

DESIGN FEATURES

- Built-in ISO 5211 Direct Mounting Pad Easy Automation
- Fire Safe Design Approved
- Anti-static Devices for Ball-Stem-Body
- Blow-out Proof Stem
- Pressure Balance Hole in Ball Slot
- Adjustable and live-loaded stem packing
- ISO 15848-1 Design Approved
- NACE MR-0175 (Optional)
- Casting Approved by TÜV AD 2000-Merkblatt W0
- Options : 1.Actuator 2.Limit Switch 3.Positioner



APPLICABLE STANDARDS

- Design Standard : ASME B16.34 API 608
- Frie Design : API 607 7th 2016
- Face To Face : ASME B16.10
- Flanged End : ASME B16.5 Class 150 / 300
- Inspection & Testing : API 598

CV VALUES

NPS	CV	
	Class 150	Class 300
1/2	18	18
3/4	36	36
1	48	48
1 1/4	93	93
1 1/2	165	165
2	207	207
2 1/2	450	450
3	780	780
4	1360	1360
5	1700	1700
6	2600	2600
8	4200	4200

TORQUE VALUES

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

unit : in-lb / N-m

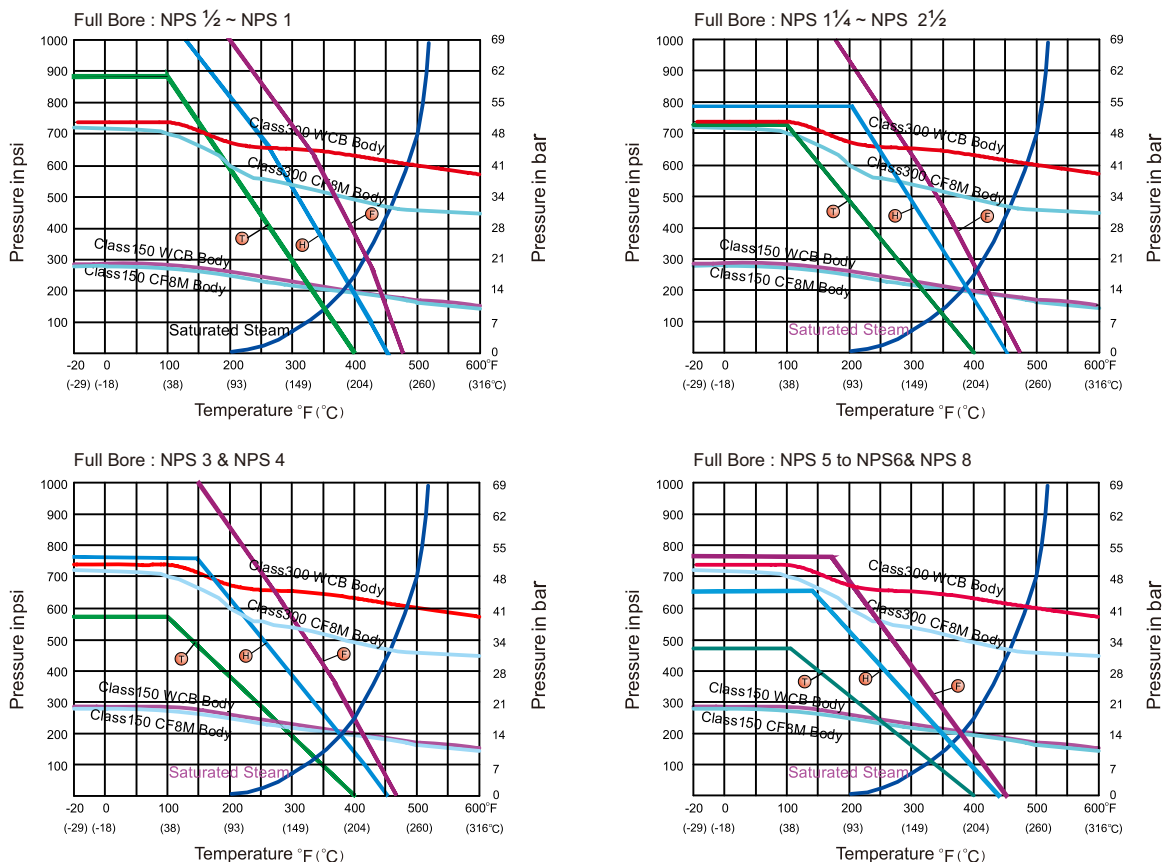
Size/ ΔP	75 psig		150 psig		300 psig		700 psig	
	5 bar		10 bar		20 bar		50 bar	
NPS	N-m	In-lb	N-m	In-lb	N-m	In-lb	N-m	In-lb
1/2	5	44	5	44	5	44	5	44
3/4	6	53	6	53	6	53	6	53
1	10	88	10	88	11	97	11	97
1 1/4	13	115	13	115	15	133	17	150
1 1/2	19	168	19	168	22	195	24	212
2	25	221	29	257	32	283	35	310
2 1/2	40	354	45	398	49	434	54	478
3	65	575	72	637	81	717	90	796
4	100	885	110	973	122	1080	135	1195
5	190	1681	210	1858	245	2168	285	2522
6	280	2478	306	2708	340	3009	530	4690
8	370	3274	430	3805	487	4310	760	6726

- Remark : 1.Torques will increase about 30% if seat materials are Reinforced Fiber-Glass PTFE, Carbon-filled PTFE or EK+PTFE or EK+PTFE or TFM4215.
2.The torque figures at 5 bar pressure are maximum values to be tested after the valves are placed for 24 hours.
3.For actuator sizing, a safety factor of minimum 30% is recommended.

TECHNICAL INFORMATION

PRESSURE - TEMPERATURE DATA

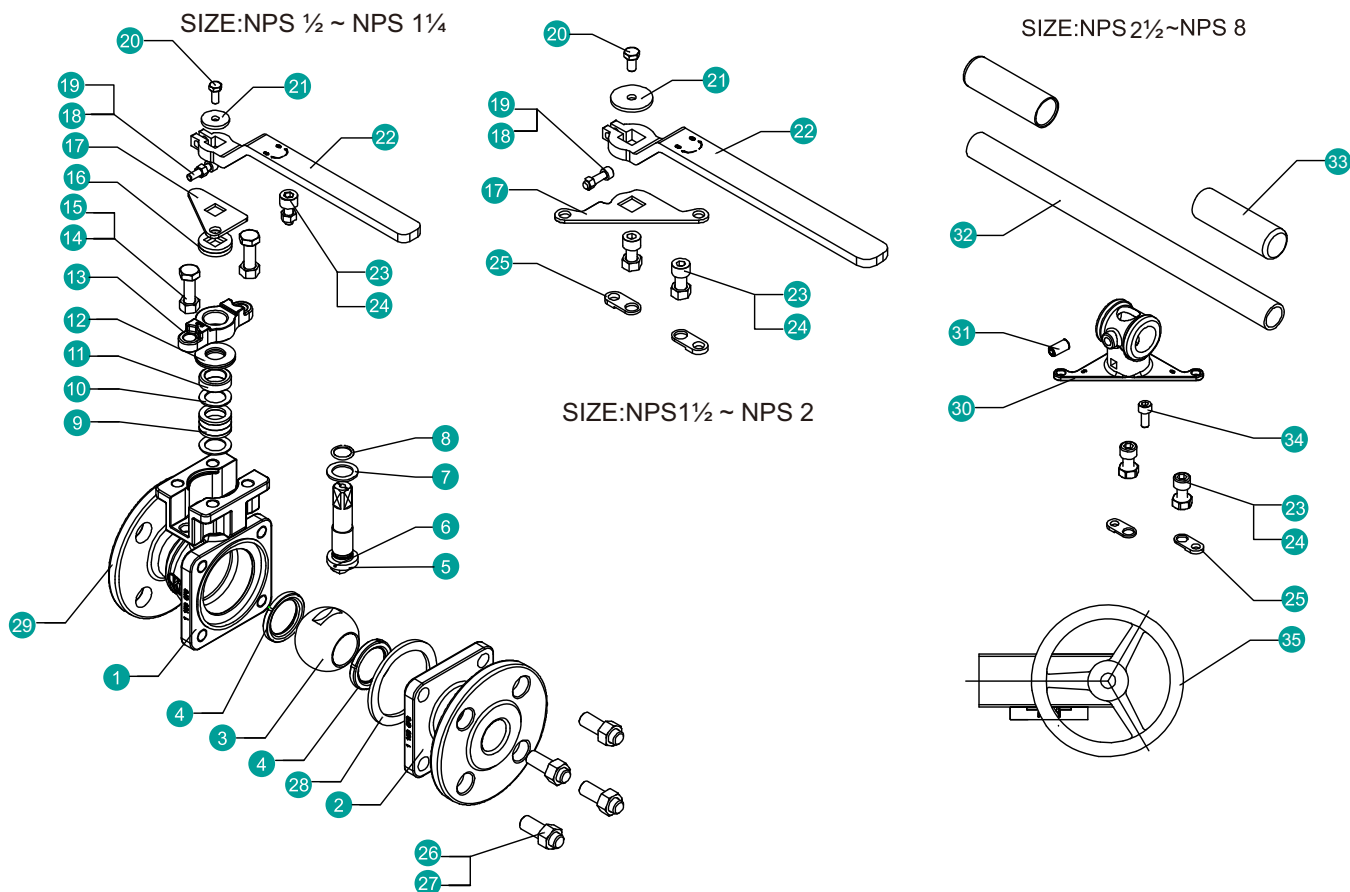
The pressure-temperature data of ball valves is determined not only by valve shell materials but also by sealing materials used for ball seats, gland packings and flange gaskets.



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.

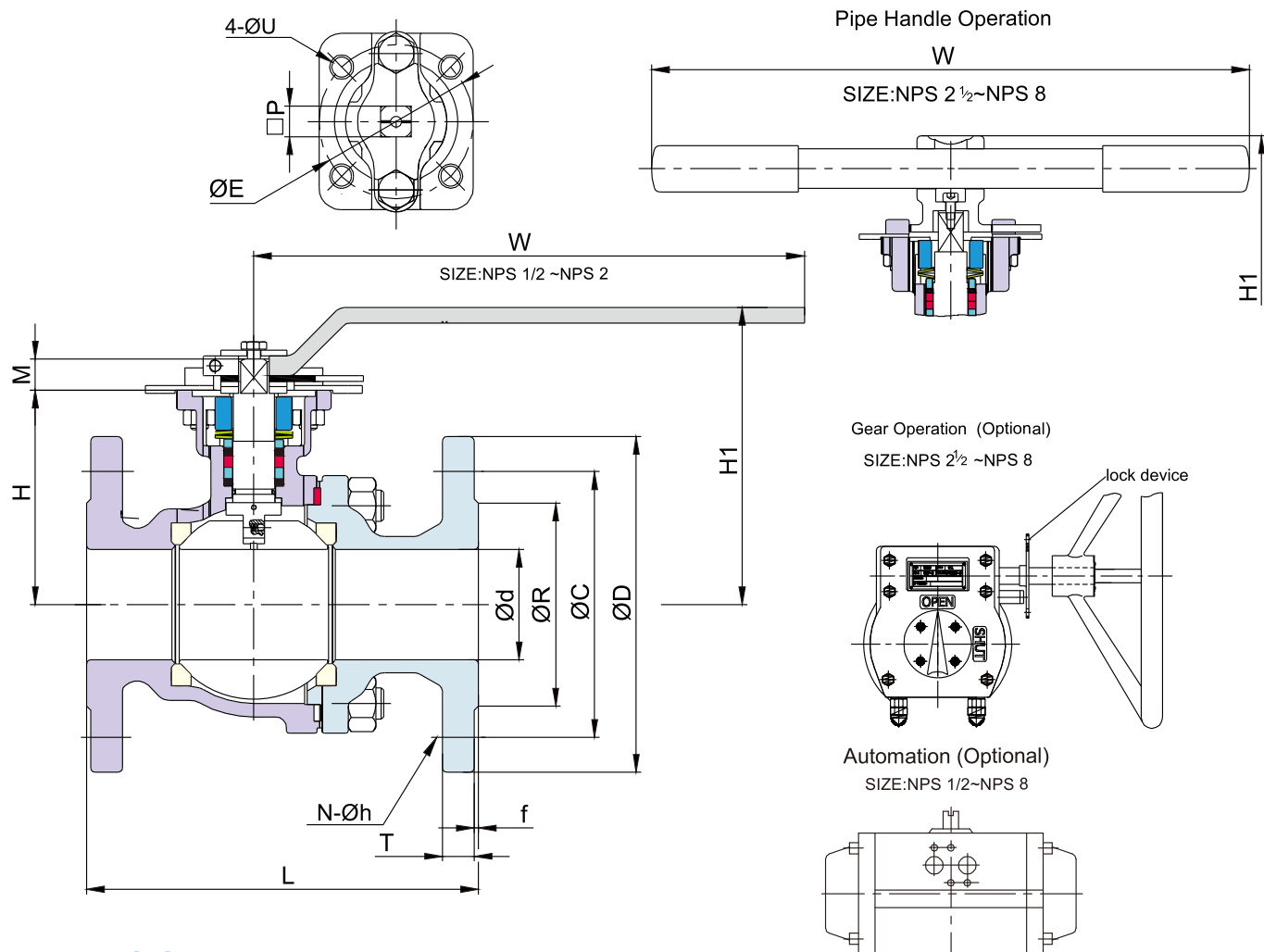
Seat Materials : ● PTFE ● TFM1600 ● TFM4215



MATERIAL OF CONSTRUCTION

NO.	PART NAME	MATERIALS		
1	Body	A351-CF8M	A351-CF8	A216-WCB
2	End Cap	A351-CF8M	A351-CF8	A216-WCB
3	Ball	A351-CF8M	A351-CF8	
4	Ball Seat	TFM1600 / PTFE / TFM4215		
5	Stem	316	304	
6	Anti-Static	316	304	
7	Thrust Washer	PTFE/TFM1600		
8	O-Ring	FKM		
9	Packing	PTFE / GRAPHITE*		
10	Bushing	50%SS+50%PTFE / 304*		
11	Gland	316	304	
12	Belleville Washer	301		
13	Packing Gland	A351-CF8		
14	Bolting	A2-70	8.8	
15	Bolt Nut	A2-70	8	
16	Support Washer (NPS½ ~ NPS2)	304		
17	Stem Stopper (NPS½ ~ NPS2)	304		
18	Bolting (NPS½ ~ NPS2)	A2-70		
19	Bolt Nut (NPS½ ~ NPS2)	A2-70		
20	Bolting (NPS½ ~ NPS2)	A2-70		
21	Washer (NPS½ ~ NPS2)	304		
22	Handle (NPS½ ~ NPS2)	CF8		
23	Stop Bolt	A2-70		
24	Stop Nut	A2-70		
25	Lock Device (NPS1½ ~ NPS8)	304		
26	Bolting	A193-B8	A193-B7	
27	Bolt Nut	A194-8	A194-2H	
28	Body Gasket	PTFE (304)/ 316 Spiral Wound+Graphite*		
29	Nameplate	304		
30	Handle Adapter(NPS2½ ~ NPS8)	A351-CF8		
31	Set Screwed (NPS2½ ~ NPS8)	A2-70		
32	Pipe Handle (NPS2½ ~ NPS8)	A53+PLATED Zn		
33	Handle Sleeve (NPS2½ ~ NPS8)	PVC		
34	Bolting (NPS2½ ~ NPS8)	A2-70		
35	Worm Gear (Optional)	Package		

*Materials for KV-L641, KV-L642 Series (Fire Safe Models)



DIMENSION TABLE

ASME Class 150 DIMENSION TABLE KV-L441/KV-L641

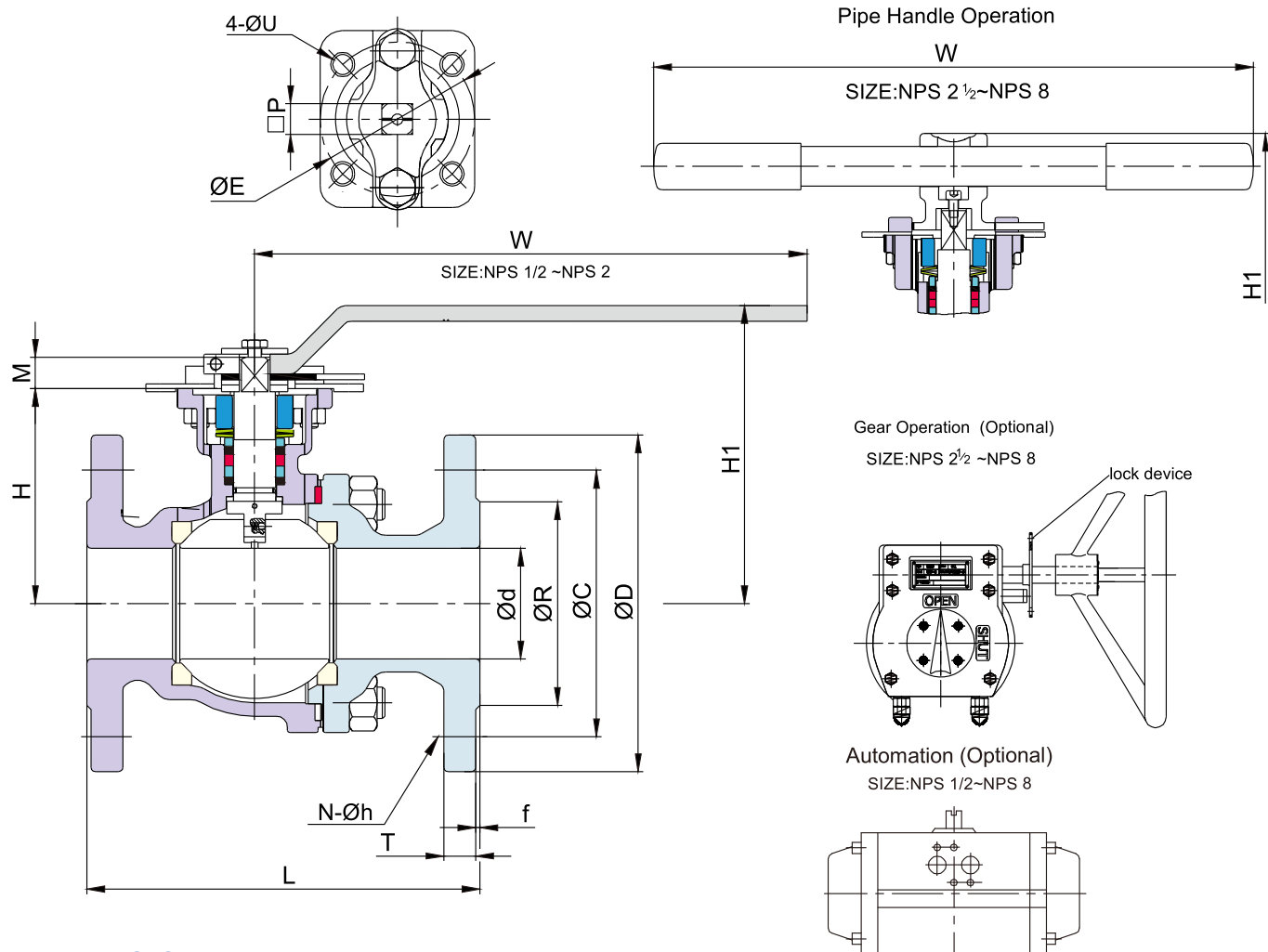
Unit : mm

NPS	d	L	R	D	C	T	f	N	h	H	H1	W	P	M	E		U		ISO 5211
1½	15	108	35.0	90	60.3	8.0	2	4	16.0	63.5	99	170	9	9.5	—	50	—	8	F05
¾	20	117	43.0	100	69.9	8.9	2	4	16.0	67	103	170	9	9.5	—	50	—	8	F05
1	25	127	51.0	110	79.4	9.6	2	4	16.0	78	113	200	11	11.5	—	50	—	8	F05
1¼	32	140	63.5	115	88.9	11.2	2	4	16.0	82.8	118	200	11	11.5	—	50	—	8	F05
1½	38	165	73.0	125	98.4	12.7	2	4	16.0	91.5	129	250	14	14	—	70	—	9	F07
2	50	178	92.0	150	120.7	14.3	2	4	19.0	97.4	135	250	14	14	—	70	—	9	F07
2½	63.5	190	104.7	180	139.7	15.9	2	4	19.0	137	206	354	17	18	70	102	9	11	F07~F10
3	76	203	127.0	190	152.4	17.5	2	4	19.0	143	212	354	17	18	70	102	9	11	F07~F10
4	100	229	157.0	230	190.5	22.3	2	8	19.0	162	234	404	22	23.5	—	102	—	11	F10
5	125	356	186.0	255	215.9	22.3	2	8	22.3	218	304	804	27	28	125	—	14	—	F12
6	151	394	216.0	280	241.3	23.9	2	8	22.3	238	324	804	27	28	125	—	14	—	F12
8	202	457	270.0	345	298.5	27.0	2	8	22.3	290.5	391	804	36	36	—	140	—	18	F14

ASME Class 150 DIMENSION TABLE KV-L441/KV-L641

Unit : inch

NPS	d	L	R	D	C	T	f	N	h	H	H1	W	P	M	E		U		ISO 5211
1/2	0.59	4.25	1.38	3.50	2.38	0.31	0.06	4	5/8	2.50	3.88	6.69	0.354	0.37	—	1.97	—	0.31	F05
3/4	0.79	4.62	1.69	3.88	2.75	0.34	0.06	4	5/8	2.64	4.02	6.69	0.354	0.37	—	1.97	—	0.31	F05
1	0.98	5.00	2.01	4.25	3.12	0.38	0.06	4	5/8	3.07	4.49	7.87	0.433	0.45	—	1.97	—	0.31	F05
1 1/4	1.26	5.50	2.50	4.62	3.50	0.44	0.06	4	5/8	3.26	4.69	7.87	0.433	0.45	—	1.97	—	0.31	F05
1 1/2	1.50	6.50	2.88	5.00	3.88	0.50	0.06	4	5/8	3.60	5.08	9.84	0.551	0.55	—	2.76	—	0.35	F07
2	1.97	7.00	3.62	6.00	4.75	0.56	0.06	4	3/4	3.83	5.31	9.84	0.551	0.55	—	2.76	—	0.35	F07
2 1/2	2.50	7.50	4.12	7.00	5.50	0.62	0.06	4	3/4	5.39	8.11	13.9	0.669	0.71	2.76	4.02	0.35	0.43	F07~F10
3	2.99	8.00	5.00	7.50	6.00	0.69	0.06	4	3/4	5.63	8.35	13.9	0.669	0.71	2.76	4.02	0.35	0.43	F07~F10
4	3.94	9.00	6.19	9.00	7.50	0.88	0.06	8	3/4	6.38	9.13	15.9	0.866	0.93	—	4.02	—	0.43	F10
5	4.92	14.00	7.32	10.00	8.50	0.88	0.06	8	7/8	8.58	11.69	31.6	1.063	1.10	4.92	—	0.55	—	F12
6	5.94	15.50	8.50	11.00	9.50	0.94	0.06	8	7/8	9.37	12.91	31.6	1.063	1.10	4.92	—	0.55	—	F12
8	7.95	18.00	10.63	13.50	11.75	1.06	0.06	8	7/8	11.44	15.39	31.6	1.417	1.42	—	5.51	—	0.71	F14



DIMENSION TABLE

ASME Class 300 DIMENSION TABLE KV-L442/KV-L642

Unit : mm

NPS	d	L	R	D	C	T	f	N	h	H	H1	W	P	M	E	U	ISO 5211
1/2	15	140	35.0	95	66.7	12.7	2	4	16.0	63.5	99	170	9	9.5	—	50	— 8 F05
3/4	20	152	43.0	115	82.6	14.3	2	4	19.0	67	103	170	9	9.5	—	50	— 8 F05
1	25	165	51.0	125	88.9	15.9	2	4	19.0	78	113	200	11	11.5	—	50	— 8 F05
1 1/4	32	178	63.5	135	98.4	17.5	2	4	19.0	82.8	118	200	11	11.5	—	50	— 9 F05
1 1/2	38	190	73.2	155	114.3	19.1	2	4	22.3	91.5	129	250	14	14	—	70	— 9 F07
2	50	216	92.0	165	127.0	20.7	2	8	19.0	97.4	135	250	14	14	—	70	— 9 F07
2 1/2	63.5	241	104.7	190	149.2	23.9	2	8	22.3	137	206	354	17	18	70	102	9 11 F07~F10
3	76	282	127.0	210	168.3	27.0	2	8	22.3	143	212	354	17	18	70	102	9 11 F07~F10
4	100	305	157.0	255	200.0	30.2	2	8	22.3	162	234	404	22	23.5	—	102	— 11 F10
5	125	381	186.0	280	235.0	33.4	2	8	22.3	225	312	804	27	28	125	—	14 — F12
6	151	403	216.0	320	269.9	35.0	2	12	22.3	238	324	804	27	28	125	—	14 — F12
8	202	502	270.0	380	330.2	39.7	2	12	25.4	308	409	804	36	36	—	140	— 18 F14

ASME Class 300 DIMENSION TABLE KV-L442/KV-L642

Unit : inch

SIZE	d	L	R	D	C	T	f	N	h	H	H1	W	P	M	E	U	ISO 5211
1/2	0.59	5.50	1.38	3.75	2.62	0.50	0.06	4	5/8	2.50	3.88	6.69	0.354	0.37	—	1.97	— 0.31 F05
3/4	0.79	6.00	1.69	4.62	3.25	0.56	0.06	4	3/4	2.64	4.02	6.69	0.354	0.37	—	1.97	— 0.31 F05
1	0.98	6.50	2.01	4.88	3.50	0.62	0.06	4	3/4	3.07	4.49	7.87	0.433	0.45	—	1.97	— 0.31 F05
1 1/4	1.26	7.00	2.50	5.25	3.88	0.69	0.06	4	3/4	3.26	4.69	7.87	0.433	0.45	—	1.97	— 0.31 F05
1 1/2	1.50	7.50	2.88	6.12	4.50	0.75	0.06	4	7/8	3.60	5.08	9.84	0.551	0.55	—	2.76	— 0.35 F07
2	1.97	8.50	3.62	6.50	5.00	0.81	0.06	8	3/4	3.83	5.31	9.84	0.551	0.55	—	2.76	— 0.35 F07
2 1/2	2.50	9.50	4.12	7.50	5.88	0.94	0.06	8	7/8	5.39	8.11	13.9	0.669	0.71	2.76	4.02	0.35 0.43 F07~F10
3	2.99	11.12	5.00	8.25	6.62	1.06	0.06	8	7/8	5.63	8.35	13.9	0.669	0.71	2.76	4.02	0.35 0.43 F07~F10
4	3.94	12.00	6.19	10.00	7.88	1.19	0.06	8	7/8	6.38	9.13	15.9	0.866	0.93	—	4.02	— 0.43 F10
5	4.92	15.00	7.32	11.00	9.25	1.31	0.06	8	7/8	8.86	12.28	31.6	1.063	1.10	4.92	—	0.55 — F12
6	5.94	15.88	8.50	12.50	10.62	1.38	0.06	12	7/8	9.37	12.91	31.6	1.063	1.10	4.92	—	0.55 — F12
8	7.95	19.75	10.63	15.00	13.00	1.56	0.06	12	1	12.13	16.10	31.6	1.417	1.42	—	5.51	— 0.71 F14