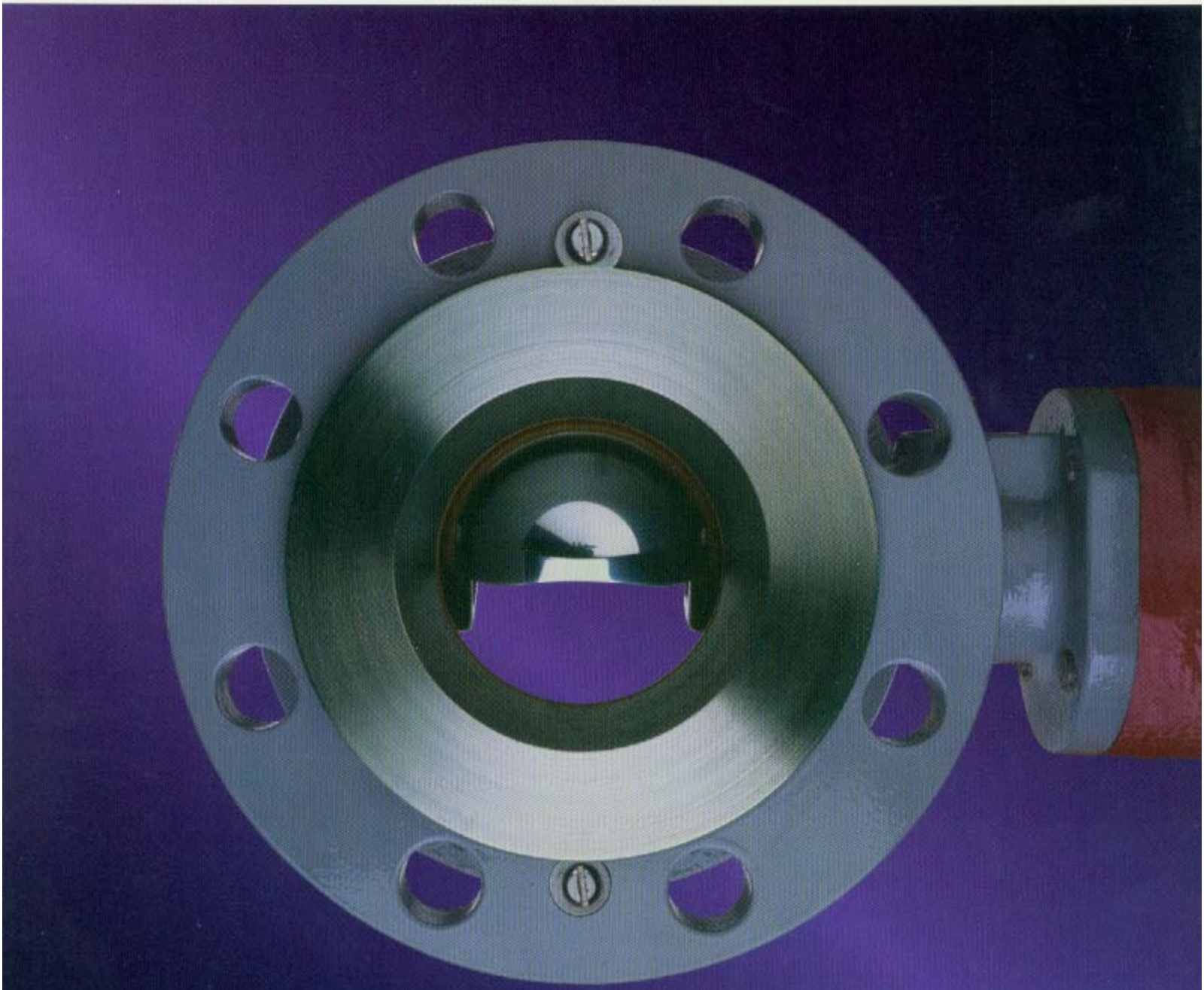
Masoneilan

Valve & Controls DRESSER



Paramax™

36004

Flanged Control Ball Valve

BM6004 7/97

Design and Construction

Masoneilan Paramax™ Control Ball Valves are designed for long trouble-free service controlling fibrous suspensions, viscous liquids, or dirty liquid and gas streams. Two seat options allow you to choose between soft seats for tight shut-off up to 425°F or metal seats good to 600°F. The design accommodates either ISA 75.04 or ANSI B16.10 (150 Class only) face-to-face dimensions.

Flanged Design

For ease of maintenance and superior tightness in line, integral flanges are standard. Available 2" through 12" in ANSI Class 150 and 300.

Choice of Face-to-Face Dimension

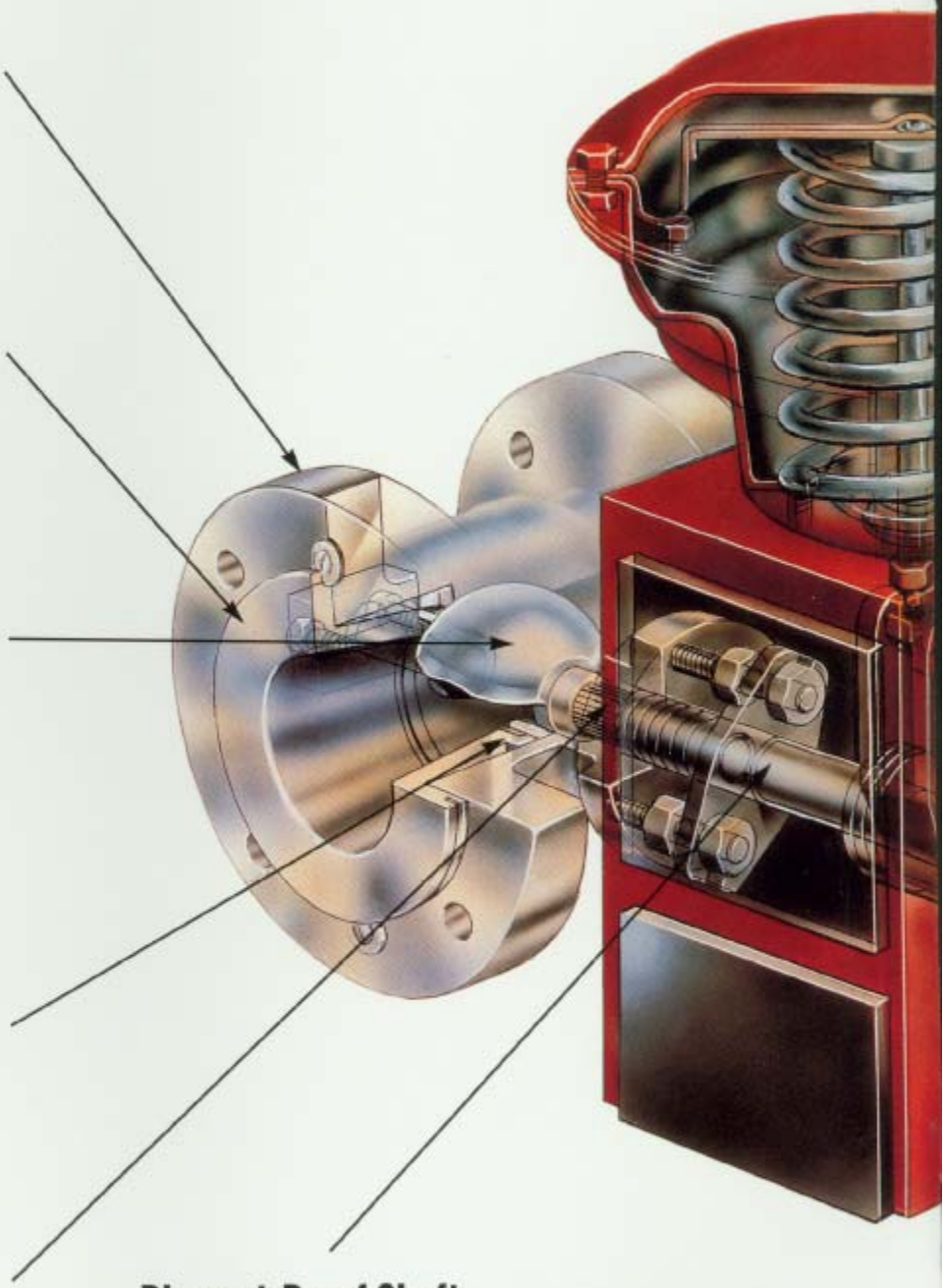
For maximum flexibility, valves may be supplied to ISA 75.04 or ANSI B16.10 (150 Class only) face-to-face. Field conversion is simple—only the retainer need be changed.

Parabolic Leading Edge Ball Segment

This unique ball design provides tight shutoff and excellent flow characteristics. The sharp leading edge and unobstructed line-of-sight flow passage is ideal for control of fibrous materials, slurry, and viscous fluids. The hard chrome-plated ball assures a smooth mating surface for the seal ring, enhancing seal life.

Soft or Hard Seats – Your Choice

For tight ANSI/FCI 70.2 Class VI shutoff up to 425°F, the proven MN-7 polymer seal ring is the choice. For higher temperature, strain hardened 316 stainless steel seats are used. Class IV shutoff is obtained with metal seats. Unlike competing designs, Masoneilan metal seats require no shims. Installation in the field is fast and foolproof.

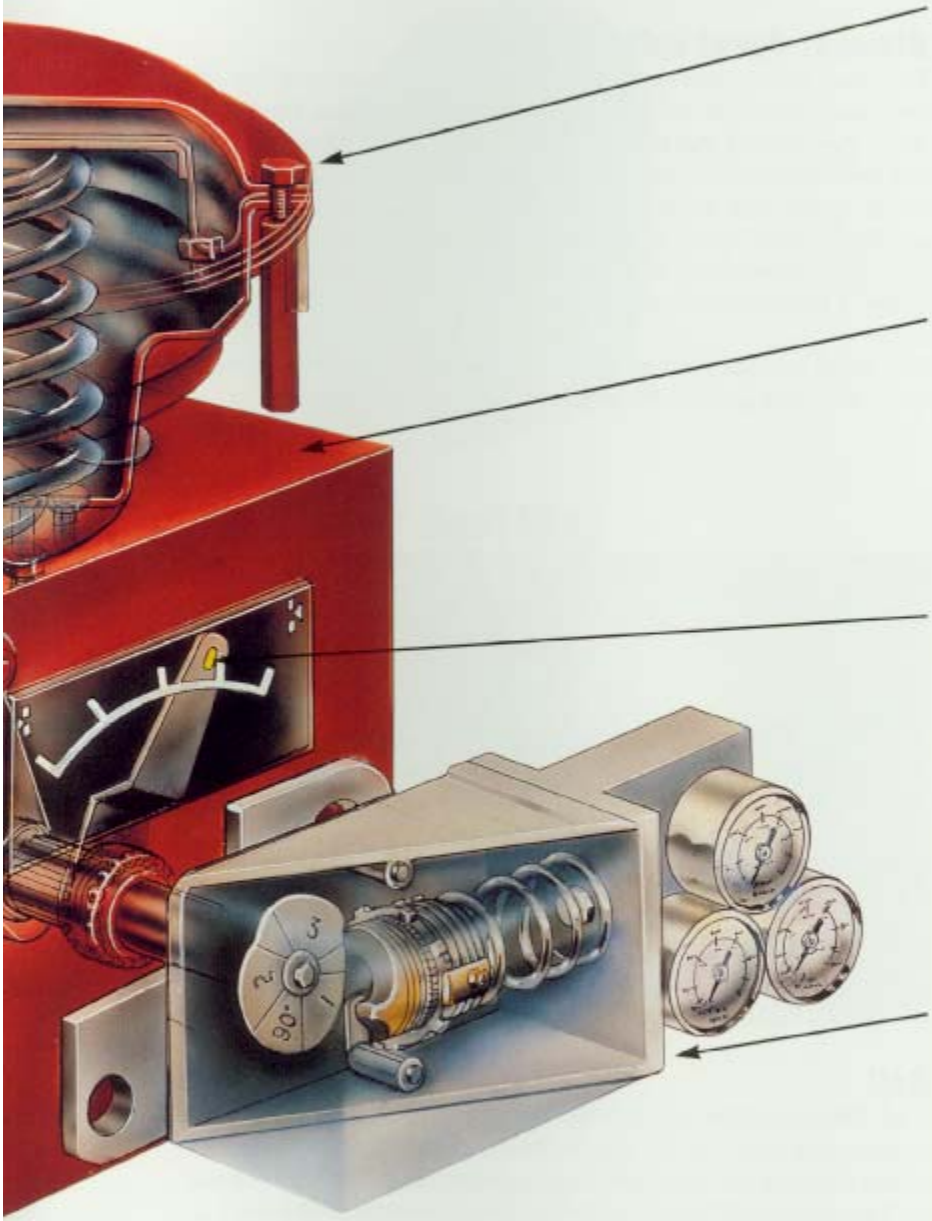


Splined Ball to Shaft Connection

A durable and accurate involute spline connects the ball to the drive shaft. Unlike pins or keys, concentrated stresses are avoided to ensure long trouble-free service.

Blowout-Proof Shaft

The shaft is designed so that it cannot blow out, even with actuator and packing follower removed. NOTE: Never attempt maintenance with pressure in the line.



Proven Diaphragm Actuator

Positive failsafe action, with all moving parts fully enclosed for safety and increased resistance to environmental corrosion. Easily field reversible.

Full Enclosure

The fully enclosed actuator linkage provides safety to plant personnel as well as protecting the moving parts from the elements and process spills.

Position Indication

A highly visible yellow marker affixed to the actuator clevis can be seen through a protective lens. This allows quick visual inspection of plug position.

Direct Mounted Positioner

All linkages are avoided by mounting the positioner directly to the end of the plug shaft. This, coupled with the clamped spline connection at the lever, totally eliminates backlash. The result is extremely accurate and repeatable plug positioning. Compliance with the EnTech control specification is available. Six possible control characteristics are available by repositioning the standard multi-lobe cam.

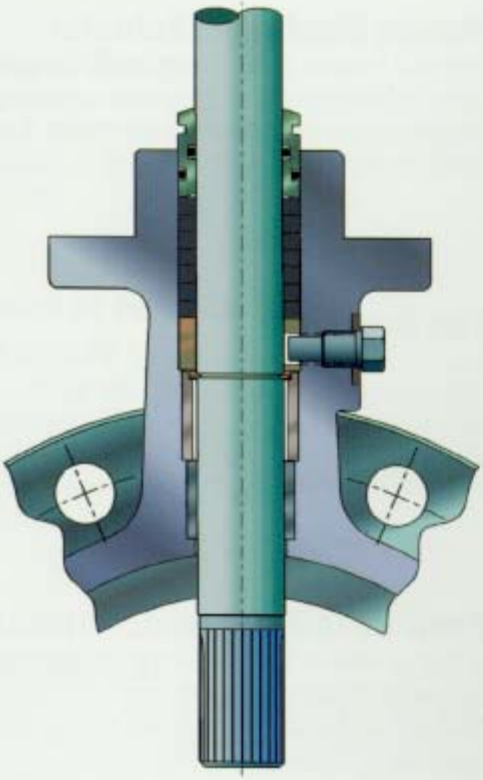
Standard E.F.™ Stem Seal

Eliminates fugitive emissions.

Optional Handwheel

A simple but effective manual override is available.

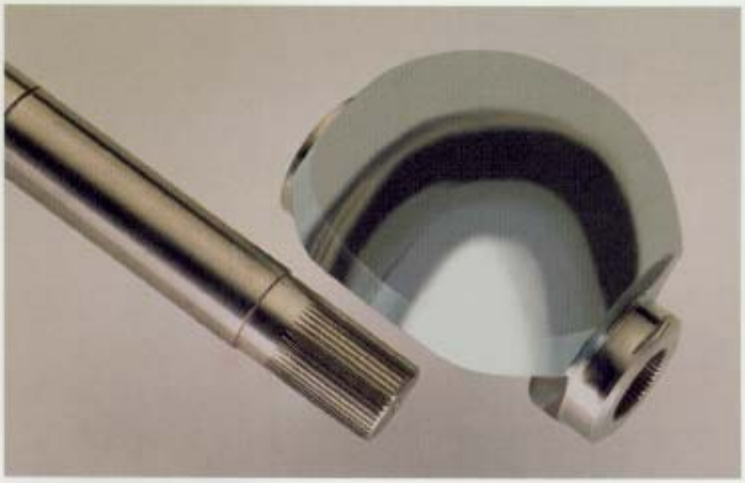
Parabolic ball design cuts through trouble...



Blowout-Proof Splined Shaft

Precision splines connect the ball to the shaft. State-of-the-art manufacturing allows tight tolerances to eliminate backlash while permitting the ball to "float" laterally into the seat for the best possible shutoff performance. There are no pins to break or fall out, no transverse holes in the plug trunnion to weaken it and cause it to fracture. This means more security for your process and fewer headaches for your maintenance crew. A Masoneilan exclusive!

The shaft is designed so that it cannot blow out of the valve, even with actuator and packing follower removed.

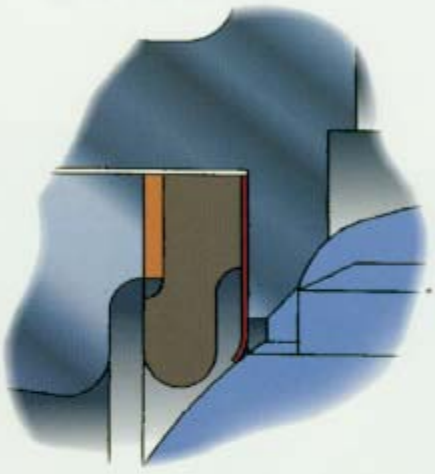


Ball

The Masoneilan parabolic design ball has delighted customers for over 25 years. The parabolic leading edge slices through fibrous material, wood pulp and slurries. Thanks to the parabolic contour on the leading edge of the ball, a rangeability of better than 300:1 is achieved. Hard chrome plating is standard. Other high performance coatings are available for erosive applications.

...seats and seals to suit your application.

MN-7 Seal Ring



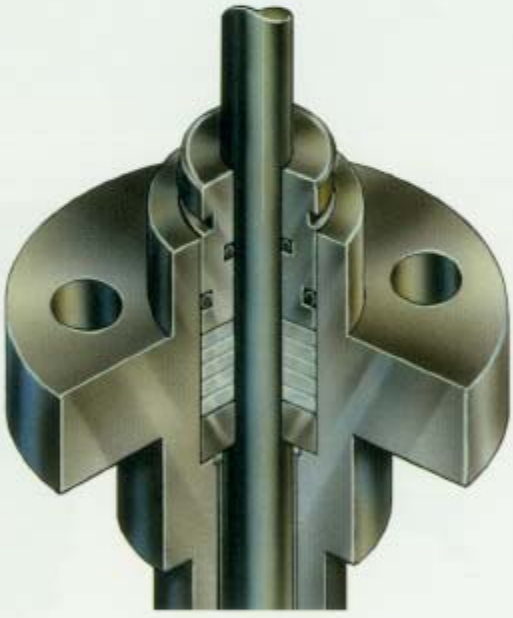
Metal Seal Ring

Seats

Masoneilan's tough and durable MN-7 exclusive polymer formulation provides bubble-tight seating and exceptional life. Service range from -50°F to +425°F. Metal seats of 316 stainless steel provide Class IV shutoff up to 600°F. Hard chrome plated ball assures long trouble-free seat life.

Stem Sealing

Standard aramid filled PTFE packing provides the ultimate in sealing performance with low friction. This assures control accuracy with low hysteresis. To reduce emissions to a fraction of the 500 PPM EPA threshold, the exclusive environmental Masoneilan E.F. Seal is standard on every Paramax! This seal also effectively eliminates chronic process leaks which can be an expensive nuisance.

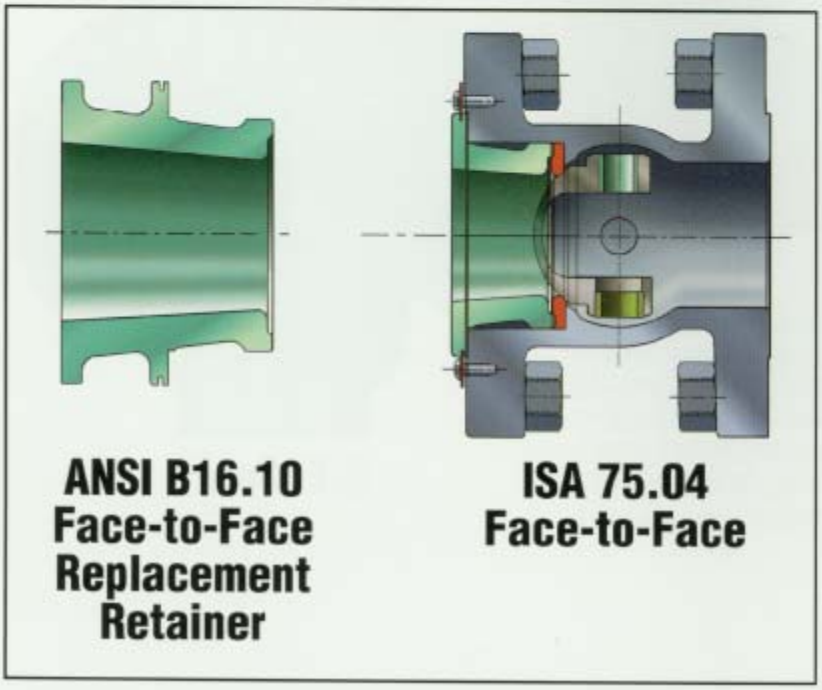


E.F. Seal

Face-to-Face to Match Existing Piping

Your choice of standard face-to-face dimensions for easy retrofit. By simply changing the seat retainer, the Masoneilan Flanged Ball Valve converts from the standard ISA 75.04 laying length to the ANSI B16.10 Short Pattern Ball Valve length.[1] This allows you to replace older style ball and plug valves with the new Paramax Valve without having to make costly and time consuming piping changes. The retainer change can be made in the field or instrument shop in minutes without special tools.

[1] *ANSI B16.10 face-to-face available for ANSI 150 Class valves only.*



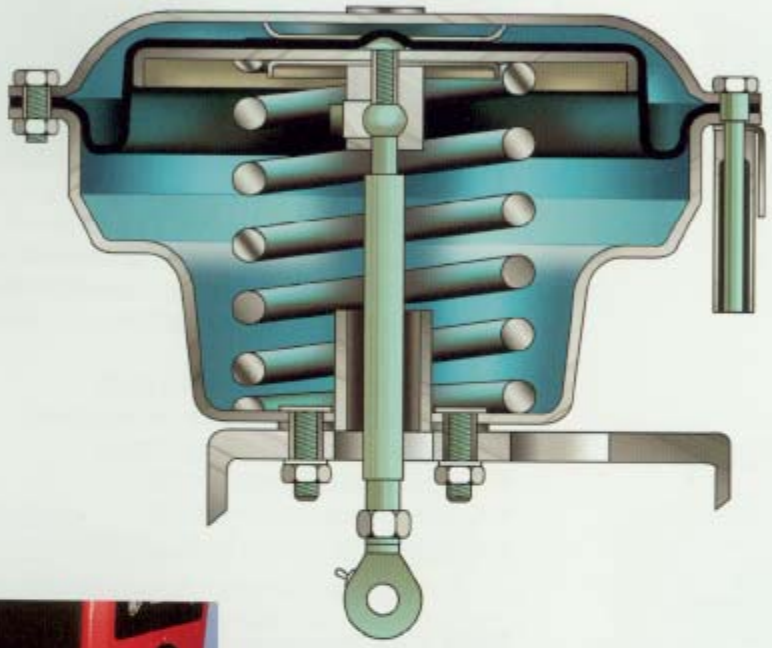
ANSI B16.10 Face-to-Face Replacement Retainer

ISA 75.04 Face-to-Face

Valve Size (in.)	ISA 75.04	ANSI B16.10
2	4.88	7.00
3	6.50	8.00
4	7.62	9.00
6	9.00	10.50
8	9.56	11.50
10	11.69	13.00
12	13.31	14.00

The proven Model 33 diaphragm actuator is the perfect complement to the new Paramax Valve. With its fully enclosed linkage and highly visible position indicator, the Model 33 offers convenience, corrosion protection and operator safety unmatched in the industry.

Proven Diaphragm Actuator



Simple and effective manual override can also function as a travel stop.

Other Features

- Fully field-reversible action with no additional parts required
- Uses all standard Masoneilan accessories
- Optional adjustable travel stops

Full Line of Accessories

Pneumatic Positioners

Masoneilan 4700P Positioners provide fast response, precise positioning, and customized control characteristics for the Paramax Valve. Features include:

- Direct connection to valve shaft
- One multi-lobe cam with six functions
- Easy zero and span adjustment
- Fully enclosed components
- Corrosion resistant housing
- Compliance with EnTech specification (4700P)

PMV Positioners

When requested, Masoneilan is pleased to mount PMV positioners on the Paramax Valve. These positioners have gained wide acceptance in the Pulp and Paper Industry.

The full range of pneumatic and electropneumatic models and options from PMV are available through Masoneilan. Consult your local sales office or the factory.

Electropneumatic Positioners

Masoneilan 4700E and 8012/8013 positioners accept a 4-20 mA electric control signal and provide the same low hysteresis and positioning accuracy as the pneumatic positioners. The 4700E utilizes a manifold mounted I/P converter, while the 8012/8013 design compares stem position with the controller D.C. output signal to provide the ultimate in dynamic response and positioning accuracy.

Model 7000 Electropneumatic Transducer

The Masoneilan Model 7000 electropneumatic transducer converts a direct current signal into a pneumatic analog signal. The digital pressure control principle uses proven Reedex™ micro-miniature valve technology, eliminating vibration sensitive nozzle and flapper arrangements. Its most common application is to convert an electronic signal from a controller into a pneumatic signal necessary to operate a control valve actuator or positioner.

Model 496 Rotary Electric Switches

The Model 496 rotary switches are available for use with the Paramax Valve. These switches may be set for one or two pre-determined positions in the stroke. They are normally connected to audible alarms or signal lights. They can also be used to actuate solenoids, relays and other electrical devices.

Electric Actuation

RCS or other electric actuators may be used to power the Paramax Valve. Available as on/off or modulating units, they feature fully enclosed gear trains, manual override, adjustable stops and state of the art electronic positioners. Weatherproof and explosionproof enclosures are available.

Westlock Limit Switches

Westlock or other limit switches and position transmitters with 4-20 mA feedback can be mounted on the Paramax Valve. The Beacon* position indicator can be supplied with any Westlock switch.

**Beacon is a registered trademark of Westlock Corporation.*

Recommended Specification for Paramax Control Ball Valves

1. Valve shall have integral flanges conforming to ANSI B16.5.
2. The design shall permit changing between ISA 75.04 face-to-face and ANSI B16.10 Short Pattern face-to-face without adding any additional parts or gasketed joints. Use of spool pieces or spacers is prohibited.
3. Flexible metal seats shall not require shimming to seal. Soft seats shall be fabricated from reinforced Fluorpolymer.
4. Ball to shaft connector shall be splined. Pins, keys, or other means requiring separate fasteners are prohibited.
5. Shaft packing shall be aramid reinforced PTFE. Fugitive emissions requirements of the Clean Air Act shall be met with the standard shaft seal design.
6. The actuator shall be of the spring opposed rolling diaphragm type capable of operating the valve without a positioner.
7. The actuator lever shall be attached to the valve shaft directly, using a zero backlash clamped spline connection.
8. Positioner feedback shall be taken directly from the valve shaft. Feedback from the actuator torque plug or stub shaft is not acceptable.
9. The actuator shall be capable of operating in any orientation.
10. The valve stem shall be designed to be inherently blowout-proof with the actuator and packing nuts removed.