Installation & Maintenance Instructions

3-WAY MANUAL RESET PNEUMATIC/SOLENOID OPERATED VALVES
NORMALLY CLOSED OPERATION
NO-VOLTAGE RELEASE & ELECTRICALLY TRIPPED
1/2" AND 1/4" NPT - 5/8" AND 5/16" ORIFICE - STAINLESS STEEL CONSTRUCTION

CATALOG
EV8308G360
EV8308G361
EV8310G361
Low Power

⚠ WARNING To reduce the risk of death, serious injury, or property damage:

- **Personnel installing, maintaining, or operating this equipment must be qualified and follow these instructions. See also separate solenoid installation & maintenance instructions. Keep this document.**
- **Before installing or maintaining the valve, turn off electrical power, depressurize valve, extinguish all open flames and avoid any type of sparking or ignition. Vent hazardous or combustible fluid to a safe area.**

⚠ WARNING Do not disassemble this valve except as required to replace solenoid.

NOTICE: See separate solenoid installation and maintenance instructions for information on: Wiring, Solenoid Temperature, Causes of Improper Operation, and Solenoid Replacement.

DESCRIPTION

EV8308G360 & EV8308G361 valves are 3-way, normally closed, no-voltage release, manual reset pneumatic/solenoid operated valves. EV8310G361 valve is a 3-way, normally closed, electrically tripped (TSO), manual reset pneumatic/solenoid operated valve. (Please see ***Flow Diagram for Electrically Tripped Operation***). Valves bodies are made of CF-8M stainless steel with internal parts of stainless steel; elastomers are Fluorocarbon, Fluorosilicone and Nitrile. The manual reset assembly is anodized aluminum.

OPERATION

Auxiliary Piloting allows a zero minimum main line pressure with the application of proper auxiliary air pressure. Refer to ***Table 1, Operating Pressure Differential***, and the graph ***Auxiliary Pilot Pressure vs Main Line Pressure***. Use this graph to determine the minimum auxiliary air pressure required for a given main line pressure.

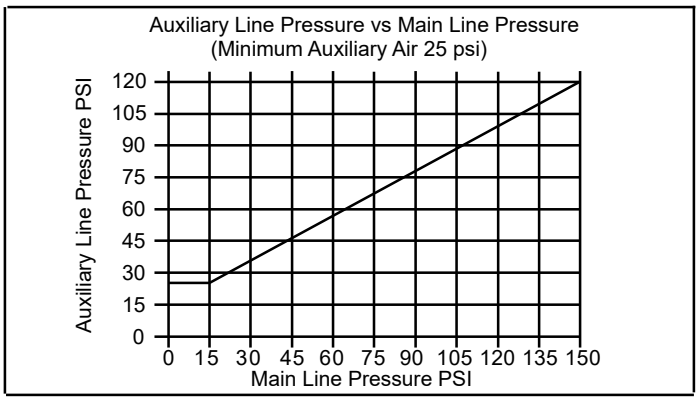


Table 1. Operating Pressure Differential		
Valve	Minimum	Maximum
Main valve	0	150 psig
Pilot valve	25	125 psig

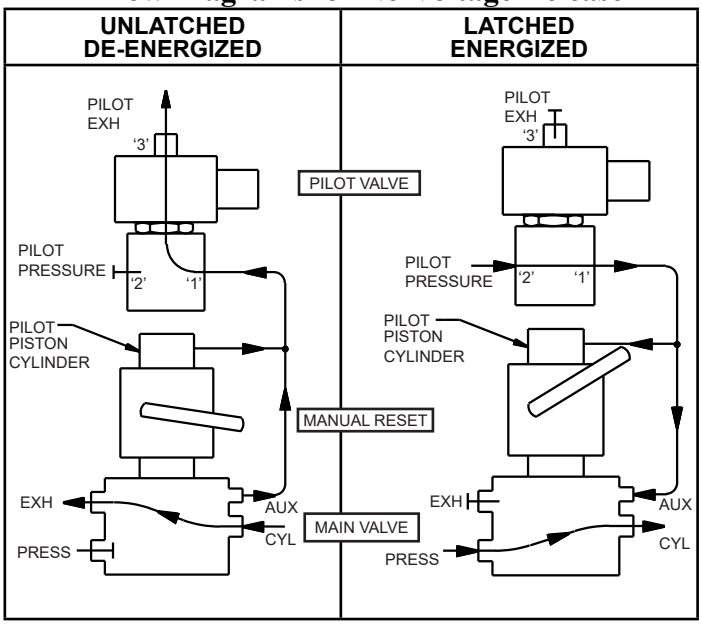
For No-Voltage Release Operation

Unlatched - Solenoid De-energized: With valve unlatched and the solenoid de-energized, main valve flow will be from cylinder to exhaust. The pressure port is closed, whether or not auxiliary pressure is present.

Latched - Solenoid Energized with Auxiliary Pressure Applied: With solenoid energized and auxiliary pilot pressure present, the valve may be manually operated (shifted) by raising the handle until it latches the operator in the (up) latched position. In the latched position, main valve flow will be from pressure to cylinder. Exhaust will be closed. When solenoid is de-energized, valve will return (trip) to the (down) unlatched position. Valve can not be latched, until solenoid is energized, auxiliary pressure applied, and handle is raised to the (up) latched position.

NOTE: Upon solenoid de-energization or loss of auxiliary pilot valve pressure, valve will return (trip) to the unlatched position. Valve can not be latched until auxiliary pilot pressure is restored, solenoid is energized and lever handle is raised. The valve is now latched.

Flow Diagrams for No-Voltage Release



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For Electrically Tripped (TSO) Operation

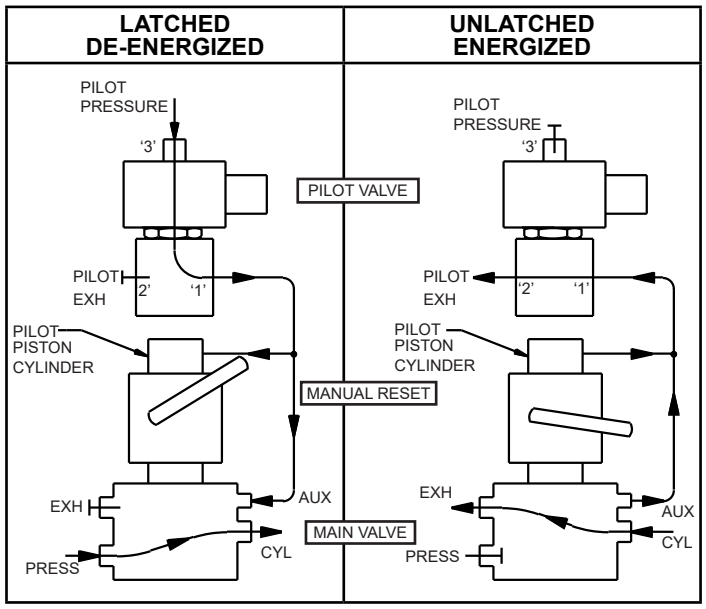
Apply proper auxiliary pressure to port 3 of the pilot valve. Port 2 is now the auxiliary exhaust port - DO NOT BLOCK OFF.

Latched - Solenoid De-energized: With solenoid de-energized, raise the handle until it latches in the (up) latched position. Main valve flow is now from the pressure to the cylinder port. The exhaust port of the main valve is closed.

Unlatched - Solenoid Energized: With solenoid energized, the handle will now return to the (down) unlatched position. The pressure port of the main valve will close and flow in the main valve will be from cylinder to exhaust.

NOTE: When piped in the electrically tripped (TSO) mode, loss of auxiliary pressure will cause the operator to return to the unlatched position - Main valve pressure will close and exhaust will open.

Flow Diagrams for Electrically Tripped



INSTALLATION

Product Verification

Check nameplate for correct catalog number, pressure, voltage, frequency, and service. Never apply incompatible fluids or exceed pressure rating of the valve. Contact ASCO or your supplier for more information about this valve or other valve options if this valve is not suitable for your application.

Temperature Limitations

Please refer to chart below, or as limited by solenoid approvals. See solenoid installation and maintenance instructions.

Temperatures		Pilot Valve	Main valve
Fluid	Min.	-4°F (-20°C)	-4°F (-20°C)
	Max.	140°F (60°C)	140°F (60°C)
Ambient	Min.	-4°F (-20°C)	-4°F (-20°C)
	Max.	140°F (60°C)	140°F (60°C)

Positioning

Valve may be mounted in any position. For optimum performance mount with operator vertical and upright.

Mounting

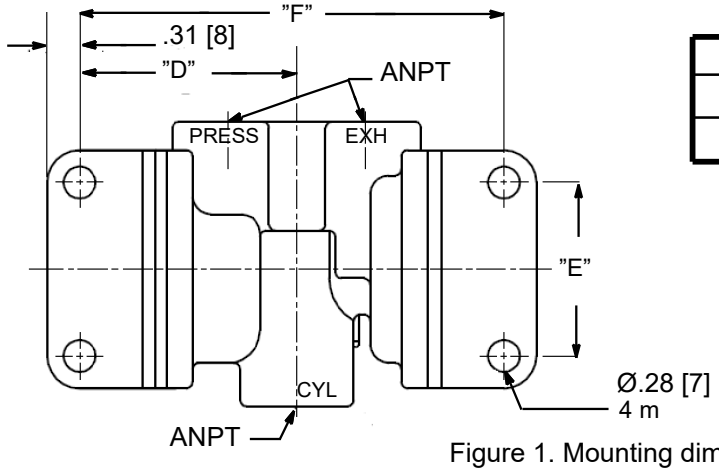
For valve body mounting refer to Figure 1.

Piping

There are three exhaust flow modes: pilot valve, auxiliary pilot and main valve exhaust. For pilot valve and auxiliary pilot exhaust use a muffler to vent to atmosphere or connect to main exhaust system if the air or inert gas cannot be exhausted directly to the atmosphere.

Connect piping or tubing to valve according to markings on valve body. Refer to flow diagrams in ***OPERATION*** section and Figure 2 ***Valve Port Connections***. Apply pipe compound sparingly to male pipe threads only. If applied to valve threads, the compound may enter the valve and cause operational difficulty. Avoid pipe strain and valve damage by properly supporting and aligning piping. When tightening the pipe, do not use valve or solenoid as a lever. Locate wrenches applied to valve body or piping as close as possible to connection point. To avoid damage to the valve body, DO NOT OVERTIGHTEN PIPE CONNECTIONS. If PTFE tape, paste, spray, or similar lubricant is used, use extra care when tightening due to reduced friction.

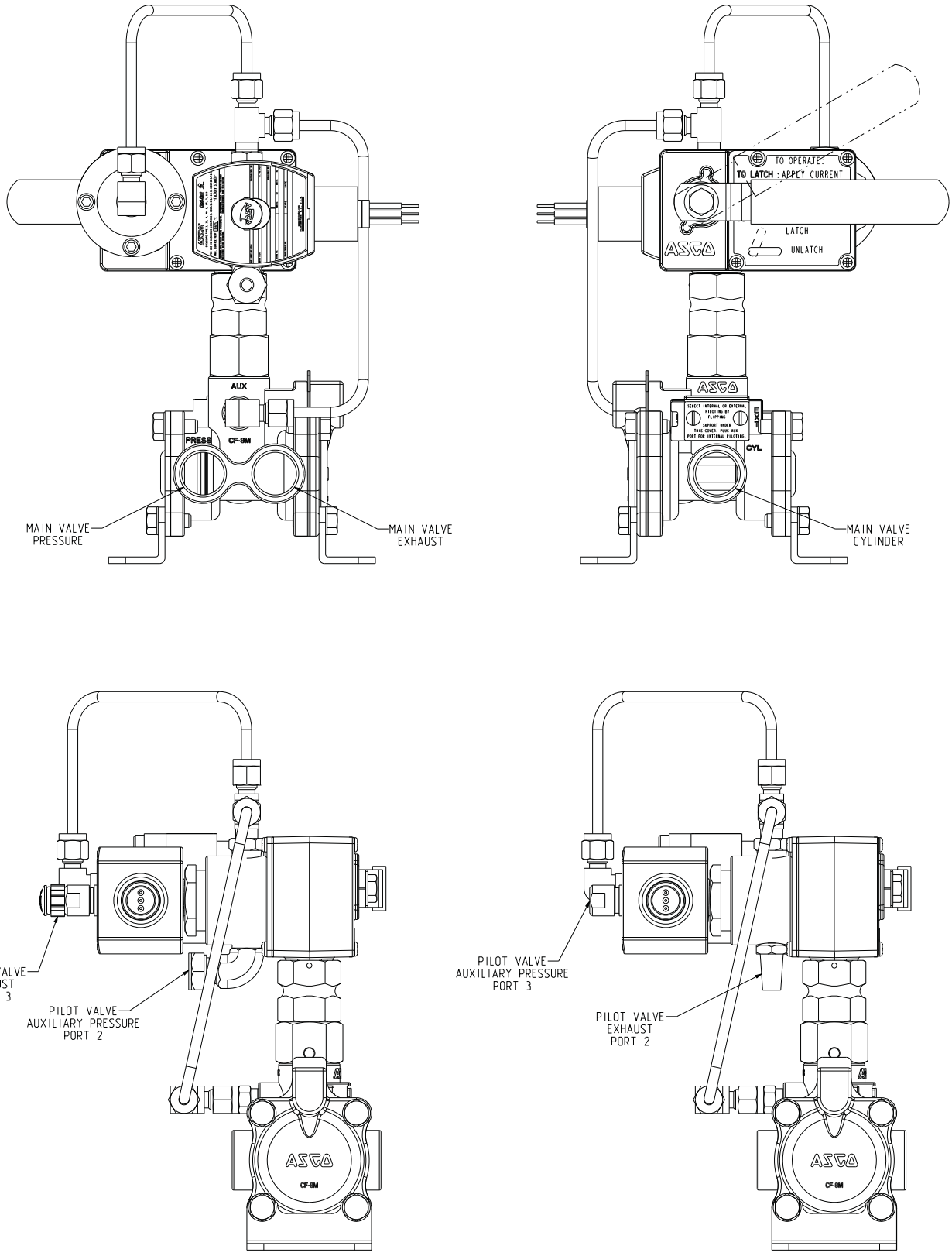
⚠CAUTION: These solenoid valves are intended for use on clean dry air, inert gas or natural gas, filtered to 40 micrometres or better. The dew point of the media should be at least 10°C (18°F) below the minimum temperature to which any portion of the clean air/inert gas system could be exposed to prevent freezing. If lubricated air is used, the lubricants must be compatible with FKM and/or Nitrile elastomers. Diester oils may cause operational problems. Instrument air in compliance with ANSI/ISA Standard 7.0.01-1996 exceeds the above requirements and is, therefore, an acceptable media for these valves.



ANPT	D	E	F
1/4"	2.09 [53]	1.25 [32]	4.05 [103]
1/2"	2.18 [55]	1.66 [42]	4.26 [108]

[mm]
INCHES

Figure 1. Mounting dimensions (partial view)



NO - VOLTAGE RELEASE OPERATION

ELECTRICALLY TRIPPED OPERATION

FIGURE 2. VALVE PORT CONNECTIONS

MAINTENANCE

⚠ WARNING To prevent the possibility of death, serious injury or property damage, turn off electrical power, depressurize pilot and main valve. Vent fluid to a safe area before servicing the valve.

Preventive Maintenance

- Keep the medium flowing through the valve as free from dirt and foreign material as possible.
- Periodic exercise of the valve should be considered if ambient or fluid conditions are such that corrosion, elastomer degradation, fluid contamination build up or other conditions that could impede solenoid valve shifting are possible. In many cases, solenoid valves are periodically exercised during normal system use or as part of routine maintenance or surveillance activities and no additional exercise is necessary. The actual frequency of exercise necessary will depend on specific operating conditions. A successful operating history is the best indication of a proper interval between exercise cycles.
- Inspect bonnet assembly for leakage at bleed hole. Leakage indicates worn internal seals and a replacement valve should be installed.
- Periodic inspection of the operating movement should be carried out. Operating movement should be kept clean and free from paint, foreign matter, corrosion, freezing and icing conditions.

Causes of Improper Operation

- **Incorrect Pressure:** Check main and pilot valve pressure. Pressure must be within range specified on nameplates.
- **Dirt in Pilot Valve Exhaust Port:** Install muffler or pipe into exhaust system to prevent foreign matter from entering exhaust port.

ORDERING INFORMATION FOR REPLACEMENT VALVES OR SOLENOIDS

When ordering, specify catalog number, serial number, voltage, frequency, and service. For solenoids, also specify number printed on solenoid if possible.