

Since 1996 Flowtech LLC has been supplying the Middle East with specialize valves, actuators, accessories and spare parts. With an enviable reputation built on providing quality products, with on time deliveries and excellent after sales support we continue to grow to meet the demands of our expanding Middle East customers.

ENGINEERING DEPARTMENT

We have an Engineering Excellence Centre, where application and design engineers with technical expertise in the field of valve/actuator sizing, valve/actuator selection as well as being able to design a wide range of valve solutions for use in the process industries. Our ability to work with you to find a valve solution for your application is second to none. We use state of the art modeling and design algorithms to optimize our solutions. Our Engineering team, with years of Process and Application experience coupled with the support of modern Engineering and Simulation Techniques have solutions for any customer's requirements. We have core expertise in sizing and selection of valves for critical applications, backed up by theoretical analysis to ascertain and eliminate Cavitation, Flashing, Noise and Vibration. We provide Customized Solutions for special applications, using Computational Fluid Dynamics (CFD) analysis to firm up concepts and design, we also do analysis and selection of correct metallurgy to suit applications.

SERVICE DEPARTMENT

Our service department is run by highly competent Engineers. Starting from PDI to commissioning and installation at site, the Flowtech Service Team can assist you with solutions to your after sales needs. We offer advice on the operation of valves, actuators and accessories, we also perform trouble shooting & maintenance advice. Training either on-site, in our UAE facility or at your premises, on all aspects of valves and actuators can be provided upon request.

Due to industries needs to 'keep moving', our Service Department offers a range of spare parts and fast moving complete items, ex-stock UAE, readily available for our customers to reduce downtimes during maintenance and shut-down periods. Our Service Department understands and cares about our customers needs to save time and money and we are here to help with that.

SALES DEPARTMENT

Flowtech LLC is your channel to the world of valves. You can rely on our inside and outside sales personnel who are always available to you. Your time is important to us, so you can always depend on us from bidding, awarding and execution stages of your enquiries and projects. Our Sales Department is ready to assist you with pricing, deliveries and technical discussions for valve and actuator selection. We take great pride in our ability to suggest solutions for applications that you may be struggling with or to suggest more economical solutions that you may not be aware of for your applications. Whatever your requirements are, we are ready to assist and provide you with our services and back-up to give you peace of mind when purchasing valves, actuators and accessories.

Bray Controls

VALVES

RESILIENT SEATED

Bray Controls is proud to offer our high performance, highest quality product line. Through years of field applications experience, research and development, we have designated products that meet the stringent requirements of today's fluid process industry. Bray offers a complete line of resilient seated butterfly valves for chemical, sanitary and general service applications. Rugged and reliable, Bray valves are built to last.

Our unique feature is the international compatibility of our valves with most world flange standards. Another feature is our tongue-and-groove seat design, which provides complete isolation of flowing media from the body and stem by a totally encasing design. Most standard bodies are epoxy coated insuring excellent corrosion and wear resistance to the valve's surface. All Bray valves have extended necks which allow for at least 2" piping insulation. Due to a modular concept of design, all Bray manual operators, pneumatic and electric actuator and Bray line accessories are directly mounted to Bray valves. 16 bar rated valves can be achieved for the resilient seated S30/S31/S33/S36.



SERIES 20/21 1"-20" (25mm-500mm)

The Bray sanitary and chemical applications valve. This valve features a one-piece disc/stem. A thin profile disc provides a very high Cv and greater pressure recovery and superior abrasion and erosion resistance in slurry or dry media applications. The Series 20, a wafer version, and the Series 21 the companion lug, are both rated from 100 psi (7 bar) to 150 psi (10 bar) for 1"-20" bodies. Dead end service ratings are 75 psi (5 bar) for 2"-12" bodies, and 50 psi (3.5 bar) for 14"-20" bodies. The split body design makes field replacement of the seat simple and fast.



316 Stainless Steel bodies, investment cast 1"-6" and sand cast 8"-12", in both wafer and lug styles are available.

All Series 20/21 valves are available with 316 Stainless Steel or Hastelloy C disc/stem and a variety of molded disc/stem and seat materials.



SERIES 22/23 2"-24" (50mm-600mm)

The Bray HPV-High Performance Valve is ideal for highly corrosive, conductive, abrasive and ultra pure applications. Conductive PTFE and UHMWPE seats and discs are available. Bray's patented sealing design provides bubble tight shut-off and absolute stem sealing capability. PTFE seats and encapsulated discs are molded from virgin, unfilled PTFE with a minimum of 1/8" thickness. The HPV seats feature computer designed, machined contours that reduce part wear by minimizing contact forces. The Series 22, a wafer version, and the Series 23, the companion lug, are rated for 150 psi (10 bar) service.



SERIES 30/31

2"-20" (50mm-500mm)

Bray's general purpose valve. This valve has a high strength through-stem design. Its precision double "D" disc to stem connection drives the disc without the need of screws or pins. This design allows for higher Cv, easy disassembly and reduced disc failure. The stem is retained in the body by means of a S.S. retaining ring. The Series 30, a wafer version, and the Series 31 the companion lug, are both rated 175 psi (12 bar) for 2"-12" bodies and 150 psi (10 bar) for 14"-20" bodies. Dead end service ratings are 75 psi (5 bar) for 2"-12" bodies, and 50 psi (3.5 bar) for 14"-20" bodies.

SERIES 32/33

22"-36" (550mm-900mm)

Large diameter economical wafer valve. The Series 32 valve is rated 75 psi (5 bar), and the Series 33 valve is rated 150 psi (10 bar). (Photo not shown)



SERIES 35/36

22"-120" (550mm-3000mm)

Large diameter flanged valve. Features and through-stem design with adjustable packing and bubble-tight shutoff. The Series 35 valve is rated 75 psi (5 bar), and the Series 36 is rated 150 psi (10 bar).

Bray Controls



SERIES 40 2.5"-66" (65mm-1650mm)

The Bray/McCannlok high-performance, high-pressure, high and low temperature butterfly valve. Full rated ANSI Class 150, 300 & 600 valves in wafer and lug bodies. The unique, two part seat design features and energized O-ring fully encapsulated in RTFE seat for bidirectional bubble-tight shut-off under high pressure, low pressure and vacuum. A double offset stem and disc design reduces seat wear, extends service life and reduces torque. A superior Fire safe version is available. The temperature range of the Series 40 is from -62°F (-52°C) to 500°F (260°C) with operating pressures up to 1480 psi (102 bar).

OPERATORS

SERIES 1 HANDLE & NOTCH PLAT KIT

For manual operation, on-off and throttling service. This quarter turn handle has a locking spring. The bolted notch plate allows positive disc position indication for 1"-12" (25mm-300mm) valves.



SERIES 4 GEAR OPERATOR

Self-locking for heavy duty service. Manual operation for on-off and throttling use for 2"-48" (50mm-1200mm) valves. Completely weatherproof and self lubricated with position indicator and adjustable travel stop. Chain wheel accessory available. A Stainless Steel housing is also available.

SERIES 5 DECLUTCHABLE GEAR OPERATOR

For manual override of pneumatic actuators. During pneumatic operation of the valve, the worm of the gear unit is disengaged. Should the valve require opening or closing in the event of power loss, manual rotation of the Declutch lever will provide a camming action and engage the worm to the segment worm gear. Reverse rotation of the lever will allow for disengagement of the unit. Excellent for safe handling of spring return actuators. Available for 2"-36" (50mm-900mm) valves.



SERIES 98 SCOTCH YOKE PNEUMATIC ACTUATOR

Bray's engineering excellence and precision manufacturing have produced a modular product line optimized for mounting on Bray valves. In addition all Bray accessories are fully configurable and directly mount to the actuator – providing flexibility and efficiency at reduced cost. The Series 98 actuators were designed primarily for pneumatic operation to a maximum pressure of 150 psi (10.3 Bar) and for temperature ranges of -50°F (-46°C) to 300°F (+149°C). It provides high Torque Output ranging from 2,744 to 885,100 in-lb (310 to 100,000 Nm) for double acting and 2,744 to 445,261 in-lb (310 to 50,306 Nm) for spring return. The Modular Design offers easy configuration in the field. As a standard it has a premium epoxy/polyurethane coating. The Ingress Protection is according to IP66/IP67M per IEC 60529, ATEX, SIL 3 suitable, PED on request can be provided.

ACTUATORS

SERIES 92/93 PNEUMATIC

Styling, strength, compactness and simplicity of design have been combined to produce the best rotary actuator on the market today. Bray pneumatic actuators are rack and pinion, opposed-piston actuators available in two versions: double acting and spring return. They have a maximum pressure rating of 140 psi (10 bar) and a temperature range of -4°F (-20°C) to +200°F (+95°C). Offered for the first time to the industry are the unique acetal piston guides and rings which have a very low coefficient of friction and absorb the side thrusts of the pistons. Other features include integral porting which reduces the cost of easily damaged tubing, position indicator and travel stop adjustment. To save both cost and space, the Series 93 spring return units are designed with the housing length the same as our double acting units. The Series 92 spring cartridges system is available for 40, 60, 80 and 100 psi services (3,4,5,6 and 7 bar). NAMUR interface of air supply ports is standard on all Series 92/93 actuators. In addition, Bray actuators comply with ISO 5211 and VDI 3845 (NAMUR recommendations) dimensions and mount directly to Bray valves without using external linkages.



Ritepro Corporation, headquartered in Quebec, Canada and founded in 1963, designs and manufactures exceptional Check Rite check valves, cam and groove quick couplings, and fluid handling loading and unloading equipment.

For over 40 years, Ritepro has earned a reputation for reliability. This reputation is based on our highest quality manufacturing standards, premium components and thorough control procedures.

With a worldwide sales and distribution network, we offer our customers full support wherever the project location.

Our engineers specialize in innovative, individual solutions to industry needs and will assist you with your project requirements.

Our knowledgeable sales and support staff are committed to outstanding service and, above all, customer satisfaction. We look forward to recommending a practical and economical solution to your fluid control applications.

Check Rite Valves continue to be the premier wafer combination swing check valve. Designed in 1970, their performance remains unsurpassed. The line offers a wide range of valves and accessories, all fully stocked and readily available.

Their successful, long term use in applications worldwide has made the Check Rite the industry standard for economy, durability and reliability.

Check Rite®

State of the Art Check Valves,

Check Rite is Rite Sized.

Ritepro's Check Rite wafer combination swing check valves are flowactivated and Rite Sized. Check Rite inlet ports and disc have been shape optimized to achieve a fully open position at low flow rates (3 ft/s on average). Therefore, the Check Rite operates exceptionally well in the flow rates typically found in pipelines containing control valves and lines with varying media flows.

Compare the Check Rite to typical full-sized swing check valves. Due in part to their oversized, heavier discs, these valves only fully open at an average flow rate of 11 ft/s. When activated at a lower flow rate, these valves lose true controllability and do not fully open. A partially open disc creates an obstruction that produces a higher pressure drop and fluttering of the valve disc - disturbing the flow and increasing the chance of water hammer.

Check Rite is Rite Sized to eliminate these problems. It has been engineered to accelerate line media through the valve and achieve a virtually unobstructed full opening in low pressure. Rite Sized, combined with the limited movement of internal parts during operation, reduces wear - enhancing the long service life of a Check Rite valve.

SIZE RANGE

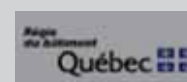
1 "(25mm) - 60" (1500mm)

ASME CLASS

125- 2500

API, DIN, BS, JIS Classes

Available



Accessories

Ritepro has designed and manufactured an extensive range of accessories for special applications. Some commonly used accessories and a PVC body uniquely designed for a specific application are shown below. Check Rite valves can be fitted with any one or a combination of accessories, including safety caging.

EXTERNAL LEVER & SPRINGS (SA-01)

Provide additional external force to anticipate closure in applications where rapid media flow reversal requires the valve to close faster than standard.

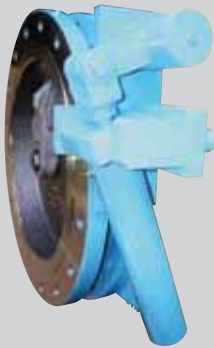
Applications: Pump protection when pumping in parallel into a common header.



EXTERNAL LEVER & COMPRESSION SPRING (SA-40)

Provide additional force to anticipate valve closure, using an enclosed compression spring, in applications where rapid media flow reversal requires the valve to close faster than standard.

Applications: Pump protection when pumping in parallel into a common header, where spring force required is higher than a SA-01 orifan enclosed spring is preferred.



EXTERNAL LEVER & WEIGHT (SA-16)

Provide additional external mass to increase the cracking pressure (pressure required to open the disc) and increase the closing force of the moving disc.

Applications: Where increased cracking pressure is required. Waste Water service or where suspended solids are present in the process (the weight will insure inertia induced positive closure). Relief valve with adjustable cracking pressure.



EXTERNAL LEVER, SPRING & WEIGHT (SA-1)

These units use the combination of a weight and spring to add cracking pressure and closing force to the disc.

Applications: Where performing both functions of faster closure and solid handling are required, primarily in waste water.



DUAL WEIGHTS (SA-10)

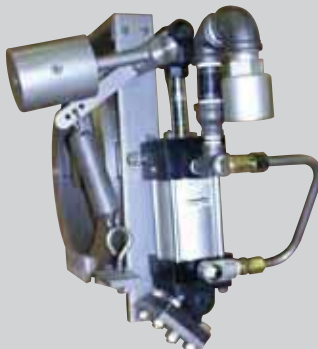
Two opposing weights, one to adjust cracking pressure and one to counter balance the disc.

Applications: Insures valve is fully open on very low flows.



HYDRAULIC PNEUMATIC SPEED CONTROLS (H-100, SA-50)

Slow the opening of the valve to protect the disc assembly in the last few degrees of travel. These units offer adjustable speed control and are ideal in fluctuating flow applications. The H-100 uses the SA-01 spring. The SA-50 uses the SA-40 compression spring.



LIMIT SWITCH (SA-2)

Provides remote indication of valve position and a positive indication of flow. If two are installed the first shows the closed position, the second the fully opened valve. (A partially opened valve is subject to premature wear.)

Applications: Automated control systems.



PVC (PEZ SA-4AX)

PVC Body with passivated stainless steel or titanium internals and position indication lever. Eliminates internal body corrosion. Applications: Used for Salt water, marine life support system and desalination applications.



KNIFE GATE VALVE

SERIES 940 UNI-DIRECTIONAL

The **Bray/VAAS Series 940** one-piece, cast body design offers rugged performance in applications ranging from general purpose to severe media handling.

Available with integral metal or replaceable soft seat, the Bray/VAAS Series 940 gate valve is easily automated for on/off applications.

Size Range: 2" - 36" (50 - 900mm)

Pressure rating: Up to 24" (600mm) 150psi (10bar)

30" - 36" (750-900mm) 100psi (7bar)

Designed for easy, quick conversion between manual and pneumatic actuation. Featuring a lubricant injection port for continuous, smooth operation with minimal maintenance.

Clevis design and horizontal bolting stabilises gate ensuring proper alignment.

Standard multi-layer square packing provides exceptional gland sealing.

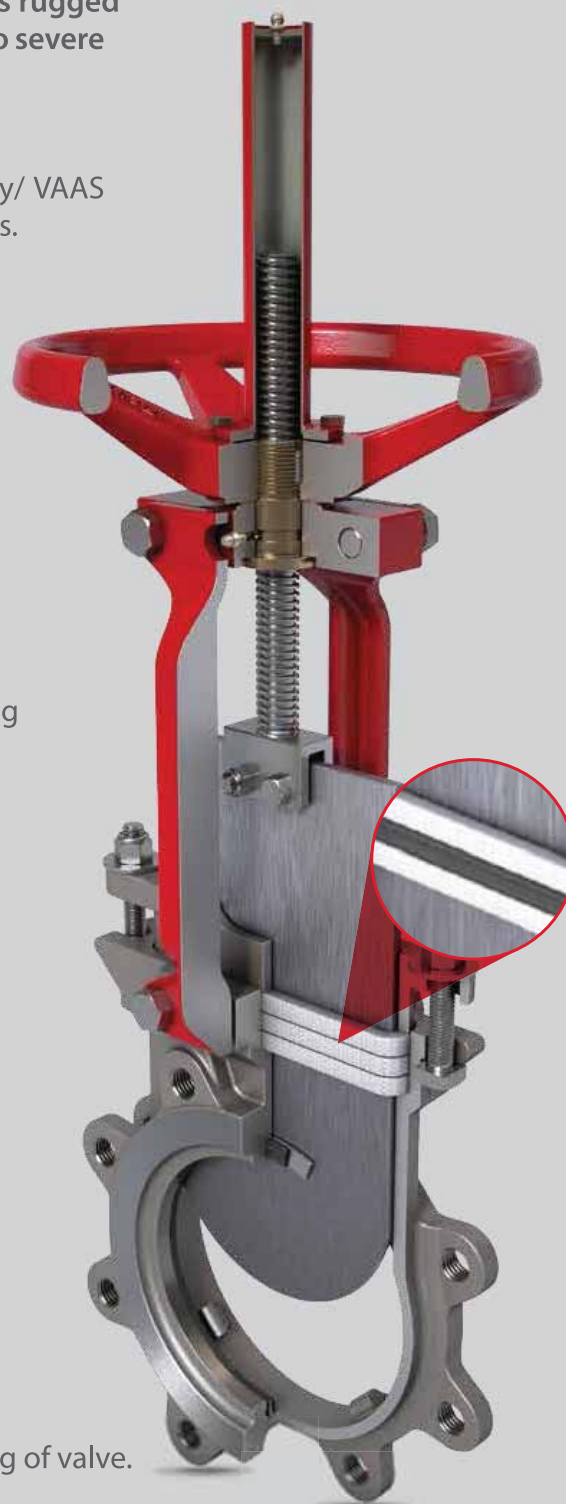
Optional energised quad seal packing for enhanced gland sealing.

Standard integral metal seat and optional replaceable zero leakage resilient seats.*

Deflection resistant gate design ensures consistent alignment for industry leading durability.

Unique body design with no dead pockets enables self-draining of valve.

Other types of Knife Gate valves are available.





We design and manufacture



Main steam stop valves
Feed water control valves
Drain valves
Pump recirculation valves
Spray water control valves
Turbine by-pass valves
Discharge-hydrogen
Discharge-sulphur
Three way control valves
Amine & Wet H₂S
Second stage reactor feed
Urea let-down valves

Design feature

Compact, Single seated valves with stream lined globe type body high flow capacity and low pressure recovery. Screw-in seat trim or Quick-change.
Globe and angle body, cast or forged.
Inherently characterised trim available in Linear, Equal percentage or Quick opening.
Both balanced and unbalanced trim designs available with soft seat insert options.

Benefits

Top-entry servicing with immediate access to plug and seat reduce inspection and maintenance costs.
Trims are compact and easy to install.
Excellent flow capacity and control rangeability.
Low actuating forces required with balanced trim styles.

In-house engineering and design.

Green Control can design and engineer application specific valves to suit customer's needs. Our in-house team of design engineers can review a customer's application parameters and design a valve specifically for that application. A unique valve for a unique application. This ability also allows us to retrofit existing valves and to design specific trims for existing control valve housings which may not be performing to customer expectations.



Industries

Power
Desalination
Geo-thermal
Oil and Gas

Applic

General
Critical
(High and Low
De-super
On/Off



After-Sales Support

We are able to provide specialist after-sales and support services for critical applications, including site visits, valve performance studies and retro-fit services for worn-out or non-performing valves when customer's need solutions.

Sizes and Connections

1/2" in (15mm) - 36" in (900mm)
RF - RTJ - BW - SW

Valve body ratings

ASME 150 - 4500

Design standard

ASME B16.34
EN 12516

Trim types

Contoured
On/Off
Single Cage
Multi Cage

Testing facility

Our unique testing facility allows us to test our entire range of sizes and pressure classes on-site. We therefore ensure the Quality Control of our products in-house assuring our Customer's of the best Performance and Quality control.

Certification

Green Control has factory accreditation for Quality Control to ISO-9001, and products accredited to PED and ATEX standards. All accreditations have been carried out by the TÜV, which is a leading international body for the certification of safety and quality for products, services and management systems

Configurations

Globe
Angle
3 Way

Applications

General purpose
Industrial service
(Low temperature)
Superheaters
On/Off Valves





**WARREN-MORRISON
VALVES LTD.**

Member of  **BVAA**

The Future of Industrial Valve Supply

Warren-Morrison Valves Ltd.

has been manufacturing its own unique range of industrial diaphragm and pinch valves for over 55 years.

We are pleased to introduce to the market an exciting new range of gate & check valves to complement our existing industrial products.





WARREN-MORRISON VALVES LTD.



True full bore Pinch Valves The Warren-Morrison Pinch Valve is the number one choice for controlling the flow of corrosive or abrasive slurries, powders and granular material and is equally efficient when handling gases and viscous liquids.

For added safety Warren-Morrison Pinch Valves are normally supplied with totally enclosed bodies acting as a secondary containment system. Open bodied versions are also available for less critical applications. The easily replaceable rubber sleeve is the only part in contact with the medium, thus eliminating gland leaks and the problems associated with jamming mechanisms. Correct selection of sleeve elastomer will ensure maximized maintenance schedules and the ease of sleeve replacement minimizes downtime.

All sizes are suitable for use in food and brewing industries and we offer a food quality EPDM rubber sleeve suitable for occasional steam sterilization at 140°C. The Mark 4 Pinch Valves have both pressure ratings and

face to face dimensions to BS 5156 which allows interchangeability with lined diaphragm valves. All Pinch Valves are available in manual and actuated styles and we are able to modify our castings to fit any suitable type of electric, pneumatic or hydraulic actuator.

W-M Gate Valve The W-M Resilient-Wedge Gate Valve is designed for use in drinking and fire protection systems as well as irrigation and back-flow control systems. The ductile iron body, bonnet, and wedge provide strength and a pressure rating of 16 bar. Ductile Iron strength more than doubles that provided by gray cast iron designs. All this strength and higher-pressure rating is provided in a compact, light-weight, and easy-to handle ductile iron valve. The valve body is fully epoxy coated on the interior and the exterior. The fusion-bonded coating is applied prior to assembly so that even the bolt holes and body-to-bonnet flange surfaces are fully epoxy coated. The wedge is fully rubber coated providing a repeatable tight shut-off seal.



Size Range: DN40 - 1000
Flange suitability: PN 10/16
Pressure rating : 16 bar
Face to face: BS 5163 / DIN F4 & F5, AWWA C509

Size range: DN 50- 750
Flange suitability: PN 10/16
Pressure rating : 16 bar

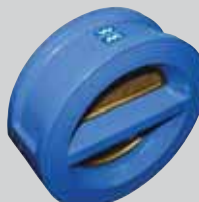


Check Valve - Flanged The W-M Flanged Check Valve is designed for use in drinking water, sewage, and fire protection systems as well as irrigation and back-flow control systems. The valve is of simple yet effective design and durable.

The valve features a compact ductile iron body and bonnet. The disc is made of ductile iron and an o-ring forms the seal between body and disc. The valve is rated for 16 bar.

Twin-plate Check Valve-Wafer The W-M Twin-Plate Check Valve is designed for use in drinking water, sewage, and fire protection systems as well as irrigation and back-flow control systems. The valve is of simple, effective and durable design. The valve features a very compact wafer style body of ductile iron construction. The disc can be supplied in aluminum bronze or 316 stainless steel. An o-ring forms the seal between the body and disc allowing the valve to be rated to 16 bar.

Size range: DN 40 - 1200 Flange suitability: PN 10/16 & ANSI 150 as standard Pressure rating : 16 bar



Size Range: DN 40 - 1200
Flange suitability: PN 10/16 & ANSI 150 as standard
Pressure rating: 16 bar

Bonnet assembly
Non-rising handwheel design with
chain locking device.
Material: Gunmetal or S.G. Iron.



Fire Hydrant Valve The 'SFV' Soft Seated Fire Valve is designed for fire fighting service for use on hydrants. The mechanism is totally enclosed thus preventing contamination from the elements. The valve is a soft seated style enabling 100% shut off and ease of opening and closing even after long periods of non-use. The valve is suitable for offshore and onshore use and also for tank cleaning services. The valve has been accepted for the purpose of the Merchant Shipping (Fire Appliances) Regulations 1980 by the Department of Transport. Lloyds Register of Shipping and is in accordance with S.O.L.A.S.1960 and 1974 Regulations.

'S' Type Diaphragm Valves Warren-Morrison Diaphragm Valves are of an advanced design which provides straight through flow whilst restricting to a minimum the flexing stress imposed on the diaphragm. The internal contours of the body ensure smooth flow and are suitable for all types of protective lining. A wide selection of body materials coupled with a variety of highly developed rubbers and synthetics for the diaphragm enable the valve to handle the widest possible range of duties. The diaphragm is moulded in the open position and has, therefore, no tendency stick closed. The body design gives very low flow resistance and the valve can be rodded should build up occur in adjacent pipework.

Standard production of the 'S' Type covers sizes DN15 to DN450 and the range includes options for handwheel, pneumatic, electric and hydraulic operation.



Remember, Warren-Morrison manufactures tailor made valves and is able to offer flexible options to suit customer's exact specifications.



**WARREN-MORRISON
VALVES LTD.**



Model 20 - threaded.

Description:

Threaded ball valve with 2-piece body and compact design. Self-adjusting live-loaded stem packing. Blow-out proof stem. Mechanical handle lock facility with ability to be padlocked as standard.

Size range : 1 / 2" to 3"

Bore type : Reduced & Full

Body material : Carbon Steel & Stainless steel

Ball material : Stainless steel

Seats : PTFE / RPTFE / DELRIN

Pressure rating : 1 / 2" to 3" Standard 1000 psi WOG

1 / 2" to 1" available up to 2000psig End connections: Threaded NPT / BSP / Actuator mounting pad : Available to ISO 5211



Model 88 - threaded.

Description:

Threaded ball valve with 3-piece body and fire-safe design. Self-adjusting live-loaded stem packing. Blow-out proof stem. Mechanical handle lock facility with ability to be padlocked as standard.

Size range: 1/4" to 4"

Bore type : Reduced & Full

Body material : Carbon steel & Stainless steel

Ball material : Stainless steel

Seats : PTFE / RPTFE

Pressure rating : 1 / 4" to 1" = 2000 psi WOG

1 1/4" to 2" = 1500 psi WOG 2 1/2 to 4" = 1000 psi WOG

End connections : Threaded NPT / BSP / SW / BW Actuator mounting pad : Available to ISO 5211

Model 90 - flanged.

Description:

Flanged ball valve with 2-piece body and fire-safe design. Self-adjusting live-loaded stem packing with blow-out proof stem. Designed in accordance with API 6D & API 607.

Size range : 1 / 2" to 6"

Bore type : Reduced & Full

Body material : Carbon steel (WCB) or Stainless steel (CF8M).

Ball material : Stainless steel

Seats: PTFE

Pressure rating : ANSI 150 & ANSI 300 class

End connections : Flanged ANSI 150 & ANSI 300

Actuator mounting pad : Available to ISO 5211

Other specifications : Available to NACE standards



Models 30 & 38

3 - way ball valves

Description:

Flanged ball valve with 3-way bore, 'L' or 'T' port. Self-adjusting live-loaded stem packing. Blow-out proof stem.

Size range : 1" to 12"

Bore type : Full

Body material : Carbon steel or Stainless steel.

Ball material : Stainless steel

Seats: PTFE

Pressure rating : ANSI 150 & ANSI 300 class

End connections : Flanged ANSI 150 & ANSI 300

Actuator mounting pad : Available to ISO 5211



**WARREN-MORRISON
VALVES LTD.**



ELECTRIC ACTUATORS

FEATURES

Enclosure:

- IP 67 (NEMA 4, NEMA 4X waterproof and dust-proof).
- Material : Dry powder coated aluminum alloy.
- ISO mounting.

Motor:

- Standard extended duty cycle induction motor.
- Class H insulation for FEM-01; Class F insulation for FEM-02 thru FEM-13.
- Built-in thermal protection <135°C prevents motor burning out.
- Various powers supplies available : 110/220 VAC 1 ph, 12/24 VAC & VDC, 380/415 VAC 3ph and others.

Position Indicator:

Continuous mechanical position indicator is visible on top of the actuator.

Manual Override (FEM-02 to FEM-13):

- Upon power outage, the manual override is operated via a hand wheel. It is not necessary to de-clutch any lever or other system to operate, simply turn the wheel. When the electric motor is operating, the handwheel does not rotate.
- For FEM-01 use of a spanner or similar tool is required. Manual over-ride output shaft does rotate during normal operation.

Gear Train:

- 35 Nm-4500 Nm output torques available.
- High alloy-steel gear trains are self-locking to avoid any valve back drive.
- Gear trains are factory lubricated with high temperature lubricant.

Working Conditions:

Ambient temperature: -30°C +70°C.

Standard features:

- 1X Open & 1 X Close limit switches (live), 2 X Extra limit switches (volt free).
- Anti-condensation heater.
- 2 X 1/2" Conduit entries.

Optional Features (upon request):

- Feedback Potentiometer unit (1K Ohm) and / or Current position transmitter (output 4-40mA).
- Local control unit (local/remote/open/close).
- Adjustable torque switches (2 units) - not available for FEM-01.
- Modulating controller - field configurable.





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