KF Series F
Flanged Floating Ball Valves

KF Industries

Superior Fluid Control Products for the Petrochemical and Industrial Markets

A Brand of CIRCOR Energy Products, Inc.

KF Series F

KF Series F Flanged Floating Ball Valves are a prime example of KF's reliability, performance, manufacturing and superior engineering techniques at work. Featuring a unibody or two-piece bolted design.

General Design Features

- NACE MR0175 - (ISO 15156) (Stainless Steel ball/stem configuration)
- Blowout proof stem
- Weather Seal (Class 600 and higher)
- Actuator mounting pad (4 bolt machined)
- API 6D
- API 607 4th Edition* (O-Ring & Graphite)
- Secondary Metal-to-Metal Sealing
- Full rated bi-directional dead end service
- Antistatic Device
- Lockable handle
- O-Ring design (standard)
- Graphite or Teflon® packing (optional)

*Not applicable to Teflon® packed.

Applicable Standards

API-American Petroleum Institute

Spec. 6D Specification for pipeline valves.
Spec. RP6F Recommended practice for fire testing valves.
Std. 598 Valve inspection and test.**
Std. 607 Fire test for soft seated quarter-turn valves.

ASME/ANSI-American National Standard

B16.5 Steel pipe flanges and flanged fittings.
B16.10 Face-to-face and end-to-end dimensions of ferrous valves.
B16.34 Steel valves- Flanged and butt welding ends.

EC-European Community

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

ISO-International Org. for Standardization

ISO 9001: 2000 Quality systems-Model for quality assurance in design/development, production, installation and servicing.
ISO 15156 Materials for use in H2S containing environments in oil and gas production.

MSS-Manufacturers Standardization Society

SP 6 Std. 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 55 Quality standard for steel castings visual method.

NACE-National Assoc. of Corrosion Engineers

MR0175 Sulfide stress cracking resistant metallic materials for oilfield equipment. (Superseded by ISO 15156)

**P.O.A. consult factory.

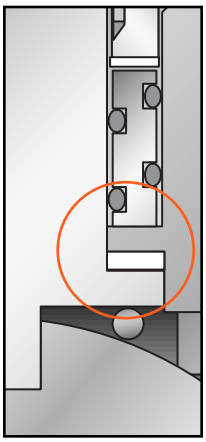
Size Range and Design Availability

Size (in.)	Class/Configuration				
	150	300	600	900	1500
1 FP	▲	▲	▲	▲	▲
1 1/2 FP	▲	▲	▲	—	—
2 RP	■	■	▲	▲	—
2 FP	▲	▲	▲	▲	—
2 1/2 RP	▲	▲	▲	—	—
3 RP	■	■	▲	—	—
3 FP	▲	▲	▲	—	—
4 RP	■	■	▲	—	—
4 FP	▲	▲	▲	—	—
6 RP	■	■	▲	—	—
6 FP	▲	▲	▲	—	—
8 RP	▲	▲	▲	—	—
8 FP	▲	▲	—	—	—
10 RP	▲	▲	—	—	—
10 FP	▲	—	—	—	—
12 RP	▲	—	—	—	—

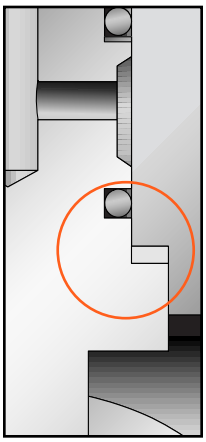
■ Unibody ▲ Split Body

Contents

KF Series F Design Features



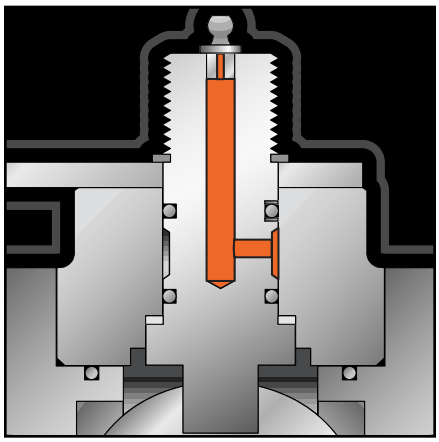
Class 150 & 300



Class 600 & higher

Blowout Proof Stem

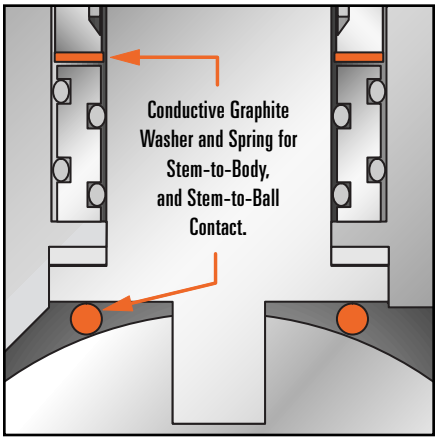
Internally inserted, "backseated" stem assures fire safety and blow-out prevention by retaining stem in the valve at all pressures.



Class 600 & higher

Stem Journal Lubrication

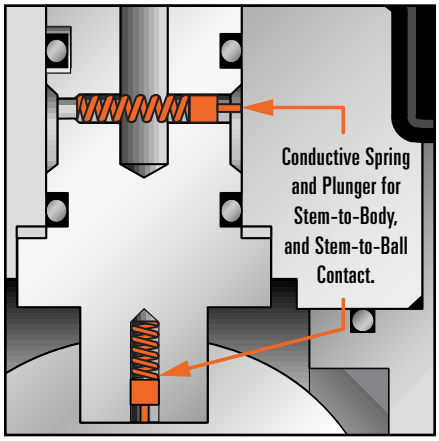
All valves incorporate external stem lubrication.
A vented weather seal allows safe pressure relief in event of excessive grease gun pressure.



Class 150 & 300
(O-Ring shown, packing also available.)

Antistatic Device

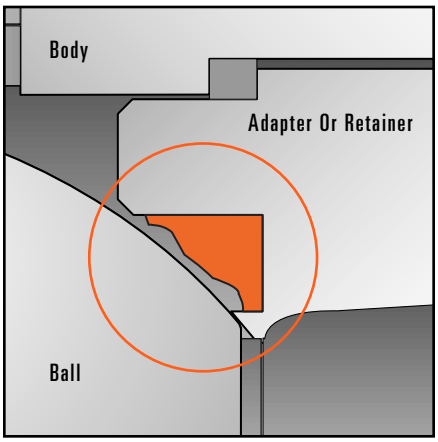
A conductive spring and a graphite washer provide antistatic continuity throughout the valve.



Class 600 & higher

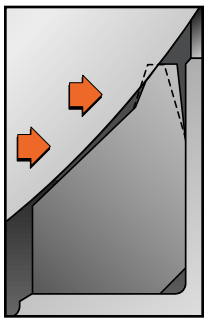
Antistatic Device

1" bore - 4" bore, cl. 600, 900 & 1500 use spring-loaded pins between the ball, stem, and body to provide antistatic continuity throughout the valve.

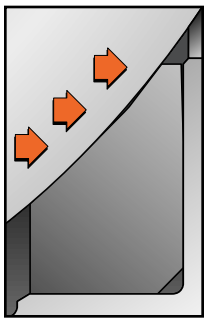


Firesafe Seat Sealing

In event of fire and seat destruction, ball floats downstream to effectively provide metal-to-metal seat sealing.



Low Pressure Sealing

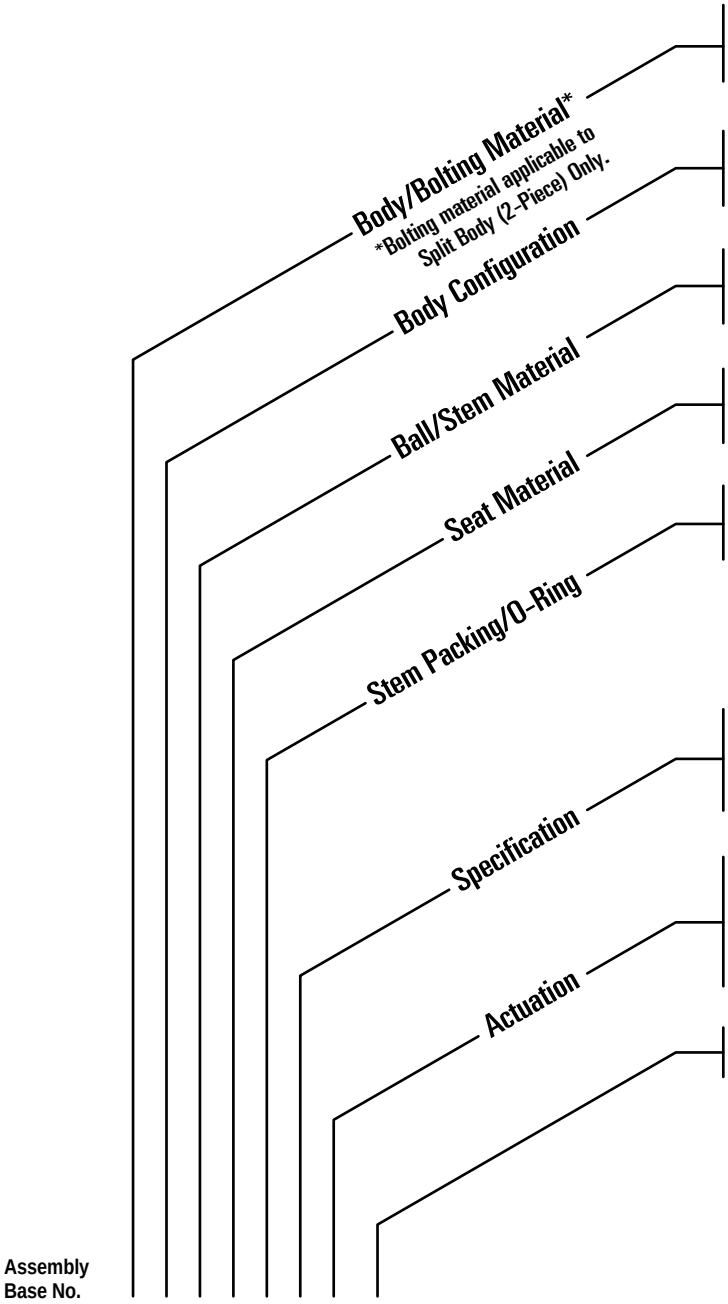


High Pressure Sealing

Positive Low & High Pressure Sealing For Devlon® and HT4 Seats

A special *integral seat lip* provides positive low pressure "bubble-tight" sealing between the ball and seat with minimal operating torque. The KF *seat lip* defects slightly at higher pressures to ensure full seat contact with the ball. The seat's "memory-action" provides "bubble-tight" sealing at both low and high pressures. This "self compensation for swell" feature results in low torque and long life operation.

KF Series F Part Number Codes



1 • WCB / CS
2 • CF8M / SS
9 • LTCS (LCC) / LTCS

2 • Vented Ball (1"FP - 4"FP Only)
8 • Unibody (See Chart on Page 3)
9 • Split Body (See Chart on Page 3)

1 • CS / CS
2 • 316SS / 316SS
A • CS 3mil ENP (6"-10" Bore Cl. 150 & 300 & 4"-6" Bore Cl. 600 Only)

2 • Uniseal™ /PTFE
5 • HT4 (PEEK™)
9 • Devlon®

Packing (Cl. 150 & 300 Only)
1 • Teflon® V-Ring (Std.)
6 • Graphite

O-Rings
A • James Walker® Viton®
B • EPDM
C • Aflas®
D • LT Buna N
E • Viton®
F • Elast-O-Lion® 985
G • HNBR

2 • NACE II (Cl. II Bolting)
3 • NACE III w/EnduroBond™ Ctg.
4 • NACE II w/EnduroBond™ Ctg.
9 • Std. (NACE Cl. III Bolting)

1 • Handle (1" - 4" Bore & 6" Bore Cl. 150 Only)
3 • Gear Operator
6 • Locking GOP
9 • Bare Stem
A • For Actuator

Process Codes
(Last two digits used ONLY when Process Codes are required.)

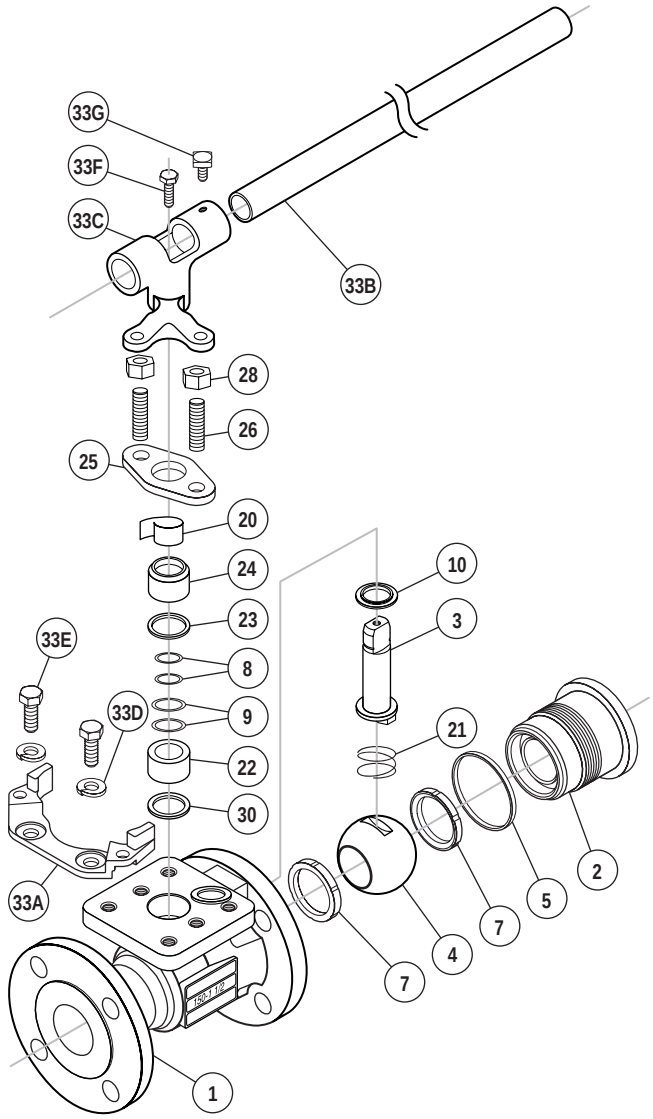
Viton® is a registered trademark of DuPont Dow Elastomers.
Teflon® is a registered trademark of DuPont.
Enduro-Bond™ is a registered trademark of Energy & Environmental Services.
James Walker® and Elast-O-Lion® are registered trademarks of James Walker.
Devlon® is a registered trademark of Devol Engineering,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

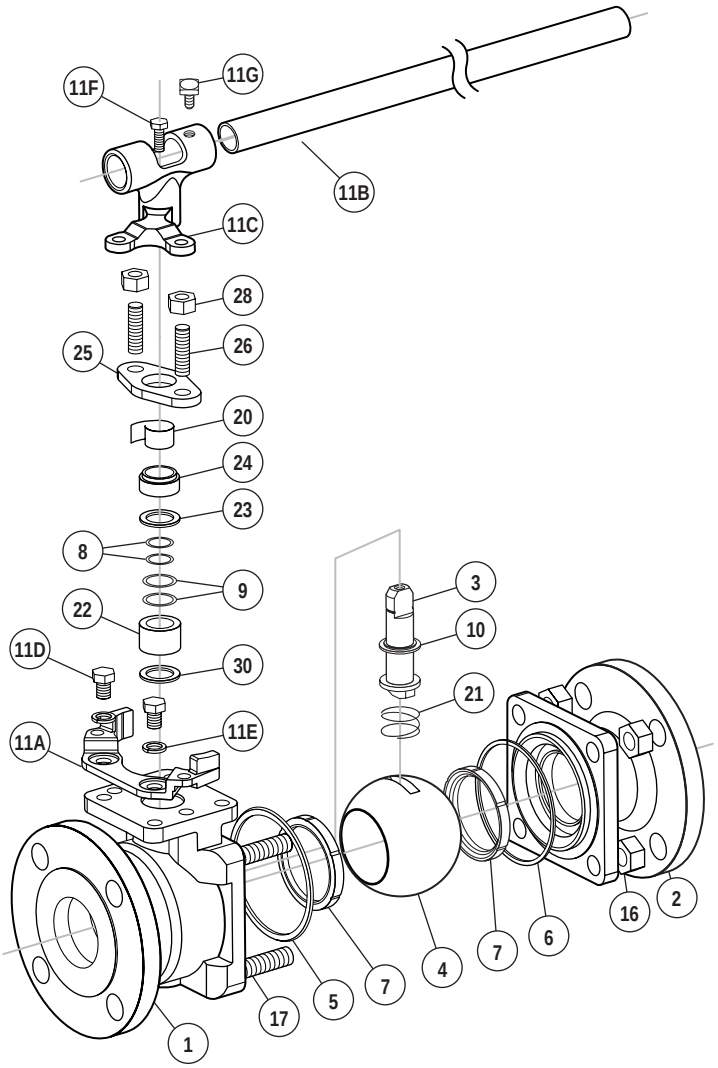
Assembly Base Numbers – 1"FP -12"RP

Size (in.)	Class/End Connection							
	150 RF	300 RF	600 RF	600 RTJ	900 RF	900 RTJ	1500 RF	1500 RTJ
1 FP	G2147	G2297	G2597	G2607	G3348	G3349	G3348	G3349
1 1/2 FP	G2149	G2299	G2599	G2609	—	—	—	—
2 RP	G2150	G2300	G2600	G2610	G2900	G2910	—	—
2 1/2 RP	G2152	G2302	G2602	G2612	—	—	—	—
2 FP	G2151	G2301	G2601	G2611	G2901	G2911	—	—
3 RP	G2153	G2303	G2603	G2613	—	—	—	—
3 FP	G2154	G2304	G2604	G2614	—	—	—	—
4 RP	G2155	G2305	G2605	G2615	—	—	—	—

Size (in.)	Class/End Connection							
	150 RF	300 RF	600 RF	600 RTJ	900 RF	900 RTJ	1500 RF	1500 RTJ
4 FP	G2156	G2306	G2606	G2616	—	—	—	—
6 RP	G2157	G2307	G2618	G2617	—	—	—	—
6 FP	G1720	G1724	G1728	G1730	—	—	—	—
8 RP	G1721	G1725	G1729	G1731	—	—	—	—
8 FP	G1722	G1726	—	—	—	—	—	—
10 RP	G1723	G1727	—	—	—	—	—	—
10 FP	G1752	—	—	—	—	—	—	—
12 RP	G1753	—	—	—	—	—	—	—

KF Series F Component Parts, Class 150 & 300





Parts List, Unibody

Part No.	Description
1	Body
2	Seat Retainer
3	Stem
4	Ball
5	Body Seal
7	Seat
8	Inner Stem O-Rngs***
9	Outer Stem O-Rings***
10	Thrust Washer
20	Liner
21	Ground Spring
22	Stem Seal: Gland or Packing
23	Ground Washer*

Part No.	Description
24	Retainer
25	Follower
26	Stud, Follower
28	Nut, Follower
30	Stem Washer**
33A	Lock Plate
33B	T-Handle Tube
33C	T-Handle Hub
33D	Lock Washer
33E	Screw, Hex
33F	Screw, Hex
33G	Screw, Square

*Not required with Graphoil® packing in Firesafe valves.
**Required in 2" and larger packed valves only.
***Not used in packed stem valves.

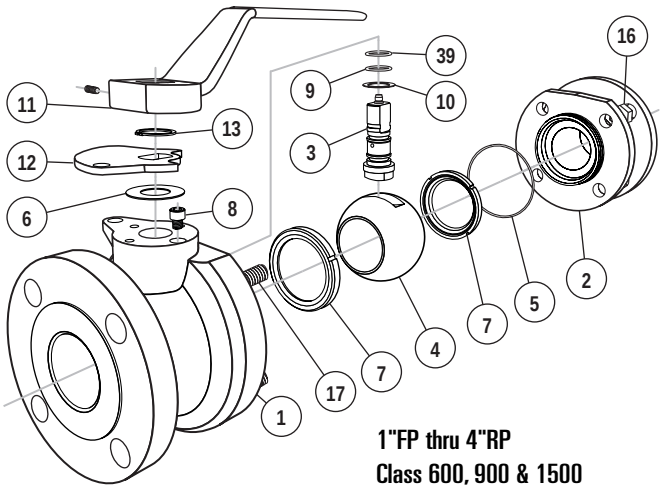
Parts List, Split Body

Part No.	Description
1	Body
2	Adapter
3	Stem
4	Ball
5	Body Gasket
6	Body O-Ring***
7	Seat
8	Inner Stem O-Rngs***
9	Outer Stem O-Rings***
10	Thrust Bearing
11A	Lock Plate
11B	T-Handle Tube
11C	T-Handle Hub
11D	Lock Plate Screw

Part No.	Description
11E	Lock Plate Lock Washer
11F	Handle Hub Screw
11G	Tube Lock Screw
16	Hex Nut
17	Stud
20	Follower Liner
21	Ground Spring
22	Stem Seal: Gland or Packing
23	Ground Washer*
24	Packing Follower
25	Packing Retainer
26	Packing Stud
28	Packing Nut
30	Stem Washer**

*Not required with Graphoil® packing in Firesafe valves.
**Required in 2" and larger packed valves only.
***Not used in packed stem valves.

KF Series F Component Parts, Class 600, 900 & 1500

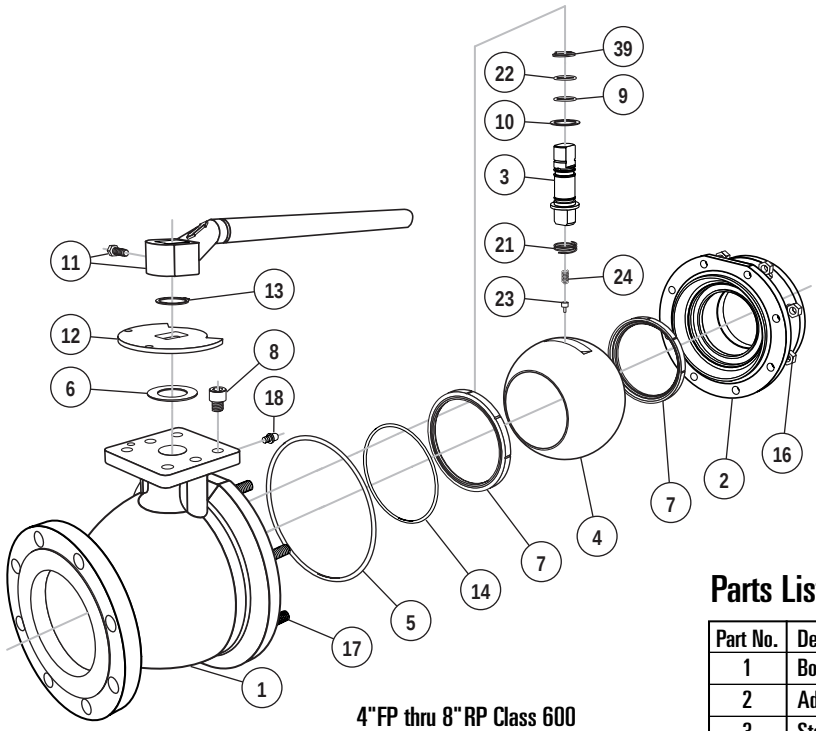


1"FP thru 4"RP
Class 600, 900 & 1500

Parts List

Part No.	Description
1	Body
2	Adapter
3	Stem
4	Ball
5	Body Seal
6	Stem Bearing
7	Seat
8	Stop Screw

Part No.	Description
9	Stem Seal
10	Thrust Bearing
11	Handle Assembly
12	Stop Plate
13	Retainer
16	Hex Nut
17	Stud
39	Weather Seal



4"FP thru 8"RP Class 600

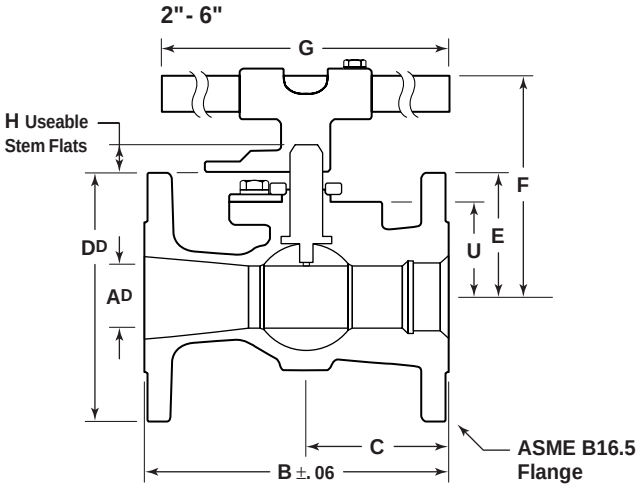
Parts List

Part No.	Description
1	Body
2	Adapter
3	Stem
4	Ball
5	Body Seal
6	Stem Bearing*
7	Seat
8	Stop Screw*
9	Stem Seal
10	Thrust Bearing
11	Handle Assembly*

Part No.	Description
12	Stop Plate*
13	Retainer*
14	Adapter Pilot Seal
16	Hex Nut
17	Stud
18	Lube Fitting
21	Ground Spring**
22	Firesafe Stem Packing
23	Ground Plunger*
24	Ground Spring*
39	Weather Seal

*4" Bore Only
**6" Bore Only

KF Series F Unibody, Dimensional Data (in.), Class 150 & 300



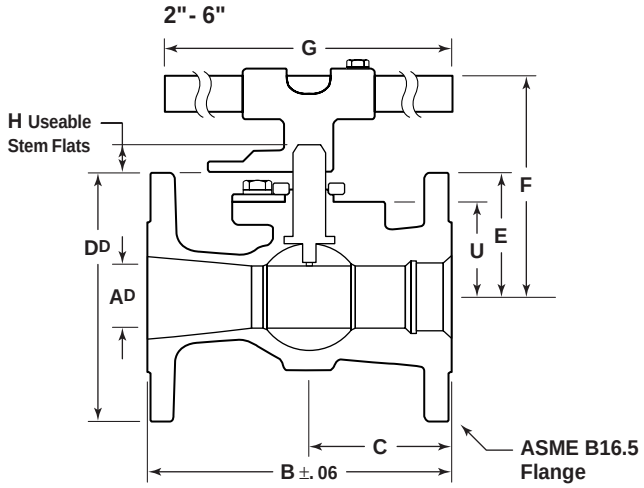
Dimensional Data (in.), 2"-6", Class 150, Reduced Port

Size (in.)	Dimension (in.)									Wt. (lbs.)
	A	B	C	D	E	F	G	H	U	
2	1.50	7.00	3.27	6.00	3.69	5.36	17.00	.70	2.31	17.6
3	2.42	8.00	3.46	7.50	4.38	6.05	17.00	.70	3.06	31.5
4	3.00	9.00	4.10	9.00	6.75	8.83	22.00	1.38	4.43	54.2
6	4.50	10.50	5.25	11.00	8.56	10.55	22.00	1.44	6.02	137.0

Dimensional Data (in.), 2"-6", Class 300, Reduced Port

Size (in.)	Dimension (in.)									Wt. (lbs.)
	A	B	C	D	E	F	G	H	U	
2	1.50	8.50	3.27	6.50	3.69	5.36	17.00	.70	2.31	26.0
3	2.42	11.12	3.96	8.25	4.38	6.05	17.00	.70	3.06	46.0
4	3.00	12.00	4.10	10.00	6.75	8.83	22.00	1.38	4.43	70.0
6	4.50	15.88	5.25	12.50	8.56	10.55	22.00	1.44	6.02	157.0

KF Series F Unibody, Dimensional Data (mm), Class 150 & 300



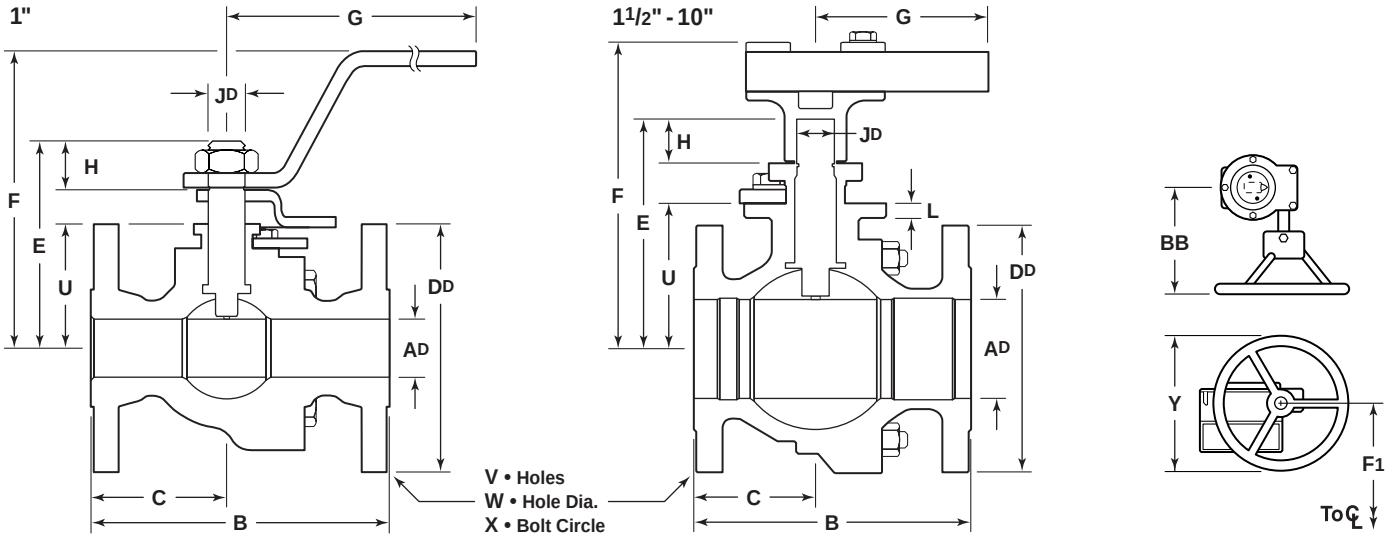
Dimensional Data (mm), 2"-6", Class 150, Reduced Port

Size (in.)	Dimension (mm)									Wt. (kg)
	A	B	C	D	E	F	G	H	U	
2	38.1	177.8	83.1	152.4	93.7	136.1	431.8	17.8	58.7	7.98
3	61.5	203.2	87.9	190.5	111.3	153.7	431.8	17.8	77.7	14.29
4	76.2	228.6	104.1	228.6	171.5	224.3	558.8	35.1	112.5	24.58
6	114.3	266.7	133.4	279.4	217.4	268.0	558.8	36.6	152.9	62.14

Dimensional Data (mm), 2"-6", Class 300, Reduced Port

Size (in.)	Dimension (mm)									Wt. (kg)
	A	B	C	D	E	F	G	H	U	
2	38.1	215.9	83.1	165.1	93.7	136.1	431.8	17.8	58.7	11.79
3	61.5	282.4	100.6	209.6	111.3	153.7	431.8	17.8	77.7	20.87
4	76.2	304.8	104.1	254	171.5	224.3	558.8	35.1	112.5	31.75
6	114.3	403.4	133.4	317.5	217.4	268.0	558.8	36.6	152.9	71.21

KF Series F Split Body, Dimensional Data (in.), Class 150 & 300



Dimensional Data (in.), 1"- 12", Class 150

Size (in.)	Dimension (in.)																	Wt. (lbs.)
	A	B	C	D	E	F	F1	G	H	J	L	U	V	W	X	Y	BB	
1 x 1	1.00	5.00	2.31	4.25	3.50	5.44	—	6.31	1.32	.586	—	1.69	4	.63	3.13	—	—	17.0
1½x1½	1.50	6.50	2.96	5.00	3.69	5.75	7.37	15.50	.640	.705	.38	2.31	4	.63	3.88	6.00	6.50	12.8
2x2	2.00	7.00	3.02	6.00	4.51	6.56	8.20	15.50	.640	.705	.44	3.14	4	.75	4.75	6.00	6.50	17.6
2½x2*	2.00	7.50	2.94	7.00	4.38	6.06	—	8.50	1.00	.873/.871	—	3.06	4	.75	5.50	—	—	37.5
3x3	3.00	8.00	3.50	7.50	6.81	10.25	11.63	20.00	1.28	1.067/1.062	.44	4.43	4	.75	6.00	6.00	6.50	31.5
4x4	4.00	9.00	4.00	9.00	8.40	11.00	13.08	20.00	1.28	1.321/1.316	.62	5.88	8	.75	7.50	8.00	9.00	54.2
6x6	6.00	15.50	7.75	11.00	10.81	11.12	15.63	20.00	1.45	1.515/1.510	.75	8.00	8	.88	9.50	8.00	9.50	137
8x6	6.00	11.50	5.13	13.50	10.81	11.12	15.63	20.00	1.45	1.515/1.510	.75	8.00	8	.88	9.50	8.00	9.50	210
8x8	8.00	18.00	9.00	13.50	14.25	—	18.26	—	2.27	1.997/1.994	.62	9.64	8	.88	9.50	12.00	9.50	477
10x8	8.00	13.00	6.50	16.00	14.25	—	18.26	—	2.27	1.997/1.994	.62	9.64	12	1.00	14.25	12.00	9.50	557
10x10	10.00	21.00	10.50	16.00	17.41	—	22.53	—	3.06	2.497/2.493	.62	11.91	12	1.00	14.25	16.00	11.50	685
12x10	10.00	14.00	7.00	19.00	17.41	—	22.53	—	3.06	2.497/2.493	.62	11.91	12	1.00	17.00	16.00	11.50	806

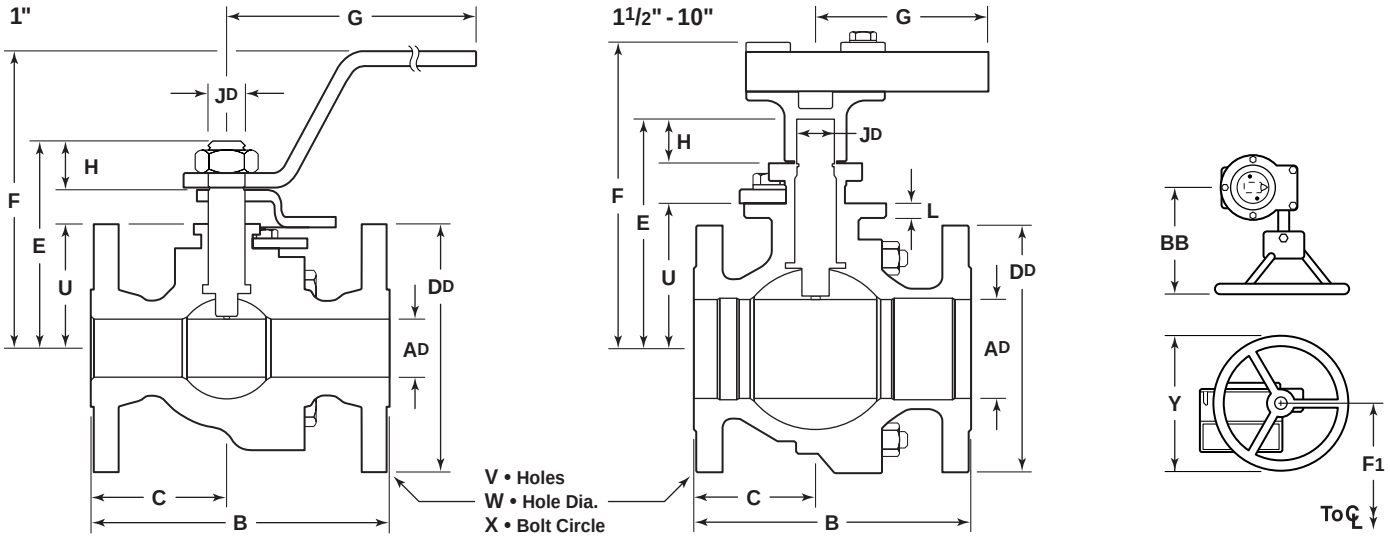
*For design artwork, refer to page 12.

Dimensional Data (in.), 1"- 10", Class 300

Size (in.)	Dimension (in.)																	Wt. (lbs.)
	A	B	C	D	E	F	F1	G	H	J	L	U	V	W	X	Y	BB	
1 x 1	1	6.50	3.50	4.88	3.50	5.44	—	6.31	1.32	-.586	—	1.69	4	.75	3.50	—	—	22.0
1½x1½	1.50	7.50	3.53	6.13	3.69	5.75	7.37	15.50	.640	.705	.38	2.31	4	.88	4.50	6.00	6.50	20.0
2x2	2.00	8.50	4.25	6.50	4.51	6.56	8.20	15.50	.640	.705	.44	3.14	8	.75	5.00	6.00	6.50	26.0
2½x2*	2.00	9.50	4.69	7.50	4.38	6.06	—	8.50	1.00	.873/.871	—	3.06	8	.88	5.88	—	—	43.7
3x3	3.00	11.13	5.82	8.25	6.81	10.25	11.63	20.00	1.28	1.067/1.062	.44	4.43	8	.88	6.63	6.00	6.50	46.0
4x4	4.00	12.00	6.00	10.00	8.40	11.00	13.08	20.00	1.28	1.321/1.316	.62	5.88	8	.88	7.88	8.00	9.00	70.0
6x6	6.00	15.88	7.94	12.50	12.75	—	15.63	—	2.27	1.950/1.945	.62	8.12	12	.88	10.63	12.00	9.50	157.0
8x6	6.00	16.50	6.63	15.00	12.75	—	15.63	—	2.27	1.950/1.945	.62	8.12	12	1.00	13.00	12.00	9.50	275
8x8	8.00	19.75	9.88	15.00	16.00	—	21.14	—	3.06	2.497/2.492	.62	10.52	12	1.00	13.00	16.00	11.50	624
10x8	8.00	18.00	6.25	17.50	16.00	—	21.14	—	3.06	2.497/2.492	.62	10.52	16	1.13	15.25	16.00	11.50	724

*For design artwork, refer to page 12.

KF Series F Split Body, Dimensional Data (mm), Class 150 & 300



Dimensional Data (mm), 1"- 12", Class 150

Size (in.)	Dimension (mm)																	Wt. (kg)
	A	B	C	D	E	F	F1	G	H	J	L	U	V	W	X	Y	BB	
1 x 1	25.4	127	58.7	108.0	88.9	138.2	—	160.3	33.5	14.9	—	42.9	4	16.0	79.5	—	—	7.7
1 1/2 x 1 1/2	38.1	165.1	75.2	127	93.7	146.1	187.2	393.7	16.3	17.9	9.7	58.7	4	16.0	98.6	152.4	165.1	5.8
2 x 2	50.8	177.8	76.7	152.4	115.0	166.6	208.3	393.7	16.3	17.9	11.2	79.8	4	19.1	120.7	152.4	165.1	8.0
2 1/2 x 2*	50.8	190.5	74.7	177.8	111.3	153.9	—	215.9	25.4	22.17/22.12	—	77.7	4	19.1	139.7	—	—	17.0
3 x 3	76.2	203.2	88.9	190.5	173.0	260.4	295.4	508	32.5	27.10/26.97	11.2	112.5	4	19.1	152.4	152.4	165.1	14.3
4 x 4	101.6	228.6	101.6	203.2	213.4	279.4	332.2	508	32.5	33.55/33.43	15.7	149.4	8	19.1	190.5	203.2	228.6	24.6
6 x 6	152.4	393.7	196.9	279.4	274.6	282.4	397.0	508	36.8	38.48/38.35	19.1	203.2	8	22.4	241.3	203.2	241.3	62.1
8 x 6	152.4	292.1	130.3	279.4	274.6	282.4	397.0	508	36.8	38.48/38.35	19.1	203.2	8	22.4	241.3	203.2	241.3	95.3
8 x 8	203.2	457.2	228.6	342.9	362.0	—	463.8	—	57.7	50.72/50.65	15.7	244.9	8	22.4	241.3	304.8	241.3	216.4
10 x 8	203.2	330.2	165.1	406.4	362.0	—	463.8	—	57.7	50.72/50.65	15.7	244.9	12	25.4	362.0	304.8	241.3	252.7
10 x 10	254	533.4	266.7	406.4	442.2	—	572.3	—	77.7	63.42/63.32	15.7	302.5	12	25.4	362.0	406.4	292.1	310.7
12 x 10	254	355.6	177.8	482.6	442.2	—	572.3	—	77.7	63.42/63.32	15.7	302.5	12	25.4	431.8	406.4	292.1	365.6

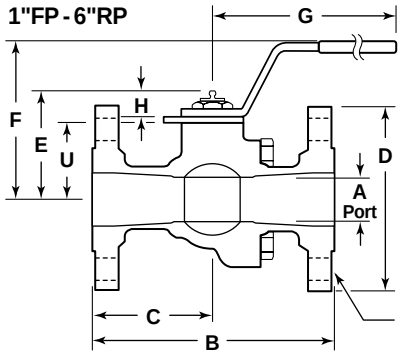
*For design artwork, refer to page 12.

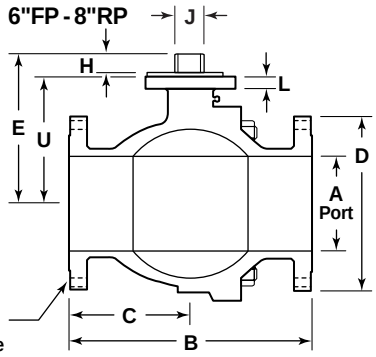
Dimensional Data (mm), 1"- 10", Class 300

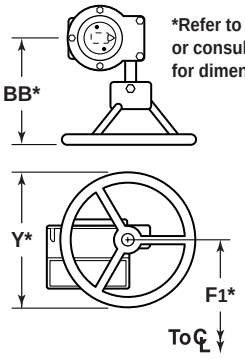
Size (in.)	Dimension (mm)																	Wt. (kg)
	A	B	C	D	E	F	F1	G	H	J	L	U	V	W	X	Y	BB	
1 x 1	25.4	165.1	88.9	124.0	88.9	138.2	—	160.3	33.5	14.9	—	42.9	4	19.1	88.9	—	—	10.0
1 1/2 x 1 1/2	38.1	190.5	89.7	155.7	93.7	146.1	187.2	393.7	16.3	17.9	9.7	58.7	4	22.4	114.3	152.4	165.1	9.1
2 x 2	50.8	215.9	108.0	165.1	115.0	166.6	208.3	393.7	16.3	17.9	11.2	79.8	8	19.1	127	152.4	165.1	11.8
2 1/2 x 2*	50.8	241.3	119.1	190.5	111.3	153.9	—	215.9	25.4	22.17/22.12	—	77.7	8	22.4	149.4	—	—	19.8
3 x 3	76.2	282.7	147.8	210.0	173.0	260.4	295.4	508	32.5	27.10/26.97	11.2	112.5	8	22.4	168.4	152.4	165.1	20.9
4 x 4	101.6	304.8	152.4	254	213.4	279.4	332.2	508	32.5	33.55/33.43	15.7	149.4	8	22.4	200.2	203.2	228.6	31.8
6 x 6	152.4	403.4	201.7	317.5	323.9	—	397.0	—	57.7	49.53/49.40	15.7	206.2	12	22.4	270.0	304.8	241.3	71.2
8 x 6	152.4	419.1	168.4	381	323.9	—	397.0	—	57.7	49.53/49.40	15.7	206.2	12	25.4	330.2	304.8	241.3	124.7
8 x 8	203.2	501.7	251.0	381	406.4	—	537.0	—	77.7	63.42/63.30	15.7	267.2	12	25.4	330.2	406.4	292.1	283.0
10 x 8	203.2	457.2	158.8	444.5	406.4	—	537.0	—	77.7	63.42/63.30	15.7	267.2	6	28.7	387.4	406.4	292.1	328.4

*For design artwork, refer to page 12.

KF Series F Split Body, Dimensional Data (in., mm), Class 600, 900 & 1500







*Refer to data sheets or consult factory for dimensional data.

Dimensional Data (in., mm), 1"FP-8"RP, Class 600

Size	Dimension (in.)																Wt.	Ring
(in.)	A	B/RF	B/RTJ	C/RF	C/RTJ	D	E	F	G	H	J	L	U	V	W	X	(lbs.)	Groove
1FP	1	8 1/2	8 1/2	3 3/4	3 3/4	4 7/8	3	4 3/16	5 7/8	13/16	.623/.621	—	1 11/16	4	3/4	3 1/2	25	R-16
1 1/2FP	1 1/2	9 1/2	9 1/2	3 7/8	3 7/8	6 1/8	3 15/16	5 5/8	8 1/2	1	.873/.871	—	2 5/8	4	7/8	4 1/2	30.4	R-20
2RP	1 1/2	11 1/2	11 5/8	4 7/16	4 1/2	6 1/2	3 15/16	5 5/8	8 1/2	1	.873/.871	—	2 5/8	8	3/4	5	35	R-23
2FP	2	11 1/2	11 5/8	4 7/16	4 1/2	6 1/2	4 3/8	6 1/16	8 1/2	1	.873/.871	—	3 1/16	8	3/4	5	41.5	R-23
2 1/2RP	2	13	13 1/8	4 15/16	5	7 1/2	4 3/8	6 1/16	8 1/2	1	.873/.871	—	3 1/16	8	7/8	5 7/8	52.9	R-26
3RP	2	14	14 1/8	6	6 1/16	8 1/4	4 3/8	6 1/16	8 1/2	1	.873/.871	—	3 1/16	8	7/8	6 5/8	61.6	R-31
3FP	3	14	14 1/8	5 3/4	5 13/16	8 1/4	5 21/32	7 1/4	15	1 1/4	1.248/1.246	—	4	8	7/8	6 5/8	89.1	R-31
4RP	3	17	17 1/8	7 3/4	7 13/16	10 3/4	5 21/32	7 1/4	15	1 1/4	1.248/1.246	—	4	8	1	8 1/2	133.8	R-37
4FP	4	17	17 1/8	8 1/2	8 9/16	10 3/4	8 19/32	9 1/2	48	1 11/16	1.791/1.773	1/2	6.5	8	1	8 1/2	167	R-37
6RP	4	22	22 1/8	11	11 1/16	14	8 19/32	9 1/2	48	1 11/16	1.791/1.773	1/2	6.5	12	1 1/8	11 1/2	345	R-45
6FP	6	22	22 1/8	11	11 1/16	14	11 3/4	—	—	2 7/8	2.499/2.492	5/8	8 25/32	12	1 1/8	11 1/2	427	R-45
8RP	6	26	26 1/8	13	13 1/16	16 1/2	11 3/4	—	—	2 7/8	2.499/2.492	5/8	8 25/32	12	1 1/4	13 3/4	672	R-49

Size	Dimension (mm)																Wt.	Ring
(in.)	A	B/RF	B/RTJ	C/RF	C/RTJ	D	E	F	G	H	J	L	U	V	W	X	(kg)	Groove
1FP	25.4	215.9	215.9	95.3	95.3	123.8	76.2	106.4	149.2	20.6	15.82/15.77	—	42.9	4	19.1	88.9	11.3	R-16
1 1/2FP	38.1	241.3	241.3	98.4	98.4	155.6	100.0	142.9	215.9	25.4	22.17/22.12	—	66.7	4	22.2	114.3	13.8	R-20
2RP	38.1	292.1	295.3	112.7	114.3	165.1	100.0	142.9	215.9	25.4	22.17/22.12	—	66.7	8	19.1	127.0	15.9	R-23
2FP	50.8	292.1	295.3	112.7	114.3	165.1	111.1	154.0	215.9	25.4	22.17/22.12	—	77.8	8	19.1	127.0	18.8	R-23
2 1/2RP	50.8	330.2	333.4	125.4	127	190.5	111.1	154.0	215.9	25.4	22.17/22.12	—	77.8	8	22.2	149.2	24.0	R-26
3RP	50.8	355.6	358.8	152.4	154.0	209.6	111.1	154.0	215.9	25.4	22.17/22.12	—	77.8	8	22.2	168.3	27.9	R-31
3FP	76.2	355.6	358.8	146.1	147.6	209.6	143.7	184.2	381.0	31.8	31.70/31.65	—	101.6	8	22.2	168.3	40.4	R-31
4RP	76.2	431.8	435.0	196.9	198.4	273.1	143.7	184.2	381.0	31.8	31.70/31.65	—	101.6	8	25.4	215.9	60.7	R-37
4FP	101.6	431.8	435.0	215.9	217.5	273.1	218.3	241.3	1219.2	42.9	45.49/45.03	12.7	165.1	8	25.4	215.9	75.7	R-37
6RP	101.6	558.8	562.0	279.4	281.0	355.6	218.3	241.3	1219.2	42.9	45.49/45.03	12.7	165.1	12	28.6	292.1	156	R-45
6FP	152.4	558.8	562.0	279.4	281.0	355.6	298.5	—	—	73.0	63.47/63.30	15.9	223.0	12	28.6	292.1	194	R-45
8RP	152.4	660.4	663.6	330.2	331.8	419.1	298.5	—	—	73.0	63.47/63.30	15.9	223.0	12	31.8	349.3	305	R-49

Note: Sizes 1"FP-6"RP is weight w/handle.
Sizes 6"FP-8"RP is weight w/gear operator.

Dimensional Data (in., mm), 1"FP-2"FP, Class 900 & 1"FP, Class 1500

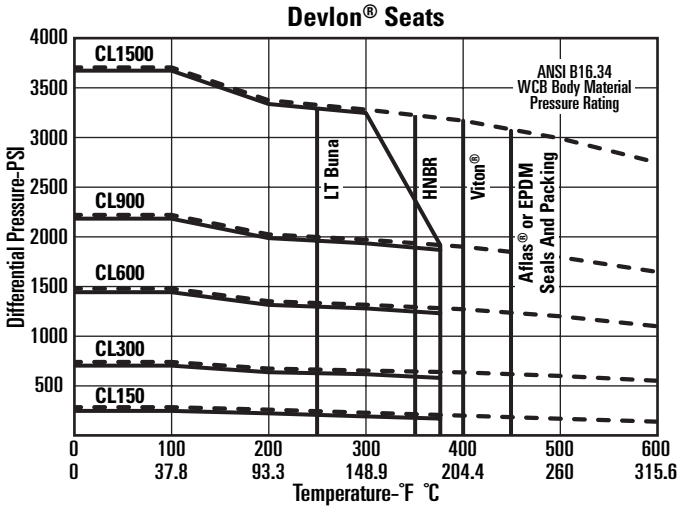
Size	Dimension (in.)																Wt.	Ring
(in.)	A	B/RF	B/RTJ	C/RF	C/RTJ	D	E	F	G	H	J	L	U	V	W	X	(lbs.)	Groove
1FP	1	10	10	4 3/4	4 3/4	5 7/8	3 1/16	4 1/2	5 7/8	1 1/8	.623/.621	—	2	4	1	4	28	R-16
2RP	1 1/2*	14 1/2*	14 5/8*	7 1/4*	7 5/16*	8 1/2*	3 15/16*	5 5/8*	8 1/2*	1 1/16*	.873/.871*	—	2 5/8*	8*	1*	6 1/2*	42.9*	R-24*
2FP	2*	14 1/2*	14 5/8*	7 1/4*	7 5/16*	8 1/2*	4 3/8*	6 1/16*	8 1/2*	1 1/16*	.873/.871*	—	3 1/16*	8*	1*	6 1/2*	51.2*	R-24*

Size	Dimension (mm)																Wt.	Ring
(in.)	A	B/RF	B/RTJ	C/RF	C/RTJ	D	E	F	G	H	J	L	U	V	W	X	(kg)	Groove
1FP	25.4	254.0	254.0	120.7	120.7	149.2	77.8	114.3	149.2	28.6	15.82/15.77	—	50.8	4	25.4	101.6	12.7	R-16
2RP	38.1*	368.3*	371.5*	184.2*	185.7*	215.9*	100.0*	142.9*	215.9*	27.0*	22.17/22.12*	—	66.7*	8*	25.4*	165.1*	19.5*	R-24*
2FP	50.8*	368.3*	371.5*	184.2*	85.7*	1215.9*	111.1*	154.0*	215.9*	27.0*	22.17/22.12*	—	77.8*	8*	25.4*	165.1*	23.2*	R-24*

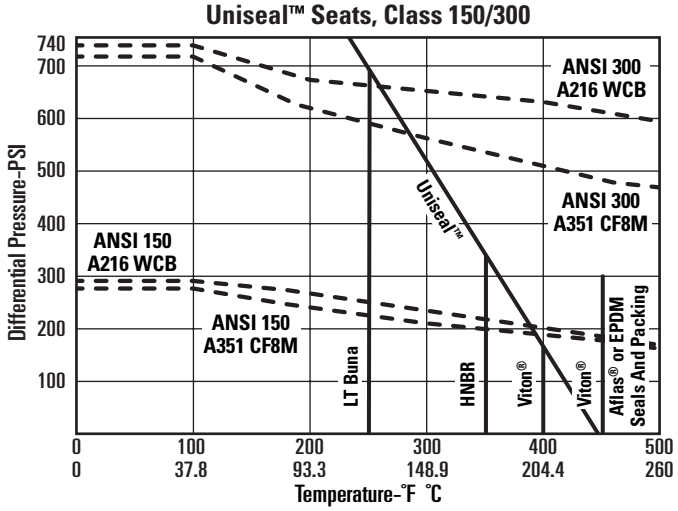
Note: Weight is w/handle.
*Class 900 Only.

KF Series F Engineering Data • Pressure Temperature (sizes listed on Teflon® chart indicate bore size)

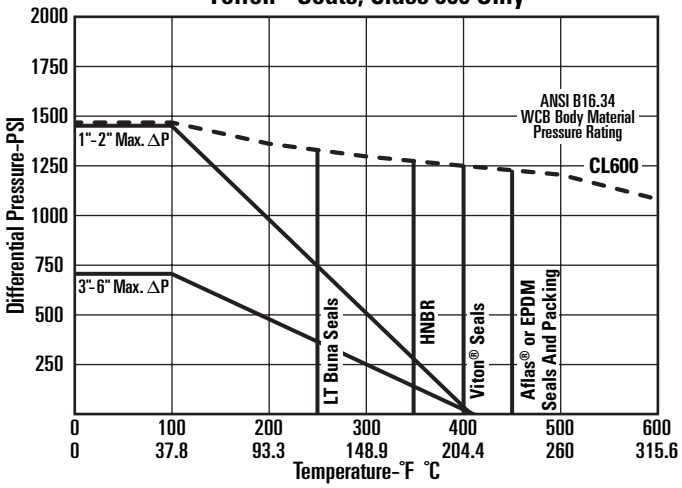
Devlon® Seats



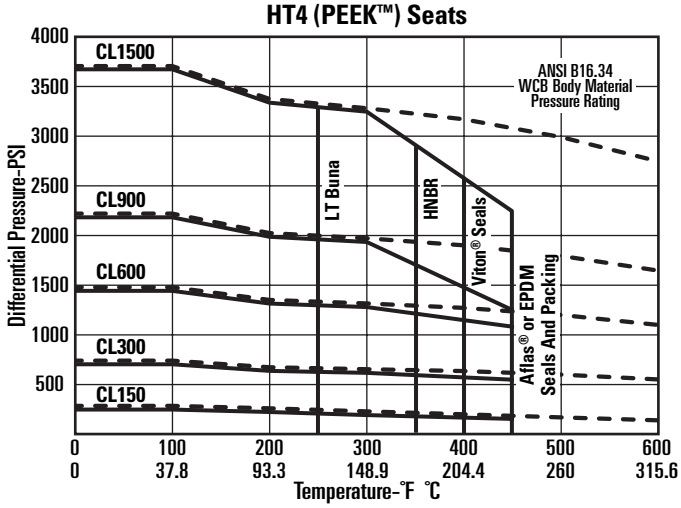
Uniseal™ Seats, Class 150/300



Teflon® Seats, Class 600 Only



HT4 (PEEK™) Seats



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
HT4 (PEEK™)	-50˚	-45.6

Seal Material	˚F	˚C
TFE/GRF Packing	-50˚	-45.6
Low Temp Buna N	-50˚	-45.6
Viton®	-20˚	-28.9
Elast-O-Lion 985	-50˚	-45.6

Seal Material	˚F	˚C
J. Walker® Viton®	+10˚	-12.2
HNBR	-40˚	-40
Aflas®	+32˚	0
EPDM	-50˚	-45.6

Flow Coefficient (C_V)

Class	Valve Size (In.)															
	1 FP	1 1/2 FP	2 RP	2 FP	2 1/2 RP	3 RP	3 FP	4 RP	4 FP	6 RP	6 FP	8 RP	8 FP	10 RP	10 FP	12 RP
150	98	265	125	470	220	430	1240	600	2470	1010	5249	2500	10,750	5000	17,775	8400
300	98	265	125	420	220	430	1050	600	2000	1010	5100	2400	10,300	4825	—	—
600	93	308	140	365	220	185	1000	570	1800	900	4600	2235	—	—	—	—
900/1500	90	—	135*	350*	—	—	—	—	—	—	—	—	—	—	—	—

*Class 900 only.

Method of Calculating Flow

The Flow Coefficient "C_V" of a valve is the flow rate of water (gallons/minute) through a fully opened valve, with a pressure drop of 1 psi across the valve. To find the flow of liquid through valve from the C_V, use the following formulas:

Liquid Flow

QL = flow rate of liquid (gal./min.)
ΔP = differential pressure across the valve (psi)
G = specific gravity of liquid (for water, G=1)

$$QL = C_V \sqrt{\frac{\Delta P}{G}}$$

Gas Flow

Qg = flow rate of gas (CFH at STP)
P2 = outlet pressure (psia)
g = Specific gravity of gas (for air, g=1.000)

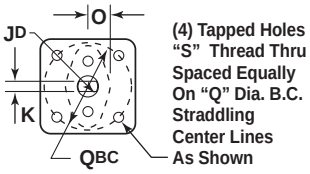
$$Qg = 61 C_V \sqrt{\frac{P_2 \Delta P}{g}}$$

For non-critical flow $\left\{\frac{\Delta P}{P_2} < 1.0\right\}$

KF Series F • Topworks (in.) & Stem Torque (in.-lbs)

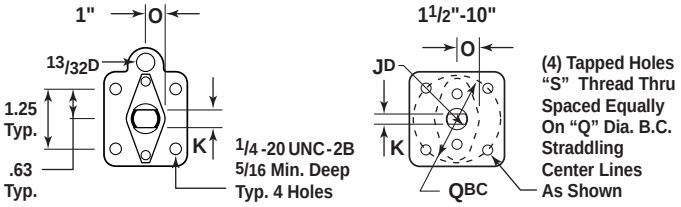
KF Unibody Ball Valves, Class 150 & 300

Size (in.)	Class	Dimension (in.)				
		J	K	O	Q	S
2	150/300	.705	.376/.373	.81	3.25	3/8-16 UNC
3	150/300	.705	.376/.373	.81	3.25	3/8-16 UNC
4	150/300	1.06	.674/.670	1.36	4.13	3/8-16 UNC
6	150/300	1.32	.865/.861	1.36	4.41	1/2-13 UNC



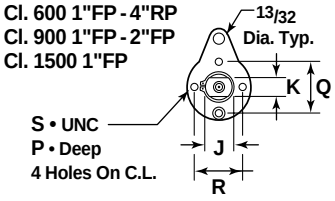
KF Split Body Ball Valves, Class 150 & 300

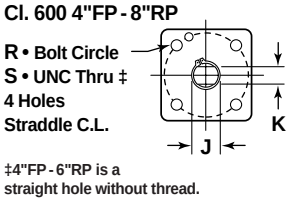
Size (in.)	Class	Dimension (in.)				
		J	K	O	Q	S
1 x 1	150/300	.586	.371/.369	.56	—	1/4-20 UNC
1 1/2 x 1 1/2	150/300	.705	.376/.373	.76	3.25	3/8-16 UNC
2 x 2	150/300	.705	.376/.373	.76	3.25	3/8-16 UNC
2 1/2 x 2	150/300	.873/.871	.560/.556	—	1.75	1/4-20 UNC
3 x 3	150/300	1.067/1.062	.674/670	1.36	4.13	3/8-16 UNC
4 x 4	150/300	1.321/1.316	.865/.861	1.36	4.41	1/2-13 UNC
6 x 6	150	1.515/1.510	1.065/1.061	1.36	5.13	5/8-11 UNC
6 x 6	300	1.950/1.945	1.249/1.245	1.58	5.13	5/8-11 UNC
8 x 6	150	1.575/1.570	1.065/1.061	1.36	5.13	5/8-11 UNC
8 x 6	300	1.950/1.945	1.249/1.245	1.58	5.13	5/8-11 UNC
8 x 8	150	1.997/1.992	1.247/1.243	1.58	5.13	5/8-11 UNC
8 x 8	300	2.497/2.492	1.747/1.743	2.10	6.75	3/4-10 UNC
10 x 8	150	1.997/1.992	1.247/1.243	1.58	5.13	5/8-11 UNC
10 x 8	300	2.497/2.492	1.747/1.743	2.10	6.75	3/4-10 UNC
10 x 10	150	2.497/2.492	1.747/1.743	2.10	6.75	3/4-10 UNC
12 x 10	150	2.497/2.492	1.747/1.743	2.10	6.75	3/4-10 UNC



KF Series F Ball Valves, Class 600, 900 & 1500

Size (in.)	Class	Dimension (in.)					
		J	K	P	Q	R	S
1 FP	600	.623/.621	.372/.370	5/16	1 1/4	1 1/4	1/4-20 UNC
1 FP	900	.623/.621	.372/.370	5/16	1 1/4	1 1/4	1/4-20 UNC
1 FP	1500	.623/.621	.372/.370	5/16	1 1/4	1 1/4	1/4-20 UNC
1 1/2 FP	600	.873/.871	.560/.556	3/8	1 3/4	1 3/4	1/4-20 UNC
2 RP	600/900	.873/.871	.560/.556	3/8	1 3/4	1 3/4	1/4-20 UNC
2 1/2 RP	600	.873/.871	.560/.556	3/8	1 3/4	1 3/4	1/4-20 UNC
2 FP	600/900	.873/.871	.560/.556	3/8	1 3/4	1 3/4	1/4-20 UNC
3 RP	600	.873/.871	.560/.556	3/8	1 3/4	1 3/4	1/4-20 UNC
3 FP	600	1.248/1.246	.622/.618	5/8	3 1/8	2 1/4	5/16-18 UNC
4 RP	600	1.248/1.246	.622/.618	5/8	3 1/8	2 1/4	5/16-18 UNC
4 FP	600	1.791/1.773	1.247/1.243	thru	—	4 1/4	7/16
6 RP	600	1.791/1.773	1.247/1.243	thru	—	4 1/4	7/16
6 FP	600	2.499/2.492	1.749/1.745	thru	—	6 3/4	3/4-10 UNC
8 RP	600	2.499/2.492	1.749/1.745	thru	—	6 3/4	3/4-10 UNC





Design Torques for Actuator Sizing (in.-lbs.)*

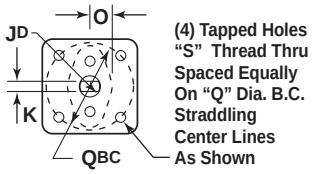
Class/Work. Press. (psi)	Valve Size (In.)															
	1 FP	1 1/2 FP	2 RP	2 FP	2 1/2 RP	3 RP	3 FP	4 RP	4 FP	6 RP	6 FP	8 RP	8 FP	10 RP	10 FP	12 RP
150/285	180	280	240	440	600	520	600	600	1440	1440	5500	5500	12,000	12,000	23,000	23,000
300/740	180	280	240	500	960	590	1000	1000	2500	2500	12,000	12,000	27,000	27,000	—	—
600/1480	600	900	900	1200	1200	1200	2700	2700	5280	5280	27,000	27,000	—	—	—	—
900/2220	780	—	1320	1800	—	—	—	—	—	—	—	—	—	—	—	—
1500/3705	1200	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

*There is no safety factor in the above torques. KF recommends at least a 25% safety factory be added.

KF Series F • Topworks (mm) & Stem Torque (Nm)

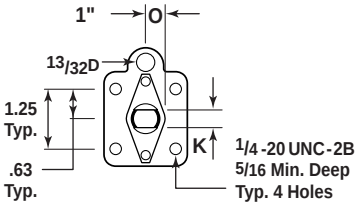
KF Unibody Ball Valves, Class 150 & 300

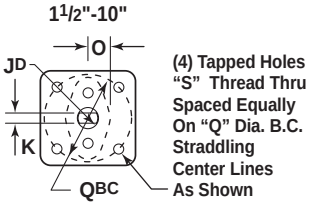
Size (in.)	Class	Dimension (mm)				
		J	K	O	Q	S
2	150/300	17.9	9.55/9.47	20.6	82.6	3/8-16 UNC
3	150/300	17.9	9.55/9.47	20.6	82.6	3/8-16 UNC
4	150/300	26.9	17.12/17.02	34.5	104.9	3/8-16 UNC
6	150/300	33.5	21.97/21.87	34.5	112.0	1/2-13 UNC



KF Split Body Ball Valves, Class 150 & 300

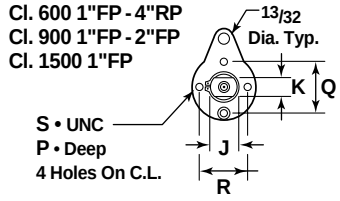
Size (in.)	Class	Dimension (mm)				
		J	K	O	Q	S
1 x 1	150/300	14.9	9.42/9.37	14.2	—	1/4-20 UNC
1 1/2 x 1 1/2	150/300	17.9	9.55/9.47	19.3	82.6	3/8-16 UNC
2 x 2	150/300	17.9	9.55/9.47	19.3	82.6	3/8-16 UNC
2 1/2 x 2	150/300	22.17/22.12	14.22/14.12	—	44.5	1/4-20 UNC
3 x 3	150/300	27.10/26.97	17.12/17.02	34.5	104.9	3/8-16 UNC
4 x 4	150/300	33.55/33.43	21.97/21.87	34.5	112.0	1/2-13 UNC
6 x 6	150	38.48/38.35	27.05/26.95	34.5	130.3	5/8-11 UNC
6 x 6	300	49.53/49.40	31.72/31.62	40.13	130.3	5/8-11 UNC
8 x 6	150	40.01/39.88	21.97/21.87	34.5	130.3	5/8-11 UNC
8 x 6	300	49.53/49.40	31.72/31.62	40.13	130.3	5/8-11 UNC
8 x 8	150	50.72/50.60	31.67/31.57	40.13	130.3	5/8-11 UNC
8 x 8	300	63.42/63.30	44.37/44.27	53.3	171.5	3/4-10 UNC
10 x 8	150	50.72/50.60	31.67/31.57	40.13	130.3	5/8-11 UNC
10 x 8	300	63.42/63.30	44.37/44.27	53.3	171.5	3/4-10 UNC
10 x 10	150	63.42/63.30	44.37/44.27	53.3	171.5	3/4-10 UNC
12 x 10	150	63.42/63.30	44.37/44.27	53.3	171.5	3/4-10 UNC

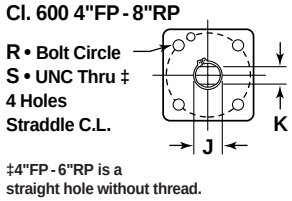




KF Series F Ball Valves, Class 600, 900 & 1500

Size (in.)	Class	Dimension (mm)					
		J	K	P	Q	R	S
1 FP	600	15.82/15.77	9.45/9.40	7.9	31.8	31.8	1/4-20 UNC
1 FP	900	15.82/15.77	9.45/9.40	7.9	31.8	31.8	1/4-20 UNC
1 FP	1500	15.82/15.77	9.45/9.40	7.9	31.8	31.8	1/4-20 UNC
1 1/2 FP	600	22.17/22.12	14.22/14.12	9.5	44.5	44.5	1/4-20 UNC
2 RP	600/900	22.17/22.12	14.22/14.12	9.5	44.5	44.5	1/4-20 UNC
2 1/2 RP	600	22.17/22.12	14.22/14.12	9.5	44.5	44.5	1/4-20 UNC
2 FP	600/900	22.17/22.12	14.22/14.12	9.5	44.5	44.5	1/4-20 UNC
3 RP	600	22.17/22.12	14.22/14.12	9.5	44.5	44.5	1/4-20 UNC
3 FP	600	31.70/31.65	15.80/15.70	15.9	79.4	57.2	5/16-18 UNC
4 RP	600	31.70/31.65	15.80/15.70	15.9	79.4	57.2	5/16-18 UNC
4 FP	600	45.49/45.03	31.67/31.57	thru	—	108.0	11.1
6 RP	600	45.49/45.03	31.67/31.57	thru	—	108.0	11.1
6 FP	600	63.47/63.30	44.42/44.32	thru	—	171.5	3/4-10 UNC
8 RP	600	63.47/63.30	44.42/44.32	thru	—	171.5	3/4-10 UNC





Design Torques for Actuator Sizing (Nm)*

Class/Work. Press. (psi)	Valve Size (In.)															
	1 FP	1 1/2 FP	2 RP	2 FP	2 1/2 RP	3 RP	3 FP	4 RP	4 FP	6 RP	6 FP	8 RP	8 FP	10 RP	10 FP	12 RP
150/285	20.3	31.6	27.1	49.7	67.8	58.8	67.8	67.8	162.7	162.7	621.4	621.4	1355.8	1355.8	2598.7	2598.7
300/740	20.3	31.6	27.1	56.5	108.5	66.7	113.0	113.0	282.5	282.5	1355.8	1355.8	3050.6	3050.6	—	—
600/1480	67.8	101.7	101.7	135.6	135.6	135.6	305.1	305.1	596.6	596.6	3050.6	3050.6	—	—	—	—
900/2220	88.1	—	149.1	203.4	—	—	—	—	—	—	—	—	—	—	—	—
1500/3705	135.6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

*There is no safety factor in the above torques. KF recommends at least a 25% safety factory be added.

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