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BELLOWS SEALED VALVE





SNY VALVE (YANCHENG) CO., LTD.

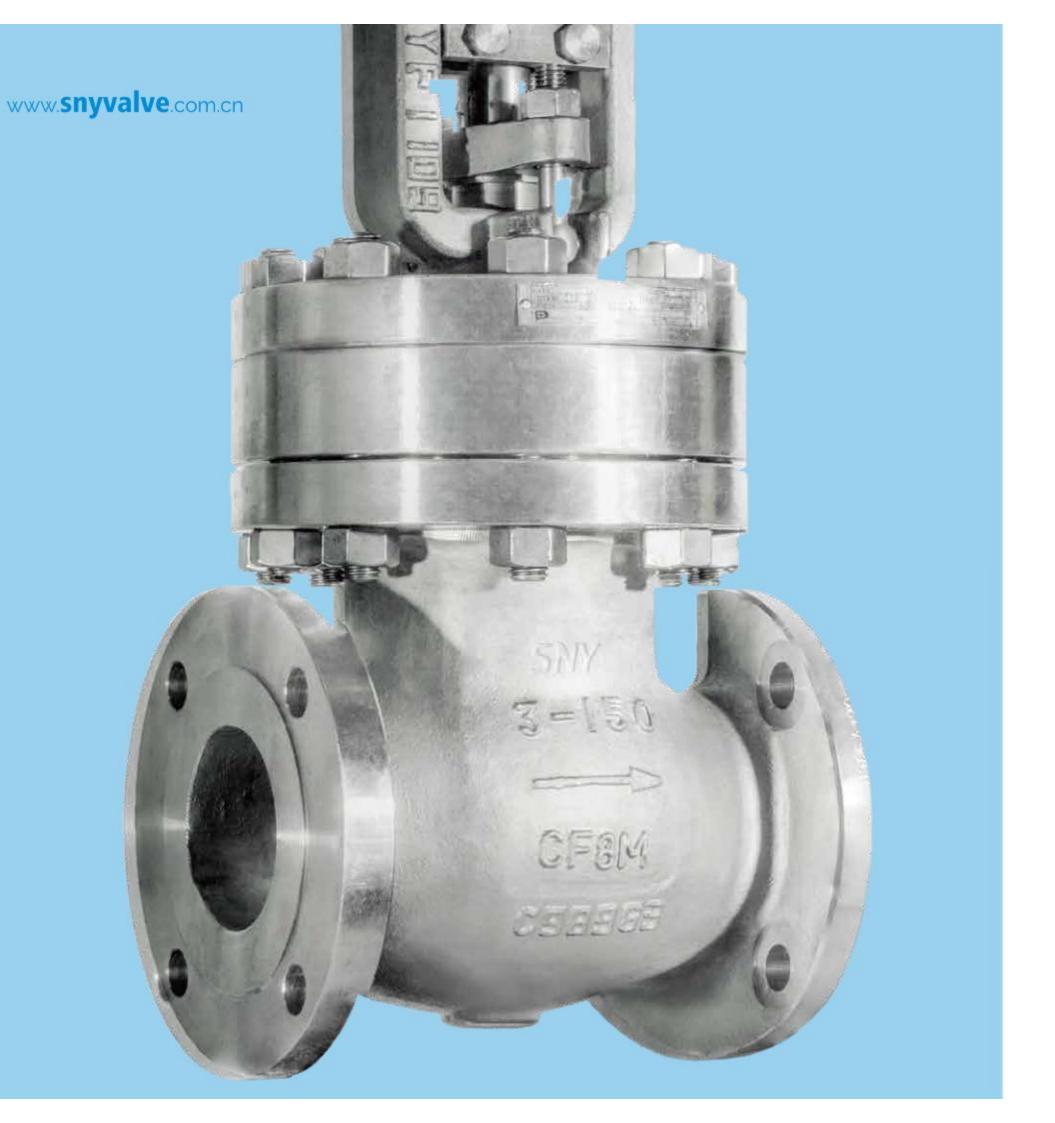
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SNY VALVE (YANCHENG) CO., LTD. Rev.No.:E1-BSV-2020



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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 m² Located in Tinghu District, Yancheng City.



THE SECOND FACTORY

Established in 2006 Area: 58,000 m² 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.

02

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.



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 Martial 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.

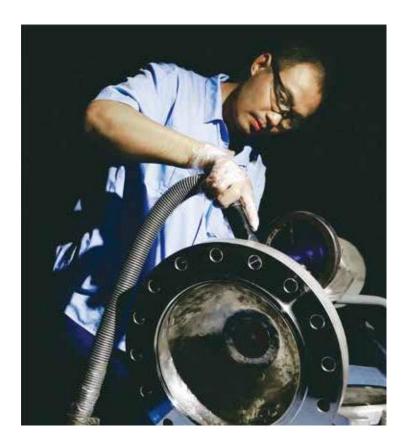
Valves manufactured at SNY valves are 100% pressure-tested. The product design has been validated through various special testing as per applicable industry standards such as Fire Safe Test, Low Temperature Test, Cryogenic Test, Vacuum Test, Fugitive Emission Test, High Pressure Gas Test, Elevated Temperature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





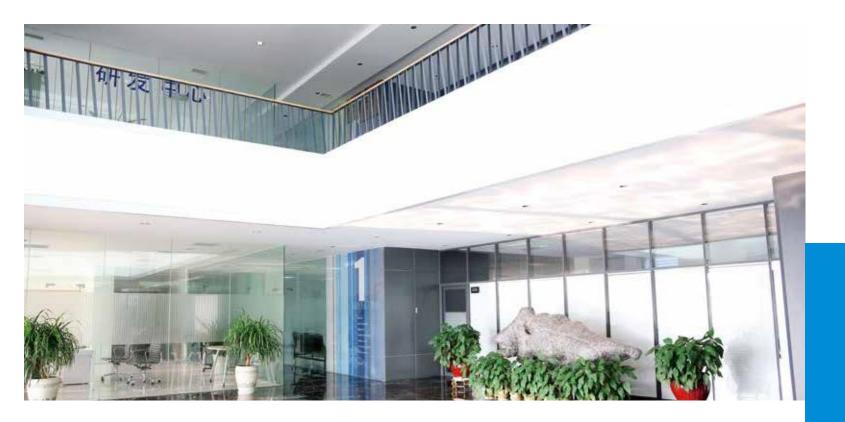










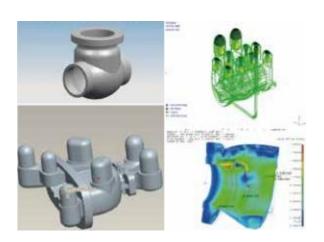


SNY VALVE always focus on technical innovation. It has one province technique center and one cryogenic ball valve engineering center. Technical team utilizes the most advanced computer technology to improve the existing products and develop the new products. Up to now, SNY VALVE possesses more than 90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

























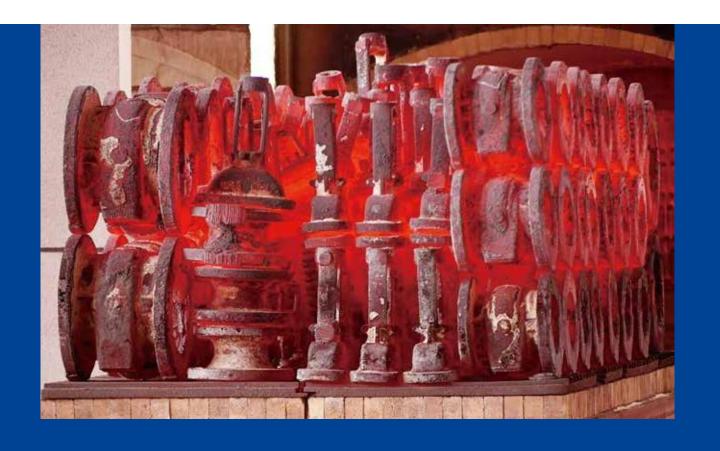
















SNY VALVE realizes the casting quality is the most important to valve life, safety of personnel and environment, especially in the high temperature and high pressure applications. So our strict customers always audit the foundries at first from our approved suppliers before order execution.

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.





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.























INDUSTRY APPLICATIONS

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



FIGURE NUMBERS

Example:

Туре

Nominal Pressure Connection С

End D

Special Requirement

F

Material G

Explanation: NPS 12, Bellows Sealed Gate Valve, Class 300, RF Flanged End, Gearbox Operated, No Machining on Raised Face, Body Material WCB, Trim No. 8, NACE Requirement

A Nominal Size

ш	140minai Oi	26		
	2	NPS2	D50	DN50
	2 1/2	NPS2 1/2	D65	DN65
	3	NPS3	D80	DN80
	4	NPS4	D100	DN100
	5	NPS5	D125	DN125
	6	NPS6	D150	DN150
	8	NPS8	D200	DN200
	10	NPS10	D250	DN250
	12	NPS12	D300	DN300
	14	NPS14	D350	DN350
	16	NPS16	D400	DN400
	18	NPS18	D450	DN450
	20	NPS20	D500	DN500

C Nominal Pressure

0	Class125	-2.5	PN(DIN)2.5	- 20	PN(ANSI)2
1	Class150	- 6	PN(DIN)6	- 50	PN(ANSI)5
3	Class300	-10	PN(DIN)10	-110	PN(ANSI)
4	Class400	- 16	PN(DIN)16	-150	PN(ANSI)
6	Class600	- 25	PN(DIN)25	-260	PN(ANSI)2
8	Class800	-40	PN(DIN)40	- 420	PN(ANSI)
9	Class900	-63	PN(DIN)63		
15	Class1500	-100	PN(DIN)100		
25	Class2500				

D End Connection

R	RF	F	FF
В	Duttualding		DTI

B Valve Type

GA	Bellows Sealed Gate Valve
LB	Bellows Sealed Globe Valve

F Special Requirement

B16.47B	ASME B16.47B standard end flange
BW	belleville spring at packing bolt shall be anti-loosening
CE	valves exported to EU, and shall be CE marked
CH	obturator(gate/wedge/disc) with pressure relief hole
FN	no machining on raised face
CW**	sprocket, ** is the dimension from the stem center or gearbo
LN**	non-standard face to face/end to end dimension, ** is the d
SH	SHELL requirement

E Operation

Default	Lever/Handle/Handwheel	В	Bare Stem
G	Gearbox	Р	Pneumatic Actuator
E	Electric Actuator	Н	Hydraulic Actuator

H Trim Material

In accordance with API 600. Other materials are available upon request.

G Body Material

WCA	A216	WCA
WCB	A216	WCB
WCC	A216	WCC
LCB	A352	LCB
LCC	A352	LCC
CF8	A351	CF8
CF8M	A351	CF8M
CF3	A351	CF3
CF3M	A351	CF3M

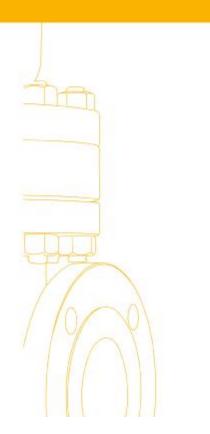
Special Material

B7M/2HM	bolt&nut material is B7M/2HM
BZ	galvanized bolt
BN	nickelplated bolt&nut
BP	PTFE plated bolt
NC	NACE Requirement

DESIGN FEATURES 1. The stem of the bellows gate valve uses the bellows + packing double sealing design to ensure zero leakage and make the valve suitable for handling flammable, explosive, toxic, and expensive mediums, in particular. The bellows is made of stainless steel, featuring reasonable sealing structure, fatigue resistance and long life. The bellows gate valve is suitable for use on various pipelines to cut off or connect the medium therein. With the use of different materials, the valve can be applied to handle water, steam, oil, urea, nitric acid, acetic acid, and oxidizing mediums specifically. 2.The bellows used in the bellows globe valve acts as a metal barrier between the fluid medium and the air to ensure zero leakage at the stem. The stainless steel bellows is welded to the stem on the lower end to prevent fluid corrosion, with the other end located between the body and the bonnet to form a static seal effect. With double sealing design, the stem packing will go on to protect the valve from leakage in case of bellows seal failure. Bellows is welded to the stem to maintain stable operation of the valve and avoid stem vibration caused by plug vibration. This valve is most suitable for use on pipelines handling steam, conducting oil, and flammable, explosive, high-purity, and/or toxic mediums.



LEADING TECHNOLOGY SOLUTION











Design Standard

9	
Basic Design	API 602/API 600/ASME B16.34
Face to Face/End to End	ASME B16.10
End Flange	ASME B16.5
Pressure-temperature Rating	ASME B16.34
Inspection and Test	API 598

Bellows Sealed Gate Valve

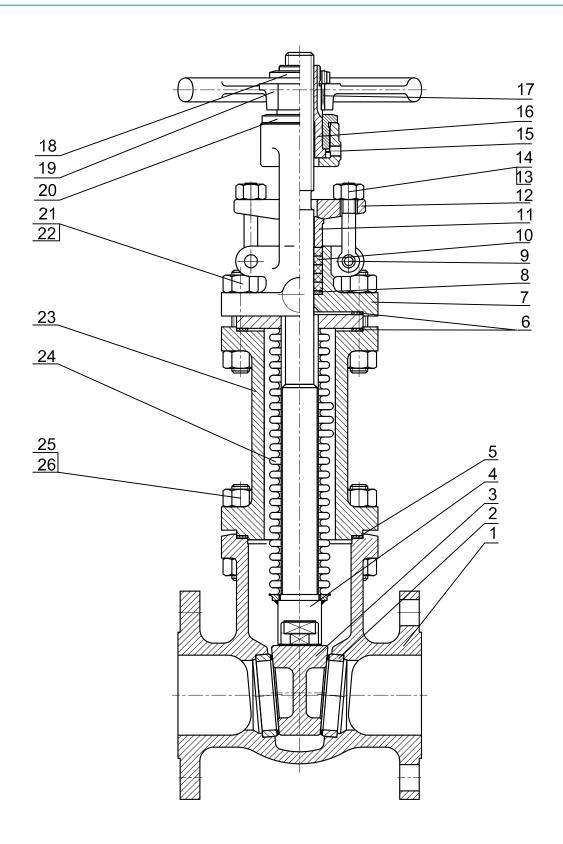
- 1. Exclusively designed bellows sealed globe valve has a sealing combination featured by using double walls stainless steel bellows as the stem seal elements and graphite packing as seal accessory to prevent leakage.
- 2. Being the key component, double wall bellows sealing keeps the valve free from leakage and maintenance.
- 3. The finely polished conical sealing between the valve and the seat ensures a long-term reliable operation.





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General Assembly Drawing



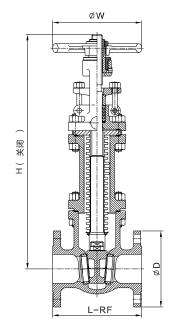
Material of Construction

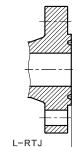
Item	Part Name	Material				
1	Body	ASTM A351 CF8				
2	Seat	ASTM A182 F304				
3	Wedge	ASTM A351 CF8				
4	Stem	ASTM A182 F304				
5	Gasket	SS304+Graphite				
6	Gasket	SS304+Graphite				
7	Bonnet	ASTM A351 CF8				
8	Packing Gasket	ASTM A240 304				
9	Pin	ASTM A276 304				
10	Packing	Graphite				
11	Packing Gland	ASTM A276 304 ASTM A351 CF8				
12	Gland Flange					
13	Eyebolt	ASTM A193 B8				
14	Nut	ASTM A194 8				
15	Grease Nipple	Carbon Steel (Galvanized)				
16	Stem Nut	ASTM A439 D-2				
17	Key	Carbon Steel				
18	Handwheel Nut	ASTM A276 304				
19	Handwheel	ASTM A47				
20	Gland	ASTM A276 304				
21	Stud	ASTM A193 B8				
22	Nut	ASTM A1948				
23	Yoke Arm	ASTM A351 CF8				
24	Bellows	ASTM A276 304				
25	Stud	ASTM A193 B8				
26	Nut	ASTM A1948				





Dimension & Weight

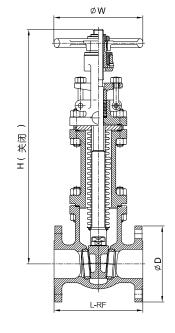


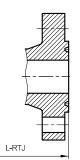


CLASS 150

Si	ize	[)	L-	-RF	L-I	RTJ	W		Н		Approx Weight	
DN	NPS	mm	in	mm	in	mm	in	mm	in	mm	in	kg	lb
50	2	152	6.00	178	7.00	191	7.50	178	7.00	526	20.71	23	51
80	3	191	7.50	203	8.00	216	8.50	229	9.00	575	22.64	44	97
100	4	229	9.00	229	9.00	241	9.50	254	10.00	720	28.35	71	157
150	6	279	11.00	267	10.50	279	11.00	305	12.00	962	37.87	116	256
200	8	343	13.50	292	11.50	305	12.00	356	14.00	1244	48.98	183	403
250	10	406	16.00	330	13.00	343	13.50	406	16.00	1376	54.17	255	562
300	12	483	19.00	356	14.00	368	14.50	508	20.00	1887	74.29	317	699

Dimension & Weight





CLASS 300

Size		D		L-RF		L-RTJ		W		Н		Approx Weight	
DN	NPS	mm	in	mm	in	mm	in	mm	in	mm	in	kg	lb
50	2	165	6.50	216	8.50	232	9.12	178	7.00	547	21.54	48	106
80	3	210	8.25	283	11.12	298	11.74	229	9.00	785	30.91	69	152
100	4	254	10.00	305	12.00	321	12.62	254	10.00	913	35.94	95	209
150	6	318	12.50	403	15.88	419	16.50	356	14.00	1144	45.04	161	355
200	8	381	15.00	419	16.50	435	17.12	406	16.00	1423	56.02	235	518
250	10	445	17.50	457	18.00	473	18.62	508	20.00	1752	68.98	304	670
300	12	502	19.75	502	19.75	517	20.37	508	20.00	1925	75.79	362	798







Design Standard

Basic Design	API 602/API 600/ASME B16.34
Face to Face/End to End	ASME B16.10
End Flange	ASME B16.5
Pressure-temperature Rating	ASME B16.34
Inspection and Test	API 598

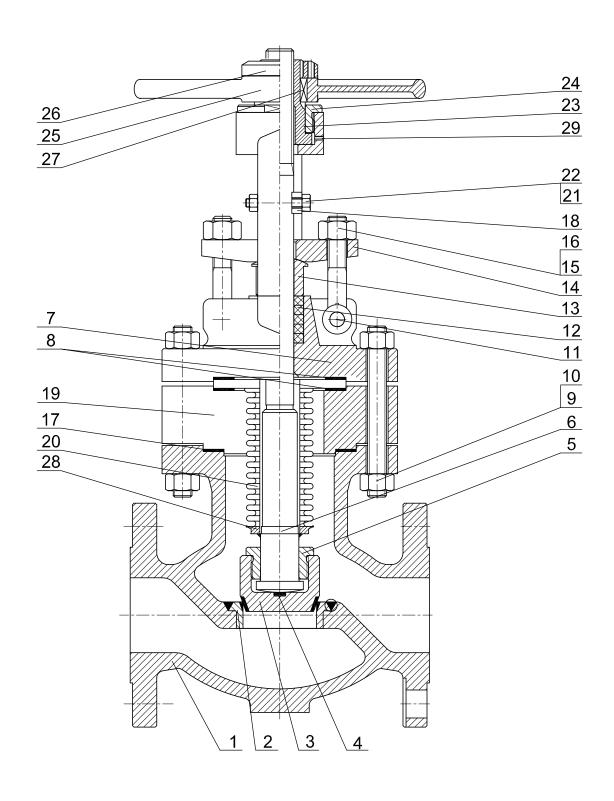
Bellows Sealed Globe Valve

- 1. Exclusively designed bellows sealed globe valve has a sealing combination featured by using double walls stainless steel bellows as the stem seal elements and graphite packing as seal accessory to prevent leakage.
- 2. No fluid loss or reducing energy loss, and improving safety of plant equipment.
- 3. Being the key component, double wall bellows sealing keeps the valve free from leakage and maintenance.
- 4. Stellited sealing surface offers a long, corrosion resistant service.





General Assembly Drawing



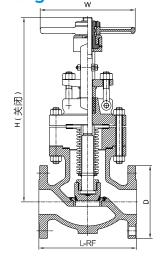
Material of Construction

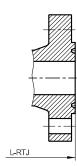
ltem	Part Name	Material
1	Body	ASTM A351 CF8
2	Seat	ASTM A182 F304
3	Disc	ASTM A182 F304
4	Thrust Washer	ASTM A240 304
5	Disc Nut	ASTM A276 304
6	Stem	ASTM A182 F304
7	Bonnet	ASTM A351 CF8
8	Gasket	SS304+Graphite
9	Stud	ASTM A193 B8
10	Nut	ASTM A194 8
11	Pin	ASTM A276 304
12	Packing	Graphite
13	Packing Gland	ASTM A276 304
14	Gland Flange	ASTM A351 CF8
15	Eyebolt	ASTM A193 B8
16	Nut	ASTM A194 8
17	Gasket	SS304+Graphite
18	Anti-rotation Plate	ASTM A276 304
19	Yoke Arm	ASTM A351 CF8
20	Bellows	ASTM A276 304
21	Nut	ASTM A194 8
22	Bolt	ASTM A193 B8
23	Stem Nut	ASTM A439 D-2
24	Gland	ASTM A276 304
25	Handwheel Nut	ASTM A276 304
26	Handwheel	ASTM A47
27	Key	Carbon Steel
28	End Fitting	ASTM A276 304
29	Grease Nipple	Carbon Steel (Galvanized)





Dimension & Weight





CLASS 150

Si	Size D		L-RF		L-RTJ		W		н		Approx Weight		
DN	NPS	mm	in	mm	in	mm	in	mm	in	mm	in	kg	lb
50	2	152	6.00	203	8.00	216	8.50	178	7.00	393	15.47	28	62
80	3	191	7.50	241	9.50	254	10.00	254	10.00	451	17.76	54	119
100	4	229	9.00	292	11.50	305	12.00	305	12.00	620	24.41	90	198
150	6	279	11.00	406	16.00	419	16.50	356	14.00	633	24.92	137	302
200	8	343	13.50	495	19.50	508	20.00	508	20.00	750	29.53	186	410
250	10	406	16.00	622	24.50	635	25.00	500	19.70	923	36.34	248	547
300	12	483	19.00	699	27.50	711	28.00	559	22.00	1265	49.80	304	670

CLASS 300

Si	Size D		L-RF		L-RTJ		W		н		Approx Weight		
DN	NPS	mm	in	mm	in	mm	in	mm	in	mm	in	kg	lb
50	2	165	6.50	267	10.50	283	11.12	178	7.00	446	17.56	35	77
80	3	210	8.25	318	12.50	333	13.12	254	10.00	525	20.67	62	137
100	4	254	10.00	356	14.00	371	14.62	356	14.00	767	30.20	98	216
150	6	318	12.50	445	17.50	460	18.12	508	20.00	806	31.73	149	328
200	8	381	15.00	559	22.00	575	22.62	640	25.20	866	34.09	208	459
250	10	445	17.50	622	24.50	638	25.12	559	22.00	1106	43.54	282	622
300	12	521	20.50	711	28.00	727	28.62	650	25.60	1352	53.23	365	805

PRESSURE TEST TO ASME B16.34&API 598 SPECIFICATIONS

▮ SHELL MATERIAL: WCB, A105

Valve Pressure	Minimum Test P	Minimum Test Pressures(psig)					
Class	Shell Hydrostatic	Seat Hydrostatic	Air Seat (psig)				
150	450	325	80				
300	1125	800	80				
600	2225	1650	80				
800	2975	2125	80				
1500	5575	4100					

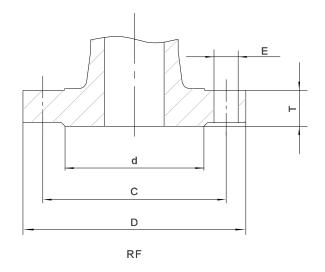
SHELL MATERIAL: CF8,CF8M

Valve Pressure	Minimum Test P	Air Cook (noin)	
Class	Shell Hydrostatic	Seat Hydrostatic	Air Seat (psig)
150	425	325	80
300	1100	800	80
600	2175	1600	80
800	2900	2125	80
1500	5400	3975	80





FLANGE DIMENSIONS

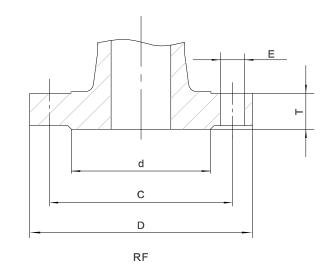


CLASS 150 Steel Pipe

Nomin	al Size	[)	(C	d	-	Γ	E		Bolt
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	Number
1/2	15	3.5	89	2.38	60.5	1.38	35	0.44	11.5	0.62	16	4
3/4	20	3.88	98	2.75	70	1.69	43	0.50	13.0	0.62	16	4
1	25	4.25	108	3.12	79.5	2.0	51	0.56	14.5	0.62	16	4
11/4	32	4.62	117	3.5	89	2.5	63.5	0.62	16.0	0.62	16	4
11/2	40	5.0	127	3.88	98.5	2.88	73	0.69	17.5	0.62	16	4
2	50	6.0	152	4.75	120.5	3.62	92	0.75 (0.62)	19.1 (15.9)	0.75	19	4
3	80	7.5	190	6.0	152.5	5.0	127	(0.75)	(19.1)	0.75	19	4
4	100	9.0	229	7 . 5	190.5	6.19	157	0.94	23.9	0.75	19	8
6	150	11.0	279	9.5	241.5	8.5	216	1.0	25.4	0.88	22	8
8	200	13.5	343	11.75	298.5	10.62	270	1.12	28.6	0.88	22	8
10	250	16.0	406	14.25	362	12.75	324	1.19	30.2	1.0	26	12
12	300	19.0	483	17.0	432	15.0	381	1.25	31.8	1.0	26	12
14	350	21.0	533	18.75	476	16.25	413	1.38	35	1.12	29	12
16	400	23.5	597	21.25	539.5	18.5	470	1.44	36.6	1.12	29	16
18	450	25.0	635	22.75	578	21.0	533	1.56	39.7	1.25	32	16
20	500	27 . 5	698	25.0	635	23.0	584	1.69	42.9	1 . 25	32	20

Height of raised face is 0.06" (1.6mm) each, dimensions in () are for valve flanges.

FLANGE DIMENSIONS



CLASS 300 Steel Pipe

Nomin	al Size	D		D C d		Т		Е		Bolt		
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	Number
1/2	15	3.75	95	2.62	66.5	1.38	35	0.56	14.5	0.62	16	4
3/4	20	4.62	117	3.25	82.5	1.69	43	0.62	16.0	0.75	19	4
1	25	4.88	124	3.5	89	2.0	51	0.69	17.5	0.75	19	4
11/4	32	5.25	134	3.88	98.5	2.5	63.5	0.75	19.5	0.75	19	4
11/2	40	6.12	156	4.5	114.5	2.88	73	0.81	20.7	0.88	22	4
2	50	6.5	165	5.0	127	3.62	92	0.88	22.3	0.75	19	8
3	80	8.25	210	6.62	168	5.0	127	1.12	28.6	0.88	22	8
4	100	10.0	254	7.88	200	6.19	157	1.25	31.8	0.88	22	8
6	150	12.5	318	10.62	270	8.5	216	1.44	36.6	0.88	22	12
8	200	15.0	381	13.0	330	10.62	270	1.62	41.3	1.0	25	12
10	250	17.5	445	15.25	387.5	12.75	324	1.88	47.7	1.12	29	16
12	300	20.5	521	17.75	451	15.0	381	2.0	50.8	1 . 25	32	16

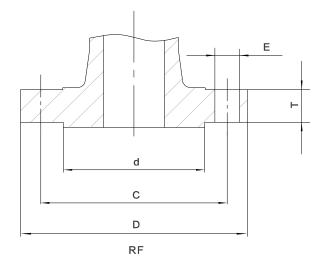
Height of raised face is 0.25" (6.4mm) each.





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FLANGE DIMENSIONS



CLASS 600 Steel Pipe

Nomin	ominal Size D		С		d		Т		E		Bolt	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	Number
1/2	15	3.75	95	2.62	66.5	1.38	35	0.56	14.5	0.62	16	4
3/4	20	4.62	117	3.25	82.5	1.69	43	0.62	16.0	0.75	19	4
1	25	4.88	124	3.5	89	2.0	51	0.69	17.5	0.75	19	4
11/4	32	5.25	134	3.88	98.5	2.5	63.5	0.81	21.0	0.75	20	4
11/2	40	6.12	156	4.5	114.5	2.88	73	0.88	22.3	0.88	22	4
2	50	6.5	165	5.0	127	3.62	92	1.0	25.4	0.75	19	8
3	80	8.25	210	6.62	168	5.0	127	1.25	31.8	0.88	22	8
4	100	10.75	273	8.5	216	6.19	157	1.5	38.1	1.0	26	8
6	150	14.0	356	11.5	292	8.5	216	1.88	47.7	1.12	29	12
8	200	16.5	419	13.75	349	10.62	270	2.19	55.6	1.25	32	12
10	250	20.0	508	17.0	432	12.75	324	2.5	63.5	1.38	35	16
12	300	22.0	559	19.25	489	15.0	381	2.62	66.7	1.38	35	20

Height of raised face is 0.25" (6.4mm) each.

Note: The data in this sample may be changed due to product upgrades and other reasons. SNY reserves the right to change the data without prior notice, and has no obligation to supplement or inform the products that have been sold.

PRODUCT WARRANTY

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