



ELECTRO-PNEUMATIC CONTROL VALVE

MODEL CT20D DUCTILE CAST IRON

COMPACT MULTI-PURPOSE CONTROL VALVE WITH ELECTRO-PNEUMATIC POSITIONER

Features

Electro-pneumatic globe valve up to DN 150 with drain plug and I/P positioner for steam and non-hazardous fluids.

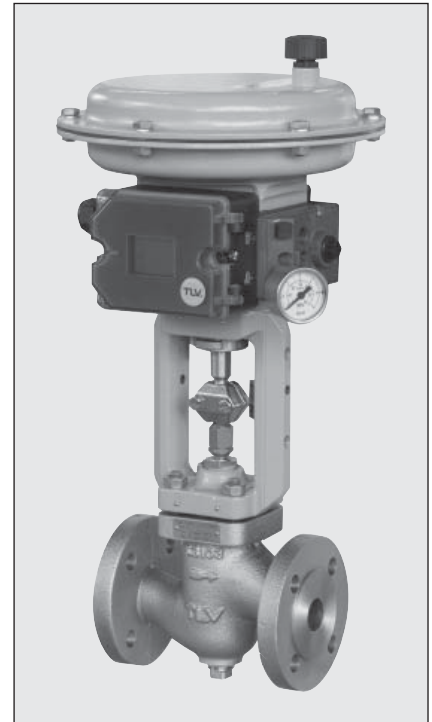
1. Digital I/P positioner and pneumatic actuator of standardized sizes in a compact configuration.
2. Rolling actuator diaphragm ensures linearity over the operating stroke and maximizes life.
3. Self-adjusting positioner features zero calibration by auto-tuning, which ensures tight shut-off and improves control during low flow.
4. Positioner LCD allows simple operation with capacitive keys and displays valve travel and error codes.
5. Self-adjusting chevron packing minimizes seal leaks, stem wear and stiction/hysteresis problems.
6. Intrinsically safe version and a wide variety of other special options are available for exceptional performance in demanding duties.
7. Size DN 40 and above utilize V-port plugs to improve control stability and provide durability resulting in a long service life.

Pressure Equipment Directive (PED)

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

Size	Category	CE Marking
DN 15 to DN 40	—*	Art. 4, Sec. 3 (sound engineering practice), CE marking not allowed
DN 50 to DN 150	I	with CE marking and Declaration of Conformity

* Manufactured in accordance with sound engineering practice



Specifications

VALVE

Model		CT20D						
Body Material		Ductile Cast Iron (EN-GJS-400-18-LT, EN 5.3103)						
Connection		Flanged PN25 DIN EN 1092-2						
Size (DN)		15, 20, 25	32	40, 50	65	80	100	150
Maximum Operating Pressure (barg) PMO		22	21	22	19.5	22	20	11.5
Maximum 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 or linear						
Rangeability		50 : 1						
Applicable Fluids**		Steam, Water, Air						

* 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
Maximum Allowable Temperature (°C) TMA: 220

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)	-20 to +80
Protection Class	IP 66
Intrinsically Safe Rating (optional)	ATEX II 2G Ex ia IIC T4

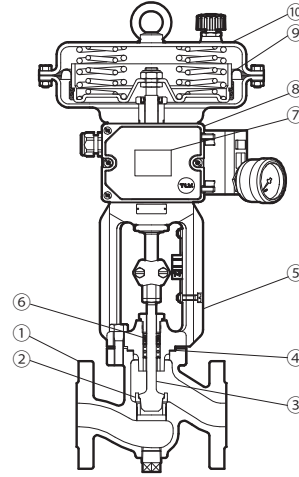


To avoid abnormal operation, accidents or serious injury, DO NOT use this product outside of the specification range. Local regulations may restrict the use of this product to below the conditions quoted.

Configuration

No.	Description	Material	DIN*	ASTM/AISI*
①	Valve Body	Ductile Cast Iron EN-GJS-400-18-LT	0.7043	A395 Gr.60-40-18
②	Valve Seat	Stainless Steel X12Cr13	1.4006	AISI410
③	Plug and Stem	Stainless Steel X2CrNiMo17-12-2/ X12Cr13**	1.4404/ 1.4006**	AISI316L/ AISI410**
④	Valve Bonnet Gasket	Graphite	—	—
⑤	Valve Bonnet	Carbon Steel A105	1.0460	—
⑥	Stuffing Box V-ring Packing	Fluorine Resin PTFE with Carbon	PTFE	PTFE
⑦	Positioner Housing	Polyphthalamide PPA	—	—
⑧	Positioner Cover	Polycarbonate PC	—	—
⑨	Rolling Diaphragm	Nitrile Rubber with Fabric Insert	NBR	NBR
⑩	Actuator Springs	Spring Carbon Steel	—	—

* Equivalent materials ** For Kvs values 25 and higher
Contact TLV for available replacement parts.



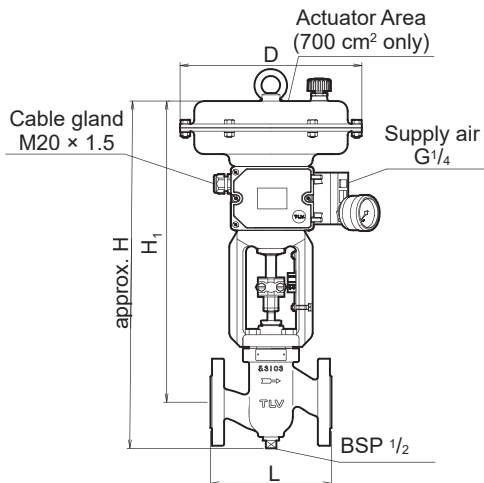
Cv & Kvs Values

Stroke (mm)	Kvs (DIN)	0.4	1	2.5	4	6.3	10	16	25	40	60	80	63	100	160	260
	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	252
	Cv (US)	0.5	1.2	3	5	7.5	12	20	30	47	70	95	75	120	190	300
	Seat Dia. (mm)	6		12		24		31	38	48	63	80	63	80	100	130
	DN	6		12		24		31	38	48	63	80	63	80	100	130
15	15	○	○	○	◎											
	20	○	○	○	○	◎										
	25	○	○	○	○	○	◎									
	32	○	○	○	○	○	○	◎								
	40	○	○	○	○	○	○	○	◎							
	50	○	○	○	○	○	○	○	○	◎						
	65									○	○	◎				
30	80								○	○	○	◎				
	100												○	○	◎	
	150												○	○	○	◎

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

Dimensions

● **CT20D** Flanged



CT20D Flanged (mm)

DN	L		Actuator Area (cm ²)	H	H ₁	φ D	Weight (kg)
	DIN EN 1092-2	PN25					
15	130		240	440	385	240	17
20	150						18
25	160			450			19
32	180			470	23		
40	200		350	490	406	280	28
50	230			495			33
65	290			545			45
80	310		700	610	497	390	62
100	350			710			80
150	480			805			135

Other standards available, but length and weight may vary

Maximum Operating Differential Pressure* PMX (Air to open)

DN	Actuator Area (cm ²)	Spring Bench Range (bar)	Min. Air Supply Pressure (barg)	Max. Differential Pressure* (bar)
15	240	0.3 - 1.1	1.5	22
20		0.6 - 2.2	2.4	
25			3.5	21
32		1.2 - 3.6**	3.8	22
40	350	1.4 - 2.3**	2.5	19.5
50		2.1 - 3.3**	3.5	
65		1.85 - 2.3**	2.5	
80	700	2.6 - 4.3**	4.5	20
100				11.5
150				

* 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
- Intrinsicly Safe Positioner
- Pressure Gauge for Positioner

* Details available on request

Memo:

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

