

DESIGN FEATURES

- Built-in ISO 5211 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
- NACE MR-0175 (Optional)
- Casting Approved by TUV AD 2000-Merkblatt W0
- Options: 1.Actuator 2.Limit 3.Positioner



APPLICABLE STANDARDS

- Design Standard : ASME B16.34
- Frie Design : API 607 5th 2005, ISO10497
- 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	15	15
3/4	18	18
1	36	36
1 1/4	48	48
1 1/2	93	93
2	165	165
2 1/2	207	207
3	450	450
4	780	780
6	1360	1360

WEIGHT

NPS	KV-M1F/M1FF		KV-M2F/M2FF	
	Weight (kg)	Weight (lb)	Weight (kg)	Weight (lb)
1/2	1.3	2.9	2.0	4.4
3/4	1.6	3.6	2.9	6.4
1	2.4	5.3	4.1	9.1
1 1/4	3.3	7.3	5.4	11.9
1 1/2	4.6	10.2	8.0	17.7
2	6.7	14.8	10.2	22.5
2 1/2	10.5	23.2	15.9	35.1
3	14.5	32.0	22.8	50.3
4	22.6	49.8	—	—
6	45.0	99.2	—	—

TORQUE VALUES

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

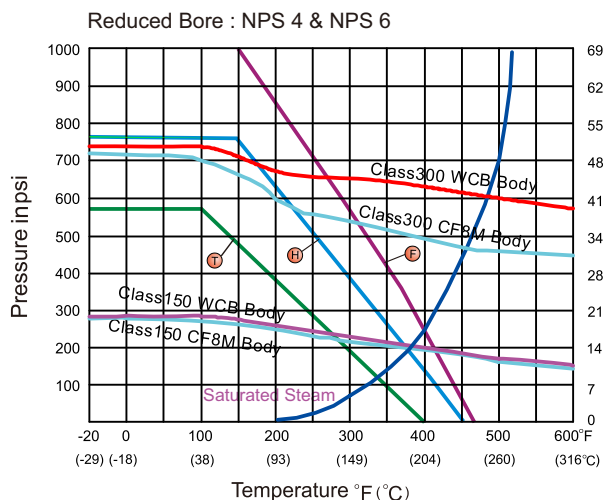
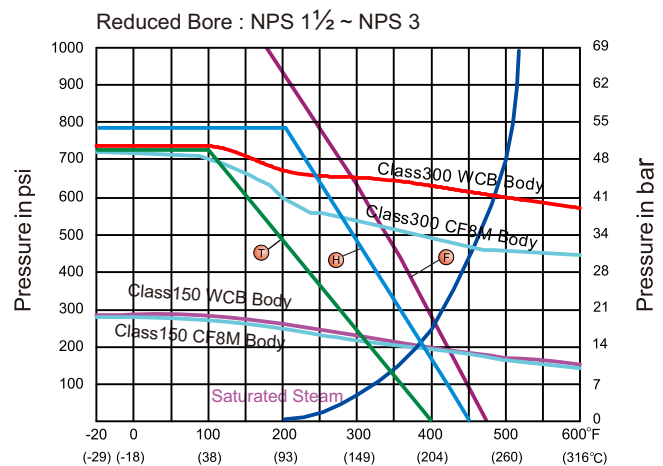
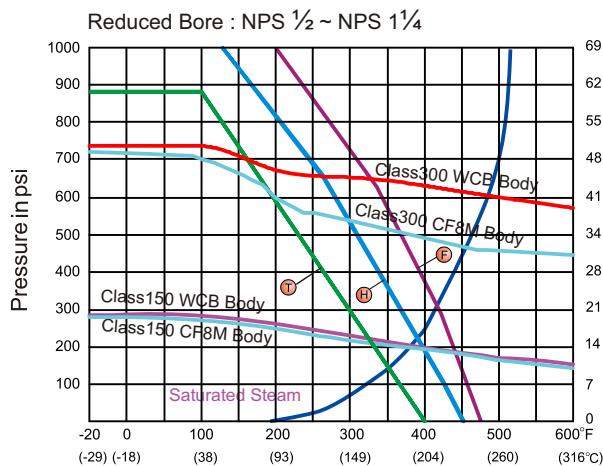
unit : in-lb / N-m

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
$\frac{1}{2}$	5	44	5	44	5	44	5	44
$\frac{3}{4}$	6	53	6	53	6	53	6	53
1	8	72	8	72	8	72	9	80
$1\frac{1}{4}$	12	106	12	106	13	116	13	116
$1\frac{1}{2}$	15	133	15	133	17	152	19	168
2	22	195	23	204	25	220	28	248
$2\frac{1}{2}$	31	275	33	292	36	320	40	354
3	48	425	51	461	55	487	60	531
4	72	638	80	708	90	795	96	850
6	130	1151	140	1239	156	1380	164	1450

- 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.

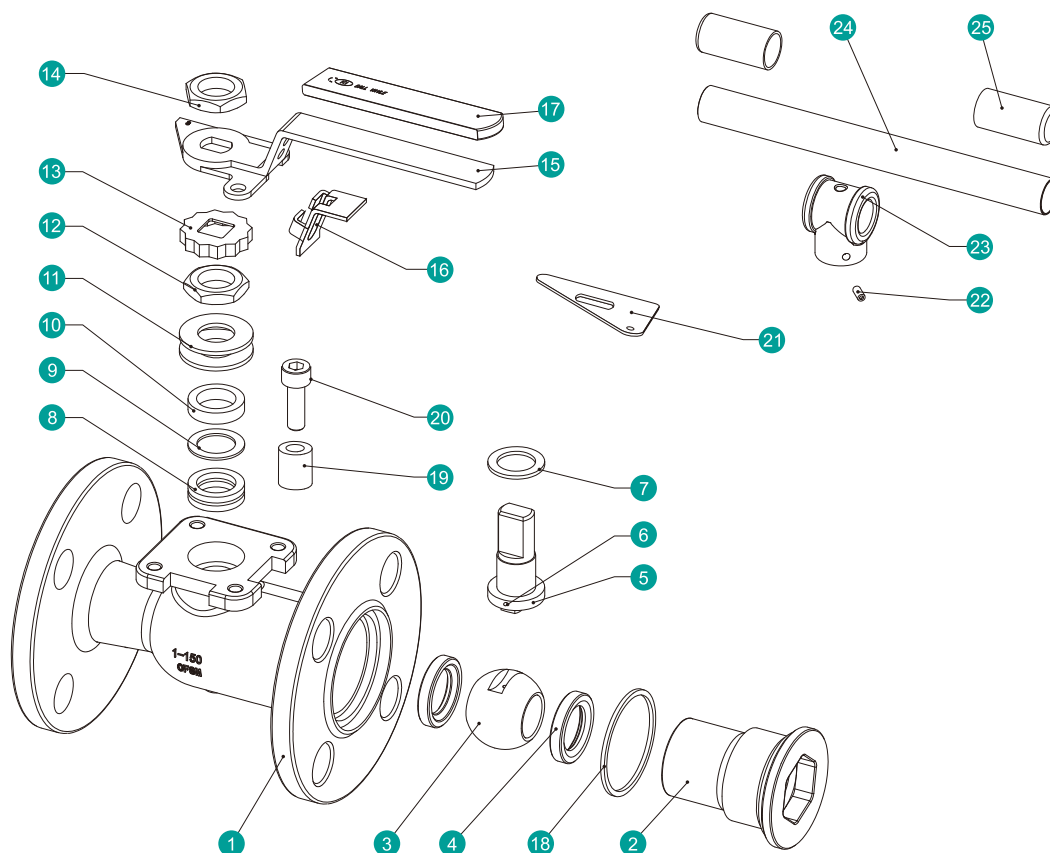
TECHNICAL INFORMATION

PRESSURE - TEMPERATURE DATA



Seat Materials : T PTFE H TFM1600 F TFM4215

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

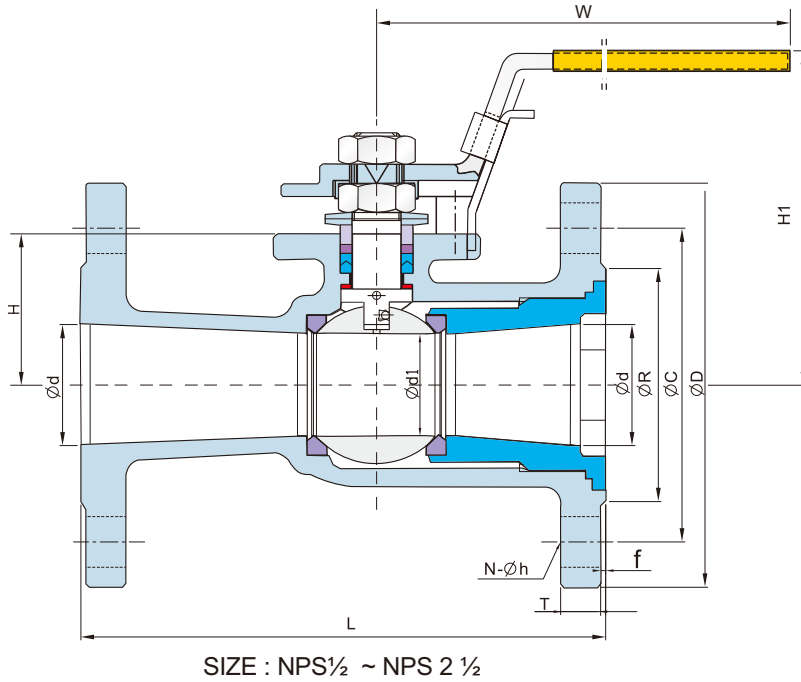
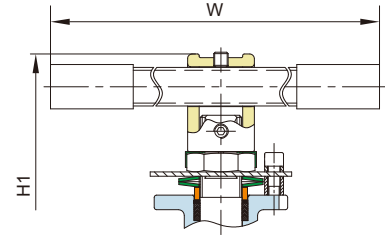


MATERIAL OF CONSTRUCTION

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	Packing	PTFE/GRAFOIL*		
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 Nut (NPS1½ ~ NPS2½)	A194-8		
15	Handle (NPS1½ ~ NPS2½)	304		
16	Lock Device (NPS1½ ~ NPS2½)	304		
17	Handle Sleeve(NPS1½~NPS2½)	VINYL PLASTIC		
18	Body Gasket	PTFE / Grafoil*		
19	Washer	304		
20	Stop Bolt	A2-70		
21	Triangle Stopper (NPS3 ~ NPS6)	304		
22	Set Screwed (NPS3 ~ NPS6)	A2-70		
23	Handle Adapter (NPS3 ~ NPS6)	A351-CF8		
24	Pipe Handle (NPS3 ~ NPS6)	A53+PLATED Zn		
25	Handle Sleeve (NPS3 ~ NPS6)	VINYL PLASTIC		

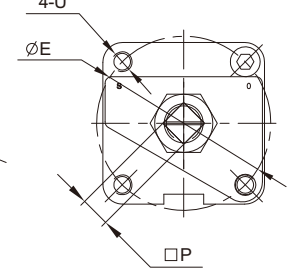
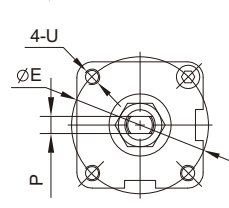
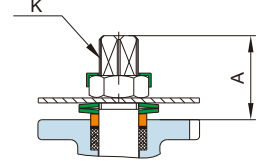
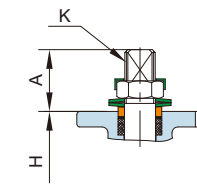
*Materials for KV-M1FF/KV-M2FF Series (Fire Safe Models)

SIZE : NPS 3 ~ NPS 6



SIZE : NPS 1/2 ~ NPS 4

SIZE : NPS 6



DIMENSION TABLE

ASME Class 150 DIMENSION TABLE KV-M1F/KV-M1FF

Unit : mm

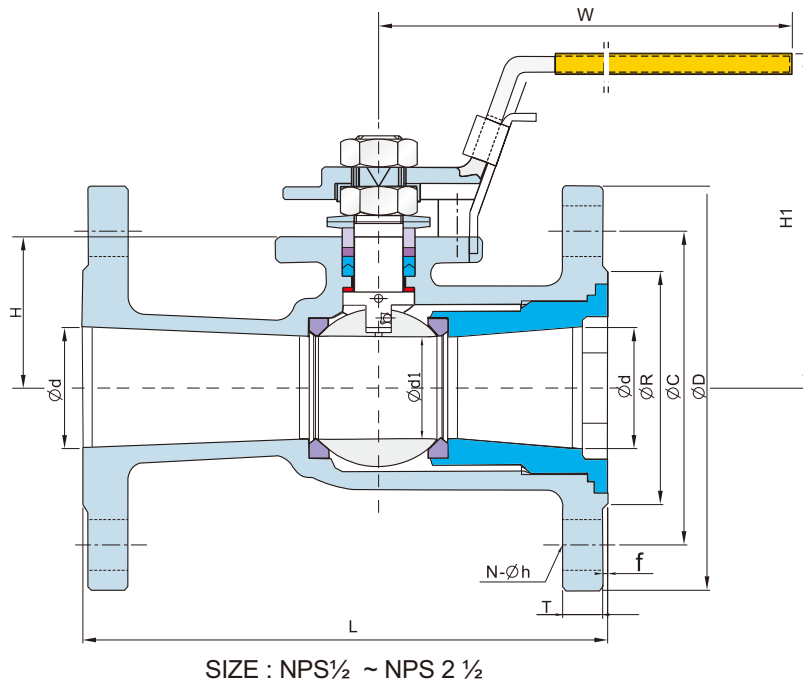
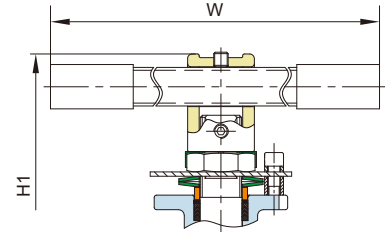
NPS	d	d1	L	R	D	C	f	T	N	h	H	H1	W	P	K	A	U	E	ISO 5211
1/2	12.5	10.0	108	35	90	60.3	2	8.0	4	16.0	23.0	74	136	6.3	3/8-24UNF	21.0	M5	42	F04
3/4	19.0	12.5	117	43	100	69.9	2	8.9	4	16.0	23.0	74	136	6.3	3/8-24UNF	21.0	M5	42	F04
1	25.0	17.5	127	51	110	79.4	2	9.6	4	16.0	33.5	88	170	9.0	9/16-18UNF	21.5	M6	50	F05
1 1/4	32.0	25.0	140	63.5	115	88.9	2	11.2	4	16.0	41.5	96	170	9.0	9/16-18UNF	21.5	M6	50	F05
1 1/2	38.0	32.0	165	73	125	98.4	2	12.7	4	16.0	47.5	105	200	9.6	5/8-18UNF	32.0	M8	70	F07
2	50.0	38.0	178	92	150	120.7	2	14.3	4	19.0	56.5	114	200	9.6	5/8-18UNF	32.0	M8	70	F07
2 1/2	62.0	50.0	190	105	180	139.7	2	15.9	4	19.0	66.5	133	250	16.0	7/8-14UNF	42.5	M10	102	F10
3	76.0	60.3	203	127	190	152.4	2	17.5	4	19.0	75.5	158	300	16.0	7/8-14UNF	42.5	M10	102	F10
4	98.0	76.0	229	157	230	190.5	2	22.3	8	19.0	96.0	191	400	18.0	1-1/8-12UNF	55.0	M10	102	F10
6	146.0	100.0	267	216	280	241.3	2	23.9	8	22.3	133.0	236	600	27.0	1-3/8-12UNF	56.0	M12	125	F12

ASME Class 150 DIMENSION TABLE KV-M1F/KV-M1FF

Unit : inch

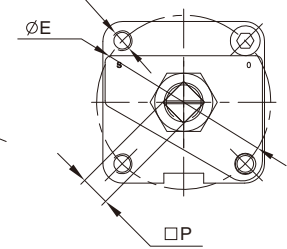
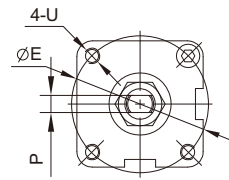
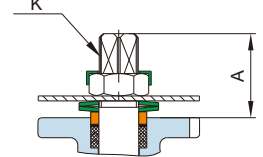
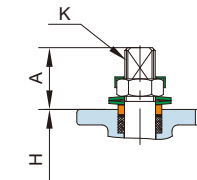
NPS	d	d1	L	R	D	C	f	T	N	h	H	H1	W	P	K	A	U	E	ISO 5211
1/2	0.49	0.40	4.25	1.38	3.50	2.38	0.06	0.31	4	5/8	0.91	2.91	5.35	0.248	3/8-24UNF	0.83	M5	1.42	F04
3/4	0.75	0.49	0.62	1.69	3.88	2.75	0.06	0.34	4	5/8	0.91	2.91	5.35	0.248	3/8-24UNF	0.83	M5	1.42	F04
1	0.98	0.69	5.00	2.01	4.25	3.12	0.06	0.38	4	5/8	1.32	3.44	6.75	0.354	9/16-18UNF	0.85	M6	1.65	F05
1 1/4	1.26	0.99	5.50	2.50	4.62	3.50	0.06	0.44	4	5/8	1.63	3.76	6.75	0.354	9/16-18UNF	0.85	M6	1.65	F05
1 1/2	1.50	1.26	6.50	2.88	5.00	3.88	0.06	0.50	4	5/8	1.87	4.13	7.95	0.378	5/8-18UNF	1.26	M8	2.76	F07
2	1.97	1.50	7.00	3.62	6.00	4.75	0.06	0.56	4	3/4	2.22	4.49	7.95	0.378	5/8-18UNF	1.26	M8	2.76	F07
2 1/2	2.44	1.97	7.50	4.12	7.00	5.50	0.06	0.62	4	3/4	2.62	5.22	9.92	0.630	7/8-14UNF	1.67	M10	4.02	F10
3	2.99	2.38	8.00	5.00	7.50	6.00	0.06	0.69	4	3/4	2.97	6.20	11.90	0.630	7/8-14UNF	1.67	M10	4.02	F10
4	3.86	2.99	9.00	6.19	9.00	7.50	0.06	0.88	8	3/4	3.78	7.52	15.90	0.709	1-1/8-12UNF	2.17	M10	4.02	F10
6	5.75	3.94	10.50	8.50	11.00	9.50	0.06	0.94	8	7/8	5.24	9.25	23.75	1.603	1-3/8-12UNF	2.20	M12	4.92	F12

SIZE : NPS 3 ~ NPS 6



SIZE : NPS 1/2 ~ NPS 4

SIZE : NPS 6



DIMENSION TABLE

ASME Class 300 DIMENSION TABLE KV-M2F/KV-M2FF

Unit : mm

NPS	d	d1	L	R	D	C	f	T	N	h	H	H1	W	P	K	A	U	E	ISO 5211
1/2	12.5	10.0	140	35	95	66.7	2	12.7	4	16.0	23.0	74	136	6.3	3/8-24UNF	21.0	M5	42	F04
3/4	19.0	12.5	152	43	115	82.6	2	14.3	4	19.0	23.0	74	136	6.3	3/8-24UNF	21.0	M5	42	F04
1	25.0	17.5	165	51	125	88.9	2	15.9	4	19.0	33.5	88	170	9.0	9/16-18UNF	21.5	M6	50	F05
1 1/4	32.0	25.0	178	63.5	135	98.4	2	17.5	4	19.0	41.5	96	170	9.0	9/16-18UNF	21.5	M6	50	F05
1 1/2	38.0	32.0	190	73	155	114.3	2	19.1	4	22.3	47.5	105	200	9.6	5/8-18UNF	32.0	M8	70	F07
2	50.0	38.0	216	92	165	127.0	2	20.7	8	19.0	56.5	114	200	9.6	5/8-18UNF	32.0	M8	70	F07
2 1/2	62.0	50.0	241	105	190	149.2	2	23.9	8	22.3	66.5	133	250	16.0	7/8-14UNF	42.5	M10	102	F10
3	76.0	60.3	282	127	210	168.3	2	27.0	8	22.3	75.5	158	300	16.0	7/8-14UNF	42.5	M10	102	F10
4	98.0	76.0	305	157	255	200.0	2	30.2	8	22.3	96.0	191	400	18.0	1-1/8-12UNF	55.0	M10	102	F10
6	146.0	100.0	403	216	320	269.9	2	35.0	12	22.3	133.0	236	600	27.0	1-3/8-12UNF	56.0	M12	125	F12

ASME Class 300 DIMENSION TABLE KV-M2F/KV-M2FF

Unit : inch

NPS	d	d1	L	R	D	C	f	T	N	h	H	H1	W	P	K	A	U	E	ISO 5211
1/2	0.49	0.40	5.50	1.38	3.70	2.62	0.06	0.50	4	5/8	0.91	2.91	5.35	0.248	3/8-24UNF	0.83	M5	1.42	F04
3/4	0.75	0.49	6.00	1.69	4.62	3.25	0.06	0.56	4	3/4	0.91	2.91	5.35	0.248	3/8-24UNF	0.83	M5	1.42	F04
1	0.98	0.69	6.50	2.01	4.88	3.50	0.06	0.62	4	3/4	1.32	3.44	6.75	0.354	9/16-18UNF	0.85	M6	1.65	F05
1 1/4	1.26	0.99	7.00	2.50	5.25	3.88	0.06	0.69	4	3/4	1.63	3.76	6.75	0.354	9/16-18UNF	0.85	M6	1.65	F05
1 1/2	1.50	1.26	7.50	2.88	6.12	4.50	0.06	0.75	4	7/8	1.87	4.13	7.95	0.378	5/8-18UNF	1.26	M8	2.76	F07
2	1.97	1.50	8.50	3.62	6.50	5.00	0.06	0.81	8	3/4	2.22	4.49	7.95	0.378	5/8-18UNF	1.26	M8	2.76	F07
2 1/2	2.44	1.97	9.50	4.12	7.50	5.88	0.06	0.94	8	7/8	2.62	5.22	9.92	0.630	7/8-14UNF	1.67	M10	4.02	F10
3	2.99	2.38	11.12	5.00	8.25	6.62	0.06	1.06	8	7/8	2.97	6.20	11.90	0.630	7/8-14UNF	1.67	M10	4.02	F10
4	3.86	2.99	12.00	6.19	10.00	7.88	0.06	1.19	8	7/8	3.78	7.52	15.90	0.709	1-1/8-12UNF	2.17	M10	4.02	F10
6	5.75	3.94	15.88	8.50	12.50	10.62	0.06	1.38	12	7/8	5.24	9.29	23.75	1.603	1-3/8-12UNF	2.20	M12	4.92	F12