



MITE 85
Snap-Acting 3-Way Valve
with Two Trip Points

GENERAL

The MITE 85 is an instrument consisting of two basic units:

- (1) a 3-way valve and
- (2) a pilot operator

An increasing pressure signal to the pilot operator at port “A” opens the 3-way valve to supply the outlet (port “I” open to port “H”).

A decreasing pressure signal at port “A” shuts the 3-way valve to vent the outlet (port “G” open to port “H”).

3-WAY VALVE

The valve consists of three ports:

- (1) “G” - vent port: this port should always be vented.
- (2) “H” - outlet port: this is the common port and its pressure should never exceed the supply pressure at “I”.
- (3) “I” - supply port: this pressure supply port should be limited to 50 PSIG. (Except 120 PSIG on high pressure model).
Note: this port also supplies pressure to the supply pilot valve “B”.

This 3-way valve is controlled by the pilot operator. When shut, outlet port “H” is vented through vent port “G”; and when open, outlet port “H” is pressurized through supply port “I”.

PILOT OPERATOR

The operator consists of four basic segments:

- (1) Cam - The cam (PC 16) is modulated by a spring opposed diaphragm. The diaphragm receives the operator pressure signal via port “A”. The operator signal pressure at port “A” may be as high as 150 PSIG, however, the modulating pressure range for the cam is as noted in Table 2 of the drawing.
- (2) Supply Adjustment “B” - The supply pilot valve (PC 15), when actuated by the modulating cam (PC 16), provides a pressure signal to open the 3-way valve. The pressure source for this supply pilot valve is routed from supply port “I” of the 3-way valve. An optional manually operated supply cartridge (PC 31) is available.
- (3) Vent Adjustment “C” - The vent pilot valve (PC 14), when actuated by the cam, vents a pressure signal to shut the 3-way valve. An optional manually operated vent cartridge (PC 30) is available.
- (4) Diaphragm Operator - The diaphragm operator (PCS 10, 11 & 12) uses the pressure signal from either supply pilot “B” to open or vent pilot “C” to shut the 3-way valve.

The pilot operator takes the operator pressure signal at port “A” to fully stroke the cam between the pressure ranges selected from Table 2 of the drawing. The supply adjustment “B” is adjusted to open the 3-way valve on an increasing pressure signal at port “A”. There is a minimum dead band between the open trip pressure and the shut trip pressure. This dead band is a function of instrument friction, supply pressure at port “I” and the amount of bleed allowable through vent adjustment “C”. This dead band is approximately 10 percent of the supply adjustment “B” setting.

ADJUSTMENT PROCEDURE

The open and close set points for the MITE 85 are obtained as follows:

- (1) Connect the operator signal pressure source at port “A”.
- (2) Connect the 3-way valve supply source at port “I”.
- (3) Connect a pressure gauge at the outlet port “H”.
- (4) Loosen locknuts on both the supply adjusting screw “B” and the vent adjusting screw “C”.

- (5) Turn both “B” and “C” approximately 2 turns counter-clockwise.
- (6) Increase operator signal pressure at “A” until the pressure required to open the 3-way valve is reached; hold this pressure.
- (7) Turn “B” clockwise slowly until the 3-way valve opens and pressure is observed at the outlet port “H”.
- (8) Decrease operator signal pressure at “A” until the pressure required to shut the 3-way valve is reached; hold this pressure.
- (9) Turn “C” clockwise slowly until the 3-way valve shuts and outlet port “H” is vented.
- (10) Repeat steps (6) and (8) above to insure proper operation; make minor adjustments at “B” and “C” if required.
- (11) Without disturbing the “B” and “C” settings, tighten locknuts.

LIMITED WARRANTY & DISCLAIMER

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