TLV®

ELECTRO-PNEUMATIC CONTROL VALVE FOR STEAM

MODEL CV-COS

POSITIONER/ACTUATOR CONTROL VALVE WITH SEPARATOR AND STEAM TRAP

Benefits

Steam control valve with I/P positioner integrated into 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. One combination I/P position/actuator (I/P positioned actuator) saves space and simplifies system layout, piping, and maintenance.
4. Top mounting of the I/P positioned actuator eliminates passerby damage and misadjustment associated with side-mount components.
5. Combined large-surface-area screen for trap and separator reduces cost and piping space.
6. Zero/span adjustment can be performed by simple dial rotation.
7. Self-adjusting chevron packing minimizes seal leaks, stem wear, and stiction/hysteresis problems.

Specifications

VALVE

Model		CV-COS			
Body Material		Cast Stainless Steel A351 Gr.CF8		Cast Iron JIS FC250 (option) A126 Cl.B equivalent	
Connection		**Flanged**		Flanged	
Size (in)		½, ¾, **1**, **1½**	**2**	1, 1½	2
Maximum Operating Pressure (psig)	PMO	230	150	230	150
Maximum Operating Temperature (°F)	TMO	428			
Maximum Allowable Pressure (psig)	PMA	250			
Maximum Allowable Temperature (°F)	TMA	428			
Seat Plug Sealing/Leak Rate Class (ANSI/FCI 70-2 and IEC534-4)		Metal to Metal / Class IV			
Characteristic		Equal percentage			
Rangeability		50 : 1			

Connections and sizes in bold are standard

ACTUATOR

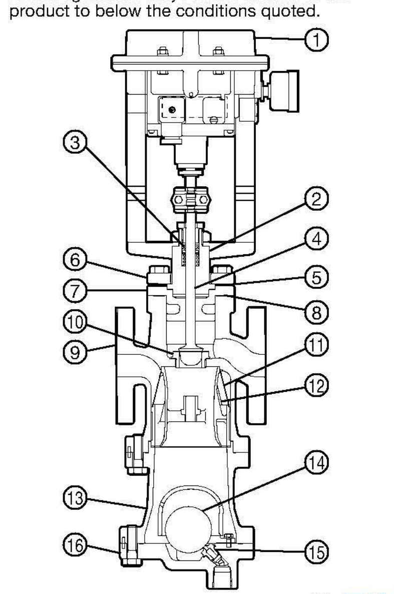
Actuator Area (in²)	18.6
Fail-Safe Position	Valve CLOSED (air to open)
Bench Range (psi)	30 to 48
Electrical Input Signal (mA)	4 to 20
Load Resistance (Ohm)	Approx. 300
Air Supply Pressure for Positioner (psig)	54*
Transit Time for Rated Travel (seconds)	Approx. 3
Hysteresis (%)	< 1
Protection Class	IP 54
Ambient Temperature Range (°F)	14 to 140
Motive Medium	Oil-free air, filtered to 5μm*

* Optional air regulator/filter available, contact TLV for details

⚠ 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.

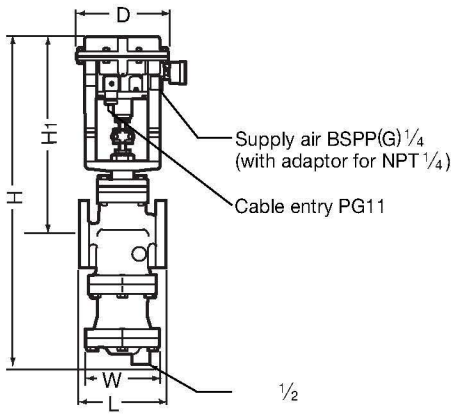
No.	Description	Material	ASTM/AISI*	JIS
①	Actuator Body	Aluminum	—	GD-Al Si 12
②	Valve Bonnet	Carbon Steel	A105	—
③	Stuffing Box V-ring	Fluorine Resin w/ Carbon	PTFE	PTFE
④	Plug and Stem	Stainless Steel	AISI304	SUS304
⑤	Valve Bonnet Gasket	••••••••••••••••••••••	••••••••••	•••••••••
⑥	Flange	Cast Stainless Steel	A351 Gr.CF8	—
⑦	Valve Bonnet Guide	Cast Stainless Steel	A351 Gr.CF8	—
⑧	Valve Bonnet Guide Gasket	Fluorine Resin	PTFE	PTFE
⑨	Main Body	See Valve Specification Table for available materials		
⑩	Valve Seat	Stainless Steel	AISI304	SUS304
⑪	Separator Screen	Stainless Steel	AISI430/304	SUS430/304
⑫	Separator	Cast Stainless Steel	A351 Gr.CF8	—
⑬	Trap Body	Same material as Valve Body		
⑭	Float	Stainless Steel	AISI316L	SUS316L
⑮	Trap Valve Seat	—	—	—
⑯	Trap Cover	Same material as Valve Body		

* Equivalent



Dimensions

● **CV-COS** Flanged



CV-COS Flanged (in)

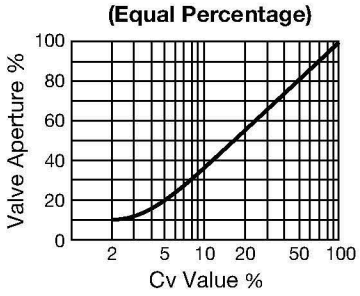
Body Material	Size	L ASME Class 125FF	L ASME Class 150RF	L ASME Class 250RF	L ASME Class **300RF**	H	H1	W	φD	Weight* (lb)
Stainless Steel	1/2	—	5 9/16	—	5 3/4	22 5/8	14 5/16	4 1/8	6 5/8	40
	3/4	—	5 1/2	—						42
	1	—	6	—	6 1/4	23 3/4	14 1/4	5 7/8		53
	1 1/2	—	7 13/16	—	8 1/8	25 1/2	14 7/8	6 1/2		66
	2	—	10	—	10 1/4	28	15 3/8	7 5/8		101
Cast Iron	1	6 15/16	—	7 3/8	—	23 3/4	14 1/4	5 7/8	6 5/8	53
	1 1/2	8 1/4	—	8 3/4	—	25 1/2	14 7/8	6 1/2		66
	2	10	—	10 1/4	—	28	15 3/8	7 5/8		103

Other standards available, but length and weight may vary
* Weight is for Class 300 RF for Stainless Steel, Class 250RF for Cast Iron
Flange classes in bold are standard

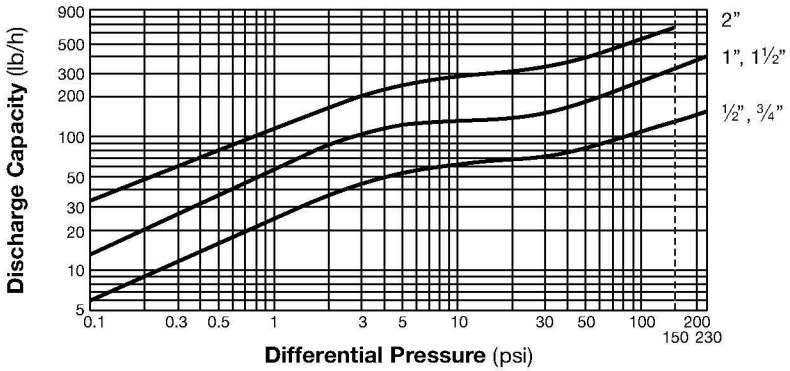
Cv Values

Size (in)	1/2	3/4	1	1 1/2	2
Cv (US)	3.5	6.0	9.0	27	40
Cv (UK)	2.9	5.0	7.5	23	33
Kvs (DIN)	3.0	5.1	7.7	23	34
Seat Diameter (in)	12/32	15/16		1 1/2	1 7/8

Characteristic Graph



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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Member of FCI Fluid Controls Institute, Inc. Technical Resource for Instrumentation and Fluid Control

Manufacturer
TLV CO., LTD.
Kakogawa, Japan
is approved by LRQA Ltd. to ISO 9001/14001

ISO 9001/ISO 14001