PHOENIX
COMPACT VALVE

INNOVATIVE COMPACT TECHNOLOGY

ADVANCED MANIFOLDS PRODUCTS

Phoenix Compact Valve is the culmination of the past 25 years developing, selling and servicing the compact valve market. Our president, James Pillaro, helped shape the compact valve development throughout those years.

1992 — James was instrumental in bringing the N-series compact floating ball valve to the industry.

1996 —The first compact trunnion ball valve was introduced, which led to expanding the pressure class to 15,000 psi. [1]

2006 — In an effort to continue pushing the valve market forward James introduced the second generation of compact trunnion ball valves.

2010 — James once again teamed up with the man that developed the first compact trunnion Valve to introduce the first patented true self centering seat assembly on a compact trunnion ball valve.

2013 — PCV set its sights on improving the seat sealing and field repair ability of the compact check valve. We have replaced the rigid Teflon seat insert, that is pressed into the mechanically locked retainer, with an O-ring seat seal. [2]

Our commitment to this industry has never been stronger!

1) It is safe to point out that several major competitors agreed that the compact trunnion valve would never work. Today these same competitors are marketing compact trunnion valves.

2) This has been utilized on flanged check valves for years.

SOUTHWEST RESEARCH INSTITUTE

External Hydrostatic / Operational Testing: Simulated Test Depth Pressure 10,000 ft. (4,450 psig)

Internal Pressure 10,000 psig

Sealing Integrity: While at an external test pressure of 4,450 psig (simulated) equivalent water depth of 10,000 feet, the valve was first subjected to a water ingress test. This test consisted of increasing the external hydrostatic pressure on the valve to 4,450 +10/-0 psig. With the valve in the open position, the internal bore pressure was increased to between 38 to 58 psig. This condition was maintained for a period of 15 minutes. During this time, no indications of leakage into the valve were observed. Once the initial water ingress test was complete, the valve was subjected to a repeated open/close cyclic test at maximum external test pressure of 4,450 psig and internal bore pressure of 10,000 psig.

Open/Close Cyclic

To perform this portion of the testing, the valve was placed in the open position. The internal bore pressure was increased to 10,000 +300/-0 psig. The valve was then placed in the closed position. Once closed, the downstream pressure was reduced to 0 psig. The valve was then opened against the full differential pressure of 10,000 psig. The bore pressure would usually drop back to around 8,000 psig at this point. The bore pressure would then be brought back up to the 10,000 psig level. Once stable, the process would be continued. The valve was subjected to a total of 53 open/close cycles using this process. During the cycling process, no visible signs of leakage were observed. Once the cycling was complete, the valve was subjected to another water ingress test similar to the first at the beginning of the test. No visible signs of leakage were observed. At this time, all test pressures were reduced to 0 psig and the chamber opened. A visual examination of the valve after testing revealed no anomalies.

All testing at SwRI was witnessed by Mr. Jamie Hinke of DNV Enery North America.

FLOATING BALL VALVE

Fire Tested per ANSI / API 607

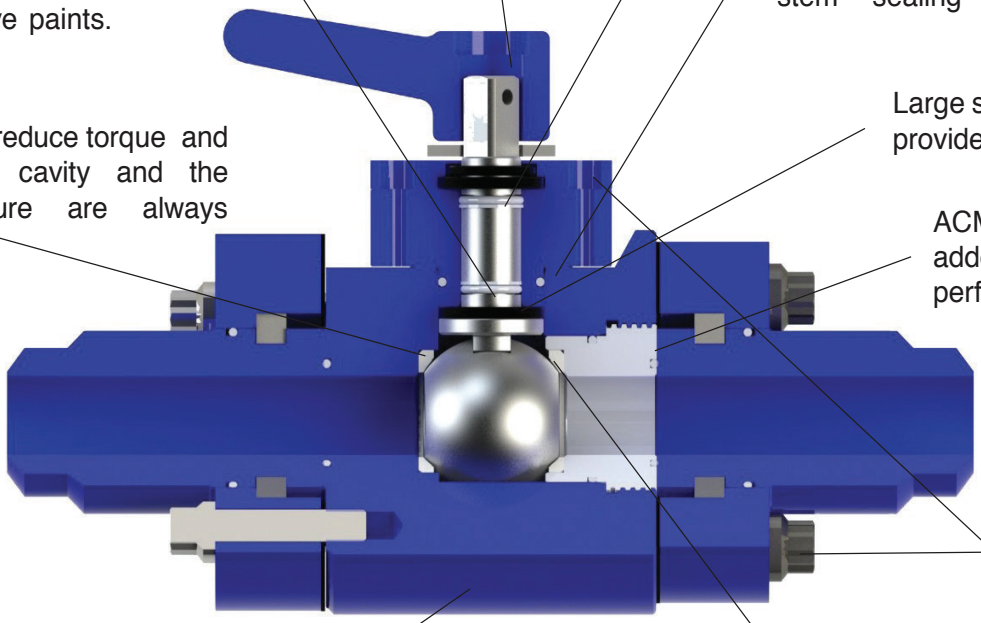
Cast handle indicates ball position. Easily repositioned to any quadrant. Removable to accept factory or field mounted actuators or gear operators.

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

In Sub Sea Applications, Large Split ring and bearing keep the stem assembly from pushing inward under pressures down to 10,000 ft.

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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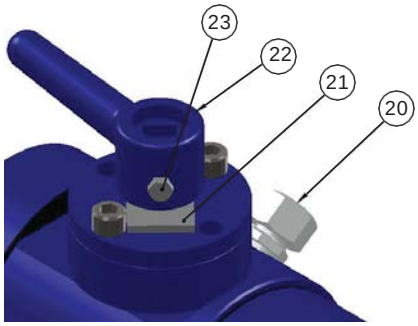
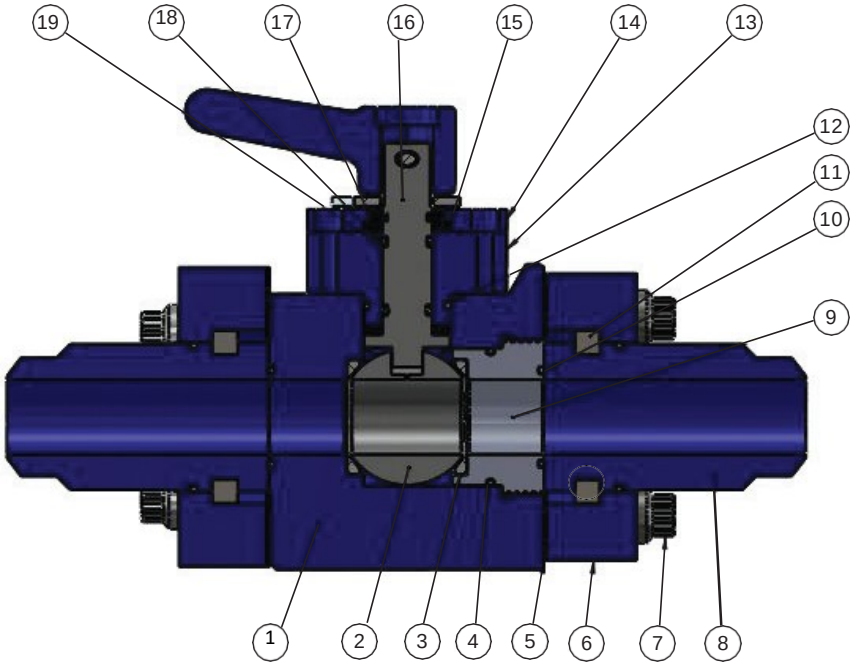
FLOATING BALL VALVE

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.
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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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TRUNNION BALL VALVE

Patented Design, Fire Tested per ANSI / API607

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

In Sub Sea applications, Large Split ring and bearing balance the stem assembly under pressures down up to 10,000 ft.

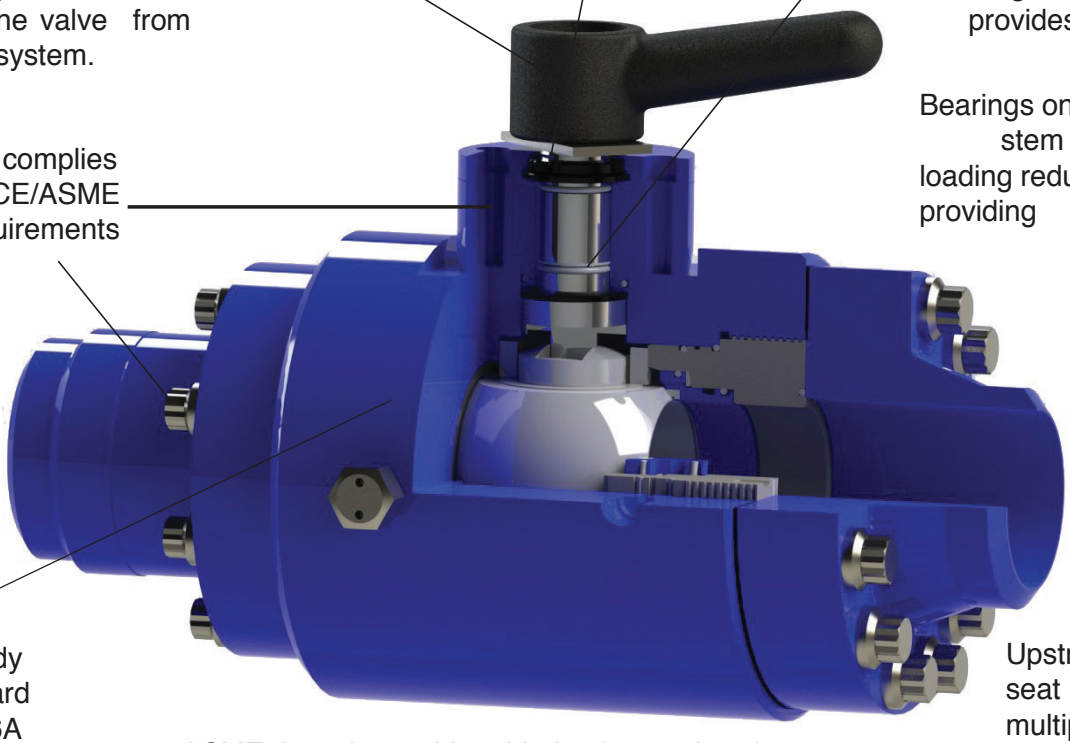
O-ring Seals and Back Ups can be provided in a wide variety of materials ensuring positive stem sealing at all pressures.

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

Large stem thrust bearing provides smooth operation.

Bearings on the ball isolate the stem from all side loading reducing torques and providing smooth operation.

LB7 bolting complies with NACE/ASME code requirements



Fire Safe Graphite Rope secondary seal. Single wave spring provides pre-loading for low pressure sealing.

Trunnion Valve/Solid Forged Body and Standard major API 6A

ACME threads provide added safety and performance. Lubrication port over ball cavity. Self-centering seat rings.

Upstream self-centering seat rings provided in multiple configurations. Soft Seats in Celcon®, or PEEK®.

WARRANTY- PCV valves are warranted for 18 months from date of purchase or 12 months from date of instalation

Warning: Valves never to exceed design pressures. Leaking valves should be removed from service immediately to prevent death, personal injury, and/or property damage.

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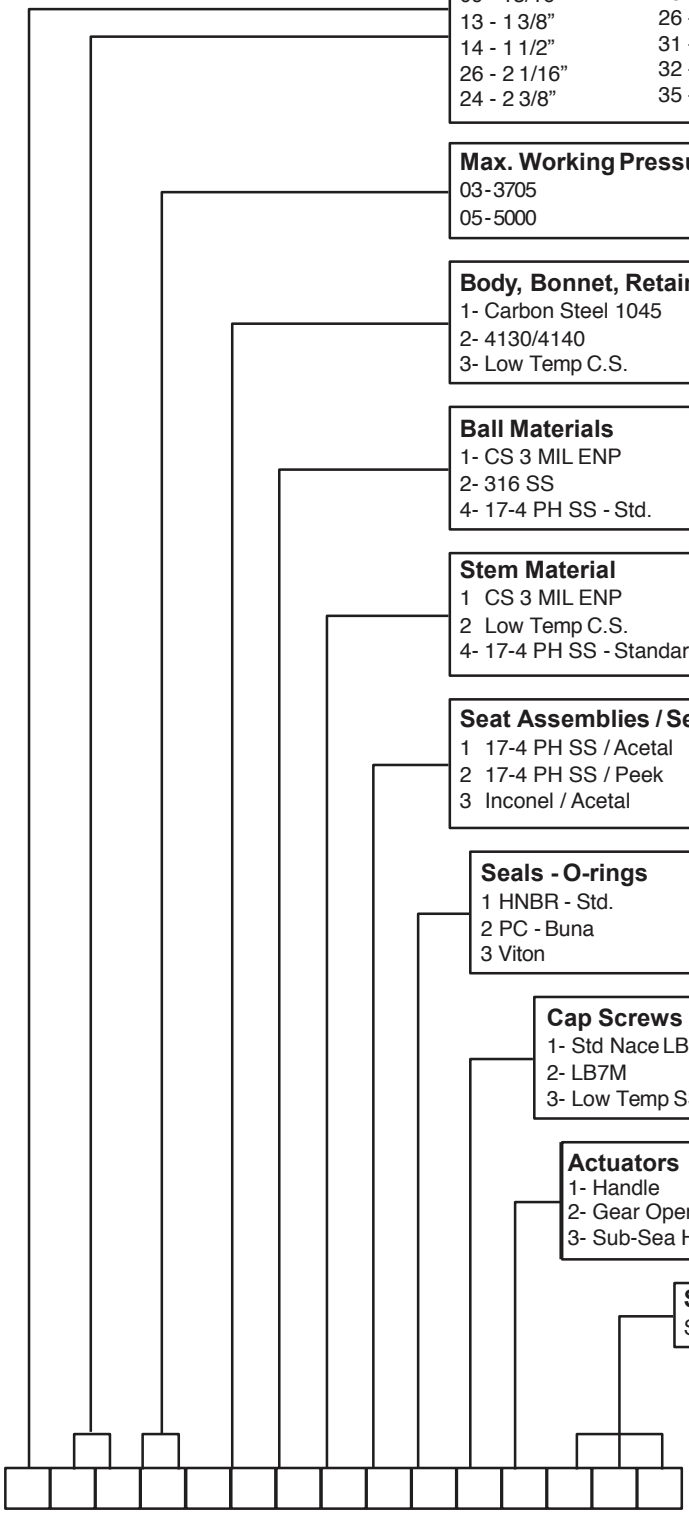
TRUNNION BALL VALVE

Assembly Part Code: T - Series

T - Trunnion Ball Valve



Port Sizes

09 - 13/16”	25 - 2 9/16”	36 - 3 3/4”	61 - 6 1/16”
13 - 1 3/8”	26 - 2 5/8”	41 - 4 1/8”	71 - 7 1/16”
14 - 1 1/2”	31 - 3 1/8”	42 - 4 3/4”	76 - 7 3/4”
26 - 2 1/16”	32 - 3 1/4”	51 - 5 3/16”	84 - 8 1/2”
24 - 2 3/8”	35 - 3 5/8”	56 - 5 5/8”	91 - 9 1/16”

Max. Working Pressure

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

Body, Bonnet, Retainer Mat.

1- Carbon Steel 1045	4- 17-4 PH SS	7 Duplex
2- 4130/4140	5- 410 SS	8 Super Duplex
3- Low Temp C.S.	6- Inconel	

Ball Materials

1- CS 3 MIL ENP	5- 410 SS	7- Duplex
2- 316 SS	6- Inconel	S- Super Duplex
4- 17-4 PH SS - Std.		

Stem Material

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

Seat Assemblies / Seat

1 17-4 PH SS / Acetal	4- Inconel / Peek	7- Super Duplex / Peek
2 17-4 PH SS / Peek	5- Duplex - Acetal	8- Special / Special
3 Inconel / Acetal	6- Duplex / Peek	

Seals - O-rings

1 HNBR - Std.	4 Aflas	7- JW - Buna
2 PC - Buna	5 EPDM	8- Special
3 Viton	6 James Walker- Viton	

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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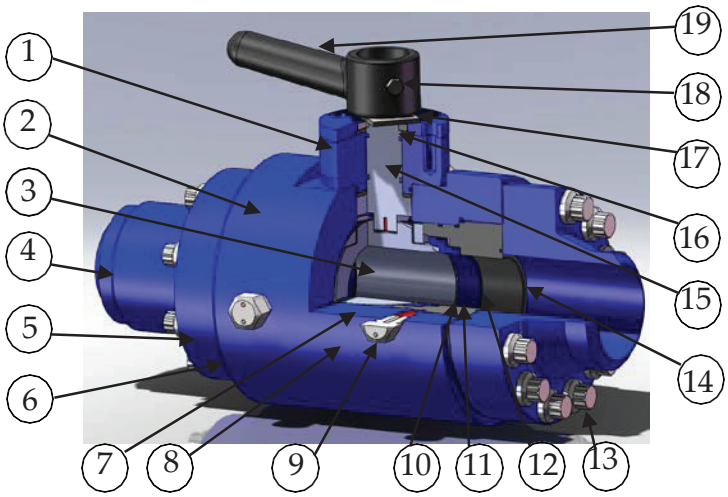
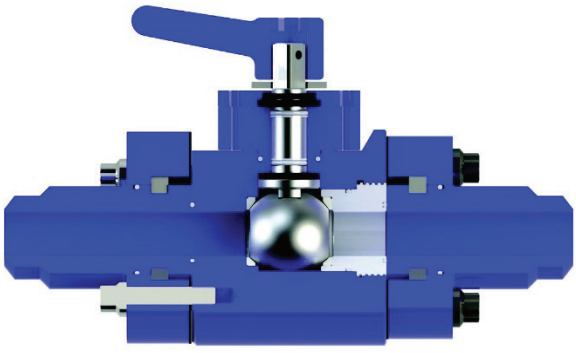
TRUNNION BALL VALVE



Item	Qty	Description	Materials
1	1	Bonnet	Alloy Steel, ASTM A322 Gr 4130 Q&T Subsea Xylan Coated
2	1	Body	Carbon Steel, Alloy Steal 4130
3	1	Ball	Alloy Steel, ASTM A322 Gr 4130 Q&T Subsea Xylan Coated, 17-4 SS
4	~	Nipple	Carbon Steel (AISI 1026/A106 Gr. B), Alloy Steel (A322 Gr 4130 Q&T)
5	2	Flange Weld Neck or Swivel	Carbon Steel, ASTM A105, A106 Gr. B, A576 (1026), Alloy Steel, ASTM A322 Gr. 4130 Q&T
6	1	Retainer	Alloy Steel, ASTM A322 Gr. 4130 Q&T
7	2	Trunnion Block	17-4 PH H1150 Stainless Steel
8	2	Trunnion Bearing	DU® (TFE Composite on Zinc Plated Steel Back)
9	1	Grease Fittings	Stainless Steel, Zinc Coated Carbon Steel
10	2	Seat Ring	17-4 PH H1150 DBL- Standard, Alloy Steel 3 mil ENP, Duplex, Super Duplex
11	2	Seat Insert	Acetal Co-polymer (Celcon®) or PEEK®
12	2	Wave Spring	17-7 PH or Inconel X-750
13	~	Ferry Head Cap Screw	ASTM, A193 / A320 LB7 Dual Certified Bolting
14	2	O-ring (Face Seal)	Buna-N, Viton®, PC Buna-N, LT Buna-N, HSN/HNBR, EPDM, AFLAS®, ...
15	1	Stem	17-4 PH H1150 DBL- Standard, Alloy Steel 3 mil ENP, Duplex, Super Duplex
16	2	Thrust Bearing	Nitronic 60 or 4130 Xylan Coated
17	1	Handle Stop Plate	Carbon Steel
18	1	Handle Screw	18-8 SS
19	1	Handle	Steel



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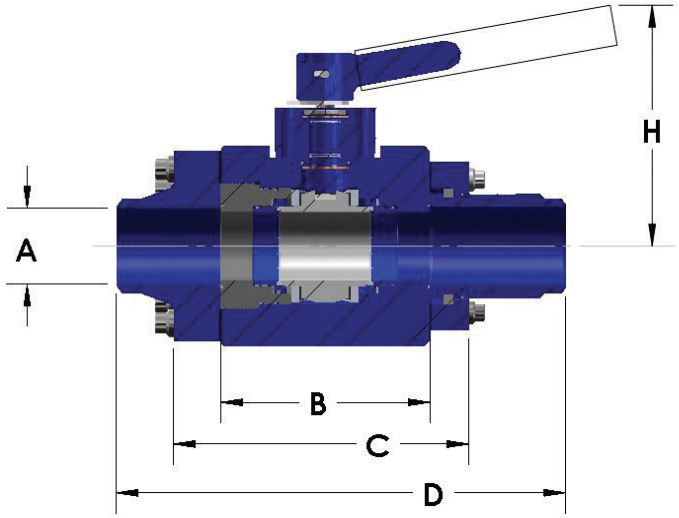
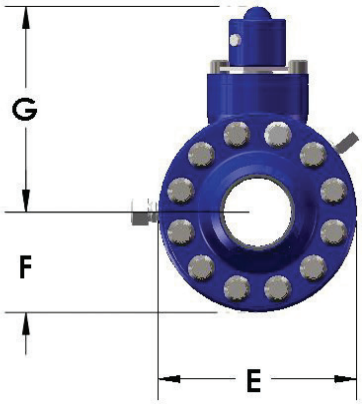
FLOATING / TRUNNION BALL VALVE





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	17	22
	6170	T9106	WNF X WNF	1580	9 1/16	18	25 1/2	33	20	10	17	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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Data shown for reference only.
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We reserve the right to change data or designs without notice.

CHECK VALVE

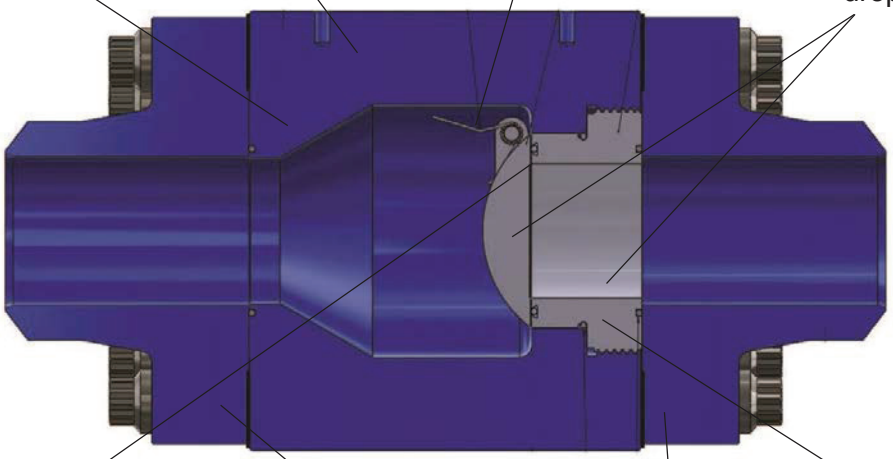
Fire Tested per ANSI / API STD 6FD

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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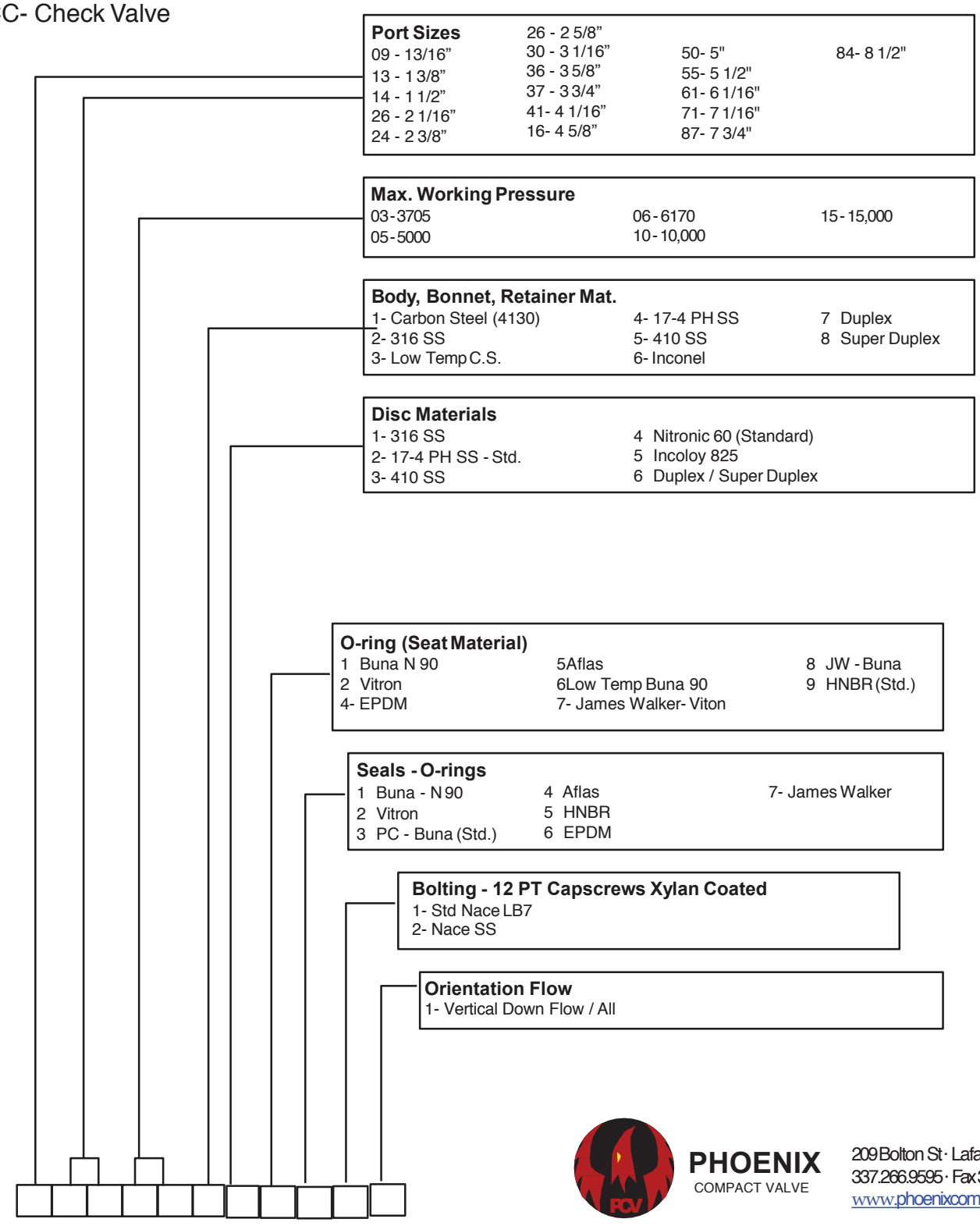
CHECK VALVE

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 Walker
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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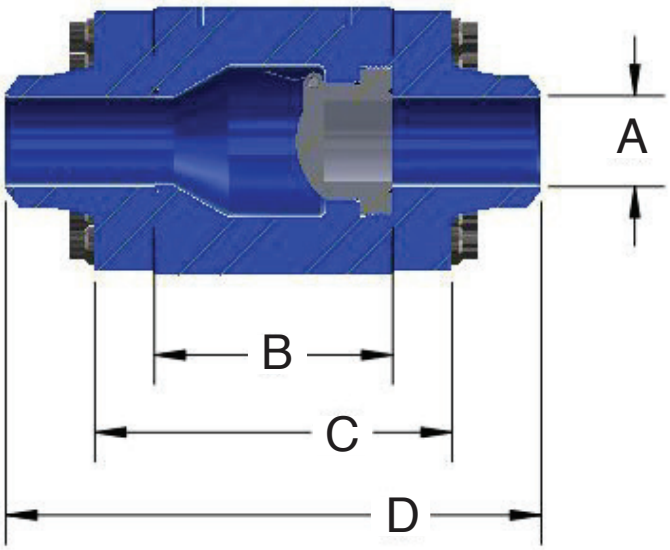
CHECK VALVE



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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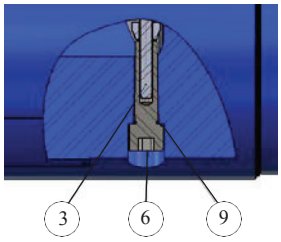
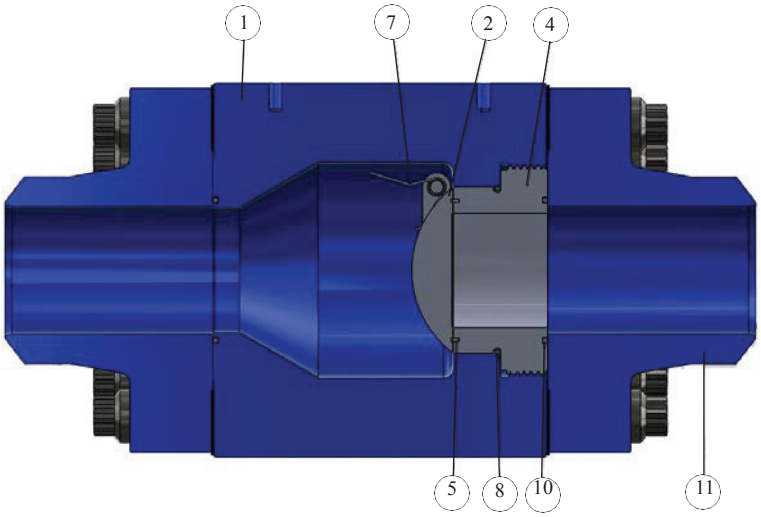
Data shown for reference only.
Consult the factory for certified data.
We reserve the right to change data or designs without notice.

CHECK VALVE

Component Parts List with Common Materials





Item	Qty	Description	Materials
1	1	Body	Alloy Steel, ASTM A322 Gr 4130 Q&T
2	1	Disc	Nitronic 60, 17-4 H1150 DBL
3	1	Shaft	17-4 PH H1150 DBL
4	1	Seat Carrier	17-4 PH H1150 DBL
5	1	Seat O-ring	HSN/HNBR
6	2	Shaft Retainer	A193 Gr B7, 17-4 H1150 DBL
7	2	Shaft Spring	Inconel X-75
8	1	Seat Carrier Seal (O-ring)	Buna-N, Viton, PC Buna-N, LT Buna-N, HSN/HNBR, EPDM, AFLAS...
9	1	Shaft Retainer Seal (O-ring)	Buna-N, Viton, PC Buna-N, LT Buna-N, HSN/HNBR, EPDM, AFLAS...
10	1	Body/End Conversion Seal (O-ring)	Buna-N, Viton, PC Buna-N, LT Buna-N, HSN/HNBR, EPDM, AFLAS...
11	2	End Flange (Swivel Shown)	Carbon Steel, Alloy Steel 4130

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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.

Assembly Part Number Code: Fittings

Product Identifier
EC-FITTINGS

Port Size

09 - 13/16"	25 - 2-9/16"	37 - 3-3/4"	71 - 7-1/16"
14 - 1-1/2"	26 - 2-5/8"	41 - 4-1/16"	77 - 7-3/4"
13 - 1-3/8"	27 - 2-3/4"	46 - 4-5/8"	84 - 8-1/2"
19 - 1-15/16"	31 - 3-1/16"	50 - 5"	97 - 9-3/4"
21 - 2-1/16"	32 - 3-1/8"	54 - 5-1/2"	
24 - 2-3/8"	36 - 3-5/8"	61 - 6-1/16"	

Pressure Class

02 - CL 900 (2220)	04 - API 3000
03 - CL 1500 (3705)	05 - API 5000
06 - CL2500 (6170)	10 - API 10,000

Weld SCH

F - SCH 80	L - SCH XXH
P - SCH 120	Y - SCH XXXH
S - SCH 140	
K - SCH 160	S - Special

Fitting Type

1 Nipple	4 - Weld Neck	7 - Thd. 3" FNPT
2 Tee	5 - Thd. 2" FNPT	8 - Thd. 4" FNPT
3 Cross	6 - Thd. 2.5" FNPT	

Fitting Material

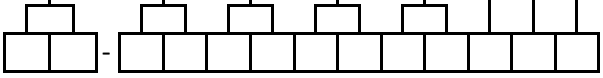
1 - Carbon Steel (A105, 1018, 4130…)
2 - Stainless Steel (316 SS…)
3 - LT Carbon Steel (LF2, LTCS…)
4 - 17-4 PH Stainless Steel

Seals (O-Rings) Material

1 - Buna-N	5 - AFLAS	0 - None Required
2 - Viton	8 - LT BUNA-N	
4 - HNBR-Std.	A - J.W. FR 58/90 Viton	

SPEC's / Bolting

1 - Std. NACE / LB7 Xylan
2 - NACE Buried / LB7M Xylan



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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

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	**50**	**600**	16	50				
	10,000	F1410	1 1/2	85	1020	16	75				
3	3705, 5000, 6170	F2506	2 9/16	**130**	**1560**	24	88	AB550	9	12	29
	6170	T2506	2 9/16	180	2160	24	90	AB550	9	12	27
	10,000	T2610	2 9/16	200	2400	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	**2000**	**24,000**	N/A		AB880	10	20	76
	6170	T4206	4 3/4	**2800**	**33,600**	N/A		AB880	10	20	80
	10,000	T4110	4 1/8	3000	36,000	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

*All torques not in **bold** are calculated

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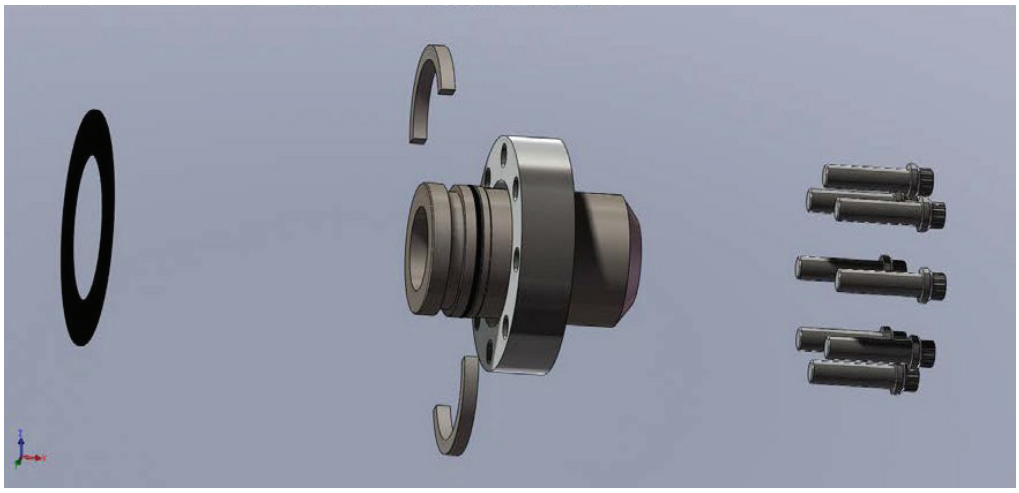
SWIVEL FLANGE / NIPPLE CONFIGURATION



Step 1: Have all components available for installation.
Generic list of components is as follows:
. 1 Buttweld Nipple
. 1 Swivel Flange
. 1 Weather Gasket
. 2 Half Rings
. One set of 12 Point Cap Screws

Step 2: Install Swivel Flange over the Nipple.

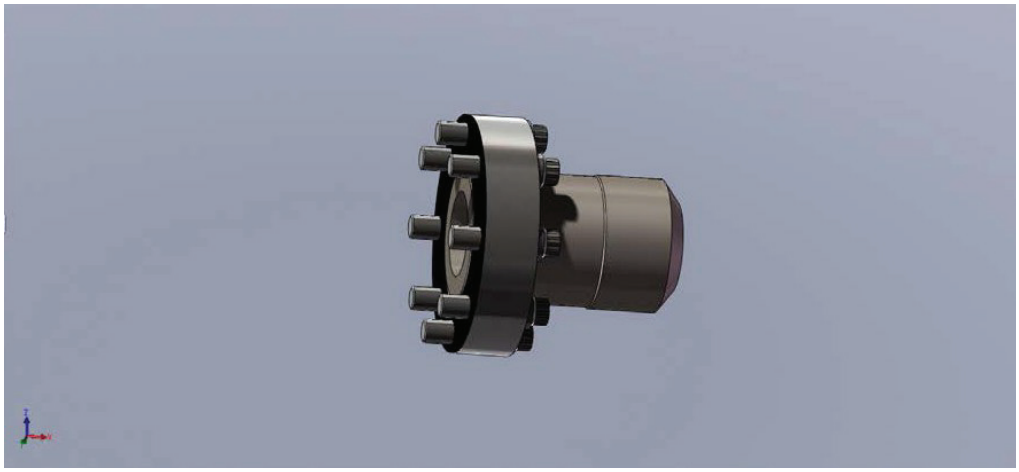
Step 3: Install the 2 Half Rings into groove on the Nipple.

Step 4: Slide the Swivel Flange back over the Half Rings.

Step 5: Install the 12 Point Cap Screws.

Step 6: Slide the Weather Gasket Over the protruding end of the Cap Screws.

Step 7: Connect Swivel Flange to Compact Valve using a Star Pattern to tighten Cap Screws.



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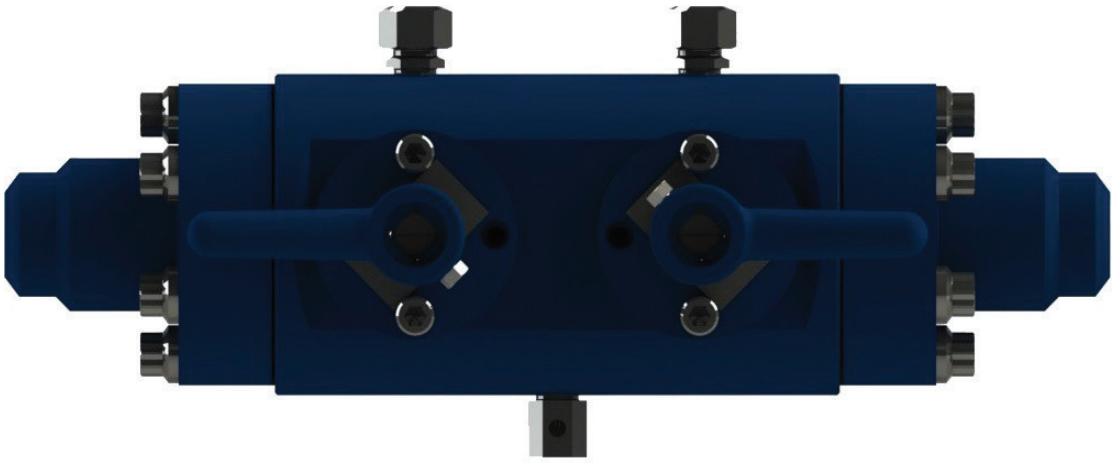
CUSTOM APPLICATION

- Dual Ball Valves / Double Block and Bleed Valves
- Throttle Ball Valves / up to 3” Nominal size
- Custom top works for ROV and diver manipulation
- Double stem ball valves for use in Sub Sea installations
- Custom weld overlays for severe service applications



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Warning Notice:
Whenever leakage is detected from PCV products, remove them Service immediately to prevent death, serious personal injury, And or property damage.
Contact the company you purchased product from for instruction from manufacturer.
Under no circumstances attempt to disassemble PCV valves or repair Without reporting problem to Phoenix Compact Valve.

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Representation in Nigeria, North Sea, Trinidad, Ohio, and Texas.