

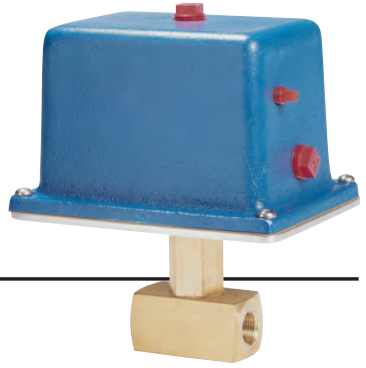


PV Series

Electronic Proportioning Control Valve



M1655/0215



INSTALLATION

Mechanical Connections

Connect the valve to your pipes by screwing the pipes into the unit. If you use TFE tape, make sure there are no loose pieces in the fluid stream. Use unions when possible for easy removal for maintenance or repair. Use hangers to support the weight of the unit and to eliminate stress on the pipes. The direction of fluid flow should match the arrows stamped on the side of the valve body.

Electrical Connections

Wire Color	Functions
White (A)	4-20mA or 1-5VDC
Black (B)	Common for 4-20mA or 1-5VDC
Red (C)	12 to 24 VDC, 3A
Red/White (D)	Common
Green (E)	Open Full contact closure
input, dry	
Green/White(F)	Close Full input, dry contact closure
Blue (G)	Common for Open and Close inputs

Move Jumper JP2 from center and bottom pins to center and top pins to switch from 4-20mA to 1-5 VDC control signal. This disconnects 250 Ohm resistor and connects the 3.3K Ohm resistor.

OPERATION

The PV closes on power-up. If closed, the motor will stall. This is normal. It then opens to the position governed by the switch settings shown below.

- 1-Close ON - Close full. 50% if Switch 2 also ON.
OFF - nothing.
- 2-Open ON - Open full. 50% if Switch 1 also ON.
OFF - nothing.
- 3-FILter ON - Noise filter engaged.
OFF - Noise filter disengaged.
- 4-DDR ON - Reverses action of Switches 1 and 2.
OFF - nothing.
- 5-Fail ON - Fail closed on loss of signal.
OFF - Fail open on loss of signal.
- 6-Range Active if Switch 7 is OFF.
ON - Selects hi range. 12-20 mA or 3-5 VDC.
OFF- Selects low range. 4-12 mA or 1-3 VDC.
- 7-Split ON - Full range. 4-20 mA or 1-5 VDC.
OFF - Split range. See Switch 6.
- 8-ADR ON - Reverse action. Large control signal causes valve to close.
OFF - Direct Action. Small control signal causes valve to close.

MAINTENANCE AND REPAIR

Seat Seal Replacement

The seat seal and plunger are replaced as a unit called the plunger assembly. When replacing the plunger assembly, replace the stem seal o-ring. Rebuilding kits are available. The PV must be disassembled to replace the seat seals.

Disconnect the PV from the power source. Remove the 3/4-16 jam nut (1-1/8" wrench). Lift the motor, bracket and plate assembly off the valve. The coupling will separate.

Remove the bonnet-stem assembly. Hold the stem to keep it from rotating.

Unscrew the plunger assembly from the stem. This is a left hand thread. Loosen the set screws holding the coupling to the stem. Slide stem out of bonnet.

Thoroughly clean all parts. Discard old o-rings.

Replace the o-ring with a new one.

Lubricate o-ring and stem with o-ring lubricant compatible with process fluid. Lubricate stem threads and outside of plunger. Reassemble in reverse order of disassembly.

NOTE: Make sure seat seal is not seated when tightening bonnet.

Part Number	Valve
10842	PV-14B
10854	PV-14SS
10741	PV-516B
10855	PV-516SS
10841	PV-38B
10856	PV-38SS
10852	PV-12B
10857	PV-12SS
10853	PV-34B
10858	PV-34SS

Figure 1. Rebuild Kits. Kits include: plunger assembly, stem, TFE washer, bonnet-body o-ring, bonnet-stem o-ring, and silicone o-ring lube.

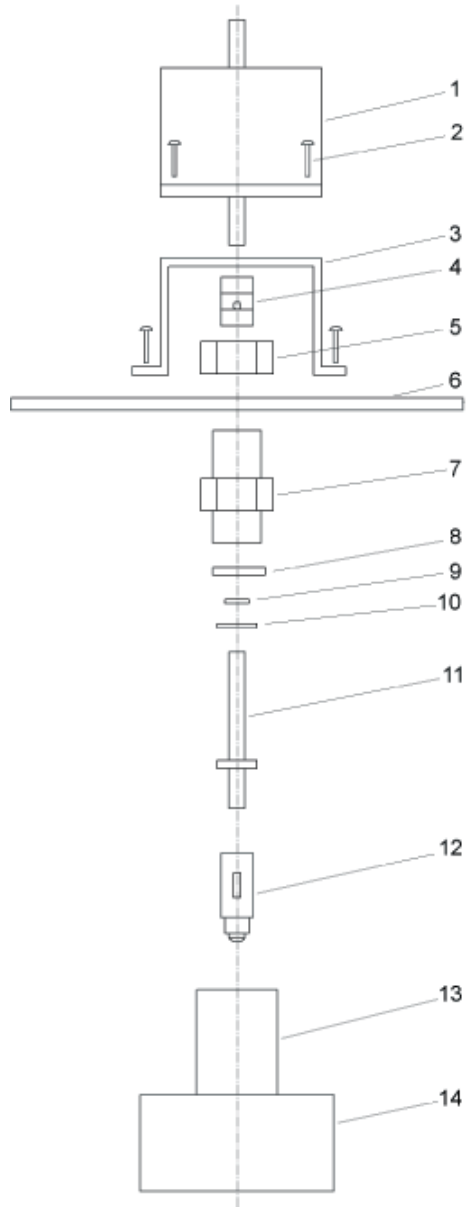


Figure 2. PV Exploded Diagram

Ref	Name	Part Number									
		PV14		PV516		PV38		PV12		PV34	
		-B	-SS	-B	-SS	-B	-SS	-B	-SS	-B	-SS
1	Motor	10003								10535	
2	Screw	10413								10629	
3	Platform	10389								10600	
4	Coupling	10009								10536	
5	Nut	10011								10510	
6	Plate	10498								10605	
7	Bonnet	10568A	10568B	10568A	10568B	10559A	10559B	10559A	10559B	10607A	10607B
8	Bonnet-Body Oring	10014 EPR				10323 EPR					
9	Stem Oring	10015 EPR								10347 EPR	
10	TFE Stem Washer	10016				10324				10466 (2)	
11	Stem	10017C	10017B	10017C	10017B	10325C	10325B	10325C	10325B	10608C	10608B
12	Plunger Assembly	10093C	10093B	10625C	10625B	10326C	10326B	10462C	10462B	10627C	10627B
13	Plunger Guide	10385A	10385B	10385A	10385B	10386A	10386B	10520A	10520B	10482A	10482B
14	Body	10383A	10383B	10523A	10523B	10384A	10384B	10591A	10591B	10621A	10621B

Figure 3. Part Number Reference Table

Symptom	Cause	Solution
Valve does not open and makes stuttering noise.	Valve was overtightened.	Loosen by hand with screwdriver in motor shaft slot, then close gently.
Nothing happens.	Power not connected.	Check cabling.
	Fuses blown in power supply.	Replace fuses.
Valve does not shut off fluid flow tightly.	Obstruction between seat seal and seat	Backflush valve or disassemble valve and remove obstruction.
	Worn out seat seal	Replace plunger assembly.
Process fluid leaks out of weep hole in bonnet.	O-ring failure.	Turn off noise filter
Valve does not follow control signal	Noisy control signal.	Turn off noise filter (Jumper 3)

Figure 4. Troubleshooting Table



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FOR **WARRANTY RETURNS**, please have the following information available BEFORE contacting OMEGA:

1. Purchase Order number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

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2. Model and serial number of the product, and
3. Repair instructions and/or specific problems relative to the product.

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