CLA-VAL E100-01 TYTAN

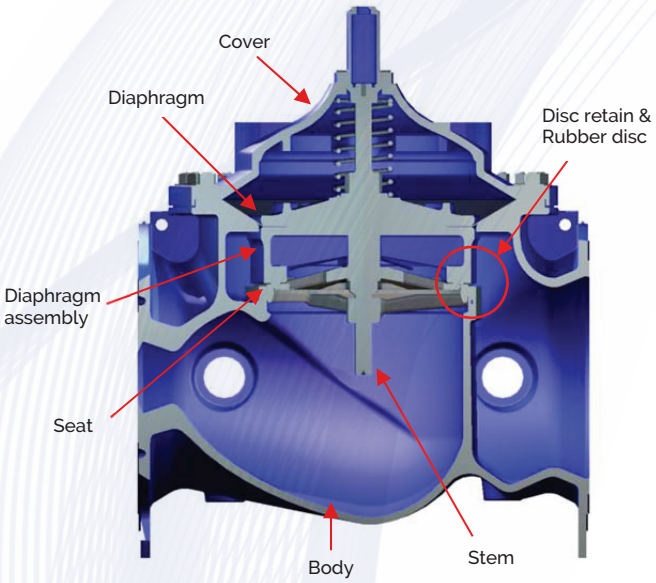
DN 600 - DN 1400

Simple, Reliable and Accurate

CLA-VAL SERIES 100 Main Function

The CLA-VAL 100-01 TYTAN Valve is a hydraulically operated, diaphragm actuated, globe pattern valve. It consists of three major components: body, diaphragm assembly and cover. The diaphragm assembly is the only moving part, guided top and bottom by a precision machined stem. The disc retainer and rubber disc form a drip-tight seal with the renewable seat when pressure is applied above the diaphragm (cover chamber).

The CLA-VAL 100-01 is the main valve used in nearly all CLA-VAL Automatic Control Valves.

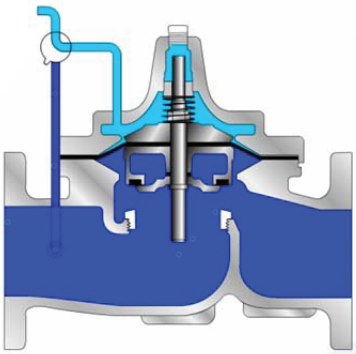


Nominale pressure:
- Standard: PN 10 and PN 16
- On request: PN 25, PN 40, ANSI 150 - 300

TYTAN norms:
- ISO and ANSI

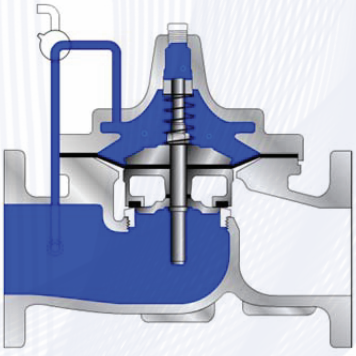
CLA-VAL 100-01 Principle of Operation

On/Off Control



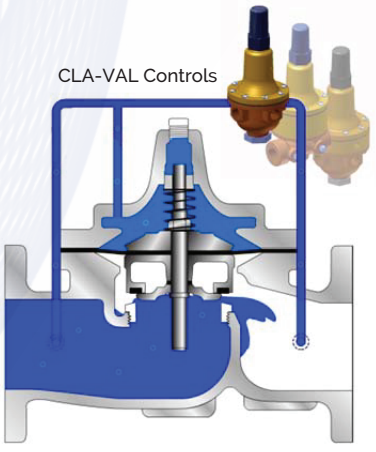
Full Open Operation:
When pressure in the cover chamber is relieved to a lower pressure zone or to atmosphere, the pressure inlet opens the valve.

On/Off Control



Tight Closing Operation:
When pressure from the inlet pressure is applied to the cover chamber, the valve closes drip-tight.

CLA-VAL Controls



Modulating Control:
The valve is pressure operating balanced. The CLA-VAL "Modulating" Controls will allow the valve to automatically compensate for pressure changes

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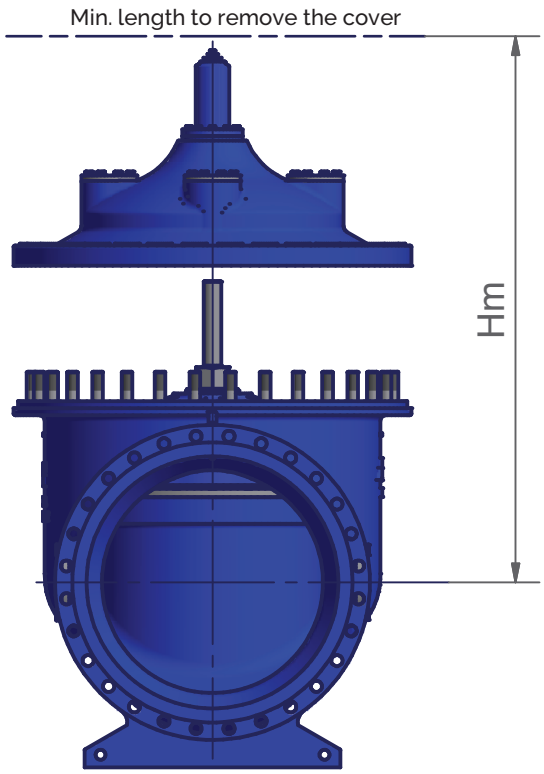
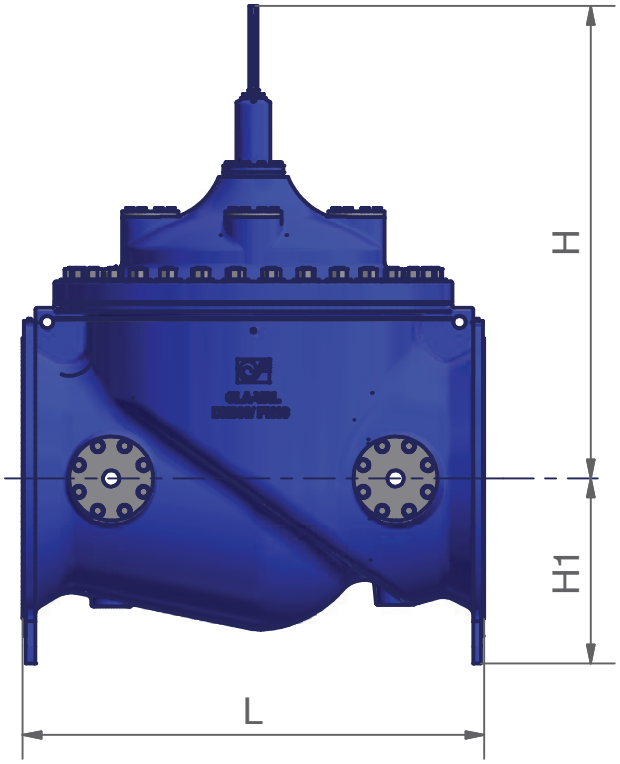
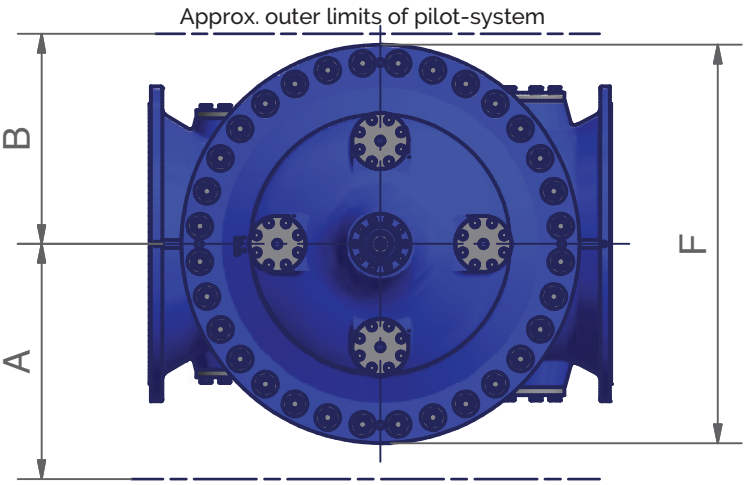


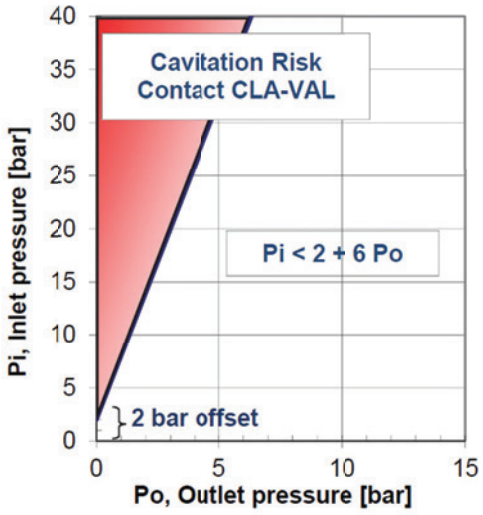




Type	DN	L [mm]	H1 (PN 10-16) [mm]	H1 (PN 25) [mm]	H [mm]	Hm [mm]	F [mm]	A [mm]	B [mm]	M [kg]	Kv [m3/h]	Cv [l/s]
TYTAN-S	DN 600 DN 700 DN 800	1450 1650 1850	430 465 543	430 490 550	1310	1685	1225	730	680	1950 2100 2350	5940 6293 6922	1650 1748 1923
TYTAN-M	DN 900 DN 1000	1650 1700	660 699	660 699	1710	1930	1425	940	750	3200 3380	9720 10440	2700 2900
TYTAN-L	DN 1200 DN 1400	2235 2500	864 965	n.a. n.a.	1830	2160	1680	1100	900	5750 6160	13680 14400	3800 4000

The Kv or Cv = m3/h or l/s @ 100 kPa (1 bar) head loss with 15° C water (valve totally open).

Cavitation / Head loss Chart

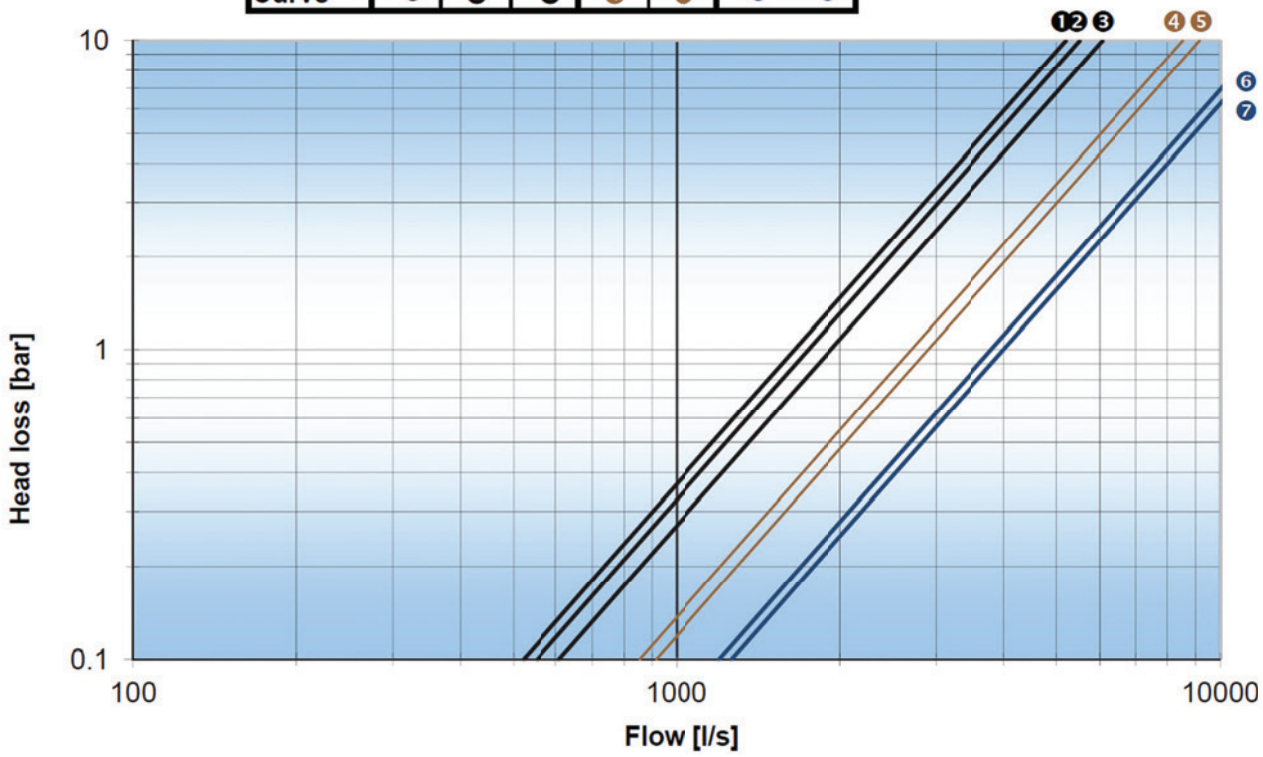


Valve sizing example

Pipe diameter : 1000 [mm]
Peak flow : 2220 [l/s]
→ **TYTAN DN 1000 [mm]**

Inlet pressure : 15 [bar]
Outlet pressure : 5 [bar]
→ **Below 'Cavitation risk"**

	TYTAN-S			TYTAN-M		TYTAN-L	
DN [mm]	600	700	800	900	1000	1200	1400
Curve	❶	❷	❸	❹	❺	❻	❼



Notes

- Diagram to be used as a guide only.
- To obtain a more accurate calculation please contact CLA-VAL

CLA-VAL E100-01 TYTAN

Quick Valve Selection

Performance Chart

	TYTAN-S			TYTAN-M		TYTAN-L			
DN [mm]	**600**	**700**	**800**	**900**	**1000**	**900**	**1000**	**1200**	**1400**
Kv (m3/h)	5940	6293	6922	9720	10440	11520	12600	13680	14400
Cv (l/s)	1650	1748	1923	2700	2900	3200	3500	3800	4000
ζ (-)	5.9	9.7	13.7	11.1	14.7	7.9	10.1	17.7	29.6
Flow (l/s)									
@ velocity 1 m/s	283	385	503	636	786	636	786	1131	1540
	to	to	to	to	to	to	to	to	to
@ velocity 3 m/s	849	1155	1509	1909	2357	1909	2357	3394	4620
Max. Flow (l/s)									
@ velocity 4 m/s	1131	1540	2011	2546	3143	2546	3143	4526	6160
Exceptional @ v = 5.5 m/s	1556	2117	2766	3500	4321	3500	4321	6223	8470

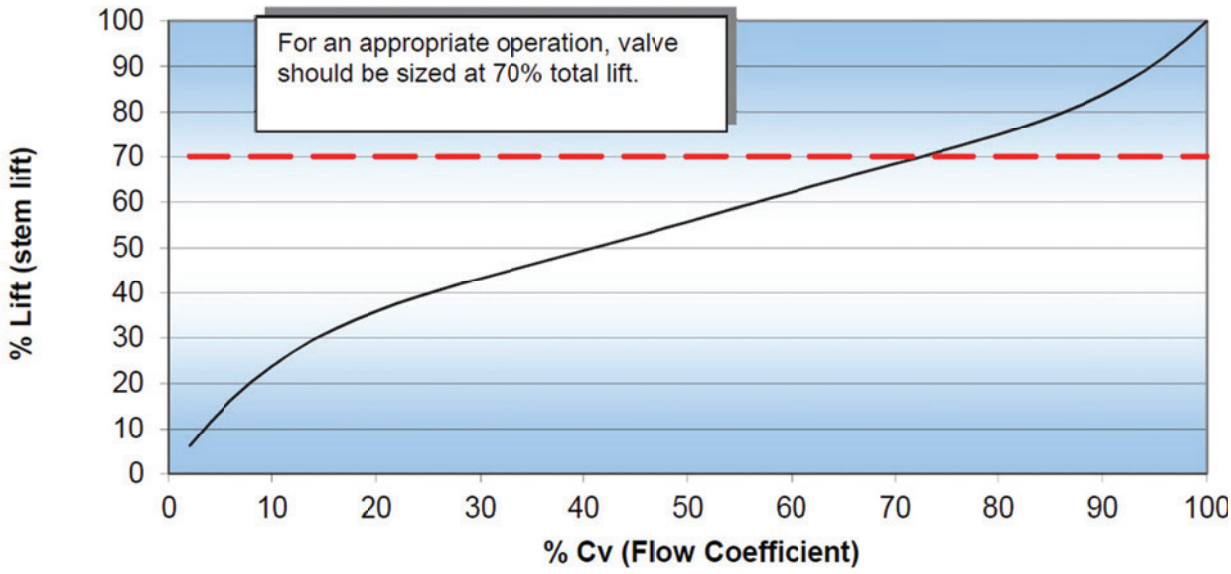
$$Q = Kv\sqrt{\Delta p}$$

$$Q = Cv\sqrt{\Delta p}$$

$$\Delta H = \zeta \frac{v^2}{2g}$$

Q : rate of flow (m3/h)
Kv : flow coefficient (m3/h)
Cv : flow coefficient (l/s)
Δp

ΔH : head loss (m)
v : average pipe velocity (m/s)
g : gravitational constant (9.81m/s2)
ζ : resistance coefficient (-)



Notes

- Kv or Cv = m3/h or l/s @ 100kPa (1 bar) head loss with 15˚C water (valve totally open).
- Minimum Opening Pressure: 0.2 [bar].
- Minimum Differential Pressure: 0.5 [bar].
- For lower opening pressure or differential pressure or more precise dimensioning curves, contact CLA-VAL.

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