

KF Series T Ball Valves



KF Industries



Superior Fluid Control Products for the Petrochemical and Industrial Markets

A division of **CIRCOR** International, Inc.

Series T Ball Valves

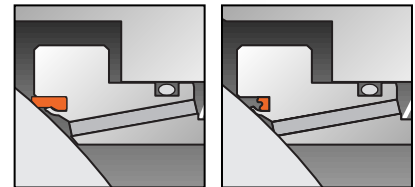
This top entry valve with a one-piece trunnion supported ball conforms to API specifications 6A, 6D and ANSI B16.34. Devlon® seats are standard. All seats are retained in metal holders which are spring-loaded against the ball for low pressure, firesafe sealing.

Series T valves are offered in:

- 2" thru 16" class 600,
- 2" thru 12" class 900, 1500 and 2500,
- 2" thru 7 1/16" API 6A class 2000, 3000 and 5000.

General Design Features

- One-piece flanged top-entry trunnion design
- Double block and bleed
- One-piece ball and stem assures precise positioning
- Anti blowout one-piece ball/stem design
- O-rings plus firesafe packing prevents leakage
- Corrosion resistant low friction bearings
- Inconel wave springs provide upstream and downstream sealing
- Stainless Steel Sealant injection fittings for emergency stem or seat sealing
- Inline repairable due to patented seat retainer design
- Minimized torque required to open and close valve
- Anti-static grounding between ball, stem and body
- Integral top works direct mounting pad
- 8" & larger valves are equipped with lifting lugs
- ANSI B16.34
- API 6D, API 6A, 607 and 6FA
- NACE MR0175
- CSA - Z245.15-01
- CE Marked (P.E.D. 97/23/EC, Cat. 3)



Firesafe Function

In case of fire and seat construction damage, firesafe requirements are accomplished with automatic metal-to-metal positive sealing.

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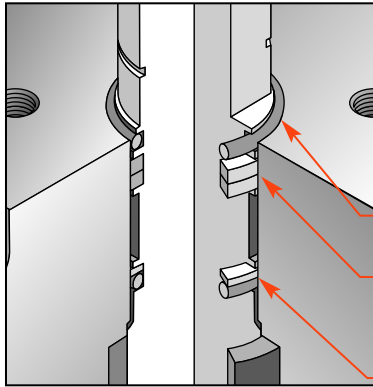
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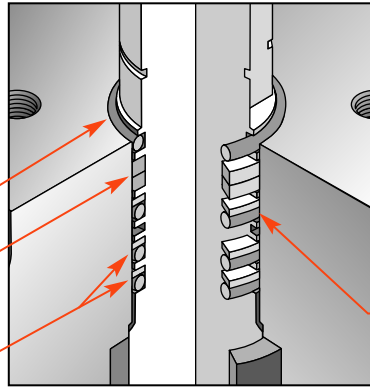


Design Features



Firesafe Standard Seal
 2" - 6" Class 600 -1500
 14" - 16" Class 600
 All Sizes Class 2500

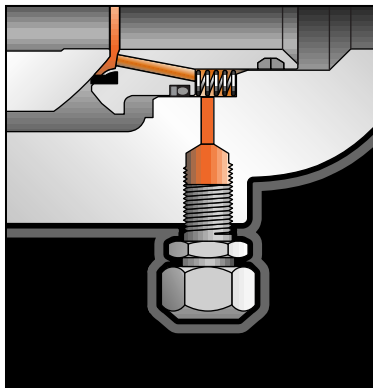
Weather Seal
Stem Packing
Braided Carbon Rope
Primary Stem Seal



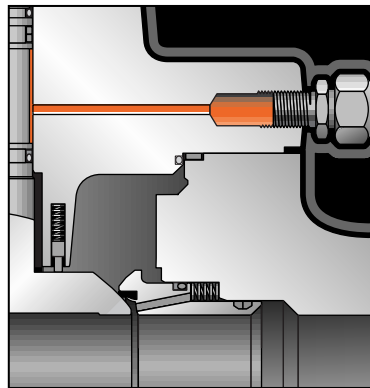
Firesafe Standard Seal
 8"- 12" Class 600 -1500

Note: Details for lower stem configuration on page 8.

Secondary Stem Seal

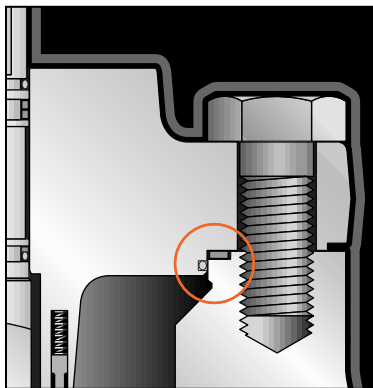


Emergency Seat Seal
 Special sealants may be injected into fittings that are located on the adapter flanges to restore sealing integrity if seat sealing surface is damaged. A second internal check valve provides backup to the fitting.

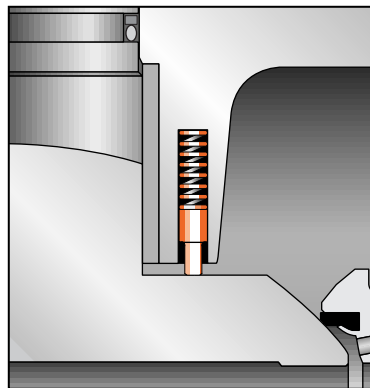


Emergency Sealant Injection System

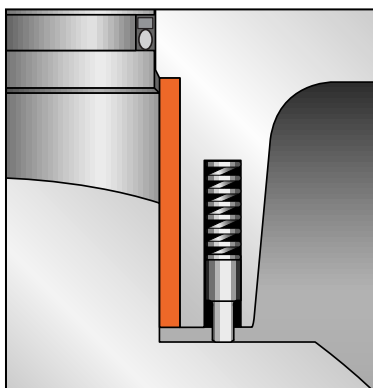
The Sealant Injection System located on the bonnet can be utilized in case of emergencies, o-ring damage, or if stem leakage occurs.



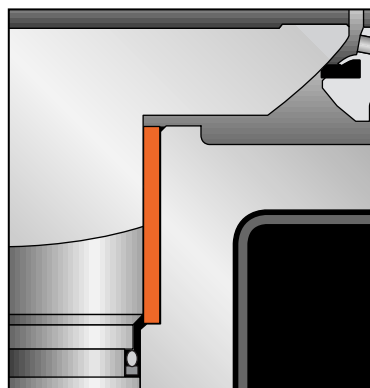
Double Sealed Envelope Connections
 Double o-rings or a combination of an o-ring and Fire-Safe gasket on body/bonnet connections to ensure positive sealing. This makes the Series T suitable for above or below ground service.



Antistatic Device
 A spring between the bonnet and the ball permits electrical continuity.



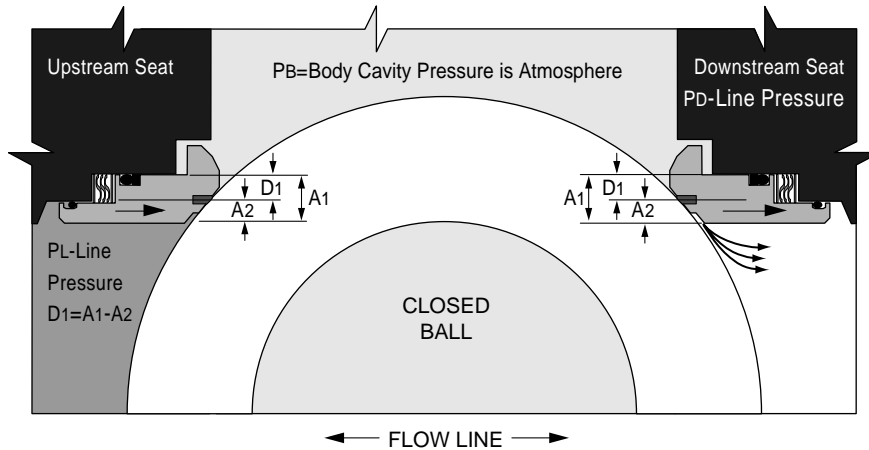
Heavy Duty Bearings
 Heavy-duty PTFE lined bearing eliminates the need of lubricating stem and trunnion journals, resulting in smooth and easy operation of valve. Upper stem and lower trunnion bearings balance the pressure load on the ball by reducing friction between ball and seat.



Garfil epoxy bearing with PTFE filler is standard in 2" through 6" in Class 600, 900 & 1500 and 8", 10" & 12" Class 600 & 900. A Garloc DU bearing with PTFE liner is standard in 8", 10" & 12" Class 1500 and 2" through 12" Class 2500.



Technical Seating Features



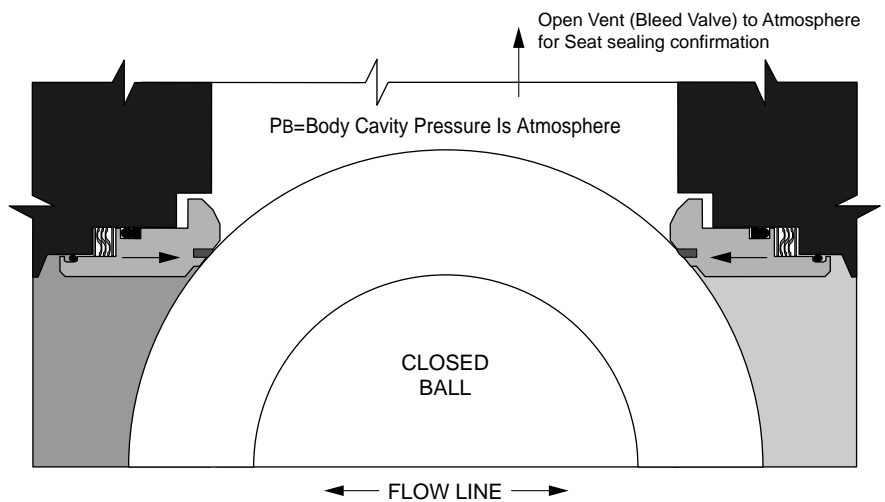
Self Relieving Seat Design

Upstream Seat: The difference in the area ($D1$) times the line pressure creates a “piston effect” which forces the seat against the ball surface. Also the springs behind the seat adds the force to the seat which keeps the seat in contact with the ball surface by providing the tight seal.

Downstream Seat: When the body cavity pressure exceeds the spring pressure, automatic pressure relief will occur by relieving the body cavity pressure past the downstream seat. This eliminates the need for the body relief valve.

Double Block and Bleed

The double block and bleed condition is available in all seat design configurations. When the ball is in the closed position the body cavity pressure may be drained down to ‘zero’ by opening the bleed valve and draining the fluid by removing the drain plug. Each seat works independently assuring tight shut off seal against ball on the upstream and downstream side.



Availability & Maximum Pressure Ratings, ANSI B16.34 & API 6D

Class/End Connection	Size (in.)															
	2 FP	3 RP	3 FP	4 RP	4 FP	6 RP	6 FP	8 RP	8 FP	10 RP	10 FP	12 RP	12 FP	14 FP	16 RP	16 FP
600RF	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
600RTJ	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
900RF	X	X	X	X	X	X	X	X	X	X	X	X	X	—	—	—
900RTJ	X	X	X	X	X	X	X	X	X	X	X	X	X	—	—	—
1500RF	X	X	X	X	X	X	X	X	X	X	X	X	X	—	—	—
1500RTJ	X	X	X	X	X	X	X	X	X	X	X	X	X	—	—	—
2500RF	X	—	X	X	X	X	X	X	X	X	X	X	X	—	—	—
2500RTJ	X	—	X	X	X	X	X	X	X	X	X	X	X	—	—	—

API 6A

Class/End Connection	Size (in.)						
	2 FP	3 RP	3 FP	4 RP	4 FP	6 RP	6 FP
2000RTJ	X	X	X	X	X	X	X
3000RTJ	X	X	X	X	X	—	X
5000RTJ	X	X	X	X	X	X	X

Consult factory for sizes not shown.



KF Series T Applicable Standards

The following list contains the most important applicable standards for ball valves. KF valves may be designed,

manufactured and tested in accordance with other international standards on request.

API-American Petroleum Institute

- Spec. 6A** Specification for wellhead and Christmas tree equipment.
- Spec. 6D** Specification for pipeline valves.
- Spec. RP6F** Recommended practice for fire testing of valves.
- Spec. 6FA** Specification for fire testing of valves.
- Std. 598** Valve inspection and test.
- Std. 605** Large diameter carbon steel flanges.
- Std. 607** Fire test for soft seated quarter-turn valves.

ASME/ANSI-American National Standard

- B 16.5** Steel pipe flanges and flanged fittings.
- B 16.10** Face-to-face and end-to-end dimensions of ferrous valves.
- B 16.25** Butt welding ends.
- B 16.34** Steel valves- Flanged and butt welding ends.
- B 31.3** Chemical plant and petroleum refinery piping
- B 31.4** Liquid petroleum transportation piping systems.
- B 31.8** Gas transmission and distribution piping systems.

ASTM-American Society for Testing Materials

British Standard

- BS 1503** Specification for steel forgings for pressure purposes.
- BS 1504** Specification for steel castings for pressure purposes.
- BS 1560** Steel pipe flanges and flanged fittings.
- BS 2080** Face-to-face, center-to-face, end-to-end, and center-to-end dimensions of flanged and butt-welding end steel valves for the petroleum, petrochemical and allied industries.

British Standard-cont.

- BS 4504** Flanges and boltings for pipes, valves and fittings.
- BS 5146** Inspection and test of steel valves for the petroleum, petrochemical and allied industries.
- BS 5351** Steel ball valves for the petroleum, petrochemical and allied industries.
- BS 5750** Quality system.
- BS 6755** Testing of valves.

EC-European Community

CE Marked (P.E.D. 97/23/EC, Cat. 3)

ISO-International Organization for Standardization

ISO 9001:2000 Quality systems-Model for quality assurance in design/development, production, installation and servicing.

MSS-Manufacturers Standardization Society

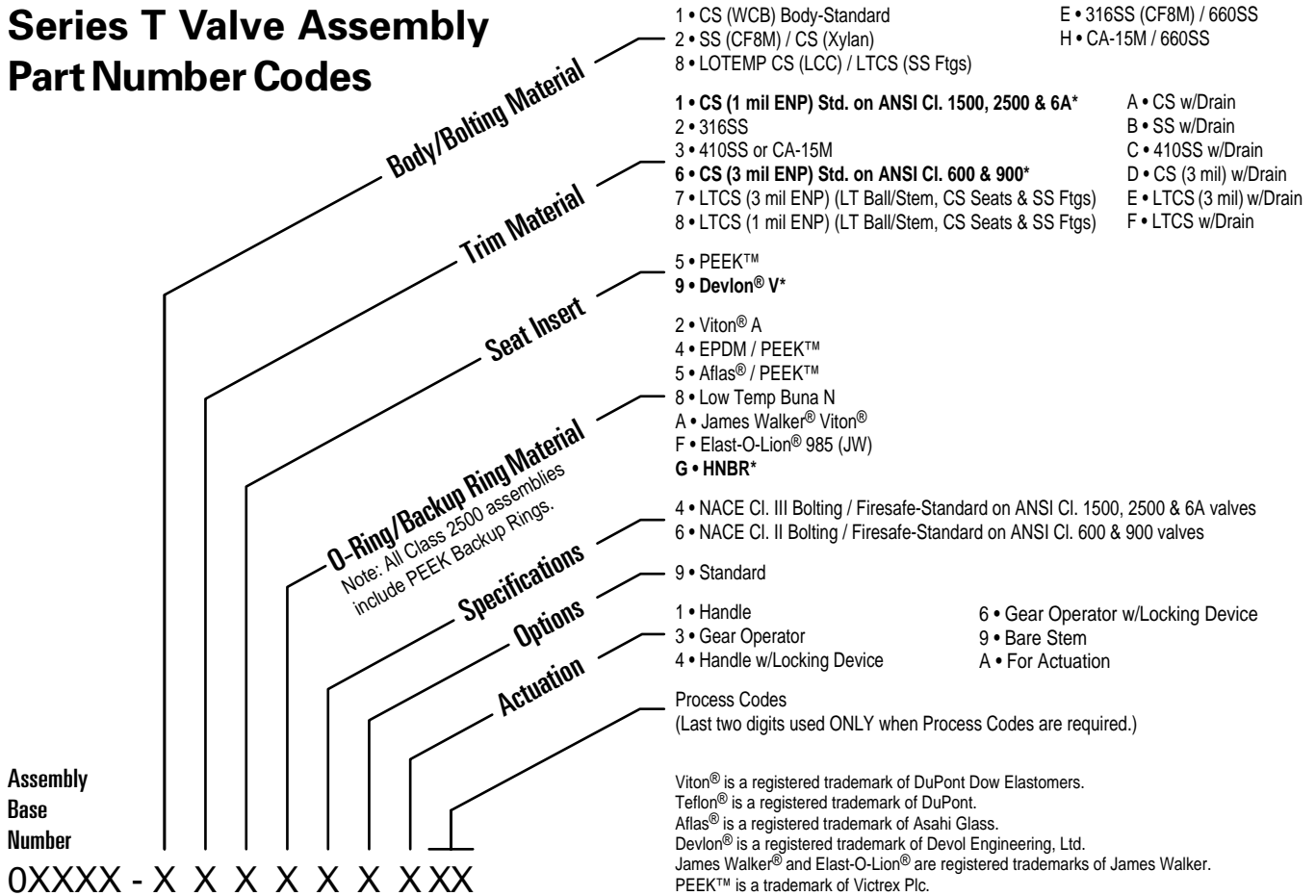
- SP 6** Standard finishes for contact faces of pipe flanges and connecting- end flanges of valves and fittings.
- SP 25** Standard marking system for valves, fittings, flanges and unions.
- SP 44** Steel pipeline flanges.
- SP 45** By-pass and drain connection standard.
- SP 55** Quality standard for steel castings-visual method.
- SP 61** Hydrostatic testing of steel valves.
- SP 72** Ball valves with flanged or butt-welding ends for general service.

NACE-National Association of Corrosion Engineers

- MR0175** Sulfide stress cracking resistant metallic materials for oil field equipment.



Series T Valve Assembly Part Number Codes



*STANDARD TRIM CONFIGURATION

Assembly Base Numbers, RF

Class	Size (in.)															
	2 FP	3 RP	3 FP	4 RP	4 FP	6 RP	6 FP	8 RP	8 FP	10 RP	10 FP	12 RP	12 FP	14 FP	16 RP	16 FP
600RF	2486	2487	2488	2489	2490	2491	2492	2493	2494	2495	2496	2497	2498	2500	2501	2502
900RF	2734	2735	2736	2737	2738	2739	2740	2741	2742	2743	2744	2745	2746	—	—	—
1500RF	2860	2861	2862	2863	2864	2865	2866	2867	2868	2869	2870	2871	2872	—	—	—
2500RF	3087	—	3089	3090	3091	3092	3093	3094	3095	3096	3097	3098	3099	—	—	—

Assembly Base Numbers, RTJ

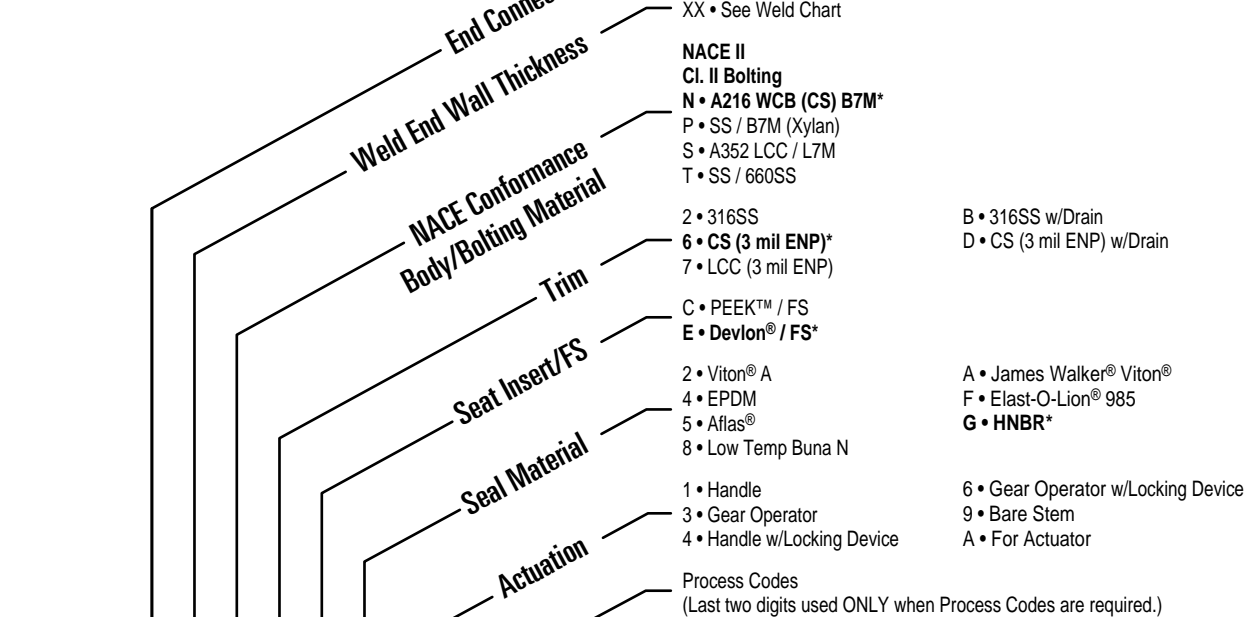
Class	Size (in.)															
	2 FP	3 RP	3 FP	4 RP	4 FP	6 RP	6 FP	8 RP	8 FP	10 RP	10 FP	12 RP	12 FP	14 FP	16 RP	16 FP
600RTJ	2506	2507	2508	2509	2510	2511	2512	2513	2514	2515	2516	2517	2518	2554	2555	2556
900RTJ	2773	2774	2775	2776	2777	2778	2779	2780	2781	2782	2783	2784	2785	—	—	—
1500RTJ	2876	2877	2878	2879	2880	2881	2882	2883	2884	2885	2886	2887	2888	—	—	—
2500RTJ	3110	—	3112	3113	3114	3115	3116	3117	3118	3119	3120	3121	3122	—	—	—

Assembly Base Numbers, API

Class	Size (in.)						
	2 FP	3 RP	3 FP	4 RP	4 FP	6 RP	6 FP
2000	3314	3315	3316	3317	3318	3319	3320
3000	3324	3325	3326	3327	3328	—	3330
5000	3432	3433	3434	3435	3436	3437	3438



Series TW Valve Assembly Part Number Codes



Assembly
Base
Number

XXXX - X X X X X X XXX

Asterisk (*) in lieu of dash (-) in Assembly Part Number indicates customer requires source inspection. (i.e. XXXX*XXXXXX)

Viton® is a registered trademark of DuPont Dow Elastomers.
Teflon® is a registered trademark of DuPont.
Aflas® is a registered trademark of Asahi Glass.
Devlon® is a registered trademark of Devol Engineering, Ltd.
James Walker® and Elast-O-Lion® are registered trademarks of James Walker.
PEEK™ is a trademark of Victrex Plc.

*STANDARD TRIM CONFIGURATION

Assembly Base Numbers

Class	Size (in.)															
	2 FP	3 RP	3 FP	4 RP	4 FP	6 RP	6 FP	8 RP	8 FP	10 RP	10 FP	12 RP	12 FP	14 FP	16 RP	16 FP
600	6177	6178	6179	6180	6181	6182	6183	6184	6185	6186	6187	6188	6189	6191	6192	6193
900	6206	6207	6208	6209	6210	6211	6212	6213	6214	6215	6216	6217	6218	—	—	—

Note: Consult factory for sizes and psi classes not shown.

KF Series TW Butt Weld End Schedule Code

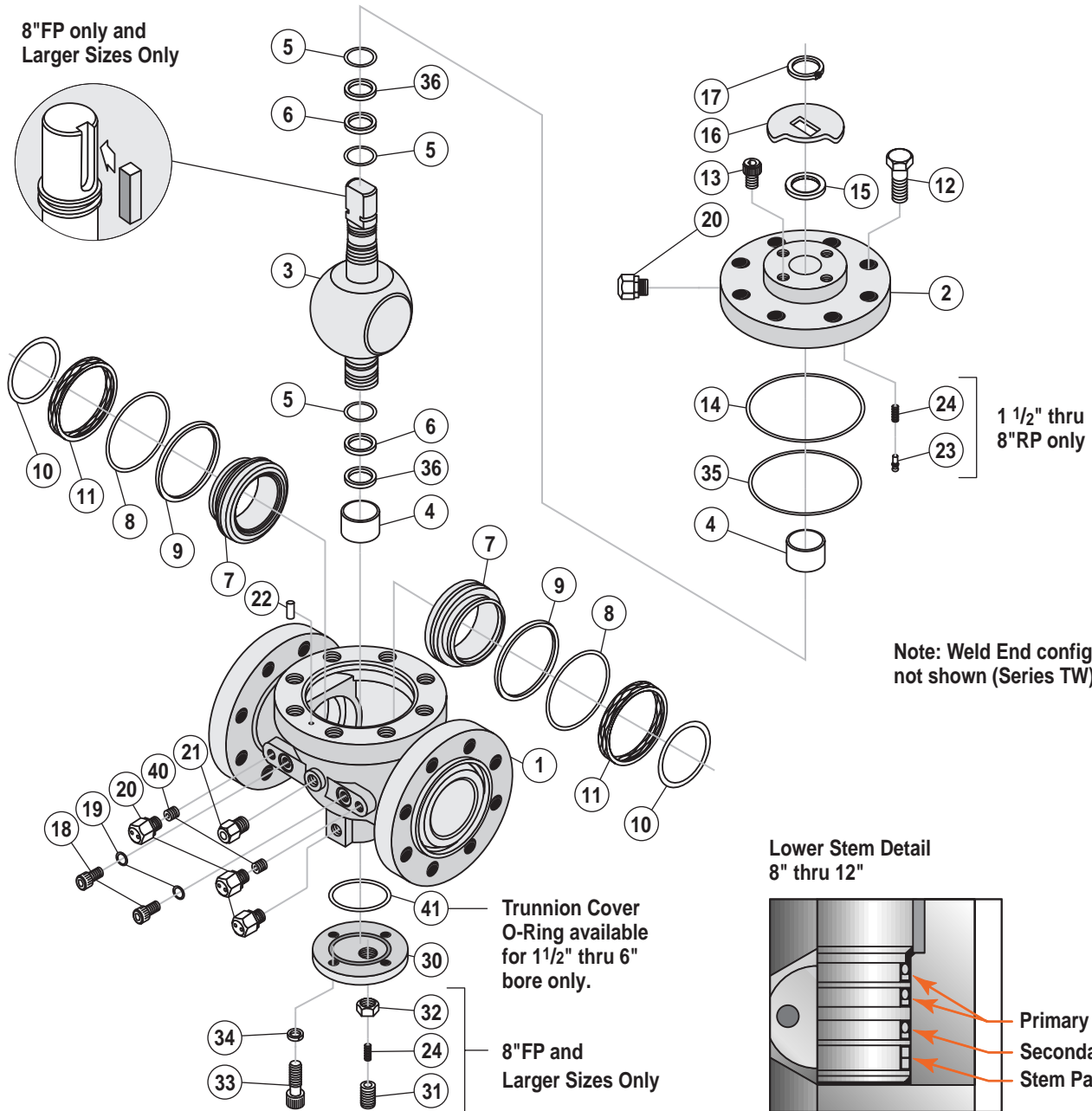
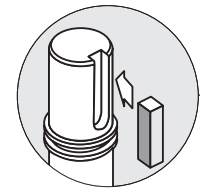
Pipe Description	Nominal Pipe Size (in.)/KF Schedule Code																	
	2	Code	3	Code	4	Code	6	Code	8	Code	10	Code	12	Code	14	Code	16	Code
Outside Dia. (In.)	2.375		3.500		4.500		6.625		8.625		10.750		12.750		14.000		16.000	
(STD) Standard	—	—	—	—	.237	17	.280	22	.322	28	.365	32	.375	33	.375	33	.375	33
Schedule 40	.154	08	.216	14	.237	17	.280	22	.322	28	.365	32	.406	35	.438	38	.500	39
Schedule 60	—	—	—	—	—	—	—	—	.406	35	.500	39	.562	42	.593	43	.656	46
XS	.218	15	.300	24	.337	30	.432	36	.500	39	.500	39	.500	39	.500	39	.500	39
Schedule 80	.218	15	.300	24	.337	30	.432	36	.500	39	.593	43	.687	48	.750	50	.843	52
Schedule 120	—	—	—	—	.438	38	.562	42	.718	49	.843	52	1.000	58	1.093	61	1.218	65
Schedule 160	.343	31	.438	38	.531	40	.718	49	.906	55	1.125	62	1.312	68	1.406	70	1.593	75
XXS	.436	37	.600	44	.674	47	.864	53	.875	54	1.000	58	1.000	58	—	—	—	—

Consult factory for other wall thicknesses.



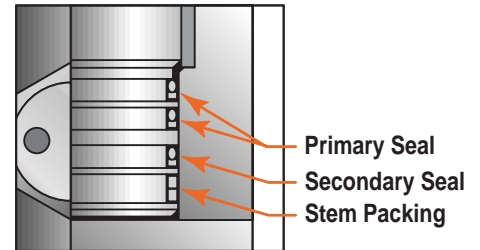
Series T & TW • Component Parts

8"FP only and Larger Sizes Only



Note: Weld End configuration not shown (Series TW)

Lower Stem Detail
8" thru 12"



Parts List

Index No.	Description
1	Body
2	Bonnet
3*	Ball/Stem
4	Trunnion Bearing
5*	Stem Seal ††
6*	Stem Back-up Ring ††
7*	Seat
8*	Seat O-Ring
9*	Seat Back-up Ring

Index No.	Description
10*	Seat Sub Seal/ Braided Carbon Rope
11*	Wave Spring
12	Bonnet Cap Screw
13 †	Stop Screw
14*	Bonnet Gasket/Seal
15*†	Stem Bearing
16 †	Stop Plate
17* †	Retainer

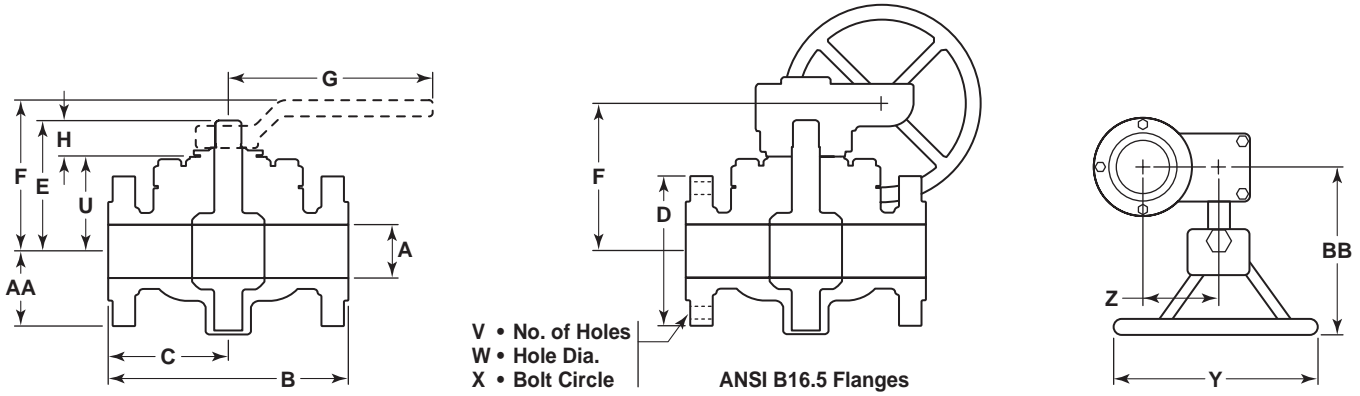
Index No.	Description
18	Retract. Port Screw
19*	Retract. Port Seal
20	Injection Fitting
21	Bleed Valve
22	Bonnet Align. Pin
23 †	Grounding Plunger
24	Grounding Spring
29	Key
30	Thrust Plate

Index No.	Description
31	Thrust Adjust. Screw
32	Jam Nut
33	Thrust Plate Bolt
34	Lock washer
35*	Bonnet Primary Seal
36*	Stem Packing/ Braided Carbon Rope
40	Internal Ball Check
41*	Trunnion Cover O-Ring

* Recommended spare parts where applicable
 † Not used in 8"FP and larger assemblies.
 †† 8" and larger use double stem seals.



KF Series T Dimensional Data (in./mm), API 6D & ANSI B16.34, Class 600



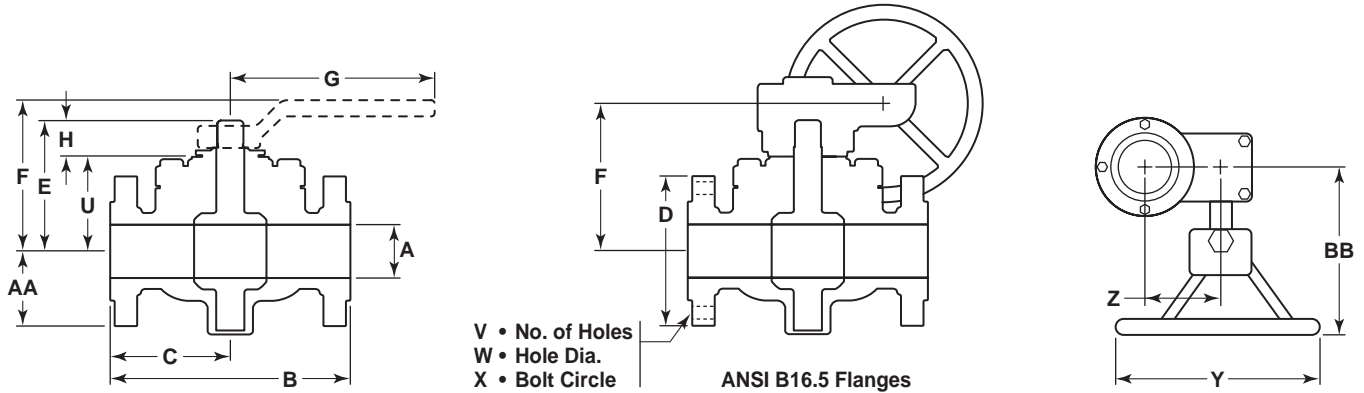
Dimensional Data (in./mm) 2"FP-16"FP

Size (in.)	Dimension (in.)																					Ring Groove RTJ	
	Wt. (lbs.)			A		B		C		D	E	F		G	H	U	V	W	X	Y	Z		AA
	Valve Only	w/ Handle	w/Gear Op.	RF	RTJ	RF	RTJ	Top of Handle	CL of H/Whl.														
2 x 2	71	75	79	2 1/16	11 1/2	11 5/8	5 3/4	5 13/16	6 1/2	6 1/2	7 19/32	6	22	1 3/16	4 7/8	8	3/4	5	8	1 3/4	4 7/8	7 3/16	R-23
3 x 2	93	97	101	2 1/16	14	14 1/8	7	7 1/16	8 1/4	6 1/2	7 19/32	6	22	1 3/16	4 7/8	8	7/8	6 5/8	8	1 3/4	4 7/8	7 3/16	R-31
3 x 3	128	136	139	3 1/8	14	14 1/8	7	7 1/16	8 1/4	7 5/8	8 19/32	6 7/8	30	1 1/16	5 1/2	8	7/8	6 5/8	10	2 1/2	5 3/4	7 1/2	R-31
4 x 3	169	177	180	3 1/8	17	17 1/8	8 1/2	8 9/16	10 3/4	7 5/8	8 19/32	6 7/8	30	1 1/16	5 1/2	8	1	8 1/2	10	2 1/2	5 3/4	7 1/2	R-37
4 x 4	229	241	250	4 1/16	17	17 1/8	8 1/2	8 9/16	10 3/4	9 1/2	10 19/32	8 15/32	48	1 3/16	7 3/32	8	1	8 1/2	12	2 1/2	6 1/2	9 1/4	R-37
6 x 4	324	336	345	4 1/16	22	22 1/8	11	11 1/16	14	9 1/2	10 19/32	8 15/32	48	1 3/16	7 3/32	12	1 1/8	11 1/2	12	2 1/2	6 1/2	9 1/4	R-45
6 x 6	456	470	487	6	22	22 1/8	11	11 1/16	14	11 7/16	12 7/16	10 7/16	48	2 13/32	8 9/16	12	1 1/8	11 1/2	24	3 1/2	8 5/16	11 15/16	R-45
8 x 6	605	619	636	6	26	26 1/8	13	13 1/16	16 1/2	11 7/16	12 7/16	10 7/16	48	2 13/32	8 9/16	12	1 1/4	13 3/4	24	3 1/2	8 5/16	11 15/16	R-49
8 x 8	852	—	939	8	26	26 1/8	13	13 1/16	16 1/2	14 3/8	—	13 3/8	—	3 1/8	11 1/4	12	1 1/4	13 3/4	24	4 5/8	10 1/8	14 5/8	R-49
10 x 8	1024	—	1111	8	31	31 1/8	15 1/2	15 9/16	20	14 3/8	—	13 3/8	—	3 1/8	11 1/4	16	1 3/8	17	24	4 5/8	10 1/8	14 5/8	R-53
10 x 10	1433	—	1528	10	31	31 1/8	15 1/2	15 9/16	20	16 5/8	—	16 1/16	—	3 1/16	12 15/16	16	1 3/8	17	30	4 5/8	11 7/8	17 3/16	R-53
12 x 10	1546	—	1636	10	33	33 1/8	16 1/2	16 9/16	22	16 5/8	—	16 1/16	—	3 1/16	12 15/16	20	1 3/8	19 1/4	30	4 5/8	11 7/8	17 3/16	R-57
12 x 12	1963	—	2123	12	33	33 1/8	16 1/2	16 9/16	22	19 3/8	—	21 1/2	—	4 1/4	15 1/8	20	1 3/8	19 1/4	20	6 1/4	14 1/2	18 3/8	R-57
14 x 13 1/4	2610	—	2770	13 1/4	35	35 1/8	17 1/2	17 9/16	23 3/4	19 5/8	—	21 3/4	—	4 1/4	15 3/8	20	1 1/2	20 3/4	36	6 1/4	14	20 5/8	R-61
16 x 13 1/4	2792	—	2952	13 1/4	39	39 1/8	19 1/2	19 9/16	27	19 5/8	—	21 3/4	—	4 1/4	15 3/8	20	1 5/8	23 3/4	36	6 1/4	14	20 5/8	R-65
16 x 15 1/4	3130	—	3269	15 1/4	39	39 1/8	19 1/2	19 9/16	27	20 3/4	—	22 7/8	—	4 1/4	16 1/2	20	1 5/8	23 3/4	36	6 1/4	15 1/4	20 5/8	R-65

Size (in.)	Dimension (mm)																					Ring Groove RTJ	
	Wt. (kg)			A		B		C		D	E	F		G	H	U	V	W	X	Y	Z		AA
	Valve Only	w/ Handle	w/Gear Op.	RF	RTJ	RF	RTJ	Top of Handle	CL of H/Whl.														
2 x 2	32.2	34.0	35.8	52.39	292.1	295.28	146.05	147.64	165.1	165.1	192.88	152.4	558.8	30.16	123.8	8	19.1	127	203.2	44.5	123.8	182.6	R-23
3 x 2	42.2	44.0	45.8	52.39	355.6	358.78	177.8	179.39	209.55	165.1	192.88	152.4	558.8	30.16	123.8	8	22.2	168.3	203.2	44.5	123.8	182.6	R-31
3 x 3	58.1	61.7	63.1	79.38	355.6	358.78	177.8	179.39	209.55	193.68	218.28	174.63	762	42.86	139.7	8	22.2	168.3	254	63.5	146.1	190.5	R-31
4 x 3	76.7	80.3	81.6	79.38	431.8	435.0	215.9	217.49	273.05	193.68	218.28	174.63	762	42.86	139.7	8	25.4	215.9	254	63.5	146.1	190.5	R-37
4 x 4	103.9	109.3	113.4	103.19	431.8	435.0	215.9	217.49	273.05	241.3	269.08	215.11	1219.2	50.00	180.2	8	25.4	215.9	457.2	63.5	165.1	235.0	R-37
6 x 4	147.0	152.4	156.5	103.19	558.8	561.98	279.4	280.99	355.6	241.3	269.08	215.11	1219.2	50.00	180.2	12	28.6	292.1	457.2	63.5	165.1	235.0	R-45
6 x 6	206.8	213.2	220.9	152.4	558.8	561.98	279.4	280.99	355.6	290.51	315.91	265.11	1219.2	61.12	217.5	12	28.6	292.1	609.6	88.9	211.1	303.2	R-45
8 x 6	274.4	280.8	288.5	152.4	660.4	663.6	330.2	331.79	419.1	290.51	315.91	265.11	1219.2	61.12	217.5	12	31.8	349.3	609.6	88.9	211.1	303.2	R-49
8 x 8	386.5	—	425.9	203.2	660.4	663.6	330.2	331.79	419.1	365.1	—	339.7	—	79.4	285.8	12	31.8	349.3	609.6	117.5	257.2	371.5	R-49
10 x 8	464.5	—	503.9	203.2	787.4	790.6	393.7	395.3	508.0	365.1	—	339.7	—	79.4	285.8	16	34.9	431.8	609.6	117.5	257.2	371.5	R-53
10 x 10	650	—	693.1	254.0	787.4	790.6	393.7	395.3	508.0	422.3	—	408.0	—	93.7	328.6	16	34.9	431.8	762	117.5	301.6	436.6	R-53
12 x 10	701.3	—	742.1	254.0	838.2	841.4	419.1	420.7	558.8	422.3	—	408.0	—	93.7	328.6	20	34.9	489.0	762	117.5	301.6	436.6	R-57
12 x 12	890.4	—	963.0	304.8	838.2	841.4	419.1	420.7	558.8	492.1	—	546.1	—	108.0	384.2	20	34.9	489.0	508	158.8	368.3	466.7	R-57
14 x 13 1/4	1183.9	—	1256.5	336.6	889.0	892.2	444.5	446.1	603.3	498.5	—	552.5	—	108.0	390.5	20	38.1	527.1	914.4	158.8	355.6	523.9	R-61
16 x 13 1/4	1267	—	1339.0	336.6	990.6	993.8	495.3	496.9	685.8	498.5	—	552.5	—	108.0	390.5	20	41.3	603.3	914.4	158.8	355.6	523.9	R-65
16 x 15 1/4	1419.8	—	1482.8	387.4	990.6	993.8	495.3	496.9	685.8	527.1	—	581.0	—	108.0	390.5	20	41.3	603.3	914.4	158.8	387.4	523.9	R-65



KF Series T Dimensional Data (in./mm), API 6D & ANSI B16.34, Class 900



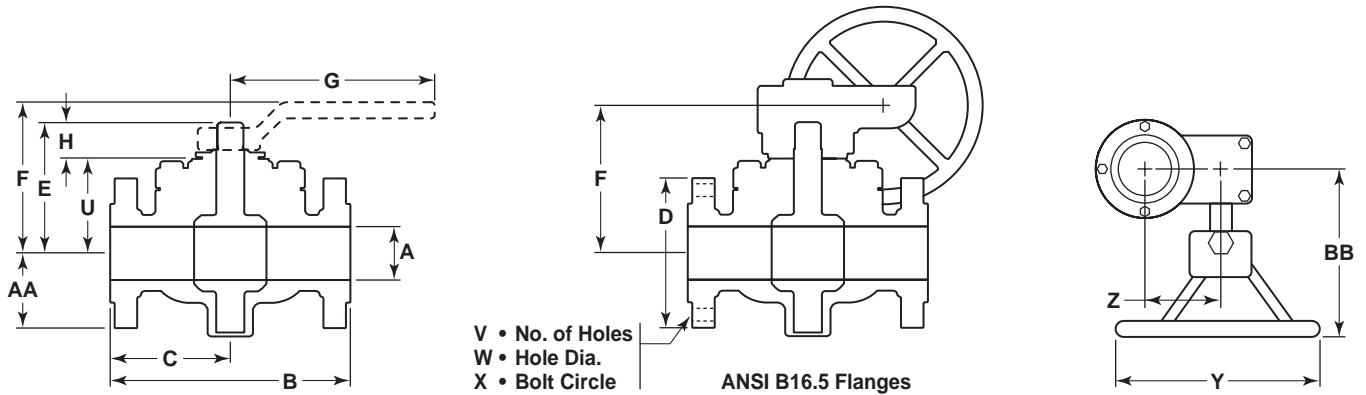
Dimensional Data (in./mm) 2"FP-12"FP

Size (in.)	Dimension (in.)																						
	Wt. (lbs.)			A		B		C		D	E	F		G	H	U	V	W	X	Y	Z	AA	BB
	Valve Only	w/ Handle	w/Gear Op.	RF	RTJ	RF	RTJ	RF	RTJ			Top of Handle	CL of H/Whl.										
2 x 2	116	120	124	2 1/16	14 1/2	14 5/8	7 1/4	7 5/16	8 1/2	6 1/2	7 19/32	6	22	1 3/16	4 7/8	8	1	6 1/2	8	1 3/4	5	7 3/16	R-24
3 x 2	129	133	137	2 1/16	15	15 1/8	7 1/2	7 9/16	9 1/2	6 1/2	7 19/32	6	22	1 3/16	4 7/8	8	1	7 1/2	8	1 3/4	5	7 3/16	R-31
3 x 3	160	168	171	3 1/8	15	15 1/8	7 1/2	7 9/16	9 1/2	7 5/8	8 25/32	7 1/16	30	1 1/2	5 11/16	8	1	7 1/2	10	2 1/2	5 13/16	7 1/2	R-31
4 x 3	216	224	227	3 1/8	18	18 1/8	9	9 1/16	11 1/2	7 5/8	8 25/32	7 1/16	30	1 1/2	5 11/16	8	1 1/4	9 1/4	10	2 1/2	5 13/16	7 1/2	R-37
4 x 4	272	284	293	4 1/16	18	18 1/8	9	9 1/16	11 1/2	9 1/2	10 19/32	8 15/32	48	1 31/32	7 3/32	8	1 1/4	9 1/4	12	2 1/2	6 3/4	9 1/4	R-37
6 x 4	360	372	381	4 1/16	24	24 1/8	12	12 1/16	15	9 1/2	10 19/32	8 15/32	48	1 31/32	7 3/32	12	1 1/4	12 1/2	12	2 1/2	6 3/4	9 1/4	R-45
6 x 6	540	564	571	6	24	24 1/8	12	12 1/16	15	11 7/16	12 11/16	10 7/16	48	2 5/32	8 13/16	12	1 1/4	12 1/2	24	3 1/2	8 5/8	11 15/16	R-45
8 x 6	675	689	706	6	29	29 1/8	14 1/2	14 9/16	18 1/2	11 7/16	12 11/16	10 7/16	48	2 5/32	8 13/16	12	1 1/2	15 1/2	24	3 1/2	8 5/8	11 15/16	R-49
8 x 8	833	—	925	8	29	29 1/8	14 1/2	14 9/16	18 1/2	14 3/8	—	13 3/8	—	3 1/8	11 1/4	12	1 1/2	15 1/2	30	4 5/8	10 3/32	15 7/8	R-49
10 x 8	1105	—	1197	8	33	33 1/8	16 1/2	16 9/16	21 1/2	14 3/8	—	13 3/8	—	3 1/8	11 1/4	16	1 1/2	18 1/2	30	4 5/8	10 3/32	15 7/8	R-53
10 x 10	1387	—	1522	10	33	33 1/8	16 1/2	16 9/16	21 1/2	16 5/8	—	20 1/16	—	3 1/16	12 15/16	16	1 1/2	18 1/2	30	6 1/4	11 7/8	18 3/8	R-53
12 x 10	1601	—	1736	10	38	38 1/8	19	19 1/16	24	16 5/8	—	20 1/16	—	3 1/16	12 15/16	20	1 1/2	21	30	6 1/4	11 7/8	18 3/8	R-57
12 x 12	2493	—	2632	12	38	38 1/8	19	19 1/16	24	19 3/8	—	21 1/2	—	4 1/4	15 1/8	20	1 1/2	21	36	6 1/4	14 1/2	20 5/8	R-57

Size (in.)	Dimension (mm)																						
	Wt. (kg)			A		B		C		D	E	F		G	H	U	V	W	X	Y	Z	AA	BB
	Valve Only	w/ Handle	w/Gear Op.	RF	RTJ	RF	RTJ	RF	RTJ			Top of Handle	CL of H/Whl.										
2 x 2	52.6	54.4	56.2	52.39	368.3	371.5	184.2	185.7	215.9	165.1	192.88	152.4	558.8	30.16	123.8	8	25.4	165.1	203.2	44.5	127	182.6	R-24
3 x 2	58.5	60.3	62.1	52.39	381	384.2	190.5	192.1	241.3	165.1	192.88	152.4	558.8	30.16	123.8	8	25.4	190.5	203.2	44.5	127	182.6	R-31
3 x 3	72.6	76.2	77.6	79.38	381	384.2	190.5	192.1	241.3	193.68	223.0	179.4	762	38.1	144.5	8	25.4	190.5	254	63.5	147.6	190.5	R-31
4 x 3	98.0	101.6	103.0	79.38	457.2	460.4	228.6	230.2	292.1	193.68	223.0	179.4	762	38.1	144.5	8	31.8	235.0	254	63.5	147.6	190.5	R-37
4 x 4	123.4	128.8	132.9	103.19	457.2	460.4	228.6	230.2	292.1	241.3	269.08	215.11	1219.2	50.00	180.2	8	31.8	235.0	304.8	63.5	171.5	235.0	R-37
6 x 4	163.3	168.7	172.8	103.19	609.6	612.8	304.8	306.4	381	241.3	269.08	215.11	1219.2	50.00	180.2	12	31.8	317.5	304.8	63.5	171.5	235.0	R-45
6 x 6	244.9	255.8	259.0	152.4	609.6	612.8	304.8	306.4	381	290.51	322.3	265.11	1219.2	54.8	223.8	12	31.8	317.5	609.6	88.9	219.1	303.2	R-45
8 x 6	306.2	312.5	320.2	152.4	736.6	739.8	368.3	369.9	469.9	290.51	322.3	265.11	1219.2	54.8	223.8	12	38.1	393.7	609.6	88.9	219.1	303.2	R-49
8 x 8	377.8	—	419.6	203.2	736.6	739.8	368.3	369.9	469.9	365.1	—	339.7	—	79.4	285.8	12	38.1	393.7	762	117.5	256.4	403.2	R-49
10 x 8	501.2	—	543.0	203.2	838.2	841.4	419.1	420.7	546.1	365.1	—	339.7	—	79.4	285.8	16	38.1	469.9	762	117.5	256.4	403.2	R-53
10 x 10	629.1	—	690.4	254.0	838.2	841.4	419.1	420.7	546.1	422.3	—	509.6	—	93.7	328.6	16	38.1	469.9	762	158.8	301.6	466.7	R-53
12 x 10	726.2	—	787.4	254.0	965.2	968.4	482.6	484.2	609.6	422.3	—	509.6	—	93.7	328.6	20	38.1	533.4	762	158.8	301.6	466.7	R-57
12 x 12	1130.8	—	1193.9	304.8	965.2	968.4	482.6	484.2	609.6	492.1	—	546.1	—	108.0	384.2	20	38.1	533.4	914.4	158.8	368.3	523.9	R-57



KF Series T Dimensional Data (in./mm), API 6D & ANSI B16.34, Class 1500



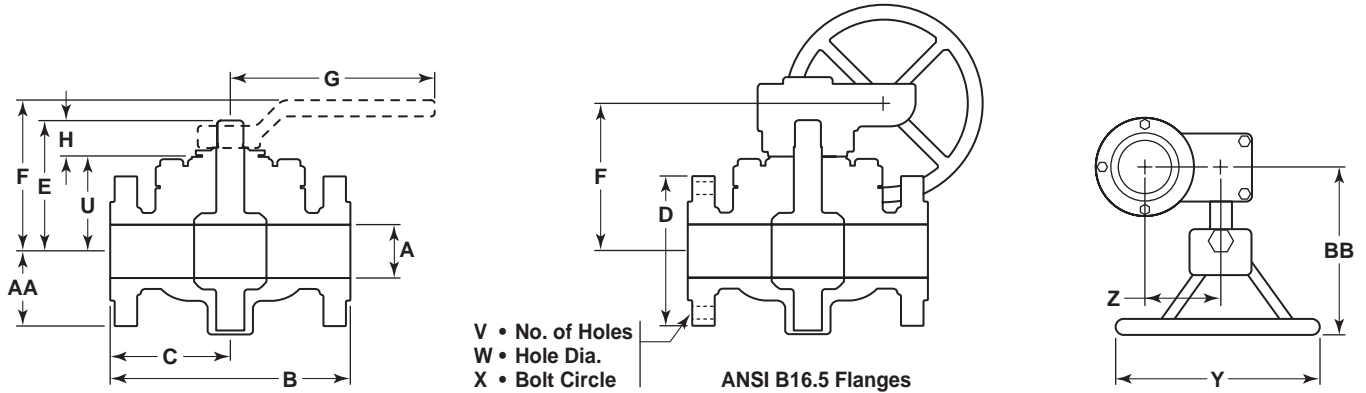
Dimensional Data (in./mm) 2"FP-12"FP

Size (in.)	Dimension (in.)																						
	Wt. (lbs.)			A		B		C		D	E	F		G	H	U	V	W	X	Y	Z	AA	BB
	Valve Only	w/ Handle	w/Gear Op.		RF	RTJ	RF	RTJ			Top of Handle	CL of H/Whl.											
2 x 2	118	122	124	2 1/16	14 1/2	14 5/8	7 1/4	7 5/16	8 1/2	6 1/2	7 19/32	6	22	1 3/16	4 7/8	8	1	6 1/2	8	1 3/4	5 1/8	7 3/16	R-24
3 x 2	164	168	172	2 1/16	18 1/2	18 5/8	9 1/4	9 5/16	10 1/2	6 1/2	7 19/32	6	22	1 3/16	4 7/8	8	1 1/4	8	8	1 3/4	5 1/8	7 3/16	R-35
3 x 3	202	210	213	3 1/8	18 1/2	18 5/8	9 1/4	9 5/16	10 1/2	8 15/16	9 31/32	8 1/4	30	1 5/8	6 7/8	8	1 1/4	8	10	2 1/2	6 1/8	7 1/2	R-35
4 x 3	299	307	310	3 1/8	21 1/2	21 5/8	10 3/4	10 13/16	12 1/4	8 15/16	9 31/32	8 1/4	30	1 5/8	6 7/8	8	1 3/8	9 1/2	10	2 1/2	6 1/8	7 1/2	R-39
4 x 4	385	397	398	4 1/16	21 1/2	21 5/8	10 3/4	10 13/16	12 1/4	10 13/32	11 1/2	9 5/16	48	1 31/32	7 15/16	8	1 3/8	9 1/2	12	2 1/2	7	9 1/4	R-39
6 x 4	475	487	486	4 1/16	27 3/4	28	13 7/8	14	15 1/2	10 13/32	11 1/2	9 5/16	48	1 31/32	7 15/16	12	1 1/2	12 1/2	12	2 1/2	7	9 1/4	R-46
6 x 6	540	—	605	6	27 3/4	28	13 7/8	14	15 1/2	14 15/16	—	13 5/16	—	3 5/8	11 5/16	12	1 1/2	12 1/2	18	4 5/8	8 3/8	17 5/8	R-46
8 x 6	675	—	740	6	32 3/4	33 1/8	16 3/8	16 9/16	19	14 15/16	—	13 5/16	—	3 5/8	11 5/16	12	1 3/4	15 1/2	18	4 5/8	8 3/8	17 5/8	R-50
8 x 8	1488	—	1586	7 5/8	32 3/4	33 1/8	16 3/8	16 9/16	19	14 5/8	—	13 3/8	—	3 3/8	11 1/4	12	1 3/4	15 1/2	18	4 5/8	11 9/16	17 3/4	R-50
10 x 8	2050	—	2148	7 5/8	39	39 3/8	19 1/2	19 11/16	23	14 5/8	—	13 3/8	—	3 3/8	11 1/4	12	2	19	18	4 5/8	11 9/16	17 3/4	R-54
10 x 10	2650	—	2775	9 1/2	39	39 3/8	19 1/2	19 11/16	23	20 5/8	—	23 5/16	—	3 11/16	16 15/16	12	2	19	30	6 1/4	12 5/8	20 5/8	R-54
12 x 10	3242	—	3367	9 1/2	44 1/2	45 1/8	22 1/4	22 9/16	26 1/2	20 5/8	—	23 5/16	—	3 11/16	16 15/16	16	2 1/8	22 1/2	30	6 1/4	12 5/8	20 5/8	R-58
12 x 12	3613	—	3748	11 3/8	44 1/2	45 1/8	22 1/4	22 9/16	26 1/2	24 1/8	—	21 1/2	—	4 1/4	19 7/8	16	2 1/8	22 1/2	36	6 1/4	14 1/2	20 5/8	R-58

Size (in.)	Dimension (mm)																						
	Wt. (kg)			A		B		C		D	E	F		G	H	U	V	W	X	Y	Z	AA	BB
	Valve Only	w/ Handle	w/Gear Op.		RF	RTJ	RF	RTJ			Top of Handle	CL of H/Whl.											
2 x 2	53.5	55.3	56.2	52.39	368.3	371.5	184.2	185.7	215.9	165.1	192.9	152.4	558.8	30.2	123.8	8	25.4	165.1	203.2	44.5	130.2	182.6	R-24
3 x 2	74.4	76.2	78.0	52.39	469.9	473.1	235.0	236.5	266.7	165.1	192.9	152.4	558.8	30.2	123.8	8	31.8	203.2	203.2	44.5	130.2	182.6	R-35
3 x 3	91.6	95.3	96.6	79.38	469.9	473.1	235.0	236.5	266.7	227.0	253.2	209.6	762	41.3	174.6	8	31.8	203.2	254	63.5	155.6	190.5	R-35
4 x 3	135.6	139.3	140.6	79.38	546.1	549.3	273.1	274.6	311.2	227.0	253.2	209.6	762	41.3	174.6	8	34.9	241.3	254	63.5	155.6	190.5	R-39
4 x 4	174.6	180.1	180.5	103.19	546.1	549.3	273.1	274.6	311.2	264.3	292.1	236.5	1219.2	50.0	201.6	8	34.9	241.3	304.8	63.5	177.8	235.0	R-39
6 x 4	215.5	220.9	220.4	103.19	704.9	711.2	352.4	355.6	393.7	264.3	292.1	236.5	1219.2	50.0	201.6	12	38.1	317.5	304.8	63.5	177.8	235.0	R-46
6 x 6	244.9	—	274.4	152.4	704.9	711.2	352.4	355.6	393.7	379.4	—	338.1	—	92.1	287.3	12	38.1	317.5	457.2	117.5	212.7	447.7	R-46
8 x 6	306.2	—	335.7	152.4	831.9	841.4	415.9	420.7	482.6	379.4	—	338.1	—	92.1	287.3	12	44.5	393.7	457.2	117.5	212.7	447.7	R-50
8 x 8	676	—	719.4	193.7	831.9	841.4	415.9	420.7	482.6	371.5	—	339.7	—	85.7	285.8	12	44.5	393.7	457.2	117.5	293.7	450.9	R-50
10 x 8	930	—	974.3	193.7	990.6	1000.1	495.3	500.1	584.2	371.5	—	339.7	—	85.7	285.8	12	50.8	482.6	457.2	117.5	293.7	450.9	R-54
10 x 10	1205	—	1258.7	241.3	990.6	1000.1	495.3	500.1	584.2	523.9	—	592.1	—	93.7	430.2	12	50.8	482.6	762	158.8	320.7	523.9	R-54
12 x 10	1474	—	1527.3	241.3	1130.3	1146.2	565.2	573.1	673.1	523.9	—	592.1	—	93.7	430.2	16	54.0	571.5	762	158.8	320.7	523.9	R-58
12 x 12	1642	—	1700.1	288.9	1130.3	1146.2	565.2	573.1	673.1	612.8	—	546.1	—	108.0	504.8	16	54.0	571.5	914.4	158.8	368.3	523.9	R-58



KF Series T Dimensional Data (in./mm), API 6D & ANSI B16.34, Class 2500



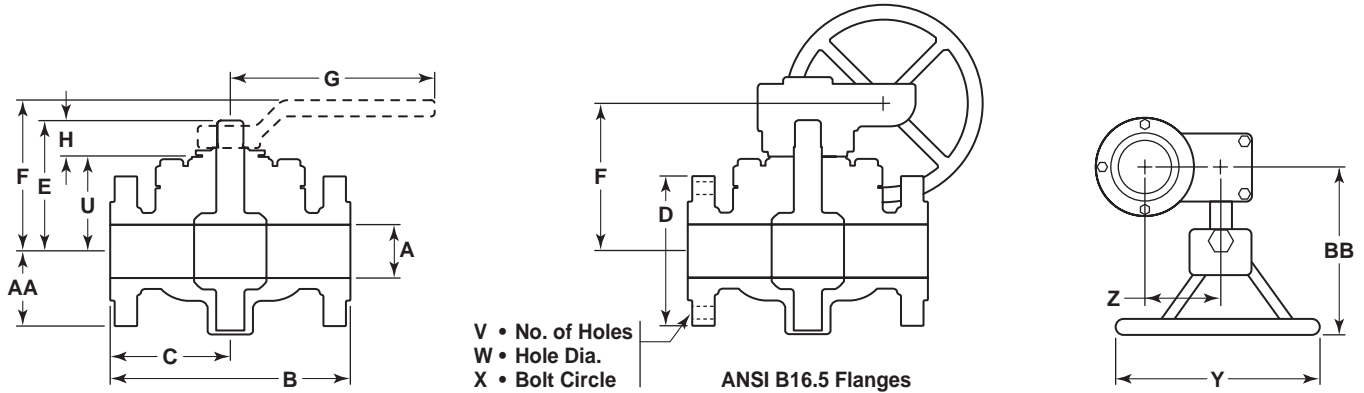
Dimensional Data (in./mm) 2"FP-12"FP

Size (in.)	Dimension (in.)																						
	Wt. (lbs.)			A		B		C		D	E	F		G	H	U	V	W	X	Y	Z	AA	BB
	Valve Only	w/ Handle	w/Gear Op.		RF	RTJ	RF	RTJ			Top of Handle	CL of H/Whl.											
2x2	199	205	207	1 3/4	17 3/4	17 7/8	8 7/8	8 15/16	9 1/4	7 1/2	8 19/32	7	30	13/16	5 7/8	8	1 1/8	6 3/4	10	13/4	4 1/2	7 1/2	R-26
3x3	341	352	355	2 1/2	22 3/4	23	11 3/8	11 1/2	12	9 13/16	10 27/32	10	48	1 5/8	7 3/4	8	1 3/8	9	12	2 1/2	5 9/16	7 7/8	R-32
4x3	505	516	519	2 1/2	26 1/2	26 7/8	13 1/4	13 7/16	14	9 13/16	10 27/32	10	48	1 5/8	7 3/4	8	1 5/8	10 3/4	12	2 1/2	5 9/16	7 7/8	R-38
4x4	650	—	681	3 1/2	26 1/2	26 7/8	13 1/4	13 7/16	14	11 11/32	—	9 29/32	—	2 11/32	8 27/32	8	1 5/8	10 3/4	24	3 1/2	6 11/16	13 3/8	R-38
6x4	803	—	834	3 1/2	36	36 1/2	18	18 1/4	19	11 11/32	—	9 29/32	—	2 11/32	8 27/32	8	2 1/8	14 1/2	24	3 1/2	6 11/16	13 3/8	R-47
6x6	913	—	994	5 1/4	36	36 1/2	18	18 1/4	19	16 1/32	—	18 9/16	—	3 21/32	12 3/8	8	2 1/8	14 1/2	18	4 5/8	8 7/16	17 5/8	R-47
8x6	1141	—	1222	5 1/4	40 1/4	40 7/8	20 1/8	20 7/16	21 3/4	16 1/32	—	18 9/16	—	3 21/32	12 3/8	12	2 1/8	17 1/4	18	4 5/8	8 7/16	17 5/8	R-51
8x8	2515	—	2640	7 1/8	40 1/4	40 7/8	20 1/8	20 7/16	21 3/4	19 15/16	—	22 5/8	—	3 11/16	16 1/4	12	2 1/8	17 1/4	30	6 1/4	11 1/8	20 5/8	R-51
10x8	3465	—	3590	7 1/8	50	50 7/8	25	25 7/16	26 1/2	19 15/16	—	22 5/8	—	3 11/16	16 1/4	12	2 5/8	21 1/4	30	6 1/4	11 1/8	20 5/8	R-55
10x10	5565	—	5700	8 7/8	50	50 7/8	25	25 7/16	26 1/2	24 13/16	—	26 3/8	—	4 1/4	20 9/16	12	2 5/8	21 1/4	30	6 1/4	13 5/8	20 5/8	R-55
12x10	6808	—	6943	8 7/8	56	56 7/8	28	28 7/16	30	24 13/16	—	26 3/8	—	4 1/4	20 9/16	12	2 7/8	24 3/8	30	6 1/4	13 5/8	20 5/8	R-60
12x12	7587	—	7722	10 1/2	56	56 7/8	28	28 7/16	30	27 1/2	—	29 15/32	—	4 5/16	23 3/16	12	2 7/8	24 3/8	30	6 1/4	14 5/8	20 5/8	R-60

Size (in.)	Dimension (mm)																						
	Wt. (kg)			A		B		C		D	E	F		G	H	U	V	W	X	Y	Z	AA	BB
	Valve Only	w/ Handle	w/Gear Op.		RF	RTJ	RF	RTJ			Top of Handle	CL of H/Whl.											
2x2	90.6	93.2	94.0	44.5	450.9	454.0	223.0	227.0	235.0	190.5	218.3	177.8	762	30.2	149.2	8	28.6	171.5	254	44.5	114.3	190.5	R-26
3x3	155	160	161.4	63.5	577.9	584.2	288.9	292.1	304.8	249.2	275.4	254	1219.2	41.3	196.9	8	34.9	228.6	304.8	63.5	141.3	200.0	R-32
4x3	229	234	235.9	63.5	673.1	682.6	336.6	341.3	355.6	249.2	275.4	254	1219.2	41.3	196.9	8	41.3	273.1	304.8	63.5	141.3	200.0	R-38
4x4	296	—	309.5	88.9	673.1	682.6	336.6	341.3	355.6	288.1	—	251.6	—	59.5	224.6	8	41.3	273.1	609.6	88.9	169.9	339.7	R-38
6x4	365	—	379.1	88.9	914.4	927.1	457.2	463.6	482.6	288.1	—	251.6	—	59.5	224.6	8	54.0	368.3	609.6	88.9	169.9	339.7	R-47
6x6	415	—	451.8	133.4	914.4	927.1	457.2	463.6	482.6	407.2	—	471.5	—	92.9	314.3	8	54.0	368.3	457.2	117.5	214.3	447.7	R-47
8x6	579	—	555	133.4	1022.4	1038.2	511.2	519.1	552.5	407.2	—	471.5	—	92.9	314.3	12	54.0	438.2	457.2	117.5	214.3	447.7	R-51
8x8	1143	—	1200	181.0	1022.4	1038.2	511.2	519.1	552.5	506.4	—	574.7	—	93.7	412.8	12	54.0	438.2	762	158.8	282.6	523.9	R-51
10x8	1575	—	1632	181.0	1270	1292.2	635	646.1	673.1	506.4	—	574.7	—	93.7	412.8	12	66.7	539.8	762	158.8	282.6	523.9	R-55
10x10	2530	—	2590	225.4	1270	1292.2	635	646.1	673.1	630.2	—	669.9	—	108.0	522.3	12	66.7	539.8	762	158.8	346.1	523.9	R-55
12x10	3095	—	3156	225.4	1422.4	1444.6	711.2	722.3	762	630.2	—	669.9	—	108.0	522.3	12	73.0	619.1	762	158.8	346.1	523.9	R-60
12x12	3449	—	3510	266.7	1422.4	1444.6	711.2	722.3	762	698.5	—	748.5	—	109.5	589.0	12	73.0	619.1	762	158.8	371.5	523.9	R-60



KF Series T Dimensional Data (in.), API 6A, 2000, 3000 & 5000 RTJ



Dimensional Data (in.), Class 2000 RTJ, 2"FP-6"FP

Size (in.)	Dimension (in.)																				Ring Groove RTJ
	Wt. (lbs.)			A	B	C	D	E	F		G	H	U	V	W	X	Y	Z	AA	BB	
	Valve Only	w/ Handle	w/Gear Op.						Top of Handle	CL of H/WHL.											
2 1/16 x 2 1/16	72	77	81	2 1/16	11 5/8	5 13/16	6 1/2	6 1/2	7 19/32	6	22	13 1/16	4 7/8	8	3/4	5	8	1 3/4	4 7/8	7 3/16	R-23
3 1/8 x 2 1/16	96	100	104	2 1/16	14 1/8	7 1/16	8 1/4	6 1/2	7 19/32	6	22	13 1/16	4 7/8	8	7/8	6 5/8	8	1 3/4	4 7/8	7 3/16	R-31
3 1/8 x 3 1/8	132	140	143	3 1/8	14 1/8	7 1/16	8 1/4	7 5/8	8 19/32	6 7/8	30	11 1/16	5 1/2	8	7/8	6 5/8	10	2 1/2	5 3/4	7 1/2	R-31
4 1/16 x 3 1/8	174	182	185	3 1/8	17 1/8	8 9/16	10 3/4	7 5/8	8 19/32	6 7/8	30	11 1/16	5 1/2	8	1	8 1/2	10	2 1/2	5 3/4	7 1/2	R-37
4 1/16 x 4 1/16	235	246	245	4 1/16	17 1/8	8 9/16	10 3/4	9 1/2	10 19/32	8 15/32	48	13 1/32	7 3/32	8	1	8 1/2	12	2 1/2	6 1/2	9 1/4	R-37
7 1/16 x 4 1/16	331	342	342	4 1/16	22 1/8	11 1/16	14	9 1/2	10 19/32	8 15/32	48	13 1/32	7 3/32	12	1 1/8	11 1/2	12	2 1/2	6 1/2	9 1/4	R-45
7 1/16 x 6	465	479	486	6	22 1/8	11 1/16	14	11 7/16	12 7/16	10 7/16	48	2 13/32	8 9/16	12	1 1/8	11 1/2	24	3 1/2	8 5/16	11 15/16	R-45

Dimensional Data (in.), Class 3000 RTJ, 2"FP-6"FP

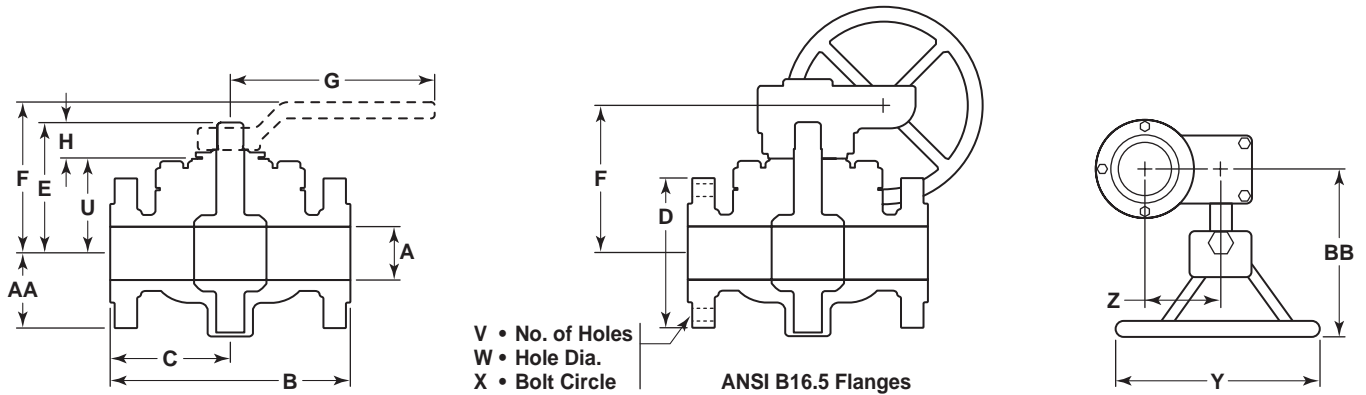
Size (in.)	Dimension (in.)																				Ring Groove RTJ
	Wt. (lbs.)			A	B	C	D	E	F		G	H	U	V	W	X	Y	Z	AA	BB	
	Valve Only	w/ Handle	w/Gear Op.						Top of Handle	CL of H/WHL.											
2 1/16 x 2 1/16	120	124	134	2 1/16	14 5/8	7 5/16	8 1/2	6 1/2	7 19/32	6	22	13 1/16	4 7/8	8	1	6 1/2	8	1 3/4	5	7 3/16	R-24
3 1/8 x 2 1/16	133	137	147	2 1/16	15 1/8	7 9/16	9 1/2	6 1/2	7 19/32	6	22	13 1/16	4 7/8	8	1	7 1/2	8	1 3/4	5	7 3/16	R-31
3 1/8 x 3 1/8	151	159	180	3 1/8	15 1/8	7 9/16	9 1/2	7 5/8	8 25/32	7 1/16	30	1 1/2	5 11/16	8	1	7 1/2	10	2 1/2	5 13/16	7 1/2	R-31
4 1/16 x 3 1/8	210	218	236	3 1/8	18 1/8	9 1/16	11 1/2	7 5/8	8 25/32	7 1/16	30	1 1/2	5 11/16	8	1 1/4	9 1/4	10	2 1/2	5 13/16	7 1/2	R-37
4 1/16 x 4 1/16	263	275	293	4 1/16	18 1/8	9 1/16	11 1/2	9 1/2	10 19/32	8 15/32	48	13 1/32	7 3/32	8	1 1/4	9 1/4	12	2 1/2	6 3/4	9 1/4	R-37
7 1/16 x 6	540	554	604	6	24 1/8	12 1/16	15	11 7/16	12 11/16	10 7/16	48	2 5/32	8 13/16	12	1 1/4	12 1/2	24	3 1/2	8 5/8	11 15/16	R-45

Dimensional Data (in.), Class 5000 RTJ, 2"FP-6"FP

Size (in.)	Dimension (in.)																				Ring Groove RTJ
	Wt. (lbs.)			A	B	C	D	E	F		G	H	U	V	W	X	Y	Z	AA	BB	
	Valve Only	w/ Handle	w/Gear Op.						Top of Handle	CL of H/WHL.											
2 1/16 x 2 1/16	121	125	135	2 1/16	14 5/8	7 5/16	8 1/2	6 1/2	7 19/32	6	22	13 1/16	4 7/8	8	1	6 1/2	8	1 3/4	4 3/8	7 3/16	R-24
3 1/8 x 2 1/16	147	151	161	2 1/16	18 5/8	9 5/16	10 1/2	6 1/2	7 19/32	6	22	13 1/16	4 7/8	8	1 1/4	8	8	1 3/4	4 3/8	7 3/16	R-35
3 1/8 x 3 1/8	251	259	262	3 1/8	18 5/8	9 5/16	10 1/2	8 15/16	9 31/32	8 1/4	30	1 5/8	6 7/8	8	1 1/4	8	10	2 1/2	5 3/8	7 1/2	R-35
4 1/16 x 3 1/8	287	295	310	3 1/8	21 5/8	10 13/16	12 1/4	8 15/16	9 31/32	8 1/4	30	1 5/8	6 7/8	8	1 3/8	9 1/2	10	2 1/2	5 3/8	7 1/2	R-39
4 1/16 x 4 1/16	427	439	457	4 1/16	21 5/8	10 13/16	12 1/4	10 13/32	11 1/2	9 5/16	48	13 1/32	7 15/16	8	1 3/8	9 1/2	12	2 1/2	6 1/4	9 1/4	R-39
7 1/16 x 4 1/16	736	749	769	4 1/16	28	14	15 1/2	10 13/32	11 1/2	9 5/16	48	13 1/32	7 15/16	12	1 1/2	12 1/2	12	2 1/2	6 1/4	9 1/4	R-46
7 1/16 x 6	846	861	884	6	28	14	15 1/2	14 15/16	—	12 15/16	—	3 5/8	11 5/16	12	1 1/2	12 1/2	24	3 1/2	7 5/8	11 15/16	R-46



KF Series T Dimensional Data (mm), API 6A, 2000, 3000 & 5000 RTJ



Dimensional Data (mm), Class 2000 RTJ, 2"FP-6"FP

Size (in.)	Dimension (mm)																			Ring Groove RTJ	
	Valve Only	Wt. (kg)		A	B	C	D	E	F		G	H	U	V	W	X	Y	Z	AA		BB
		w/ Handle	w/Gear Op.						Top of Handle	CL of H/Wht.											
2 1/16 x 2 1/16	32.7	34.9	36.7	52.39	295.28	147.64	165.1	165.1	192.88	152.4	558.8	30.16	123.8	8	19.1	127	203.2	44.5	123.8	182.6	R-23
3 1/8 x 2 1/16	43.5	45.4	47.2	52.39	358.78	179.39	209.55	165.1	192.88	152.4	558.8	30.16	123.8	8	22.2	168.3	203.2	44.5	123.8	182.6	R-31
3 1/8 x 3 1/8	59.9	63.5	64.9	79.38	358.78	179.39	209.55	193.68	218.28	174.63	762	42.86	139.7	8	22.2	168.3	254	63.5	146.1	190.5	R-31
4 1/16 x 3 1/8	78.9	82.6	83.9	79.38	435.0	217.49	273.05	193.68	218.28	174.63	762	42.86	139.7	8	25.4	215.9	254	63.5	146.1	190.5	R-37
4 1/16 x 4 1/16	106.6	111.6	111.1	103.19	435.0	217.49	273.05	241.3	269.08	215.11	1219.2	50.00	180.2	8	25.4	215.9	304.8	63.5	165.1	235.0	R-37
7 1/16 x 4 1/16	150.1	155.1	155.1	103.19	561.98	280.99	355.6	241.3	269.08	215.11	1219.2	50.00	180.2	12	28.6	292.1	304.8	63.5	165.1	235.0	R-45
7 1/16 x 6	210.9	217.3	220.4	152.4	561.98	280.99	355.6	290.51	315.91	265.11	1219.2	61.12	217.5	12	28.6	292.1	609.6	88.9	211.1	303.2	R-45

Dimensional Data (mm), Class 3000 RTJ, 2"FP-6"FP

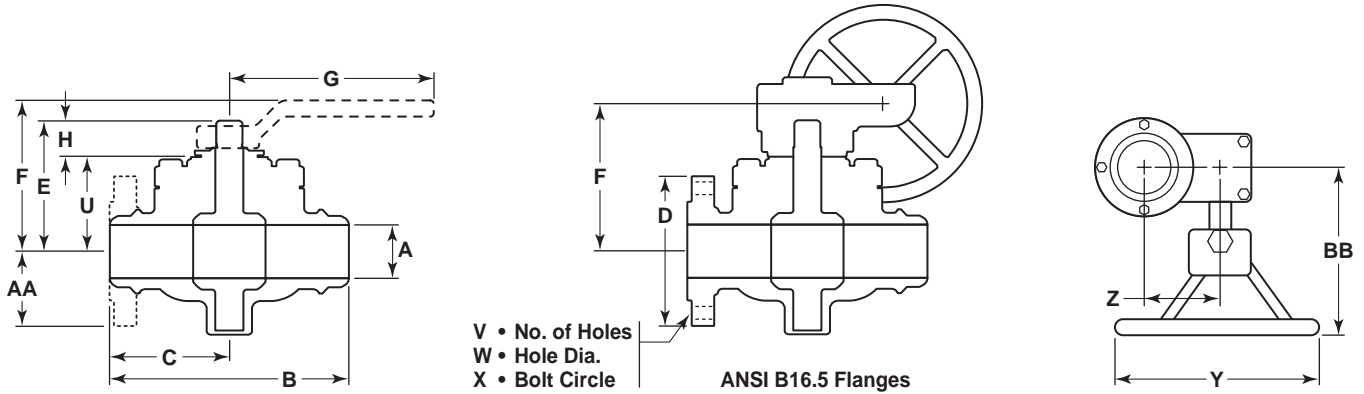
Size (in.)	Dimension (mm)																			Ring Groove RTJ	
	Valve Only	Wt. (kg)		A	B	C	D	E	F		G	H	U	V	W	X	Y	Z	AA		BB
		w/ Handle	w/Gear Op.						Top of Handle	CL of H/Wht.											
2 1/16 x 2 1/16	54.4	56.2	60.8	52.39	371.5	185.7	215.9	165.1	192.88	152.4	558.8	30.16	123.8	8	25.4	165.1	203.2	44.5	127	182.6	R-24
3 1/8 x 2 1/16	60.3	62.1	66.7	52.39	384.2	192.1	241.3	165.1	192.88	152.4	558.8	30.16	123.8	8	25.4	190.5	203.2	44.5	127	182.6	R-31
3 1/8 x 3 1/8	68.5	72.1	81.6	79.38	384.2	192.1	241.3	193.68	223.0	179.4	762	38.1	144.5	8	25.4	190.5	254	63.5	147.6	190.5	R-31
4 1/16 x 3 1/8	95.3	98.9	107.0	79.38	460.4	230.2	292.1	193.68	223.0	179.4	762	38.1	144.5	8	31.8	235.0	254	63.5	147.6	190.5	R-37
4 1/16 x 4 1/16	119.3	124.7	132.9	103.19	460.4	230.2	292.1	241.3	269.08	215.11	1219.2	50.00	180.2	8	31.8	235.0	304.8	63.5	171.5	235.0	R-37
7 1/16 x 6	244.9	251.3	274.0	152.4	612.8	306.4	381	290.51	322.3	265.11	1219.2	50.00	223.8	12	31.8	317.5	609.6	88.9	219.1	303.2	R-45

Dimensional Data (mm), Class 5000 RTJ, 2"FP-6"FP

Size (in.)	Dimension (mm)																			Ring Groove RTJ	
	Valve Only	Wt. (kg)		A	B	C	D	E	F		G	H	U	V	W	X	Y	Z	AA		BB
		w/ Handle	w/Gear Op.						Top of Handle	CL of H/Wht.											
2 1/16 x 2 1/16	54.9	56.7	61.2	52.39	371.5	185.7	215.9	165.1	192.9	152.4	558.8	30.2	123.8	8	25.4	165.1	203.2	44.5	111.1	182.6	R-24
3 1/8 x 2 1/16	66.7	68.5	73.0	52.39	473.1	236.5	266.7	165.1	192.9	152.4	558.8	30.2	123.8	8	31.8	203.2	203.2	44.5	111.1	182.6	R-35
3 1/8 x 3 1/8	113.9	117.5	118.8	79.38	473.1	236.5	266.7	227.0	253.2	209.6	762	41.3	174.6	8	31.8	203.2	254	63.5	136.5	190.5	R-35
4 1/16 x 3 1/8	130.2	133.8	140.6	79.38	549.3	274.6	311.2	227.0	253.2	209.6	762	41.3	174.6	8	34.9	241.3	254	63.5	136.5	190.5	R-39
4 1/16 x 4 1/16	193.7	199.1	207.3	103.19	549.3	274.6	311.2	264.3	292.1	236.5	1219.2	50.0	201.6	8	34.9	241.3	304.8	63.5	158.8	235.0	R-39
7 1/16 x 4 1/16	333.8	339.7	348.8	103.19	711.2	355.6	393.7	264.3	292.1	236.5	1219.2	50.0	201.6	12	38.1	317.5	304.8	63.5	158.8	235.0	R-46
7 1/16 x 6	383.7	390.5	401.0	152.4	711.2	355.6	393.7	379.4	—	328.6	—	92.1	287.3	12	38.1	317.5	609.6	88.9	193.7	303.2	R-46



KF Series TW Dimensional Data (in./mm), API 6D & ANSI B16.34, Class 600



Dimensional Data (in./mm) 2"FP-16"FP

Size (in.)	Dimension (in.)																				Ring Groove RTJ x WE		
	Wt. (lbs.)				B		C		D	E	F		G	H	U	V	W	X	Y	Z		AA	BB
	WE x WE	Flanged x WE	add for Handle	add for Gear Op	WE x WE RF x WE	RTJ x WE	WE x WE RF x WE	RTJ x WE	Flanged x WE		Top of Handle	CL of H/Whl.				Flanged x WE	Flanged x WE	Flanged x WE					
2 x 2	55	63	4	11	11 1/2	119/16	5 3/4	5 25/32	6 1/2	6 1/2	7 19/32	6	22	1 3/16	4 7/8	8	3/4	5	8	1 3/4	4 7/8	7 3/16	R-23
3 x 2	64	78	4	11	14	14 1/16	7	7 1/32	8 1/4	6 1/2	7 19/32	6	22	1 3/16	4 7/8	8	7/8	6 5/8	8	1 3/4	4 7/8	7 3/16	R-31
3 x 3	98	113	8	18	14	14 1/16	7	7 1/32	8 1/4	7 5/8	8 19/32	6 7/8	30	1 1/16	5 1/2	8	7/8	6 5/8	10	2 1/2	5 3/4	7 1/2	R-31
4 x 3	103	136	8	18	17	17 1/16	8 1/2	8 17/32	10 3/4	7 5/8	8 19/32	6 7/8	30	1 1/16	5 1/2	8	1	8 1/2	10	2 1/2	5 3/4	7 1/2	R-37
4 x 4	163	196	12	21	17	17 1/16	8 1/2	8 17/32	10 3/4	9 1/2	10 19/32	8 15/32	48	1 3/16	7 3/32	8	1	8 1/2	12	2 1/2	6 1/2	9 1/4	R-37
6 x 4	203	263	12	21	22	22 1/16	11	11 1/32	14	9 1/2	10 19/32	8 15/32	48	1 3/16	7 3/32	12	1 1/8	11 1/2	12	2 1/2	6 1/2	9 1/4	R-45
6 x 6	335	395	14	40	22	22 1/16	11	11 1/32	14	11 7/16	12 7/16	10 7/16	48	2 13/32	8 9/16	12	1 1/8	11 1/2	24	3 1/2	8 5/16	11 15/16	R-45
8 x 6	415	510	14	40	26	26 1/16	13	13 1/32	16 1/2	11 7/16	12 7/16	10 7/16	48	2 13/32	8 9/16	12	1 1/4	13 3/4	24	3 1/2	8 5/16	11 15/16	R-49
8 x 8	662	757	—	73	26	26 1/16	13	13 1/16	16 1/2	14 3/8	—	13 3/8	—	3 1/8	11 1/4	12	1 1/4	13 3/4	24	4 5/8	10 1/8	14 5/8	R-49
10 x 8	715	870	—	73	31	31 1/16	15 1/2	15 9/16	20	14 3/8	—	13 3/8	—	3 1/8	11 1/4	16	1 3/8	17	24	4 5/8	10 1/8	14 5/8	R-53
10 x 10	1124	1279	—	75	31	31 1/16	15 1/2	15 9/16	20	16 5/8	—	16 1/16	—	3 1/16	12 15/16	16	1 3/8	17	30	4 5/8	11 7/8	17 3/16	R-53
12 x 10	1184	1365	—	75	33	33 1/16	16 1/2	16 9/16	22	16 5/8	—	16 1/16	—	3 1/16	12 15/16	20	1 3/8	19 1/4	30	4 5/8	11 7/8	17 3/16	R-57
12 x 12	1601	1782	—	139	33	33 1/16	16 1/2	16 9/16	22	19 3/8	—	21 1/2	—	4 1/4	15 1/8	20	1 3/8	19 1/4	20	6 1/4	14 1/2	18 3/8	R-57
14 x 13 9/16	2177	2393	—	137	35	35 1/16	17 1/2	17 9/16	23 3/4	19 5/8	—	21 3/4	—	4 1/4	15 3/8	20	1 1/2	20 3/4	36	6 1/4	14	20 5/8	R-61
16 x 13 9/16	2285	2588	—	137	39	39 1/16	19 1/2	19 9/16	27	19 5/8	—	21 3/4	—	4 1/4	15 3/8	20	1 5/8	23 3/4	36	6 1/4	14	20 5/8	R-65
16 x 15 1/4	2525	2828	—	139	39	39 1/16	19 1/2	19 9/16	27	20 3/4	—	22 7/8	—	4 1/4	16 1/2	20	1 5/8	23 3/4	36	6 1/4	15 1/4	20 5/8	R-65

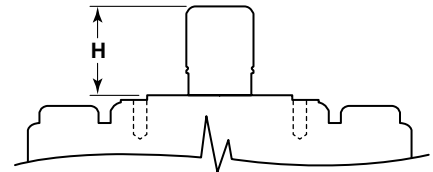
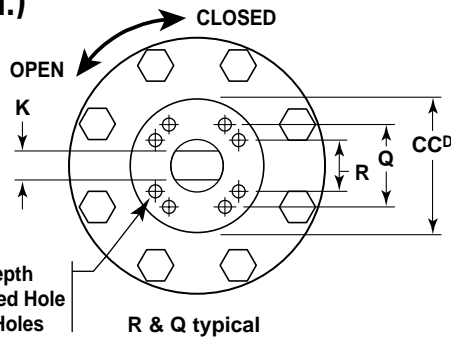
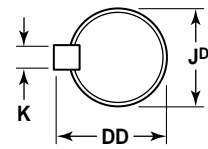
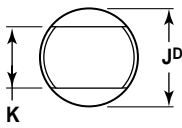
Note: Dimension A per pipe wall schedule on page 7.

Size (in.)	Dimension (mm)																				Ring Groove RTJ x WE		
	Wt. (kg)				B		C		D	E	F		G	H	U	V	W	X	Y	Z		AA	BB
	WE x WE	Flanged x WE	add for Handle	add for Gear Op	WE x WE RF x WE	RTJ x WE	WE x WE RF x WE	RTJ x WE	Flanged x WE		Top of Handle	CL of H/Whl.				Flanged x WE	Flanged x WE	Flanged x WE					
2 x 2	24.9	28.6	1.8	5.0	292.1	293.7	146.1	146.8	165.1	165.1	192.88	152.4	558.8	30.16	123.8	8	19.1	127	203.2	44.5	123.8	182.6	R-23
3 x 2	29.0	35.4	1.8	5.0	355.6	357.2	177.8	178.6	209.6	165.1	192.88	152.4	558.8	30.16	123.8	8	22.2	168.3	203.2	44.5	123.8	182.6	R-31
3 x 3	44.5	51.3	3.6	8.2	355.6	357.2	177.8	178.6	209.6	193.7	218.28	174.63	762	42.86	139.7	8	22.2	168.3	254	63.5	146.1	190.5	R-31
4 x 3	46.7	61.7	3.6	8.2	431.8	433.4	215.9	216.7	273.1	193.7	218.28	174.63	762	42.86	139.7	8	25.4	215.9	254	63.5	146.1	190.5	R-37
4 x 4	73.9	88.9	5.4	9.5	431.8	433.4	215.9	216.7	273.1	241.3	269.08	215.11	1219.2	50.00	180.2	8	25.4	215.9	304.8	63.5	165.1	235.0	R-37
6 x 4	92.1	119.3	5.4	9.5	558.8	560.4	279.4	280.2	355.6	241.3	269.08	215.11	1219.2	50.00	180.2	12	28.6	292.1	304.8	63.5	165.1	235.0	R-45
6 x 6	152.0	179.2	6.4	18.1	558.8	560.4	279.4	280.2	355.6	290.5	315.91	265.11	1219.2	61.12	217.5	12	28.6	292.1	609.6	88.9	211.1	303.2	R-45
8 x 6	188.2	231.3	6.4	18.1	660.4	662.0	330.2	331.0	419.1	290.5	315.91	265.11	1219.2	61.12	217.5	12	31.8	349.3	609.6	88.9	211.1	303.2	R-49
8 x 8	300.3	343.4	—	33.1	660.4	662.0	330.2	331.8	419.1	365.1	—	339.7	—	79.4	285.8	12	31.8	349.3	609.6	117.5	257.2	371.5	R-49
10 x 8	324.3	394.6	—	33.1	787.4	789.0	393.7	395.3	508.0	365.1	—	339.7	—	79.4	285.8	16	34.9	431.8	609.6	117.5	257.2	371.5	R-53
10 x 10	509.8	580.2	—	34.0	787.4	789.0	393.7	395.3	508.0	422.3	—	408.0	—	93.7	328.6	16	34.9	431.8	762	117.5	301.6	436.6	R-53
12 x 10	537.1	619.2	—	34.0	838.2	839.8	419.1	420.7	558.8	422.3	—	408.0	—	93.7	328.6	20	34.9	489.0	762	117.5	301.6	436.6	R-57
12 x 12	726.2	808.3	—	63.1	838.2	839.8	419.1	420.7	558.8	492.1	—	546.1	—	108.0	384.2	20	34.9	489.0	508	158.8	368.3	466.7	R-57
14 x 13 9/16	987.5	1085.5	—	62.1	889	890.6	444.5	446.1	603.3	498.5	—	552.5	—	108.0	390.5	20	38.1	527.1	914.4	158.8	355.6	523.9	R-61
16 x 13 9/16	1036.5	1173.9	—	62.1	990.6	992.2	495.3	496.9	685.8	498.5	—	552.5	—	108.0	390.5	20	41.3	603.3	914.4	158.8	355.6	523.9	R-65
16 x 15 1/4	1145.3	1282.8	—	63.1	990.6	992.2	495.3	496.9	685.8	527.1	—	581.0	—	108.0	419.1	20	41.3	603.3	914.4	158.8	387.4	523.9	R-65

Note: Dimension A per pipe wall schedule on page 7.



Topworks & Stem Torque (in.)



Flatted Stem
2"FP-8"RP

Round Stem
Square Key
8"FP-16"FP

P • Hole Depth
S • Threaded Hole
T • No. of Holes

R & Q typical

Top of stem to top
of mounting pad

Valve Size (in.)	API # Class/ Pressure	H	JD Stem Dia.	K	P Hole Depth	Q	R	S Threaded Hole	T No. of Holes	CCD	DD*	Max. Stem Shear Torq. Ft.-Lbs.	Break Torque In.-Lbs.	Torque Expression See Notes 1, 2, 3 Below Chart
2	6D 600	15/8	1.124/1.120	.749/.744	1/2	2 11/16 BC	—	5/16-18	4 on CL	3 3/16	—	424	1221	0.488* P + 498.83
2	6D 900	15/8	1.124/1.120	.749/.744	1/2	2 11/16 BC	—	5/16-18	4 on CL	3 1/4	—	424	1583	
2	6D 1500	15/8	1.124/1.120	.749/.744	1/2	2 11/16 BC	—	5/16-18	4 on CL	3 1/4	—	424	2308	
2	6D 2500	15/8	1.372/1.368	.872/.868	1/2	2 11/16 BC	—	5/16-18	4 on CL	3 1/4	—	1061	3511	
2	6A 2000	15/8	1.124/1.120	.749/.744	1/2	2 11/16 BC	—	5/16-18	4 on CL	3 3/16	—	637	1475	
2	6A 3000	15/8	1.124/1.120	.749/.744	1/2	2 11/16 BC	—	5/16-18	4 on CL	3 1/4	—	637	1963	
2	6A 5000	15/8	1.124/1.120	.749/.744	1/2	2 11/16 BC	—	5/16-18	4 on CL	3 1/4	—	637	2939	
3	6D 600	2 1/8	1.499/1.495	.999/.994	7/8	3 3/8	1 3/4	3/8-16	8	4 1/2	—	1034	1794	
3	6D 900	1 15/16	1.499/1.495	.999/.994	7/8	3 3/8	1 3/4	3/8-16	8	4 1/2	—	1034	2426	
3	6D 1500	2 1/16	1.499/1.495	.999/.994	7/8	3 3/8	1 3/4	3/8-16	8	4 3/4	—	1034	3694	
3	6D 2500	2 1/16	1.747/1.743	1.247/1.243	7/8	3 3/8	1 3/4	3/8-16	8	4 3/4	—	2763	5798	
3	6A 2000	2 1/8	1.499/1.495	.999/.994	7/8	3 3/8	1 3/4	3/8-16	8	4 1/2	—	1551	2238	
3	6A 3000	1 15/16	1.499/1.495	.999/.994	7/8	3 3/8	1 3/4	3/8-16	8	4 1/2	—	1551	3092	
3	6A 5000	2 1/16	1.499/1.495	.999/.994	7/8	3 3/8	1 3/4	3/8-16	8	4 3/4	—	1551	4799	
4	6D 600	2 13/32	1.999/1.995	1.249/1.245	7/8	3 3/8	2	3/8-16	8	5 1/2	—	2107	4717	2.143* P + 1545
4	6D 900	2 13/32	1.999/1.995	1.249/1.245	7/8	3 3/8	2	3/8-16	8	5 1/2	—	2107	6303	
4	6D 1500	2 15/32	1.999/1.995	1.249/1.245	3/4	4 1/2	2 3/8	1/2-13	8	5 15/16	—	2107	9486	
4	6D 2500	2 1/2	1.997/1.993	1/2 sq.	3/4	4 1/2	2 3/8	1/2-13	8	5 15/16	—	5069	14,769	
4	6A 2000	2 13/32	1.999/1.995	1.249/1.245	7/8	3 3/8	2	3/8-16	8	5 1/2	—	3160	5831	
4	6A 3000	2 13/32	1.999/1.995	1.249/1.245	7/8	3 3/8	2	3/8-16	8	5 1/2	—	3160	7974	
4	6A 5000	2 15/32	1.999/1.995	1.249/1.245	3/4	4 1/2	2 3/8	1/2-13	8	5 15/16	—	3160	12,260	
6	6D 600	2 7/8	2.499/2.495	1.749/1.745	1	4 5/8	2 7/8	1/2-13	8	6 1/2	—	5151	9128	
6	6D 900	2 5/8	2.499/2.495	1.749/1.745	1	4 5/8	2 7/8	1/2-13	8	7 1/2	—	5151	11,136	
6	6D 1500	2 5/8	2.868/2.872	3/4 sq.	1 1/8	6	3 1/2	5/8-11	8	8 1/4	3.200/3.186	5151	15,165	
6	6D 2500	3 21/32	2.872/2.868	3/4 sq.	1 1/8	6	3 1/2	5/8-11	8	8 1/4	3.200/3.186	18,712	21,854	
6	6A 2000	2 7/8	2.499/2.495	1.749/1.745	1	4 5/8	2 7/8	1/2-13	8	6 1/2	—	7727	10,538	
6	6A 3000	2 5/8	2.499/2.495	1.749/1.745	1	4 5/8	2 7/8	1/2-13	8	7 1/2	—	7727	13,251	
6	6A 5000	2 5/8	2.875/2.871	3/4 sq.	1 1/8	6	3 1/2	5/8-11	8	8 1/4	3.200/3.180	14,974	18,679	
8	6D 600	3 1/8	2.874/2.871	3/4 sq.	1 1/8	6	3 1/2	5/8-11	8	8 1/4	3.200/3.180	9961	20,292	8.540* P + 7652
8	6D 900	3 1/8	2.874/2.871	3/4 sq.	1 1/8	6	3 1/2	5/8-11	8	8 1/4	3.200/3.180	9961	26,611	
8	6D 1500	3 1/8	2.874/2.871	3/4 sq.	1 1/8	6	3 1/2	5/8-11	8	8 1/4	3.200/3.180	14,941	39,294	
8	6D 2500	3 11/16	3.497/3.495	7/8 sq.	1 1/4	8	3 1/2	3/4-10	8	10 1/2	3.885/3.865	34,252	60,344	
10	6D 600	3 11/16	3.249/3.246	7/8 sq.	1 1/4	8	3 1/2	3/4-10	8	10 1/4	3.630/3.610	14,317	31,567	15.257* P + 8987
10	6D 900	3 11/16	3.249/3.246	7/8 sq.	1 1/4	8	3 1/2	3/4-10	8	10 1/4	3.630/3.610	14,317	42,858	
10	6D 1500	3 11/16	3.249/3.246	7/8 sq.	1 1/4	8	3 1/2	3/4-10	8	10 1/4	3.630/3.610	21,476	65,514	
10	6D 2500	4 1/4	3.989/3.987	1 sq.	1 1/2	8	4	7/8-9	8	10 5/8	4.440/4.420	50,848	103,123	
12	6D 600	4 1/4	3.999/3.997	1 sq.	1 1/4	8	3 1/2	3/4-10	8	10 1/4	4.440/4.420	27,186	48,471	25.101* P + 11,321
12	6D 900	4 1/4	3.997/3.994	1 sq.	1 1/2	8	4	7/8-9	8	10 5/8	4.440/4.420	27,186	67,046	
12	6D 1500	4 1/4	3.997/3.994	1 sq.	1 1/2	8	4	7/8-9	8	10 5/8	4.440/4.420	40,844	104,321	
12	6D 2500	4 5/16	3.989/3.987	1 sq.	1 1/2	8	4	7/8-9	8	10 5/8	4.440/4.420	50,848	166,194	
14	6D 600	4 1/4	3.999/3.997	1 sq.	1 1/2	9 1/2	3	7/8-9	8	12	4.440/4.420	27,186	63,199	34.594* P + 12,000
16	6D 600	4 1/4	3.999/3.997	1 sq.	1 1/2	9 1/2	3	7/8-9	8	12	4.440/4.420	27,186	77,113	42.374* P + 14,400

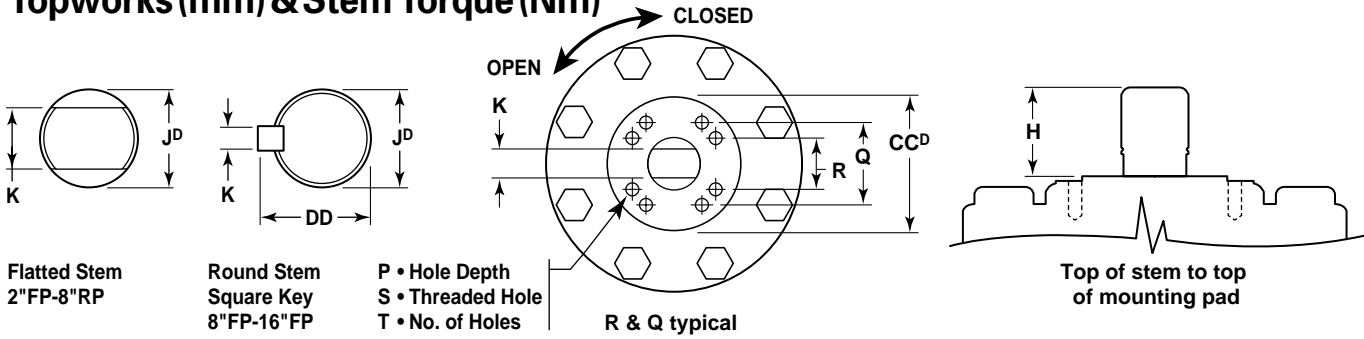
Note: (1) Torque at maximum differential pressure are tabulated.
 (2) Torques expressions are suggested for other differential pressure.
 (3) Differential pressure "P" in torque expressions is in PSI.
 **DD" dimension is applicable to keyed stem only.

Pressure ratings according to API 6D:
 Class 600 P = 1480
 Class 900 P = 2220
 Class 1500 P = 3705
 Class 2500 P = 6170

Pressure ratings according to API 6A:
 API 2000 P = 2000
 API 3000 P = 3000
 API 5000 P = 5000



Topworks (mm) & Stem Torque (Nm)



Flatted Stem
2"FP-8"RP

Round Stem
Square Key
8"FP-16"FP

P • Hole Depth
S • Threaded Hole
T • No. of Holes

R & Q typical

Top of stem to top
of mounting pad

Valve Size (in.)	API # Class/ Pressure	H	JD Stem Dia.	K	P Hole Depth	Q	R	S Threaded Hole	T No. of Holes	CCD	DD*	Max. Stem Shear Torq. Nm	Break Torque Nm	Torque Expression See Notes 1, 2, 3 Below Chart
2	6D 600	41.3	28.55/28.45	19.02/18.90	12.7	68.3 BC	—	5/16-18	4 on CL	81.0	—	575	138.0	7.997* P + 56.360
2	6D 900	41.3	28.55/28.45	19.02/18.90	12.7	68.3 BC	—	5/16-18	4 on CL	82.6	—	575	178.9	
2	6D 1500	41.3	28.55/28.45	19.02/18.90	12.7	68.3 BC	—	5/16-18	4 on CL	82.6	—	575	260.8	
2	6D 2500	41.3	34.85/34.75	22.15/22.05	12.7	68.3 BC	—	5/16-18	4 on CL	82.6	—	1438	396.7	
2	6A 2000	41.3	28.55/28.45	19.02/18.90	12.7	68.3 BC	—	5/16-18	4 on CL	81.0	—	863	166.7	
2	6A 3000	41.3	28.55/28.45	19.02/18.90	12.7	68.3 BC	—	5/16-18	4 on CL	82.6	—	863	221.8	
2	6A 5000	41.3	28.55/28.45	19.02/18.90	12.7	68.3 BC	—	5/16-18	4 on CL	82.6	—	863	332.1	
3	6D 600	54.0	38.07/37.97	25.37/25.25	22.23	85.7	44.5	3/8-16	8	114.3	—	1402	202.7	13.994* P + 59.910
3	6D 900	49.2	38.07/37.97	25.37/25.25	22.23	85.7	44.5	3/8-16	8	114.3	—	1402	274.1	
3	6D 1500	52.4	38.07/37.97	25.37/25.25	22.23	85.7	44.5	3/8-16	8	120.7	—	1402	417.4	
3	6D 2500	52.4	44.37/44.27	31.67/31.57	22.23	85.7	44.5	3/8-16	8	120.7	—	3746	655.1	
3	6A 2000	54.0	38.07/37.97	25.37/25.25	22.23	85.7	44.5	3/8-16	8	114.3	—	2103	252.9	
3	6A 3000	49.2	38.07/37.97	25.37/25.25	22.23	85.7	44.5	3/8-16	8	114.3	—	2103	349.3	
3	6A 5000	52.4	38.07/37.97	25.37/25.25	22.23	85.7	44.5	3/8-16	8	120.7	—	2103	542.2	
4	6D 600	61.1	50.77/50.67	31.72/31.62	22.23	85.7	50.8	3/8-16	8	139.7	—	2857	532.9	35.117* P + 174.561
4	6D 900	61.1	50.77/50.67	31.72/31.62	22.23	85.7	50.8	3/8-16	8	139.7	—	2857	712.1	
4	6D 1500	62.7	50.77/50.67	31.72/31.62	19.05	114.3	60.3	1/2-13	8	150.8	—	2857	1071.8	
4	6D 2500	63.5	50.72/50.62	12.7/12.7	19.05	114.3	60.3	1/2-13	8	150.8	—	6873	1668.7	
4	6A 2000	61.1	50.77/50.67	31.72/31.62	22.23	85.7	50.8	3/8-16	8	139.7	—	4284	658.8	
4	6A 3000	61.1	50.77/50.67	31.72/31.62	22.23	85.7	50.8	3/8-16	8	139.7	—	4284	900.9	
4	6A 5000	62.7	50.77/50.67	31.72/31.62	19.05	114.3	60.3	1/2-13	8	150.8	—	4284	1385.2	
6	6D 600	73.0	63.47/63.37	44.42/44.32	25.4	117.5	73.0	1/2-13	8	165.1	—	6984	1031.3	44.458* P + 577.578
6	6D 900	66.7	63.47/63.37	44.42/44.32	25.4	117.5	73.0	1/2-13	8	190.5	—	6984	1258.2	
6	6D 1500	66.7	72.85/72.95	19.1 sq.	28.58	152.4	88.9	5/8-11	8	209.6	81.28/80.92	6984	1713.4	
6	6D 2500	92.9	72.95/72.85	19.1 sq.	28.58	152.4	88.9	5/8-11	8	209.6	81.28/80.92	25,370	2469.2	
6	6A 2000	73.0	63.47/63.37	44.42/44.32	25.4	117.5	73.0	1/2-13	8	165.1	—	10,476	1190.6	
6	6A 3000	66.7	63.47/63.37	44.42/44.32	25.4	117.5	73.0	1/2-13	8	190.5	—	10,476	1497.2	
6	6A 5000	66.7	73.03/72.92	19.1 sq.	28.58	152.4	88.9	5/8-11	8	209.6	81.28/80.77	20,302	2110.4	
8	6D 600	79.4	73.00/72.92	19.1 sq.	28.58	152.4	88.9	5/8-11	8	209.6	81.28/80.77	13,505	2292.7	139.945* P + 864.560
8	6D 900	79.4	73.00/72.92	19.1 sq.	28.58	152.4	88.9	5/8-11	8	209.6	81.28/80.77	13,505	3006.6	
8	6D 1500	79.4	73.00/72.92	19.1 sq.	28.58	152.4	88.9	5/8-11	8	209.6	81.28/80.77	20,258	4439.6	
8	6D 2500	93.7	88.82/88.77	22.2 sq.	31.75	203.2	88.9	3/4-10	8	266.7	98.68/98.17	46,439	6818.0	
10	6D 600	93.7	82.52/82.45	22.2 sq.	31.75	203.2	88.9	3/4-10	8	260.4	92.20/91.69	19,411	3566.6	
10	6D 900	93.7	82.52/82.45	22.2 sq.	31.75	203.2	88.9	3/4-10	8	260.4	92.20/91.69	19,411	4842.3	250.017* P + 1015.394
10	6D 1500	93.7	82.52/82.45	22.2 sq.	31.75	203.2	88.9	3/4-10	8	260.4	92.20/91.69	29,117	7402.1	
10	6D 2500	108.0	101.32/101.27	25.4 sq.	38.1	203.2	101.6	7/8-9	8	269.9	112.78/112.27	68,941	11,651.3	
12	6D 600	108.0	101.57/101.52	25.4 sq.	31.75	203.2	88.9	3/4-10	8	260.4	112.78/112.27	36,860	5476.5	411.331* P + 1279.101
12	6D 900	108.0	101.52/101.45	25.4 sq.	38.1	203.2	101.6	7/8-9	8	269.9	112.78/112.27	36,860	7575.2	
12	6D 1500	108.0	101.52/101.45	25.4 sq.	38.1	203.2	101.6	7/8-9	8	269.9	112.78/112.27	55,377	11,786.7	
12	6D 2500	109.5	101.32/101.27	25.4 sq.	38.1	203.2	101.6	7/8-9	8	269.9	112.78/112.27	68,941	18,777.4	
14	6D 600	108.0	101.57/101.52	25.4 sq.	38.1	241.3	76.2	7/8-9	8	304.8	112.78/112.27	36,860	7140	
16	6D 600	108.0	101.57/101.52	25.4 sq.	38.1	241.3	76.2	7/8-9	8	304.8	112.78/112.27	36,860	8712	694.385* P + 1626.981

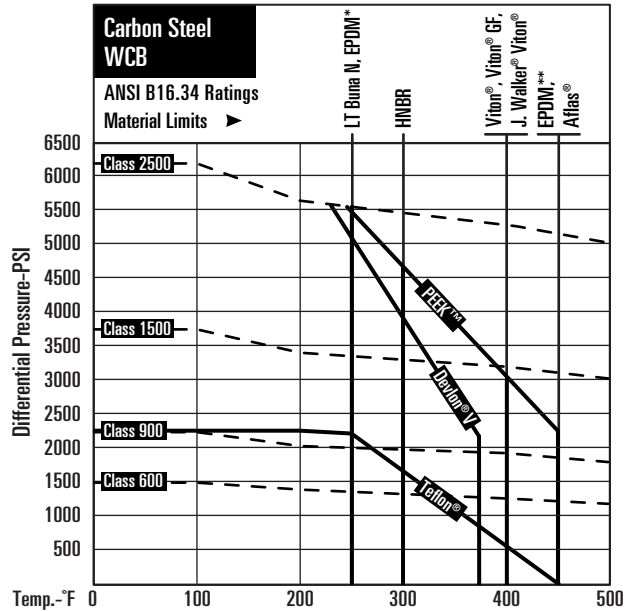
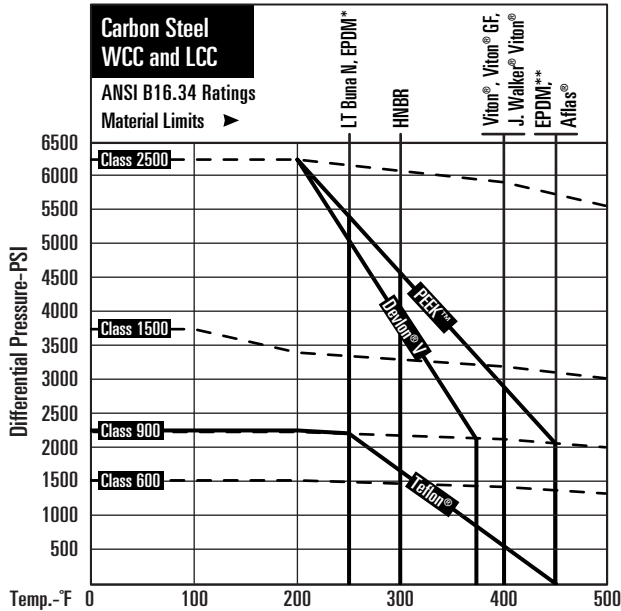
Note: (1) Torque at maximum differential pressure are tabulated.
 (2) Torques expressions are suggested for other differential pressure.
 (3) Differential pressure "P" in torque expressions is in Mpa.
 **"DD" dimension is applicable to keyed stem only.

Pressure ratings according to API 6D:
 Class 600 P = 10.204
 Class 900 P = 15.306
 Class 1500 P = 25.545
 Class 2500 P = 42.541

Pressure ratings according to API 6A:
 API 2000 P = 13.789
 API 3000 P = 20.684
 API 5000 P = 34.474



KF Series T Pressure Temperature And Flow Data



Pressure Temperature Chart Notes: Consult factory for service above 325°F.
* For chemical service. ** For water and steam service only.

Low Temperature Limits

Body Material	°F	°C
WCC	-20°	-28.9
LCC	-50°	-45.6
WCB	-20°	-28.9
CF8M	-50°	-45.6

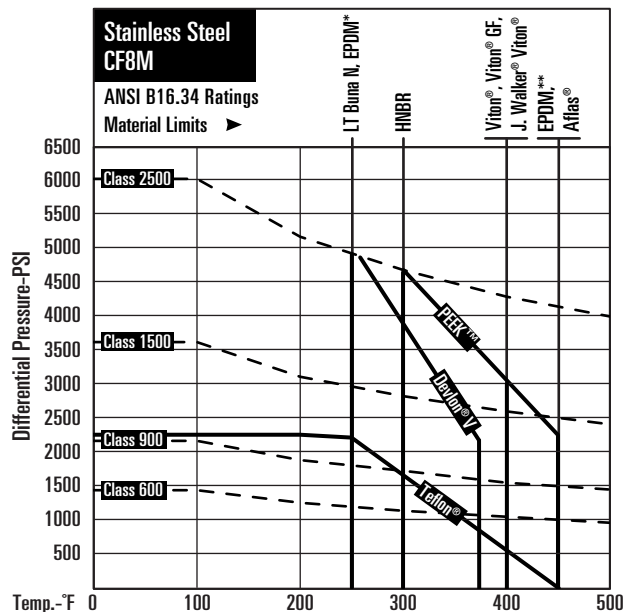
Seat Material	°F	°C
Devlon® V	-50°	-45.6
Teflon®	-50°	-45.6
PEEK™	-50°	-45.6

Seal Material	°F	°C
Buna N	-30°	-34.4
Low Temp Buna N	-50°	-45.6
Viton®	-20°	-28.9
Viton® GF	-20°	-28.9

Seal Material	°F	°C
James Walker® Viton®	+10°	-12.2
HNBR	-40°	-40
Aflas®	+32°	0
EPDM	-50°	-45.6

Flow Coefficient (Cv), API 6D & ANSI B16.34

Class	Size (in.)						
	3 RP	4 RP	6 RP	8 RP	10 RP	12 RP	16 RP
600	185	570	890	2235	4605	7525	14,750
900	190	560	800	2150	4500	8000	
1500	185	570	890	2235	4000	7000	—
2500	170	520	750	2050	3970	6850	—



Flow Coefficient (Cv), API 6A

Class	Size (in.)		
	3 RP	4 RP	6 RP
2000	185	570	890
3000	190	560	—
5000	185	535	855

Method of Calculating Flow

The Flow Coefficient “C_v” of a valve is the flow rate of water (gallons/minute @ 60°F) through a fully opened valve, with a pressure drop of 1 psi across the valve. To find the flow of a liquid or gas through a valve from the C_v, use the following formulas:

Liquid Flow

Q_L = flow rate of liquid (gal./min.)

ΔP = differential pressure across the valve (psi)

G = Specific gravity of liquid (for water, G=1)

$$Q_L = C_v \sqrt{\frac{\Delta P}{G}}$$

Gas Flow

Q_G = flow rate of gas (CFH at STP)

P₂ = outlet pressure (psia)

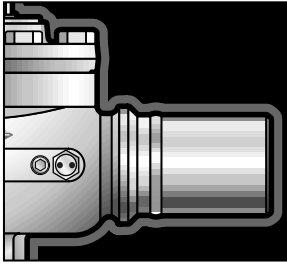
g = Specific gravity of gas (for air, g=1.000)

$$Q_G = 61 C_v \sqrt{\frac{P_2 \Delta P}{g}} \quad \left\{ \frac{\Delta P}{P_2} < 1.0 \right\}$$

For non-critical flow

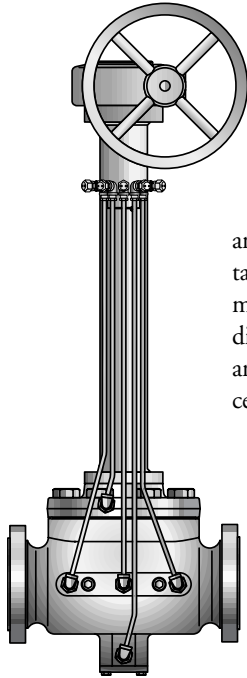


KF Series T Optional Features



Pups

Butt Weld valves may be supplied with transition pieces (PUPS) to avoid any risk of seat and seal damage during welding and post weld heat treatment operations. Length of pups and type of pipe and grade to be specified by customer.



Extensions

KF Series T ball valves are available for below ground or buried service with fully operational extensions to meet your specifications. Body Bleed and Sealant Injection functions are maintained along with total valve control by manual or powered actuators. Extension dimensions for Gear Operator or Actuator are given with reference from the valve center line to the center of hand wheel.

Actuators

The bonnet design on KF Series T Ball Valves permits easy adaptation to mount manual, electric, hydraulic, or pneumatic actuators.

Tar Set Coating

KF Series T ball valves can be Tar Set coated for added corrosion protection to meet specific application requirements. Tar Set coating is available upon request. Ask your KF Industries representative for more information on this special coating process.

Metal Seated Ball Valves

KF Series T Metal Seated ball valves have been designed to provide a reliable, efficient and safe method to handle services where high temperatures and/or the presence of solid particles in the fluid make it impossible, or not recommended, to use soft seated ball valves.

Sub-Sea Options: Sub-Sea valves are optionally available with CoalTar Epoxy Coating (18 to 20 mils), Xylan Coated Bolting and Sub-Sea Gear Operators.

Installation

Flange Ends (RF & RTJ):

- Series T Ball Valves may be mounted in either vertical or horizontal piping systems. The stem may be positioned vertically or horizontally.
- Mating flanges must be correctly aligned. Alignment includes bolt hole placement, parallelism, and perpendicularity.
- Use proper size gasket or RTJ metal seal. Flange studs or bolting must be correct size and properly tightened.
- Properly constructed piping systems do not cause undo stress in valve assemblies. Valves are not intended to make up for insufficient pipe tolerances.

Weld Ends (WE):

- Keep ball in open position prior to installation/welding of KF Series T Weld End Ball Valve.
- Place the valve in position by aligning Weld Ends to the pipe. Prior to welding it is imperative that all welding surfaces be clean from contamination such as dirt, dust and grease which may affect weld performance.

Caution: During the welding process, valve body temperatures should be monitored around the circumference at a location in line with the sealant injection fittings. The temperatures at this plane should be checked with Temperature Stick or other reliable temperature indicator and not allowed to exceed 300°F. This precaution is necessary to assure that non-metallic seals do not suffer heat damage.

- Tack weld valve in position and check for proper alignment.
- Finish weld following proper weld procedure for material grade and condition, and the above Caution.



Worldwide Sales Offices



KF Industries and its sister companies in the CIRCOR Energy Products Group reach into every corner of the globe serving the oil & gas and industrial marketplace.

Supplying an extensive range of product offerings through a worldwide network of manufacturer representatives and distributors, KF Industries is the right choice for all your flow control needs.

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