

## 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/ 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 : 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

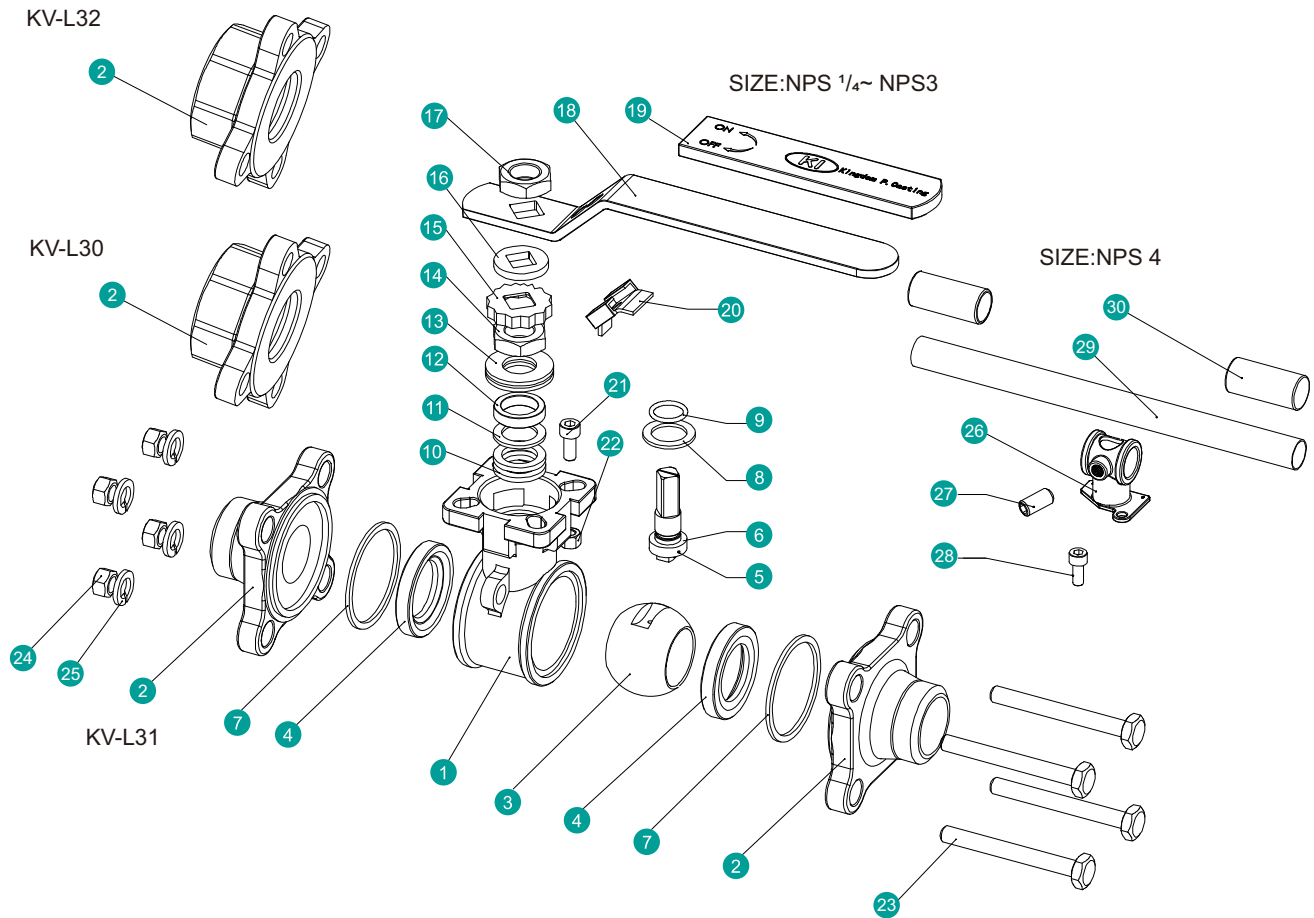
## TORQUE VALUES

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

unit : in-lb / N-m

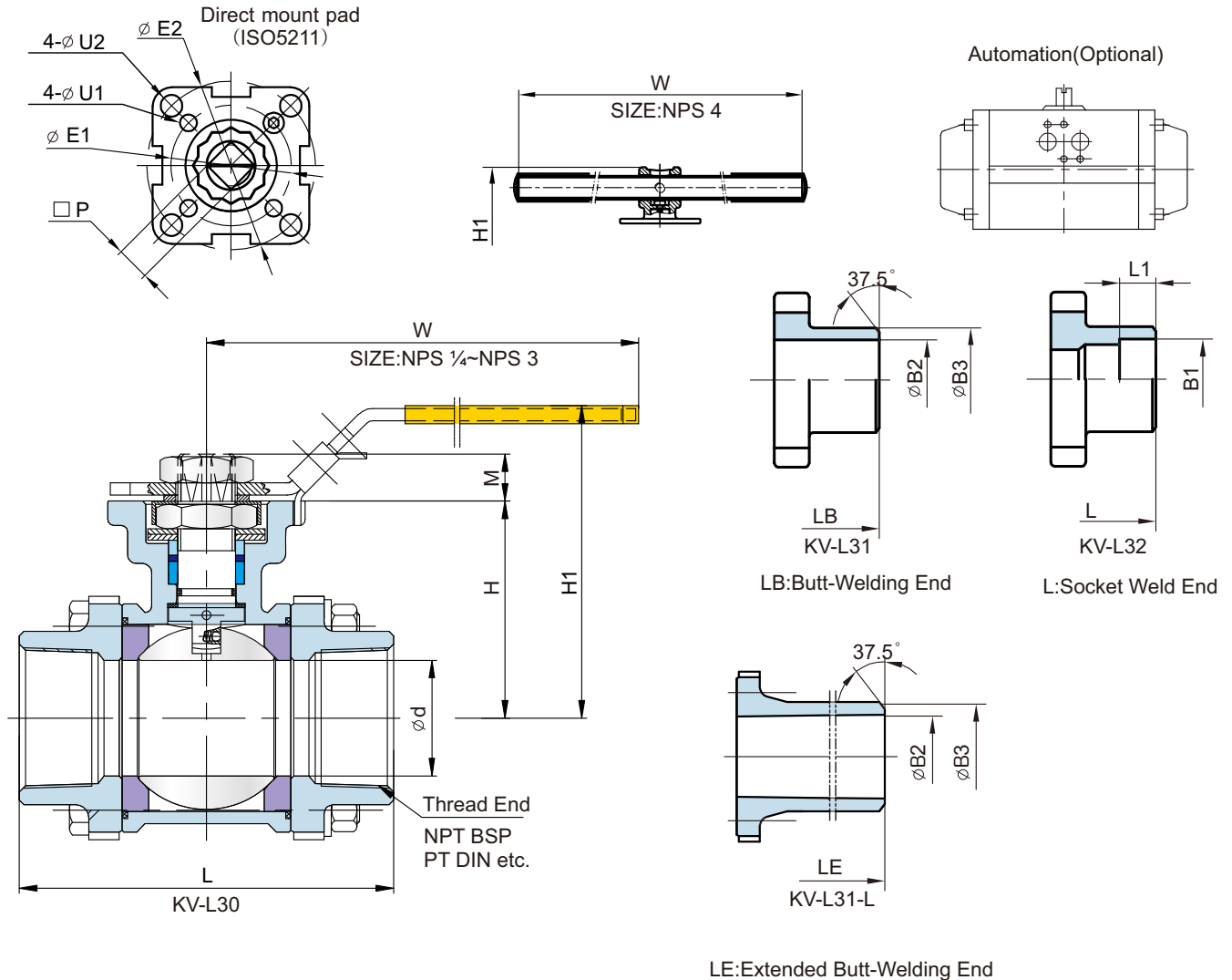
Size/ $\Delta P$		75 psig		150 psig		300 psig		700 psig		1000 psig	
		5 bar		10 bar		20 bar		50bar		63bar	
NPS	DN	N-m	In-lb	N-m	In-lb	N-m	In-lb	N-m	In-lb	N-m	In-lb
1/4	8	4.5	40	4.5	40	4.5	40	4.5	40	4.5	40
3/8	10	4.5	40	4.5	40	4.5	40	4.5	40	4.5	40
1/2	15	5	44	5	44	5	44	5	44	5	44
3/4	20	6	53	6	53	6	53	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.



**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)	CF8(1.4308)	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 / GRAPHITE*		
11	Bushing	50%SS+50%PTFE / 304		
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		
24	Bolt Nut	A194-8 / A2-70		
25	Bolt Washer	304		
26	Handle Adapter (NPS4)	A351-CF8		
27	Set Screw (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

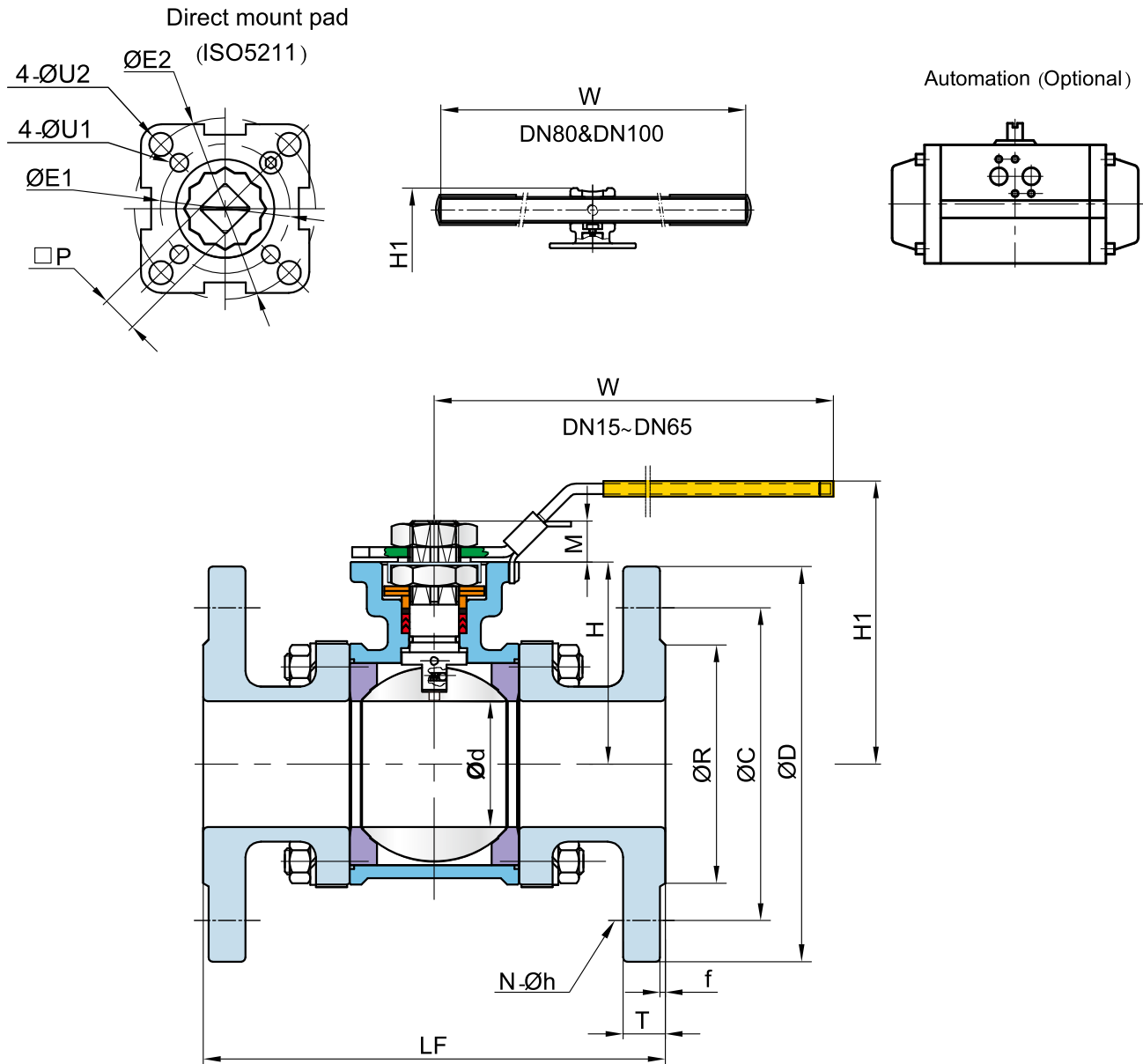
NPS	DN	d	L	LB	LE	H	H1	W	B1	B2	B3	L1	P	M	E1	E2	U1	U2	HEX.B	ISO 5211
1/4	8	10.6	75	70	225	42	72	147	14.2	9.3	18	10.0	9	9	36	42	6	6	28	F03~F04
3/8	10	12.7	75	70	225	42	72	147	17.8	12.5	18	10.0	9	9	36	42	6	6	28	F03~F04
1/2	15	15	75	75	225	42	72	147	21.8	15.8	22	10.0	9	9	36	42	6	6	28	F03~F04
3/4	20	20	80	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

\*M3 Face to Face dimensions are available

\*For valves with butt weld ends per DIN11850 series 2 or ISO1127, the pressure rating will be 400 WOG.



**DIMENSION TABLE**

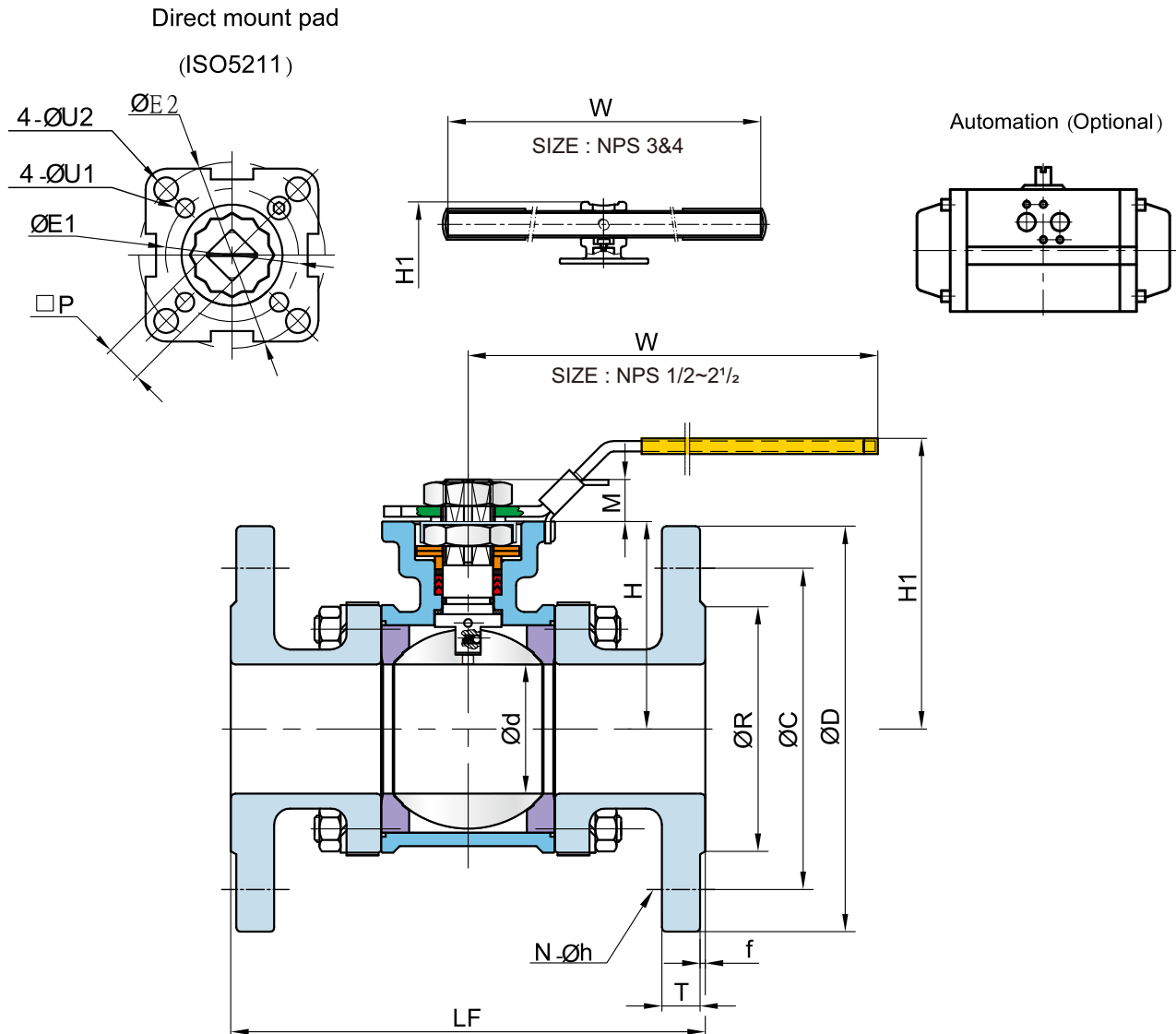
EN PN10/16/25/40 DIMENSION TABLE

Unit : mm

DN	PN	d	LF	R	D	C	f	T	N	h	H	H1	W	P	M	E1	E2	U1	U2	ISO5211
15	10	15	130	45	95	65	2	16	4	14	42	72	147	9	9	36	42	6	6	F03-F04
20		20	150	58	105	75	2	18	4	14	48.5	79	147	9	9	36	50	6	7	F03-F05
25		25	160	68	115	85	2	18	4	14	58.5	89	177	11	11	42	50	6	7	F04-F05
32	25	32	180	78	140	100	2	18	4	18	63	94	177	11	11	42	70	6	9	F04-F07
40		38	200	88	150	110	3	18	4	18	71.3	103	197	14	14	50	70	7	9	F05-F07
50	40	50	230	102	165	125	3	20	4	18	78.2	110	197	14	14	50	70	7	9	F05-F07
65	10/16	63.5	290	122	185	145	3	18	4 <sup>(a)</sup>	18	100	150	267	17	17	70	102	9	11	F07-F10
	22							8												
80	10/16	76	310	138	200	160	3	20	8	18	109	174	300	17	17	70	102	9	11	F07-F10
	24							8												
100	10/16	100	350	158	220	180	3	20	8	18	140	212	400	22	22	NON	102	NON	11	F10
	162			235				190												

KV-L3F(K) [PN16] KV-L3F(N) [PN40]

(a): 4 holes is factory standard for DN65 PN16 valve and 8 holes is optional.



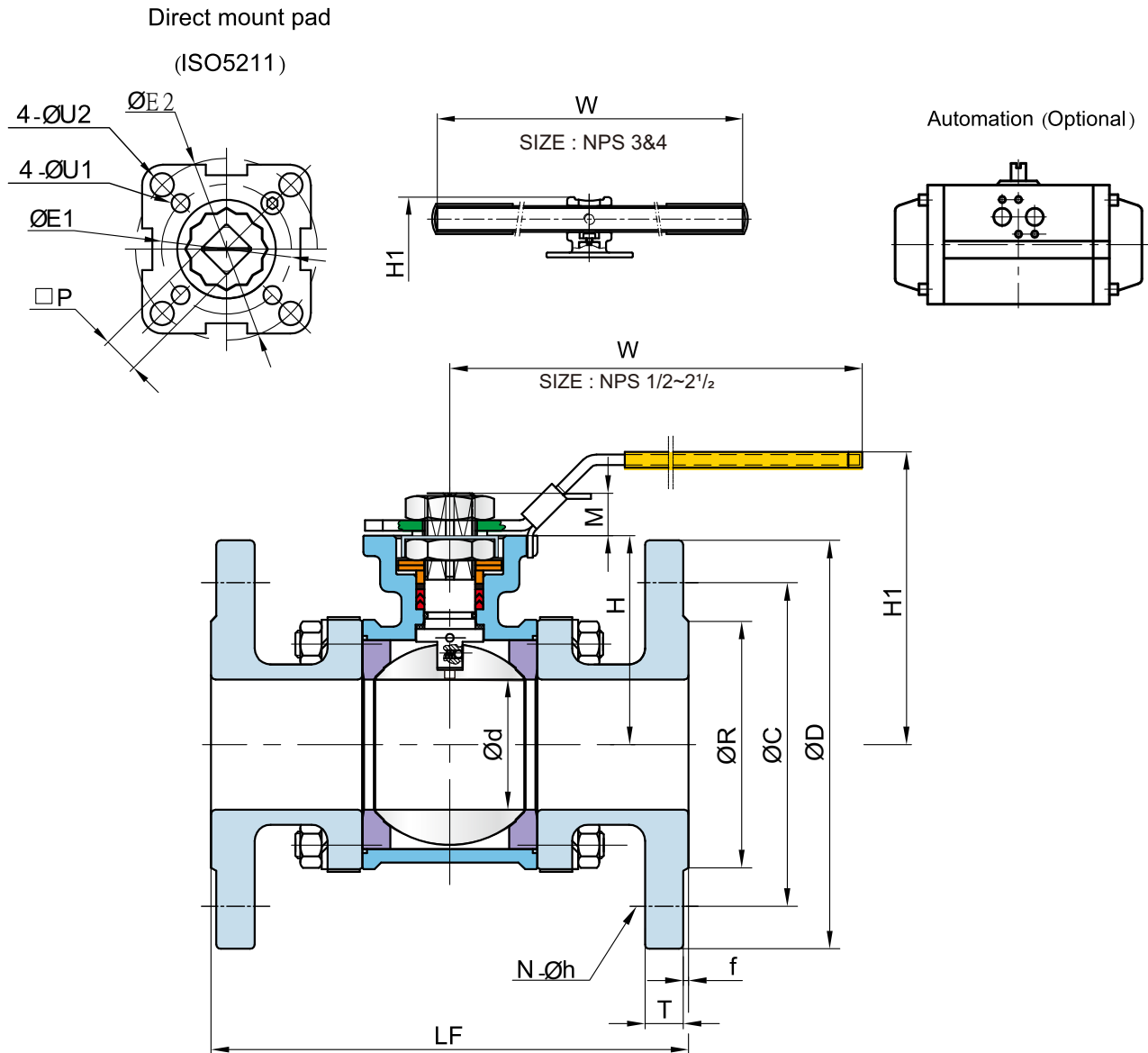
■ ASME Class 150 DIMENS ON TABLE

Unit : mm

NPS	d	LF	R	D	C	f	T	N	h	H	H1	W	P	M	E1	E2	U1	U2	ISO5211
1/2	15	130	35.0	90	60.3	2	8.0	4	16.0	42	72	147	9	9	36	42	6	6	F03~F04
3/4	20	150	43.0	100	69.9	2	8.9	4	16.0	48.5	79	147	9	9	36	50	6	7	F03~F05
1	25	160	51.0	110	79.4	2	9.6	4	16.0	58.5	89	177	11	11	42	50	6	7	F04~F05
1 1/4	32	180	63.5	115	88.9	2	11.2	4	16.0	63	94	177	11	11	42	70	6	9	F04~F07
1 1/2	38	200	73.2	125	98.4	2	12.7	4	16.0	71.3	103	197	14	14	50	70	7	9	F05~F07
2	50	230	92.0	150	120.7	2	14.3	4	19.0	78.2	110	197	14	14	50	70	7	9	F05~F07
2 1/2	63.5	290	104.7	180	139.7	2	15.9	4	19.0	100	150	267	17	17	70	102	9	11	F07~F10
3	76	310	127.0	190	152.4	2	17.5	4	19.0	109	174	300	17	17	70	102	9	11	F07~F10
4	100	350	157.0	230	190.5	2	22.3	8	19.0	140	212	400	22	22	—	102	—	11	F10

Unit : inch

NPS	d	L	R	D	C	f	T	N	h	H	H1	W	P	M	E1	E2	U1	U2	ISO5211
1/2	0.59	5.12	1.38	3.50	2.38	0.06	0.31	4	5/8	1.65	2.83	5.79	0.354	0.28	1.42	1.65	0.24	0.24	F03~F04
3/4	0.79	5.91	1.69	3.88	2.75	0.06	0.34	4	5/8	1.91	3.11	5.79	0.354	0.35	1.42	1.97	0.24	0.28	F03~F05
1	0.98	6.30	2.01	4.25	3.12	0.06	0.38	4	5/8	2.30	3.50	6.97	0.433	0.43	1.65	1.97	0.24	0.28	F04~F05
1 1/4	1.26	7.09	2.50	4.62	3.50	0.06	0.44	4	5/8	2.48	3.66	6.97	0.433	0.43	1.65	2.76	0.24	0.35	F04~F07
1 1/2	1.50	7.87	2.88	5.00	3.88	0.06	0.50	4	5/8	2.81	4.06	7.76	0.551	0.55	1.97	2.76	0.28	0.35	F05~F07
2	1.97	9.06	3.62	6.00	4.75	0.06	0.56	4	3/4	3.08	4.33	7.76	0.551	0.55	1.97	2.76	0.28	0.35	F05~F07
2 1/2	2.50	11.42	4.12	7.00	5.50	0.06	0.62	4	3/4	3.94	5.91	10.5	0.669	0.67	2.76	4.02	0.35	0.43	F07~F10
3	2.99	12.20	5.00	7.50	6.00	0.06	0.69	4	3/4	4.27	6.85	11.9	0.669	0.67	2.76	4.02	0.35	0.43	F07~F10
4	3.94	13.78	6.19	9.00	7.50	0.06	0.88	8	3/4	5.51	8.35	15.9	0.866	0.87	—	4.02	—	0.43	F10



■ ASME Class 300 DIMENSION TABLE

Unit : mm

NPS	d	LF	R	D	C	f	T	N	h	H	H1	W	P	M	E1	E2	U1	U2	ISO5211
1/2	15	130	35.0	95	66.7	2	12.7	4	16.0	42	72	147	9	9	36	42	6	6	F03~F04
3/4	20	150	43.0	115	82.6	2	14.3	4	19.0	48.5	79	147	9	9	36	50	6	7	F03~F05
1	25	160	51.0	125	88.9	2	15.9	4	19.0	58.5	89	177	11	11	42	50	6	7	F04~F05
1 1/4	32	180	63.5	135	98.4	2	17.5	4	19.0	63	94	177	11	11	42	70	6	9	F04~F07
1 1/2	38	200	73.2	155	114.3	2	19.1	4	22.3	71.3	103	197	14	14	50	70	7	9	F05~F07
2	50	230	92.0	165	127.0	2	20.7	8	19.0	78.2	110	197	14	14	50	70	7	9	F05~F07
2 1/2	63.5	290	104.7	190	149.2	2	23.9	8	22.3	100	150	267	17	17	70	102	9	11	F07~F10
3	76	310	127.0	210	168.3	2	27.0	8	22.3	109	174	300	17	17	70	102	9	11	F07~F10
4	100	350	157.0	255	200.0	2	30.2	8	22.3	140	212	400	22	22	—	102	—	11	F10

Unit : inch

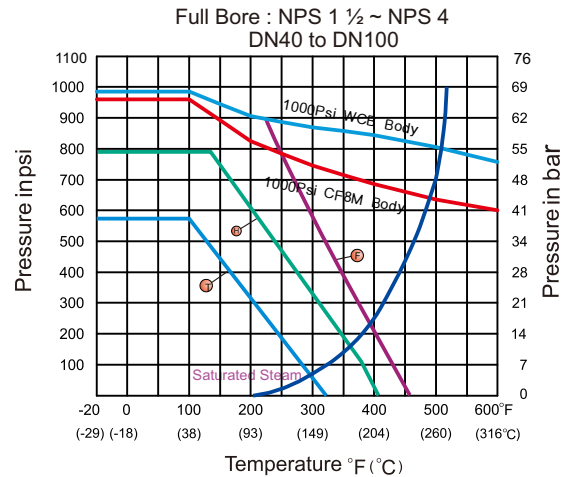
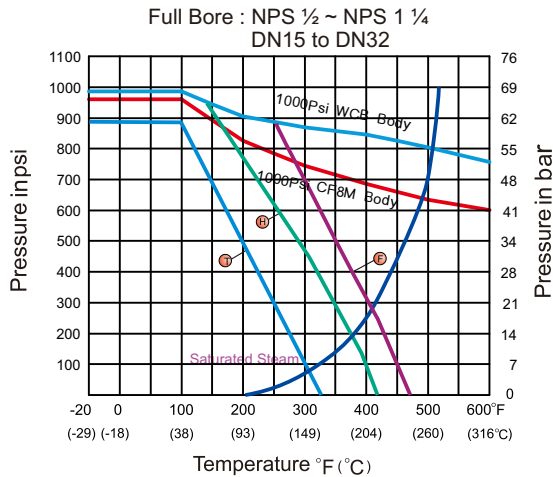
NPS	d	L	R	D	C	f	T	N	h	H	H1	W	P	M	E1	E2	U1	U2	ISO5211
1/2	0.59	5.12	1.38	3.75	2.62	0.06	0.50	4	5/8	1.65	2.83	5.79	0.354	0.28	1.42	1.65	0.24	0.24	F03~F04
3/4	0.79	5.91	1.69	4.62	3.25	0.06	0.56	4	3/4	1.91	3.11	5.79	0.354	0.35	1.42	1.97	0.24	0.28	F03~F05
1	0.98	6.30	2.01	4.88	3.50	0.06	0.62	4	3/4	2.30	3.50	6.97	0.433	0.43	1.65	1.97	0.24	0.28	F04~F05
1 1/4	1.26	7.09	2.50	5.25	3.88	0.06	0.69	4	3/4	2.48	3.66	6.97	0.433	0.43	1.65	2.76	0.24	0.35	F04~F07
1 1/2	1.50	7.87	2.88	6.12	4.50	0.06	0.75	4	7/8	2.81	4.06	7.76	0.551	0.55	1.97	2.76	0.28	0.35	F05~F07
2	1.97	9.06	3.62	6.50	5.00	0.06	0.81	8	3/4	3.08	4.33	7.76	0.551	0.55	1.97	2.76	0.28	0.35	F05~F07
2 1/2	2.50	11.42	4.12	7.50	5.88	0.06	0.94	8	7/8	3.94	5.91	10.5	0.669	0.67	2.76	4.02	0.35	0.43	F07~F10
3	2.99	12.20	5.00	8.25	6.62	0.06	1.06	8	7/8	4.27	6.85	11.9	0.669	0.67	2.76	4.02	0.35	0.43	F07~F10
4	3.94	13.78	6.19	10.00	7.88	0.06	1.19	8	7/8	5.51	8.35	15.9	0.866	0.87	—	4.02	—	0.43	F10

## TECHNICAL INFORMATION

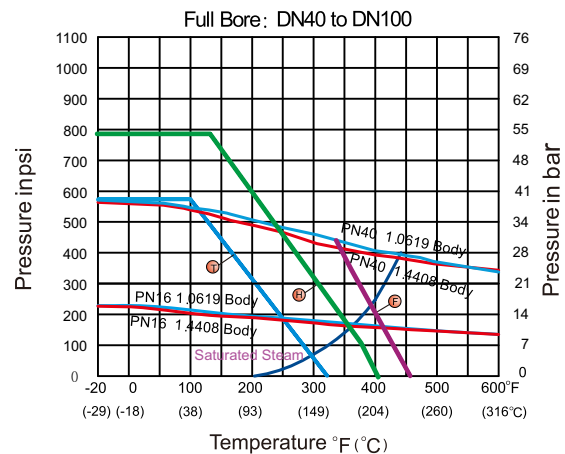
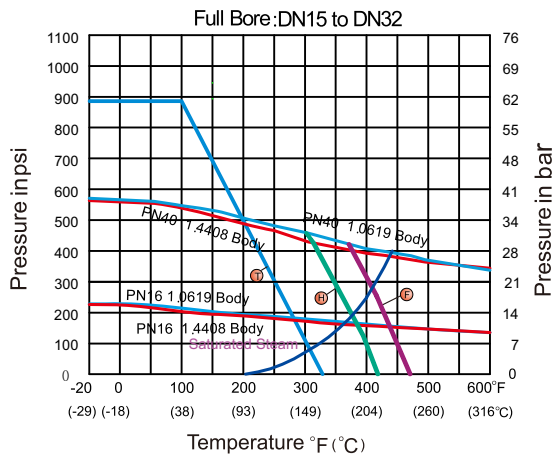
### PRESSURE - TEMPERATURE DATA

Floating Ball Valves, 1000psi

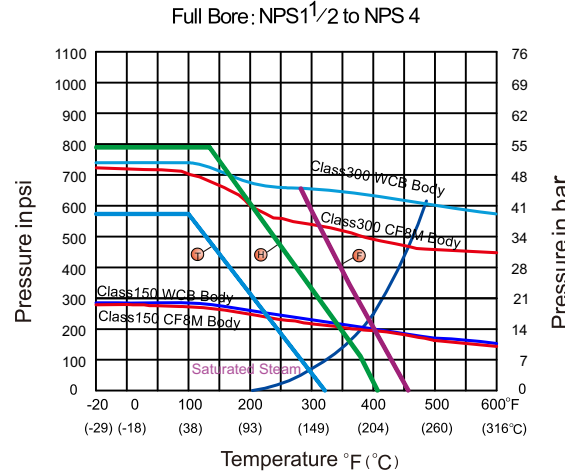
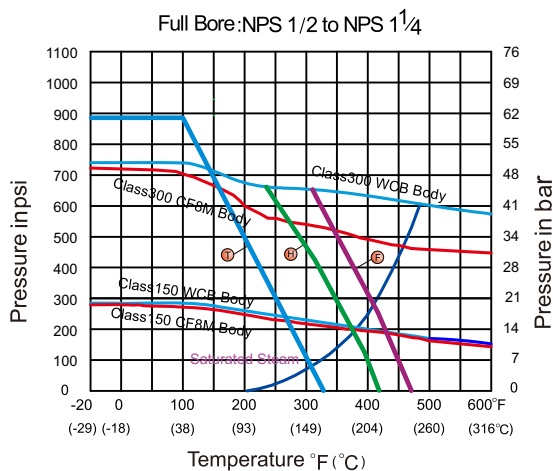
The pressure-temperature data of ball valves is determined not only by valve shell materials but also by sealing materials used for ball seats, gland packings and flange gaskets.



### Floating Ball Valves, EN PN16/40



### Floating Ball Valves, ASME Class 150/300



Seat Materials : (T) PTFE (H) TFM1600 (E) TFM4215

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.