

MATERIAL OF CONSTRUCTION

FOR PRESSURE CONTAINING PARTS		FOR TRIM MATERIAL	
Carbon Steel Forged	A-105/13% Cr. Steel	A-217 Gr. CA15	
Carbon Steel Cast	A-216 Gr. WCB, WCC		AISI 410
0.15% Moly Steel Cast	A-217 Gr. WC-1		
Cr. Moly Steel Cast	A-217 Gr. WC-6, WC-9, C5, C12		
18-8 S Cast	A-351 Gr. CF8	18-8 S	AISI 304
18-8 S Moly Cast	A-351 Gr. CF8M	18-8 S Moly	AISI 316
18-8 S Low Carbon	A-351 Gr. CF3	18-8 S Low Carbon	AISI 304L
18-8 S Low Carbon with Moly	A-351 Gr. CF3M	18-8 S Low Carbon Moly	AISI 316L
18-8 S Cb Cast	A-351 Gr. CF8C		
Low Carbon Steel Cast	A-352 Gr. LCB, LCC		
Low Carbon Moly Steel Cast	A-352 Gr. LC-1	SEAT AND DISC OVERLAY	
11.5-13.5 Cr. Steel Forged	A-182 Gr. F6	13% Cr. Steel, Stellite 6, Stellite 12.	
Hastelloy `B` Cast	A-296 N-12M		
Hastelloy `C` Cast	A-296 m M CW-12M		
Alloy 20 Cast	A-351 Gr. CN7M		
Duplex Steel	A-351 Gr. CD4MCu		
Super Duplex Steel	A890 Gr. 1A, 2A, 3A, 4A, 5A, 6A		

Cast Iron/ SG Iron of different grades

Also available as per NACE specification on request

Selection of Packing, Seals & Fastner material to suit application & service condition.

API 600 TRIM NUMBER CHART

API TRIM NO.	MATERIAL	SEAT/DISC		BACK SEAT	STEM	NOTES
1	410	410	410	410	410	
2	304	304	304	304	304	
3	F310	310	310	310	310	
4	HARD 410	Hard 410	Hard 410	410	410	Seats 750 BHN min.
5	HARDFACED	Stellite	Stellite	410	410	
5A	HARDFACED	Ni-Cr	Ni-Cr	410	410	
6	410 and Cu-Ni	Cu-Ni	Cu-Ni	410	410	
7	410 and Hard 410	Hard 410	Hard 410	410	410	Seats 750 BHN min.
8	410 and Hardfaced	Stellite	410	410	410	
8A	410 and Hardfaced	Ni-Cr	410	410	410	
9	Monel	Monel	Monel	Monel	Monel	
10	316	316	316	316	316	
11	Monel and Hardfaced	Stellite	Monel	Monel	Monel	
12	316 and Hardfaced	Stellite	316	316	316	
13	Alloy 20	Alloy 20	Alloy 20	Alloy 20	Alloy 20	
14	Alloy 20 and Hardfaced	Stellite	Alloy 20	Alloy 20	Alloy 20	
15	304 and Hardfaced	Stellite	Stellite	304	304	
16	316 and Hardfaced	Stellite	Stellite	316	316	
17	347 and Hardfaced	Stellite	Stellite	347	347	
18	Alloy 20 and Hardfaced	Stellite	Stellite	Alloy 20	Alloy 20	

Note: Data provided in above table for reference only, always cosult current API publications to verify information and trim data.

Norflow Controls

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Our Vision to Achieve Leadership Through Quality



www.norflowvalves.com

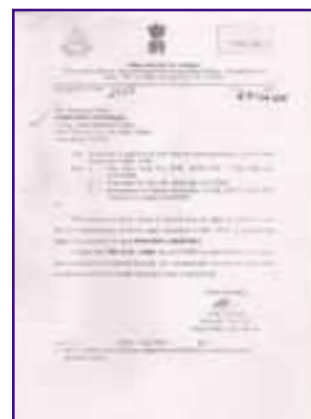
GATE VALVE

About us.

The Company's steady growth began with ambition, vision, foresight and these values remain our guiding force even today, enabling us to force ahead and do our Country proud in projecting our products overseas, as well as in domestic market and acquiring acceptability and approval. From humble beginning, Norflow Controls has grown to be one of the leading manufacturers of Industrial Valves with ISO 9001:2008, API 6A, API 6D, API 600, API 602, IBR up to pressure class 2500#, CE marking certification in different designs of valves in India.

The company's prime objective is to produce superior quality industrial valves at competitive price through high productivity by constant up gradation recommended by R&D wing. Our greatest reward of relentless growth is immense confidence generated amongst the rapidly growing family of customers through its no compromise policies on quality front. The stiff competition and appetite for excellence is a big challenge. But with quality standard, kaleidoscopic nature of service, timely delivery, vision to expand is the ethical business practice which we commit and we honor this commitment.

Our good business practice and transparent mode of working is a result of highly qualified and professional management. This enables us to keep on adding new products to our range and give value for money (VFM) to our customers.



Bolted Bonnet

- ✦ Range: 1/2" to 24"
- ✦ Pressure Class: ANSI 150# to 900#
- ✦ End Connections: Flanged, Screwed, Butt, Socket Welded, Victolic End
- ✦ Manufacturing Standard: API 595, API 600, ASME B16.34
- ✦ Face to Face as per: ANSI B16.10
- ✦ End Connections as per: ASME /BS/DIN
- ✦ Testing Standard: API 598

Forged Steel

- ✦ Range: 1/4" to 2"
- ✦ Pressure Class: ANSI 800# to 2500#
- ✦ End Connections: Flanged, Screwed, Butt, Socket Welded, Victolic End
- ✦ Manufacturing Standard: API 602, ASME B16.34
- ✦ Face to Face as per: API 602
- ✦ End Connections as per: ASME /BS/DIN
- ✦ Testing Standard: API 598



Pressure Seal

- ✦ Range: 2" to 24"
- ✦ Pressure Class: ANSI 900# to 2500#
- ✦ End Connections: Flanged, Butt, Socket Welded.
- ✦ Manufacturing Standard: API 600, ASME B16.34
- ✦ Face to Face as per: ASME B16.10
- ✦ End Connections as per: ANSI /BS/DIN
- ✦ Testing Standard: API 598

GLOBE VALVE

Bolted bonnet

- ✦ Range: 1/2" to 16"
- ✦ Pressure Class: ANSI 150# to 900#
- ✦ End Connections: Flanged, Screwed, Butt, Socket Welded, Victolic End
- ✦ Manufacturing Standard: BS1873, ASME B16.34
- ✦ Face to Face as per: ANSI B16.10
- ✦ End Connections as per: ASME /BS/DIN
- ✦ Testing Standard: API 598, BS-5146



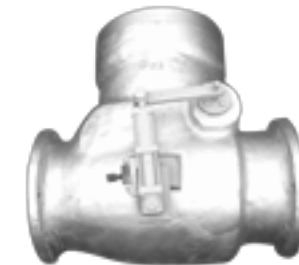
Forged steel

- ✦ Range: 1/4" to 2"
- ✦ Pressure Class: ANSI 800# to 2500#
- ✦ End Connections: Flanged, Screwed, Butt, Socket Welded, Victolic End
- ✦ Manufacturing Standard: API 602, ASME B16.34
- ✦ Face to Face as per: API 602
- ✦ End Connections as per: ASME /BS/DIN
- ✦ Testing Standard: API 598, BS-5146



Pressure Seal

- ✦ Range: 2" to 12"
- ✦ Pressure Class: ANSI 900# to 2500#
- ✦ End Connections: Flanged, Butt, Socket Welded.
- ✦ Manufacturing Standard: BS 1873, ASME B16.34
- ✦ Face to Face as per: ASME B16.10
- ✦ End Connections as per: ANSI /BS/DIN
- ✦ Testing Standard: API 598, BS 5146



NON RETURN VALVE

Bolted Cover

- ✦ Range: 1/2" to 24"
- ✦ Pressure Class: ANSI 150# to 900#
- ✦ End Connections: Flanged, Screwed, Butt, Socket Welded, Victolic End
- ✦ Manufacturing Standard: BS1868, ASME B16.34
- ✦ Face to Face as per: ANSI B16.10
- ✦ End Connections as per: ASME /BS/DIN
- ✦ Testing Standard: API 598, BS-6755



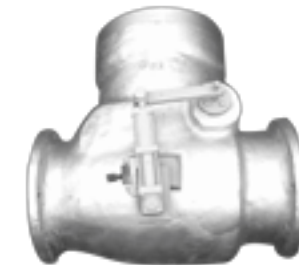
Forged steel

- ✦ Range: 1/4" to 2"
- ✦ Pressure Class: ANSI 800# to 2500#
- ✦ End Connections: Flanged, Screwed, Butt, Socket Welded, Victolic End
- ✦ Manufacturing Standard: API 602, ASME B16.34
- ✦ Face to Face as per: API 602
- ✦ End Connections as per: ASME /BS/DIN
- ✦ Testing Standard: API 598, BS-6755



Pressure seal

- ✦ Range: 2" TO 24"
- ✦ Pressure Class: ANSI 900# to 2500#
- ✦ End Connections: Flanged, Screwed, Butt, Socket Welded.
- ✦ Manufacturing Standard: BS-1868, B16.34
- ✦ Face to Face as per: ASME B16.10
- ✦ End Connections as per: ANSI /BS/DIN
- ✦ Testing Standard: API 598, BS 6755



NON RETURN VALVE



Flap type

- ✦ Range: 1" to 24"
- ✦ Pressure Class: ANSI 150#
- ✦ End Connections: Flanged
- ✦ Manufacturing Standard: BS 1868
- ✦ End Connections as per: ANSI /BS/DIN
- ✦ Testing Standard: API 598, BS 6755
- ✦ Lining: Rubber Lined, Teflon Lined
- ✦ Neoprene/Nitrile/Ebonite/EPDM/Natural/Viton/Silicon

BALL VALVE



- ✦ Range: 1/4" to 12"
- ✦ Pressure Class: ANSI 150# to 600#
- ✦ End Connections: Flanged, Screwed, Butt, Socket Welded, Victolic End
- ✦ Manufacturing Standard: BS-5351, API 6D
- ✦ Face to Face as per: ANSI B16.10
- ✦ End Connections as per: ASME /BS/DIN
- ✦ Testing Standard: API 598
- ✦ Body type: Single/Two/Three piece
- ✦ Design: Floating Ball / Trunion mounted
- ✦ Port: Full/Reduced port

WAFER TYPE NON RETURN VALVE

- ✦ Range: 1/2" to 24"
- ✦ Pressure Class: ANSI 150# to 1500#
- ✦ End Connections: Wafer, Lugged, Flanged
- ✦ Manufacturing Standard: API-6D, API-594
- ✦ End Connections as per: ASME /BS/DIN
- ✦ Testing Standard: API 598.
- ✦ Lining: Rubber Lined, Teflon Lined
- ✦ Neoprene/Nitrile/Ebonite/EPDM/Natural/Viton/Silicon



BUTTERFLY VALVE

- ✦ Range: 2" to 30"
- ✦ Pressure Class: PN10, PN16
- ✦ End Connections: Wafer, Lugged, Flanged
- ✦ Manufacturing Standard: BS-5155, API-609. AWWA C-504
- ✦ End Connections as per: ASME /BS/DIN
- ✦ Testing Standard: API 598.
- ✦ Disc type: Centre, Offset disc
- ✦ Lining: Rubber Lined, Teflon Lined
- ✦ Neoprene/Nitrile/Ebonite/EPDM/Natural/Viton/Silicon



DIAPHRAGM VALVE



- ✦ Range: 1/2" to 12"
- ✦ Pressure Class: ANSI 150#
- ✦ End Connections: Flanged, Screwed
- ✦ Manufacturing Standard: BS-5156
- ✦ End Connections as per: ASME /BS/DIN
- ✦ Testing Standard: API 598.
- ✦ Diaphragm: Neoprine/Nitrile/Natural/Silicon rubber & Teflon laminated
- ✦ Lining: Rubber Lined, Teflon Lined
- ✦ Neoprene/Nitrile/Ebonite/EPDM/Natural/Viton/Silicon

WELLHEAD VALVE



- ✦ Range: 2.1/16" to 7.1/16"
- ✦ Pressure Class: 2000, 3000, 5000, 10000 PSI.
- ✦ End Connection: Flanged, Screwed, Socket, Butt welded
Manufacturing Standard: API 6A
- ✦ Design: As per API 6A full bore, thru Conduit type
- ✦ Gate type: Slab Gate / Expanded Gate with floating seat.
- ✦ Material Class: As per API 6A
[AA, BB, CC, DD, EE, FF, HH to NACE MR0175]
- ✦ Product Specification level: PSL1 ~ PSL2
- ✦ Testing Standard: API 6A

STRAINER

- ✦ Range: 1/2" to 30"
- ✦ Pressure Class: ANSI 150# to 1500#
- ✦ End Connections: Flanged, Screwed, Butt, Socket Welded.
- ✦ End Connections as per: ASME /BS/DIN
- ✦ Testing Standard: API 598.
- ✦ Filter Type: Y type/T type/Bucket type/Pot type
- ✦ Lining: Rubber Lined
[Neoprene/Nitrile/Ebonite/EPDM/Natural/Viton/Silicon]



CONDUIT GATE VALVE

- ✦ Range: 2" to 24"
- ✦ Pressure Class: 150# to 1500#
- ✦ End Connection: Flanged, Screwed, Socket, Butt welded
- ✦ Manufacturing Standard: API 6D
- ✦ Face to Face as per: API 6D
- ✦ End Connections as per: ASME /BS/DIN
- ✦ Testing Standard: API-6D/ API 598



Size	Rating	F to F as per ASME B16.10					Side Flange Details as Per ASME B 16.5										Approx height of valve (close)				
		GATE	GLOBE	NRV	BALL	BALL	OD	THK	P.C.D	Hole/Drill	RF Dia	RF Thk.	GATE	GLOBE	NRV	BALL					
150#	150#	127	127	127	127	127	110	11	79.4	4/15.7	51	1.6	195	180	80	70					
300#	300#	165	203	216	165	165	125	17	88.9	4/19.05	51	1.6	200	190	90	70					
600#	600#	216	216	216	216	216	125	17	88.9	4/19.05	51	6.35	225	200	100	75					
150#	150#	165	165	165	165	165	125	14	98.4	4/15.7	73	1.6	235	235	105	90					
300#	300#	190	229	241	190	190	155	21	114.3	4/22.09	73	1.6	245	255	115	90					
600#	600#	241	241	241	241	241	155	22	114.3	4/22.09	73	6.35	265	280	125	95					
150#	150#	177.8	203.2	203.2	177.8	177.8	152.4	15.8	120.6	4/19.05	91.9	1.6	320	255	140	110					
300#	300#	216	266.7	266.7	216	216	165.1	22.3	127	8/19.05	91.9	1.6	375	330	160	110					
600#	600#	292.1	292.1	292.1	292.1	292.1	165.1	25.4	127	8/19.05	91.9	6.35	450	390	174	120					
900#	900#	216	368	368	216	216	215.9	38.1	165.1	8/25.4	91.9	6.35	455	575	210						
1500#	1500#	216	216	216	216	216	215.9	38.1	165.1	8/25.4	91.9	6.35	455	585	210						
150#	150#	190	216	216	190	190	180	17	139.7	4/19.05	105	1.6	340	335	150	150					
300#	300#	241	292	292	241	241	190	25.4	149.2	8/22.09	105	1.6	380	380	165	150					
600#	600#	330	330	330	330	330	190	29	149.2	8/22.09	105	6.35	440	410	190	160					
900#	900#	254	254	254	254	254	245	41.3	190.5	8/28.4	105	6.35	500	585	235						
1500#	1500#	254	254	254	254	254	245	41.3	190.5	8/28.4	105	6.35	500	585	240						
150#	150#	203.2	241.3	241.3	203.2	203.2	190.5	19.05	152.4	4/19.05	127	1.6	410	360	170	160					
300#	300#	282.4	317.5	317.5	282.4	282.4	209.5	29	168.1	6/22.3	127	1.6	450	455	194	160					
600#	600#	355.6	355.6	355.6	355.6	355.6	209.5	31.7	168.1	8/22.3	127	6.35	495	490	225	190					
900#	900#	305	305	305	305	305	241.3	38.1	190.5	8/25.4	127	6.35	515	590	270						
1500#	1500#	305	305	305	305	305	265	47.7	203.2	8/31.7	127	6.35	515	610	270						
150#	150#	228.6	292.1	292.1	229	229	228.6	23.8	190.5	8/19.05	157.2	1.6	514	440	215	210					
300#	300#	304.8	355.6	355.6	304.8	304.8	254	31.75	200.1	8/22.3	157.2	1.6	526	520	210	210					
600#	600#	431.8	431.8	431.8	431.8	431.8	273	38.1	215.9	8/25.4	157.2	6.35	620	607	235	250					
900#	900#	356	356	356	356	356	292.1	44.45	234.9	8/31.7	157.2	6.35	650	720	330						
1500#	1500#	406	406	406	406	406	310	54	241.3	8/34.8	157.2	6.35	700	735	330						
150#	150#	254	355.6	330.2	254	254	254	23.8	235.8	8/32.8	185.6	1.6	600	514	215	215					
300#	300#	381	400	400	381	381	279.4	35	234.9	8/22.3	185.6	1.6	600	533	245	220					
600#	600#	508	508	508	508	508	330.2	44.4	266.7	8/28.4	185.6	6.35	770	570	284	235					
900#	900#	432	432	432	432	432	34.2	50.8	279.4	8/34.8	185.6	6.35	824	800	352						
1500#	1500#	483	483	483	483	483	375	73.1	292.1	8/41.1	185.6	6.35	860	840	370						
150#	150#	266.7	406.4	355.6	266.7	266.7	279.4	25.4	241.3	8/22.3	215.9	1.6	585	450	240	250					
300#	300#	403.3	444.5	444.5	403.3	403.3	317.5	36.5	269.7	12/22.3	215.9	1.6	600	605	264	250					
600#	600#	558.8	558.8	558.8	558.8	558.8	355.6	47.7	292.1	12/28.4	215.9	6.35	890	973	325	270					
900#	900#	508	508	508	508	508	381	55.6	317.5	12/31.7	215.9	6.35	935	973	420						
1500#	1500#	559	559	559	559	559	395	82.6	317.5	12/38.1	215.9	6.35	985	990	420						
150#	150#	292.1	495.3	495.3	292.1	292.1	342.9	28.5	298.4	8/22.3	269.7	1.6	785	565	325	280					
300#	300#	419.1	558.8	583.4	419.1	419.1	381	41.1	330.2	12/25.4	269.7	1.6	865	740	325	280					
600#	600#	660.4	660.4	660.4	660.4	660.4	419.1	55.6	349.2	12/31.75	269.7	6.35	880	838	429						
900#	900#	660	660	660	660	660	469.9	63.5	393.7	12/38.1	269.7	6.35	1125	1140	536						
1500#	1500#	711	711	711	711	711	485	92.1	393.7	12/44.4	269.7	6.35	1200	1160	550						
150#	150#	330.2	622.3	622.3	330.2	330.2	406.4	30.2	361.9	12/25.4	232.8	1.6	945	775	344	320					
300#	300#	457.2	622.3	622.3	457.2	457.2	444.5	47.7	387.3	16/28.5	323.8	1.6	1110	850	344	320					
600#	600#	787.4	787.4	787.4	787.4	787.4	508	63.5	431.8	16/35.05	323.8	6.35	1213	690	504						
900#	900#	787	787	787	787	787	546.4	69.85	409.9	16/38.1	323.8	6.35	1255	1300	600						
1500#	1500#	864	864	864	864	864	585	108	482.6	12/50.8	323.8	6.35	1275	1325	625						
150#	150#	355.6	698.5	698.5	355.6	355.6	482.6	31.75	431.8	12/25.4	381	1.6	1035	780	405	390					
300#	300#	501.6	711.2	711.2	501.6	501.6	520.7	50.8	450.8	16/31.75	381	1.6	1210	1010	487	390					
600#	600#	838.2	838.2	838.2	838.2	838.2	558.8	66.5	488.9	20/35.05	381	6.35	1285	1060	508						
900#	900#	914	914	914	914	914	609.6	79.4	533.4	20/38.1	381	6.35	1439	1472	640						
1500#	1500#	991	991	991	991	991	675	123.9	571.5	16/53.8	381	6.35									
150#	150#	381	787.4	787.4	381	381	533.4	35.05	476.2	12/28.4	412.8	1.6	1275	875	455						
300#	300#	762	838.2	838.2	762	762	584.2	54	514.3	20/31.75	412.8	1.6	1420	1420	475						
600#	600#	889	889	889	889	889	603.2	69.8	577	20/38.1	412.8	6.35	1520	1520	594						
900#	900#	991	991	991	991	991	641.3	85.7	558.8	20/41.1	412.7	6.35	1585	1585	700						
1500#	1500#	1067	1067	1067	1067	1067	750	133.4	635	16/60.1	412.7	6.35									
150#	150#	406.4	914.4	863.6	406.4	406.4	596.9	36.5	539.7	16/28.4	469.9	1.6	1455	1455	475						
300#	300#	838.2	838.2	863.6	838.2	838.2	647.7	57.15	571.5	20/34.9	469.9	1.6	1544	1544	504						
600#	600#	990.6	990.6	990.6	990.6	990.6	685.8	76.2	603.2	20/41.1	469.9	6.35	1615	1615	664						
900#	900#	1092	1092	1092	1092	1092	704.8	88.9	615.9	20/44.4	469.9	6.35	1639	1639	762						
1500#	1500#	1194	1194	1194	1194	1194	825	146.1	704.8	16/66.5	469.9	6.35	1800	1800	810						
150#	150#	431.8	978	978	431.8	431.8	635	39.6	577.8	16/31.7	533.4	1.6	1609	1609	529						
300#	300#	914.4	977.9	977.9	914.4	914.4	711	60.3	628.6	24/34.9	533.4	1.6	1075	1075	584						
600#	600#	1092	1092	1092	1092	1092	743	82.5	654	20/44.4	533.4	6.35	1810	1810	689						
900#	900#	1219	1219	1219	1219	1219	787	101.6	685.8	20/50.8	533.4	6.35	1835	1835	822						
1500#	1500#	1346	1346	1346	1346	1346	915	162	774.7	16/72.8	533.4	6.35									
150#	150#	457.2	978	978	457.2	457.2	699	42.9	635	20/31.7	584.2	1.6	1814	1814	609						
300#	300#	990.6	1016	1016	990.6	990.6	745	63.5	685.8	24/34.9	584.2	1.6	1920	1920	686						
600#	600#	1194	1194	1194	1194	1194	813	88.9	724	24/44.4	584.2	6.35	1920	1920	789						
900#	900#	1321	1321	1321	1321	1321	857	107.9	749.3	20/54	584.2	6.35	1970	1970	885						
1500#	1500#	1473	1473	1473	1473	1473	985	177.8	831.8	16/79.2	584.2	6.35									
150#	150#	508	1295	1295	508	508	813	47.7	749.3	20/35	693.1	1.6	2175	2175	664						
300#	300#	1143	1346	1346	1143	1143	914	69.8	812.8	24/41.3	692.1	1.6	2444	2444	749						
600#	600#	1397	1397	1397	1397	1397	940	101.6	838.2	24/50.8	692.1	6.35	2810	2810	849						
900#	900#	1549	1549	1549	1549	1549	1041	139.7	901.7	20/66.5	692.1	6.35	2600	2600	945						
1500#	1500#	1943	1943	1943	1943	1943	1170	203.2	990.6	16/91.9	692.1	6.35	2700	2700							