



Y-Pattern Globe and Piston Check Valves



**FORGED HIGH PRESSURE
BONNETLESS DESIGN**

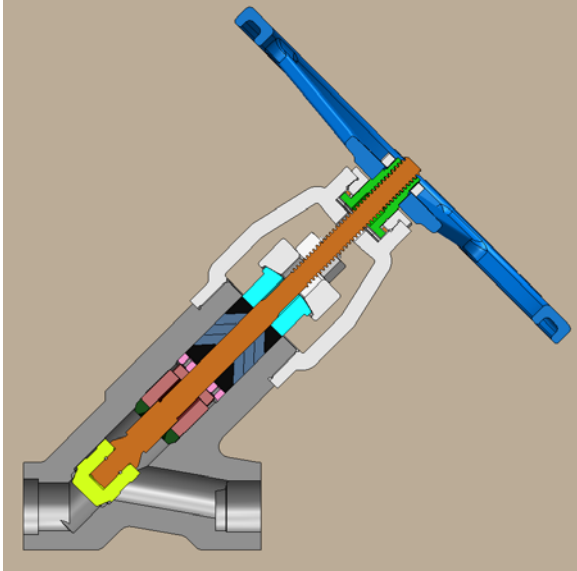
**ASME CLASSES: 1690, 2690, 4500
SIZES: 1/2" – 2" (15 - 50 mm)**



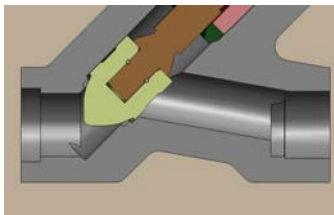
ANSI/ISO/ASQ Q9001-2008
Certificate # 40828

PRODUCT OVERVIEW

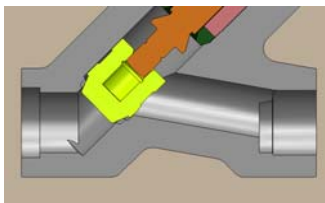
SMITH Y-Pattern design group of products is a wide range of Globe, Needle, Stop, and Piston check valves primarily designed for the high pressure and high temperature applications such as ASME Section I Power Boilers and Steam Generation.



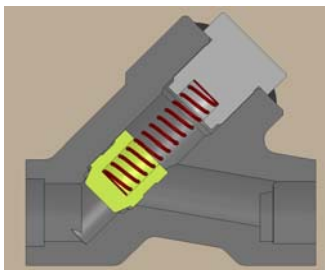
Standard Globe Valve



Needle Valve



Stop Check Valve



Piston Check Valve

DESIGN FEATURES, MANUFACTURING, AND TESTING

SMITH Y-Pattern valves feature a rugged design manufactured and tested to meet the requirements of ASME B16.34:

1. Designed to ASME B16.34
2. Standard Globe, Needle, Stop Check
3. Pressure Ratings: Classes 1690, 2690 and 4500
4. Sizes: ½" through 2" (Through 1" on Class 4500)
5. End connection: Threaded, Socket Welded, Weld End, and Flanged
6. Bonnetless, therefore only the valve body is under pressure
7. Bonnetless, therefore no body/bonnet seal gasket nor bolting
8. Screwed in, locked, and tack welded Yoke
9. Non-rotating Stem insuring no torsional load in packing
10. Non-rising handwheel prevents stem accidental damage
11. Solid stellite Fully Guided Disc to ensure disc seat alignment
12. Swiveling disc to prevent seating misalignments
13. Integral Stellite Seat and Backseat to protect against erosive flow and provide long life
14. Well lubricated stem nut racing on two thrust bearing affords Low handwheel Operating Torque and minimizes damage to parts
15. Optimum Flow Path warrants High Cv and Self-draining
16. Easy and rapid In-line repair w/ refinishing tool
17. Live loading adaptation available
18. Power actuation adaptation available
19. Testing per ASME B16.34 & MSS SP-61
20. Marking per MSS SP-25

INSTALLATION

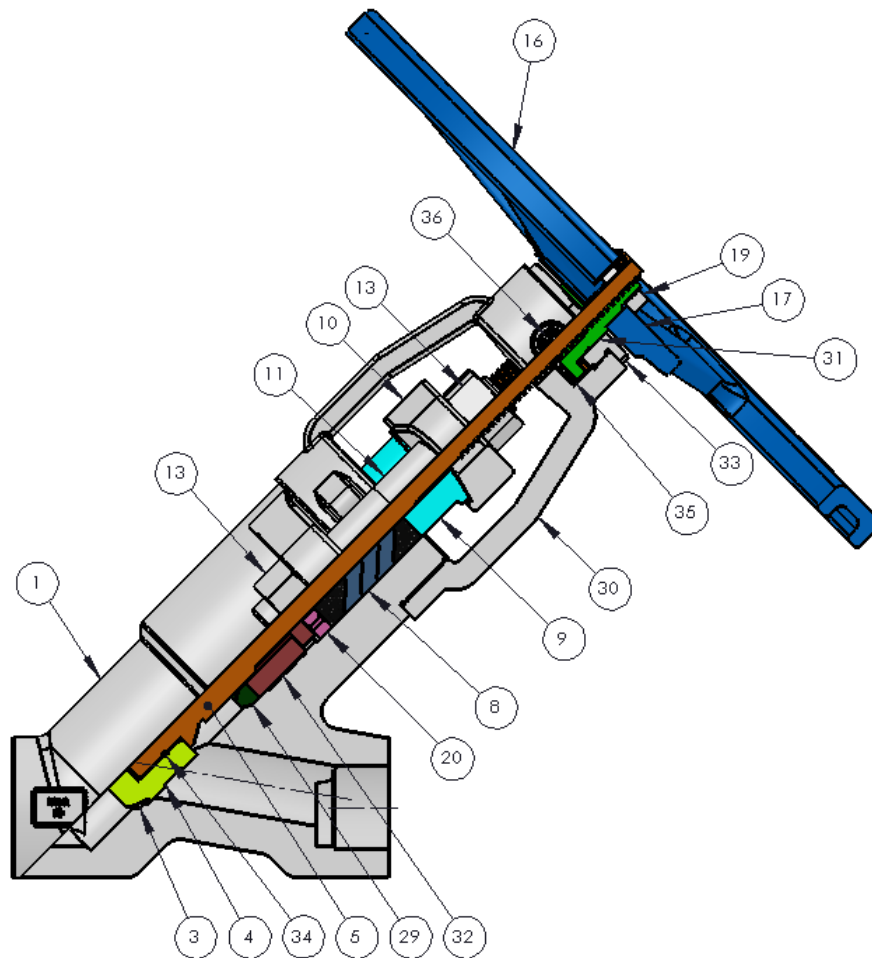
Prior to installation, the valves and nameplates should be checked for proper identification to ensure the valve is of the proper type, material, and is a suitable pressure class and temperature rating to satisfy the application requirements.

The valve weight shall be well supported and sufficient clearance for access, operation, and disassembly shall be allowed.

Power actuation is available upon request.

BILLS OF MATERIALS

ITEM	PART DESCRIPTION	A105	A182 F11	A182 F22	ASTM F91	A182 F316
1	BODY	ASTM A105NLC	ASTM A182 F11	ASTM A182 F22	ASTM A 182 F91	ASTM A182 F316
3	SEAT HARD FACE	STELLITE 6				
4	DISC	STELLITE 6				
5	STEM	ASTM A565 GR 616 HT + STELLITE 6				ASTM A479 T316 + STELLITE 6
8	PACKING SET	GRAPHITE-BRAIDED ENDS WITH DIE FORMED RINGS				
9	GLAND BUSHING	ASTM A479 T316				
10	GLAND FLANGE	ASTM A216 WCB				ASTM A351 CF8M
11	GLAND STUD	ASTM A182 F6a CLASS 1				ASTM B8M CLASS 2
13	GLAND STUD NUT	ASTM A194 2HM				ASTM A194 8M
16	HANDWHEEL	ASTM A47 MALLEABLE IRON				
17	NAMEPLATE	303 OR 304 SS				
19	HANDWHEEL NUT	COMMERCIAL				
20	PACKING RING	ASTM A182 F91				ASTM A479 T316
29	BACK SEAT RING	STELLITE 6				
30	YOKE	ASTM A105NLC	ASTM A182 F22	ASTM A182 F22	ASTM A 182 F91	ASTM A182 F316
31	YOKE NUT	ASTM A276 TYPE 410				
32	BACK SEAT BUSHING	ASTM A696 GR. C	ASTM A739 B-22	ASTM A739 B-22	ASTM A182 F91	ASTM A479 T316
33	YOKE NUT RETAINER	ASTM A276 TYPE 410				
34	DISC WIRE	INCONEL				
35	THRUST BEARING/WASHER	COMMERCIAL				
36	GREASE FITTING	303 OR 304 SS				



PRESSURE TEMPERATURE RATINGS

Temp (*F)	Class 1690 (psig)					Class 2690 (psig)					Class 4500 (psig)				
	A105	F11	F22	F91	F316	A105	F11	F22	F91	F316	A105	F11	F22	F91	F316
100	4,170	4,225	4,225	4,225	4,055	6,635	6,725	6,725	6,725	6,455	11,110	11,250	11,250	11,250	10,800
200	3,820	4,225	4,225	4,225	3,485	6,085	6,725	6,725	6,725	5,550	10,185	11,250	11,250	11,250	9,290
300	3,680	4,065	4,100	4,100	3,145	5,860	6,470	6,530	6,530	5,010	9,815	10,830	10,925	10,925	8,390
400	3,570	3,900	3,975	3,975	2,890	5,680	6,210	6,325	6,325	4,605	9,505	10,400	10,585	10,585	7,705
500	3,395	3,745	3,745	3,745	2,690	5,405	5,960	5,960	5,960	4,280	9,040	9,965	9,965	9,965	7,165
600	3,195	3,405	3,405	3,405	2,540	5,085	5,420	5,420	5,420	4,045	8,515	9,070	9,070	9,070	6,770
650	3,090	3,310	3,310	3,310	2,485	4,920	5,275	5,275	5,275	3,955	8,240	8,825	8,825	8,825	6,625
700	2,995	3,195	3,195	3,195	2,445	4,760	5,085	5,085	5,085	3,895	7,960	8,515	8,515	8,515	6,515
750	2,855	2,995	2,995	2,995	2,405	4,550	4,765	4,765	4,765	3,830	7,610	7,970	7,970	7,970	6,410
800	2,315	2,860	2,860	2,860	2,375	3,690	4,550	4,550	4,550	3,785	6,170	7,610	7,610	7,610	6,335
850	1,795	2,740	2,740	2,740	2,350	2,855	4,365	4,365	4,365	3,740	4,785	7,305	7,305	7,305	6,265
900	1,295	2,530	2,530	2,530	2,335	2,060	4,025	4,025	4,025	3,720	3,455	6,740	6,740	6,740	6,230
950	770	1,795	2,175	2,175	2,175	1,230	2,855	3,460	3,460	3,460	2,055	4,785	5,795	5,795	5,795
1000	480	1,215	1,505	2,045	2,045	765	1,935	2,395	3,255	3,255	1,285	3,240	4,010	5,450	5,450
1050		810	985	2,025	2,025		1,290	1,565	3,225	3,225		2,160	2,625	5,400	5,400
1100		540	615	1,700	1,715		860	980	2,705	2,735		1,440	1,645	4,525	4,575
1150		365	385	1,255	1,330		585	610	1,995	2,120		975	1,030	3,345	3,550
1200		230	230	810	1,040		370	370	1,290	1,660		615	615	2,160	2,775

DIMENSIONAL DATA

SIZE		A	B	C	D	E	F	WT	Cv
NPS	Dn	in/mm	in/mm	in/mm	in/mm	in/mm	in/mm	lbs/kg	
1/2	15	5.512	11.327	12.430	6.918	0.472	9.843	22.06	SOON TO BE PUBLISHED
		140.00	287.71	315.71	175.71	12.00	250.00	10.0	
3/4	20	5.512	11.327	12.430	6.918	0.709	9.843	21.67	
		140.00	287.71	315.71	175.71	18.00	250.00	9.8	
1	25	6.299	11.884	13.380	7.081	0.906	9.843	27.24	
		160.00	301.85	339.85	179.85	23.00	250.00	12.4	
1¼	32	8.268	17.703	19.376	11.226	1.142	15.748	85.66	
		210.00	449.66	492.15	285.15	29.00	400.00	38.9	
1½	40	8.268	17.703	19.376	11.226	1.378	15.748	84.68	
		210.00	449.66	492.15	285.15	35.00	400.00	38.4	
2	50	10.236	21.461	23.646	13.410	1.693	19.685	138.07	
		260.00	545.12	600.61	340.61	43.00	500.00	62.6	

MAINTENANCE



IOM AVAILABLE
SEAT REFINISHING TOOL AVAILABLE

The Newdell Company, 13750 Hollister Road, Houston, Texas 77086-1213
Tel: 713-590-1312, 877-510-7853, Fax: 713-590-1319, www.smithvalve.com

ACTUATION DATA

Figure No.		Y162					Y262					Y450		
Valve Size		1/2"	3/4"	1"	1 1/2"	2"	1/2"	3/4"	1"	1 1/2"	2"	1/2"	3/4"	1"
Class		1690	1690	1690	1690	1690	2690	2690	2690	2690	2690	4500	4500	4500
Pressure	psi	4225	4225	4225	4225	4225	6745	6745	6745	6745	6745	11100	11100	11100
	bar	295	295	295	295	295	465	465	465	465	465	765.9	765.9	765.9
Thread Size		5/8"	5/8"	3/4"	7/8"	1"	5/8"	5/8"	3/4"	7/8"	1"	3/4"	7/8"	1"
Thread Per Inch		8	8	6	6	5	8	8	6	6	5	6	6	5
Thread Type		ACME	ACME	ACME	ACME	ACME	ACME	ACME	ACME	ACME	ACME	ACME	ACME	ACME
Orientation		LH	LH	LH	LH	LH	LH	LH	LH	LH	LH	LH	LH	LH
Lead	in	0.125	0.125	0.167	0.167	0.200	0.125	0.125	0.167	0.167	0.200	0.167	0.167	0.200
	mm	3.18	3.18	4.23	4.23	5.08	3.18	3.18	4.23	4.23	5.08	4.23	4.23	5.08
Valve Stroke	in	0.673	0.752	0.900	1.469	1.584	0.673	0.752	0.900	1.469	1.584	0.900	1.469	1.584
	mm	17.09	19.09	22.86	37.32	40.24	17.09	19.09	22.86	37.32	40.24	22.86	37.32	40.24
Running Thrust	lb	1445	1445	2154	2756	3521	2278	2278	3396	4345	5550	5591	7152	9137
	N	6427	6427	9583	12260	15661	10131	10131	15105	19325	24686	24867	31814	40640
Running Torque	ft.lb	11	11	18	27	39	17	17	29	43	61	48	71	101
	Nm	14.34	14.34	24.96	36.90	52.56	22.61	22.61	39.34	58.16	82.85	64.76	95.75	136.39
Seating Thrust	lb	1750	2597	3895	8151	12088	2758	4093	6140	12847	19054	10108	21150	31368
	N	7783	11551	17327	36254	53768	12268	18207	27311	57146	84752	44962	94077	139526
Seating Torque	ft.lb	13	19	33	80	133	20	30	52	127	210	86	209	345
	Nm	17.37	25.77	45.12	109.11	180.45	27.37	40.63	71.13	171.98	284.43	117.10	283.13	468.25

HOW TO ORDER

JUST SELECT FROM THE TWELVE (12) - CHARACTER MODEL NUMBER AS FOLLOWS:

The diagram illustrates the 12-character model number structure. It consists of four groups of characters, each represented by a colored box:

- STYLE CODE (Yellow):** 4 characters. Options: Y162 - Y Pattern Globe Class 1690, Y262 - Y Pattern Globe Class 2690, Y450 - Y Pattern Globe Class 4500.
- MATERIAL CODE (Blue):** 4 characters. Options: OTOO - ASTM A105 Body, KTOO - ASTM A182 F11 Body, NTOO - ASTM A182 F22 Body, PTOO - ASTM A182 F91 Body, JWOO - ASTM A182 F316 Body. Note: Materials for other components are per the bills of materials table above.
- END CODE (Grey):** 1 character. Options: B - Butt weld, J - Ring Joint, O - Female NPT THD - Flanged ends, U - Socket weld x F-NPT, W - Socket weld.
- SIZE CODE (Green):** 3 characters. Options: 050 - 1/2" NPS / DN 15, 075 - 3/4" NPS / DN 20, 100 - 1" NPS / DN 25, 150 - 1 1/2" NPS / DN 40, 200 - 2" NPS / DN 50.

For any other material or configuration combinations, please consult the factory.

THE NEWDELL COMPANY



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