

# VBG SERIES RECTANGULAR BUTTERFLY VALVES

Waterman rectangular rubber-seated butterfly valves are designed for water-tight closure, convenient installation and operation, and adaptability to a variety of uses.

They are available in four-sided seating models for orifice or in-line mounting and in three-sided channel mounted units. Each gate is designed and fabricated for its specific installation and function requirements.

## APPLICATIONS & ADVANTAGES

Rectangular valves are commonly used where low headroom prevents the use of conventional sluiceways, and where flow regulating (modulating) is a requirement.

Other advantages include watertight performance in either direction (both seating and unseating heads), the acceptance of maximum heads of water on either side, and the ease of operation. Applications include sewage treatment plants, water filtration projects, cooling tower basins, power plants, and many other water and flood control projects.

## APPROVED FOR USE IN DRINKING WATER SYSTEMS

The VBG series water control gates (24" – 96") conform to the requirements of NSF/ANSI 61 Drinking Water System Components – Health Effects and NSF/ANSI 372. They conform with the lead content requirements for "lead free" plumbing as defined by California, Vermont, Maryland, and Louisiana state laws and the U.S. Safe Drinking Water Act.



## SIZES

Square sizes currently available are 24" x 24" through 96" x 96". Larger and/or special sizes can be designed and fabricated to meet particular project requirements.

## DISC DESIGN

The disc (vane) features an adjustable resilient seal with stainless steel fasteners and retaining bars. Made of Neoprene rubber, the seals seat against frame-mounted stainless steel seats for a positive, no-leak performance. Adjustments and field replacement are easily accomplished.



**MPI – MCWANE PLANT & INDUSTRIAL**

1201 Vanderbilt Road Birmingham, AL 35234 866.924.8674 [www.mcwanepi.com](http://www.mcwanepi.com) [sales@mcwanepi.com](mailto:sales@mcwanepi.com)

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The streamline design of the disc minimizes turbulence in the full open position, lessens pressure drop across the valve in the open position, and provides excellent throttling characteristics.

## VALVE BODY AND SHAFT

Standard valve bodies are fabricated from A-36 mild steel or stainless steel with flanges one side or two, as required for installation, and have a stainless-steel seat. The stainless steel valve shaft is secured to the disc using match-bored taper pins of precipitation hardened stainless steel. Packing glands are stainless steel with impregnated hemp packings. Sleeve bearings are self-lubricating. Thrust bearings are adjustable.

## OPERATORS

Waterman rectangular butterfly valves require a 90° turn of the disc to go from full open to full closed. Manual operators with position indicator are available in worm-gear gearboxes with handwheel, or a 2" square operating nut for use with power devices. Electric or hydraulic operators for local and/or remote operation can be provided.

## MOUNTING AND OPTIONAL ACCESSORIES

Optional accessories include bonnet extensions, limit switches and integral controls for power operators. Wall thimbles and anchor bolts are available.



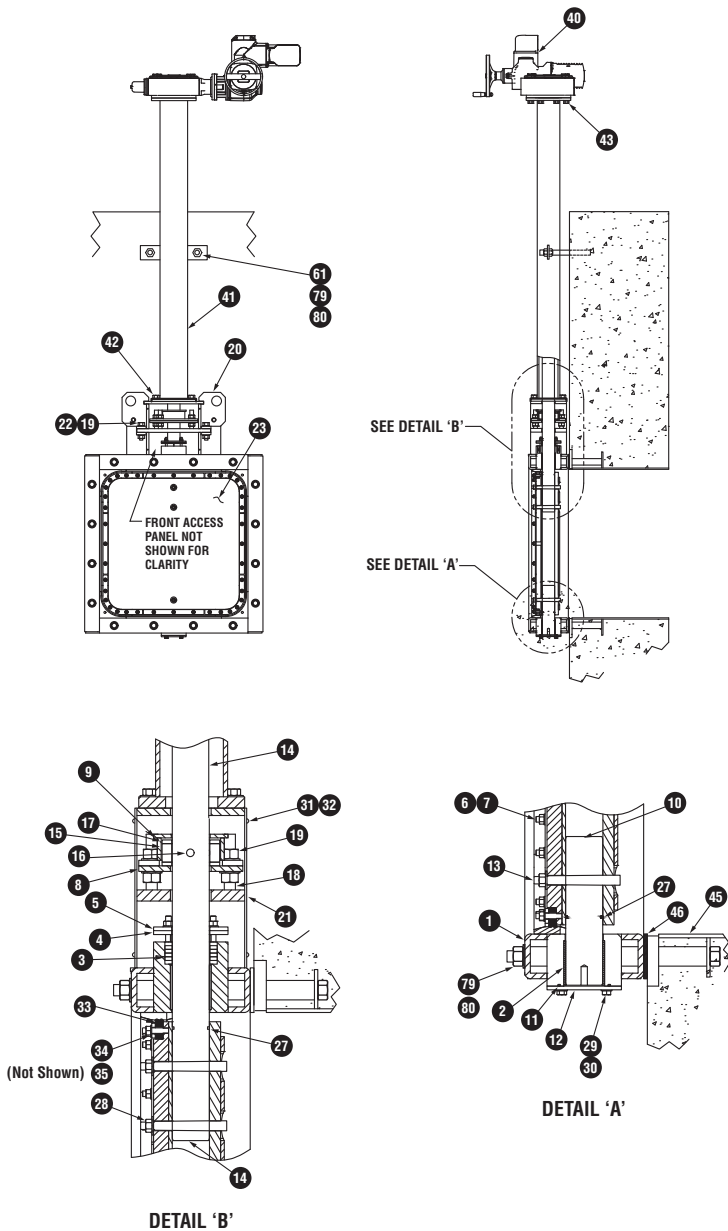
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## MATERIALS OF CONSTRUCTION



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Number	Description	Material
1	Frame	Standard: Structural Steel ASTM A-513 Optional: Stainless Steel ASTM A-240, Type 304 or 316
2	Bushing	Fiberbacked Teflon
3	Packing Ring	Graphite Impregnated Hemp
4 & 5	Packing Plate	Stainless Steel ASTM A-240 Type 304 or 316
6 & 7	Hardware	Stainless Steel
8	Thrust Plate	Stainless Steel ASTM A-240 Type 304 or 316
9	Thrust Collar	Stainless Steel ASTM A-240 Type 304 or 316
10	Lower Stem	Stainless Steel ASTM A-276 Type 304 or 316
11	O-Ring	Viton ASTM D-2000
12	End Cap	Stainless Steel ASTM A-240 Type 304 or 316
13	Taper Pin	Stainless Steel Bar ASTM A-564 Type 630
14	Upper Stem	Stainless Steel ASTM A-276 Type 304 or 316
15	Thrust Bearing	Stainless Steel ASTM A-276 Type 304 or 316
16	Thrust Bearing Pin	Stainless Steel ASTM A-276 Type 304 or 316
17	Thrust Washer	UHMW Polyethylene ASTM D-6712
18	Stud	Stainless Steel ASTM A-276 Type 304 or 316
19	Hex Nut	Stainless Steel
20	Operator Mount	Standard: Structural Steel ASTM A-513 Optional: Stainless Steel ASTM A-240, Type 304 or 316
21	Access Panel	Stainless Steel ASTM A-240 Type 304 or 316
22	Hex Head Bolt	Stainless Steel
23	Cover Weldment	Standard: Structural Steel ASTM A-513 Optional: Stainless Steel ASTM A-240, Type 304 or 316
27	O-Ring	Viton ASTM D-2000
28 - 32	Hardware	Stainless Steel
33	Seal	Neoprene Rubber ASTM D-2000
34 & 35	Retainer	Stainless Steel ASTM A-240 Type 304 or 316
40	Operator	Brand/Model as Specified
41	Torque Tube Pedestal	Standard: Structural Steel ASTM A-513 Optional: Stainless Steel ASTM A-312, Type 304 or 316
42-43	Hardware	Stainless Steel
46	Gasket	Neoprene Rubber ASTM D-2000
79 & 80	Hardware	Stainless Steel



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## TYPICAL SPECIFICATIONS

Rectangular butterfly valves shall be self-contained and of the rubber seated, tight closing type and capable of seating against the maximum head specified in either direction. Rectangular butterfly valves shall be as manufactured by Waterman Valve, LLC.

### VALVE BODIES

Valve bodies shall be rectangular and shall be fabricated from carbon steel conforming to ASTM A-36 (or stainless steel conforming to ASTM A-240, type 304 or 316). The body shall be designed to be field fastened to a wall thimble, directly fastened with anchor bolts to a wall, grouted into a concrete channel, or double flange-mounted in a pipeline. Where a four-sided design is specified, the upper trunnion shall contain a stuffing box utilizing an adjustable bronze gland and low friction hemp packing.

### DISC AND SEAT

The valve disc shall be fabricated from ASTM A-36 carbon steel (or stainless steel conforming to ASTM A-240, type 304 or 316) and shall have a resilient seal recessed and clamped with a stainless-steel retaining ring on to its periphery. The valve seal shall be field adjustable and replaceable. The design shall permit removal and replacement in the field without removing the valve disc, shaft, or valve actuator from their mountings. The valve seat shall not be interrupted by the valve shaft. Resilient seals shall be neoprene rubber. A corrosion resistant metal seat area of stainless steel shall be incorporated in the valve body and corner radii shall not exceed 4½ inches.

### SHAFT AND BEARINGS

Valve shafts shall be made of Type 304 (or Type 316) stainless steel. The shaft shall be securely locked to the valve disc by means of stainless-steel keys and bolts, or tapered pins as required. Valve shaft bearings shall be self-lubricated sleeve type fitted into the valve body trunnion bore. The valve assembly shall be furnished with a fixed two-way thrust bearing designed to hold the disc centered in the valve seat at all times.

### OPERATOR AND SUPPORT

An extension bonnet of fabricated steel (or stainless steel) shall be provided to locate operator as shown on plans and equally distribute operating torques and loads to structure. Operator shall conform to requirements of valve operation, with sufficient capacity to seat, unseat, and maintain intermediate positions under the operating conditions specified herein.



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