



# ELECTRO-PNEUMATIC CONTROL VALVE

## MODEL CV-COS-16 DUCTILE CAST IRON STAINLESS STEEL

### POSITIONER/ACTUATOR CONTROL VALVE WITH SEPARATOR AND STEAM TRAP

#### Features

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.
8. DN 40 and DN 50 have a silencer for noise reduction.

#### Pressure Equipment Directive (PED)

Classification according to PED 2014/68/EU, fluid group 2

Size	Category	CE Marking
DN 15 to DN 25	—*	Art. 4, Sec. 3 (sound engineering practice), CE marking not allowed
DN 40, DN 50	I	with CE marking and Declaration of Conformity

\* Manufactured in accordance with sound engineering practice



#### Specifications

##### VALVE

Model		CV-COS-16									
Body Material		Ductile Cast Iron (EN 5.3103)					Cast Stainless Steel (A351 Gr.CF8M)				
Connection		Flanged PN25 DIN EN 1092-2					Flanged PN40 DIN EN 1092-2				
Size (DN)		15	20	25	40	50	15	20	25	40	50
Max. Operating Pressure (barg) PMO		21			17	11	21			17	11
Max. Operating Temperature (°C) TMO		220									
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 Fluid*		Steam									

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

1 bar = 0.1 MPa

PRESSURE SHELL DESIGN CONDITIONS (NOT OPERATING CONDITIONS): Maximum Allowable Pressure (barg) PMA: 22 (EN 5.3103), 32 (CF8M)

Maximum Allowable Temperature (°C) TMA: 220

Minimum Allowable Temperature (°C): 0

##### 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 (barg)	3.7 to 6
Ambient Temperature Range (°C)	-25 to +80
Protection Class	IP 66
Intrinsically Safe Rating (optional)	ATEX II 2G Ex ia IIC T4

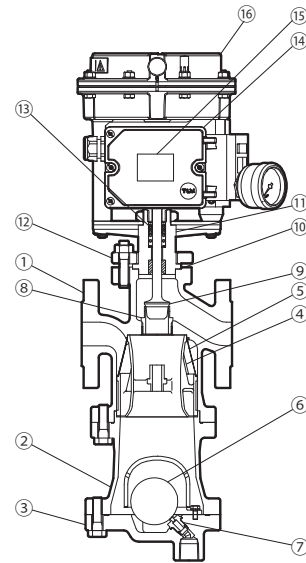


To avoid abnormal operation, accidents or serious injury, DO NOT use this product outside of the specification range. Local regulations may restrict the use of this product to below the conditions quoted.

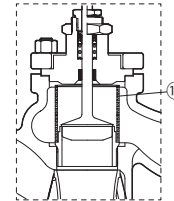
## Configuration

No.	Description	Material	DIN*	ASTM/AISI*
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	1.4312	—
⑤	Separator Screen	Stainless Steel SUS430/ SUS304	1.4016/ 1.4301	AISI430/ AISI304
⑥	Float	Stainless Steel SUS316L	1.4404	AISI316L
⑦	Trap Valve Seat	—	—	—
⑧	Valve Seat	Stainless Steel X8CrNiS18-9	1.4305	AISI303
⑨	Plug and Stem	Stainless Steel X8CrNiS18-9	1.4305	AISI303
⑩	Valve Bonnet Gasket	Graphite	—	—
⑪	Valve Bonnet	Carbon Steel A105/ Stainless Steel SUS316Ti**	1.0460/ 1.4571**	—/ A479 Type 316Ti**
⑫	Flange	Carbon Steel A105	1.0460	—
⑬	Stuffing Box V-ring Packing	Fluorine Resin PTFE with Carbon	PTFE	PTFE
⑭	Positioner Housing	Polyphthalamide PPA	—	—
⑮	Positioner Cover	Polycarbonate PC	—	—
⑯	Actuator Body	Aluminium GD-Al Si 12	—	—
⑰	Silencer	Stainless Steel	—	—

\* Equivalent materials \*\* For cast stainless steel model  
Contact TLV for available replacement parts.



DN 40, DN 50



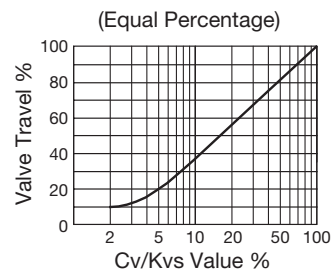
The parts configuration of sizes DN 40 and DN 50 differs slightly from that of DN 15 to DN 25.

## Cv & Kvs Values

DN	15	20	25	40	50
Kvs (DIN)	4.0 [1.6]	6.3 [2.5]	10 [4.0]	25 [10]	35 [16]
Cv (UK)	3.9 [1.6]	6.1 [2.4]	9.7 [3.9]	24 [9.7]	34 [15.5]
Cv (US)	5.0 [2.0]	7.5 [3.0]	12 [5.0]	30 [12]	40 [20]
Seat Diameter (mm)	12	24 [12]	38 [24]	48 [32]	

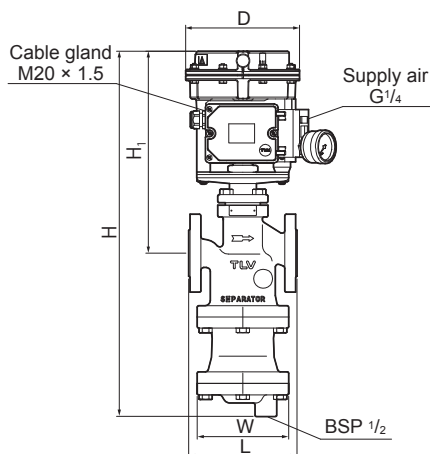
[ ] Optional

## Characteristic Graph



## Dimensions

● **CV-COS-16** Flanged



**CV-COS-16** Flanged

(mm)

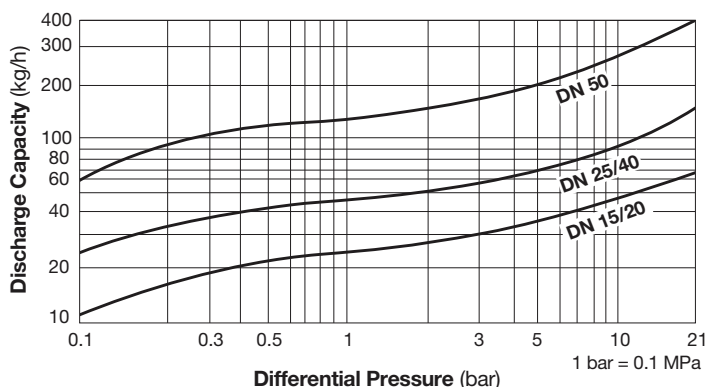
DN	L		Actuator Area (cm <sup>2</sup> )	H*	H <sub>1</sub>	W	φ D	Weight** (kg)
	DIN EN 1092-2							
	PN25	PN40						
15	130	130	120	495	292	105	168	9.5
20	150	150						10
25	160	160		535	150	14		
40	200	200	297	580	165	195	22	
50	230	230					630	35

Other standards available, but length and weight may vary

\* Approximate dimensions

\*\* Weight is for DIN PN 25 in ductile cast iron

## 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!

## Options

Body Material	Cast Steel (A216 Gr.WCB)
Intrinsically Safe Positioner	ATEX II 2G Ex ia IIC T4
Pressure Gauge for Positioner	Details on request
Electric Actuator*	Details on request

\* Manufacturer: Samson AG

Memo:

---

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

ISO 9001  
ISO 14001

