

GLOSSARY OF TERMS



SPECIALTY VALVE & FITTING Co. 7551 East Rosecrans Avenue • Paramount, CA 90723
 To Order, Call: (562) 602-1400 • (800) 421-2219 or FAX: (562) 630-7700

The following glossary of terms is intended as an aid in your understanding of **SAM-FLOW**® Valve products and their components.

Gate Valve -	This valve has a gate that moves perpendicular to the flow of the service. In the up position it is open. In the down position it is closed. The flow is straight through, and does not lend itself for use as a metering valve. The gate valve is used mainly as an on/off valve.	Stellite 6 -	The hard (RC36-42) erosion and abrasion resistant cobalt-chrome alloy ensures long life of working parts, such as seats, wedges, and seat rings.
Globe Valve -	The globe valve is the most popular valve for metering or regulating fluid flow. Seating in globe valves is parallel to line of flow and the flow pattern is offset, not a straight line throughflow. This design affords a better closure than a gate valve. The change in direction of fluid flow produces increased resistance and considerable pressure drop. Because the flow is directed against the disc in a symmetrical fashion, there is very little wear on the valve parts and is one of the easiest valves to repair.	Rising Stem -	OS&Y (Outside Screw & Yoke) Keeps the stem threads outside the valve and is recommended where high temperatures, corrosives, and solids in the line might damage the stem threads inside the valve. When open, the stem extends above the handwheel indicates the position of the gate.
Check Valves -	This valve is used to stop back flow to the upstream side of the valve. The design is quite simple. A hinged door or a ball is placed inside the valve. With the pressure coming upstream the door or ball is held open; when pressure increases on the downstream side, it forces the door or ball to close, stopping any back flow. SAM-FLOW flanged check valves and 200# class check valves are swing checks, the 800# class check valves are piston type lift check valves. The piston type valve works up and down providing a strong, firm seal under high pressure conditions.	Integral Seats -	Machined into the body casting.
Y-Strainer Valves -	This valve is designed to remove foreign matter from pipe lines and provide protection for pumps, meters, valves, and other similar mechanical equipment.	Renewable Seats -	Separate seat rings that screw into the valve body.
Ball Valves -	In addition to on/off service, ball valves can be used to modulate flow. In full port valves, the flow is straight through the port, resulting in minimum pressure loss. As the temperature increases, the pressure capability decreases. PTFE loses strength in higher temperatures.	Trim -	Refers to the stem, seat, and disc in gate and globe valves, and to the seat, disc, and hinge pin in swing check valves.
Bolted Bonnet -	Practical, commonly used design adaptable to different types of gasketing. Multiple bolting permits application of equalized sealing pressure. Only the highest pressures and temperatures tax its capacity to permanently hold tight.	Flexible Wedge -	Is a variation of the solid wedge. It is joined at the center by a hub which enables the disc faces to compensate for variable temperatures and pressures and allows valves to operate at lower torques.
Screwed-in Bonnet -	For smaller valves where frequent dismantling is not required. Ordinarily used on gate, globe, and angle valves for moderate pressures.	Solid Wedge -	One piece wedge. The most widely used wedge. Primarily used in sizes 2" and smaller. Gate valves with a solid wedge can be installed with stems in any position. Recommended particularly for steam service where a split wedge or double disc would vibrate and chatter.
Union Bonnet -	Easy to dismantle and reassemble without danger of injury to body-bonnet bearing surfaces. Union ring gives added strength and rigidity to body against internal pressure and distortion. Ideal for services requiring frequent inspection and cleaning of internal valve parts. Use restricted to smaller size valves.	Spiral wound type 316 + Graphite (Gasket) -	Used for forged valves for chemical industry. Asbestos-free. Max. temperature 1400° F.
Cv Rate -	Refers to the Cv Coefficient for valves. It is defined as the flow of water at 60° F in gallons per minute (GPM), at a pressure drop of one pound per square inch across the valve.	Graphoil® -	Extremely heat resistant, flexible, conformable, and resilient. Graphoil molds into spaces to fill irregularities and creates a superior seal. It maintains that seal in harsh environments ranging from cryogenic to superheated; even when exposed to corrosive fluids and gasses.
		MG1241 -	75% PTFE + 20% Fiber glass, and 5% Graphoil.
		PTFE -	Pure Teflon® (Virgin-polytetrafluoroethylene). Has a temperature limitation of 500° F max. because teflon becomes soft and starts to flow. PTFE packing has a pH range of 0-14. Often used in the food and beverage industry.
		RTFE -	Teflon® glass reinforced [15%] is suitable for temperatures ranging from -50° F to 450° F maximum.
		Viton -	Has good mechanical properties and is tough and long wearing. Maximum Operating temperature range from 20° F - 300° F (-29° C - 93° C).

GLOSSARY OF TERMS AND PRESSURE-TEMPERATURE RATINGS



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- ANSI B16.10 - Refers to Face-to Face Dimensions for Ferrous Flanged & Welding End Valves.
- ANSI B16.5 - Refers to Steel Pipe Flanges & Flanged Fittings.
- ANSI B16.34 - Refers to Valves: flanged, threaded and welding end.
- API 598 - This standard covers inspection, examination, supplementary examinations, and pressure test requirements for resilient-seated, nonresilient- and nonmetallic-seated, and metal-to-metal-seated valves of the gate, globe, plug, ball, check, and butterfly types.
- API 600 - This standard is for the convenience of purchasers and manufacturers who order, fabricate, or install steel gate valves. Covers steel gate valves with flanged or butt-welding ends in sizes NPS 1 through NPS 24. These sizes correspond to nominal pipe sizes in ASME B36.10M.
- API 602 - This standard is a purchase specification for threaded-end, socket-welding-end, butt-welding-end, and flanged-end compact steel gate valves in sizes NPS 4 and smaller. The term compact is used to distinguish the reduced-port valves covered by this standard from the full-port valves described in the API standard 600, Steel Gates, Flanged and Butt-welding Ends. Inspection and testing requirements for these valves are covered fully in API Standard 598.
- API 603 - This standard is a purchase specification of requirements for high-alloy, corrosion resistant, flanged-end gate valves for use in petroleum refinery piping systems.
- ASTM A351 - This specification covers austenitic and austenitic-ferritic steel castings for valves, flanges, and other pressure-containing parts.

PRESSURE-TEMPERATURE RATINGS

VALVE WALL THICKNESS

API 602

Materials: A182 - F316 800# Valve Class	
Temperature in °F	Pressures in PSI
-20 to100	1920
200	1655
300	1495
400	1370
500	1275
600	1205
650	1185
700	1150
750	1130
800	1105
850	1080
900	1050
950	1030
1000	970
1050	960
1100	860
1150	735
1200	550
1250	485
1300	365
1350	275
1400	200
1450	155
1500	110

ANSI B 16.34-1988

Materials: A351 - CF8M 150# Valve Class	
Temperature in °F	Pressures in PSI
-20 to100	275
200	240
300	215
400	195
500	170
600	140
650	125
700	110
750	95
800	80
850	65
900	50
950	35
1000	20

Flanged end ratings terminate at 1000° F

API 600

HEAVY WALL 150# Valve Class	
NOMINAL SIZE	RATINGS IN INCHES
1/2	-
3/4	-
1	0.25
1-1/4	0.25
1-1/2	0.25
2	0.34
2-1/2	0.38
3	0.41
4	0.44
5	-
6	0.47
8	0.50
10	0.56
12	0.63
14	0.66
16	0.69
18	0.72
20	0.75
24	0.81

API 603; ANSI B 16.34

LIGHT WALL 150# Valve Class	
NOMINAL SIZE	RATINGS IN INCHES
1/2	0.11
3/4	0.12
1	0.16
1-1/4	0.19
1-1/2	0.19
2	0.22
2-1/2	0.22
3	0.22
4	0.25
5	0.28
6	0.28
8	0.31
10	0.34
12	0.38
14	0.41
16	0.44
18	0.47
20	0.50
24	0.57