



MODEL 5-6 MULTI-PORT DIRECT MOUNT BALL VALVE



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

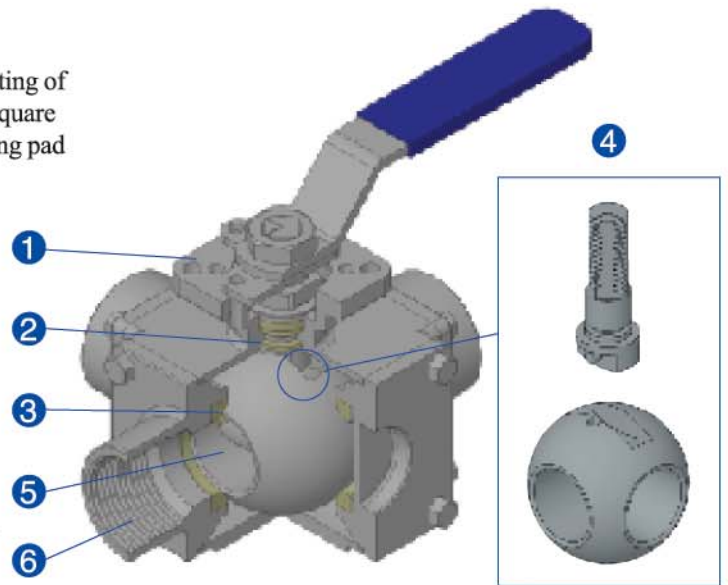
For ball valve up to 2", Apex built a pin insert into the stem making a floating ball design to have limited rolling effect. Rolling of the ball may cause the open port to misalign with the ball port. Our design maintains the flexibility of floating ball while limiting the rolling effect to a minimum.

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, threaded, socket weld, butt weld may be change out size for size.

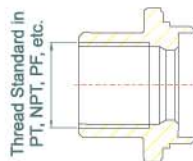
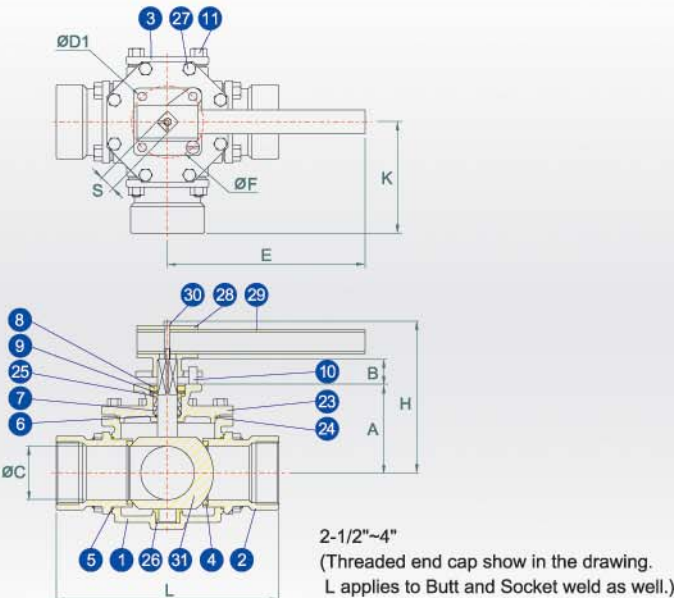
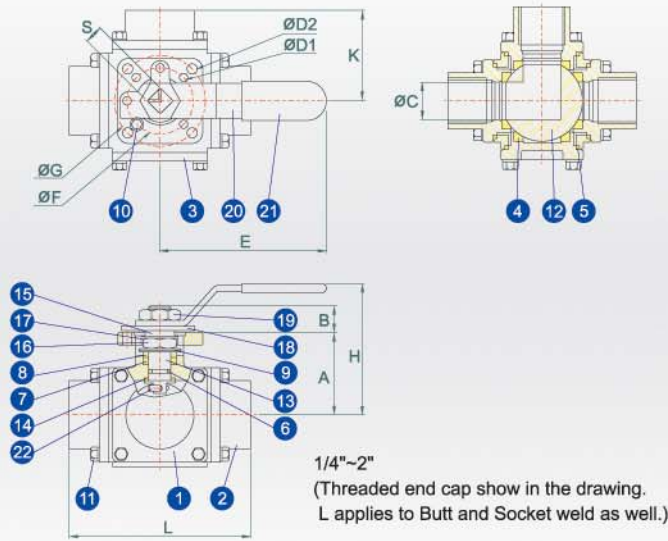


■ Options

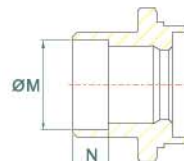


Ball Valve Materials and Dimensions

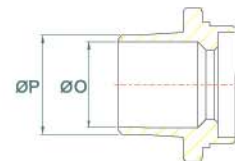
5-6T, 5-6S, 5-6B



5-6T : Threaded End



5-6S : Socket Weld End



5-6B : Butt Weld End

DIMENSIONS (mm)

SIZE	ØC	ØD1	ØD2	ØF	ØG	A	B	E	H	K			L			ØM	N	ØO	ØP	S
										THD	B.W	S.W	THD	B.W	S.W					
1/4"	10	6.0	6.0	36	42	39	11	130	62	44	44	44	88	88	88	14.2	11.1	10.0	17.0	9
3/8"	12.5	6.0	6.0	36	42	39	11	130	62	44	44	44	88	88	88	17.5	11.1	12.0	19.0	9
1/2"	15	6.0	6.0	36	42	41	11	130	64	53	53	53	105	105	105	21.7	12.7	15.0	21.5	9
3/4"	20	6.0	7.1	42	50	49	14	165	82	56	56	56	112	112	112	27.1	14.3	20.0	27.5	11
1"	25	6.0	7.1	42	50	55	14	165	89	64	64	64	128	128	128	33.8	15.9	25.0	34.5	11
1 1/4"	32	7.1	9.2	50	70	63	18	205	98	70	70	70	140	140	140	42.5	17.5	32.0	42.8	14
1 1/2"	38	7.1	9.2	50	70	74	18	205	108	80	80	80	160	160	160	48.6	19.1	38.0	49.0	14
2"	50	9.2	11	70	102	93	23	325	140	96	96	96	192	192	192	61.1	22.2	50.0	61.0	17
2 1/2"	62	11	N/A	102	N/A	119	25	400	197	147	133	147	294	265	294	73.9/77.0	23.0	65.0	77.0	22
3"	76	11	N/A	102	N/A	137	25	500	215	159	145	159	317	290	317	89.9	23.0	80.0	91.0	22
4"	96	11	N/A	102	N/A	157	25	650	235	185	173	185	369	345	369	115.2	29.0	100.0	115.0	22

MATERIALS LIST

NO.	PART NAME	MATERIAL	Q'TY
1	Body	ASTM A351 Gr. CF8M	1
2	End Cap	ASTM A351 Gr. CF8M	3
3	Blank End Cap	ASTM A351 Gr. CF8M	1
4	Seat	PTFE *	4
5	Gasket	PTFE	4
6	O-Ring	Viton	1
7	Stem Packing	PTFE	1
8	Gland	AISI 304	1
9	Belleville Washer	AISI 301	2
10	Stop Pin	AISI 304	1
11	Body Bolt	AISI 304	16
†12	Ball	AISI 316	1
†13	Stem	AISI 316	1
†14	Thrust Washer	RPTFE	1
†15	Spacer	AISI 304	1
†16	Stem Nut	AISI 304	1
†17	Lock Saddle	AISI 304	1
†18	Locking Plate	AISI 304	1
†19	Handle Nut	AISI 304	1
†20	Handle	AISI 304	1
†21	Handle Sleeve	Vinyl	1
†22	Pin Insert	AISI 316	1
‡23	Top End Cap	ASTM A351 Gr. CF8M	1
‡24	Top Cap Gasket	PTFE	1
‡25	Gland washer	AISI 304	1
‡26	Bushing	50% S/S Filled	1
‡27	Top Cap Bolt	AISI 304	#
‡28	Handle T-Bar	ASTM A351 Gr. CF8	1
‡29	Lever	Steel Pipe	1
‡30	Handle Bolt	AISI 304	1
‡31	Trunion Ball	ASTM A351 Gr. CF8M	1

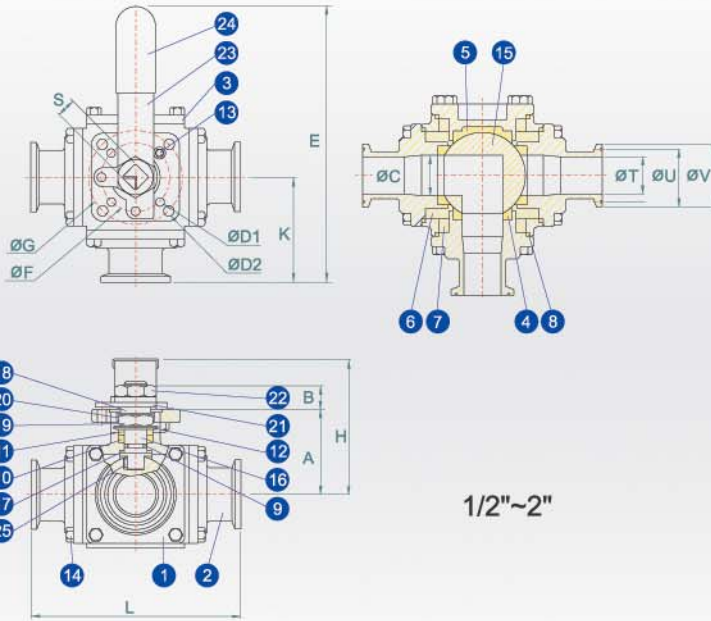
* Other options available

2-1/2" : 6 Pcs, 3"~4" : 8 Pcs

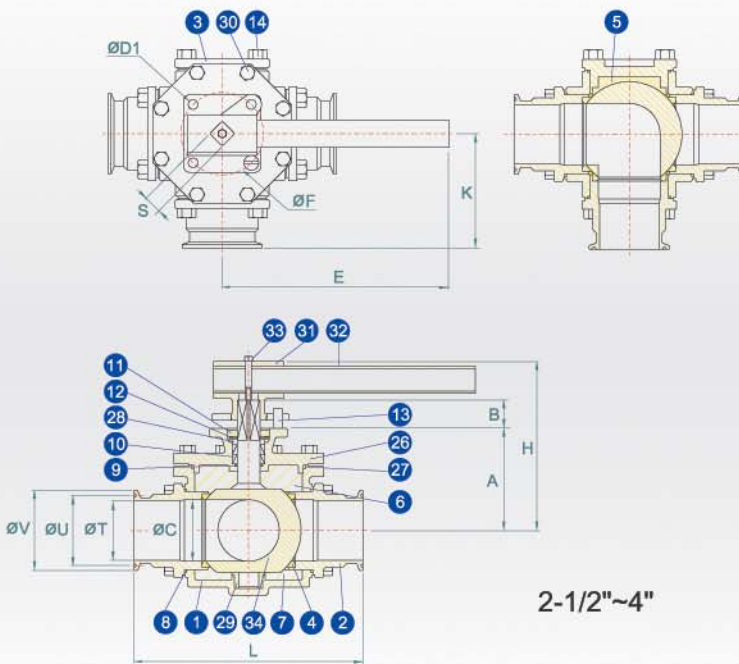
† Parts for 1/4" to 2" only

‡ Parts for 2-1/2" to 4" only

5-6P



1/2"~2"



2-1/2"~4"

MATERIALS LIST

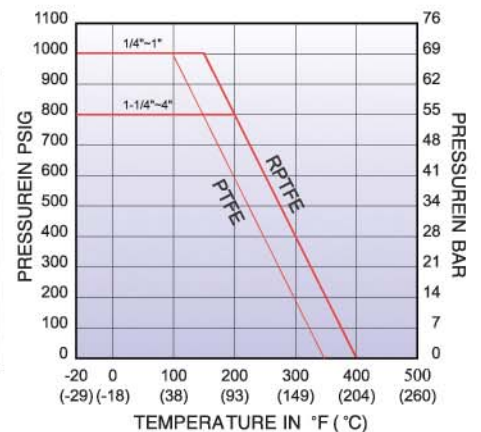
NO.	PART NAME	MATERIAL	QTY
1	Body	ASTM A351 Gr. CF8M	1
2	End Cap	ASTM A351 Gr. CF8M	3
3	Blank End Cap	ASTM A351 Gr. CF8M	1
4	Seat (A)	PTFE *	3
5	Seat (B)	PTFE *	1
6	Cavity Filler Seat (A)	PTFE	1
7	Cavity Filler Seat (B)	PTFE	1
8	Gasket	PTFE	4
9	O-Ring	Viton	1
10	Stem Packing	PTFE	1
11	Gland	AISI 304	1
12	Belleville Washer	AISI 301	2
13	Stop Pin	AISI 304	1
14	Body Bolt	AISI 304	16
†15	Ball	AISI 316	1
†16	Stem	AISI 316	1
†17	Thrust Washer	RPTFE	1
†18	Spacer	AISI 304	1
†19	Stem Nut	AISI 304	1
†20	Lock Saddle	AISI 304	1
†21	Locking Plate	AISI 304	1
†22	Handle Nut	AISI 304	1
†23	Handle	AISI 304	1
†24	Handle Sleeve	Vinyl	1
†25	Pin Insert	AISI 316	1
‡26	Top End Cap	ASTM A351 Gr. CF8M	1
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‡32	Lever	Steel Pipe	1
‡33	Handle Bolt	AISI 304	1
‡34	Trunion Ball	ASTM A351 Gr. CF8M	1

* Other options available
 # 2-1/2" : 6 Pcs, 3"-4" : 8 Pcs
 † Parts for 1/4" to 2" only
 ‡ Parts for 2-1/2" to 4" only

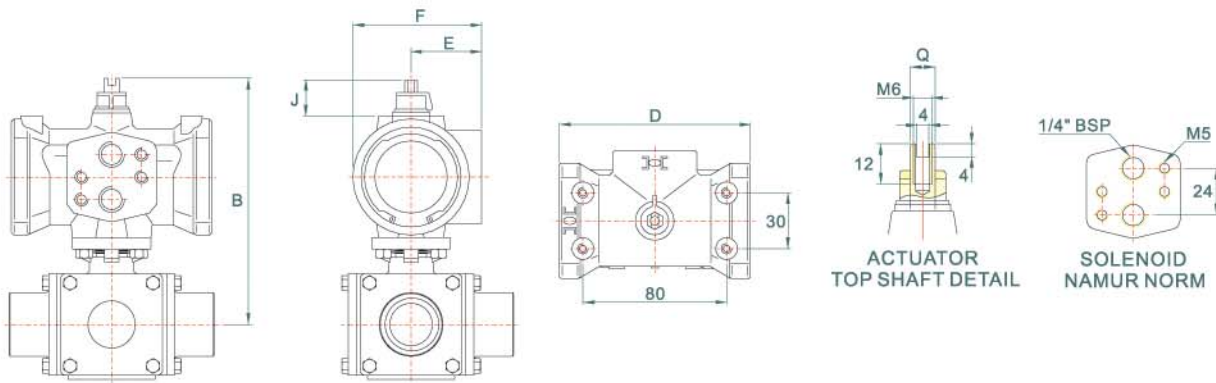
DIMENSIONS (mm)

SIZE	ØC	ØD1	ØD2	ØF	ØG	A	B	E	H	K	L	S	ØT	ØU	ØV
1/2"	12	6.0	6.0	36	42	39	11	130	62	60	120	9	9.6	21.7	25.0
3/4"	15	6.0	6.0	36	42	41	11	130	64	68	136	9	15.8	21.7	25.0
1"	25	6.0	7.1	42	50	55	14	165	89	80	160	11	22.1	43.5	50.4
1 1/2"	38	7.1	9.2	50	70	74	18	205	108	91	182	14	34.8	43.5	50.4
2"	50	9.2	11	70	102	93	23	325	140	108	216	17	47.5	56.5	63.9
2 1/2"	62	11	N/A	102	N/A	119	25	400	197	121	241	22	60.2	70.5	77.4
3"	76	11	N/A	102	N/A	137	25	500	215	140	279	22	72.9	83.2	91.0
4"	96	11	N/A	102	N/A	157	25	650	235	165	330	22	97.4	110.4	119.0

Pressure Vs. Temperature Chart



Actuated Ball Valve Dimensions



Note: Actuator is sized for 6 BAR air pressure operation with less than 5 BAR pressure differential across the outlet of the valves in clear non-viscous fluid. For other operation conditions please re-select actuator according to differential torque values find in our user's manual.

5-6T Dimensions for Valve with Double Acting Actuator (mm)

SIZE	Actuator Type	B	D	E	F	J	Q
1/4"	PW	124	109	37.5	68.5	20	8
3/8"	PW	124	109	37.5	68.5	20	8
1/2"	PW	126	109	37.5	68.5	20	8
3/4"	P00	159	125	44	80	30	10
1"	P05	177	146	53	98	30	10
1 1/4"	P05	185	146	53	98	30	10
1 1/2"	P10	201	182	55	102	30	10
2"	P15	241	203	60	115	30	10
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

5-6P Dimensions for Valve with Double Acting Actuator (mm)

SIZE	Actuator Type	B	D	E	F	J	Q
1/2"	P00	149	125	44	80	30	10
3/4"	P00	151	125	44	80	30	10
1"	P10	182	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"	P30	330	349	94	177	30	16
3"	P30	348	349	94	177	30	16
4"	P30	368	349	94	177	30	16

Break Away Torque for Actuator Sizing

5-6T Torque Values in N-M

SIZE	IN-LB	NM
1/4"	140	15.8
3/8"	140	15.8
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

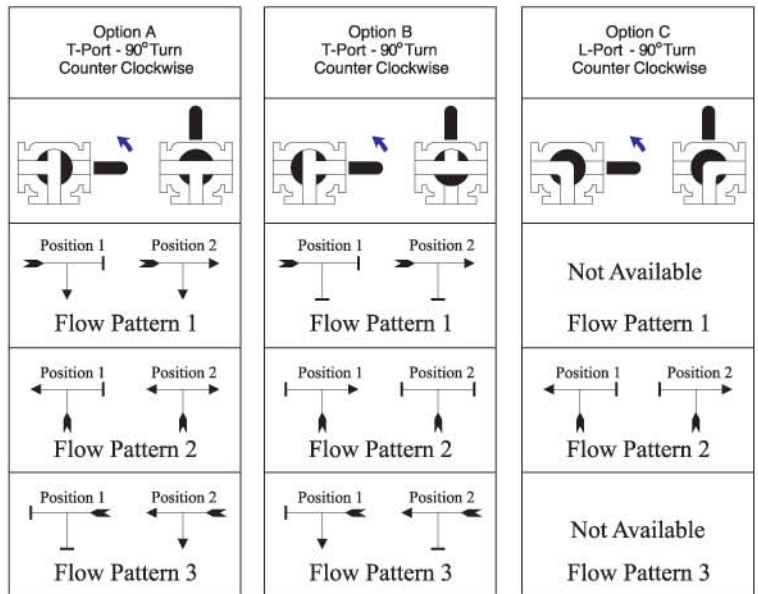
5-6P Torque Values in N-M

SIZE	IN-LB	NM
1/2"	212	24
3/4"	221	25
1"	513	58
1 1/2"	850	96
2"	1327	150
2 1/2"	3009	340
3"	3451	390
4"	4071	460

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	Model 5-6 Three-Piece Ball Valve	N56
End Cap Type	Threaded End	T
	Butt Weld End	B
	Socket weld End	S
	T-Clamp End	P
Ball Part	L-Port	L
	T-Port	T
Body Material	316 Stainless Steel (ASTM A351 Gr. CF8M or DIN1.4408)	6
	316L Stainless Steel (ASTM A351 Gr. CF3M or DIN1.4409)	L
End Cap Material	316 Stainless Steel (ASTM A351 Gr. CF8M or DIN1.4408)	6
	316L Stainless Steel (ASTM A351 Gr. CF3M or DIN1.4409)	L
Seat Material	PTFE	P
	PTFE Cavity Filler	F
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	Cap Type	Ball Port	Body	Cap	Seat	Size
N56 (Three-Piece)	T (Threaded)	L (L-Port)	6 (SS316)	6 (SS316)	P (PTFE)	08 (2")