



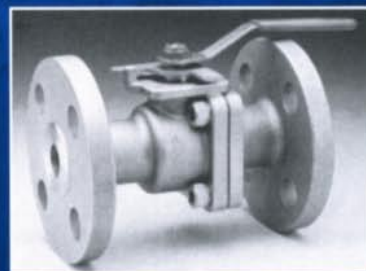
The Reliable Source

1300 Gazin St. • Houston, TX 77020 • www.NewcoValves.com
Toll Free: 1.800.231.3505 • Fax: 713.675.1589

COOPER®

TEXSTEAM OPERATIONS

Exotic Alloy Full Port Ball Valves



Exactly What You'd Expect From The Specialist!

COMPLETE ALLOY COVERAGE

Common alloys shown—others available on special order

304/A744 Grade CF8	AVESTA 254 SMO/ASTM A351
304L/A744 Grade CF3	Monel/A494 Grade M35-1
316/A744 Grade CF8M	Nickel/A494 Grade CZ100
316L/A744 Grade CF3M	Inconel/600 Grade CY40
317/A744 Grade CG8M	Incoloy 800—ASTM A351 CT15C
347/A744 Grade CF8C	Hastelloy B/A494 Grade N12MV
Alloy 20/A744 Grade CN7M	Hastelloy C/A494 Grade CW12MW
Titanium/B367 Grade C3, C5, C7	Zirconium
CD4MCU Duplex Stainless ASTM A744	

SPECIAL ADVANTAGES

Standard Features

- Full port
- Fire tested—API 607
- Available in all alloys
- Blowout-proof stem
- Solid ball—straight through fluid path
- All valves hydrostatically tested to ANSI B16.34, API 598, MSS SP61
- All valves serialized—full traceability of materials
- Flexible manufacturing facility—widest choice of special applications in the industry

Fire Test Certification API 607

Cooper ball valves Models 415, 430, 460 (sizes ½" thru 8") have been qualified by testing and meet the requirements of API 607. The original test reports are on file and are available for customer inspection at our facility.

COOPER®

SPECIAL APPLICATIONS

Cryogenic Service

Available ½"—12", ANSI Class 150, 300, and 600 full port for service to -300 °F

Chlorine Service

Cooper ball valves are available in special designs for the most demanding chlorine applications.

Vacuum Service

Standard Cooper ball valves are suitable for service to 20 microns.

Oxygen Service

Cooper ball valves are available specially cleaned and prepared for oxygen service.

Fugitive Emissions

Cooper ball valves are designed to meet customer's requirements.

Acid Service

Cooper manufactures ball valves for severe acid service, HCl, H₂SO₄, HNO₃, Acetic, etc.

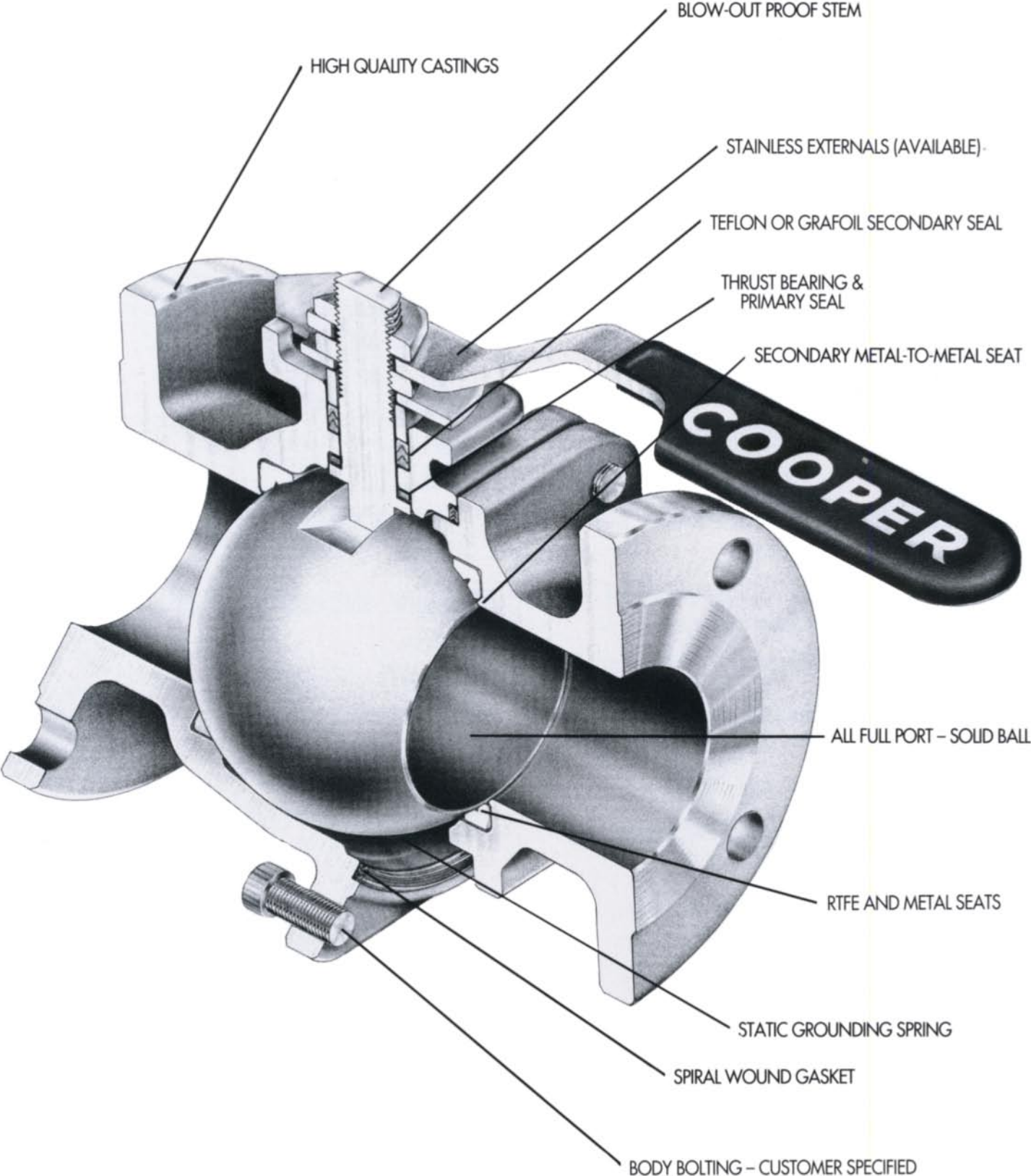
Cooper Full Port Flanged Ball Valve

- High quality castings
- Blowout-proof stem
- Secondary metal-to-metal seat
- Teflon or Grafoil secondary seal
- RTFE and metal seats
- All full port – solid ball
- Spiral wound gasket
- Static grounding spring
- Thrust bearing and primary seal
- Body bolting – Customer specified

Ball Valves – Metal Seated

- Special Coatings
- Autoclave Applications
- Slurry Service
- Erosive and/or Corrosive Service
- High Temperature
- Mining Applications

Cooper Full Port Flanged Ball Valves



Unique Design Features

All Full Port solid ball—straight through fluid path

Flow rates equal to an equivalent length of pipe produce the lowest possible pressure drop, resulting in considerable system energy savings over standard (reduced) port designs.

Blowout-proof Stem

Internally inserted for maximum safety

Gear Operators

Grafoil Secondary Seal

Positive leak prevention if primary seal is destroyed due to a fire condition

Secondary Metal-to-Metal Seat

All Cooper valves are provided with a secondary metal-to-metal seat as standard in the event of loss of seats due to a fire or any other condition which might result in damage to the primary seats.

Spiral Wound Gasket

Positive leak prevention in case of fire

Stainless Steel Cap Screws

Threaded mating flange for minimum possible thermal expansion in a fire condition

Anti-static Grounding Spring

Eliminates the possibility of spark due to static electricity build-up

Special Options

1. Handle locking device
2. Extended stem
3. Extended bonnet
4. Oval handle
5. Special bolting
6. Special ball & metal seat coatings and surface treatment

Tungsten carbide

Chrome oxide

Alumina oxide

Stellite

Nitrating

Others available upon request

7. Cavity Fillers

Seat Materials

- Virgin teflon
- Reinforced teflon - 15% glass filled
- Kel-F
- Peek
- Metal - (coated)

Temperature range - 300°F to +1000°F

COOPER[®]

Ball Valve

Flanged Full Port

Floating Ball Design 1/2" thru 2"

Model 415RF ANSI Class 150

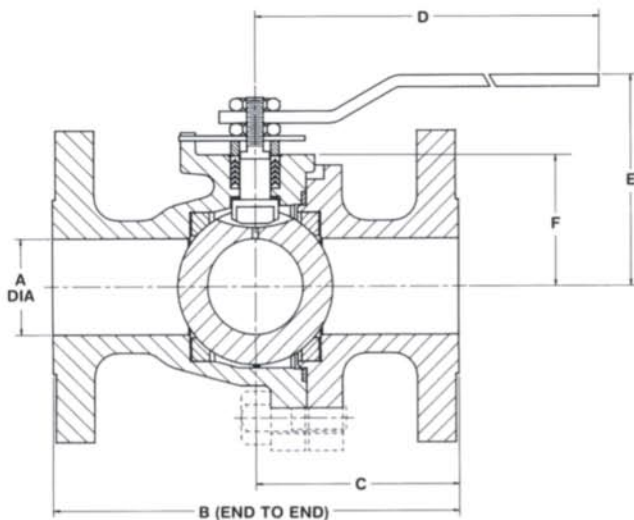
Valve Size	Approximate Dimensions (inches)						Approx. Wt. (lbs.)
	A	B	C	D	E	F	
1/2"	1/2	4 1/4	2 1/4	7 1/4	3	1 3/4	5
3/4"	3/4	4 3/4	2 3/4	7 3/4	3 3/4	1 3/4	7
1"	1	5	2 1/2	7 1/2	2 1/2	1 1/4	8
1 1/2"	1 1/2	6 1/2	3 1/4	9 1/2	3 1/4	2 1/4	15
2"	2	7	3 1/2	13 1/4	4 1/4	2 1/2	25

Model 430RF ANSI Class 300

Valve Size	Approximate Dimensions (inches)						Approx. Wt. (lbs.)
	A	B	C	D	E	F	
1/2"	1/2	5 1/2	2 3/4	7 1/4	3	1 3/4	6
3/4"	3/4	6	3	7 3/4	3 3/4	1 3/4	9
1"	1	6 1/2	3 3/4	7 1/2	3 1/2	2 1/4	10
1 1/2"	1 1/2	7 1/2	3 3/4	9 1/2	3 1/4	2 1/4	22
2"	2	8 1/2	4 1/4	13 1/4	4 1/4	2 1/2	28

Model 460RF ANSI Class 600

Valve Size	Approximate Dimensions (inches)						Approx. Wt. (lbs.)
	A	B	C	D	E	F	
1/2"	1/2	6 1/2	3 1/2	7 1/4	3 1/4	1 3/4	7
3/4"	3/4	7 1/2	4 1/4	7 3/4	3 1/2	1 3/4	10
1"	1	8 1/2	5	7 1/2	3 1/2	2 1/4	12
1 1/2"	1 1/2	9 1/2	5 3/4	9 1/2	4 3/4	2 1/4	25
2"	2	11 1/2	6 3/4	13 1/4	4 1/4	3	33



3" thru 6"

Model 415RF ANSI Class 150

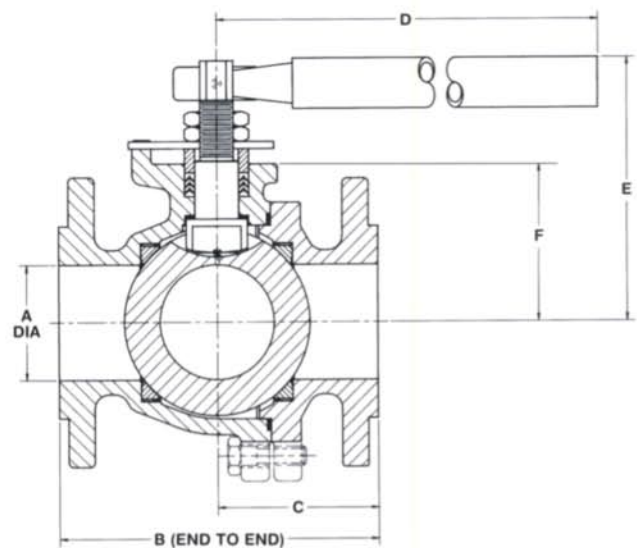
Valve Size	Approximate Dimensions (inches)						Approx. Wt. (lbs.)
	A	B	C	D	E	F	
3"	3	8	4	20	6 3/4	4 1/4	48
4"	4	9	4 1/2	20	7 1/4	5	83
6"	6	10 1/2	5 1/4	30	10	6 1/4	125

Model 430RF ANSI Class 300

Valve Size	Approximate Dimensions (inches)						Approx. Wt. (lbs.)
	A	B	C	D	E	F	
3"	3	11 1/4	6 1/4	20	6 3/4	4 1/4	60
4"	4	12	6	20	8 1/2	5 1/2	110
6"	6	15 1/4	7 3/4	30	12 1/2	7 3/4	195

Model 460RF ANSI Class 600

Valve Size	Approximate Dimensions (inches)						Approx. Wt. (lbs.)
	A	B	C	D	E	F	
3"	3	14	9 3/4	20	6 3/4	4 1/4	80
4"	4	17	10 1/2	30	8 3/4	5 1/2	135
6"	6	22	13 1/2	30	12 1/2	7 3/4	235



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Ball Valve Flanged Full Port

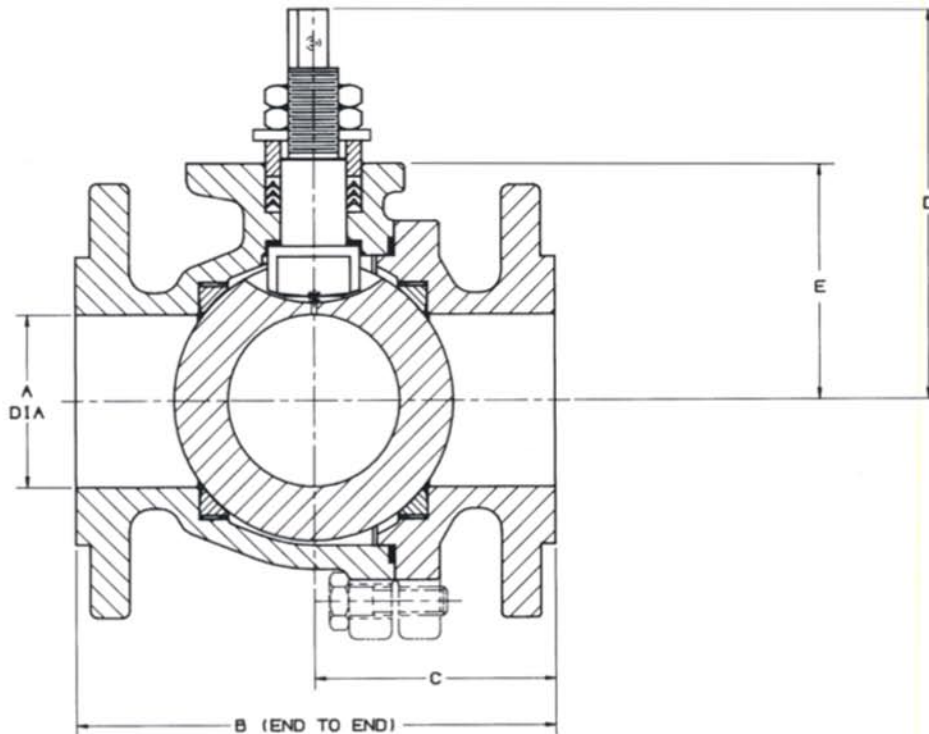
Floating Ball Design 8" thru 12"

Model 415RF ANSI Class 150

Valve Size	Approximate Dimensions (inches)					Approx. Wt. (lbs.)
	A	B	C	D	E	
8"	8	18	9 1/2	11 1/2	8 1/2	225
10"	10	21	10 1/2	17 1/4	12	350
12"	12	24	12	23 1/4	15 1/4	530

Model 430RF ANSI Class 300

Valve Size	Approximate Dimensions (inches)					Approx. Wt. (lbs.)
	A	B	C	D	E	
8"	8	19 1/4	9 1/4	22 1/4	9 1/4	325
10"	10	22 1/4	11 1/4	21 1/4	13 1/4	470
12"	12	25 1/4	13 1/4	25 1/2	15 1/4	765



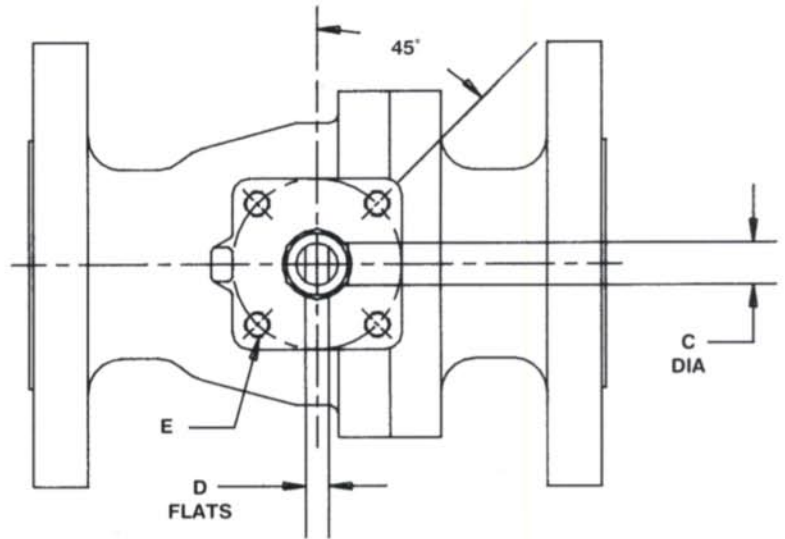
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Top Work Dimensions

Floating Ball Design 1/2" thru 2"

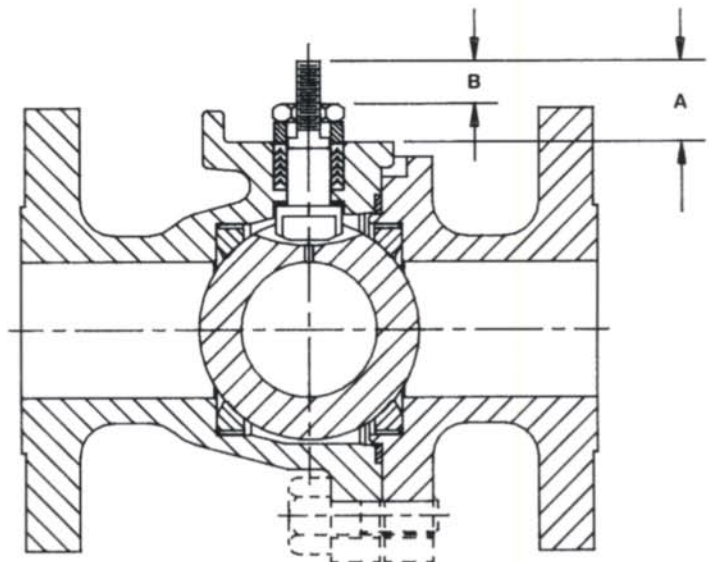
Model 415RF ANSI Class 150

Valve Size	Approximate Dimensions (inches)				E
	A	B	C	D	
1/2"	3/16	13/32	.373/.366	.215/.213	1/4-28 UNF (thru) on a 1.781 DIA. B.C.
3/4"	3/8	1/2	.374/.367	.215/.213	1/4-28 UNF (thru) on a 1.945 DIA B.C.
1"	1 1/16	5/8	.436/.428	.295/.292	1/4-28 UNF (thru) on a 1.943 DIA. B.C.
1 1/2"	1 3/16	3/4	.561/.553	.340/.338	3/4-24 UNF (thru) on a 2.475 DIA. B.C.
2"	1 3/8	7/8	.625/.616	.343/.340	3/4-24 UNF (thru) on a 2.500 DIA. B.C.



Model 430RF ANSI Class 300

Valve Size	Approximate Dimensions (inches)				E
	A	B	C	D	
1/2"	3/16	13/32	.373/.366	.215/.213	1/4-28 UNF (thru) on a 1.781 DIA. B.C.
3/4"	3/8	1/2	.374/.367	.215/.213	1/4-28 UNF (thru) on a 1.945 DIA B.C.
1"	7/16	5/8	.436/.428	.295/.292	1/4-28 UNF (thru) on a 1.969 DIA. B.C.
1 1/2"	1 3/16	3/4	.561/.553	.340/.338	3/4-24 UNF (thru) on a 2.457 DIA. B.C.
2"	1 3/8	7/8	.625/.616	.343/.340	3/4-24 UNF (thru) on a 2.500 DIA. B.C.



Model 460RF ANSI Class 600

Valve Size	Approximate Dimensions (inches)				E
	A	B	C	D	
1/2"	3/16	3/8	.373/.366	.215/.213	1/4-28 UNF (thru) on a 1.781 DIA. B.C.
3/4"	3/8	13/32	.374/.367	.215/.213	1/4-28 UNF (thru) on a 1.945 DIA B.C.
1"	7/16	5/8	.436/.428	.295/.292	1/4-28 UNF (thru) on a 1.944 DIA. B.C.
1 1/2"	1 3/16	13/32	.561/.553	.340/.338	3/4-24 UNF (thru) on a 2.500 DIA. B.C.
2"	1 7/16	7/8	.874/.865	.500/.497	3/4-24 UNF (thru) on a 2.500 DIA. B.C.

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Top Work Dimensions

Floating Ball Design 3" thru 6"

Model 415RF ANSI Class 150

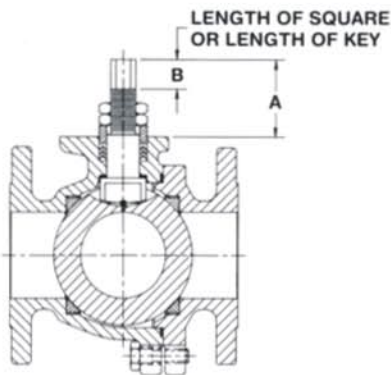
Valve Size	Approximate Dimensions (inches)			D
	A	B	C	
3"	2 1/4	1 1/2	.874/.872	3/4-24 UNF (thru) on a 3.375 DIA. B.C.
4"	2 3/4	1 1/2	.874/.872	3/4-24 UNF (thru) on a 3.890 DIA. B.C.
6"	3	1 3/4	1.128/1.126	3/4-20 UNF (thru), 3/8" DP. on a 4.596 DIA. B.C.

Model 430RF ANSI Class 300

Valve Size	Approximate Dimensions (inches)			D
	A	B	C	
3"	2 1/4	1 1/2	.874/.872	3/4-24 UNF (thru) on a 3.375 DIA. B.C.
4"	2 1/2	1 1/2	.874/.872	3/4-24 UNF, 3/8" DP. on a 3.889 DIA. B.C.
6"	3 1/4	1 3/4	1.749/1.746	3/4-20 UNF (thru), 3/8" DP. on a 4.594 DIA. B.C.

Model 460RF ANSI Class 600

Valve Size	Approximate Dimensions (inches)			D
	A	B	C	
3"	2 1/4	1 1/2	.874/.872	3/4-24 UNF, 3/8" DP. on a 3.375 DIA. B.C.
4"	3 1/2	1 3/4	1.128/1.126	3/4-24 UNF, 3/8" DP. on a 3.889 DIA. B.C.
6"	3 3/4	1 3/4	1.749/1.746	3/4-11 UNC, 3/8" DP. on a 4.594 DIA. B.C.



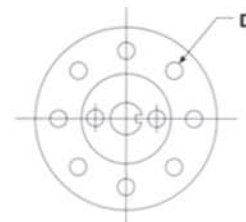
8" thru 12"

Model 415RF ANSI Class 150

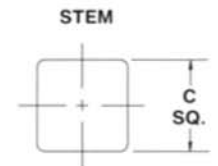
Valve Size	Approximate Dimensions (inches)			D
	A	B	C	
8"	3 3/4	1 3/4	1 3/4	1/2-20 UNF (thru) on a 6" DIA. B.C.
10"	5 1/4	3 3/4	3/4	1/2" DIA (thru) on a 8" DIA. B.C.
12"	8 1/4	4 3/4	1	3/4-10 UNC (thru) on a 10.25 DIA. B.C.

Model 430RF ANSI Class 300

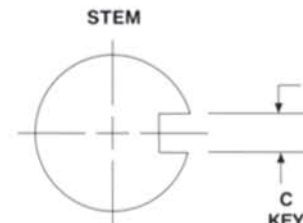
Valve Size	Approximate Dimensions (inches)			D
	A	B	C	
8"	12 3/4	4 3/4	3/4	3/4-10 UNC, 1 1/4" DP. on a 7.00 DIA. B.C.
10"	7 1/4	5	3/4	3/4-10 UNC, 3/8" DP. on a 10.50 DIA. B.C.
12"	10 1/2	5 3/4	1 1/4	1 1/4-8 UN, 1 1/4" DP. on a 10.50 DIA. B.C.



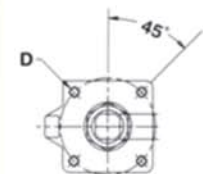
10" - 300#
12" - 150# + 300#



3" THRU 6" - 150#, 300#, 600#
8" - 150#



10" - 150#
12" - 150#
8" THRU 12" - 300#



3" THRU 6" - 150#, 300#, 600#
8" - 150#, 300#
10" - 150#

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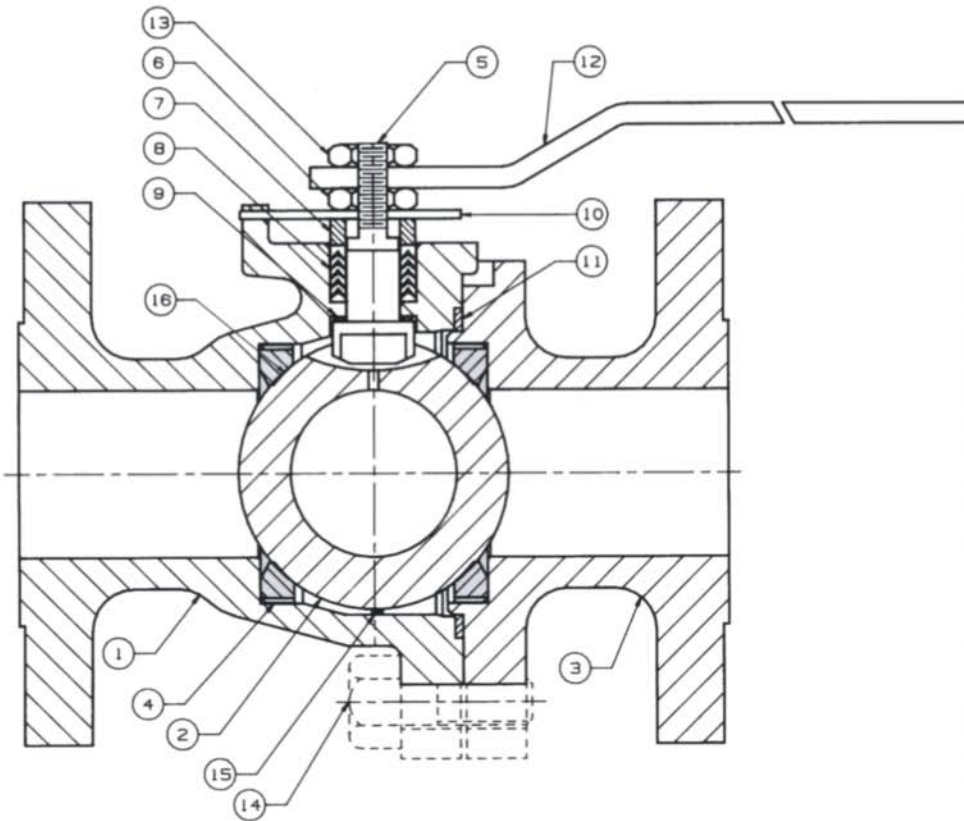
Ball Valve Metal Seated

Floating Ball Design

½" - 12" ANSI Class 150 Model 415RF

½" - 12" ANSI Class 300 Model 430RF

½" - 6" ANSI Class 600 Model 460RF



Item	Description
1	Body
2	Ball
3	End PC.
4	Seat
5	Stem
6	Stem nut
7	Stem bushing
8	Stem seal
9	Thrust bearing
10	Stop plate
11	Body seal
12	Handle *
13	Handle nut
14	Body bolt
15	Static spring
16	Seat gasket

Features

- Bi-directional sealing
- True blow-out proof stem
- Adjustable packing with multiple V - rings
- Self adjusting seat design with wiping action
- Special ball and seat coatings
- Optimized torque/seat loading for positive seal
- Full port design/special bores
- Flanged end design to ANSI B16.10
- Fire safe design

Benefits

- Cost effective with long service life
- Full port for low pressure drop – High CV
- Available in standard and exotic alloys
- Designs for severe service applications
- Easily automated
- Optional interchangeable ball/seat sets
- Severe service applications, slurry, high temperature and other specialized applications

* – Recommend valve operator for sizes 6" and up

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How To Order Cooper Exotic Alloy Ball Valves

Valve Type	Valve Size	Press Rating		End Conn.	Body and Trim Material		Packing Material		Seal Material		Seat Material		Appl.		
R	Q ¼ IN.	1	150 LB.	R	R.F. FLANGE	4	304	T	PTFE	T	PTFE	T	PTFE	AA	STD. VALVE W/HANDLE
	A ¾ IN.	3	300 LB.	F	F.F. FLANGE	3	304 L	R	REINF. TEFLON	R	REINF. TEFLON	R	REINF. TEFLON	AB	STD. VALVE W/O HANDLE
	5 ½ IN.	6	600 LB.	T	R.J. FLANGE	6	316	P	PFA	C	COOPER FILL	C	COOPER FILL	AC	AA W/EXTENDED BONNET – 6"
	7 ¾ IN.	9	900 LB.	1	R.F. 125 RMS	L	316L	G	GRAFOIL	P	PFA	U	UHMWP	AD	AB W/EXTENDED BONNET – 6"
	1 1 IN.	8	1500 LB.	2	R.F. 250 RMS	E	317	U	UHMWP	V	VITON	P	PFA	AE	AA W/3" EXT. STEM
	B 1 ¼ IN.					2	321			B	BUNA-N	N	NYLON	AF	AA W/4" EXT. STEM
	C 1 ½ IN.					7	347			U	UHMWP	H	GRAFETAR	AG	AA W/6" EXT. STEM
	2 2 IN.					A	ALLOY 20			S	SW – BODY/TFE	B	COOPER FILL CAV FILL	AH	AA W/8" EXT. STEM
	D 2 ½ IN.					D	416			E	SW – BODY/GRAFOIL	Q	RIFE CAV FILL	AJ	AA W/2" EXT. STEM
	3 3 IN.					M	MONEL			J	SW TRIM/TFE	V	UHMWP CAV FILL	AK	AA W/ESNA STEM NUTS
	4 4 IN.					N	NICKEL			L	SW TRIM/GRAF.	S	STELLITE	AL	AA W/B7 BOLTS
	6 6 IN.					I	INCONEL 600					L	ARLON 1000	AM	AA W/OVAL HANDLE
	8 8 IN.					B	HASTELLOY B					K	KEL-F	AN	AA W/MONEL STUDS AND NUTS
	T 10 IN.					C	HASTELLOY C							AO	AD W/GEAR OPERATOR
	E 12 IN.					T	TITANIUM C3							AP	AB W/GEAR OPERATOR
						Z	ZIRCONIUM							AQ	AA W/UPSTREAM BLEED HOLE
						F	CD - 4MCU							AX	W/LOCKING STOP PLATE
						J	INCOLOY 800								
						Y	WCB/MONEL								

* Typical valve matrix numbering system - Subject to Change. Verify specific numbers with Cooper prior to order placement.

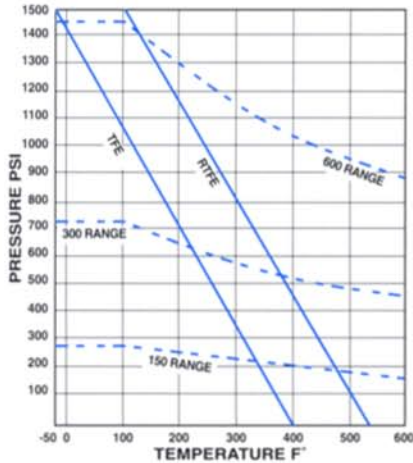
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Engineering Data

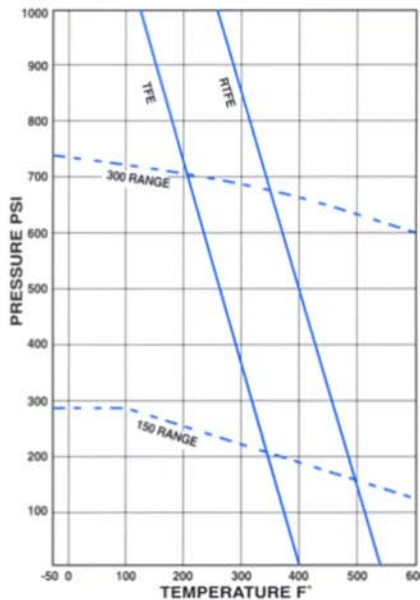
Pressure and Temperature Ratings Full Port Flanged

Floating Ball

1/2"-2" ANSI Class 150, 300, 600



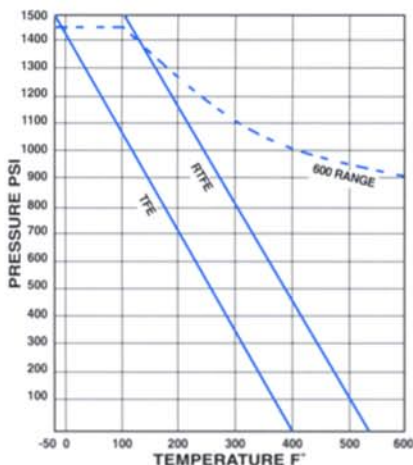
3"-8" ANSI Class 150, 300



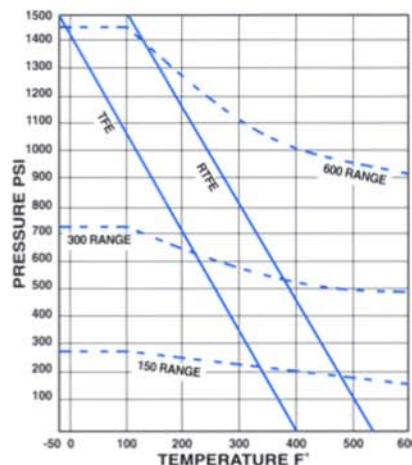
Note:

1. Dotted lines indicate metal body ratings to ANSI B16.34. (CF8M).
2. Seat ratings, indicated by solid lines in the charts, are based on differential pressure with the valve ball in the fully closed position and refer to the seats only.
3. Ratings shown are for general service applications. For applications requiring higher pressures and temperatures from -300°F to +1000°F, consult factory.
4. Reinforced TFE may be used to 150 PSIG steam maximum.

3"-6" ANSI Class 600



10"-12" ANSI Class 150, 300



Note:

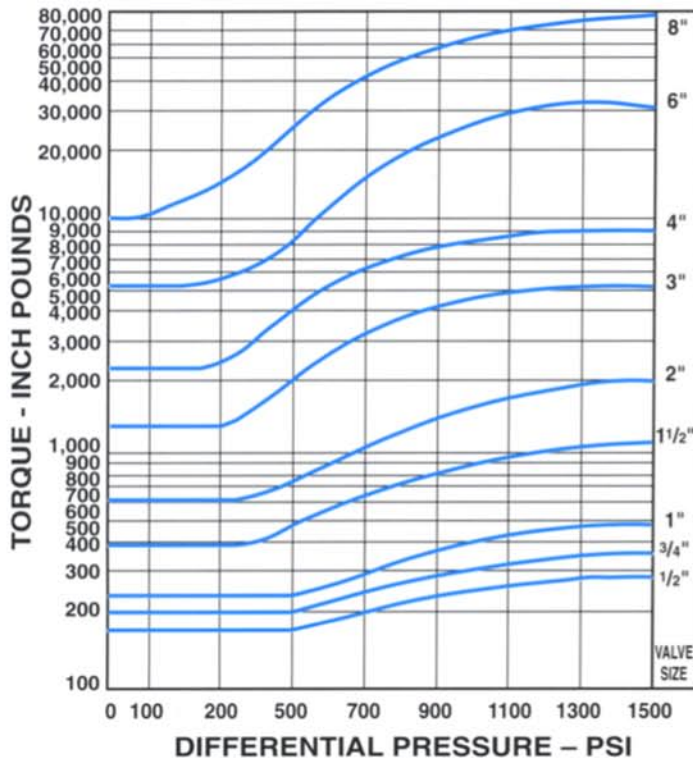
1. Dotted lines indicate metal body ratings to ANSI B16.34-77. (CF8M)
2. Seat ratings, indicated by solid lines in the charts, are based on differential pressure with the valve ball in the fully closed position and refer to the seats only.
3. Ratings shown are for general service applications. For applications requiring higher pressures and temperatures from -300°F to +1000°F, consult factory.
4. Reinforced TFE may be used to 150 PSIG steam maximum.

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Engineering Data

Valve Torque Data

Floating Ball *ANSI Class 150, 300, 600*



Note:

- Torque charts shown are a guide to running torques for general service applications. Under same conditions floating ball designs may require higher breakaway torques than shown. Actuators selected should provide torques at least as high or higher than values shown. (Consult factory for assistance.)
- Torque values shown are based on clean fluids. For other conditions:
 - reduce by 10% for high lubricity oils
 - increase by 10% for dry gases
 - increase by 40% for fluids with solids or abrasive contents
- Consult factory for special service applications, i.e. metal to metal seats, cryogenic, high temperature, etc.
- Consult factory for torque values on 10" and larger valves.

Flow Chart

C _v For ANSI Class 150, 300, 600	
Valve Size	Approximate C _v
1/2"	28
3/4"	50
1"	96
1 1/2"	270
2"	500
3"	1,320
4"	2,400
6"	5,500
8"	10,000
10"	13,500
12"	18,200