

## DESIGN FEATURES

- Built-in ISO 5211 Direct Mounting Pad Easy Automation
- Anti-static Devices for Ball-Stem-Body
- Blow-out Proof Stem
- Pressure Balance Hole in Ball Slot
- TA-Luft Design Approved
- ISO 15848-1 Design Approved
- NACE MR-0175 (Optional)
- Casting Approved by TUV AD 2000-Merkblatt W0
- Options : 1.Actuator 2.Limit 3.Positioner

## APPLICABLE STANDARDS

- Design Standard : MSS SP-110
- Wall Thickness : EN12516-3,
- Pipe Thread (KV-L30) : ASME B1.20.1,BS21  
DIN 2999/259, ISO 228/1  
JIS B0203 ISO7/1
- Butt Weld (KV-L31,L31-L) : ASME B16.25 (øB2 Sch40), EN 12627
- Socket Weld (KV-L32) : ASME B16.11
- Flange End (KV-L3F\*) : ASME B16.5 Class150 KV-L3F(1)  
ASME B16.5 Class300 KV-L3F(2)  
EN 1092-1 PN10-40 KV-L3F(K/N)
- Inspection & Testing : MSS SP-110



## CV VALUES

NPS	DN	CV
1/4	8	10
3/8	10	13
1/2	15	18
3/4	20	36
1	25	48
1 1/4	32	93
1 1/2	40	165
2	50	207
2 1/2	65	450
3	80	780
4	100	1360

## WEIGHT

NPS	DN	KV-L30		KV-L31		KV-L32	
		(kg)	(lb)	(kg)	(lb)	(kg)	(lb)
1/4	8	0.64	1.41	0.64	1.41	0.65	1.43
3/8	10	0.65	1.43	0.61	1.34	0.61	1.34
1/2	15	0.68	1.50	0.63	1.39	0.67	1.48
3/4	20	0.95	2.09	0.91	2.01	0.95	2.09
1	25	1.40	3.09	1.35	2.98	1.33	2.93
1 1/4	32	2.21	4.87	2.08	4.59	2.04	4.50
1 1/2	40	2.99	6.59	2.97	6.55	2.80	6.17
2	50	4.50	9.92	4.30	9.48	4.30	9.48
2 1/2	65	8.40	18.5	8.50	18.8	8.30	18.2
3	80	12.3	27.1	12.3	27.1	12.3	27.1
4	100	23.7	52.3	23.4	51.6	23.0	50.7

## TORQUE VALUES

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

unit : in-lb / N-m

Size/ $\Delta P$		75 psig		150 psig		300 psig		700 psig		1000 psig	
		5 bar		10 bar		20 bar		50bar		63bar	
NPS	DN	N-m	In-lb	N-m	In-lb	N-m	In-lb	N-m	In-lb	N-m	In-lb
1/4	8	4.5	40	4.5	40	4.5	40	4.5	40	4.5	40
3/8	10	4.5	40	4.5	40	4.5	40	4.5	40	4.5	40
1/2	15	5	44	5	44	5	44	5	44	5	44
3/4	20	6	53	6	53	6	53	6	53	6	53
1	25	10	88	10	89	11	97	11	97	11	97
1 1/4	32	13	115	13	115	15	133	17	150	19	168
1 1/2	40	19	168	19	168	22	195	24	212	26	230
2	50	25	221	29	257	32	283	35	310	38	336
2 1/2	65	40	354	45	398	49	434	54	478	59	522
3	80	65	575	72	637	81	717	90	796	101	894
4	100	100	885	110	973	122	1080	135	1195	148	1310

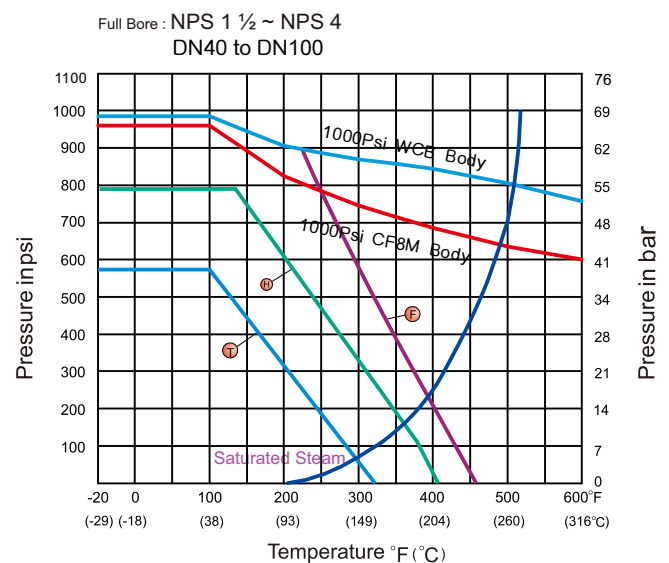
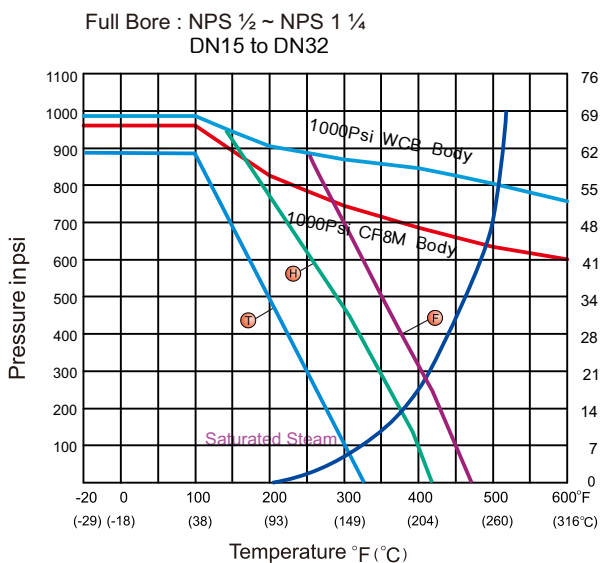
Remark : 1.Torques will increase about 30% if seat materials are Reinforced Fiber-Glass PTFE, Carbon-filled PTFE or EK+PTFE or TFM4215.

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.

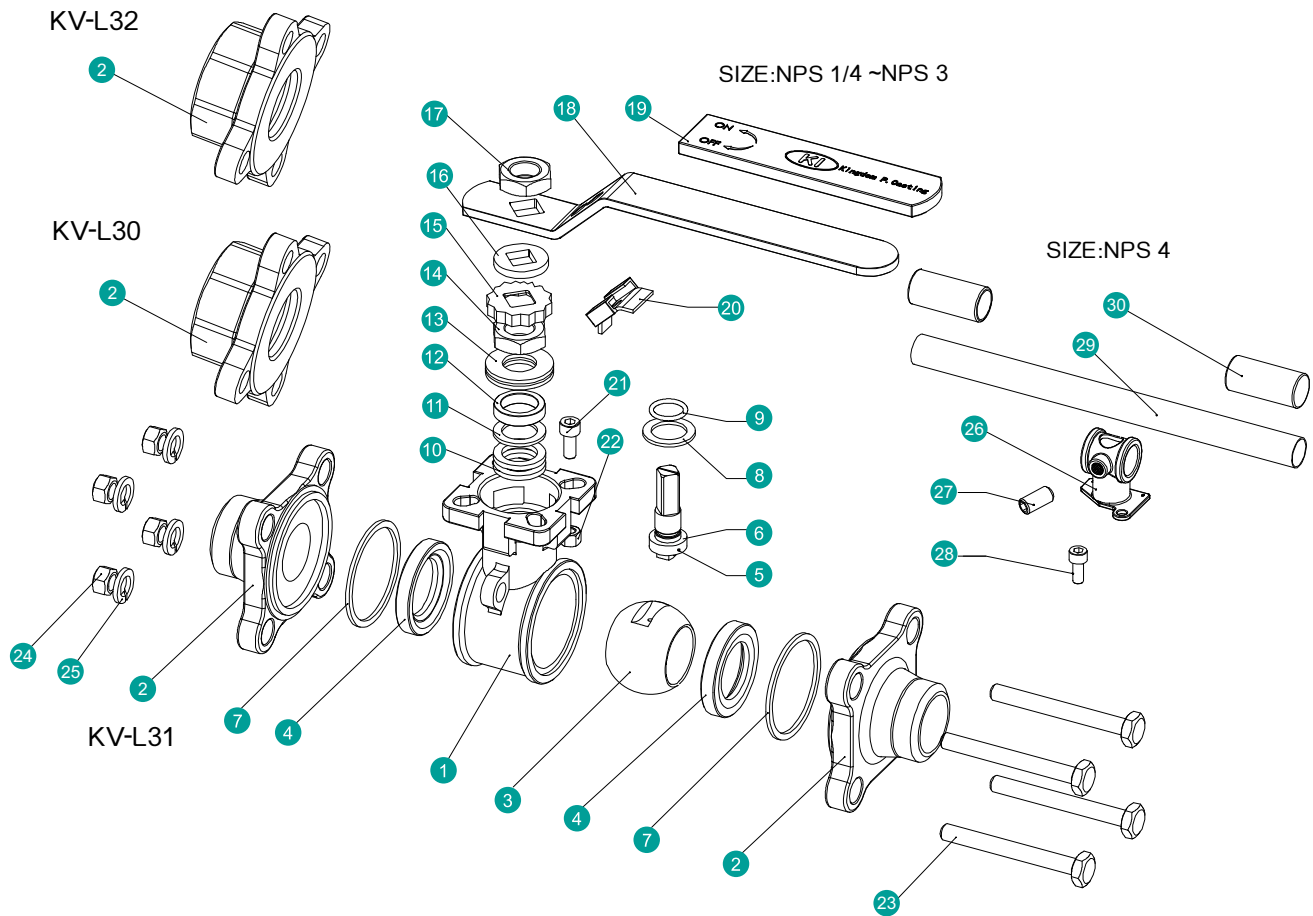
## TECHNICAL INFORMATION

### PRESSURE - TEMPERATURE DATA



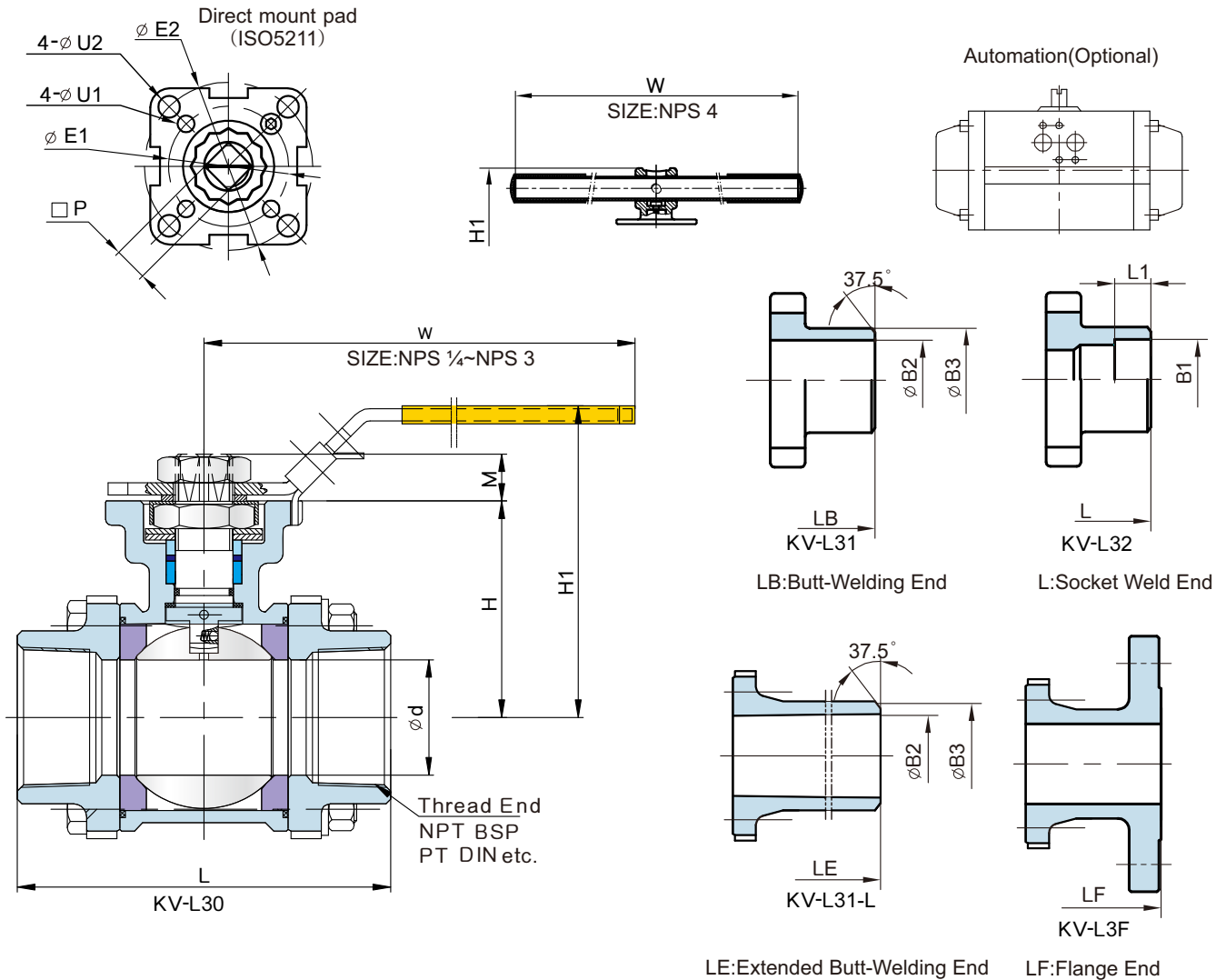
Seat Materials : Ⓧ PTFE Ⓧ TFM1600 Ⓧ TFM4215

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	CF8M(1.4408)	CF8(1.4308)	WCB(1.0619)
2	End Cap (Thread)	CF8M(1.4408)	CF8(1.4308)	WCB(1.0619)
	End Cap (BW/SW)	CF3M(1.4409)	CF3(1.4309)	WCB(1.0619)
3	Ball	CF8M	CF8	
4	Ball Seat	TFM1600 /PTFE/TFM4215		
5	Stem	316	304	
6	Anti-Static	316	304	
7	Body Gasket	PTFE/TFM1600		
8	Thrust washer	PTFE/TFM1600/ RTFE		
9	O-Ring	FKM		
10	Packing	PTFE/ <b>GRAFOIL*</b>		
11	Bushing	50%SS+50%PTFE / <b>304</b>		
12	Gland	316		
13	Belleville Washer	301		
14	Stem Nut	A194-8		
15	Stop-lock-Cap	304		
16	Handle Gland	304		
17	Handle Nut (NPS <sup>1/4</sup> ~NPS3)	A194-8		
18	Handle (NPS <sup>1/4</sup> ~NPS3)	304		
19	Handle Sleeve (NPS <sup>1/4</sup> ~NPS3)	VINYL PLASTIC		
20	Lock Device (NPS <sup>1/4</sup> ~NPS3)	304		
21	Stop Bolt	A2-70		
22	Stop Nut	A2-70		
23	Bolting	A193-B8/A2-70		
	Bolt Nut	A194-8/A2-70		
24	Bolt Washer	304		
26	Handle Adapter (NPS4)	A351-CF8		
27	Set Screwed (NPS4)	A2-70		
28	Bolting (NPS4)	A2-70		
29	Pipe Handle (NPS4)	A53+PLATED Zn		
30	Handle Sleeve (NPS4)	VINYL PLASTIC		



**DIMENSION TABLE**

**ANSI 1000 WOG DIMENSION TABLE**

Unit : mm

NPS	DN	d	L	LB	LE	H	H1	W	B1	B2	B3	L1	P	M	E1	E2	U1	U2	HEX.B	ISO 5211
1/4	8	10.6	75	70	225	42	72	147	14.2	9.3	18	10.0	9	9	36	42	6	6	28	F03-F04
3/8	10	12.7	75	70	225	42	72	147	17.8	12.5	18	10.0	9	9	36	42	6	6	28	F03-F04
1/2	15	15	75	75	225	42	72	147	21.8	15.8	22	10.0	9	9	36	42	6	6	28	F03-F04
3/4	20	20	80	90	225	48.5	79	147	27.3	20.9	28	13.0	9	9	36	50	6	7	34.5	F03-F05
1	25	25	90	100	245	58.5	89	177	34.0	26.7	34	13.0	11	11	42	50	6	7	42	F04-F05
1 1/4	32	32	110	110	255	63	93	177	42.8	35.1	43	16.0	11	11	42	70	6	9	52	F04-F07
1 1/2	40	38	120	125	260	71.3	103	197	48.9	40.9	50	16.0	14	14	50	70	7	9	58.5	F05-F07
2	50	50	140	150	275	78.2	110	197	61.4	52.5	61	17.0	14	14	50	70	7	9	71.5	F05-F07
2 1/2	65	63.5	185	190	330	100	150	267	74.0	62.7	76	17.0	17	17	70	102	9	11	86.5	F07-F10
3	80	76	205	220	356	108.5	159	267	90.0	78.0	92	17.0	17	17	70	102	9	11	101	F07-F10
4	100	100	240	270	432	140	212	400	115.5	102.4	115	20.0	22	22	—	102	—	11	132	F10

Unit : inch

NPS	DN	d	L	LB	LE	H	H1	W	B1	B2	B3	L1	P	M	E1	E2	U1	U2	HEX.B	ISO 5211
1/4	8	0.42	2.95	2.76	8.86	1.65	2.83	5.79	0.55	0.37	0.71	0.39	0.354	0.28	1.42	1.65	0.24	0.24	1.10	F03-F04
3/8	10	0.50	2.95	2.76	8.86	1.65	2.83	5.79	0.70	0.49	0.71	0.39	0.354	0.28	1.42	1.65	0.24	0.24	1.10	F03-F04
1/2	15	0.59	2.95	2.95	8.86	1.65	2.83	5.79	0.86	0.62	0.87	0.39	0.354	0.28	1.42	1.65	0.24	0.24	1.10	F03-F04
3/4	20	0.79	3.15	3.54	8.86	1.91	3.11	5.79	1.07	0.82	1.10	0.51	0.354	0.35	1.42	1.97	0.24	0.28	1.36	F03-F05
1	25	0.98	3.54	3.94	9.65	2.30	3.50	6.97	1.34	1.05	1.34	0.51	0.433	0.43	1.65	1.97	0.24	0.28	1.65	F04-F05
1 1/4	32	1.26	4.33	4.33	10.04	2.48	3.66	6.97	1.69	1.38	1.69	0.63	0.433	0.43	1.65	2.76	0.24	0.35	2.05	F04-F07
1 1/2	40	1.50	4.72	4.92	10.24	2.81	4.06	7.76	1.93	1.61	1.97	0.63	0.551	0.55	1.97	2.76	0.28	0.35	2.30	F05-F07
2	50	1.97	5.51	5.91	10.83	3.08	4.33	7.76	2.42	2.07	2.40	0.67	0.551	0.55	1.97	2.76	0.28	0.35	2.81	F05-F07
2 1/2	65	2.50	7.28	7.48	12.99	3.94	5.91	10.5	2.91	2.47	2.99	0.67	0.669	0.67	2.76	4.02	0.35	0.43	3.41	F07-F10
3	80	2.99	8.07	8.66	14.02	4.27	6.26	10.5	3.54	3.07	3.62	0.67	0.669	0.67	2.76	4.02	0.35	0.43	3.98	F07-F10
4	100	3.94	9.45	10.63	17.01	5.51	8.35	15.9	4.55	4.03	4.53	0.79	0.866	0.87	—	4.02	—	0.43	5.20	F10