Kingdom
FLOW CONTROL CO., LTD.

KV-L5U,KV-L5S (Direct Mount Standard Type)

ASME B 16.5 Class 150/300

3&4 - Way Full PORT Flanged Ends Ball Valve

240612

DESIGN FEATURES

- Built-in ISO 5211 Direct Mounting Pad Easy Automation
- Anti-static Devices for Ball-Stem-Body
- Blow-out Proof Stem
- TA-Luft Design Approved
- NACE standard MR0175 & MR0103 (Optional)
- Casting Approved by TÜV AD 2000-Merkblatt W0
- Top Entry For NPS 5 ~ NPS 8
- Positive Position Location At 90° Increments
- Locking in Every 90° Increments
  KV-L5U/L, KV-L5S/L:L-Port
  KV-L5U/T, KV-L5S/T:T-Port
  KV-L5U/X, KV-L5S/X:LL-Port
- Options : 1.Actuator 2.Limit Switch 3.Positioner

APPLICABLE STANDARDS

- Design Standard : ASME B 16.34
- Wall Thickness : ASME 16.34
- Flanged End:ASME B 16.5 Class 150/300
- Inspection & Testing : API 598

TORQUE VALUES

Close to Open Torque at Various Differential Pressure (△P),
Standard Seats (TFM1600 & PTFE)

unit : in·lb / N·m

Size/△P	75 psig		150 psig		300 psig		700 psig	
	5 bar		10 bar		20 bar		50bar	
NPS	N·m	In·lb	N·m	In·lb	N·m	In·lb	N·m	In·lb
½	9	80	9	80	10	88	10	88
¾	14	124	14	124	15	133	15	133
1	18	159	18	159	19	168	22	195
1¼	25	221	26	230	27	239	33	292
1½	35	310	38	336	42	372	46	407
2	45	398	50	442	56	496	65	575
2½	70	619	79	699	86	761	100	885
3	110	973	122	1080	138	1221	160	1416
4	190	1681	209	1850	232	2053	265	2345
5	360	3186	390	3452	460	4071	580	5133
6	580	5133	640	5664	700	6195	860	7611
8	680	6018	800	7080	920	8142	1150	10117

KV-L5U,KV-L5S (Direct Mount Standard Type)

ASME B 16.5 Class 150/300

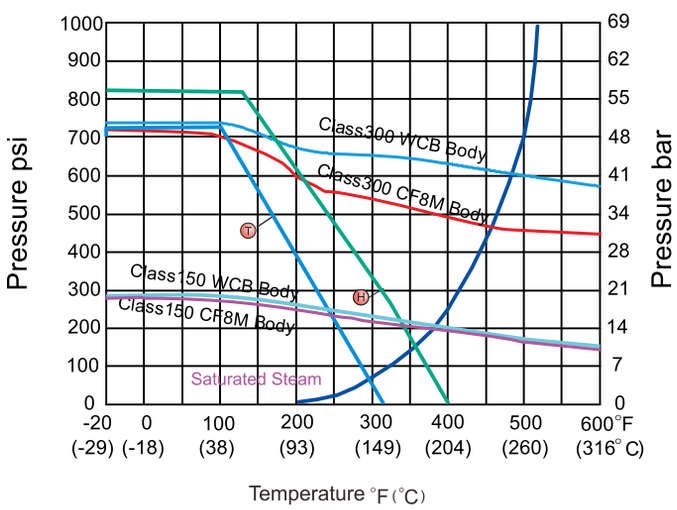
3&4 - Way Full PORT Flanged Ends Ball Valve

TECHNICAL INFORMATION

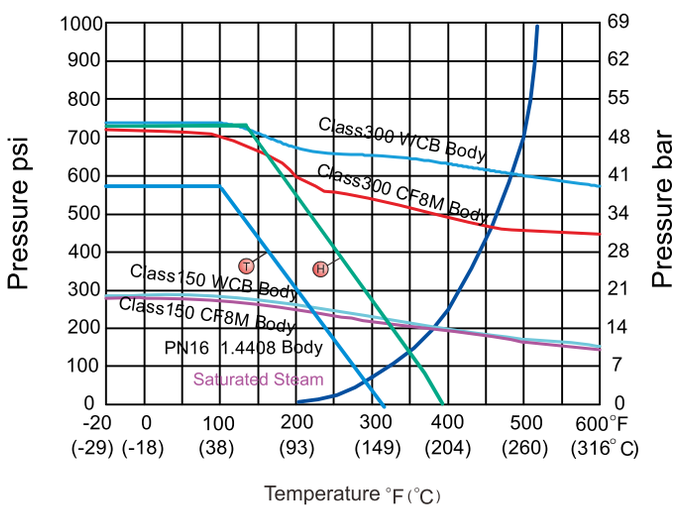
PRESSURE - TEMPERATURE DATA

The pressure-temperature data of ball valves is determined not only by valve shell materials but also by sealing materials used for ball seats, gland packings and flange gaskets.

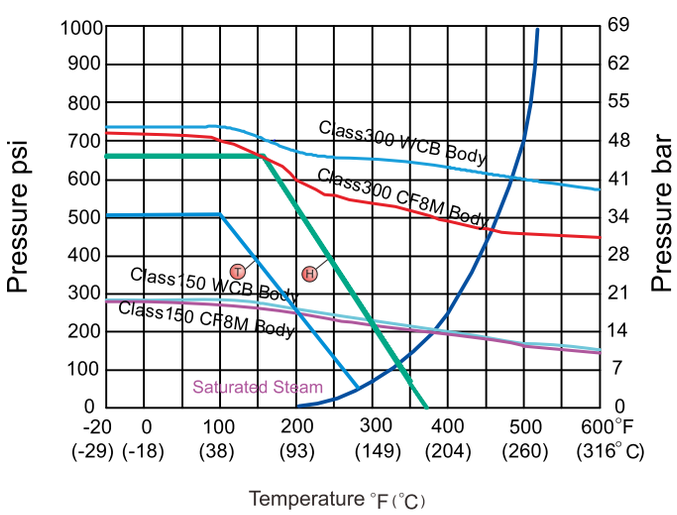
Full Bore : NPS ½ ~ NPS 1



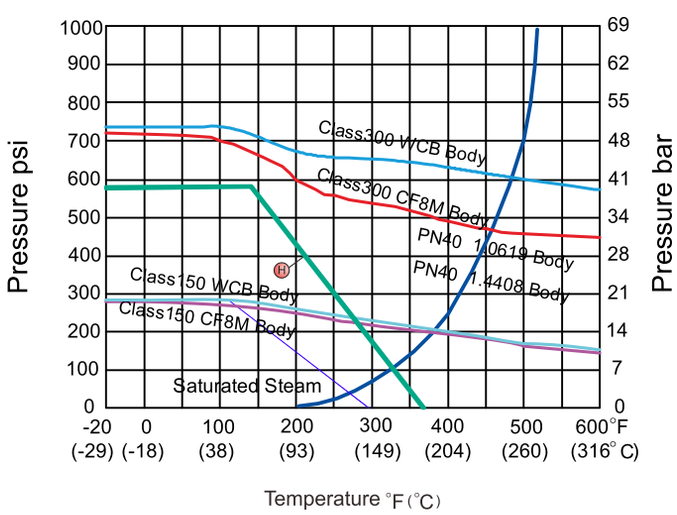
Full Bore : NPS 1 ¼~ NPS 2 ½



Full Bore : NPS 3 ~ NPS 4



Full Bore : NPS 5 ~ NPS 6 ~ NPS 8



Seat Materials : Ⓣ PTFE Ⓗ TFM1600

Body Ratings: Shown above are for ASTM A351 Gr.CF8M and A216 Gr.WCB

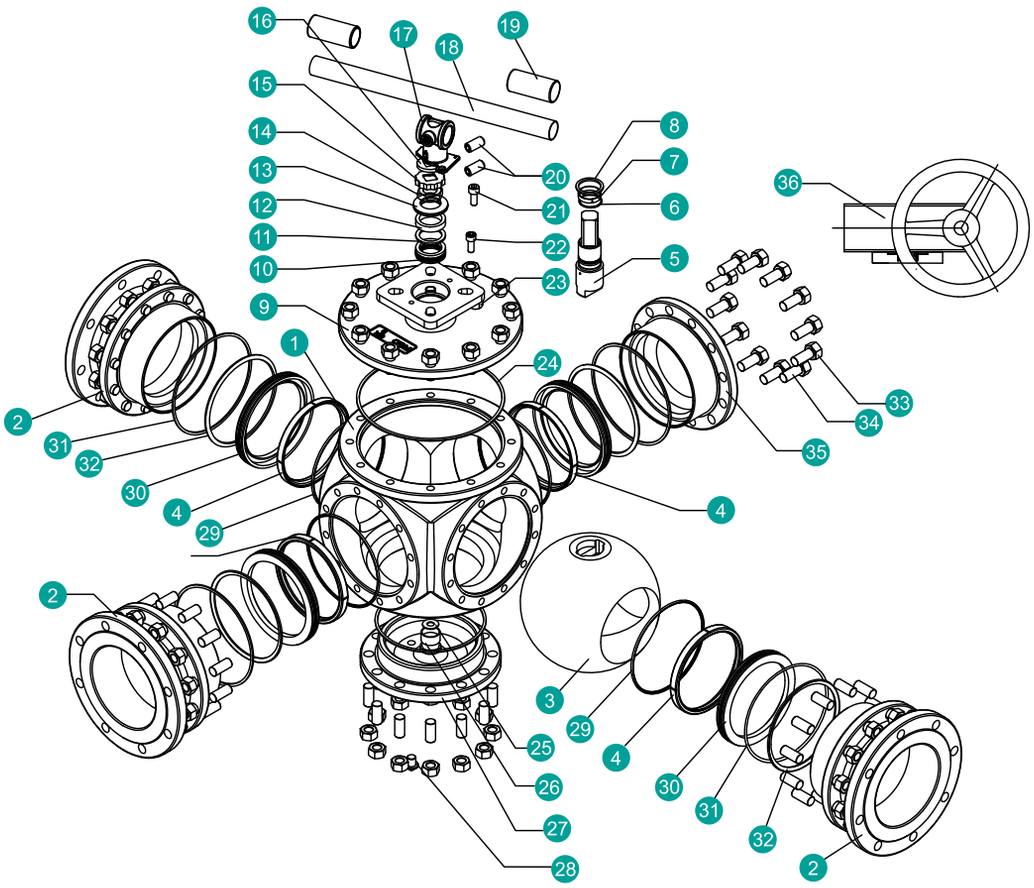
For ratings of other valve shell materials, please refer to the last edition of ASME B16.34.

Kingdom
FLOW CONTROL CO., LTD.

KV-L5U,KV-L5S (Direct Mount Standard Type)

ASME B 16.5 Class 150/300

3&4 - Way Full PORT Flanged Ends Ball Valve



MATERIAL OF CONSTRUCTION

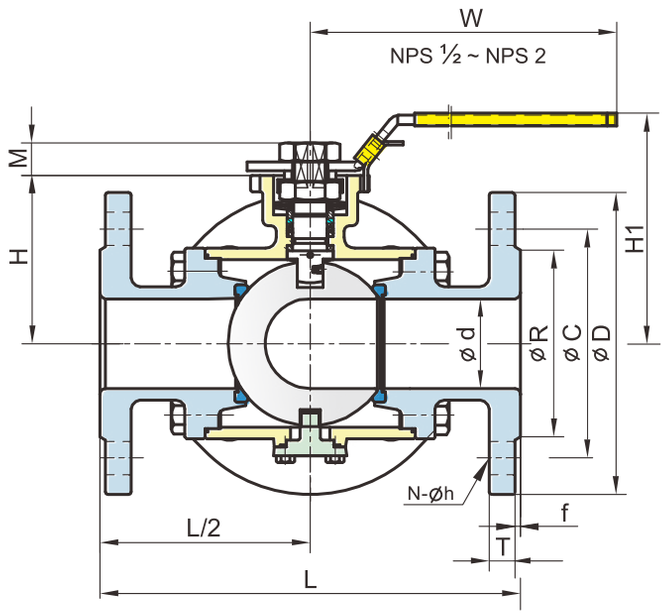
NO.	PART NAME	MATERIALS		
1	Body	A351-CF8M	A351-CF8	A216-WCB
2	End Cap(1)	A351-CF8M	A351-CF8	A216-WCB
3	Ball	A351-CF8M	A351-CF8	
4	Ball Seat	TFM1600 / PTFE		
5	Stem (Anti-Static Device)	316	304	
6	Thrust washer	PTFE		
7	O-Ring	FKM		
8	Stem Packing	PTFE/GRAPHITE		
9	Bushing	50%SS+50%PTFE / 304		
10	Gland	316		
11	Belleville Washer	301		
12	Stem Nut	A194-8		
13	Stop-lock-Cap	304		
14	Handle Gland (NPS1/2 ~ NPS4)	304		
15	Handle+Lock Device (NPS1/2 ~ NPS2)	304		
16	Handle Nut (NPS1/2 ~ NPS2)	A194-8		
17	Handle Sleeve (NPS1/2 ~ NPS2)	PVC		
18	Body Gasket (1)	PTFE/GRAPHITE		
19	Bolt	A193-B8		A193-B7
20	End Cap (2)	A351-CF8M	A351-CF8	A216-WCB
21	Washer	50%SS+50%PTFE		
22	Bushing	50%SS+50%PTFE		
23	Body Gasket (2)	PTFE/GRAPHITE		
24	Bottom Cap	A351-CF8M	A351-CF8	A216-WCB
25	Set Screwed (NPS 2 1/2 ~ NPS 4)	A2-70		
26	Handle Adapter (NPS 2 1/2 ~ NPS 4)	CF8		
27	Bolt (NPS 2 1/2 ~ NPS 4)	A2-70		
28	Handle (NPS 2 1/2 ~ NPS 4)	A53+ZnPlated		
29	Handle Sleeve (NPS 2 1/2 ~ NPS 4)	PVC		
30	Stop Bolt (NPS 1/2 ~ NPS 4)	A2-70		
31	Stop Nut (NPS 1/2 ~ NPS 4)	A2-70		
32	Worm Gear (NPS 5 ~ NPS 8)	Package		

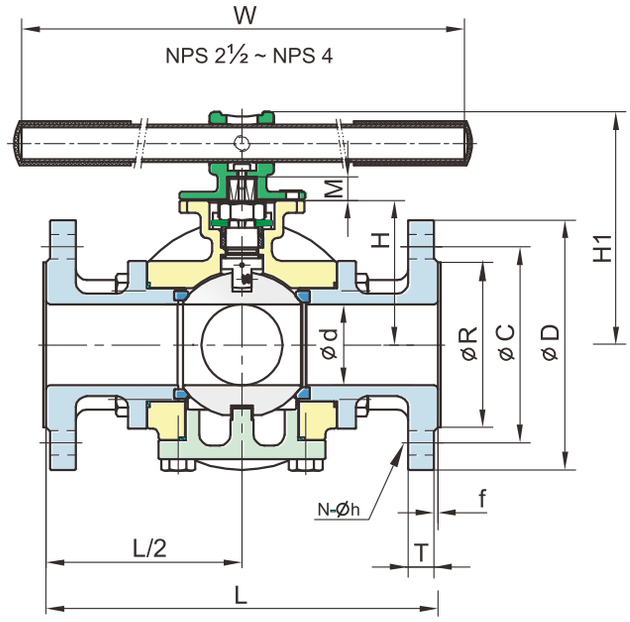
Kingdom
FLOW CONTROL CO., LTD.

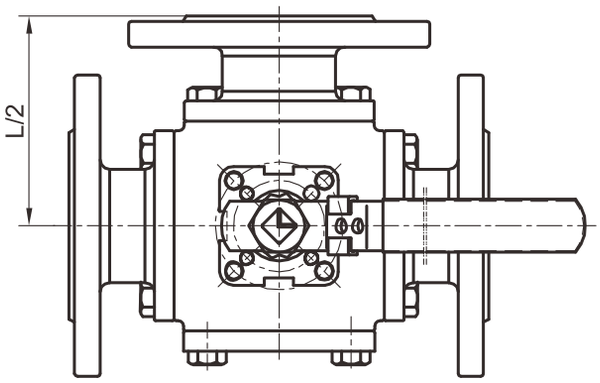
KV-L5U,KV-L5S (Direct Mount Standard Type)

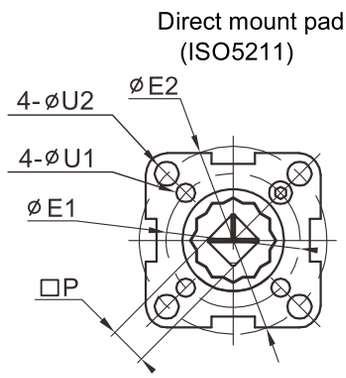
ASME B 16.5 Class 150/300

3&4 - Way Full PORT Flanged Ends Ball Valve









DIMENSION TABLE

ASME Class 150 DIMENSION TABLE KV-L5U

Unit : mm

NPS	d	L	R	D	C	T	f	N	h	H	H1	W	P	M	E1	E2	U1	U2	ISO 5211
½	15	150	35	89	60.5	7.9	1.5	4	16	53	83	147	9	9	36	42	6	6	F03~F04
¾	20	165	43	99	69.8	8.6	1.5	4	16	57	87	147	9	9	36	50	6	7	F03~F05
1	25	181	51	108	79.2	9.7	1.5	4	16	68	99	177	11	11	42	50	6	7	F04~F05
1¼	32	190	63.5	117	88.9	11.2	1.5	4	16	72	103	177	11	11	42	70	6	9	F04~F07
1½	38	212	73	127	98.6	12.7	1.5	4	16	85	119	197	14	14	50	70	7	9	F05~F07
2	49	229	92	152	120.6	14.2	1.5	4	19	92	126	197	14	14	50	70	7	9	F05~F07
2½	60	290	105	178	139.7	15.7	1.5	4	19	107	172	400	17	17	70	102	9	11	F07~F10
3	75	310	127	190	152.4	17.5	1.5	4	19	119	185	400	17	17	70	102	9	11	F07~F10
4	99	367	157	229	190.5	22.4	1.5	8	19	150	221	400	22	22	—	102	—	11	F10

Unit : inch

NPS	d	L	R	D	C	T	f	N	h	H	H1	W	P	M	E1	E2	U1	U2	ISO 5211
½	0.59	5.91	1.38	3.50	2.38	0.31	0.06	4	⅝	2.09	3.27	5.79	0.354	0.35	1.42	1.65	0.24	0.24	F03~F04
¾	0.79	6.50	1.69	3.88	2.75	0.34	0.06	4	⅝	2.24	3.43	5.79	0.354	0.35	1.42	1.97	0.24	0.28	F03~F05
1	0.98	7.13	2.01	4.25	3.12	0.38	0.06	4	⅝	2.68	3.90	6.97	0.433	0.43	1.65	1.97	0.24	0.28	F04~F05
1¼	1.26	7.50	2.50	4.62	3.50	0.44	0.06	4	⅝	2.83	4.06	6.97	0.433	0.43	1.65	2.76	0.24	0.35	F04~F07
1½	1.50	8.35	2.88	5.00	3.88	0.50	0.06	4	⅝	3.35	4.69	7.76	0.551	0.55	1.97	2.76	0.28	0.35	F05~F07
2	1.93	9.06	3.62	6.00	4.75	0.56	0.06	4	¾	3.62	4.96	7.76	0.551	0.55	1.97	2.76	0.28	0.35	F05~F07
2½	2.36	11.42	4.12	7.00	5.50	0.62	0.06	4	¾	4.21	6.77	15.9	0.669	0.67	2.76	4.02	0.35	0.43	F07~F10
3	2.95	12.20	5.00	7.50	6.00	0.69	0.06	4	¾	4.69	7.28	15.9	0.669	0.67	2.76	4.02	0.35	0.43	F07~F10
4	3.90	14.45	6.19	9.00	7.50	0.88	0.06	8	¾	5.91	8.70	15.9	0.866	0.87	—	4.02	—	0.43	F10

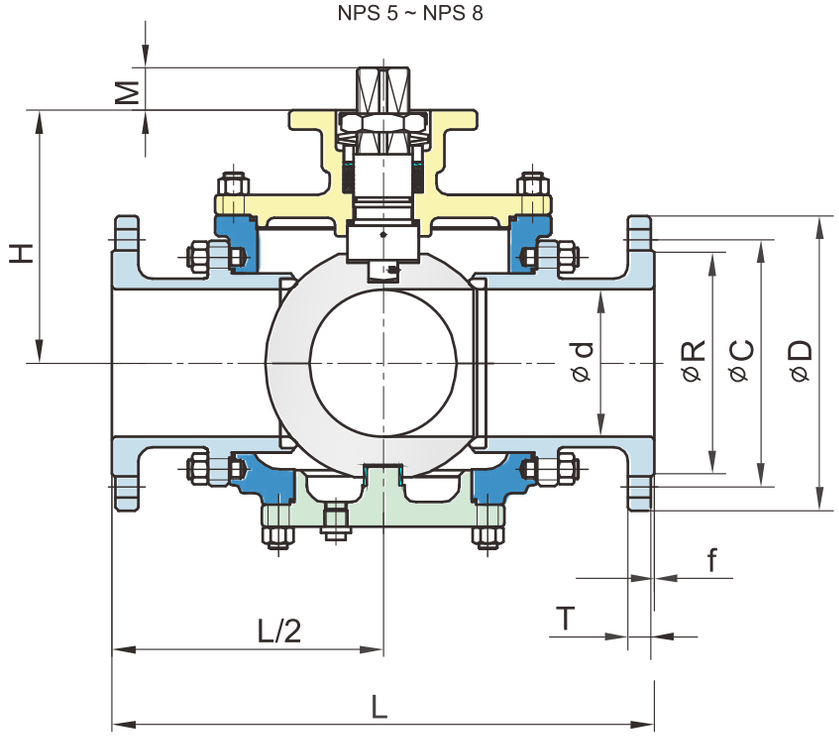
Kingdom
FLOW CONTROL CO., LTD.

KV-L5U,KV-L5S (Direct Mount Standard Type)

ASME B 16.5 Class 150/300

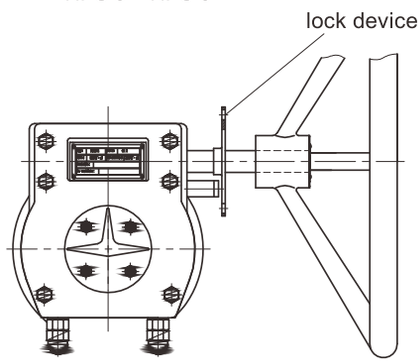
3&4 - Way Full PORT Flanged Ends Ball Valve

NPS 5 ~ NPS 8

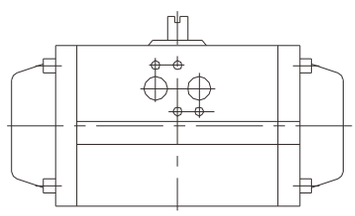


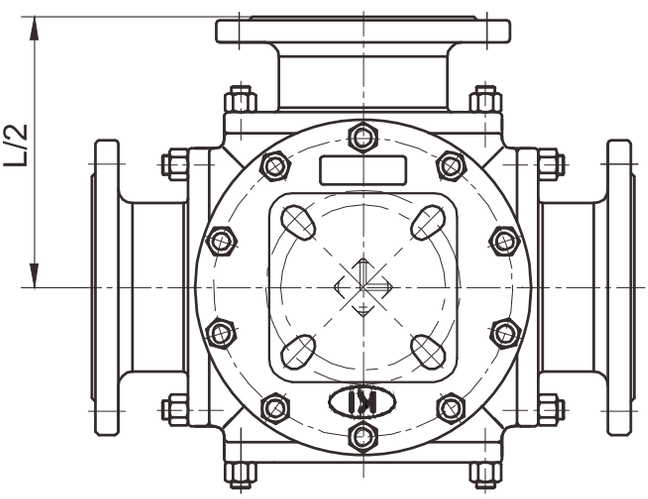
Gear Operation (Standard Type)

NPS 5 ~ NPS 8

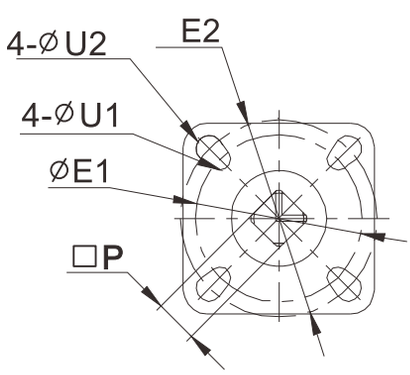


Automation (Optional)





Direct mount pad (ISO5211)



DIMENSION TABLE

ASME Class 150 DIMENSION TABLE KV-L5U

Unit : mm

NPS	d	L	R	D	C	T	f	N	h	H	H1	W	P	M	E1	E2	U1	U2	ISO 5211
5	125	460	186	254	215.9	22.4	1.5	8	22.3	215	—	—	36	36	140	165	18	22	F14~F16
6	150	490	216	279	241.3	23.9	1.5	8	22.3	228.5	—	—	36	36	140	165	18	22	F14~F16
8	200	620	270	343	298.4	26.9	1.5	8	22.3	281.5	—	—	36	36	140	165	18	22	F14~F16

ASME Class 150 DIMENSION TABLE KV-L5U

Unit : mm

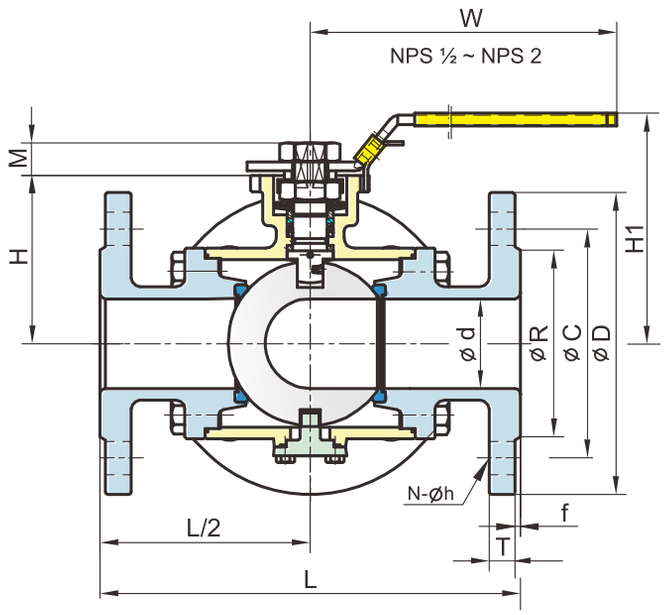
NPS	d	L	R	D	C	T	f	N	h	H	H1	W	P	M	E1	E2	U1	U2	ISO 5211
5	4.92	18.11	7.32	10.0	8.50	0.88	0.06	8	7/8	8.46	—	—	1.417	1.42	5.51	6.50	0.71	0.87	F14~F16
6	5.91	19.29	8.50	11.0	9.50	0.94	0.06	8	7/8	9.02	—	—	1.417	1.42	5.51	6.50	0.71	0.87	F14~F16
8	7.87	24.41	10.63	13.5	11.75	1.06	0.06	8	7/8	11.1	—	—	1.417	1.42	5.51	6.50	0.71	0.87	F14~F16

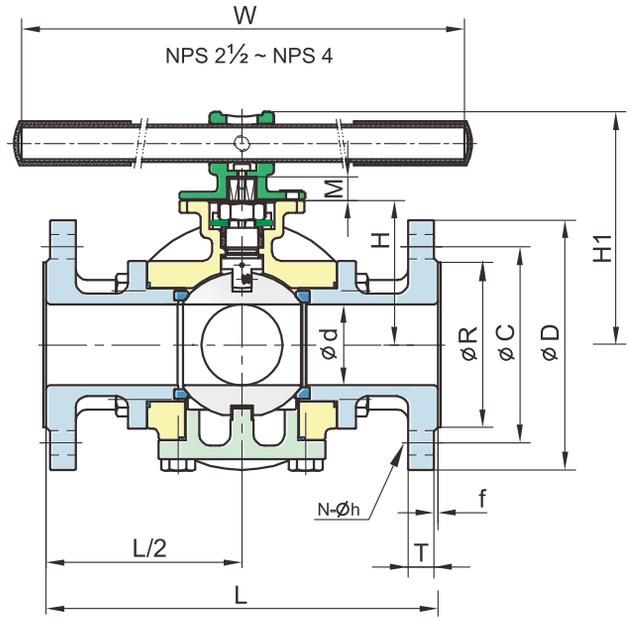
Kingdom
FLOW CONTROL CO., LTD.

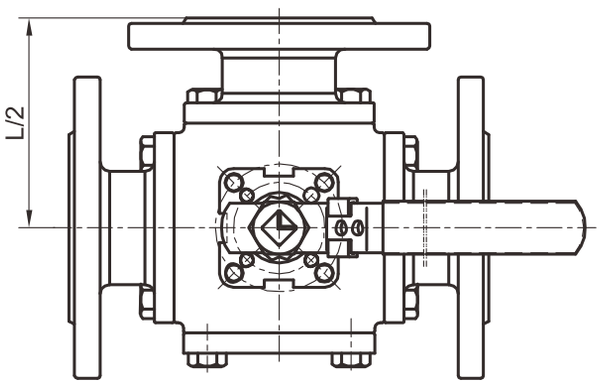
KV-L5U,KV-L5S (Direct Mount Standard Type)

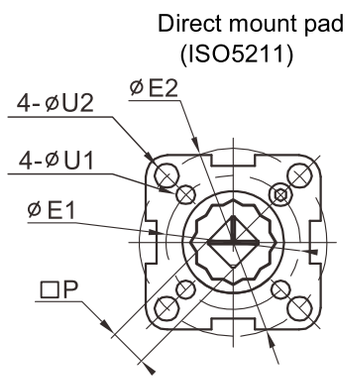
ASME B 16.5 Class 150/300

3&4 - Way Full PORT Flanged Ends Ball Valve









DIMENSION TABLE

ASME Class 300 DIMENSION TABLE KV-L5S

Unit : mm

NPS	d	L	R	D	C	T	f	N	h	H	H1	W	P	M	E1	E2	U1	U2	ISO 5211
½	15	150	35	95	66.5	12.7	1.5	4	16.0	53	83	147	9	9	36	42	6	6	F03~F04
¾	20	165	43	117	82.6	14.2	1.5	4	19.0	57	87	147	9	9	36	50	6	7	F03~F05
1	25	181	51	124	88.9	15.7	1.5	4	19.0	68	99	177	11	11	42	50	6	7	F04~F05
1¼	32	207	63.5	133	98.6	17.5	1.5	4	19.0	72	103	177	11	11	42	70	6	9	F04~F07
1½	38	234	73.2	155	114.3	19.0	1.5	4	22.3	85	119	197	14	14	50	70	7	9	F05~F07
2	49	258	92	165	127.0	20.6	1.5	8	19.0	92	126	197	14	14	50	70	7	9	F05~F07
2½	60	316	104.7	190	149.4	23.9	1.5	8	22.3	107	172	400	17	17	70	102	9	11	F07~F10
3	75	360	127	210	168.1	26.9	1.5	8	22.3	119	185	400	17	17	70	102	9	11	F07~F10
4	99	398	157	254	200.2	30.2	1.5	8	22.3	150	221	400	22	22	—	102	—	11	F10

ASME Class 300 DIMENSION TABLE KV-L5S

Unit : inch

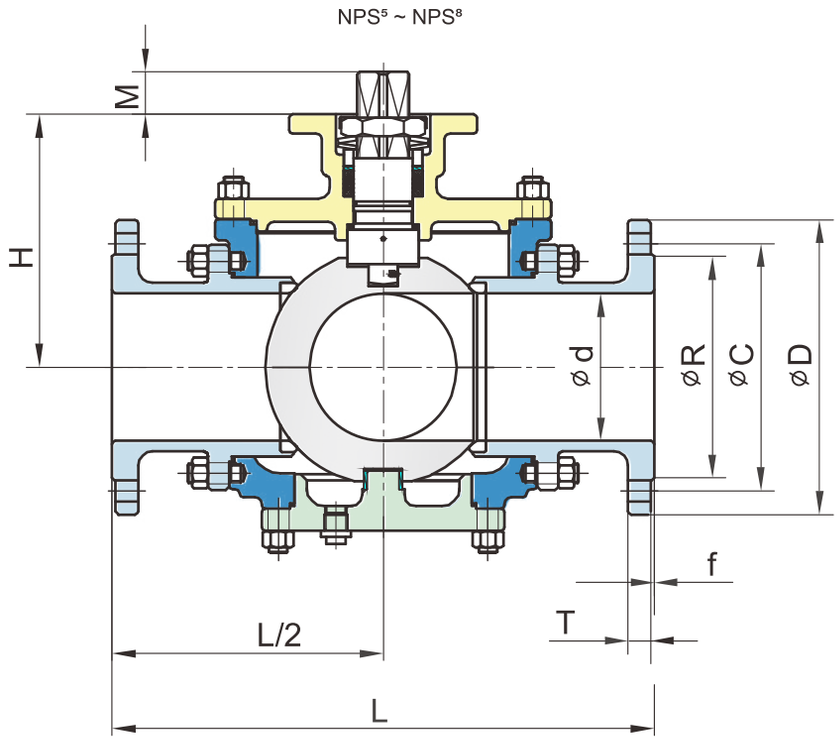
NPS	d	L	R	D	C	T	f	N	h	H	H1	W	P	M	E1	E2	U1	U2	ISO 5211
½	0.59	5.91	1.38	3.75	2.62	0.50	0.06	4	⅝	2.09	3.27	5.79	0.354	0.35	1.42	1.65	0.24	0.24	F03~F04
¾	0.79	6.50	1.69	4.62	3.25	0.56	0.06	4	¾	2.24	3.43	5.79	0.354	0.35	1.42	1.97	0.24	0.28	F03~F05
1	0.98	7.13	2.01	4.88	3.50	0.62	0.06	4	¾	2.68	3.90	6.97	0.433	0.43	1.65	1.97	0.24	0.28	F04~F05
1¼	1.26	8.15	2.50	5.25	3.88	0.69	0.06	4	¾	2.83	4.06	6.97	0.433	0.43	1.65	2.76	0.24	0.35	F04~F07
1½	1.50	9.21	2.88	6.12	4.50	0.75	0.06	4	⅞	3.35	4.69	7.76	0.551	0.55	1.97	2.76	0.28	0.35	F05~F07
2	1.93	10.16	3.62	6.50	5.00	0.81	0.06	8	¾	3.62	4.96	7.76	0.551	0.55	1.97	2.76	0.28	0.35	F05~F07
2½	2.36	12.44	4.12	7.50	5.88	0.94	0.06	8	⅞	4.21	6.77	15.9	0.669	0.67	2.76	4.02	0.35	0.43	F07~F10
3	2.95	14.17	5.00	8.25	6.62	1.06	0.06	8	⅞	4.69	7.28	15.9	0.669	0.67	2.76	4.02	0.35	0.43	F07~F10
4	3.90	15.67	6.19	10.00	7.88	1.19	0.06	8	⅞	5.91	8.70	15.9	0.866	0.87	—	4.02	—	0.43	F10

Kingdom
FLOW CONTROL CO., LTD.

KV-L5U,KV-L5S (Direct Mount Standard Type)

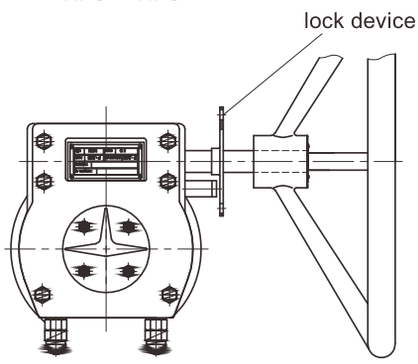
ASME B 16.5 Class 150/300

3&4 - Way Full PORT Flanged Ends Ball Valve

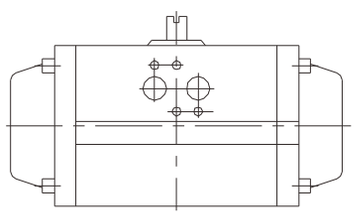


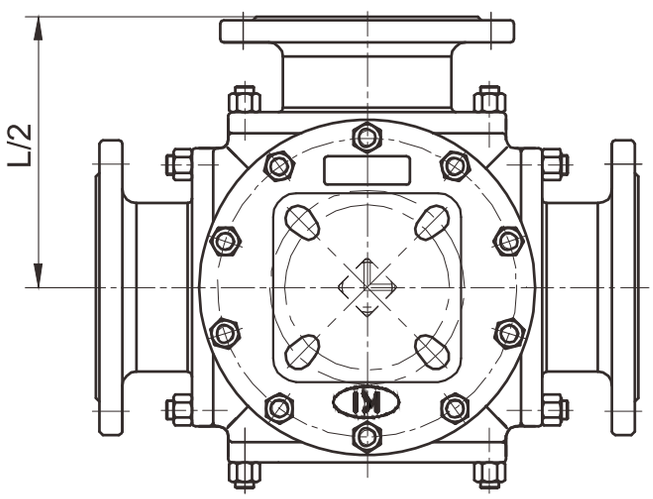
Gear Operation (Standard Type)

NPS⁵ ~ NPS⁸

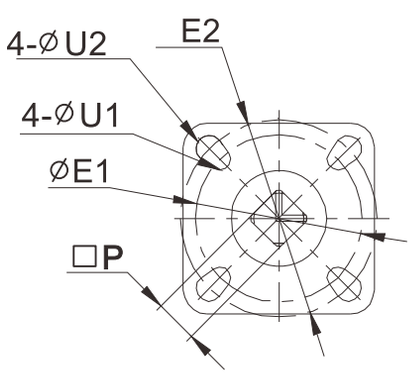


Automation (Optional)





Direct mount pad
(ISO5211)



DIMENSION TABLE

ASME Class 300 DIMENSION TABLE KV-L5S

Unit : mm

NPS	d	L	R	D	C	T	f	N	h	H	H1	W	P	M	E1	E2	U1	U2	ISO 5211
5	125	480	186	279	235.0	33.3	1.5	8	22.3	215	—	—	36	36	140	165	18	22	F14~F16
6	150	520	216	318	269.7	35.1	1.5	12	22.3	228.5	—	—	36	36	140	165	18	22	F14~F16
8	200	660	270	381	330.2	39.6	1.5	12	25.4	281.5	—	—	36	36	140	165	18	22	F14~F16

ASME Class 300 DIMENSION TABLE KV-L5S

Unit : mm

NPS	d	L	R	D	C	T	f	N	h	H	H1	W	P	M	E1	E2	U1	U2	ISO 5211
5	4.92	18.90	7.32	11.00	9.25	1.31	0.06	8	7/8	8.46	—	—	1.417	1.42	5.51	6.50	0.71	0.87	F14~F16
6	5.91	20.47	8.50	12.50	10.62	1.38	0.06	12	7/8	9.02	—	—	1.417	1.42	5.51	6.50	0.71	0.87	F14~F16
8	7.87	25.98	10.63	15.00	13.00	1.56	0.06	12	1	11.1	—	—	1.417	1.42	5.51	6.50	0.71	0.87	F14~F16

Kingdom
FLOW CONTROL CO., LTD.

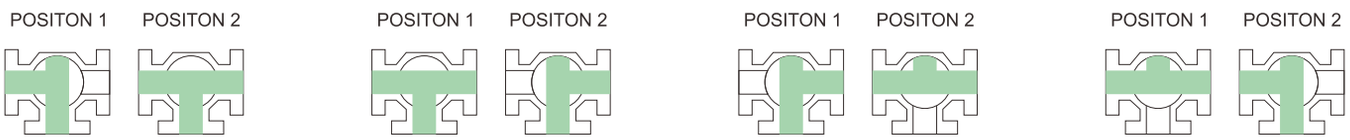
KV-L5U,KV-L5S (Direct Mount Standard Type)

ASME B 16.5 Class 150/300

3&4 - Way Full PORT Flanged Ends Ball Valve

FLOW PATTERNS FOR 3 WAY VALVE

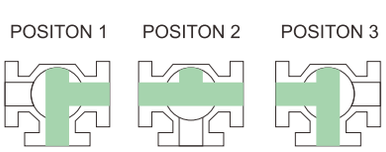
T-PORT 90° TURN



FLOW PLAN A　FLOW PLAN B　FLOW PLAN C　FLOW PLAN D

T-PORT 180° TURN

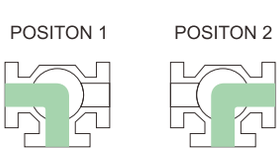
FLOW PLAN E



FLOW PLAN F

FLOW PLAN H

FLOW PLAN G



FLOW PLAN J

L-PORT 90° TURN

L-PORT 180° TURN

FLOW PLAN K

FLOW PLAN L

LL-PORT 90° TURN

L-PORT180° TURN
4-WAY VALVES