

Control the Flow...

...With KF Industries Floating Ball Valves.

Oil & Gas companies around the globe trust the reliability of KF floating ball valves even in the harshest conditions. They know the KF Brand means performance second to none.

As an ISO 9001:2000 manufacturer KF Industries continues to utilize superior engineering and manufacturing techniques to insure a consistent quality product at a competitive price. KF Industries provides the Oil & Gas and Industrial markets with the most comprehensive valve offering available anywhere in the world.

Contents

KF Floating Ball Valves

Main Features	3
Design Features.....	4

Dimensional Data, Part Numbers & Materials

Series B & BH Three-piece Ball Valves	5
Series A & AH Ball Valves	6
Series AF & AFH Ball Valves	7
Series C, CH & CXH Ball Valves.....	8
Series CF, CFH & CFXH Ball Valves.....	9
Series CA & CAH Ball Valves	10
Series CB & CBH Ball Valves.....	11
Series E, EH & EC Ball Valves.....	12
Series W Ball Valves	13

KF Unibody & Two-piece Ball Valves

Main Features	14
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Dimensional Data, Part Numbers & Materials

Series HC-730 Unibody Ball Valves	15
Series HC-740 Two-piece Ball Valves	15
Series HC-710 & HS-810 Unibody Ball Valves	16
Series HS-820 Two-piece Ball Valves	16
Series HB-600 Two-piece Ball Valves	17

Engineering Data

Pressure Temperature Charts	18, 19
Low Temperature Limits	19
Flow Coefficients, (C _v), Calculating Flow.....	20
Actuation, Specification Conformance	20
Operating Torque	21, 22

When quality counts,
Specify KF Industries.



Registered to the ISO
9001 Quality System
Standard, accredited by
U.K., Dutch and German
qualifying authorities

KF Series C, CH and CXH Ball Valves

Body/Ball & Stem	1 • Carbon Steel/Carbon Steel	A • Carbon Steel w/Freeze
	2 • Carbon Steel/Stainless Steel	B • Stainless Steel w/Freeze
Seat & Seals	1 • Nylon/HNBR	7 • HT4 (PEEK™)/Aflas®
	2 • Teflon®/Viton®*	8 • Nylon/PC Buna N
Coating	3 • Nylon/Viton®	9 • Teflon®/PC Buna N*
	4 • Teflon®/HNBR*	D • HT4 (PEEK™)/PC Buna N
Actuation	5 • HT4 (PEEK™)/Viton®	E • HT4 (PEEK™)/HNBR
	6 • HT4 (PEEK™)/EPDM	
Options	3 • Enduro-Bond™ Body/Adapter	
	9 • None	
Options	1 • Handle	
	2 • Square Nut	
Options	9 • Stem Only	
	1 • Standard (w/o Anti-Static Device)	
	2 • With Anti-Static Device	

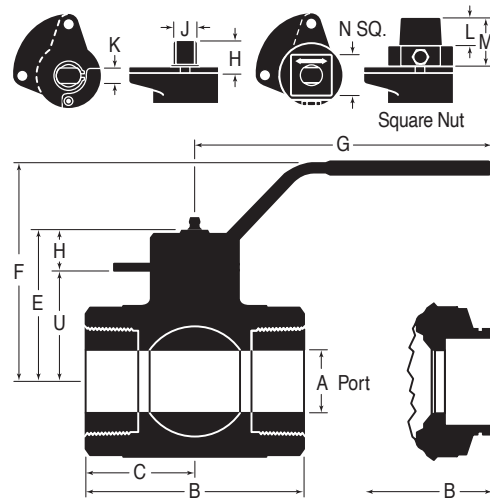
Assembly

Base No.

XXXX - X X X X X

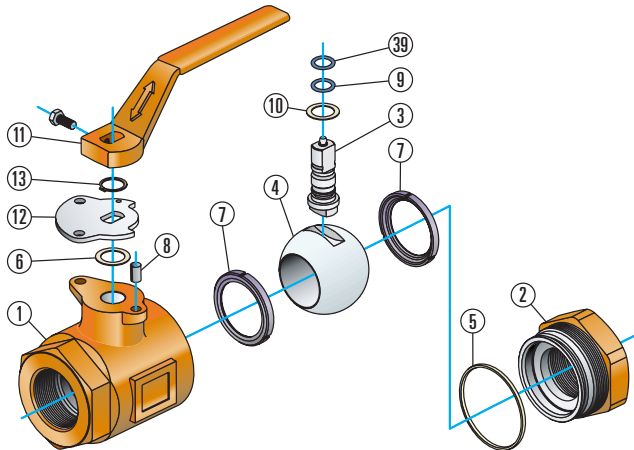
*Teflon® Seats not available in Series CH or CXH

†SS body not available Series CXH or in 4"FP Series CH



Assembly Base Numbers

Valve Size (in.)	1FP	1 1/2FP	2RP	2FP	2 1/2RP	2 1/2FP	3RP	3FP	4RP	4FP
Nylon										
HT4	2500			2160	1500	2160	1500			750
PTFE	1500			1500	1000	1000	1000			750
Series C	Thrd. 1477-	1500-	1501-	1502-	1503-	3798-	1504-	1505-	1506-	3604-
	Grvd. 1478-	1507-	1508-	1509-	1510-	3799-	NA	1512-	1513-	3605-
Rating (psi)	3000									2000
Series CH	3001-	3002-	3003-	3004-	3005-	—	3006-	3007-	3008-	3363-
Rating (psi)	5000									
Series CXH	5050-	5051-	5052-							



Parts List and Materials

Index	Description	Material
1	Body	A216 WCB/A105 CS, A351 Gr. CF8M
2	Adapter	A216 WCB/A105 CS, A351 Gr. CF8M
3	Stem	CS/Zinc Plated or 316 SS, 17-4 SS
4	Ball	1215 CS w/Chrome over Nickel Plating or 316 SS
5	Body Seal	HNBR, Viton®, EPDM, Aflas®, PC Buna N
6	Stem Bearing	Nylon
7	Seat	Nylon (Delrin in Ser. CH, CXH), RTFE (Ser. C only) or HT4 (PEEK™)

Dimensional Data (in.)

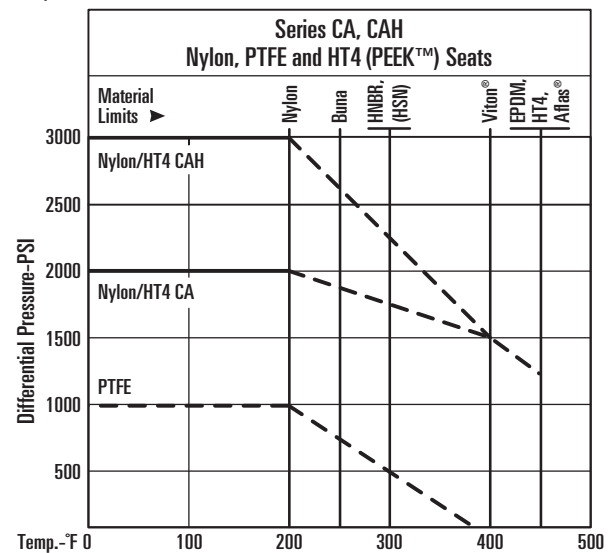
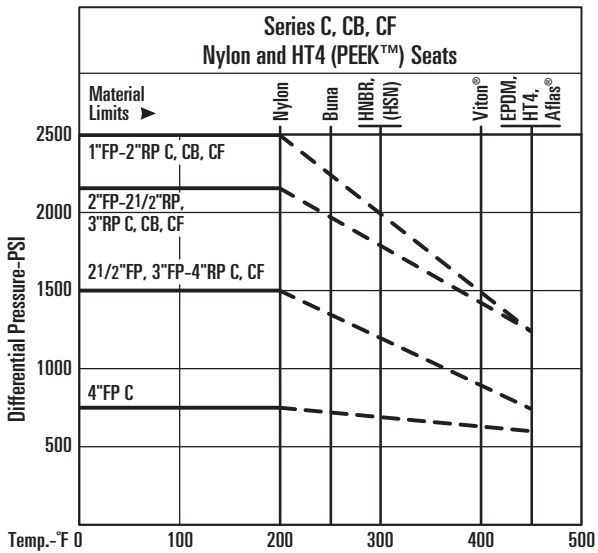
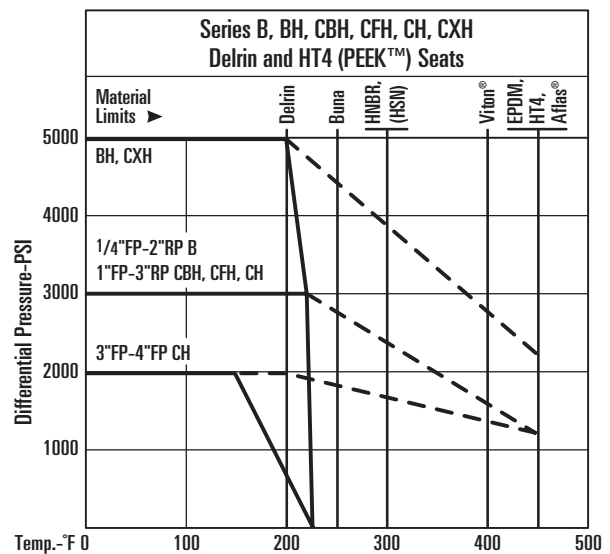
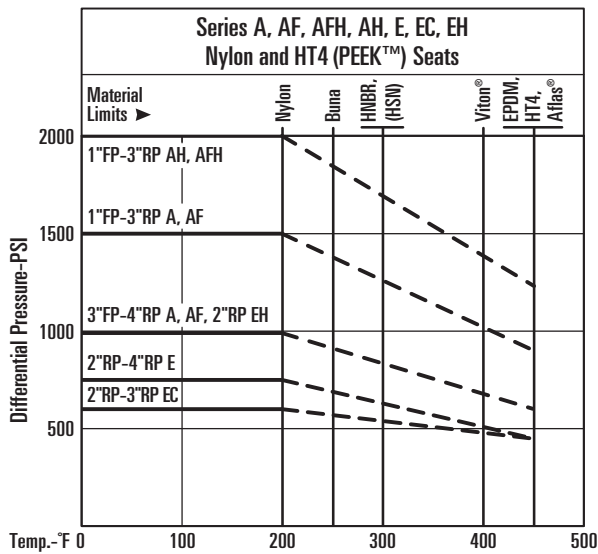
Valve Size (in.)	1FP	1 1/2FP	2RP	2FP	2 1/2RP	2 1/2FP	3RP	3FP	4RP	4FP
Dimension	1 x 1	1 1/2 x 1 1/2	2 x 1 1/2	2 x 2	2 1/2 x 2	2 1/2 x 2 1/2	3 x 2	3 x 3	4 x 3	4 x 4
Weight lbs.*	4.5	13	12.5	18	16.25	20	22	52	46	58
A	1	1 1/2	2	2 1/2	2	3	4			
B	Thrd. 4	5 1/2	6	7	8 1/4	8 3/4	9 3/8			
	Grvd.** 4 7/8	6	6 1/4	7	NA	8 3/4	9 3/8			
C	2	2 3/4	3	3 3/8	4 1/8	4 3/8	4 11/16			
E	2 1/2	3 21/32	4 3/32	5 1/32	4 3/32	5 11/32	6 1/2			
F	3 1/8	5 15/32	5 29/32	6 15/32	5 29/32	6 25/32	8 1/16			
G	C 6 1/4	8 1/2	15	8 1/2	15	18				
	CH 6 1/4	8 1/2	15	8 1/2	15	48				
H	25/32	11/32	1 3/8	1 1/32	1 3/8	1 1/2				
J	.623/.621	.873/.871	1.248/1.245	.873/.871	1.248/1.245	1.373/1.371				
K	.372/.370	.560/.556	.621/.618	.560/.556	.621/.618	.747/.743				
L	—	1	1 1/8	1	1 1/8					
M	—	1 3/4	2 3/16	1 3/4	2 3/16	2				
N	—	1 7/16	1 13/16	1 7/16	1 13/16					
U	1 23/32	2 5/8	3 1/16	3 21/32	3 1/16	4	5			

* Handle weight included. ** Series C only.

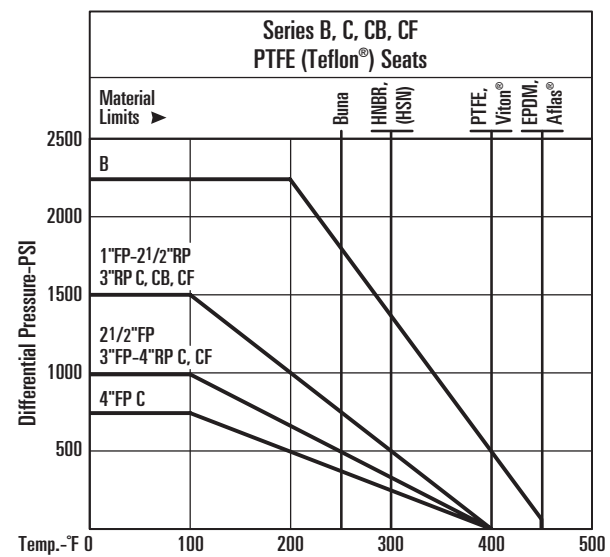
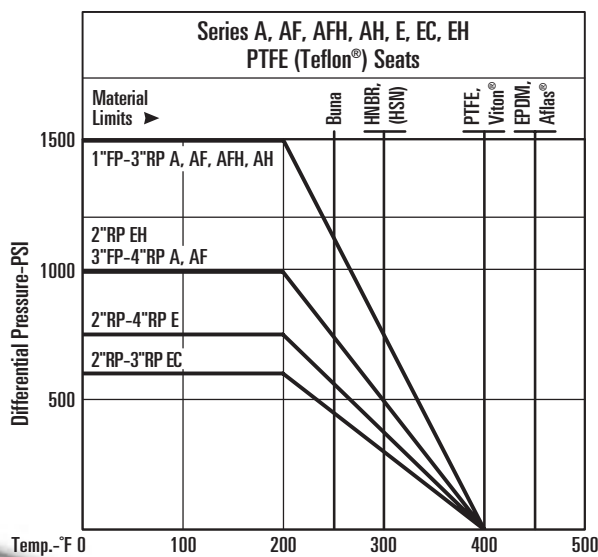
Index	Description	Material
8	Stop	Steel
9	Stem Seal	HNBR, Viton®, EPDM, Aflas®, PC Buna N
10	Thrust Bearing	Teflon® (HT4 when using Hi-Temp Seats & Seals)
11	Handle/Sq. Nut	1018 Carbon Steel (1" FP), A47 Malleable Iron (1 1/2" FP-4" RP) & A216 Gr. WCB (4" FP)
12	Stop Plate	Steel, Plated
13	Retainer	Spring Steel
39	Weather Seal	Buna N Only



Engineering Data, Pressure Temperature Charts



Floating Ball Valves with Seats made of Teflon®



Engineering Data

Flow Coefficients (C_v)

Series	Valve Size (in.)																
	1/4	3/8	1/2	3/4	1 RP	1 FP	1 1/4	1 1/2 RP	1 1/2 FP	2 RP	2 FP	2 1/2 RP	2 1/2 FP	3 RP	3 FP	4 RP	4 FP
A	—	—	—	—	—	185	—	—	308	140	500	220	—	220	1390	630	—
AH	—	—	—	—	—	185	—	—	308	—	—	220	—	—	—	—	—
B	6	—	15	30	30	60	—	—	130	110	—	—	—	—	—	—	—
BH	6	—	15	30	30	—	—	—	—	—	—	—	—	—	—	—	—
C	—	—	—	—	—	185	—	—	308	140	500	220	890	220	1390	630	2160
CH	—	—	—	—	—	185	—	—	308	140	500	—	—	—	—	—	—
CA	—	—	—	—	—	—	—	—	—	—	531	—	935	—	—	—	—
CB	—	—	—	—	—	185	—	—	—	140	500	—	—	—	—	—	—
CBH	—	—	—	—	—	185	—	—	—	140	500	—	—	—	—	—	—
CXH	—	—	—	—	—	185	—	—	308	140	—	—	—	—	—	—	—
E	—	—	—	—	—	—	—	—	—	140	—	—	—	220	—	630	—
EH	—	—	—	—	—	—	—	—	—	140	—	—	—	—	—	—	—
EC	—	—	—	—	—	—	—	—	—	140	—	—	—	—	—	—	—
W	7	8	15	35	60	—	105	150	—	300	—	—	—	—	—	—	—
HC-730	—	—	7	12	25	—	38	52	—	95	—	—	—	—	—	—	—
HC-740	6	12	15	23	36	—	44	64	—	114	—	—	—	—	—	—	—
HS-810	4	4	4	7.5	14	—	19.5	33	—	50	—	—	—	—	—	—	—
HS-820	4.8	4.8	8	12	29	—	50	60	—	110	—	—	—	—	—	—	—
HB-600	6.3	6.3	15	25	40	—	50	75	—	110	450	260	—	400	—	800	—

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

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)

$$Q_g = 61 C_v \sqrt{\frac{P_2 \Delta P}{g}}$$

For non-critical flow

$$\left\{ \frac{\Delta P}{P_2} < 1.0 \right\}$$

Actuation

Pneumatic and electric actuators are optionally available for mounting on KF Ball Valves. Four tapped actuator mounting holes in the stem boss surface are standard with all Series B, BH ball valves. Consult factory for specific information. For torque requirements of seats made of Teflon®, multiply chart torque by 0.7.

Specification Conformance

KF ball valves are designed, manufactured and tested in accordance with API, ANSI, ASME and B.S. requirements.

The following list contains the most important applicable standards for ball valves. KF valves may be produced in accordance with other international standards on request.

ANSI B 1.20.1 • Pipe threads, general purpose

API Spec. 6A • Wellhead equipment specifications

Spec. Q1 • Quality Program

Spec. 5B EUE • External upset tubing threads

MSS SP-25 • Standard marking system for valves, fittings, flanges and unions.

SP-55 • Quality standard for steel castings

NACE MR0175 • Sulfide stress cracking resistant metallic materials for oil field equipment

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



Operating Torque

Series A, AH, C, CH, CB Maximum Operating Torque

Valve Size (in.)	Series A, AF		Series AH, AFH		Series C, CF		Series CH, CFH		Series CB	
	Maximum Pressure	Torque (In-Lbs.)	Maximum Pressure	Torque (In-Lbs.)	Maximum Pressure	Torque (In-Lbs.)	Maximum Pressure	Torque (In-Lbs.)	Maximum Pressure	Torque (In-Lbs.)
1	1500	600	2000	730	2500	860	3000	1000	2500	860
1 1/2 FP, 2 RP	1500	900	2000	1200	2500	1450	3000	1690	2500	1450
2 FP, 2 1/2 RP, 3 RP	1500	1200	2000	1625	2160	1750	3000	2310	2160	1750
2 1/2 FP	—	—	—	—	1500	1950	—	—	—	—
3 FP, 4 RP	1000	1200	—	—	1500	2700	2000	3660	—	—
4 FP	—	—	—	—	750	3600	2000	6000	—	—

Series B, BH, CBH, CXH Maximum Operating Torque

Valve Size (in.)	Series B		Series BH		Series CBH		Series CXH	
	Maximum Pressure	Torque (In-Lbs.)	Maximum Pressure	Torque (In-Lbs.)	Maximum Pressure	Torque (In-Lbs.)	Maximum Pressure	Torque (In-Lbs.)
1/4 FP	3000	170	5000	210	—	—	—	—
3/8 FP	3000	170	5000	210	—	—	—	—
1/2 FP, 3/4 RP	3000	200	5000	210	—	—	—	—
3/4 FP, 1 RP	3000	200	5000	260	—	—	—	—
1 FP	3000	320	—	—	3000	1000	5000	1420
1 1/2 FP, 2 RP	3000	850	—	—	3000	1670	5000	2425
2 FP	—	—	—	—	3000	2310	—	—

Series E, EH, EC Maximum Operating Torque

Valve Size (in.)	Series E		Series EH		Series EC	
	Maximum Pressure	Torque (In-Lbs.)	Maximum Pressure	Torque (In-Lbs.)	Maximum Pressure	Torque (In-Lbs.)
1 1/2	750	720	1000	785	600	665
2	750	960	—	—	600	850
3	750	2160	—	—	—	—

Series CA Max. Op. Torque

Valve Size (in.)	Series CA	
	Maximum Pressure	Torque (In-Lbs.)
2 1/16	2000	1625
2 9/16	2000	2650

