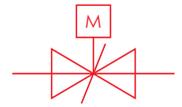


SERIES BFIII

Double and Triple Offset Replaceable Seal and Seat Butterfly Valve
3 to 72 Inches

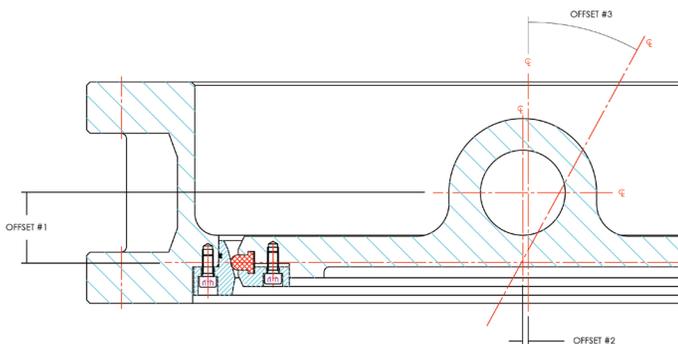


Design Features

Double or Triple Offset

When minimum seating and unseating torque is a project requirement first choice should be given to VSI double and triple offset butterfly valves. By adding centerline offsets to the traditional butterfly valve standard design run interference between the seal and seat is virtually eliminated.

Offset one places the shaft centerline behind the seating plane. This offset reduces the majority of seat-to-seal rubbing by allowing the seal to cam into the seat. Offset two moves the centerline of the shaft to the side of the pipe centerline. This offset further reduces seat-to-seal rubbing by rotating the valve disc sealing plane away from the seat plane. The third optional offset rotates the seat sealing cone centerline away from the pipe centerline. This final offset eliminates all seat-to-seal contact through the entire motion of the valve after unseating.



Valve Offsets

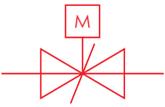
Replaceable Seat

All VSI Series BFIII butterfly valves are equipped with a replaceable corrosion resistant body mounted seat. This seat is secured to the body with standard bolting practices, allowing easy field replacement by maintenance personnel with no additional training. The design of the seat allows for more accurate machining operations than standard cast-in-body seats, producing higher final tolerance units.

The replaceable seat is equipped with a resilient seal to ensure no residual flow between the seat and valve body.



Replaceable Seat



Secured Shafts

All sizes are equipped with shafts that are mechanically secured to the disc. Positive positioning and indication is guaranteed by zero slip.

Sealed Bushings

While many manufacturers will allow the line-flow to contact bushings and bearings VSI has chosen to isolate these components. Sealing rings have been placed between line-flow and all friction reducing and drive support components. This design feature allows a wider range of material options, increased service life, and reduces leakage possibilities.

Standardized Bonnet

Unlike the majority of American valve manufacturers, VSI supplies valves with standardized bonnet mounts unless otherwise specified. The use of International Organization of Standardization (ISO) or Manufacturers Standard Society (MSS) mount dimensions allows for the attachment of standardized gearboxes and operators without the need for specialized adapters. Eliminating these adapters often reduces cost, minimizes overall dimensions of the valve package, and reduces weight.

Should there be a need to exchange or retrofit a newer operator this standardization expands options while reducing cost. The additional use of standardized stem diameters and key widths allows the direct mounting of many commercially available operators without any drive bush machining or adapter fabrication.



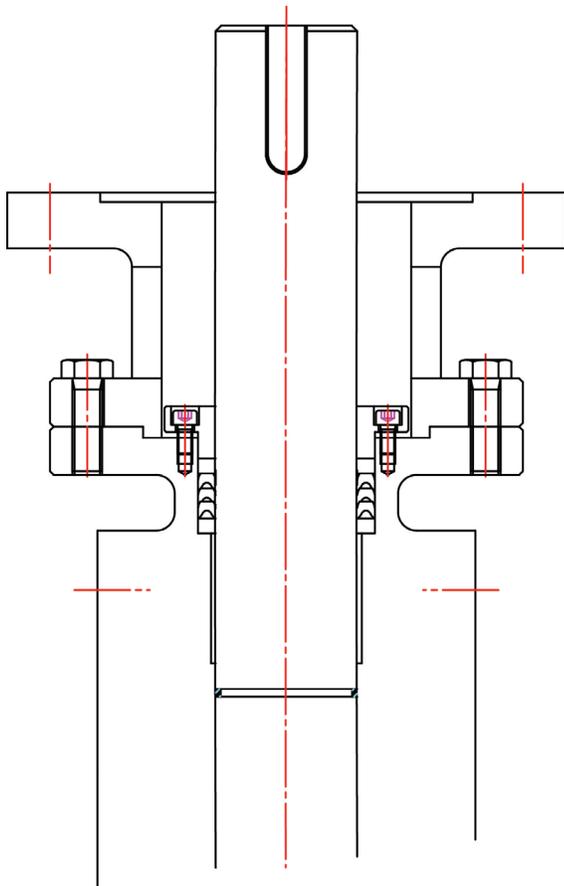
Standard Bonnet



Design Features

Simple Packing Replacement

VSI HP Series valves use a standard ISO valve stem size. This combined with industry standard stack heights allows for the use of off-the-shelf packing. The packing gland and retention design further allows for the replacement of the packing without removing the valve from the line. In some cases the line pressure can be maintained. All service can be performed without any special training.



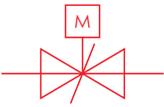
Design Standards

Construction	AWWA C504 ASME B16.34 API 609
Coatings	AWWA C550
Connections	ANSI B16.1 Class 125* ANSI B16.5 Class 150 ANSI/AWWA C111/A21.11 ISO 7005
Laying Length	AWWA C504 Short* ISO 5752
Classifications	150A 150B* 250B
Bonnet	MSS SP-101* ISO 5211
Stem Diameter	ISO 5211
Key Size	ISO R773

*Standard Option



American Water Works
Association



Material Options

Body and Bonnet	<input type="checkbox"/> ASTM A536 65-45-12* <input type="checkbox"/> ASTM A126 <input type="checkbox"/> ASTM A351 CF8 <input type="checkbox"/> ASTM A351 CF8M <input type="checkbox"/> ASTM A216 WCB <input type="checkbox"/> _____
Disc	<input type="checkbox"/> ASTM A536 65-45-12* <input type="checkbox"/> ASTM A126 <input type="checkbox"/> ASTM A351 CF8 <input type="checkbox"/> ASTM A351 CF8M <input type="checkbox"/> ASTM A216 WCB <input type="checkbox"/> _____
Stem	<input type="checkbox"/> ASTM A276 304* <input type="checkbox"/> ASTM A276 316 <input type="checkbox"/> _____
Seat	<input type="checkbox"/> ASTM A276 304* <input type="checkbox"/> ASTM A276 316 <input type="checkbox"/> _____
Seal	<input type="checkbox"/> EPDM* <input type="checkbox"/> PTFE <input type="checkbox"/> NBR <input type="checkbox"/> FPM <input type="checkbox"/> _____

Seal Retainer	<input type="checkbox"/> ASTM A276 304* <input type="checkbox"/> ASTM A276 316 <input type="checkbox"/> _____
O-Rings	<input type="checkbox"/> EPDM* <input type="checkbox"/> PTFE <input type="checkbox"/> NBR <input type="checkbox"/> _____
Bushings	<input type="checkbox"/> SS304 Reinforced PTFE* <input type="checkbox"/> ASTM B62 Bronze <input type="checkbox"/> ASTM A276 316 <input type="checkbox"/> _____
Packing	<input type="checkbox"/> EPDM* <input type="checkbox"/> PTFE <input type="checkbox"/> NBR <input type="checkbox"/> _____
Wetted Hardware	<input type="checkbox"/> SS304* <input type="checkbox"/> SS316 <input type="checkbox"/> _____
Exterior Hardware	<input type="checkbox"/> ASTM A153 CS* <input type="checkbox"/> ASTM F593 Group 1 (SS304) <input type="checkbox"/> ASTM F593 Group 2 (SS316) <input type="checkbox"/> _____
Key	<input type="checkbox"/> ASTM 1045

*Standard Option
Other Materials Available Upon Request

Seal Selection Guide

Designation	Common Name(s)	Composition	Min/Max Temperature Range	General Properties	Resistant to:	Attacked by:
PTFE	Teflon®	Polytetrafluoroethylene	-100 F / 450 F	Excellent abrasion resistance and chemically inert	Acids, harsh inorganic and organic chemicals, oils, oxidizing agents, and solvents	Molten alkali metals and fluoroine at high temperatures
EPDM, EPM	EPDM	Ethylene-propylene- diene; Ethylene-propylene	-40 F / 300 F	Excellent ozone, chemical, and aging resistance. Poor resistance to petroleum-based fluids.	Animal and vegetable oils, ozone, strong and oxidizing chemicals.	Mineral oils and solvents, aromatic hydrocarbons.
NBR	Buna-N	Nitrile-butadiene	-30 F / 250 F	Excellent resistance to petroleum-based fluids. Good physical properties.	Many hydrocarbons, fats, oils, greases, hydraulic fluids, chemicals.	Ozone (except PVC blends), ketones, esters, aldehydes, chlorinated and nitro hydrocarbons.
FPM	Viton®	Hexafluoropropylene- vinylidene fluoride	- 10 F / 400 F	Excellent oil and air resistance both at low and high temperatures. Very good chemical resistance.	All aliphatic, aromatic and halogenated hydrocarbons, acids, animal and vegetable oils.	Ketones, low molecular weight esters and nitro containing compounds.



Dimensions

Nominal Size	4	6	8	10	12	14	16	18	24
DIN	100	150	200	250	300	350	400	450	600
A	100	144	178	227	280	316	380	410	540
B	127		152	203					
C	122.6	147.6	171.5	224.4	257.4	269.4	340.4	355.4	440.4
D	159	188	220	339	365.5	384	440	465	588.5
E	40			60					90
F	22			36			48		76
O-Rings	OX-XX-116			OX-XX-217			OX-XX-223		OX-XX-232
G	229	279	343	406	483	533	597	635	813
H	190.5	241.3	298.5	361.95	431.8	476.25	539.75	577.85	749.3
I	4			8			12		16
J	19	22	25		30			35	
K	4								
L	5/8-11UNC	3/4-10UNC		7/8-9UNC		1-8UNC		1 1/8-7UNC	1 1/4-7UNC
M	125			175			210		300
N	101.6			139.7			165.1		254.4
O	4								
P	12			19			22		18
Key	8			12			16		22
Mount	FA10			FA14			FA16		FA25
Q	20.5	21.5	29	37			49		64
R	2.5			4			5		5

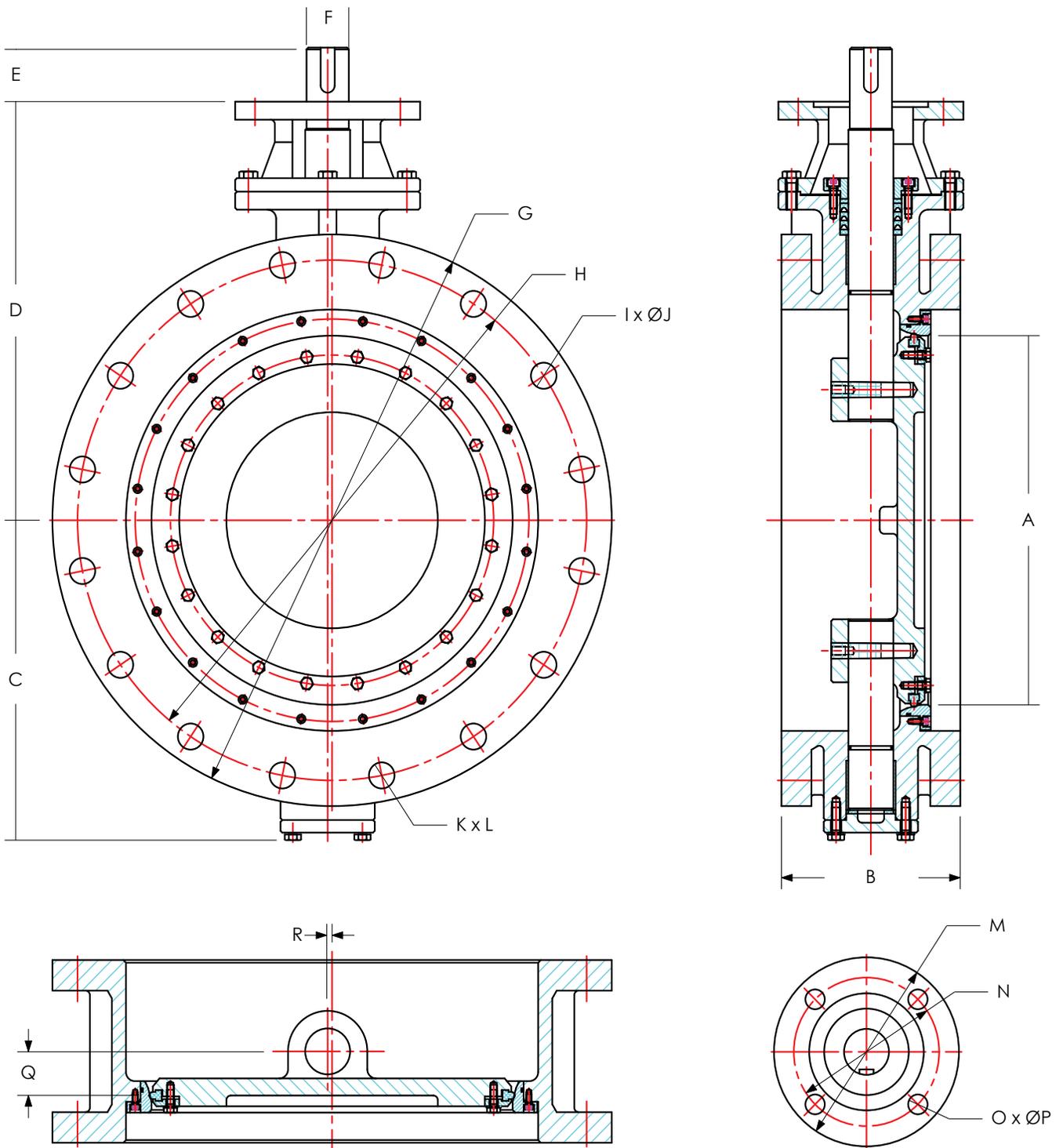
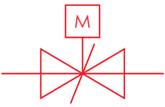
*Other sizes and standards available upon request

Standard Warranty

VSI Company warrants that its valves will be free from defects in materials and workmanship under normal and customary use and maintenance for a period of (12) months from delivery acceptance, provided the valves are installed according to VSI instructions, and applicable codes. The foregoing warranty does not cover failure of any part or parts from external forces, including but not limited to earthquake, vandalism, vehicular or other impact, and application of excessive torque to the operating mechanism or frost heave.

Should any VSI Company part or parts fail to conform to the foregoing warranty, VSI shall, upon prompt written notice thereof, repair or replace F.O.B. point of manufacture, such defective part or parts. Purchaser shall, if requested, return the parts to VSI, transportation prepaid. Purchaser shall bear all responsibility and expense incurred for removal, reinstallation and shipping in connection with any part supplied under the foregoing warranty.

The foregoing warranty is in lieu of and excludes all other warranties not expressly set forth herein, whether express or implied by operation of law or otherwise. In no event shall VSI Company be responsible or liable for any incidental or consequential losses, damages or expenses.



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