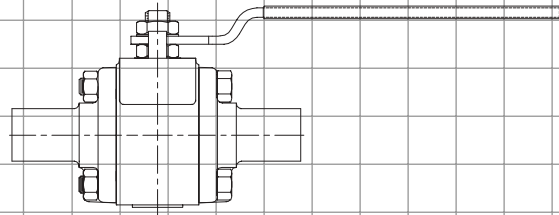


AN ISO 9001 REGISTERED COMPANY



Series WK 70 Tube Bore Clean Valves

*Forged Stainless Steel Ball Valves for
high-purity and aseptic processes*

A Clean Valve to write your specs around:

Tube bore, metallurgy, surface finish, shutoff, cleanability and automation

Series WK 70 clean valves operate dependably in the pharmaceutical, biotech, food, cosmetic, paint, chemical and semi-conductor manufacturing industries where microbes, media deposits, mineral impurities and cross-contamination can threaten the quality of the product. The high-purity design, high vacuum rating, high cycle life and pressure/temperature rating of these valves make them ideal for applications from sterile steam to nutrient inlets to high purity water. The performance of the WK70 Tube Bore Clean Valve is based on a combination of high standard specifications.

Tube Bore*

The inside diameter of WK70 valve components are tube bore dimensions so that the valve precisely matches the tubing it is connected to. This prevents buildup of pyrogens or bacteria.

Forged Valve

WK70 valves are built of forged parts. From an integrity perspective, forgings are better than castings for clean service because they are stronger, free from crevices, pits, shrinks or inclusions and have better controlled metallurgy.

Low Ferrite Content

WK70 valves are made of 316L stainless steel with a guaranteed ferrite content of less than 5%. This prevents rouging resulting from minerals and impurities drawn from higher ferrite content metals.

High Integrity Welds

The metallurgy of WK70 body and extended tube ends assures the integrity of the orbital welding. The tube ends have a verifiable sulfur content between .005% and .016%. Too much sulfur causes a lack of penetration of the orbital welding. With a low sulfur content comparable to that of the process tubing, the quality of the weld is assured.

High Cycle Sealing, Bubble-Tight Shutoff

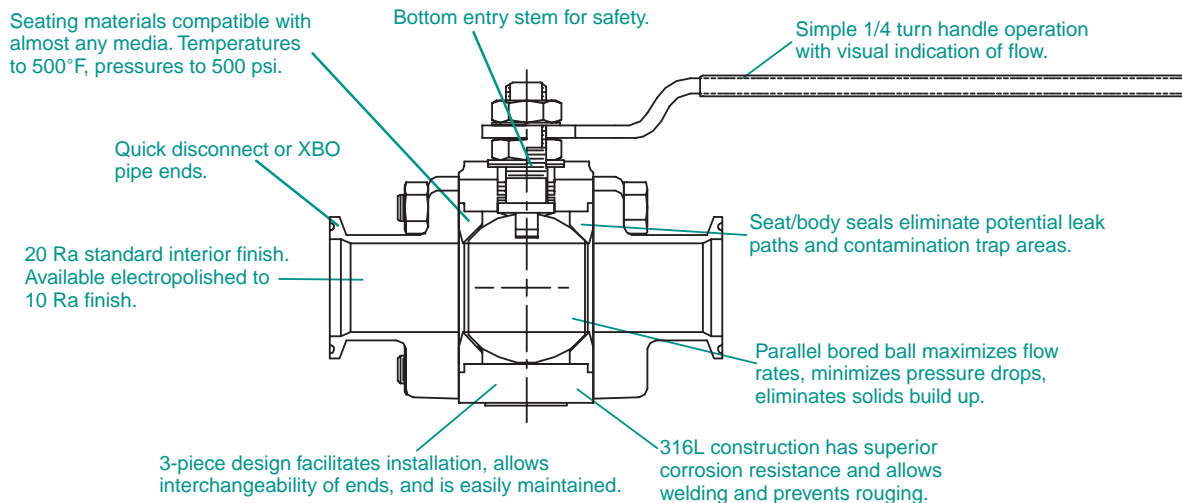
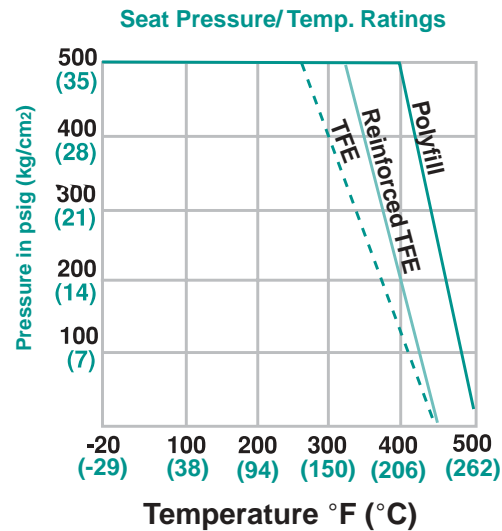
Seats of TFE, Reinforced TFE and Polyfill® provide bubble-tight shutoff through the valve, even under conditions of high-vacuum and high cycle operation. High cycle stem seals assure external sealing when the valve is automated.

Steam Service Capability

Pollyfill is a TFE material with carbon and graphite fillers with excellent high temperature properties. These standard seats are capable of up to 275 working steam pressure (WSP) making the WK 70 valve ideal for sterile steam applications.

3" - 4" Series WK70 Clean Valves

Worcester's clean valves are optionally available in 3" and 4" sizes with TC Quick Disconnect and XBO ends through our Custom Product Department.



*For standard reduced port clean valves, refer to Brochure PB WK 44.

Specifications

- Valve Size: 1/2", 3/4", 1", 1 1/2", 2"
- Styles: 3-piece, tube bore valve,
bi-directional flow
- *Pressure Rating: Quick disconnect - varies according
to clamp type and gasket material.
XBO - 500 psig.
- Vacuum Rating: 1x 10⁻³ torr (1 x 10⁻⁵ torr optional)
- Body and Pipe Ends: Forged stainless steel to ASTM
A182 F316L. Ferrite content less
than 5%. XBO tube ends have
verifiable sulfur content between
.005% to .016%.
- Ball: Solid parallel bore (no vent hole)
stainless steel, ASTM A479-316L
condition A.
- Seats: TFE, Reinforced TFE, Polyfill
- Body Seals: TFE
- Stem: One-piece, bottom entry stainless
steel ASTM A479-316L, condition
A.
- Stem Seals: Polyfill and PEEK.
- External Parts: 300 Series stainless steel

*The final valve pressure and temperature rating is established by the rating of two items; end connections and seat/body seal material. The lowest rating prevails.

Interior Surface Finish: 20 Ra Standard, 10 Ra optional
(electropolish)

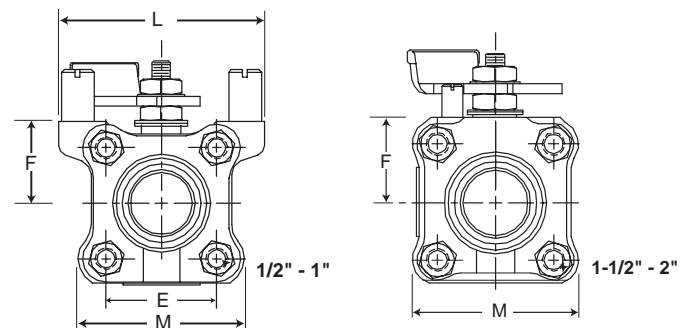
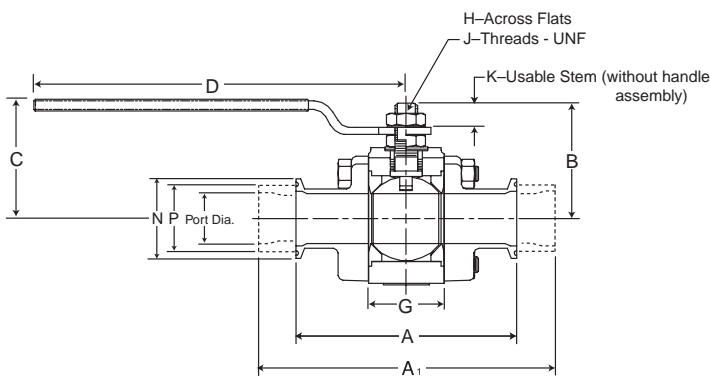
Seat/Seal Leakage: Standard valves, less than 1x10⁻⁶ cc
He/Sec. inboard and through the
valve, bubble-tight (1x10⁻⁴cc
He/Sec.). With preparation, leakage
will be less than 2x10⁻⁹ He/Sec. All
valves 100% tested to bubble-tight
standards in a class 100 clean
room and double bagged.

Standard and Approvals: All materials of construction
comply with FDA requirements.
USDA approval with TFE seats.

Cv Values and Equivalent Length of .065 Wall tubing

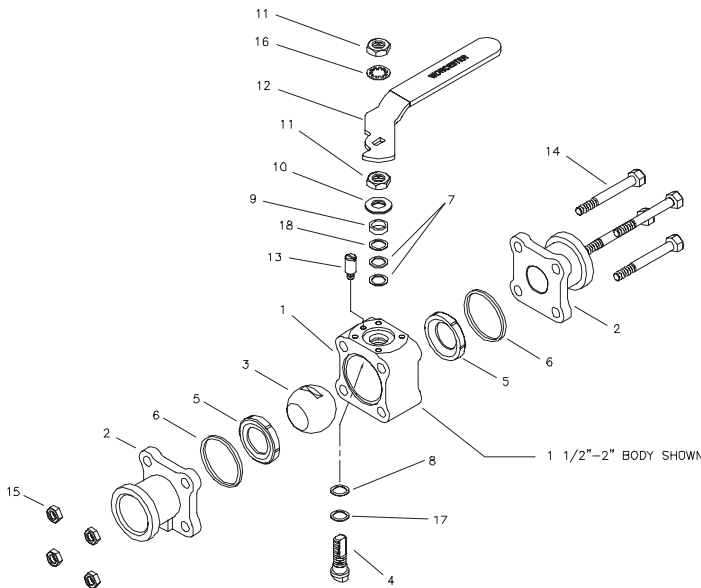
Valve Size	Cv		Equivalent Length of Tubing-in. (mm)	
	TC	XBO	Quick Disconnect	XBO
1/2"	8.1	6.5	3.50" (88.9)	5.53" (141)
3/4"	28.6	24.3	4.00" (102)	5.57" (147)
1"	67	56.4	4.53" (115)	6.36" (162)
1 1/2"	192	165	5.57" (142)	7.5" (191)
2"	400	367	6.69" (170)	8.04" (204)

Dimensions Inches (mm)



Valve Size	A Face to Face		B	C	D	E	F	G	H	J	K	L	M	N	P	Port Dia.	Valve Weight lbs. (kg)
	TC	XBO															
1/2"	3.50 (88.9)	5.53 (141)	1.55 (39.4)	1.76 (44.7)	5.53 (141)	1.25 (31.8)	.94 (23.9)	.813 (20.7)	.217 (5.51)	3/8-24	.28 (7.11)	2.33 (59.2)	1.79 (45.5)	.986 (25)	.50 (12.7)	.37 (9.40)	1.1 (.50)
3/4"	4.00 (102)	5.77 (147)	1.68 (42.7)	1.90 (48.3)	5.53 (141)	1.50 (31.8)	1.07 (27.2)	.969 (24.6)	.217 (5.51)	3/8-24	.28 (7.11)	2.62 (66.6)	2.04 (51.8)	.986 (25)	.75 (19.1)	.62 (15.8)	1.8 (.82)
1"	4.53 (115)	6.36 (162)	2.23 (56.6)	2.32 (58.9)	6.53 (166)	1.75 (44.5)	1.30 (33.0)	1.28 (32.5)	.296 (7.52)	7/16-20	.43 (10.9)	3.12 (79.3)	2.45 (62.2)	1.986 (50.4)	1.00 (21.4)	.87 (22.1)	3.1 (1.41)
1 1/2"	5.57 (142)	7.50 (191)	2.96 (75.2)	2.91 (73.9)	8.03 (204)	2.41 (61.2)	1.80 (45.7)	1.98 (50.3)	.343 (8.71)	9/16-18	.61 (15.5)	-	3.31 (84.1)	1.986 (50.4)	1.50 (38.1)	1.37 (34.8)	6.2 (2.82)
2"	6.69 (170)	8.04 (204)	3.33 (84.6)	3.29 (83.6)	8.03 (204)	3.09 (78.5)	2.18 (55.4)	2.66 (67.6)	.343 (8.71)	9/16-18	.60 (15.2)	-	4.09 (104)	2.518 (64)	2.00 (50.8)	1.87 (47.5)	9.5 (4.31)

Part Identification and Materials of Construction



Item No.	Qty.	Description	Material
1	1	Valve Body	Stainless Steel ASTM A182-F316L
2	2	Pipe Ends	Stainless Steel ASTM A182-F316L
3	1	Ball	Stainless Steel A479-316L Cond. A
4	1	Stem	Stainless Steel A479-316L Cond. A
5	2	Seat	TFE-Virgin / Reinforced TFE / PolyFill
6	2	Body Seal	TFE-Virgin
7	2	Stem Seal	PolyFill
8	1	Thrust Bearing	PolyFill
9	1	Follower	Stainless Steel AISI 316L
10	2	Belleville Washers	Stainless Steel AISI 301
11	2	Handle Nut & Ret. Nut	Stainless Steel AISI 300, Series/Zinc Plated
12	1	Handle Assembly	Stainless Steel ASTM A167 304, Vinyl Coated
13	1 or 2	Stop Pin	Stainless Steel, A276-300 Series
14	4	Body Bolts	Stainless Steel ASTM F593-316 GR.2
15	4	Body Nuts	Stainless Steel ASTM A194 GR.8
16	1	Lockwasher	Stainless Steel AISI 300 Series
17	1	Thrust Bearing	PEEK
18	1	Seal Protector	PEEK

How to Order

Valve Size	Options	Product Series	Body & Pipe Ends	Ball & Stem	Seats	Body Seals	Ends	Variations
1/2" 3/4" 1" 1 1/2" 2"	Blank-Std. 20 Ra Finish E-No handle valve built for automation P-Electropolished (10 Ra)	WK 70	6-316L Stainless Steel	6-316L Stainless Steel	T-TFE R-Reinforced TFE P-Polyfill	T-TFE	TC- Quick Disconnect XBO-Extended Butt Weld O.D. Tube	Blank-No Variations V6-Source Inspection V32-Oval Handle V36-Cert. of Compliance V48-Extended Lever Handle V59-Extended Oval Handle V60-OSHA Lockout V66-Cert. of Comp. for European Valve Orders V72-Cert. of Comp. for European Pressure Equipment Directive Conformance

Ordering Example: A 1" Series WK 70 with a stainless steel body, pipe ends, ball and stem, Polyfill seats, TFE body seals, quick disconnect ends, and electropolished finish.

CAUTION: Ball Valves can retain pressurized media in the body cavity when closed. Use care when disassembling. Always open valve to relieve pressure prior to disassembly. Due to continuous development of our product range, we reserve the right to alter the dimensions and information contained in this leaflet as required.

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