



Control Valves & Regulators

Sliding Gate Valves

Pressure Regulators

Temperature Regulators

Control Valves

Positioners



Jordan Sliding Gate Valve Seats . . .

Simple Concept, Superior Performance

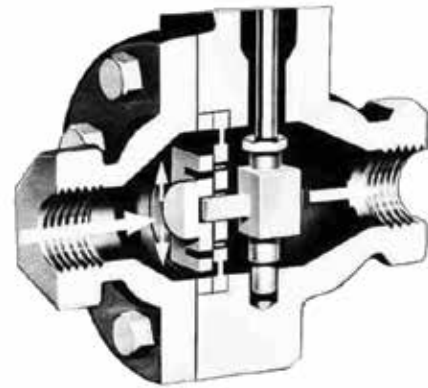
You'll notice something different in a Jordan valve . . . the sliding gate seat. A remarkably simple concept that offers superior performance and benefits not found in traditional rising stem and rotary valves.

The sliding gate seat is made up of two primary parts: a moveable disc and stationary plate with multiple orifices. Together, this seat set achieves levels of performance, reliability and accuracy that are hard to find in other valve designs.

Straight-Through Flow

The control element in the Jordan Valve sliding gate design is perpendicular to the flow, unlike the traditional globe style design. With the straight thru flow design, the sliding gate design reduces turbulence and provides superior trim life.

The sliding gate design provides unparalleled low flow control since the flow works with the design, not against it. In a typical globe style design the flow goes underneath the plug, working against the plug. In the sliding gate design, the flow pushes the disc against the plate, helping to hold the desired setpoint. This also enables the disc and plate to lap and clean themselves. Thus the sliding gate design, "wears in" instead of wearing out!



This unique ability provides much higher rangeability and better turndown while maintaining tight shut-off (ANSI Class IV).

Short Stroke, Fast Response

The total stroke length of a sliding gate valve is just a fraction of the equivalent globe or rotary style valve. In pressure regulators, the stroke length is typically 1/3 that of a globe valve, reducing the amount of droop (deviation from setpoint) in the regulator. In a Jordan control valve, the stroke length can be as little as 1/6 that of a conventional globe or cage guided design. This allows the use of smaller actuators, reduced air consumption and weight.

In both regulators and control valves, the response time from a change in the input signal is dramatically reduced. This also lessens the wear on the packing and lengthens the diaphragm life.

Quiet Operation

Quiet operation is a standard benefit of Jordan sliding gate valves. Compared to conventional globe and cage designs, the sliding gate seat generates between 5-10dBa less noise. In addition, you won't find a premium price adder for "low-noise trim". The sliding gate valve is inherently quieter than other types of valves because:

- The disc and plate remain in constant contact, eliminating the chatter found in plug and seat designs
- The straight-through flow passage minimizes turbulence found in globe and rotary designs, a prime cause of valve noise
- The multiple orifices in the plate and disc divide the flow into smaller, noise-dissipating flow streams.

Tight Shutoff

The sliding gate design provides an area of closure, not a line of the closure. When the valve is closed, the disc and plate are overlapped by 1/32". This area of closure helps reduce the effects of wire draw which is one of the most common causes of seat leakage. What does this mean for you? Less maintenance downtime and more opportunity to increase yields and profits!

Why the Sliding Gate lasts longer than other designs:

- Area of closure – when closed, the disc overlaps the orifice in the plate approximately 1/32" (0,8mm) so that the seats actually move beyond the closed position. This overlap creates an area of closure not often found in globe/cage or rotary designs.
- Self-cleaning – The movement of the sliding gate seats generates a self-cleaning action, with any leak-producing deposits being cleaned off by the sharp shearing action of the disc moving across the plate.
- Materials – Our proprietary Jorcote seat material is extremely hard and delivers outstanding wear resistance.
- Multi-orifice – The multi-orifice design separates erosive flow into smaller, less damaging streams. The erosive forces are dissipated over the numerous slots eliminating the single wear points associated with other valve types, and increased sealing areas, resulting in much longer seat life.
- Media assisted – The upstream pressure holds the disc in constant contact with the plate. This prevents the sudden, damaging (and noisy) contact which occurs in some plug/cage designs. The constant contact between the disc and plate actually generate a self-lapping effect which results in less friction and tighter shutoff than when the valve leaves the factory in new condition.



Jordan Valve engineers conducted a steam test using 250 psig (17,2 barg) saturated steam. The test was designed so that the valve would fully stroke open and closed each time it was actuated. The pressure drop across the valve was the full 250 psig (17,2 barg). The results were impressive. Our standard Jorcote/Chrome seat combination had less friction after 70,000 cycles than when it was new and the seat leakage was still well below ANSI Class IV limits.

Result: Tighter shutoff than a brand new valve leaving the factory.

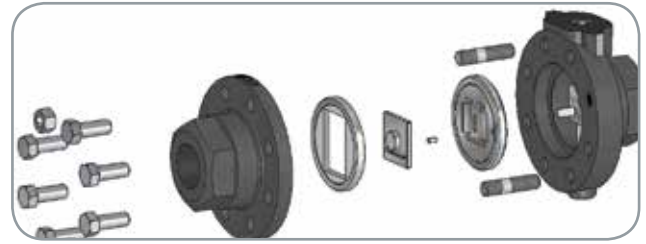
Seat Coatings

Jordan Valve offers a variety of coatings and seat materials to meet almost any application need.

Jorcote, our standard seat material, is a proprietary composite coating on Stainless Steel. This material is extremely hard (@ RC85) and delivers outstanding performance. Factory testing at 250 psi steam shows that after over 70,000 full stroke cycles, Jorcote will still shutoff to ANSI Class IV leak limits. Other coatings include Teflon coating and chrome plating.

Easy to Maintain

The simplistic design of the sliding gate valve makes maintenance easy to perform. Disassembly of the valve is very simple and, since the seats are not pressed or screwed into the valve body, they conveniently lift out. Should your flow requirements change, interchangeable Cv's are available in flow coefficients as low as 0.0008 and as high as 395 (depending on body size).



Size and Weight

As the line sizes increase, so too does the size and weight of the valve. Because of the short stroke length, a sliding gate valve is typically shorter and lighter weight than a globe-style valve.

Reduced Turbulence, Quiet Operation

When throttling, the control member of a rotary control valve will direct the flow to the sealing area of the seat, causing premature seat leakage or, in flashing or cavitation service, erosion of the wall of the valve body (Figure 1).

The tortuous flow path of a globe style design generates greater turbulence, noise and wear, reducing seat life and compromising control. In flashing or cavitating service, damage to the valve body is common, mitigated only through expensive material upgrades or elaborate trim configurations (Figure 2).

The multi-orifice straight through flow path of the sliding gate reduces turbulence and leads to quieter operation, reduced wear, longer seat life and better control. Combined with the ultra-compact water body design, erosion of the seats and valve body (i.e. in cavitation and flashing service) is virtually eliminated. Dramatic cost savings can be realized (Figure 3).

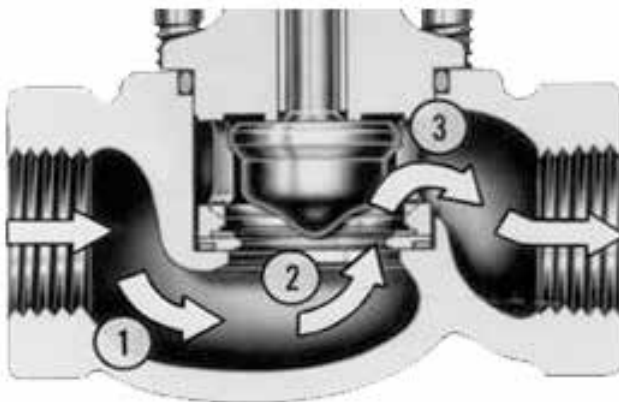
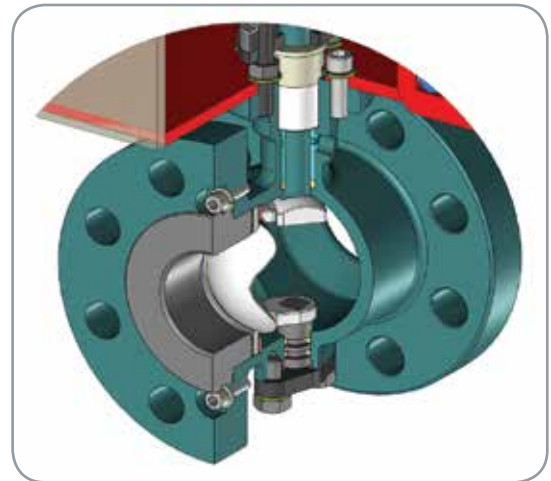


Figure 2

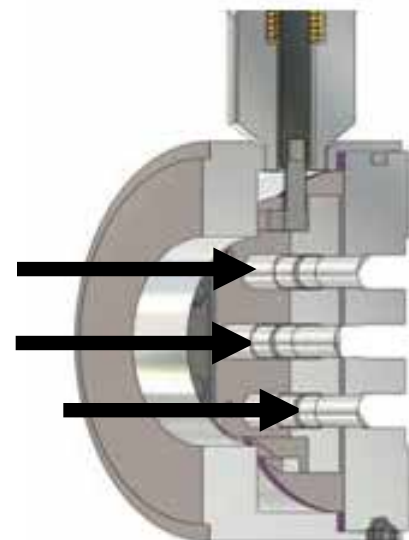
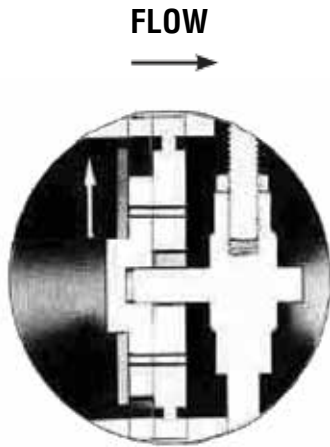


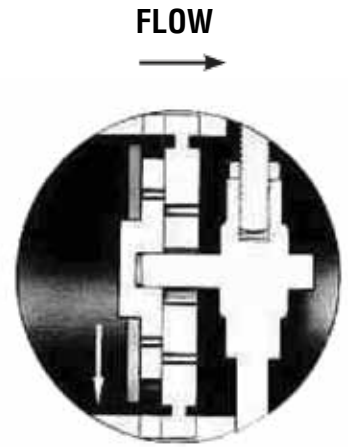
Figure 3

Here the Disc and Plate are shown in the full open position. Note the straight-through flow. This minimizes flow turbulence, a major cause of poor control, noise and wear in conventional valves.



OPEN

Here the Disc and Plate are shown in the full closed position. Note the 1/32" overlap which assures tight shut-off. The overlap also provides a buffer of extra metal to defeat any fringe erosion of wire drawing.



CLOSED

Jordan Valve Express

Many of our standard Jordan Valve products are available for next day shipment at no additional charge.

Please contact your local Jordan Valve Rep or the factory for a complete listing.

Customization

In addition to the standard models featured on the pages that follow, Jordan Valve engineers welcome the opportunity to engineer products for your specific application.



Jorlon Diaphragm

Jorlon Diaphragm

If you are looking to extend the life of your regulators and reduce the overall cost of ownership, then look no further than Jordan Valve's Jorlon diaphragm. This diaphragm was developed as an alternative to the standard SST diaphragm and offers several distinct advantages.

Jorlon is a proprietary modified PTFE material that positively impacts regulator reliability, performance, and service life. It is the standard and preferred diaphragm in most regulator applications and provides the following benefits:

- **Chemical Compatibility:** Since Jorlon is PTFE based, it is compatible with the same media as Teflon™ up to 450°F.
- **Improved Performance:** SST diaphragms by nature are rigid and therefore have decreased sensitivity. Jorlon approaches the droop performance seen in true elastomer diaphragms resulting in greater set point accuracy.
- **Long Life:** Jorlon has been extensively tested at the factory for durability. The diaphragm was tested on both 300 psi air and 450°F steam with no failures....even after over 1,000,000 full stroke cycles.
- **Lower Ownership Costs:** Less droop means better accuracy, and better accuracy means better overall performance and productivity. Its long life means less down time to replace a failed diaphragm which translates into higher profits.
- **High Pressure Limits:** Jorlon has been tested in excess of our regulators maximum allowable pressures. In some cases, Jorlon can be rated as high as 720 psi at 100°F.

Jorlon is the diaphragm of choice for almost every regulator application. Combine the long life of Jorlon with the superior characteristics of Jorcote sliding gate seats, and you end up with a regulator that will outlast most systems with normal use.

Sliding Gate Regulators

Mark 60/61 Series Self-Operated Pressure Regulators



The Mark 60 handles a broad range of applications including steam, water, oil, gas, air and chemicals. It features the Sliding Gate seat which combines excellent control and extreme longevity in a compact, lightweight design. The Mark 61 features a larger diaphragm to provide greater sensitivity.

- Shutoff – ANSI Class IV shutoff
- Sizes: Mk 60: 1/4" – 4" (DN8 – DN100); Mk 61: 1/4" – 3/4" (DN8 – DN20)
- Body Materials: Ductile Iron, Bronze, Carbon Steel, Stainless Steel, Cast Iron
- End Connections: Threaded, Flanged, Socket Weld, Butt-Weld
- Cv (Kv): up to 200 (up to 172)
- Trim Materials: Stainless Steel, Monel, Hastelloy C, Alloy 20
- Diaphragm: Jorlon, Stainless Steel, Buna-N, Viton
- Setpoints: 1 to 450 psi (0,07 to 31,0 bar)

Mark 601/602 Series High-Flow Pressure Regulators



The high-flow MK601 and MK602 are used for applications that require a higher Cv rating without using a larger valve. Jordan's Sliding Gate seats, help reduce the droop commonly associated with high flow regulators.

- Shutoff – ANSI Class IV shutoff
- Sizes: 1-1/2" through 2" (DN40 through DN50)
- Body Materials: Ductile Iron, Bronze, Carbon Steel, Stainless Steel
- End Connections: Threaded, Flanged, Socket Weld, Butt-Weld
- Cv (Kv): up to 70 (up to 60)
- Trim Materials: Stainless Steel, Monel, Hastelloy C, Alloy 20
- Diaphragm: Jorlon, Stainless Steel, Buna-N, Viton
- Setpoints: 20 to 160 psi (1,4 to 11,0 bar)

Mark 63/64 Series Differential Pressure Regulators



The Mark 63 is designed to maintain a constant differential between the pressure on the discharge side of the regulator and the signal pressure loaded on the diaphragm. The Mark 64 provides the same flow capacity but with less offset. It features a larger effective diaphragm area for greater sensitivity.

- Shutoff – ANSI Class IV shutoff
- Sizes: MK 63: 1/4" – 2" (DN8 – DN50); MK 64: 1/4" – 3/4" (DN8 – DN20)
- Body Materials: Ductile Iron, Bronze, Carbon Steel, Stainless Steel
- End Connections: Threaded, Flanged, Socket Weld, Butt-Weld
- Cv (Kv): up to 30 (up to 25,8)
- Trim Materials: Stainless Steel, Monel, Hastelloy C, Alloy 20
- Diaphragm: Stainless Steel, Jorlon, Buna-N, Viton
- Setpoints: 1 to 450 psi (0,07 to 31,0 bar)

Sliding Gate Regulators

Mark 65 Series Downstream Vacuum Regulators

Jordan downstream vacuum regulators maintain the proper vacuum/pressures at predetermined settings and to regulate vacuums on evaporators, cookers, grinding fixtures, milking machines, altitude chambers and other vacuum systems.

- Shutoff – ANSI Class IV shutoff
- Sizes: 1/2" through 2" (DN15 through DN50)
- Body Materials: Ductile Iron, Bronze, Carbon Steel, Stainless Steel
- End Connections: Threaded, Flanged, Socket Weld, Butt-Weld
- Cv (Kv): up to 30 (25,86)
- Trim Materials: Stainless Steel, Monel, Hastelloy C, Alloy 20
- Diaphragm: Jorlon, Stainless Steel, Buna-N, Viton
- Service: Air and Gas



Mark 66 Series Air Loaded Pressure Regulators

The Jordan Mark 66 is one of the most accurate pressure regulators on the market. Dome loading combined with the sliding gate provide excellent regulation and rangeability. This valve can be coupled with an extended range I/P for remote operation. It can also be manually controlled with a MK12 loading station or LowFlow JR regulator.

- Shutoff – ANSI Class IV shutoff
- Sizes: 1/2" through 6" (DN15 through DN150)
- Body Materials: Ductile Iron, Bronze, Carbon Steel, Stainless Steel, Cast Iron
- End Connections: Threaded, Flanged, Socket Weld, Butt-Weld
- Cv (Kv): up to 395 (up to 340)
- Trim Materials: Stainless Steel, Monel, Hastelloy C, Alloy 20
- Diaphragm: Jorlon, Stainless Steel, Buna-N, Viton
- Setpoints up to body ratings



Mark 67 Series Pilot-Operated Pressure Regulators

The Mark 67 is for higher flow rates and/or greater accuracy than a self-operated regulator can provide. The Sliding Gate seats provides unsurpassed seat and diaphragm life, ease of installation, simplified maintenance and more accurate performance.

- Shutoff – ANSI Class IV shutoff
- Sizes: 1/2" through 6" (DN15 through DN150)
- Body Materials: Ductile Iron, Carbon Steel, Stainless Steel, Cast Iron
- End Connections: Threaded, Flanged, Socket Weld, Butt-Weld
- Cv (Kv): up to 395 (up to 340)
- Trim Materials: Stainless Steel, Monel, Hastelloy C, Alloy 20
- Diaphragm: Stainless Steel, Monel, Hastelloy C, Alloy 20
- Setpoints: 10 to 200 psi (0,69 to 13,79 bar)



Sliding Gate Regulators

Mark 50/51 Series Self-Operated Back Pressure Regulators



The Mark 50/51 handles a broad range of applications including steam, water, oil, gas, air and chemicals. Excellent capacity and the sliding gate trim enable the Mark 50 to quickly and accurately regulate upstream pressure, preventing overpressure situations. The Mark 51 features a larger diaphragm for greater sensitivity.

- Shutoff – ANSI Class IV shutoff
- Sizes: MK 50: 1/4" – 4" (DN8 – DN100); MK 51: 1/4" – 3/4" (DN8 – DN20)
- Body Materials: Ductile Iron, Bronze, Carbon Steel, Stainless Steel, Cast Iron
- End Connections: Threaded, Flanged, Socket Weld, Butt-Weld
- Cv (Kv): up to 200 (up to 172)
- Trim Materials: Stainless Steel, Monel, Hastelloy C, Alloy 20
- Diaphragm: Jorlon, Stainless Steel, Buna-N, Viton
- Setpoints: 0.5 to 450 psi (0,03 to 31,0 bar)

Mark 501/502 Series High-Flow Back Pressure Regulators



The high-flow MK501 and MK502 are used for applications that require a higher Cv rating without going to the next highest line size. Jordan's Sliding Gate seats, help reduce the build-up commonly associated with high flow back pressure regulators.

- Shutoff – ANSI Class IV shutoff
- Sizes: 1-1/2" through 2" (DN40 through DN50)
- Body Materials: Ductile Iron, Bronze, Carbon Steel, Stainless Steel
- End Connections: Threaded, Flanged, Socket Weld, Butt-Weld
- Cv (Kv): up to 70 (up to 60,2)
- Trim Materials: Stainless Steel, Monel, Hastelloy C, Alloy 20
- Diaphragm: Jorlon, Stainless Steel, Buna-N, Viton
- Setpoints: 0.5 to 150 psi (0,03 to 10,3 bar)

Mark 53/54 Series Differential Back Pressure Regulators



The Mark 53 is designed to maintain inlet pressure at a set differential pressure over the signal pressure loaded on the diaphragm. The Mark 54 provides the same flow capacity as the Mark 53 but with less offset in controlled pressure due to a larger diaphragm.

- Shutoff – ANSI Class IV shutoff
- Sizes: MK 53: 1/4" – 2" (DN8 – DN50); MK 54: 1/4" – 3/4" (DN8 – DN20)
- Body Materials: Ductile Iron, Bronze, Carbon Steel, Stainless Steel
- End Connections: Threaded, Flanged, Socket Weld, Butt-Weld
- Cv (Kv): up to 30 (up to 25,8)
- Trim Materials: Stainless Steel, Monel, Hastelloy C, Alloy 20
- Diaphragm: Jorlon, Buna-N, Viton
- Setpoints: 0.5 to 450 psi (0,03 to 31,0 bar)

Sliding Gate Regulators

Mark 55 Series Upstream Vacuum Regulators

The Mark 55 upstream regulators maintain the proper vacuum/pressures at predetermined settings and to regulate vacuums on evaporators, cookers, grinding fixtures, milking machines, altitude chambers and other vacuum systems.

- Shutoff – ANSI Class IV shutoff
- Sizes: 1/4" through 2" (DN8 through DN50)
- Body Materials: Ductile Iron, Bronze, Carbon Steel, Stainless Steel
- End Connections: Threaded, Flanged, Socket Weld, Butt-Weld
- Cv (Kv): up to 30 (up to 25,8)
- Trim Materials: Stainless Steel, Monel, Hastelloy C, Alloy 20
- Diaphragm: Jorlon, Stainless Steel, Buna-N, Viton
- Setpoints: 1" to 25" Hg vacuum (0,035 to 0,886 kg/cm²)



Mark 56 Series Air Loaded Back Pressure Regulators

The Mark 56 is one of the most accurate back pressure regulators on the market. Dome loading combined with the sliding gate seat provide excellent regulation and rangeability. Can be coupled with an extended range I/P for remote operation. Can also be manually controlled with a MK12 loading station or LowFlow JR regulator.

- Shutoff – ANSI Class IV shutoff
- Sizes: 1/2" through 6" (DN15 through DN150)
- Body Materials: Ductile Iron, Bronze, Carbon Steel, Stainless Steel, Cast Iron
- End Connections: Threaded, Flanged, Socket Weld, Butt-Weld
- Cv (Kv): up to 395 (up to 340)
- Trim Materials: Stainless Steel, Monel, Hastelloy C, Alloy 20
- Diaphragm: Stainless Steel, Jorlon, Buna-N, Viton
- Setpoints: up to body rating



Mark 57 Series Pilot-Operated Back Pressure Regulators

The Mark 57 pilot operated back pressure regulator is designed to accurately control pressure to 90% of its rated flow capacity with only a small deviation from setpoint. The Mark 57 provides accuracy that approaches that of controller-operated valves.

- Shutoff – ANSI Class IV shutoff
- Sizes: 1/2" through 6" (DN15 through DN150)
- Body Materials: Ductile Iron, Carbon Steel, Stainless Steel, Cast Iron
- End Connections: Threaded, Flanged, Socket Weld, Butt-Weld
- Cv (Kv): up to 395 (up to 340)
- Trim Materials: Stainless Steel, Monel, Hastelloy C, Alloy 20
- Diaphragm: Stainless Steel
- Setpoints: 25 to 185 psi (1,7 to 12,8 bar)



Globe and Cage Style Regulators

Mark 68G Series Pressure Regulators



The Mark 68G offers high capacity, accurate regulation, and easy servicing, making it the ideal choice for your industrial-grade pressure reducing applications. The MK68G can be supplied with a soft seat to provide ANSI Class VI shutoff.

- Shutoff: ANSI Class IV (hard seat); ANSI Class VI (soft seat)
- Seat: Plug – Buna-N, Viton, Hardened 17-4 pH Stainless Steel
- Sizes: 1/4" through 2" (DN8 through DN50)
- Body Materials: Ductile Iron, Bronze, Carbon Steel, Stainless Steel
- End Connections: Threaded, Flanged, Socket Weld
- Cv (Kv): up to 19 (up to 16,3)
- Trim Material: Stainless Steel
- Diaphragm: Stainless Steel, Jorlon, Buna-N/Nylon, Viton/Nomex

Mark 686 Series Air-Loaded Cage Trim Pressure Regulators



The Dome Loaded Mark 686 provides more accurate regulation than self-operated models. The MK686 is excellent when remote and/or frequent setpoint adjustment is required.

- Shutoff: ANSI Class IV (hard seat); ANSI Class VI (soft seat)
- Seat: Plug – Buna-N, Viton, Hardened 17-4 pH Stainless Steel
- Sizes: 1/4" through 2" (DN8 through DN50)
- Body Materials: Ductile Iron, Bronze, Carbon Steel, Stainless Steel
- End Connections: Threaded, Flanged, Socket Weld
- Cv (Kv): up to 19 (up to 16,3)
- Cage Materials: Electro-nickel plated steel or Stainless Steel depending on body material
- Diaphragm: Stainless Steel, Jorlon, Buna-N/Nylon, Viton/Nomex

Mark 58FT/A Series Cage Trim Back Pressure Regulators



The Mark 58 features three ports: a bypass outlet on the bottom, and two side ports which are directly connected to serve as dual inlet and outlet for through-flow.

- Shutoff: ANSI Class IV (hard seat); ANSI Class VI (soft seat)
- Seat: Plug – Buna-N, Viton, EPDM, 17-4 PH Stainless Steel
- Sizes: 1/4" through 2" (DN8 through DN50)
- Body Materials: Ductile Iron, Bronze, Carbon Steel, Stainless Steel
- End Connections: Threaded, Flanged, Socket Weld
- Cv (Kv): up to 32.4 (up to 27,86)
- Cage Materials: Electro-nickel plated steel or Stainless Steel depending on body material
- Diaphragm: Stainless Steel, Jorlon, Buna-N/Nylon, Viton/Nomex

Gas Regulators

Mark 608 Series Gas Pressure Regulators (1-1/2" – 2")

The Mark 608 gas pressure regulator is used on large tank blanketing applications or other low pressure gas regulation. In a tank blanketing application, the Mark 608 is used to control the flow of the blanketing gas into the tank to maintain the proper positive pressure. Once the blanket has been established, a small flow of nitrogen is continually admitted to the tank to keep the blanket fresh.

- Shutoff: ANSI Class VI
- Sizes: 1-1/2", 2" (DN40, DN50)
- Body Materials: Bronze, Carbon Steel, Stainless Steel
- End Connections: Threaded, Flanged
- Trim Materials: Stainless Steel
- Diaphragm: Buna-N/Nylon, Viton/Nomex, EPDM with Polyester Reinforcement
- Setpoints: 2" w.c. to 5 psi
- Maximum Downstream Pressure: 25 psi (1,7 bar)



Mark 608IS Series Gas Pressure Regulators (3/4" – 1-1/4")

The Mark 608IS gas pressure regulator is the ideal valve for low pressure gas regulation. The self-contained low pressure gas regulator is for use on tank blanketing, gas meter inlet pressure regulating, gas burners and other low pressure air and gas applications.

- Shutoff: ANSI Class VI
- Sizes: 3/4" through 1-1/4" (DN20 through DN32)
- Body Materials: Carbon Steel, Stainless Steel, Ductile Iron
- End Connections: Threaded, Flanged
- Trim Materials: Stainless Steel
- Plug: Buna-N and Stainless Steel (DI body); Stainless Steel and Viton (CS & SS body)
- Setpoints: 1" w.c. to 3.5 psi
- Maximum Inlet Pressure: 150 psi (10,3 bar)



Mark 608BP Series Balanced Plug Gas Pressure Regulators (3/4" - 1")

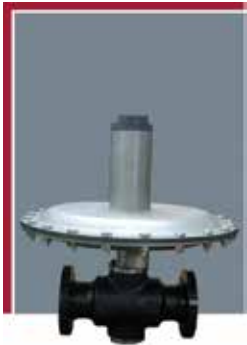
The Mark 608BP balanced plug gas pressure regulator is the ideal valve for low pressure gas regulation with higher inlet pressures. The self-contained low pressure gas regulator is for use on tank blanketing, gas meter inlet pressure regulating, gas burners and other low pressure air and gas applications.

- Shutoff – ANSI Class VI
- Sizes: 3/4", 1" (DN20, DN25)
- Body Materials: Ductile Iron, Carbon Steel, Stainless Steel
- End Connections: Threaded, Flanged
- Plug: Stainless Steel and Buna-N (DI body); Stainless Steel and Viton (CS & SS body)
- Diaphragm: Buna-N/Nylon (DI body); Viton (CS & SS body)
- Maximum Inlet Pressure: 150 psi (10 bar)
- Orifice Sizes (interchangeable): 1/4" (6mm), 5/16" (8mm); 3/8" (10mm)



Gas Regulators

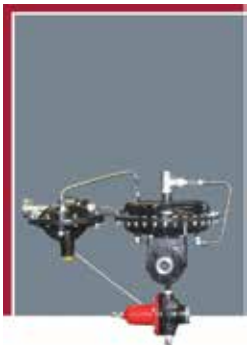
Mark 608DS Series Low Pressure Double Seated Gas Regulators (1-1/2" – 2")



The Mark 608DS is a double-seated, self-operated gas regulator for use in tank blanketing applications. The double seated design allows the Mark 608DS to handle increased flow and higher pressure drops than similarly sized single seat valve types while maintaining ANSI Class VI shutoff.

- Shutoff – ANSI Class VI
- Sizes: 1-1/2" – 2" (DN40 – DN50)
- Body Materials: Carbon Steel, Stainless Steel
- End Connections: ANSI 150/300 Integrally Flanged
- Trim Materials: Stainless Steel
- Diaphragm: Buna-N, Viton, EPDM
- Cv (Kv): 1-1/2": 5 Cv; orifice 9/16"; 2": 17 Cv; orifice 1"
- Maximum Inlet Pressure: 150 psi (10,3 bar)

Mark 688 Series Piloted Soft Seat Regulators (1" – 2")



The Mark 688 Series piloted soft seat regulator was designed specifically to provide accurate pressure control on very low pressure tank blanketing systems. The pilot operated Mark 688 responds to very small changes in tank pressure by throttling open or closed to maintain the desired pressure set point.

- Shutoff – ANSI Class VI
- Sizes: 1" – 2" (DN25 – DN50)
- Body Materials: Carbon Steel, Stainless Steel
- End Connections: ANSI Flanges- 150#, 300#
- Trim Materials: 316SS (Standard on all valves)
- Diaphragm: Buna-N
- Cv (Kv): 1" 17, 1-1/2" 25, 2" 45 (1" 14,7, 1-1/2" 21,6, 2" 38,9)
- Maximum Inlet Pressure: 200 psi (13,8 bar)

Mark 695 Series Piloted Soft Seat Regulators



The Mark 695 Series piloted soft seat regulator was designed specifically to provide accurate pressure control on very low pressure tank blanketing systems. The pilot operated Mark 695 responds to very small changes in tank pressure by throttling open or closed to maintain the desired pressure set point.

- Shutoff – ANSI Class VI
- Sizes: 3/4" - 1" (DN20 - DN25)
- Body Materials: Carbon Steel, Stainless Steel
- End Connections: NPT ANSI Flanges- 150#, 300#
- Trim Materials: 316SS (Standard on all valves)
- Diaphragm: Teflon Sheet
- Cv (Kv): 1, 2, 4, 7.5, 10 (0,86, 1,73, 3,46, 6,49, 8,65)
- Maximum Inlet Pressure: 200 psi (13,8 bar)

Gas Regulators

Mark 627 Series High Pressure Regulators

The Jordan Mark 627 self-contained, pressure-reducing regulator, is designed to provide tight-shutoff and accurate regulation on low or high pressure systems. It can be used on air, natural gas or a variety of other gases. The top entry design allows for easy in-line maintenance.

- Seat: 316 Stainless Steel
- Sizes: 3/4", 1", 2" (DN20, DN25, DN50)
- Body Materials: Carbon Steel
- End Connections: FNPT (contact factory for other options)
- Orifice Sizes (Interchangeable): 3/32" (2mm), 1/8" (3mm), 3/16" (5mm), 1/4" (6mm), 3/8" (10mm), 1/2" (13mm)
- Diaphragm: Nitrile
- Service: air and gas



Mark 630 Series High Pressure Regulators

The Jordan Mark 630 self-operated pressure reducing regulator is designed to provide tight shutoff and accurate regulation on high pressure gas systems. It can be used on air and a variety of gases. It is designed to handle inlet pressures up to 1500 psi.

- Seat: Brass or 316 Stainless Steel (CF8M)
- Sizes: 1" and 2" (DN25 and DN50)
- Body Materials: Carbon Steel (WCB A216) for 1"; Ductile Iron for 2"
- End Connections: FNPT (contact factory for other options)
- Orifice Sizes (Interchangeable): 1/8" (3mm), 3/16" (5mm), 1/4" (6mm), 3/8" (10mm), 1/2" (13mm)
- Diaphragm: Neoprene, Viton
- Disc Assembly: Brass/TFE, 316/TFE
- Service: air and gas



Mark 687 Series Piloted Seat Regulators

The Jordan Mark 687 is a piloted soft seat regulator for critical pressure reducing applications. It uses balance plug trim with the action of a pilot valve to create a faster, more accurate (meaning less droop as your flows increase) response.

- Shutoff: ANSI Class VI
- Seat: 316SS/PTFE
- Sizes: 1-1/2" through 2" (DN40 through DN50)
- Body Materials: Carbon Steel (ASME SA216 WCB) & Stainless Steel (ASME SA351 CF8M)
- End Connections: Threaded & ANSI Flanges
- Cv (Kv): 40 (34) (1-1/2") & 50 (43) (2")



Liquid Pressure Regulating/ Back Pressure Regulating Valves

Mark 5108 Series Back Pressure Regulating Valves

In many liquid piping systems, it is vital that line pressure is maintained within relatively narrow limits. This is the function of the Mark 5108 Series Back Pressure Regulators. Installed in the main flow line, the standard Mark 5108-2 acts as a back pressure or pressure sustaining valve. In this configuration, the valve maintains a constant upstream pressure regardless of fluctuating downstream demand. When used in a bypass line, the same model will function as a relief valve, protecting the system against potentially damaging surges.

- Sizes: 1-1/4" - 24"
- Body Materials: Ductile Iron, Cast Steel, Cast Bronze, Stainless Steel
- End Connections: Flanged (#150,#300), Screwed, Grooved
- Diaphragm: Buna-N, Viton, EPDM
- Maximum Inlet Pressure: 740 psi



Mark 6127 Series Pressure Reducing Valves

The Mark 6127 Pressure-Reducing Valve is used in many applications worldwide. The primary function of the Mark 6127 is to reduce a greater upstream pressure to a lesser, more manageable downstream pressure, operating without regard to either upstream supply or downstream demand.

- Sizes: 1-1/4" - 24"
- Body Materials: Ductile Iron, Cast Steel, Cast Bronze, Stainless Steel
- End Connections: Flanged (#150,#300), Screwed, Grooved
- Diaphragm: Buna-N, Viton, EPDM
- Maximum Inlet Pressure: 740 psi



SWA Actuator

For JV Sliding Gate Temperature Regulators

The most accurate and most reliable thermal system available today is the SWA actuator. This actuator is actually three pieces of metal stamped and bonded together and then heliarc welded around the outside. A bonded double stainless steel diaphragm is welded between the two stainless steel casings to provide an all metal seal. There are no rubber parts in this actuator. Therefore, there is no rubber to dry out, crack, or allow fill to leak out of the actuator itself.

Furthermore, this actuator when combined with the short stroke of the sliding gate seat, enables the movement of the diaphragm to be just 1/3 of that of a bellows type. Thus, the metal fatigue involved with this diaphragm is considerably less than that of the bellows. Therefore, the reliability of this valve far exceeds anything else that has ever been on the market.

The combination of the SWA actuator and the sliding gate seat design provides temperature control spans as low as 10-15°. This means that the total time it takes this valve to go from full open to full closed is almost 1/3 the time it takes older style valves. Also, due to its modular construction, the replacement of the SWA thermal system is as easy as removing four bolts. Thus, the thermal system can be replaced in line without any additional adjustments.



Temperature Regulators

Mark 80 Series Self-Operated Temperature Regulators



The Mark 80 Series is completely self-operated and requires no external power source or other expensive instrumentation to operate the valve. Depending on valve action, the seats open or close as bulb senses rise in temperature.

- Shutoff: ANSI Class IV
- Sizes: 1/4" – 2" (DN8 – DN50)
- End Connections: Threaded, Flanged, Socket Weld, Butt-Weld
- Body Materials: Ductile Iron, Bronze, Carbon Steel, Stainless Steel
- Cv (Kv): up to 30 (up to 25,8)
- Trim Materials: Stainless Steel, Monel, Hastelloy C, Alloy 20
- Seat Materials: Jorcote
- Thermal System: Seal-welded actuator (SWA) with capillary and bulb
- Control range: up to 450°F (232°C)

Mark 801/802 Series Self-Operated High Flow Temperature Regulators



The Mark 801/802 Series is completely self-operated and requires no external power source or other expensive instrumentation to operate the valve. The Mark 801/802 Series are high-flow versions of our Mark 80 Series temperature regulators.

- Shutoff: ANSI Class IV
- Sizes: 1/2" – 2" (DN15 – DN50)
- End Connections: Threaded, Flanged, Socket Weld, Butt-Weld
- Body Materials: Ductile Iron, Bronze, Carbon Steel, Stainless Steel
- Cv (Kv): up to 70 (up to 60,2)
- Trim Materials: Stainless Steel, Monel, Hastelloy C, Alloy 20
- Seat Materials: Jorcote
- Thermal System: Seal-welded actuator (SWA) with capillary and bulb
- Control range: up to 450°F (232°C)

Mark 85 Series "Controlled Failure" Temperature Regulators



The Mark 85 is a self-operated temperature regulator with controlled failure option which allows you to predetermine the position of the valve in the event of a thermal system failure. The Mark 85 is designed to fail closed on heating applications and to fail open on cooling applications.

- Shutoff: ANSI Class IV
- Sizes: 1/4" – 3/4" (DN8 – DN20)
- Body Materials: Ductile Iron, Bronze, Carbon Steel, Stainless Steel
- End Connections: Threaded, Flanged, Socket Weld, Butt-Weld
- Cv (Kv): up to 4.4 (up to 3,8)
- Trim Materials: Stainless Steel, Monel, Hastelloy C, Alloy 20
- Seat Materials: Jorcote
- Thermal System: Bolted Cast Iron Actuator with capillary and bulb
- Control range: up to 285°F (140°C)

Temperature Regulators

Mark 86 Series Steam Tracing Regulators

The Mark 86 ambitemp regulator is designed to control steam tracing lines based on ambient temperatures. The MK86 allows steam to flow through the tracer lines only when it is needed, opens or closes when ambient temperature rises above or below the setpoint depending upon action.

- Shutoff: ANSI Class IV
- Sizes: 1/2" – 2" (DN15 – DN50)
- End Connections: Threaded, Flanged, Socket Weld, Butt-Weld
- Body Materials: Ductile Iron, Bronze, Carbon Steel, Stainless Steel
- Cv (Kv): up to 30 (up to 25,8)
- Trim Materials: Stainless Steel, Monel, Hastelloy C, Alloy 20
- Seat Materials: Jorcote
- Thermal System: Seal-welded actuator (SWA)
- Control range: up to 210°F (99°C)



Mark 87 Series External Piloted Temperature Regulators

The Mark 87 piloted temperature regulator is the Sliding Gate valve engineered to provide wide rangeability, and greater accuracy, for a variety of temperature control applications. Designed with the same technology as the Mark 80, the Mark 87 is a piloted temperature regulator that offers quality and performance.

- Shutoff: ANSI Class IV
- Sizes: 1/2" – 6" (DN15 – DN150)
- End Connections: Threaded, Flanged, Socket Weld, Butt-Weld
- Body Materials: Ductile Iron, Bronze, Carbon Steel, Stainless Steel, Cast Iron
- Cv (Kv): up to 395 (up to 339,7)
- Trim Materials: Stainless Steel, Monel, Hastelloy C, Alloy 20
- Seat Materials: Jorcote
- Thermal System: Seal-welded actuator (SWA) with capillary and bulb
- Control range: up to 450°F (232°C)



Mark 89 Series Three-Way Temperature Regulators

The Mark 89 is used for diverting service and is ideal for bypassing fluids around coolers or filters. In this configuration, there is one inlet and two outlets. As one outlet closes, the other outlet opens, diverting flow from one channel to the other. The Mark MK89MX is ideal for mixing service.

- Shutoff: ANSI Class IV
- Sizes: 1-1/2" – 2" (DN40 – DN50)
- Body Materials: Carbon Steel, Stainless Steel
- End Connections: Threaded, Socket Weld, or Flanged
- Cv (Kv): up to 30 (up to 25,8)
- Trim Materials: Stainless Steel, Monel, Hastelloy C, Alloy 20
- Seat Materials: Jorcote
- Thermal System: Seal-welded actuator (SWA) with Capillary and bulb
- Control range: up to 450°F (232°C)



Sliding Gate Control Valves

Mark 75 Series Wafer Style Sliding Gate Control Valves



With all the benefits of the time-tested Sliding Gate design, but in a lighter weight, compact wafer-style body, the Mark 75 dramatically reduces the size and weight of conventional control valves.

- Shutoff: ANSI Class IV
- Sizes: 1" – 8" (DN25 – DN200)
- Body Materials: 316 Stainless Steel, Carbon Steel
- Seat Materials: Jorcote/316SS standard
- Cv (Kv): up to 600 (up to 517)
- Action: Direct (ATC) or Reverse (ATO)
- Ranges: 3-15 psi, 6-30 psi or split ranges (0,2-1,0 bar, 0,4-2,1 bar)
- ANSI Class 150/300

Mark 70 Series Sliding Gate Control Valves



The Mark 70 Series is a line of pneumatically-operated diaphragm control valves that combine multiple spring actuators with the precision of Jordan Valve's advanced sliding gate seat for closer control and greater accuracy. Equal percentage available as a Mark 707.

- Shutoff: ANSI Class IV
- Sizes: 1/4" – 2" (DN8 – DN50); 1/4" – 6" for Mark 711
- Body Materials: Ductile Iron, Bronze, Carbon Steel, Stainless Steel
- Seat Materials: Jorcote on SST standard
- Cv (Kv): up to 30 (up to 26); 6" Mark 711: up to 395 (up to 340)
- Action: Direct (ATC) or Reverse (ATO)
- Ranges: 3-15 psi, 6-30 psi or split ranges (0,2-1,0 bar, 0,4-2,1 bar)

Mark 701/702 Series High Flow Control Valves



The Mark 701/702 high flow sliding gate control valves provide higher Cv without going to a larger valve, straight through flow and ease of maintenance

- Shutoff: ANSI Class IV
- Sizes: 1/2" – 2" (DN15 – DN50)
- Body Materials: Ductile Iron, Bronze, Carbon Steel, Stainless Steel
- Seat Materials: Jorcote on SST standard
- Cv (Kv): up to 70.0 (up to 60,3)
- Action: Direct (ATC) or Reverse (ATO)
- Ranges: 3-15 psi, 6-30 psi or split ranges (0,2-1,0 bar, 0,4-2,1 bar)

Sliding Gate Control Valves

Mark 33 Series Electric Motor Control Valves

The Mark 33 is a motor operated valve featuring the Jordan sliding gate seat and heavy-duty industrial motors for proportional (resistance), on-off, or 4-20mA electronic format. The Mark 331/332 is the High Flow version of this valve, and the Mark 337 is the equal percentage version.

- Shutoff: ANSI Class IV
- Sizes: 1/4" – 2" (DN8 – DN50)
- Body Materials: Ductile Iron, Bronze, Carbon Steel, Stainless Steel
- End Connections: Threaded, Flanged, Socket Weld, Butt-Weld
- Cv (Kv): up to 30 (up to 25,9)
- Trim Materials: Stainless Steel, Monel, Hastelloy C, Alloy 20
- Seat Materials: Jorcote
- Command Signals: Proportional (resistance), on/off, milliamp, or 2-10 VDC



Mark 37 Series Final Control Element Valves

The Mark 37 is a motor-operated control valve that combines a state-of-the-art electronic linear actuator with the exceptional performance of Jordan's sliding gate seat design. The result is a superior degree of accuracy that makes it ideal for use as the final control element in distributed process control systems. The Mark 371/372 is the High Flow version of this valve, and the Mark 377 is the equal percentage version.

- Shutoff: ANSI Class IV
- Sizes: 1/4" – 6" (DN8 – DN150)
- Body Materials: Ductile Iron, Bronze, Carbon Steel, Stainless Steel, Cast Iron
- End Connections: Threaded, Flanged, Socket Weld, Butt-Weld
- Cv (Kv): up to 395 (up to 339,7)
- Trim Materials: Stainless Steel, Monel, Hastelloy C, Alloy 20
- Seat Materials: Jorcote
- Command Signals: Current or voltage command, on/off



Mark 74 Series Bellows Seal Control Valves

The Mark 74 provides exceptional bellows life with a valve stroke that is just a fraction of that of other rising stem valves. This means Jordan Valve can use a smaller formed bellows that has minimal movement during operation.

- Shutoff: ANSI Class IV
- Sizes: 1/4" – 2" (DN8 – DN50)
- Body Materials: Ductile Iron, Bronze, Carbon Steel, Stainless Steel
- Seat Materials: Jorcote/316SS standard
- Cv (Kv): up to 30 (up to 10,3)
- Action: Direct (ATC) or Reverse (ATO)
- Ranges: 3-15 psi, 6-30 psi or split ranges (0,2-1,0 bar, 0,4-2,1 bar)



Control Valves

Mark 78 Series Globe Style Control Valves



The Mark 78 pneumatic control valve is designed for accurate performance and simplified maintenance. This versatile product can be used on a variety of applications, including viscous/corrosive liquids, process gases or steam in process or utility service.

- Shutoff: ANSI Class IV or VI
- Sizes: 1/2" – 2" (DN15 – DN50)
- End Connections: Threaded, Flanged, Socket Weld, Butt-Weld
- Body Materials: Bronze, Carbon Steel, Stainless Steel
- Cv (Kv): up to 50 (up to 43)
- Trim Materials: Stainless Steel, Monel, Hastelloy C, Alloy 20
- Seat: ANSI Class IV (Hard Seat); ANSI Class VI Teflon (Soft Seat)
- Control Ranges: 3-15 psi, 6-30 psi or split ranges (0,2-1,0 bar, 0,4-2,1 bar)

Mark 79/79MX Series Three-Way Control Valves



The Mark 79 is a pneumatic 3-way control valve for use in either bypass or mixing service. The Mark 79 utilizes the unique sliding gate trim design to provide excellent control with superior longevity. Each valve contains two sets of sliding gate seats connected to a common valve stem for synchronized movement, whether in by-pass or mixing mode.

- Shutoff: ANSI Class IV
- Sizes: 1-1/2", 2", 3" (DN40, DN50, DN80)
- Body Materials: Carbon Steel, Stainless Steel
- End Connections: Flanged
- Cv (Kv): 15, 25, 30 (12,9, 21,6, 25,9)
- Trim Materials: Carbon Steel, Stainless Steel
- Control Ranges: 3-15 psi (0, 2-1 bar); others upon request

Mark ED and ET Series Globe Style Control Valves



The Mark ED and ET are single port, globe style bodies with composition or metal seats, and a balanced valve plug with "push down to close" action. The Mark ED is intended for general control applications over a wide variety of temperature and pressure drops. The Mark ET has a balanced tight shut off, and is used in applications requiring low leakage rates.

- Sizes: 1"-8"
- Pressure Classes: ASME Class 150, 300 and 600
- End Connections: Raised Face, or Ring Type Joint flanges
- Body Materials: LCC, WCB, WCC, WC9, C5, Monel, CF8M (SST), Others on request
- Flow Characteristics: Linear, Quick Opening or Equal Percentage
- Shutoff: Mark ET: ANSI Class IV & V; Mark ED: ANSI Class II & III

Control Valves

Mark EZ Series Globe Style Control Valves

The Mark EZ valves are globe style valves with integral end connections, post guiding and features quick change trim.

- Sizes: 1"-4"
- Pressure Classes: ASME Class 150, 300 and 600
- End Connections: Raised Face, or Ring Type Joint flanges
- Body Materials: LCC, WCB, WCC, WC9, C5, Monel, CF8M (SST), Others on request
- Flow Characteristics: Linear, Quick Opening or Equal Percentage
- Shutoff: Mark ET: ANSI Class IV and V



Mark EW Series Globe Style Control Valves

The Mark EW valve bodies are single port, globe style bodies with cage guiding, clamped seat rings and push down to close valve plug action. The series features large end connections and expanded internal flow cavities.

- Sizes: 8 x 6, 10 x 8, 12 x 6, 16 x 12, 20 x 16, 24 x 16, 24 x 20
- Pressure Classes: ASME Class 150 through 900
- End Connections: Raised Face, Ring Type Joint, and welded flanges.
- Body Materials: LCC, WCB, WCC, WC9, C5, Monel, CF8M (SST), Others on request
- Flow Characteristics: Linear, Quick Opening or Equal Percentage
- Shutoff: Mark EWD: Class II, III & IV; Mark EWS: Class IV & V; Mark EWT: Class IV & V



Mark D Series Globe and Angle Style Control Valves

The Mark D Series is a single port, screwed-in metal seated globe style valve, with an unbalanced post-guided plug, and "push down to close" plug action for use in high pressure applications. The Mark D valve is especially useful for throttling or on/off control of liquids or gases.

- Sizes: 1" & 2"
- Pressure Classes: ASME Class 150 through 2500
- End Connections: Cast integral flanges, Welded flanges, Screwed or Socket Weld connections
- Body Materials: LCC, WCB, WCC, WC9, C5, Monel, CF8M (SST), Others on request
- Flow Characteristics: Equal Percentage
- Shutoff: Class IV and V



Control Valves

Mark DBAQ Series Angle Style Control Valves



The Mark DBAQ is a single port metal seated valve with push down to close valve plug action, which is available in Angle style bodies. The Mark DBAQ Series is ideally suited for high pressure water and steam applications.

- Sizes: 2"
- Pressure Classes: ASME Class 1500 and 2500
- End Connections: Raised Face (RF), Ring Type Joint (RTJ), National Pipe Thread (NPT), or Butt Weld
- Body Materials: LCC, WCB, CF8M (316SS), Others on request
- Flow Characteristics: Equal Percentage
- Shutoff: Class IV and V

Mark HPX and HPAX Series Globe and Angle Style Control Valves



The Mark HPX Control Valves are designed for high pressure applications in the process industry. Valves are cage guided, with metal seats and quick change trim. Balanced plugs are push down to close. The Mark HPX is a straight globe valve while the Mark HPAX is an angled valve.

- Sizes: 2", 3", 4" & 6"
- Pressure Classes: ASME Class 900 through 2500
- End Connections: Raised Face, Ring Type Joint, NPT, or welded flanges
- Body Materials: LCC, WCB, WCC, WC9, C5, Monel, and CF8M (SST), Others on request
- Flow Characteristics: Linear, Equal percentage and Quick opening
- Shutoff: Class II & V

Mark H900/ H1500/ H2500 Series Globe Style Control Valves



The Mark H2D is a single port, globe style body with cage guiding, and balanced valve plug with push down to close action. Metal seat, piston rings are used to provide the seal between the valve plug and cage. The Mark H5T is a single port, globe style body with cage guiding, balanced valve plug, metal seat, and pressure assisted spring seal to provide the seal between the valve plug and cage.

- Sizes: 3", 4" & 6"
- Pressure Classes: ASME 900 through 2500
- End Connections: Raised Face, Ring Type Joint, or welded flanges
- Body Materials: LCC, WCB, CF8M, CF3M, WCC, Others on request
- Flow Characteristics: Linear, Equal percentage and Quick opening
- Shutoff: Class II, III, IV & V

Control Valves

Mark V-100 Series Rotary Control Valves

The Mark V-100 Ball Valve design utilizes a standard ball with a triangular shaped wedge formed in it. This design allows for both throttling control and on/off service used in conjunction with a variety of actuators.

- Sizes: 2" - 12"
- Pressure Classes: ASME Class 150, 300 & 600
- End Connections: Wafer Style (flangeless)
- Body Materials: LCC, WCB, CF8M (316SS), Others on request
- Flow Characteristics: Modified equal percentage with forward flow into the convex side of the V-ball
- Shutoff: Class IV



Mark 128PQC Series Control Valves

The Mark 128 PQC Control Valves are single port valves with an unbalanced stem-guided valve plug and push down to close valve plug action. Operated by a Mark 128 spring and diaphragm actuator, the assembly can be operated in a normally open or normally closed application.

- Sizes: 1"
- Pressure Classes: 3600 psi @ 100°F
- End Connections: NPT
- Body Materials: WCB
- Flow Characteristics: Quick Opening with a 45° taper plug
- Shutoff: Class IV



Mark 2000 Series Angle Seat On/Off Control Valves

The Mark 2000 is an externally piloted angle-seat valve with self-adjusting packing gland, intermediate relief and wiper. The angle-seat construction of the body makes possible extremely high flow rates, particularly in comparison to conventional globe valves.

- Seat: PTFE
- Sizes: 1/2" - 2" (DN15 - DN50)
- Body Materials: 316 SST
- End Connections: Threaded (NPT)
- Pressure Range: 0 - 362 psi, max (0 - 25 bar)
- Trim Materials: 304 SST
- Packing Materials: Spring loaded, PTFE-V Rings
- Solenoid Options: 125VAC or 24 VDC





Please refer to our LowFlow Condensed Catalog for information relating to our complete line of fractional flow control valves and regulators. Please refer to the Steriflow Condensed Catalog for information relating to our complete line of sanitary pressure regulators, back pressure regulators, control valves, ball valves, steam traps and high purity pressure regulators.



RICHARDS INDUSTRIES

Richards Industries is the parent company of six distinct industrial product lines:

- **Jordan Valve** – Pressure and temperature regulators; pneumatic and electric control valves
- **LowFlow Valve** – Fractional flow control valves and regulators
- **Steriflow Valve** – Sanitary regulators, control valves and steam traps
- **Marwin Valve** – Ball valves and automated products
- **Hex Valve** – Instrumentation valves and manifolds
- **Bestobell Steam Traps** – Steam traps and steam specialty equipment

Our global network of representatives and distributors is our customers' most valuable resource. With over 200 representatives throughout the world, there is a local rep who will provide hands-on assistance with your application.

To learn more about Richards Industries and our products visit: www.richardsind.com

ISO 9001: 2000 certified

3170 Wasson Road
Cincinnati, OH 45209
USA

513-533-5600 • 513-871-0105 (f)

info@richardsind.com
www.jordanvalve.com