



MODEL F-6 MULTI-PORT DIRECT MOUNT FLANG BALL VALVE

Choice of
Direct mount actuation
or Manual Locking Lever



3-WAY & 4-WAY
CONFIGURATIONS AVAILABLE



APEX

Ball Valve Features

1. DIRECT ISO5211 MOUNTING PAD

Apex's mounting pad is designed for direct mounting of actuators that meet ISO5211 specification. The square stem is set perpendicular to the machined mounting pad to ensure proper alignment of mounted actuator. Alternatively, a manual locking handle can be installed for manual operation.

2. ACTIVE STEM SEALING MECHANISM

Apex incorporates a set of Belleville Washer to ensure tight sealing at all times. Whether it is temperature fluctuation or wear down due to friction, the spring-loaded washers dynamically tighten the seal.

3. BUBBLE TIGHT SEATING MECHANISM

Our three-way ball valve has four seats to ensure that ball to seat sealing is bubble tight at all flow configurations.

4. PORT AND BALL ALIGNMENT

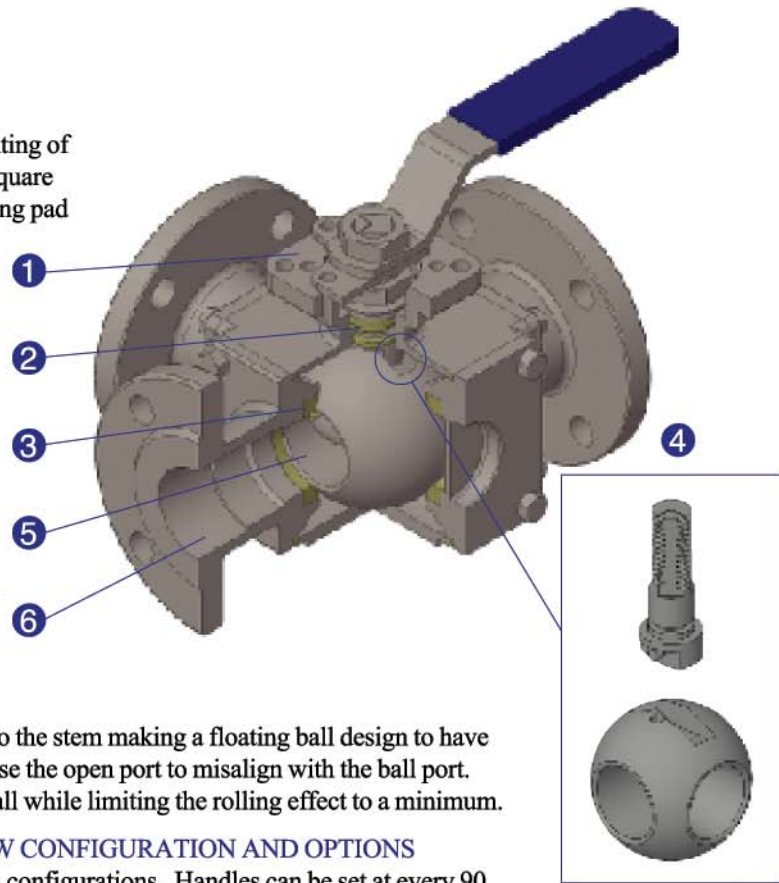
For ball valve up to 2", Apex built a pin insert into the stem making a floating ball design to have limited rolling effect. Rolling of the ball may cause the open port to misalign with the ball port. Our design maintains the flexibility of floating ball while limiting the rolling effect to a minimum.

5. FLEXIBILITY WITH WIDE RANGE OF FLOW CONFIGURATION AND OPTIONS

Our L-port and T-Port ball may be set for various configurations. Handles can be set at every 90 degrees to maximize flow pattern and the handle direction. Optional 4-way valve may be constructed or cavity filled seats may be installed to suit each application.

6. CHOICE OF DIFFERENT END CONNECTIONS

Various end cap types, flange of different standards, threaded, socket weld, butt weld may be change out size. For threaded, socket weld, and butt weld type, please consult our 5-6 brochure.



Options

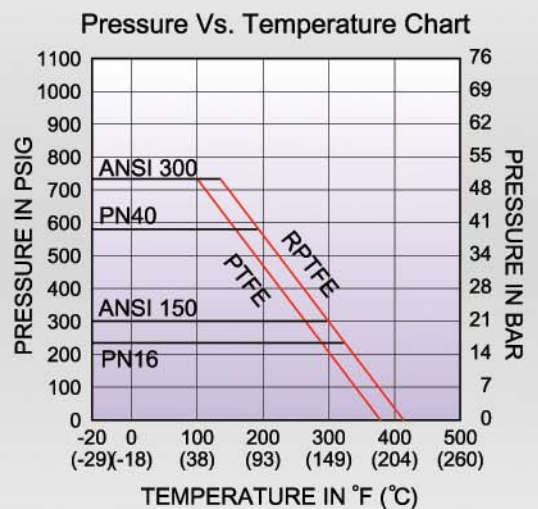


Model F6:
1/2" (DN15) ~ 2" (DN50)



Model F6:
2 1/2" (DN65) ~ 4" (DN100)

Pressure And Temperature Rating

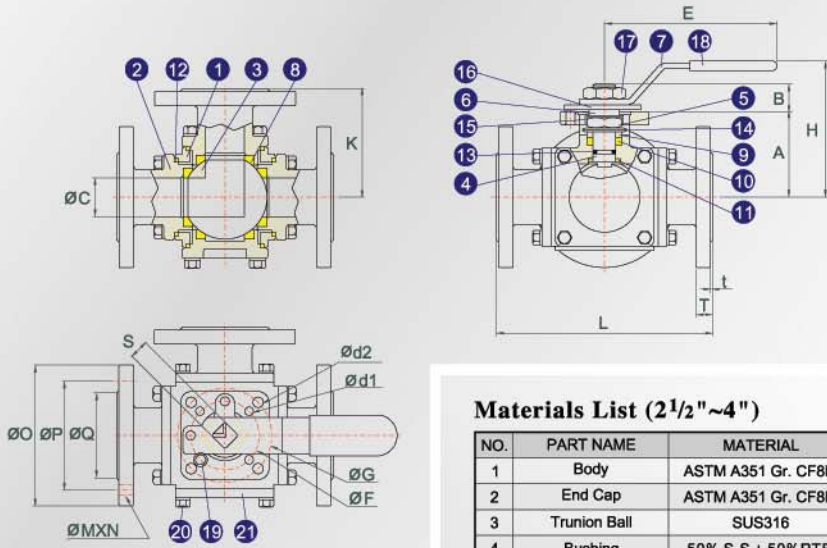


Ball Valve Materials and Dimensions

Materials List (1/2"~2")

NO.	PART NAME	MATERIAL	QTY
1	Body	ASTM A351 Gr. CF8M	1
2	End Cap	ASTM A351 Gr. CF8M	3
3	Ball	SUS316	1
4	Stem	SUS316	1
5	Stem Nut	SUS 304	1
6	Spacer	SUS 304	1
7	Handle	SUS 304	1
8	Seat	PTFE *	4
9	Gland	SUS 304	1
10	Stem Packing	PTFE	1
11	Thrust Washer	RPTFE	1
12	Joint Gasket	PTFE	4
13	O-Ring	Viton	1
14	Belleve Washer	SUS 301	2
15	Lock Saddle	SUS 304	1
16	Locking Plate	SUS 304	1
17	Handle Nut	SUS 304	1
18	Handle Sleeve	Vinyl	1
19	Stop Pin	SUS 304	1
20	Cap Bolt	SUS 304	16
21	Blank Cap	ASTM A351 Gr. CF8M	1

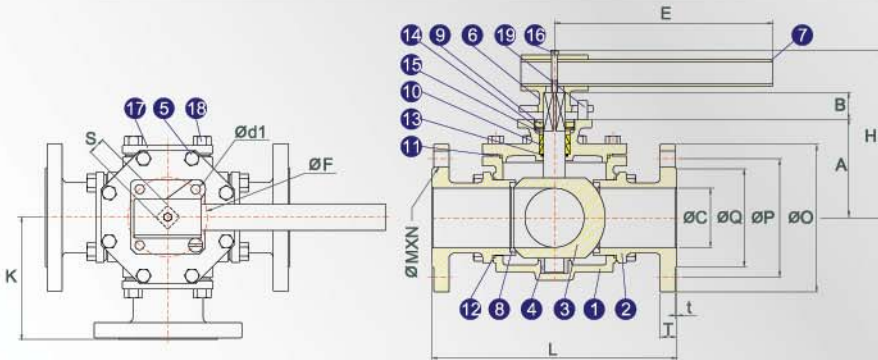
* Other options available. Please contact us.



Materials List (2 1/2"~4")

NO.	PART NAME	MATERIAL	QTY
1	Body	ASTM A351 Gr. CF8M	1
2	End Cap	ASTM A351 Gr. CF8M	3
3	Trunion Ball	SUS316	1
4	Bushing	50% S.S + 50%PTFE	1
5	Top Cap Bolt	SUS 304	8
6	Handle T-Bar	ASTM A351 Gr. CF8	1
7	Lever	Carbon Steel	1
8	Seat	PTFE *	4
9	Gland	SUS 304	1
10	Stem Packing	PTFE	1
11	Top Cap Gasket	PTFE	1
12	Joint Gasket	PTFE	4
13	O-Ring	Viton	1
14	Belleve Washer	SUS 301	2
15	Gland Washer	SUS 304	1
16	Handle Bolt	SUS 304	1
17	Blank Cap	ASTM A351 Gr. CF8M	1
18	End Cap Bolt	SUS 304	16
19	Stop Pin	SUS 304	1

* Other options available. Please contact us.



Dimensions (mm)

SIZE	ØC	Ød1	Ød2	ØF	ØG	A	B	K				L				T				t			
								150#	300#	PN16	PN40	150#	300#	PN16	PN40	150#	300#	PN16	PN40	150#	300#	PN16	PN40
1/2"	15	6.0	6.0	36	42	41	11	76	80	80	80	152	160	160	160	11.2	14.5	14	16	1.6	1.6	2	2
3/4"	20	6.0	7.1	42	50	49	14	84	89	89	89	167	177	177	177	11.2	16.0	16	18	1.6	1.6	2	2
1"	25	6.0	7.1	42	50	55	14	95	100	95	100	190	200	190	200	11.2	17.5	16	18	1.6	1.6	2	2
1-1/4"	32	7.1	9.2	50	70	63	18	104	109	104	109	208	218	208	218	12.7	20.5	16	18	1.6	1.6	2	2
1-1/2"	38	7.1	9.2	50	70	74	18	110	117	117	117	220	234	234	234	14.3	22.5	16	18	1.6	1.6	3	3
2"	50	9.2	11.4	70	102	93	23	127	137	137	137	253	273	273	273	15.8	25.4	18	20	1.6	1.6	3	3

SIZE	E	H	S	M				N				O				P				Q			
				150#	300#	PN16	PN40	150#	300#	PN16	PN40	150#	300#	PN16	PN40	150#	300#	PN16	PN40	150#	300#	PN16	PN40
1/2"	130	62	9	16	16	14	14	4	4	4	4	89	95	95	95	60.5	66.5	65	65	35	35	45	45
3/4"	165	82	11	16	19	14	14	4	4	4	4	98	117	105	105	70	82.5	75	75	43	43	58	58
1"	165	89	11	16	19	14	14	4	4	4	4	108	124	115	115	79.5	89	85	85	51	51	68	68
1-1/4"	205	98	14	16	19	18	18	4	4	4	4	117	134	140	140	89	98.5	100	100	64	64	78	78
1-1/2"	205	108	14	16	22	18	18	4	4	4	4	127	156	150	150	98.5	114.5	110	110	73	73	88	88
2"	325	140	17	16	19	18	18	4	8	4	4	152	165	165	165	120.5	127	125	125	92	92	102	102

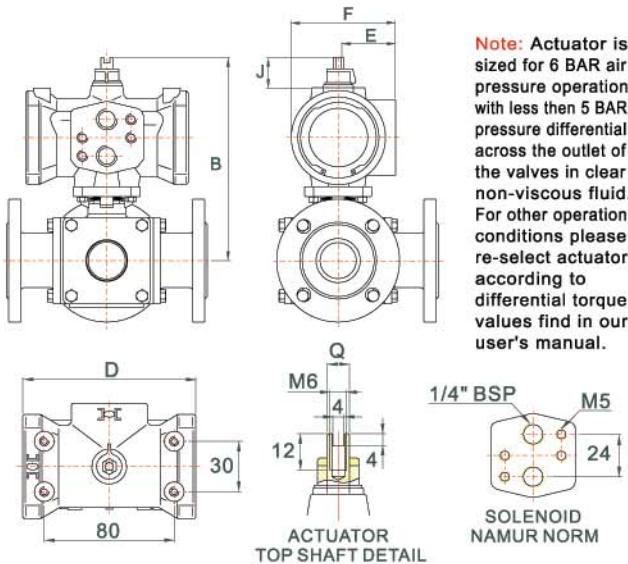
SIZE	ØC	Ød1	ØF	A	B	E	K				L				T				t			
							150#	300#	PN16	PN40	150#	300#	PN16	PN40	150#	300#	PN16	PN40	150#	300#	PN16	PN40
2-1/2"	62	11	102	119	25	400	150	150	150	150	300	300	300	300	17.8	25.4	18	22	1.6	1.6	3.0	3.0
3"	76	11	102	137	25	500	153	165	153	165	305	330	305	330	19.1	28.6	20	24	1.6	1.6	3.0	3.0
4"	96	11	102	157	25	650	185	197	185	197	369	394	369	394	24	32	20	24	1.6	1.6	3.0	3.0

SIZE	H	S	M				N				O				P				Q			
			150#	300#	PN16	PN40	150#	300#	PN16	PN40	150#	300#	PN16	PN40	150#	300#	PN16	PN40	150#	300#	PN16	PN40
2-1/2"	199	22	19	22	18	18	4	8	4	8	178	190	185	185	140	149	145	145	105	105	122	122
3"	217	22	19	22	18	18	4	8	8	8	190	210	200	200	153	168	160	160	127	127	138	138
4"	237	22	19	22	18	22	8	8	8	8	229	254	220	235	191	200	180	190	157	157	158	162

Actuated Ball Valve Dimensions

Dimensions for Valve with Double Acting Actuator (mm)

SIZE	Actuator Type	B	D	E	F	J	Q
1/2"	P00	151	125	44	80	30	10
3/4"	P00	159	125	44	80	30	10
1"	P05	177	146	53	98	30	10
1 1/4"	P10	190	182	55	102	30	10
1 1/2"	P15	222	203	60	115	30	10
2"	P20	254	234	67	127	30	16
2 1/2"	P25	310	276	78	152	30	16
3"	P25	328	276	78	152	30	16
4"	P30	368	349	94	177	30	16



Break Away Torque for Actuator Sizing

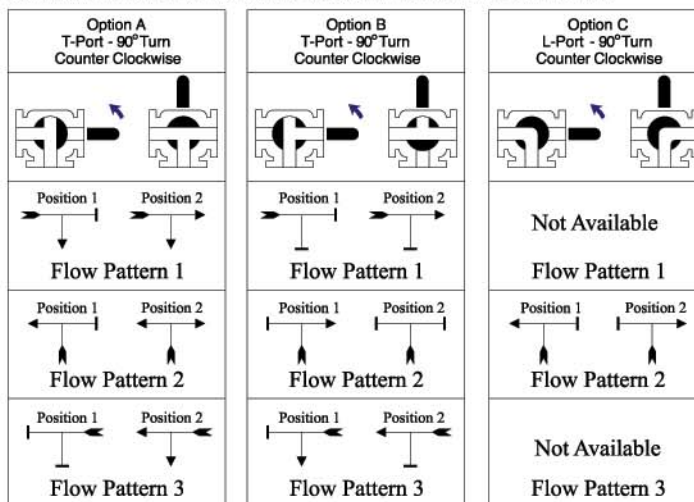
F-6 Torque Values

SIZE	IN-LB	NM
1/2"	152	17.1
3/4"	166	18.8
1"	338	38.2
1 1/4"	397	44.8
1 1/2"	549	62.0
2"	881	99.5
2 1/2"	1155	130.5
3"	1404	158.6
4"	2821	318.8

Note: Torque Value listed is for non-lubricated ball valve at differential pressure of 75PSI(5 Bars) with clear liquid. 20% safety factor has been added to the value

Flow Configurations

As a standard our ball valves are shipped with Option A for T-Port configuration and Option C for L-Port configuration if customer does not explicitly specify particular option in the purchase order



← Up Stream (Flow Origin) |— No Flow
 → Down Stream (Flow End) — Flow Path

Ordering Information

Item	Selection	Code
Valve Type :	Three-Way Full Port Direct Mount Flange Ball Valve ANSI Class 150	F-61
	Three-Way Full Port Direct Mount Flange Ball Valve ANSI Class 300	F-62
	Three-Way Full Port Direct Mount Flange Ball Valve DIN PN 16	F-63
	Three-Way Full Port Direct Mount Flange Ball Valve DIN PN 40	F-66
Ball Port :	L-Port	L
	T-Port	T
Body Material :	316 Stainless Steel (ASTM A351 Gr. CF8M or DIN1.4408)	6
	WCB Carbon Steel (ASTM A216 Gr. WCB or DIN1.0619)	W
End Cap Material :	316 Stainless Steel (ASTM A351 Gr. CF8M or DIN1.4408)	6
	WCB Carbon Steel (ASTM A216 Gr. WCB or DIN1.0619)	W
Seat Material :	PTFE	P
	RPTFE	R
Size :	1/4"(DN8)=01, 3/8"(DN10)=02, 1/2"(DN15)=03, 3/4"(DN20)=04, 1"(DN25)=05, 1 1/4"(DN32)=06, 1 1/2"(DN40)=07, 2"(DN50)=08, 2 1/2"(DN65)=09, 3"(DN80)=10, 4"(DN100)=11	

Ordering Example

Type	Ball Port	Body	Cap	Seat	Size
F61 (Three-Way 150LB)	L (L-Port)	6 (SS316)	6 (SS316)	P (PTFE)	08 (2")