

TAMIN-TAJHIZ-STEEL-AVAL

ASME B 16.5 Class 150/300
3&4 - Way Full PORT
Flanged Ends Ball Valve

240612

DESIGN FEATURES

- Built-in ISO 5211 Direct Mounting Pad Easy Automation
 - Anti-static Devices for Ball-Stem-Body
 - Blow-out Proof Stem
 - TA-Luft Design Approved
 - NACE standard MR0175 & MR0103 (Optional)
 - Casting Approved by TÜV AD 2000-Merkblatt W0
 - Top Entry For NPS 5 ~ NPS 8
 - Positive Position Location At 90° Increments
 - Locking in Every 90° Increments
-
- Options : 1.Actuator 2.Limit Switch 3.Positioner



APPLICABLE STANDARDS

- Design Standard : ASME B 16.34
- Wall Thickness : ASME 16.34
- Flanged End:ASME B 16.5 Class 150/300
- Inspection & Testing : API 598

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(02133961354)

Class 150

Class 300

BL-W3-A-1016

BL-W3-B-1017

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		50bar	
NPS	N·m	In·lb	N·m	In·lb	N·m	In·lb	N·m	In·lb
1½	9	80	9	80	10	88	10	88
¾	14	124	14	124	15	133	15	133
1	18	159	18	159	19	168	22	195
1¼	25	221	26	230	27	239	33	292
1½	35	310	38	336	42	372	46	407
2	45	398	50	442	56	496	65	575
2½	70	619	79	699	86	761	100	885
3	110	973	122	1080	138	1221	160	1416
4	190	1681	209	1850	232	2053	265	2345
5	360	3186	390	3452	460	4071	580	5133
6	580	5133	640	5664	700	6195	860	7611
8	680	6018	800	7080	920	8142	1150	10117

TECHNICAL INFORMATION

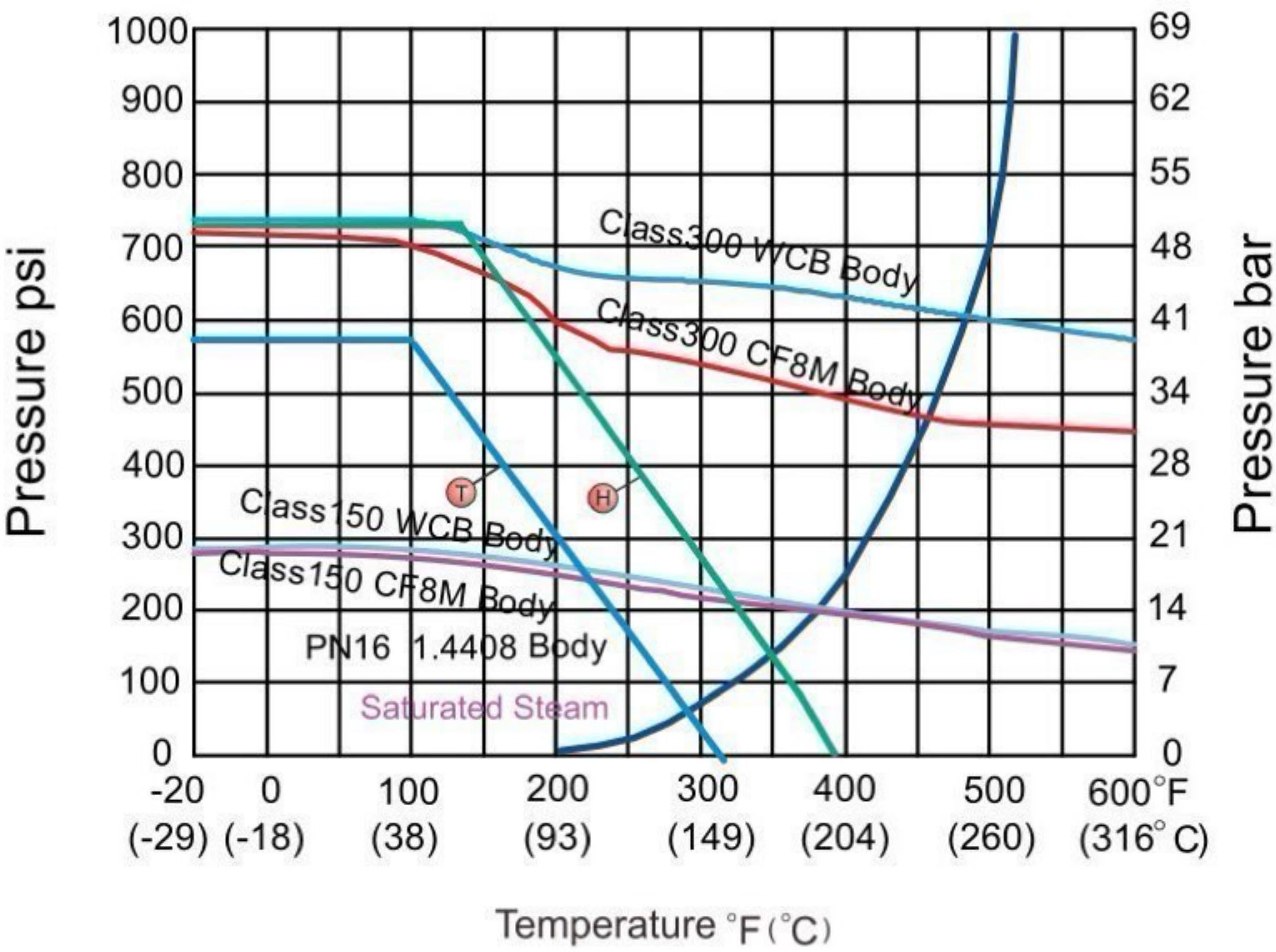
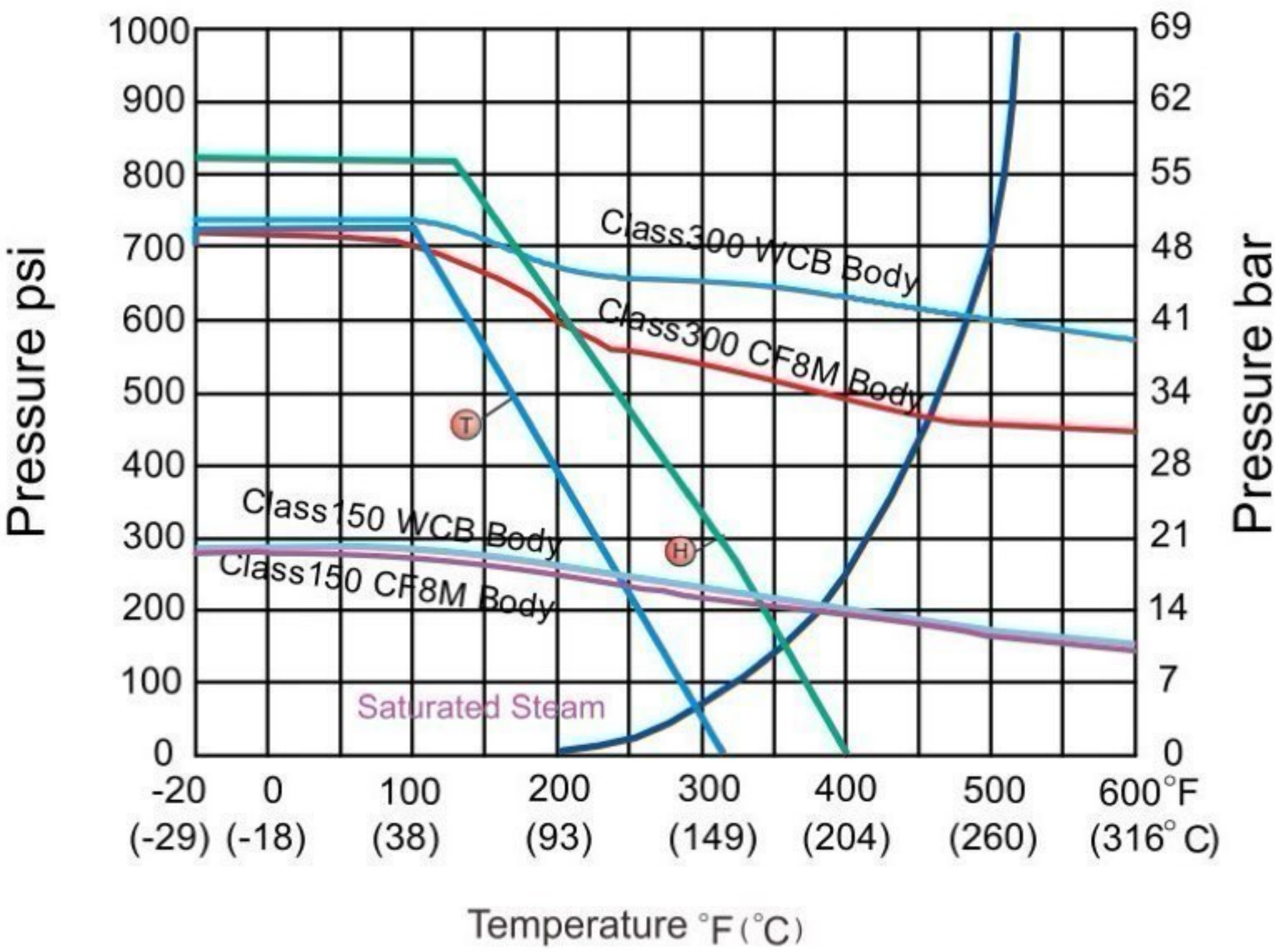


PRESSURE - TEMPERATURE DATA

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.

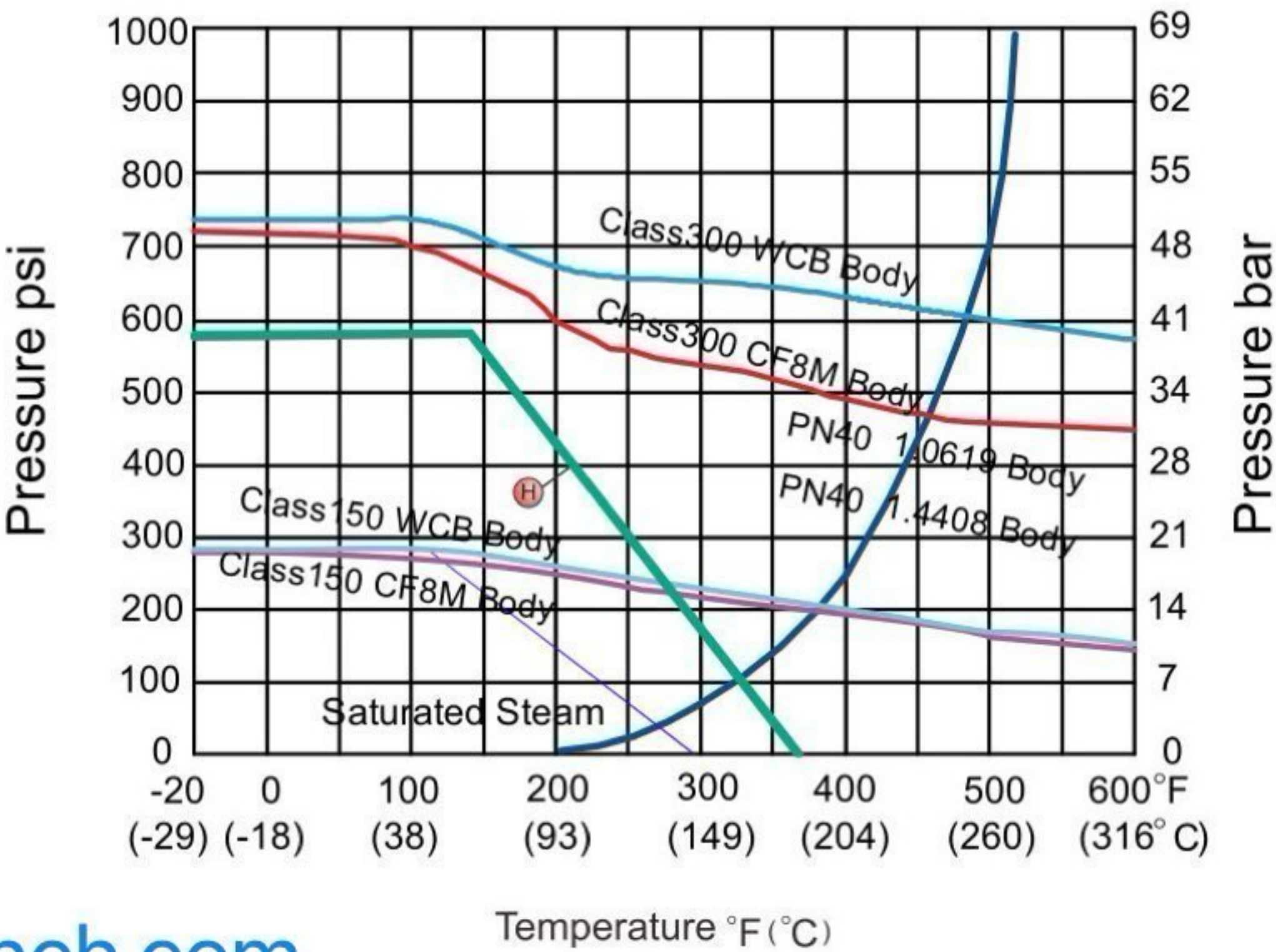
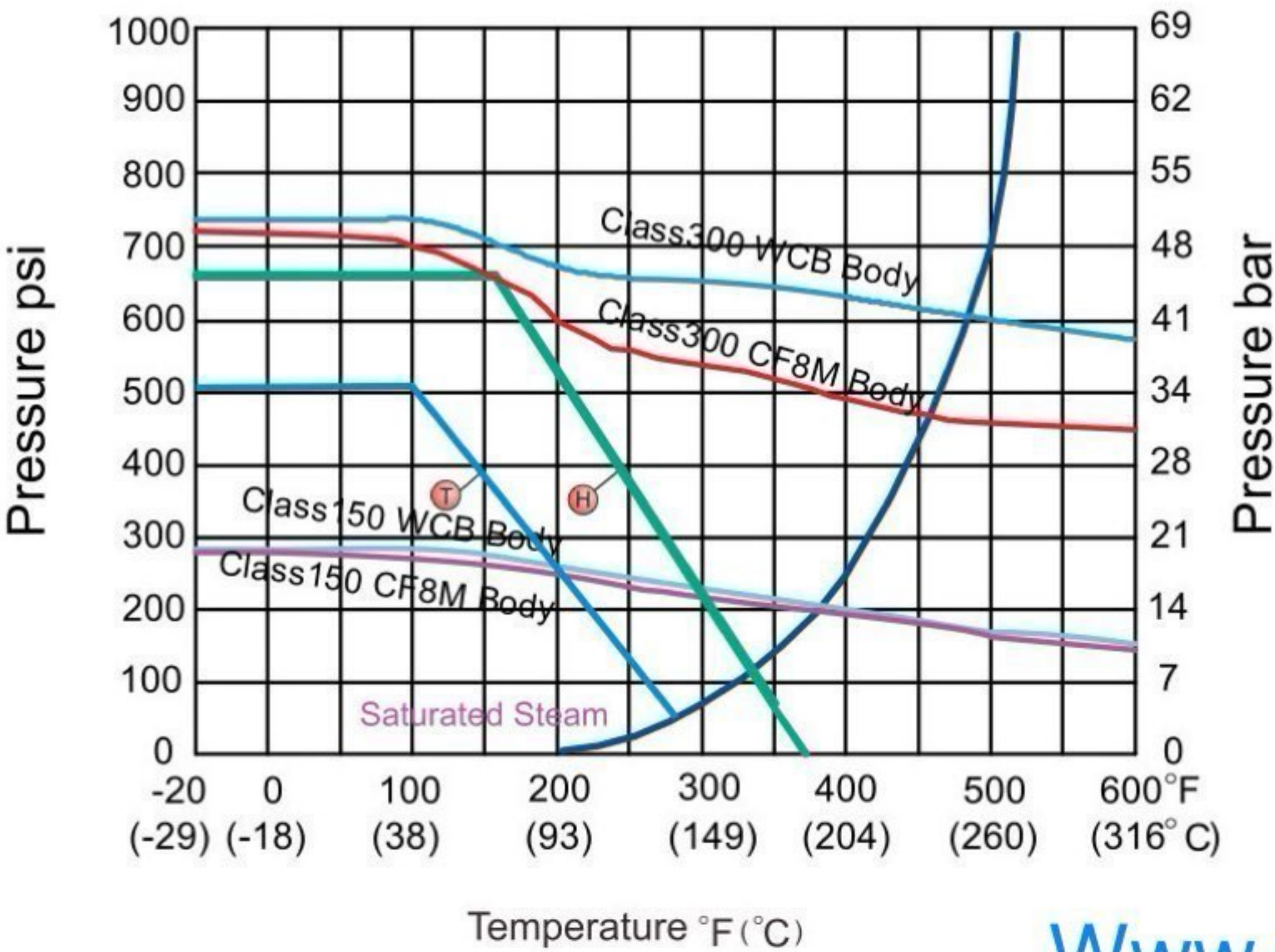
Full Bore : NPS ½ ~ NPS 1

Full Bore : NPS 1 ¼~ NPS 2 ½



Full Bore : NPS 3 ~ NPS 4

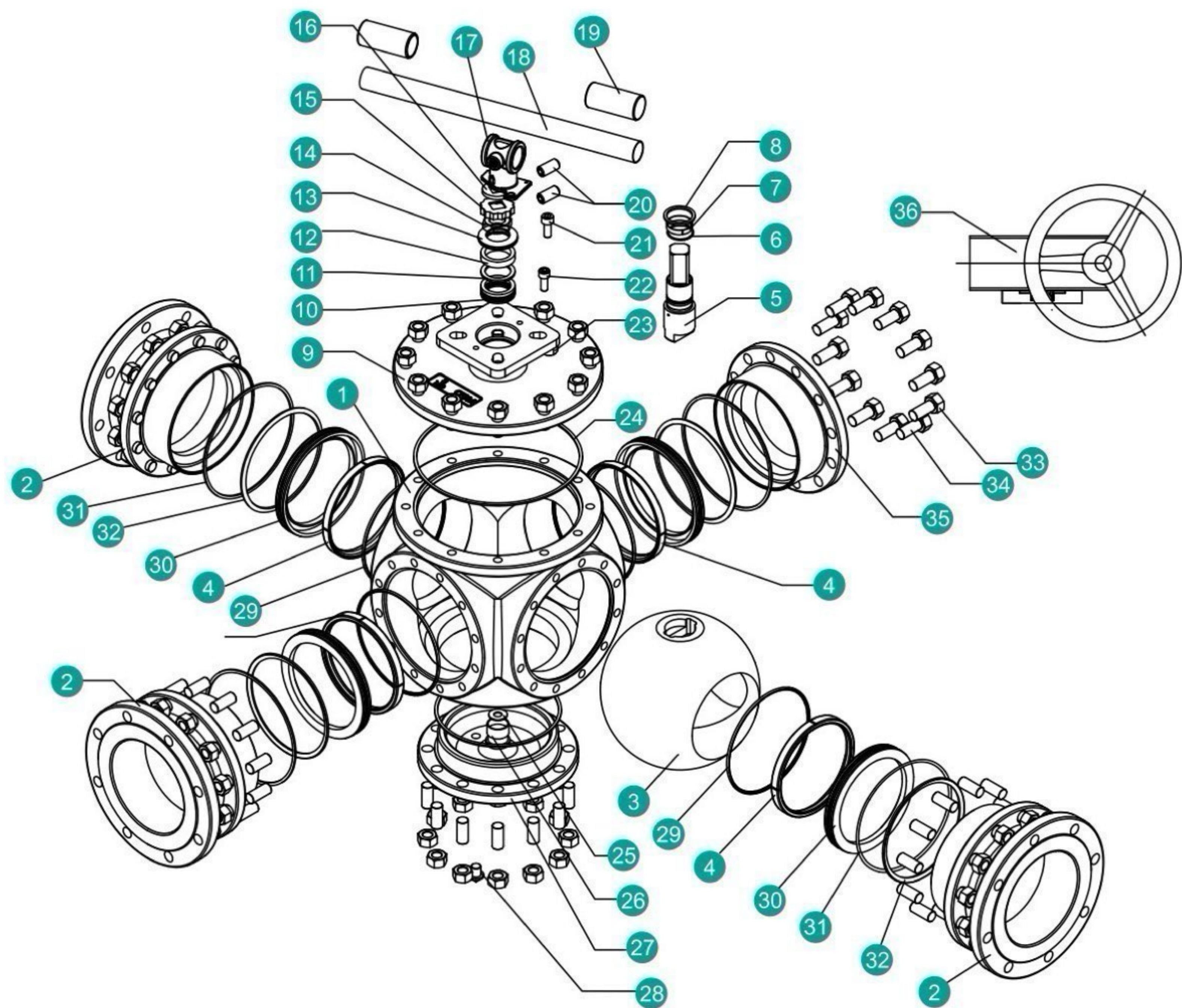
Full Bore : NPS 5 ~ NPS 6 ~ NPS 8



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Seat Materials : T PTFE H TFM1600

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.



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MATERIAL OF CONSTRUCTION

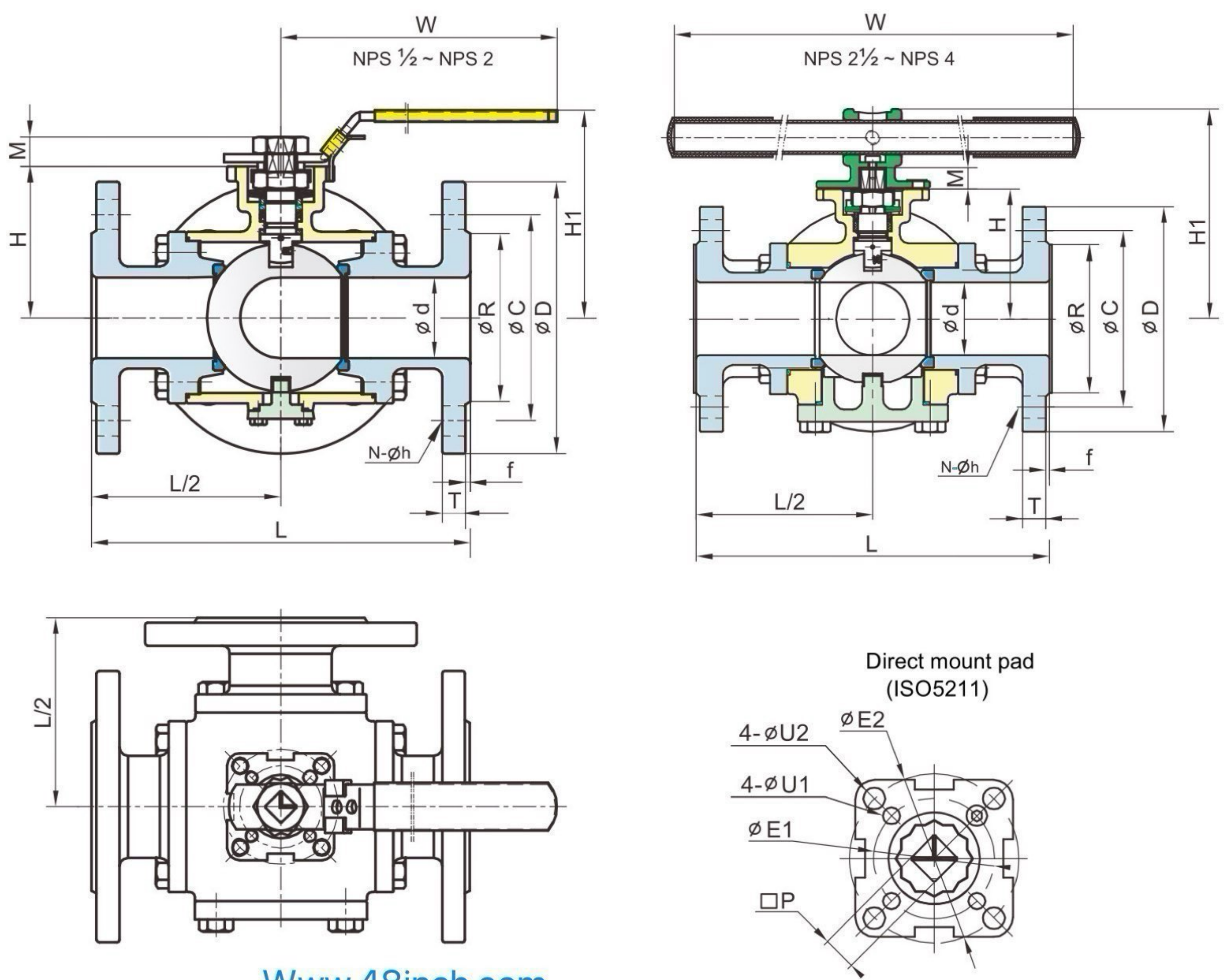
NO.	PART NAME	MATERIALS		
1	Body	A351-CF8M	A351-CF8	A216-WCB
2	End Cap(1)	A351-CF8M	A351-CF8	A216-WCB
3	Ball	A351-CF8M	A351-CF8	
4	Ball Seat	TFM1600 / PTFE		
5	Stem (Anti-Static Device)	316	304	
6	Thrust washer	PTFE		
7	O-Ring	FKM		
8	Stem Packing	PTFE/GRAPHITE		
9	Bushing	50%SS+50%PTFE / 304		
10	Gland	316		
11	Belleville Washer	301		
12	Stem Nut	A194-8		
13	Stop-lock-Cap	304		
14	Handle Gland (NPS ¹ / ₂ ~ NPS4)	304		
15	Handle+Lock Device (NPS ¹ / ₂ ~ NPS2)	304		
16	Handle Nut (NPS ¹ / ₂ ~ NPS2)	A194-8		
17	Handle Sleeve (NPS ¹ / ₂ ~ NPS2)	PVC		
18	Body Gasket (1)	PTFE/GRAPHITE		
19	Bolt	A193-B8		A193-B7
20	End Cap (2)	A351-CF8M	A351-CF8	A216-WCB
21	Washer	50%SS+50%PTFE		
22	Bushing	50%SS+50%PTFE		
23	Body Gasket (2)	PTFE/GRAPHITE		
24	Bottom Cap	A351-CF8M	A351-CF8	A216-WCB
25	Set Screwed (NPS 2 ¹ / ₂ ~ NPS 4)	A2-70		
26	Handle Adapter (NPS 2 ¹ / ₂ ~ NPS 4)	CF8		
27	Bolt (NPS 2 ¹ / ₂ ~ NPS 4)	A2-70		
28	Handle (NPS 2 ¹ / ₂ ~ NPS 4)	A53+ZnPlated		
29	Handle Sleeve (NPS 2 ¹ / ₂ ~ NPS 4)	PVC		
30	Stop Bolt (NPS ¹ / ₂ ~ NPS 4)	A2-70		
31	Stop Nut (NPS ¹ / ₂ ~ NPS 4)	A2-70		
32	Worm Gear (NPS 5 ~ NPS 8)	Package		

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ASME B 16.5 Class 150/300

3&4 - Way Full PORT Flanged

Ends Ball Valve



DIMENSION TABLE

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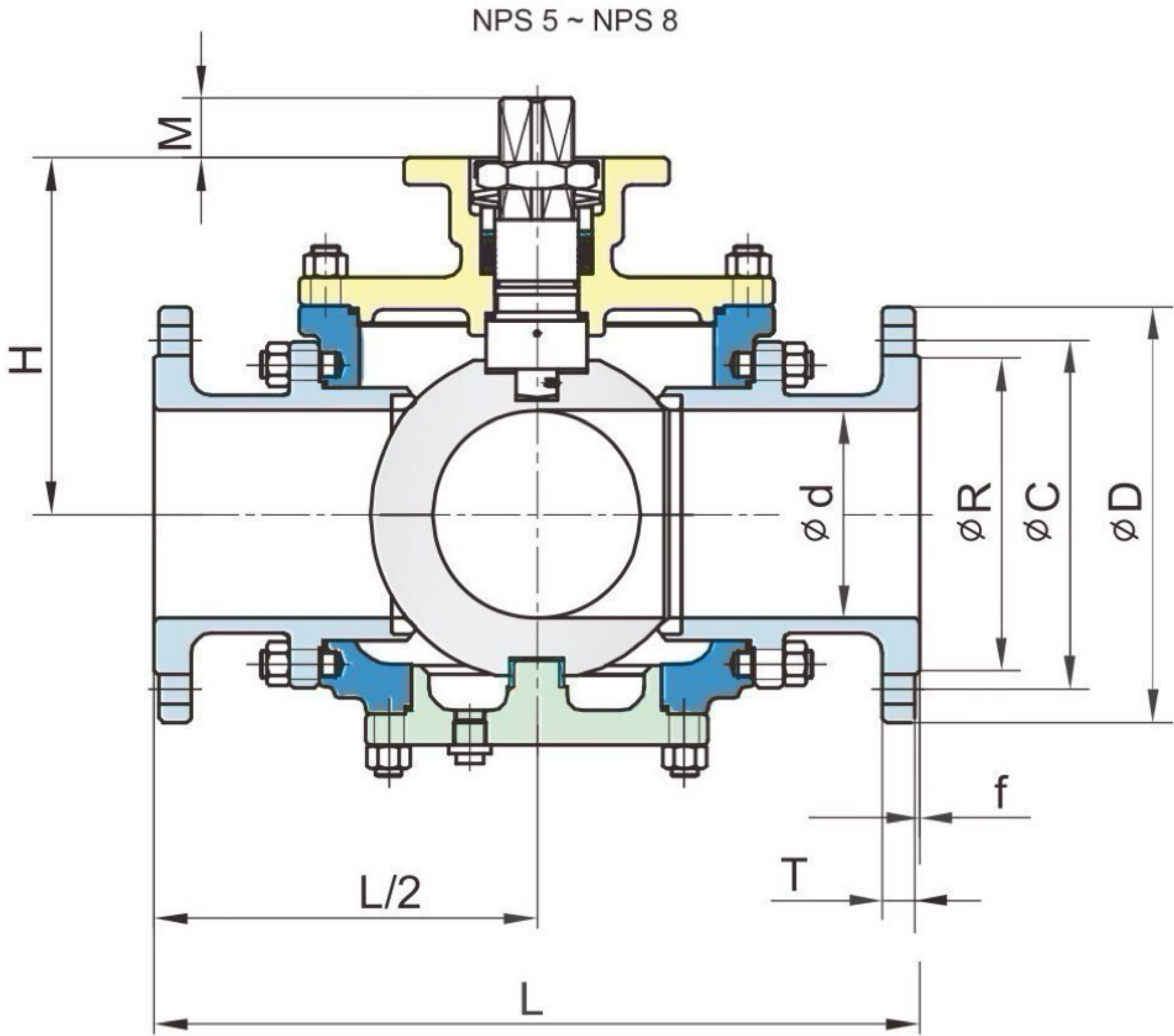
ASME Class 150 DIMENSION TABLE

NPS	d	L	R	D	C	T	f	N	h	H	H1	W	P	M	E1	E2	U1	U2	ISO 5211
1/2	15	150	35	89	60.5	7.9	1.5	4	16	53	83	147	9	9	36	42	6	6	F03~F04
3/4	20	165	43	99	69.8	8.6	1.5	4	16	57	87	147	9	9	36	50	6	7	F03~F05
1	25	181	51	108	79.2	9.7	1.5	4	16	68	99	177	11	11	42	50	6	7	F04~F05
1 1/4	32	190	63.5	117	88.9	11.2	1.5	4	16	72	103	177	11	11	42	70	6	9	F04~F07
1 1/2	38	212	73	127	98.6	12.7	1.5	4	16	85	119	197	14	14	50	70	7	9	F05~F07
2	49	229	92	152	120.6	14.2	1.5	4	19	92	126	197	14	14	50	70	7	9	F05~F07
2 1/2	60	290	105	178	139.7	15.7	1.5	4	19	107	172	400	17	17	70	102	9	11	F07~F10
3	75	310	127	190	152.4	17.5	1.5	4	19	119	185	400	17	17	70	102	9	11	F07~F10
4	99	367	157	229	190.5	22.4	1.5	8	19	150	221	400	22	22	—	102	—	11	F10

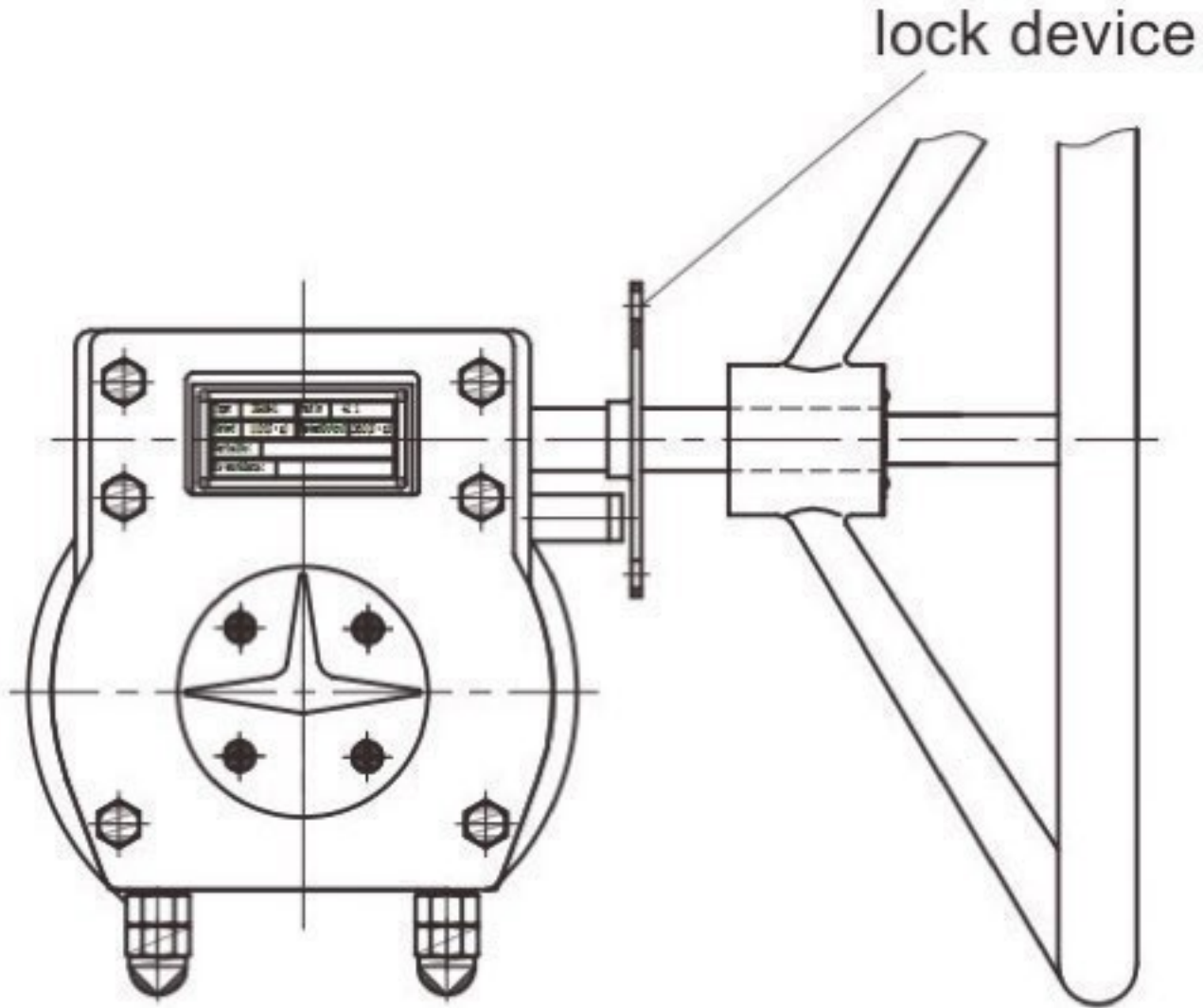
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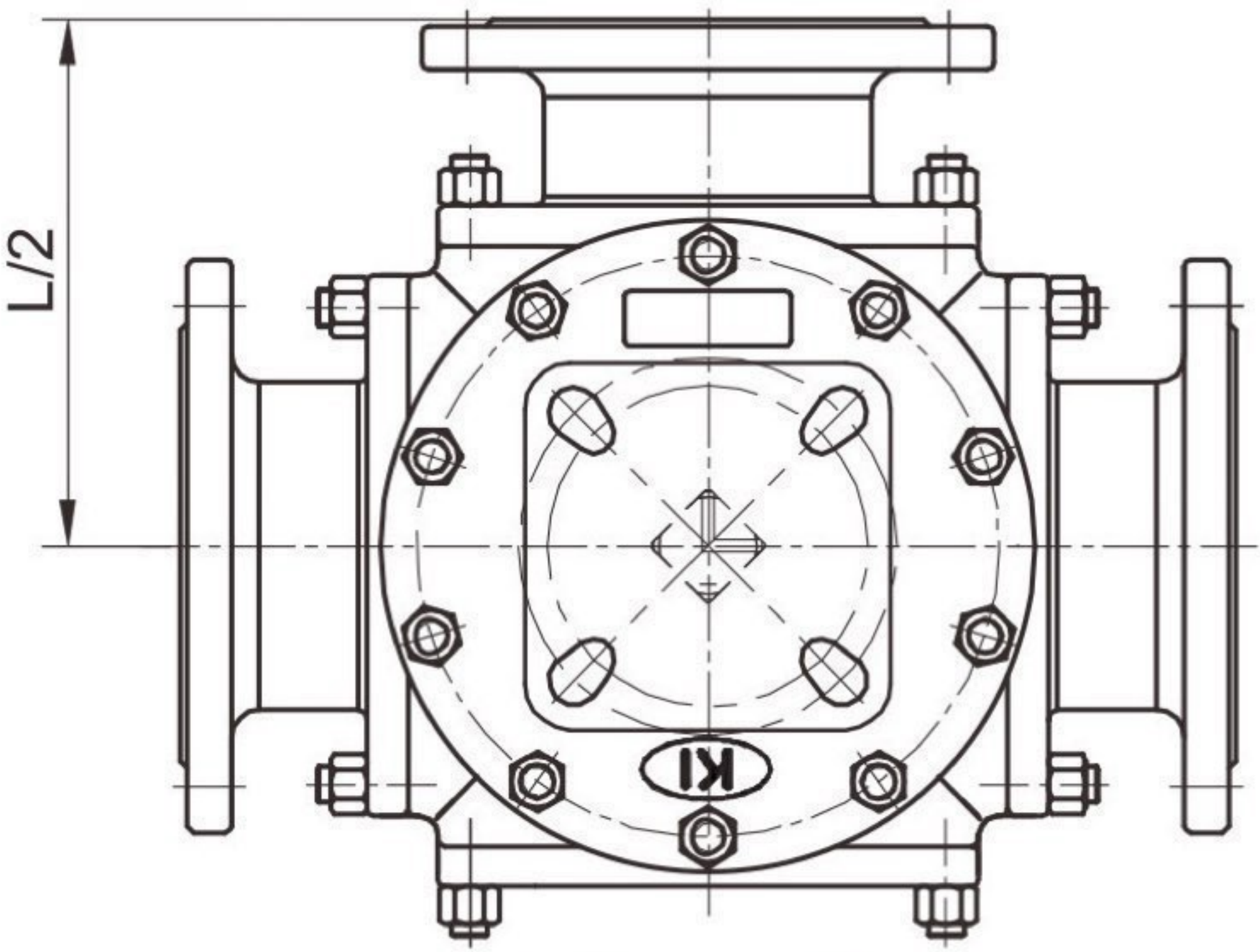
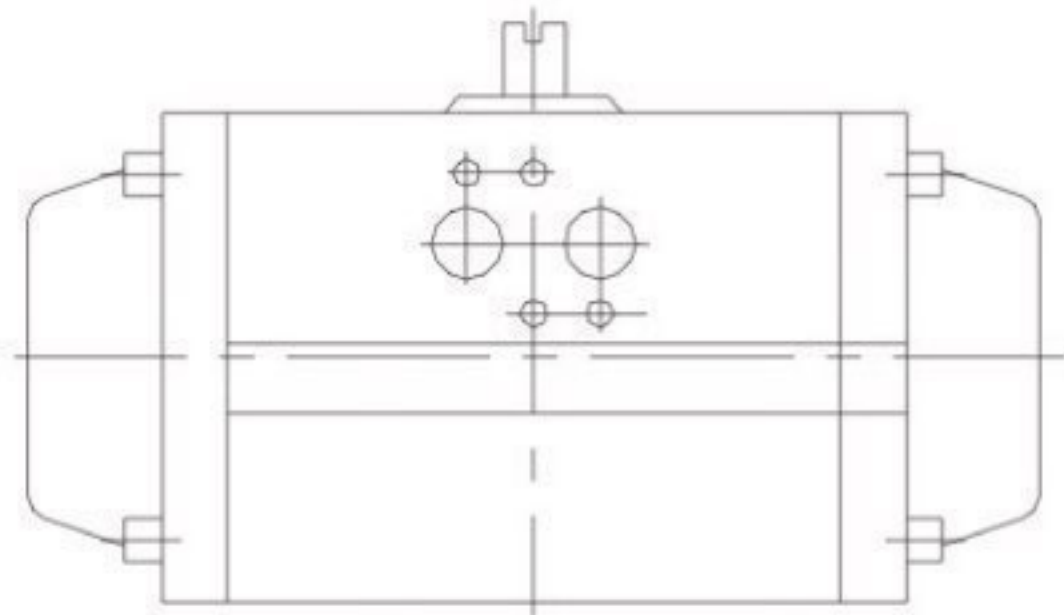
NPS	d	L	R	D	C	T	f	N	h	H	H1	W	P	M	E1	E2	U1	U2	ISO 5211
1/2	0.59	5.91	1.38	3.50	2.38	0.31	0.06	4	5/8	2.09	3.27	5.79	0.354	0.35	1.42	1.65	0.24	0.24	F03~F04
3/4	0.79	6.50	1.69	3.88	2.75	0.34	0.06	4	5/8	2.24	3.43	5.79	0.354	0.35	1.42	1.97	0.24	0.28	F03~F05
1	0.98	7.13	2.01	4.25	3.12	0.38	0.06	4	5/8	2.68	3.90	6.97	0.433	0.43	1.65	1.97	0.24	0.28	F04~F05
1 1/4	1.26	7.50	2.50	4.62	3.50	0.44	0.06	4	5/8	2.83	4.06	6.97	0.433	0.43	1.65	2.76	0.24	0.35	F04~F07
1 1/2	1.50	8.35	2.88	5.00	3.88	0.50	0.06	4	5/8	3.35	4.69	7.76	0.551	0.55	1.97	2.76	0.28	0.35	F05~F07
2	1.93	9.06	3.62	6.00	4.75	0.56	0.06	4	3/4	3.62	4.96	7.76	0.551	0.55	1.97	2.76	0.28	0.35	F05~F07
2 1/2	2.36	11.42	4.12	7.00	5.50	0.62	0.06	4	3/4	4.21	6.77	15.9	0.669	0.67	2.76	4.02	0.35	0.43	F07~F10
3	2.95	12.20	5.00	7.50	6.00	0.69	0.06	4	3/4	4.69	7.28	15.9	0.669	0.67	2.76	4.02	0.35	0.43	F07~F10
4	3.90	14.45	6.19	9.00	7.50	0.88	0.06	8	3/4	5.91	8.70	15.9	0.866	0.87	—	4.02	—	0.43	F10



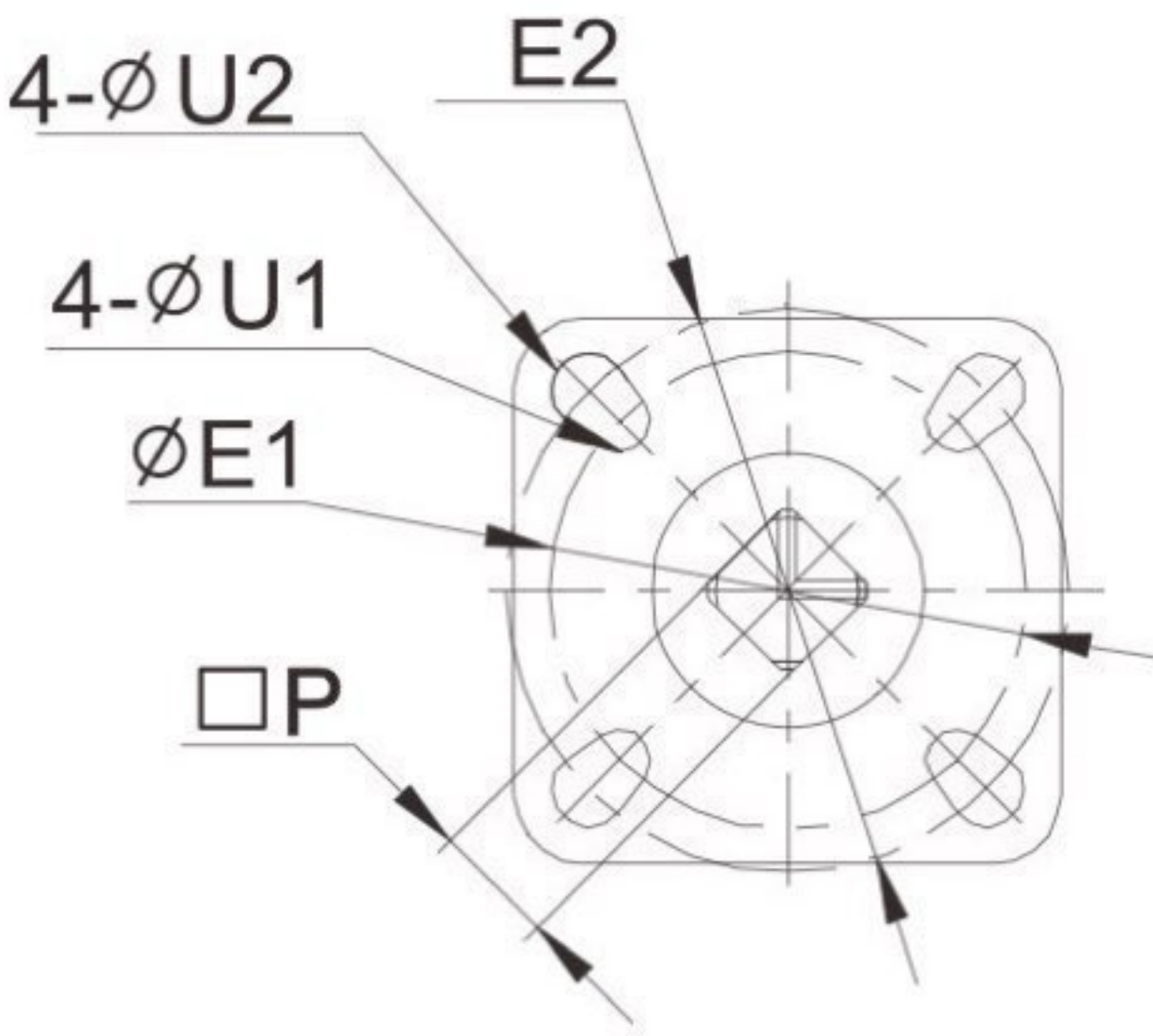
Gear Operation (Standard Type)
NPS 5 ~ NPS 8



Automation (Optional)



Direct mount pad
(ISO5211)



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ASME Class 150 DIMENSION TABLE

NPS	d	L	R	D	C	T	f	N	h	H	H1	W	P	M	E1	E2	U1	U2	ISO 5211
5	125	460	186	254	215.9	22.4	1.5	8	22.3	215	—	—	36	36	140	165	18	22	F14~F16
6	150	490	216	279	241.3	23.9	1.5	8	22.3	228.5	—	—	36	36	140	165	18	22	F14~F16
8	200	620	270	343	298.4	26.9	1.5	8	22.3	281.5	—	—	36	36	140	165	18	22	F14~F16

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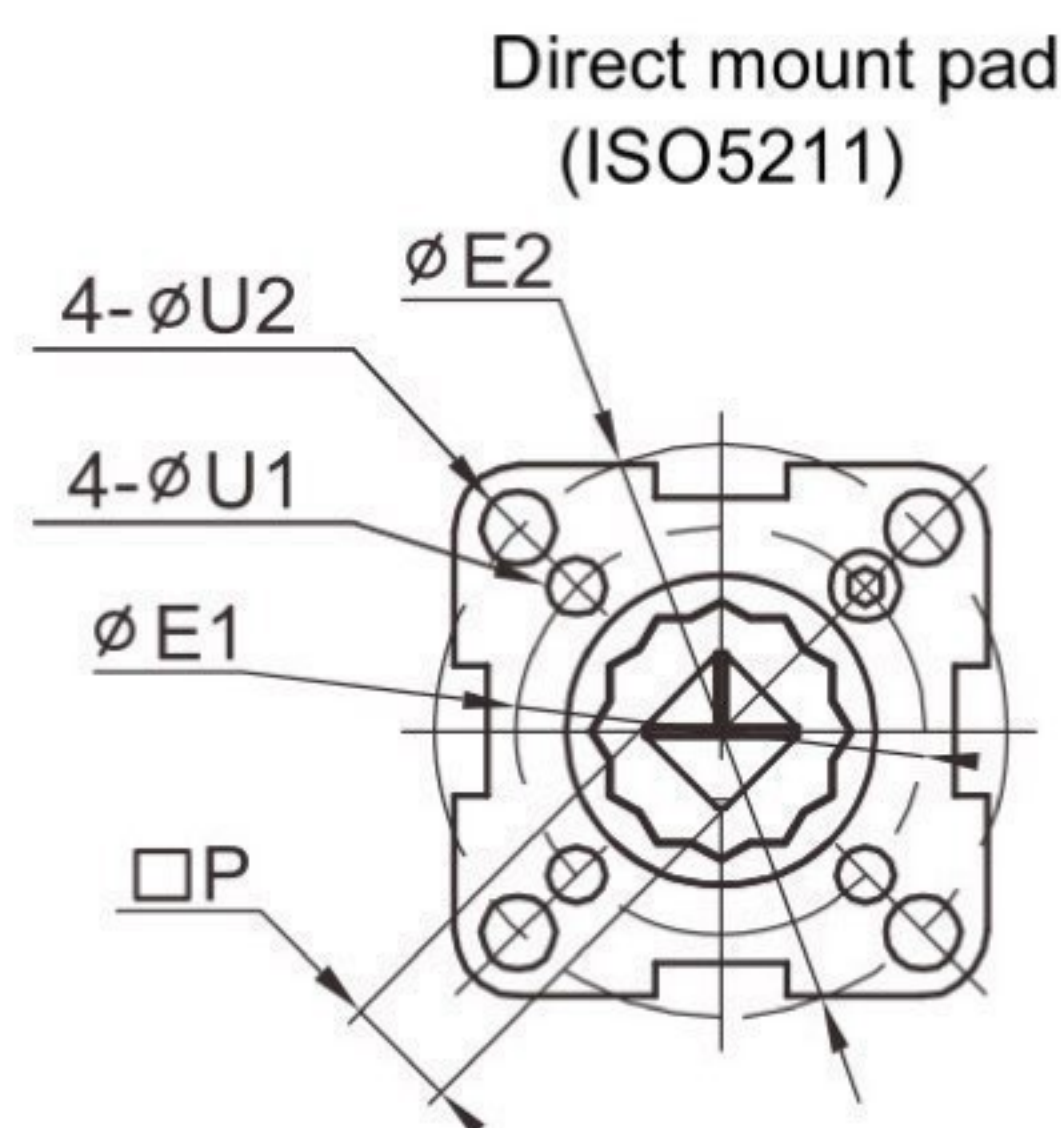
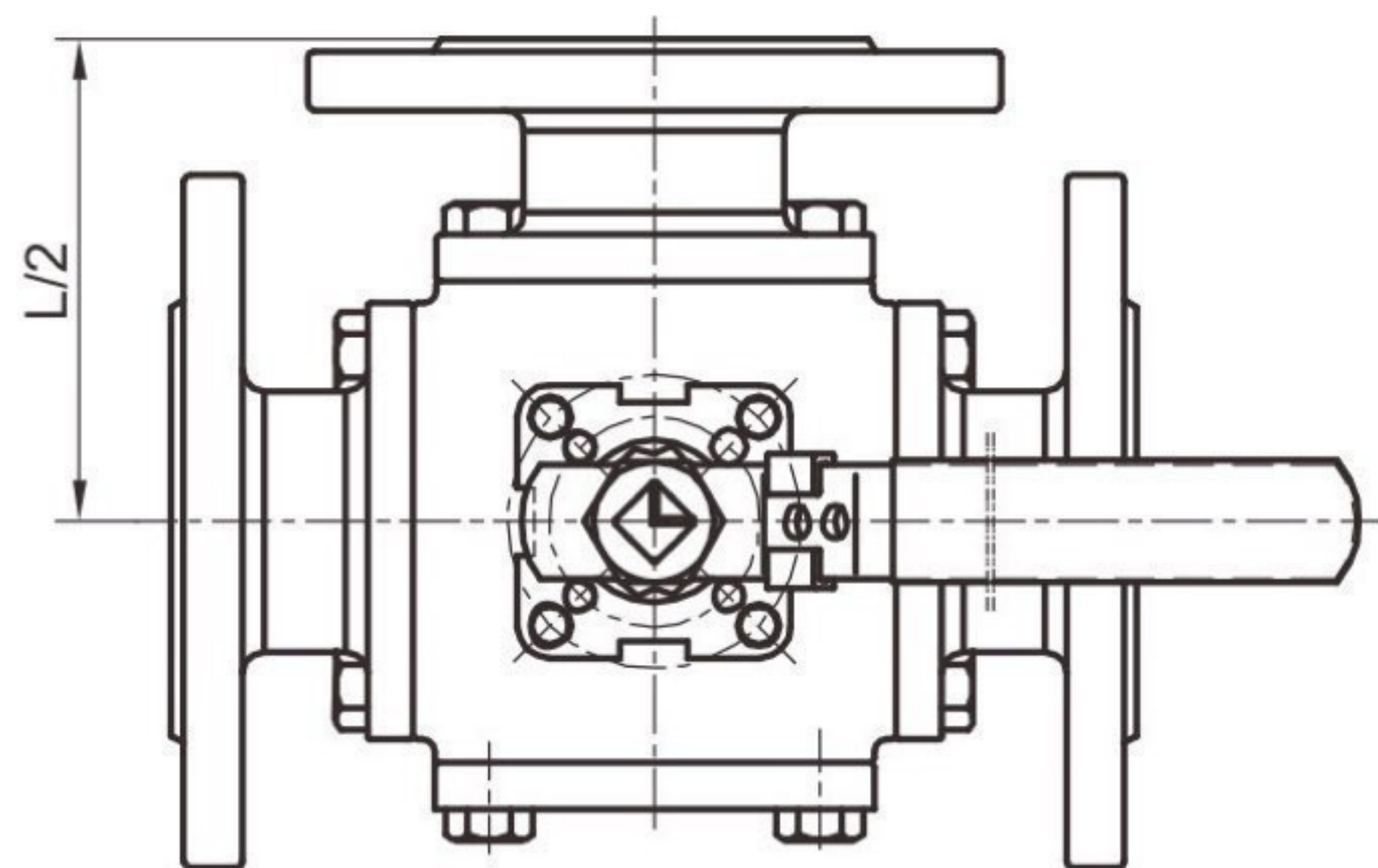
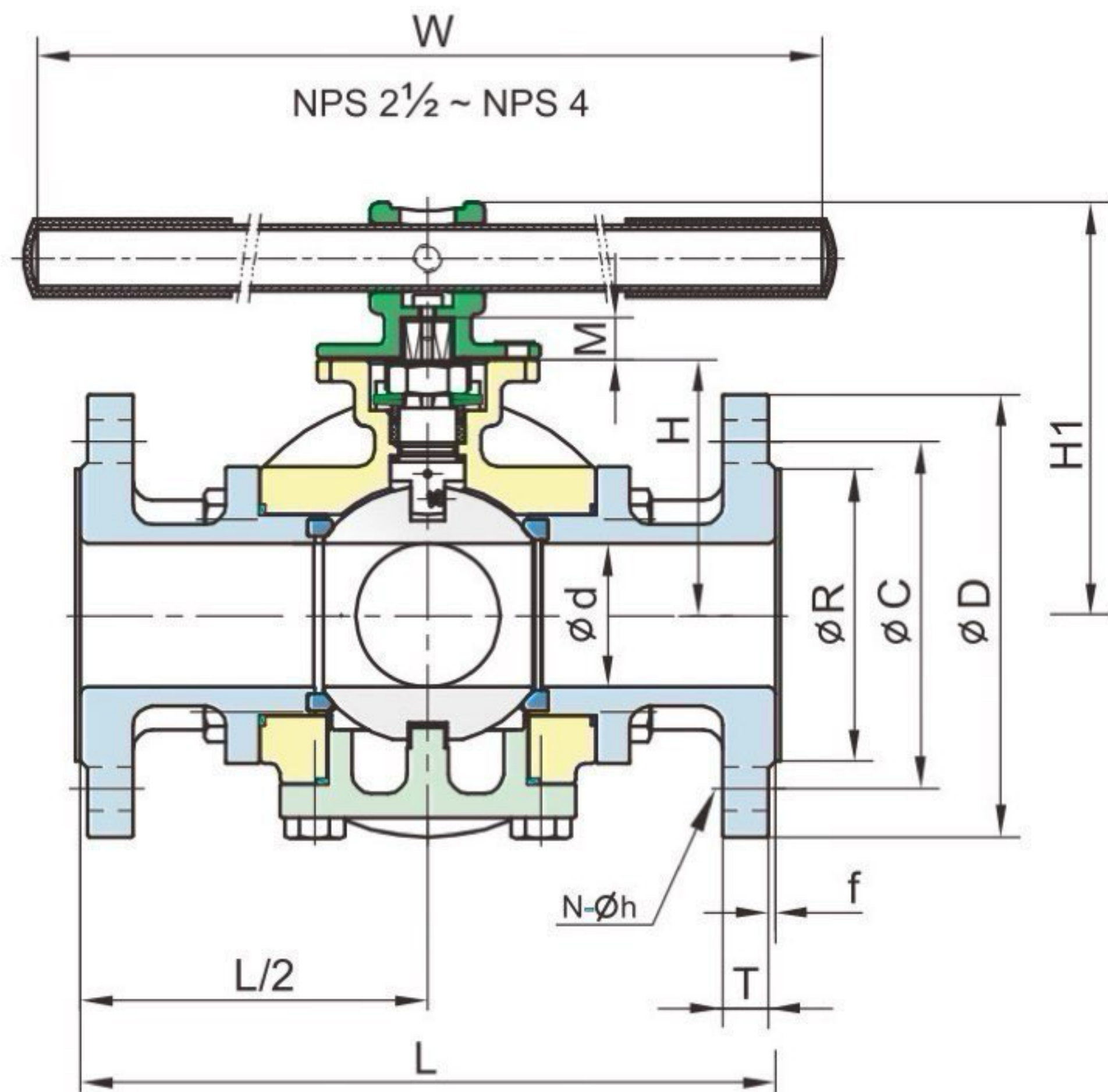
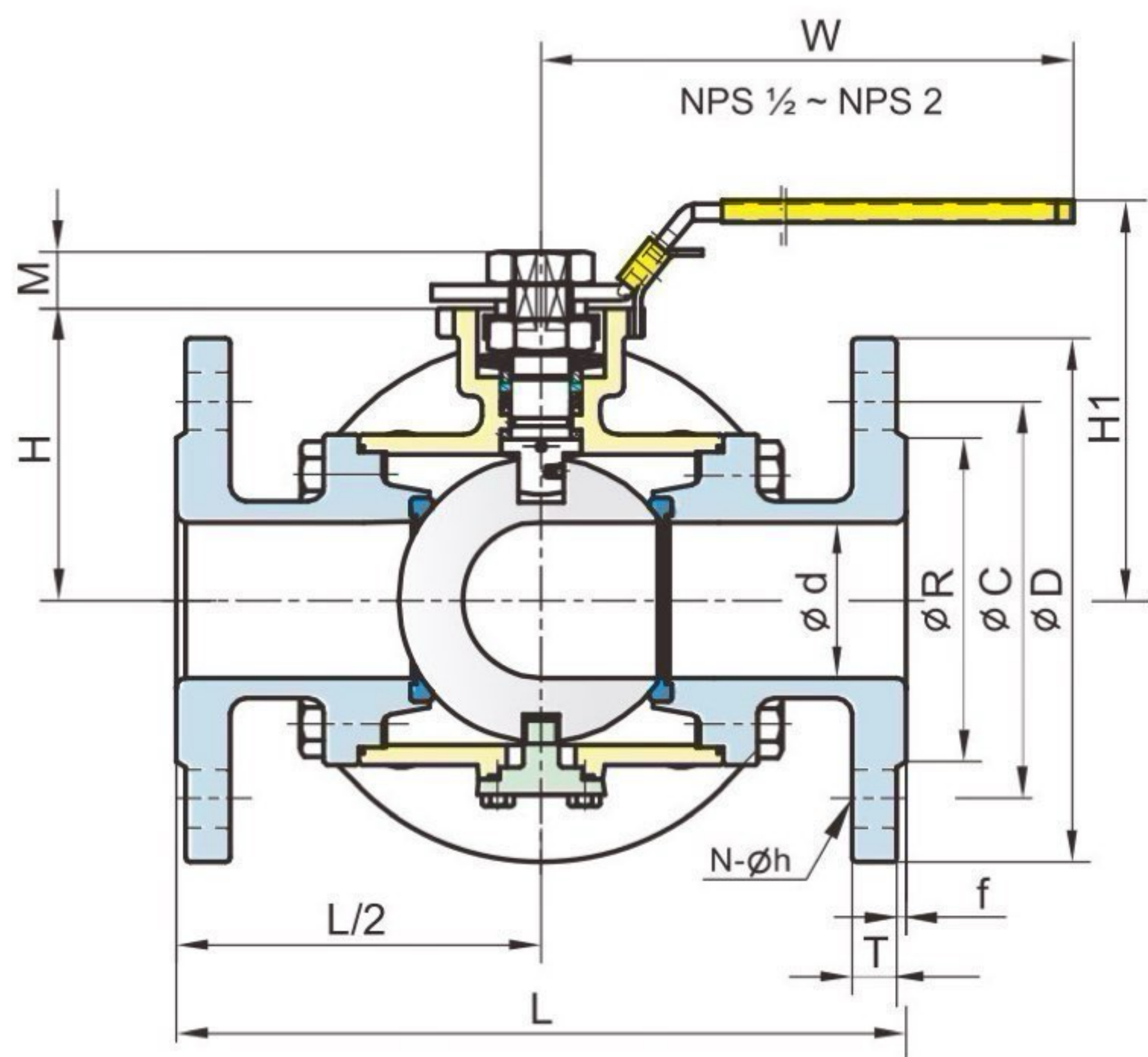
Unit : mm

ASME Class 150 DIMENSION TABLE

NPS	d	L	R	D	C	T	f	N	h	H	H1	W	P	M	E1	E2	U1	U2	ISO 5211
5	4.92	18.11	7.32	10.0	8.50	0.88	0.06	8	7/8	8.46	—	—	1.417	1.42	5.51	6.50	0.71	0.87	F14~F16
6	5.91	19.29	8.50	11.0	9.50	0.94	0.06	8	7/8	9.02	—	—	1.417	1.42	5.51	6.50	0.71	0.87	F14~F16
8	7.87	24.41	10.63	13.5	11.75	1.06	0.06	8	7/8	11.1	—	—	1.417	1.42	5.51	6.50	0.71	0.87	F14~F16

BL-W3-A-1016

Unit : mm



DIMENSION TABLE www.48inch.com
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ASME Class 300 DIMENSION TABLE

NPS	d	L	R	D	C	T	f	N	h	H	H1	W	P	M	E1	E2	U1	U2	ISO 5211
1/2	15	150	35	95	66.5	12.7	1.5	4	16.0	53	83	147	9	9	36	42	6	6	F03~F04
3/4	20	165	43	117	82.6	14.2	1.5	4	19.0	57	87	147	9	9	36	50	6	7	F03~F05
1	25	181	51	124	88.9	15.7	1.5	4	19.0	68	99	177	11	11	42	50	6	7	F04~F05
1 1/4	32	207	63.5	133	98.6	17.5	1.5	4	19.0	72	103	177	11	11	42	70	6	9	F04~F07
1 1/2	38	234	73.2	155	114.3	19.0	1.5	4	22.3	85	119	197	14	14	50	70	7	9	F05~F07
2	49	258	92	165	127.0	20.6	1.5	8	19.0	92	126	197	14	14	50	70	7	9	F05~F07
2 1/2	60	316	104.7	190	149.4	23.9	1.5	8	22.3	107	172	400	17	17	70	102	9	11	F07~F10
3	75	360	127	210	168.1	26.9	1.5	8	22.3	119	185	400	17	17	70	102	9	11	F07~F10
4	99	398	157	254	200.2	30.2	1.5	8	22.3	150	221	400	22	22	—	102	—	11	F10

ASME Class 300 DIMENSION TABLE

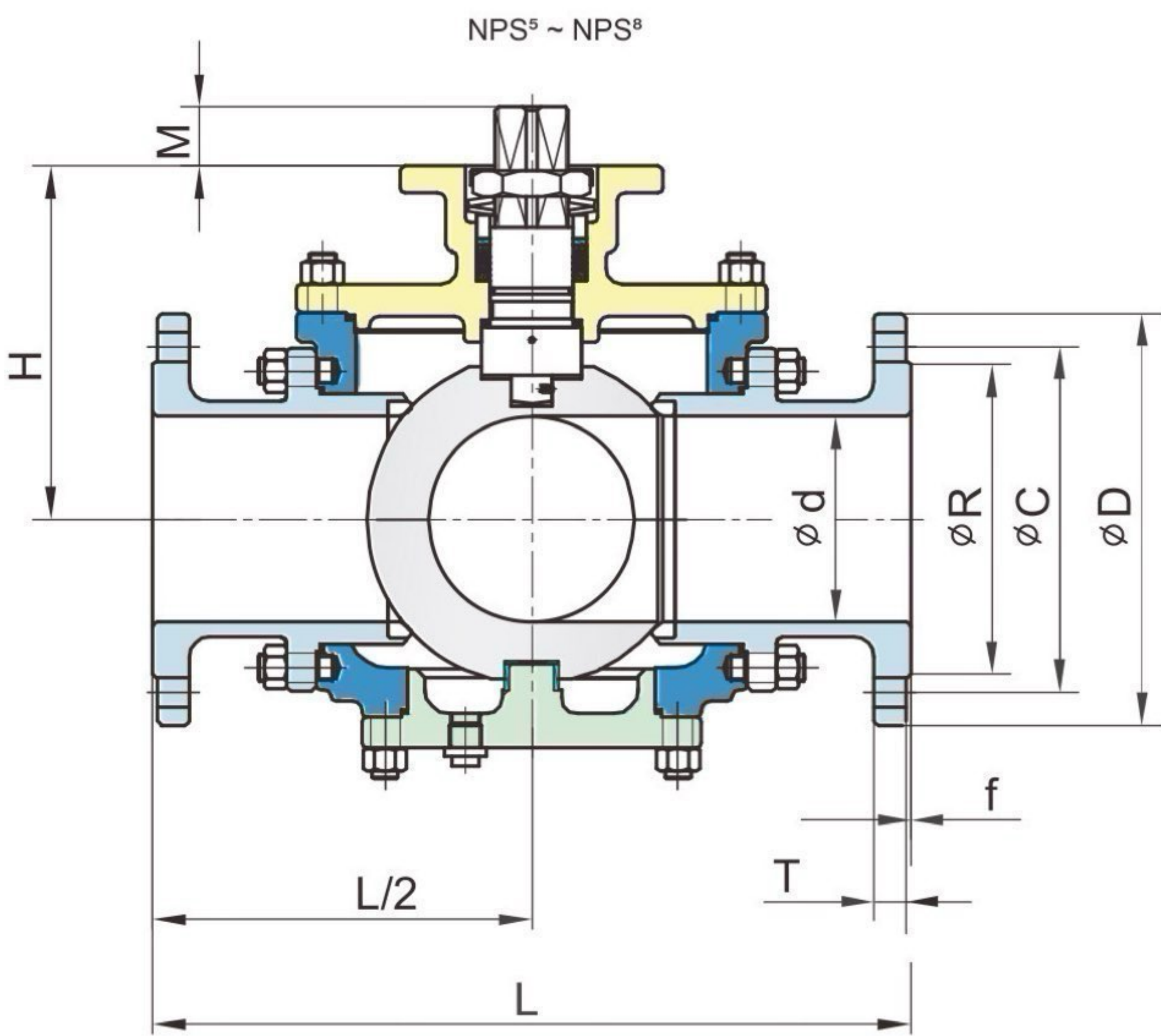
NPS	d	L	R	D	C	T	f	N	h	H	H1	W	P	M	E1	E2	U1	U2	ISO 5211
1/2	0.59	5.91	1.38	3.75	2.62	0.50	0.06	4	5/8	2.09	3.27	5.79	0.354	0.35	1.42	1.65	0.24	0.24	F03~F04
3/4	0.79	6.50	1.69	4.62	3.25	0.56	0.06	4	3/4	2.24	3.43	5.79	0.354	0.35	1.42	1.97	0.24	0.28	F03~F05
1	0.98	7.13	2.01	4.88	3.50	0.62	0.06	4	3/4	2.68	3.90	6.97	0.433	0.43	1.65	1.97	0.24	0.28	F04~F05
1 1/4	1.26	8.15	2.50	5.25	3.88	0.69	0.06	4	3/4	2.83	4.06	6.97	0.433	0.43	1.65	2.76	0.24	0.35	F04~F07
1 1/2	1.50	9.21	2.88	6.12	4.50	0.75	0.06	4	7/8	3.35	4.69	7.76	0.551	0.55	1.97	2.76	0.28	0.35	F05~F07
2	1.93	10.16	3.62	6.50	5.00	0.81	0.06	8	3/4	3.62	4.96	7.76	0.551	0.55	1.97	2.76	0.28	0.35	F05~F07
2 1/2	2.36	12.44	4.12	7.50	5.88	0.94	0.06	8	7/8	4.21	6.77	15.9	0.669	0.67	2.76	4.02	0.35	0.43	F07~F10
3	2.95	14.17	5.00	8.25	6.62	1.06	0.06	8	7/8	4.69	7.28	15.9	0.669	0.67	2.76	4.02	0.35	0.43	F07~F10
4	3.90	15.67	6.19	10.00	7.88	1.19	0.06	8	7/8	5.91	8.70	15.9	0.866	0.87	—	4.02	—	0.43	F10

BL-W3-B-1017

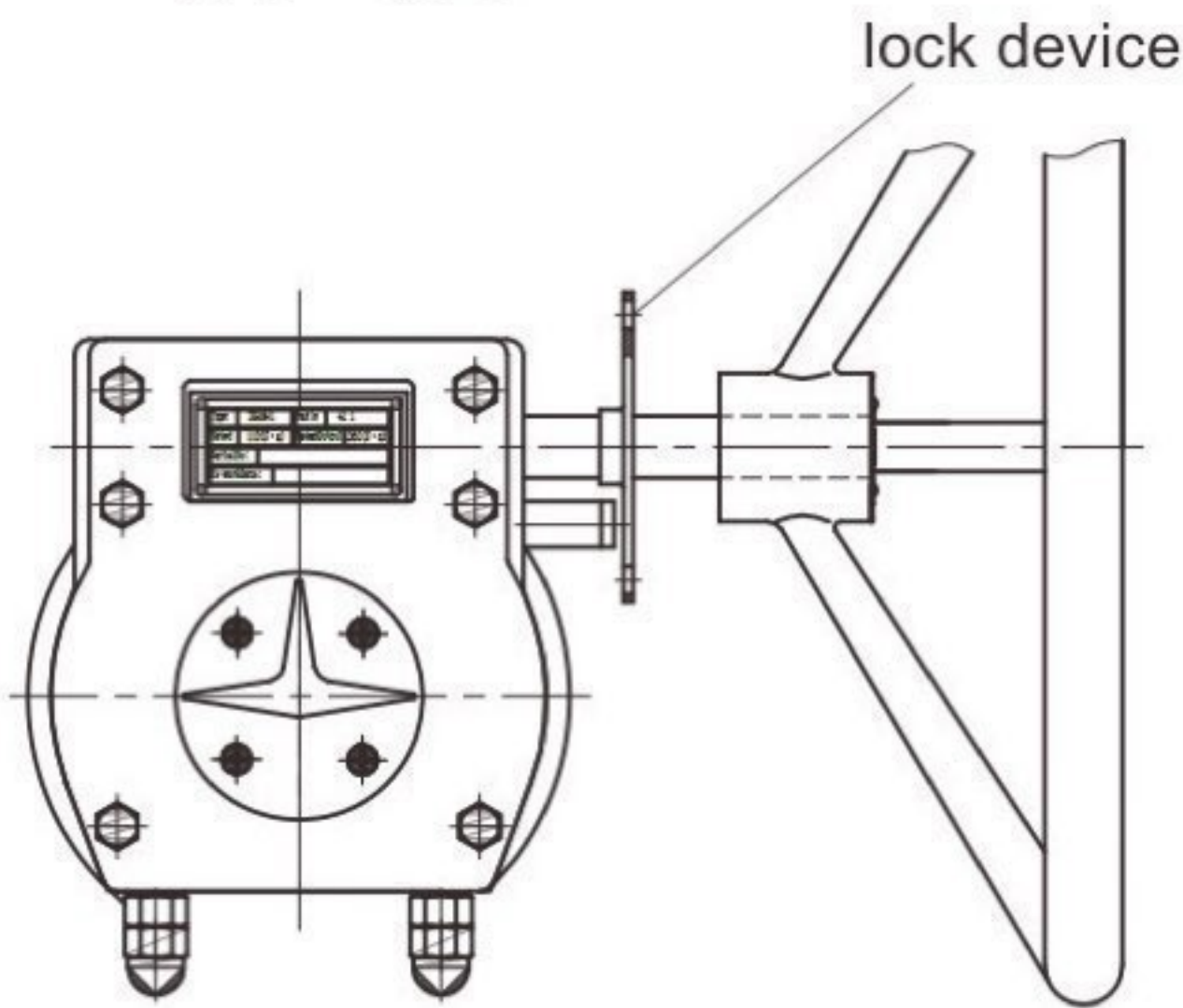
Unit : mm

BL-W3-B-1017

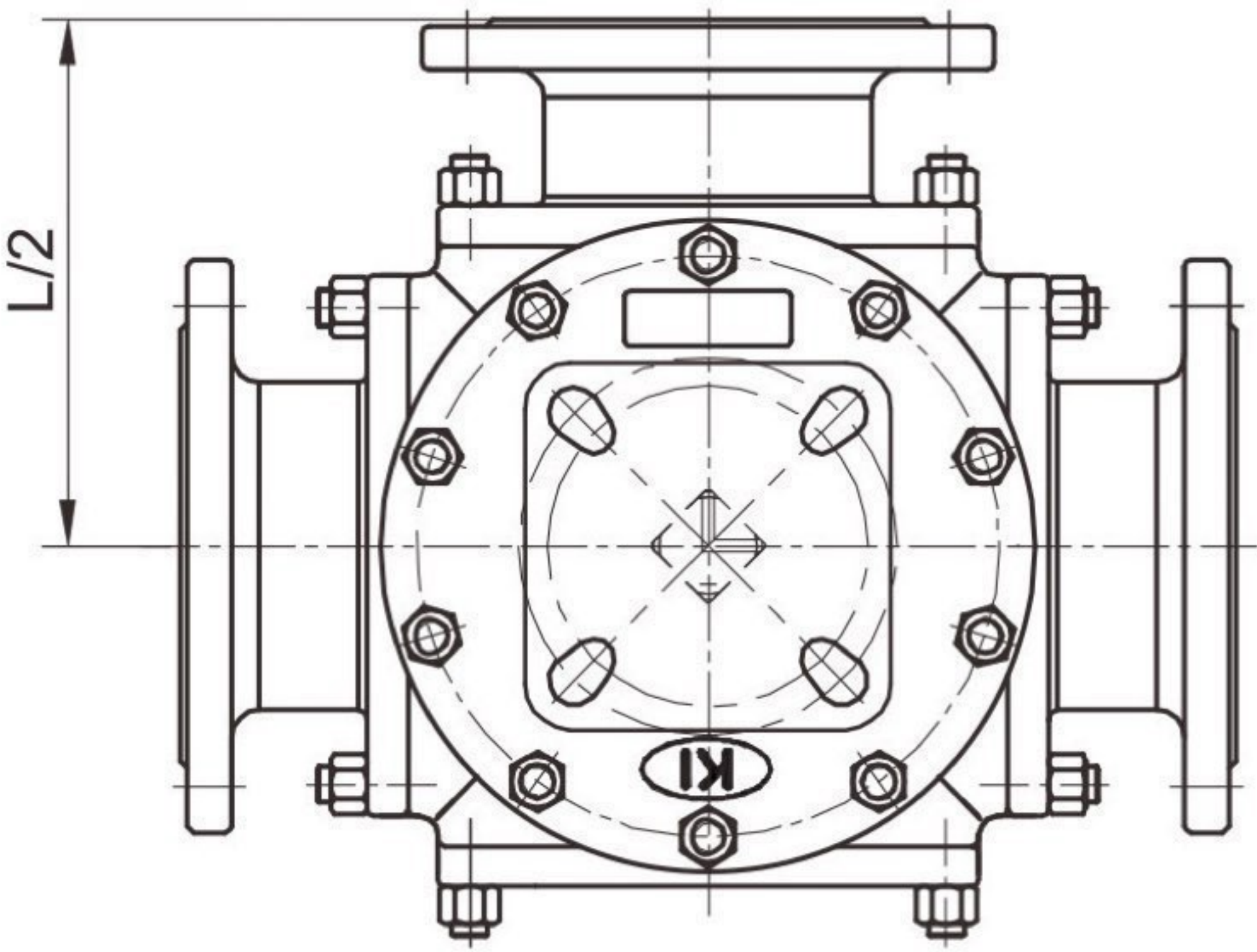
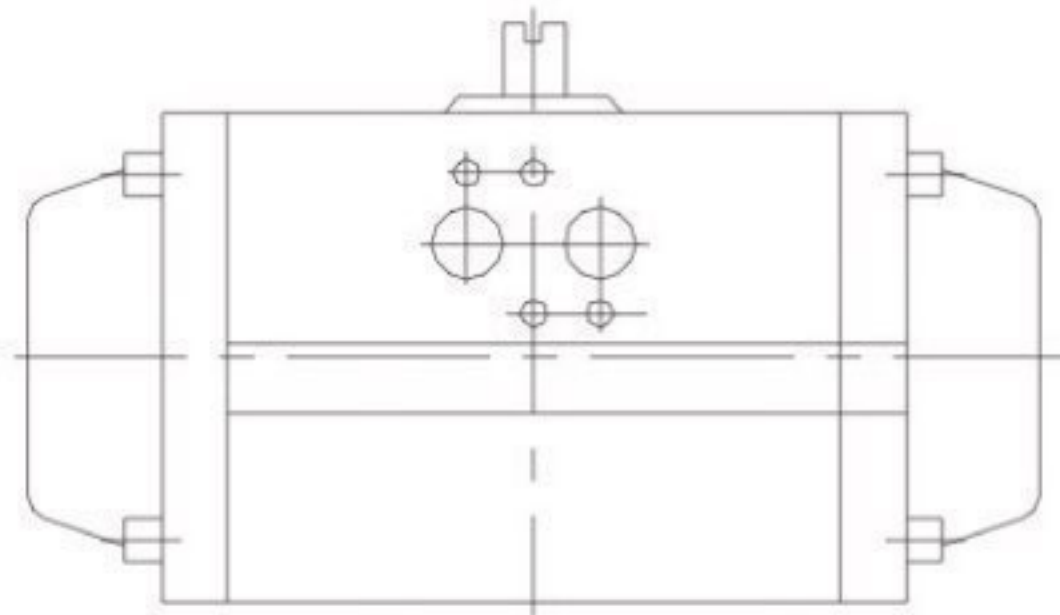
Unit : inch



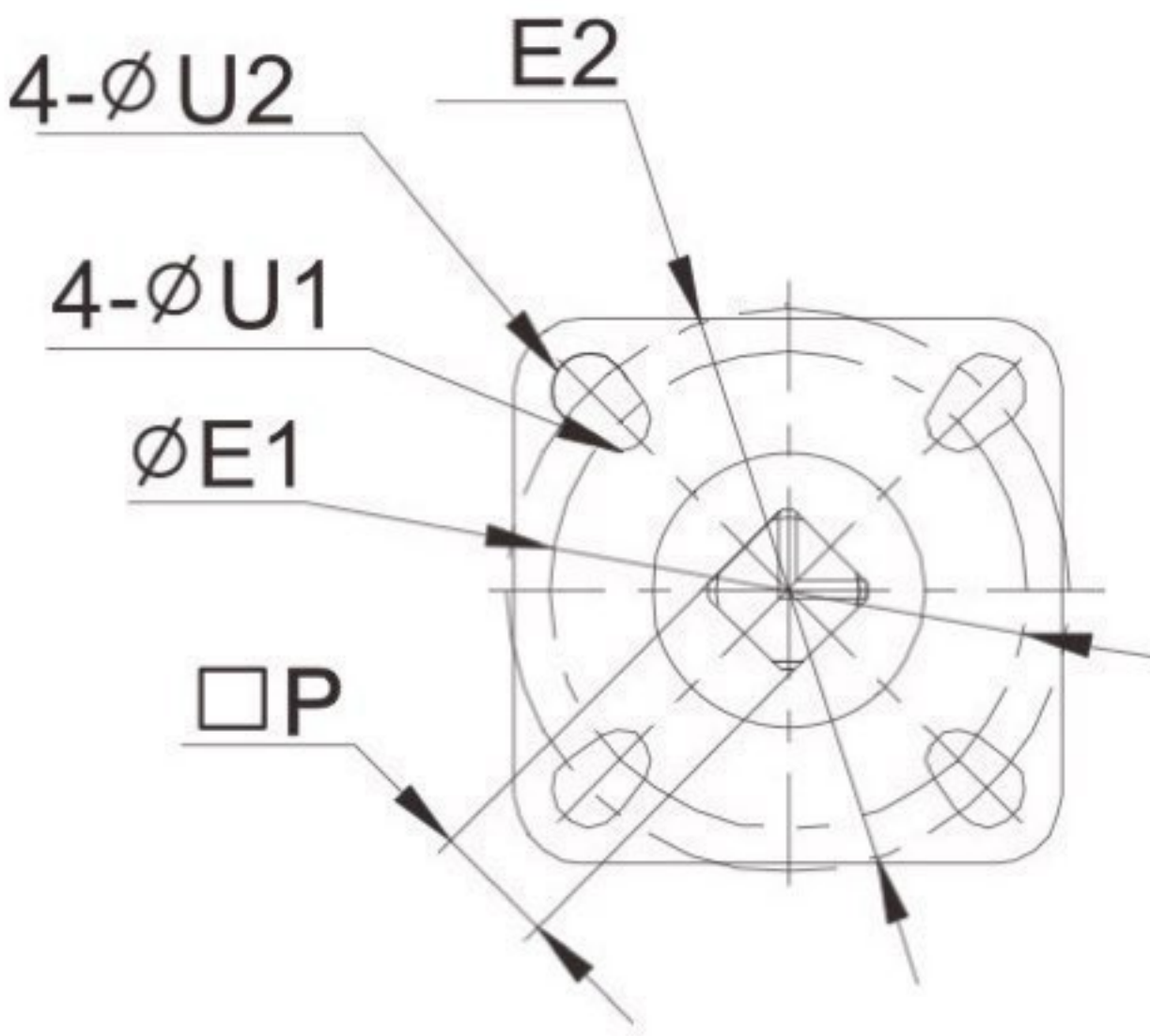
Gear Operation (Standard Type)
NPS⁵ ~ NPS⁸



Automation (Optional)



Direct mount pad
(ISO5211)



DIMENSION TABLE www.48inch.com
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ASME Class 300 DIMENSION TABLE

NPS	d	L	R	D	C	T	f	N	h	H	H1	W	P	M	E1	E2	U1	U2	ISO 5211
5	125	480	186	279	235.0	33.3	1.5	8	22.3	215	—	—	36	36	140	165	18	22	F14~F16
6	150	520	216	318	269.7	35.1	1.5	12	22.3	228.5	—	—	36	36	140	165	18	22	F14~F16
8	200	660	270	381	330.2	39.6	1.5	12	25.4	281.5	—	—	36	36	140	165	18	22	F14~F16

Unit : mm

BL-W3-B-1017

ASME Class 300 DIMENSION TABLE

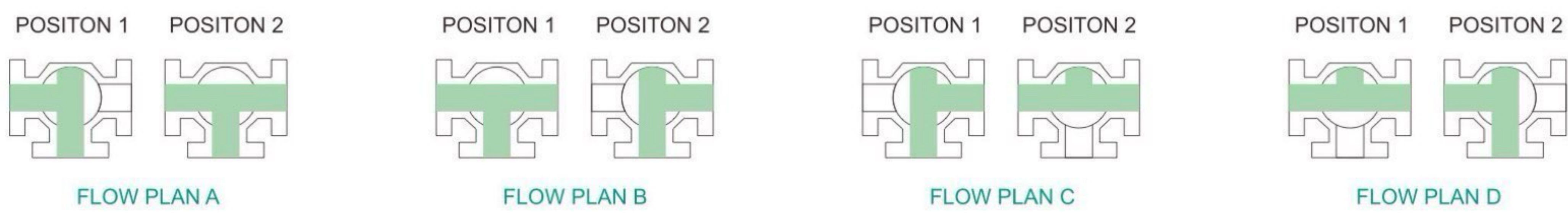
NPS	d	L	R	D	C	T	f	N	h	H	H1	W	P	M	E1	E2	U1	U2	ISO 5211
5	4.92	18.90	7.32	11.00	9.25	1.31	0.06	8	7/8	8.46	—	—	1.417	1.42	5.51	6.50	0.71	0.87	F14~F16
6	5.91	20.47	8.50	12.50	10.62	1.38	0.06	12	7/8	9.02	—	—	1.417	1.42	5.51	6.50	0.71	0.87	F14~F16
8	7.87	25.98	10.63	15.00	13.00	1.56	0.06	12	1	11.1	—	—	1.417	1.42	5.51	6.50	0.71	0.87	F14~F16

Unit : mm

BL-W3-B-1017

FLOW PATTERNS FOR 3 WAY VALVE

T-PORT 90° TURN



T-PORT 180° TURN





STEEL AVAL