

## 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 standard MR0175 & MR0103 (Optional)
- Casting Approved by TUV 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 : ASME B1.20.1,BS21, EN 10226  
DIN 2999/259, ISO 228/1  
JIS B0203 ISO7/1
- Inspection & Testing : MSS SP-110

## CV VALUES

NPS	DN	CV	KV
1/4	8	16	14
3/8	10	23	20
1/2	15	30	26
3/4	20	55	48
1	25	96	83
1 1/4	32	170	147
1 1/2	40	270	234
2	50	470	407
2 1/2	65	780	675
3	80	1150	995

## WEIGHT

NPS	DN	Weight	
		(kg)	(lb)
1/4	8	0.58	1.28
3/8	10	0.55	1.21
1/2	15	0.51	1.12
3/4	20	0.61	1.34
1	25	1.10	2.43
1 1/4	32	1.42	3.13
1 1/2	40	2.04	4.50
2	50	3.27	7.21
2 1/2	65	6.04	13.3
3	80	9.17	20.2

## 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

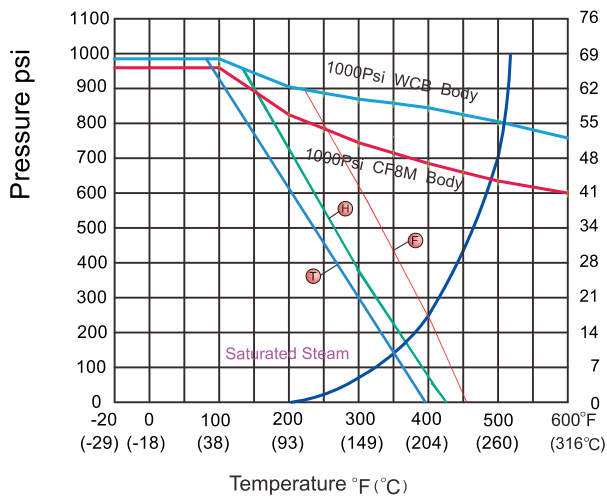
- Remark :
- Torques will increase about 30% if seat materials are Reinforced Fiber-Glass PTFE, Carbon-filled PTFE or EK+PTFE or TFM4215.
  - The torque figures at 5 bar pressure are maximum values to be tested after the valves are placed for 24 hours.
  - For actuator sizing, a safety factor of minimum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

## TECHNICAL INFORMATION

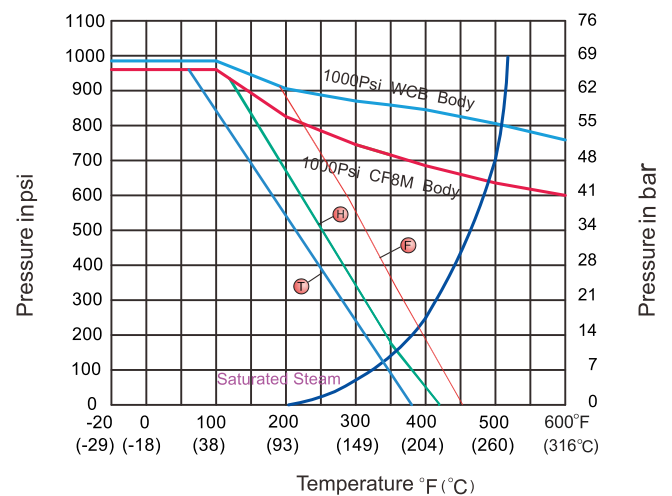
### PRESSURE - TEMPERATURE DATA

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.

Full Bore : NPS 1/2 ~ NPS 1 1/4  
DN15 to DN32



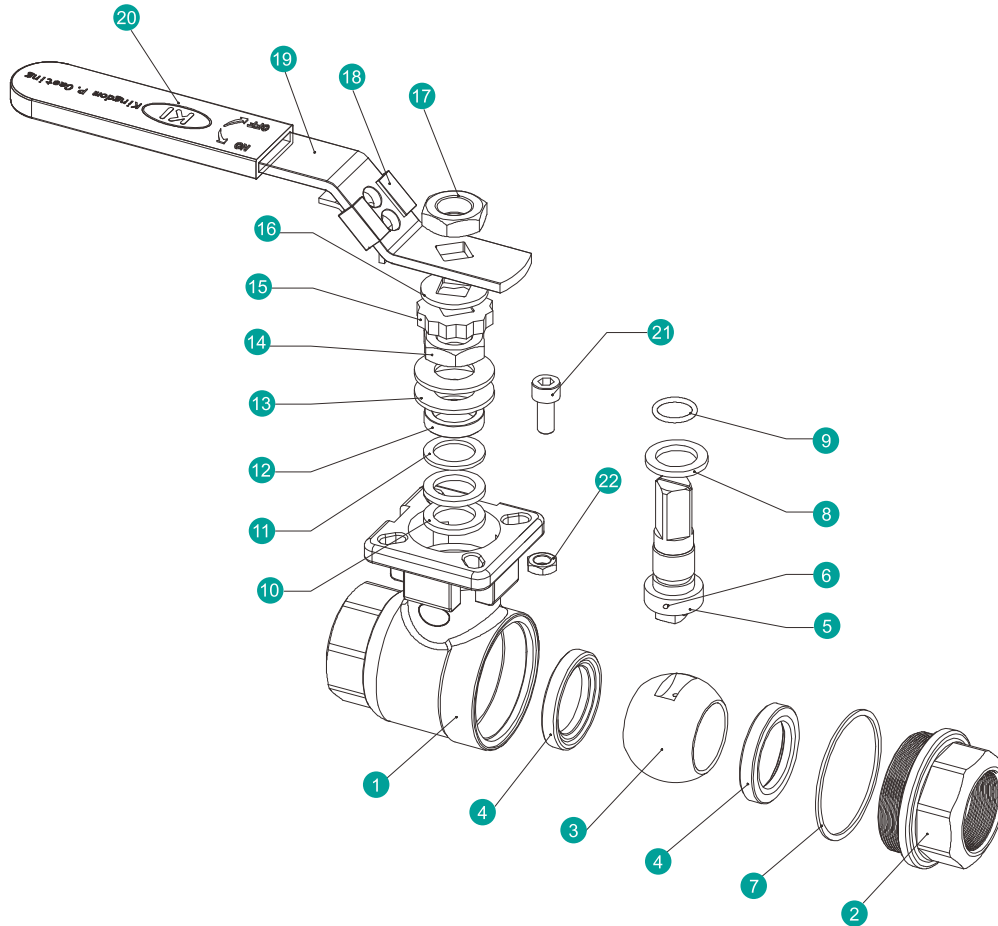
Full Bore : NPS 1 1/2 ~ NPS 3  
DN40 to DN80



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

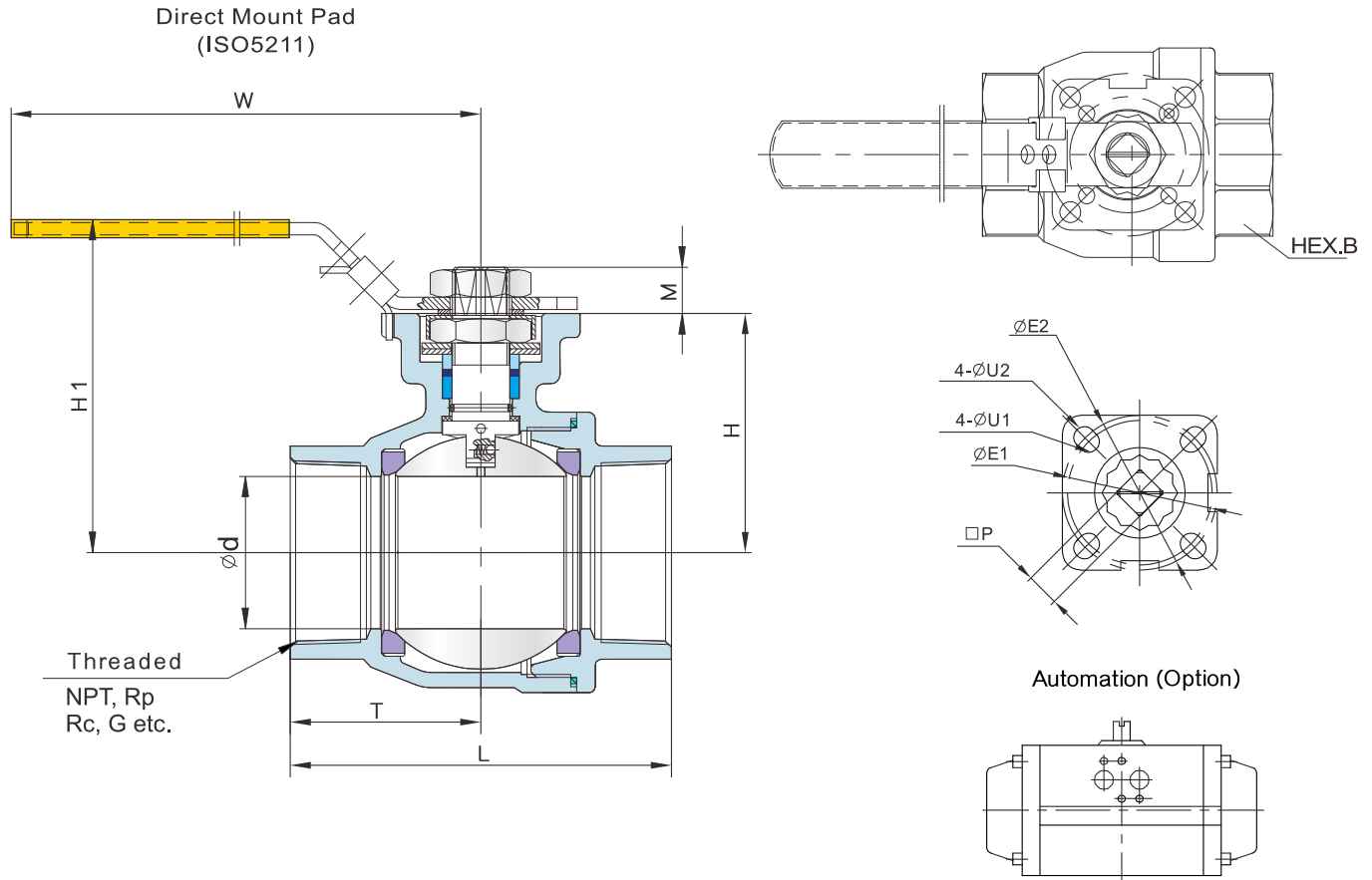
Body Ratings: Shown above are for ASTM A351 Gr.CF8M and A216 Gr.WCB

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



**MATERIAL OF CONSTRUCTION**

NO.	PART NAME	MATERIALS		
1	Body	CF8M(1.4408)	CF8(1.4308)	WCB(1.0619)
2	End Cap	CF8M(1.4408)	CF8(1.4308)	WCB(1.0619)
3	Ball	316		304
4	Ball Seat	TFM1600 /PTFE/TFM4215		
5	Stem	316		304
6	Anti-Static	316		304
7	Body Gasket	PTFE/TFM1600 / GRAPHITE*		
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	A194-8		
18	Lock Device	304		
19	Handle	304		
20	Handle Sleeve	PVC		
21	Stop Bolt	A2-70		
22	Stop Nut	A2-70		



**DIMENSION TABLE**

**ANSI 1000 WOG DIMENSION TABLE**

Unit : mm

NPS	DN	d	L	W	H	H1	T	P	M	E1	E2	U1	U2	HEX.B	ISO 5211
1/4	8	10.6	67	147	42.5	73	33.5	9	9	36	42	6	6	27	F03~F04
3/8	10	12.7	67	147	42.5	73	33.5	9	9	36	42	6	6	27	F03~F04
1/2	15	15	67	147	42.5	73	33.5	9	9	36	42	6	6	27	F03~F04
3/4	20	20	70.4	147	49	79	35.2	9	9	36	50	6	7	32	F03~F05
1	25	25	85	177	58	88	42.5	11	11	42	50	6	7	41	F04~F05
1 1/4	32	32	94	177	62.5	93	47	11	11	42	70	6	9	50	F04~F07
1 1/2	40	38	105	197	71.5	103	52.5	14	14	50	70	7	9	56	F05~F07
2	50	50	125	197	78.5	110	62.5	14	14	50	70	7	9	70	F05~F07
2 1/2	65	63.5	155	267	100	150	77.5	17	17	70	102	9	11	83	F07~F10
3	80	76	173	267	109	159	86.5	17	17	70	102	9	11	102	F07~F10

Unit : inch

NPS	DN	d	L	W	H	H1	T	P	M	E1	E2	U1	U2	HEX.B	ISO 5211
1/4	8	0.42	2.64	5.79	1.67	2.87	1.32	0.354	0.35	1.42	1.65	0.24	0.24	1.06	F03~F04
3/8	10	0.50	2.64	5.79	1.67	2.87	1.32	0.354	0.35	1.42	1.65	0.24	0.24	1.06	F03~F04
1/2	15	0.59	2.64	5.79	1.67	2.87	1.32	0.354	0.35	1.42	1.65	0.24	0.24	1.06	F03~F04
3/4	20	0.79	2.77	5.79	1.93	3.11	1.39	0.354	0.35	1.42	1.97	0.24	0.28	1.26	F03~F05
1	25	0.98	3.35	6.97	2.28	3.46	1.67	0.433	0.43	1.65	1.97	0.24	0.28	1.61	F04~F05
1 1/4	32	1.26	3.70	6.97	2.46	3.66	1.85	0.433	0.43	1.65	2.76	0.24	0.35	1.97	F04~F07
1 1/2	40	1.50	4.13	7.76	2.81	4.06	2.07	0.551	0.55	1.97	2.76	0.28	0.35	2.20	F05~F07
2	50	1.97	4.92	7.76	3.09	4.33	2.46	0.551	0.55	1.97	2.76	0.28	0.35	2.76	F05~F07
2 1/2	65	2.50	6.10	10.5	3.98	5.91	3.05	0.669	0.67	2.76	4.02	0.35	0.43	3.27	F07~F10
3	80	2.99	6.81	10.5	4.29	6.26	3.41	0.669	0.67	2.76	4.02	0.35	0.43	4.02	F07~F10