FLOWSERVE

PRESENTING THE NEW

Noble Alloy Valve™

HARDENED METAL AND SOFT SEATED BALL VALVES

For Tough Services And High Pressure Applications

System II Precision Cast Ball Valves

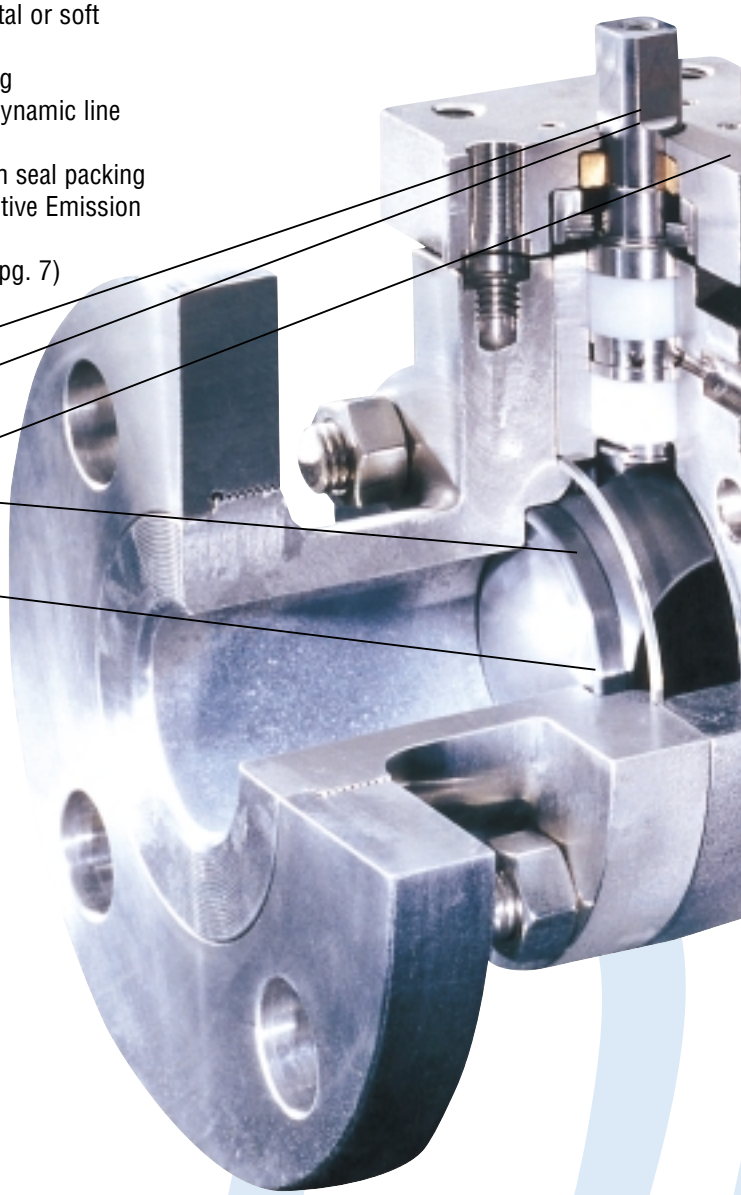
Noble Alloy Valve's line of forged and precision cast ball valves provides the ultimate in flexibility and value. With its uniquely interchangeable balls and seats, these valves can be easily retrofitted for changing service conditions. All valves meet appropriate ASME, API and MSS design and performance criteria. Models include:

- *System II™*
- *Custom (pg. 4)*
- *3D™ (pg. 5)*

High Alloy and High Performance With Cast Economy

In addition to significant cost savings compared with forged valves, System II offers these unique features:

- Fully interchangeable metal or soft seats
- Fully bi-directional seating
- Patented metal seat for dynamic line seal
- Patented live-loaded stem seal packing design with optional Fugitive Emission Monitor (FEM)
- Nobleized internals (See pg. 7)



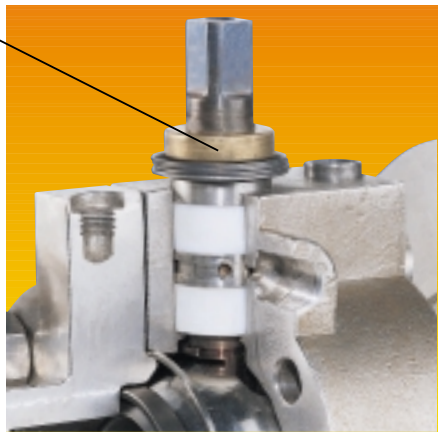
Technical Data

- ASME Class 150 to 300
- Full port
- Raised face flanged
- Sizes 1/2 in (15 mm) to 4 in (100 mm)
- Materials
  - 316SS
  - Hastelloy® C
  - Inconel®
  - Titanium
  - Zirconium
  - Others
- Metal seats meet MSS-SP-61 leak requirements
- Soft seats tested to zero leakage

® Hastelloy is a registered trademark of Haynes International
® Inconel is a registered trademark of the International Nickel Co., Inc.

External thrust bearing prevents side loading and extends seal life. No contact with media

Back-up manual adjustment



Patented Live-Loaded Stem Seal Packing Design
Totally enclosed, tamper-proof belleville springs exert a constant pressure on the packing follower. This maintains an effective seal between the stem and valve body.

V-Port Control Valves
The v-port ball may be specified in 30° and 45° configurations for either metal or soft seat valves. Existing valves may be retrofitted with a matched ball/stem assembly. Available for System II, custom and 3D models to 6 in (150 mm) sizes.

Line contact for low pressure sealing

Flexes for greater contact surface in high pressure sealing

Requires no lapping or matching

Patented Metal Seat Design
The seat is designed so the contact area between the ball and seat increases proportionally to the load.

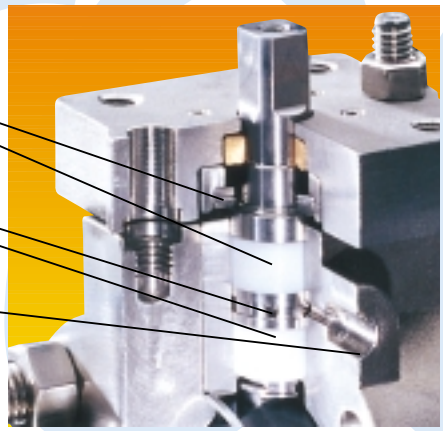
Belleville springs

Upper-secondary packing

Lantern ring

Lower-primary packing

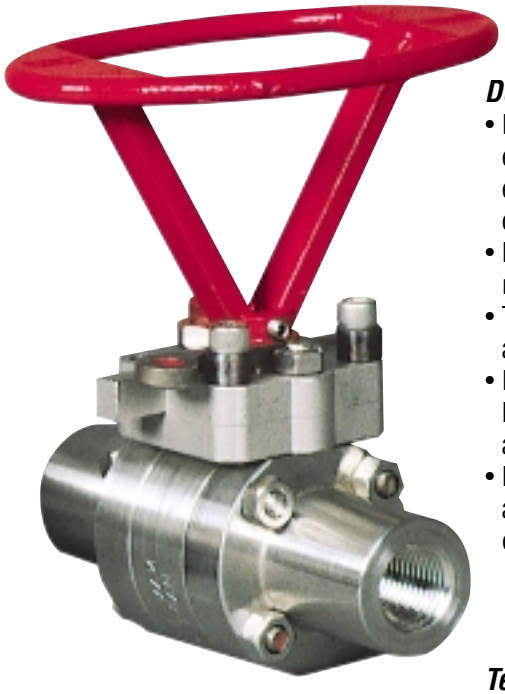
Optional communication port

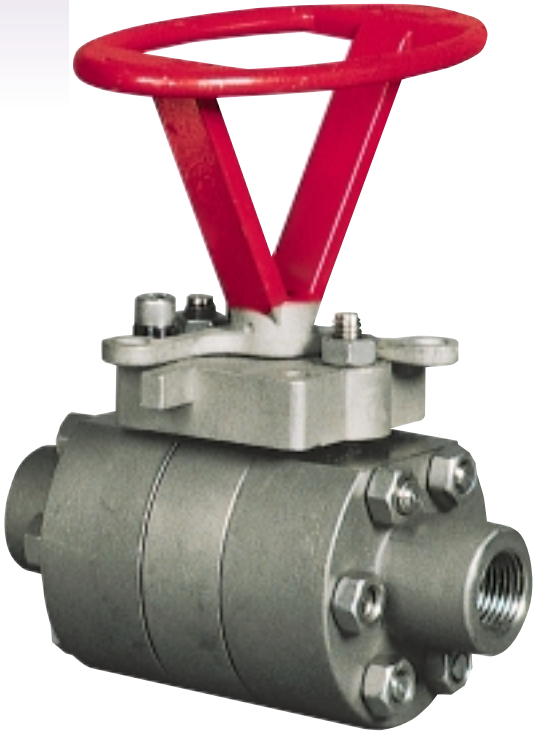


Fugitive Emission Monitor (FEM)
All System II Valves feature the FEM dual packing arrangement. It is the best choice where high integrity redundant stem sealing is required. When used with a sensing instrument, it permits detection of stem seal emissions.

3D Ball Valves

Noble Alloy Valve's line of 3D ball valve products provide completely reliable performance in high pressure services, metal and soft seated applications in a wide variety of demanding chemical processes.





Design Features

- Patented conical metal seating eliminates matched lapped sets, enabling virtually unlimited trim combinations including soft seats
- Bi-directional design allows easy reversal of flow direction
- Three-piece body construction accommodates in-line service or retrofit
- Patented live-loaded packing with back-up adjustment is standard on all 3D valves
- High end alloy valve models are available in high quality investment cast or forged/100% machined bodies

Technical Data

Small Bore Alloy Valves

- ASME Class 150 through 1500
- Full port
- Buttweld, socketweld and threaded end connections
- Sizes: 1/4 in (6 mm), 3/8 in (10 mm), 1/2 in (15 mm), 3/4 in (20 mm) and 1 in (25 mm)
- Materials: Aluminum, Alloy 20, duplex SS, Hastelloy, Inconel, nickel, tantalum, titanium, zirconium and many others

High End Alloy Valves

- ASME Class 150 to 1500
- Full port
- Nobleized surface hardened ball and stems
- Buttweld, socketweld and threaded end connections
- Sizes: 1/4 in (6 mm) to 4 in (100 mm)
- Materials: Aluminum, Alloy 20, duplex SS, Hastelloy, Inconel, nickel, tantalum, titanium, zirconium and many others

Titanium Valves

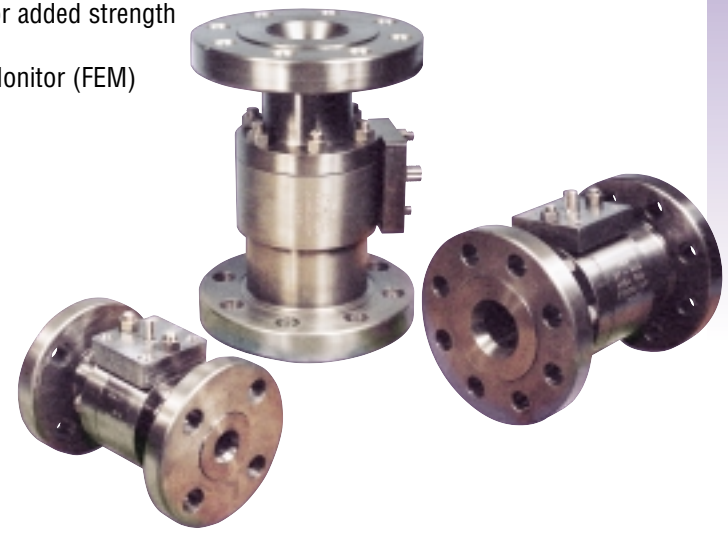
- ASME Class 150 through 1500
- Full port
- Socketweld and threaded end connections
- Sizes: 1/4 in (6 mm), 3/8 in (10 mm), 1/2 in (15 mm), 3/4 in (20 mm) and 1 in (25 mm)

Custom Ball Valves

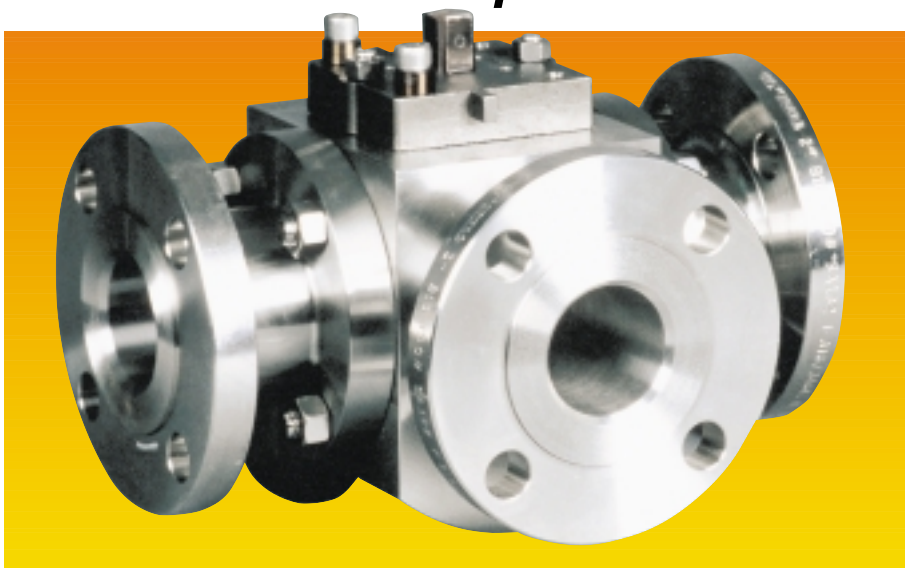
Design Features
- Severe corrosive and erosive services
- Unlimited body and trim combinations
- End connections and flange sizes can be mixed
- Metal-to-metal or soft seats
- Ball and seats require no lapping/matched sets for easy field repair
- 100% machined from any forged material
- Composite flange for added strength in higher alloys
- Fugitive Emission Monitor (FEM) package available

Technical Data
- ASME Class 150 through 1500
- Full or regular port
- Raised face flanged, ring-type joint, buttweld, socketweld and threaded end connections in any combination
- Sizes: 1/2 in (15 mm) to18 in (450 mm)
- Materials: Aluminum, Alloy 20, duplex SS, Hastelloy, Inconel, nickel Nitronic®, tantalum, titanium, Ultimet®, zirconium and many more

Noble Alloy Valve's line of custom ball valves are made to order, according to user specification, with a virtually unlimited choice of materials and configurations.



Multiport Ball Valves



Design Features
Include patented conical metal seats, patented live-loaded stem seal packing, Nobleized surface hardened balls and metal seats and all design features common to Noble Alloy Valves

Technical Data
- ASME Class 150 to 1500
- Full port
- Raised face flanged, buttweld, socketweld and threaded end connections
- Sizes: 1/2 in (15 mm) to 8 in (200 mm)
- Materials: Hastelloy, Inconel, titanium, zirconium and many more

® Nitronic is a registered trademark of Armco Inc.
® Ultimet is a registered trademark of Haynes International

Check Valves

The same quality and performance found in Noble Alloy Valves' ball valves can be enjoyed with its swing check and in-line piston check valves… and through ASME Class 1500.

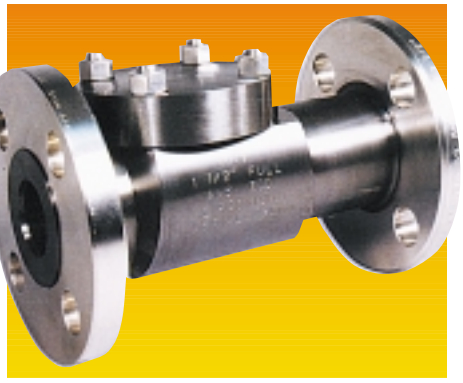
Condor™ Piston Check Valve

Design Features

- Patented constant area design for full bore flow area and assurance of low pressure loss through the valve
- Short stroke and low spring force for quick, positive closure and minimal flow reversal
- Unique double guided piston for total stability even in dual phase conditions
- Simple, rugged design – light, compact, easy installation
- Installation in any position to optimize piping flexibility
- Completely field serviceable without special tools
- Replaceable metal or soft seats

Technical Data

- ASME Class 150 through 1500
- Sizes: 1/2 in (15 mm) to 8 in (200 mm) and 10 in (250 mm) for Class 150
- Materials: Carbon, 316SS (standard). Other materials include those for swing check valve plus ceramic for some applications



Swing Check Valve

Design Features

- Disc fully clears waterway for full flow capability
- No possibility of disc separation, loss of parts downstream with riveted disc assembly
- Disc hinge pin not in flow path and designed with no external leak path
- Choice of metal-to-metal or soft seats
  - Integral seats; no welded-in seal rings
  - Flat seats; no angles or radius sealing
- Bolted bonnet for fast service access
- Only two internal parts to replace
- Metal spiral wound or elastomeric bonnet seals for effective emission containment
- Composite flange for added strength in higher forged alloys

Technical Data

- ASME Class 150 through 1500
- Full or regular port
- Raised face flanged, ring-type joint, buttweld, socketweld and threaded end connections, in any combination
- Sizes: 1/2 in (15 mm) to 8 in (200 mm) (larger sizes on application)
- Materials: 316SS, chrome, Hastelloy, Alloy 20, Inconel, titanium, zirconium and other alloys

Nobleizing™ Surface Enhancement

Neither a coating nor a spray but a physical and chemical conversion, Nobleizing transforms the metal at the surface to produce an extremely hard finish which penetrates to an appreciable depth. A Nobleized surface will not peel, chip, delaminate, spall or crack. In most cases, the corrosion resistance of the Nobleized metal remains unchanged or is improved.

When Nobleized, Noble Alloy Valve seats, balls and stems experience reduced wear and galling with enhanced abrasion resistance.

Technical Notes

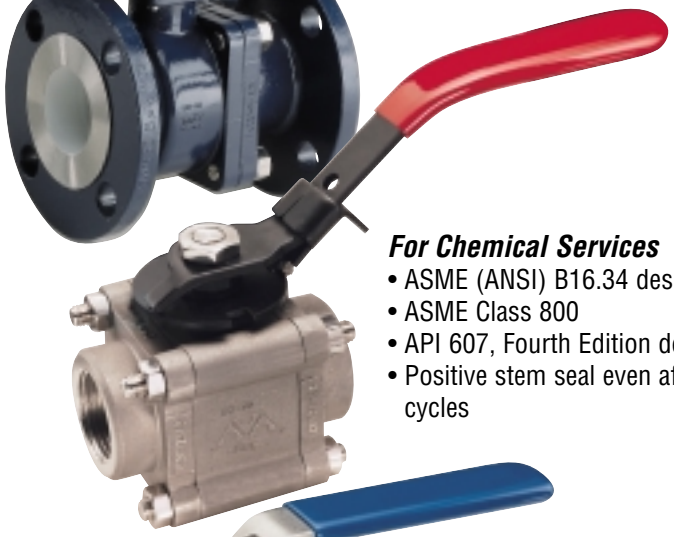
- Nobleized zirconium produces hardnesses up to 70 Rockwell C
- Hardness levels of 54 to 65 Rockwell C are possible on titanium, tantalum, titanium-niobium and other reactive or refractory metals

Originally developed to address galling problems with light reactive alloys, Nobleizing is now applied to an extensive variety of metals for increased wear resistance and service life.

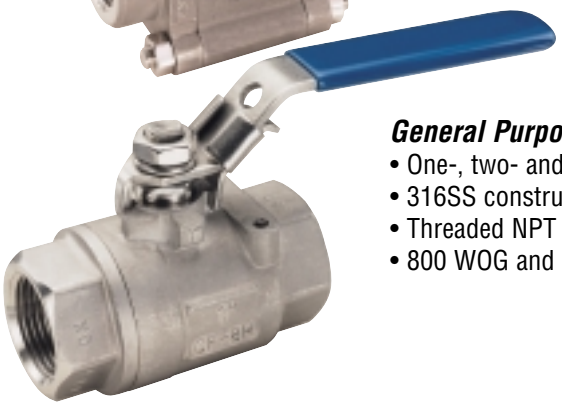
Durco® Microfinish™ Ball Valves

Durco Microfinish ball valves take stem seal performance and durability to a new standard. The unique stem sealing system significantly enhances life cycle capability while reducing turning torque. With the quality and performance you expect from Flowserve, these valves are becoming the standard of the CPI.

For Chemical Services
- ASME (ANSI) B16.34 design criteria
- ASME Class 150 and 300
- API 607, Fourth Edition design criteria
- High cyclability – more than 100,000 cycles without packing adjustment or stem seal leakage
- Single-source responsibility for automated valve packages featuring Automax® actuators and controls



For Chemical Services
- ASME (ANSI) B16.34 design criteria
- ASME Class 800
- API 607, Fourth Edition design criteria
- Positive stem seal even after extended cycles



General Purpose WOG
- One-, two- and three-piece
- 316SS construction
- Threaded NPT full and regular port
- 800 WOG and 1000 WOG

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