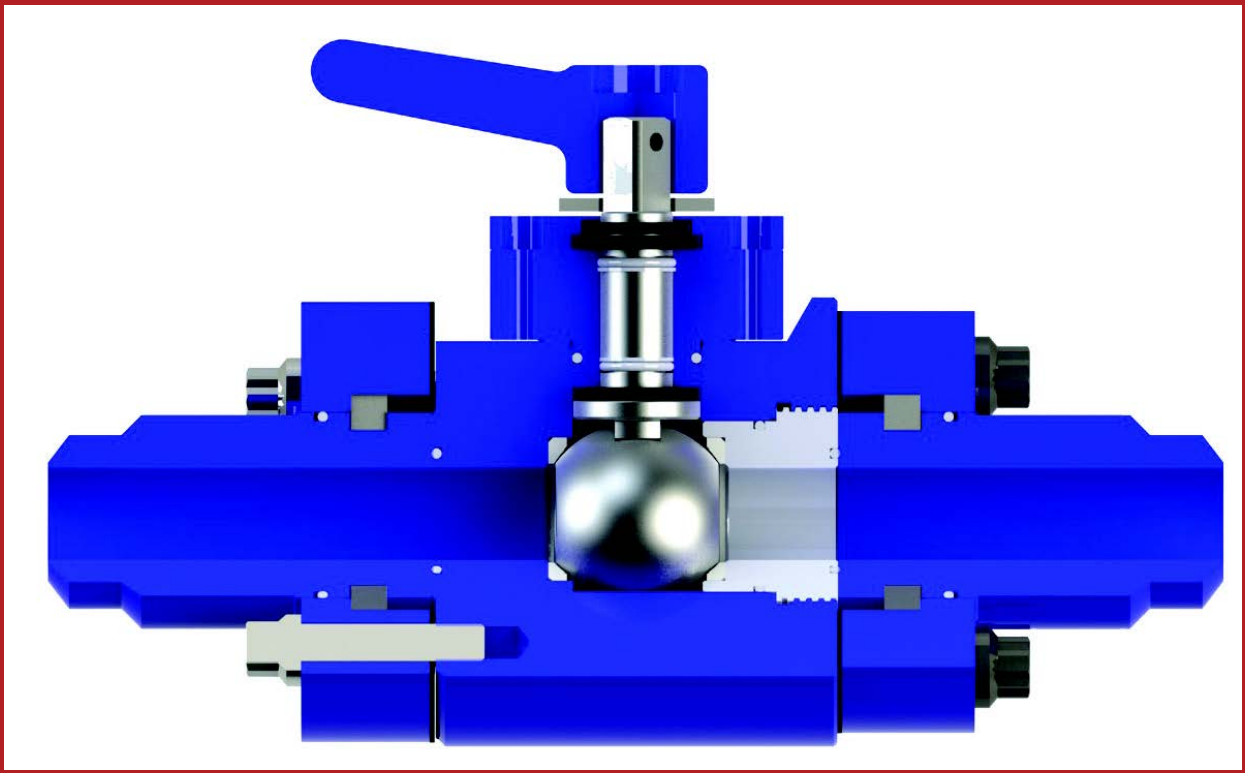
PHOENIX

COMPACT VALVE



INNOVATIVE COMPACT TECHNOLOGY

FLOATING BALL VALVE

Fire Tested per ANSI / API 607

Cast handle indicates ball position. Easily repositioned to any quadrant. Removable to accept factory or field mounted actuators or gear operators.

Stem and Bonnet seals can be replaced without removing the valve from the piping system.

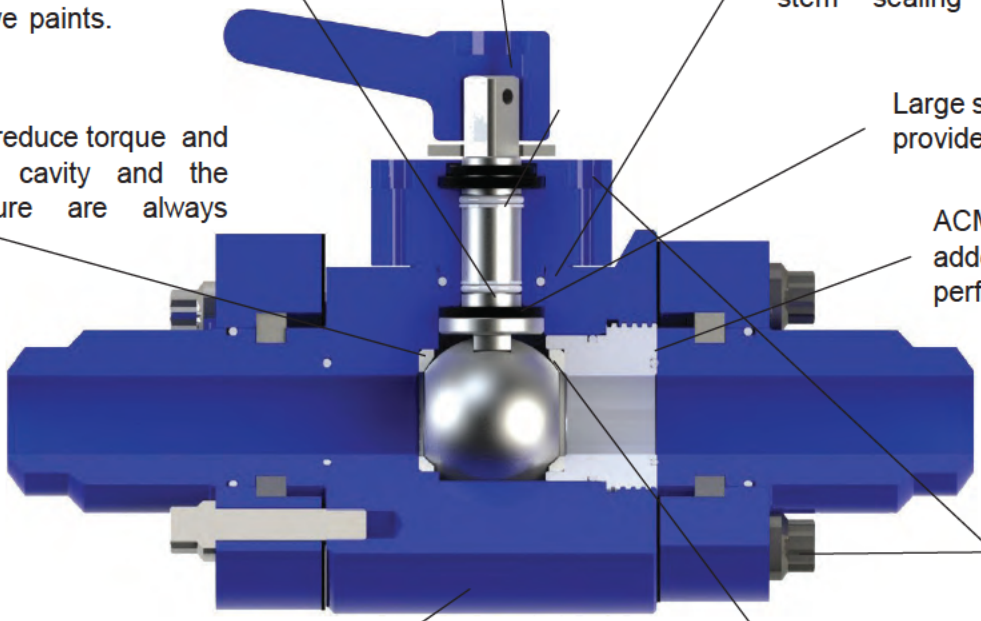
Body, Seat Retainer, Bonnet, Bolting and Handle coated offering better protection than standard valve paints.

O-ring Seals and Back Ups can in be provided a wide variety of materials ensuring positive stem sealing at all pressures.

Large stem thrust bearing provides smooth operation.

Seat Seal design reduce torque and ensure the ball cavity and the upstream pressure are always equalized.

ACME threads provide added safety and performance.



LB7 bolting complies with NACE/ASME code requirements.

Solid forged body.

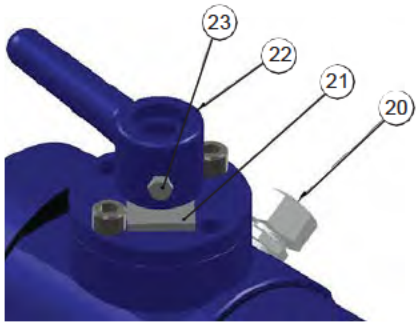
Large seats provided in Celcon® or Peek®.

Warning: Valves never to exceed design pressures.

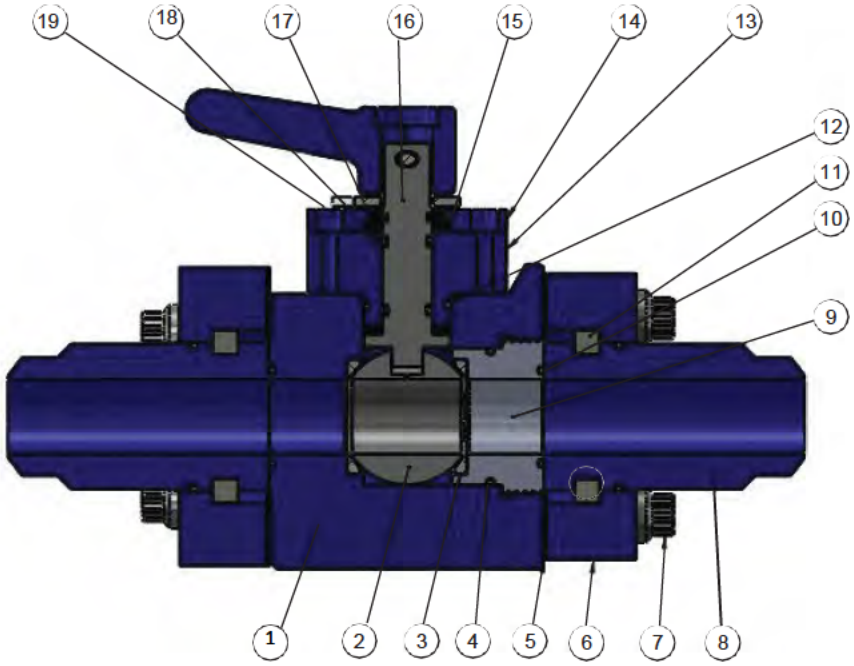
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FLOATING BALL VALVE

Component Part List with Common Materials



Swivel flanges shown. Weld neck flanges are available on some sizes as well as custom configurations.



Item	Qty	Description	Materials
1	1	Body	Alloy Steel, ASTM A322 Gr 4130 Q&T Subsea Xylan Coated
2	1	Ball	17-4 PH H1150 DBL-Standard, Alloy Steel 3 mil ENP
3	2	Seat	Acetal Co-polymer (Celcon®) or PEEK®
4	1	O-ring (Retainer)	Buna-N, Viton®, PC Buna-N, LT Buna-N, HSN/HNBR,EPDM, AFLAS®,…
5	2	Dusk Gasket Gasket	Open Cell Sponge
6	-	End Flange (Swivel Shown)	Carbon Steel (AISI 1026/ A106 Gr. B), Alloy Steel (A322 Gr 4130 Q&T)
7	-	Flange Bolting	A193 / A320 LB7 Bolting Dual Certified
8	-	Nipple (Buttweld and Swivel Tube Shown)	Carbon Steel (AISI 1026/ A106 Gr. B), Alloy Steel (A322 Gr 4130 Q&T)
9	2	O-ring (Flange Face)	Buna-N, Viton®, PC Buna-N, LT Buna-N, HSN/HNBR, EPDM, AFLAS®, ...
10	-	Half Ring (Swivel Flanges Only)	Alloy Steel, ASTM A322 Gr 4130 Q&T
11	1	O-ring (Retainer)	Buna-N, Viton®, PC Buna-N, LT Buna-N, HSN/HNBR, EPDM, AFLAS®, ...
12	1	O-ring (Bonnet)	Buna-N, Viton®, PC Buna-N, LT Buna-N, HSN/HNBR, EPDM, AFLAS®, ...
13	1	Bonnet	Alloy Steel, ASTM A322 Gr 4130 Q&T Subsea Xylan Coated
14	1	Stem Seal Cover	4130
15	1	Thrust Bearing	Nitronic 60 or 4130 Xylan Coated
16	1	Stem	17-4 PH H1150 DBL-Standard, Alloy Steel 3 mil ENP
17	1	Stem Half Ring	Alloy Steel, ASTM A322 Gr 4130 Q&T
18	2	Back Up Ring (Stem)	RTFE or Buna-N, Viton®, LT Buna-N, HSN/HNBR, EPDM, AFLAS®,....
19	2	O-ring (Stem)	Buna-N, Viton®, PC Buna-N, LT Buna-N, HSN/HNBR, EPDM, AFLAS®, ...
20	1	Grease Fitting	Stainless Steel, Zinc Coated Carbon Steel
21	1	Stop Plate	Carbon Steel
22	1	Handle	Carbon Steel
23	1	Handle Screw	18-8 SS

Other materials available to meet customer specifications.
Consult the factory for options and pricing.
Many other end connections are available.
Consult the factory for details.

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FLOATING BALL VALVE

Assembly Part Code: F - Series

F - Floating Ball Valve

Port Sizes

09 - 1" x 13/16"	25 - 3" x 2 9/16"
14 - 2" x 1 1/2"	

Max. Working Pressure

03 - 3705	06 - 6170
05 - 5000	10 - 10,000

Body, Bonnet, Retainer Mat.

1- Carbon Steel (4130) or (1045) STD	4- 410 SS	7- Duplex
2- 316 SS	5 17-4 PH SS	8- Super Duplex
3- Low Temp C.S.	6 Inconel	

Ball Materials

1- CS 3 MIL ENP	5- 410 SS	8- Super Duplex
3 Low Temp C.S.	6 Inconel	S- Special
4 17-4 PH SS - Standard	7 Duplex	

Stem Material

1- CS 3 MIL ENP	5- 410 SS	8- Super Duplex
3 Low Temp C.S.	6 Inconel	S- Special
4 17-4 PH SS - Standard	7 Duplex	

Seat Materials

7- Acetal Std Material
4- Peek

Seals - O-rings

1 BUNA-N (90 Duro)	4 Aflas	7- James Walker - Viton
2 VITON	5 HNBR - Std.	8- JW - Buna
3 PC - Buna	6 EPDM	

Cap Screws - 12 PT - Xylan Coated

1- Std Nace LB7
2- LB7M
3- Low Temp SS

Actuators

1 Handle	4 Bucket Connector	7- Locking Handle
2 Gear Operator	5 Hydraulic	8- Locking Gear
3- Sub-Sea Handle	6- Pneumatic	

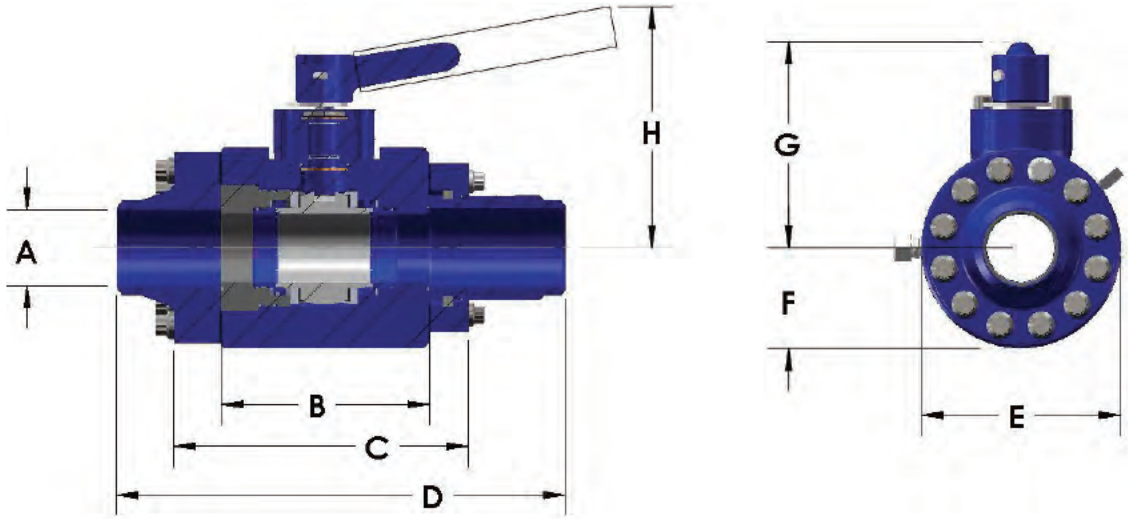
Sub Sea

SS1 - 0 - 10,000 Ft

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FLOATING / TRUNNION BALL VALVE



Nominal Size	Working Pressure	Assembly Base No.	Stand End Configure	W/Ends Weight (LBS)	A	B	C	D	E	F	G	H
1”	3705, 5000, 6170	F0906	SLP X SLP	26	13/16	4	6 5/8	12	4 1/4	2 1/8	5 3/4	7 1/8
	10,000	F0910	SLP X SLP	26	13/16	4	6 5/8	12	4 1/4	2 1/8	5 3/4	7 1/8
	15,000	F0915	WNF X WNF	32	13/16	4 1/2	7 1/2	12	4 1/2	2 1/4	5 3/4	7 1/8
2”	3705, 5000, 6170	F1406	SLP X SLP	44	1 1/2	5	7 1/2	15 1/2	5 5/8	2 13/16	6 1/2	5
	10,000	F1410	SLP X SLP	87	1 1/2	5 1/2	9 1/4	16	6 1/4	3 1/8	7	5
	15,000	F1415	WNF X WNF	145	1 1/2	7	10 1/2	16	8	4	8 3/4	
3”	3705, 5000, 6170	F2506	SLP X SLP	130	2 9/16	7	10 5/8	18 1/2	8	4	8 1/2	6 7/8
	6170	T2506	SLP X SLP	130	2 9/16	7	10 5/8	18 1/2	7 1/2	3 7/8	8 1/2	6 7/8
	10,000	T2610	WNF X WNF	90	2 5/8	8	12	18	9	4 1/2	9 5/8	7 3/4
	15,000	T1315	WNF X WNF	115	1 3/8	9	13 1/4	18	10	5	8 1/2	
4”	3705	T3603	WFN X WFN	194	3 3/4	10	13 3/4	21 1/2	10	5	8 1/2	7
	5000, 6170	T3206	WNF X WNF	265	3 1/4	10	14 1/8	21 1/2	10	5	9 1/8	7
	10,000	T3110	WNF X WNF	301	3 1/8	9	13 1/2	20	10	5	12 1/2	8
	15,000	T2615	WNF X WNF	357	2 5/8	10 1/2	15 5/8	22	11 3/4	5 7/8	12 3/4	13 1/2
6”	3705	T5103	WNF X SLP	510	5 3/16	12	17 1/4	23 1/2	13	6 1/2	12 3/8	14
	5000	T5105	WNF X SLP	639	5 3/16	13	17 7/16	26	13	6 1/2	12 1/2	16
	6170	T4206	WNF X SLP	749	4 3/4	13	18 7/8	26	13	6 1/2		16
	10,000	T4110	WNF X WNF	649	4 1/8	12	18	24 1/2	13	6 1/2		16
	15,000	T3615	WNF X WNF	611	3 3/4	11 1/2	17 1/2	24	14 3/4	7 3/8		16
8”	3705, 5000	T7105	WNF X SLP	1009	7 1/16	15	21 1/4	29	16 1/2	8 1/8		18
	6170	T7106	WNF X SLP	1019	7 1/16	15	21 1/4	29	16 1/2	8 1/2		18
	10,000	T6110	WNF X WNF	1146	6 1/16	15	23 1/8	31	17	8 1/4		18
	15,000	T5615	WNF X WNF	1146	5 5/8	13 1/2	25 5/8	33	16 1/2	9 5/8		18
10”	3705, 5000	T9105	WNF X WNF	1580	9 1/16	18	25 1/2	33	20	10		22
	6170	T9106	WNF X WNF	1889	9 1/16	18	25 1/2	33	20	10		22
	10,000	T7610	WNF X WNF	1889	7 3/4	17	28 1/8	37	21	10 1/2		22
	15,000	T7615	WNF X WNF	1874	7 3/4	17	25	33	21	10 1/2		22

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CHECK VALVE

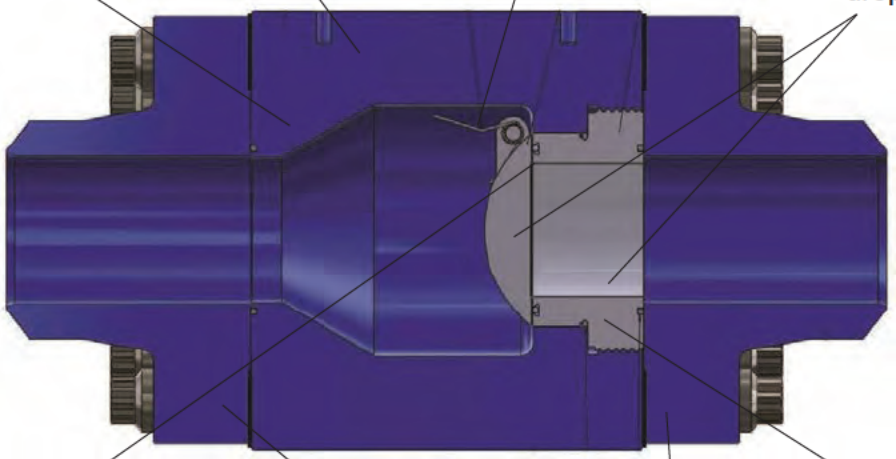
Fire Tested per ANSI / API STD 6FD

Resilient and metal-to-metal sealed disc pin retainers.

Stainless, Inconel or Elgiloy springs to suit any application. Provides positive shut off in low flow applications.

Solid forged body.

Stainless, flapper and seat assembly. Flapper swings completely out of the flow path, reducing pressure drop and turbulence.



Threaded seat assembly provides for mechanical engagement and is virtually blow-out proof.

O-Ring seal installed in the seat assembly, keeping it out of the flow stream for longer life. O-Ring Seat Seal Field Replaceable without replacing seat retainer.

A variety of end connections can be provided, offering complete mounting versatility.

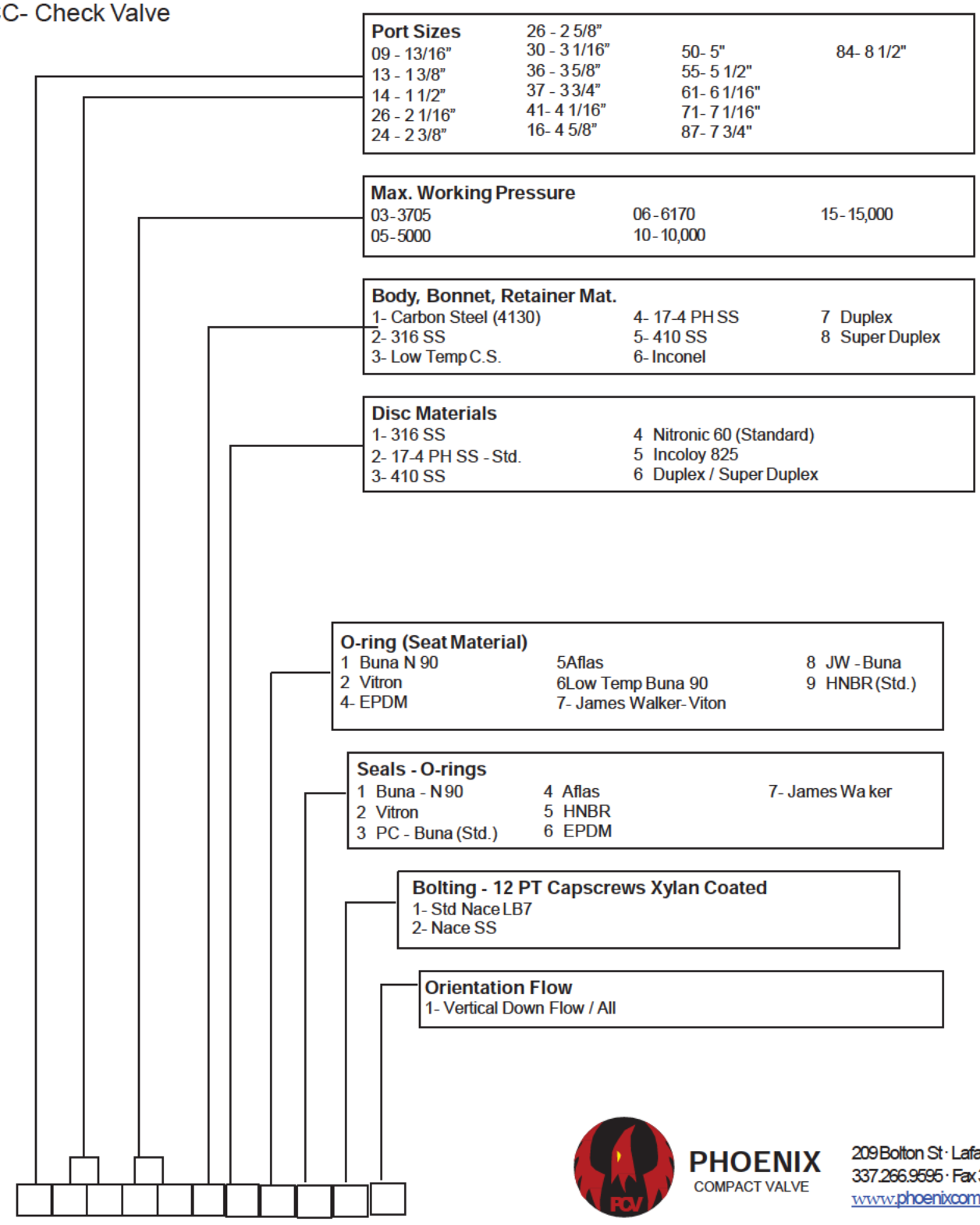
Warning: Valves never to exceed design pressures.

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CHECK VALVE

Assembly Part Number Code

CC- Check Valve



Port Sizes

09 - 13/16"	26 - 2 5/8"		
13 - 1 3/8"	30 - 3 1/16"	50- 5"	84- 8 1/2"
14 - 1 1/2"	36 - 3 5/8"	55- 5 1/2"	
26 - 2 1/16"	37 - 3 3/4"	61- 6 1/16"	
24 - 2 3/8"	41- 4 1/16"	71- 7 1/16"	
	16- 4 5/8"	87- 7 3/4"	

Max. Working Pressure

03-3705	06-6170	15-15,000
05-5000	10-10,000	

Body, Bonnet, Retainer Mat.

1- Carbon Steel (4130)	4- 17-4 PH SS	7 Duplex
2- 316 SS	5- 410 SS	8 Super Duplex
3- Low Temp C.S.	6- Inconel	

Disc Materials

1- 316 SS	4 Nitronic 60 (Standard)
2- 17-4 PH SS - Std.	5 Incoloy 825
3- 410 SS	6 Duplex / Super Duplex

O-ring (Seat Material)

1 Buna N 90	5Aflas	8 JW - Buna
2 Vitron	6Low Temp Buna 90	9 HNBR (Std.)
4- EPDM	7- James Walker- Viton	

Seals - O-rings

1 Buna - N 90	4 Aflas	7- James Wa ker
2 Vitron	5 HNBR	
3 PC - Buna (Std.)	6 EPDM	

Bolting - 12 PT Capscrews Xylan Coated

1- Std Nace LB7
2- Nace SS

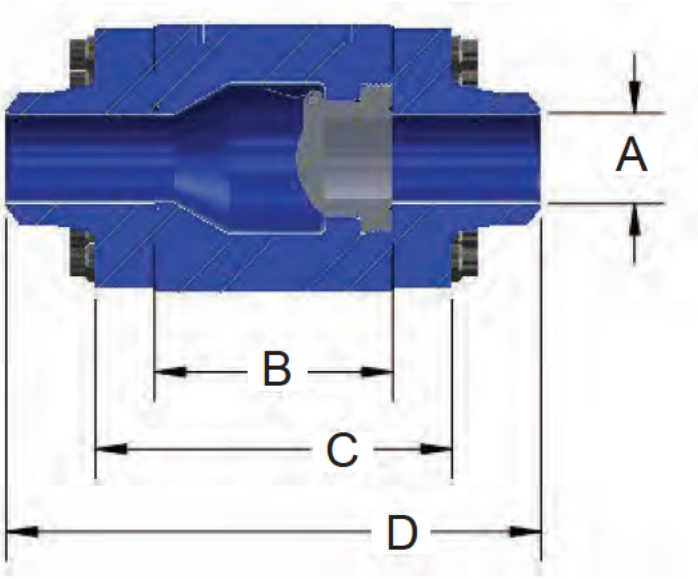
Orientation Flow

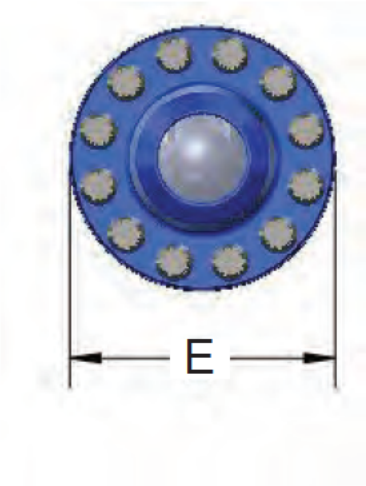
1- Vertical Down Flow / All

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CHECK VALVE





Nominal Size	Working Pressure	Assembly Base No.	Stand End Configure	W/Ends Weight (LBS)	A	B	C	D	E
1”	3705, 5000, 6170	CC0906	SLP X SLP	15	13/16	4	6 1/2	12	3
	10,000	CC0910	SLP X SLP	28.5	13/16	4	6 1/2	12	3
	15,000	CC0915	WNF X WNF	33	13/16	4		10	4 1/8
2”	3705, 5000, 6170	CC1406	SLP X SLP	43	1 1/2	4	6 3/8	14 1/2	4
	10,000	CC1410	SLP X SLP	71	1 1/2	5 1/2	9 1/8	16	5 7/8
	15,000	CC1415	WNF X WNF	85	1 1/2	4 1/2		14 1/2	7 1/4
3”	3705, 5000	CC2405	SLP X SLP	66	2 3/8	5	8	16 1/2	6 1/4
	6170	CC2406	SLP X SLP	66	2 3/8	5	8	16 1/2	6 1/4
	10,000	CC2110	WNF X WNF	90	2 1/16	5 1/2	9 1/4	18	8 1/2
	15,000	CC1316	WNF X WNF	115	1 3/8	6		15	8
4”	3705	CC3603	SLP X SLP	125	3 5/8	7	10 5/8	20	8
	5000, 6170	CC3606	SLP X SLP	125	3 5/8	6 1/2	10 1/8	20	8 3/4
	10,000	CC3010	WNF X WNF	189	3 1/16	8	11 3/4	18	10 1/4
	15,000	CC2615	WNF X WNF	200	2 5/8	8		19 1/2	11 1/4
6”	3705	CC5003	SLP X SLP	219	5	9	13 1/8	22	10
	5000	CC5005	SLP X SLP	235	5	10	15 3/4	23	11 1/2
	6170	CC5006	SLP X SLP	235	5	10	15 3/4	23	11 1/2
	10,000	CC4110	SLP X SLP	275	4 1/16	10	15 3/4	23	11 1/2
	15,000	CC3715	WNF X WNF	295	3 3/4	11 1/2		24	14 1/2
8”	3705, 5000	CC7103	SLP X SLP	595	7 1/16	12	18	26	14 1/4
	6170	CC7106	SLP X SLP	595	7 1/16	12	18	26	14 1/4
	10,000	CC6110	WNF X WNF	640	6 1/16	12		28	14 1/2
	15,000	CC5515	WNF X WNF	685	5 1/2	12 7/8		25 3/8	16 1/2
10”	3705	CC8403	WNF X WNF	839	8 1/2	15		30	16 3/4
	5000, 6170	CC8406	WNF X WNF	839	8 1/2	15		30	17 1/4
	10,000	CC7610	WNF X WNF	875	7 3/4	14		32	17 1/4

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Recommended Spare Parts for 1 to 2 Years

Part Description	Number of Valves in Operation						
	1-5	6-10	11-15	16-20	21-25	26-30	31-35
Body Group	0	0	0	0	0	0	0
Disc	0	1	1	2	3	3	5
Seal Kit	1	2	3	4	5	6	7
Seat Assembly Set	1	2	3	4	5	6	7

Note: Consult factory for part numbers on above spare parts.

Recommended Cap Screw Tightening Torque

Xylan Coated Bolts

Screw Diameter	Torque (FT.-LBS.) 3,600 & 6,000 W.P.	10,000 W.P.
7/16″	45	50
1/2″	60	70
5/8″	110	130
3/4″	150	195
7/8″	250	325
1″	375	490
1-1/8″	540	700
1-1/4″	750	975
1-1/2″	1,280	1,680

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BALL VALVE OPERATING TORQUE

The torque values below show the maximum required operating Break Torque of PCV Compact Ball Valves in a Clean or Wet service. Torques may increase as much as 100% in some services such as Dry Natural Gas. Run Torque is about 50% of the Break Torque and Reseat Torque will be about 80%. A minimum of 50% to a maximum of 100% should be added for actuator sizing.
Always consult with factory for actual torques to ensure accuracy.

Nominal Size	Working Pressure (psi)	Valve Model Number	Valve Bore Size	Max Torque (ft/lbs)	Max Torque (in/lbs)	Handle Length (in)	Handle Pull (lbs)	Gear Operator Model	Turns to Open/ Close	Handwheel Diameter (in)	Handwheel Rim Pull (lbs)
1	3705, 5000, 6170	F0906	13/16	35	420	12	35	Consult Factory			
	10,000	F0910	13/16	45	540	12	45				
2	3705, 5000, 6170	F1406	1 1/2	25	300	16	50				
	10,000	F1410	1 1/2	100	1200	16	75				
3	3705, 5000, 6170	F2506	2 9/16	130	1560	24	88	AB550	9	12	29
	6170	T2506	2 9/16	130	1560	24	90	AB550	9	12	27
	10,000	T2610	2 9/16	125	1600	24	63	AB880	10	12	46
4	3705	T3603	3 3/4	313	3756	48	78	AB550	9	12	52
	5000, 6170	T3206	3 1/4	383	4596	60	77	AB880	10	12	58
	10,000	T3110	3 1/8	433	5200	66	80	AB880	10	12	66
6	3705	T5103	5 13/16	583	7000	N/A		AB880	10	12	66
	5000	T5105	5 13/16	833	10,000	N/A		AB880	10	20	76
	6170	T4206	4 3/4	725	8700	N/A		AB880	10	20	80
	10,000	T4110	4 1/8	1667	20,000	N/A		AB1250	12	30	70
8	3705, 5000	T7105	7 1/16	1167	14,000	N/A		AB1950	14	24	61
	6170	T7106	7 1/16	1583	19,000	N/A		AB1950	14	24	83
	10,000	T6110	6 1/16	4166	50,000	N/A		AB1950/SP4	54	30	61
10	3705, 5000	T9105	9 1/16	2325	27,900	N/A		AB1950/SP4	54	16	64
	6170	T9106	9 1/16	3300	39,600	N/A		AB1950/SP4	53	30	49

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