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SNY VALVE (YANCHENG) CO., LTD.

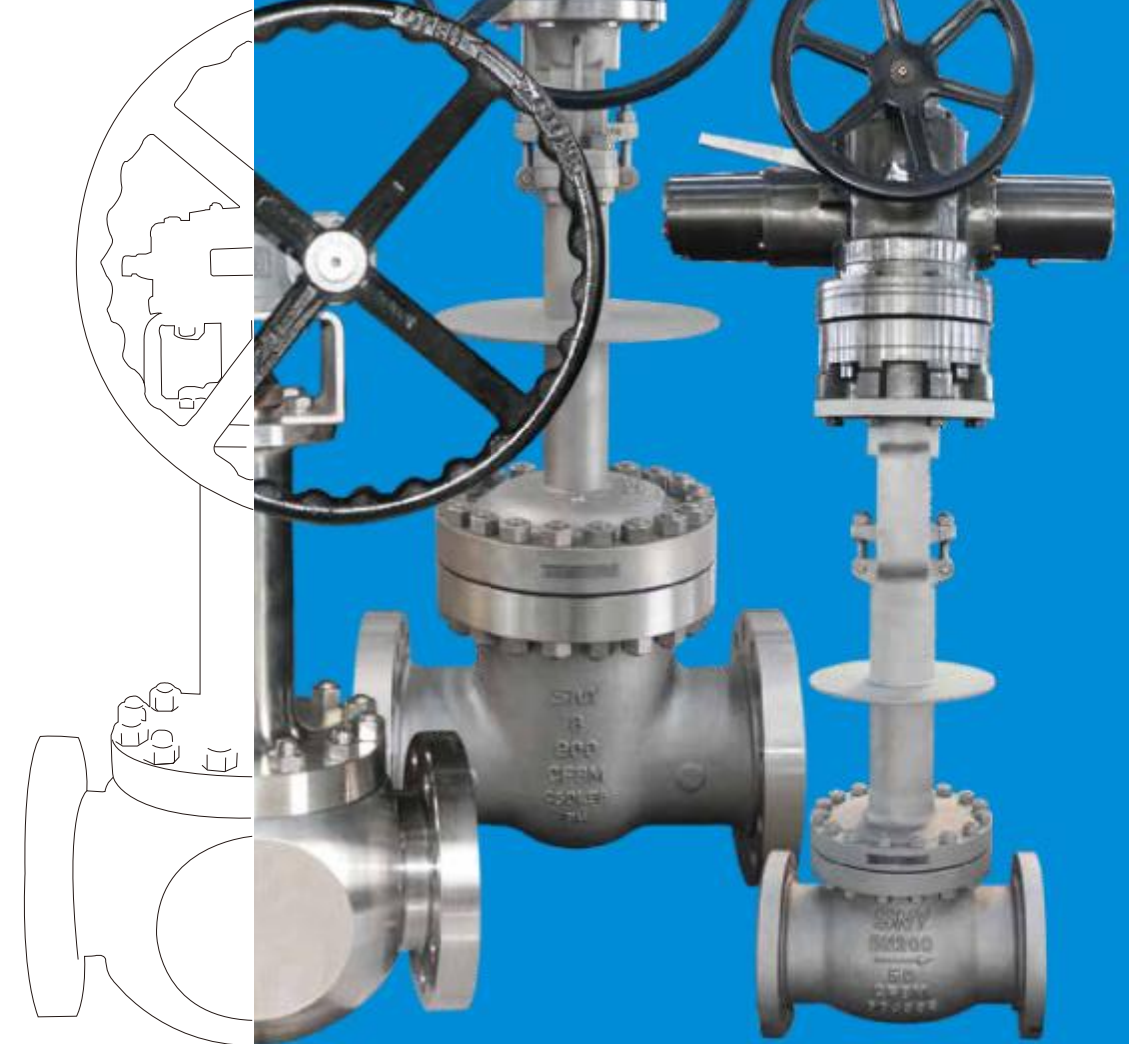
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**CRYOGENIC
VALVE**

**Gate
Globe
Check
& Ball**



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SNY VALVE
LEADING TECHNOLOGY SOLUTION
FOR ENGINEERING VALVE

SNY VALVE (YANCHENG) CO., LTD.
Rev. No.: E1-COV-2020

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COMPANY PROFILE

SNY Valve (Yancheng) Co., Ltd. is committed to providing global customers with reliable and complete range of solution for engineering valve. Established in 2003 with CNY 150 million registered capital, SNY VALVE is a national high-tech comprehensive enterprise which integrating valve R&D manufacturing and sales. SNY VALVE headquarters is located in Yancheng city with two manufacturing workshops. We have sales centers in Yancheng, Suzhou and Beijing. SNY VALVE covers an area of over 100,000 sq. meters with more than 300 sets of production, test & inspection facilities. SNYVALVE has established long-term cooperative relations with many large enterprises at home and abroad, been approved by many end users and EPC companies, and products export to middle east, Europe, America, etc.

Main Products

SNY VALVE products are widely applied in oil, gas, petroleum refining, petrochemical, power, mining, metallurgy, LNG shipbuilding and other industries. Our product range are NPS 1/4~60 inch (DN6~DN1500), Class150~2500 (PN16~PN420). Our mainly products are gate valves, globe valves, check valves, ball valves, API6D valve, and we are actively developing special valves used for severe service such as cryogenic, ultra-high temperature and high corrosion. Products are designed according to standards of ANSI, ASTM, API, BS, JIS, DIN, GB, ISO, MSS, etc., and design temperature from -196 to 650 Deg.C. Material are available of carbon steel, stainless (including duplex and super duplex), and other alloys steel (low alloy, nickel-based alloy, Inconel, Monel, Hastelloy),etc.

Technical Strength

SNY VALVE has a first-class technology research and development team, and we have nearly 100 of all kinds of patents and copyrights. Company are capable of physical & chemical analysis, mechanical performance testing, NDT, impact test at ambient temperature and low temperature, hardness testing, metallographic analysis, coordinate measuring, valve torque testing, valve life testing, high-temperature & cryogenic testing, etc., products have been certified through fire safe, fugitive emission, TAT tests.



HEADQUARTERS

Established in 2003
Area: 34,000 ㎡
Located in Tinghu District,
Yancheng City.



THE SECOND FACTORY

Established in 2006
Area: 58,000 ㎡
Located in Yancheng E&T
development zone, Yancheng City.



SUZHOU BRANCH

Located in Suzhou Industrial Zone, Suzhou branch is the global sales & marketing center of SNY VALVE, which plays a comprehensive role in market promotion, sales, and set up distribution system.



BEIJING BRANCH

Located in Beijing International Business Center, Beijing branch is the domestic sales & marketing center of SNY VALVE, and plays a comprehensive role in market promotion, sales, and set up distribution system.

Environment, Health & Safety

Quality, health, safety and environment management have top priority in our growth plans and all our endeavors. SNY VALVE is committed to providing a safe, healthy and positive working environment for our employees and those under our care. SNY VALVE has established management policy and action guidelines regarding environmental issues. We view "harmony with nature" and "sustainable development" as integral to the pursuit of our business.

Social Responsibility

Constantly taking social responsibility, SNY VALVE has set up "SNY Scholarship" through cooperating with local university for aiding excellent students in straitened circumstance.

QUALIFICATION & CERTIFICATE

SNY VALVE is committed to provide the highest possible quality industrial valves at the most cost effective way to customers worldwide. We have been certified with ISO9001, ISO14001, OHSAS18001, CE/PED, API6D, API602, API600,ABS, CU-TR,TS,and obtained API607 /API 6Fa fire safe approvals.



QUALITY CONTROL

SNY VALVE has been certified with ISO 9001 & API Spec. Q1 for quality management system. SNY quality assurance and quality control capabilities are followed and implemented based on global standards. We have

- State-of-the-art Quality Control Test Center
- In-house Non-destructive Test Equipment & ASNT Certified Personnel
- Pressure Test Equipment
- Special Testing Equipment for Product Validation

Raw material quality is ensured by a stringent vendor qualification system. By NDT (Radiographic Test, Magnetic Particle Test, Penetrant Test & Ultrasonic Test), Positive Material Identification (PMI), Tensile Test, and Hardness Test to evaluate samples & small lot production, as well as surveillance audits and sample check to ensure the compliance as per customers' requirements.

Valves manufactured at SNY valves are 100% pressure-tested. The product design has been validated through various special testing as per applicable industry standards such as Fire Safe Test, Low Temperature Test, Cryogenic Test, Vacuum Test, Fugitive Emission Test, High Pressure Gas Test, Elevated Temperature Test and so on.



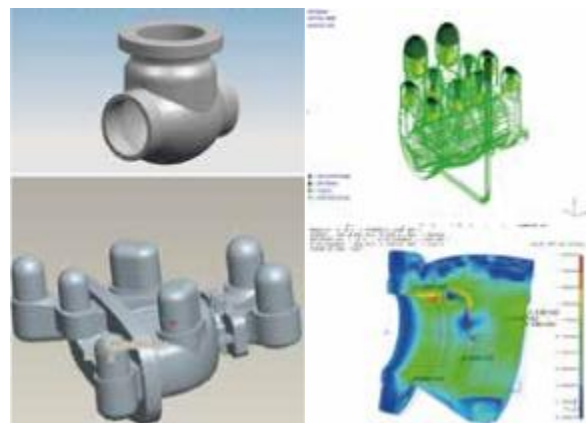


SNY VALVE always focus on technical innovation. It has one province technique center and one cryogenic ball valve engineering center. Technical team utilizes the most advanced computer technology to improve the existing products and develop the new products. Up to now, SNY VALVE possesses more than 90 patents.

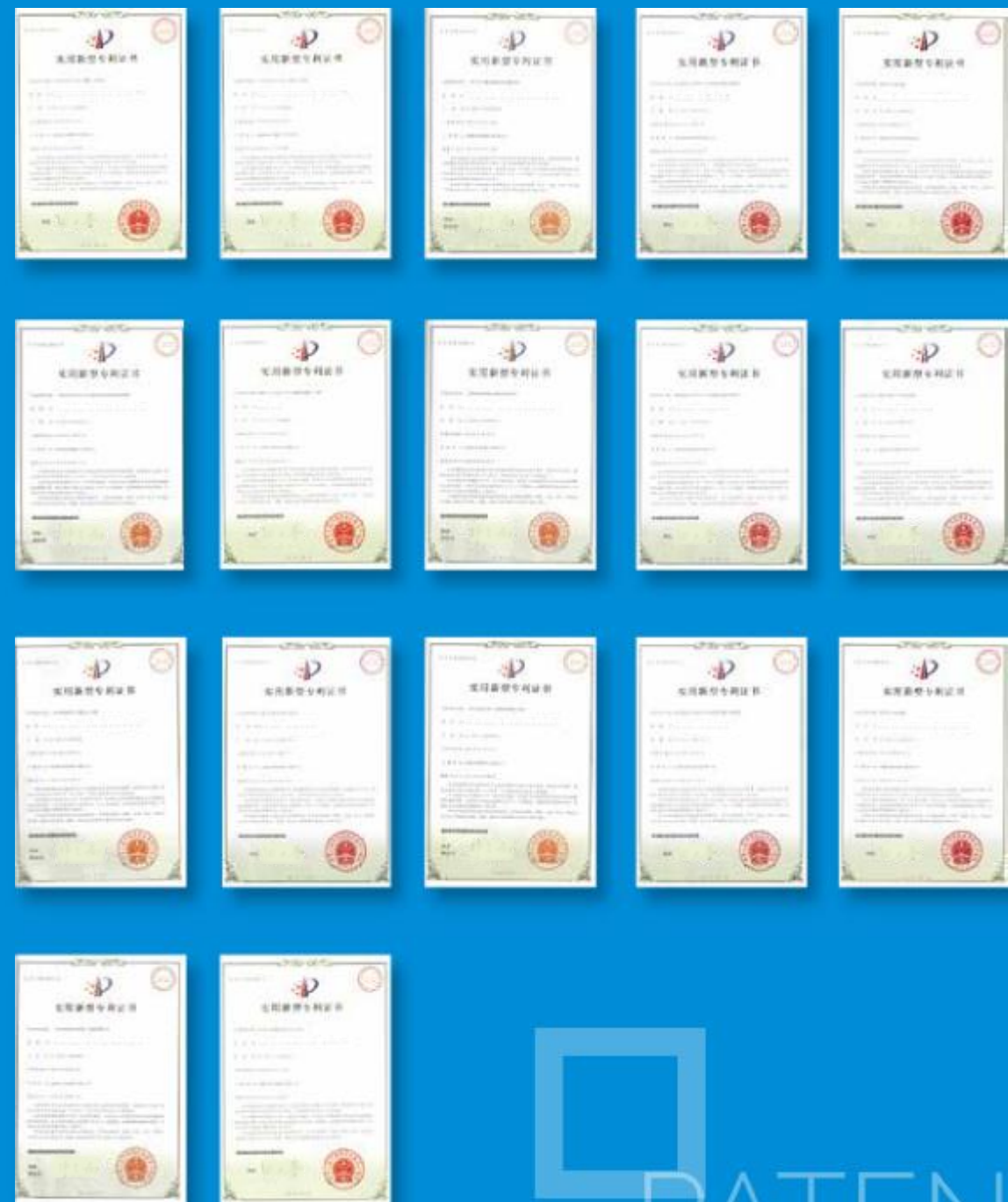
SNY VALVE design philosophy is to develop a safe and cost-efficient valve. Through the latest software of 3D, CAD & Solid works, engineer is available to fictitiously check and verify if the parts & valves can be assembled precisely before they are actually made, which can speed up the development process & saves the costs.

SNY VALVE technical personnel are always ready to offer on-line or on-site technical training and support for all of our customers.

TECHNICAL INNOVATION



TECHNOLOGY PATENT



PATENT



FACTORY MANAGEMENT & FACILITIES

SNY VALVE organically integrates the advanced manufacturing equipment and the staffs. By using the most advanced hardware and software, centralizing the production resources, increasing our efficiency and continuously improving the process control, we are able to meet or exceed the different requirement of customers. Company implement 6S management onsite to reduce waste and improve process control. Advanced management software such as K/3 (ERP) & OA (Collaborative Management Software) play an important role in SNY VALVE. Synchronized supervision & management are performed through the whole manufacturing process to improve productivity & efficiency. Our business philosophy is: stable & reliable quality, on-time delivery and reasonable price.

SNY VALVE have more than 300 sets(units) equipment, such as CNC machining Center, CNC lathes, CNC boring-milling machine, general lathes, large-scale vertical lathe, sphere grinders, plasma overlaying welding equipment and heat treatment equipment, etc. CNC machining Center is Japanese FANUC 0I-MD NC, and the three-way coupling is from Germany S+J/R+W, which realizes the automatic continuous milling of plane, groove, bevel, and a variety of linear processing, and ensure the accuracy of ball.



SNY VALVE realizes the casting quality is the most important to valve life, safety of personnel and environment, especially in the high temperature and high pressure applications. So our strict customers always audit the foundries at first from our approved suppliers before order execution.

SNY VALVE has established unique strategic supply chain management system. We have strategically foundries and one own foundry. They each have a full set of quality inspection facilities, such as spectrometer, NDT and PMI inspection, etc.

INTRODUCTION OF FOUNDRIES





INDUSTRY APPLICATIONS

- Oil & Gas Pipeline
- Refinery
- Petrochemical
- Power
- Chemical
- LNG & LPG
- Mining
- Metallurgy
- Aerospace
- Water Treatment
- Offshore Engineering



Figure Numbers

	Normal Size	Valve Type	Normal Pressure	End Connection	Operation	Special Requirement	Body Material	Trim	Special Material
Example:	A	B	C	D	E	F	G	H	I
	10	GAL	6	R	G	FN	CF8M	T10	NC

Explanation: NPS 10, Cast Steel Rising Stem Cryogenic Gate Valve , Class 600, RF Flanged End, Gearbox Operated, No Machining on Raised face, Body Material CF8M, Trim No.10, NACE Requirement

A Normal Size							C Normal Pressure					
1/4	NPS1/4	10 NPS10	D8	DN8	D250	DN250	0	Class125	-2.5	PN(DIN)2.5	-20	PN(ANSI)20
3/8	NPS3/8	12 NPS12	D10	DN10	D300	DN300	1	Class150	-6	PN(DIN)6	-50	PN(ANSI)50
1/2	NPS1/2	14 NPS14	D15	DN15	D350	DN350	3	Class300	-10	PN(DIN)10	-110	PN(ANSI)110
3/4	NPS3/4	16 NPS16	D20	DN20	D400	DN400	4	Class400	-16	PN(DIN)16	-150	PN(ANSI)150
1	NPS1	18 NPS18	D25	DN25	D450	DN450	6	Class600	-25	PN(DIN)25	-260	PN(ANSI)260
1 1/4	NPS1 1/4	20 NPS20	D32	DN32	D500	DN500	8	Class800	-40	PN(DIN)40	-420	PN(ANSI)420
1 1/2	NPS1 1/2	22 NPS22	D40	DN40	D550	DN550	9	Class900	-63	PN(DIN)63		
2	NPS2	24 NPS24	D50	DN50	D600	DN600	15	Class1500	-100	PN(DIN)100		
2 1/2	NPS2 1/2	26 NPS26	D65	DN65	D650	DN650	25	Class2500				
3	NPS3	28 NPS28	D80	DN80	D700	DN700						
4	NPS4	30 NPS30	D100	DN100	D750	DN750						
5	NPS5	32 NPS32	D125	DN125	D800	DN800						
6	NPS6	34 NPS34	D150	DN150	D850	DN850						
8	NPS8	36 NPS36	D200	DN200	D900	DN900						

Note: Reduced-bore valve is expressed as Nominal Size × Nominal Size, e.g.: 4 × 3.

D End Connection					E Operation			
R	RF	Flanged	B**	Butt-welding(** is the pipe nominal size or can be described as OD*Wall Thickness)				
J	RTJ	Flanged	F	FF	Flanged			
L	Lug		W	Wafer				

F Special Requirement				G Body Material			
B16.47B ASME B16.47B standard end flange				F304			
BW belleville spring at packing bolt shall be anti-loosening				F316			
CE valves exported to EU, and shall be CE marked				F304L			
CH closure member (gate/wedge/disc/ball)				F316L			
FN no machining on raised face				CF8			
CW** sprocket , ** is the dimension from the stem center or gearbox input shaft to the bottom of the chain link				CF8M			
LN** non-standard face to face/end to end dimension , ** is the dimension data				CF3			
LS valve with lock				CF3M			
SH Shell requirement							

H Trim Material				I Special Material			
Gate , check&globe valves are in accordance with API 600				B8M(2)/8M			
Ball valve materis are per following :				B8M/8M			
Ball/Seat Ring	Seat Insert/Ball-Seat Ring Surface	Stem	Seals	B8M/8MA			
3 F304	1 PTFE	3 F304	8 Lip Seal	BP			
4 F316	2 PTFE + 15 Glass Fiber	4 F316	Y Braided + Flexible Graphite	NC			
5 F304L	3 PTFE + 25% Carbon Fiber	5 F304L	Z Flexible Graphite				
6 F316L	6 PEEK	6 F316L					
8 INCONEL 625	8 PCTFE	8 17-4PH					
9 INCOLOY 825							

Other materials are available upon request.



PART 1

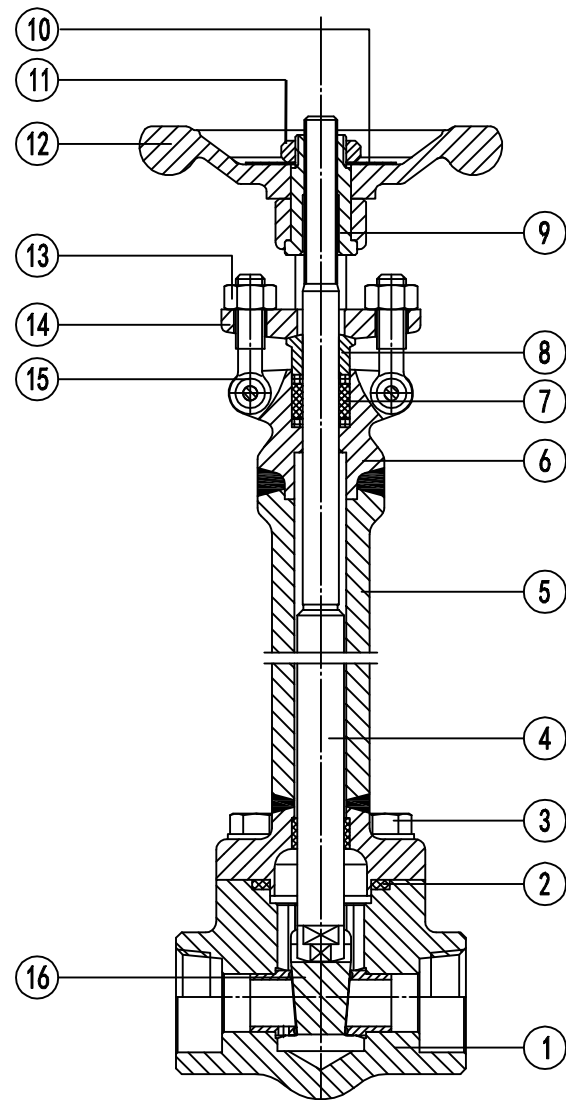


Design Standard	
Basic Design	API 600/BS 6364/SPE 77 200
Face to Face/End to End	ASME B16.10
Flange End	ASME B16.5/ASME B16.47
Buttwelding End	ASME B16.25
Pressure-temperature Rating	ASME B16.34
Inspection and Test	API 598

Cryogenic Gate Valve

- 1. Extended bonnet to minimize the heat conduction & transfer from the cold zone and keep the stem packing free of cold formation for providing a secure seal.
- 2. Drip plate fitting to minimize ice accumulation on the extension and prevent possible damage to insulation.
- 3. Fugitive Emission packing design.
- 4. Hard-faced seat/wedge for preventing wear and improving durability.
- 5. Cavity pressure relief design to prevent excessive pressure rise in cavity.
- 6. Low torque design.

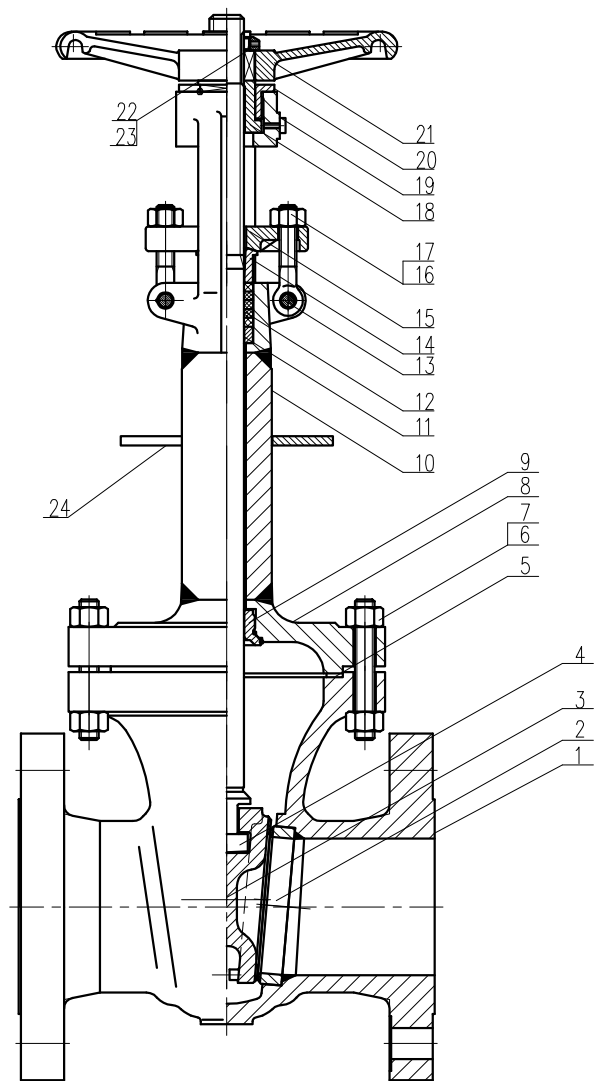
General Assembly Drawing & Material of Construction–Forged Steel



Part No.	Part Name	Materials
1	Body	ASTM A182 F316
2	Gasket	SS316+Graphite
3	Bolt	ASTM A320 B8M
4	Stem	ASTM A182 F316
5	Extended Bonnet	ASTM A182 F316
6	Bonnet	ASTM A182 F316
7	Packing	Graphite
8	Gland	ASTM A276 316
9	Stem Nut	ASTM A276 410
10	Nameplate	Aluminium
11	Hand Wheel Nut	Stainless Steel
12	Hand Wheel	Carbon Steel
13	Nut	ASTM A194 8
14	Gland Flange	ASTM A182 F316
15	Eye Bolt	ASTM A320 B8
16	Gate	ASTM A182 F316+HF*

* HF: Hard-faced with stellite 6 or equivalent.

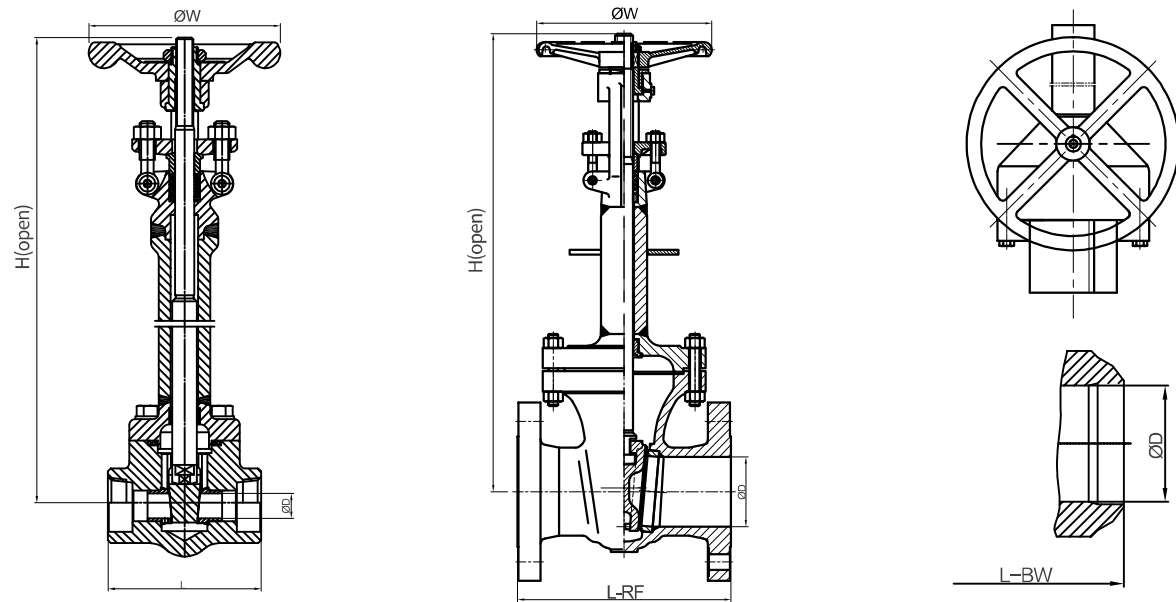
General Assembly Drawing & Material of Construction–Cast Steel



Part No.	Part Name	Materials
1	Body	ASTM A351 CF8M
2	Seat	ASTM A182 F316+HF*
3	Wedge	ASTM A351 CF8M+HF*
4	Stem	ASTM A182 F316
5	Gasket	SS316+Graphite
6	Bonnet Bolt	ASTM A320 B8 (CL.2)
7	Bonnet Bolt Nut	ASTM A194 8
8	Bonnet	ASTM A351 CF8M
9	Backseat Bushing	ASTM A276 Type 316
10	Extended Bonnet	ASTM A351 CF8M
11	Packing Spacer	ASTM A276 Type 316
12	Packing	Graphite
13	Eye Bolt Pin	ASTM A276 Type 304
14	Gland	ASTM A276 Type 316
15	Gland Flange	ASTM A351 CF8M
16	Eye Bolt	ASTM A320 B8 (CL.2)
17	Eye Bolt Nut	ASTM A194 8
18	Stem Nut	ASTM A439 Gr. D2
19	Grease Fitting	Galvanized Steel
20	Stem Bushing Lock Nut	ASTM A276 Type 304
21	Handwheel	Cast Iron
22	Handwheel Nut	ASTM A276 Type 304
23	Screw	ASTM A276 Type 304
24	Drip Plate	ASTM A240 Type 316

* HF: Hard-faced with stellite 6 or equivalent.

Dimension & Weight

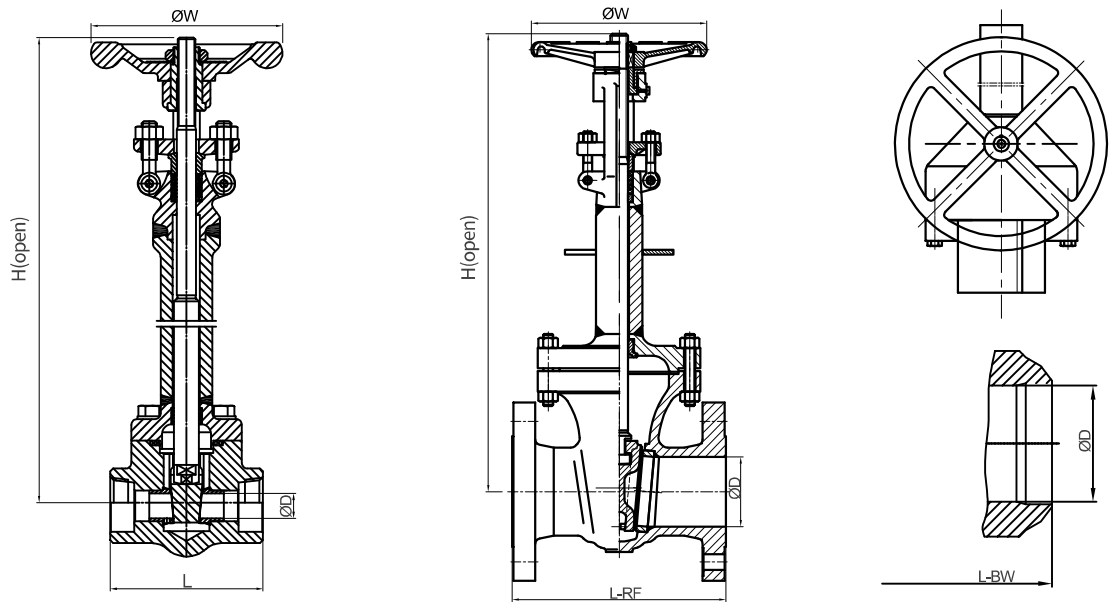


CLASS 150

Size		L-RF		L-BW		D		H		W		Approx Weight (RF)	
NPS	DN	mm	in	mm	in	mm	in	mm	in	mm	in	kg	lb
3/4	20	117	4.62	117	4.62	19	0.75	532	20.94	160	6.30	16	35
1	25	127	5.00	127	5.00	26	1.00	593	23.35	225	8.86	22	49
2	50	178	7.00	216	8.50	52	2.05	642	25.28	225	8.86	29	64
3	80	203	8.00	283	11.12	76	2.99	763	30.04	225	8.86	42	93
4	100	229	9.00	305	12.00	102	4.02	852	30.04	275	10.83	50	110
6	150	267	10.50	403	15.88	152	5.98	1034	33.54	325	12.80	96	212
8	200	292	11.50	419	16.50	203	7.99	1226	40.71	380	14.96	148	326
10	250	330	13.00	457	18.00	254	10.00	1415	55.71	380	14.96	229	505
12	300	356	14.00	502	19.75	305	12.01	1645	64.76	400	15.75	335	739
14	350	762	30.00	572	22.50	335	13.19	1755	69.09	700	27.56	492	1085
16	400	406	16.00	610	24.00	387	15.24	1977	77.83	500	19.69	676	1490
18	450	432	17.00	660	26.00	432	17.01	2150	84.65	500	19.69	810	1786
20	500	457	18.00	711	28.00	489	19.25	2380	93.70	800	31.50	1018	2244
24	600	508	20.00	813	32.00	591	23.25	2740	107.87	800	31.50	1550	3417
30	750	610	24.00	914	36.00	743	29.25	3720	146.46	#500	23.62	2320	5115
36	900	711	28.00	1016	40.00	895	35.25	3920	154.33	#810	31.89	4005	8830

#Gearbox Operation

Dimension & Weight

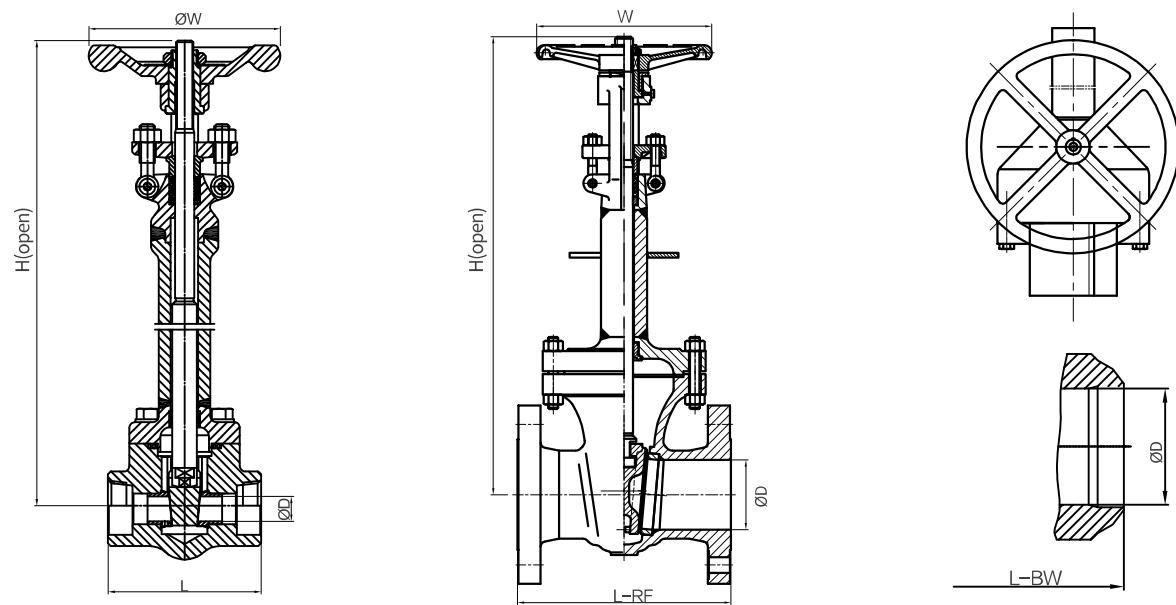


CLASS 300

Size		L-RF		L-BW		D		H		W		Approx Weight (RF)	
NPS	DN	mm	in	mm	in	mm	in	mm	in	mm	in	kg	lb
3/4	20	152	6.00	152	6.00	19	0.75	528	20.79	160	6.30	19	42
1 1/2	40	191	7.50	191	7.50	40	1.57	638	25.12	225	8.86	29	64
2	50	216	8.50	216	8.50	52	2.05	639	25.16	225	8.86	34	75
3	80	282	11.12	282	11.12	76	2.99	797	31.38	225	8.86	44	97
4	100	305	12.00	305	12.00	102	4.02	822	32.36	275	10.83	66	146
6	150	403	15.88	403	15.88	152	5.98	1081	42.56	380	14.96	126	278
8	200	419	16.50	419	16.50	203	7.99	1305	51.38	380	14.96	191	421
10	250	457	18.00	457	18.00	254	10.00	1522	59.92	500	19.69	380	838
12	300	502	19.75	502	19.75	305	12.01	1790	70.47	500	19.69	566	1248
14	350	762	30.00	762	30.00	337	13.25	1910	75.20	700	27.56	880	1940
16	400	838	33.00	838	33.00	385	15.16	2135	84.06	700	27.56	1112	2452
18	450	914	36.00	914	36.00	432	17.01	2346	92.36	700	27.56	1442	3179
20	500	991	39.00	991	39.00	483	19.02	2531	99.65	700	27.56	1905	4200
24	600	1143	45.00	1143	45.00	584	22.99	2943	115.87	800	31.50	3002	6618
26	650	1245	49.00	1245	49.00	635	25.00	3169	124.76	800	31.50	3627	7996
28	700	1346	53.00	1346	53.00	686	27.01	3490	137.40	#610	24.02	4332	9550
30	750	1397	55.00	1397	55.00	737	29.02	3768	148.35	#610	24.02	4525	9976
32	800	1524	60.00	1524	60.00	787	30.98	4050	159.45	#810	31.89	5127	11303
36	900	1727	68.00	1727	68.00	889	35.00	4200	165.35	#810	31.89	6920	15256

#Gearbox Operation

Dimension & Weight

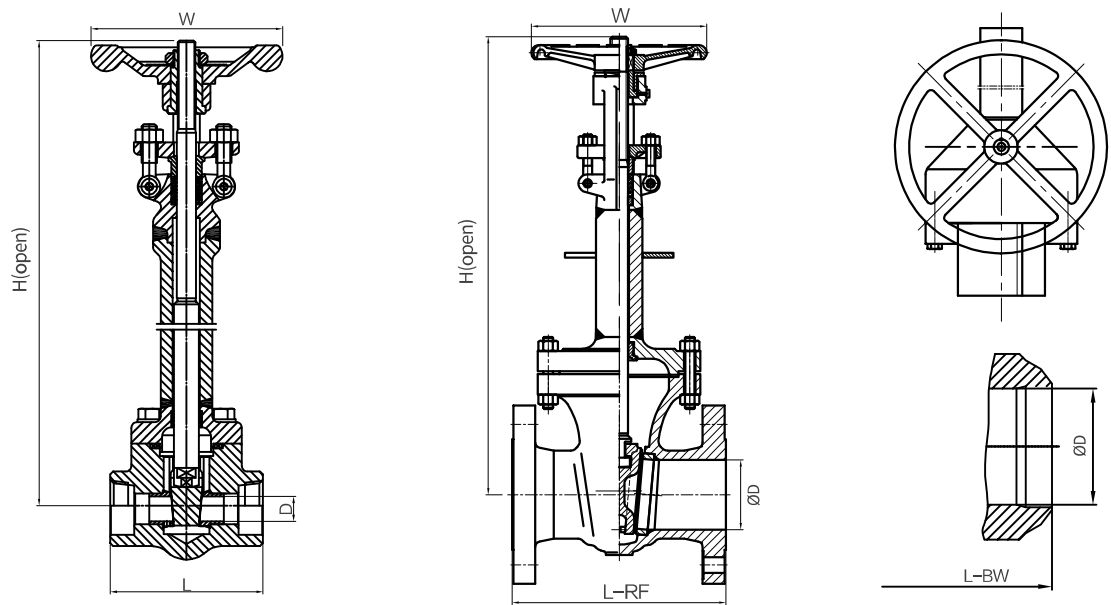


CLASS 600

Size		L-RF		L-BW		D		H		W		Approx Weight (RF)	
NPS	DN	mm	in	mm	in	mm	in	mm	in	mm	in	kg	lb
1	25	216	8.50	216	8.50	25	0.98	543	21.38	225	8.86	33	73
2	50	292	11.50	292	11.50	52	2.05	690	27.17	300	11.81	51	112
3	80	357	14.04	357	14.04	76	2.99	846	33.31	325	12.80	72	159
4	100	432	17.00	432	17.00	102	4.02	920	36.22	350	13.78	155	342
6	150	559	22.00	559	22.00	152	5.98	1160	45.67	450	17.72	330	728
8	200	660	26.00	660	26.00	203	7.99	1370	53.94	500	19.69	510	1124
10	250	787	31.00	787	31.00	248	9.76	1535	60.43	650	25.59	820	1808
12	300	838	33.00	838	33.00	298	11.73	1719	67.68	680	26.77	1110	2447
14	350	889	35.00	889	35.00	327	12.87	1922	75.67	700	27.56	1315	2899
16	400	991	39.00	991	39.00	375	14.76	2050	80.71	800	31.50	1992	4392
18	450	1092	43.00	1092	43.00	419	16.50	2203	86.73	800	31.50	2597	5725
20	500	1194	47.00	1194	47.00	464	18.27	2444	96.22	800	31.50	3186	7024
24	600	1397	55.00	1397	55.00	559	22.01	3400	133.86	900	35.43	4290	9458
26	650	1448	57.00	1448	57.00	605	23.82	3500	137.80	#1000	39.37	5680	12522
28	700	1549	61.00	1549	61.00	650	25.59	3600	141.73	#1000	39.37	7970	17571
30	370	1651	65.00	1651	65.00	700	27.56	3800	149.61	#1000	39.37	8702	19184

#Gearbox Operation

Dimension & Weight

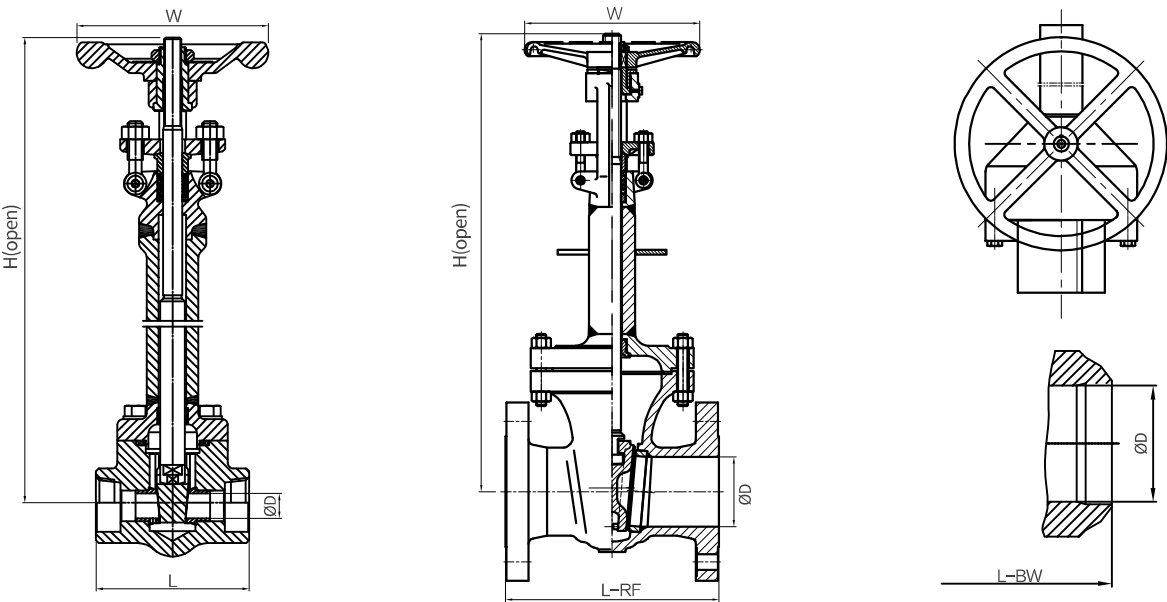


CLASS 900

Size		L-RF		L-BW		D		H		W		Approx Weight (RF)	
NPS	DN	mm	in	mm	in	mm	in	mm	in	mm	in	kg	lb
1/2	15	165	6.50	165	6.50	13	0.51	632	24.88	160	6.30	28	62
3/4	20	191	7.50	191	7.50	19	0.75	746	29.37	225	8.86	35	77
1	25	216	8.50	216	8.04	22	0.87	762	30.00	225	8.86	44	97
1 1/2	40	241	9.50	241	9.50	35	1.37	792	31.18	225	8.86	55	121
2	50	368	14.50	368	14.50	48	1.89	765	30.12	325	12.80	69	152
3	80	381	15.00	381	15.00	73	2.87	833	32.80	380	14.96	126	278
4	100	457	18.00	457	18.00	98	3.87	913	35.94	380	14.96	192	423
6	150	610	24.00	610	24.00	147	5.79	1201	47.28	500	19.69	371	818
8	200	737	29.00	737	29.00	191	7.52	1358	53.46	500	19.69	602	1327
10	250	787	31.00	787	31.00	238	9.37	1588	62.52	600	23.62	1225	2701
12	300	965	38.00	965	38.00	282	11.10	1744	68.66	700	27.56	1463	3225
14	350	1029	40.50	1029	40.50	311	12.24	1860	73.23	700	27.56	1878	4140
16	400	1130	44.50	1130	44.50	356	14.02	2174	85.59	#610	24.02	2405	5302

#Gearbox Operation

Dimension & Weight

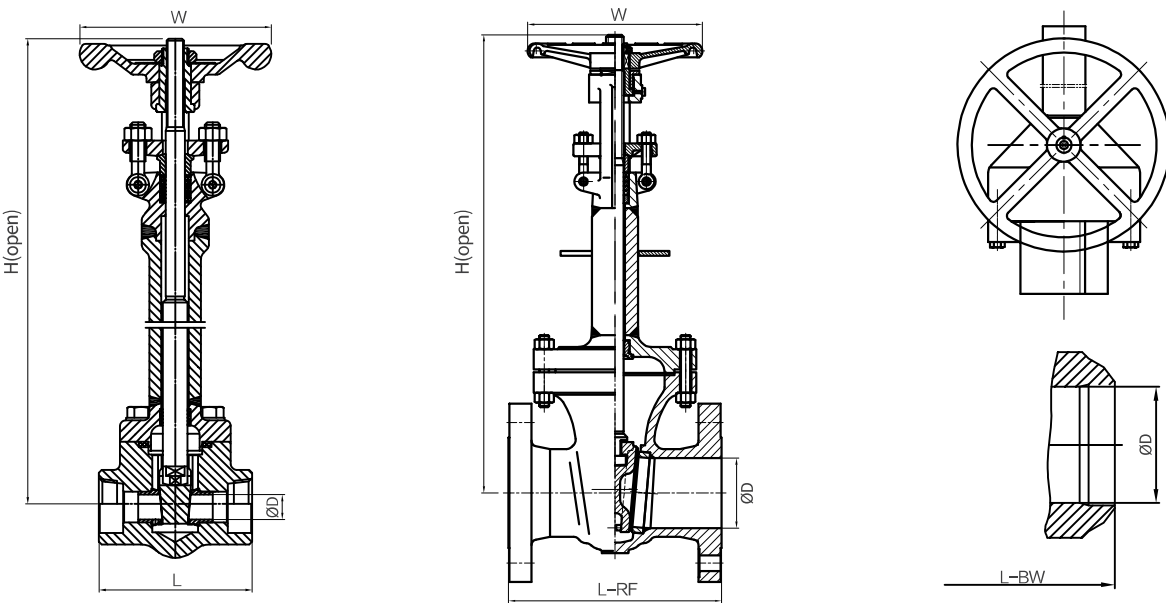


CLASS 1500

Size		L-RF		L-BW		D		H		W		Approx Weight (RF)	
NPS	DN	mm	in	mm	in	mm	in	mm	in	mm	in	kg	lb
2	50	368	14.50	368	14.50	48	1.89	835	32.87	325	12.80	89	2261
3	80	470	18.50	470	18.50	70	2.86	948	37.32	380	14.96	205	5207
4	100	546	21.50	546	21.50	92	3.622	1045	41.14	500	19.69	309	7849
6	150	705	27.75	705	27.75	137	5.40	1273	50.12	700	27.56	602	15291
8	200	832	32.75	832	32.75	178	7.01	1397	55.00	700	27.56	1192	30277
10	250	991	39.00	991	39.00	222	8.74	1690	66.54	#460	18.11	2177	55296
12	300	1130	44.50	1130	44.50	263	10.35	1855	73.03	#610	24.02	3305	83947

#Gearbox Operation

Dimension & Weight



CLASS 2500

Size		L-RF		L-BW		D		H		w		Approx Weight (RF)	
NPS	DN	mm	in	mm	in	mm	in	mm	in	mm	in	kg	lb
2	50	451	17.76	451	17.76	38	1.50	850	33.46	350	13.78	169	4293
3	80	578	22.76	578	22.76	57	2.25	872	34.33	450	17.72	319	8103
4	100	673	22.76	673	22.76	73	2.87	1120	44.09	500	19.69	637	16180
6	150	914	26.50	914	26.50	111	4.37	1700	66.93	610	24.02	2080	52832
8	200	1022	35.98	1022	35.98	146	5.75	1700	66.93	610	24.02	2100	53340





PART 2

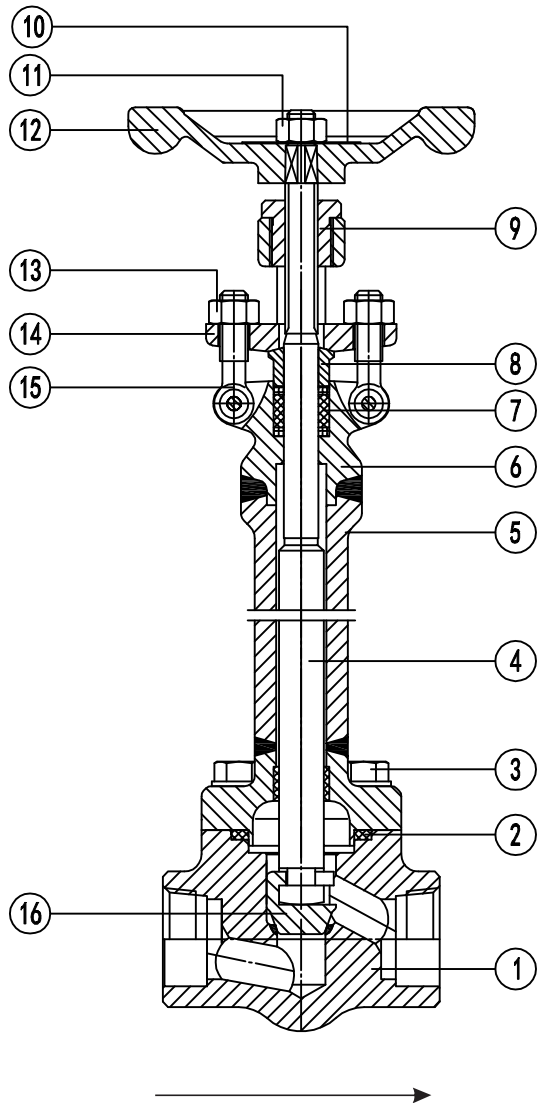


Design Standards	
Basic Design	API 602/BS 1873/BS 6364 SPE 77 200
Face to Face/End to End	ASME B16.10
Flange End	ASME B16.5
Buttwelding End	ASME B16.25
Pressure-Temperature Rating	ASME B16.34
Inspection and Test	API 598

Cryogenic Globe Valve

- 1. Extended bonnet to minimize the heat conduction & transfer from the cold zone and keep the stem packing free of cold formation for providing a secure seal.
- 2. Drip plate fitting to minimize ice accumulation on the extension and prevent possible damage to insulation.
- 3. Fugitive Emission packing design.
- 4. Hard-faced seat/disc for preventing wear and improving durability.
- 5. Cavity pressure relief design to prevent excessive pressure rise in cavity.
- 6. Low torque design.
- 7. Optional non-metallic material for sealing face.
- 8. Tapered disc design.

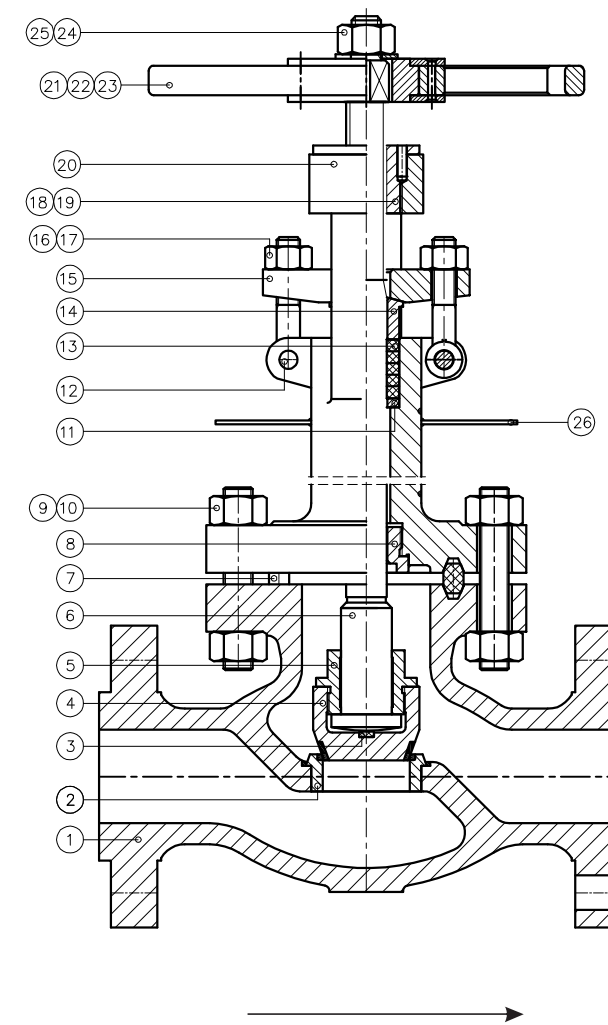
General Assembly Drawing & Material of Construction–Forged Steel



Part No.	Part Name	Materials
1	Body	ASTM A182 F316
2	Gasket	SS316+Graphite
3	Bolt	ASTM A320 B8M
4	Stem	ASTM A182 F316
5	Extended Bonnet	ASTM A182 F316
6	Bonnet	ASTM A182 F316
7	Packing	Graphite
8	Gland	ASTM A276 316
9	Yoke Nut	ASTM A276 410
10	Nameplate	Aluminium
11	Handwheel Nut	Stainless Steel
12	Handwheel	Carbon Steel
13	Gland Nut	ASTM A194 8
14	Gland Flange	ASTM A182 F316
15	Gland Eyebolt	ASTM A320 B8
16	Disc	ASTM A182 F316+HF*

* HF: Hard-faced with stellite 6 or equivalent.

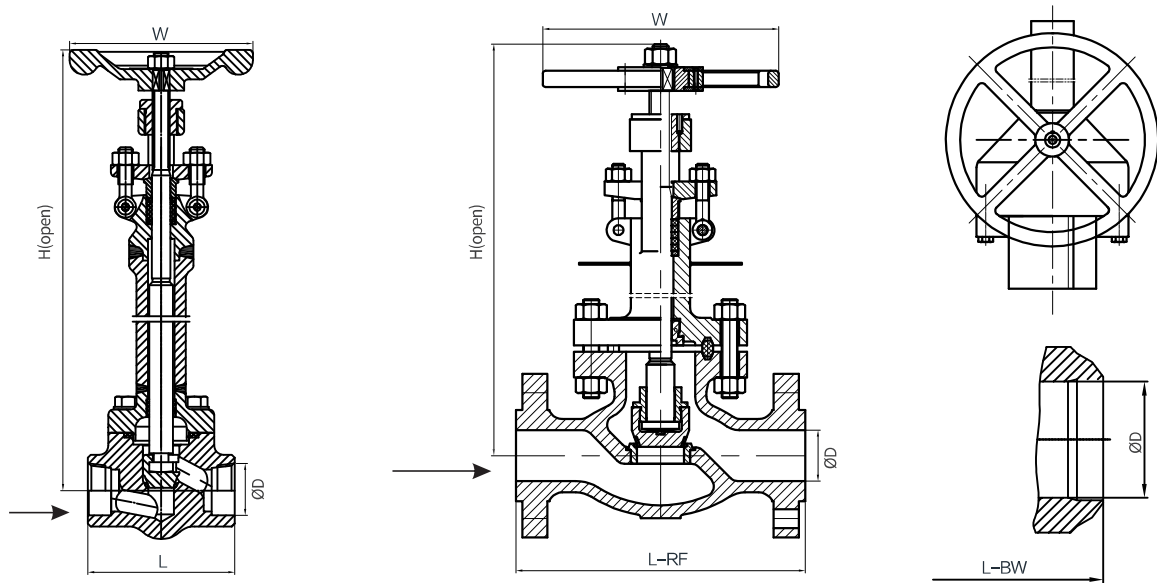
General Assembly Drawing & Material of Construction–Cast Steel



Part No.	Part Name	Materials
1	Body	ASTM A351 CF8M
2	Seat	ASTM A182 F316+HF*
3	Thrust Washer	ASTM A276 Type 316
4	Disc	ASTM A182 F316+HF*
5	Disc Nut	ASTM A276 Type 316
6	Stem	ASTM A182 F316
7	Ring Joint Gasket	ASTM A182 F316
8	Backseat Bushing	ASTM A276 Type 316
9	Bonnet Stud	ASTM A320 B8 (CL.2)
10	Bonnet Nut	ASTM A194 8
11	Packing Washer	ASTM A276 Type 316
12	Eye Bolt Pin	ASTM A276 Type 304
13	Packing	Graphite
14	Gland	ASTM A276 Type 316
15	Gland Flange	ASTM A351 CF8M
16	Eye Bolt	ASTM A320 B8 (CL.2)
17	Nut	ASTM A194 8
18	Stem Nut	A439-D2
19	Screw	ASTM A276 Type 304
20	Bonnet	ASTM A351 CF8M
21	Handwheel	Cast Iron
22	Impact Block	Carbon Steel
23	Retain Plate	Carbon Steel
24	Handwheel Washer	ASTM A276 Type 304
25	Handwheel Nut	ASTM A276 Type 304
26	Drip Plate	ASTM A240 Type 316

* HF: Hard-faced with stellite 6 or equivalent.

Dimension & Weight

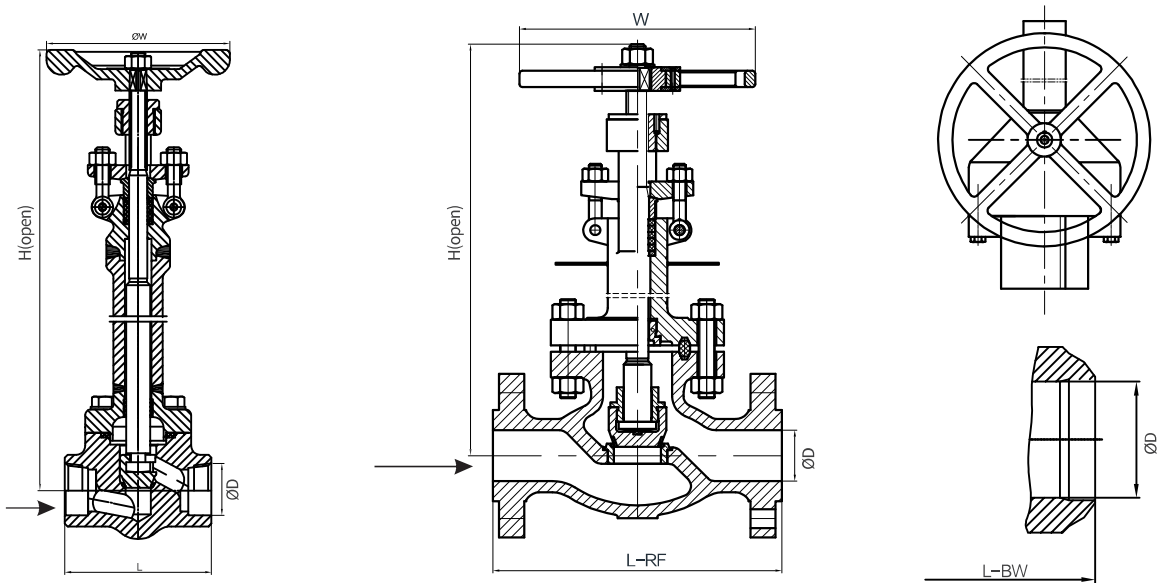


CLASS 150

Size		L-RF		L-BW		D		H		W		Approx Weight (RF)	
NPS	DN	mm	in	mm	in	mm	in	mm	in	mm	in	kg	lb
1/2	15	108	4.25	108	4.25	13	0.51	507	19.96	160	6.30	7	15
3/4	20	118	4.63	118	4.63	19	0.75	518	20.39	160	6.30	11	24
1	25	127	5.00	127	5.00	25	0.98	533	20.98	160	6.30	20	44
1 1/2	40	165	6.50	165	6.50	38	1.50	631	24.84	200	7.87	23	51
2	50	203	8.00	203	8.00	51	2.00	645	25.39	225	8.86	27	60
3	80	241	9.50	241	9.50	76	2.99	700	27.56	325	12.80	49	108
4	100	292	11.50	292	11.50	102	4.02	750	29.53	325	12.80	73	161
6	150	406	16.00	406	16.00	152	5.98	760	29.92	500	19.69	160	353
8	200	495	19.50	495	19.50	203	7.99	796	31.34	500	19.69	190	419
10	250	622	24.50	622	24.50	254	10.00	830	32.68	500	19.69	236	520
12	300	699	27.50	699	27.50	305	12.01	980	38.58	600	23.62	420	926
14	350	787	31.00	787	31.00	336	13.23	1000	39.37	600	23.62	561	1237
16	400	914	36.00	914	36.00	387	15.24	1005	39.57	600	23.62	772	1702
18	450	1041	41.00	1041	41.00	438	17.25	1270	50.00	#610	24.02	1716	3783
20	500	1168	46.00	1168	46.00	489	19.25	1389	54.69	#610	24.02	3151	6947
24	600	1295	51.00	1295	51.00	590	23.23	1625	63.98	#610	31.89	4630	10207

#Gearbox Operation

Dimension & Weight

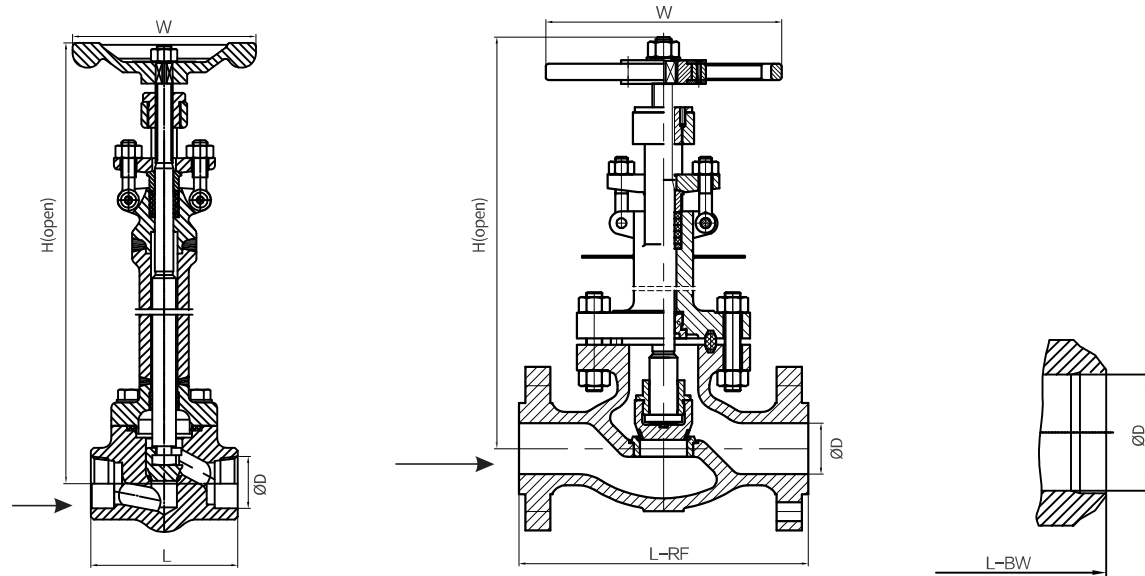


CLASS 300

Size		L-RF		L-BW		D		H		W		Approx Weight (RF)	
NPS	DN	mm	in	mm	in	mm	in	mm	in	mm	in	kg	lb
1/2	15	152	6.00	152	6.00	13	0.51	500	19.96	160	6.30	11	24
3/4	20	178	7.00	178	7.00	19	0.75	547	21.54	160	6.30	14	31
1	25	203	8.00	203	8.00	25	0.98	585	23.03	160	6.30	19	42
1 1/2	40	229	9.00	229	9.00	38	1.50	631	24.84	200	7.87	26	57
2	50	267	10.50	267	10.50	51	2.00	659	25.94	225	8.86	40	88
3	80	318	12.50	318	12.50	76	2.99	820	32.28	325	12.80	65	143
4	100	356	14.00	356	14.00	102	4.02	888	34.96	325	12.80	110	243
6	150	444	17.48	445	17.50	152	5.98	1050	41.34	500	19.69	174	384
8	200	559	22.00	559	22.00	203	7.99	1070	42.13	600	23.62	286	631
10	250	622	24.50	622	24.50	254	10.00	1140	44.88	700	27.56	388	855
12	300	711	28.00	711	28.00	305	12.01	1165	45.87	700	27.56	620	1367
14	350	787	31.00	787	31.00	336	13.23	1650	64.96	700	27.56	886	1953
16	400	914	36.00	914	36.00	387	15.24	1714	67.48	#610	24.02	1025	2260
18	450	878	34.57	878	34.57	432	17.00	1762	69.37	#610	24.02	2238	4934
20	500	1016	40.00	1016	40.00	483	19.00	1889	74.37	#810	31.89	3669	8089

#Gearbox Operation

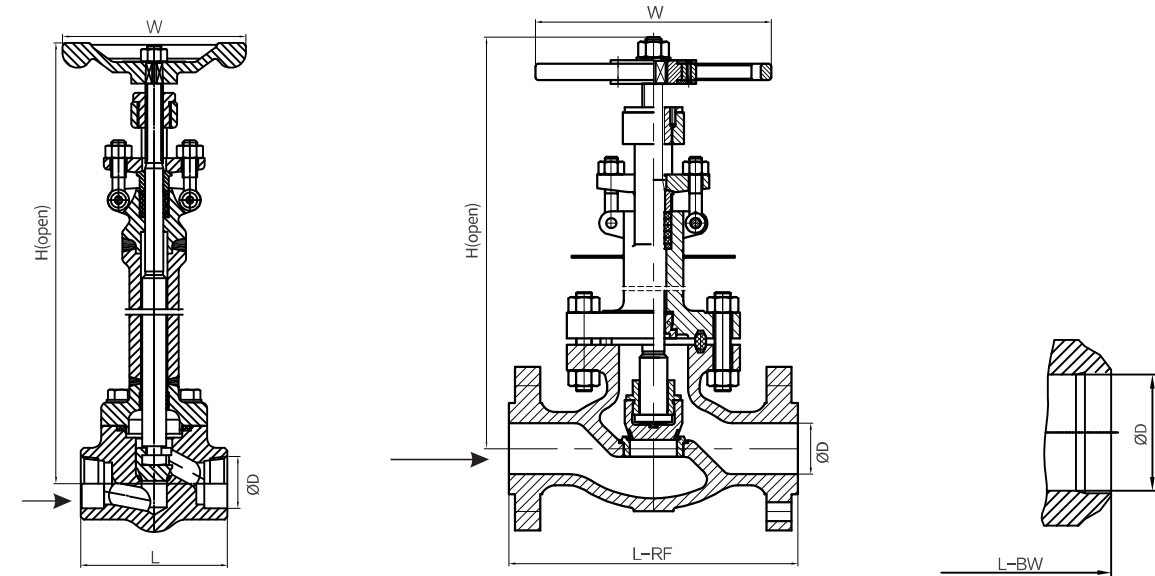
Dimension & Weight



CLASS 600

Size		L-RF		L-BW		D		H		W		Approx Weight (RF)	
NPS	DN	mm	in	mm	in	mm	in	mm	in	mm	in	kg	lb
1/2	15	165	6.50	165	6.50	13	0.51	521	20.51	160	6.30	14	31
3/4	20	191	7.50	191	7.50	19	0.75	566	22.28	160	6.30	19	42
1	25	216	8.50	216	8.50	25	0.98	566	22.28	200	7.87	22	49
1 1/2	40	241	9.50	241	9.50	38	1.50	631	24.84	200	7.87	27	60
2	50	292	11.50	292	11.50	51	2.00	700	27.56	225	8.86	50	110
3	80	356	14.00	356	14.00	76	2.99	850	33.46	325	12.80	79	174
4	100	432	17.00	432	17.00	102	4.02	900	35.43	500	19.69	190	419
6	150	559	22.00	559	22.00	152	5.98	1000	39.37	500	19.69	277	611
8	200	661	26.00	661	26.00	200	7.87	1130	44.49	500	19.69	526	1160
10	250	787	31.00	787	31.00	248	9.76	1170	46.06	800	31.50	862	1900
12	300	838	33.00	838	33.00	298	11.73	1225	48.23	800	31.50	905	1995

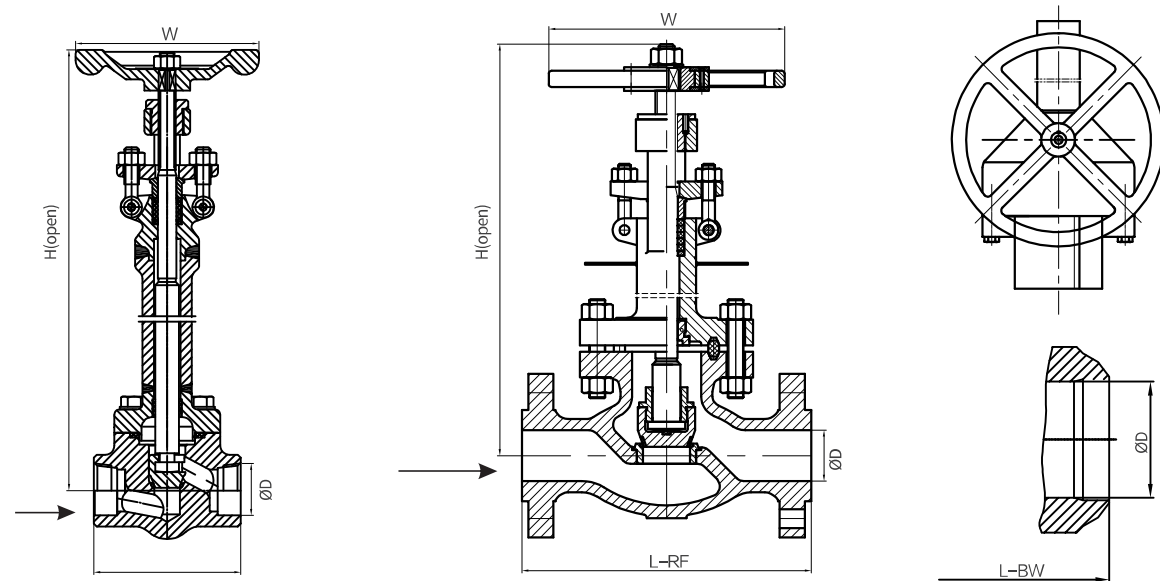
Dimension & Weight



CLASS 900

Size		L-RF		L-BW		D		H		W		Approx Weight (RF)	
NPS	DN	mm	in	mm	in	mm	in	mm	in	mm	in	kg	lb
2	50	368	14.50	368	14.50	48	1.89	877	34.53	325	12.80	85	187
3	80	381	15.00	381	15.00	73	2.87	969	38.15	325	12.80	157	346
4	100	457	18.00	457	18.00	98	3.86	986	38.82	400	15.75	272	600
6	150	610	24.00	610	24.00	146	5.75	1068	42.05	700	27.56	369	813
8	200	737	29.00	737	29.00	190	7.48	1100	43.31	800	31.50	1045	2304
10	250	838	33.00	838	33.00	238	9.37	-	-	1000	39.37	1647	3631
12	300	965	38.00	965	38.00	283	11.14	-	-	1000	39.37	1991	4389

Dimension & Weight



CLASS 1500

Size		L-RF		L-BW		D		H		W		Approx Weight (RF)	
NPS	DN	mm	in	mm	in	mm	in	mm	in	mm	in	kg	lb
2	50	368	14.50	368	14.50	48	1.89	877	34.53	325	12.80	85	187
3	80	470	18.50	470	18.50	70	2.75	900	35.43	600	23.62	181	399
4	100	546	21.50	546	21.50	92	3.62	1000	39.37	600	23.62	407	897
6	150	705	27.75	705	27.75	137	5.39	1130	44.49	900	35.43	641	1413
8	200	832	32.75	832	32.75	178	7.01	1512	59.53	#610	24.02	1261	2780

#Gearbox Operation

CLASS 2500

Size		L-RF		L-BW		D		H		W		Approx Weight (RF)	
NPS	DN	mm	in	mm	in	mm	in	mm	in	mm	in	kg	lb
2	50	451	17.76	451	17.76	38	1.50	866	34.09	450	17.72	228	503
3	80	578	22.76	578	22.76	57	2.25	1135	44.69	560	22.05	389	858
4	100	673	26.50	673	26.50	73	2.87	1511	59.49	610	24.02	981	2163
6	150	914	35.98	914	35.98	111	4.37	2152	84.72	610	24.02	2102	4634
8	200	1022	40.24	1022	40.24	146	5.75	2715	106.89	610	24.02	4873	10743





PART 3



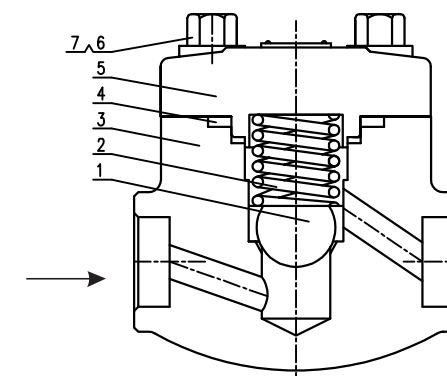
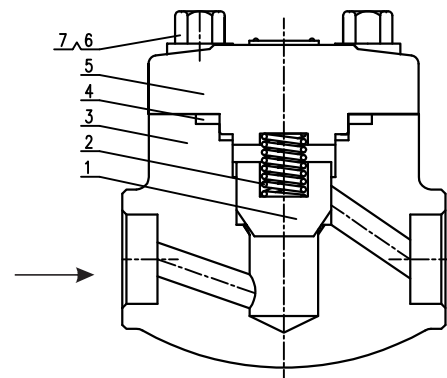
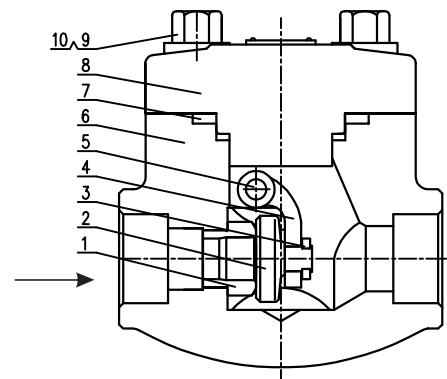
Design Standards

Basic Design	BS 1868/BS 6364/SPE 77 200
Face to Face/End to End	ASME B16.10
Flange End	ASME B16.5/ASME B16.47
Buttwelding End	ASME B16.25
Pressure-Temperature Rating	ASME B16.34
Inspection and Test	API 598

Cryogenic Check Valve

- 1. Hard-faced seat/disc for preventing wear and improving durability.
- 2. Optional soft seat.
- 3. Internal hinge pin design to minimize external leakage and ensure reliability in service.
- 4. Non-rotating disc design.

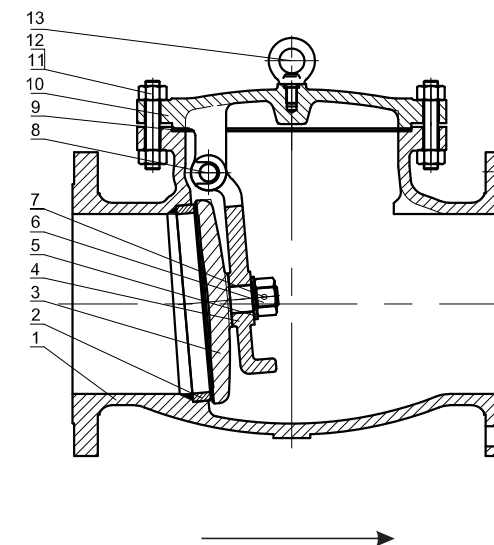
General Assembly Drawing & Material of Construction–Forged Steel



Part No.	Part Name	Materials
1	Body	ASTM A182 F316
2	Gasket	SS316 + Graphite
3	Bolt	ASTM A320 B8M
4	Nut	ASTM A194 8
5	Seat	ASTM A182 F316+HF*
6	Cover	ASTM A182 F316
7	Spring	SS316
8	Disc	ANSI 316
9	Nameplate	Aluminium
10	Washer	Stainless Steel

* HF: Hard-faced with stellite 6 or equivalent.

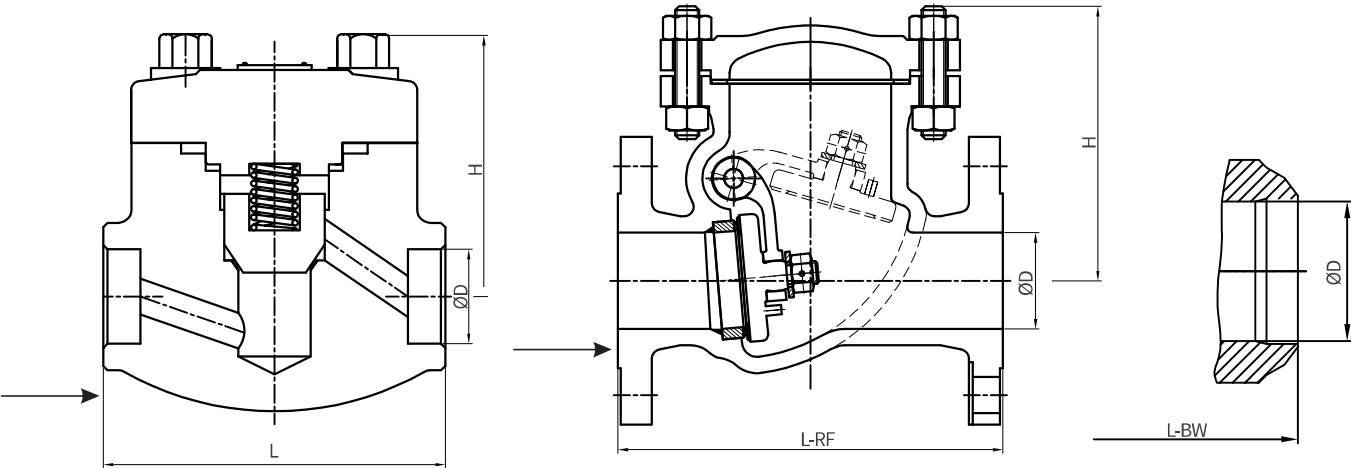
General Assembly Drawing & Material of Construction–Cast Steel



Part No.	Part Name	Materials
1	Body	ASTM A351 CF8M
2	Seat	ASTM A182 F316+HF*
3	Disc	ASTM A351 CF8M+HF*
4	Hinge	ASTM A351 CF8M
5	Washer	ASTM A276 316
6	Disc Nut	ASTM A276 316
7	Cotter Pin	ASTM A276 316
8	Hinge Pin	ASTM A276 316
9	Gasket	SS316 + Graphite
10	Cover	ASTM A351 CF8M
11	Cover Bolt	ASTM A193 B8 (CL.2)
12	Cover Bolt Nut	ASTM A194 8
13	Lifting Eye Bolt	Carbon Steel

*HF: Hard-faced with stellite 6 or equivalent.

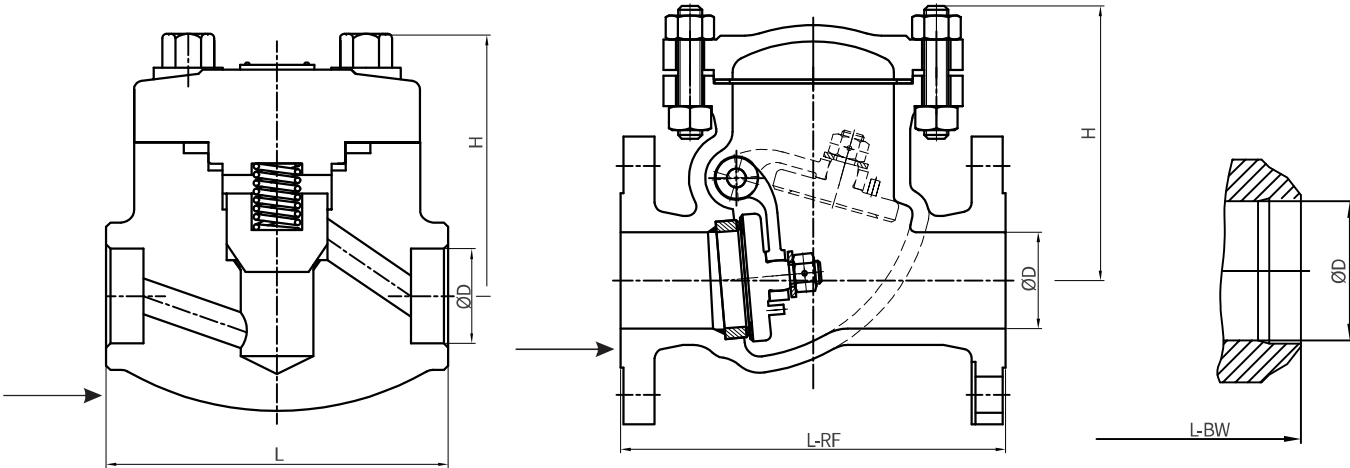
Dimension & Weight



CLASS 150

Size		L-RF		L-BW		D		H		Approx Weight (RF)	
NPS	DN	mm	in	mm	in	mm	in	mm	in	kg	lb
1/2	15	108	4.25	108	4.25	15	0.59	105	4.13	10	22
3/4	20	177	4.98	177	6.98	20	0.79	108	4.25	11	24
1	25	127	5.00	127	5.00	25	0.98	112	4.41	12	26
1 1/2	40	165	6.50	165	6.50	38	1.50	126	4.96	13	29
2	50	203	8.00	203	8.00	51	2.00	143	5.63	16	35
3	80	241	9.50	241	9.50	76	2.99	186	7.32	27	60
4	100	292	11.50	292	11.50	102	4.02	210	8.27	43	95
6	150	356	14.00	356	14.00	152	5.98	247	9.72	71	157
8	200	495	19.50	495	19.50	203	7.99	304	11.97	128	282
10	250	622	24.50	622	24.50	254	10.00	331	13.03	232	511
12	300	699	27.50	699	27.50	305	12.01	410	16.14	326	719
14	350	787	31.00	787	31.00	335	13.19	459	18.07	460	1014
16	400	864	34.00	864	34.00	387	15.24	499	19.65	576	1270
18	450	978	38.50	978	38.50	438	17.24	552	21.73	660	1455
20	500	978	38.50	978	38.50	489	19.25	572	22.52	808	1781
24	600	1295	51.00	1295	51.00	590	23.23	670	26.38	1404	3095
30	750	1524	60.00	1524	60.00	743	29.25	800	31.50	2330	5137

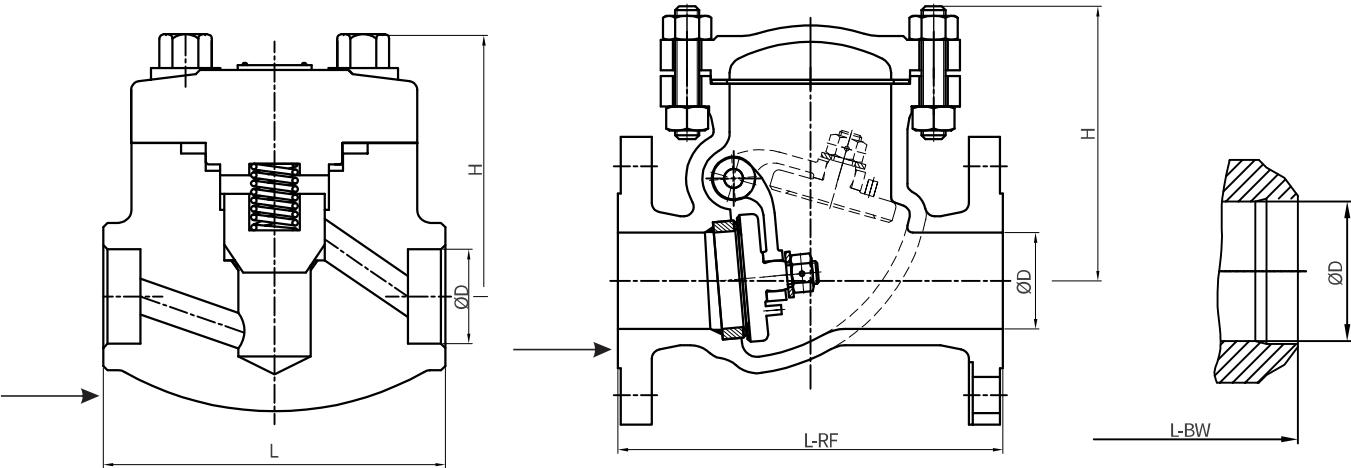
Dimension & Weight



CLASS 300

Size		L-RF		L-BW		D		H		Approx Weight (RF)	
NPS	DN	mm	in	mm	in	mm	in	mm	in	kg	lb
1/2	15	152	6.00	152	6.00	15	0.59	105	4.13	11	24
3/4	20	178	7.00	178	7.00	20	0.79	108	4.25	12	26
1	25	216	8.50	216	8.50	25	1.00	112	4.41	13	29
1 1/2	40	241	9.50	241	9.50	38	1.50	134	5.28	14	31
2	50	267	10.50	267	10.50	51	2.00	152	5.98	24	53
3	80	318	12.50	318	12.50	76	2.99	184	7.24	46	101
4	100	356	14.00	356	14.00	102	4.02	222	8.74	62	137
6	150	445	17.50	445	17.50	152	5.98	275	10.83	125	276
8	200	533	21.00	533	21.00	203	7.99	328	12.91	220	485
10	250	622	24.50	622	24.50	254	10.00	392	15.43	320	705
12	300	711	28.00	711	28.00	304	11.97	451	17.76	446	983
14	350	838	33.00	838	33.00	335	13.19	487	19.17	612	1349
16	400	864	34.00	864	34.00	387	15.24	552	21.73	572	1261
18	450	978	38.50	978	38.50	432	17.01	591	23.27	1150	2535
20	500	1016	40.00	1016	40.00	483	19.02	622	24.49	1252	2760
24	600	1346	53.00	1346	53.00	584	22.99	721	28.39	2063	4548
30	750	1594	62.75	1594	62.75	737	29.02	860	33.86	3150	6944

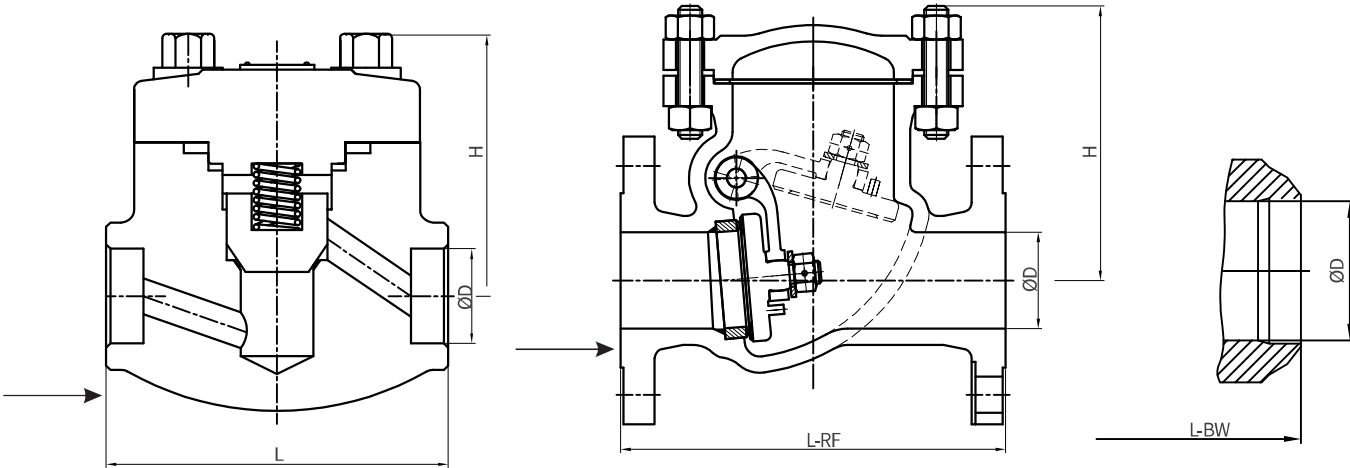
Dimension & Weight



CLASS 600

Size		L-RF		L-BW		D		H		Approx Weight (RF)	
NPS	DN	mm	in	mm	in	mm	in	mm	in	kg	lb
1/2	15	165	6.50	165	6.50	15	0.59	13	0.51	13	29
3/4	20	191	7.50	191	7.50	20	0.79	118	4.65	14	31
1	25	216	8.50	216	8.50	26	1.02	122	4.80	16	35
1 1/2	40	241	9.50	241	9.50	38	1.50	136	5.35	24	53
2	50	292	11.50	292	11.50	51	2.00	198	7.80	32	71
3	80	356	14.00	356	14.00	76	2.99	217	8.54	60	132
4	100	432	17.00	432	17.00	101	3.98	279	10.98	103	227
6	150	559	22.00	559	22.00	152	5.98	366	14.41	202	445
8	200	660	26.00	660	26.00	200	7.87	424	16.69	335	739
10	250	787	31.00	787	31.00	248	9.76	522	20.55	622	1371
12	300	838	33.00	838	33.00	298	11.73	564	22.20	830	1830
14	350	889	35.00	889	35.00	327	12.87	593	23.35	1107	2440
16	400	991	39.00	991	39.00	375	14.76	624	24.57	1505	3318
18	450	1092	43.00	1092	43.00	419	16.50	705	27.76	1903	4195
20	500	1194	47.00	1194	47.00	464	18.25	784	30.87	2696	5944
24	600	1397	55.00	1397	55.00	559	22.01	839	33.03	3307	7291
28	700	1600	63.00	1600	63.00	648	25.50	1088	42.83	-	-
30	750	1651	65.00	1651	65.00	695	27.36	1088	42.83	5790	12765

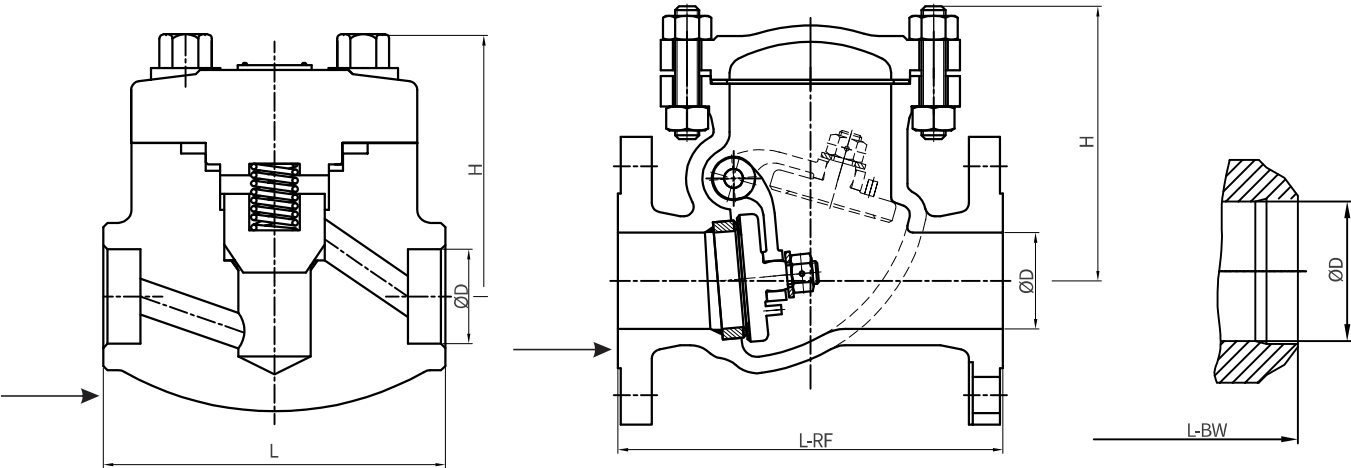
Dimension & Weight



CLASS 900

Size		L-RF		L-BW		D		H		Approx Weight (RF)	
NPS	DN	mm	in	mm	in	mm	in	mm	in	kg	lb
1/2	15	216	8.50	216	8.50	13	0.51	113	4.45	23	51
3/4	20	229	9.00	229	9.00	18	0.71	118	4.65	26	57
1	25	254	10.00	254	10.00	22	0.87	122	4.80	31	68
1 1/2	40	305	12.00	305	12.00	35	1.38	167	6.57	42	93
2	50	368	14.50	368	14.50	48	1.87	237	9.33	74	163
3	80	381	15.00	381	15.00	73	2.87	265	10.43	94	207
4	100	457	18.00	457	18.00	98	3.87	317	12.48	158	348
6	150	610	24.00	610	24.00	147	5.79	402	15.83	302	666
8	200	737	29.00	737	29.00	191	7.52	474	18.66	505	1113
10	250	838	33.00	838	33.00	238	9.37	557	21.93	880	1940
12	300	965	38.00	965	38.00	283	11.14	597	23.50	1360	2998
14	350	1029	40.50	1029	40.50	311	12.24	640	25.20	1742	3840
16	400	1130	44.50	1130	44.50	356	14.02	678	26.69	2089	4605

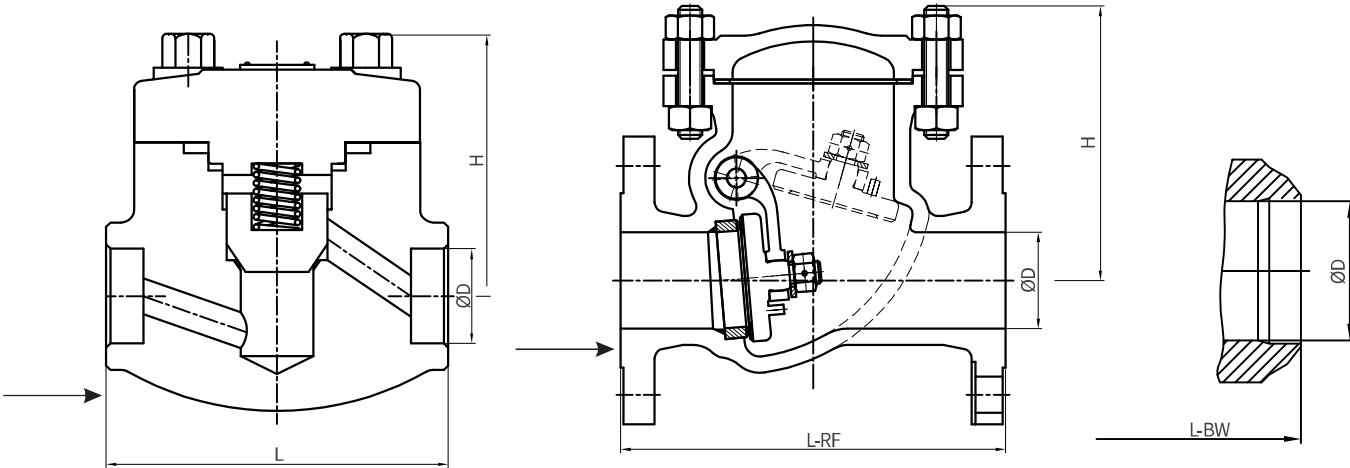
Dimension & Weight



CLASS 1500

Size		L-RF		L-BW		D		H		Approx Weight (RF)	
NPS	DN	mm	in	mm	in	mm	in	mm	in	kg	lb
1/2	15	216	8.50	216	8.50	13	0.51	113	4.45	23	51
3/4	20	229	9.00	229	9.00	18	0.71	118	4.65	26	57
1	25	254	10.00	254	10.00	22	0.87	122	4.80	31	68
1 1/2	40	305	12.00	305	12.00	35	1.38	167	6.57	42	93
2	50	368	14.50	368	14.50	48	1.89	237	9.33	74	163
3	80	470	18.50	470	18.50	70	2.76	296	11.65	135	298
4	100	546	21.50	546	21.50	92	3.62	342	13.46	226	498
6	150	705	27.75	705	27.75	137	5.39	469	18.46	515	1135
8	200	832	32.75	832	32.75	178	7.01	553	21.77	898	1980
10	250	991	39.00	991	39.00	222	8.74	643	25.31	1588	3501
12	300	1130	44.50	1130	44.50	264	10.39	755	29.72	2497	5505

Dimension & Weight



CLASS 2500

Size		L-RF		L-BW		D		H		Approx Weight (RF)	
NPS	DN	mm	in	mm	in	mm	in	mm	in	kg	lb
1/2	15	264	10.38	264	10.38	11	0.43	140	5.51	32	71
3/4	20	273	10.75	273	10.75	15	0.59	147	5.79	43	95
1	25	308	12.12	308	12.12	19	0.75	164	6.46	54	119
1 1/2	40	384	15.12	384	15.12	28	1.12	217	8.54	65	143
2	50	451	17.75	451	17.75	38	1.50	290	11.42	110	243
3	80	578	22.75	578	22.75	57	2.24	366	14.41	224	494
4	100	673	26.50	673	26.50	73	2.87	426	16.77	331	730
6	150	914	36.00	914	36.00	111	4.37	582	22.91	619	1365



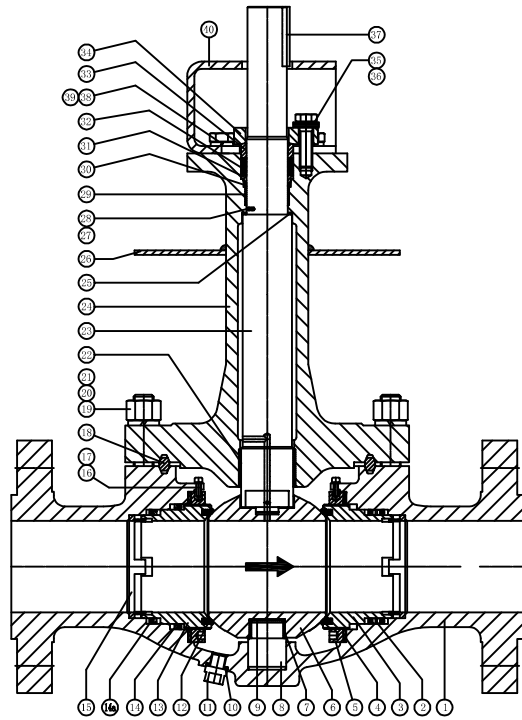
Design Standards	
Basic Design	API 6D/API 608ISO 17292 BS 6364/SPE 77 200
Face to Face/End to End	ASME B16.10
Flange End	ASME B16.5/ASME B14.47
Buttwelding End	ASME B16.25
Pressure-Temperature Rating	ASME B16.34
Inspection and Test	API 598/API 6D/BS 6364 SPE 77 200

PART 4

Cryogenic Ball Valve

- 1. Extended bonnet to minimize the heat conduction & transfer from the cold zone and keep the stem packing free of cold formation for providing a secure seal.
- 2. Drip plate fitting to minimize ice accumulation on the extension and prevent possible damage to insulation.
- 3. Hardened sealing surface for preventing wear and improving durability.
- 4.Futitive emission packing with advantages of heat resistance, low stress release and low creep, etc.
- 5. Packing with double seals and firesafe design.
- 6. Lip seal design between seat and ball to ensure the sealing performance of valve at low temperature.
- 7. Cryogenic treatment to increase the parts stability so as to ensure the operation and sealing performance of valve at low temperature or cryogenic service.
- 8. Integral stem with anti-blowout design.
- 9. Cavity pressure relief design to prevent excessive pressure rise in cavity.
- 10. Low torque design.
- 11. Optional metal seat design.
- 12. Anti-static design.
- 13. Double block and bleed function (DBB).
- 14. Double isolation and bleed function (DIB).

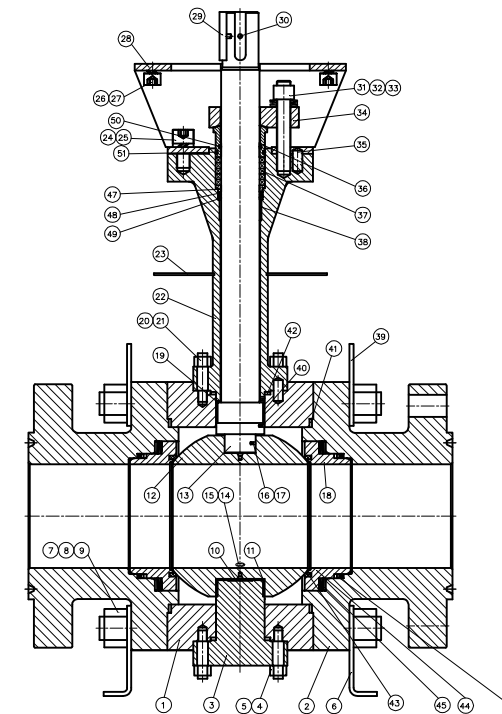
General Assembly Drawing & Material of Construction–Top Entry



Part No.	Part Name	Materials
1	Body	ASTM A351 CF8M
2	Sealing	Lip Seal
3	Seat	ASTM A182 F316
4	Belleville Spring	Inconel X-750
5	Seat Thrust Ring	ASTM A182 F316
6	Ball	ASTM A182 F316
7	Bearing	SS316+PCTFE
8	Trunnion	ASTM A479 316
9	Bearing	SS316+PCTFE
10	Plug	ASTM A479 316
11	Gasket	SS316+Graphite
12	Seat Insert	PCTFE
13	Seat	ASTM A182 F316
14	Sealing	Lip Seal

Part No.	Part Name	Materials
14a	Sealing	Lip Seal
15	Seat Thrust Ring	ASTM A182 F316
16	Screw	ASTM A193 B8M
17	Spring Washer	ASTM A693 631(17-7PH)
18	Sealing Ring	ASTM A182 F316
19	Nut	ASTM A194 8MA
20	Stud	ASTM A320 8M CL.2
21	Spring Washer	ASTM A693 631(17-7PH)
22	Bearing	SS316+PCTFE
23	Extended Bonnet	ASTM A351 CF8M
24	Extended Stem	ASTM A182 FXM-19
25	Thrust Washer	PCTFE
26	Drip Plate	ASTM A240 Type 304
27	Spring	SS316
28	Steel Ball	SS316
29	Bearing	PCTFE
30	Sealing	Lip Seal
31	Gasket	ASTM A479 316
32	Packing	Graphite
33	Gland	ASTM A479 316
34	Gland Flange	ASTM A182 F316
35	Belleville Spring	ASTM A693 631(17-7PH)
36	Bolt	ASTM A320 8M CL.2
37	Key	Stainless Steel
38	Bolt	ASTM A320 8M CL.2
39	Spring Washer	ASTM A693 631(17-7PH)
40	Bracket	ASTM A240 Type 304

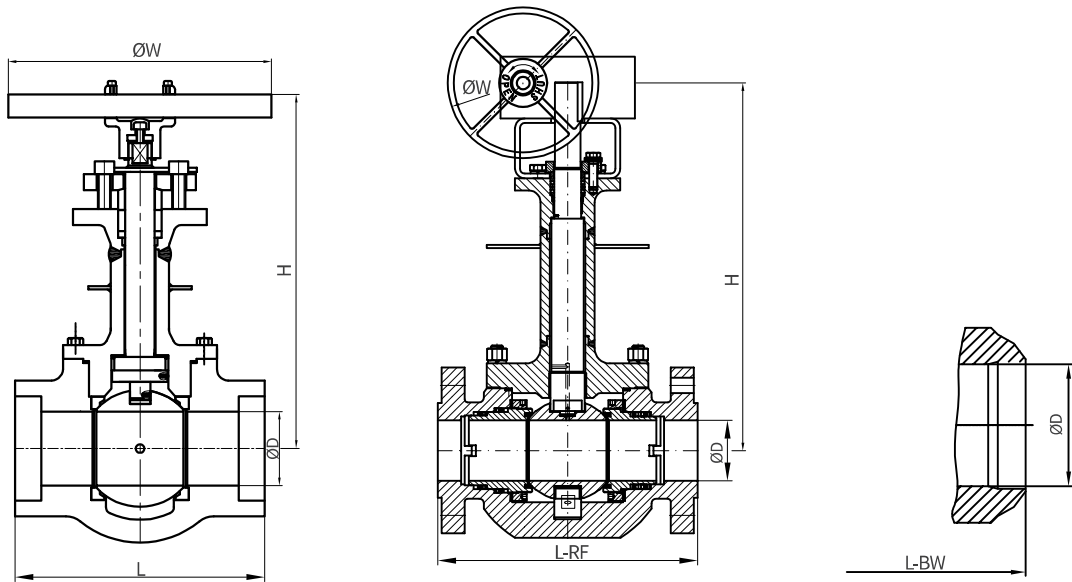
General Assembly Drawing & Material of Construction–Side Entry



Part No.	Part Name	Materials
1	Body	ASTM A182 F316
2	End Connector	ASTM A182 F316
3	Trunnion	ASTM A182 F316
4	Nut	ASTM A194 8M
5	Stud	ASTM A320 B8M CL.2
6	Support Leg	SS304
7	Nut	ASTM A194 8M
8	Stud	ASTM A320 B8M CL.2
9	Stud	ASTM A320 B8M CL.2
10	Thrust Bearing	PCTFE
11	Bearing	SS316+PCTFE
12	Ball	ASTM A182 F316
13	Stem	ASTM A182 FXM-19
14	Plug	Stainless Steel
15	Washer	PCTFE
16	Antistatic Spring	Stainless Steel
17	Antistatic Ball	Stainless Steel
18	Seat	ASTM A182 F316

Part No.	Part Name	Materials
19	Thrust Bearing	PCTFE
20	Nut	ASTM A194 8M
21	Stud	ASTM A320 B8M CL.2
22	Extended Bonnet	ASTM A182 F316
23	Collar Drip	SS316
24	Screw	ASTM A320 B8M CL.2
25	Washer	ASTM A276 Type 316
26	Screw	ASTM A320 B8M CL.2
27	Washer	ASTM A276 Type 316
28	Bracket	ASTM A240 Type 316
29	Key	ASTM A240 Type 316
30	Fixed Pin	ASTM A276 Type 316
31	Nut	ASTM A194 8M
32	Stud	ASTM A320 B8M CL.2
33	Belleville Spring	Inconel-X750
34	Gland Flange	ASTM A479 316
35	Fixed Pin	ASTM A240 Type 316
36	Gland	ASTM A182 F316
37	Packing	Flexible Graphite
38	Bearing	SS316+PTFE
39	Lifting Eye Bolt	ASTM A240 Type 304
40	Bearing	SS316+PTFE
41	Spiral Wound Gasket	SS316+Graphite
42	Gasket	SS316+Graphite
43	Seat Insert	PCTFE
44	Belleville Spring	Inconel-X750
45	Washer	A276 316
46	Lip Seal Ring	Eligloy+PCTFE
47	Packing Spacer	PCTF
48	Lip Seal Ring	EEligloy+PCTFE
49	Retainer Ring	PCTFE
50	O Ring	HNBR
51	O Ring	HNBR

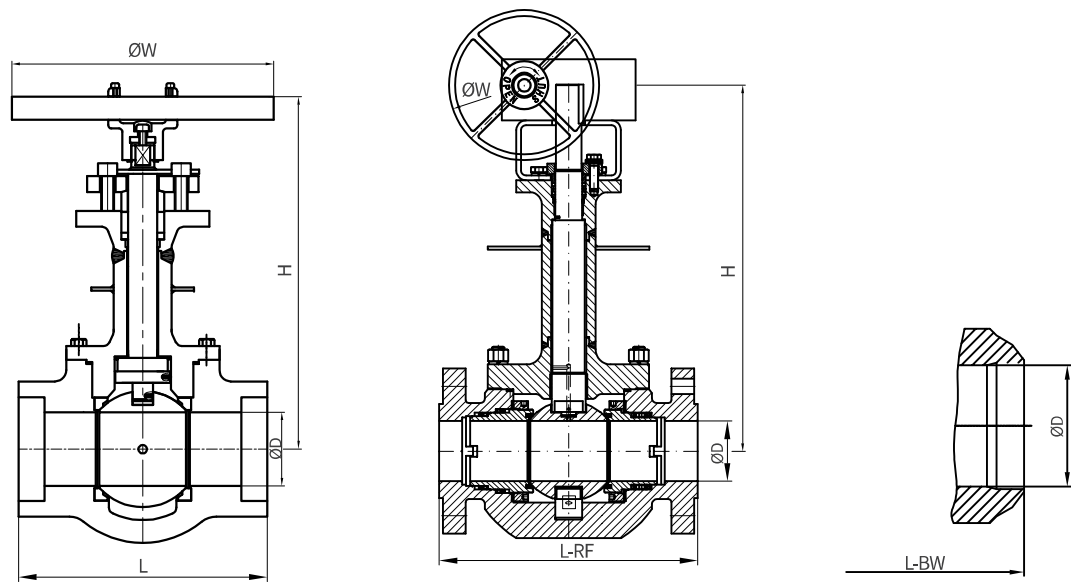
Dimension & Weight–Top Entry



CLASS 150

Size		L–RF		L–BW		D		H		W		Approx Weight (RF)	
NPS	DN	mm	in	mm	in	mm	in	mm	in	mm	in	kg	lb
1/2	15	108	4.25	140	5.50	15	0.59	500	19.69	117	4.61	10	22
3/4	20	127	5.00	152	6.00	19	0.75	500	19.69	164	6.46	12	26
1	25	160	6.30	165	6.50	25	0.98	500	19.69	186	7.32	16	35
1 1/2	40	216	8.50	191	7.50	38	1.50	600	23.62	186	7.32	29	64
2	50	178	7.01	216	8.50	49	1.93	600	23.62	300	11.81	30	66
3	80	203	7.99	283	11.14	74	2.91	700	27.56	300	11.81	46	101
4	100	229	9.02	305	12.01	100	3.94	700	27.56	500	19.69	93	205
6	150	394	15.51	457	17.99	150	5.91	750	29.53	600	23.62	206	454
8	200	457	17.99	521	20.51	201	7.91	900	35.43	600	23.62	395	871
10	250	533	20.98	559	22.01	252	9.92	1008	39.69	600	23.62	675	1488
12	300	610	24.02	635	25.00	303	11.93	1100	43.31	600	23.62	979	2158
14	350	686	27.01	762	30.00	334	13.15	1200	47.24	700	27.56	1001	2207
16	400	762	30.00	838	32.99	385	15.16	1300	51.18	760	29.92	1795	3957
18	450	864	34.02	914	35.98	436	17.17	1400	55.12	800	31.50	2143	4724
20	500	914	35.98	991	39.02	487	19.17	1500	59.06	900	35.43	3627	7996
22	550	–	–	–	–	538	21.18	1650	64.96	900	35.43	5211	11488
24	600	1067	42.01	1143	45.00	589	23.19	1800	70.87	900	35.43	6000	13228
26	650	1143	45.00	1245	49.02	633	24.92	1950	76.77	900	35.43	–	–
28	700	1245	49.02	1346	52.99	684	26.93	2100	82.68	900	35.43	–	–
30	750	1295	50.98	1397	55.00	735	28.94	2250	88.58	900	35.43	–	–
32	800	1372	54.02	1524	60.00	779	30.67	2400	94.49	900	35.43	–	–
34	850	1473	57.99	1626	64.02	830	32.68	2600	102.36	900	35.43	–	–
36	900	1524	60.00	1727	67.99	874	34.41	2800	110.24	900	35.43	–	–

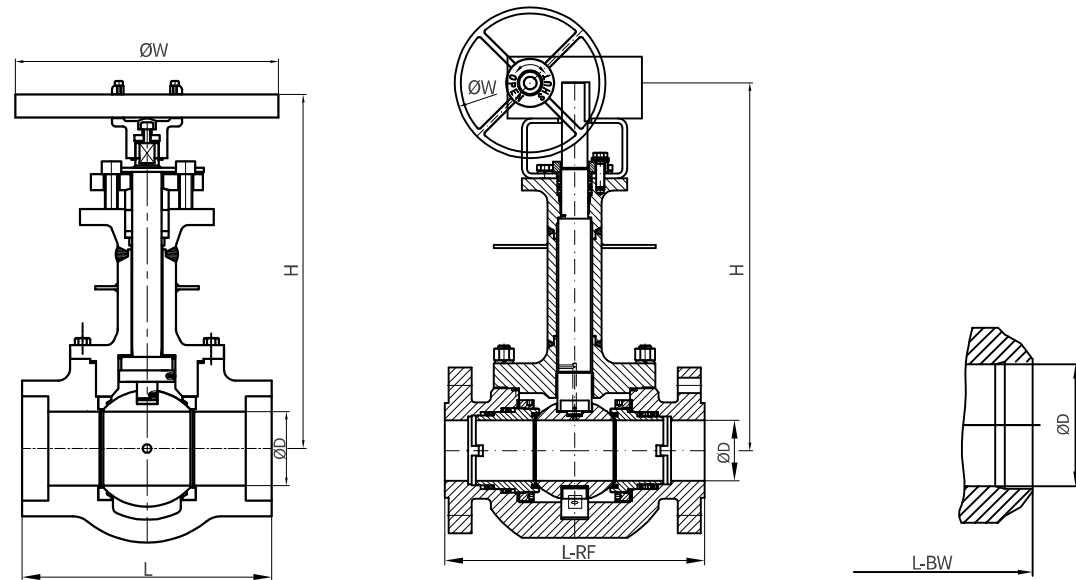
Dimension & Weight Top Entry



CLASS 300

Size		L–RF		L–BW		D		H		W		Approx Weight (RF)	
NPS	DN	mm	in	mm	in	mm	in	mm	in	mm	in	kg	lb
1/2	15	140	5.50	140	5.50	15	0.59	500	19.69	117	4.61	11	24
3/4	20	152	6.00	152	6.00	19	0.75	500	19.69	164	6.46	13	29
1	25	178	7.00	178	7.00	25	0.98	500	19.69	186	7.32	23	51
1 1/2	40	229	9.00	229	9.00	38	1.50	550	21.65	186	7.32	32	71
2	50	216	8.50	216	8.50	49	1.93	600	23.62	300	11.81	38	84
3	80	283	11.14	283	11.14	74	2.91	700	27.56	300	11.81	76	168
4	100	305	12.01	305	12.01	100	3.94	700	27.56	500	19.69	137	302
6	150	403	15.87	457	17.99	150	5.91	750	29.53	600	23.62	285	628
8	200	502	19.76	521	20.51	201	7.91	900	35.43	600	23.62	510	1124
10	250	568	22.36	559	22.01	252	9.92	1000	39.37	600	23.62	710	1565
12	300	648	25.51	635	25.00	303	11.93	1100	43.31	600	27.56	1189	2621
14	350	762	30.00	762	30.00	334	13.15	1200	47.24	700	29.92	1320	2910
16	400	838	32.99	838	32.99	385	15.16	1300	51.18	760	29.92	2027	4469
18	450	914	35.98	914	35.98	436	17.17	1400	55.12	800	31.50	2341	5161
20	500	991	39.02	991	39.02	487	19.17	1500	59.06	900	35.43	3810	8400
22	550	1092	42.99	1092	42.99	538	21.18	1650	64.96	900	35.43	5420	11949
24	600	1143	45.00	1143	45.00	589	23.19	1800	70.87	900	35.43	6755	14892
26	650	1245	49.02	1245	49.02	633	24.92	1950	76.77	900	35.43	–	–
28	700	1346	52.99	1346	52.99	684	26.93	2100	82.68	900	35.43	–	–
30	750	1397	55.00	1397	55.00	735	28.94	2250	88.58	900	35.43	–	–
32	800	1524	60.00	1524	60.00	779	30.67	2400	94.49	900	35.43	–	–
34	850	1626	64.02	1626	64.02	830	32.68	2600	102.36	900	35.43	–	–
36	900	1727	67.99	1727	67.99	874	34.41	2800	110.24	900	35.43	–	–

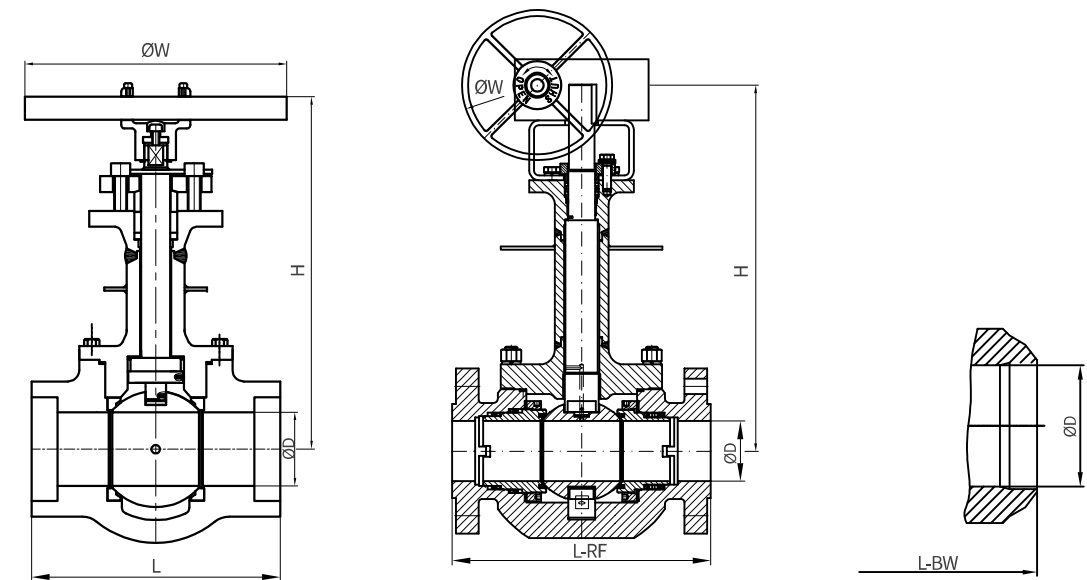
Dimension & Weight–Top Entry



CLASS 600

Size		L–RF		L–BW		D		H		W		Approx Weight (RF)	
NPS	DN	mm	in	mm	in	mm	in	mm	in	mm	in	kg	lb
1/2	15	165	6.50	165	6.50	15	0.59	500	19.69	117	4.61	14	31
3/4	20	191	7.50	191	7.50	19	0.75	500	19.69	164	6.46	18	40
1	25	216	8.50	216	8.50	25	0.98	500	19.69	186	7.32	28	62
1 1/2	40	241	9.49	241	9.50	38	1.50	600	23.62	186	7.32	40	88
2	50	292	11.50	320	12.60	50	1.97	600	23.62	300	11.81	62	137
3	80	356	14.02	419	16.49	76	2.99	700	27.56	500	19.69	113	249
4	100	432	17.01	504	19.84	102	4.02	700	27.56	500	19.69	181	399
6	150	559	22.01	632	24.88	152	5.98	750	29.53	600	23.62	330	728
8	200	660	25.98	784	30.87	204	8.03	900	35.43	600	23.62	650	1433
10	250	787	30.98	916	36.06	254	10.00	1008	39.69	760	29.92	893	1969
12	300	838	32.99	1112	43.78	305	12.01	1100	43.31	760	29.92	1520	3351
14	350	889	35.00	1295	50.98	337	13.27	1200	47.24	760	29.92	1850	4079
16	400	991	39.02	1372	54.02	388	15.28	1300	51.18	760	29.92	2160	4762
18	450	1092	42.99	1499	59.02	438	17.24	1400	55.12	800	31.50	2560	5644
20	500	1194	47.01	1600	62.99	489	19.25	1500	59.06	900	35.43	3981	8777
22	550	1295	50.98	1727	67.99	540	21.26	1650	64.96	900	35.43	5570	12280
24	600	1397	55.00	1854	72.99	591	23.27	1800	70.87	900	35.43	8829	19464
26	650	1448	57.01	1900	74.80	635	25.00	1950	76.77	900	35.43	–	–
28	700	1549	60.98	2008	79.06	686	27.01	2100	82.68	900	35.43	–	–
30	750	1651	65.00	2135	84.06	737	29.02	2250	88.58	900	35.43	–	–

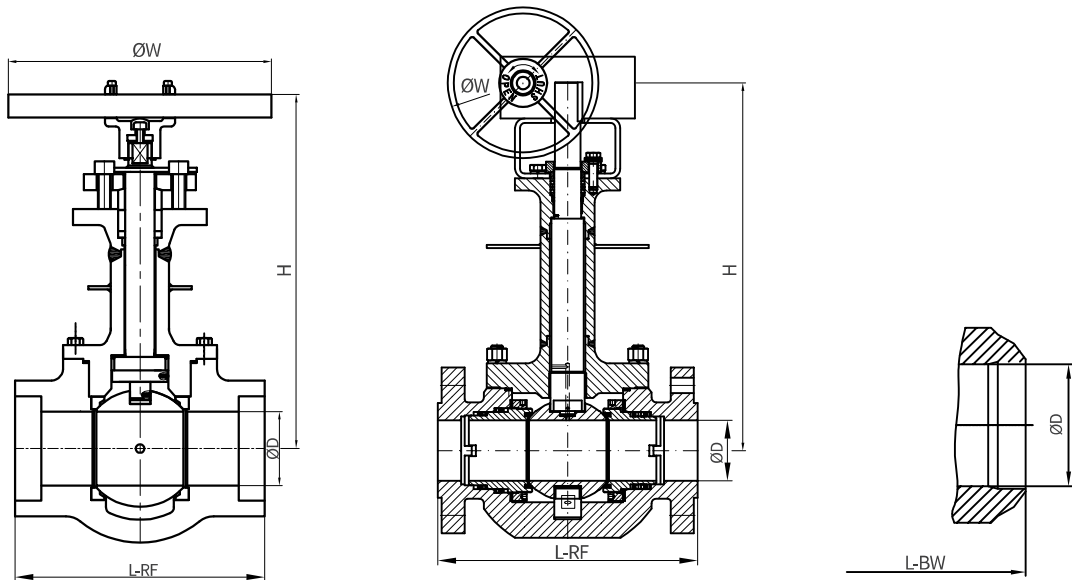
Dimension & Weight Top Entry



CLASS 900

Size		L–RF		L–BW		D		H		W		Approx Weight (RF)	
NPS	DN	mm	in	mm	in	mm	in	mm	in	mm	in	kg	lb
1/2	15	216	8.50	216	8.50	13	0.51	500	19.69	350	13.78	22	49
3/4	20	229	9.00	229	9.00	17	0.67	500	19.69	500	19.69	35	77
1	25	254	10.00	254	10.00	22	0.87	500	19.69	650	25.59	41	90
1 1/2	40	305	12.00	305	12.00	35	1.38	600	23.62	800	31.50	59	130
2	50	368	14.49	368	14.49	50	1.97	600	23.62	457	17.99	95	209
3	80	381	15.00	381	15.00	76	2.99	700	27.56	610	24.02	151	333
4	100	457	17.99	457	17.99	102	4.02	700	27.56	762	30.00	255	562
6	150	610	24.02	610	24.02	152	5.98	750	29.53	#300	11.81	439	968
8	200	737	29.02	737	29.02	204	8.03	900	35.43	#400	15.75	782	1724
10	250	838	32.99	838	32.99	254	10.00	1008	39.69	#500	15.69	1349	2974
12	300	965	37.99	965	37.99	305	12.01	1100	43.31	#600	23.62	2335	5148
14	350	1029	40.51	1029	40.51	324	12.76	1200	47.24	#600	23.62	–	–
16	400	1130	44.49	1130	44.49	375	14.76	1300	51.18	#600	23.62	–	–
18	450	1219	47.99	1219	47.99	425	16.73	1400	55.12	#600	23.62	–	–
20	500	1321	52.01	1321	52.04	473	18.62	1500	59.06	#600	23.62	–	–
22	550	–	–	–	–	524	20.63	1650	64.96	#800	31.50	–	–
24	600	1549	60.98	1549	60.98	571	22.48	1800	70.87	#800	31.50	–	–
26	650	1651	65.00	–	–	619	24.37	1950	76.77	#800	31.50	–	–
28	700	–	–	–	–	667	26.26	2100	82.68	#900	35.43	–	–
30	750	1880	74.02	–	–	714	28.11	2250	88.58	#900	35.43	–	–

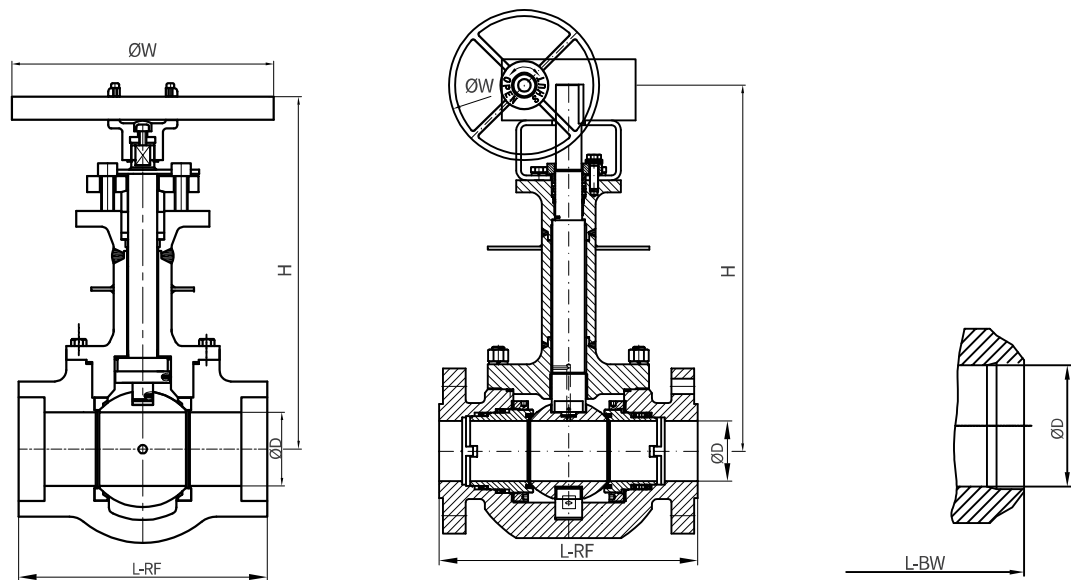
Dimension & Weight–Side Entry



CLASS 150

Size		L–RF		L–BW		D		H		W		Approx Weight (RF)	
NPS	DN	mm	in	mm	in	mm	in	mm	in	mm	in	kg	lb
1/2	15	108	4.25	140	5.50	15	0.59	500	19.69	135	5.31	12	26
3/4	20	117	4.61	152	6.00	20	0.79	500	19.69	141	5.55	15	33
1	25	127	5.00	165	6.50	25	0.98	500	19.69	141	5.55	18	40
1 1/2	40	165	6.50	191	7.50	40	1.57	600	23.62	198	7.80	24	53
2	50	178	7.01	216	8.50	50	1.97	600	23.62	300	11.81	35	79
3	80	203	7.99	283	11.14	80	3.15	700	27.56	300	19.69	52	115
4	100	229	9.02	305	12.01	100	3.94	700	27.56	500	19.69	72	159
6	150	394	15.51	457	17.99	150	5.91	750	29.53	#600	23.62	260	573
8	200	457	17.99	521	20.51	200	7.87	900	35.43	#600	23.62	355	785
10	250	533	20.98	559	22.01	250	9.84	1008	39.69	#600	23.62	590	1301
12	300	610	24.02	635	25.00	300	11.81	1100	43.31	#600	23.62	986	2174
14	350	686	27.01	762	30.00	350	13.78	1200	47.24	#700	27.56	1270	2800
16	400	762	30.00	838	32.99	400	15.75	1300	51.18	#760	29.92	1360	2998
18	450	854	34.02	914	35.98	450	17.75	1400	55.12	#800	31.50	1805	3979
20	500	914	35.98	991	39.02	500	19.69	1500	59.06	#900	35.43	2630	5798
22	550	–	–	–	–	538	21.18	1650	64.96	#900	35.43	3102	6839
24	600	1067	42.01	1143	45.00	600	23.62	1800	70.87	#900	35.43	3622	7985
26	650	1143	45.00	1245	49.02	650	25.59	1950	76.77	#900	35.43	4005	8829
28	700	1245	49.02	1346	52.99	700	27.56	2100	82.68	#900	35.43	4705	10373
30	750	1295	50.98	1397	55.00	750	29.53	2250	88.58	#900	35.43	5540	12213

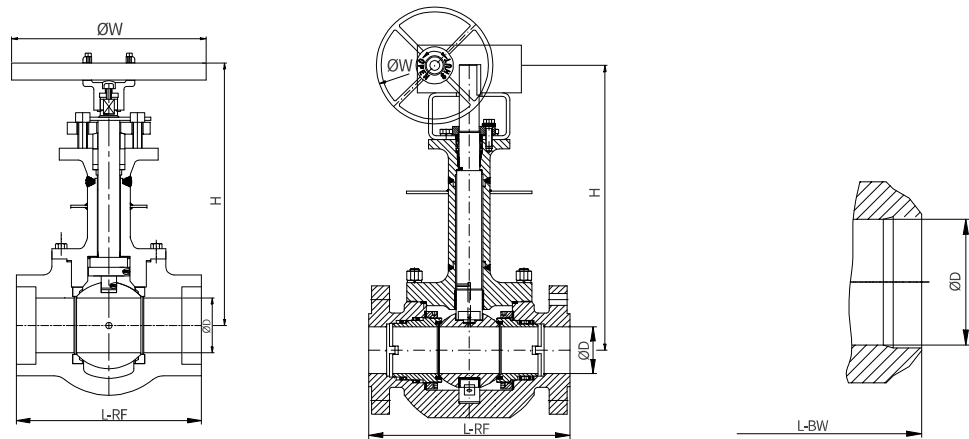
Dimension & Weight–Side Entry



CLASS 300

Size		L–RF		L–BW		D		H		W		Approx Weight (RF)	
NPS	DN	mm	in	mm	in	mm	in	mm	in	mm	in	kg	lb
1/2	15	140	5.50	140	5.50	15	0.59	500	19.69	135	5.31	14	31
3/4	20	152	6.00	152	6.00	19	0.75	500	19.69	141	5.55	16	35
1	25	178	7.00	178	7.00	25	0.98	500	19.69	141	5.55	19	42
1 1/2	40	229	9.00	229	9.00	38	1.50	600	23.62	198	7.80	26	57
2	50	216	8.50	216	8.50	49	1.93	600	23.62	300	11.81	39	86
3	80	283	11.14	283	11.14	74	2.91	700	27.56	300	11.81	56	123
4	100	305	12.01	305	12.01	100	3.94	700	27.56	500	19.69	112	247
6	150	403	15.87	457	17.99	150	5.91	750	29.53	#600	23.62	275	606
8	200	502	19.76	521	20.51	201	7.91	900	35.43	#600	23.62	360	794
10	250	568	22.36	559	22.01	252	9.92	1008	39.37	#600	23.62	760	1675
12	300	648	25.51	635	25.00	303	11.93	1100	43.31	#700	27.56	1151	2537
14	350	762	30.00	762	30.00	334	13.15	1200	47.24	#760	29.92	1367	3014
16	400	838	32.99	838	32.99	385	15.16	1300	51.18	#760	29.92	1725	3803
18	450	914	35.98	914	35.98	436	17.17	1400	55.12	#800	31.50	2355	5192
20	500	991	39.02	991	39.02	487	19.17	1500	59.06	#900	35.43	2770	6107
22	550	1092	42.99	1092	42.99	538	21.18	1650	64.96	#900	35.43	4340	9568
24	600	1143	45.00	1143	45.00	589	23.19	1800	70.87	#900	35.43	5520	12169

Dimension & Weight–Side Entry



CLASS 600

口径		L-RF		L-BW		D		H		W			
NPS	DN	mm	in	mm	in	mm	in	mm	in	mm	in	kg	lb
1/2	15	165	6.50	165	6.50	15	0.59	500	19.69	117	4.61	18	40
3/4	20	191	7.50	191	7.50	19	0.75	500	19.69	164	6.46	20	44
1	25	216	8.50	216	8.50	25	0.98	500	19.69	186	7.32	33	73
1 1/2	40	241	9.49	241	9.50	38	1.50	600	23.62	186	7.32	39	86
2	50	292	11.50	320	12.60	49	1.93	600	23.62	300	11.81	56	123
3	80	356	14.02	419	16.49	74	2.91	700	27.56	500	19.69	91	201
4	100	432	17.01	504	19.84	100	3.94	700	27.56	500	19.69	181	399
6	150	559	22.01	632	24.88	150	5.91	750	29.53	600	23.62	427	941
8	200	660	25.98	784	30.87	201	7.91	900	35.43	600	23.62	824	1817
10	250	787	30.98	916	36.06	252	9.92	1000	39.37	760	29.92	927	2044
12	300	838	32.99	1112	43.78	303	11.93	1100	43.31	760	29.92	1457	3212
14	350	889	35.00	1295	50.98	334	13.15	1200	47.24	760	29.92	1727	3807
16	400	991	39.02	1372	54.02	385	15.16	1300	51.18	760	29.92	2325	5126
18	450	1092	42.99	1499	59.02	436	17.17	1400	55.12	800	31.50	2975	6559
20	500	1194	47.01	1600	62.99	487	19.17	1500	59.06	900	35.43	3415	7529
22	550	1295	50.98	1727	67.99	538	21.18	1650	64.96	900	35.43	4022	8867
24	600	1397	55.00	1854	72.99	589	23.19	1800	70.87	900	35.43	5305	11695

CLASS 900

口径		L-RF		L-BW		D		H		W		Approx Weight (RF)	
NPS	DN	mm	in	mm	in	mm	in	mm	in	mm	in	kg	lb
2	50	368	14.49	368	14.49	49	1.93	500	19.69	500	19.69	74	163
3	80	381	15.00	381	15.00	74	2.91	630	24.80	500	19.69	125	276
4	100	457	17.99	457	17.99	100	3.94	687	27.05	600	23.62	279	615
6	150	610	24.02	610	24.02	150	5.91	890	35.04	600	23.62	655	1444
8	200	737	29.02	737	29.02	201	7.91	1084	42.68	760	29.92	761	1678
10	250	838	32.99	838	32.99	252	9.92	1144	45.04	760	29.92	1210	2668
12	300	965	37.99	965	37.99	303	11.93	1300	51.18	800	31.50	1624	3580
14	350	1029	40.51	1029	40.51	322	12.68	1550	61.02	900	35.43	2335	5148
16	400	1130	44.49	1130	44.49	373	14.69	1800	70.87	900	35.43	2900	6393
18	450	1219	47.99	1219	47.99	425	16.73	1965	77.36	900	35.43	3646	8038

Note:Due to quick development of products, the data in our catalogue may be updated.SNY reserves the right to change the design, material, or specifications without notice and free of obligation to furnish or install such changes on products on products previously sold.

PRODUCT WARRANTY

SNY offer the product warranty within 18 months from the date of shipment or 12 months after installation, whichever occurs first.