



IBR APPROVED

AN ISO 9001 : 2015 CERTIFIED COMPANY



our **VISION** to
achieve **LEADERSHIP**
through **QUALITY**



ABOUT US.

The Company 's steady growth began with ambition, vision, foresight and these values remain our guiding force even today, enabling us to force ahead and do our Country proud in projecting our products overseas, as well as in domestic market and acquiring acceptability and approval. From humble beginning, Norflow Controls has grown to be one of the leading manufacturers of Industrial Valves with ISO 9001 : 2015, CE marking & IBR up to pressure class 2500#, in different designs of valves in India.

The company's prime objective is to produce superior quality industrial valves at competitive price through high productivity by constant up gradation recommended by R&D wing. Our greatest reward of relentless growth is immense confidence generated amongst the rapidly growing family of customers through its no compromise policies on quality front. The stiff competition and appetite for excellence is a big challenge. But with quality standard, kaleidoscopic nature of service, timely delivery, vision to expand is the ethical business practice which we commit and we honor this commitment.

Our good business practice and transparent mode of working is a result of highly qualified and professional management. This enables us to keep on adding new products to our range and give value for money (VFM) to our customers.



GATE VALVE

Gate valves serve as efficient on-off valves with flow in either direction (Bi-directional). In such a design, a wedge travels cross a general passageway in order to control fluid flow. One of the most significant characteristics of this type of valves is its straight-through, unobstructed passageway when set in the “full open” position. This is made possible by the wedge lifting entirely out of the passageway. As a result, gate valves are characterized by a minimum of turbulence and pressure drop in operation. Gate valves are not recommended for installations in which throttling is required. They are designed for on/off service.

BODY BONNET CONNECTION

Bolted Bonnet Design from Class 150 to 600,
Pressure Seal Design for Class 900 & Above

WEDGE

Flexible wedge for improved seating ease of operation, especially in high temperature service, wedges are accurately guided through the entire stroke.

STEM

Stem is non-rotating part. Stems made from one piece and ACME threaded and smooth machined with surface finish to maximize packing seal for low fugitive emissions.

SEAT FACES

Seat faces lapped for smooth finish and superior sealing. Optional renewable threaded seat or welded seats are as per customer specification.

BACK SEAT

All our gate valve have back seat design, carbon steel valves is fitted with removable back seat. For stainless steel integral machined with bonnet.

GASKET

Stainless steel + flexible graphite spiral wound gasket is used for 150 to 600 class, ring joint gasket is also optional for class 600 valves, for class 900 and above pressure seal design is used.

OTHER AVAILABLE OPTIONS FOR GATE VALVES

- Alternate trim materials
- Locking arrangement
- Stem Extension
- Bypass, drain and other auxiliary connections
- Chain wheel, Gear, Electrical & Pneumatic actuator operated
- NACE service, Hydrogen service



PRODUCT RANGE	SIZE	PRESSURE CLASS
Bolted Bonnet Gate Valve	15 NB to 900 NB	150# to 600#
Forged Steel Gate Valve	6 NB to 50 NB	800# to 2500#
Pressure Seal Gate Valve	50 NB to 600 NB	900# to 2500#

TECHNICAL SPECIFICATIONS

Bolted Bonnet Gate Valve	API 600
Forged Steel Gate Valve	API 602
Pressure Seal Gate Valve	ASME B16.34 / API 600
End to End Dimensions	ASME B16.10
Flanged End Dimensions	ASME B16.5, ASME B16.47-A & B
Butt Weld End Dimensions	ASME B16.25
Socket Weld End Dimensions	ASME B16.11
Valve Inspection & Testing	API 598/ BS 6755 Part-I
Visual Inspection	MSS SP 55
Non Destructive Test (RT, UT, MT, PT)	ASME B16.34
Pressure - Temperature Rating	ASME B16.34

GLOBE VALVE

All globe valves are used on “port closure” concept of valves. So the fluid passes through a specific opening (rather than a general passageway, as in the case of gate valves), and the fluid is controlled by means of Disc or Plug in that area.

Despite of lacking the straight through, unobstructed passageway of the gate valve, these globe types are superior in two key aspects - throttling and service-ability under frequent use. They are better at the throttling function because they permit fluid to exit uniformly around the circumference of a seat, rather than “slicing” down to limit passage through a narrowly restricted area.

BODY BONNET CONNECTION

Bolted Bonnet Design from Class 150 to 600,
Pressure Seal Deign for Class 900 & Above

DISC

For valve with NPS < 2 are of disc solid and for above 2" Forged or Cast disc is used.

STEM

Stem is rotating part. Stems made from one piece and ACME threaded and smooth machined with surface finish to maximize packing seal for low fugitive emissions.

SEAT FACES

Seat faces lapped for smooth finish and superior sealing. Optional renewable threaded seat or welded seats are as per customer specification.

BACK SEAT

All our globe valves have back seat design, carbon steel valves is fitted with removable back seat. For stainless steel integral machined with bonnet.

GASKET

Stainless steel + flexible graphite spiral wounded gasket is used for 150 to 600 class, ring joint gasket is also optional for class 600 valves, for class 900 and above pressurized seal design is used.

OTHER AVAILABLE OPTIONS FOR GLOBE VALVE

- Alternate trim materials
- Locking arrangement
- Stem Extension
- Bypass, drain and other auxiliary connections
- Chain wheel, Gear, Electrical & Pneumatic actuator operated
- NACE service, Hydrogen service



PRODUCT RANGE	SIZE	PRESSURE CLASS
Bolted Bonnet Globe Valve	15 NB to 400 NB	150# to 600#
Forged Steel Globe Valve	6 NB to 50 NB	800# to 2500#
Pressure Seal Globe Valve	50 NB to 200 NB	900# to 2500#

TECHNICAL SPECIFICATIONS

Bolted Bonnet Globe Valve	BS 1873
Forged Steel Globe Valve	API 602
Pressure seal Globe Valve	ASME B16.34 / BS 1873
End to End Dimensions	ASME B16.10
Flanged End Dimensions	ASME B16.5
Butt Weld End Dimensions	ASME B16.25
Socket Weld End Dimensions	ASME B 16.11
Valve Inspection & Testing	API 598/ BS 6755 Part-I
Visual Inspection	MSS SP 55
Non Destructive Test (RT, UT, MT, PT)	ASME B16.34
Pressure - Temperature Rating	ASME B16.34

NON RETURN VALVE

For Unidirectional flow, check valves serve an important application namely to prevent flow in one direction while allowing it in the other. A check valve is self-actuated and designed to prevent fluid from flowing back into the system prevent reverse flow. It prevents backflow into an injection line or into a pump. The fluid flow opens the valve by forcing a disc in one direction. When the flow stops, the disc is seated and closes the valve. They can be installed in upward flow piping direction.

THE FEATURES OF CHECK VALVE

Bolted bonnet check valve metallic seating surface finish

BODY AND COVER CONNECTION

Bolted Bonnet Design from Class 150 to 600,
Pressure Seal Deign for Class 900 & Above

SWIVEL DISC

Swivel disc for improved seat alignment and longer life

SEAT FACES

Seat faces lapped for smooth finish and superior sealing. Optional renewable threaded seat or welded seats are as per customer specification.

SWING / LIFT TYPE DESIGN

Swing Check valves are suitable for service in horizontal line with cap vertical or in a vertical line with flow upward while Lift Check valve are suitable only for horizontal line only.

OTHER AVAILABLE OPTIONS FOR NON RETURN VALVE

- Alternate trim materials
- Drain and other auxiliary connections
- NACE service



PRODUCT RANGE	SIZE	PRESSURE CLASS
Bolted Cover Swing Check Valve	15 NB to 900 NB	150# to 600#
Forged Steel Lift Check Valve	6 NB to 50 NB	800# to 2500#
Pressure Seal Swing Check Valve	50 NB to 600 NB	900# to 2500#

TECHNICAL SPECIFICATIONS

Bolted Cover Swing Check Valve	BS 1868
Forged Steel Lift Check Valve	API 602
Pressure Seal Swing Check Valve	ASME B16.34 / BS 1868
End to End Dimensions	ASME B16.10
Flanged End Dimensions	ASME B16.5, ASME B16.47 A & B
Butt Weld End Dimensions	ASME B16.25
Socket Weld End Dimensions	ASME B16.11
Valve Inspection & Testing	API 598/ BS 6755 Part-I
Visual Inspection	MSS SP 55
Non Destructive Test (RT, UT, MT, PT)	ASME B16.34
Pressure - Temperature Rating	ASME B16.34



SINGLE DISC CHECK VALVE

Light weight, versatile design - 80% to 90% less than conventional full-body swing check valves Single Disc opening, Single integrated arm/ disc assembly, Spring-loaded disc calculated to increase the responsiveness of the disc, Elastomer o-ring seat secured in body with dove-tail groove, Integrated body seat, Non-blow out shaft design. Optimizes space utilization, Lowers installation costs, Reduces pipe supports, Requires less number of man-hours, Unobstructed flow Stable disc at lower flow velocities, No shearing of disc from arm, Non-rotating disc for longer life.

NON SLAM CHECK VALVE

Disc Check Valve is advanced designs which gives full flow and occupy very less space than other type of Non Return Valve. DCVs are simple to fit between two pipe flanges. Spring loaded disc to prevent reverse flow in pipe lines. Stronger, lighter and smaller than conventional swing check valves, hence less expensive to install and maintain. Compact Design of valves flexibly accommodates various types of flange selection. The valves can be fitted in any direction in pipelines. Zero leakage for soft seated valves.

DUAL PLATE CHECK VALVE

The dual Plate Check Valve is an all purpose non return valve that is much stronger, lighter in weight and smaller in size compared to a conventional swing check valve or life check valve. Dual Plate Check Valve has cylindrical body which makes the valve look like any other pipe fitting. A cylindrical body has much more uniform distribution of stress compared to a conventional swing check valve. A cylindrical body of the pressure containing part of the Dual Plate Check Valve can be designed to withstand extreme much to the weight (thickness) of valve. Thus for severe/ rugged loading conditions, these valves have a distinct edge over the conventional valves both in terms of safety and economics besides general versatility. The Dual Plate Check Valve employs two spring-loaded plates hinged on a central hinge pin. When the flow decreases, the plates close by torsion spring action without requiring reverse flow. This design offers the twin advantages of No Water Hammer and Non Slam simultaneously. All features put together make the Dual Plate Check Valve one of the most efficient design. Dual Plat Check Valves are available in wafer design, flanged wafer design and extended design with flanged ends having face to face dimensions as that of a swing check valve.



PRODUCT RANGE	SIZE	PRESSURE CLASS
Single Disc Check Valve	40 NB to 1000 NB	150# to 1500#
Non Slam Check Valve	15 NB to 300 NB	150# to 600#
Dual Plate Check Valve	50 NB to 600 NB	150# to 1500#

TECHNICAL SPECIFICATIONS

Single Disc Check Valve	API 594 / API 6D
Non Slam Check Valve	API 594
Dual Plate Check Valve	API 594
Flanged End Dimensions	ASME B16.5, ASME B16.47 A & B
Valve Inspection & Testing	API 598
Visual Inspection	MSS SP 55
Non Destructive Test (RT, UT, MT, PT)	ASME B16.34
Pressure - Temperature Rating	ASME B16.34

BALL VALVE

FLOATING BALL

Ball Valves are available in both designs floating and trunnion mounted. Standard Ball Valve is of a floating-ball design, where sealing takes place by allowing the ball under pressure to move towards the downstream seat to effect a tight seal. The floating ball design is the universal and versatile and used widely compare to trunnion mounted Ball Valve.

TRUNNION-MOUNTED BALL

For size above 2" NB and for higher pressure ratings, and for special services that require double-block and bleed features, trunnion - mounted ball valves are used. Soft seat is inserted in metal cage backup with number of spring which helps to reduce torque and give excellent sealing hence trunnion - mounted ball valves with soft seats used for critical process applications.

THREE-PIECE DESIGN

Ball Valves featuring this design are the most easily on-line maintainable in their class. By removing three body connector bolts and loosening the fourth, the body can be taken away using the fourth bolt as the fulcrum, to carry out any installation or maintenance operation on the valve. This feature reduces maintenance downtime.

SINGLE-PIECE / TWO-PIECE DESIGN

Single-piece ball valves come with a one-piece integrally flanged body. This design offers the unique advantage of eliminating the possibility of external leakage to the atmosphere through bolted body joints. These environment-friendly and high-integrity valves are preferred in critical applications where the media is expensive, toxic, and where external leakage or wastage is unacceptable. The two-piece design eliminates one joint as in three piece which reduces maintenance and possibility of external leakage to the atmosphere through joints.

ANTISTATIC FEATURE

Build-up of static electricity can occur as a result of constant rubbing of the ball against the PTFE seats. This can be a potential fire hazard, especially while handling inflammable fluids. Spring-loaded plungers are provided between the stem and the ball. Spark generated by friction between the ball and stem during on and off performance to the ground to prevent the possible risk of fire or explosion.

MIRROR-FINISHED SS BALLS

The stainless steel balls are manufactured to very close sphericity tolerances and are mirror-finished. This results in bubble-tight sealing and considerably reduced operating torque.

PRODUCT RANGE	SIZE	PRESSURE CLASS
Floating Ball Valve	6 NB to 300 NB	150# to 600#
Trunion Mounted Ball Valve	50 NB to 300 NB	150# to 600#



BLOW-OUT PROOF STEM

All Ball Valves have a bottom-entry stem design which features stem insertion from inside the body. An integral shoulder on the stem sits against the shoulder in the body, giving it blow-out proof integrity. This design offers safety features superior to top entry stem design.

FIRE-SAFE FEATURE

Fire-safe design valves feature a secondary metal to metal seat which renders the valve fire-safe. As per customers requirements NORFLOW fire safe design ball valve meets the requirements of API 607 & API 6FA.

OTHER AVAILABLE OPTIONS FOR BALL VALVES

- Alternate trim materials
- Stem Extension
- MS or SS Jacketed
- Flush Bottom Valve
- Pup Piece in Butt Weld/ Socket Weld End Valves
- Vent & drain and other auxiliary connections
- Chain wheel, Gear, Electrical & Pneumatic actuator
- NACE service

TECHNICAL SPECIFICATIONS

Floating Ball Valve	BS 5351
Trunion Mounted Ball Valve	API 6D
End To End Dimensions	ASME B16.10
Flanged End Dimensions	ASME B16.5
Butt Weld End Dimensions	ASME B16.25
Socket Weld End Dimensions	ASME B16.11
Valve Inspection & Testing	API 598/ BS 6755 Part-I
Visual Inspection	MSS SP 55
Non Destructive Test (RT, UT, MT, PT)	ASME B16.34
Pressure - Temperature Rating	ASME B16.34

BUTTERFLY VALVE

Butterfly valves are maintenance free, easy to install and operate and require minimum installation space, therefore they are used more and more in various applications NORFLOW Butterfly valves are structured to centered seal, single eccentric seal, double eccentric seal. It is available in three types; wafer, lug or double flange. The butterfly valve is available with flange connection for DIN, ANSI. Sealing materials may be soft or hard, place on body or disc to meet different working conditions and to effect good seal and long life. Rubber quality is crucial to make the valve leak proof and ensure a long service life hence good quality rubber according to application is used.

FEATURES:

- Compact construction results in low weight, less space in storage and installation.
- Central shaft position, 100% bidirectional bubble tight shut off makes installation acceptable at any direction.
- Full bore body gives low resistance to flow.
- No cavities in the flow passage, easy to clean and disinfect for potable water system etc.
- Liner creates seal with mating flanges so no media is in contact with the valve body.
- Low operating torques results in easy operation and economical actuator sizing.
- PTFE lined bearing on shaft allows for low friction & wear without using lubricants.
- Seldom maintenance and long service life.
- Low driving moment, easy and quick operation

OTHER AVAILABLE OPTIONS FOR BUTTERFLY VALVES

- Alternate trim materials
- Chain wheel, Gear, Electrical & Pneumatic actuator.

PRODUCT RANGE	SIZE	PRESSURE CLASS
Wafer type Butterfly Valve	25 NB to 1000 NB	PN 10 to PN 16
Lug Type Butterfly Valve	100 NB to 600 NB	PN 10 to PN 16
Flanged End Butterfly Valve	50 NB to 600 NB	PN 10 to PN 16

TECHNICAL SPECIFICATIONS

Wafer type Butterfly Valve	BS 5155, API 609 & AWWA C 504
Lug Type Butterfly Valve	BS 5155, API 609 & AWWA C 504
Flanged End Butterfly Valve	BS 5155, API 609 & AWWA C 504
Flanged End Dimensions	ASME B16.5, ASME B16.47 A & B
Valve Inspection & Testing	API 598/ BS 6755 Part-I
Visual Inspection	MSS SP 55



DIAPHRAGM VALVE

Diaphragm valves have a wide range of fluids and gases to handle. Pocketless design for contamination free performance and smooth flow characteristics. Linear operation ensures valve does not induce damaging pressure surges or static charges. Extended life, reliability, safety and ease of use, combined with an essentially simple design, results in low maintenance and cost-effective operation. All working parts of the valves are isolated from the line media and positive closure is obtained even on frequent cycling or with entrained particulates in the line unlike other valve types. Throttling and control characteristics are enhanced by a streamlined flow path that is cavity free and provides excellent flow control capabilities. Diaphragm valve can be installed in any position without affecting its operation.



TECHNICAL SPECIFICATIONS

Diaphragm Valve	BS 5156
End To End Dimensions	ASME B16.10
Flanged End Dimensions	ASME B16.5
Valve Inspection & Testing	API 598
Visual Inspection	MSS SP 55

PRODUCT RANGE	SIZE	PRESSURE CLASS
Diaphragm Valve	15 NB to 300 NB	PN 10 to PN 16

STRAINER

STRAINER

Strainers are closed mechanical devices that contain a cleanable screen or mesh used to remove and retain foreign particles from flowing liquids, such as oil, gas, slurries, steam, and solids along pipelines. If a particle is visible to the naked eye, a strainer should be chosen to remove it from the liquid stream. If the device retains particles finer than 45 microns, it is generally considered a filter. The difference between filters and strainers is only semantic; A filter could be considered a coarse filter. All types of strainers are available with a large variety of joining methods for insertion into a pipeline (threaded, socket weld, butt weld, flanged).

'Y' TYPE STRAINER

The Y strainer, has compact in design and is considered for use where space constraints exist. Frequent cleaning is often required. It's a good choice for high-pressure applications and for gases where pressures are higher and amount of dirt present is low. Y strainer has less capacity to store dirt than similar sizes of basket strainers. It is installed in a pipeline with its strainer element in the down position and can be positioned either horizontally or vertically.

BASKET STRAINER

The Basket strainers, as well, gets its name from the upright, perforated basket used to trap particles. It is installed upright in the strainer body, and the top of the strainer must be removed for cleaning. Because of its large size, it can store large quantities of dirt and so has a lower pressure loss than a similar sized of Y strainer.

Basket Strainers find wide application in pipelines that require a high flow capacity. To service a basket strainer, the cover can be removed so technicians get immediate access to the filtering element (cage) if it needs replacement (due to cumulated debris). These types of strainers are manufactured also in the variant of "duplex type" which consists of two parallel basket strainers that facilitate the maintenance of the strainers in conditions when the flow of the line cannot be stopped.

PRODUCT RANGE	SIZE	PRESSURE CLASS
'Y' Type Strainer	15 NB to 600 NB	150# to 2500#
Basket Type Strainer	50 NB to 1000 NB	150#

TECHNICAL SPECIFICATIONS

Flanged End Dimensions	ASME B16.5, ASME B16.47-A & B
Butt Weld End Dimensions	ASME B16.25
Socket Weld End Dimensions	ASME B16.11
Valve Inspection & Testing	API 598
Visual Inspection	MSS SP-55
Non Destructive Test (RT, UT, MT, PT)	ASME B16.34



DIMENSION CHART



SIZE	RATING	F TO F AS PER ASME B16.10				SIDE FLANGE DETAILS AS PER ASME B 16.5						APPROX HIGHT OF VALVE (CLOSE)			
		GATE	GLOBE	NRV	BALL	OD	THK	P.C.D	HOLE/DRILL	RF DIA	RF THK	GATE	GLOBE	NRV	BALL
1" 25 mm	150#	127	127	127	127	110	11	79.4	4/15.7	51	2	195	180	80	70
	300#	165	203	216	165	125	17	88.9	4/19.05	51	2	200	190	90	70
	600#	216	216	216	216	125	17	88.9	4/19.05	51	7	225	200	100	75
1.1/2" 40 mm	150#	165	165	165	165	125	14	98.4	4/15.7	73	2	235	235	105	90
	300#	190	229	241	190	155	21	114.3	4/22.09	73	2	245	255	115	90
	600#	241	241	241	241	155	22	114.3	4/22.09	73	7	265	280	125	95
2" 50 mm	150#	178	203	203	178	150	15.8	120.7	4/19.05	92	2	320	255	140	110
	300#	216	267	267	216	165	22.3	127	8/19.05	92	2	375	330	160	110
	600#	292	292	292	292	165	25.4	127	8/19.05	92	7	450	390	174	120
	900#	216	368	368		215.9	38.1	165.1	8/25.4	92	7	455	575	210	
	1500#	216	216	216		215.9	38.1	165.1	8/25.4	92	7	455	585	210	
2.1/2" 65 mm	150#	190	216	216	190	180	17	139.7	4/19.05	105	2	340	335	150	150
	300#	241	292	292	241	190	25.4	149.2	8/22.09	105	2	380	380	165	150
	600#	330	330	330	330	190	29	149.2	8/22.09	105	7	440	410	190	160
	900#	254	254	254		245	41.3	190.5	8/28.4	105	7	500	585	235	
	1500#	254	254	254		245	41.3	190.5	8/28.4	105	7	500	585	240	
3" 80mm	150#	203	241	241	203	190	19.05	152.4	4/19.05	127	2	410	360	170	160
	300#	282	318	318	282	210	29	168.3	6/22.3	127	2	450	455	194	160
	600#	356	356	356	356	210	31.7	168.3	8/22.3	127	7	495	490	225	190
	900#	305	305	305		240	38.1	190.5	8/25.4	127	7	515	590	270	
	1500#	305	305	305		265	47.7	203.2	8/31.7	127	7	515	610	270	
4" 100mm	150#	229	292	292	229	230	23.8	190.5	8/19.05	157	2	514	440	215	210
	300#	305	356	356	305	255	31.75	200	8/22.3	157	2	526	520	210	210
	600#	432	432	432	432	275	38.1	215.9	8/25.4	157	7	620	607	235	250
	900#	356	356	356		290	44.45	234.9	8/31.7	157	7	650	720	330	
	1500#	406	406	406		310	54	241.3	8/34.8	157	7	700	735	330	
5" 125mm	150#	254	356	330	254	255	23.8	215.9	8/32.8	185.6	2	600	514	215	215
	300#	381	400	400	381	280	35	235	8/22.3	185.6	2	600	533	245	220
	600#	508	508	508	508	330	44.4	266.7	8/28.4	185.6	7	770	570	284	235
	900#	432	432	432		350	50.8	279.4	8/34.8	185.6	7	824	800	352	
	1500#	483	483	483		375	73.1	292.1	8/41.1	185.6	7	860	840	370	
6" 150mm	150#	267	406	356	267	280	25.4	241.3	8/22.3	216	2	585	450	240	250
	300#	403	444	444	403	320	36.5	269.9	12/22.3	216	2	600	605	264	250
	600#	559	559	559	559	355	47.7	292.1	12/28.4	216	7	890	973	325	270
	900#	508	508	508		380	55.6	317.5	12/31.7	216	7	935	973	420	
	1500#	559	559	559		395	82.6	317.5	12/38.1	216		985	990	420	

SIZE	RATING	F TO F AS PER ASME B16.10				SIDE FLANGE DETAILS AS PER ASME B 16.5						APPROX HIGHT OF VALVE (CLOSE)			
in/mm		GATE	GLOBE	NRV	BALL	OD	THK	P.C.D	HOLE/DRILL	RF DIA	RF THK	GATE	GLOBE	NRV	BALL
8" 200mm	150#	292	495	495	292	345	28.5	298.5	8/22.3	269.7	2	785	565	325	280
	300#	419	559	533	419	380	41.1	330.2	12/25.4	269.7	2	865	740	325	280
	600#	660	660	660	660	420	55.6	349.2	12/31.75	269.7	7	880	838	429	
	900#	660	660	660		470	63.5	393.7	12/38.1	269.7	7	1125	1140	536	
	1500#	711	711	711		485	92.1	393.7	12/44.4	269.7	7	1200	1160	550	
10" 250mm	150#	330	622	622	330	405	30.2	362	12/25.4	323.8	2	945	775	344	320
	300#	457	622	622	457	445	47.7	387.4	16/28.5	323.8	2	1110	850	344	320
	600#	787	787	787	787	510	63.5	431.8	16/35.05	323.8	7	1213	690	504	
	900#	787	787	787		545	69.85	409.9	16/38.1	323.8	7	1255	1300	600	
	1500#	864	864	864		585	108	482.6	12/50.8	323.8	7	1275	1325	625	
12" 300mm	150#	356	698	698	356	485	31.75	431.8	12/25.4	381	2	1035	780	405	390
	300#	502	711	711	502	520	50.8	450.8	16/31.75	381	2	1210	1010	487	390
	600#	838	838	838	838	560	66.5	489	20/35.05	381	7	1285	1060	508	
	900#	914	914	914		610	79.4	533.4	20/38.1	381	7	1439	1472	640	
	1500#	991	991	991		675	123.9	571.5	16/53.8	381	7				
14" 350mm	150#	381	787	787	381	535	35.05	476.3	12/28.4	412.8	2	1275	875	455	
	300#	762		838	572	585	54	514.4	20/31.75	412.8	2	1420		475	
	600#	889	889	889		605	69.8	527	20/38.1	412.8	7	1520		594	
	900#	991		991		640	85.7	558.8	20/41.1	412.8	7	1585		700	
	1500#	1067		1067		750	133.4	635	16/60.1	412.8	7				
16" 400mm	150#	406	914	864	406	595	36.5	539.8	16/28.4	469.9	2	1455		475	
	300#	838		864	610	650	57.15	571.5	20/34.9	469.9	2	1544		504	
	600#	991	991	991		685	76.2	603.2	20/41.1	469.9	7	1615		664	
	900#	1092		1092		705	88.9	615.9	20/44.4	469.9	7	1639		762	
	1500#	1194		1194		825	146.1	704.8	16/66.5	469.9	7	1800		810	
18" 450mm	150#	432	978	978		635	39.6	577.9	16/31.7	533.4	2	1609		529	
	300#	914		978		710	60.3	628.6	24/34.9	533.4	2	1075		584	
	600#	1092	1092	1092		745	82.5	654	20/44.4	533.4	7	1810		689	
	900#	1219		1219		785	101.6	685.8	20/50.8	533.4	7	1835		822	
	1500#	1346		1537		915	162	774.7	16/72.8	533.4	7				
20" 500mm	150#	457	978	978		700	42.9	635	20/31.7	584.2	2	1814		609	
	300#	991		1016		775	63.5	685.8	24/34.9	584.2	2	1920		686	
	600#	1194	1194	1194		815	88.9	724	24/44.4	584.2	7	1920		789	
	900#	1321		1321		855	107.9	749.3	20/54	584.2	7	1970		885	
	1500#	1473		1664		985	177.8	831.8	16/79.2	584.2	7				
24" 600mm	150#	508	1295	1295		815	47.7	749.3	20/35	692.1	2	2175		664	
	300#	1143		1346		915	69.8	812.8	24/41.3	692.1	2	2444		749	
	600#	1397	1397	1397		940	101.6	838.2	24/50.8	692.1	7	2810		849	
	900#	1549		1549		1040	139.7	901.7	20/66.5	692.1	7	2600		945	
	1500#	1943		1943		1170	203.2	990.6	16/91.9	692.1	7	2700			

MATERIAL OF CONSTRUCTION

Cast Iron/ SG Iron of different grades
Also available as per NACE specification on request
Selection of Packing, Seals & Fastner material to suit
application & service condition.

FOR PRESSURE CONTAINING PARTS		FOR TRIM MATERIAL	
Carbon Steel Forged	A-105	13% Cr. Steel	A-217 Gr. CA15
Carbon Steel Cast	A-216 Gr. WCB, WCC		AISI 410
0.15% Moly Steel Cast	A-217 Gr. WC-1		
Cr. Moly Steel Cast	A-217 Gr. WC-6, WC-9, C5, C12		
18-8 S Cast	A-351 Gr. CF8	18-8 S	AISI 304
18-8 S Moly Cast	A-351 Gr. CF8M	18-8 S Moly	AISI 316
18-8 S Low Carbon	A-351 Gr. CF3	18-8 S Low Carbon	AISI 304L
18-8 S Low Carbon with Moly	A-351 Gr. CF3M	18-8 S Low Carbon Moly	AISI 316L
18-8 S Cb Cast	A-351 Gr. CF8C		
Low Carbon Steel Cast	A-352 Gr. LCB, LCC		
Low Carbon Moly Steel Cast	A-352 Gr. LC-1	SEAT AND DISC OVERLAY	
11.5-13.5 Cr. Steel Forged	A-182 Gr. F6	13% Cr. Steel, Stellite 6, Stellite 12.	
Hastelloy `B` Cast	A-296 N-12M		
Hastelloy`C` Cast	A-296 m M CW-12M		
Alloy 20 Cast	A-351 Gr. CN7M		
Duplex Steel	A-351 Gr. CD4MCu		
Super Duplex Steel	A890 Gr. 1A, 2A, 3A, 4A, 5A, 6A		

API 600 TRIM NUMBER CHART

API TRIM NO.	MATERIAL	SEAT/DISC		BACK SEAT	STEM	NOTES
1	410	410	410	410	410	
2	304	304	304	304	304	
3	F310	310	310	310	310	
4	HARD 410	Hard 410	Hard 410	410	410	Seats 750 BHN min.
5	HARDFACED	Stellite	Stellite	410	410	
5A	HARDFACED	Ni-Cr	Ni-Cr	410	410	
6	410 and Cu-Ni	Cu-Ni	Cu-Ni	410	410	
7	410 and Hard 410	Hard 410	Hard 410	410	410	Seats 750 BHN min.
8	410 and Hardfaced	Stellite	410	410	410	
8A	410 and Hardfaced	Ni-Cr	410	410	410	
9	Monel	Monel	Monel	Monel	Monel	
10	316	316	316	316	316	
11	Monel and Hardfaced	Stellite	Monel	Monel	Monel	
12	316 and Hardfaced	Stellite	316	316	316	
13	Alloy 20	Alloy 20	Alloy 20	Alloy 20	Alloy 20	
14	Alloy 20 and Hardfaced	Stellite	Alloy 20	Alloy 20	Alloy 20	
15	304 and Hardfaced	Stellite	Stellite	304	304	
16	316 and Hardfaced	Stellite	Stellite	316	316	
17	347 and Hardfaced	Stellite	Stellite	347	347	
18	Alloy 20 and Hardfaced	Stellite	Stellite	Alloy 20	Alloy 20	

Note: Data provided in above table for reference only, always consult current API publications to verify information and trim data.

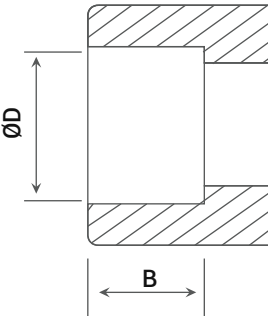
BUTT WELD DETAILS

Size	A	B												C											
		STD	20	30	40	60	80	100	120	140	160	XS	XXS	STD	40	60	80	100	120	140	160	XS	XXS		
2"	60.30	52.50	-	-	52.50	-	49.20	-	-	-	42.80	49.20	38.20	6.00	6.00	-	8.50	-	-	-	13.00	8.50	16.50		
2.1/2"	73.00	-	-	63.50	62.50	-	59.00	-	-	-	54.00	-	45.00	8.00	8.00	-	10.50	-	-	-	15.50	10.50	22.50		
3"	88.90	78.00	-	79.50	78.00	-	73.50	-	-	-	66.50	73.50	58.50	8.00	8.00	-	11.50	-	-	-	16.50	11.50	23.00		
4"	114.30	102.00	-	104.50	102.00	-	97.00	-	92.00	-	87.50	97.00	80.00	9.00	9.00	-	13.00	-	16.50	-	20.00	13.00	25.70		
6"	168.30	154.00	-	-	154.00	-	146.50	-	140.00	-	132.00	146.50	124.50	10.50	10.50	-	16.50	-	21.50	-	27.50	16.50	33.00		
8"	219.10	203.00	206.50	205.00	203.00	198.50	193.50	189.00	182.50	178.00	173.00	193.50	174.50	12.50	12.50	15.50	19.00	22.50	27.50	31.00	34.50	19.00	33.50		
10"	273.00	254.50	260.50	257.50	254.50	247.50	243.00	236.50	230.00	222.00	216.00	247.50	222.00	14.00	14.00	19.00	22.50	27.50	32.00	38.00	43.00	19.00	38.00		
12"	323.80	305.00	311.00	307.00	303.00	295.00	289.00	281.00	273.00	266.50	257.00	298.50	273.00	14.50	15.50	21.50	26.00	32.00	38.00	43.00	50.00	19.00	38.00		
14"	355.60	336.50	340.00	-	333.50	325.50	317.50	308.00	300.00	292.00	284.00	330.00	-	14.50	16.50	22.50	28.50	35.50	41.50	47.50	53.50	19.00	-		
16"	406.40	387.50	390.50	-	381.00	373.00	363.50	354.00	344.50	333.50	325.50	381.00	-	14.50	19.00	25.00	32.00	39.50	46.50	55.00	60.50	19.00	-		
18"	457.20	438.00	441.50	435.00	428.50	419.00	409.50	398.50	387.50	378.00	366.50	432.00	-	14.50	21.50	28.50	35.50	44.00	52.50	59.50	68.00	19.00	-		
20"	508.00	489.00	-	-	478.00	467.00	455.50	443.00	432.00	419.00	408.00	482.50	-	14.50	22.50	31.00	39.50	49.00	57.00	66.50	75.00	19.00	-		
24"	609.60	590.50	-	581.00	574.50	560.50	547.50	532.00	517.50	505.00	490.50	584.00	-	14.50	26.00	37.00	46.50	58.50	69.00	78.50	89.50	19.00	-		

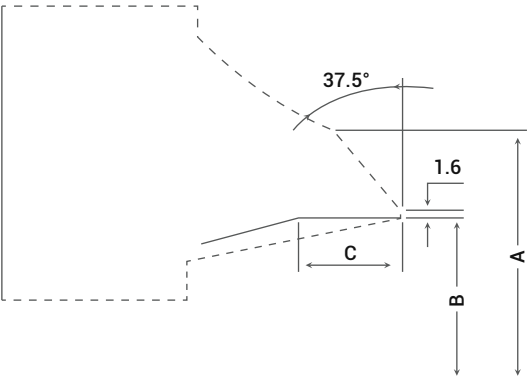
Source : ASME B 16.25

SOCKET WELD DETAILS

SIZE	SOCKET OD	SOCKET LENGTH
	D	B
1/4"	14.2	9.5
3/8"	17.6	9.5
1/2"	21.8	9.5
3/4"	27.2	12.5
1"	33.9	12.5
1.1/4"	42.7	12.5
1.1/2"	48.8	12.5
2"	61.2	16



Source : ASME B 16.11



TEST PRESSURE CHART

PRESSURE	SHELL		SEAT		BACK SEAT		PNEUMATIC SEAT	
CLASS	Kg/cm ²	Psig	Kg/cm ²	Psig	Kg/cm ²	Psig	Kg/cm ²	Psig
150#	32	450	22	315	22	315	7	100
300#	79	1125	57	815	57	815	7	100
600#	156	2225	115	1630	115	1630	7	100
800#	211	3000	141	2000	141	2000	7	100
900#	236	3350	172	2445	172	2445	7	100
1500#	392	5575	287	4080	287	4080	7	100
2500#	652	9275	477	6790	477	6790	7	100

Low Pressure Test for Swing Check Valves

In addition to the high pressure Seat test, Swing Check Valves are subjected to low pressure hydrostatic Seat test at a pressure of 25% of the high pressure Seat test. The duration of the test is the same as that of the high pressure Seat test.

Source : API 598

Note: Data provided in above table for reference only, always consult current ASME / API publications to verify information.



Norflow Controls

Industrial Valves

NORFLOW CONTROLS

Manufacturers & Exporters of Industrial Valves

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