



The CleanSafe Valve –
For when even the
smallest chance of
impurity isn't acceptable.

**NOWHERE
TO HIDE**

FOR WHEN CLEANLINESS IS CRITICAL

Produced by renowned Worcester Controls, the ultra-clean design and build of the CleanSafe Valve provide absolute reassurance to the bioprocessing and pharmaceutical industry that costly and damaging deposits have nowhere to hide.

Made from forged 316L stainless steel and polymeric components, the CleanSafe Valve has less than 1% ferrite content to help prevent rouging, and its high surface finish eliminates even the smallest chance of crevices, allowing standards such as ASME BPE to be met or even exceeded.

Designed to be installed as built, and so maintain sterility and sealing integrity, the CleanSafe Valve is perfect for any application – from sterile steam, nutrient inlets to high-purity water – where it's critical that harmful matter has nowhere to hide.

TUBE BORE*

The inside diameter of the WK70 valve is designed to perfectly match the bore of ASME BPE / DIN 11866 C tube diameters to help prevent build-up of pyrogens or bacteria; this makes the valve ideal for installation into self-draining systems.

FORGED VALVE

WK70 valves are manufactured from forged components providing greater integrity and eliminating the risk of crevices, pitting, shrinkage and inclusions associated with cast material.

LOW FERRITE CONTENT

WK70 valves use 316L stainless steel with a controlled ferrite content of less than 1%. This reduces the risk of rouging that can occur in high-purity water systems.

WELD INTEGRITY

The weld end connectors of the WK70 are designed for high-integrity orbital welding systems, allowing sufficient length for equipment and alignment. The sulphur content in the forged end is controlled to ASME BPE requirements between 0.005 and 0.017%, enabling a high-integrity weld joint eliminating potential weld pool offset and maintaining cleanability.

MATERIAL TRACEABILITY

All wetted metallic parts are 3.1 certified providing traceability through the sales order reference from the product name plate.

HIGH CYCLE SEALING, BUBBLETIGHT SHUTOFF

Seats of Virgin PTFE, Reinforced PTFE and Fluorofill provide bubble tight shutoff through the valve, even under conditions of high vacuum and high cycle operation. High-cycle stem seals assure external sealing when the valve is automated.

SURFACE FINISH

The standard surface finish complies with ASME BPE SF1 but is also available electropolished, complying with ASME BPE level SF4.

EXTERNALLY MACHINED WKB70

The WK70 is also available manufactured from wrought bar as the WKB70. This valve has the same high level of material control providing a full machined external finish suitable for electropolishing on request.

Simple ¼ turn wrench operation with visual indication of flow.

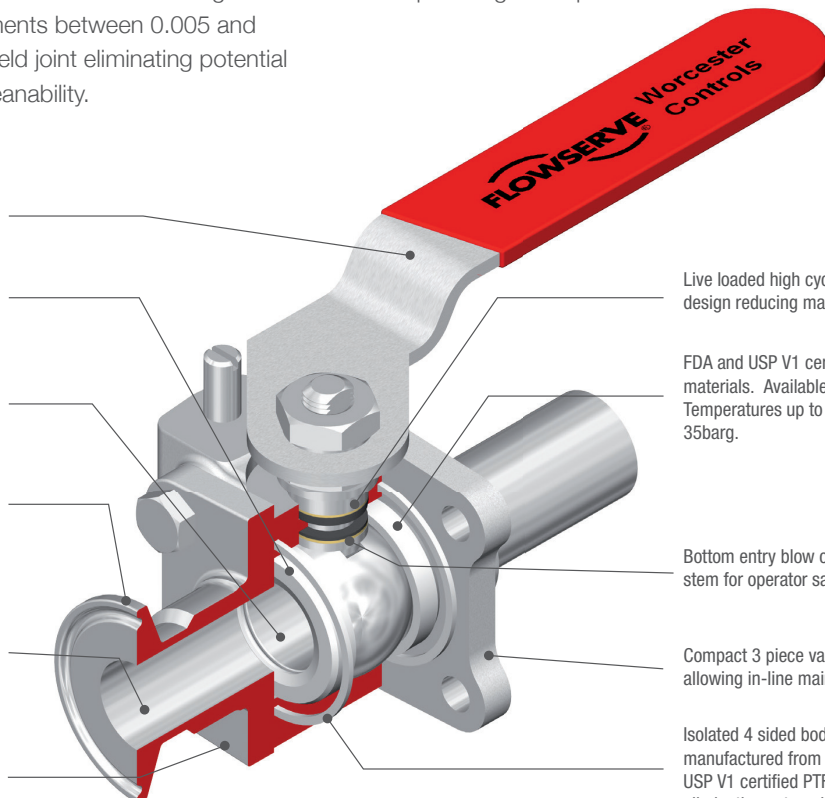
Seat designed to reduce potential contamination traps and provide a bubble tight seal.

Tube bore ball diameter preventing pooling of media inside the valve and assisting self draining.

Quick disconnecting Hygienic Clamps or XBO (Extended Butt Weld ends matched to tube diameter) allows in-line welding without the need to disassemble the valve.

0.51 µm standard internal finish. Available electropolished to 0.38 µm finish.

316L high integrity forged body with controlled ferrite content of <1% reducing the risk of rouging.



Live loaded high cycling stem seal design reducing maintenance.

FDA and USP V1 certified seat materials. Available for Temperatures up to 260°C and 35barg.

Bottom entry blow out proof stem for operator safety.

Compact 3 piece valve design allowing in-line maintenance.

Isolated 4 sided body seal manufactured from FDA and USP V1 certified PTFE eliminating external leakage.

SPECIFICATIONS

The Valve Size:

1/2", 3/4", 1", 1 1/2", 2" (3" and 4" available on request)

Styles:

Three-piece, tube bore valve, bi-directional flow.

Pressure Rating*:

XBO – Extended Butt Weld – 35 barg

TRI – Tri-Clamp – 35 barg

Vacuum Rating:

1x 10⁻² torr

Body and Pipe Ends:

Forged stainless steel to ASTM A182 F316L.

Ferrite content less than 1%. XBO tube ends have

verifiable sulphur content between .005% to .017%.

Ball:

Solid parallel bore (no vent hole) stainless steel,

ASTM A479-316L condition A.

Seats:

Virgin PTFE, Reinforced PTFE, Fluorofill

Body Seals:

Virgin PTFE

Stem:

One-piece, stainless steel ASTM A479-316L, condition A.

Stem Seals:

Virgin PTFE, Fluorofill, PEEK

External Parts:

Stainless steel

Interior Surface Finish:

Standard – ASME BPE SF1 20µm / 0.51µm

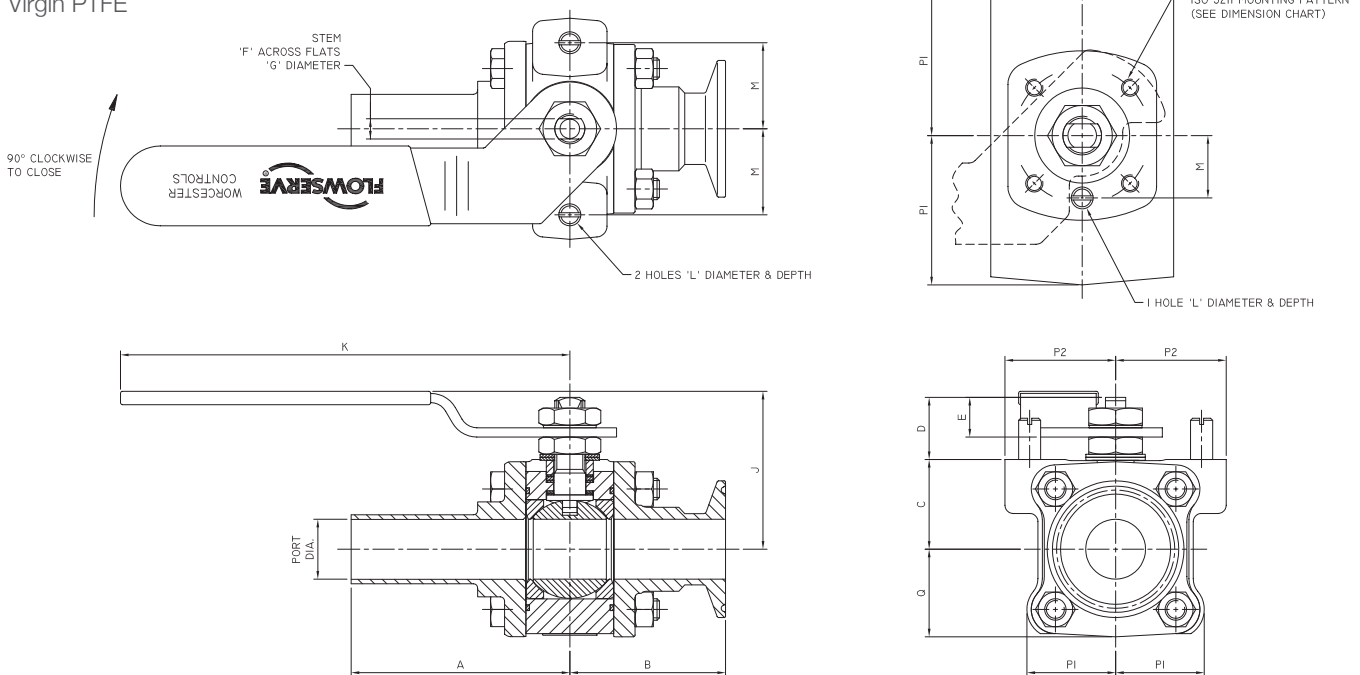
Electropolished – ASME BPE SF4 15µm / 0.38 µm

Assembly and Test:

All valves are subjected to a 1.5 x rated pressure Hydrostatic test prior to cleaning followed by a 6.9 bar seat test once finally assembled in an ISO Class 7 clean room. Valves are double bagged to maintain cleanliness.

Standard and Approvals:

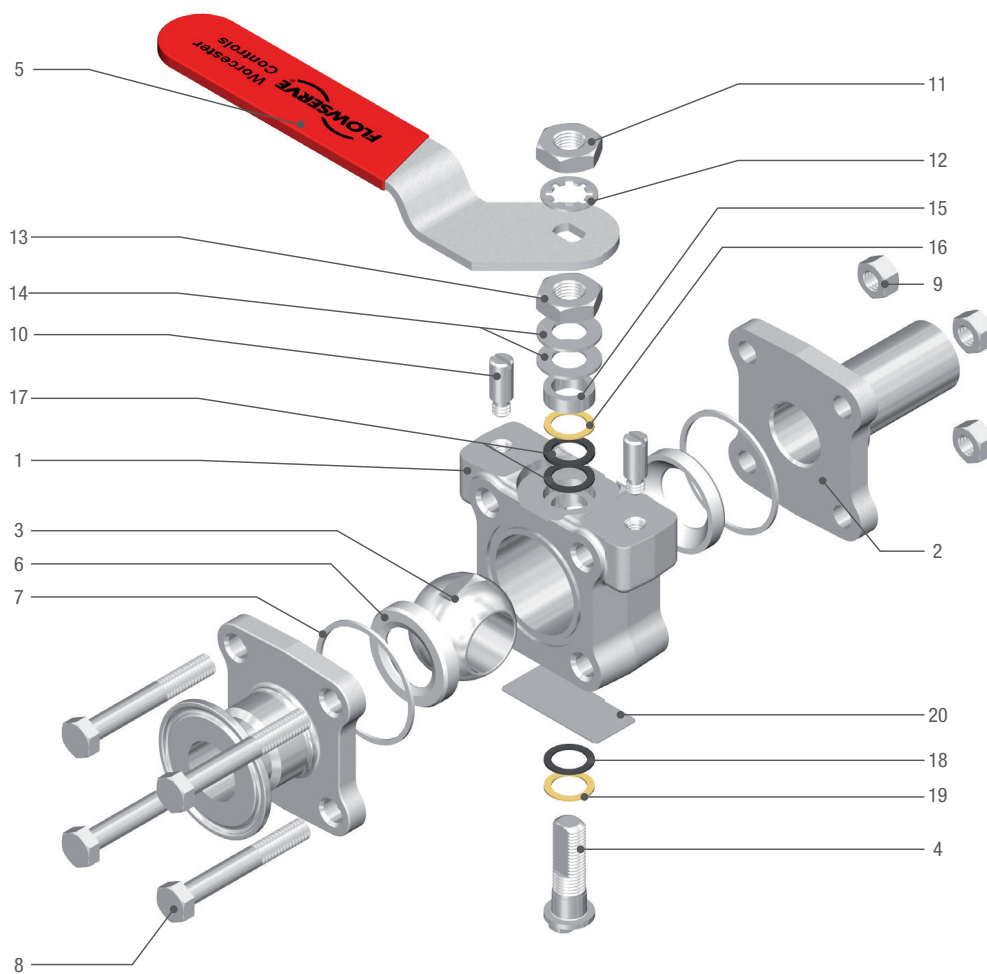
Materials of construction approved to FDA, in addition Virgin PTFE, Reinforced PTFE and Fluorofill and body/stem seals tested and approved to USP VI.



DN	Port Min Ø	A	B	C	D	E	F / AF	G THREAD	J	K	L	M	P1	P2	Q	ISO	Mounting Holes	Platform Recess	Weight Kg
1/2"	9.3	70.3	44.4	24.33 23.32	16.66 14.35	13.21 10.97	0.217 0.213	3/8-24 UNF	44.1	140.5	1/4-20 UNC 9.1 MIN	24.0	23.8	29.6	22.8	NA	NA	NA	0.5
3/4"	16.6	73.3	50.7	27.69 26.67	16.66 14.33	13.21 10.97	0.217 0.213	3/8-24 UNF	47.5	140.5	1/4-20 UNC 9.1 MIN	27.0	27.2	33.3	25.8	NA	NA	NA	0.8
1"	22.2	80.7	57.5	33.60 32.59	24.08 21.77	15.70 13.49	0.296 0.292	7/16-20 UNF	58.3	165.9	1/4-20 UNC 9.1 MIN	31.75	32.7	40.8	31.1	NA	NA	NA	1.4
1 1/2"	34.7	95.2	70.6	46.33 45.34	29.77 27.48	19.66 17.35	0.343 0.339	9/16-18 UNF	73.6	204.0	1/4-20 UNC 9.1 MIN	23.0	44.3	NA	41.9	F05	4 OFF 1/4-20 UNC 9.1 DEEP MIN ON 50.5 PCD	Ø 35.59/34.57 0.139/0.129 DEEP	2.8
2"	47.4	102	84.9	55.78 54.79	29.77 27.48	19.66 17.35	0.343 0.339	9/16-18 UNF	83.0	204.0	1/4-20 UNC 9.1 MIN	23.0	51.9	NA	51.9	F05	4 OFF 1/4-20 UNC 9.1 DEEP MIN ON 50.5 PCD	Ø 35.59/34.57 0.139/0.129 DEEP	4.3



PART IDENTIFICATION AND MATERIALS OF CONSTRUCTION



Item No.	Description	Material	Item No.	Description	Material
1	Body	Stainless Steel ASTM A182-F316	11	Wrench Nut	Stainless Steel AISI 300, Series Zinc-Plated
2	Pipe Ends	Stainless Steel ASTM A182-F316	12	Lockwasher	Stainless Steel AISI 300 Series
3	Ball	Stainless Steel A479-316L	13	Gland Nut	Stainless Steel AISI 300 Series Zinc-Plated
4	Stem	Stainless Steel A479-316L	14	Belleville Washers	Stainless Steel AISI 301
5	Wrench	Stainless Steel, Plastinol dipped sleeve	15	Follower	Stainless Steel AISI 316L
6	Seat	PTFE-Virgin / PTFE-Reinforced / Fluorofill	16	Seal Protector	PEEK
7	Body Seals	PTFE-Virgin	17	Stem Seals	PTFE-Virgin / Fluorofill
8	Body Bolts	Stainless Steel ASTM F593-316 GR.2	18	Thrust Bearing	PTFE-Virgin / Fluorofill
9	Body Nuts	Stainless Steel ASTM F593-316 GR.8	19	Thrust Bearing	PEEK
10	Stop Pin	Stainless Steel A276-300 Series	20	ID Plate	Stainless Steel

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