

# SEAT-ON-DISC BUTTERFLY VALVES

AWWA C504  
CLASS 150 B & 250 B  
STYLE 4600/4650 3"-72"

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# AWWA C-504 BUTTERFLY VALVES

SIZES 3"-72" AWWA C504



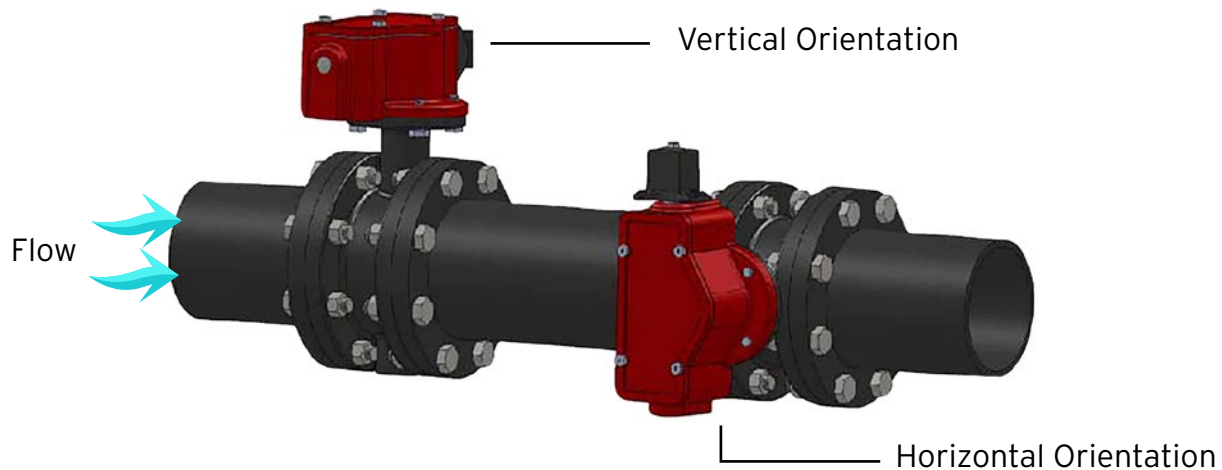
## PRODUCT OVERVIEW

Designed for years of dependable service, the superior design of our butterfly valve provides ease of adjustment along with the ensured dependability expected in any distribution system or plant installation. Our butterfly valve has a 100% bubble tight seal via a 316 stainless steel ring located in the body, and rubber seat located on the vane. The rubber seat provides a 'zero leakage' alternative to metal-seated valves.

For pump station and treatment plant applications, butterfly valves offer flow control advantages (such as throttling) over gate valves, and are much more economical. Our butterfly valves are manufactured in accordance with the American Water Works Association (AWWA) C504 standard. Butterfly valves are constructed of ductile iron, stainless steel, rubber seats & seals. The strength of ductile iron along with stainless steel components provide corrosion resistance for buried service applications.

KEY CHARACTERISTICS	
Size Range	3"-72"
Materials	Ductile Iron ASTM A536 body cover and vane, seat ring 316 SS, 304 or 630 SS shafts, EPDM
O-Ring Seals	Chevron Type 3"-24" and O-ring type 30" and up
Pressure Range	CL 150 or CL 250
Temperature Range	0°F-250°F
Body Style	FLG, MJ or MJxFLG
Actuator Types	Traveling Nut Operator, Lever, Handwheel, 2" OP nut, Electric Motor Operator, Pneumatic Operator
Standards	AWWA C504, NSF/ANSI 61/372 certified (4"-24" only)

# BUTTERFLY VALVE FEATURES & BENEFITS



## STANDARD FEATURES

- Sizes: 3"-72"
- Heavy duty ASTM A536 ductile iron body designed and manufactured to meet or exceed AWWA standard C504.
- Offset vane design: Heavy duty A536 ductile iron meets or exceeds AWWA C504.
- EPDM rubber is vulcanized to a 304 stainless steel ring and attached to the vane utilizing self-locking, stainless steel cap screws. Body ring seat is composed of 316 stainless steel, forming an uninterrupted 360-degree seal.

## ADDITIONAL FEATURES

- **Stainless steel shafts:** One-piece shaft of stainless steel meets or exceeds AWWA C504: Class 150B - 304 stainless steel Class 250B - 630 stainless steel. Other options are available.

- **Direct mounted actuators:** Size 3"-24" butterfly valves come standard with an integrally cast actuator mounting pad machined and drilled in accordance with ISO-5211 and MSS SP-101. This allows for direct mounting a manual and automatic actuator without the need of additional pieces or adapters, providing a more compact and rigid arrangement.
- **Metal to metal:** Full metal-to-metal contact, vane to shaft connection utilizing a stainless-steel torque plug.
- **Strength:** Traveling nut actuators are manufactured with ductile iron housing and position stops are factory preset to prevent the actuator from going beyond the open and closed positions of the valve.
- **Overload protection:** Up to 450 ft-lbs. of input torque against the stops (open/close) to prevent damage to the valve and actuator.
- **Ease of maintenance:** The vane rubber seat ring is field adjustable or replaceable. Bearings for each size butterfly valve require no maintenance.
- **Vertical or Horizontal Orientation:** BFs can be mounted both vertically and horizontally.



# ENGINEERING FEATURES

SERIES 4600

SIZES 3"-24"

## ACTUATOR MOUNTING PAD

Butterfly Valves come standard with an integrally cast actuator mounting pad, machined and drilled in accordance with ISO-5211 and MSS SP-101. This allows for direct mounting of manual and automated actuators without the need of additional pieces or adapters, providing a more compact and rigid arrangement.

## VALVE BODY

Butterfly Valve Bodies consist of heavy duty ASTM A536 ductile iron that are designed to meet or exceed AWWA C504.

## SEALING SYSTEM

EPDM rubber is vulcanized to a 304 stainless steel ring and attached to the vane utilizing self-locking, stainless steel cap screws. The body ring seat is composed of 316 stainless steel, forming an uninterrupted 360-degree seal. Butterfly Valve vane rubber seat ring is easily field replaceable.

## OFFSET VANE DESIGN

Heavy duty A536 ductile iron meets or exceeds AWWA C504.

## STAINLESS STEEL SHAFT

Stainless steel meets or exceeds AWWA C504: Class 150B - 304 stainless steel  
Class 250B - 630 stainless steel.  
Single-piece (3"-12"). Two-piece (14"-24").

## SELF-ADJUSTING PERMANENT PACKING

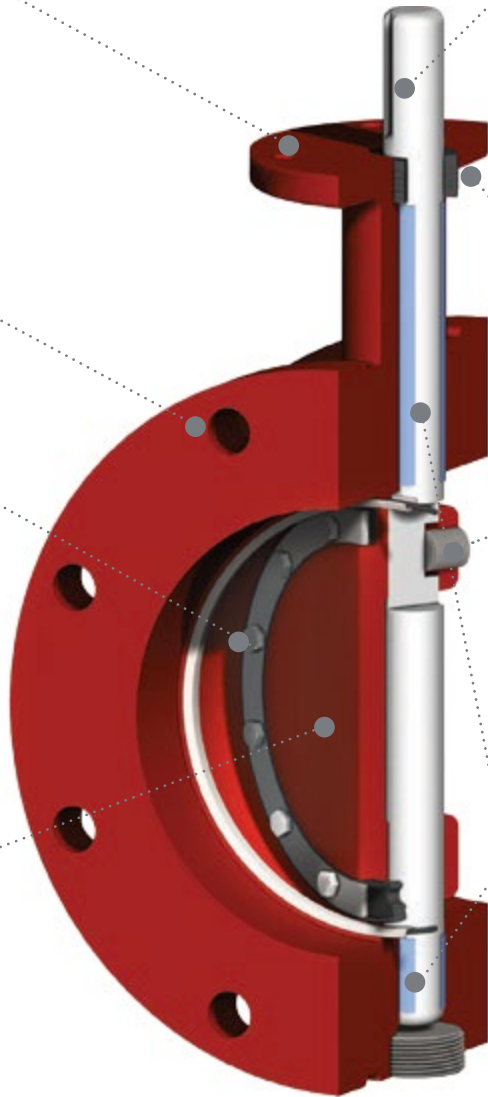
Self-adjusting V-type packing that increases the sealing force with the increase in line pressure. Accessible without dismantling the valve, per AWWA C504.

## TORQUE PLUG

Full metal-to-metal contact, vane to shaft connection utilizing a stainless steel torque plug.

## LIFETIME BEARINGS

Nylon bearings are sized to meet or exceed the AWWA C504 specification for axial pressure loads. The bearings are self-lubricating and require no maintenance.



# ENGINEERING FEATURES

SERIES 4650

SIZES 30"-54"

## BEARINGS

Generously sized, stainless steel backed, Teflon bearings provided on operator and thrust ends are self-lubricated, providing low friction support for the life of the valve. No maintenance is required.

## OFFSET VANE DESIGN

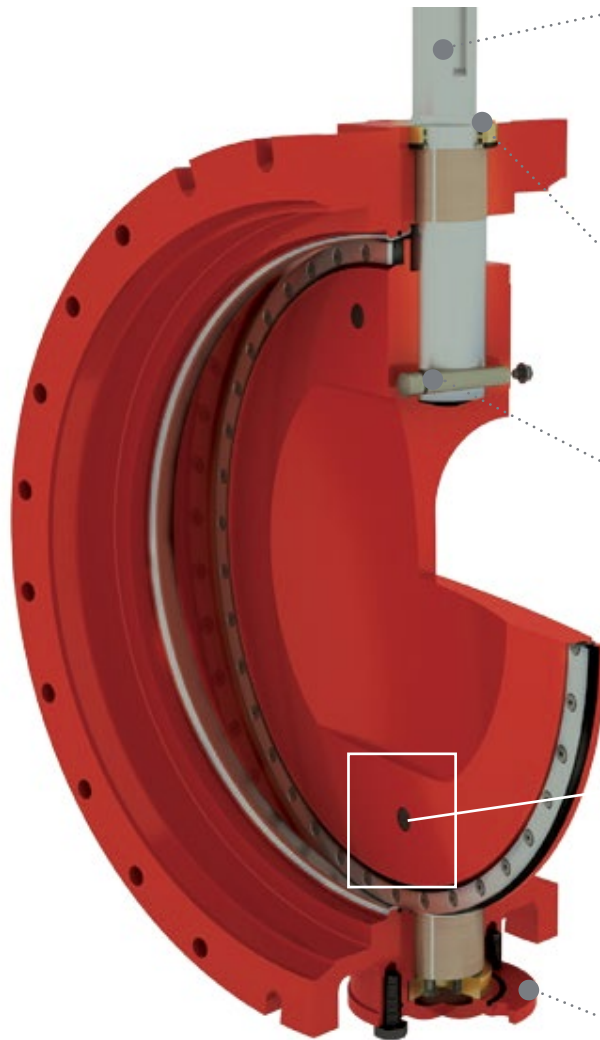
Newly engineered vane provides large free flow area without sacrificing vane strength. Vane construction is of A536 ductile iron to meet or exceed AWWA standard C504.

## VALVE BODY

Heavy duty ASTM A536 Ductile Iron body designed and manufactured to meet or exceed AWWA standard C504.

## SEALING SYSTEM

EPDM rubber is vulcanized to a 304 stainless steel ring and attached to the vane utilizing self-locking, stainless steel cap screws. The body ring seat is composed of 316 stainless steel, forming an uninterrupted 360-degree seal. The style 4500 Butterfly Valve vane rubber seat ring is easily replaced in the field.



## STAINLESS STEEL SHAFT

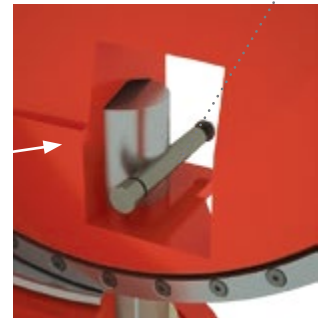
Two-piece shaft of stainless steel meets or exceeds AWWA C504:  
Class 150B - 304 stainless steel  
Class 250B - 630 stainless steel.  
Other options are available.

## O-RING CARTRIDGE

Maximum shaft sealing efficiency with a non-adjustable bronze O-ring cartridge.

## TAPER PINS

Full metal-to-metal contact, vane to shaft connection is accomplished by stainless steel taper pins secured with stainless steel lock bolts.



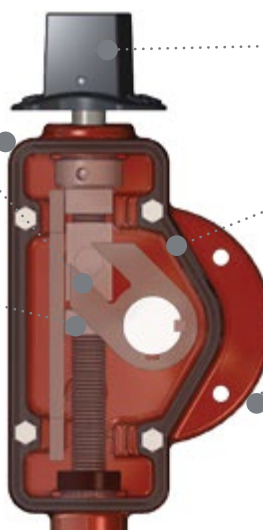
## ADJUSTABLE THRUST BEARING

Bronze thrust bearing accurately centers vane in valve body. Accurate alignment is held in installation position. Factory adjusted for the life of the valve.

# TRAVELING NUT ACTUATORS

MPI style 4600 seat-on-disc butterfly valves use slotted-lever traveling nut actuators for smooth operation. Traveling nut actuators were developed to match the torque characteristics and provide greater mechanical advantage near the valve open and close positions where it is most needed. The actuator slows down near the close position to help seat the disc, and the slower opening/closure reduces shocks to the connected piping system.

## Model 450 (sizes 3"-12")



**DUCTILE IRON HOUSING**  
Includes a four bolt ISO-5211 & MSS-101 compliant connection.

**LEVER & TRAVELING NUT**  
Ductile Iron construction, precision machined to transmit torque seamlessly. Contains multiple keyways to change the opening direction.

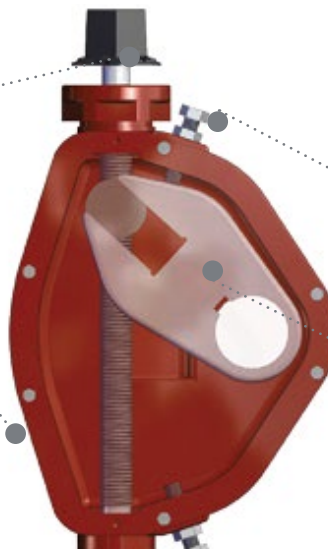
**POSITION STOP NUTS**  
Factory preset internal adjusters prevent the actuator from going beyond the open and closed positions of the valve.

**OVERLOAD PROTECTION**  
Up to 450 ft-lbs of input torque protection to prevent damage to the valve and actuator.

**SEALS**  
Actuator is fully greased and utilizes a reusable rubber gasket in the housing cover and O-rings to seal the input shaft.

**360° ROTATION**  
Actuator can be mounted in 90-degree increments for easy installation and operation without the need of adapter plates and additional parts.

## Model 1250 (sizes 14"-20") • Model 2200 (sizes 24")



**OVERLOAD PROTECTION**  
Up to 450 ft-lbs of input torque against the stops (open/close) to prevent damage to the valve and actuator.

**DUCTILE IRON HOUSING**  
Proven strength, permanently lubricated and sealed to protect from the elements and groundwater.

**POSITION STOP**  
Factory preset prevents the actuator from going beyond the open and closed positions of the valve.

**LEVER**  
Ductile Iron construction, precision machined to transmit torque seamlessly. Contains multiple keyways to change the opening direction.

# BUTTERFLY VALVE

## ACCESSORIES & OPTIONS



### FLOOR STANDS

The F-5500-T Floor stand is for use on NRS valves. Floor stands are of high strength ductile iron and may be provided with extension arms of steel, stainless steel or bronze as specified. The F-5500-T indicating floor stand is for use on NRS valves where open/ close valve indication is needed.



### EXTENSION STEMS

Valve extension stems are available in steel, or bronze and are provided with a 2" square nut or handwheel as specified. Extension stems are available for use with mud valves, gate valves, butterfly valves, etc. diameters up to 2-1/2" any length.



Size Range	Medium Length*	Maximum Length*
#1	2-1/2"	17"
#2	15"	24"
#3	24"	35"

\*Distance from wall

### FLOOR BOX

Floor boxes are designed for use with NRS valves. Installed in concrete floors or slabs they provide support for the extension stem and a cover for the operating nut on the stem. Available in 8", 10", and 12" lengths. Maximum stem diameter 1-3/4".



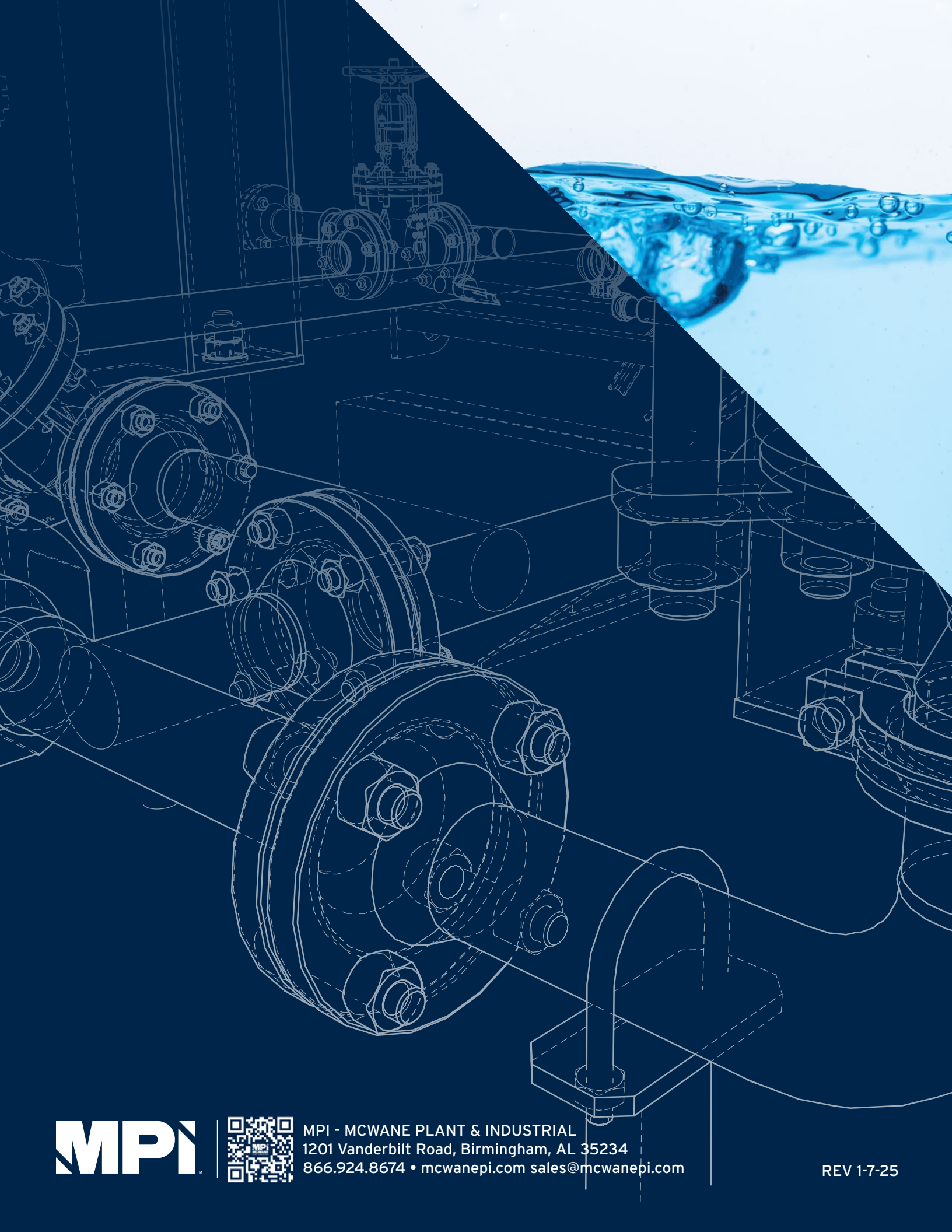
### STEM GUIDES

Stem guides are installed as wall brackets to support extension arms. They are fully adjustable and are made of high strength ductile iron. The guide is bronze bushed where the extension stem passes through. They should be installed at a height which does not permit the stem to be unsupported through a length or more that 10 feet. Stem guides are available in three sizes. When ordering state distance from center line of operating stem to face of wall, or give the size as shown.



### VALVE OPERATORS

Cylinder operator, electric motor operator, worm gear operator, lever operator, hand wheel, chain wheel, and 2" op nut available. Other types upon request.



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REV 1-7-25