FLOWSERVE

TMCBV

Trunnion-Mounted Control Ball Valve

Experience In Motion

Introduction

The TMCBV is manufactured in Milan, Italy by Flowserve Valbart. The TMCBV merges the robust Valbart trunnion-guided design with advanced Flowserve technologies for characterized control, cavitation control, and noise attenuation. We designed the TMCBV to be a more compact, less expensive choice in services where it had been previously necessary to use a larger, more expensive valve style.

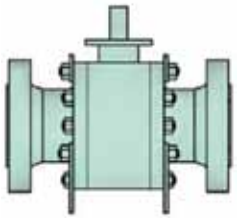
The TMCBV is designed to operate at high pressures while minimizing the torque needed to operate the valve. The seats are spring-preloaded and process energized for tight (Class IV or Class V) shutoff at any pressure. In most cases the TMCBV's capacity is greater than that of a comparable globe valve - allowing the customer to use a smaller TMCBV. The customer receives cascading savings from using a smaller, lighter valve. It requires a smaller, less expensive actuator and lighter, less expensive pipe supports. Delivery charges are reduced, and the smaller valve is easier to install in tight piping runs.

Rotary seals, precision machining, and accurate trunnion guiding, all contribute to zero external leakage ensuring that the TMCBV meets all environmental standards.

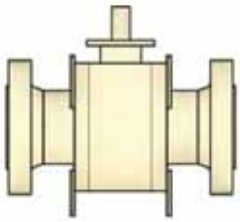
Product Range

Application	ANSI Pressure Class	Size Range
Control ball valves for normal throttling	150 – 600 900 – 1500 2500	6" – 56" 6" – 48" 6" – 24"
Control ball valves for severe service	150 and above	6" – 48"
Control ball valves for cryogenic service (-196 °C / -320 °F)	150 – 900	2" – 48"

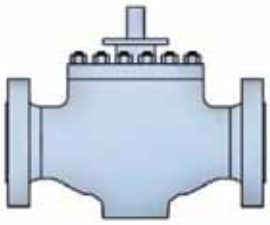
Body Styles



Side-entry



Welded body



Top entry

Difference in cost and weight

To achieve a Cv of 9,000 in a Class 300 valve body

	Line Size	Weight	Cost
Globe Valve	36"	23,148 lbs	$200,000
TMCBV	24"	8,377 lbs	$99,600

Materials

The TMCBV is offered in many alloys. Steels, Stainless, Duplex, Super Duplex or Nickel alloys are among the many available choices. Specify your material requirements in your inquiry.

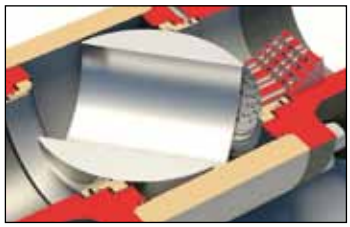
Trims

Flowserve has been the industry leader in anticavitation and noise attenuation technology for over 30 years. Now we have merged advanced Flowserve technologies with the robust, industry-leading, Valbart trunnion-guided ball valve.

We offer trims based upon Valtek's CavControl design. These trims split the flow into many tiny, low-energy jets, and direct them together into the center of the flowstream so the cavitation bubbles can collapse in free space without causing damage.

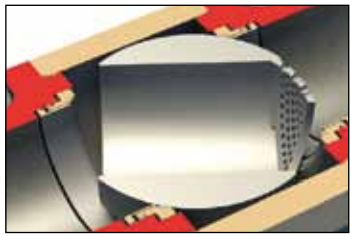
Cavitation-Control Trims

C1



C3

The first of many trim options is the **C1**. **C1** covers the entire port so that the trim protects against cavitation damage at every valve position. When more capacity is required in a given size: **C2** is partially open, characterized to suit the contrasting needs for high capacity and cavitation protection. Once the valve is adequately open, other system losses cause the Delta-P across the valve to decrease so the potential for cavitation decreases. Then, the remainder of the port can open to allow straight through, highest capacity flow.



C2

The **C3** trim is based upon Valtek's Channelstream trim which packs many stages of pressure reduction into a small volume. This is a true velocity-control, cavitation-prevention trim which presents many small, gentle pressure drops to the flow so that cavitation cannot occur. **C3** trim is characterized. When the valve is in the fully-open configuration much of the flow bypasses the CavControl element and flows through the valve with little resistance. Maximum capacity is high, and cavitation is prevented.

Noise-control trims are based on Valtek's Megastream technology.
The **N1** trim controls velocity as it stages the pressure drop across flat plates in the bore of the ball, progressively decreasing the resistance as the flow encounters fewer plates as the valve is opened. 10-20 dB attenuation can be expected. The **N2** trim is more advanced and uses multiple baffles to absorb pressure drops in steps and to acoustically prevent noise by wave-front cancellation as well as tuned resonance in high, less-audible frequencies. Attenuation of up to 30dB may be realized.

N1

N2

The **Z1** and **Z2** trims use angled plates to give a progressive, continuous characteristic while forcing the flow through multiple self-cleaning stages. Z-trims serve for cavitation control prevention and for noise attenuation up to 20dB.

Z1

Z2

The TMCBV system offers more trim choices than any other valve in the industry. Let us optimize your application with our technology.

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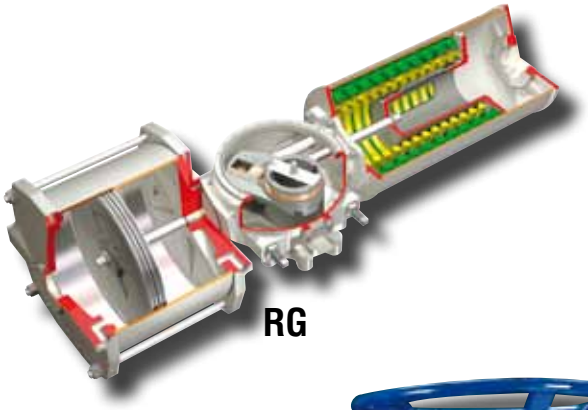
Automation Systems

Flowserve Valbart TMCBV system includes unmatched Flowserve automation to meet your needs and your specifications. We use the RG Series Scotch-yoke actuator, or if specified, the Turnex link-drive actuator. When Electric actuation is required we offer the Flowserve Limitorque MX. Custom actuation is available to meet your specifications. All of these actuators will be supplied with the appropriate precision analog or digital Flowserve positioner. Flowserve Logix digital positioners are gas-compatible. Piped vent gives zero emission. Unlike "pilot" controllers, Logix positioners may use Flowserve's ValveSight® continuous monitoring system, and are capable of being commanded to perform safety or other control functions. All components are manufactured by Flowserve Valbart. All are selected to complement each other, and Flowserve Valbart provides single-source support.



RG

Limitorque

Logix 3000 series

Turnex

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