservoir safety valve.

BELLOWS REPLACEMENT

The bellows assembly may be replaced as a unit. The calibrating spring and nut provide a means of calibrating the bellows to the pressure range on the nameplate, see Fig. 3.

After the new bellows has been installed, the calibrating nut should be adjusted to permit operation over the entire range as indicated on the nameplate. This is accomplished by calibrating at the minimum setting of the range nut. Turning the calibrating nut down (clockwise) will lower the range and, conversely, turning it up



1. Snap Switch
2. Internal Range Adjustment
3. Differential Adjusting Screw
4. Calibrating Nut
5. Bellows Assembly

Fig. 3 — Pressure Control Switch With Front Cover Removed

(counterclockwise) will raise the range. With the range nut at minimum, manipulation of the calibrating nut will bring the falling pressure point in agreement with the minimum range as shown on the nameplate. It is not necessary to readjust this setting once it has been made.

RANGE ADJUSTMENT

The range adjusting nut and the differential adjusting screw is accessible by removing the front cover, see Fig. 3. Adjustment of the range operating point is made by turning the nut located at the top of the switch. The range scale refers to the operating point on falling pressure.

DIFFERENTIAL ADJUSTMENT

The differential adjusting screw is turned in a clockwise direction to increase the differential. This will affect only the operating point on rising pressure.

MAINTENANCE DATA

Pressure switch settings can be found on nameplate attached to device. Local operating conditions may require that other settings be used. In such cases, refer to the wiring diagram or specific instructions for a particular installation.

Any switch which cannot be adjusted, or a switch which fails to function because of mechanical difficulties within the switch, should be replaced, and the faulty switch returned to EMD on a Repair and Return basis.

Litho in U.S.A.