ELECTRO-MOTIVE DIVISION • GENERAL MOTORS CORPORATION
SERVICE DEPARTMENT

MAINTENANCE INSTRUCTION

PRESSURE CONTROL SWITCH-TYPE 223

DESCRIPTION

The pressure control switch, Fig. 1, is a pressure operated switch. All operating parts of this switch are enclosed in a compact, dust-proof case. One of the main functions of this type of switch is to control the air pressure in the main reservoir by regulation of the air compressor.

14553

Fig. 1 — Pressure Control Switch

MAINTENANCE

The switch is manufactured to close tolerances and it is suggested that inspections be limited to intervals as prescribed in the Scheduled Maintenance Program.

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.

It is recommended that test lamps, with a 74 volt or 110 volt source, be used in conjunction with an air pressure gauge, to give positive indication of the opening and closing of the contacts.

Before testing for proper settings of the switch, a clearance check should be made to determine that a .010" clearance exists between the upper magnet and the power pack lever. There should also be a minimum of .010" between the lower magnet and the power pack lever. The pins of the power pack lever assembly should not be loose or binding, as this will cause the contacts to flutter.

RANGE ADJUSTMENT

In order to adjust the range setting of the switch the cap screw over the range adjustment screw on the outside of the switch housing must be removed. On the inside of the switch housing loosen the range adjustment lock screw with an Allen

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

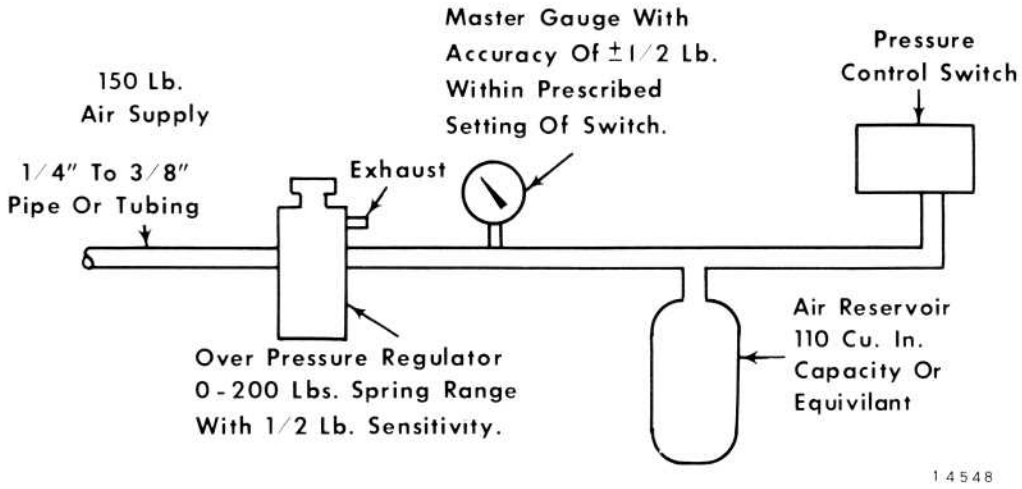
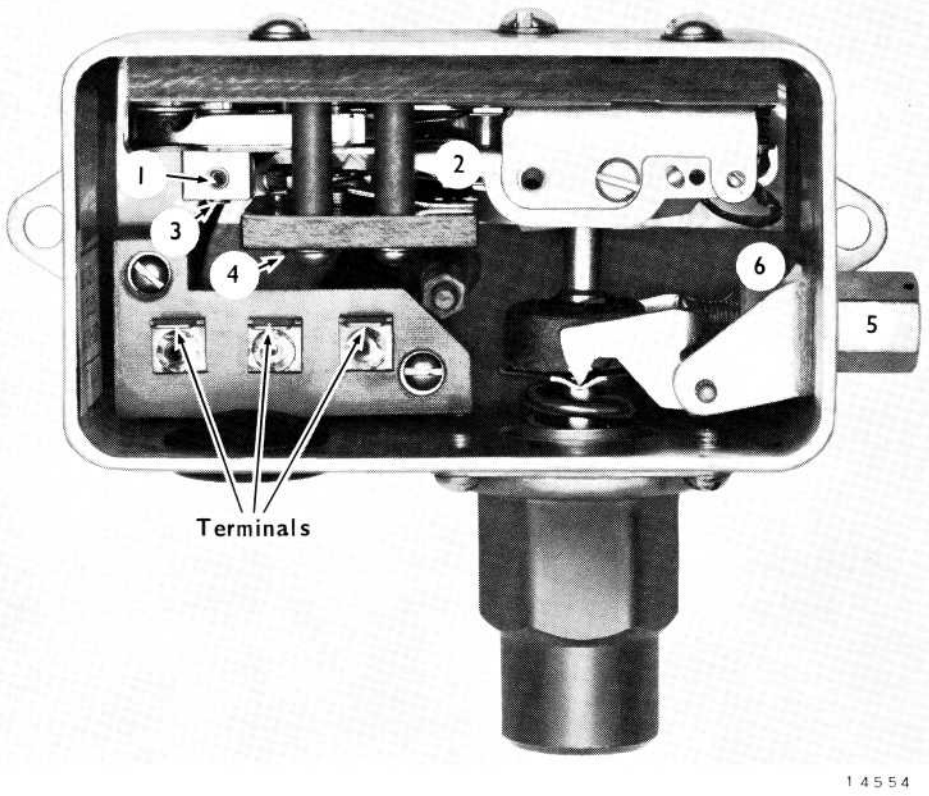


Fig. 2 — Schematic — Bench Test

wrench, Fig. 3. After adjustment has been made, it is important that the range adjustment lock screw be retightened, as failure to do this will allow vibration to change the setting of the range.

Apply air to the switch at the pressure desired to have the upper contact close. If the upper contact is open at this pressure, turn the range screw clockwise until the contact just closes. If this contact is closed, open by turning the range screw counterclockwise and then adjust to the point where the contact just closes. This fixes the "closing" point of the upper contact.



1. Differential Adjustment Lock Screw
2. Operating Arm
3. Differential Adjustment Screw
4. Magnet Adjustment Screw
5. Range Adjustment Screw Cap
6. Range Adjustment Lock Screw

Fig. 3 — Pressure Control Switch With Cover Removed

SERVICE DEPARTMENT

MAINTENANCE DATA

Clearance between upper magnet and power pack lever . . . . . .010"

Clearance between lower magnet and power pack lever . . . . . .010" min.

Switch settings are shown on each switch nameplate.

Any switch which cannot be adjusted as outlined in this M.I. or a switch which fails to function because of mechanical difficulty within the switch, should be replaced.

The faulty switch may be returned to EMD on a Repair and Return basis.

SERVICE DEPARTMENT

MAINTENANCE DATA

Clearance between upper magnet and power pack lever . . . . . .010"

Clearance between lower magnet and power pack lever . . . . . .010" min.

Switch settings are shown on each switch nameplate.

Any switch which cannot be adjusted as outlined in this M.I. or a switch which fails to function because of mechanical difficulty within the switch, should be replaced.

The faulty switch may be returned to EMD on a Repair and Return basis.

If sufficient range cannot be obtained with use of the range screw, loosen the four screws holding the power element to the switch housing and turn the power element either in or out a 1/4 turn at a time until the range setting can be made. This should only be necessary when changing the power element or contact and lever assembly.

DIFFERENTIAL ADJUSTMENT

Before attempting to adjust differential, loosen the differential adjustment lock screw with an Allen wrench, Fig. 3. After adjustment has been made, it is important that the differential adjustment lock screw be retightened, as failure to do this will allow vibration to change the setting of the differential.

The opening of the upper contact and closing of the lower contact is adjusted by the differential screw. This adjustment is made by applying air to the switch at the pressure desired to have the lower contacts close. If the lower contacts close at this pressure, the differential screw need not be touched. If the contacts do not close, the differential screw can be turned slowly counterclockwise for less differential. An offset screwdriver is needed for this adjustment.

If sufficient differential cannot be obtained with use of the differential screw, then use the magnet adjustment screw located below the magnet to adjust the magnet to obtain differential adjustment. Care should be taken when adjusting the magnet so that when the switch is in operation on the unit, the operating arm will not contact the magnet, causing a short in the switch.

POWER PACK LEVER AND CONTACT ASSEMBLY REPLACEMENT

When contacts become worn or faulty mechanical operation occurs in the contact and lever assembly, it is necessary to change the entire contact and power pack lever assembly. This can be accomplished in the following manner:

1. The power element shaft is removed from the power pack lever assembly by removing four screws holding power element to switch housing. Turn power element clockwise counting each 1/4 turn until snug. Record the number of 1/4 turns so that the power element can be reassembled in its original position. Turn the power element counterclockwise until it is loose for removal.

2. Loosen the three screws on top of the switch that hold the contact and lever assembly to the switch housing. The assembly can now be removed far enough to be able to unsolder the leads connected to the contact assembly.

3. Replace old contact and lever assembly with a new one and reassemble in reverse order to disassembly.

4. When reassembling power element to switch, turn element clockwise until snug then turn counterclockwise the same number of 1/4 turns as recorded in Step 1. Fasten power element to switch housing with four screws formerly removed.

POWER ELEMENT REPLACEMENT

Whenever it becomes necessary to change the power element of this switch follow the same procedure as outlined in steps 1 and 4 under section titled, POWER PACK LEVER AND CONTACT ASSEMBLY REPLACEMENT.

Litho in U.S.A.