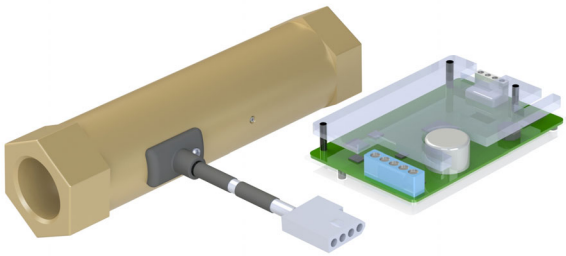
IMPORTANT NOTE!

Please take the time to read this instruction sheet.

Disregarding these guidelines may adversely affect your piping components

Griswold Controls assumes no responsibility for damages or injuries resulting from non-compliance with installation instructions or standard good practice when installing, operating, or maintaining the valves, even if not explicitly mentioned in the installation instructions.

GENERAL INFORMATION



1. Air should be eliminated from the system so the Griswold Controls flow control valves remain full of fluid during operation. This will also protect the system from noise and vibration due to cavitation. It may be necessary to install Automatic Airvents or an Air Separator for piping systems with entrained air.
2. Clean the lines upstream of the valve particles larger than 1/16" diameter (welding slag, pipe scale & other contaminants). Upstream installation of a 20 mesh strainer is recommended.
3. Do not use boiler additives, chemicals which are petroleum based or contain mineral oil, hydrocarbons, azole compounds or ethylene glycol acetate. Compounds which can be used, with minimum 50% water dilution, are diethylene glycol, ethylene glycol, and propylene glycol. If installing these valves in an addition or retrofitting an existing building, do not assume that the fluid in the existing piping meets these criteria.
4. Flow control valves may be inserted in the pipe line either horizontally or vertically. Straight sections of piping upstream and downstream of the valves are not necessary for proper operation. Reducing bushings or flanges may be attached directly to flow control valves. Standard adapters are adequate for installation of flow control valves. Please follow good piping practices, system design, and maintenance as outlined in ASHRAE published standards. For example do not pipe valves after two consecutive elbows.
5. All styles of flow control valves are marked to show the direction of flow. **WARNING:** The flow arrow must point in the direction of flow for proper operation.
6. Do not install valves at pump discharge. Minimum of 8 pipe diameters or 8 feet, whichever is longer, is required before the valve.
7. When pressure testing the system with compressed air do not exceed 100 psi air pressure.

CLEANING

If the system experiences large amounts of pipe scale due to poor water conditions, as sometimes found in older systems, provisions should be made to keep the system clean. Proper water treatment is also recommended.

Depending on the system, strainers should be cleaned annually.

1700 Barranca Parkway, Irvine, CA 92606
(949) 559-6000 Fax (949) 559-6088
www.GriswoldControls.com

GRISWOLD CONTROLS
A FlowCon International/Griswold Controls LLC. Company

INSTALLATION GUIDELINES

Threaded Valves

Standard threaded flow control valves are tapped with NPT. Seal valves with pipe sealant. Please be advised that using tape on a threaded connection can lead to over tightening and cracks in FNPT components. Torque should not exceed 75 foot/pounds.

Use two wrenches. Secure one wrench on the hex pads nearest the joint being tightened while using the second wrench to screw in the threaded end, thereby preventing the retainer–to–body seal from being broken. When all the pipe connections have been made, proceed with electrical connections.

Sweat Valves

WARNING: Failure to follow these installation guidelines can lead to loss of warranty.

Griswold products with sweat connections are designed to be soft soldered. The use of a heat sink is required because excessive heat can harm internal polymer materials such as O-rings.

To ensure leak-free joints the following instructions should be followed:

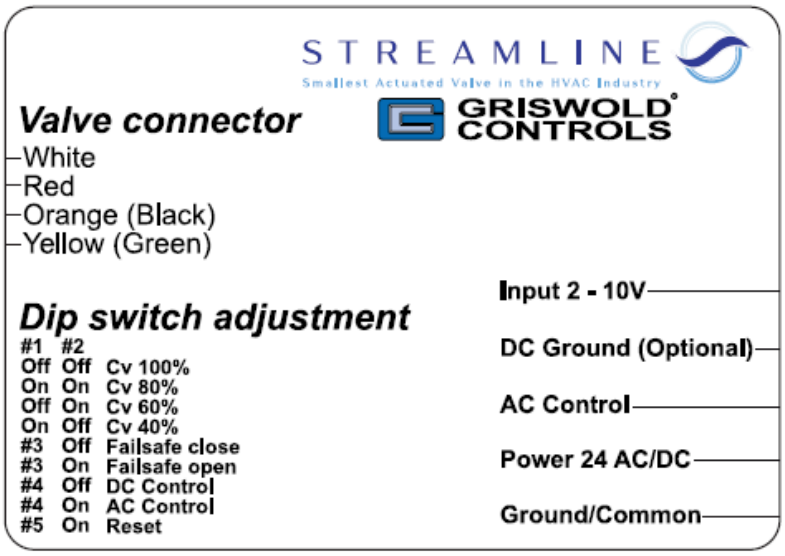
1. Make sure the copper tube ends are cut square, and all burrs and rough edges are removed.
2. Clean tubing ends and the inside of the valve socket with a wire brush and sandpaper suitable for copper tubing and bronze valves. The inside of the valve ends should be made bright with a wire brush and the tube ends made bright with sand or emery paper.
3. Carefully coat the inside of the valve sockets and outside of the tubing with non-corrosive solder flux. In extremely cold weather, warm the valves to room temperature before applying flux.
4. After coating the valve sockets and copper tubing with flux, insert the tube ends into the valves socket until it seats against the shoulder. Rotate the tubing a few times to insure proper flux coverage.
5. Use a heat sink (wet towel) around the valve to protect o-rings from heat.
6. Using a soldering torch, heat the outside of the valve socket until it is hot enough to melt the solder. The correct temperature can be determined by the touching of the valve socket with the solder.
7. Once the valve is heated enough to accept the solder, apply the flame to the bottom of the valve socket until all the solder is absorbed, remove the flame and any excess solder. Let the valve cool before operating.

WARNING: DO NOT, under any circumstances, solder the downstream end of the valve while there is upstream pressure, or with fluid trapped in the cavity around the ball. Thermal expansion of this fluid can produce excessive internal pressure that could damage seat or body materials. Always drain the system and cycle the valve two to three times after draining is complete before applying heat. Steam created from trapped fluid in cavity around ball could cause the valve to BURST if it is heated excessively.

1700 Barranca Parkway, Irvine, CA 92606
(949) 559-6000 Fax (949) 559-6088
www.GriswoldControls.com
GRISWOLD CONTROLS
A FlowCon International/Griswold Controls LLC. Company

ELECTRONIC SET UP / GUIDELINES

Wiring Diagram as shown on board label



Wire Modulating signal connection to this screw terminal

Wire ground to this screw terminal if signal is not already grounded

Wire On/Off signal to this screw terminal

Wire power to this screw terminal

Wire ground

Setting the Cv:

Before applying 22-35 Vac/Vdc power adjust the DIP switch to select power and Cv. If using the default settings, the valve is set up with 100% Cv (full stroke) and with analog control 2-10VDC.

SIZE	STROKE	DIP SWITCH SETTINGS		FLOWRATE (GPM) @ DIFFERENTIAL PRESSURE (PSI)											
				2-Position HVAC Apps		HVAC Modulating Apps									
					Cv										
		DIP1	DIP2	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	7.0	10.0
1/2"	40%	On	Off	0.4	**0.5**	0.6	0.7	0.8	0.9	0.9	1.0	1.1	1.1	1.3	1.6
	60%	Off	On	1.0	**1.4**	1.7	2.0	2.2	2.4	2.6	2.8	3.0	3.1	3.7	4.4
	80%	On	On	1.7	**2.4**	2.9	3.4	3.8	4.2	4.5	4.8	5.1	5.4	6.3	7.6
	100%	Off	Off	2.5	**3.5**	4.3	4.9	5.5	6.1	6.5	7.0	7.4	7.8	9.3	11.1
3/4"	40%	On	Off	0.4	**0.5**	0.6	0.7	0.8	0.9	0.9	1.0	1.1	1.1	1.3	1.6
	60%	Off	On	1.1	**1.5**	1.8	2.1	2.4	2.6	2.8	3.0	3.2	3.4	4.0	4.7
	80%	On	On	1.8	**2.5**	3.1	3.5	4.0	4.3	4.7	5.0	5.3	5.6	6.6	7.9
	100%	Off	Off	3.5	**5.0**	6.1	7.1	7.9	8.7	9.4	10.0	10.6	11.2	13.2	15.8

Setting Failsafe:

For failsafe models set DIP3 to preferred fail position. OFF is Fail closed and ON is Fail open.

Setting Analog Control vs 24VAC ON/Off:

Set dip 4 to control preference. Off for DC Control or on for AC Control.

Hard Reset:

Turn dip 5 On for a couple of seconds then turn back to Off position to reset.

1700 Barranca Parkway, Irvine, CA 92606
(949) 559-6000 Fax (949) 559-6088
www.GriswoldControls.com

Calibration:

After power is applied the valve will run a calibration cycle which will take about one minute. During calibration the LED will flash yellow.

LED color chart:

Blinking green: valve is opening
Solid green: valve is all the way open to maximum position (depending on DIP switch position)
Blinking yellow: valve is closing
Solid yellow: valve is all the way closed
Solid purple: Unit was first powered ON or reset and it initializing. After initialization the valve will do the calibration cycle. Takes about one minute.
Solid blue: valve is not all the way closed or open and is not currently moving
Blinking red: At startup there is only battery power and no AC power. Unit will remain in this condition until power is applied or the battery runs out.

1700 Barranca Parkway, Irvine, CA 92606
(949) 559-6000 Fax (949) 559-6088
www.GriswoldControls.com
GRISWOLD CONTROLS
A FlowCon International/Griswold Controls LLC. Company