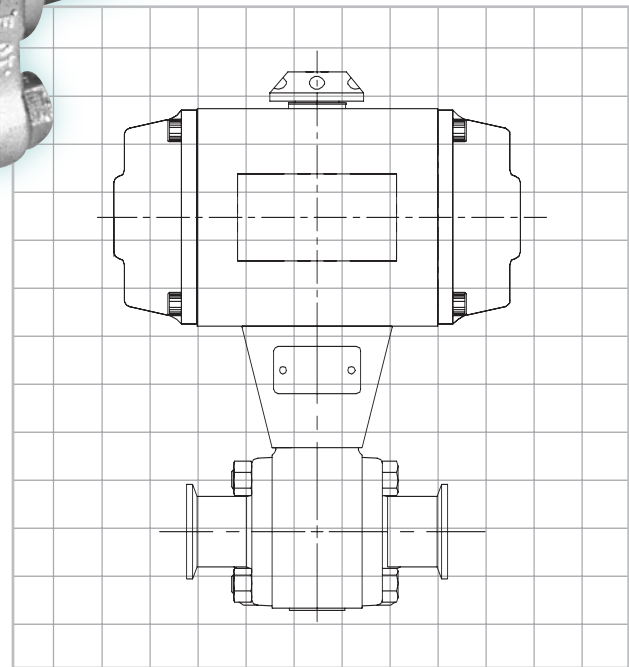


AN ISO 9001 REGISTERED COMPANY



# *Series WK 74 Tube Bore Clean Valves*

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

## A Clean Valve to write your specs around:

Tube bore, metallurgy, surface finish, shut-off, cleanability and automation

**F**lowserve Worcester Controls Series WK 74 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 WK 74 Tube Bore Clean Valve is based on a combination of high standard specifications.

### Tube Bore\*

The inside diameter of WK 74 valve components are tube bore dimensions so that the valve precisely matches the tubing it is welded to. This prevents buildup of pyrogens or bacteria.

### Low Ferrite Content

WK 74 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 WK 74 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.

### CMTR's

Provided standard with all valves.

### High-Cycle Sealing, Bubble-Tight Shut-off

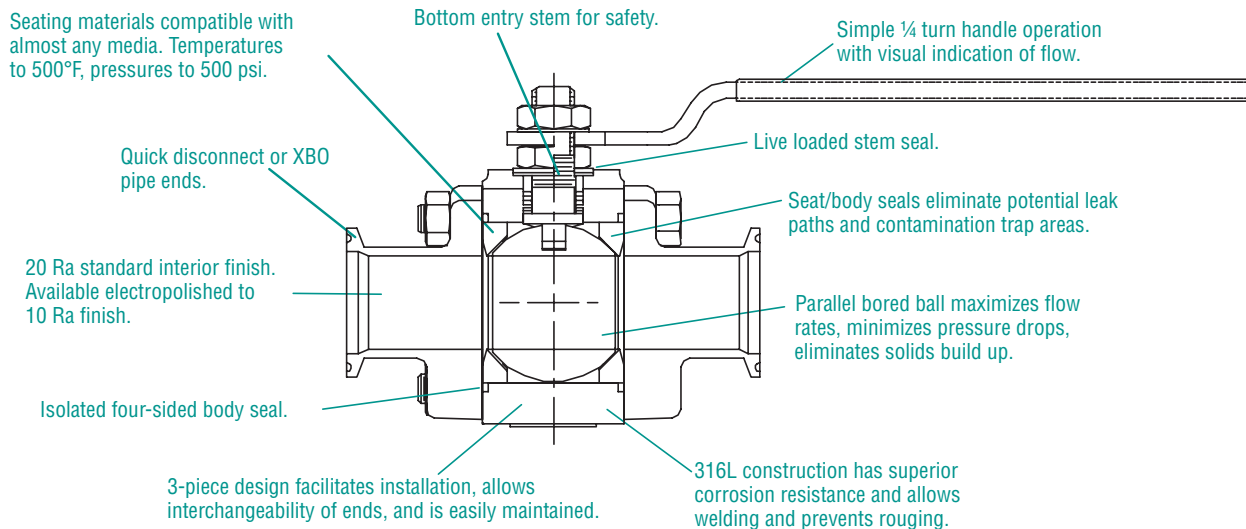
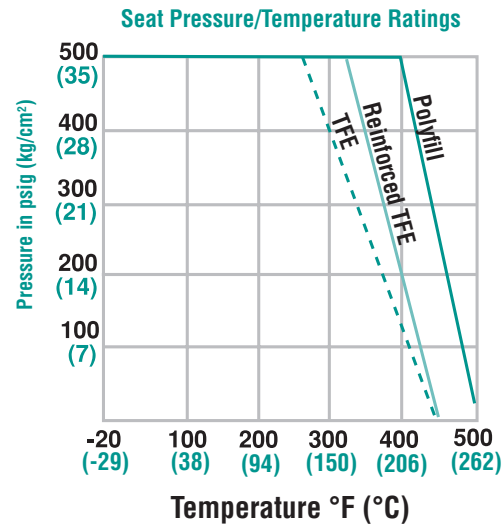
Seats of TFE, Reinforced TFE and Polyfill® provide bubble-tight shut-off through the valve, even under conditions of high-vacuum and high-cycle operation. High-cycle stem seals assure external sealing when the valve is automated.

### Steam Service Capability

Polyfill is a TFM 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 74 valve ideal for sterile steam applications.

### Fire Rated Design

Specify the "FWK" design for flammable high-purity liquids and gases. Four-sided body seal provides maximum safety against external leaks. Qualified to API 607 Edition 4.



\*For standard reduced port clean valves, refer to brochure WCABR1035.

\*For applications requiring forged stainless steel parts, refer to brochure WCABR1036.

## Specifications

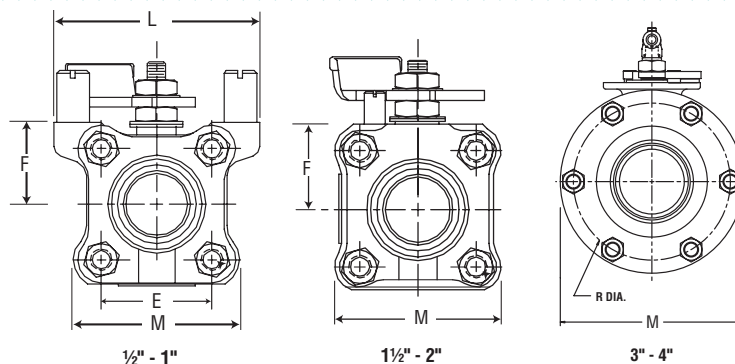
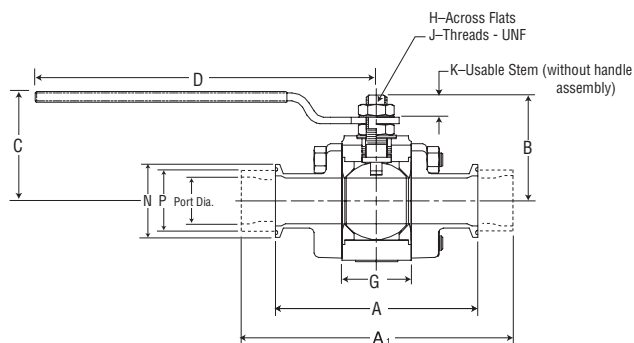
- Valve Size:** ..... ½", ¾", 1", 1½", 2", 3", 4"
- Styles:** ..... 3-piece, tube bore valve, bi-directional flow
- \*Pressure Rating:** ..... Quick disconnect – varies according to clamp type and gasket material. XBO - 500 psig.
- Vacuum Rating:** ..... 1 x 10<sup>-3</sup> torr (1 x 10<sup>-5</sup> torr optional)
- Body and Pipe Ends:** ..... Investment cast stainless steel to ASTM A351 CF3M. 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, TFM, Polyfill, Reinforced TFE
- Body Seals:** ..... TFE, Graphite
- Stem:** ..... One-piece, bottom entry stainless steel ASTM A479-316L, condition A.
- Stem Seals:** ..... TFE, TFM, Polyfill and PEEK.
- External Parts:** ..... 300 Series stainless steel
- Interior Surface Finish:** ..... 20 Ra Standard, 10 Ra optional (electropolish)
- Seat/Seal Leakage:** ..... Standard valves, less than 1x10<sup>-6</sup> cc He/Sec. inboard and through the valve, bubble-tight (1x10<sup>-4</sup> cc He/Sec.). With vacuum preparation, leakage will be less than 2x10<sup>-9</sup> He/Sec. All valves 100% tested to bubble-tight standards in a class 100 clean room and double bagged.
- Standard and Approvals:** ..... All wetted parts comply with FDA requirements (21 CFR) and are USDA approved. Qualified to API 607 Edition 4.

\*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.

### Cv Values and Equivalent Length of .065 Wall tubing

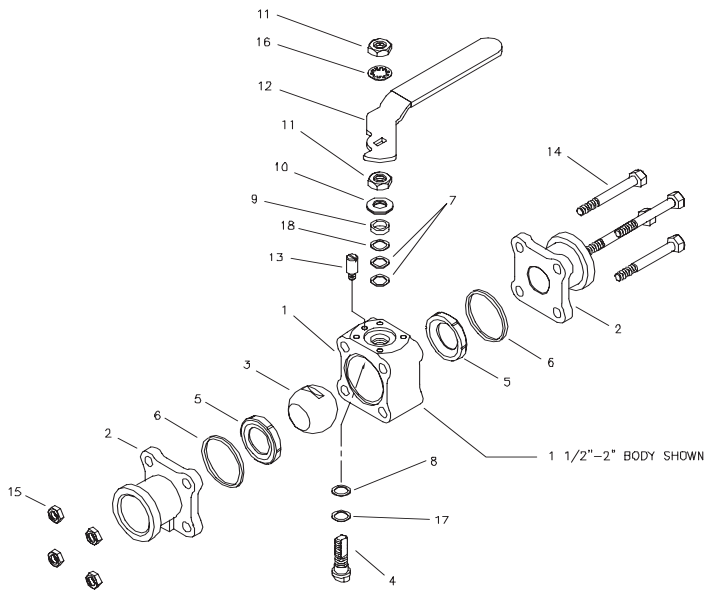
Valve Size	Cv		Equivalent Length of Tubing-in. (mm)	
	TC	XBO	Quick Disconnect	XBO
½"	8.1	6.5	3.50" (88.9)	5.53" (141)
¾"	28.6	24.3	4.00" (102)	5.57" (147)
1"	67	56.4	4.53" (115)	6.36" (162)
1½"	192	165	5.57" (142)	7.5" (191)
2"	434	402	6.69" (170)	8.04" (204)
3"	1123	1033	7.62" (194)	11.42" (290)
4"	2054	1889	10.2" (259)	11.74" (298)

## 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															
½"	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)
¾"	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)
1½"	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)
3"	7.62 (194)	11.42 (290)	5.94 (151)	7.47 (190)	24 (610)	6.72 (171)	4.22 (107)	4.03 (102)	.745 (18.9)	1-14	.65 (16.5)	-	7.87 (200)	3.58 (90.9)	3.00 (76.2)	2.87 (72.9)	42 (1067)
4"	10.2 (259)	11.74 (298)	6.69 (170)	8.22 (209)	24 (610)	7.92 (201)	5.07 (129)	4.71 (120)	.745 (18.9)	1-14	.65 (16.5)	-	9.01 (229)	4.68 (118.9)	4.00 (101.6)	3.83 (97.3)	60 (1524)

## Part Identification and Materials of Construction



Item No.	Qty.	Description	Material
1	1	Valve Body	Stainless Steel ASTM A351-CF3M
2	2	Pipe Ends	Stainless Steel ASTM A351-CF3M
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
6	2	Body Seal - Fire Rated	Z - Graphite
7	2	Stem Seal	Polyfill, TFE-Virgin, TFM-Virgin
7	1	Stem Seal - Fire Rated	Graphite
8	1	Thrust Bearing	Polyfill, TFE-Virgin, TFM-Virgin
8	1	Thrust Bearing - Fire Rated	Graphite, Carbon Filled
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" 3" 4"	<b>Blank</b> -Std. 20 Ra Finish <b>E</b> -No handle valve built for automation <b>K</b> -Locking Handle <b>P</b> -Electropolished (10 Ra) <b>V</b> -Vacuum	WK 74	6-316L Stainless Steel	6-316L Stainless Steel	T-TFE R-Reinforced TFE P-Polyfill TFM-TFM	T-TFE	TC- Quick Disconnect XBO-Extended Butt Weld O.D. Tube	<b>Blank</b> -No Variations <b>V6</b> -Source Inspection <b>V32</b> -Oval Handle <b>V36</b> -Cert. of Compliance <b>V48</b> -Extended Lever Handle <b>V59</b> -Extended Oval Handle <b>V60</b> -OSHA Lockout <b>V66</b> -Cert. of Comp. for European Valve Orders <b>V72</b> -Cert. of Comp. for European Pressure Equipment Directive Conformance <b>V73</b> -Cavity Filler Seats
1/2" 3/4" 1" 1 1/2" 2"	<b>Blank</b> -Std. 20 Ra Finish <b>E</b> -No handle valve built for automation <b>K</b> -Locking Handle <b>P</b> -Electropolished (10 Ra) <b>V</b> -Vacuum	FWK 74 (Fire Rated)*	6-316L Stainless Steel	6-316L Stainless Steel	T-TFE R-Reinforced TFE P-Polyfill TFM-TFM	Z-Graphite (Fire Rated)	TC- Quick Disconnect XBO-Extended Butt Weld O.D. Tube	<b>Blank</b> -No Variations <b>V6</b> -Source Inspection <b>V32</b> -Oval Handle <b>V36</b> -Cert. of Compliance <b>V48</b> -Extended Lever Handle <b>V59</b> -Extended Oval Handle <b>V60</b> -OSHA Lockout <b>V66</b> -Cert. of Comp. for European Valve Orders <b>V72</b> -Cert. of Comp. for European Pressure Equipment Directive Conformance <b>V73</b> -Cavity Filler Seats

\*Valves meet API 607 Edition 4.

**Ordering Example:** A 1" Series WK 74 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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