PETROLVALVES

PRODUCT SELECTION GUIDE

三千控制阀网
www.cv3000.com

valves and actuators

PETROLVALVES

our history

1956

PETROLVALVES is founded as a metalworking and mechanical engineering company specialized in **small size valves production**

1964

PETROLVALVES is recognized as one of the **main manufacturers of valves for Oil & Gas applications** in Europe and Middle East with a range of production including Wedge Gate Valves and Swing Check up to 42", Ball valves up to 36", Slab Gate Valves up to 36"

1968

First Top Entry Ball Valve is patented by **PETROLVALVES** and Engineering develops a wide range of "Pressure Seal" Valves and HF Valves. Production includes valves up to 56"

1970

Company enters the **International Gas Market** with dedicated products such as "Double Expanding" Gate Valves and develops special technology dedicated to Subsea Market, shortly becoming a leader in Subsea Market

1980 /90

The first metal - to - metal sealing ball valve is developed and the After Sales Department is created in order to provide clients with efficient support during the operation, installation and maintenance of all products. Company reinforces its commercial network by opening branch offices worldwide: UK, Norway, USA, Singapore, Australia

today

PETROLVALVES is a leading valves manufacturing company with more than 500 employees and a strong presence worldwide

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general range
OF PRODUCTION

AREAS OF CUSTOM PRODUCTION: refining, petrochemical, Offshore platform and Subsea, Oil & Gas production & transportation, mining/autoclave, coal gasification, power generation plants.

AREAS OF SPECIALIZATION: hydrofluoric acid (alkylation), cryogenic (LNG) and hydrogen processes, Control and HIPPS systems.

Large variety of seat and stem seals selection, including Infinity metal stem seal (**PETROLVALVES** patent).

PETROLVALVES production starts from 1/2"and extends to 110" valves with pressure ratio of ANSI 150 to 4500 and API 2000 to 20.000 and includes the use of such unique materials as Super Duplex, Duplex, 6 MO, Monel, Incoloy 825, Inconel 625, Titanium and many other alloys, as well as overlays and hardfacing are available in all materials to suit service needs. **PETROLVALVES** offers a **complete single-source integrated solution** for manual or actuated high integrity ball, check, slab gate, double expanding gate and axial flow valves, in both Subsea and Topside environments

environmental, health
AND SAFETY SYSTEM

PETROLVALVES adopts an Environmental, Health and Safety system structured in compliance with the Italian Law D. Lgs. 81/08 and certified according to the international standards ISO 14001 since 2004 and OHSAS 18001 since 2010

design
AND ENGINEERING

The in-house Engineering Department's main aim is to develop new customized and technologically advanced products matching client requirements. Research and Development activity is supported by the **latest technology design tools:** structural and fluid-dynamic numerical simulations are carried out in-house by highly skilled personnel using Ansys®, FE and CFD softwares. Customized reliability calculations are carried out to cover the safety integrity level requirements (SIL) according to IEC 61508-61511

quality
SYSTEM

System Manual and Procedures in place are in compliance with ISO 9001 standard (Ed. 2008).

PETROLVALVES Integrated Management System is certified according to ISO 9001, ISO 14001 and OHSAS 18001

statutory and regulatory certifications
FOR VALVES, ACTUATORS, FINAL ELEMENTS AND SAFETY SYSTEMS

Declarations of Conformity as per European Directives: Ped, Atex, Machinery Directive.

SAR (Safety Analysis Report) as per International Standards: IEC 61508, IEC 61511, ISO/ TR 12489, ISO 14224

API 6 AV1 Class II
VALIDATION TEST

PETROLVALVES' metal seated ball valves (both side entry and top entry body designs) and metal seated slab gate valves, have been successfully certified in accordance to the stringent requirements of API 6AV1 Class II Validation Test.

In passing the **API 6AV1 Class II Validation Test** with three valve designs (thereby providing customers several options for consideration), PetrolValves is in full compliance with the US Government and Bureau of Safety and Environmental Enforcement, BSEE regulations, employing our proven technology and providing the highest reliability (up through API 20 K) for the Gulf of Mexico and Worldwide, on all possible applications, including Boarding Valves & High Integrity Pressure Protection systems.

certification

▸ ISO 9001 ▸ ISO 14001 ▸ OHSAS 18001 ▸ API 6D ▸ API 6DSS
▸ API 6A ▸ API 600 ▸ PED ▸ ATEX ▸ NORSOK STANDARDS
▸ ACHILLES ▸ RUSSIAN CERTIFICATE

testing

STANDARD TEST AREA

Hydrotest and gas test of valves from 1/2"up to 80" and up to class API 10000

SPECIAL TEST AREA

Hydraulic tests up to 3000 Barg and Gas tests up to 1600 Barg. Valves from 1/2"up to 120" included ▸ Pressure test under simultaneous effect of stress tests (Bending moment up to 13000 kNm), Tensile test and/or Torsion al tests ▸ Verification/validation of the Sand Slurry valve design in wearing conditions ▸ Verification/ validation of the theoretical valve Cv curve ▸ Tests on Hydrofluoridic Service valves ▸ Low Temperature tests (up to -50 °C) ▸ Cryogenic tests (up to -196 °C) ▸ High Temperature tests ▸ Fire Safe Test Plant ▸ Hyperbaric test chambers to simulate water depth up to 5000 mt

project

MANAGEMENT

In-house team of project management and documentation coordinates all the orders received from clients, to deliver safe, quality and on-time materials in accordance with the contractual requirements. Main tools used include Microsoft Excel and Microsoft Project, as well as the mainframe available at Petrolvalves. Focused on customer satisfaction, the project management team is the main interface between clients and company, dealing with **everyday communications and events** as well as with meetings, conference calls and inspection of products up to the final delivery of goods and documentation.

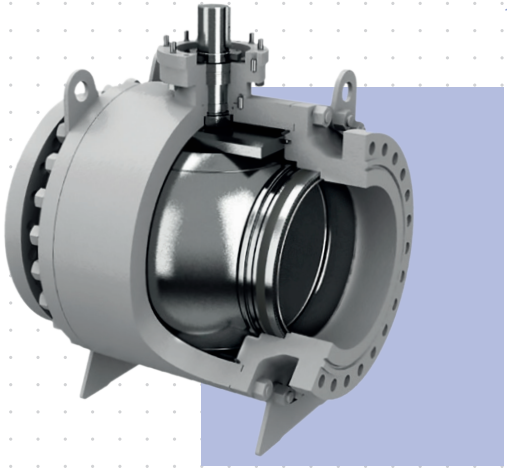
In addition, project management team acts as **focal point** with other company departments coordinating all the related activities on a project basis.

trunnion mounted
BALL VALVE: TOP ENTRY



- Fully in-line maintainable top entry design
- Through conduit, full bore, suitable for pigging operations
- Both Soft Seated or Metal Seated construction available
- Self Relieving and/or Double Piston Seats options available

trunnion mounted
BALL VALVE: SIDE ENTRY



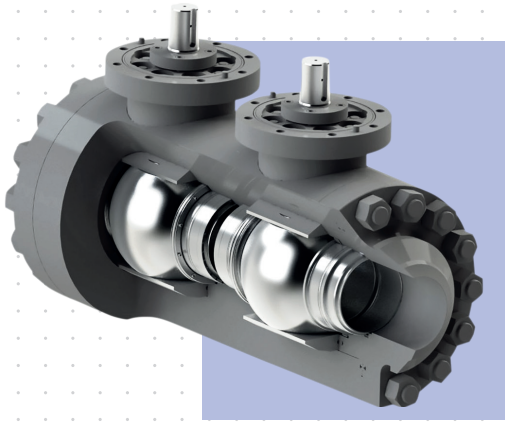
- Two or three pieces body construction; bolted joints
- Through conduit, full bore, suitable for pigging operations
- Both Soft Seated or Metal Seated construction available
- Self Relieving and/or Double Piston Seats options available

trunnion mounted
BALL VALVE: WELDED BODY



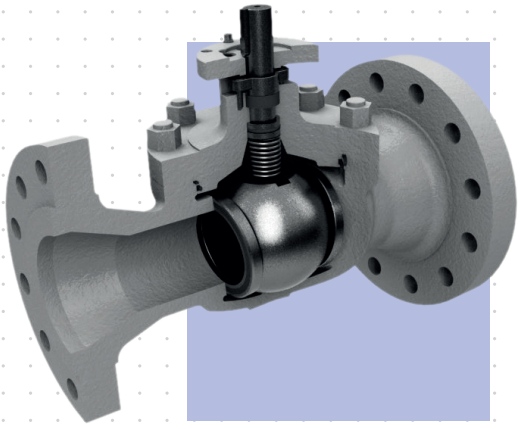
- Two or three pieces body sections butt welded together; no leak path to environment
- Through conduit, full bore, suitable for pigging operations (reduced port on request)
- Both Soft seated and Primary Metal - Secondary Soft Seated available
- Maintainable execution with full-metal-to-metal seat design available
- Self Relieving and/or Double Piston Seats options available

trunnion mounted
BALL VALVE: DB&B DEVICES



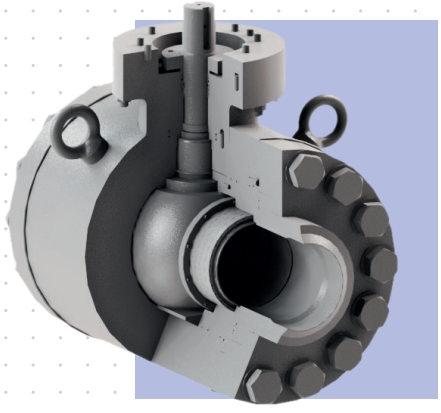
- Both Top Entry and Side Entry construction available
- Through conduit, full bore, suitable for pigging operations (reduced port on request)
- Both Soft Seated or Metal Seated construction available
- Self Relieving and/or Double Piston Seats options available

floating ball
WEDGE TYPE



- Fully in-line maintainable top entry design
- Soft/Metal Seated construction available

compact manifold
VALVE

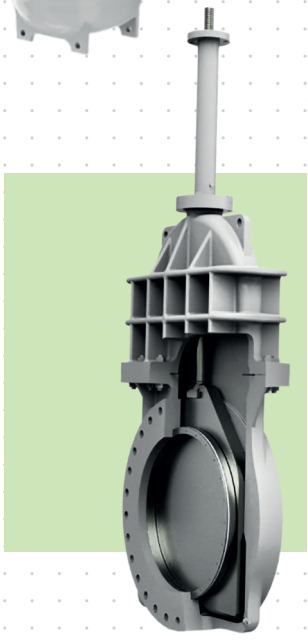


- Extremely compact end-to-end dimension
- The valve 'core piece' can be removed for maintenance, while end flanges are permanently welded to the line
- Two-trims-in-one body-design available; a check valve can also be incorporated in the body
- Through conduit, full bore, suitable for pigging operations
- Trunnion Mounted and Floating Ball design available
  - Both Soft Seated or Metal Seated construction available
  - Self Relieving or Double Piston Seats options available



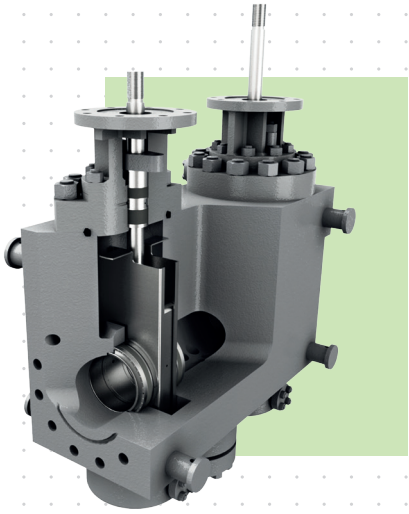
slab through conduit
GATE VALVE

- Fully in line maintainable design
- Through conduit, full bore, suitable for pigging operations
- Both Soft Seated or Metal Seated construction available
- Primary seat-to-body seal is metal-to-metal
- Double Block & Bleed
- Both Rising-Stem and Non-Rising-Stem design available
- Seat skirt option for dirty service



compact slab
GATE VALVE

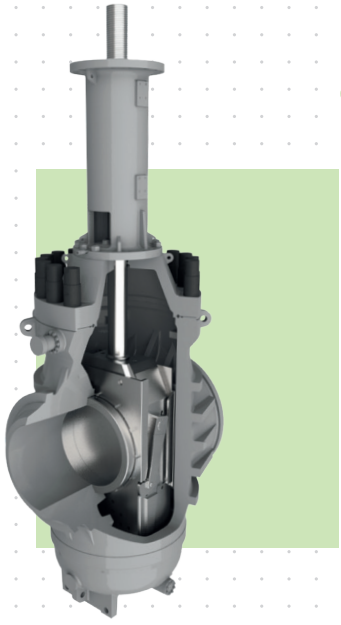
- Fully in line maintainable design
- Both Soft Seated or Metal Seated construction available
- Primary seat-to-body seal is metal-to-metal
- Double Block & Bleed
- Both Rising-Stem and Non-Rising-Stem design available



DB & B devices
BOARDING VALVES

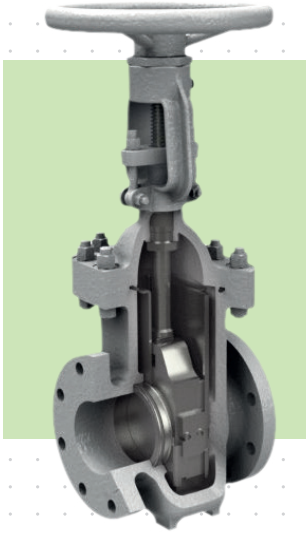
- Fully in line maintainable design
- Through conduit, full bore, suitable for pigging operations (reduced port on request)
- Both Soft Seated or Metal Seated construction available
- Primary seat-to-body-seal is metal-to-metal
- Double Block & Bleed
- Both Rising-Stem and Non-Rising-Stem design available
- Seat skirt option for dirty service

GATE valves



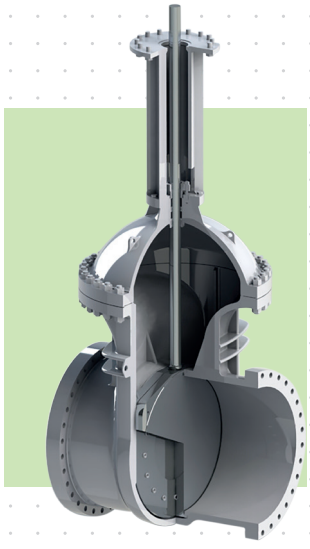
expanding gate through conduit
GATE VALVE

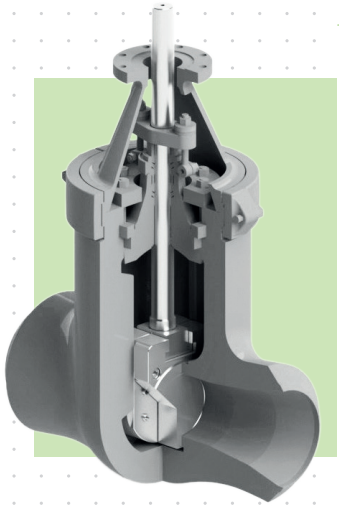
- Fully in line maintainable design
- Through conduit, full bore, negligible pressure drop, no turbulence, suitable for pigging operations
- Metal-to-Metal
- Simultaneous Bubble Tight Upstream and Downstream seat seal achieved via stem thrust
- Fully bidirectional
- Both Rising-Stem and Non-Rising-Stem design available
- Double expanding gate design



compact expanding gate
GATE VALVE

- Fully in line maintainable design
- Both Soft Seated or Metal Seated construction available
- Double Block & Bleed
- Fully bidirectional





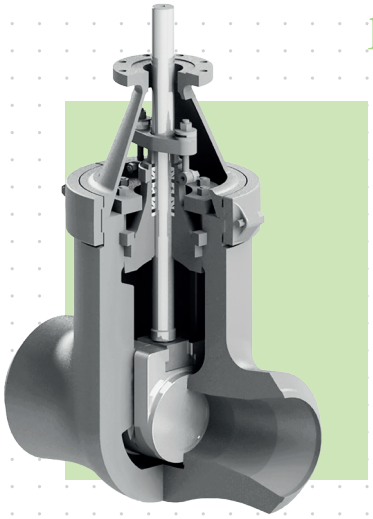
parallel slide
GATE VALVE

- Pressure seal or bolted bonnet design available
- Metal Seated



wedge gate
GATE VALVE

- Bolted bonnet
- Wedge design options (solid, flex, split) to suit service requirements
- Both metal and soft seated construction available



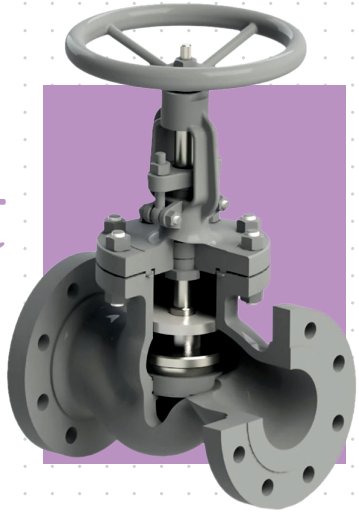
pressure seal wedge
GATE VALVE

- Pressure seal design
- Wedge design options (flex, split) to suit service requirements

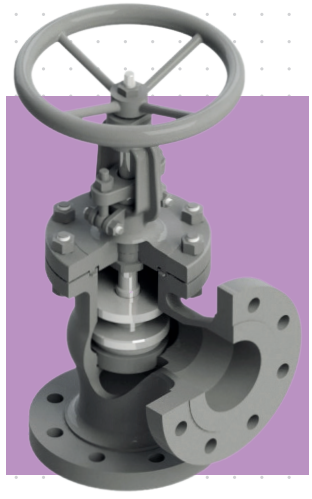
globe valve
CHARACTERISTICS

- Bolted bonnet and Pressure seal design
- Straight pattern, Angle pattern, Y pattern
- Contoured Plug options available to suit inherent valve characteristic

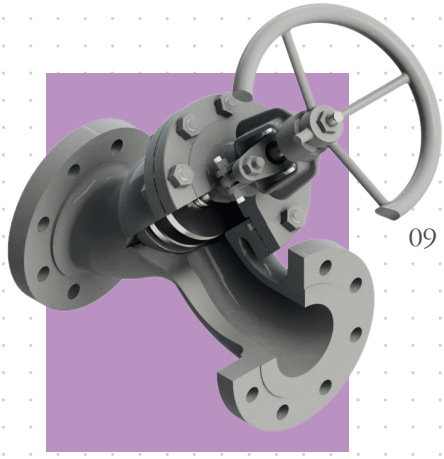
bolted bonnet



straight pattern



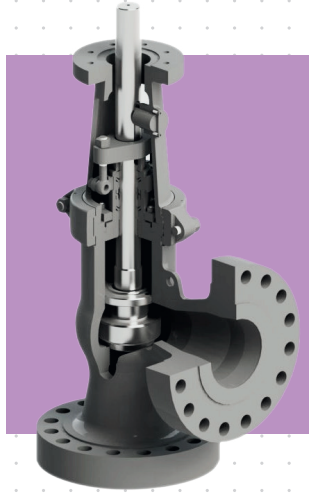
angle pattern

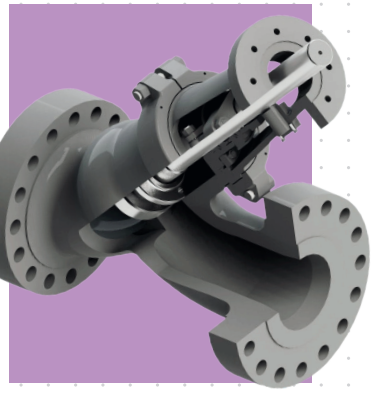


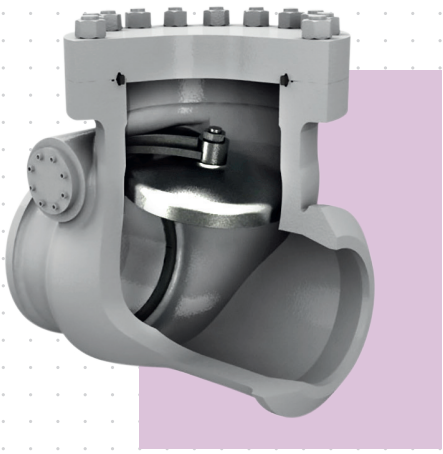
y-pattern

pressure seal









swing check
CHECK VALVE

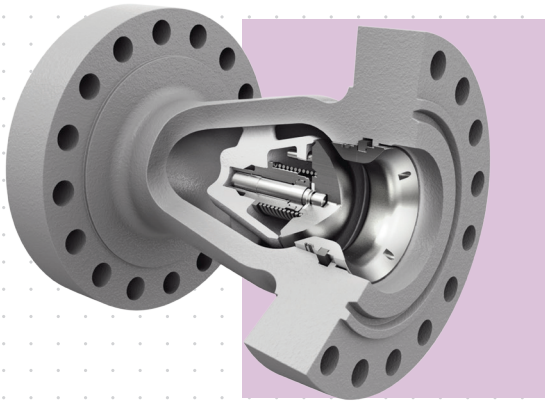
- Bolted bonnet and Pressure seal design available
- Metal and soft seated construction available
- Large variety of accessories available to suit specific service requirements (dashpot, conveyor for pigging, clapper locking device, counterweight, position indicator, etc…)



dual plate
CHECK VALVE

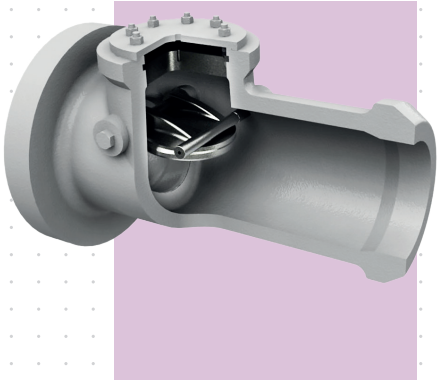
- Wafer and Monobloc (Flanged/Hub Ends) Bodies available
- Hinge pins are retained into the body (no holes through the pressure boundary)
- Lug type design option
- Metal seated and soft seated construction available
- Different spring selection is available to suit the required range of flow rates combining minimum pressure drop and no-chattering

nozzle check
CHECK VALVE



- Short pattern and long pattern (ANSI B16.10) design available
- Metal and soft seated construction available
- Valve conduit contour designed to provide maximum fluid-dynamic efficiency
- Different spring selection is available to suit the required range of flow rates, combining minimum pressure drop and no-chattering

tilting disk
CHECK VALVE



top opening



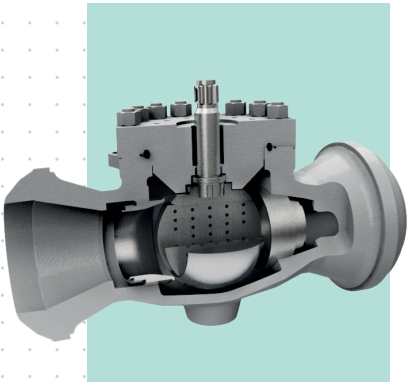
short pattern

- Top Opening and Short Pattern body constructions available
  - Top Opening can be supplied Bolted Bonnet or Pressure Seal
  - Short Pattern can be supplied Wafer Type or Monobloc (Flanged)
- Metal and soft seated construction available for bubble-tight shutoff
- Large variety of accessories available to suit specific service requirements (dashpot, clapper locking device, counterweight, position indicator, etc…)

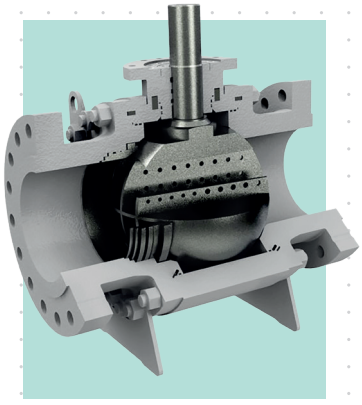
FLOW MEASUREMENT
and control valves

cage ball VALVE

Top entry - field maintainable



split body



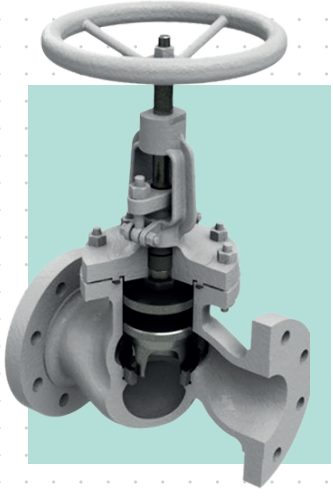
- Low dead band construction (one piece stem and ball)
- High CV value; good rangeability
- Equi % CV characteristic
- Valve cage customized to suit specific CV curve
- Low noise Cage design
- Suitable for throttling service for both gas and liquid.
- Unidirectional and bidirectional design available

choke VALVE

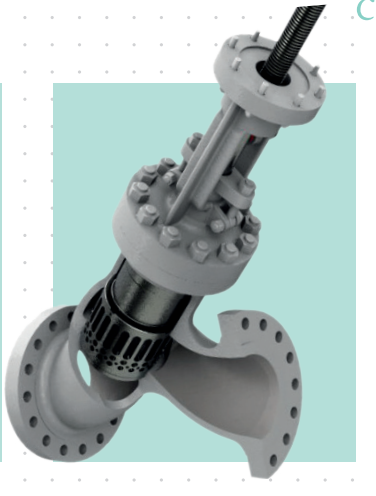


- One or two piece body construction; bolted joints
- Plug type and Cage type design available
- Low noise and anti-cavitation single or multiple Cage Trim available
- Suitable for throttling service for both gas and liquid
- Erosion resistant trim available (Solid TC Plug & Cage)
- Quick-Opening, Linear or Equi % characteristic available
- Specific customized CV curve available
- Good rangeability

control globe VALVE



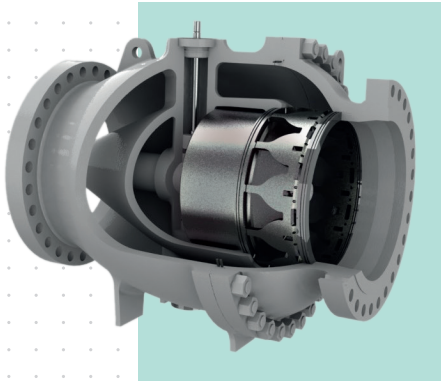
globe straight pattern



y-pattern

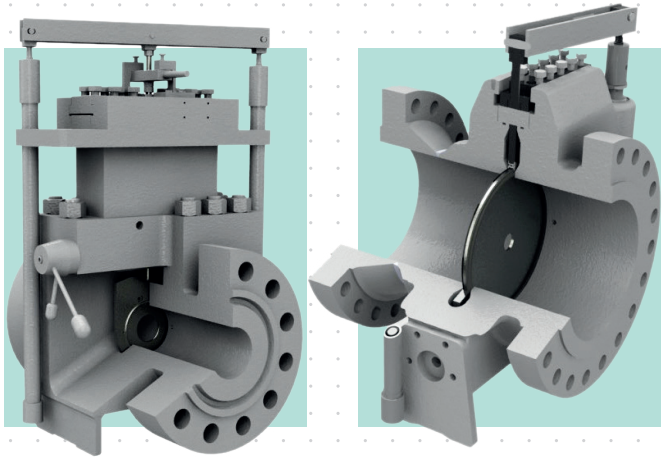
- Body options: Straight Pattern, Angle Pattern, Y-Pattern
- Plug type and Cage type design available
- Low noise and anti-cavitation single or multi Cage design available
- Suitable for throttling service for both gas and liquid
- Quick-Opening, Linear or Equi % characteristic available
- Contoured plug and/or cage to suit specific customized CV curve
- Good rangeability

axial flow
CONTROL VALVE



- Two or three pieces body construction; bolted joints
- Low noise and anti-cavitation Multiple Cage design available
- Suitable for throttling service for both gas and liquid
- Uni and bidirectional design available
- Linear or Equi % CV characteristic
- Valve cage customized to suit specific CV curve
- Good rangeability

orifice
FITTINGS

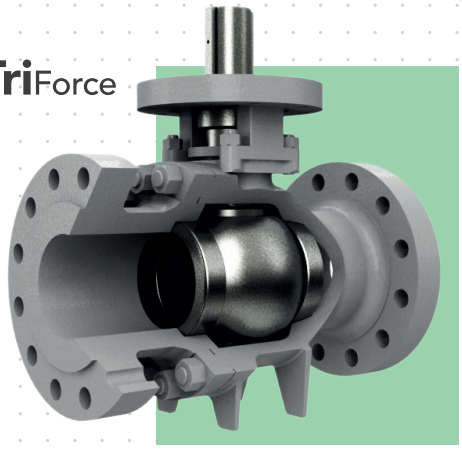


- Flow rate measurement by differential pressure reading
- Suitable for both liquid and gas service
- Calibrated disk design according to ISO/BS or API standards
- Pressure tappings available on flange, corner or D and D/2
- Flow stragihteners according to API, BS, ISO Standards can be supplied upon request
- Extremely wide selection of materials for both body and internals, including: carbon steel, low alloy steels, stainless steels, Duplex 22/25 Cr, Ni-alloys

SPECIALTY applications

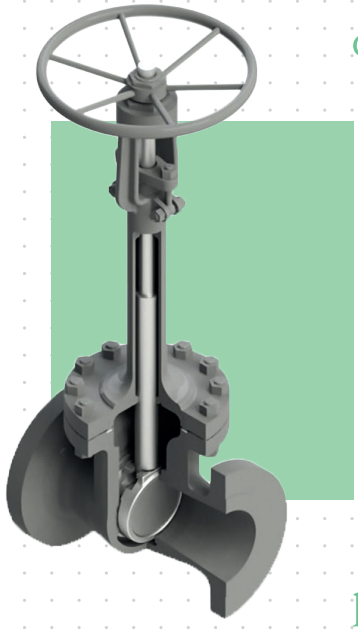
high performance metal floating
BALL VALVE

TriForce



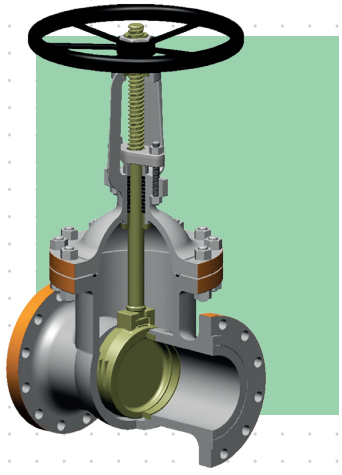
- Side Entry design
- Through conduit, full bore, (reduced port on request)
- Metal Seated construction to suit very severe service requirements; Special constructions available for extremely High and Low Temperature (Cryogenic), high erosive/abrasive, corrosive service
- Bidirectional design available

cryogenic service
VALVE



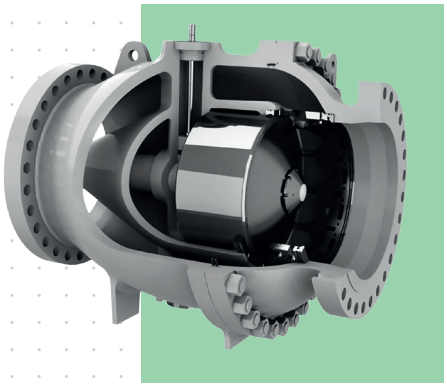
- Temperatures to minus 196 C // minus 320 F
- Gate
- Globe
- Check
- Ball
- Full product range availability to 36"
- Pressure classes to ANSI 2500

hydrofluoric acid processing
HF



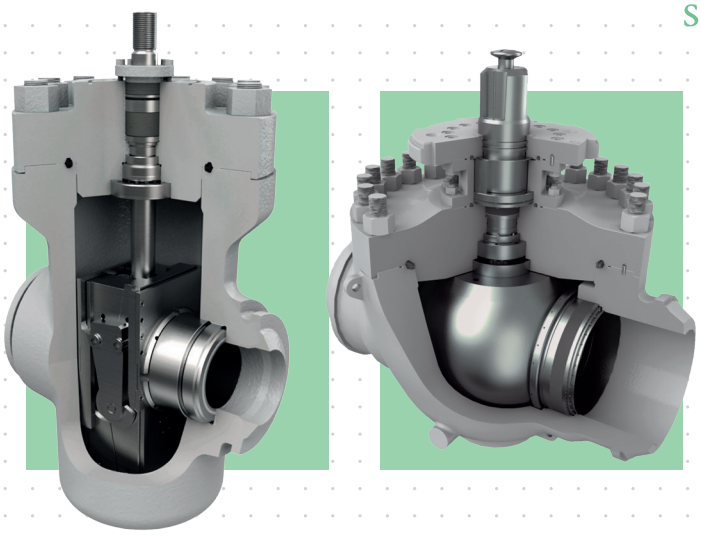
- Gate
- Globe
- Check
- **PETROLVALVES** is certified by UOP and Phillips for the complete range of sizes and pressure classes

axial
FLOW



- Both Soft Seated or Metal Seated construction available
- Valve conduit contour designed to provide maximum fluid-dynamic efficiency (low pressure drop, minimum turbulence)
- Pressure balanced plug, low stem torque demand
- Existing design for HIPPS, HOPPS applications
- Special constructions available for Low Temperature, erosive and corrosive service

subsea



- Ball - Slab Gate - Double Expanding Gate - Check - Actuators
- **PETROLVALVES** has extensive experience in engineering and producing 'fit for purpose' designs for the arduous conditions encountered with high pressures in ultra deep water depths

HIPPS system
INTEGRATOR

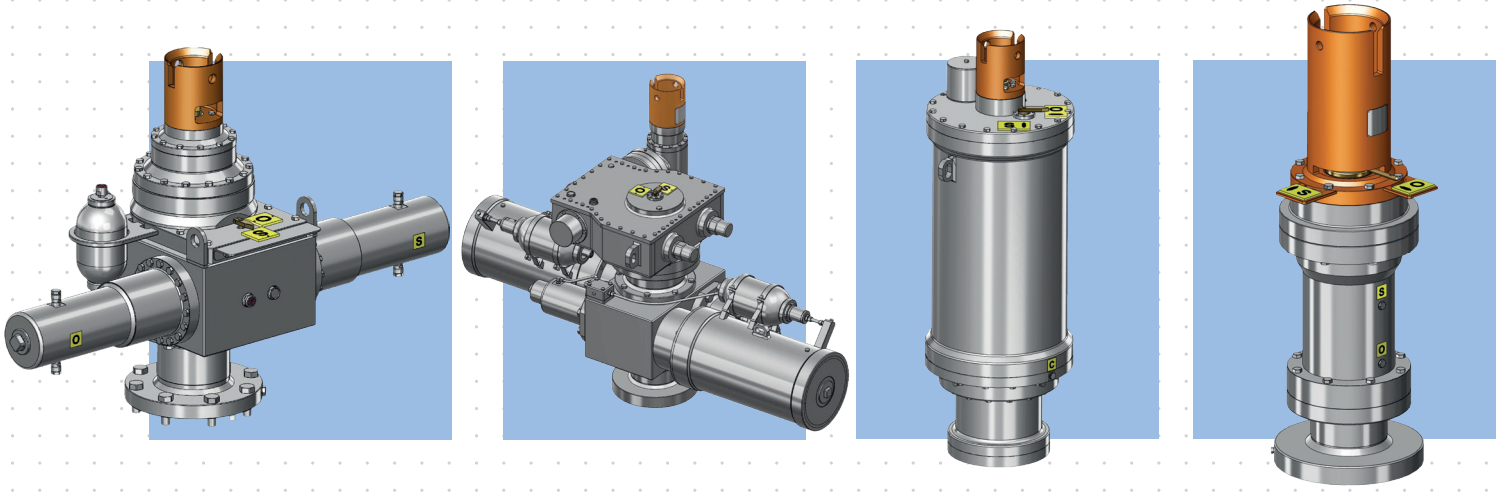
PETROLVALVES is experienced and certified to supply, as single point of source, the complete HIPPS (High Integrity Pressure Protection Systems) package comprised of:

- Valves (axial flow, slab gate, ball)
- Hydraulic or pneumatic actuators
- Hydraulic or pneumatic control systems
- Pressure transmitters
- Interlocking manifold
- Logic solver
- Fireproof protection
- SAR (Safety Analysis Report)
- SIL Certification (Safety Integrity Level)
- I-FAT (Integrated FAT test) testing completely performed in-house
- FSE (Functional Safety Engineer)

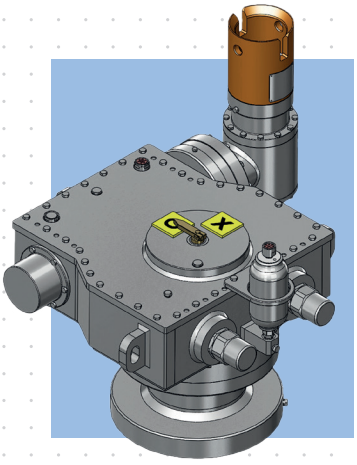
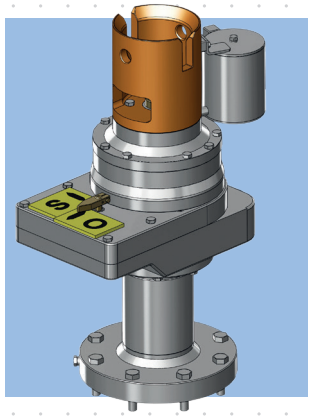
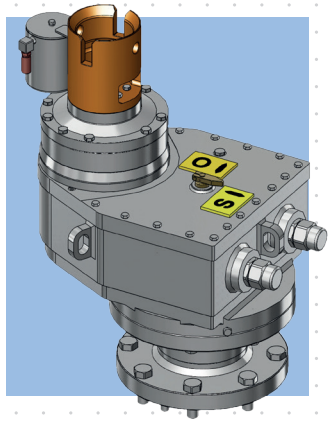
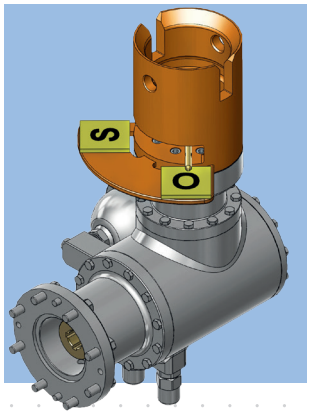
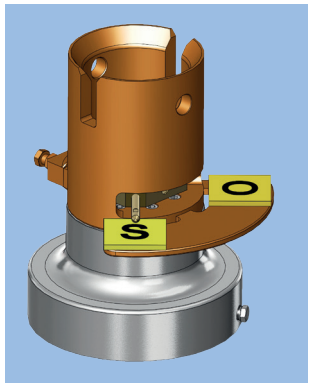
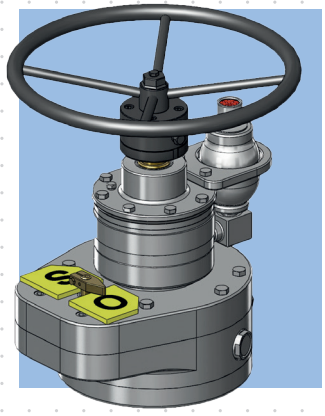
subsea
ACTUATORS

- **Tailor-made sizing** according to Customer requirements related to **safety factors**, operating pressures, operating torques and material selection
- High Strength materials for internal and torque transmitting parts and seawater resistant material for all exposed parts
- Fail-safe or Fail-as-is solution according to plant design
- Fully **compensated design for installation** at any water depth
- Special Features to allow fast valve operation (less than 2 sec)
- Actuator compact design available, specifically recommended for PLEM and manifold installation
- Valves and Actuators may be assessed up to SIL 3 according to **IEC 61508** and **IEC 61511** requirements
- Fully designed and **qualified according** to API 6A, API 6D, API 6DSS, ISO 13628-8, ISO 10423, ISO 14723
- ISO 13628-8 or tailor-made ROV interface

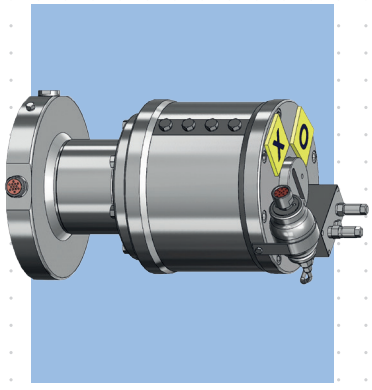
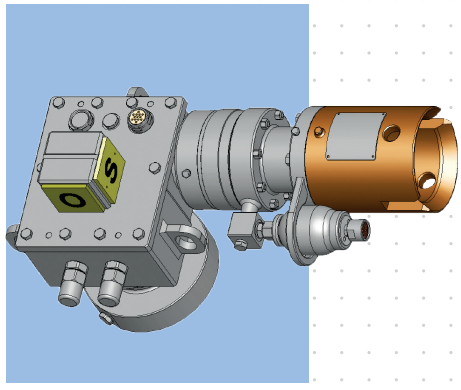
rack & pinion and helical spline hydraulic actuators
DESIGN FOR SUBSEA BALL VALVES OPERATION



mechanical operators
FOR SUBSEA BALL VALVES

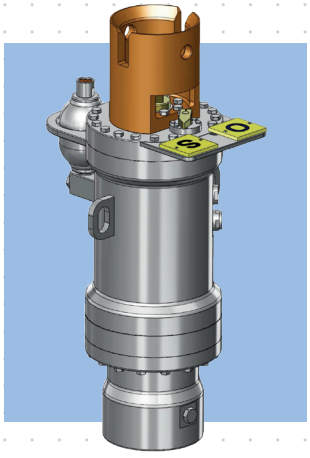







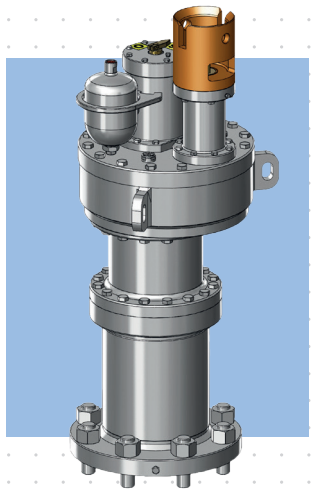
dampening systems and mechanical operator
FOR SUBSEA CHECK VALVES

linear mechanical operator

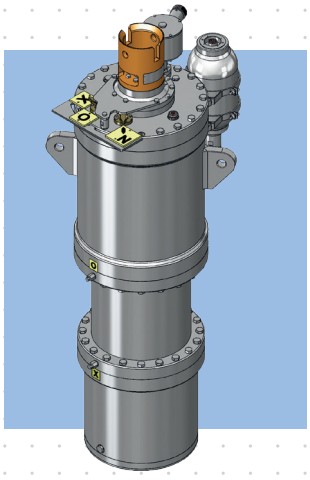
FOR SUBSEA GATE, GLOBE AND AXIAL FLOW VALVES

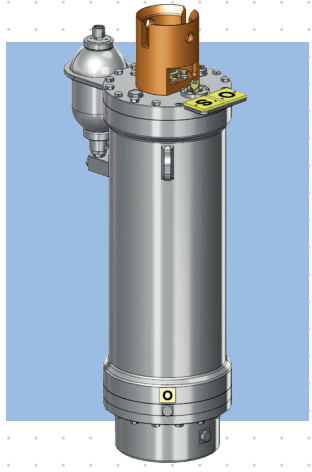




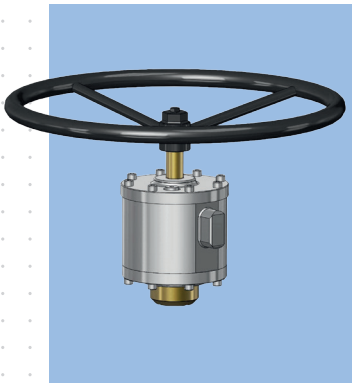
linear hydraulic actuators

FOR SUBSEA GATE, GLOBE AND AXIAL FLOW VALVES

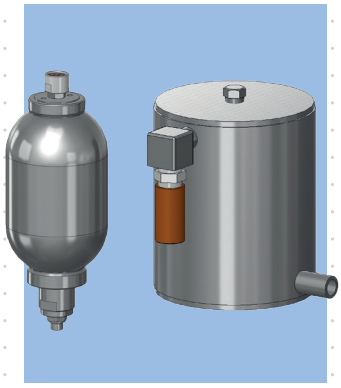




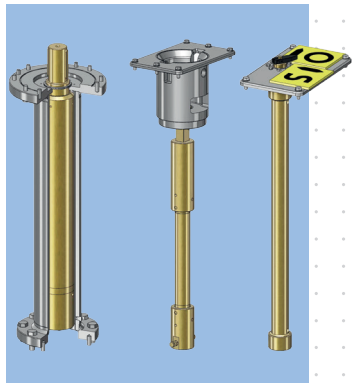
subsea
DIVER TOOLS



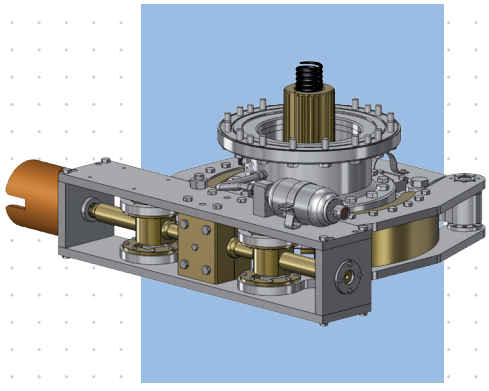
compensation
SYSTEMS

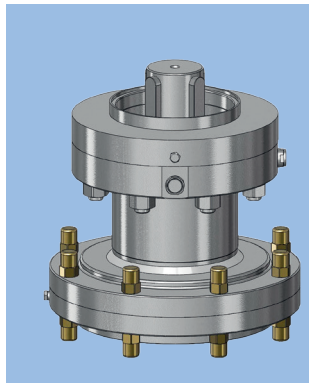


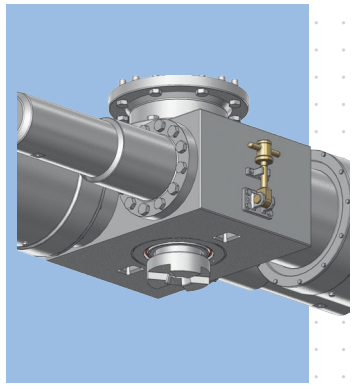
extension
SYSTEMS

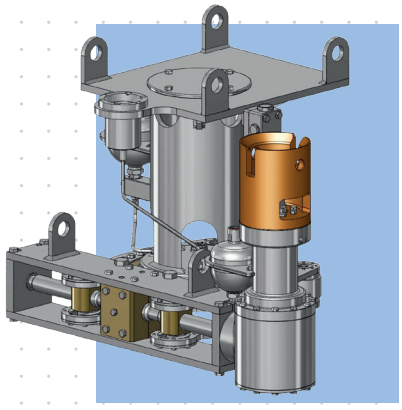


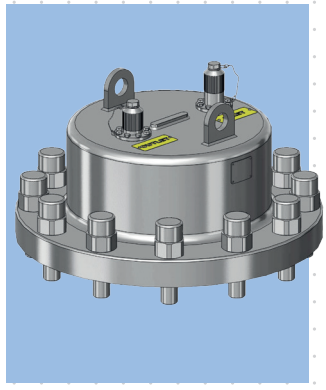
retrieval systems and stem pressure/protection caps
FOR SHALLOW AND DEEP-WATER INSTALLATION

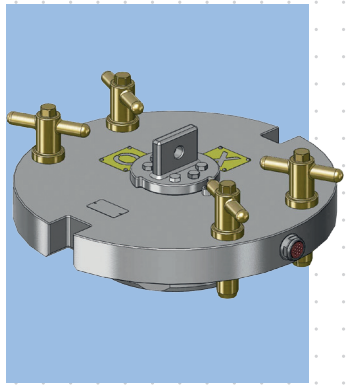




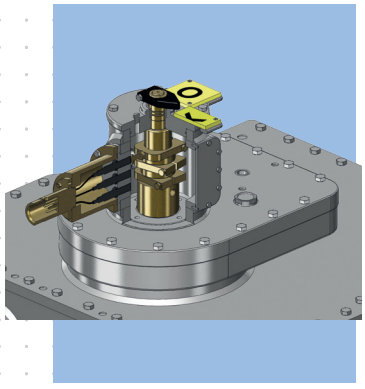


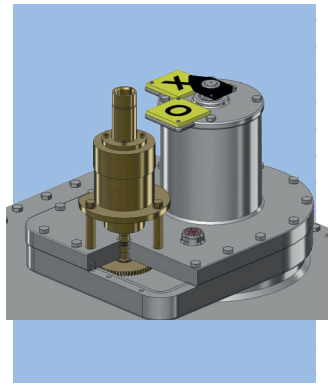


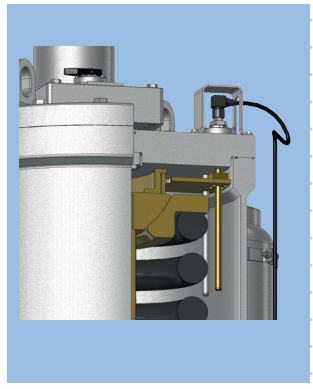




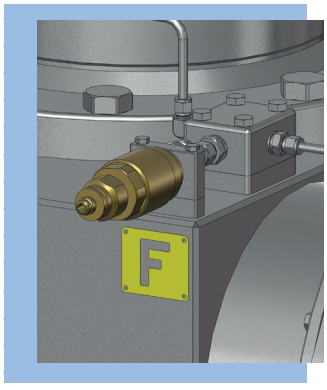
tailor-made remote position
INDICATOR SYSTEMS

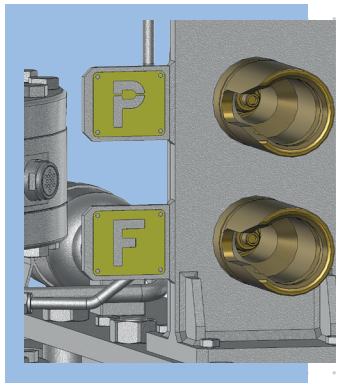






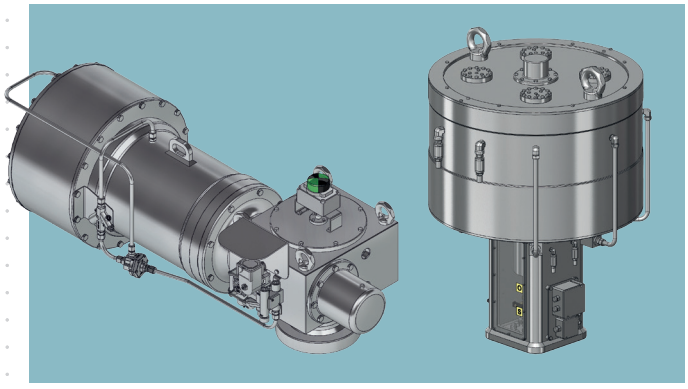
tailor-made hydraulic
ROV / DIVER CONNECTIONS



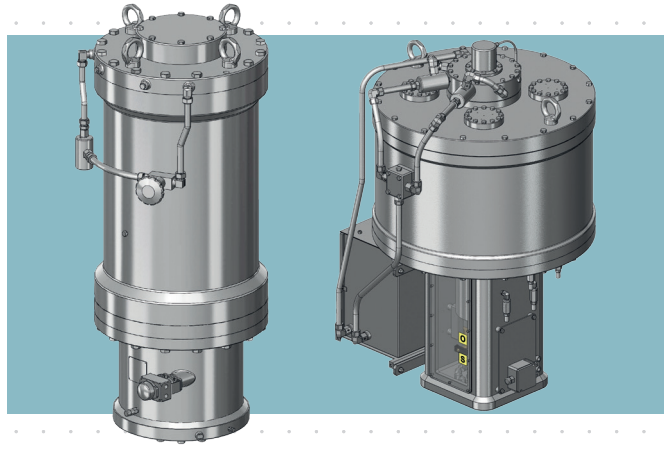


- Tailor-made sizing according to Customer requirements related to safety factors, operating pressures, operating torques and material selection
- Fail-safe or Fail-as-is solution as well as compact design according to plant design
- Valves and Actuators may be assessed up to SIL 3 according to IEC 61508 and IEC 61511 requirements
- Close loop system for fast closing operation, with quick exhaust valve and flow regulator
- **PETROLVALVES** is certified ISO 9001: 2008 as HIPPS System Integrator

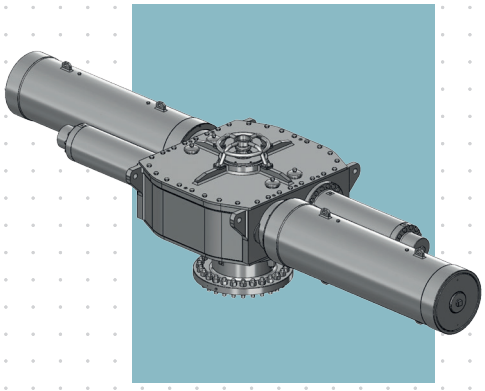
hydraulic and pneumatic
HIPPS ACTUATORS AND CONTROL SYSTEMS

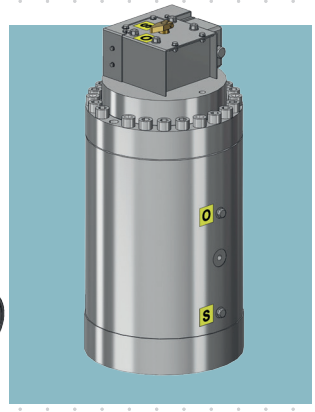


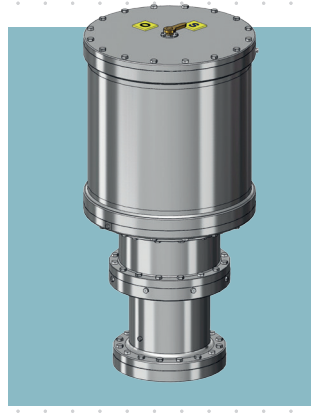
linear hydraulic (compact)
AND PNEUMATIC ACTUATORS FOR GATE GLOBE AND AXIAL FLOW VALVES



hydraulic and pneumatic quarter turn actuators
FOR TOPSIDE LOCATED VALVES







Rev 02 - June 2016 - Please visit our website www.petrolvalves.com to get the latest revision.

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