



ELECTRO-PNEUMATIC CONTROL VALVE

MODEL CV-COS-20

POSITIONER/ACTUATOR CONTROL VALVE WITH SEPARATOR AND STEAM TRAP

Benefits

Steam control valve featuring a digital I/P positioner combined with a compact pneumatic actuator. Built-in cyclone separator and steam trap to provide high-quality steam for process applications.

1. Built-in cyclone separator and self-modulating free float steam trap provide dry, high-quality steam supply improving productivity and product quality for process applications.
2. Removal of condensate while valve is closed reduces scale adhesion and water hammer.
3. Pneumatic actuator with digital I/P positioner in a compact configuration.
4. Rolling actuator diaphragm ensures linearity over the operating stroke and maximizes life.
5. Self-adjusting positioner features zero calibration by auto-tuning, which ensures tight shut-off and improves control during low flow.
6. Positioner LCD allows simple operation with capacitive keys and displays valve travel and error codes.
7. Self-adjusting chevron packing minimizes seal leaks, stem wear and stiction/hysteresis problems.



Specifications

VALVE

Model		CV-COS-20							
Body Material		Cast Steel (A216 Gr.WCB) Cast Stainless Steel (A351 Gr.CF8)							
Connection		Flanged ASME							
Size (in)		1/2	3/4	1	1 1/2	2	2 1/2	3	4
Max. Operating Pressure (psig)	PMO 150RF	150							
	300RF	300							
Maximum Operating Temperature (°F) TMO		428							
Maximum Allowable Pressure (psig) PMA		449							
Maximum Allowable Temperature (°F) TMA		428							
Leak Rate Class (IEC 60534-4)/Seat Plug Sealing		Class IV / Metal sealing (Option: Class VI / Soft sealing)							
Characteristic		Equal percentage							
Rangeability		50 : 1							
Applicable Fluids*		Steam							

* Do not use with toxic, flammable or otherwise hazardous fluids.

ACTUATOR / POSITIONER

Fail-safe Position	Valve CLOSED (Air to Open)
Motive Medium	Oil-free air, filtered to 5 µm
Electrical Input Signal (mA)	4 to 20
Load Impedance (V)	Max. 6.3
Air Supply Pressure Range for Positioner (psig)	54 to 90
Ambient Temperature Range (°F)	-13 to +176
Protection Class	IP 66
Intrinsically Safe Rating (optional)	ATEX II 2G Ex ia IIC T4

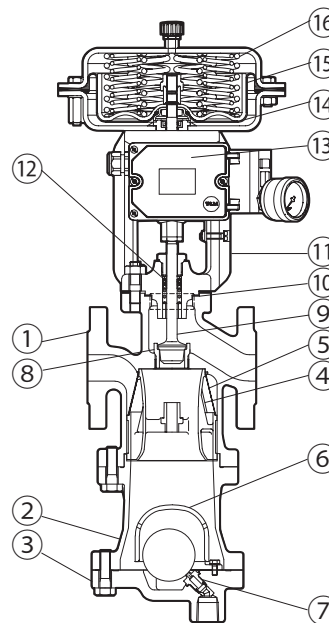


CAUTION To avoid abnormal operation, accidents or serious injury, DO NOT use this product outside of the specification range. Local regulations may restrict the use of this product to below the conditions quoted.

Configuration

No.	Description	Material	ASTM/AISI*	JIS
①	Main Body	See Valve Specification Table for available materials		
②	Separator Body	See Valve Specification Table for available materials		
③	Trap Cover	See Valve Specification Table for available materials		
④	Separator	Cast Stainless Steel	A351 Gr.CF8	—
⑤	Separator Screen	Stainless Steel	AISI304	SUS304
⑥	Float	Stainless Steel	AISI316L	SUS316L
⑦	Trap Valve Seat	—	—	—
⑧	Valve Seat	Stainless Steel	AISI410	SUS410
⑨	Plug and Stem	Stainless Steel	AISI316L/ AISI410**	SUS316L/ SUS410**
⑩	Valve Bonnet Gasket	Graphite	—	—
⑪	Valve Bonnet	Carbon Steel	A105	—
⑫	Stuffing Box V-ring Packing	Fluorine Resin with Carbon	PTFE	PTFE
⑬	Positioner Cover	Polycarbonate	PC	PC
⑭	Positioner Housing	Polyphthalamide	PPA	PPA
⑮	Rolling Diaphragm	Nitrile Rubber with Fabric Insert	NBR	NBR
⑯	Actuator Springs	Spring Carbon Steel	—	—

* Equivalent ** For Cv(US) values 30 and higher
Contact TLV for available replacement parts.



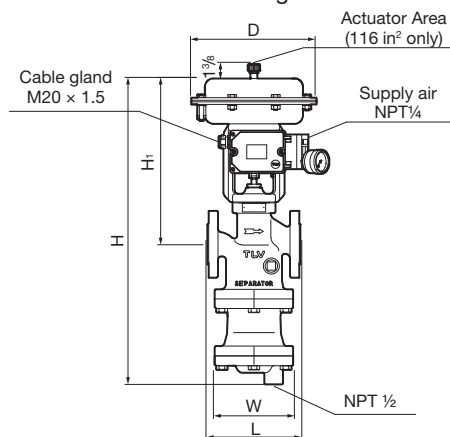
Cv & Kvs Values

Stroke (in)	Cv (US)	0.5	1.2	3	5	7.5	12	20	30	47	70	95	75	120	190
	Cv (UK)	0.39	0.97	2.4	3.9	6.1	9.7	15.5	24.3	38.8	58.2	77.6	61.1	97	155
	Kvs (DIN)	0.4	1	2.5	4	6.3	10	16	25	40	60	80	63	100	160
	Seat Dia. (in) Size	¼		½		5/16		1¼	1½	1⅞	2½	3⅞	2½	3⅞	3⅞
9/16	½	○	○	○	◎										
	¾	○	○	○	○	◎									
	1	○	○	○	○	○	◎								
	1½	○	○	○	○	○	○	○	◎						
	2	○	○	○	○	○	○	○	○	◎					
	2½								○	○	◎				
	3								○	○	○	◎			
1⅜	4												○	○	◎

◎: Standard, ○: Option. Price and delivery time may vary for options.

Dimensions

● CV-COS-20 Flanged



CV-COS-20 Flanged

(in)

Size	L		Actuator Area (in ²)	H*	H ₁	W	ϕ D	Weight** (lb)
	Connects to ASME Class							
	150RF	300RF						
1/2	7 1/4	7 1/2	27	19 7/8	11 13/16	4 1/8	8 7/16	49
3/4		7 5/8		21 7/16		5 7/8		51
1		7 3/4		22 13/16		6 1/2		82
1 1/2	8 3/4	9 1/4						
2	10	10 1/2	27 [55]	25 [27 3/16]	13 15/16	7 11/16	8 7/16 [11]	113
2 1/2	10 7/8	11 1/2	55	28 9/16	15 1/2		11	198
3	11 3/4	12 1/2	55 [116]	33 3/8 [34 1/4]	15 1/2 [15 3/16]		11 [15 1/2]	251 [297]
4	13 7/8	14 1/2	116	41 15/16	19 7/16	9 5/8	15 1/2	390

Other standards available, but length and weight may vary

* Approx.

** Weight is for Class 300 RF

[] for Class 300RF

Maximum Operating Differential Pressure* PMX (Air to open)

Size	Flange	Actuator Area (in ²)	Spring Bench Range (psi)	Min. Air Supply Pressure (psig)	Max. Differential Pressure* (psi)
1/2	150RF	27	25 to 48	50.7	150
	300RF				300
3/4	150RF				150
	300RF				300
1	150RF				150
	300RF				300
1 1/2	150RF				150
	300RF				300
2	150RF	55	34 to 43	47	150
	300RF				300
2 1/2	150RF				150
	300RF				300
3	150RF	116	23 to 35	38	150
	300RF				300
4	150RF		32 to 49	52	150
	300RF				300

* Subject to limitation of maximum operating pressure rating of valve (PMO), see 'Specifications' for details.

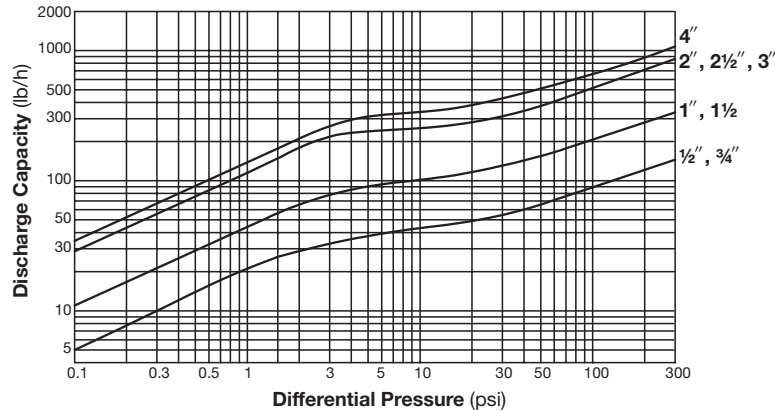
** Pre-tensioned springs

Options*

- Air Filter Regulator
- Manual Handwheel
- Limit Switches
- Electric Actuator
- Pneumatic Positioners
- Intrinsically Safe Positioner

* Details available on request

Trap Discharge Capacity



1. The discharge capacity is the maximum continuous condensate discharge 11 °F below saturated steam temperature.
2. The differential pressure is the difference between the CV-COS inlet and its trap outlet pressure.



CAUTION DO NOT use this product under conditions that exceed maximum differential pressure, as condensate backup will occur!



CAUTION DO NOT DISASSEMBLE OR REMOVE THIS PRODUCT WHILE IT IS UNDER PRESSURE. Allow internal pressure of this product to equal atmospheric pressure and its surface to cool to room temperature before disassembling or removing. Failure to do so could cause burns or other injury. READ INSTRUCTION MANUAL CAREFULLY.

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Manufacturer

TLV CO., LTD.

Kakogawa, Japan

is approved by LRQA Ltd. to ISO 9001/14001

ISO 9001
ISO 14001

