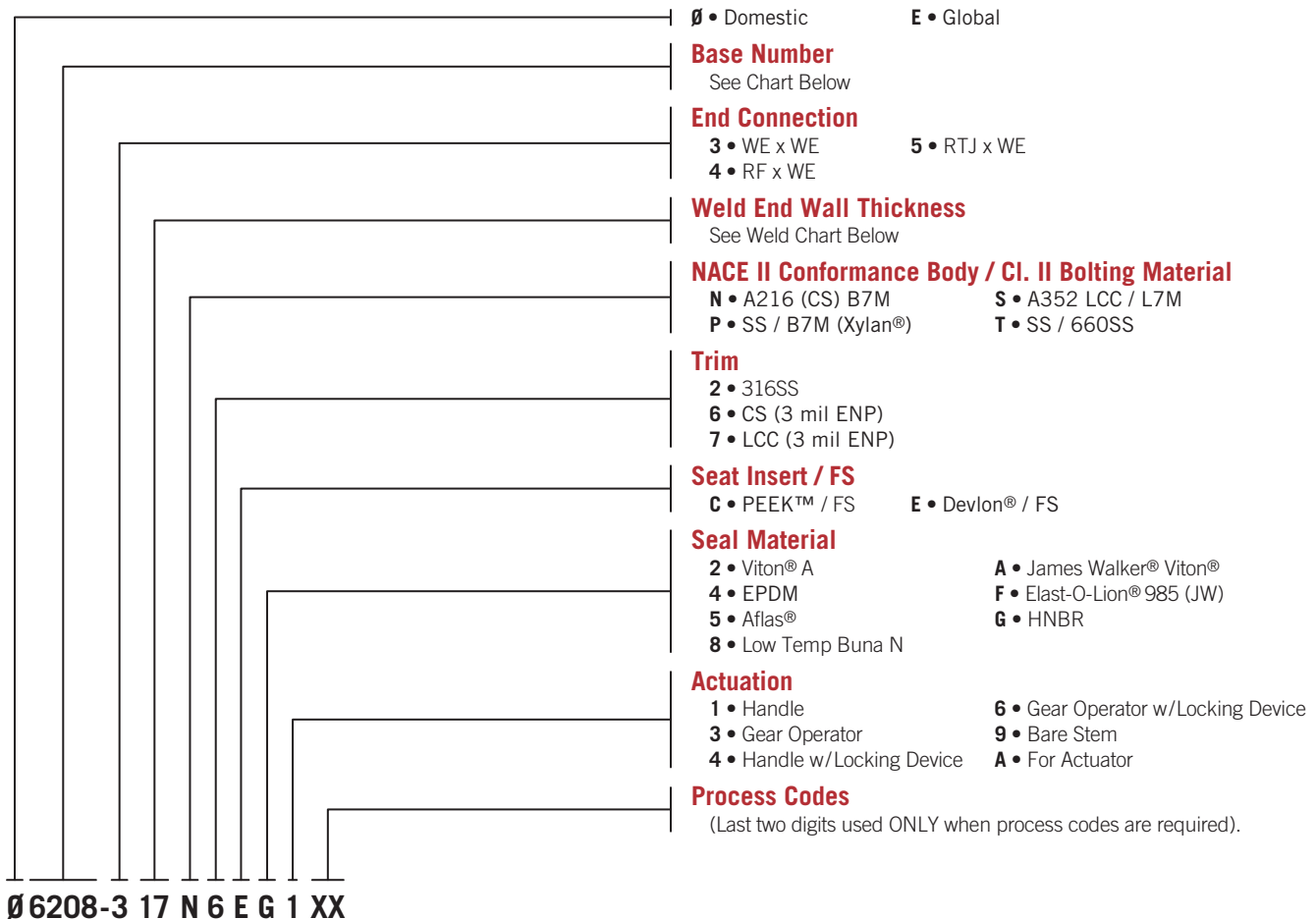


KF Series TW/TWE Valve Assembly Part Number Codes



Ø6208-3 17 N 6 E G 1 XX

Example

Asterisk (*) in lieu of dash (-) in Assembly Part Number indicates customer requires source inspection. (i.e. XXXXX * XXXXXXXXX)
 (i.e. ØXXXX-XXXXXXXX) - Domestic • (i.e. EXXXX-XXXXXXXX) - Global

Assembly Base Numbers

Class	Size (in.)												
	2FP	3RP	3FP	4RP	4FP	6RP	6FP	8RP	8FP	10RP	10FP	12RP	12FP
600	6177	6178	6179	6180	6181	6182	6183	6184	6185	6186	6187	6188	6189
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

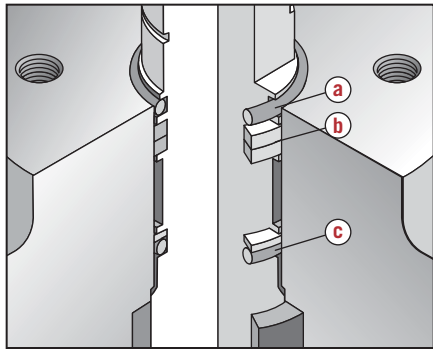
Pipe Description	Nominal Pipe Size (in.) / KF Schedule Code													
	2		3		4		6		8		10		12	
Outside Diameter (in.)	Code	Code	Code	Code	Code	Code	Code	Code	Code	Code	Code	Code	Code	Code
(STD) Standard	—	—	—	—	.237	17	.280	22	.322	28	.365	32	.375	33
Schedule 40	.154	08	.216	14	.237	17	.280	22	.322	28	.365	32	.406	35
Schedule 60	—	—	—	—	—	—	—	—	.406	35	.500	39	.562	42
XS	.218	15	.300	24	.337	30	.432	36	.500	39	.500	39	.500	39
Schedule 80	.218	15	.300	24	.337	30	.432	36	.500	39	.593	43	.687	48
Schedule 120	—	—	—	—	.438	38	.562	42	.718	49	.843	52	1.000	58
Schedule 160	.343	31	.438	38	.531	40	.718	49	.906	55	1.125	62	1.312	68
XXS	.436	37	.600	44	.674	47	.864	53	.875	54	1.000	58	1.000	58

Consult factory for other wall thicknesses.

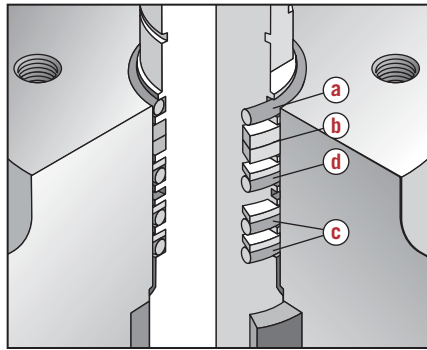


KF Valves

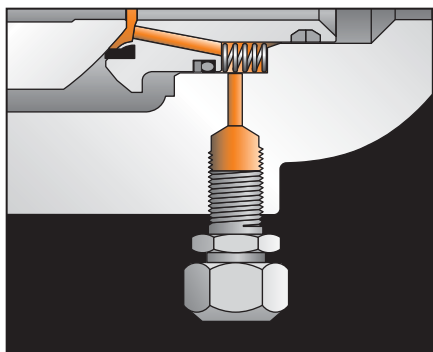
KF Series T/TE & TW/TWE Design Features



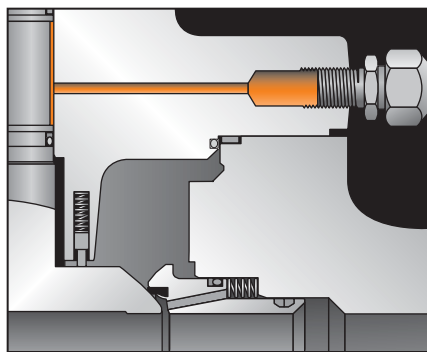
1A



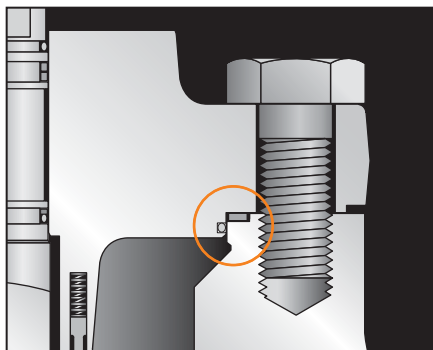
1B



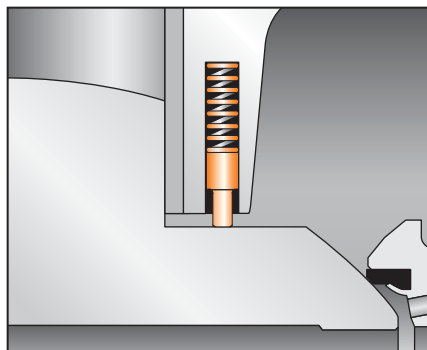
2



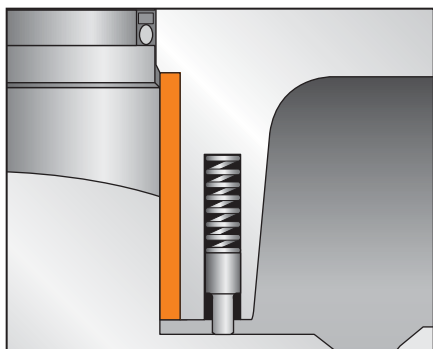
3



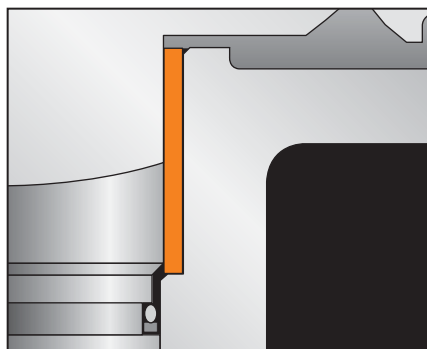
4



5



6



1 Firesafe Standard Seal

A 2" - 6" class 600 -1500

All sizes class 2500

a Weather seal

b Stem seal braided carbon rope

c Primary stem seal

B 8" - 12" class 600 -1500

a Weather seal

b Stem seal braided carbon rope

c Primary stem seal

d Secondary stem seal

Note: Details for lower stem configuration on page 8.

2 Lubricant/Emergency Seal Seal

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

3 Emergency Sealant Injection System

The sealant injection system located on the body can be utilized in case of emergencies, o-ring damage or if stem leakage occurs.

4 Double Sealed Envelope Connections

Double o-rings or an o-ring and firesafe gasket on body/bonnet connections ensure positive sealing, making the series T suitable for above or below ground service.

5 Antistatic Device

A spring between the bonnet and ball permits electrical continuity.

6 Heavy Duty Bearings

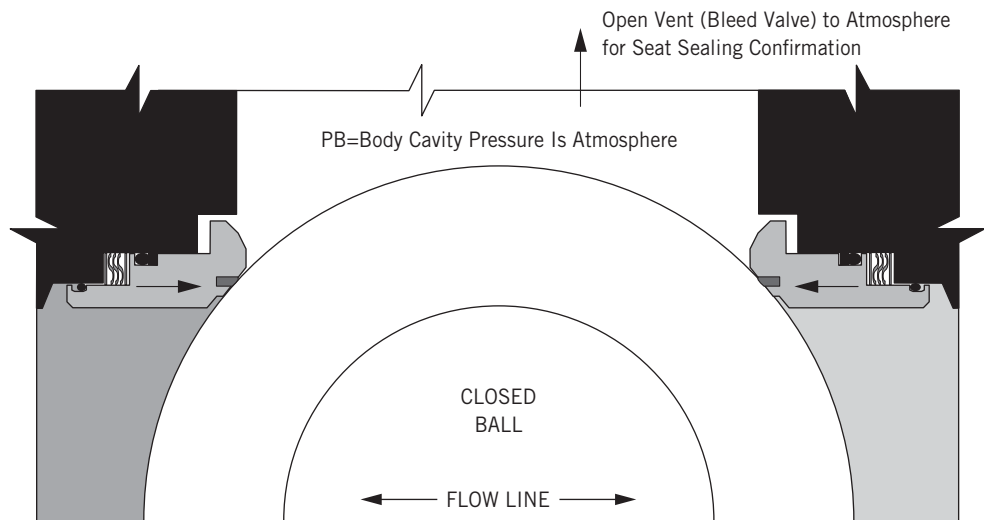
Heavy duty PTFE lined bearings eliminate the need to lubricate stem and trunnion journals, resulting in smooth and easy operation. Upper stem/lower trunnion bearings balance the pressure load on the ball by reducing friction between ball and seat. A garfil epoxy bearing with PTFE filler is standard in 2" - 6" 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"-10" class 2500.

KF Series T/TE & TW/TWE Technical Seating Features

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.



Double Block and Bleed

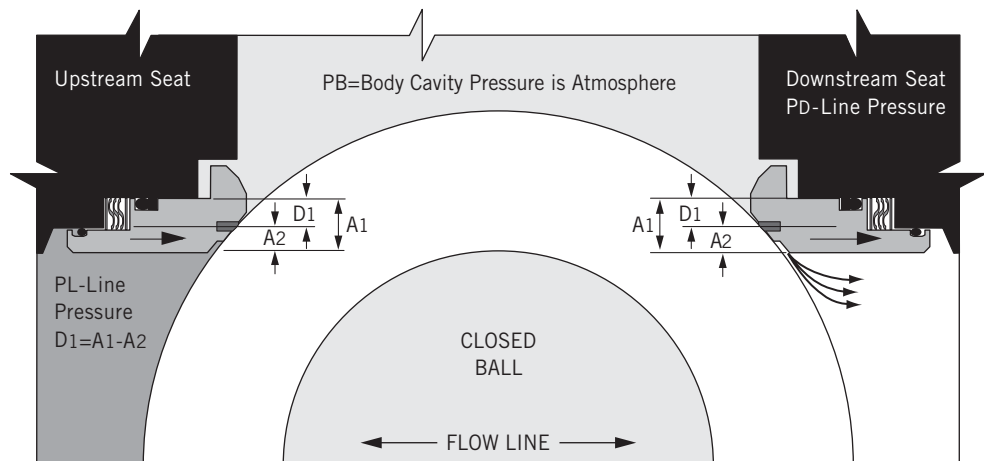
Self Relieving Seat Design

Upstream Seat

The difference in the area (D1) times the line pressure 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.



Self Relieving Seat Design

Product Availability, ANSI B16.34, API 6A & API 6D

Class/ End Connection	Standard	Size (in.)								
		2FP	3RP	3FP	4RP/FP	6RP	6FP	8RP/FP	10RP/FP	12RP/FP
600RF/RTJ	ANSI B 16.34 & API 6D	X	X	X	X	X	X	X	X	X
900RF/RTJ		X	X	X	X	X	X	X	X	X
1500RF/RTJ		X	X	X	X	X	X	X	X	X
2500RF/RTJ		X	—	X	X	X	X	X	X	—
2000RTJ	API 6A	X	X	X	X	X	X	—	—	—
3000RTJ		X	X	X	X	—	X	—	—	—
5000RTJ		X	X	X	X	X	X	—	—	—

Consult factory for sizes not shown.



KF Valves

KF Series T/TE & TW/TWE 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. Q1

Spec. 6A

Specification for wellhead and Christmas tree equipment.

Spec. 6D

Specification for pipeline valves.

Std. 607

Fire test for soft seated quarter-turn valves.

Spec. 6FA

Specification for fire testing of valves.

Std. 598

Valve inspection and test.

Std. 605

Large diameter carbon steel flanges.

ASME/ANSI - American National Standard Institute

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 (pressure & temperature ratings).

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

Consult factory for details.

British Standards

BS 1503

Specification for steel forgings for pressure purposes.

BS 1504

Specification for steel castings for pressure purposes.

BS 2080

Face-to-face, center-to-face, end-to-end, and center-to-end dimensions of flanged and butt welding end steel valves or the petroleum, petrochemical and allied industries.

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.

ISO 15156

For use in H₂S containing environments in oil and gas production.

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 45

Bypass and drain connection standard.

SP 55

Quality standard for steel castings - visual method.

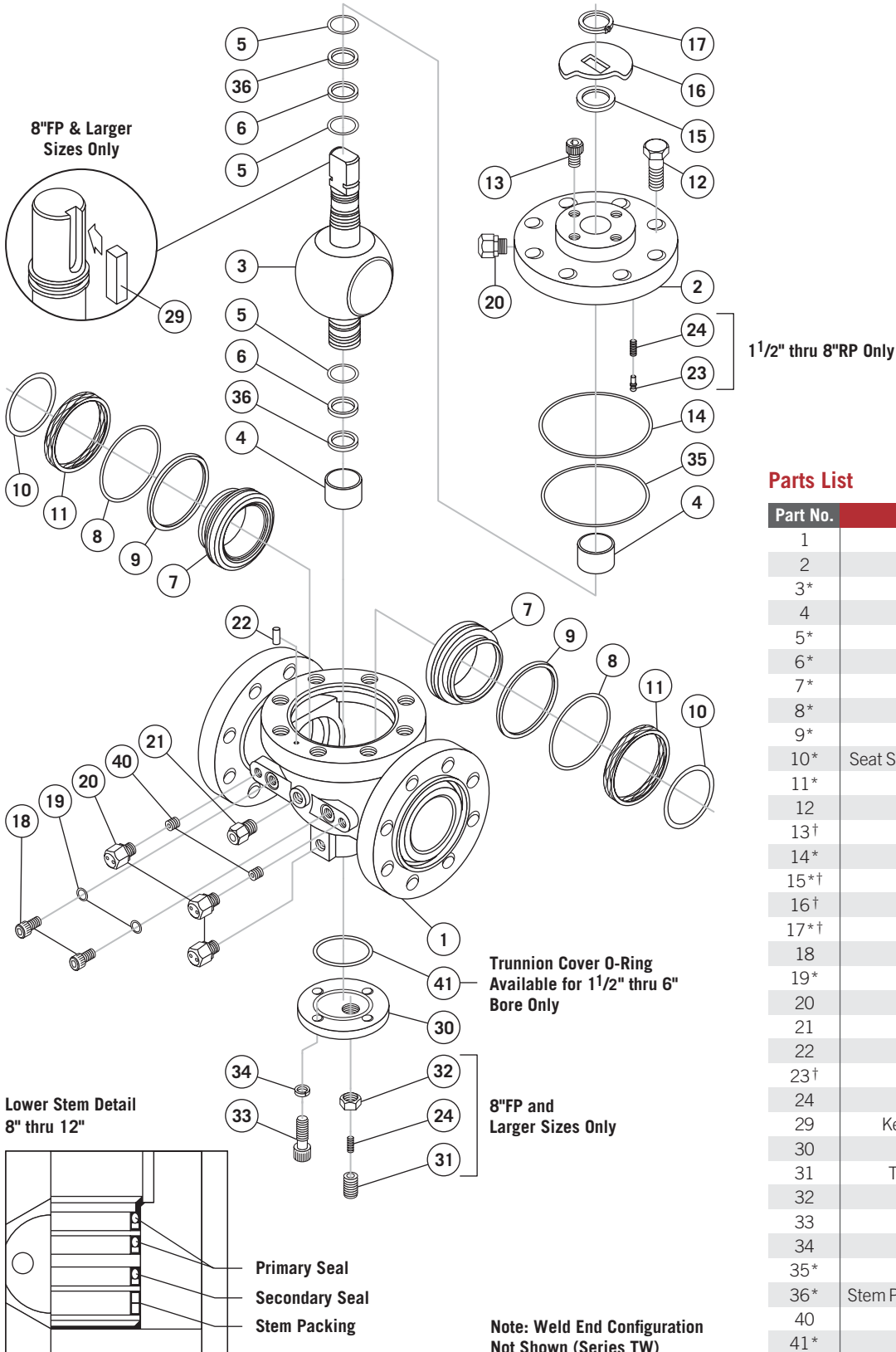
Hydrogen Sulfide (H₂S Environments)

NACE MR0175

ISO 15156

General principles for cracking resistant materials in H₂S containing environments in oil & gas production.

Series T/TE & TW/TWE Component Parts



Parts List

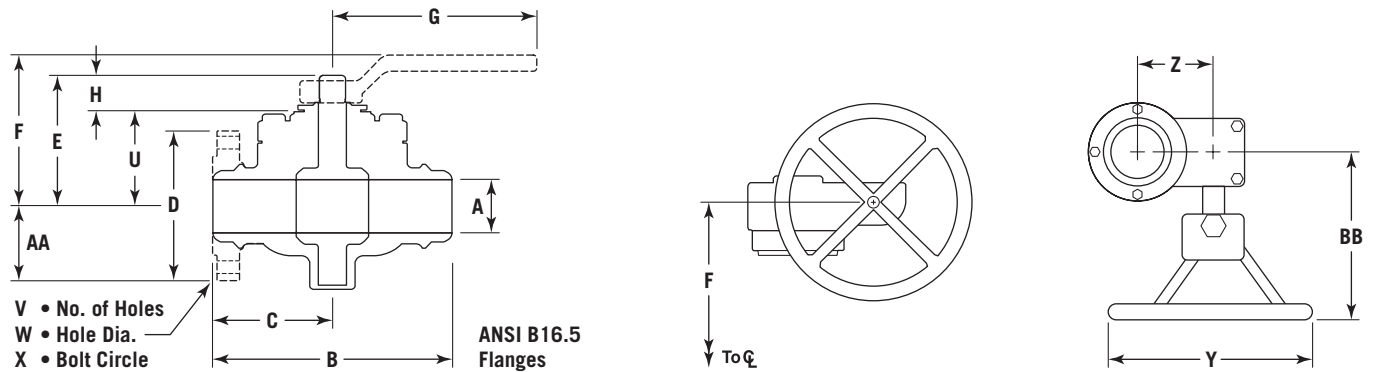
Part No.	Description
1	Body
2	Bonnet
3*	Ball / Stem
4	Trunnion Bearing
5*	Stem Seal ††
6*	Stem Backup Ring ††
7*	Seat
8*	Seat O-Ring
9*	Seat Backup Ring
10*	Seat Sub Seal/Braided Carbon Rope
11*	Wave Spring
12	Bonnet Cap Screw
13†	Stop Screw
14*	Bonnet Gasket / Seal
15*†	Stem Bearing
16†	Stop Plate
17*†	Retainer
18	Retract. Port Screw
19*	Retract. Port Seal
20	Injection Fitting
21	Bleed Valve
22	Bonnet Alignment Pin
23†	Grounding Plunger
24	Grounding Spring
29	Key, 8" & Larger Sizes Only
30	Thrust Plate
31	Thrust Adjustment 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 TW/TWE Dimensional Data



Dimensional Data (in./mm), 2"FP-12"FP, Class 600, API 6D & ANSI B16.34

Size (in.)	Dimension (in.)																	
	B		C		D	E	F		G	H	U	V	W	X	Y	Z	AA	BB
	WE x WE RF x WE	RTJ x WE	WE x WE RF x WE	RTJ x WE	FLG x WE		Top of Handle	CL of H/Whl.				FLG x WE	FLG x WE	FLG x WE				
2 x 2	11.50	11.56	5.75	5.78	6.50	6.50	7.59	6.00	22	1.19	4.88	8	0.75	5.00	8	1.75	4.88	7.19
3 x 2	14.00	14.06	7.00	7.03	8.25	6.50	7.59	6.00	22	1.19	4.88	8	0.88	6.63	8	1.75	4.88	7.19
3 x 3	14.00	14.06	7.00	7.03	8.25	7.63	8.59	6.88	30	1.69	5.50	8	0.88	6.63	10	2.50	5.75	7.50
4 x 3	17.00	17.06	8.50	8.53	10.75	7.63	8.59	6.88	30	1.69	5.50	8	1.00	8.50	10	2.50	5.75	7.50
4 x 4	17.00	17.06	8.50	8.53	10.75	9.50	10.59	8.47	48	1.97	7.09	8	1.00	8.50	12	2.50	6.50	9.25
6 x 4	22.00	22.06	11.00	11.03	14.00	9.50	10.59	8.47	48	1.97	7.09	12	1.13	11.50	12	2.50	6.50	9.25
6 x 6	22.00	22.06	11.00	11.03	14.00	11.44	12.44	10.44	48	2.41	8.56	12	1.13	11.50	24	3.50	8.31	11.94
8 x 6	26.00	26.06	13.00	13.03	16.50	11.44	12.44	10.44	48	2.41	8.56	12	1.25	13.75	24	3.50	8.31	11.94
8 x 8	26.00	26.06	13.00	13.06	16.50	14.38	—	13.38	—	3.13	11.25	12	1.25	13.75	24	4.63	10.13	14.63
10 x 8	31.00	31.06	15.50	15.56	20.00	14.38	—	13.38	—	3.13	11.25	16	1.38	17.00	24	4.63	10.13	14.63
10 x 10	31.00	31.06	15.50	15.56	20.00	16.63	—	16.06	—	3.69	12.94	16	1.38	17.00	30	4.63	11.88	17.19
12 x 10	33.00	33.06	16.50	16.56	22.00	16.63	—	16.06	—	3.69	12.94	20	1.38	19.25	30	4.63	11.88	17.19
12 x 12	33.00	33.06	16.50	16.56	22.00	19.38	—	21.50	—	4.25	15.13	20	1.38	19.25	20	6.25	14.50	18.38

Size (in.)	Dimension (mm)																	
	B		C		D	E	F		G	H	U	V	W	X	Y	Z	AA	BB
	WE x WE RF x WE	RTJ x WE	WE x WE RF x WE	RTJ x WE	FLG x WE		Top of Handle	CL of H/Whl.				FLG x WE	FLG x WE	FLG x WE				
2 x 2	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
3 x 2	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
3 x 3	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
4 x 3	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
4 x 4	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
6 x 4	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
6 x 6	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
8 x 6	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
8 x 8	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
10 x 8	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
10 x 10	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
12 x 10	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
12 x 12	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

Note: Dimension A per pipe wall schedule on page 4.

KF Series T/TE & TW/TWE Weights & Ring Grooves

Series T/TE Weights (lbs.) & Ring Groove (RTJ), Class 600, 900, 1500 & 2500, API 6D & ANSI B 16.34

Size (in.)	Weight (lbs.) / Ring Groove (RTJ)															
	Class 600				Class 900				Class 1500				Class 2500			
	Valve Only	With Handle	With Gear Op.	Ring Groove	Valve Only	With Handle	With Gear Op.	Ring Groove	Valve Only	With Handle	With Gear Op.	Ring Groove	Valve Only	With Handle	With Gear Op.	Ring Groove
2 x 2	71	75	79	R-23	116	120	124	R-24	118	122	124	R-24	199	205	207	R-26
3 x 2	93	97	101	R-31	129	133	137	R-31	164	168	172	R-35	—	—	—	—
3 x 3	128	136	139	R-31	160	168	171	R-31	202	210	213	R-35	341	352	355	R-32
4 x 3	169	177	180	R-37	216	224	227	R-37	299	307	310	R-39	505	516	519	R-38
4 x 4	229	241	250	R-37	272	284	293	R-37	385	397	398	R-39	650	—	681	R-38
6 x 4	324	336	345	R-45	360	372	381	R-45	475	487	486	R-46	803	—	834	R-47
6 x 6	456	470	487	R-45	540	564	571	R-45	540	—	605	R-46	913	—	994	R-47
8 x 6	605	619	636	R-49	675	689	706	R-49	675	—	740	R-50	1141	—	1222	R-51
8 x 8	852	—	939	R-49	833	—	925	R-49	1488	—	1586	R-50	2515	—	2640	R-51
10 x 8	1024	—	1111	R-53	1105	—	1197	R-53	2050	—	2148	R-54	3465	—	3590	R-55
10 x 10	1433	—	1528	R-53	1387	—	1522	R-53	2650	—	2775	R-54	5565	—	5700	R-55
12 x 10	1546	—	1636	R-57	1601	—	1736	R-57	3242	—	3367	R-58	—	—	—	—
12 x 12	1963	—	2123	R-57	2493	—	2632	R-57	3613	—	3748	R-58	—	—	—	—

Series T/TE Weights (lbs.) & Ring Groove (RTJ), Class 2000, 3000 & 5000 RTJ, API 6A

Size (in.)	Weight (lbs.) / Ring Groove (RTJ)											
	Class 2000 RTJ				Class 3000 RTJ				Class 5000 RTJ			
	Valve Only	With Handle	With Gear Op.	Ring Groove	Valve Only	With Handle	With Gear Op.	Ring Groove	Valve Only	With Handle	With Gear Op.	Ring Groove
2 1/16 x 2 1/16	72	77	81	R-23	120	124	134	R-24	121	125	135	R-24
3 1/8 x 2 1/16	96	100	104	R-31	133	137	147	R-31	147	151	161	R-35
3 1/8 x 3 1/8	132	140	143	R-31	151	159	180	R-31	251	259	262	R-35
4 1/16 x 3 1/8	174	182	185	R-37	210	218	236	R-37	287	295	310	R-39
4 1/16 x 4 1/16	235	246	245	R-37	263	275	293	R-37	427	439	457	R-39
7 1/16 x 4 1/16	331	342	342	R-45	—	—	—	—	736	749	769	R-46
7 1/16 x 6	465	479	486	R-45	540	554	604	R-45	846	861	884	R-46

Series TW/TWE Weights (lbs.) & Ring Groove (RTJ), Class 600, API 6D & ANSI B 16.34

Size (in.)	Weight (lbs.) / Ring Groove (RTJ)				
	Class 600				
	WE x WE	FLG x WE	Add For Handle	Add For Gear Op.	Ring Groove
2 x 2	55	63	4	11	R-23
3 x 2	64	78	4	11	R-31
3 x 3	98	113	8	18	R-31
4 x 3	103	136	8	18	R-37
4 x 4	163	196	12	21	R-37
6 x 4	203	263	12	21	R-45
6 x 6	335	395	14	40	R-45

Size (in.)	Weight (lbs.) / Ring Groove (RTJ)				
	Class 600				
	WE x WE	FLG x WE	Add For Handle	Add For Gear Op.	Ring Groove
8 x 6	415	510	14	40	R-49
8 x 8	662	757	—	73	R-49
10 x 8	715	870	—	73	R-53
10 x 10	1124	1279	—	75	R-53
12 x 10	1184	1365	—	75	R-57
12 x 12	1601	1782	—	139	R-57

KF Series T/TE & TW/TWE Weights & Ring Grooves

Series T/TE Weights (kg) & Ring Groove (RTJ), Class 600, 900, 1500 & 2500, API 6D & ANSI B 16.34

Size (in.)	Weight (kg) / Ring Groove (RTJ)															
	Class 600				Class 900				Class 1500				Class 2500			
	Valve Only	With Handle	With Gear Op.	Ring Groove	Valve Only	With Handle	With Gear Op.	Ring Groove	Valve Only	With Handle	With Gear Op.	Ring Groove	Valve Only	With Handle	With Gear Op.	Ring Groove
2 x 2	32.2	34.0	35.8	R-23	52.6	54.4	56.2	R-24	53.5	55.3	56.2	R-24	90.6	93.2	94.0	R-26
3 x 2	42.2	44.0	45.8	R-31	58.5	60.3	62.1	R-31	74.4	76.2	78.0	R-35	—	—	—	—
3 x 3	58.1	61.7	63.1	R-31	72.6	76.2	77.6	R-31	91.6	95.3	96.6	R-35	155	160	161.4	R-32
4 x 3	76.7	80.3	81.6	R-37	98.0	101.6	103.0	R-37	135.6	139.3	140.6	R-39	229	234	235.9	R-38
4 x 4	103.9	109.3	113.4	R-37	123.4	128.8	132.9	R-37	174.6	180.1	180.5	R-39	296	—	309.5	R-38
6 x 4	147.0	152.4	156.5	R-45	163.3	168.7	172.8	R-45	215.5	220.9	220.4	R-46	365	—	379.1	R-47
6 x 6	206.8	213.2	220.9	R-45	244.9	255.8	259.0	R-45	244.9	—	274.4	R-46	415	—	451.8	R-47
8 x 6	274.4	280.8	288.5	R-49	306.2	312.5	320.2	R-49	306.2	—	335.7	R-50	579	—	555	R-51
8 x 8	386.5	—	425.9	R-49	377.8	—	419.6	R-49	676	—	719.4	R-50	1143	—	1200	R-51
10 x 8	464.5	—	503.9	R-53	501.2	—	543.0	R-53	930	—	974.3	R-54	1575	—	1632	R-55
10 x 10	650	—	693.1	R-53	629.1	—	690.4	R-53	1205	—	1258.7	R-54	2530	—	2590	R-55
12 x 10	701.3	—	742.1	R-57	726.2	—	787.4	R-57	1474	—	1527.3	R-58	—	—	—	—
12 x 12	890.4	—	963.0	R-57	1130.8	—	1193.9	R-57	1642	—	1700.1	R-58	—	—	—	—

Series T/TE Weights (kg) & Ring Groove (RTJ), Class 2000, 3000 & 5000 RTJ, API 6A

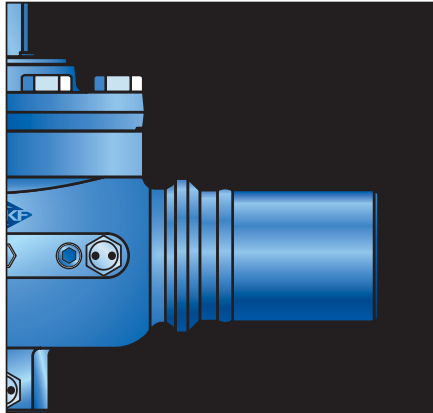
Size (in.)	Weight (kg) / Ring Groove (RTJ)											
	Class 2000 RTJ				Class 3000 RTJ				Class 5000 RTJ			
	Valve Only	With Handle	With Gear Op.	Ring Groove	Valve Only	With Handle	With Gear Op.	Ring Groove	Valve Only	With Handle	With Gear Op.	Ring Groove
2 1/16 x 2 1/16	32.7	34.9	36.7	R-23	54.4	56.2	60.8	R-24	54.9	56.7	61.2	R-24
3 1/8 x 2 1/16	43.5	45.4	47.2	R-31	60.3	62.1	66.7	R-31	66.7	68.5	73.0	R-35
3 1/8 x 3 1/8	59.9	63.5	64.9	R-31	68.5	72.1	81.6	R-31	113.9	117.5	118.8	R-35
4 1/16 x 3 1/8	78.9	82.6	83.9	R-37	95.3	98.9	107.0	R-37	130.2	133.8	140.6	R-39
4 1/16 x 4 1/16	106.6	111.6	111.1	R-37	119.3	124.7	132.9	R-37	193.7	199.1	207.3	R-39
7 1/16 x 4 1/16	150.1	155.1	155.1	R-45	—	—	—	—	333.8	339.7	348.8	R-46
7 1/16 x 6	210.9	217.3	220.4	R-45	244.9	251.3	274.0	R-45	383.7	390.5	401.0	R-46

Series TW/TWE Weights (kg) & Ring Groove (RTJ), Class 600, API 6D & ANSI B 16.34

Size (in.)	Weight (kg) / Ring Groove (RTJ)				
	Class 600				
	WE x WE	FLG x WE	Add For Handle	Add For Gear Op.	Ring Groove
2 x 2	24.9	28.6	1.8	5.0	R-23
3 x 2	29.0	35.4	1.8	5.0	R-31
3 x 3	44.5	51.3	3.6	8.2	R-31
4 x 3	46.7	61.7	3.6	8.2	R-37
4 x 4	73.9	88.9	5.4	9.5	R-37
6 x 4	92.1	119.3	5.4	9.5	R-45
6 x 6	152.0	179.2	6.4	18.1	R-45

Size (in.)	Weight (kg) / Ring Groove (RTJ)				
	Class 600				
	WE x WE	FLG x WE	Add For Handle	Add For Gear Op.	Ring Groove
8 x 6	188.2	231.3	6.4	18.1	R-49
8 x 8	300.3	343.4	—	33.1	R-49
10 x 8	324.3	394.6	—	33.1	R-53
10 x 10	509.8	580.2	—	34.0	R-53
12 x 10	537.1	619.2	—	34.0	R-57
12 x 12	726.2	808.3	—	63.1	R-57

KF Series T/TE & TW/TWE Optional Accessories & Installation



Pups

Buttweld 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/TE & TW/TWE 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.

External Coating

KF series T/TE & TW/TWE ball valves can be coated for added corrosion protection to meet specific application requirements. Coating is available upon request. Ask your KF Valves representative for more information on this special coating process.

Actuation

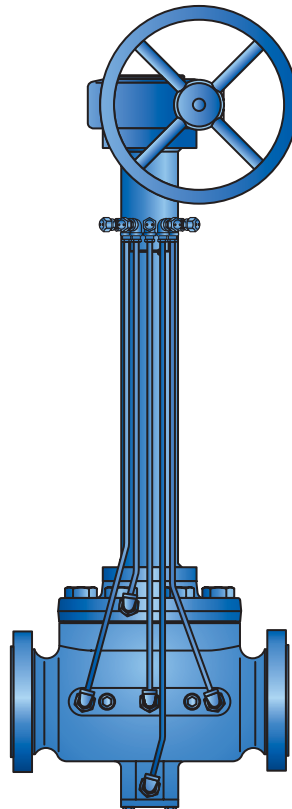
The bonnet design on KF series T/TE & TW/TWE ball valves permit easy adaptation to mount manual, electric, hydraulic or pneumatic actuators.

Metal Seated Ball Valves

KF series T/TE & TW/TWE 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.

Subsea Options

Subsea valves are optionally available with coal tar epoxy coating (18 to 20 mils), xylan[®] coated bolting and subsea gear operators.



Installation

Flange Ends (RF & RTJ)

- Series T/TE & TW/TWE 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 undue 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 TW/TWE weld end ball valves.
- 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.