



Your Best Engineering Partner



DONGKANG METAL

Forged Steel Valves & Strainer





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ISO 9001:2008



Forged Steel Valves & Strainer
DONGKANG METAL
 [Your Best Engineering Partner]

The Status of Certificate



API 6D Certificate



API 600 Certificate



API 602 Certificate



CE PED Certificate



ISO 9001 Certificate



Gas Certificate



Takreer Certificate



MEW Certificate

“Realization of Super Corporation” Leading Valve Industry

Message

I am pleased to introduce that Dong Kang Metal is the leader of forged steel valves in Korea, and I am positive that you found the right company to work as a long-term business partner. Dongkang Metal is a professional manufacturer of High Temperature/High Pressure Forged Valve, Ball Valve and Strainer.

Our products are supplied to hydroelectric power plants, district heating corporations, combined heat & power plants, petrochemical plants, etc.

Having attained ISO 9001:2000, Dongkang Metal is equipped with superior quality control system. Particularly, the company has obtained patent from the Korean Intellectual Property Office for the system to prevent valve seat damage.

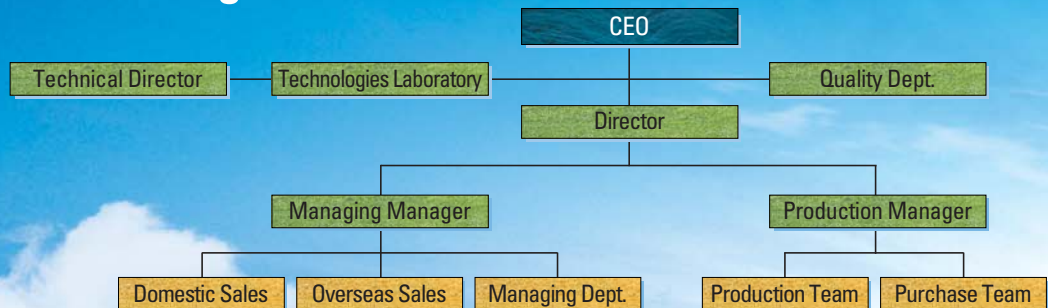
With the invention, the chronic problem of water leakage was resolved, and once again our superior technology has been widely approved.

Instead of getting satisfied, we promise to steadfastly endeavor to grow as a future-oriented corporation that focuses on technical development and customer satisfaction, thus trusted by the customers. We want your everlasting concern and encouragement. Thank you.

Yang, il-ho
CEO President



Organization





Company History

2014.	Certificate of Authority to produce the gas supplies
2013.	Factory Enlargement (2,500m ²)
2012.	Registered as Vendor of Fertil
2011.	Butterfly Valve for Cartridge type Side Overhang Structure (Patent No.10-1057480)
2011.	Registered as Vendor of Takreer
2011.	Optained Certification of CE-PED by BV
2011.	Registered as Vendor of Brongue and delivered prouducts
2010.	Factory Enlargement (2,500m ²)
2010.	Selected as MAIN-BIZ
2009.	Get GS CALTEX Co. Forged Valve Manufacturer Certification
2008.	Selected as INNO-BIZ
2008.	\$ 1 Million Achievement Award at the 45th Annual Trade day
2008.	Obtained certification of API602, 6D, 600, QI, ISO9000
2008.	Rgisterd as vender of MEW (Kuwait)
2007.	Headquarter office & factory moved for enlargement (1,700m ²)
2006.	Registered as vender of Doosan Heary Industries and delivered products.
2005.	Registered, the qualified vender for the item selected by Korea Southern Power Co., Ltd Western South-East
2005.	Prevent Damage to the Structure of The Valve Seat of the Valve (Patent No. 0474659)
2003.	Mr.Yang takes over as CEO
2002.	Registered to SK Chemical as a vender and conclude unit lost contract
2001.	Registered as a vendor of SK Construction and delivered products
2001.	Registered as a vendor of LG Construction and delivered products
2000.	Developed ANSI 4500LB valve
2000.	Acquistion of ISO9001:2000/KSA9000:2001-EQAICC Certificate
1999.	Developed and delivered ANSI 2500LB valve
1999.	Registered as a vender of Samsung Engineering Co., Ltd
1999.	Established Dong Kang Metal Co.,Ltd. (Capacity 10,000Pcs/Month)
1998.	Registered as a vender of LG CALTEX and delivered products
1996.	Registered as a supplier to Gwangyang steel mill of POSCO Engineering & Construction Co., Ltd. (Busan factory)
1994.	Registered as a collaborator of Samsung heavy industry
1991.	Established the Dong-kang metal industry Co., Ltd.(over 10,000EA per month predictability) Merged Samshin high-tension valve fitting Industry company and Hanyang frontal attack company

FORGED STEEL VALVES & STRAINER



Machining & Facilities

We, the DONGKANG METAL CO., LTD. are now working under the extremely clean working environment with automatic and semi-automatic modern facilities will continue our steady fast efforts to develop new products and keep all the goods in best quality.

We are sure you will be fully satisfied with our products which are produced under strict quality control process ranging from material component analysis with the state-of-the-art testing equipment to LOT CONTROL of component parts and thorough test operation of the complete valves.



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(1) VIEW OF MACHINING SHOP
(2) VIEW OF ASSEMBLY-LINE
(3) CNC LATHE

(4) MACHINING CENTER
(5) AUTO. INDEXING CHUCK
(6) VERTICAL FORGING PRESS

(7) SEAT RING EXPANSION MACHINE
(8) LAPPING MACHINE



③



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FORGED STEEL VALVES & STRAINER



Machining & Testing

- | | | |
|----------------------------------|--------------------------------------|-----------------------------------|
| (1): HIGH PRESSURE HYDRO TESTER | (4): PMI TEST | (7): U.T.M |
| (2): GAS BOOSTER & LEAK DETECTOR | (5): HYDRO TESTING FOR CASTING VALVE | (8): COORDINATE MEASURING MACHINE |
| (3): CRYOGENIC TESTING | (6): SPECTROMETER | (9): BRINELL HARDNESS TESTER |



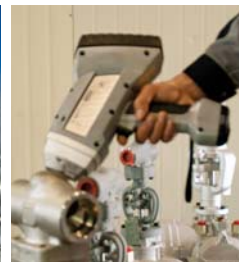
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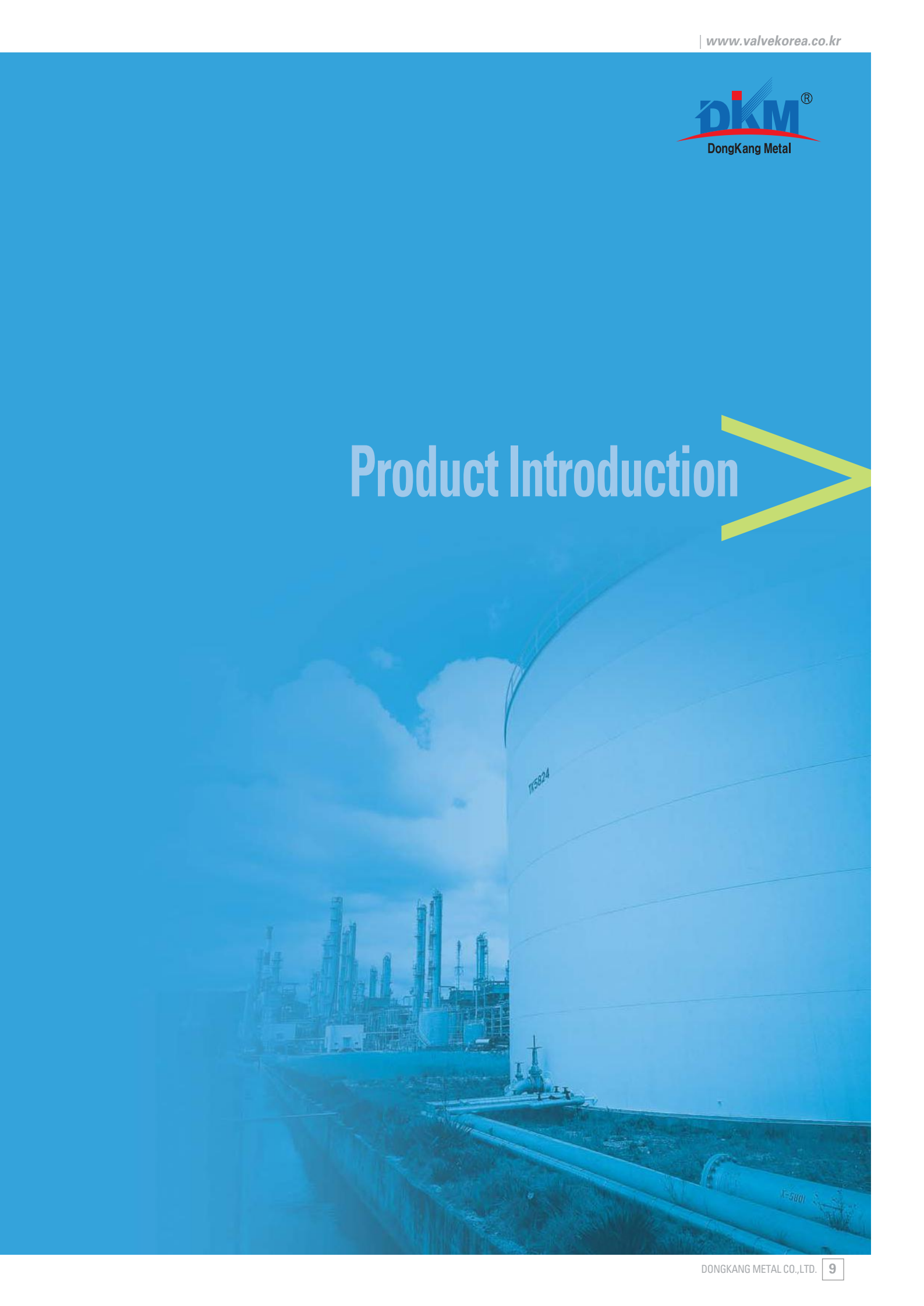


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Product Introduction

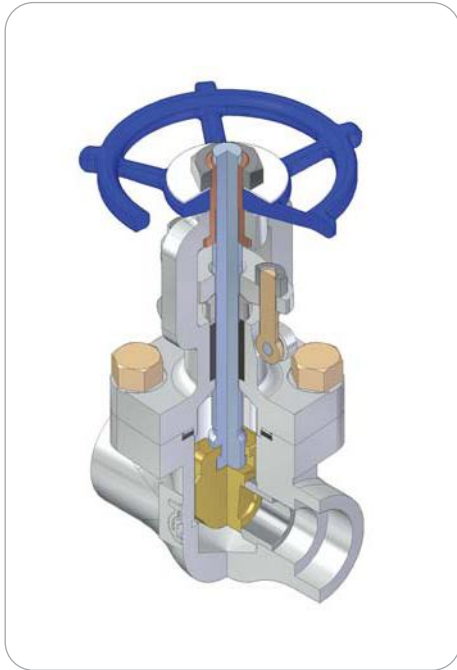


THE BELOW VALVES IN THE LIST ARE CURRENT PRODUCTS IN PRODUCTION

- GATE VALVE
- GLOBE VALVE
- LIFT CHECK VALVE (W/SPRING)
- SWING CHECK VALVE
- NEEDLE VALVE
- GLOBE CHECK VALVE
- CRYOGENIC GATE VALVE
- CRYOGENIC GLOBE VALVE
- BELLOWS GATE VALVE
- BELLOWS GLOBE VALVE
- 3-PIECE BALL VALVE
- 2-PIECE BALL VALVE
- Y-STRAINER
- Y-STRAINER (CASTING)
- Y-GLOBE VALVE
- PNEUMATIC VALVE
- MOTOR OPERATED VALVE (M.O.V)
- JACKET VALVE
- ANGLE VALVE
- PRESSURE SEAL BONNET
- PRESSURE SEAL COVER







GATE VALVE

DESCRIPTION

Serves as efficient stop valves with flow in either direction. They are commonly used where a minimum of pressure drop is important because they offer practically no resistance to flow when fully open. Throttling is not conducive to accurate and consistent flow control. Also the valves may be damaged by the high velocity across the seats. They function best fully open or fully closed.

CLASS

API 800, 1500
ANSI 150, 300, 600, 900, 1500, 2500

SIZE

3/8", 1/2", 3/4", 1", 1 1/4", 1 1/2", 2"

MATERIAL

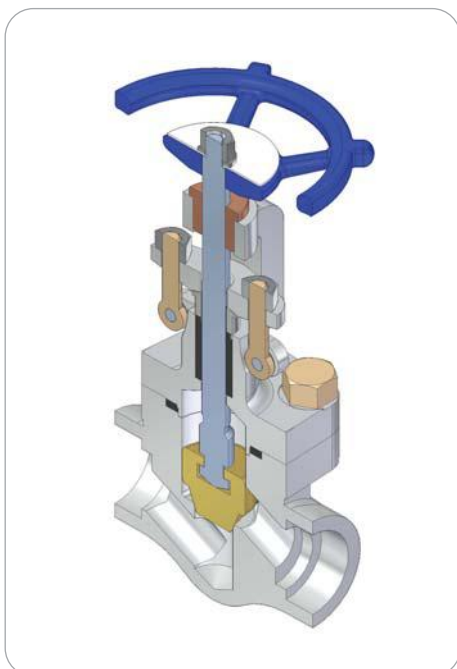
ASTM A105, A182-F5, A182-F9, A182-F11, A182-F22, A182-F304, A182-F316, A182-F304L, A182-F316L, A182-F321, A182-F347, A182-F51, A182-F91, A350-LF2
Other Materials also Available on Application

END CONNECTION

SOCKET WELDING, THREADED, BUTT WELDING, FLANGED

FEATURE

BOLTED BONNET OR WELDED BONNET OUTSIDE SCREW & YOKE
SOLID WEDGE DISC RENEWABLE SEAT



GLOBE VALVE

DESCRIPTION

Are ideal for throttling service. Their flow characteristics permit accurate and repeatable flow control. However, caution must be exercised to avoid extremely close throttling when pressure drop exceeds 20%. This creates excessive noise, vibration, and possibly damage to valves and piping. When these conditions are anticipated, consult dong-kang for recommendations.

CLASS

API 800, 1500
ANSI 150, 300, 600, 900, 2500, 4500

SIZE

3/8", 1/2", 3/4", 1", 1 1/4", 1 1/2", 2"

MATERIAL

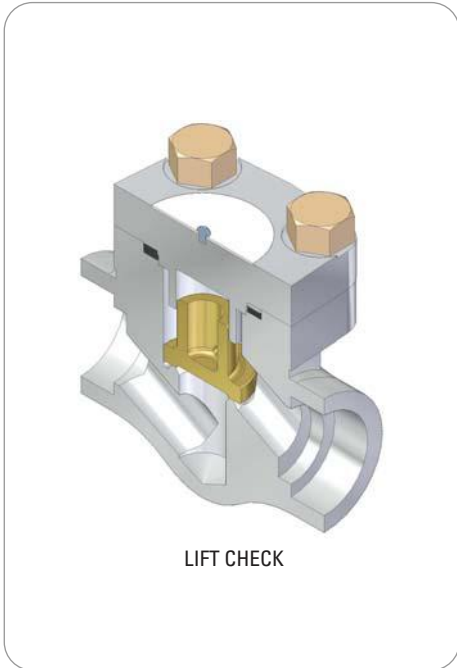
ASTM A105, A182-F5, A182-F9, A182-F11, A182-F22, A182-F304, A182-F316, A182-F304L, A182-F316L, A182-F321, A182-F347, A182-F51, A182-F91, A350-LF2
Other Materials also Available on Application

END CONNECTION

SOCKET WELDING, THREADED BUTT WELDING, FLANGED

FEATURE

BOLTED BONNET OR WELDED BONNET OUTSIDE SCREW & YOKE
PLUG DISC INTEGRAL SEAT



LIFT CHECK VALVE

DESCRIPTION

Have an advantage over most other types of check valves in that they need only a relatively short lift to obtain full valve opening. The lift check valve uses a free-moving closure element that is placed above the seat. It prevents backflow and maintains pressure. The lift check valve is recommended to install in horizontal piping lines because the disc is pushed up by the flow until the flow reverses when gravity and down stream pressure close the closure element against the seat.

CLASS

API 800, 1500
ANSI 150, 300, 600, 900, 1500, 2500, 4500

SIZE

3/8", 1/2", 3/4", 1", 1 1/4", 1 1/2", 2"

MATERIAL

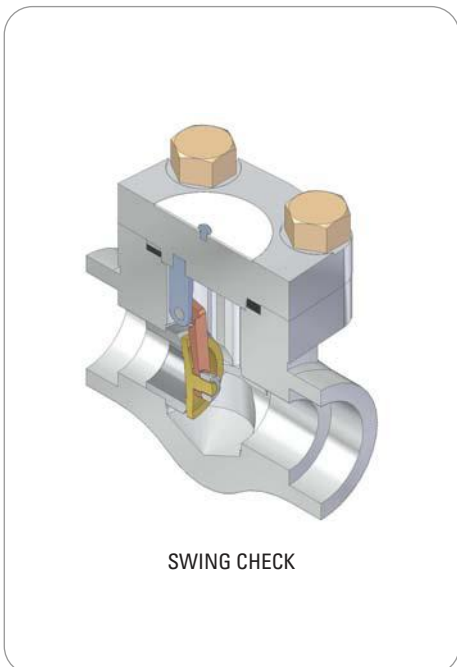
ASTM A105, A182-F5, A182-F9, A182-F11, A182-F22, A182-F304, A182-F316, A182-F304L, A182-F316L, A350-LF2

END CONNECTION

SOCKET WELDING, THREADED BUTT WELDING, FLANGED

FEATURE

BOLTED COVER OR WELDED COVER INTEGRAL SEAT



SWING CHECK VALVE

DESCRIPTION

prevent reversal of flow through pipe lines. the swing check valve uses a hinged door to open during flow and to close against a pressure reversal. most dong-kang swing check valves can be installed in horizontal or vertical upward flow piping. they offer low resistance to flow and are particularly suited to low velocity service.

CLASS

API 800, 1500
ANSI 150, 300, 600, 900, 1500

SIZE

3/8", 1/2", 3/4", 1", 1 1/4", 1 1/2", 2"

MATERIAL

ASTM A105, A182-F5, A182-F9, A182-F11, A182-F22, A182-F304, A182-F316, A182-F304L, A182-F316L, A182-F321, A182-F347, A182-F51, A182-F91, A350-LF2
Other Materials also Available on Application

END CONNECTION

SOCKET WELDING, THREADED BUTT WELDING, FLANGED

FEATURE

BOLTED COVER OR WELDED COVER RENEWABLE SEAT

Figure Number Abbreviations

1		2		3		4		5, 6	
Valve		Item		Construction		Class		Size	
A	ANGLE	A	BASIC	1	SW	A	150	0A	1/2
B	BALL	B	YOKE WELDED	2	RF	B	300	0B	3/4
G	GLOBE	C	WELDED BONNET/COVER	3	FF	C	600	01	1
L	L/CHECK	D	LONG BONNET	4	RTJ	D	800	1A	1 1/4
S	S/CHECK	E	CRYOGENIC	5	BW	E	900	1B	1 1/2
T	GATE	F	BELLOWS	6	NPT	F	1500	02	2
Y	STRAINER	G	P.S.B / P.S.C	7	SW × NPT	G	2500	2B	2 1/2
		H	N.B			H	5K		
		J	Y-N.B			J	10K		
		K	NEEDLE			K	16K		
		L	2-PIECE			L	20K		
		M	Y-TYPE			M	30K		
		N	Y-P.S.B / Y-P.S.C			N	40K		
						P	4500		

Product Information

1. TYPE:

- GATE, GLOBE, ANGLE, Y-TYPE GLOBE, GLOBE NEEDLE POINT, LONG BONNET, BELLOWS SEAL, CRYOGENIC SERVICE
- ACTUATOR (MOV, PNEUMATIC)
- CHECK VALVE (LIFT, SWING, BALL, TILTING, SPRING LOADED), GLOBE CHECK (SDNR)
- DSS VALVE FOR POWER PLANT, STRAINER
- BALL VALVE
- STRAINER

2. SIZE: 3/8" ~ 2" (2 1/2" ~ 20" BY ORDER)

3. CLASS: API 800, 1500

ANSI 150, 300, 600, 900, 1500, 2500, 4500

4. PORT: REDUCED OR FULL

5. MATERIAL: ASTM A105/A182-F304, F316, A182-F304L, F316L, F5, F9, F11, F22, F51, F53, F91, F347/A350-LF2
ALLOY, MONEL, INCONEL, HASTELLOY

6. END CONNECTION:

SOCKET WELDING ACC. TO ANSI, JIS, KS, DIN
BUTT WELDING ACC TO ANSI
THREADED ACC. TO NPT, PT
FLANGED ACC. TO ANSI, BSS, JIS, KS, DIN

7. BONNET TYPE:

BOLTED BONNET, WELDED BONNET
PRESSURE SEAL BONNET

8. OTHER FEATURE:

OUTSIDE SCREW AND YOKE

Abbreviations

- ANSI: American National Standards Institute Inc.
- API: American Petroleum Institute
- ASB: Asbestos
- ASTM: American Society for Testing and Materials
- BB: Bolted Bonnet
- BC: Bolted Cover
- BW: Butt Welding
- CWP: Cold Working Pressure
- EB: Extended Bonnet
- FF: Flat Face
- FLGD: Flanged
- HF: Hard Faced
- INTSS: Integral Seat Stellite Wild Face
- ISS: Inside Screw and Stem
- JIS: Japanese Industrial Standard
- JPI: Japan Petroleum Institute
- LB: Long Bonnet
- NPT: National Pipe Taper Thread (Pipe Thread):ANSI
- OS & Y: Outside Screw and Yoke
- PT: Pipe Taper Thread (Pipe Thread):JIS
- RF: Raised Face
- RS: Rising Stem
- RTJ: Ring Type Joint
- SB: Screwed Bonnet
- SCH: Schedule
- SCRD: Screwed
- SDNR: Stem Down Non Return
- SH: Surface Hardening
- STD: Standard
- STL: Stellite
- SW: Socket Welding
- WB: Welded Bonnet
- WC: Welded Cover
- PS: Pressure seal

Product Specification

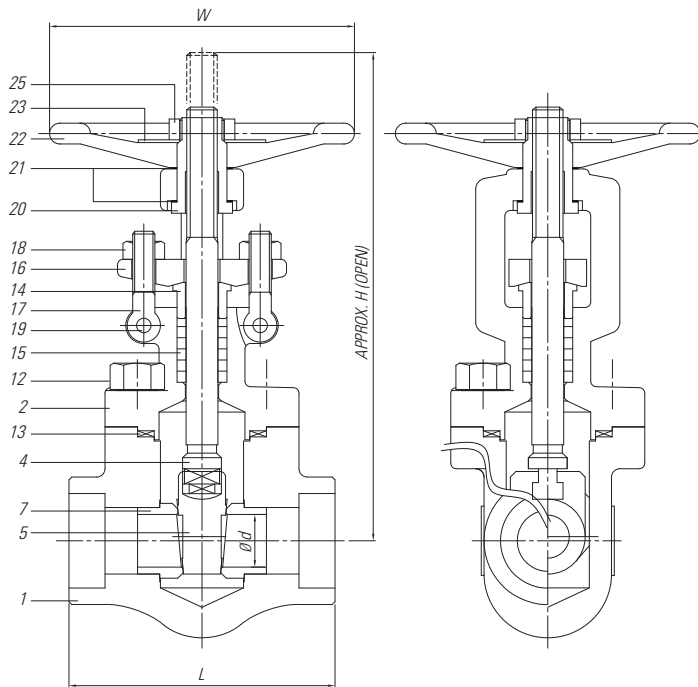
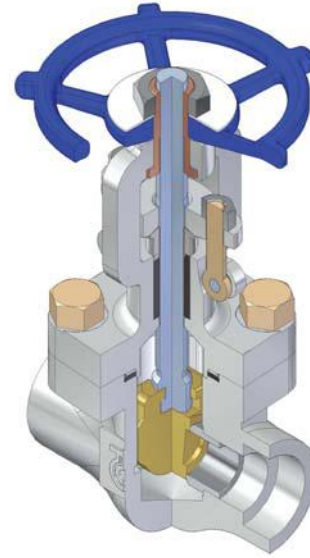


- FORGED STEEL GATE VALVE / Bolted Bonnet
- FORGED STEEL GATE VALVE / Yoke type Welded Bonnet
- FORGED STEEL GLOBE VALVE / Bolted Bonnet
- FORGED STEEL GLOBE VALVE / Non-Bonnet type
- FORGED STEEL LIFT CHECK VALVE / Bolted Cover
- FORGED STEEL SWING CHECK VALVE / Bolted Cover
- FORGED STEEL BELLOWS GATE VALVE / Bolted Bonnet
- FORGED STEEL BELLOWS GLOBE VALVE / Bolted Bonnet
- FORGED STEEL GATE VALVE / Cryogenic, B.B
- FORGED STEEL GLOBE VALVE / Cryogenic, B.B
- FORGED STEEL GATE VALVE / Long Bonnet, B.B
- FORGED STEEL GLOBE VALVE / Long Bonnet, B.B
- FORGED STEEL GATE VALVE / Pressure Seal Bonnet
- FORGED STEEL GLOBE VALVE / Pressure Seal Bonnet
- FORGED STEEL CHECK VALVE / Pressure Seal Cover
- FORGED STEEL GLOBE VALVE / Y-Non-Bonnet type
- FORGED STEEL BALL VALVE / Bolted Cap
- FORGED STEEL Y-STRAINER / Bolted Cover
- Y-STRAINER
- BASKET-STRAINER
- TEE-STRAINER
- TEMPORARY-STRAINER

FORGED STEEL GATE VALVE

BOLTED BONNET, OS & Y

CLASS 800 & 600 & 1500



DIMENSIONS (unit: mm)

CLASS	SIZE	L	Approx. H	W	Ød	Approx. Weight(kg)	
800	1/2"	15A	73	133	90	10	1.5
	3/4"	20A	87	149	90	13	1.8
	1"	25A	96	178	105	19	2.5
	1 1/4"	32A	121	210	125	25	4.7
	1 1/2"	40A	141	222	125	30	6.0
	2"	50A	161	257	150	37	9.5
600	1/2"	15A	87	149	90	13	1.8
	3/4"	20A	96	178	105	19	2.5
	1"	25A	121	210	125	25	4.7
	1 1/4"	32A	141	222	125	30	6.0
	1 1/2"	40A	161	257	150	37	9.5
	2"	50A	172	292	165	37	11.8
1500	1/2"	15A	96	178	105	13	2.5
	3/4"	20A	96	178	105	13	2.5
	1"	25A	121	210	125	19	4.7
	1 1/4"	32A	141	222	125	25	6.0
	1 1/2"	40A	161	257	150	30	9.5
	2"	50A	172	292	165	37	11.8

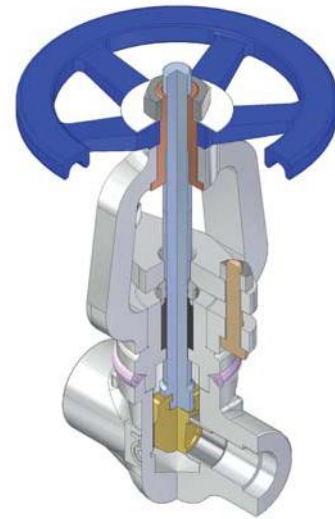
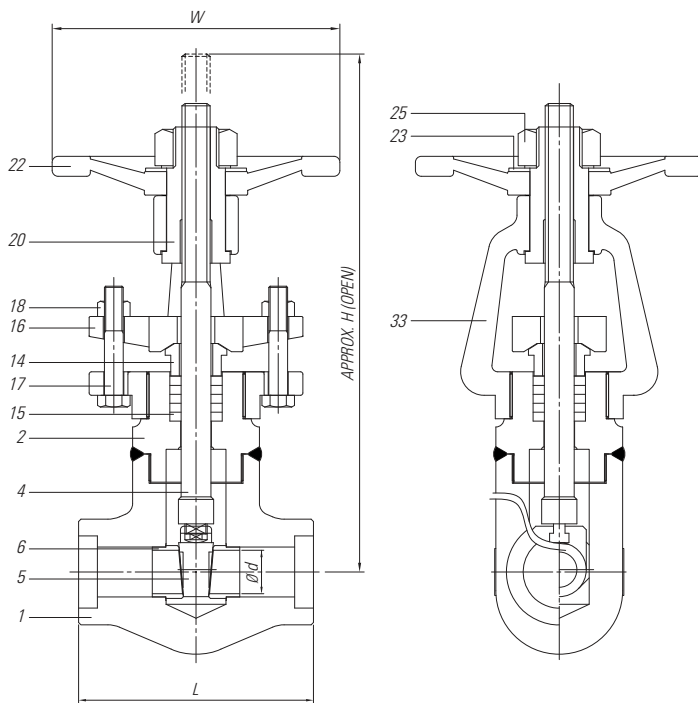
BILL OF MATERIALS

No.	PART NAME	MATERIAL							
1	Body	A105	A182-F22	A350-LF2	A182-F304	A182-F304L	A182-F316	A182-F316L	
2	Bonnet	A105	A182-F22	A350-LF2	A182-F304	A182-F304L	A182-F316	A182-F316L	
4	Stem	A276-410			A276-304	A276-316			
5	Disc	A217-CA15			A351-CF8	A351-CF8M			
7	Seat Ring	A276-410			A276-304	A276-316			
12	Bonnet Bolt	A193-B7	A193-B16	A320-L7	A193-B8				
13	Gasket	304SS+GRAPHITE				316SS+GRAPHITE			
14	Gland	A276-304							
15	Gland Packing	GRAPHITE							
16	Gland Flange	A105			A182-F304				
17	Gland Bolt	A193-B8							
18	Gland Bolt Nut	A194-2H			A194-8				
19	Gland Bolt Pin	A276-304							
20	Sleeve	A276-410							
21	Sleeve Washer	A276-304							
22	Hand Wheel	A197							
23	Name Plate	ALUMINUM							
25	Hand Wheel Nut	SS400+Zn PLATE							

FORGED STEEL GATE VALVE

YOKE TYPE WELDED BONNET, OS & Y

CLASS 1500 & 2500



DIMENSIONS(unit:mm)

CLASS	SIZE	L	Approx. H	W	∅d	Approx. Weight(kg)	
1500	1/2"	15A	96	233	165	13	4.7
	3/4"	20A	121	245	165	19	6.8
	1"	25A	141	300	200	25	8.5
	1 1/4"	32A	161	331	200	30	13.0
	1 1/2"	40A	172	355	200	37	15.5
	2"	50A	200	439	245	37	18.0
2500	1/2"	15A	121	245	165	12	6.8
	3/4"	20A	141	300	200	12	8.5
	1"	25A	161	331	200	17	13.0
	1 1/4"	32A	172	355	200	25	15.5
	1 1/2"	40A	200	439	245	30	18.0
	2"	50A	220	486	350	37	20.0

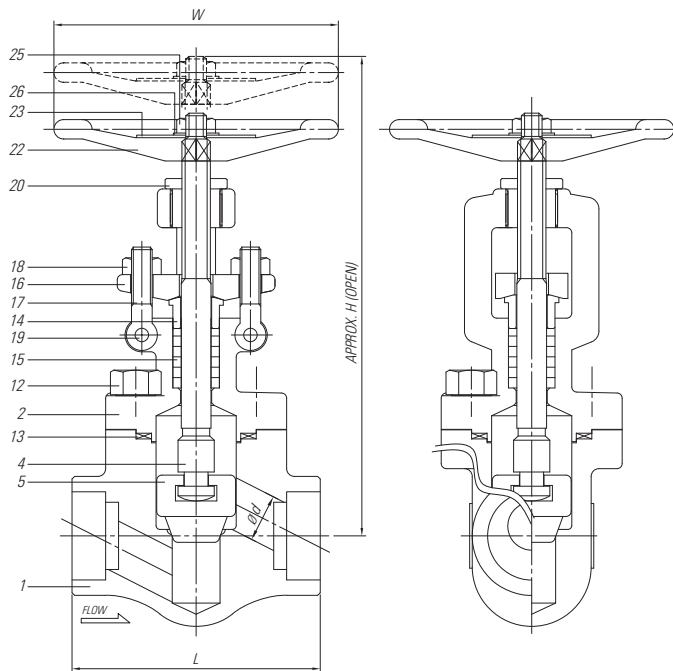
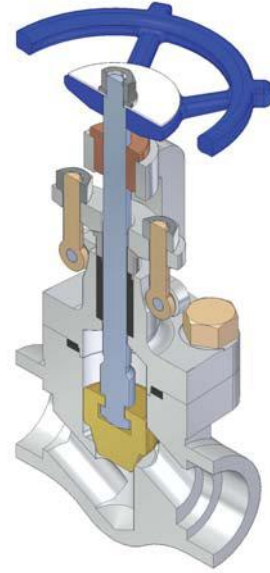
BILL OF MATERIALS

No.	PART NAME	MATERIAL						
1	Body	A105	A182-F22	A350-LF2	A182-F304	A182-F304L	A182-F316	A182-F316L
2	Bonnet	A105	A182-F22	A350-LF2	A182-F304	A182-F304L	A182-F316	A182-F316L
4	Stem	A276-410			A276-304	A276-316		
5	Disc	A217-CA15			A351-CF8	A351-CF8M		
7	Seat Ring	A276-410			A276-304	A276-316		
14	Gland	A276-304						
15	Gland Packing	GRAPHITE						
16	Gland Flange	A105			A182-F304			
17	Gland Bolt	A193-B7			A193-B8			
18	Gland Bolt Nut	A194-2H			A194-8			
20	Sleeve	HIGH-TENSION BRASS						
22	Hand Wheel	A197						
23	Name Plate	ALUMINUM						
25	Hand Wheel Nut	SS400+Zn PLATE						
33	Yoke	A216-WCB			A351-CF8			

FORGED STEEL GLOBE VALVE

BOLTED BONNET, OS & Y

CLASS 800 & 600 & 1500



DIMENSIONS (unit: mm)

CLASS	SIZE	L	Approx. H	W	Ød	Approx. Weight(kg)
800	1/2"	15A	73	134	90	1.5
	3/4"	20A	87	146	90	1.8
	1"	25A	96	177	105	2.7
	1 1/4"	32A	121	205	125	4.7
	1 1/2"	40A	141	215	125	5.9
	2"	50A	161	248	150	9.5
600	1/2"	15A	79	155	100	1.9
	3/4"	20A	92	155	100	2.1
	1"	25A	111	197	125	3.8
	1 1/4"	32A	130	218	155	5.6
	1 1/2"	40A	152	256	155	7.2
	2"	50A	172	276	180	11.8
1500	1/2"	15A	96	177	105	2.7
	3/4"	20A	96	177	105	2.7
	1"	25A	121	205	125	4.7
	1 1/4"	32A	141	215	125	5.9
	1 1/2"	40A	161	248	150	9.5
	2"	50A	172	276	165	11.8

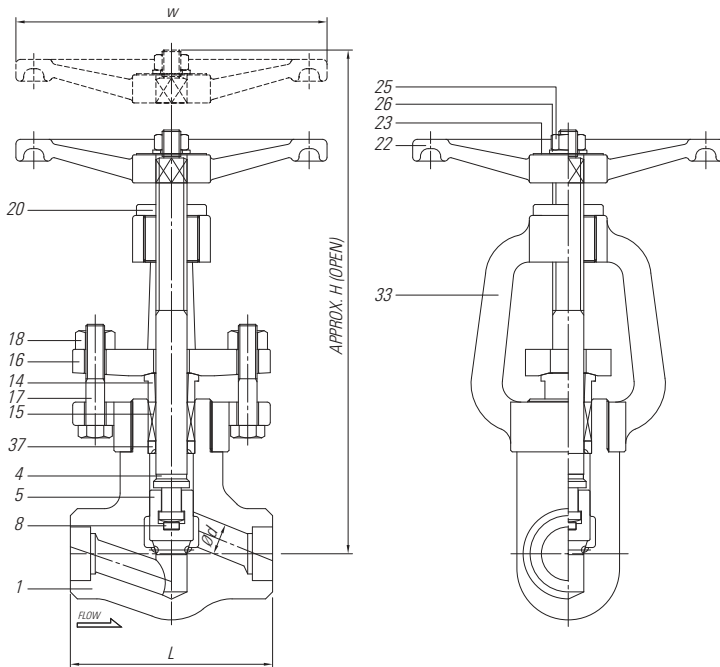
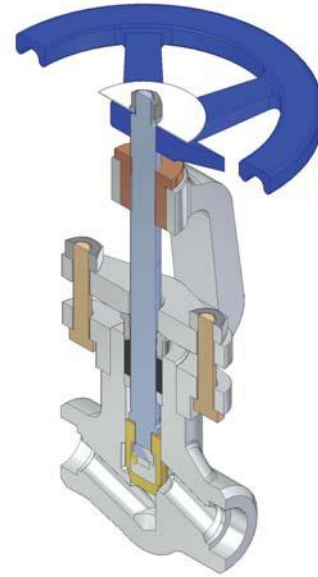
BILL OF MATERIALS

No.	PART NAME	MATERIAL						
1	Body	A105	A182-F22	A350-LF2	A182-F304	A182-F304L	A182-F316	A182-F316L
2	Bonnet	A105	A182-F22	A350-LF2	A182-F304	A182-F304L	A182-F316	A182-F316L
4	Stem	A276-410			A276-304	A276-316		
5	Disc	A217-CA15			A351-CF8	A351-CF8M		
12	Bonnet Bolt	A193-B7	A193-B16	A320-L7	A193-B8			
13	Gasket	304SS+GRAPHITE				316SS+GRAPHITE		
14	Gland	A276-304						
15	Gland Packing	GRAPHITE						
16	Gland Flange	A105			A182-F304			
17	Gland Bolt	A193-B8						
18	Gland Bolt Nut	A194-2H			A194-8			
19	Gland Bolt Pin	A276-304						
20	Sleeve	A276-410						
22	Hand Wheel	A197						
23	Name Plate	ALUMINUM						
25	Hand Wheel Nut	A307-B						
26	Wheel Washer	A108-1020						

FORGED STEEL GLOBE VALVE

NON-BONNET TYPE, OS & Y

CLASS 1500 & 2500 & 4500



DIMENSIONS(unit:mm)

CLASS	SIZE	L	Approx. H	W	∅d	Approx. Weight(kg)	
1500	1/2"	15A	120	225	200	12	5.2
	3/4"	20A	120	225	200	15	5.2
	1"	25A	130	290	260	20	8.5
	1 1/4"	32A	200	380	360	25	20.0
	1 1/2"	40A	200	380	360	30	20.0
	2"	50A	240	425	360	36	32.0
2500	1/2"	15A	130	225	200	10	6.2
	3/4"	20A	130	225	200	13	6.2
	1"	25A	150	290	260	18	9.5
	1 1/4"	32A	220	395	360	22	26.0
	1 1/2"	40A	220	395	360	28	26.0
	2"	50A	260	440	360	34	39.0
4500	1/2"	15A	180	420	360	8	26.0
	3/4"	20A	180	420	360	11	26.0
	1"	25A	180	420	360	14	26.0
	1 1/4"	32A	250	415	360	18	53.0
	1 1/2"	40A	250	415	360	22	53.0
	2"	50A	250	415	360	25	53.0

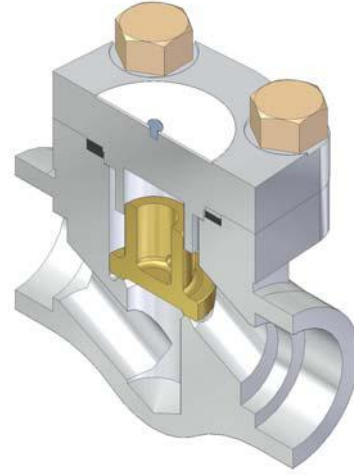
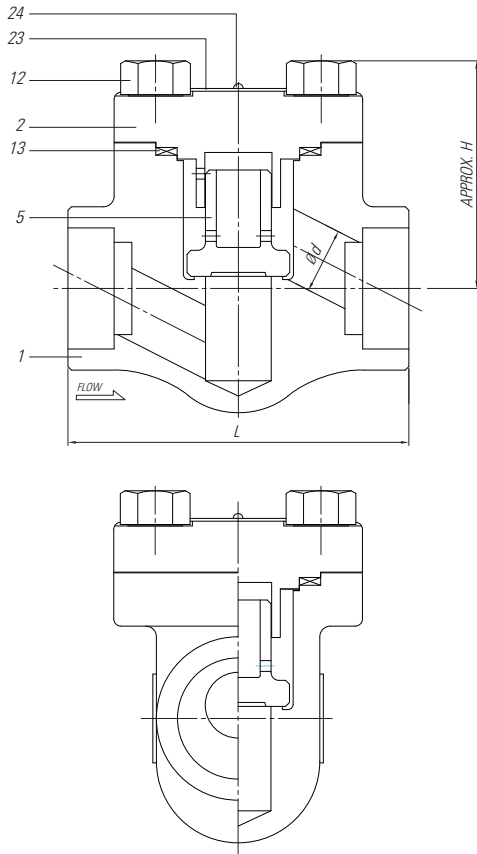
BILL OF MATERIALS

No.	PART NAME	MATERIAL						
1	Body	A105	A182-F22	A350-LF2	A182-F304	A182-F304L	A182-F316	A182-F316L
4	Stem	A276-431			A276-304	A276-316		
5	Disc	A276-410			A276-304	A276-316		
8	Disc Thrust Plate	A564-630						
14	Gland	A276-304						
15	Gland Packing	GRAPHITE						
16	Gland Flange	A105			A182-F304			
17	Gland Bolt	A193-B7			A193-B8			
18	Gland Bolt Nut	A194-2H			A194-8			
20	Sleeve	HIGH-TENSION BRASS						
22	Hand Wheel	A197						
23	Name Plate	ALUMINUM						
25	Hand Wheel Nut	A307-B						
26	Wheel Washer	A108-1020						
33	Yoke	A216-WCB			A351-CF8			
37	Loose Backseat	A276-431+NITRIDED						

FORGED STEEL LIFT CHECK VALVE

BOLTED COVER

CLASS 800 & 600 & 1500



DIMENSIONS (unit: mm)

CLASS	SIZE	L	Approx. H	∅d	Approx. Weight(kg)	
800	1/2"	15A	73	51	9.5	1.0
	3/4"	20A	87	55	12.5	1.3
	1"	25A	96	65	18.5	2.0
	1 1/4"	32A	121	76	24	3.4
	1 1/2"	40A	141	84	29	4.2
	2"	50A	161	101	35	6.9
600	1/2"	15A	79	56	10	1.2
	3/4"	20A	92	56	13	1.4
	1"	25A	111	72	17.5	2.6
	1 1/4"	32A	130	84	24	4.2
	1 1/2"	40A	152	99	31	5.6
	2"	50A	172	116	37	8.9
1500	1/2"	15A	96	65	9.5	2.0
	3/4"	20A	96	65	12.5	2.0
	1"	25A	121	76	18.5	3.4
	1 1/4"	32A	141	84	24	4.2
	1 1/2"	40A	161	101	29	6.9
	2"	50A	172	116	35	9.0

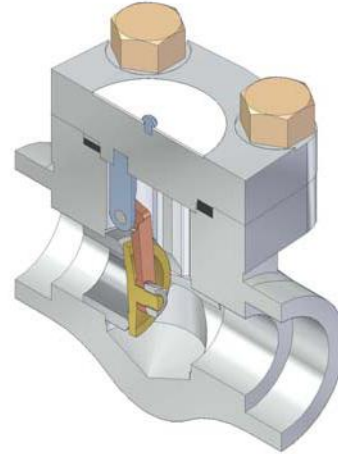
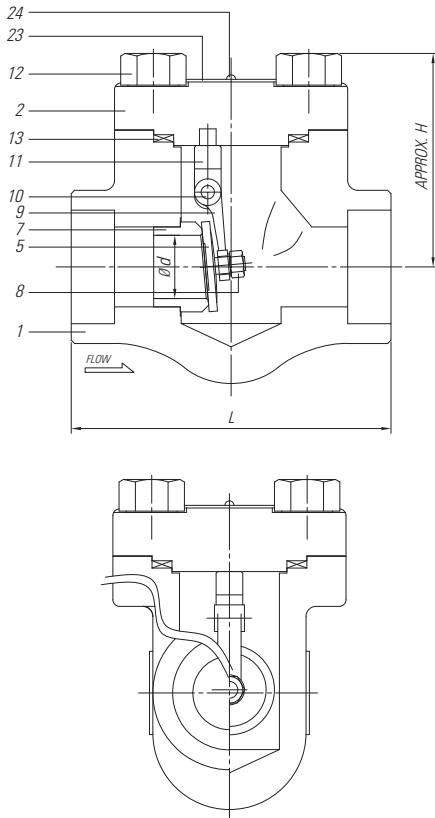
BILL OF MATERIALS

No.	PART NAME	MATERIAL						
1	Body	A105	A182-F22	A350-LF2	A182-F304	A182-F304L	A182-F316	A182-F316L
2	Cover	A105	A182-F22	A350-LF2	A182-F304	A182-F304L	A182-F316	A182-F316L
5	Disc	A276-410			A276-304	A276-316		
12	Cover Bolt	A193-B7	A193-B16	A320-L7	A193-B8			
13	Gasket	304SS+GRAPHITE				316SS+GRAPHITE		
23	Name Plate	ALUMINUM						
24	Rivet	A304SS						

FORGED STEEL SWING CHECK VALVE

BOLTED COVER

CLASS 800 & 600 & 1500



DIMENSIONS(unit:mm)

CLASS	SIZE	L	Approx. H	Ød	Approx. Weight(kg)	
800	1/2"	15A	73	51	10	1.0
	3/4"	20A	87	55	13	1.3
	1"	25A	96	65	19	2.0
	1 1/4"	32A	121	76	25	3.4
	1 1/2"	40A	141	84	30	4.2
600	2"	50A	161	101	37	6.9
	1/2"	15A	87	55	13	1.3
	3/4"	20A	96	65	19	2.0
	1"	25A	121	76	25	3.4
	1 1/4"	32A	141	84	30	4.2
1500	1 1/2"	40A	161	101	37	6.9
	2"	50A	172	116	37	9.0
	1/2"	15A	96	65	13	2.0
	3/4"	20A	96	65	13	2.0
	1"	25A	121	76	19	3.4

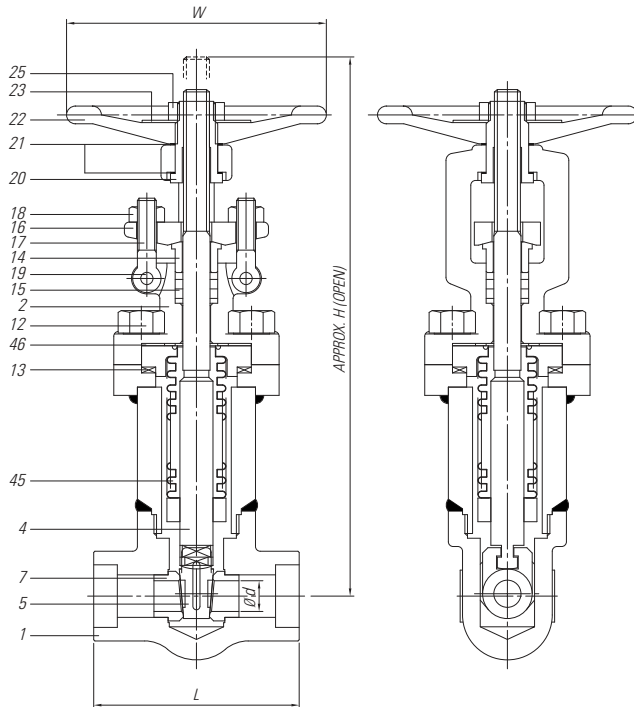
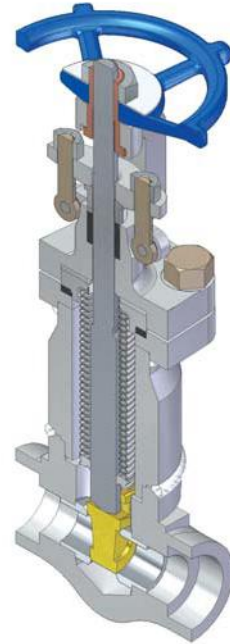
BILL OF MATERIALS

No.	PART NAME	MATERIAL							
1	Body	A105	A182-F22	A350-LF2	A182-F304	A182-F304L	A182-F316	A182-F316L	
2	Cover	A105	A182-F22	A350-LF2	A182-F304	A182-F304L	A182-F316	A182-F316L	
5	Disc	A276-410			A276-304	A276-316			
7	Seat Ring	A276-410			A276-304	A276-316			
8	Retaining Nut	A194-2H			A194-8				
9	Hinge	A351-CF8M							
10	Hinge Pin	A276-316							
11	Supporter	A276-316							
12	Cover Bolt	A193-B7	A193-B16	A320-L7	A193-B8				
13	Gasket	304SS+GRAPHITE				316SS+GRAPHITE			
23	Name Plate	ALUMINUM							
24	Rivet	A304SS							

FORGED STEEL BELLOWS GATE VALVE

BOLTED BONNET, OS & Y

CLASS 800 & 600



DIMENSIONS (unit:mm)

CLASS	SIZE	L	Approx. H	W	∅d	Approx. Weight(kg)	
800	1/2"	15A	87	231	105	13	6.8
	3/4"	20A	87	231	105	13	6.8
	1"	25A	96	256	105	19	8.5
	1 1/4"	32A	141	342	150	25	13.0
	1 1/2"	40A	141	342	150	30	15.5
	2"	50A	161	505	150	37	19.0
600	1/2"	15A	87	231	105	13	6.8
	3/4"	20A	87	231	105	13	6.8
	1"	25A	96	256	105	19	8.5
	1 1/4"	32A	141	342	150	25	13.0
	1 1/2"	40A	141	342	150	30	15.5
	2"	50A	161	505	150	37	19.0

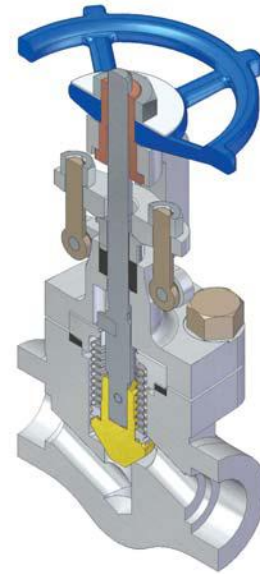
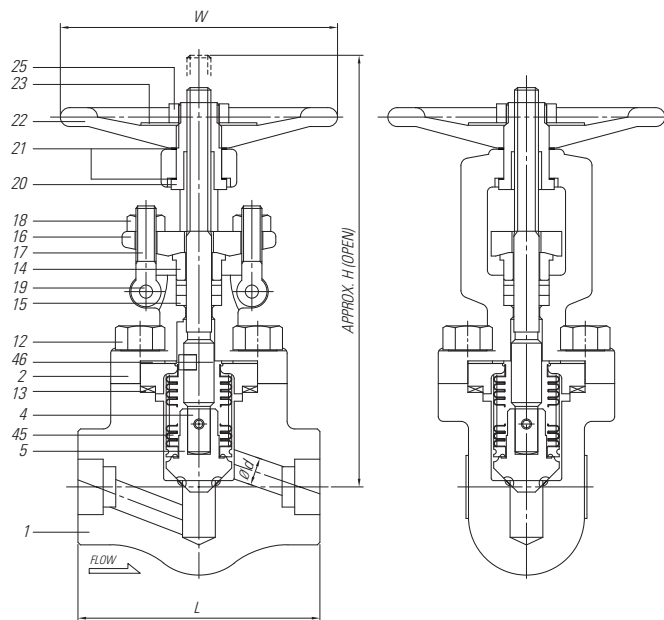
BILL OF MATERIALS

No.	PART NAME	MATERIAL						
1	Body	A105	A182-F22	A350-LF2	A182-F304	A182-F304L	A182-F316	A182-F316L
2	Bonnet	A105	A182-F22	A350-LF2	A182-F304	A182-F304L	A182-F316	A182-F316L
4	Stem	A276-410			A276-304	A276-316		
5	Disc	A217-CA15			A351-CF8	A351-CF8M		
7	Seat Ring	A276-410			A276-304	A276-316		
12	Bonnet Bolt	A193-B7	A193-B16	A320-L7	A193-B8			
13	Gasket	304SS+GRAPHITE				316SS+GRAPHITE		
14	Gland	A276-304						
15	Gland Packing	GRAPHITE						
16	Gland Flange	A105			A182-F304			
17	Gland Bolt	A193-B8						
18	Gland Bolt Nut	A194-2H			A194-8			
19	Gland Bolt Pin	A276-304						
20	Sleeve	A276-410						
21	Sleeve Washer	A276-304						
22	Hand Wheel	A197						
23	Name Plate	ALUMINUM						
25	Hand Wheel Nut	SS400+Zn PLATE						
45	Bellows	316SS						
46	Metal Gasket	A240-304						

FORGED STEEL BELLOWS GLOBE VALVE

BOLTED BONNET, OS & Y

CLASS 800 & 600



DIMENSIONS(unit: mm)

CLASS	SIZE	L	Approx. H	W	ød	Approx. Weight(kg)
800	1/2"	15A	96	169	105	9.5
	3/4"	20A	96	169	105	12.5
	1"	25A	141	202	125	18.5
	1 1/4"	32A	141	202	125	24
	1 1/2"	40A	141	202	125	29
	2"	50A	161	233	150	35
600	1/2"	15A	96	169	105	9.5
	3/4"	20A	96	169	105	12.5
	1"	25A	141	202	125	18.5
	1 1/4"	32A	141	202	125	24
	1 1/2"	40A	141	202	125	29
	2"	50A	161	233	150	35

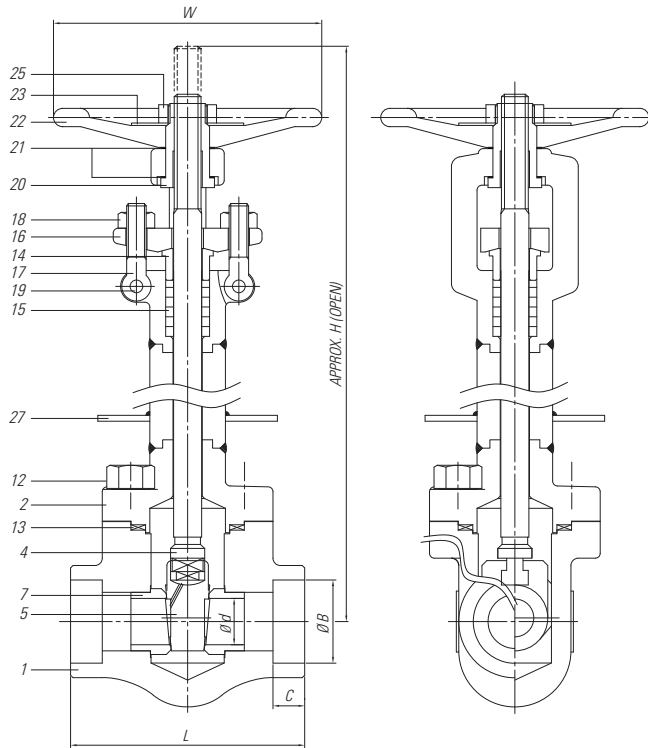
BILL OF MATERIALS

No.	PART NAME	MATERIAL						
1	Body	A105	A182-F22	A350-LF2	A182-F304	A182-F304L	A182-F316	A182-F316L
2	Bonnet	A105	A182-F22	A350-LF2	A182-F304	A182-F304L	A182-F316	A182-F316L
4	Stem	A276-410			A276-304	A276-316		
5	Disc	A276-410			A276-304	A276-316		
12	Bonnet Bolt	A193-B7	A193-B16	A320-L7	A193-B8			
13	Gasket	304SS+GRAPHITE				316SS+GRAPHITE		
14	Gland	A276-304						
15	Gland Packing	GRAPHITE						
16	Gland Flange	A105			A182-F304			
17	Gland Bolt	A193-B8						
18	Gland Bolt Nut	A194-2H			A194-8			
19	Gland Bolt Pin	A276-304						
20	Sleeve	A276-410						
21	Sleeve Washer	A276-304						
22	Hand Wheel	A197						
23	Name Plate	ALUMINUM						
25	Hand Wheel Nut	SS400+Zn PLATE						
45	Bellows	316SS						
46	Metal Gasket	A240-304						

FORGED STEEL GATE VALVE

CRYOGENIC, B.B, OS & Y

CLASS 800 & 1500



BILL OF MATERIALS

No.	PART NAME	MATERIAL	
1	Body	A182-F304	A182-F316
2	Bonnet	A182-F304	A182-F316
4	Stem	A276-304	A276-316
5	Disc	A351-CF8	A351-CF8M
7	Seat Ring	A276-304	A276-316
12	Bonnet Bolt	A193-B8	
13	Gasket	304SS+GRAPHITE	316SS+GRAPHITE
14	Gland	A276-304	
15	Gland Packing	GRAPHITE	
16	Gland Flange	A182-F304	
17	Gland Bolt	A193-B8	
18	Gland Bolt Nut	A194-8	
19	Gland Bolt Pin	A276-304	
20	Sleeve	A276-410	
21	Sleeve Washer	A276-304	
22	Hand Wheel	A197	
23	Name Plate	ALUMINUM	
25	Hand Wheel Nut	SS400+Zn PLATE	
27	Plate	304SS	

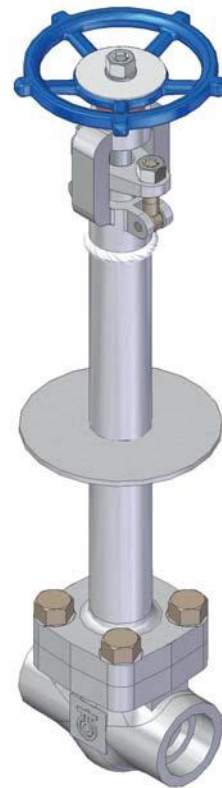
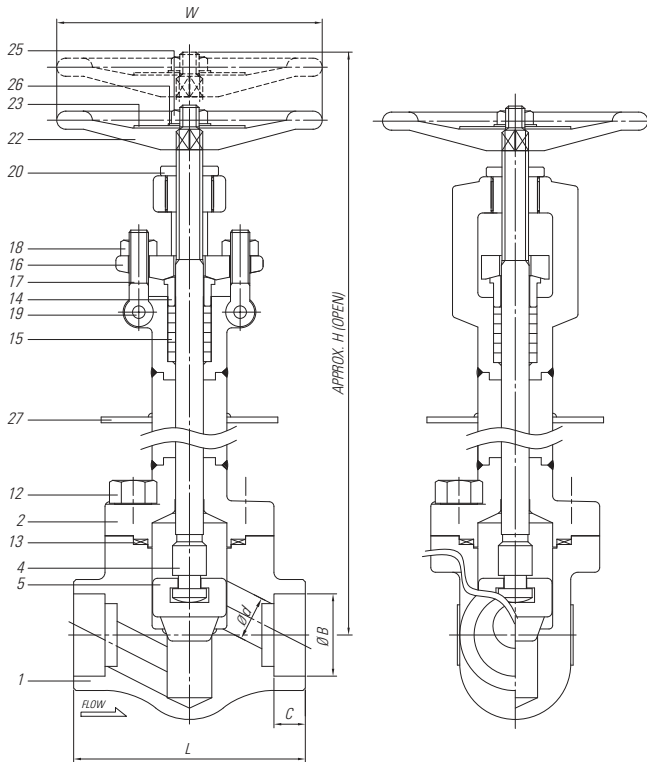
DIMENSIONS (unit: mm)

CLASS	SIZE		L	Approx. H	W	Ød	Approx. Weight(kg)
800	1/2"	15A	73	357	90	10	2.5
	3/4"	20A	87	379	90	13	2.8
	1"	25A	96	407	105	19	3.5
	1 1/4"	32A	121	430	125	25	5.7
	1 1/2"	40A	141	453	125	30	7.0
	2"	50A	161	492	150	37	10.5
1500	1/2"	15A	96	407	105	13	3.5
	3/4"	20A	96	407	105	13	3.5
	1"	25A	121	430	125	19	5.7
	1 1/4"	32A	141	453	125	25	7.0
	1 1/2"	40A	161	492	150	30	10.5
	2"	50A	172	520	165	37	12.8

FORGED STEEL GLOBE VALVE

CRYOGENIC, B.B, OS & Y

CLASS 800 & 1500



BILL OF MATERIALS

No.	PART NAME	MATERIAL	
1	Body	A182-F304	A182-F316
2	Bonnet	A182-F304	A182-F316
4	Stem	A276-304	A276-316
5	Disc	A351-CF8	A351-CF8M
12	Bonnet Bolt	A193-B8	
13	Gasket	304SS+GRAPHITE	316SS+GRAPHITE
14	Gland	A276-304	
15	Gland Packing	GRAPHITE	
16	Gland Flange	A182-F304	
17	Gland Bolt	A193-B8	
18	Gland Bolt Nut	A194-8	
19	Gland Bolt Pin	A276-304	
20	Sleeve	A276-410	
22	Hand Wheel	A197	
23	Name Plate	ALUMINUM	
25	Hand Wheel Nut	A307-B	
26	Wheel Washer	A108-1020	
27	Plate	304SS	

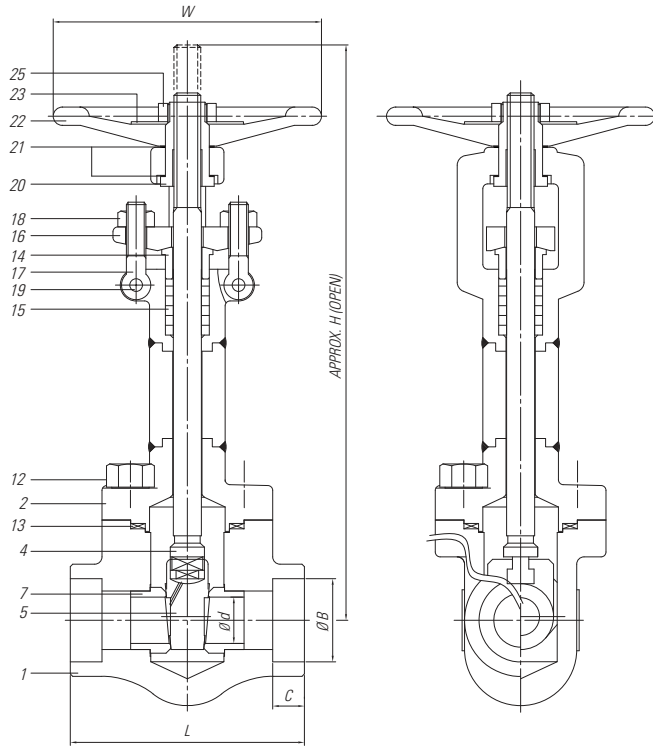
DIMENSIONS (unit: mm)

CLASS	SIZE	L	Approx. H	W	Ød	Approx. Weight(kg)	
800	1/2"	15A	73	361	90	9.5	2.5
	3/4"	20A	87	378	90	12.5	2.8
	1"	25A	96	406	105	18.5	3.7
	1 1/4"	32A	121	420	125	24	5.7
	1 1/2"	40A	141	446	125	29	6.9
	2"	50A	161	481	150	35	10.5
1500	1/2"	15A	96	406	105	9.5	3.7
	3/4"	20A	96	406	105	12.5	3.7
	1"	25A	121	420	125	18.5	5.7
	1 1/4"	32A	141	446	125	24	6.9
	1 1/2"	40A	161	481	150	29	10.5
	2"	50A	172	500	165	35	12.8

FORGED STEEL GATE VALVE

LONG BONNET, B.B, OS & Y

CLASS 800 & 1500



DIMENSIONS (unit: mm)

CLASS	SIZE	L	Approx. H	W	Ød	Approx. Weight(kg)	
800	1/2"	15A	73	257	90	10	2.0
	3/4"	20A	87	298	90	13	2.3
	1"	25A	96	307	105	19	3.0
	1 1/4"	32A	121	330	125	25	5.2
	1 1/2"	40A	141	353	125	30	6.5
	2"	50A	161	392	150	37	10.0
1500	1/2"	15A	96	307	105	13	3.0
	3/4"	20A	96	307	105	13	3.0
	1"	25A	121	330	125	19	5.2
	1 1/4"	32A	141	353	125	25	6.5
	1 1/2"	40A	161	392	150	30	10.0
	2"	50A	172	410	165	37	12.3

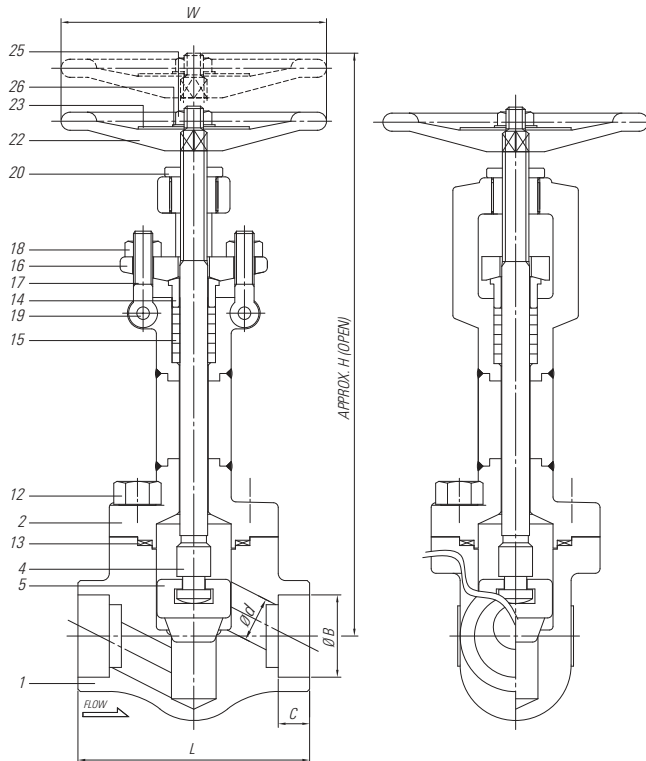
BILL OF MATERIALS

No.	PART NAME	MATERIAL						
1	Body	A105	A182-F22	A350-LF2	A182-F304	A182-F304L	A182-F316	A182-F316L
2	Bonnet	A105	A182-F22	A350-LF2	A182-F304	A182-F304L	A182-F316	A182-F316L
4	Stem	A276-410			A276-304	A276-316		
5	Disc	A217-CA15			A351-CF8	A351-CF8M		
7	Seat Ring	A276-410			A276-304	A276-316		
12	Bonnet Bolt	A193-B7	A193-B16	A320-L7	A193-B8			
13	Gasket	304SS+GRAPHITE				316SS+GRAPHITE		
14	Gland	A276-304						
15	Gland Packing	GRAPHITE						
16	Gland Flange	A105			A182-F304			
17	Gland Bolt	A193-B8						
18	Gland Bolt Nut	A194-2H			A194-8			
19	Gland Bolt Pin	A276-304						
20	Sleeve	A276-410						
21	Sleeve Washer	A276-304						
22	Hand Wheel	A197						
23	Name Plate	ALUMINUM						
25	Hand Wheel Nut	SS400+Zn PLATE						

FORGED STEEL GLOBE VALVE

LONG BONNET, B.B, OS & Y

CLASS 800 & 1500



DIMENSIONS(unit: mm)

CLASS	SIZE	L	Approx. H	W	Ød	Approx. Weight(kg)
800	1/2"	15A	73	220	90	9.5
	3/4"	20A	87	278	90	12.5
	1"	25A	96	332	105	18.5
	1 1/4"	32A	121	360	125	24
	1 1/2"	40A	141	401	125	29
	2"	50A	161	420	150	35
1500	1/2"	15A	96	332	105	9.5
	3/4"	20A	96	332	105	12.5
	1"	25A	121	360	125	18.5
	1 1/4"	32A	141	401	125	24
	1 1/2"	40A	161	420	150	29
	2"	50A	172	440	165	35

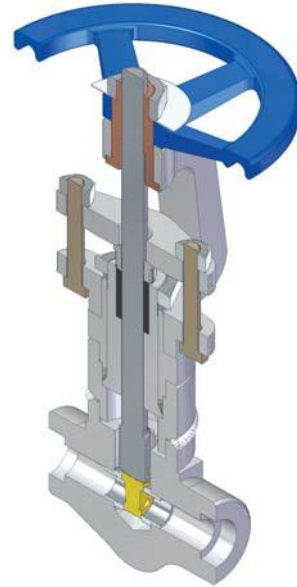
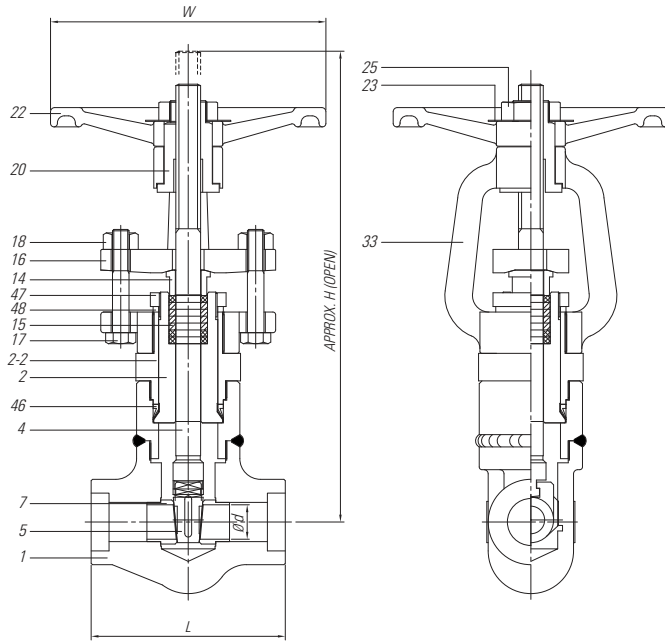
BILL OF MATERIALS

No.	PART NAME	MATERIAL						
1	Body	A105	A182-F22	A350-LF2	A182-F304	A182-F304L	A182-F316	A182-F316L
2	Bonnet	A105	A182-F22	A350-LF2	A182-F304	A182-F304L	A182-F316	A182-F316L
4	Stem	A276-410			A276-304	A276-316		
5	Disc	A217-CA15			A351-CF8	A351-CF8M		
12	Bonnet Bolt	A193-B7	A193-B16	A320-L7	A193-B8			
13	Gasket	304SS+GRAPHITE				316SS+GRAPHITE		
14	Gland	A276-304						
15	Gland Packing	GRAPHITE						
16	Gland Flange	A105			A182-F304			
17	Gland Bolt	A193-B8						
18	Gland Bolt Nut	A194-2H			A194-8			
19	Gland Bolt Pin	A276-304						
20	Sleeve	A276-410						
22	Hand Wheel	A197						
23	Name Plate	ALUMINUM						
25	Hand Wheel Nut	A307-B						
26	Wheel Washer	A108-1020						

FORGED STEEL GATE VALVE

PRESSURE SEAL BONNET, OS & Y

CLASS 1500 & 2500



DIMENSIONS (unit: mm)

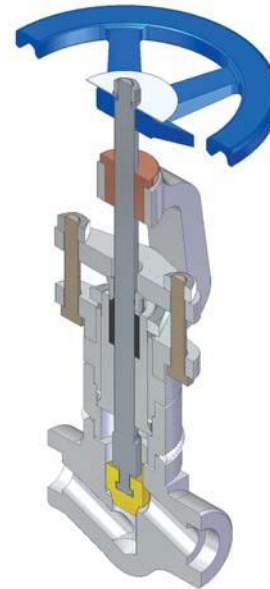
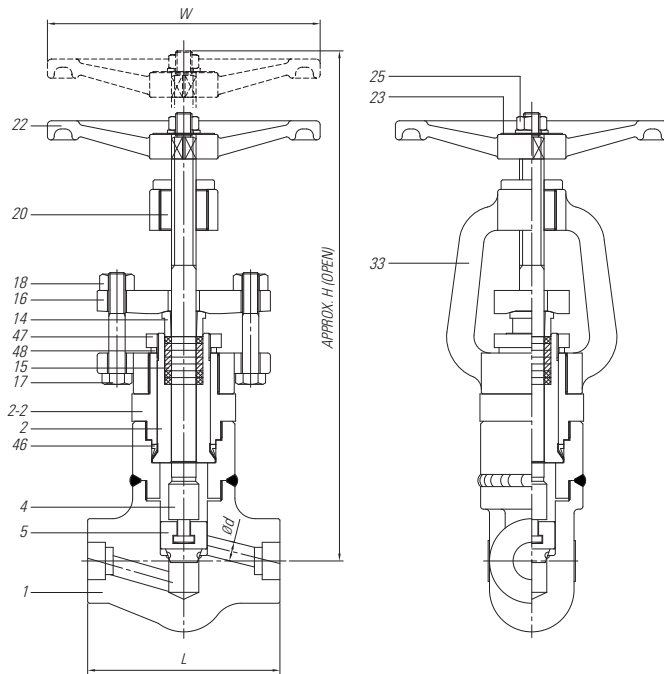
CLASS	SIZE	L	Approx. H	W	Ød	Approx. Weight(kg)	
1500	1/2"	15A	96	270	165	13	4.8
	3/4"	20A	121	283	165	19	6.8
	1"	25A	141	347	200	25	8.5
	1 1/4"	32A	161	454	200	30	13.0
	1 1/2"	40A	172	470	200	37	15.5
	2"	50A	200	495	245	37	18.0
2500	1/2"	15A	121	276	165	12	6.8
	3/4"	20A	141	336	200	12	8.5
	1"	25A	161	454	200	17	13.0
	1 1/4"	32A	172	470	200	25	15.5
	1 1/2"	40A	200	495	245	30	18.0
	2"	50A	220	546	350	37	20.0

BILL OF MATERIALS

No.	PART NAME	MATERIAL						
1	Body	A105	A182-F22	A350-LF2	A182-F304	A182-F304L	A182-F316	A182-F316L
2	Bonnet	A105	A182-F22	A350-LF2	A182-F304	A182-F304L	A182-F316	A182-F316L
2-2	Bonnet	A105			A182-F304	A182-F316		
4	Stem	A276-410			A276-304	A276-316		
5	Disc	A217-CA15			A351-CF8	A351-CF8M		
7	Seat Ring	A276-410			A276-304	A276-316		
14	Gland	A276-304						
15	Gland Packing	GRAPHITE						
16	Gland Flange	A105			A182-F304			
17	Gland Bolt	A193-B7			A193-B8			
18	Gland Bolt Nut	A194-2H			A194-8			
20	Sleeve	HIGH-TENSION BRASS						
22	Hand Wheel	A197						
23	Name Plate	ALUMINUM						
25	Hand Wheel Nut	SS400+Zn PLATE						
33	Yoke	A216-WCB			A351-CF8			
46	Metal Gasket	304SS				316SS		
47	Lock Nut	A105						
48	Packing Washer	A276-410						

FORGED STEEL GLOBE VALVE

PRESSURE SEAL BONNET, OS & Y CLASS 1500 & 2500



DIMENSIONS(unit: mm)

CLASS	SIZE	L	Approx. H	W	∅d	Approx. Weight(kg)	
1500	1/2"	15A	96	270	165	13	4.8
	3/4"	20A	121	285	165	18	6.8
	1"	25A	141	345	200	22	8.5
	1 1/4"	32A	161	440	200	28	13.0
	1 1/2"	40A	172	460	200	32	15.5
	2"	50A	200	505	245	35	18.0
2500	1/2"	15A	121	285	165	11	6.8
	3/4"	20A	141	345	200	14	8.5
	1"	25A	161	440	200	19	13.0
	1 1/4"	32A	172	460	200	25	15.5
	1 1/2"	40A	200	505	245	28	18.0
	2"	50A	220	546	315	38	20.0

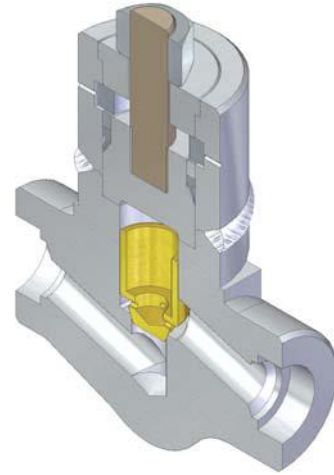
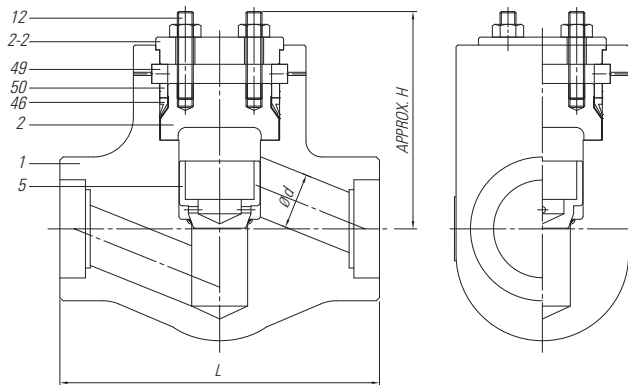
BILL OF MATERIALS

No.	PART NAME	MATERIAL						
1	Body	A105	A182-F22	A350-LF2	A182-F304	A182-F304L	A182-F316	A182-F316L
2	Bonnet	A105	A182-F22	A350-LF2	A182-F304	A182-F304L	A182-F316	A182-F316L
2-2	Bonnet	A105			A182-F304	A182-F316		
4	Stem	A276-410			A276-304	A276-316		
5	Disc	A217-CA15			A351-CF8	A351-CF8M		
14	Gland	A276-304						
15	Gland Packing	GRAPHITE						
16	Gland Flange	A105			A182-F304			
17	Gland Bolt	A193-B7			A193-B8			
18	Gland Bolt Nut	A194-2H			A194-8			
20	Sleeve	HIGH-TENSION BRASS						
22	Hand Wheel	A197						
23	Name Plate	ALUMINUM						
25	Hand Wheel Nut	A307-B						
33	Yoke	A216-WCB			A351-CF8			
46	Metal Gasket	304SS				316SS		
47	Lock Nut	A105						
48	Packing Washer	A276-410						

FORGED STEEL CHECK VALVE

PRESSURE SEAL COVER

CLASS 1500 & 2500



DIMENSIONS (unit: mm)

CLASS	SIZE	L	Approx. H	Ød	Approx. Weight(kg)	
1500	1/2"	15A	96	130	13	3.0
	3/4"	20A	121	140	18	5.0
	1"	25A	141	150	22	6.0
	1 1/4"	32A	161	170	28	8.0
	1 1/2"	40A	172	190	32	10.0
	2"	50A	200	140	35	12.0
2500	1/2"	15A	121	140	11	5.0
	3/4"	20A	141	150	14	6.0
	1"	25A	161	170	19	8.0
	1 1/4"	32A	172	190	25	10.0
	1 1/2"	40A	200	140	28	12.0
	2"	50A	220	170	38	15.0

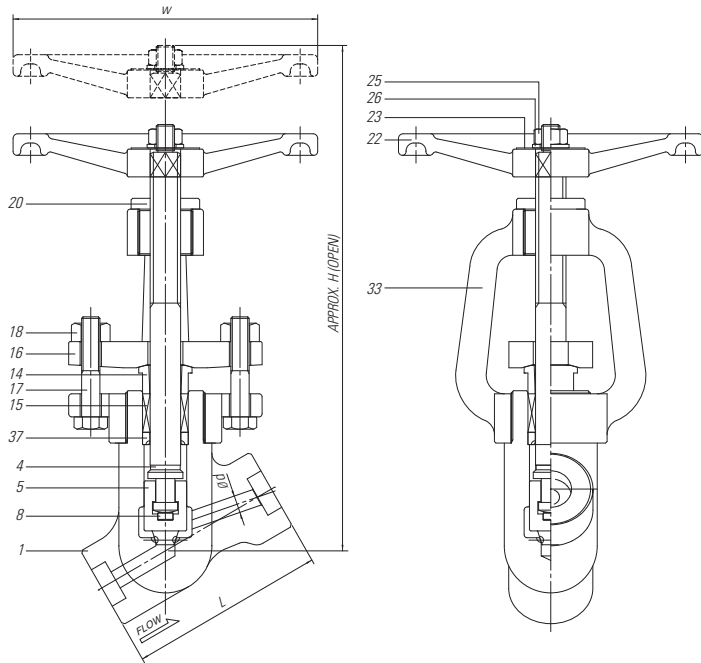
BILL OF MATERIALS

No.	PART NAME	MATERIAL						
1	Body	A105	A182-F22	A350-LF2	A182-F304	A182-F304L	A182-F316	A182-F316L
2	Bonnet	A105	A182-F22	A350-LF2	A182-F304	A182-F304L	A182-F316	A182-F316L
2-2	Cover	A105	A182-F22	A350-LF2	A182-F304	A182-F304L	A182-F316	A182-F316L
5	Disc	A276-410			A276-304	A276-316		
12	Cover Bolt / Nut	A193-B7 / A194-2H	A193-B16 / A194-4	A320-L7 / A194-4	A193-B8 / A194-8			
46	Metal Gasket	304SS				316SS		
49	Segmental Thrust Ring	A276-304						
50	Spacer Ring	A276-304						

FORGED STEEL GLOBE VALVE

Y-NON-BONNET TYPE, OS & Y

CLASS 1500 & 2500



DIMENSIONS(unit: mm)

CLASS	SIZE	L	Approx. H	W	Ød	Approx. Weight(kg)	
1500	1/2"	15A	130	242	200	10	5.2
	3/4"	20A	130	242	200	13	5.2
	1"	25A	150	316	260	18	8.5
	1 1/4"	32A	220	429	360	22	20.0
	1 1/2"	40A	220	429	360	28	20.0
	2"	50A	240	465	360	35	32.0
2500	1/2"	15A	130	242	200	10	5.2
	3/4"	20A	130	242	200	13	5.2
	1"	25A	150	316	260	18	8.5
	1 1/4"	32A	220	429	360	22	20.0
	1 1/2"	40A	220	429	360	28	20.0
	2"	50A	260	465	360	35	32.0

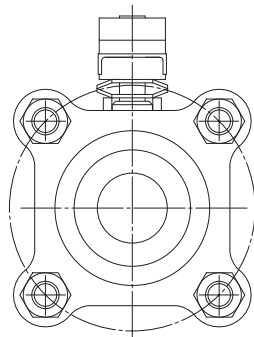
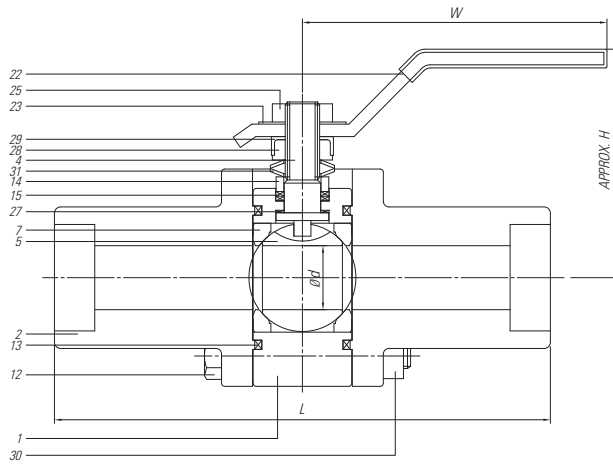
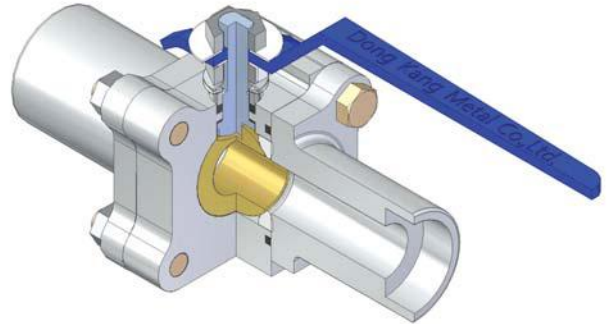
BILL OF MATERIALS

No.	PART NAME	MATERIAL						
1	Body	A105	A182-F22	A350-LF2	A182-F304	A182-F304L	A182-F316	A182-F316L
4	Stem	A276-431			A276-304	A276-316		
5	Disc	A276-410			A276-304	A276-316		
8	Disc Thrust Plate	A564-630						
14	Gland	A276-304						
15	Gland Packing	GRAPHITE						
16	Gland Flange	A105			A182-F304			
17	Gland Bolt	A193-B7			A193-B8			
18	Gland Bolt Nut	A194-2H			A194-8			
20	Sleeve	HIGH-TENSION BRASS						
22	Hand Wheel	A197						
23	Name Plate	ALUMINUM						
25	Hand Wheel Nut	A307-B						
26	Wheel Washer	A108-1020						
33	Yoke	A216-WCB			A351-CF8			
37	Loose Backseat	A276-431+NITRIDED						

FORGED STEEL BALL VALVE

BOLTED CAP

CLASS 600 & 800 & 1500



DIMENSIONS (unit: mm)

CLASS	SIZE	Long L	Short L	Approx. H	W	∅d	Approx. Weight(kg)
600 800 Reduced	1/2"	15A	150	75	62	150	14.2
	3/4"	20A	150	75	62	150	14.2
	1"	25A	160	95	74	180	20.5
	1 1/4"	32A	180	116	88	255	31.6
	1 1/2"	40A	180	116	88	255	31.6
	2"	50A	190	128	93	255	38.0
600 800 Full	1/2"	15A	150	75	62	150	14.2
	3/4"	20A	160	95	74	180	20.5
	1"	25A	180	116	88	255	31.6
	1 1/4"	32A	180	116	88	255	31.6
	1 1/2"	40A	190	128	93	255	38.0
	2"	50A	220	160	125	255	50.8
1500 Full	1/2"	15A	150	75	62	150	14.2
	3/4"	20A	160	95	74	180	20.5
	1"	25A	180	116	88	255	25.0
	1 1/4"	32A	180	116	88	255	31.6
	1 1/2"	40A	190	128	93	255	38.0
	2"	50A	220	160	125	255	50.8

BILL OF MATERIALS

No.	PART NAME	MATERIAL							
1	Body	A105	A182-F22	A350-LF2	A182-F304	A182-F304L	A182-F316	A182-F316L	
2	Cap	A105	A182-F22	A350-LF2	A182-F304	A182-F304L	A182-F316	A182-F316L	
4	Stem	A276-304				A276-316			
5	Ball	A276-304				A276-316			
7	Seat	PTFE / RTFE / NYLON / PEEK							
12	Cap Bolt	A193-B7			A193-B8				
13	Gasket	PTFE / RTFE / GRAPHITE							
14	Gland	A276-316							
15	Gland Packing	Reinforced PTFE							
22	Handle	A108-1020							
23	Name Plate	ALUMINUM							
25	Handle Nut	SS400+Zn PLATE			A276-304				
27	Thrust Bearing	Reinforced PTFE							
28	Stem Nut	SS400+Zn PLATE			A276-304				
29	Tap Washer	A167-302							
30	Cap Nut	A194-2H			A194-8				
31	Conical Spring	A167-302							

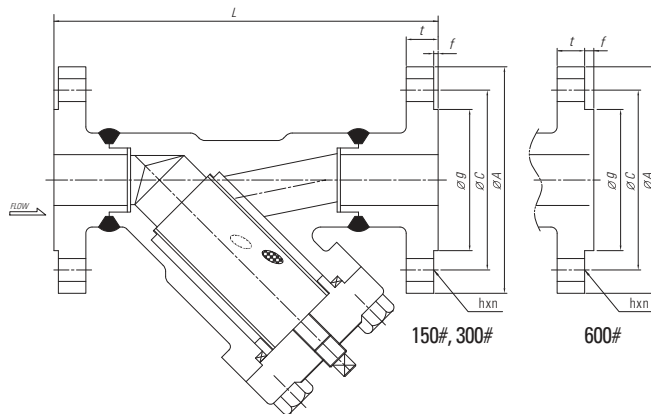
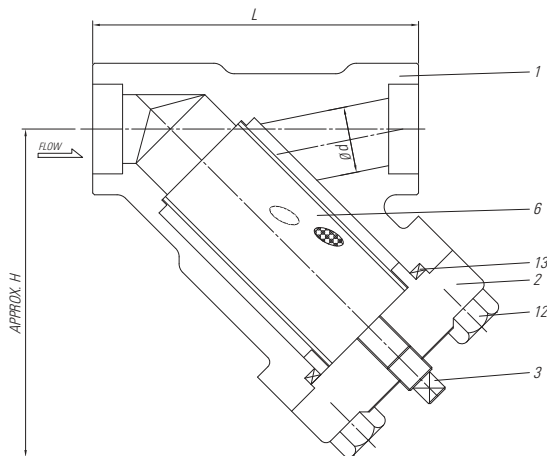
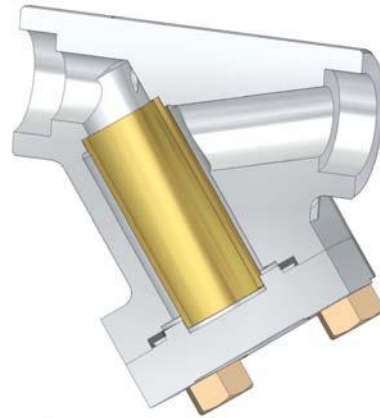
FORGED STEEL Y-STRAINER

BOLTED COVER

CLASS 600 & 1500

FLANGE TYPE

CLASS 150 & 300 & 600



DIMENSIONS (unit:mm) / BOLTED COVER

CLASS	SIZE		L	Approx. H	Ød	Approx. Weight(kg)
800	1/2"	15A	98	97	13	1.5
	3/4"	20A	98	97	18	1.5
	1"	25A	120	114	23	2.3
	1 1/4"	32A	140	137	29	5.2
	1 1/2"	40A	140	137	35	5.2
1500	1/2"	15A	120	114	13	2.3
	3/4"	20A	120	114	18	2.3
	1"	25A	140	137	23	5.2
	1 1/4"	32A	170	152	29	9.0
	1 1/2"	40A	170	152	35	9.0

DIMENSIONS (unit:mm) / FLANGE TYPE

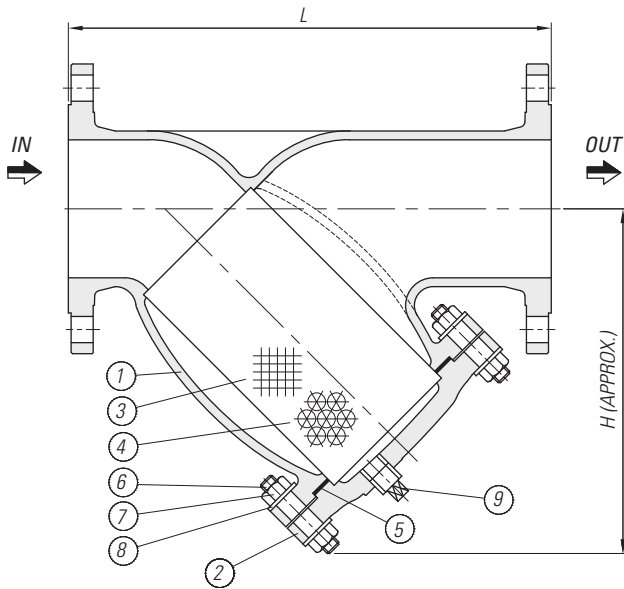
CLASS	SIZE		L	ØA	ØC	hxn	Øg	f	t
150	1/2"	15A	178	89	60.3	16x4	34.9	1.6	11.2
	3/4"	20A	187	98	69.9	16x4	42.9	1.6	12.7
	1"	25A	209	108	79.4	16x4	50.8	1.6	14.2
	1 1/4"	32A	217	117	88.9	16x4	63.5	1.6	15.7
	1 1/2"	40A	228	127	98.4	16x4	73.0	1.6	17.5
300	1/2"	15A	178	95	66.7	16x4	34.9	1.6	14.2
	3/4"	20A	187	117	82.5	19x4	42.9	1.6	15.7
	1"	25A	209	124	88.9	19x4	50.8	1.6	17.5
	1 1/4"	32A	217	133	98.4	19x4	63.5	1.6	19.1
	1 1/2"	40A	228	156	114.3	22x4	73.0	1.6	20.6
600	1/2"	15A	180	95	66.7	16x4	34.9	6.4	14.3
	3/4"	20A	190	117	82.5	19x4	42.9	6.4	15.9
	1"	25A	216	124	88.9	19x4	50.8	6.4	17.5
	1 1/4"	32A	260	133	98.4	19x4	63.5	6.4	20.7
	1 1/2"	40A	260	156	114.3	22x4	73.0	6.4	22.3
2"	50A	292	165	127.0	19x8	92.1	6.4	25.4	

BILL OF MATERIALS

No.	PART NAME	MATERIAL							
1	Body	A105	A182-F22	A350-LF2	A182-F304	A182-F304L	A182-F316	A182-F316L	
2	Cover	A105	A182-F22	A350-LF2	A182-F304	A182-F304L	A182-F316	A182-F316L	
3	Plug	AISI 1045			A276-304	A276-316			
6	Screen	SUS304 (40MESH)				SUS316 (40MESH)			
12	Cover Bolt	A193-B7	A193-B16	A320-L7	A193-B8				
13	Gasket	SUS304+GRAPHITE				SUS316+GRAPHITE			

Y-STRAINER

Model : DKM-BCY



- Body/Trim : A216-WCB / SS 304, 316, 316L, 304L
A351-CF8 / SS 304, 316, 316L, 304L
- Specialized in Special material
(Monel, Hasteloy, SMO254, or Inconel are available)
- Standard

No.	Part Name	Material (Spec.)		
1	Body	A216-WCB	A351-CF8	A351-CF8M
2	Cover	A216-WCB	A351-CF8	A351-CF8M
3	Screen (Mesh)	SS 304	SS 304	SS 316
4	Punching Plate	SS 304	SS 304	SS 316
5	Gasket	PTFE	PTFE	PTFE
6	Stud. Bolt	A193-B7	A193-B8	A193-B8
7	Nut	A194-2H	A194-8	A194-8
8	Washer	Carbon Steel	SS 304	SS 304
9	Plug	Carbon Steel	SS 304	SS 316

- Punching Plate $\phi 6 \times 8P \times 1T$ / 40 Mesh Screen
- Basic Design Code : ASME B16.34 / B16.5

REFERENCE DIMENSIONS (unit: mm)

150LB

SIZE	1/2B	3/4B	1B	1 1/2B	2B	2 1/2B	3B	4B	5B	6B	8B	10B	12B	14B
	DN15	DN20	DN25	DN40	DN50	DN65	DN80	DN100	DN125	DN150	DN200	DN250	DN300	DN350
L	140	140	160	220	220	270	290	360	400	450	540	680	840	1050
H	80	80	100	130	130	180	200	240	275	320	380	480	600	710

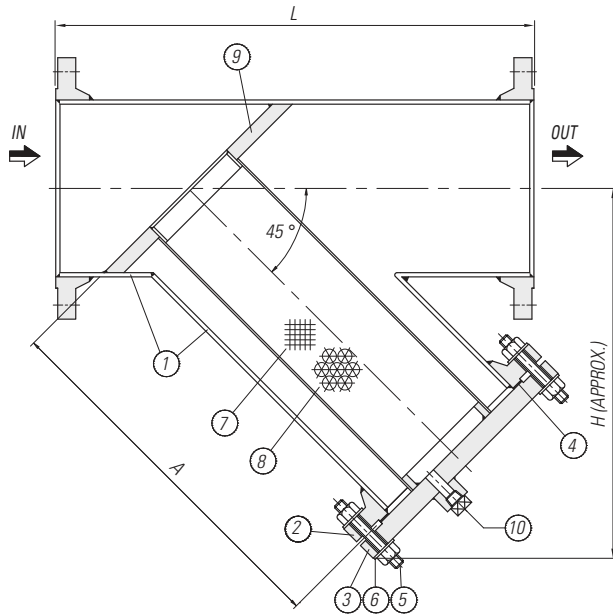
300LB

SIZE	1/2B	3/4B	1B	1 1/2B	2B	2 1/2B	3B	4B	5B	6B	8B	10B	12B	14B
	DN15	DN20	DN25	DN40	DN50	DN65	DN80	DN100	DN125	DN150	DN200	DN250	DN300	DN350
L	145	145	175	230	260	300	340	405	440	520	610	760	892	1050
H	85	85	100	130	140	180	210	270	310	370	490	565	635	730

*600LB and above class is available on demand

Y-STRAINER

Model : DKM-BWY-1, DKM-BWYF-1



- Body/Trim : A106B & EQ / SS 304, 316, 316L, 304L
A312-TP304 / SS 304, 316, 316L, 304L
- Specialized in Special material
(Monel, Hasteloy, SMO254, or Inconel are available)
- Teflon lined ~ Rubber Coating
- Standard

No.	Part Name	Material (Spec.)		
1	Pipe (Body)	A106-B	A312-TP304	A312-TP316
2	Body Flange	A105	A182-F304	A182-F316
3	Cover Flange	A105	A182-F304	A182-F316
4	Gasket	304+Graphite	304+Graphite	316+Graphite
5	Stud. Bolt / Nut	A193-B7 / 2H	A193-B8 / 8	A193-B8 / 8
6	Washer	Carbon Steel	SS 304	SS 304
7	Screen (Mesh)	SS 304	SS 304	SS 316
8	Punching Plate	A240-304	A240-304	A240-316
9	Element Ring	Carbon Steel	A240-304	A240-316
10	W / Plug	Carbon Steel	SS 304	SS 316

■ STANDARD FEATURES

- Standard sizes form 2"-24" Larger sizes available on demand
- Available with RF or RTJ flanged (ASME B16.5) or Buttweld (ASME B16.9) end connections.
- Economical standard thru bolt cover design
- Custom designs are available
- Perforated screens are standard
- Strainers designed to meet the requirements of ASME B31.1 ASME B31.3 and /or ASME Section VIII, Div. 1.
- Drain is standard and complete with plug.
- Vents, differentials and special covers are optional

REFERENCE DIMENSIONS (unit: mm)

150LB

SIZE	2B	2 1/2B	3B	4B	5B	6B	8B	10B	12B	14B	16B	18B	20B	24B
	DN50	DN65	DN80	DN100	DN125	DN150	DN200	DN250	DN300	DN350	DN400	DN450	DN500	DN600
L	290	320	360	400	450	480	580	710	800	930	1000	1100	1140	1380
H	230	240	290	340	370	410	490	590	690	790	840	900	970	1160
A	240	250	310	360	395	435	520	625	725	845	890	950	1020	1225

300LB

SIZE	2B	2 1/2B	3B	4B	5B	6B	8B	10B	12B	14B	16B	18B	20B	24B
	DN50	DN65	DN80	DN100	DN125	DN150	DN200	DN250	DN300	DN350	DN400	DN450	DN500	DN600
L	290	320	360	400	450	480	580	710	800	930	1000	1100	1140	1380
H	230	290	310	370	410	450	540	640	740	850	900	990	1080	1250
A	240	305	325	385	435	475	560	680	780	900	950	1035	1135	1300

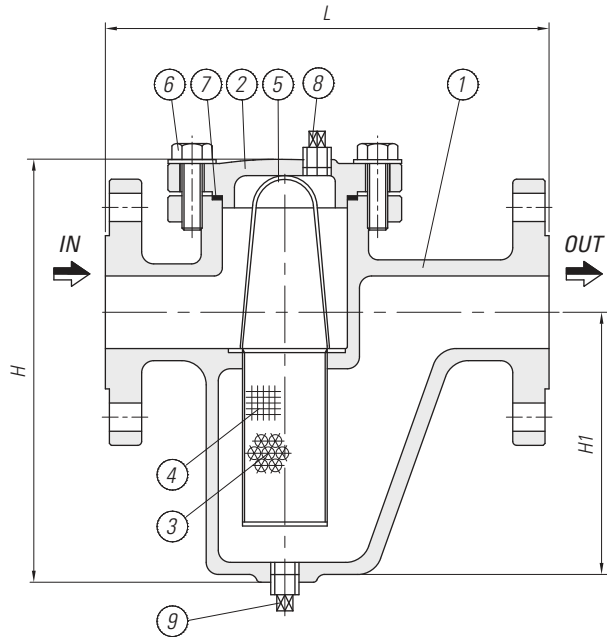
600LB

SIZE	2B	2 1/2B	3B	4B	5B	6B	8B	10B	12B	14B	16B	18B	20B	24B
	DN50	DN65	DN80	DN100	DN125	DN150	DN200	DN250	DN300	DN350	DN400	DN450	DN500	DN600
L	320	-	380	450	-	580	669	810	875	970	1080	1230	1300	1500
H	285	-	360	420	-	555	650	760	812	970	1015	1180	1195	1395
A	291	-	368	430	-	556	649	762	842	900	1139	1081	1200	1412

※900LB and above class is available on demand

BASKET-STRAINER

Model : DKM-BCB



- Body/Trim : A216-WCB / SS 304, 316, 316L, 304L
A351-CF8 / SS 304, 316, 316L, 304L
- Specialized in Special material
(Monel, Hasteloy, SMO254, or Inconel are available)
- Standard

No.	Part Name	Material (Spec.)		
1	Body	A216-WCB	A351-CF8	A351-CF8M
2	Cover	A216-WCB	A351-CF8	A351-CF8M
3	Punching Plate	SS 304	SS 304	SS 316
4	Screen (Mesh)	SS 304	SS 304	SS 316
5	Support Plate	SS 304	SS 304	SS 316
6	Hex. Bolt	A193-B7 / 2H	A193-B8 / 8	A193-B8 / 8
7	Gasket	PTFE	PTFE	PTFE
8	Vent Plug	Carbon Steel	SS 304	SS 316
9	Drain Plug	Carbon Steel	SS 304	SS 316

- Punching Plate $\phi 6 \times 8P \times 1T$ / 40 Mesh Screen
- Basic Design Code : ASME B16.34 / B16.5

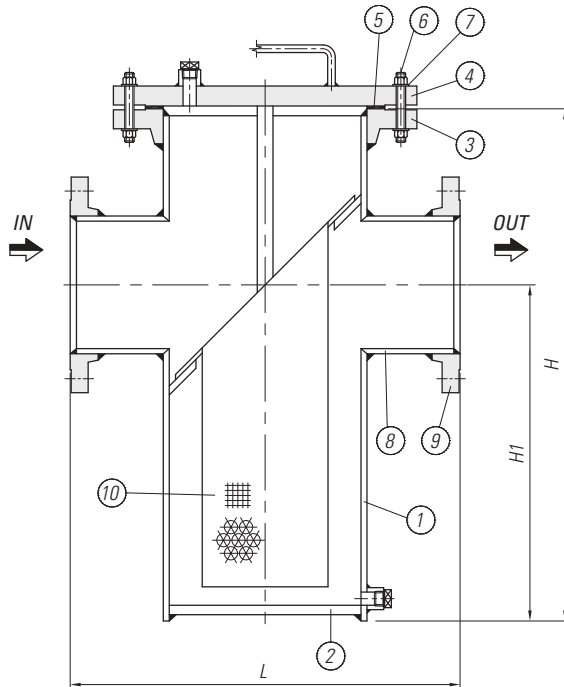
REFERENCE DIMENSIONS (unit:mm)

150LB

SIZE	1/2B	3/4B	1B	1 1/2B	2B	2 1/2B	3B	4B	5B	6B	8B	10B	12B	14B
	DN15	DN20	DN25	DN40	DN50	DN65	DN80	DN100	DN125	DN150	DN200	DN250	DN300	DN350
L	180	180	190	230	230	290	300	385	460	500	630	-	-	-
H	120	120	140	195	210	240	370	400	435	510	680	-	-	-
H1	75	75	120	160	160	180	270	300	350	420	550	-	-	-

BASKET-STRAINER

Model : DKM-BSWF-1



- Body/Trim : A106B & EQ / SS 304, 316, 316L, 304L
A312-TP304 / SS 304, 316, 316L, 304L
- Specialized in Special material
(Monel, Hasteloy, SMO254, or Inconel are available)
- Teflon lined ~ Rubber Coating
- Standard

No.	Part Name	Material (Spec.)		
1	Pipe (Body)	A106-B	A312-TP304	A312-TP316
2	Flat Head	Carbon Steel	A240-304	A240-316
3	Body Flange	A105	A182-F304	A182-F316
4	Cover Flange	A105	A182-F304	A182-F316
5	Gasket	304+Graphite	304+Graphite	316+Graphite
6	Stud. Bolt / Nut	A193-B7 / 2H	A193-B8 / 8	A193-B8 / 8
7	Washer	Carbon Steel	SS 304	SS 304
8	Nozzle (Pipe)	A53-B	A312-TP304	A312-TP316
9	Nozzle Flange	A105	A182-F304	A182-F316
10	Element (Ass'y)	SS 304	SS 304	SS 316

STANDARD FEATURES

- Standard sizes form 2"-24" Larger sizes available on demand
- Available with RF or RTJ flanged (ASME B16.5) or Buttweld (ASME B16.9) end connections.
- Economical standard thru bolt cover design
- Custom designs are available
- Perforated screens are standard
- Strainers designed to meet the requirements of ASME B31.1 ASME B31.3 and /or ASME Section VIII, Div. 1.
- Drain is standard and complete with plug.
- Vents, differentials and special covers are optional

REFERENCE DIMENSIONS (unit: mm)

150LB

SIZE	2B	2 1/2B	3B	4B	5B	6B	8B	10B	12B	14B	16B	18B	20B	24B
	DN50	DN65	DN80	DN100	DN125	DN150	DN200	DN250	DN300	DN350	DN400	DN450	DN500	DN600
L	350	350	400	500	540	580	650	750	850	850	950	1000	1100	1100
H	400	400	500	550	600	700	800	950	1150	1250	1450	1600	1750	2100
H1	270	270	330	320	380	450	520	600	750	800	950	1050	1150	1450

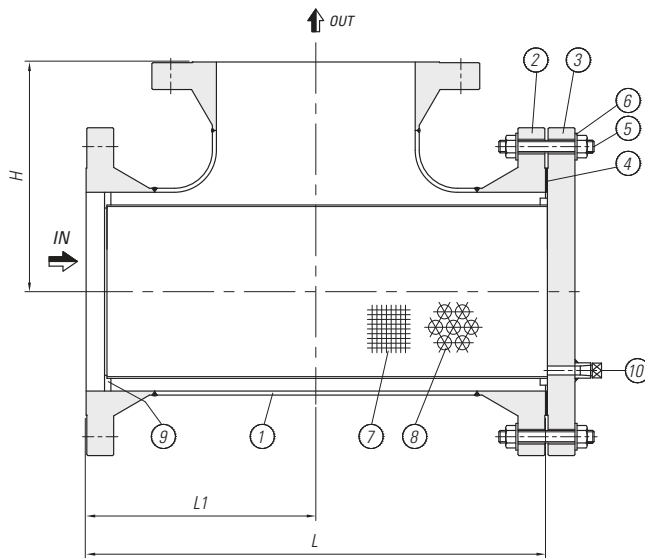
300LB

SIZE	2B	2 1/2B	3B	4B	5B	6B	8B	10B	12B	14B	16B	18B	20B	24B
	DN50	DN65	DN80	DN100	DN125	DN150	DN200	DN250	DN300	DN350	DN400	DN450	DN500	DN600
L	350	350	400	500	540	580	650	750	850	850	950	1000	1100	1100
H	400	400	500	550	600	700	800	950	1150	1250	1450	1600	1750	2100
H1	270	270	330	350	380	450	520	600	750	800	950	1050	1150	1450

*600LB and above class is available on demand

TEE-STRAINER

Model : DKM-BWT-1, DKM-BWTF-1



- Body/Trim : A234-WPB / SS 304, 316, 316L, 304L
A403-WP304 / SS 304, 316, 316L, 304L
- Specialized in Special material
(Monel, Hasteloy, SMO254, or Inconel are available)
- Teflon lined ~ Rubber Coating
- Standard

No.	Part Name	Material (Spec.)		
1	Tee (Body)	A234-WPB	A403-WP304	A403-WP316
2	Body Flange	A105	A182-F304	A182-F316
3	Cover Flange	A105	A182-F304	A182-F316
4	Gasket	304+Graphite	304+Graphite	316+Graphite
5	Stud. Bolt / Nut	A193-B7 / 2H	A193-B8 / 8	A193-B8 / 8
6	Washer	Carbon Steel	SS 304	SS 304
7	Screen (Mesh)	SS 304	SS 304	SS 316
8	Punching Plate	A240-304	A240-304	A240-316
9	Element Ring	Carbon Steel	A240-304	A240-316
10	W / Plug	Carbon Steel	SS 304	SS 316

STANDARD FEATURES

- Standard sizes form 2"-24" Larger sizes available on demand
- Available with RF or RTJ flanged (ASME B16.5) or Buttweld (ASME B16.9) end connections.
- Economical standard thru bolt cover design
- Custom designs are available
- Perforated screens are standard
- Strainers designed to meet the requirements of ASME B31.1 ASME B31.3 and/or ASME Section VIII, Div. 1.
- Drain is standard and complete with plug.
- Vents, differentials and special covers are optional

REFERENCE DIMENSIONS (unit: mm)

150LB

SIZE	2B	2 1/2B	3B	4B	5B	6B	8B	10B	12B	14B	16B	18B	20B	24B
	DN50	DN65	DN80	DN100	DN125	DN150	DN200	DN250	DN300	DN350	DN400	DN450	DN500	DN600
L	250	292	311	362	425	464	559	635	737	813	864	965	1051	1168
L1	127	146	155.5	181	212.5	232	279.5	317.5	368.5	406.5	432	482.5	525	584
H	127	146	155.5	181	212.5	232	279.5	317.5	368.5	406.5	432	482.5	525	584

300LB

SIZE	2B	2 1/2B	3B	4B	5B	6B	8B	10B	12B	14B	16B	18B	20B	24B
	DN50	DN65	DN80	DN100	DN125	DN150	DN200	DN250	DN300	DN350	DN400	DN450	DN500	DN600
L	267	305	330	381	445	483	578	667	768	845	902	1003	1086	1200
L1	133.5	152.5	165	190.5	222.5	241.5	289	333.5	384	422.5	451	501.5	543	600
H	133.5	152.5	165	190.5	222.5	241.5	289	333.5	384	422.5	451	501.5	543	600

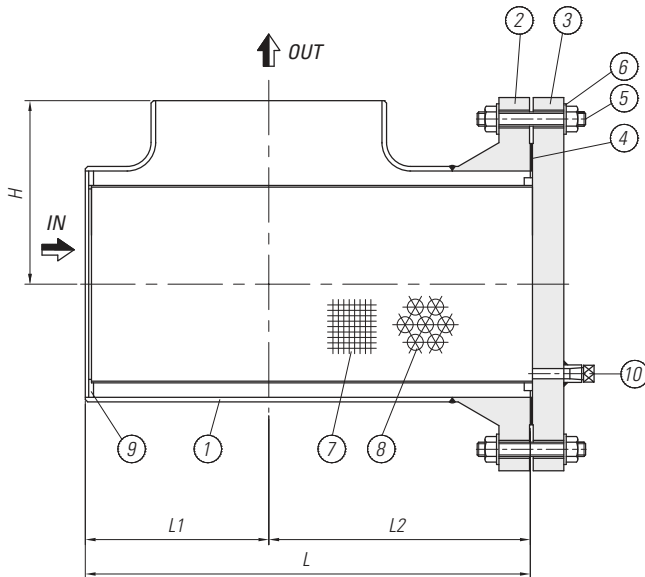
600LB

SIZE	2B	2 1/2B	3B	4B	5B	6B	8B	10B	12B	14B	16B	18B	20B	24B
	DN50	DN65	DN80	DN100	DN125	DN150	DN200	DN250	DN300	DN350	DN400	DN450	DN500	DN600
L	286	324	349	425	489	533	635	749	832	902	978	1067	1156	1283
L1	143	162	174.5	212.5	244.5	266.5	317.5	374.5	416	451	489	533.5	578	641.5
H	143	162	174.5	212.5	244.5	266.5	317.5	374.5	416	451	489	533.5	578	641.5

*900LB and above class is available on demand

TEE-STRAINER

Model : DKM-BWT-2, DKM-BWTF-2



- Body/Trim : A234-WPB / SS 304, 316, 316L, 304L
A403-WP304 / SS 304, 316, 316L, 304L
- Specialized in Special material
(Monel, Hasteloy, SMO254, or Inconel are available)
- Standard

No.	Part Name	Material (Spec.)		
1	Tee (Body)	A234-WPB	A403-WP304	A403-WP316
2	Body Flange	A105	A182-F304	A182-F316
3	Cover Flange	A105	A182-F304	A182-F316
4	Gasket	304+Graphite	304+Graphite	316+Graphite
5	Stud. Bolt / Nut	A193-B7 / 2H	A193-B8 / 8	A193-B8 / 8
6	Washer	Carbon Steel	SS 304	SS 304
7	Screen (Mesh)	SS 304	SS 304	SS 316
8	Punching Plate	A240-304	A240-304	A240-316
9	Element Ring	Carbon Steel	A240-304	A240-316
10	W / Plug	Carbon Steel	SS 304	SS 316

■ STANDARD FEATURES

- Standard sizes form 2"-24" Larger sizes available on demand
- Available with RF or RTJ flanged (ASME B16.5) or Buttweld (ASME B16.9) end connections.
- Economical standard thru bolt cover design
- Custom designs are available
- Perforated screens are standard
- Strainers designed to meet the requirements of ASME B31.1 ASME B31.3 and /or ASME Section VIII, Div. 1.
- Drain is standard and complete with plug.
- Vents, differentials and special covers are optional

REFERENCE DIMENSIONS (unit: mm)

150LB

SIZE	2B	2 1/2B	3B	4B	5B	6B	8B	10B	12B	14B	16B	18B	20B	24B
	DN50	DN65	DN80	DN100	DN125	DN150	DN200	DN250	DN300	DN350	DN400	DN450	DN500	DN600
L	194	225	245	289	340	378	460	537	625	688	740	829	910	1019
L1	64	76	86	105	124	143	178	216	254	279	305	343	381	432
L2	130	149	159	184	216	235	282	321	371	409	435	486	529	587
H	64	76	86	105	124	143	178	216	254	279	305	343	381	432

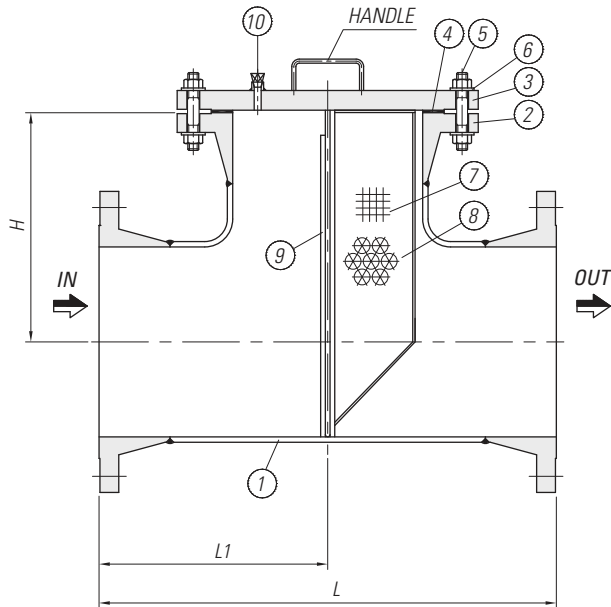
300LB

SIZE	2B	2 1/2B	3B	4B	5B	6B	8B	10B	12B	14B	16B	18B	20B	24B
	DN50	DN65	DN80	DN100	DN125	DN150	DN200	DN250	DN300	DN350	DN400	DN450	DN500	DN600
L	200	231	254	299	349	387	470	552	641	704	759	848	927	1035
L1	64	76	86	105	124	143	178	216	254	279	305	343	381	432
L2	136	155	168	198	225	244	292	336	387	425	454	505	546	603
H	64	76	86	105	124	143	178	216	254	279	305	343	381	432

*600LB and above class is available on demand

TEE-STRAINER

Model : DKM-BWT-3, DKM-BWTF-3



- Body/Trim : A234-WPB / SS 304, 316, 316L, 304L
A403-WP304 / SS 304, 316, 316L, 304L
- Specialized in Special material
(Monel, Hasteloy, SMO254, or Inconel are available)
- Standard

No.	Part Name	Material (Spec.)		
1	Tee (Body)	A234-WPB	A403-WP304	A403-WP316
2	Body Flange	A105	A182-F304	A182-F316
3	Cover Flange	A105	A182-F304	A182-F316
4	Gasket	304+Graphite	304+Graphite	316+Graphite
5	Stud. Bolt / Nut	A193-B7 / 2H	A193-B8 / 8	A193-B8 / 8
6	Washer	Carbon Steel	SS 304	SS 304
7	Screen (Mesh)	SS 304	SS 304	SS 316
8	Punching Plate	A240-304	A240-304	A240-316
9	Element Rod	Carbon Steel	A240-304	A240-316
10	W / Plug	Carbon Steel	SS 304	SS 316

STANDARD FEATURES

- Standard sizes form 2"-24" Larger sizes available on demand
- Available with RF or RTJ flanged (ASME B16.5) or Buttweld (ASME B16.9) end connections.
- Economical standard thru bolt cover design
- Custom designs are available
- Perforated screens are standard
- Strainers designed to meet the requirements of ASME B31.1 ASME B31.3 and/or ASME Section VIII, Div. 1.
- Drain is standard and complete with plug.
- Vents, differentials and special covers are optional

REFERENCE DIMENSIONS (unit: mm)

150LB

SIZE	2B	2 1/2B	3B	4B	5B	6B	8B	10B	12B	14B	16B	18B	20B	24B
	DN50	DN65	DN80	DN100	DN125	DN150	DN200	DN250	DN300	DN350	DN400	DN450	DN500	DN600
L	254	292	311	362	425	464	559	635	737	813	864	965	1051	1168
L1	127	146	155.5	181	212.5	232	279.5	317.5	368.5	406.5	432	482.5	525	584
H	127	146	155.5	181	212.5	232	279.5	317.5	368.5	406.5	432	482.5	525	584

300LB

SIZE	2B	2 1/2B	3B	4B	5B	6B	8B	10B	12B	14B	16B	18B	20B	24B
	DN50	DN65	DN80	DN100	DN125	DN150	DN200	DN250	DN300	DN350	DN400	DN450	DN500	DN600
L	267	305	330	381	445	483	578	667	768	845	902	1003	1086	1200
L1	133.5	152.5	165	190.5	222.5	241.5	289	333.5	384	422.5	451	501.5	543	600
H	133.5	152.5	165	190.5	222.5	241.5	289	333.5	384	422.5	451	501.5	543	600

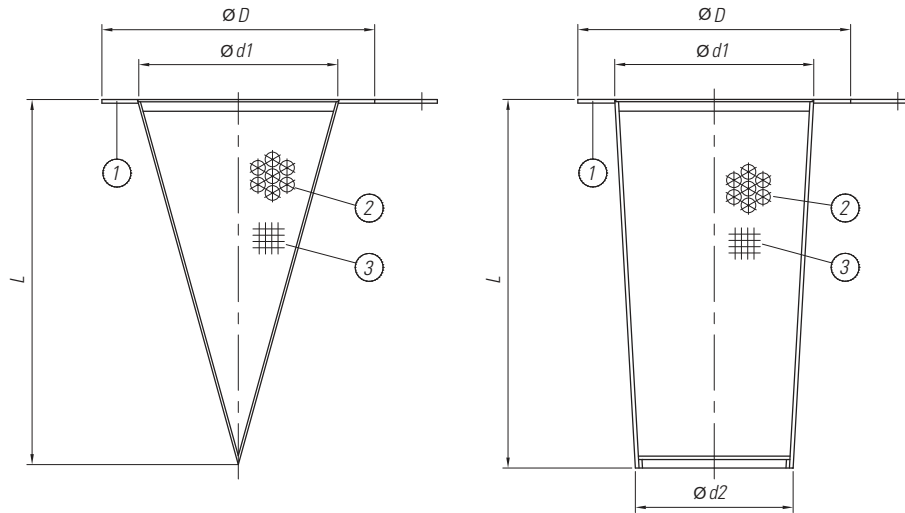
600LB

SIZE	2B	2 1/2B	3B	4B	5B	6B	8B	10B	12B	14B	16B	18B	20B	24B
	DN50	DN65	DN80	DN100	DN125	DN150	DN200	DN250	DN300	DN350	DN400	DN450	DN500	DN600
L	286	324	349	425	489	533	635	749	832	902	978	1067	1156	1283
L1	143	162	174.5	212.5	244.5	266.5	317.5	374.5	416	451	489	533.5	578	641.5
H	143	162	174.5	212.5	244.5	266.5	317.5	374.5	416	451	489	533.5	578	641.5

*900LB and above class is available on demand

TEMPORARY-STRAINER

Model : DKM-CCTS-1, DKM-CBTS-2



- Body/Trim : Carbon Steel / SS 304, 316, 316L, 304L
Stainless Steel / SS 304, 316, 316L, 304L
- Specialized in Special material
(Monel, Hasteloy, SMO254, or Inconel are available)
- Standard

No.	Part Name	Material (Spec.)		
1	Ring (Body)	Carbon Steel	A240-304	A240-316
2	Punching Plate	A240-304	A240-304	A240-316
3	Screen (Mesh)	SS 304	SS 304	SS 316

• Punching Plate $\phi 6 \times 8P \times 1T / 40$ Mesh Screen

REFERENCE DIMENSIONS(unit:mm)

150LB

SIZE	2B	2 1/2B	3B	4B	5B	6B	8B	10B	12B	14B	16B	18B	20B	24B
	DN50	DN65	DN80	DN100	DN125	DN150	DN200	DN250	DN300	DN350	DN400	DN450	DN500	DN600
L	90	100	120	160	200	240	310	390	460	490	550	620	700	840
ϕD	100	120	130	170	190	215	275	335	405	445	510	540	600	710
$\phi d1$	45	55	70	90	115	145	190	245	295	330	380	430	480	580
$\phi d2$	25	30	40	50	60	70	95	120	140	165	190	215	235	285

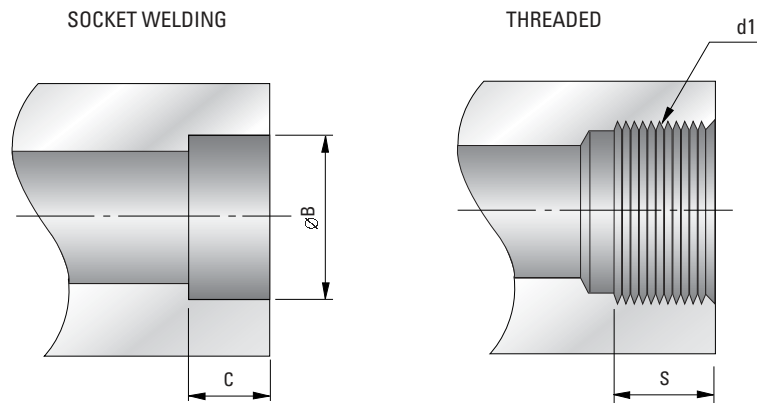
300LB

SIZE	2B	2 1/2B	3B	4B	5B	6B	8B	10B	12B	14B	16B	18B	20B	24B
	DN50	DN65	DN80	DN100	DN125	DN150	DN200	DN250	DN300	DN350	DN400	DN450	DN500	DN600
L	90	100	120	160	200	240	310	390	460	490	550	620	700	840
ϕD	105	125	145	175	210	245	305	355	415	480	535	590	650	765
$\phi d1$	45	55	70	90	115	145	190	245	295	330	380	430	480	580
$\phi d2$	25	30	40	50	60	70	95	120	140	165	190	215	235	285

Technical Information

- Dimensions of End Connection
- Butt Welding Dimensions
- Flanged End Dimensions
- Tolerances (ASME)
- Tolerances (JIS)
- Flange Facing Finish
- Punching Screen
- Dimensions of Steel Pipes
- Hydrostatic Test Pressures
- Pressure-Temperature Ratings
- Comparison List for Casting & Forging
- Conversion Tables
- Corrosion Resistance Guide
- Reference Standard & Specification
- Guide to Storage, Installation & Service

DIMENSIONS OF END CONNECTION



SOCKET WELDING

Unit :mm(inch)

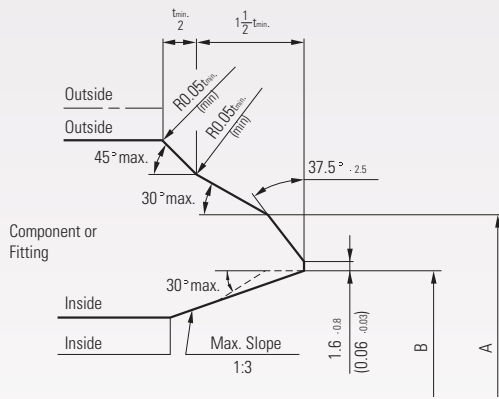
Valve size		ASME B 16.11						KS B1542 / JIS B 2316					
		ØB				Min.C		ØB				Min.C	
		Min.		Max.				Min.		Max.			
DN	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
8	1/4	14.10	0.555	14.35	0.565	10	0.38	14.3	0.56	14.6	0.57	10	0.38
10	3/8	17.55	0.690	17.80	0.700	10	0.38	17.8	0.70	18.1	0.71	10	0.38
15	1/2	21.80	0.858	22.20	0.874	10	0.38	22.2	0.87	22.5	0.89	10	0.38
20	3/4	27.20	1.070	27.60	1.086	13	0.50	27.7	1.09	28.0	1.10	13	0.50
25	1	33.90	1.334	34.30	1.350	13	0.50	34.5	1.36	34.8	1.37	13	0.50
32	1 1/4	42.70	1.681	43.10	1.696	13	0.50	43.2	1.70	43.5	1.71	13	0.50
40	1 1/2	48.80	1.921	49.20	1.937	13	0.50	49.1	1.93	49.4	1.94	13	0.50
50	2	61.20	2.409	61.70	2.429	16	0.62	61.1	2.41	61.4	2.42	16	0.62

THREADED

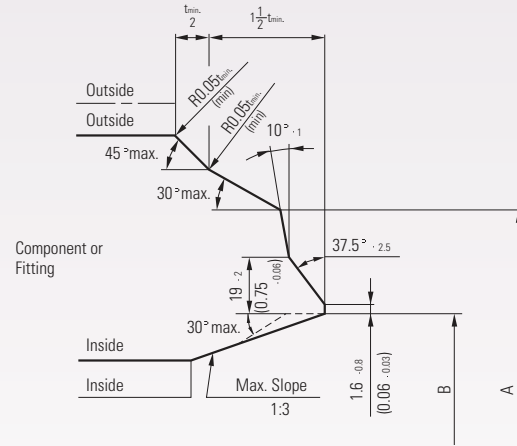
Unit :mm(inch)

Valve size		ASME B 16.11 / B1. 20.1			KS B0222 / JIS B 0203		
		Thread, Min. S		Thread, d1	Thread, Min. S		Thread, d1
		mm	in.		mm.	in.	
DN	in	mm	in.	Thread, d1	mm.	in.	Thread, d1
8	1/4	10.0	0.4018	1/4-18NPT	9.4	0.37	PT1/4-19
10	3/8	10.5	0.4078	3/8-18NPT	9.7	0.38	PT3/8-19
15	1/2	13.5	0.5337	1/2-14NPT	12.7	0.50	PT1/2-14
20	3/4	14.0	0.5457	3/4-14NPT	14.1	0.56	PT3/4-14
25	1	17.5	0.6828	1-11 1/2NPT	16.2	0.64	PT1-11
32	1 1/4	18.0	0.7068	1 1/4-11 1/2NPT	18.5	0.73	PT1 1/4-11
40	1 1/2	18.5	0.7235	1 1/2-11 1/2NPT	18.5	0.73	PT1 1/2-11
50	2	19.0	0.7565	2-11 1/2NPT	22.8	0.90	PT2-11

BUTT WELDING DIMENSIONS



For nominal wall thicknesses
22mm(0.88 in.) & thinner
(Without backing ring)



For nominal wall thicknesses
greater than 22mm(0.88 in.)
(Without backing ring)

BUTT WELDING END

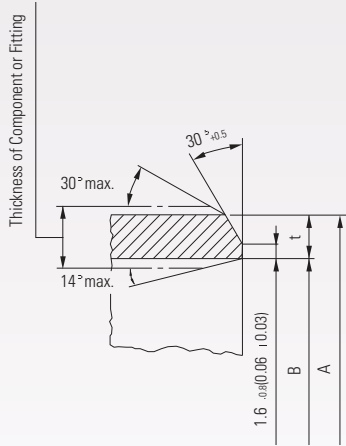
DIMENSIONS (MILLIMETERS/INCHES)-ASME B16.25

NPS	Pipe Schedule	Outside Dia.		Inside Dia.		Wall Thickness	
		A		B		t	
		mm	in	mm	in	mm	in
1/2	40	21.3	0.84	15.8	0.622	2.77	0.109
	80			13.9	0.547	3.73	0.147
	160			11.8	0.464	4.78	0.188
	XXS			6.4	0.252	7.47	0.294
3/4	40	26.7	1.05	20.9	0.823	2.87	0.113
	80			18.9	0.744	3.91	0.154
	160			15.5	0.610	5.56	0.219
	XXS			11	0.433	7.82	0.308
1	40	33.4	1.31	26.6	1.047	3.38	0.133
	80			24.3	0.956	4.55	0.179
	160			20.7	0.815	6.36	0.250
	XXS			15.2	0.598	9.09	0.358
1 1/4	40	42.2	1.66	35	1.378	3.56	0.140
	80			32.5	1.279	4.85	0.191
	160			29.5	1.161	6.35	0.250
	XXS			22.8	0.897	9.70	0.382
1 1/2	40	48.3	1.90	40.9	1.610	3.68	0.145
	80			38.1	1.500	5.08	0.200
	160			34	1.338	7.14	0.281
	XXS			28	1.102	10.15	0.400

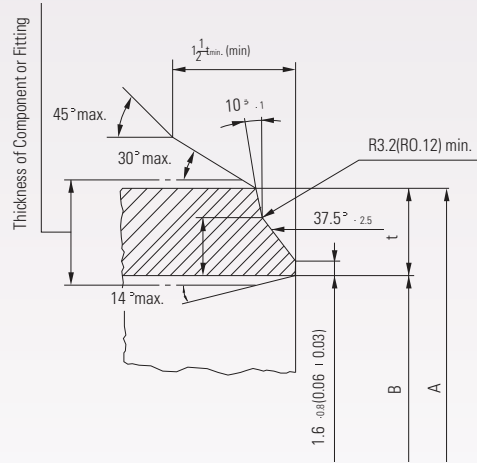
NPS	Pipe Schedule	Outside Dia.		Inside Dia.		Wall Thickness	
		A		B		t	
		mm	in	mm	in	mm	in
2	40	60.3	2.37	52.5	2.067	3.91	0.154
	80			49.3	1.940	5.54	0.218
	160			42.9	1.689	8.74	0.344
	XXS			38.2	1.504	11.07	0.436
2 1/2	40	73	2.87	62.7	2.468	5.15	0.203
	80			59	2.323	7.00	0.276
	160			54	2.126	9.55	0.375
	XXS			45	1.771	14.00	0.552
3	40	89	3.50	78	3.071	5.50	0.216
	80			73.7	2.901	7.60	0.300
	160			66.7	2.626	11.15	0.438
	XXS			58.4	2.299	15.25	0.600
3 1/2	40	102	4.01	90	3.543	5.75	0.226
	80			85	3.346	8.10	0.318
4	40	114.3	4.5	102.3	4.027	6.00	0.237
	80			97.2	3.826	8.55	0.337
	120			92	3.622	11.15	0.438
	160			87.3	3.437	13.50	0.531
XXS	80	3.149	17.10	0.674			

Note: When ordering butt welding ends, indicate type of ends and pipe schedule to be used.

BUTT WELDING DIMENSIONS



For nominal wall thicknesses
22mm(0.88 in.) & thinner



For nominal wall thicknesses
greater than 22mm(0.88 in.)

BUTT WELDING END

DIMENSIONS (MILLIMETERS/INCHES)- JIS B2312

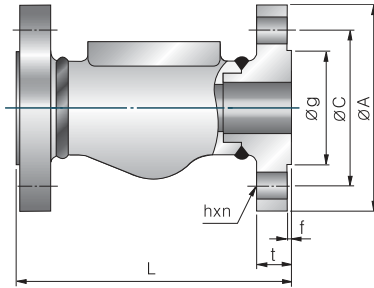
NPS	Pipe Schedule	Outside Dia.		Inside Dia.		Wall Thickness	
		A		B		t	
		mm	in	mm	in	mm	in
1/2	40			16.1	0.63	2.8	0.11
	80	21.7	0.85	3.7	0.15	4.7	0.19
	160			12.3	0.48		
3/4	40			21.4	0.84	2.9	0.11
	80	27.2	1.07	19.4	0.76	3.9	0.15
	160			16.2	0.64	5.5	0.22
1	40			27.2	1.07	3.4	0.13
	80	34.0	1.34	25.0	0.98	4.5	0.18
	160			21.2	0.83	6.4	0.25
1 1/4	40			35.5	1.40	3.6	0.14
	80	42.7	1.68	32.9	1.30	4.9	0.19
	160			29.9	1.18	6.4	0.25
1 1/2	40			41.2	1.62	3.7	0.15
	80	48.6	1.91	38.4	1.51	5.1	0.20
	160			34.4	1.35	7.1	0.28

NPS	Pipe Schedule	Outside Dia.		Inside Dia.		Wall Thickness	
		A		B		t	
		mm	in	mm	in	mm	in
2	40			52.7	2.07	3.9	0.15
	80	60.5	2.38	49.5	1.95	5.5	0.22
	160			43.1	1.70	8.7	0.34
2 1/2	40			65.9	2.59	5.2	0.20
	80	76.3	3.00	62.3	2.45	7.0	0.28
	160			57.3	2.26	9.5	0.37
3	40			78.1	3.07	5.5	0.22
	80	89.1	3.51	73.9	2.91	7.6	0.30
	160			66.9	2.63	11.1	0.44
3 1/2	40			90.2	3.55	5.7	0.22
	80	101.6	4.00	85.4	3.36	8.1	0.32
	160			76.2	3.00	12.7	0.50
4	40			102.3	4.03	6.0	0.24
	80	114.3	4.50	97.1	3.82	8.6	0.34
	160			87.3	3.44	13.5	0.53

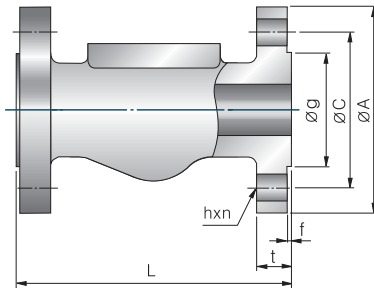
Note: When ordering butt welding ends, indicate type of ends and pipe schedule to be used.

FLANGED END DIMENSIONS

**CLASS 10K~40K
CLASS 150, 300**

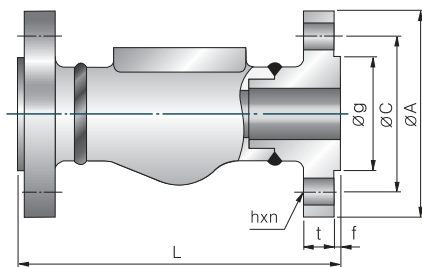


Socket Welding + Flange Type

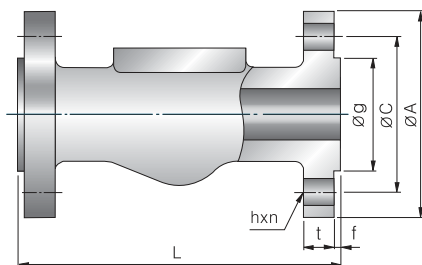


Integral Flange Type

CLASS 600, 1500, 2500



Socket Welding + Flange Type



Integral Flange Type

JIS STANDARD

(Unit:mm)

		FLANGE TYPE DIMENSIONS JIS B2002 / B2220									
CLASS	SIZE	Gate L	Globe L	Check L	øA	øC	hxn	øg	f	t	
10K	1/2"	15A	108	108	108	95	70	15x4	51	1	12
	3/4"	20A	117	117	117	100	75	15x4	56	1	14
	1"	25A	127	127	127	125	90	19x4	67	1	14
	1 1/4"	32A	140	140	140	135	100	19x4	76	2	16
	1 1/2"	40A	165	165	165	140	105	19x4	81	2	16
20K	2"	50A	178	203	203	155	120	19x4	96	2	16
	1/2"	15A	140	152	152	95	70	15x4	51	1	16
	3/4"	20A	152	178	178	100	75	15x4	56	1	14
	1"	25A	165	203	203	125	90	19x4	67	1	16
	1 1/4"	32A	178	216	216	135	100	19x4	76	2	16
30K	1 1/2"	40A	190	229	229	140	105	19x4	81	2	18
	2"	50A	216	267	267	155	120	19x8	96	2	18
	1/2"	15A	140	152	152	115	80	19x4	55	1	18
	3/4"	20A	152	178	178	120	85	19x4	60	1	18
	1"	25A	165	203	203	130	95	19x4	70	1	20
40K	1 1/4"	32A	178	213	213	140	105	19x4	80	2	22
	1 1/2"	40A	190	229	229	160	120	23x4	90	2	22
	2"	50A	216	267	267	165	130	19x8	105	2	22
	1/2"	15A	165	165	165	115	80	19x4	55	1	20
	3/4"	20A	190	190	190	120	85	19x4	60	1	20

ASME STANDARD

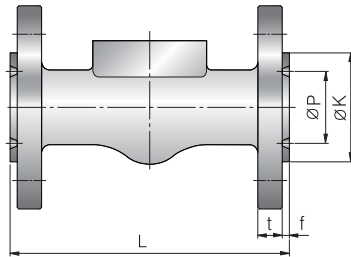
(Unit:mm)

		FLANGE TYPE DIMENSIONS ASME B16.10 / B16.5									
CLASS	SIZE	Gate L	Globe L	Check L	øA	øC	hxn	øg	f	t	
150	1/2"	15A	108	108	108	89	60.3	16x4	34.9	1.6	11.2
	3/4"	20A	117	117	117	98	69.9	16x4	42.9	1.6	12.7
	1"	25A	127	127	127	108	79.4	16x4	50.8	1.6	14.2
	1 1/4"	32A	140	140	140	117	88.9	16x4	63.5	1.6	15.7
	1 1/2"	40A	165	165	165	127	98.4	16x4	73.0	1.6	17.5
300	2"	50A	178	203	203	152	120.6	19x4	92.1	1.6	19.1
	1/2"	15A	140	152	152	95	66.7	16x4	34.9	1.6	14.2
	3/4"	20A	152	178	178	117	82.5	19x4	42.9	1.6	15.7
	1"	25A	165	203	203	124	88.9	19x4	50.8	1.6	17.5
	1 1/4"	32A	178	216	216	133	98.4	19x4	63.5	1.6	19.1
600	1 1/2"	40A	190	229	229	156	114.3	22x4	73.0	1.6	20.6
	2"	50A	216	267	267	165	127.0	19x8	92.1	1.6	22.4

		FLANGE TYPE DIMENSIONS ASME B16.10 / B16.5								
CLASS	SIZE	L	øA	øC	hxn	øg	f	t		
600	1/2"	15A	165	95	66.7	16x4	34.9	6.4	14.3	
	3/4"	20A	190	117	82.5	19x4	42.9	6.4	15.9	
	1"	25A	216	124	88.9	19x4	50.8	6.4	17.5	
	1 1/4"	32A	229	133	98.4	19x4	63.5	6.4	20.7	
	1 1/2"	40A	241	156	114.3	22x4	73.0	6.4	22.3	
1500	2"	50A	292	165	127.0	19x8	92.1	6.4	25.4	
	1/2"	15A	216	121	82.5	22x4	34.9	6.4	22.3	
	3/4"	20A	229	130	88.9	22x4	42.9	6.4	25.4	
	1"	25A	254	149	101.6	25x4	50.8	6.4	28.6	
	1 1/4"	32A	279	159	111.1	25x4	63.5	6.4	28.6	
2500	1 1/2"	40A	305	178	123.8	29x4	73.0	6.4	31.8	
	2"	50A	368	216	165.1	25x8	92.1	6.4	38.1	
	1/2"	15A	264	133	88.9	22x4	34.9	6.4	30.2	
	3/4"	20A	273	140	95.3	22x4	42.9	6.4	31.8	
	1"	25A	308	159	108.0	25x4	50.8	6.4	35.1	
2500	1 1/4"	32A	349	184	130.0	28x4	63.5	6.4	38.1	
	1 1/2"	40A	384	203	146.1	32x4	73.0	6.4	44.5	
2500	2"	50A	451	235	171.5	28x8	92.1	6.4	50.8	

FLANGED END DIMENSIONS

CLASS 150, 300, 600, 1500, 2500



RTJ Flange Type

RTJ STANDARD

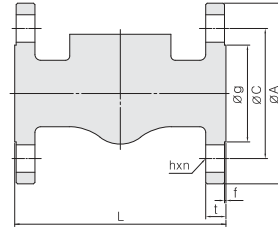
(Unit:mm)

RTJ FLANGE TYPE DIMENSIONS									
CLASS	SIZE	Gate L	Globe L	Check L	ØP	ØK	f	t	RING NO.
150	1/2"	15A	-	-	-	-	-	-	
	3/4"	20A	-	-	-	-	-	-	
	1"	25A	140	140	140	47.6	63.5	6.4	R15
	1 1/4"	32A	153	153	153	57.2	73.2	6.4	R17
	1 1/2"	40A	178	178	178	65.1	82.6	6.4	R19
300	2"	50A	191	216	216	82.6	101.6	6.4	R22
	1/2"	15A	151	163	163	34.1	50.8	5.6	R11
	3/4"	20A	165	191	191	42.9	63.5	6.4	R13
	1"	25A	178	216	216	50.8	69.9	6.4	R16
	1 1/4"	32A	191	229	229	60.3	79.5	6.4	R18
	1 1/2"	40A	203	242	242	68.3	90.4	6.4	R20
2"	50A	232	283	283	82.6	108.0	7.9	R23	

RTJ FLANGE TYPE DIMENSIONS								
CLASS	SIZE	L	ØP	ØK	f	t	RING NO.	
600	1/2"	15A	163	34.1	50.8	5.6	14.3	R11
	3/4"	20A	190	42.9	63.5	6.4	15.9	R13
	1"	25A	216	50.8	69.9	6.4	17.5	R16
	1 1/4"	32A	229	60.3	79.5	6.4	20.7	R18
	1 1/2"	40A	241	68.3	90.4	6.4	22.3	R20
	2"	50A	295	82.6	108.0	7.9	25.4	R23
1500	1/2"	15A	216	39.7	60.5	6.4	22.3	R12
	3/4"	20A	229	44.5	66.8	6.4	25.4	R14
	1"	25A	254	50.8	71.4	6.4	28.6	R16
	1 1/4"	32A	279	60.3	81.0	6.4	28.6	R18
	1 1/2"	40A	305	68.3	92.2	6.4	31.8	R20
	2"	50A	371	95.3	124.0	7.9	38.1	R24
2500	1/2"	15A	264	42.9	65.0	6.4	30.2	R13
	3/4"	20A	273	50.8	73.2	6.4	31.8	R16
	1"	25A	308	60.3	82.6	6.4	35.1	R18
	1 1/4"	32A	352	72.2	101.6	7.9	38.1	R21
	1 1/2"	40A	387	82.6	114.3	7.9	44.5	R23
	2"	50A	454	101.6	133.4	7.9	50.8	R26

FLANGED END DIMENSIONS

The table covers flanges conforming to pressure classes PN6-PN64 for valves, as well as matching pipe flanges.

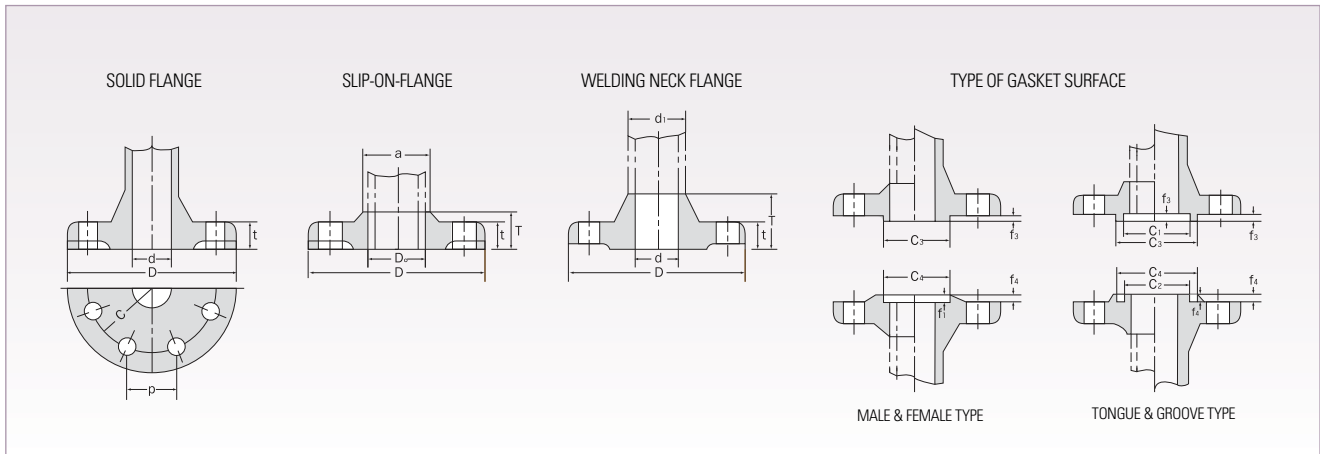


DIN STANDARD

(Unit:mm/in)

Pressure Rating	Valve Size	DIMENSIONS														Number of Bolts n
		L		ØA		ØC		Øg		f		t		h		
		mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	
PN6	15	130	5.11	80	3.14	55	2.16	45	1.77	2	0.08	12	0.47	11	0.43	4
		210	8.26													
	20	150	5.90	90	3.54	65	2.55	58	2.28	2	0.08	14	0.55	11	0.43	
		230	9.05													
	25	160	6.29	100	3.93	75	2.95	68	2.68	2	0.08	14	0.55	11	0.55	
		230	9.05													
	32	180	7.08	120	4.72	90	3.54	78	3.07	2	0.08	14	0.55	14	0.55	
		260	10.2													
	40	200	7.87	130	5.11	100	3.93	88	3.46	3	0.12	14	0.55	14	0.55	
		260	10.2													
	50	230	9.05	140	5.51	110	4.43	102	4.01	3	0.12	14	0.55	14	0.55	
		300	11.8													
PN10	15	same as class 6	95	3.74	65	2.55	45	1.77	2	0.08	14	0.55	14	0.55	4	
	20		105	4.13	75	2.95	58	2.28	2	0.08	16	0.62	14	0.55		
	25		115	4.52	85	3.34	68	2.68	2	0.08	18	0.70	14	0.55		
	32		140	5.51	100	3.93	78	3.07	2	0.08	18	0.70	18	0.70		
	40		150	5.90	110	4.43	88	3.46	3	0.12	18	0.70	18	0.70		
	50		165	6.49	125	4.92	102	4.01	3	0.12	18	0.70	18	0.70		
PN16	15	same as class 6	95	3.74	65	2.55	45	1.77	2	0.08	14	0.55	14	0.55	4	
	20		105	4.13	75	2.95	58	2.28	2	0.08	16	0.62	14	0.55		
	25		115	4.52	85	3.34	68	2.68	2	0.08	18	0.70	14	0.55		
	32		140	5.51	100	3.93	78	3.07	2	0.08	18	0.70	18	0.70		
	40		150	5.90	110	4.43	88	3.46	3	0.12	18	0.70	18	0.70		
	50		165	6.49	125	4.92	102	4.01	3	0.12	18	0.70	18	0.70		
PN25	15	same as class 6	95	3.74	65	2.55	45	1.77	2	0.08	16	0.62	14	0.55	4	
	20		105	4.13	75	2.95	58	2.28	2	0.08	18	0.70	14	0.55		
	25		115	4.52	85	3.34	68	2.68	2	0.08	18	0.70	14	0.55		
	32		140	5.51	100	3.93	78	3.07	2	0.08	18	0.70	18	0.70		
	40		150	5.90	110	4.43	88	3.46	3	0.12	18	0.70	18	0.70		
	50		165	6.49	125	4.92	102	4.01	3	0.12	20	0.78	18	0.70		
PN40	15	same as class 6	95	3.74	65	2.55	45	1.77	2	0.08	16	0.62	14	0.55	4	
	20		105	4.13	75	2.95	58	2.28	2	0.08	18	0.70	14	0.55		
	25		115	4.52	85	3.34	68	2.68	2	0.08	18	0.70	14	0.55		
	32		140	5.51	100	3.93	78	3.07	2	0.08	18	0.70	18	0.70		
	40		150	5.90	110	4.43	88	3.46	3	0.12	18	0.70	18	0.70		
	50		165	6.49	125	4.92	102	4.01	3	0.12	20	0.78	18	0.70		
PN64	15	same as class 6	105	4.13	75	2.95	45	1.77	2	0.08	20	0.78	14	0.55	4	
	20		130	5.12	90	3.54	58	2.28	2	0.08	22	0.86	18	0.70		
	25		140	5.51	100	3.93	68	2.68	2	0.08	24	0.94	18	0.70		
	32		155	6.10	110	4.43	78	3.07	2	0.08	24	0.94	22	0.86		
	40		170	6.69	125	4.92	88	3.46	3	0.12	26	1.02	22	0.86		
	50		180	7.08	135	5.31	102	4.01	3	0.12	28	1.10	22	0.86		

TOLERANCES ASME



THREAD, SOCKET-WELDING, SLIP-ON, LAP JOINT AND BLIND

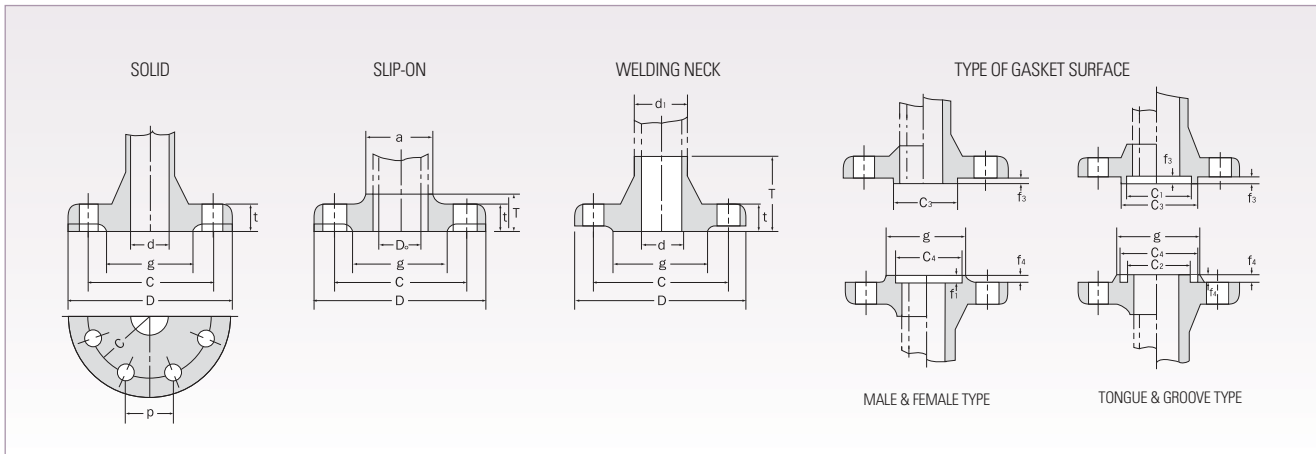
Outside Diameter	When O.D. is 24" or less	$\pm 1/16$ " (1.6mm)*
	When O.D. is Over 24"	$\pm 1/8$ " (3.2mm)*
Inside Diameter	Threaded	Within limits on boring gauge
	Socket-welding, Slip-on and Lap joint	10" & Smaller + 1/32" (0.8mm), -0 12" & Larger + 1/16" (1.6mm), -0
Outside Diameter of Hub	5" and Smaller	+ 3/32" (2.4mm)* - 1/32" (0.8mm)
	6" and Larger	+ 5/32" (4.0mm) - 1/32" (0.8mm)
Diameter of Contact Face	1/16" Raised Face	$\pm 1/32$ " (0.8mm)
	1/4" Raised Face Tongue & Globe Male, Female	$\pm 1/64$ " (0.4mm)
Diameter of Counter bore	Same as for Inside Diameter	
Drilling	Bolt Circle	$\pm 1/16$ " (1.6mm)
	Bolt Hole Spacing	$\pm 1/32$ " (0.8mm)
	Eccentricity of Bolt Circle with Respect to Facing	2 1/2" Smaller 1/32" (0.8mm) Max. 3" & Larger 1/16" (1.6mm) Max.
	Eccentricity of Bolt Circle with Respect to Bore	1/32" (0.8mm) Max.
	Eccentricity of Bolt Circle with Respect to Bore	1/32" (0.8mm) Max.
Thickness	18" and Smaller	+ 1/8" (3.2mm), -0
	20" and Larger	+ 3/16" (4.8mm), -0
Length Thru Hub	10" and Smaller	$\pm 1/16$ " (1.6mm)
	12" and Larger	$\pm 1/8$ " (3.2mm)

WELDING NECK

Outside Diameter	When O.D. is 24" or less	$\pm 1/16$ " (1.6mm)*
	When O.D. is Over 24"	$\pm 1/8$ " (3.2mm)
Inside Diameter	10" and Smaller	$\pm 1/32$ " (0.8mm)
	12" thru 18"	$\pm 1/16$ " (1.6mm)
	20" and Larger	+ 1/8" (3.2mm) - 1/16" (1.6mm)
Diameter of Contact Face	1/16" Raised Face	$\pm 1/32$ " (0.8mm)
	1/4" Raised Face Tongue & Globe Male, Female	$\pm 1/64$ " (0.4mm)
Diameter of Hub at Base	When Hub Base is 24" or Smaller	$\pm 1/16$ " (1.6mm)*
	When Hub Base is Over 24"	$\pm 1/8$ " (3.2mm)*
Diameter of Hub at Point of Welding	5" and Smaller	+ 3/32" (2.4mm) - 1/32" (0.8mm)
	6" and Larger	+ 5/32" (4.0mm) - 1/32" (0.8mm)
Drilling	Bolt Circle	$\pm 1/16$ " (1.6mm)
	Bolt Hole Spacing	$\pm 1/32$ " (0.8mm)
	Eccentricity of Bolt Circle with Respect to Facing	2 1/2" Smaller 1/32" (0.8mm) Max. 3" & Larger 1/16" (1.6mm) Max.
	Eccentricity of Bolt Circle with Respect to Bore	1/32" (0.8mm) Max.*
	Eccentricity of Bolt Circle with Respect to Bore	1/32" (0.8mm) Max.*
Thickness	18" and Smaller	+ 1/8" (3.2mm), -0
	20" and Larger	+ 3/16" (4.8mm), -0
Length Thru Hub	10" and Smaller	$\pm 1/16$ " (1.6mm)
	12" and Larger	$\pm 1/8$ " (3.2mm)

Note : *This tolerance is not covered in ASME B16.5. but maker's option.

TOLERANCES JIS



(Unit:mm)

Flange Section	Surface Condition	Basic Size	Dimensional Tolerance	
Outside Dia D	As Forged (1)	300 & below	+Not Specified	
		over 300 thru 600	-2.0	
		over 600 thru 1000	+Not Specified	
		over 1000 thru 1500	-3.0	
	Finish	300 & below	±1	
		over 300 thru 600	±1.5	
		over 600 thru 1000	±2	
		over 1000 thru 1500	±2.5	
Inside Dia D	Solid Flange d(2)	As Forged (1)	16 & below	±1
			over 16 thru 63	±1.5
			over 63 thru 125	±2
			over 125 thru 150	±2.5
			over 250 thru 500	±3
			over 500 thru 1000	±4
	Slip-on Flange do	Finish	100 & below	+0.5 0
			over 100 thru 400	+1 0
			over 400 thru 600	+1.5 0
			over 600 thru 800	+2 0
			over 800 thru 1000	+2.5 0
			over 1000	+3 0
	Welding Neck Flange d	Finish	100 & below	0 -0.5
			over 100 thru 400	0 -1
			over 400 thru 600	0 -1.5
			over 600 thru 800	0 -2
			over 800 thru 1000	0 -2.5
			over 1000	0 -3
Bolt Hole	Bolt Circle Dia. C	2500 & below	±0.5	
		over 250 thru 550	±0.6	
		over 550 thru 950	±0.8	
		over 950 thru 1350	±1	
		over 1350	±1.5	

Flange Section	Surface Condition	Basic Size	Dimensional Tolerance				
Bolt Hole	Pitch of Hole p	Drilling Hole	-	±0.5			
			Dia. of Hub	Slip-on Flange (a) and Welding Neck Flange (d)	As Forged	220 & below	+2 0
						over 220 thru 450	+3 0
						over 450 thru 650	+4 0
						over 650 thru 850	+6 0
						over 850 thru 1000	+7 0
						over 1000	+8 0
			Gasket Seat	C1, C2, C3, C4	Finish	500 & below	±0.3
						over 500 thru 1000	±0.35
						over 1000 thru 1500	±0.4
						over 1500	±0.5
						Thickness t	One-side Finish
over 20 thru 50	+2 0						
Hub Height T	Flange with Pipe inserted	Finish	50 & below	±1			
			over 50 thru 100	±1.5			
Gasket Seat	f _{fs}	Finish	8 & below	±0.2			
			over 8	±0.25			
Gasket Seat	g	Finish	200 & below	±0.8			
			over 200 thru 650	±0.9			
Gasket Seat	g	Finish	over 650 thru 1000	±1			
			ever 1000	±1.2			
Thickness t	Both-side Finish	One-side Finish	20 & below	+1 0			
			over 20 thru 50	+1.5 0			
Thickness t	Both-side Finish	Both-side Finish	over 50 thru 100	+2 0			
			over 100 thru 200	±2			
Hub Height T	Flange with Butt-welded Pipe	Finish	over 200 & below	+2 0			
			over 200 thru 300	+3 0			

Note

- (1) This dimensional tolerance applies to the machined surface, as required.
- (2) This dimension "d" has been specified only for the flange, of which the bore part is cylindrical in shape.

Remarks

- (1) The dimensions "d" of bore part of the solid flanges with surface, as forged of valves, pumps, etc. are allowed up to plus 100% of the above dimensional tolerance. Provided that the required thickness shall be free from its influence.
- (2) The thickness of flange of valve and the like, of which the dimension between flange faces is limited to a fixed value, are allowed up to plus 100% of the above dimensional tolerance in the column of thickness.
- (3) In the case of spot facing of the single surface finishing, the thickness of spot facing is allowed up to 70% of the dimensional tolerance in the above column of thickness in negative side.
- (4) The chain double-dashed lines in the figures of solid flange and socket welding type flange illustrate the cases of large raised face flange.

FLANGE FACING FINISH ASME B16.5

6.4.4 Flange Facing.

The finish of contact faces of pipe flanges and connecting end flanges of fittings shall be judged by visual comparison with standards (see ANSI/ASME B46.1) and not by instruments having stylus tracers and electronic amplification.

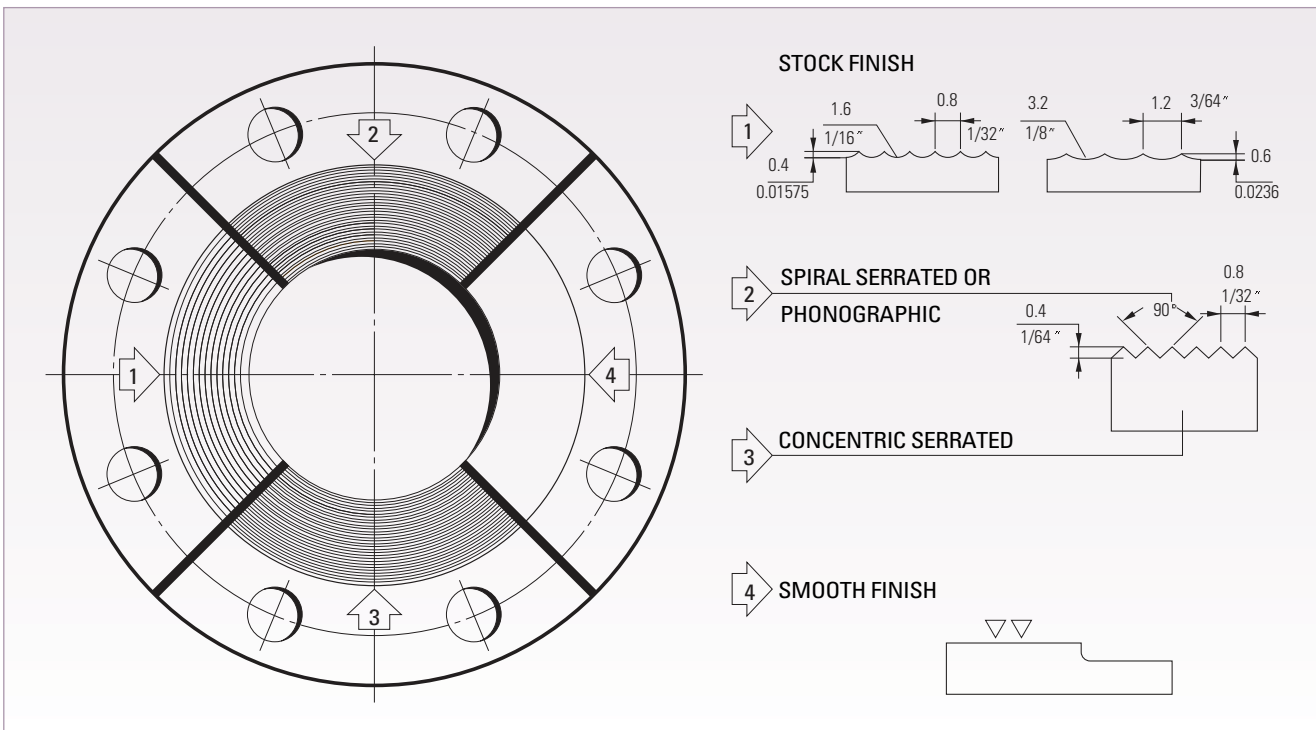
The finishes required are given below. Other finishes may be furnished by agreement between user and manufacturer.

6.4.4.1 Raised Face Large Male and Female.

Either a serrated concentric or serrated spiral finish having from 24 grooves/in. to 40 grooves/in. shall be used. The cutting tool employed shall have an approximate 0.06 in. or larger radius.

The resultant surface finish shall have a 125 in. to 500 in. roughness.

STANDARD FINISHES FOR FACE OF FLANGE (MSS SP6)



STOCK FINISH : The most widely used of any gasket finish, because, practically, is suitable for all ordinary service conditions. This is a continuous spiral groove. Flanges sizes 12" and smaller, are produced with a 1/16" round-nosed tool at a feed of 1/32" per revolution. For sizes 14" and larger, the finish is made with 1/8" round-nosed tool at a feed of 3/64" per revolution.

SPIRAL SERRATED OF PHONOGRAPHIC : This finish is produced by using a 90° included-angle <V> tool, making a spiral groove 1/64" deep with a feed of 1/32".

CONCENTRIC SERRATED : This finish is produced by using a 90° included-angle <V> tool, making concentric groove 1/64" deep and 1/32" apart.

SMOOTH FINISH : This finish is produced by several shapes of tools cutting at speeds and feeds which leave no definite tool marks apparent to the naked eye.

1. RAISED FACE, AND LARGE MALE AND FEMALE

Either a serrated-concentric or serrated-spiral finish having from 24 to 40 grooves per inch is used.

The cutting tool employed has an approximate 0.06 in. or larger radius. The resultant surface finish has a 500 micro inch (12.5 μm) approximate roughness.

2. TONGUE AND GROOVE, AND SMALL MALE AND FEMALE

The gasket contact surface does not exceed 125 micro inch (3.2 μm) roughness.

3. RING JOINT

The inside wall surface of gasket groove does not exceed 63 micro inch (1.6 μm) roughness.

4. BLIND

Blind flanges need not be faced in the center if, when this center part is raised, its diameter is at least 1 in.

smaller than the inside diameter of fittings of the corresponding pressure class. When the center part is depressed, its diameter is not greater than the inside diameter of the corresponding pressure class fittings. Machining of the depressed center is not required.

PUNCHING SCREEN

1. PERCENTAGE OF AREA

Even the "MESH" is same, OPEN AREA is not always same due to the diameter of wire.
The formula of OPEN AREA PERCENTAGE is as follows :

$$\text{OPEN AREA PERCENTAGE} = \left(\frac{a}{a+b} \right)^2 \times 100\%$$

a : Width of Opening
b : Diameter of Wire

The details of wire as follows :

A : Number of Wire B : Diameter of Wire C : Width of Opening D : Percentage of OPEN AREA

MESH	A SWG	B m/m Ø	C m/m	D
5	20	0.914	4.166	67.3
10	22	0.711	1.829	51.8
20	28	0.356	0.914	51.8
30	32	0.274	0.572	45.7
40	36	0.193	0.442	48.4
50	37	0.172	0.336	43.6
60	38	0.152	0.271	41.0
80	40	0.122	0.195	37.8

MESH	A SWG	B m/m Ø	C m/m	D
100	42	0.102	0.152	35.8
120	43	0.092	0.119	31.8
150	45 1/2	0.066	0.103	37.1
180	46 1/2	0.053	0.088	38.9
200	47	0.051	0.076	35.8
250	48	0.039	0.062	37.7
300	48	0.040	0.044	27.6

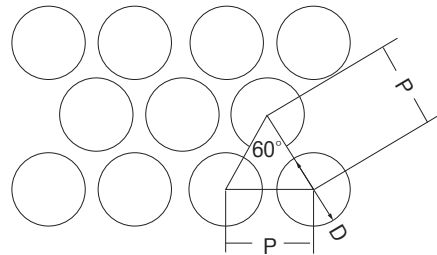
2. OUTSIDE SCREEN (protecting net)

For the outside screen a stainless steel plate perforated in 60-degree staggered arrangement is used.
For the OPEN AREA you can use the formula below.

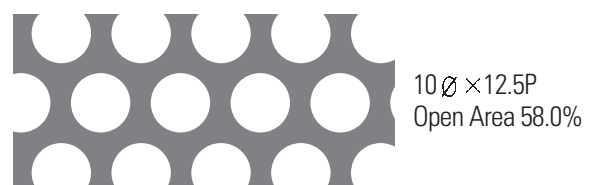
$$F = \frac{\sqrt{3} \times \pi}{6} \times \left(\frac{D}{F} \right)^2 \times 100\% \approx \frac{91 \times D^2}{P^2} (\%)$$

N.N.P : diameter of perforation
: pitch

*Following are DKM standard outside screen



OUTSIDE SCREEN



HYDROSTATIC TEST PRESSURES

ASME B16.34

Material			Test pressure by classes																											
Group No	Forging	Casting	150		300				600				900				1500				2500				4500					
			Shell		Seat/Backseat		Shell		Seat/Backseat		Shell		Seat/Backseat		Shell		Seat/Backseat		Shell		Seat/Backseat		Shell		Seat/Backseat		Shell		Seat/Backseat	
			kg/cm ²	psi	kg/cm ²	psi	kg/cm ²	psi	kg/cm ²	psi	kg/cm ²	psi	kg/cm ²	psi	kg/cm ²	psi	kg/cm ²	psi	kg/cm ²	psi	kg/cm ²	psi	kg/cm ²	psi	kg/cm ²	psi	kg/cm ²	psi	kg/cm ²	psi
	A105																													
1.1		A216-WCB A350-LF2	32.0	450	23.0	325	79.5	1125	58.5	825	156.5	2225	116.5	1650	236.0	3350	172.5	2450	392.0	5515	288.5	4100	652.5	9270	478.5	6800	1172.5	16675	860.0	12225
1.2		A126WCC A352-LC2 A352-LC3	32.0	450	23.0	325	79.5	1125	58.5	825	158.5	2250	116.5	1650	237.5	3375	174.5	2475	395.5	5625	290.5	4125	659.5	9375	483.5	6875	1186.5	16875	870.5	12375
1.3		A352-LCB	28.5	400	21.5	300	74.5	1050	54.5	775	148.0	2100	109.0	1550	221.5	3150	162.0	2300	367.5	5225	269.0	3825	612.0	8100	448.5	6375	1099.0	15625	806.5	11470
1.4		A350-LF1	26.5	375	19.5	275	67.0	950	49.5	700	133.0	1875	97.0	1375	195.5	2275	144.5	2050	327.0	4650	239.5	3400	543.5	7125	399.5	5675	977.5	13900	717.5	10200
		A217-WC1																												
1.5		A182-F1 A352-LC1	28.5	400	21.5	300	74.5	1050	54.5	775	148.0	2100	109.0	1550	221.5	3150	162.0	2300	367.5	5225	269.0	3825	612.0	8700	448.5	6375	1099.0	15625	806.5	11470
		A217-WC4																												
1.7		A182-F2 A217-WC5	32.0	450	23.0	325	79.5	1125	58.5	825	158.5	2250	116.5	1650	237.5	3375	174.5	2475	395.5	5625	290.5	4125	659.5	9375	483.5	6875	1186.5	16875	870.5	12375
		A217-WC5																												
1.9		A182-F12 A182-F11	32.0	450	23.0	325	79.5	1125	58.5	825	158.5	2250	116.5	1650	237.5	3375	174.5	2475	395.5	5625	290.5	4125	659.5	9375	483.5	6875	1186.5	16875	870.5	12375
		A217-WC6																												
1.10		A182-F22	32.0	450	23.0	325	79.5	1125	58.5	825	158.5	2250	116.5	1650	237.5	3375	174.5	2475	395.5	5625	290.5	4125	659.5	9375	483.5	6875	1186.5	16875	870.5	12375
		A217-WC9																												
1.11		A182-F21	32.0	450	23.0	325	79.5	1125	58.5	825	158.5	2250	116.5	1650	237.5	3375	174.5	2475	395.5	5625	290.5	4125	659.5	9375	483.5	6875	1186.5	16875	870.5	12375
		A217-C5																												
1.13		A182-F5a	32.0	450	23.0	325	79.5	1125	58.5	825	158.5	2250	116.5	1650	237.5	3375	174.5	2475	395.5	5625	290.5	4125	659.5	9375	483.5	6875	1186.5	16875	870.5	12375
1.14		A182-F9	32.0	450	23.0	325	79.5	1125	58.5	825	158.5	2250	116.5	1650	237.5	3375	174.5	2475	395.5	5625	290.5	4125	659.5	9375	483.5	6875	1186.5	16875	870.5	12375
		A217-C12																												
2.1		A182-F304 A182-F304H	30.0	425	23.0	325	77.5	1100	56.5	800	153.0	2175	112.5	1600	229.0	3250	169.0	2400	380.0	5400	279.5	3975	633.0	9000	464.5	6600	1139.5	16200	837.0	11900
		A351-CF3 A351-CF8																												
2.2		A182-F316 A182-F316H	30.0	425	23.0	325	77.5	1100	56.5	800	153.0	2175	112.5	1600	229.0	3250	169.0	2400	380.0	5400	279.5	3975	633.0	9000	464.5	6600	1139.5	16200	837.0	11900
		A351-CF3A A351-CF8A A351-CF3M A351-CF8M																												
2.3		A182-F304L A182-F316L	25.0	350	19.5	275	63.5	900	49.5	675	127.0	1800	93.5	1325	190.0	2700	141.0	2000	316.5	4500	232.5	3300	527.5	7500	387.0	5500	949.5	13500	696.5	9900
2.4		A182-F321 A182-F321H	30.0	425	23.0	325	77.5	1100	56.5	800	153.0	2175	112.5	1600	229.0	3250	169.0	2400	380.0	5400	279.5	3975	633.0	9000	464.5	6600	1139.5	16200	837.0	11900
2.5		A182-F347 A182-F347H	30.0	425	23.0	325	77.5	1100	56.5	800	153.0	2175	112.5	1600	229.0	3250	169.0	2400	380.0	5400	279.5	3975	633.0	9000	464.5	6600	1139.5	16200	837.0	11900
		A351-CF8C A182-F348 A182-F348																												
2.6		A351-CH20	28.5	400	21.5	300	72.5	1025	53.0	750	143.0	2025	106.0	1500	213.5	3025	157.0	2225	356.0	5050	261.0	3700	562.0	8400	435.0	6175	1065.5	15125	782.0	11100
2.7		A182-F310	28.5	400	21.5	300	72.5	1025	53.0	750	143.0	2025	106.0	1500	213.5	3025	157.0	2225	356.0	5050	261.0	3700	562.0	8400	435.0	6175	1065.5	15125	782.0	11100
		A351-CK20																												

Your Best Engineering Partner

PRESSURE-TEMPERATURE RATINGS

(°C/kg/cm²)

CLASS	1500					800					1500										
	A105 ^(a) & A350-LF2 ^(b)										A182										
	150	300	600	800	1500	F5	F9	F11 ^(c)	F22 ^(c)	F304	F304L	F316	F316L	F5	F9	F11 ^(c)	F22 ^(c)	F304	F304L	F316	F316L
MATERIAL																					
TEMP. °F																					
TEMP. °C																					
-20 to 100	20.1	52.1	104.1	138.9	260.5	140.6	140.6	140.6	146.6	135.0	112.5	135.0	112.5	263.7	263.7	263.7	263.7	253.2	210.9	253.2	210.9
100 to 200	18.3	47.5	95.0	126.6	237.3	140.6	140.6	133.6	134.3	112.5	95	116.4	95	263.7	263.7	263.7	251.7	210.9	177.9	217.6	177.9
200 to 300	16.2	46.1	92.5	123.1	230.6	136.4	136.4	126.2	126.9	99.2	85.1	105.1	85.1	260.0	260.0	260.0	238.0	185.6	159.6	196.5	159.6
300 to 400	14.1	44.7	89.3	118.9	222.9	132.3	132.2	123.4	121.7	88.3	77.4	96.4	77.4	248.2	248.2	248.2	227.8	165.3	145.2	180.7	145.2
400 to 500	12.0	42.2	84.4	112.2	210.6	113.6	113.6	113.6	119.9	81.9	71.7	89.7	71.8	233.8	233.8	233.8	225.0	153.7	134.3	168.1	134.3
500 to 600	9.9	38.7	77.0	102.7	192.3	113.6	113.6	113.6	113.6	77.7	67.5	84.8	67.5	212.7	212.7	212.7	212.7	145.9	126.6	158.6	126.6
600 to 700	8.8	37.7	75.6	100.6	188.8	110.4	110.4	110.4	110.4	76.7	65.8	83.4	65.8	206.7	206.7	206.7	206.7	143.5	123.1	156.1	123.1
700 to 800	7.7	36.9	74.9	99.9	187.4	106.6	106.6	106.6	106.6	75.6	64.4	80.9	64.4	199.7	199.7	199.7	199.7	141.7	120.6	151.9	120.6
800 to 900	6.7	35.5	71.0	94.6	177.2	99.9	99.9	99.9	99.8	74.6	62.9	79.5	63.0	187.0	187.0	187.0	187.0	139.9	118.1	148.4	118.1
900 to 1000	5.7	28.9	58.0	77.4	144.9	93.2	95.3	95.3	95.3	73.9	61.6	77.7	61.6	178.6	178.6	178.6	178.6	138.5	115.7	145.9	115.7
1000 to 1100	4.6	19.0	37.7	50.3	94.3	82.3	91.4	91.4	91.4	72.8	60.5	75.9	60.5	171.2	171.2	171.2	171.2	136.8	113.2	142.8	113.2
1100 to 1200	3.6	12.0	24.3	32.4	60.5	66.1	84.4	84.4	84.4	72.1	60.5	73.9	60.5	157.9	157.9	157.9	157.9	135.0	138.5	138.5	138.5
1200 to 1300	2.5	7.4	14.5	19.4	36.3	48.9	69.3	70.7	70.7	70.3	60.5	72.5	60.5	132.6	132.6	132.6	132.6	131.5	135.7	135.7	135.7
1300 to 1400	1.4	3.6	7.4	9.9	18.3	35.9	54.9	41.9	50.3	60.5	60.5	68.2	60.5	78.4	94.3	113.2	128.0	113.2	128.0	128.0	128.0
1400 to 1500						26.4	35.5	25.7	37.3	58.0	60.5	67.5	60.5	48.2	70	108.7	126.6	108.7	126.6	126.6	126.6
						19.4	21.1	18.0	21.1	48.2	60.5	60.5	60.5	33.8	39.8	90.4	113.2	90.4	113.2	113.2	113.2
						13.0	14.1	9.9	19.4	36.6	60.5	51.7	60.5	18.3	36.3	68.9	96.4	68.9	96.4	96.4	96.4
						8.5	9.9	6.7	10.2	29.2	60.5	38.7	60.5	12	19.4	54.2	72.5	54.2	72.5	72.5	72.5
										20.8	60.5	34.1	60.5			38.7	64.0	38.7	64.0	64.0	64.0
										15.4	60.5	25.7	60.5	28.9	48.2	85.0	113.2	28.9	48.2	48.2	48.2
										11.6	60.5	19.4	60.5	21.8	36.3	85.0	113.2	21.8	36.3	36.3	36.3
										9.2	60.5	14.1	60.5	16.9	26.8	85.0	113.2	16.9	26.8	26.8	26.8
										6.7	60.5	10.9	60.5	12.0	20.4	85.0	113.2	12.0	20.4	20.4	20.4
										4.6	60.5	7.8	60.5	8.5	14.5	85.0	113.2	8.5	14.5	14.5	14.5

(a) Permissible, but not recommended for prolonged usage above 426 °C (b) A350-LF2 is suitable down to -45 °C at -29 °C at pressure ratings. Do not use A350-LF2 above 399 °C

(c) Permissible, but not recommended for prolonged usage above 593 °C

COMPARISON LIST FOR CASTING & FORGING

ASME B16.34

Group Materials	Material Group No.	Nominal Designation steel	Forgings			Castings			
			ASTM (Spec-Grade)	JIS Equiv	Notes	ASTM (Spec-Grade)	JIS Equiv	Notes	
1	1.1	Carbon	A105	G3202-SFVC 2A	(1)(3)(5)(10)	A216-WCB	G5151-SCPH2	(1)	
			A350-LF2	G3205-SFL2					
	1.2	Carbon				A216-WCC	G5102-SCW49	(1)	
			2 1/2Ni			A352-LC2	G5152-SCPL21	(10)	
			3 1/2Ni	A350-LF3	G3205-SFL3	(10)	A352-LC3	G5152-SCPL31	(10)
	1.3	Carbon				A352-LCB	G5152-SCPL1	(10)	
	1.4	Carbon	A350-LF1	G3205-SFL1	(10)				
	1.5	C-1/2 Mo	A182-F1	G3203-SFVA F1	(2)(11)	A217-2WC1	G5151-SCPH11	(2)(11)(10)	
						A352-LC1	G5152-SCPL11		
	1.7	1/2 Cr-1/2Mo	A182-F2	G3203-SFVA F2	(12)				
			Ni-Cr-1/2Mo			A217-WC4		(4)(12)	
			Ni-Cr-1Mo			A217-WC5		(4)(13)	
	1.9	1 Cr-1/2Mo	A182-F12	G3203-SFVA12	(4)(14)				
			1 1/4 Cr-1/2Mo	A182-F11	G3203-SFVA11A	(4)(14)	A217-WC6	G5151-SCPH21	(4)(15)
1.10	2 1/4 Cr-1/2Mo	A182-F22	G3203-SFVA22B	(14)	A217-WC9	G5151-SCPH32	(4)(15)		
1.11	3Cr-1Mo	A182-F21	G3203-SFVA21B	(14)					
1.13	5Cr-1/2Mo	A182-F5a	G3203-SFVA F5D		A217-C5	G5151-SCPH61	(4)		
		A182-F5	G3203-SFVA F5B						
1.14	9Cr-1Mo	A182-F9	G3203-SFVA F9		A217-C12		(4)		
2	2.1	18Cr-8Ni	A182-F304	G3214-SUS F304	(6)				
			A182-F304H	G3214-SUS F304H			A351-CF3	G5121-SCS19A	(16)(6)
						A351-CF8	G5121-SCS13A		
	2.2	16Cr-2Ni-2Mo	A182-F316	G3214-SUS F316	(6)				
			A182-F316H	G3214-SUS F316H			A351-CF3A		(10)(10)
							A351-CF8A		
		18Cr-8Ni							
		18Cr-9Ni-sMo				A351-CF3M	G5121-SCS16A	(17)(6)	
						A351-CF8M	G5121-SCS14A		
	2.3	18Cr-8Ni	A182-F304L	G3214-SUS F304L	(16)				
			A182-F316L	G3214-SUS F316L					
2.4	18Cr-10Ni-Ti	A182-F321	G3214-SUS F321	(6)(12)					
		A182-F321H	G3214-SUS F321H						
2.5	18Cr-10Ni-Cb	A182-F347	G3214-SUS F347	(6)(12)	A351-CF8C	G5121-SCS21	(6)		
		A182-F347H	G3214-SUS F347H						
		A182-F348							
	A182-F348H								
2.6	25Cr-12Ni				A351-CH8		(6)(6)		
					A351-CH20	G5121-SCS17			
2.7	25Cr-20Ni	A182-F310	G3214-SUS F310	(6)(7)	A351-CK20	G5121-SCS18	(6)		

Notes:

- (1) Upon prolonged exposure to temperatures above about 800 °F (425 °C).
The carbide phase of carbon steel may be converted to graphite.
- (2) Upon prolonged exposure to temperatures above about 875 °F (470 °C).
The carbide phase of carbon molybdenum steel may be converted to graphite.
- (3) Only killed steel shall be used above 850 °F (455 °C).
- (4) Use normalized and tempered material only.
- (5) Permissible, but not recommended for prolonged usage above about 800 °F (425 °C).
- (6) At temperatures over 1000 °F (540 °C) use only when the carbon is 0.04% or higher.
- (7) For service temperatures of 1050 °F (565 °C) and above, assurance must be provided that grain size is not finer than ASTM No. 6.
- (8) Use annealed material only.
- (9) Use solution annealed material only.
- (10) Not to be used over 650 °F (345 °C).
- (11) Permissible, but not recommended for prolonged upon above about 850 °F (455 °C).
- (12) Not to be used over 1000 °F (540 °C).
- (13) Not to be used over 1050 °F (565 °C).
- (14) Permissible, but not recommended for prolonged upon above about 1100 °F (595 °C).
- (15) Not to be used over 1100 °F (595 °C).
- (16) Not to be used over 800 °F (425 °C).
- (17) Not to be used over 850 °F (455 °C).

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CONVERSION TABLES

STRESS

1N/㎠=1MPa

kgf/㎠	kgf/㎠	lbf/ft ²	Pa	MPa(㎠/㎠)
1	1 × 10 ²	2.048 × 10 ²	9.80665 × 10 ²	9.80665
1 × 10 ⁻²	1	2.048 × 10 ²	9.80665 × 10 ²	9.80665 × 10 ²
4.882 × 10 ⁻⁴	4.882 × 10 ⁻⁴	1	4.786 × 10 ²	4.786 × 10 ²
1.01972 × 10 ⁻²	1.01972 × 10 ²	2.089 × 10 ²	1	1 × 10 ²
1.0972 × 10 ⁻¹	1.01972 × 10 ²	2.089 × 10 ²	1 × 10 ²	1

LENGTH

m	㎝	in	ft	yd	km	mile	Nautical mile
1	100	39.37	3.281	1.094	1	0.6214	0.5400
0.01	1	0.3937	0.032 81	0.010 94	1.609	1	0.8690
0.0254	2.510	1	0.083 33	0.027 78	1.852	1.151	1
0.3048	30.48	12	1	0.333 3			
0.9144	91.44	36	3	1			

KINEMATIC VISCOSITY

1St=1㎠/s

㎠/s	ft ² /s	cSt	St
1	1.076 × 10 ⁻²	1 × 10 ²	1 × 10 ²
9.290 × 10 ⁻²	1	9.2900 × 10 ²	9.290 × 10 ²
1 × 10 ⁻⁶	1.076 × 10 ²	1	1 × 10 ²
1 × 10 ⁻⁴	1.076 × 10 ²	1 × 10 ²	1

AREA

㎠	in ²	ft ²	yd ²	km ²	acre	mile ²	ha
1	1550	10.76	1.196	1	247.1	0.386 1	100
6.452 × 10 ⁻⁴	1	6.944 × 10 ⁻²	7.716 × 10 ⁻²	4.047 × 10 ⁻³	1	1.562 × 10 ⁻⁵	0.4047
0.09290	144	1	0.1111	2.590	640	1	259.0
0.8361	1296	9	1	0.01	2.471	3.861 × 10 ⁻³	1

VOLUME

㎠	in ³	ft ³	yd ³	dm ³	gal(British)	gal(U.S)	in ³
1	61 024	35.31	1.308	1	0.220 0	0.264 2	61.02
1.639 × 10 ⁻³	1	5.787 × 10 ⁻⁴	2.143 × 10 ⁻⁵	4.546	1	1.201	277.4
0.02832	1 728	1	0.03704	3.785	0.832 7	1	231
0.7646	46 656	27	1	0.016 39	3.605 × 10 ⁻⁴	4.329 × 10 ⁻³	1

PRESSURE

Mpa	kgf/㎠	lbf/in ²	atm	mHg	inHg	mH ₂ O	ftH ₂ O
1	10.20	145.0	9.869	7.501	295.3	102.0	334.6
0.098 07	1	14.22	0.967 8	0.735 6	28.96	10	32.61
0.006 895	0.070 31	1	0.068 05	0.051 71	2.036	0.703 1	2.307
0.101 3	1.033	14.70	1	0.76	29.92	10.33	33.90
0.133 3	1.360	19.34	1.316	1	39.37	13.60	44.60
0.003 386	0.034 53	0.491 2	0.033 42	0.025 4	1	0.345 3	1.133
0.009 806	0.1	1.422	0.096 78	0.073 55	2.896	1	3.281
0.002 989	0.030 48	0.433 5	0.029 50	0.022 42	0.882 7	0.304 8	1

VISCOSITY

Poise=ꠁ/cm · s (CGS UNIT)	centipose.cP	kg/m · h	kg/m · s	lb/ft · s
1	100	0.1	360	0.0672
0.01	1	0.001	3.6	0.000672
10	1000.0	1	3600.0	0.672
0.00278	0.278	0.0278	1	0.000187
14.88	1488.0	1.488	5356.8	1

POWER

K/W	PS	HP(British)	kgf-m/s	ft-lbf/s	Kcal/s	BTU/s(British)
1	1.360	1.340	102.0	737.6	0.238 9	0.918 0
0.735 5	1	0.985 9	75	542.5	0.175 7	0.697 3
0.746	1.014	1	76.07	550.2	0.178 2	0.707 2
0.009 807	0.013 33	0.013 15	1	7.233	0.002 343	0.009 297
0.001 356	0.001 843	0.001 817	0.138 3	1.0	0.003 239	0.001 285
4.186	5.691	5.611	426.9	3087.0	1	3.968
1.055	1.434	1.414	107.6	778.0	0.252 0	1

VELOCITY

m/s	km/h	kn	ft/s	mi/h
1	3.6	1.944	3.281	2.237
0.277 8	1	0.540 0	0.911 3	0.621 4
0.514 4	151	1	1.688	1.151
0.304 8	1.097	0.592 5	1	0.681 8
0.447 0	1.609	0.869 0	1.467	1

FLOW

ꠁ/s	㎠/h	㎠/s	British gal/min	U.S gal/min	ft ³ /h	ft ³ /s
1	3.6	0.001	13.197	15.8514	127.14	0.03532
0.277 8	1	0.0277 8	3.6658	4.4032	35.317	0.09801
1.000	3600.0	1	13197.0	15851.0	127150.0	35.3160
0.075775	0.27279	0.075775	1	1.2011	9.6342	0.02676
0.06309	0.2271	0.06304	0.8325	1	8.0208	0.02228
0.07865	0.02832	0.07865	0.1038	0.1247	1	0.02778
28.3153	101.935	0.02832	373.672	448.833	3600.0	1

ENERGY

1J=1Ws, 1wh=3600Ws, 1cal=4.18605J

kgf-m	lbf-ft	j	kw-h	2.343 × 10 ³
1	7.231	9.807	2.724 × 10 ⁻⁶	2.343 × 10 ³
1.383 × 10 ⁻¹	1	1.356	3.766 × 10 ⁻⁷	3.239 × 10 ³
1.0197 × 10 ⁻¹	7.376 × 10 ¹	1	2.778 × 10 ⁻⁷	2.389 × 10 ³
3.671 × 10 ²	2.665 × 10 ²	3.600 × 10 ²	1	8.600 × 10 ²
4.269 × 10 ²	3.087 × 10 ²	4.186 × 10 ²	1.163 × 10 ³	1

WEIGHT

kg	g	t(tonne)France	lb	British ton	U.S ton
0.001	1	0.001	0.002205	0.000984	0.001102
1	1,000	0.001	2.2046	0.000984	0.001102
1,000	1 × 10 ⁶	1	2,204.6	0.9842	1.1023
0.4536	453.6	0.04536	1	0.0446	0.051
1,016.05	1,016,047	1.01605	2,240	1	1.12
907.185	907,185	0.90719	2,000	0.86289	1

DENSITY

1g/㎠=1/tm³

g/㎠	kg/㎠	lb/in	lb/ft ³	H/U.S.gat
1	1 × 10 ³	3.613 × 10 ²	6.243 × 10 ²	8.345
1 × 10 ⁻³	1	3.613 × 10 ²	6.243 × 10 ²	8.345 × 10 ³
2.768 × 10 ²	2.768 × 10 ²	1	1.728 × 10 ³	231
1.602 × 10 ⁻²	1.602 × 10 ⁻²	5.787 × 10 ⁻²	1	1.337 × 10 ⁻¹
1.198 × 10 ⁻¹	1.198 × 10 ⁻¹	4.329 × 10 ⁻¹	7.481	1

FORCE

1dyn=10N

kgf	lbf	N	dyn
1	2.205	9.80655	9.80665 × 10 ⁵
4.536 × 10 ⁻¹	1	4.44822	4.44822 × 10 ⁵
1.01972 × 10 ⁻¹	2.248 × 10 ⁻¹	1	1 × 10 ⁵
1.01972 × 10 ²	2.248 × 10 ²	1 × 10 ⁵	1

CORROSION RESISTANCE GUIDE

Fluid	Materials													
	Carbon Steel	Cast Iron	Type 302/304 Stainless Steel	Type 316 Stainless Steel	Bronze	Monel (R)	Hastelloy (R) B	Hastelloy (R) C	Durimet (R) 20	Titanium	Cobalt-Base Alloy 6	Type 416 Stainless Steel	Type 440c Hard Stainless Steel	T7.4ph Hard Stainless Steel
Acetaldehyde	A	A	A	A	A	A	I.L.	A	A	I.L.	I.L.	A	A	A
Acetic acid, Air Free	C	C	B	B	B	B	A	A	A	A	A	C	C	B
Acetic Acid, Aerated	C	C	A	A	A	A	A	A	A	A	A	C	C	B
Acetic Acid, Vapors	C	C	A	A	B	B	I.L.	A	B	A	A	C	C	B
Acetone	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Acetylene	A	A	A	A	I.L.	A	A	A	A	I.L.	A	A	A	A
Alcohols	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Aluminum Sulfate	C	C	A	A	B	B	A	A	A	I.L.	C	C	I.L.	I.L.
Ammonia	A	A	A	A	C	A	A	A	A	A	A	A	A	I.L.
Ammonium Chloride	C	C	B	B	B	B	A	A	A	A	B	C	C	I.L.
Ammonium Nitrate	A	C	A	A	C	C	A	A	A	A	A	C	B	I.L.
Ammonium Phosphate(Mono-basic)	C	C	A	A	B	B	A	A	B	A	A	B	B	I.L.
Ammonium Sulfate	C	C	B	A	B	A	A	A	A	A	A	C	C	I.L.
Ammonium Sulfite	C	C	A	A	C	C	I.L.	A	A	A	A	B	B	I.L.
Aniline	C	C	A	A	C	B	A	A	A	A	A	C	C	I.L.
Asphalt	A	A	A	A	A	A	A	A	A	I.L.	A	A	A	A
Beer	B	C	A	A	B	A	A	A	A	A	A	B	B	A
Benzene (Benzol)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Benzoic Acid	C	C	A	A	A	A	I.L.	A	A	A	I.L.	A	A	A
Boric Acid	C	C	A	A	A	A	A	A	A	A	A	B	B	I.L.
Butane	A	A	A	A	A	A	A	A	A	I.L.	A	A	A	A
Calcium Chloride (Alkaline)	B	B	C	B	C	A	A	A	A	A	I.L.	C	C	I.L.
Calcium Hypochlorite	C	C	B	B	B	B	C	A	A	A	I.L.	C	C	I.L.
Carbolic Acid	B	B	A	A	A	A	A	A	A	A	A	I.L.	I.L.	I.L.
Carbon Dioxide, Dry	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Carbon Dioxide, Wet	C	C	A	A	B	A	A	A	A	A	A	A	A	A
Carbon Disulfide	A	A	A	A	C	B	A	A	A	A	A	B	B	I.L.
Carbon Tetrachloride	B	B	B	B	A	A	B	A	A	A	I.L.	C	A	I.L.
Carbonic acid	C	C	B	B	C	A	A	A	A	I.L.	I.L.	A	A	A
Chlorine Gas, Dry	A	A	B	B	C	A	A	A	A	C	B	C	C	C
Chlorine Gas, Wet	C	C	C	C	C	C	C	B	C	A	B	C	C	C
Chlorine, Liquid	C	C	C	C	B	C	C	A	B	C	B	C	C	C
Chromic Acid	C	C	C	B	C	A	C	A	C	A	B	C	C	C
Citric Acid	I.L.	C	B	A	A	B	A	A	A	A	I.L.	B	B	B
Coke Oven Gas	A	A	A	A	B	B	A	A	A	A	A	A	A	A
Copper Sulfate	C	C	B	B	B	C	I.L.	A	A	A	I.L.	A	A	A
Cottonseed Oil	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Creosote	A	A	A	A	C	A	A	A	A	I.L.	A	A	A	A
Ethane	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Ether	B	C	A	A	A	A	A	A	A	A	A	A	A	A
Ethyl Chloride	C	C	A	A	A	A	A	A	A	A	A	B	B	I.L.
Ethylene	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Ethylene Glycol	A	A	A	A	A	A	I.L.	I.L.	A	I.L.	A	A	A	A
Ferric Chloride	C	C	C	C	C	C	C	B	C	A	B	C	C	I.L.
Formaldehyde	B	B	A	A	A	A	A	A	A	A	A	A	A	A
Formic acid	I.L.	C	B	B	A	A	A	A	A	C	A	C	C	B
Freon, Wet	B	B	B	A	A	A	A	A	A	A	A	I.L.	I.L.	I.L.
Freon, Dry	B	B	A	A	A	A	A	A	A	A	A	I.L.	I.L.	I.L.
Furfural	A	A	A	A	A	A	A	A	A	A	A	B	B	I.L.
Gasoline, Refined	A	A	A	A	A	A	A	A	A	A	B	A	A	A
Glucose	A	A	A	A	A	A	A	A	A	A	B	A	A	A
Hydrochloric Acid, Aerated	C	C	C	C	C	C	A	B	C	C	B	C	C	C
Hydrochloric Acid, Air Free	C	C	C	C	C	C	A	B	C	C	I.L.	C	C	C
Hydrofluoric Acid, Aerated	B	C	C	B	C	C	A	A	B	C	C	C	C	C
Hydrofluoric Acid, Air Free	A	C	C	B	C	A	A	A	B	C	C	C	C	C

A-Recommended
 B-Minor to moderate effect. Proceed with caution.
 C-Unsatisfactory
 I.L.-Information lacking

Note : Ratings are based on media at ambient temperature unless otherwise specified.
 These ratings should be used as a general guide only.

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	Carbon Steel	Cast Iron	Type 302/304 Stainless Steel	Type 316 Stainless Steel	Bronze	Monel (R)	Hastelloy (R) B	Hastelloy (R) C	Durimet (R) 20	Titanium	Cobalt-Base Alloy 6	Type 416 Stainless Steel	Type 440c Hard Stainless Steel	T7 4ph Hard Stainless Steel
Hydrogen	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Hydrogen Peroxide	I.L.	A	A	A	C	A	B	B	A	A	I.L.	B	B	I.L.
Hydrogen Sulfide, Liquid	C	C	A	A	C	C	A	A	B	A	C	C	C	I.L.
Magnesium Hydroxide	A	A	A	A	B	A	A	A	A	A	A	A	A	I.L.
Mercury	A	A	A	A	C	B	A	A	A	A	A	A	A	B
Methanol	A	A	A	A	A	A	A	A	A	A	A	A	B	A
Methyl Ethyl Ketone	A	A	A	A	A	A	A	A	A	I.L.	A	A	A	A
Milk	C	C	A	A	A	A	A	A	A	A	C	C	C	C
Natural Gas	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Nitric Acid	C	C	A	B	C	C	C	B	A	A	C	C	C	B
Oleic Acid	C	C	A	A	B	A	A	A	A	A	A	A	A	I.L.
Oxalic Acid	C	C	B	B	B	B	A	A	A	B	B	B	B	I.L.
Oxygen	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Petroleum Oils, Refined	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Phosphoric Acid, Aerated	C	C	A	A	C	C	A	A	A	B	A	C	C	C
Phosphoric Acid, Air Free	C	C	A	A	C	B	A	A	A	B	A	C	C	C
Phosphoric Acid Vapors	C	C	B	B	C	C	A	I.L.	A	B	C	C	C	C
Picric Acid	C	C	A	A	C	C	A	A	A	I.L.	I.L.	B	B	I.L.
Potassium Chloride	B	B	A	A	B	B	A	A	A	A	I.L.	C	C	I.L.
Potassium Hydroxide	B	B	A	A	B	A	A	A	A	A	I.L.	B	B	I.L.
Propane	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Rosin	B	B	A	A	A	A	A	A	A	I.L.	A	A	A	A
Silver Nitrate	C	C	A	A	C	C	A	A	A	A	B	B	B	I.L.
Sodium Acetate	A	A	B	A	A	A	A	A	A	A	A	A	A	A
Sodium Carbonate	A	A	A	A	A	A	A	A	A	A	A	B	B	A
Sodium Chloride	C	C	B	B	A	A	A	A	A	A	A	B	B	B
Sodium Chromate	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Sodium Hydroxide	A	A	A	A	C	A	A	A	A	A	A	B	B	A
Sodium Hypochloride	C	C	C	C	B-C	B-C	C	A	B	A	I.L.	C	C	I.L.
Sodium Thiosulfate	C	C	A	A	C	C	A	A	A	A	I.L.	B	B	I.L.
Stannous Chloride	B	B	C	A	C	B	A	A	A	A	I.L.	C	C	I.L.
Stearic Acid	A	C	A	A	B	B	A	A	A	A	B	B	B	I.L.
Sulfate Liquor (black)	A	A	A	A	C	A	A	A	A	A	A	I.L.	I.L.	I.L.
Sulfur	A	A	A	A	C	A	A	A	A	A	A	A	A	A
Sulfur Dioxide, Dry	A	A	A	A	A	A	B	A	A	A	A	B	B	I.L.
Sulfur Trioxide, Dry	A	A	A	A	A	A	B	A	A	A	A	B	B	I.L.
Sulfuric Acid, Aerated	C	C	C	C	C	C	A	A	A	B	B	C	C	C
Sulfuric Acid, Air Free	C	C	C	C	B	B	A	A	A	B	B	C	C	C
Sulfurous Acid	C	C	B	B	B	C	A	A	A	A	B	C	C	I.L.
Tar	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Trichloroethylene	B	B	B	A	A	A	A	A	A	A	A	B	B	I.L.
Turpentine	B	B	A	A	A	B	A	A	A	A	A	A	A	A
Vinegar	C	C	A	A	B	A	A	A	A	I.L.	A	C	C	A
Water, Boiler Feed	B	C	A	A	C	A	A	A	A	A	A	B	A	A
Water, Distilled	A	A	A	A	A	A	A	A	A	A	A	B	B	I.L.
Water, Sea	B	B	B	B	A	A	A	A	A	A	A	C	C	A
Whiskey And Wines	C	C	A	A	A	B	A	A	A	A	A	C	C	I.L.
Zinc Chloride	C	C	C	C	C	C	A	A	A	A	B	C	C	I.L.
Zinc Sulfate	C	C	A	A	B	A	A	A	A	A	A	B	B	I.L.

A-Recommended
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Note: Ratings are based on media at ambient temperature unless otherwise specified.
 These ratings should be used as a general guide only.

REFERENCE STANDARD & SPECIFICATION

ASME STANDARDS-AMERICAN NATIONAL STANDARDS

B1.1	Unified Screw Threads
B2.1	Pipe Threads(Except Dryseal)
B16.1	Steel Pipe Flanges Flanged Fittings
B16.10	Face to face and End to-End Dimensions of Ferrous Valves
B16.11	Forged Steel Fittings Socket Welding and Threaded
B16.20	Ring-Joint Gaskets and Grooves for Steel Pipe Flanges
B16.21	Nonmetallic Gaskets for Pipe Flanges
B16.25	Buttwelding Ends
B16.34	Steel Valves Flanged and Buttwelding End
B18.21	Square and Hex Bolts and Screws
B18.22	Square and Hex Nuts
B31.1	Power Piping
B31.2	Fuel Gas Piping
B31.3	Chemical Plant and Petroleum Refining Piping
B31.4	Liquid Petroleum Transportation Piping Systems
B31.5	Refrigeration Piping Systems
B31.7	Nuclear Power Piping
B31.8	Gas Transmission and Distribution Piping Systems
B31.10	Wrought-Steel and Wrought-Iron Pipe

API STANDARDS-AMERICAN PETROLEUM INSTITUTE

6A	Specification for Wellhead Equipment
6D	Specification for Pipeline Valve
597	Steel Venturi Gate Valves, Flanged or Buttwelding End
598	Valve Inspection and Test
600	Steel Gate Valve, Flanged or Buttwelding Ends
602	Compact Steel Gate Valves
603	150-Lb, Light-Wall, Corrosion-Resistant Gate Valve for Refinery Use
605	Large Diameter Carbon Steel Flanges
607	Testing of Valves - Fire type Teating Requirements
608	Metal Ball Valves - Flanged, Threaded and Welding End

MSS STANDARD PRACTICES-MANUFACTURES STANDARDIZATION SOCIETY OF THE VALVE AND FITTINGS INDUSTRY.

SP-6	Finishes for Contact Faces of Connecting End-flanges of Ferrous Valves and Fittings
SP-9	Spot- Facing Standard
SP-25	Standard Making System for Valves, Fitting, Flanges and Unions
SP-42	150Lb Corrosion Resistant Cast Flanged Valves
SP-44	Steel Pipe Line Flanges
SP-45	Bypass and Drain Connection Standard
SP-53	Quality Standard for Steel Castings-Dry Particle Magnetic Inspection Method
Sp-54	Quality Standard for Steel Castings-Radiographic Inspection Method
Sp-55	Quality Standard for Steel Castings-Visual Method
SP-61	Hydrostatic Testing of Steel Valves
SP-67	Butterfly Valves
SP-81	Stainless Steel Knife Gate Valves
SP-82	Valve Pressure Testing Methods

GUIDE TO STORAGE, INSTALLATION & SERVICE

I. STORAGE

1. Dongkang valves are thoroughly cleaned to remove fluids, rust and other foreign materials after testing and before shipping.
2. Plastic covers are pressed firmly in both ends to keep the valves clean. Do not remove plastic covers until ready to install.
3. Valves should be stored in a suitably sheltered place to prevent contamination by weather, dirt or dampness. Valves will eventually rust unless treated with a light oil coating, when stored for long periods of time.

II. INSTALLATION

1. Make sure all piping and components are cleaned of dirt and foreign objects.
2. Install valves as indicated by the arrow forged on the valve body.
3. Install valves in a manner that will allow future service and ease of operation.
4. Use hangers to support the weight of the valve and piping properly.
5. Keep valves in a partially open position during the welding process. Valves should be fully closed again after the welding process is completed.

III. OPERATION

1. Valves are manually actuated by means of the handwheel-counterclockwise to open and clockwise to close.
 2. Gate valves should be fully opened or fully closed.
- Do not use gate valves in a throttling or modulating application.

3. Valves that do not require frequent opening and closing should have grease applied to the stem threads on a regular basis.

4. If a leakage starts in our valve, please follow this procedure.

- a) Do not apply extra force to close the valve.

- b) Open the valve fully, then close again.

This usually away foreign materials on the seating surface.

- c) If leakage still continues, after flushings(Step b), disassemble the valve, clean the seating surface and reassemble the valve.

IV. ADJUSTING GLAND PACKING

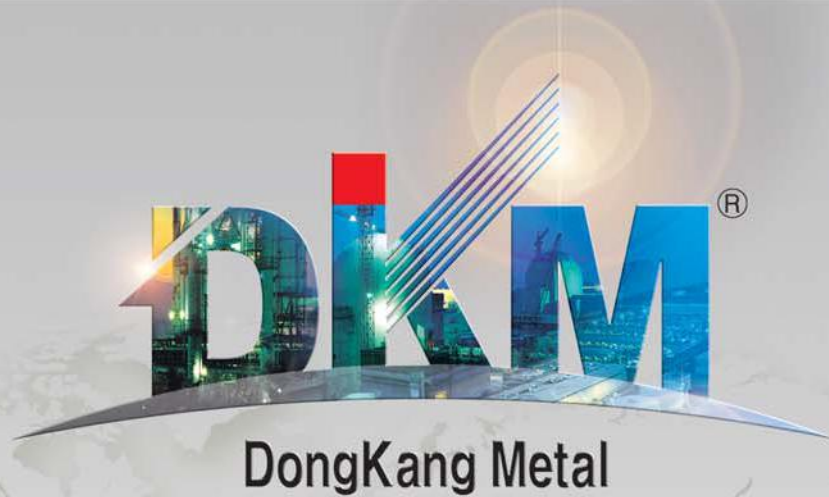
1. When trying the valve for the time in the piping, it is recommended to adjust the gland packing by tightening the gland bolt nut.

Tighten the gland packing uniformly so as to stop leakage.

Over tightening can result in hard to turn the valve handwheel.

2. If tightning does not stop leakage around the stem, repacking should be considered at once.

FORGED STEEL VALVES & STRAINER



WORK CONCEPT OF DONGKANG METAL

We, Dong Kang Metal Co., are endeavoring for the purpose of producing and supplying the superior products based on our technique and the reliance which have been accumulated for a long time, and we prepared for the most advanced test equipments, not to mention the latest production facilities and we work hard to accomplish the product quality improvement and manufacture the perfect valve with the thorough quality control.



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