

# KF Threaded And Grooved-End Floating Ball Valves



**KF Industries**



Superior Fluid Control Products for the Petrochemical and Industrial Markets

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

# 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.

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When quality counts,  
*Specify KF Industries.*



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



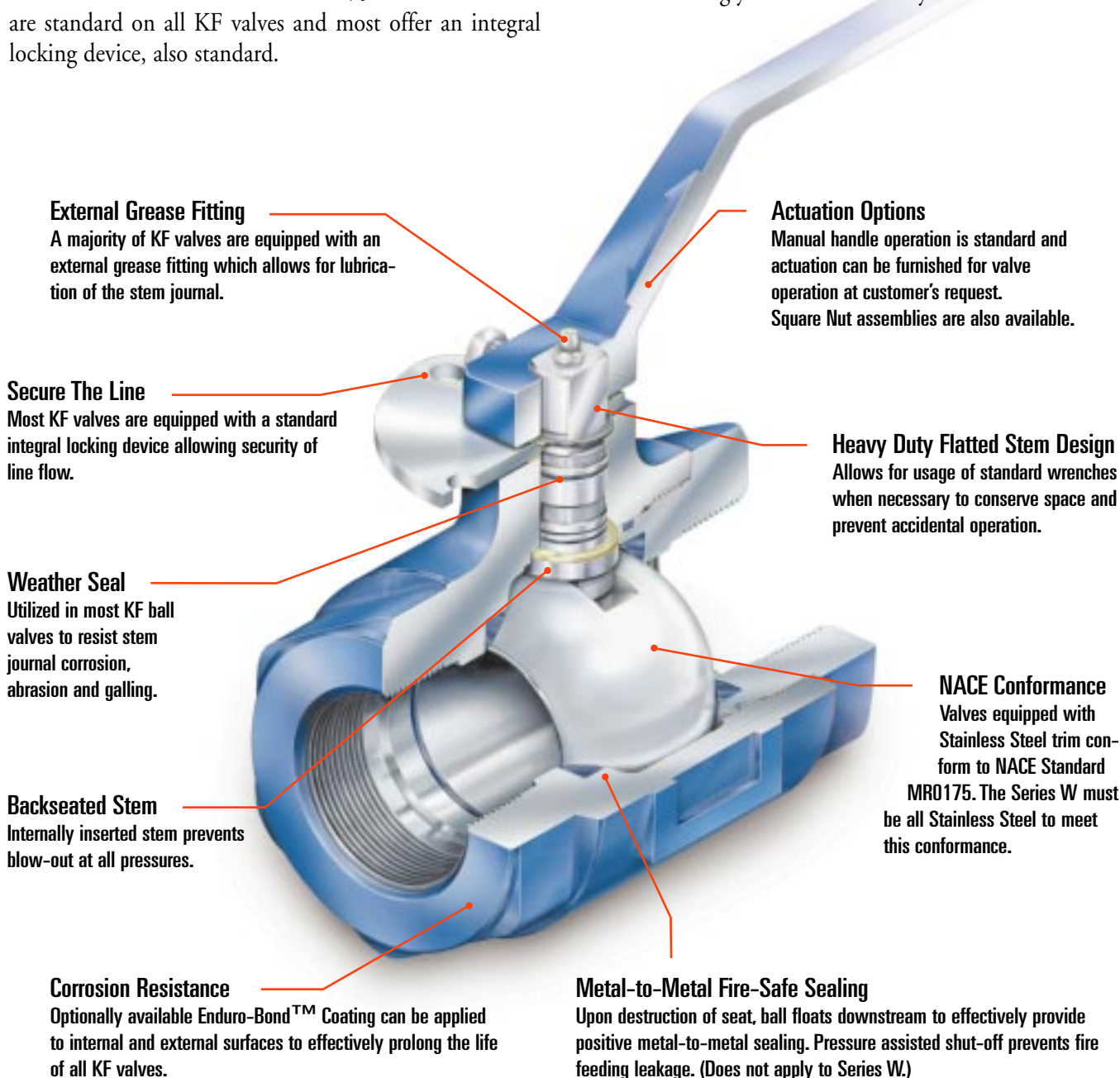
# KF Threaded and Grooved-End Floating Ball Valves

KF Floating ball valves utilize a durable yet economical design constructed of the highest quality materials available. Offered in threaded and grooved-end configurations in sizes 1/4"RP thru 4"FP and pressures from 400 psi thru 5000 psi. KF offers a variety of construction materials including Carbon Steel and Stainless Steel and seat and seal materials of Nylon, Delrin, and Buna N. Your KF representative can assist you with your specific application requirements.

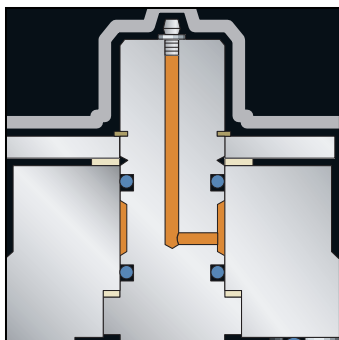
All KF valves when specified with Stainless Steel trim conform to NACE Standard MR0175. Durable handles are standard on all KF valves and most offer an integral locking device, also standard.

Optional locking devices are also available for all others. Square Nut assemblies and actuation are optionally available at the customers request.

All KF Floating ball valves (except Series W) utilize a fire safe design that provides metal-to-metal sealing with pressure assisted shut-off to prevent fire feeding leakage. Many valves are equipped with external grease fittings to lubricate the stem journal increasing the life of the valve. Optionally available Enduro-Bond™ coating may be applied internally and externally to help fight the cost of corrosion saving you time and money.

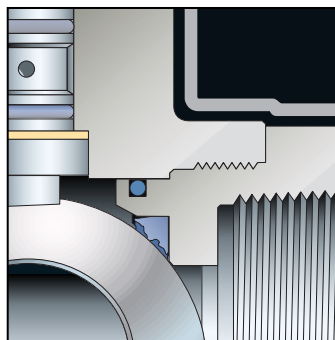


# KF Threaded and Grooved-End Floating Ball Valves General Design Features



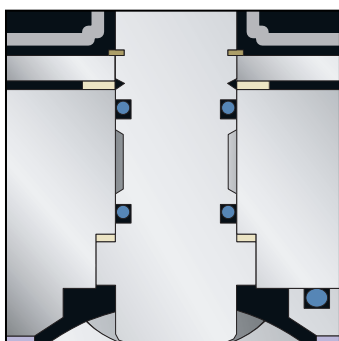
## Stem Journal Lubrication

Valves that utilize an external stem lubrication fitting also incorporate a vented weather seal which allows safe pressure relief in the event of excessive grease gun pressure.



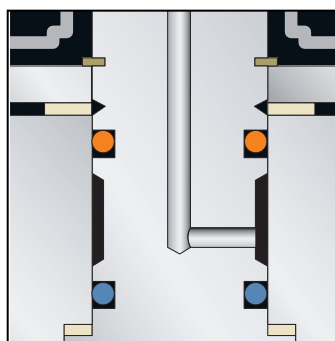
## Fire Safe Design

Upon destruction of the seat (in the event of a fire) the ball floats downstream to provide metal-to-metal contact behind the seat area. Pressure assisted shut-off prevents fire feeding leakage. (Does not apply to Series W.)



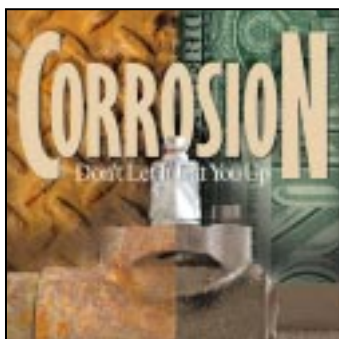
## Blow-Out Proof Stem

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



## Weather Seal

Weather seals are utilized in most KF Ball Valves to effectively eliminate stem journal corrosion, abrasion and galling. The Series W and B/BH feature stem packing instead of the weather seal.



## Fight the Cost of Corrosion

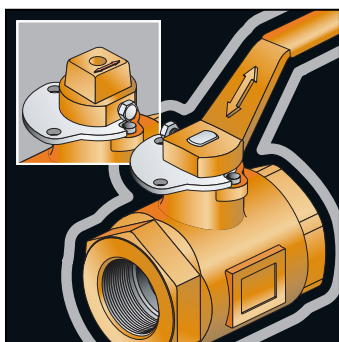
Prolong the life of your valves by reducing corrosion with Enduro-Bond™ Coating. Internal and external protection is now available for many KF Valves. Consult factory for more information.



## Secure Your Investment

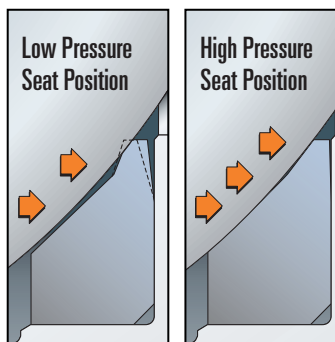
A majority of the Threaded/Grooved Ball Valves come standard with an integral locking ear to prevent unauthorized operation.

\*Padlocks not included.



## Standard Handle, Stem Wrench Area

KF Ball Valves are equipped with durable handles as a standard feature. Valves can also be provided with square nut assemblies. The heavy-duty flatted stem design allows usage of standard wrenches when necessary to conserve space and prevent accidental operation.



## Low Pressure Seat Position

An integral seat lip provides positive low pressure "bubble-tight" sealing of ball and seat. The assembly pre-load insures constant surface load of ball to seat with minimal operating torque.

## High Pressure Seat Position

The KF seat lip deflects slightly at higher pressures to ensure full seat-to-ball contact. The seat's "memory-action" provides bubble-tight sealing at low and high pressures. This "self compensation for swell" feature results in low torque and long life operation.



# KF Series B and BH Ball Valves

<b>Body &amp; Adapter (And External Parts)</b>  <b>End Connections</b>  <b>Trim (Ball &amp; Stem)</b>  <b>Seat &amp; Seat Seals</b>  <b>Actuation</b>	1 • Carbon Steel	
	2 • Stainless Steel	
	3 • Enduro-Bond™ CS Body/Adapter	
	5 • SS Body w/LT Carbon Steel Adapters (LF2)	
	8 • Low Temp Carbon Steel	
	1 • Female x Female	4 • Socket Weld x Socket Weld
	2 • Male x Female	5 • Socket Weld x Female
	3 • Male x Male	6 • Socket Weld x Male
	1 • Carbon Steel	A • CS w/Anti-static
	2 • Stainless Steel	B • SS w/Anti-static
	1 • Delrin/Buna N	6 • HT4 (PEEK™)/EPDM
	2 • Teflon®/None*	7 • HT4 (PEEK™)/Aflas®
	3 • Delrin/Viton®	8 • HT4 (PEEK™)/PC Buna N
	4 • HT4/LT Buna N	9 • Delrin/PC Buna N
	5 • HT4/Viton®	
	1 • Handle	
	3 • Handle w/Locking Device	
	5 • Handle SS (For CS Body Only)	
	6 • Handle SS w/Locking Device (For CS Body Only)	
	7 • Oval Handle	
	A • For Actuation (Topworks data consult factory)	

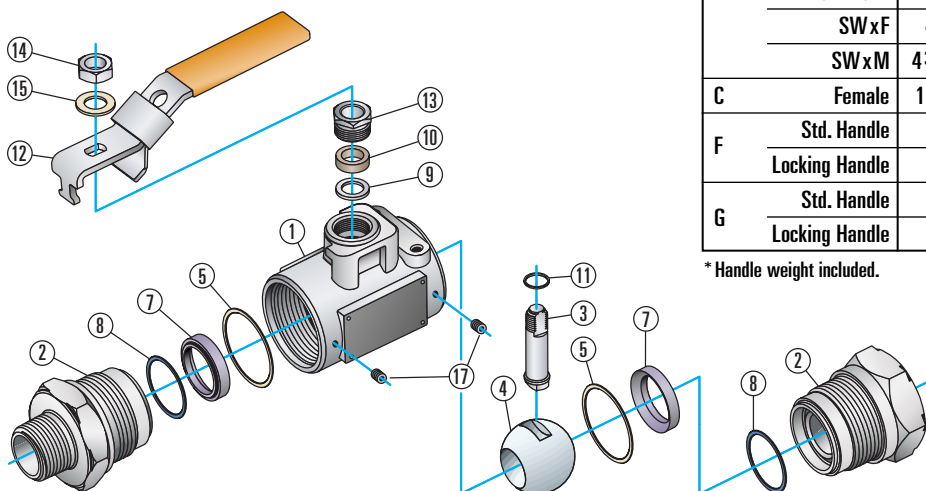
Assembly  
Base No.

XXXX - X X X X X

\*Not available for the Series BH.

## Assembly Base Numbers

Valve Size (in.)	1/4 FP	1/2 FP	3/4 FP	1 RP	1 FP	1 1/2 FP	2 RP
Rating (psi)	3000 (2220 for PTFE Seats)						
Series	Std.	6100-	6102-	6103-	6104-	6105-	6107-
B	Secured Adapt.	8020-	8022-	8023-	8024-	8025-	8027-
Rating (psi)	5000						
Series	Std.	6112-	6114-	6115-	6116-	6117-	—
BH	Secured Adapt.	8030-	8032-	8033-	8034-	8035-	—



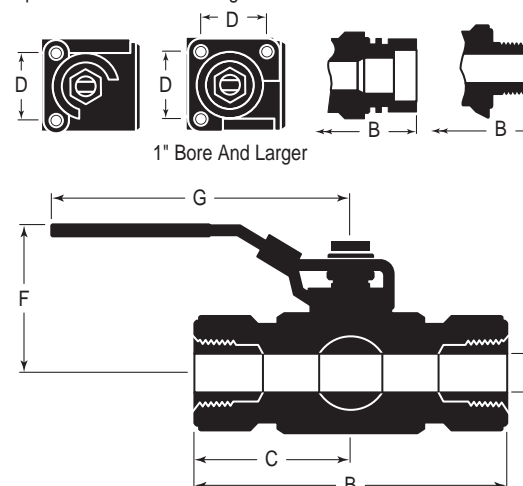
## Parts List and Materials

Index	Description	Material
1	Body	CS, SS or LCC
2	Adapter	AISI 1018 CS or AISI 316 SS or A350 Gr. LF2 Low Temp.
3	Stem	Plated 12L14 Carbon Steel or 316 Stainless Steel
4	Ball***	Plated 12L14 Carbon Steel or 316 Stainless Steel
5	Adapter Gasket	Virgin PTFE
7	Seat	Delrin, or HT4 (PEEK™), PTFE*
8	Seat Seal**	Buna N, Viton®, PC Buna N, EPDM, Aflas®

\*Not available in Series BH ball valves. \*\*Not required when using PTFE seats.

\*\*\*1/2" ball is 316SS standard.

Optional Actuation Mounting Pattern



## Dimensional Data (in.)

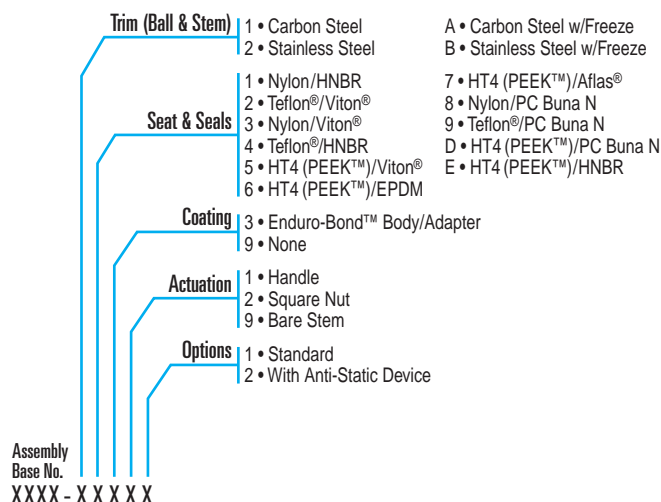
Valve Size (in.)	1/4 FP	1/2 FP	3/4 FP	1 RP	1 FP	1 1/2 FP	2 RP
Dimension	1/4 x 1/4	1/2 x 1/2	3/4 x 3/4	1 x 3/4	1 x 1	1 1/2 x 1 1/2	2 x 1 1/2
Weight lbs.*	2	2	2.5	2.5	5	10.75	10.75
A	1/4	1/2	3/4	1	1 1/2		
B	FxF	3	4	4 1/4	4 1/2	5 1/4	6 1/4
	MxM	3 13/16	4 7/16	5 1/8	—	—	7 3/8
	FxM	3 3/8	4 1/4	4 11/16	—	—	6 13/16
	SWxSW	5	6 1/4	6 1/2	7 1/2	8 1/2	—
	SWxF	4	4 1/2	5 1/4	5 1/2	6 3/8	7 3/8
C	Female	1 1/2	2	2 1/8	2 1/4	2 5/8	3 1/8
	Std. Handle	2 5/8	3 3/4	3 1/4	4	—	—
F	Locking Handle	1 7/8	2 3/8	3 1/16	3 15/16	—	—
	Std. Handle	4 15/16	5 7/8	8 1/4	11	—	—
G	Locking Handle	3 13/16	4 5/16	8	12	—	—

\*Handle weight included.

Index	Description	Material
9	Stem Washer	1/2" Body only-316 Stainless Steel
10	Packing	RTFE (Std.), Grafoil® (Optional)
11	Thrust Bearing	Coated 316 Stainless Steel, 1"FP-2"RP PTFE or HT4 (PEEK™)
12	Handle Assem.	Carbon Steel or 304 Stainless Steel
13	Packing Nut	316 Stainless Steel
14	Handle Nut	Carbon Steel or 316 Stainless Steel
15	Lock washer	Carbon Steel or 316 Stainless Steel
17	Set Screw	Carbon Steel or 316 Stainless Steel

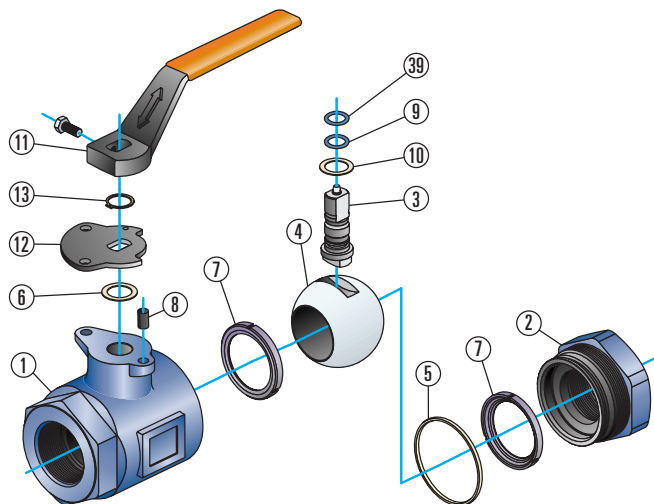


# KF Series A and AH Ball Valves



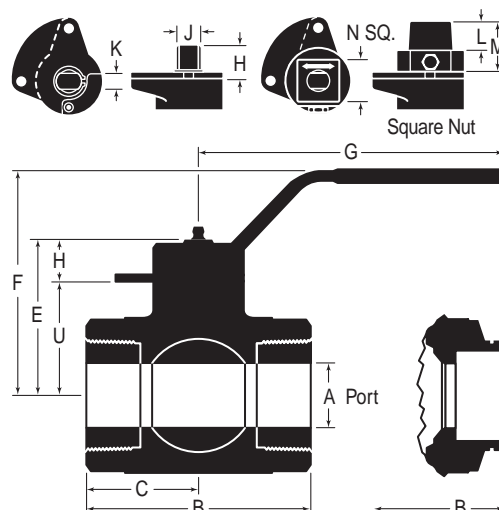
## Assembly Base Numbers

Valve Size (in.)	1FP	1 1/2FP	2RP	2FP	2 1/2RP	3RP	3FP	4RP
Rating (psi)	1500							
Series	Thrd.	2339-	2340-	2341-	2342-	2343-	2344-	2345-
A	Grvd.	2354-	2347-	2348-	2349-	2350-	2351-	2352-
Rating (psi)	2000 (1500 for PTFE Seats)							
Series	Thrd.	2979-	2980-	2981-	2982-	—	2984-	—
AH	Grvd.	2987-	2988-	2989-	—	—	—	—



## Parts List and Materials

Index	Description	Material
1	Body	ASTM A395 Ductile Iron
2	Adapter	ASTM A395 Ductile Iron
3	Stem	Carbon Steel/Zinc Plated or 316 Stainless Steel
4	Ball	1215 CS w/Chrome over Ni. Plating or 316 SS
5	Body Seal	HNBR, Viton®, PC Buna N, EPDM, Aflas®
6	Stem Bearing	Nylon
7	Seat	Nylon, Reinforced Teflon® or HT4 (PEEK™)



## Dimensional Data (in.)

Valve Size (in.)	1FP	1 1/2FP	2RP	2FP	2 1/2RP	3RP	3FP	4RP
Dimension	1x1	1 1/2x1 1/2	2x1 1/2	2x2	2 1/2x2	3x2	3x3	4x3
Weight lbs.*	4.5	13	12.5	18	16.25	22	52	46
A	1	1 1/2	2				3	
B	Thrd.	4	5 1/2	6		7 5/16	8 3/4	
	Grvd.	4 7/8	6	6 1/4		7 5/16	8 3/4	
C	2	2 3/4	3			4 1/8	4 3/8	
E	2 1/2	3 21/32	4 3/32				5 11/32	
F	3 1/16	5 15/32	6 1/16				6 25/32	
G	6 1/4	8 1/2					15	
H	25/32	1 1/32					1 3/8	
J	.623/.621	.873/.871					1.248/1.245	
K	.372/.370	.560/.556					.621/.618	
L	—	1					1 1/8	
M	—	1 3/4					2 3/16	
N	—	17/16					1 13/16	
U	1 23/32	2 5/8	3 1/16				4	

\*Handle weight included.

Square Nut not illustrated, see Dimensional Data information above.

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

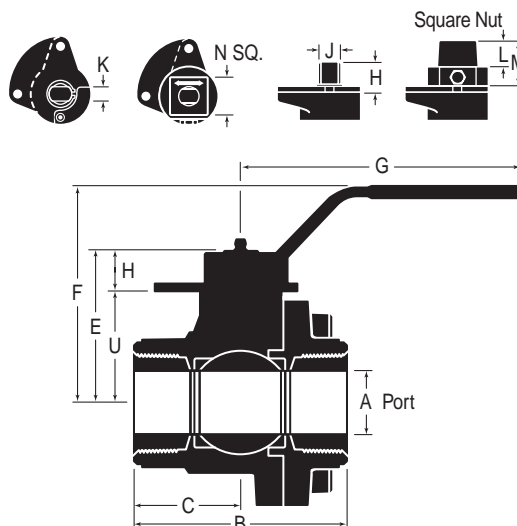


# KF Series AF and AFH Ball Valves

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

Assembly Base No.

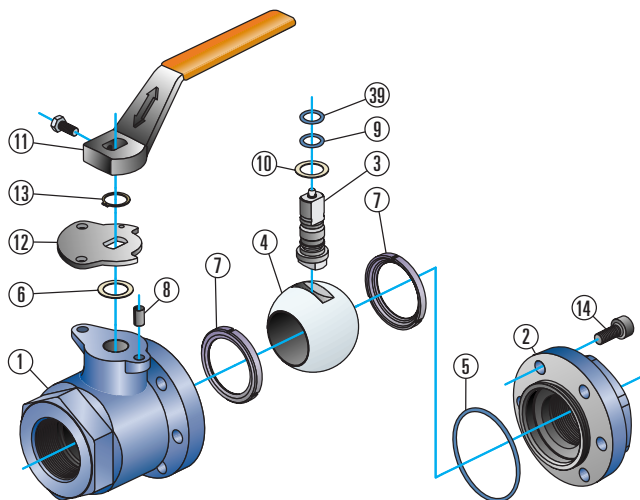
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## Assembly Base Numbers

Valve Size (in.)	2RP	2FP	3RP	3FP	4RP
Rating (psi)*	1500			1000	
Series AF	6377-	6378-	6379-	6380	6381
Rating (psi)*	2000			—	—
Series AFH	6383-	6384-	6385	—	—

\*PTFE seats rated to 1500 psi for Series AFH.



## Dimensional Data (in.)

Valve Size (in.)	2 RP	2 FP	3 RP	3 FP	4 RP
Dimension	2 x 1 1/2	2 x 2	3 x 2	3 x 3	4 x 3
Weight lbs.*	12.5	21	25	60	53
A	1 1/2	2		3	
B	5 3/32	6	7 5/16	8 3/4	
C	2 35/64	3	4 1/8	4 3/8	
E	3 21/32	4 3/32		5 11/32	
F	5 15/32	6 1/16		6 25/32	
G	8 1/2			15	
H	1 1/32			1 3/8	
J	.873/.871			1.298/1.245	
K	.560/.556			.621/.618	
L	1			1 1/8	
M	1 3/4			2 3/16	
N	1 7/16			1 13/16	
U	2 5/8	3 1/16		4	

\*Handle weight included.

## Parts List and Materials

Index	Description	Material
1	Body	ASTM 395 Ductile Iron
2	Adapter	ASTM 395 Ductile Iron
3	Stem	Carbon Steel/Zinc Plated or 316 Stainless Steel
4	Ball	1215 CS w/Chrome over Ni. Plating or 316 SS
5	Body Seal	HNBR, Viton®, PC Buna N, EPDM, Aflas®
6	Stem Bearing	Nylon
7	Seat	Nylon, Reinforced Teflon® or HT4 (PEEK™)
8	Stop	Steel

Index	Description	Material
9	Stem Seal	HNBR, Viton®, PC Buna N, EPDM, Aflas®
10	Thrust Bearing	Teflon® (HT4 when using HT4 Seats)
11	Handle/Sq. Nut	A47 Malleable Iron
12	Stop Plate	Steel, Plated
13	Retainer	Spring Steel
14	Cap Screw	Carbon Steel B7 (NACE III), B7M (NACE II)
39	Weather Seal	Buna N Only

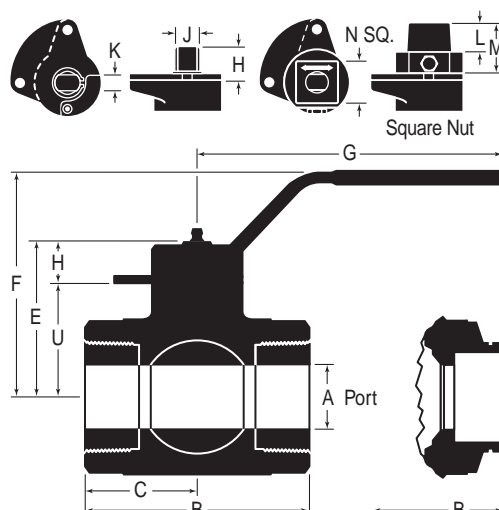


# KF Series C, CH and CXH Ball Valves

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 • Enduro-Bond™ Body/Adapter	9 • Teflon®/PC Buna N*
	9 • None	D • HT4 (PEEK™)/PC Buna N
Actuation	1 • Handle	E • HT4 (PEEK™)/HNBR
	2 • Square Nut	
Options	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



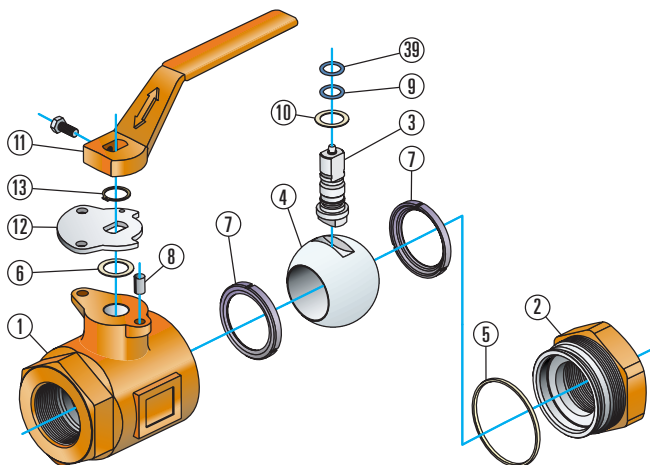
## Assembly Base Numbers

Valve Size (in.)	1 FP	1 1/2 FP	2 RP	2 FP	2 1/2 RP	2 1/2 FP	3 RP	3 FP	4 RP	4 FP
Nylon										
Rating (psi)										
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)										
Series CH	3001-	3002-	3003-	3004-	3005-	—	3006-	3007-	3008-	3363-
Rating (psi)										
Series CXH	5050-	5051-	5052-							

## Dimensional Data (in.)

Valve Size (in.)	1 FP	1 1/2 FP	2 RP	2 FP	2 1/2 RP	2 1/2 FP	3 RP	3 FP	4 RP	4 FP
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		18
CH	6 1/4			8 1/2			15	8 1/2		48
H	25/32			11/32			1 3/8	1 1/32		1 1/2
J	.623/.621			.873/.871			1.248/1.245	.873/.871		1.248/1.245
K	.372/.370			.560/.556			.621/.618	.560/.556		.621/.618
L	—			1			1 1/8	1		1 1/8
M	—			1 3/4			2 3/16	1 3/4		2 3/16
N	—			1 7/16			1 13/16	1 7/16		1 13/16
U	123/32			2 5/8			3 1/16	3 1/16		4

\* Handle weight included. \*\* Series C only.



## 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™)

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

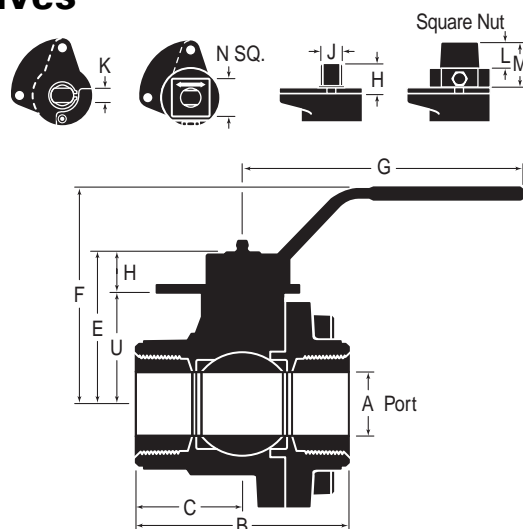


# KF Series CF, CFH and CFXH Ball Valves

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

Assembly Base No.  
XXXX - X X X X X

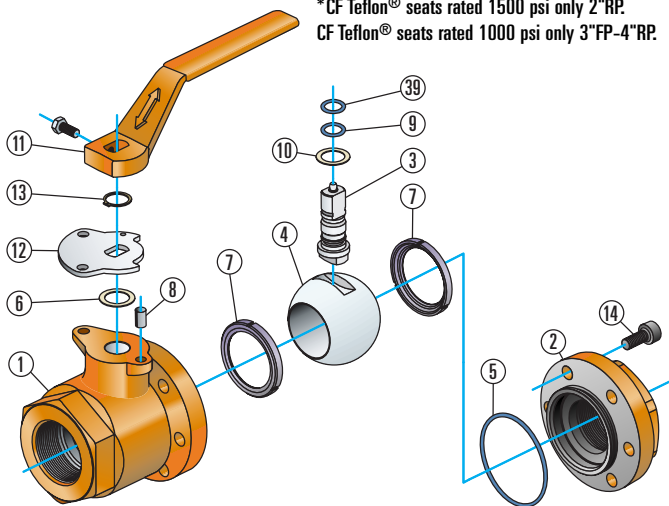
\*Teflon® Seats not available in Series CF or CFXH



## Assembly Base Numbers

Valve Size (in.)	2 RP	2 FP	3 RP	3 FP	4 RP
Rating (psi)*	2500	2160		1500	
Series CF	6389-	6390-	6391-	6392-	6393-
Rating (psi)	3000				
Series CFH	6395-	6396-	6397-	6398-	6399-
Rating (psi)	5000				
Series CFXH	6375-				

\* CF Teflon® seats rated 1500 psi only 2"RP.  
CF Teflon® seats rated 1000 psi only 3"FP-4"RP.



## Dimensional Data (in.)

Valve Size (in.)	2 RP	2 FP	3 RP	3 FP	4 RP
Dimension	2 x 1 1/2	2 x 2	3 x 2	3 x 3	4 x 3
Weight lbs.*	12.5	21	25	60	53
A	1 1/2	2		3	
B	CF/CFH 5 3/32 CFXH 5 1/2	5 3/4	7 1/4	8 1/8	
C	CF/CFH 2 35/64 CFXH 2 3/4	2 7/8	3 5/8	4 1/16	
E	3 21/32	4 3/32		5 11/32	
F	5 15/32	5 29/32		6 25/32	
G		8 1/2		15	18
H		1 1/32		1 3/8	
J		.873/.871		1.248/1.245	
K		.560/.556		.621/.618	
L		1		1 1/8	
M		1 3/4		2 3/16	
N		1 7/16		1 13/16	
U	2 5/8	3 1/16		4	

\* Handle weight included.

## Parts List and Materials

Index	Description	Material
1	Body	A216 WCB
2	Adapter	A216 WCB
3	Stem	Carbon Steel/Zinc Plated or 316 Stainless Steel
4	Ball	1215 CS w/Chrome over Ni. Plating or 316 SS
5	Body Seal	HNBR, Viton®, PC Buna N, EPDM, Aflas®
6	Stem Bearing	Nylon
7	Seat	Nylon (Delrin in Ser. CFH & CFXH), Reinforced Teflon® or HT4 (PEEK™)
8	Stop	Steel

Index	Description	Material
9	Stem Seal	HNBR, Viton®, PC Buna N, EPDM, Aflas®
10	Thrust Bearing	Teflon® (HT4 when using HT4 Seats)
11	Handle/Sq. Nut	A47 Malleable Iron
12	Stop Plate	Steel, Plated
13	Retainer	Spring Steel
14	Cap Screw	Carbon Steel B7 (NACE III), B7M (NACE II)
39	Weather Seal	Buna N Only



# KF Series CA and CAH Ball Valves

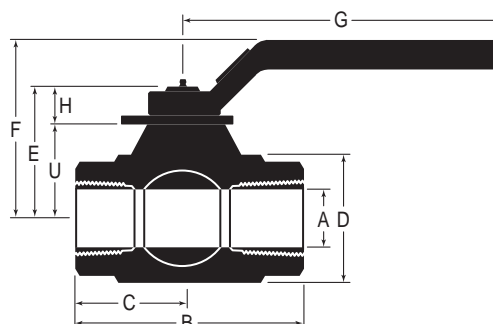
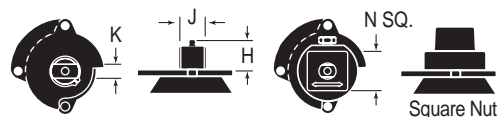
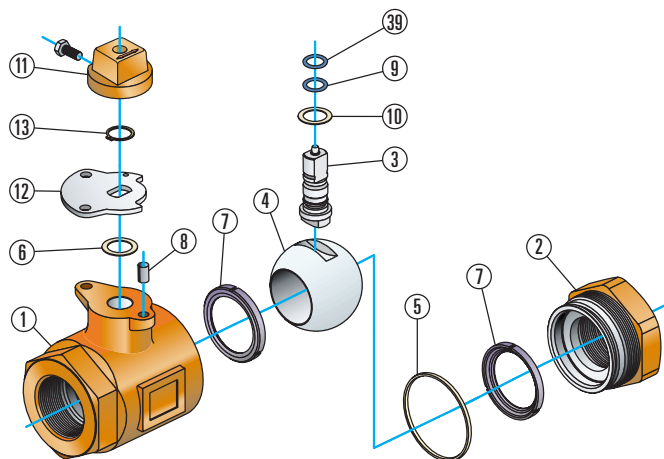
Trim (Ball & Stem)	1 • Carbon Steel 2 • Stainless Steel	A • Carbon Steel w/Freeze B • Stainless Steel w/Freeze
Seat & Seals	1 • Nylon / HNBR 2 • Teflon® / Viton®* 3 • Nylon / Viton® 4 • Teflon® / HNBR* 5 • HT4 (PEEK™) / Viton® 6 • HT4 (PEEK™) / EPDM	7 • HT4 (PEEK™) / Aflas® 8 • Nylon / PC Buna N 9 •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

## Assembly Base Numbers

Valve Size (in.)	2 1/16 FP - 2 3/8 EUE	2 9/16 FP - 2 7/8 EUE
Rating (psi)	2000 (1000 for PTFE Seats)	
Series CA	1590-	1591-
Rating (psi)	3000	
Series CAH	2005-	2006-



## Dimensional Data (in.)

Valve Size (in.)	2 3/8 EUE X 2 1/16 Bore	2 7/8 EUE X 2 9/16 Bore
Dimension		
Weights (lbs.)*	28	36
A	2 1/16	2 9/16
B	8 1/2	9 3/4
C	4 1/4	4 3/4
D	4 5/8	5 1/8
E	4 3/4	5 1/32
F	6 3/16	6 15/32
G	15	
H	1 3/8	
J	1.248 / 1.246	
K	.622 / .618	
N	1 13/16	
U	3 13/32	3 21/32

\* Handle weight not included

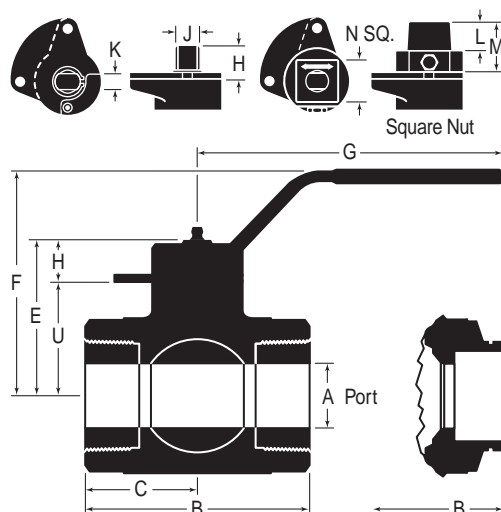
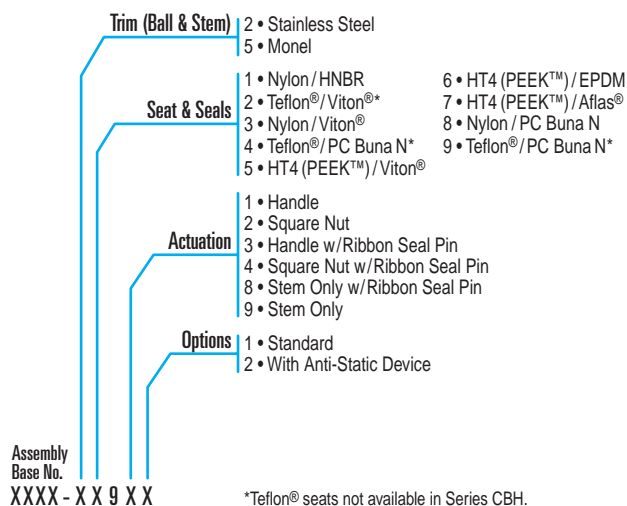
## Parts List and Materials

Index	Description	Material
1	Body	ASTM A487 Gr. 4C Carbon Steel
2	Adapter	ASTM A487 Gr. 4C Carbon Steel
3	Stem	Carbon Steel/Zinc Plated or 316 Stainless Steel
4	Ball	1215 CS w/Chrome over Nickel Plating or 316 SS
5	Body Seal	HNBR, Viton®, PC Buna N, EPDM, Aflas®
6	Stem Bearing	Nylon
7	Seat	Nylon (Delrin in CAH), Reinforced Teflon® or HT4 (PEEK™)

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



# KF Series CB and CBH Ball Valves



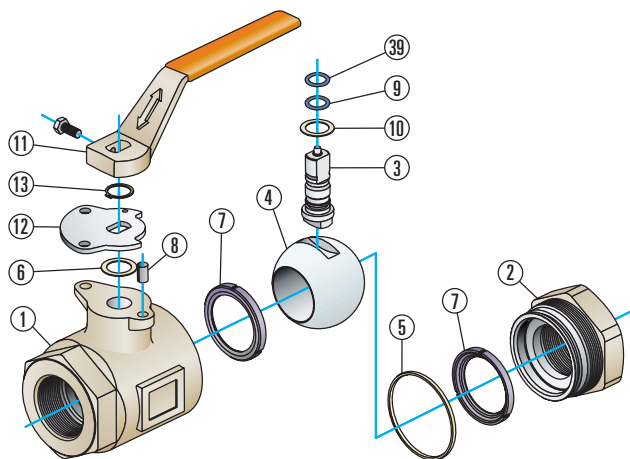
## Assembly Base Numbers

Valve Size (in.)	1 FP	2 RP	2 FP
Rating (psi)			
Nylon	2500		2160
HT4			
PTFE	1500		1500
Series	Thrd.	3351-	3353-
CB	Grvd.	3371-	3373-
Rating (psi)		3000	
Series CBH		6070-	6072-
			6073-

## Dimensional Data (in.)

Valve Size (in.)	1 FP	2 RP	2 FP
Dimension	1 x 1	2 x 1 1/2	2 x 2
Weight lbs.*	4.5	12.5	18
A	1	1 1/2	2
B	Thrd.	4	5 1/2
	Grvd.	4 7/8	6
C	2	2 3/4	3
E	2 1/2	3 21/32	4 3/32
F	3 1/8	5 15/32	5 29/32
G	6 1/4	8 1/2	
H	25/32	11/32	
J	.623 / .621	.873 / .871	
K	.372 / .370	.560 / .556	
L	—	1	
M	—	1 3/4	
N	—	1 7/16	
U	1 23/32	2 5/8	3 1/16

\*Handle weight included.



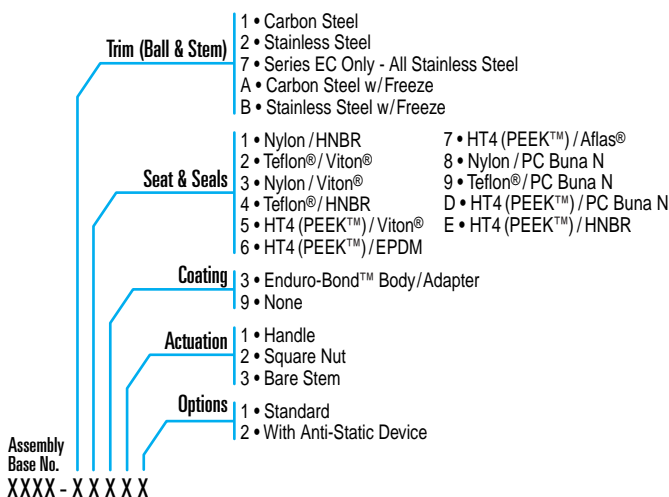
## Parts List and Materials

Index	Description	Material
1	Body	Ni-Aluminum Bronze, B-148-955
2	Adapter	Ni-Aluminum Bronze, B-148-955
3	Stem	316 Stainless Steel or Monel
4	Ball	316 Stainless Steel or Monel Alloy 400
5	Body Seal	HNBR, Viton®, EPDM, Aflas®, or PC Buna N
6	Stem Bearing	Nylon
7	Seat	Nylon (Delrin in Ser. CBH), RTFE (Ser. CB only), or HT4 (PEEK™)

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

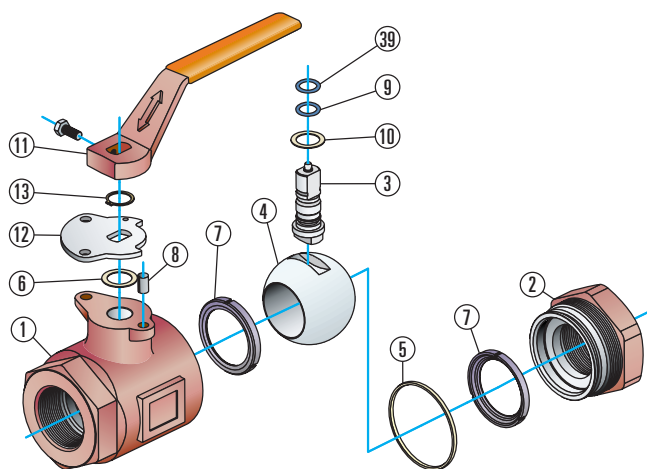


# KF Series E, EH, and EC Ball Valves



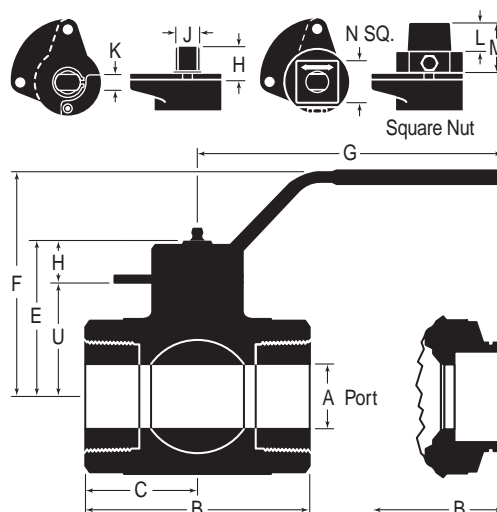
## Assembly Base Numbers

Valve Size (in.)		2 x 1 1/2	3 x 2	3 x 3	4 x 3
Rating (psi)		750 CWP			
Series	Thrd.	3140-	3141-	3081-	3142-
E	Grvd.	3150-	3151-	3084-	3152-
Rating (psi)		1000 CWP			
Ser. EH	Thrd.	6514-	—	—	—
Rating (psi)		600 CWP			
Ser. EC	Grvd.	3413-	3414-	—	—



## Parts List and Materials

Index	Description	Material
1	Body	E&EH-ASTM 395 Ductile Iron, EC-A351 Gr. CF8M
2	Adapter	E&EH-ASTM 395 Ductile Iron, EC-A351 Gr. CF8M
3	Stem	Carbon Steel / Zinc Plated or 316 Stainless Steel
4	Ball	1215 CS w/Chrome over Nickel Plating or 316 SS
5	Body Seal	HNBR, Viton®, PC Buna N, EPDM, Aflas®
6	Stem Bearing	Nylon
7	Seat	Nylon, Reinforced Teflon® or HT4 (PEEK™)
8	Stop	Steel



## Dimensional Data (in.)

Valve Size (in.)	2 RP	3 RP	3 FP / 4 RP	
Dimension	2 x 1 1/2	3 x 2	4 x 3	
Weight lbs.*	12.5	22	52/46	
A	1 1/2	2	3	
B	Thrd.	5 1/4	7 5/16	8 3/4
	Grvd.	5 1/8	7 5/16	8 3/4
	Ser. EC	5 1/16	7 3/8	—
C	Thrd.	2 3/8	3 5/16	4 3/8
	Grvd.	2 11/16	3 5/16	4 3/8
E	3 21/32	4 3/32	5 11/32	
F	5 15/32	5 29/32	6 25/32	
G	8 1/2		5	
H	11/32		1 3/8	
J	.873/.871		1.248/1.246	
K	.560/.556		.622/.618	
L	1		1 1/8	
M	1 3/4		2 3/16	
N	1 7/16		1 13/16	
U	2 5/8	3 1/16	4	

\*Handle weight included.

Index	Description	Material
9	Stem Seal	HNBR, Viton®, PC Buna N, EPDM, Aflas®
10	Thrust Bearing	Teflon® (HT4 when using Hi-Temp Seats & Seals)
11	Handle	A47 Malleable Iron
12	Stop Plate	Steel, Plated
13	Retainer	Spring Steel
20	Ribbon Seal Pin	Copper Pin/Steel Chain
39	Weather Seal	Buna N Only



## KF Series W Ball Valves

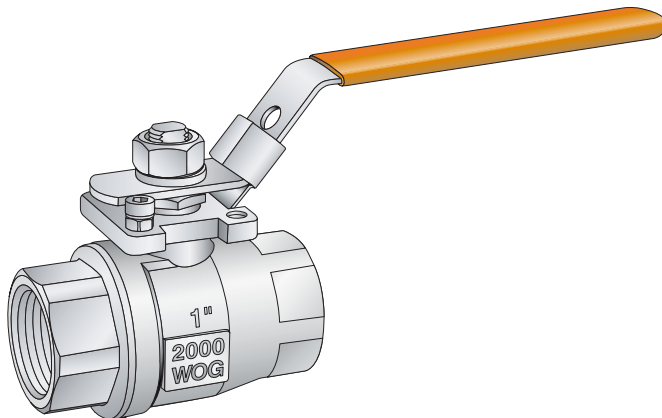
Size	0 • 1/4"	4 • 1"	8 • 2 1/2"
	1 • 3/8"	5 • 1 1/4"	9 • 3"
	2 • 1/2"	6 • 1 1/2"	10 • 4"
	3 • 3/4"	7 • 2"	
Body/Adapter Packing Nut	1 • Carbon Steel w/ Zinc plating		
	2 • Stainless Steel (S8000)		
	B • Carbon Steel w/ Black Oxide		
Trim (Ball & Stem)	1 • Stainless Steel		
Actuation	1 • Handle w/ Locking Device		
	3 • Oval Handle		

Assembly Base No. 0500X - X X X

All Stainless Steel Series W valves conform to NACE Specification MR0175.

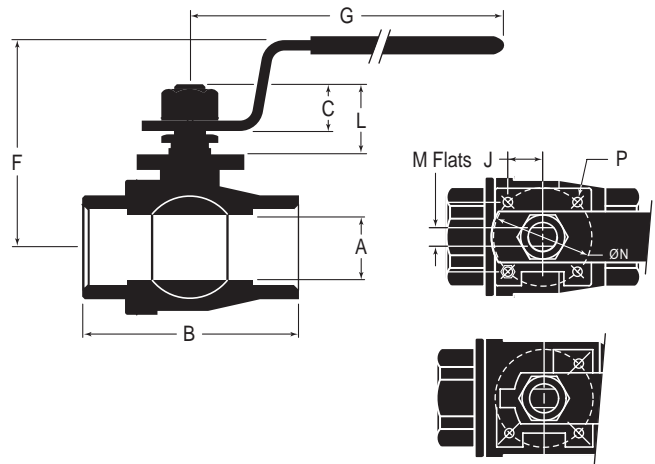
### Assembly Base Numbers

Valve Size (in.)	1/4	3/8	1/2	3/4	1	1 1/4
Rating (psi)	2000 CWP					
Series W	5000-	5001-	5002-	5003-	5004-	5005-
Valve Size (in.)	1 1/2	2	2 1/2	3	4	
Rating (psi)	2000 CWP		1500			
Series W	5006-	5007-	5007-	5009-	5010	



### Parts List and Materials

Index	Description	Material
1	Body	ASTM A216 Gr. WCB or A351 CF8M
2	Adapter	C12L14 Carbon Steel or 316 Stainless Steel
3	Stem	316 Stainless Steel
4	Ball	316 Stainless Steel
5	Body Seal	Teflon®
7	Seat	Uniseal™



Sizes 2 1/2" thru 4"

### Dimensional Data (in.)

Valve Sz. (in.)	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4
Dim.											
Wt. lbs.*	.55	.55	.66	1.13	2.00	3.00	4.25	6.88			
A	.43	.49	.59	.79	1.00	1.26	1.50	1.97	2.56	3.15	3.93
B	2.32	2.44	2.87	3.35	3.82	4.53	5.28	6.61	7.52	9.09	
C	.37	.47	.53		.71				1.14	1.22	
F	2.36	2.44	2.68	3.15	3.39	3.74	5.20	5.63	6.69		
G	3.94		4.76	6.02	7.09	10.43	11.02				
J	.31		.39	.47	.55	.75	.98				
L	.55	.67	.79	.98	1.57	1.79					
M	.20	.24	.31	.47	.63						
N	1.42		1.65	1.97	2.76	4.02					
P	M5				M6	M8	M10				

\* Handle weight included.

Index	Description	Material
8	Thrust Washer	PTFE
9	Packing	Glass Reinforced Teflon®
11	Handle	304 Stainless Steel
13	Handle Nut	304 Stainless Steel
20	Packing Nut	316 Stainless Steel



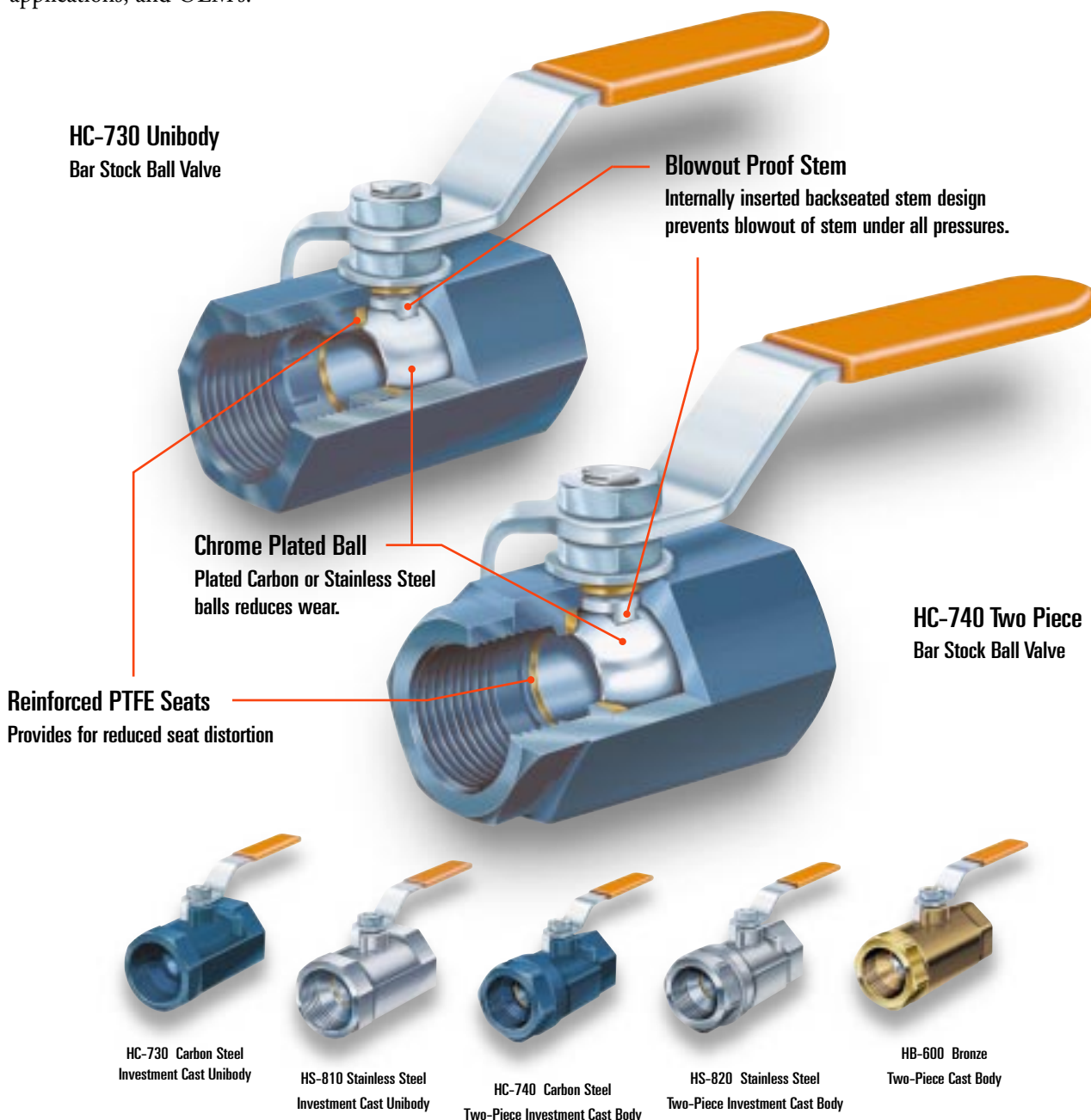
# KF Unibody and Two-Piece Ball Valves

KF offers a dependable unibody ball valve available in sizes from 1/4" thru 2" as well as a two-piece design in sizes from 1/4" thru 4". Both valves are offered in Carbon Steel, Stainless Steel, and Bronze, in various pressures from 400 to 2000 psi WOG.

KF floating ball valves are specifically designed for Hydraulic Hook-ups, Off-shore applications, Well Heads, Production Lines, Petroleum and Chemical Plant applications, and OEM's.

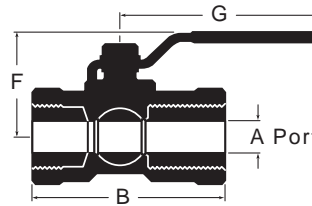
All KF valves come standard with a durable handle, and many designs offer an optional locking device for positive line security. A seal welded adapter option is available for the two-piece Stainless Steel Series HS-820.

KF's tradition of quality continues to compliment KF Industries extensive valve offering. Contact your representative for more information regarding KF valves.



## KF Series HC-730 • Carbon Steel Unibody

Assembly Base No. U500X - X X X	Size	2 • 1/2"	4 • 1"	7 • 2"
		3 • 3/4"	6 • 1 1/2"	
	Series	Q • HC-730		
	Trim (Ball & Stem)	T • HXC-730 (1 1/2" - 2")		
	Actuation	1 • Carbon Steel	2 • Stainless Steel	
		1 • Handle	2 • Locking Handle	



### Assembly Base Numbers

Valve Size (in.)	1/2	3/4	1	1 1/2	2
Rating (psi)	2000 CWP			1500 CWP*	
Part Number	U5002-XXX	U5003-XXX	U5004-XXX	U5006-XXX	U5007-XXX

\*HC 730 = 1500 CWP, HXC 730 = 2000 CWP

### Dimensional data

Valve Size (in.)	1/2	3/4	1	1 1/2	2
Dimension					
Weight lbs.	.5	.8	1.4	3.1	5.0
A	.40	.54	.68	1.00	1.25
B	2.19	2.62	3.12	4.00	4.50
F	1.63	1.73	2.08	2.58	2.98
G	3.78		5.10	6.10	

### Parts List and Materials

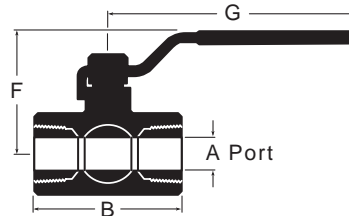
Index	Description	Material
1	Body*	CS 12L14 (1 1/2"-1" HC-730 & 1 1/2"-2" HXC-730) or A216 WCB (1 1/2"-2" HC-730)
2	Retainer	Carbon Steel 12L14
3	Ball	Carbon Steel 12L14 Chrome Plated or 316 Stainless Steel
4	Stem	Carbon Steel 12L14 or 316 Stainless Steel
5	Thrust Washer	Reinforced PTFE

\* 1 1/2"-2" HXC 730 = 2000 CWP with CS 12L14 body

Index	Description	Material
6	Stem Packing	Reinforced PTFE
7	Packing Nut	304 Stainless Steel
8	Spring Washer	Carbon Steel, Zinc Plated
9	Nuts	Carbon Steel, Zinc Plated
10	Handle	Carbon Steel, Zinc Plated and Vinyl dipped
11	Seats	Reinforced PTFE

## KF Series HC-740 • Carbon Steel Two-Piece

Assembly Base No. 0500X - X X X	Size	0 • 1/4"	2 • 1/2"	4 • 1"	6 • 1 1/2"
		1 • 3/8"	3 • 3/4"	5 • 1 1/4"	7 • 2"
	Series	V • HC-740 (1 1/4"-2")			
	Trim (Ball & Stem)	P • HXC-740			
	Actuation	1 • Carbon Steel Plated	2 • 316 Stainless Steel		
		1 • Handle	2 • Locking Handle		



### Assembly Base Numbers

Valve Size (in.)	1/4	3/8	1/2	3/4
Rating (psi)	2000 CWP			
Part Number	5000-PXX	5001-PXX	5002-PXX	5003-PXX
Valve Size (in.)	1	1 1/4	1 1/2	2
Rating (psi)	2000 CWP		1500 CWP	
Part Number	5004-P1X	5005-XXX	5006-XXX	5007-XXX

### Parts List and Materials

Index	Description	Material
1	Body*	Steel C12L14 (1/4"-1") or A216 WCB (1 1/4"-2"), Zinc Phosphate coating
2	Stem	Steel C12L14, Nickel plate or 316 Stainless Steel
3	Thrust Washer	Reinforced PTFE
4	Stem Packing	Reinforced PTFE
5	Packing Nut	304 Stainless Steel
6	Spring Washer	Steel, Zinc plate

\* 1 1/4"-2" HXC 740 = 2000 CWP with CS C12L14 body

### Dimensional Data (in.)

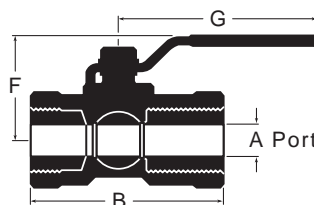
Valve Size (in.)	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Dimension								
Weight lbs.	.6	.6	.8	1.4	2.4	2.7	4.5	6.1
A	.40	.54	.68	.88	1.00	1.25	1.50	
B	2.00	2.37	2.90	3.41	3.94	4.65	4.98	
F	1.63	1.73	2.08	2.30	2.76	2.98	3.54	
G	3.78		5.10	6.10		8.60		

Index	Description	Material
7	Nut	Steel, Zinc plate
8	Handle	Steel, Zinc plate
8	Handle Cover	Vinyl
9	Ball Seat	Reinforced PTFE
10	Ball	Steel C12L14, Chrome plate or 316 Stainless Steel
11	End Cap Seal	Reinforced PTFE
12	End Cap	Steel C12L14, Zinc Phosphate coating



## KF Series HC-710 and HS-810 • Carbon & Stainless Steel Unibody

Assembly Base No. U500X - X X X	Size	0 • 1/4"	2 • 1/2"	4 • 1"	6 • 1 1/2"
		1 • 3/8"	3 • 3/4"	5 • 1 1/4"	7 • 2"
	Series	C • HC-710 (CS) D • HS-810 (SS)			
	Trim (Ball & Stem)	2 • 316 Stainless Steel			
	Actuation	1 • Locking Handle    3 • Oval Locking Handle			



### Assembly Base Numbers

Valve Size (in.)	1/4	3/8	1/2	3/4
Rating (psi)	2000 CWP			
Part Number	U5000-XXX	U5001-XXX	U5002-XXX	U5003-XXX
Valve Size (in.)	1	1 1/4	1 1/2	2
Part Number	U5004-XXX	U5005-XXX	U5006-XXX	U5007-XXX

### Dimensional Data (in.)

Valve Size (in.)	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Dimension								
Weight lbs.	.6	.6	.6	1.0	1.8	3.0	4.0	6.5
A	3/8			1/2	5/8	13/16	1	1 1/4
B	2.72			3.12	3.68	4.06	4.42	5.01
F	1.58			1.68	1.96	2.31	2.42	2.90
G	3.73				3.76	4.50	5.19	

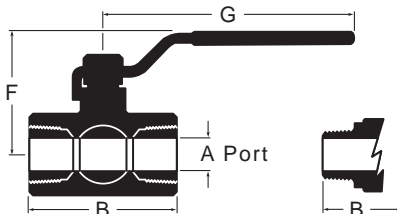
### Parts List and Materials

Index	Description	Material
1	Body	A216 WCB/A105
2	Retainer	Carbon Steel 12L14 or 316 Stainless Steel
3	Seat	Reinforced PTFE
4	Ball	Carbon Steel 12L14, hard Chrome Plated or 316 SS
5	Stem	Carbon Steel 12L14, hard Chrome Plated or 316 SS

Index	Description	Material
6	Thrust Washer	PTFE
7	Stem Packing	Graphite
8	Packing Nut	Carbon Steel 12L14 or 316 Stainless Steel
9	Handle	Carbon Steel, Zinc Plated and Vinyl dipped
10	Handle Nut	Carbon Steel, Zinc Plated

## KF Series HS-820 • Stainless Steel Seal Welded Two-Piece

Assembly Base No. 0500X - X 2 2	Size	0 • 1/4"	2 • 1/2"	4 • 1"	6 • 1 1/2"
		1 • 3/8"	3 • 3/4"	5 • 1 1/4"	7 • 2"
	Series	R • HS-820 MxF (1/4"-1")    S • HS-820 FxF			
	Trim (Ball & Stem)	2 • 316 Stainless Steel			
	Actuation	2 • Locking Handle			



### Assembly Base Numbers

Valve Size (in.)	1/4	3/8	1/2	3/4
Rating (psi)	2000 CWP			
Part Number	5000-X22	5001-X22	5002-X22	5003-X22
Valve Size (in.)	1	1 1/4	1 1/2	2
Part Number	5004-X22	5005-S22	5006-S22	5007-S22

### Dimensional Data (in.)

Valve Size (in.)	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Dimension								
Weight lbs.	0.57	0.53	0.73	1.41	1.98	2.77	4.00	5.03
A	.36	.38	.50	.69	.87	1.0	1.25	1.50
B	FxF		2.07	2.34	2.80	3.23	3.57	4.63
	MxF		2.76	3.15	3.74	4.25	—	—
F	1.76		1.92	2.40	2.56	2.74	2.98	3.17
G	4.33			5.83		7.76		

### Parts List and Materials

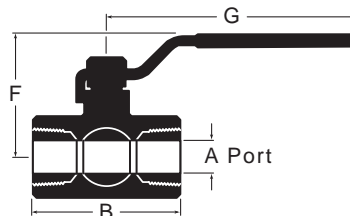
Index	Description	Material
1	Body	A351, CF8M, Seal welded
2	Ball	A351, CF8M
3	Stem	316 Stainless Steel
4	Body Cap	A351, CF8M Stainless Steel
5	Seat	Reinforced PTFE
6	Stem Seal	Reinforced PTFE

Index	Description	Material
7	Stem Packing	PTFE
8	Packing Nut	316 Stainless Steel
9	Handle (Locking)	304 Stainless Steel, Vinyl dipped
10	Spring Washer	304 Stainless Steel
11	Lock Nut	304 Stainless Steel



## KF Series HB-600 • Bronze Two-Piece

Assembly Base No. 0500X - X X X	Size	0 • 1/4"	3 • 3/4"	6 • 1 1/2"	9 • 3"
		1 • 3/8"	4 • 1"	7 • 2"	10 • 4"
		2 • 1/2"	5 • 1 1/4"	8 • 2 1/2"	
	Series	3 • HB600, replaces WBZ F • HB600F, Full Port 2" only M • HB600M, Reduced Port, 2" lightweight design			
	Trim (Ball & Stem)	2 • Stainless Steel 3 • Hard Chrome plated Brass Ball, Unplated Brass Stem			
	Actuation	1 • Handle 2 • Locking Handle			



### Assembly Base Numbers

Valve Size (in.)	1/4	3/8	1/2	3/4	1	1 1/4	
Rating (psi)	600 CWP						
Series HB-600	5000-3XX	5001-3XX	5002-3XX	5003-3XX	5004-3XX	5005-3XX	
Valve Size (in.)	1 1/2	2	2M*	2F	2 1/2	3	4
Rating (psi)	600 CWP			400 CWP			
Series HB-600	5006-3XX	5007-3XX	5007-MXX	5007-FXX	5008-3XX	5009-3XX	5010-3XX

\*2" Lightweight pattern design

### Parts List and Materials

Index	Description	Material
1	Body	Brass (B584 C84400)
2	Ball	Hard Chrome Plated Brass or 316 Stainless Steel
3	Seats	Durafil (1/4"-3"), Virgin PTFE (4")
4	Adapter	Brass
5	Body Seal	PTFE (1 1/4"-4" only)
6	Stem	Brass or 316 Stainless Steel

### Dimensional Data (in.)

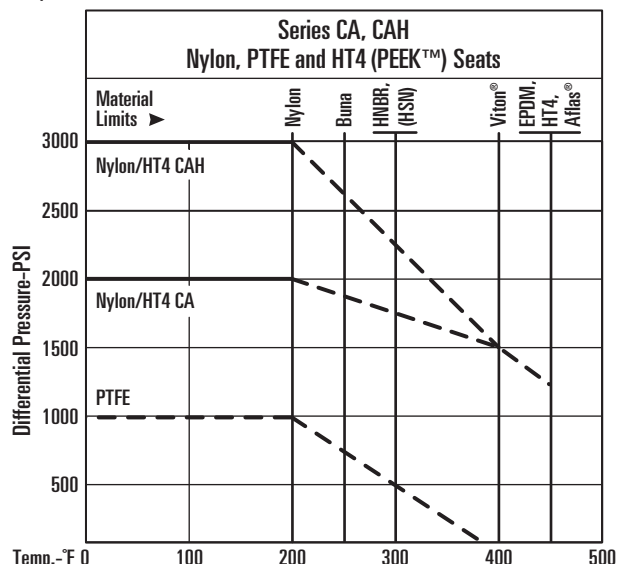
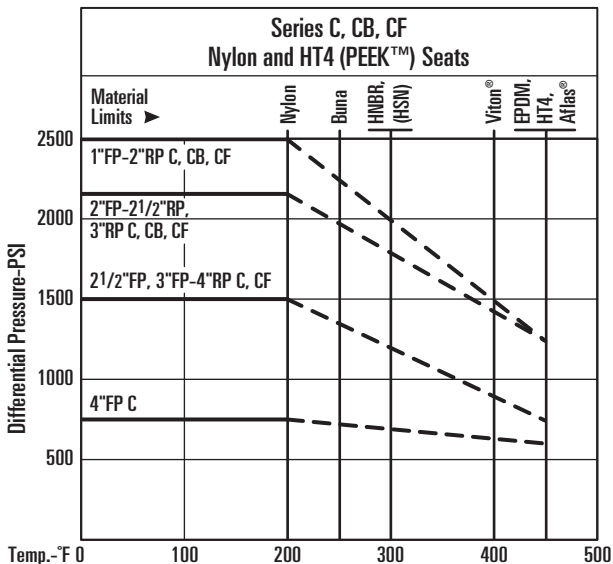
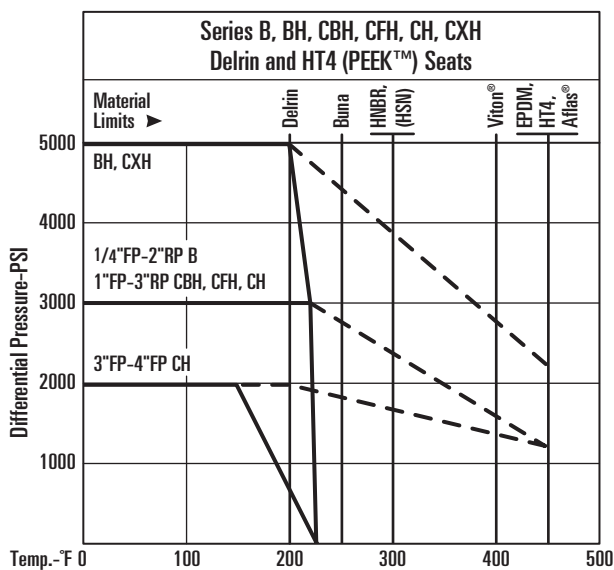
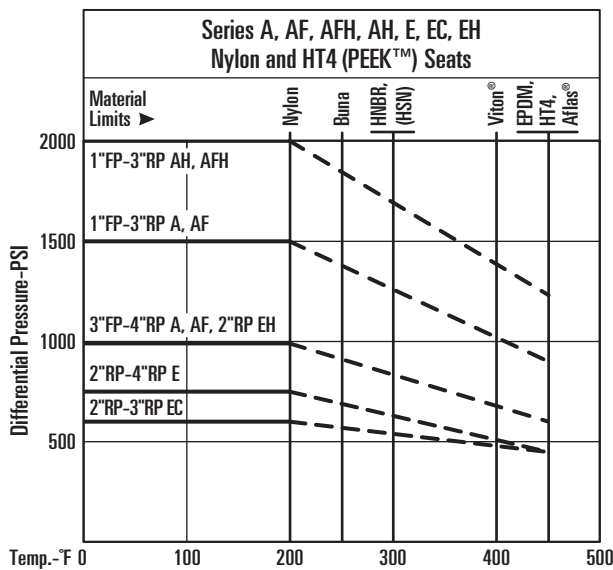
Valve Size (in.)	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2*	2F	2 1/2	3	4
Dimension												
Weight lbs.	0.58	0.60	0.63	1.19	1.70	3.25	4.13	6.38	6.0	12.75	17.75	25.00
A		3/8	1/2	11/16	7/8	1	1 1/4	1 1/2	2	2 1/2	3	
B		2 1/16	2 3/16	2 13/16	3 7/16	3 7/8	4 1/4	4 13/16	5.53	6 1/2	6 13/16	7 11/16
F		1 3/4		2	2.427	2 15/16	3 1/2	4 1/4	4 1/2	5		
G		3 1/16	3 3/4		5.7	5 1/2	8 1/8					11

\*Also dimensions for 2" 2M lightweight pattern design

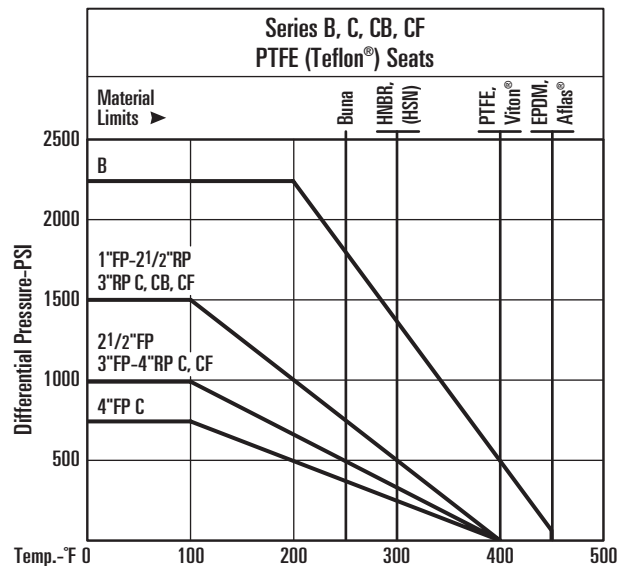
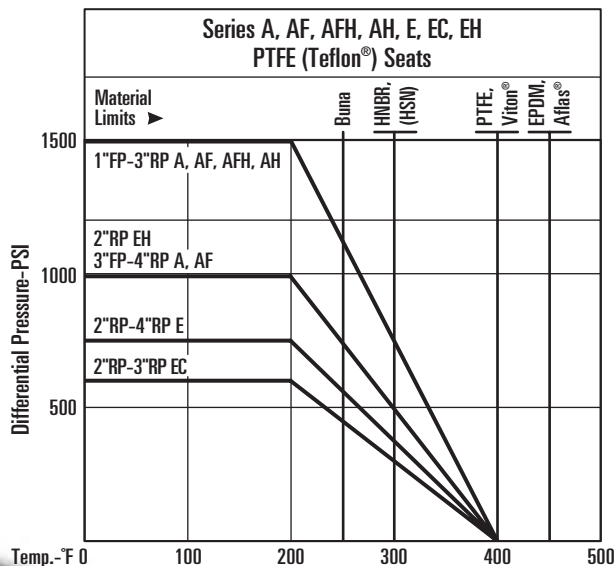
Index	Description	Material
7	Stem Packing	Glass reinforced PTFE
8	Packing Nut	Brass
9	Thrust Washer	Glass reinforced PTFE
10	Handle	Carbon Steel, Plated & Vinyl dipped
11	Handle Nut	Carbon Steel Plated



# Engineering Data, Pressure Temperature Charts

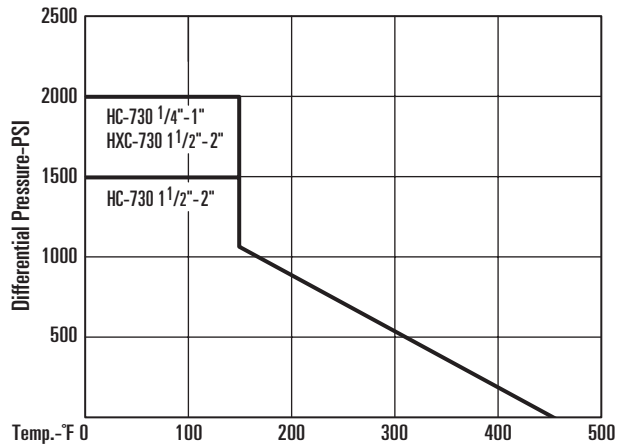


## Floating Ball Valves with Seats made of Teflon®

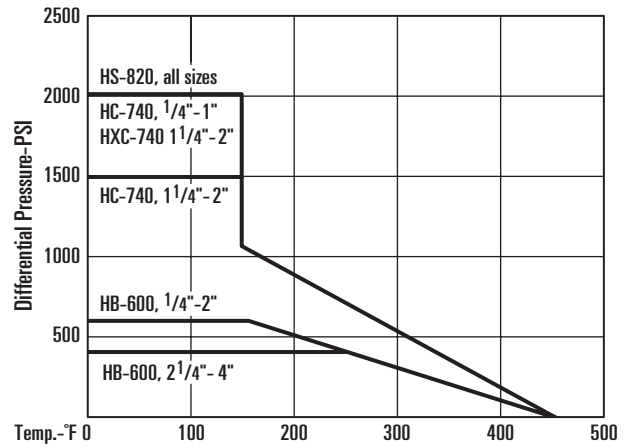


# Pressure Temperature Charts

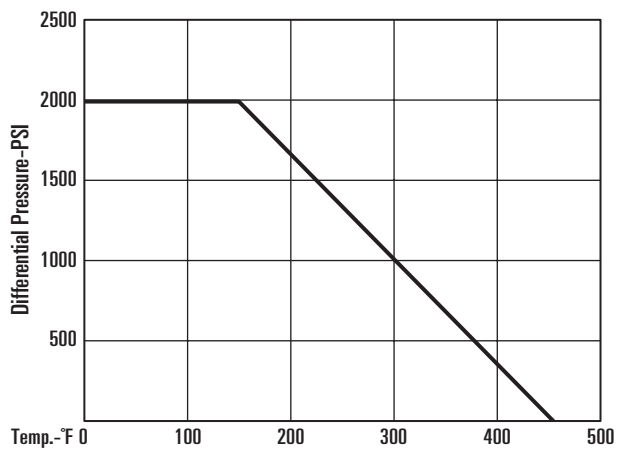
Series HC-730  
PTFE Seats



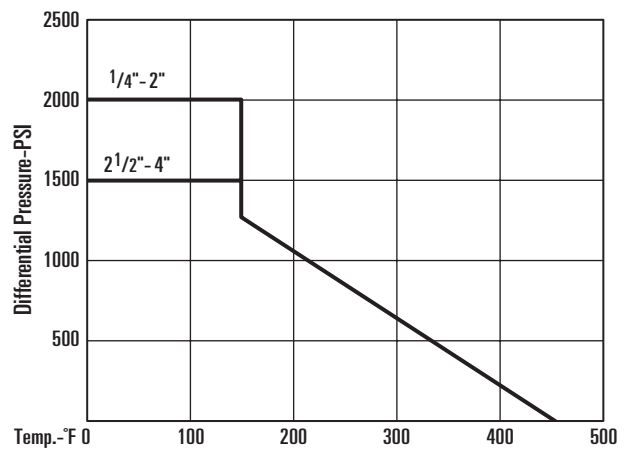
Series HS-820, HC-740, HB-600  
PTFE Seats



Series HS-810, HC-710  
PTFE Seats



Series W  
UNISEAL™ Seats



## Low Temperature Limits

Body Material	°F
WCB	-20°F
LCC	-50°F
CF8M	-50°F
Aluminum Bronze	-50°F
Carbon Steel	-20°F
Stainless Steel	-50°F

Seat Material	°F
Nylon/Delrin	-50°F
Teflon®	-50°F
HT4 (PEEK™)	-50°F

Seal Material	°F
Buna N	-30°F
Low Temp Buna N	-50°F
Viton®	-20°F
Aflas®	+32°F
EPDM	-50°F
HSN	-25°F



# Engineering Data

## Flow Coefficients (C<sub>v</sub>)

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<sub>v</sub>” 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<sub>v</sub>, use the following formulas:

### Liquid Flow

Q<sub>L</sub> = 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<sub>g</sub> = flow rate of gas (CFH at STP)

P<sub>2</sub> = 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



## Operating Torque (continued)

### Series W Maximum Flow Coefficient (C<sub>v</sub>) and Operating Torque

Valve Size (in.)	Series W	
	C <sub>v</sub> Rating	Torque (In-Lbs.)
1/4	7	60
3/8	8	60
1/2	15	80
3/4	35	90
1	60	150
1 1/4	105	230
1 1/2	150	250
2	300	400
2 1/2	480	600
3	750	1050
4	900	1500

### HC-730, HC-740 Maximum Operating Torque

Valve Size (in.)	Series HC-730		Series HC-740	
	Maximum Pressure	Torque (In-Lbs.)	Maximum Pressure	Torque (In-Lbs.)
1/4	—	—	2000	42
3/8	—	—	2000	42
1/2	2000	42	2000	100
3/4	2000	100	2000	125
1	2000	125	2000	200
1 1/4	1500	164	1500	225
1 1/2	1500	210	1500	283
2	1500	270	1500	410

### Series HS810, HS-820, HB-600 Maximum Operating Torque

Valve Size (in.)	Series HS-810		Series HS-820		Series HB-600	
	Maximum Pressure	Torque (In-Lbs.)	Maximum Pressure	Torque (In-Lbs.)	Maximum Pressure	Torque (In-Lbs.)
1/4	2000	40	2000	30	600	60
3/8	2000	40	2000	30	600	60
1/2	2000	40	2000	45	600	60
3/4	2000	50	2000	90	600	90
1	2000	115	2000	170	600	150
1 1/4	2000	180	2000	200	600	200
1 1/2	2000	230	2000	230	600	250
2, 2M	2000	315	2000	320	600	320
2F	—	—	—	—	600	500
2 1/2	—	—	—	—	400	500
3	—	—	—	—	400	600
4	—	—	—	—	400	800





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