

■ **Valve Information:**

-The research for innovative solutions to handle fluids under different conditions with only one valve was the most ambitious challenge of the Valpres research and development department: one trim capable to handle the control of fluids both in the liquid and in the gaseous state. Valpres "FGV" patented solution provides technical benefits and high performances in all process conditions. The FGV-L trim, (for liquids) has the feature to better manage moderate and severe cavitation while the FGV-G trim (for gas and steam) offers excellent results in reducing the noise. These standard trims are able to manage the process even under difficult conditions and severe service. Furthermore, the same basic geometry is used with both liquids and gases allowing product standardization. The principle of curved plates (Fig. 1) provides excellent throttling performance in terms of FL, sigma and XT coefficients without sacrificing the maximum capacity of the valve. Also the minimum flow rates have been carefully evaluated by technicians and engineers to ensure the best Range ability. The Valpres trim are designed to be installed both on floating and Trunnion ball valves. FGV valves can be designed full or reduced bore according to process conditions.



Fig.1

■ Main technical features

FGV valves are sized according to IEC 60534 and ISA75 international sizing equations.

Customized calculations and CFD can be adopted for special applications.

Valve sizing is performed with latest generation VALPSIZE™ 1.0 sizing tool.

- Noise is evaluated according to customized IEC and VDMA equations.
- Venturi outlet closures can be adopted to better control velocity profiles in steam/gas applications.
- Valve body construction and flanges can be manufactured according to customer specifications.

Floating and Trunnion control

ball valves include the same standard features that are implemented in the on-off valves.

- Materials: solid metal alloys can be adopted as well as weld overlays in Corrosion Resistant Alloys (CRA).

- Metal to metal seal contact is available as a standard solution, leakage rate Class V. Soft seated valves are for clean fluids and tight shut off applications.

- Special plates design and high peak frequencies allow standard noise reduction up to 20dB(A) thanks to velocity control (Fig. 2).

- Liquid Recovery Factor up to 0.96 thanks to special plates design and multiple pressure drop stage (Fig. 3).

- Real Rangeability up to 300:1 with standard trim. Customized trim can be adopted to increase the Rangeability to 500:1 and above.

- Resistors can be installed to increase valve's performances when required 30dB(A) noise reduction can be reached with combined solutions.

- High Inherent Cv value (i.e. FGV-L ND100 with Cv=500 vs globe valve ND100 with Cv=160-200: this implies that an 8" globe valve is required to compare the capacity) (Fig. 4).

- FGV's are intrinsically self-cleaning trim and they are suitable to handle 2-phase fluids, pulp, flashing liquids and dirty fluids.

- Cryogenic and high temperature design is available on request.

- FGV2 design (also patented) is for special and very severe applications.

- FGV are also available with V-Shaped ball in the following standard design (Fig. 6).

Customized V-Shape balls are available upon request to better respond to the required process conditions. Various type of liquids, gasses and steam can be controlled by these performing valves.

Soft seats are standard. Metal to metal seats are available for high temperatures and dirty or slurry conditions.

Range ability is greater than 500 (see CV-curve, Fig. 5) and this solution is well suitable if combined with FGV-L and FGV-G anti-cavitation and low-noise trims for floating and Trunnion mounted control ball valves.



Fig. 2 - CFD showing the velocity reduction inside the trim.

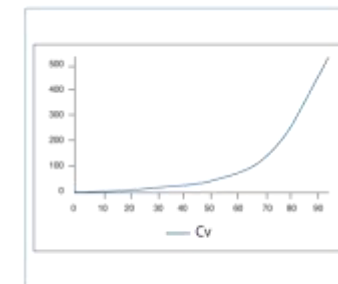


Fig. 4 - CV curve of a DN100 valve with FGV trim.

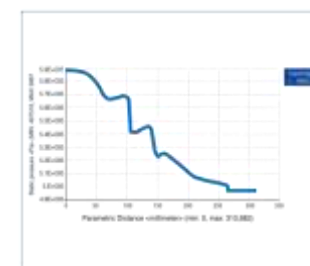


Fig. 3 - Step-wise pressure drop curve inside the body cavity.

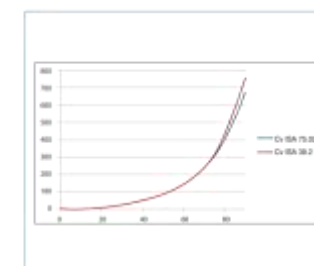


Fig. 5 - CV curve of a DN 100 valve with 60° V-ball.



Fig.6 - 90°, 60° and 30°-60° V-Shape.

■ Patterns customized on process parameters are available, as well as on pressure classes not mentioned on the present standard table.

■ Actuation package

Valbia double acting (DA) and spring return

(SR) pneumatic actuators - up to

3.300Nm/2,435Lb-in (SR) and

5.500Nm/4,060Lb-in (DA)

are available with a wide range of positioners

for precise throttling control.

Valbia electric actuators are offered for smaller

valves (up to 350Nm/260ft lb), allowing for

dependable throttling control in systems

where compressed air is not available.

For the Valbia actuators offering please check

Valbia catalogue or visit the web site

(www.valbia.it).

Trunnion			Floating			
Rating 150/300/600 (higher rating on request)			Rating 150/300 (PN 16/40)			
	L -Trim	G-Trim		L -Trim	G-Trim	V-ball
2"	•	•	1"	•	•	•
3"	•	•	1 ½"	•	•	•
4"	•	•	2"	•	•	•
6"	•	•	3"	•	•	•
8"	•	•	4"	•	•	•
10"	•	•	6"	•	•	•
12"	•	•				
14"	•	•				
16"	•	•				
18"	•	•				
20"	•	•				
24"	•	•				
30"	•	•				
36"	•	•				
42"	•	•				

