PETROLVALVES

CONTROL BALL VALVES

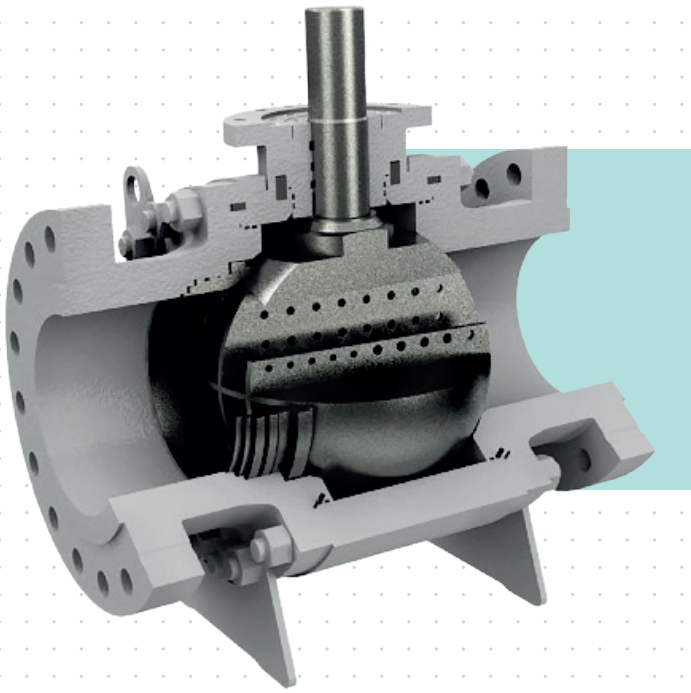
valves and actuators

introduction

PETROLVALVES is a leading manufacturer of valves for the oil and gas industry. Formed in 1956, **PETROLVALVES** has grown to a company with sales, services and manufacturing facilities throughout the world with direct presence in the United States, Norway, United Kingdom, Italy, Singapore and Australia.

The continuous investment in development of new technology has resulted in the growth and ongoing success of our company. **PETROLVALVES** line of production includes some of the most sophisticated valve products in the world with a strong focus on the development of custom or niche products designed according to customer's specific requirements.

PETROLVALVES engineering department, with their specific dedicated FEA & CFD engineers take valves sizing process to the next level by taking advantage of the latest software for flow simulation. Each valve trim component is optimized for specific application and tailor made in order to match customer requirements in terms of flow capacity and noise reduction and to avoid cavitation phenomena.



control ball valve 984

GENERAL INFORMATION

Standard service: use in natural gas, LNG, crude oil, refined products transmission lines as well as in many other general industrial and oil&gas applications with throttling purposes. For example:

- Transmission pipelines
- Pumping, compression and reinjection units
- Offshore platforms
- Onshore terminals
- Pig traps
- Measuring stations
- Surge-relief skids
- Blowdown

	DESIGN	SEAT TYPE	SEALING METAL
TRUNNION	SPLIT BODY	Metal seated	Elastomeric or Thermoplastic Seal
	THREE PIECES		
	TOP ENTRY		

RANGE OF PRODUCTION (*)	
Pressure class	150 to 2500 (*)
Size range	2" to 48 "
(*) and uprated	

(*) For non-listed dimensions contact PV's staff

control ball valves

DESIGN FEATURES

MAIN DESIGN FEATURES	SPECIAL FEATURES	ACCESSORIES
▸ API 6D ▸ ASME B16.34 ▸ Fire Safe ▸ Full/Reduced Bore ▸ Bidirectional/ Unidirectional ▸ Self Relieving ▸ Anti blow out stem ▸ Anti static device	▸ NACE Requirement ▸ Special bore ▸ Full/partial cladding ▸ Equalizing hole ▸ Extended stem ▸ Extended bonnet ▸ Ad hoc design for horizontal stem installation and or vertical pipeline installation (*) ▸ Ad hoc engineering to suit customer projects requirements (*) inclusive of any special tooling may be needed to maintain the valve in situ	Vent & Drain: ▸ Plugged ▸ Flanged ▸ With valve Stem Injection: ▸ Class 1500 standard for DN 6″ and above ▸ Class 2500 standard for DN 4″ and above Seat Injection: ▸ Class 150/300/600 upon request for DN 6″ and above ▸ Class 900/1500/2500 upon request for DN 4″ and above

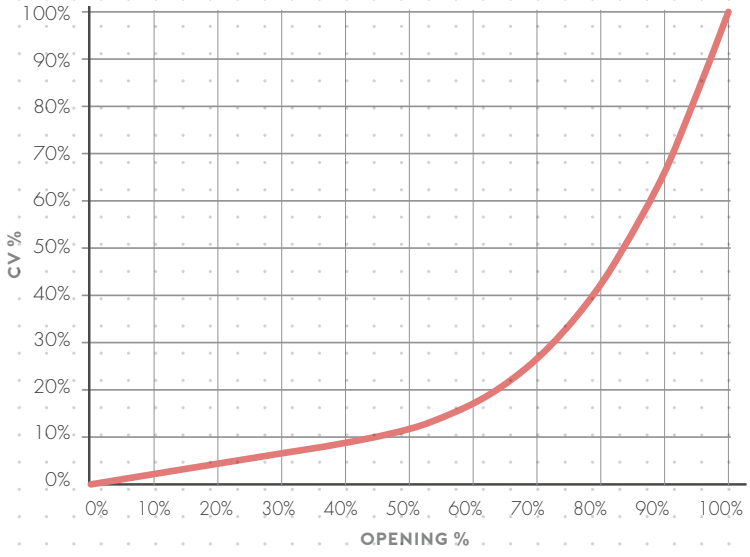
PETROLVALVES engineering department is specialized in fulfilling all customer's requirements and project specification.

control performances

GENERAL OVERVIEW

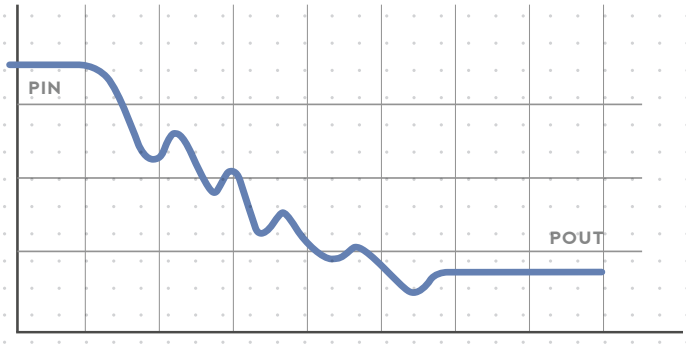
Cv curve and fluid dynamic performances of multistage trim are here summarized for a typical design; values can be adjusted and modified according to specific customer requirements.

For any request, please contact **PETROLVALVES**.



With liquid flow, an increased recovery factor (FL) improves the anti-cavitation performances.

With gas, noise reduction is increased due to a greater expansion factor.



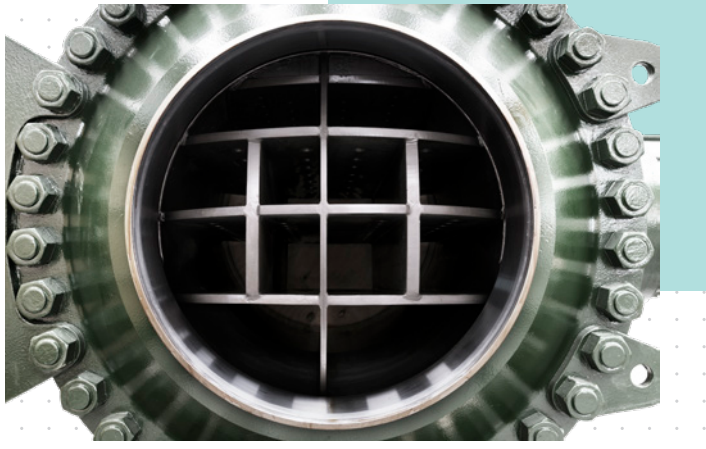
PRESSURE DROP PROFILE ACROSS THE VALVE AT INTERMEDIATE OPENING DEGREES

internal plates design

VALVE OPENING STEPS CFD SIMULATION

PETROLVALVES control are specifically design to control flows in severe service applications, both on gas and liquids. The solid design is based on extensive campaign of numerical simulations and experimental tests.

984 Series combines high flow capacity with accurate control at small flow conditions, thus increasing valve rangeability at values once unthinkable for control valves. The side entry split body geometry offers excellent structural strength and versatility of construction, while the trunnion mounted design allows to transfer the pressure load from the trim directly on valve body, to reduce actuating torques and increase lifetime of seals.

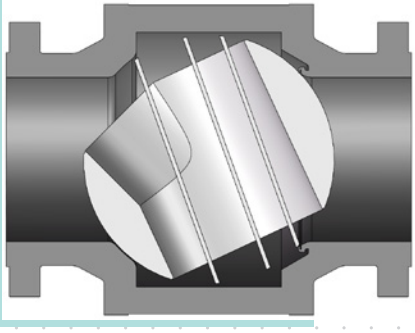


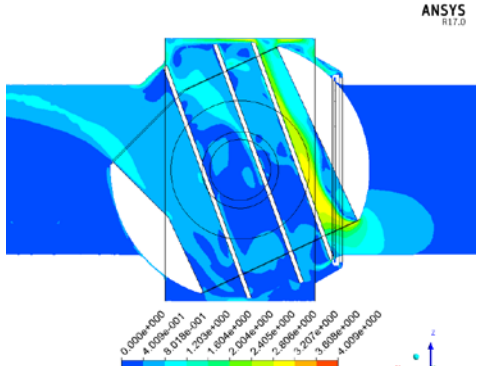
valve opening steps CFD simulation

LOW OPENINGS

The 984 Control Valve incorporates a Multistage Cage Trim inside the ball containing plates with drilled holes, with specific design for noise reduction on gas flows, and cavitation prevention in liquid flows. Trim design allows high control capability, huge rangeability and excellent and long lasting tightness. At low openings, process fluid will go through all drilled plates inside the valve trim. This feature makes possible to handle high pressure drops by controlling low CV values.

01





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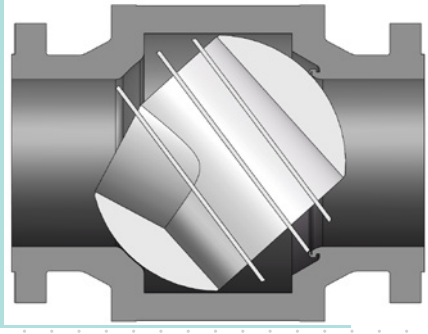
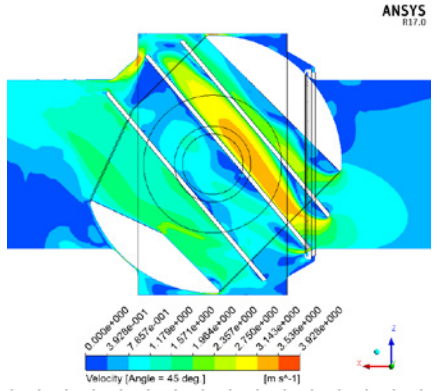




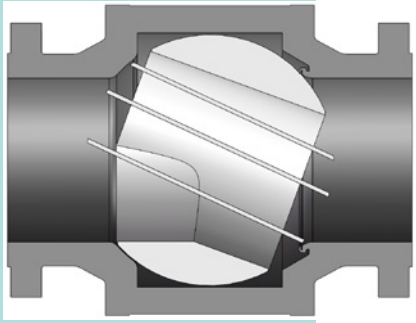
valve opening steps CFD simulation

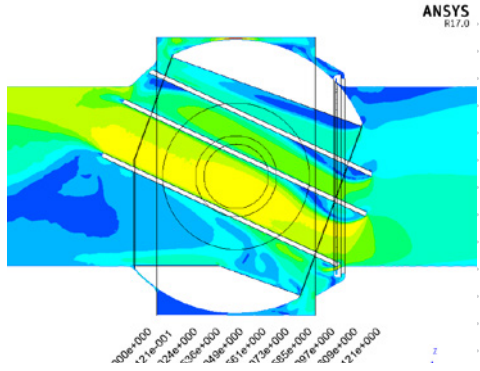
HIGH OPENINGS

By opening the valve, and reaching higher openings, fluid will progressively face a smaller resistance, in order to grant higher CVs. At these openings, process fluid will not face the resistance of drilled plates inside the valve trim.

This feature makes possible to handle lower pressure drops by controlling higher CV values.

03





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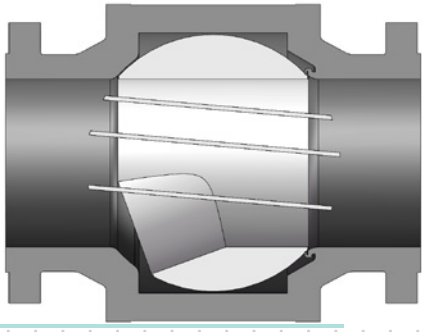
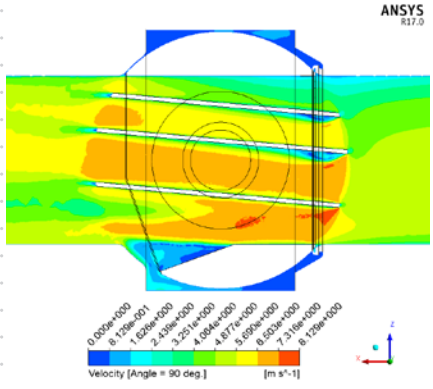
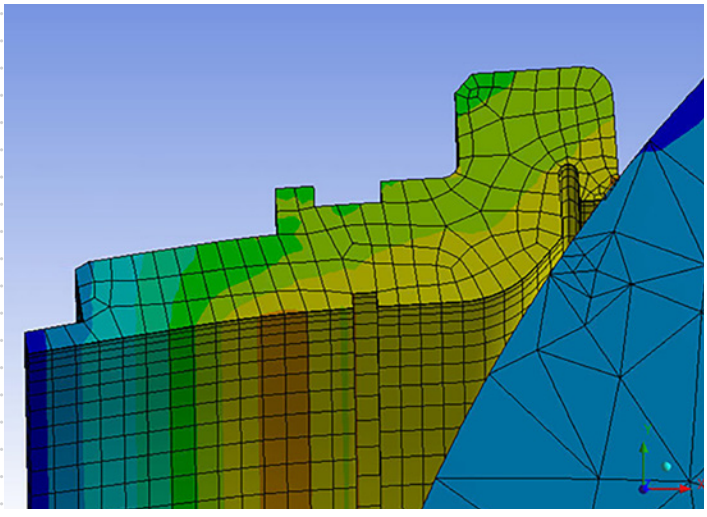


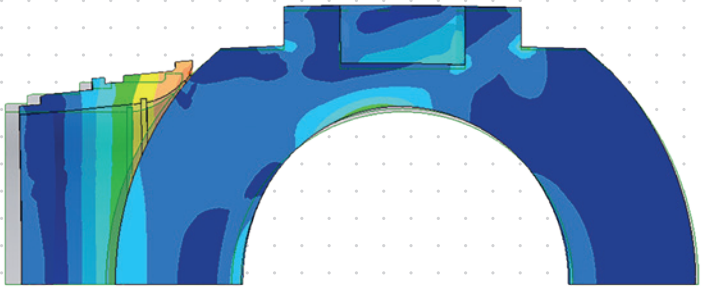


seat to ball
SEALING DESIGN

METAL SEAT

Manufactured with the help of the most updated technologies to find the optimal selection of flexibility and stiffness of both ball and seat rings. Numerical simulations are carried out to optimize any project solution.



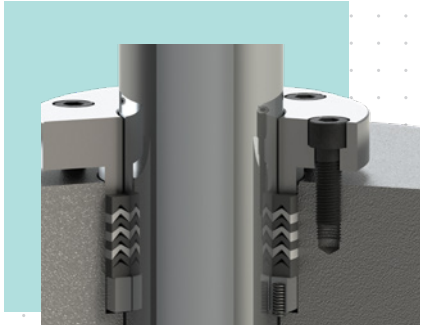


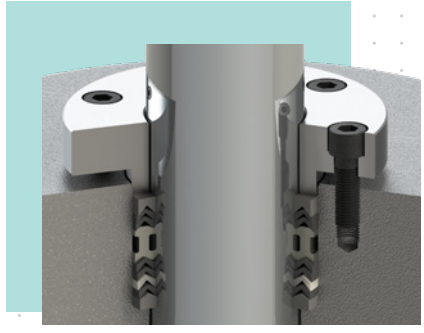
(*) For non-listed dimensions contact PV's staff

stem sealing

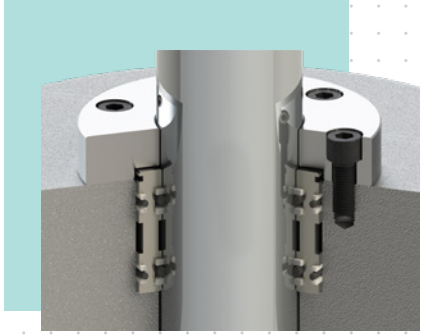
DESIGN

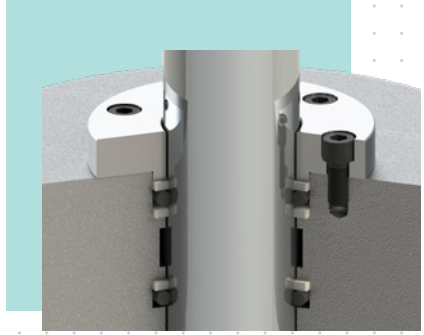
PETROLVALVES control ball valves are available with two different stem seals system; elastomer (o-rings) or PTFE Chevron with or without lantern ring.





CHEVRON STEM SEALING
PTFE chevron, with or without lantern ring.





STEM SEALING
elastomer (o-ring) type, with PTFE back up on higher classes.
Several configurations available.

(*) For non-listed dimensions contact PV's staff

material SELECTION

PETROLVALVES control ball valves have been designed for use with various combinations of materials which are selected to better suit service conditions

AVAILABLE BODY MATERIAL SELECTION	AVAILABLE OBTURATOR MATERIAL SELECTION METAL SEAT EXECUTION	AVAILABLE SEAT MATERIAL SELECTION METAL SEAT EXECUTION
▸ CS, LTCS (*) ▸ Low Alloy Steel (*) ▸ Stainless Steel ▸ Ni Alloy (*) CRA weld overlay option available	▸ Low Alloy Steel (*) ▸ Austenitic / Ferritic / Martensitic Stainless Steel ▸ Duplex /Superduplex /Ni Alloy (*) CRA weld overlay option available **HardFacing** Tungsten / Chromium carbide coating	▸ Low Alloy Steel ▸ Austenitic / Ferritic / Martensitic Stainless Steel ▸ Duplex /Superduplex / Ni Alloy **HardFacing** Tungsten / Chromium carbide coating

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PETROLVALVES

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