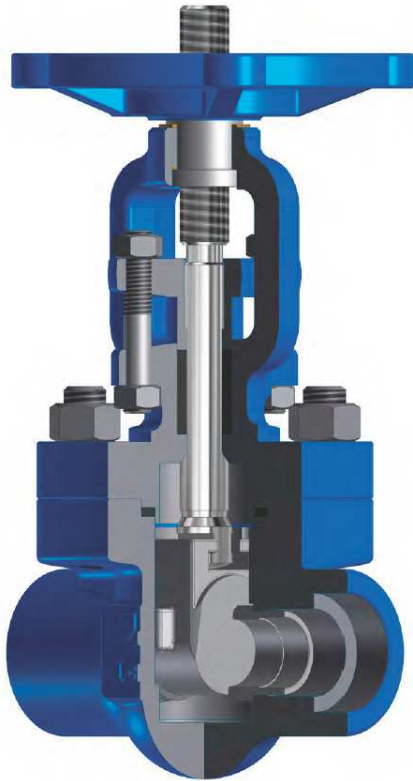


S38 121 class 150 – Gate valve butt welding



Forged Gate Valve [GAF]

Standard: API 602 (ISO 15761)

DN 8 (1/4") ÷ DN 50 (2")

Class 150 ÷ Class 1500

Design

- Forged body and bonnet
- Bolted bonnet (BB)
- Rising stem (RS), outside screw and yoke (OS&Y)
- Solid wedge
- Body seats pressed into the body

Applications

- Refining, Petrochemical, Chemical, Power plant, Water supply and other

Media

- Depending on the gate valves materials for: water, steam, gas, oil and other non-aggressive media.

Pressure and temperature (table D.3.8)

- Class 150 ÷ Class 1500
- Temperature up to 600 °C

Materials (table D.3.1)

- Carbon, heat resistant alloy and stainless steels

Advantages

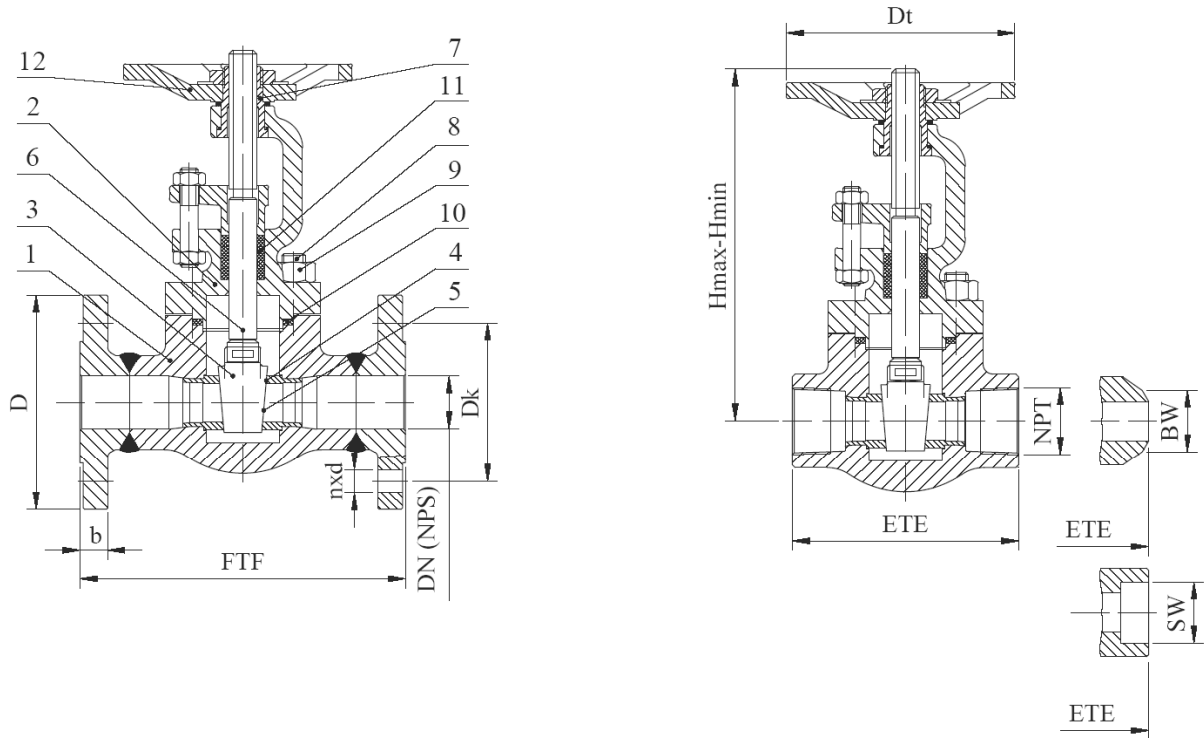
- Long service life
- Respect to emission standards
- Easy handling and maintenance
- Stem packing replacement in working conditions

Options

- Electric, hydraulic or pneumatic actuator
- Welded bonnet (WB)
- Extended body (EB)
- Flanges and welding ends according to: GOST, DIN, EN...
- Other paint finishes are available upon customer's request
- Gate valve complete with counter flanges, bolting and gaskets.

Testing

- Every produced gate valve was tested according to API 598 (ISO 5208)



Drawing D.3.1 Parts and dimensions

List of materials

Table D.3.1

Item	Part	Groups of materials according to ASME B16.34									
		1.1	1.9	1.10	1.13	1.15	2.1	2.2	2.4	2.5	
		Application									
		-29°C÷ 425°C	-40°C÷ 425°C	-29°C÷ 595°C	-29°C÷ 595°C	-29°C÷ 650°C	-29°C÷ 650°C	-196°C÷ 550°C	-196°C÷ 550°C	-196°C÷ 540°C	-196°C÷ 540°C
		Material Code									
		12	14	22	24	26	28	40	42	44	48
1	Body	A105	A350 LF2	A182 F11	A182 F22	A182 F5a	A182 F91	A182 F304	A182 F316	A182 F321	A182 F347
2	Bonnet	A105	A350 LF2	A182 F11	A182 F22	A182 F5a	A182 F91	A182 F304	A182 F316	A182 F321	A182 F347
3	Wedge	A217 CA15			A351 CF8M						
4	Trim	Seat	13Cr	HF (Stellite)			Basic material or Stellite				
5		Wedge	13Cr	HF (Stellite)			Basic material or Stellite				
6		Stem	SS 420				SS 304 / SS 316				
7	Stem Nut	SS 420 - hardened				Cu alloy					
8	Stud Bolts	A193 B7		A193 B16 / 1.7709			A193 B8 or A193 B8M				
9	Nuts	A194 2H		A194 4 / 1.7709			A194 8 or A194 8M				
10	Bonnet Gasket	spiral wound									
11	Stem Packing	braided graphite with corrosion inhibitor									
12	Handwheel	forged carbon steel									

Standards

Table D.3.2

Forged Gate Valve according to API 602 (ISO 15761)	Class 150 ÷ Class 1500
Socket Welding end SW	ASME/ANSI B16.11
Butt Welding end BW	ASME/ANSI B16.25
Threaded end NPTF	ASME/ANSI B1.20.1
Face-to-face and End-to-end dimensions according to	Manufacturer standard and ASME/ANSI B16.10
Flanged ends according to	ASME/ANSI B16.5

[GAF] Dimensions Class 800 and Class 1500

Table D.3.3

DN (NPS)	Class 800						Class 1500					
	ETE	SW	Dt	H max	H min	i (kg)	ETE	SW	Dt	H max	H min	i (kg)
	↕ (mm)						↕ (mm)					
8 (1/4)	84	14,2	100	170	158	2,1	90	14,2	100	176	158	2,6
10 (3/8)	84	17,6	100	170	158	2,1	90	17,6	100	176	158	2,6
15 (1/2)	84	21,8	100	170	158	2,1	90	21,8	100	176	158	2,6
20 (3/4)	90	27,2	100	181	165	2,6	114	27,2	120	203	183	4,1
25 (1)	114	33,9	120	203	183	4,1	180	33,9	150	263	233	8,2
32 (1 1/4)	180	42,7	150	267	237	8,2	210	42,7	150	267	233	8,2
40 (1 1/2)	180	48,8	150	270	237	11,5	210	48,8	150	300	258	11,5
50 (2)	210	61,2	150	297	255							

End connections can be threaded (NPT), with butt welding (BW) or with socket welding ends (SW).

[GAF] Dimensions Class 150

Table D.3.4

DN (NPS)	FTF	D	b	Dk	d	n	H max	H min	Dt	i (kg)
	↕ (mm)									
15 (1/2)	108	90	11,6	60,3	15,9	4	170	158	100	3,7
20 (3/4)	117	100	13,2	69,9	15,9	4	181	165	100	6
25 (1)	127	110	14,7	79,4	15,9	4	203	183	120	6,3
32 (1 1/4)	140	115	16,3	88,9	15,9	4	267	237	150	9,3
40 (1 1/2)	165	125	17,9	98,4	15,9	4	270	237	150	10,1

[GAF] Dimensions Class 300

Table D.3.5

DN (NPS)	FTF	D	b	Dk	d	n	H max	H min	Dt	i (kg)
	↕ (mm)									
15 (1/2)	140	95	14,7	66,7	15,9	4	170	158	100	4,1
20 (3/4)	152	115	16,3	82,6	19	4	181	165	100	5,8
25 (1)	165	125	17,9	88,9	19	4	203	183	120	9,4
32 (1 1/4)	178	135	19,5	98,4	19	4	267	237	150	13,7
40 (1 1/2)	190	155	21,1	114,3	22,2	4	270	237	150	14,7

[GAF] Dimensions Class 600

Table D.3.6

DN (NPS)	FTF	D	b	Dk	d	n	H max	H min	Dt	i (kg)
	↕ (mm)									
15 (1/2)	165	95	21,3	66,7	15,9	4	170	158	100	4,9
20 (3/4)	190	115	22,9	82,6	19	4	181	165	100	6,6
25 (1)	216	125	24,5	88,9	19	4	203	183	120	8,8
32 (1 1/4)	229	135	27,7	98,4	19	4	267	237	150	12,9
40 (1 1/2)	241	155	29,3	114,3	22,2	4	270	237	150	15,5

[GAF] Dimensions Class 1500

Table D.3.7

DN (NPS)	FTF	D	b	Dk	d	n	H max	H min	Dt	i (kg)
	↕ (mm)									
15 (1/2)	216	120	29,3	82,6	22,2	4	176	158	100	7
20 (3/4)	229	130	32,4	88,9	22,2	4	203	183	120	10
25 (1)	254	150	35,6	101,6	25,4	4	263	233	150	16
32 (1 1/4)	279	160	35,6	111,1	25,4	4	267	237	150	17,5
40 (1 1/2)	305	180	38,8	123,8	28,5	4	300	258	150	24

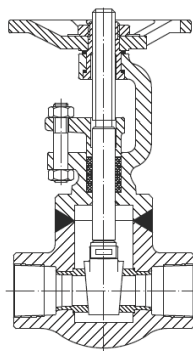
Range of application

Table D.3.8

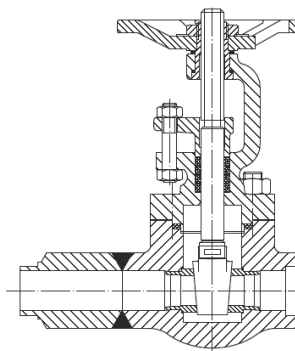
Group Material (Code)	Materials	Class	Pressure (bar)/temperature (°C) ratings according to B16.34 and API 602 (Class 800)																		
			-29 ÷ 38	50	100	150	200	250	300	325	350	375	400	425	450	475	500	538	550	575	600
1.1 (12,14)	A 105 A 350 LF2	150	20	19	18	16	14	12	10	9	8	7	7	6	5	4	3	1			
		300	51	50	47	45	44	42	40	39	38	36	35	29	23	17	12	6			
		600	102	100	93	90	88	84	80	77	75	73	69	58	46	35	24	12			
		800	136	134	124	120	117	112	106	103	100	97	93	77	61	47	31	16			
		1500	255	251	233	225	219	210	199	194	188	182	174	144	115	87	59	30			
1.9 (22)	A 182 F11	150	20	20	18	16	14	12	10	9	8	7	7	6	5	4	3	1	1(a)	1(a)	1(a)
		300	52	52	51	50	48	46	43	41	40	39	37	35	34	32	26	15	13	9	6
		600	103	103	103	100	96	93	86	83	80	78	73	70	68	63	52	30	25	18	12
		800	138	138	137	133	128	124	114	110	107	104	98	93	90	85	69	40	34	24	16
		1500	259	259	257	249	240	232	214	207	201	194	183	175	169	158	129	75	64	44	31
1.10 (24)	A 182 F22	150	20	20	18	16	14	12	10	9	8	7	7	6	5	4	3	1	1(a)	1(a)	1(a)
		300	52	52	52	50	49	46	43	41	40	39	37	35	34	32	28	18	17	11	7
		600	103	103	103	100	97	93	86	83	80	78	73	70	68	63	57	37	31	21	14
		800	138	138	137	134	130	124	114	110	107	104	98	93	90	85	75	49	42	28	18
		1500	259	259	258	251	243	232	214	207	201	194	183	175	169	158	141	92	78	53	34
1.13 (26)	A 182 F5a	150	20	20	18	16	14	12	10	9	8	7	7	6	5	4	3	1	1(a)	1(a)	1(a)
		300	52	52	52	50	49	46	43	41	40	39	37	35	34	28	21	14	12	9	6
		600	103	103	103	100	97	93	86	83	80	78	73	70	68	56	43	27	24	18	13
		800	138	138	137	134	130	124	114	110	107	104	98	93	90	74	57	37	32	22	17
		1500	259	259	258	251	243	232	214	207	201	194	183	175	169	139	107	69	60	44	32
1.15 (28)	A 182 F91	150	20	20	18	16	14	12	10	9	8	7	7	6	5	4	3	1	1(a)	1(a)	1(a)
		300	52	52	52	50	49	46	43	41	40	39	37	35	34	32	28	25	25	24	20
		600	103	103	103	100	97	93	86	83	80	78	73	70	68	63	57	50	50	48	39
		800	138	138	137	134	130	124	114	110	107	104	98	93	90	85	75	67	67	64	52
		1500	259	259	258	251	243	232	214	207	201	194	183	175	169	158	141	126	125	120	98
2.1 (40)	A 182 F304	150	19	18	16	14	13	12	10	9	8	7	7	6	5	4	3	1	1(a)	1(a)	1(a)
		300	50	48	41	37	35	33	31	30	30	29	28	28	27	27	27	24	24	21	17
		600	99	96	82	74	69	65	62	60	59	58	57	56	55	54	53	49	47	42	34
		800	132	128	109	99	92	87	82	81	79	77	76	75	73	72	71	65	63	56	45
		1500	248	239	204	185	172	162	155	151	148	145	142	140	137	135	132	122	118	104	84
2.2 (42)	A 182 F316	150	19	18	16	15	14	12	10	9	8	7	7	6	5	4	3	1	1(a)	1(a)	1(a)
		300	50	48	42	39	36	33	32	31	30	30	29	29	29	29	28	25	25	24	20
		600	99	96	84	77	71	67	63	62	61	60	59	58	58	57	57	50	50	48	40
		800	132	128	113	103	95	89	84	82	81	80	79	78	77	76	75	67	67	64	53
		1500	248	241	211	193	178	170	158	154	152	149	147	146	144	143	141	126	125	120	100
2.4 (44)	A 182 F321	150	19	19	17	16	14	12	10	9	8	7	7	6	5	4	3	1	1(a)	1(a)	1(a)
		300	50	49	44	41	38	36	34	33	33	32	32	31	31	31	28	25	25	24	20
		600	99	97	89	82	77	72	68	67	65	64	63	62	62	61	57	50	50	48	41
		800	132	130	118	109	102	96	91	89	87	85	84	83	82	81	75	67	67	64	54
		1500	248	243	221	205	192	180	171	167	163	160	158	156	154	153	141	126	125	120	101
2.5 (48)	A 182 F347	150	19	19	17	16	14	12	10	9	8	7	7	6	5	4	3	1	1(a)	1(a)	1(a)
		300	50	49	45	43	40	38	36	35	35	34	34	34	34	32	28	25	25	24	22
		600	99	98	91	85	80	76	72	71	70	68	68	67	67	63	57	50	50	48	43
		800	132	130	121	113	107	101	96	94	93	91	90	90	89	85	75	67	67	64	57
		1500	248	244	227	212	200	189	180	177	174	171	170	168	167	158	141	126	125	120	107

(a) Flangend end valve ratings terminate at 538 °C

Optional execution



Gate valve with welded bonnet



Gate valve with extended body