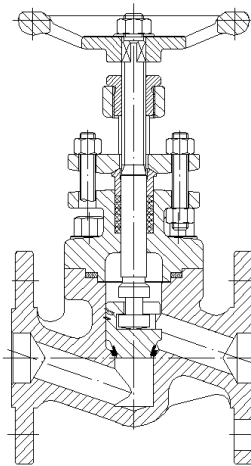
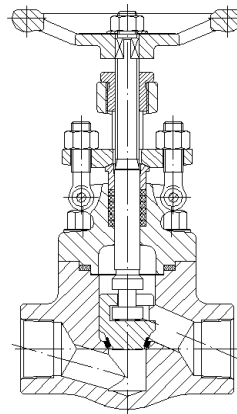


Class: 150lbs / 300lbs / 600lbs
Design acc. : API 602
Flanged ends : ASME B16.5(RF)
Face to face : ASME B16.10
Test and inspection : API 598
Body : A105N / F316
TA-Luft packing
TA-Luft gasket

**FIG : 160****Page 1**

Class: 800lbs
Design acc. : API 602
Socket-welding ends : ASME B16.11
NPT ends : ASME B1.20.1
Test and inspection : API 598
Body : A105N / F316
TA-Luft packing
TA-Luft gasket

**FIG : 161****Page 2**

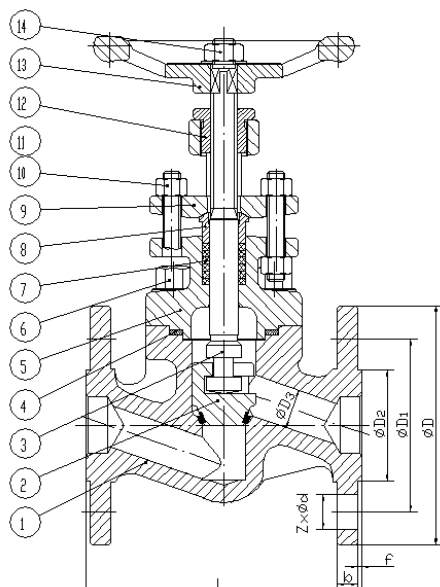


FIG.	Class	Material	Range
141.160	150	A105N	1/2"-2"
142.160	300	A105N	1/2"-2"
144.160	600	A105N	1/2"-2"
231.160	150	F316	1/2"-2"
232.160	300	F316	1/2"-2"
234.160	600	F316	1/2"-2"

Design acc. : API 602
Flanged ends : ASME B16.5(RF)
Face to face : ASME B16.10
Test and inspection : API 598
TA-Luft packing
TA-Luft gasket

Material List

NO.	Part	Material	
		FIG.141.160 / 142.160 / 144.160	FIG.231.160 /232.160/234.160
1	Body	ASTM A105N+STL	ASTM A182 F316+STL
2	Disc	ASTM A182 F6a	ASTM A182 F316
3	Stem	ASTM A276 410	ASTM A276 316
4	Bonnet gasket	SS304+Graphite	SS316+Graphite
5	Bonnet	ASTM A105N	ASTM A182 F316
6	Body bolt	ASTM A193 B7M	ASTM A193 B8M
7	Packing	Graphite	Graphite
8	Gland	ASTM A276 410	ASTM A276 316
9	Gland flange	ASTM A105N	ASTM A182 F304
10	Bolt	ASTM A193 B7M	ASTM A193 B8M
11	Nut	ASTM A194 2HM	ASTM A194 8M
12	Stem nut	ASTM A276 410	ASTM A276 410
13	Hand wheel	ASTM A47 32510	ASTM A47 32510
14	Lock nut	ASTM A108 1020	ASTM A108 1020

Dimension List

Class	Size	L	D	D1	D2	D3	b	f	zxΦd
150LB	1/2"	108	90	60.3	34.9	12	8	2	4x16
	3/4"	117	100	69.9	42.9	17	8.9	2	4x16
	1"	127	110	79.4	50.8	22	9.6	2	4x16
	1 1/2"	165	125	98.4	73	35	12.7	2	4x16
	2"	203	150	120.7	92.1	44	14.3	2	4x19
300LB	1/2"	152	95	66.7	34.9	12	12.7	2	4x16
	3/4"	178	115	82.6	42.9	17	14.3	2	4x19
	1"	203	125	88.9	50.8	22	15.9	2	4x19
	1 1/2"	229	155	114.3	73	35	19.1	2	4x22
	2"	267	165	127	92.1	44	20.7	2	8x19
600LB	1/2"	165	95	66.7	34.9	12	14.3	7	4x16
	3/4"	190	115	82.6	42.9	17	15.9	7	4x19
	1"	216	125	88.9	50.8	22	17.5	7	4x19
	1 1/2"	241	155	114.3	73	35	22.3	7	4x22
	2"	292	165	127	92.1	44	25.4	7	8x19

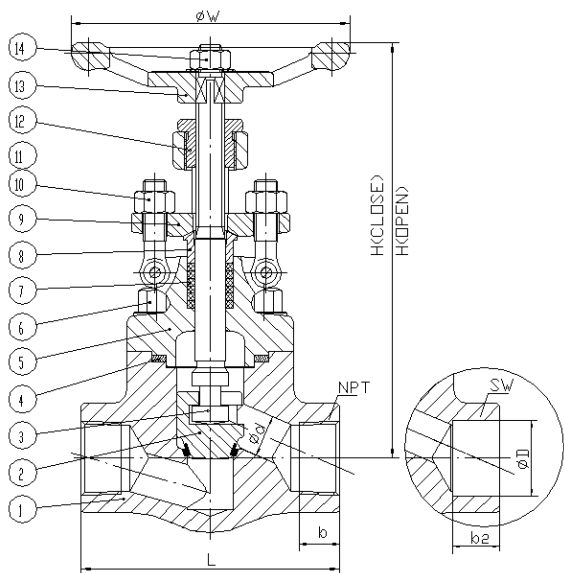


FIG.	Class	Material	Range
145.161-SW	800	A105N	1/2"-2"
235.161-SW	800	F316	1/2"-2"
135.161-T	800	A105N	1/2"-2"
235.161-T	800	F316	1/2"-2"

Design acc. : API 602
SW ends : ASME B16.11
NPT ends: ASME B1.20.1
Test and inspection : API 598
TA-Luft packing
TA-Luft gasket

Material List

NO.	Part	Material	
		FIG.145.161-SW / 145.161-T	FIG.235.161-SW/235.161-T
1	Body	ASTM A105N+STL	ASTM A182 F316L+STL
2	Disc	ASTM A182 F6a	ASTM A182 F316
3	Stem	ASTM A276 410	ASTM A276 316
4	Bonnet gasket	SS304+Graphite	SS316+Graphite
5	Bonnet	ASTM A105N	ASTM A182 F316
6	Body bolt	ASTM A193 B7	ASTM A193 B8M
7	Packing	Graphite	Graphite
8	Gland	ASTM A276 410	ASTM A276 316
9	Gland flange	ASTM A105N	ASTM A182 F304
10	Bolt	ASTM A193 B7	ASTM A193 B8M
11	Nut	ASTM A194 2H	ASTM A194 8M
12	Stem nut	ASTM A276 410	ASTM A276 410
13	Hand wheel	ASTM A47 32510	ASTM A47 32510
14	Lock nut	ASTM A108 1020	ASTM A108 1020

Dimension List

Class	Size	L	H(OPEN)	H(CLOSE)	d	NPT	b	D	b2	W
800LB	1/2"	92	163	153	12	1/2	13.2	21.8	10	100
	3/4"	111	195	179	17	3/4	15	27.1	13	120
	1"	120	238	218	22	1	17	33.9	13	160
	1 1/2"	172	290	266	35	1 1/2	20	48.8	13	180
	2"	319	150	293	44	2	24	61.2	16	200