



ELECTRO-PNEUMATIC CONTROL VALVE FOR STEAM

MODEL **CV-COS** DUCTILE CAST IRON
CAST IRON, STAINLESS STEEL

POSITIONER/ACTUATOR CONTROL VALVE WITH SEPARATOR AND STEAM TRAP

Features

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 positioner/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 Iron (JIS FC250) (equivalent to GG-25)		Ductile Cast Iron (GGG40.3)		Cast Stainl. Stl. (ASTM A351 Gr.CF8) (equivalent to 1.4312)	
Connection	Flanged ASME		Flanged DIN		Flanged DIN	
Size	DN 15, 20, 25, 40	DN 50	DN 15, 20, 25, 40	DN 50	DN 15, 20, 25, 40	DN 50
Maximum Operating Pressure (barg)	13	10	16	10	16	10
Maximum Operating Temperature (°C)	200			220		
Seat Plug Sealing / Leak Rate Class (DIN EN 60 534)	Metal to Metal / Class IV					
Characteristic	Equal percentage					
Rangeability	50 : 1					

ACTUATOR

Actuator Area (cm ²)	120
Fail-safe position	Valve CLOSED (Air to open)
Bench Range (bar)	2.1 to 3.3
Electrical Input Signal (mA)	4 to 20
Load Resistance (Ω)	Approx. 300
Air Supply Pressure for Positioner (barg)	3.8
Transit Time for Rated Travel (seconds)	Approx. 3
Hysteresis (%)	< 1
Protection Class	IP 54
Ambient Temperature Range (°C)	-10 to 60
Motive Medium	Oil-free air, filtered to 5μm

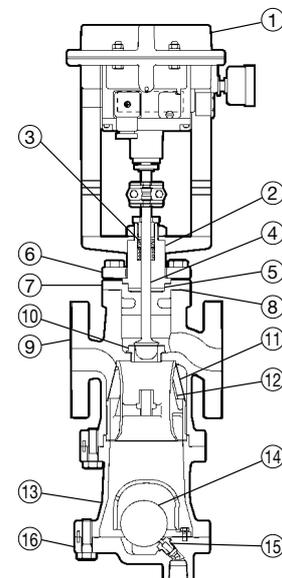
1 bar = 0.1 MPa

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.

PRESSURE SHELL DESIGN CONDITIONS (NOT OPERATING CONDITIONS):
Maximum Allowable Pressure (barg) PMA: 13 (Cast Iron), 16 (Ductile Cast Iron, Stainless Steel)
Maximum Allowable Temperature (°C) TMA: 200 (Cast Iron) 220 (Ductile Cast Iron, Stainless Steel)

No.	Description	Material	DIN*	ASTM/AISI*
①	Actuator Body	Aluminum GD-Al Si 12	—	—
②	Valve Bonnet	Carbon Steel A105	1.0460	—
③	Stuffing Box V-rings	Fluorine Resin PTFE w/ Carbon	PTFE	PTFE
④	Plug and Stem	Stainless Steel SUS304	1.4301	AISI304
⑤	Valve Bonnet Gasket	Graphite	—	—
⑥	Flange	Cast Stainl. Stl. A351 Gr.CF8	1.4312	—
⑦	Valve Bonnet Guide	Cast Stainl. Stl. A351 Gr.CF8	1.4312	—
⑧	Valve Bonnet Guide Gasket	Fluorine Resin PTFE	PTFE	PTFE
⑨	Main Body	See Valve Specification Table for available materials		
⑩	Valve Seat	Stainless Steel SUS304	1.4301	AISI304
⑪	Separator Screen	Stainless Steel SUS430/304	1.4016/1.4301	AISI430/304
⑫	Separator	Cast Stainl. Stl. A351 Gr.CF8	1.4308	—
⑬	Trap Body	Same material as Valve Body		
⑭	Float	Stainless Steel SUS316L	1.4404	AISI316L
⑮	Trap Valve Seat	—	—	—
⑯	Trap Cover	Same material as Valve Body		

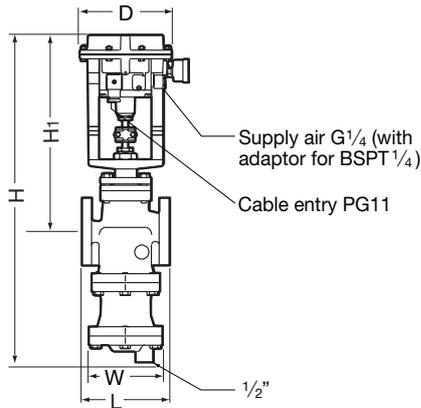
* Equivalent materials



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Dimensions

● **CV-COS Flanged**



CV-COS Flanged (mm)

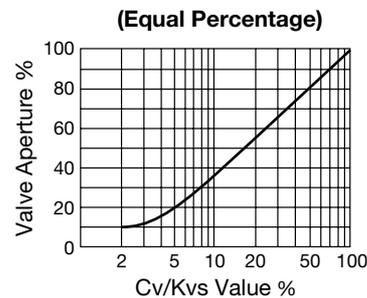
DN	L					H	H _i	W	φD	Weight* (kg)			
	DIN 2501	ASME Class											
	PN25/40	125FF	(150RF)	250RF	(300RF)								
(15)	150	—	170	—	170	574	364	105	168	18			
(20)	150	—	182	—	182					23			
25	160	176	188	188	192					602	362	150	30
40	200	209	220	222	224					647	377	165	45
50	230	255	255	260	261					711	391	195	

() No ASME standard exists for cast iron; machined to fit steel flanges
 Class 125 FF can connect to 150 RF, 250 RF can connect to 300 RF
 Other standards available, but length and weight may vary
 * Weight is for PN 25/40 (ductile cast iron)
 Flange to flange dimension of DN 15 not according to DIN standard, due to size of separator and steam trap.

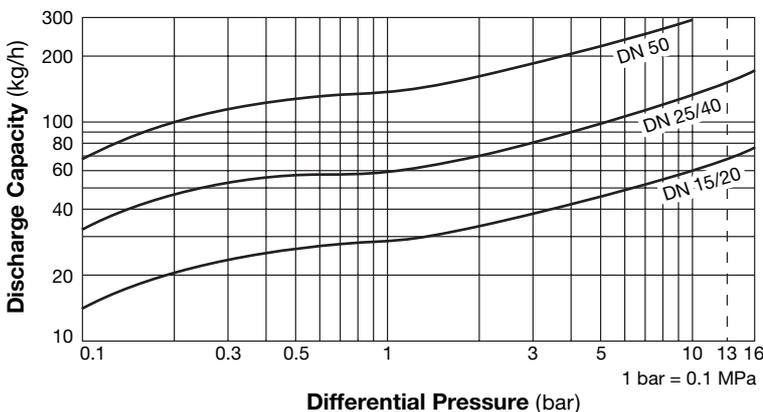
Cv & Kvs Values

DN	15	20	25	40	50
Kvs (DIN)	3.0	5.1	7.7	23	34
Cv (UK)	2.9	5.0	7.5	23	33
Cv (US)	3.5	6.0	9.0	27	40
Seat Diameter (mm)	12	24	38	48	

Characteristic Graph



Trap Discharge Capacity



1. The discharge capacity is the maximum continuous condensate discharge 6°C 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!

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

ISO 9001/ISO 14001

