

Hand Shut-Off Valves

“Built Stronger to Last Longer”

Sizes: 6mm (1/4”) to 305mm (12”)

Suitable For: Ammonia, Fluorocarbons, Nitrogen and Carbon Dioxide

Features

- ASTM 352 LCB Cast Steel Body (1/4” thru 12”)
- Maximum Safe Working Pressure 400 PSIG
- Fluid Temperature Range: -60°F to +300°F
- Stainless Steel Stem
- Optional Stainless Steel Trim
- Reliable Back Seating
- Complete Line of Bolted Bonnets
- 25% Carbon Filled PTFE Seat (1/4” thru 12”)
- Available Connections:
 - 1/4” thru 1-1/2”, Screwed End
 - 1/4” thru 4”, Socket Weld
 - 1-1/4” thru 12”, Butt Weld
- Linear Flow “Y” Pattern Globe Body (1-1/4” thru 12”) For Low Pressure Drop
- Extended Bonnets For Thicker Insulation
- Handwheel and Seal Cap Interchangeable on Same Valve

Description

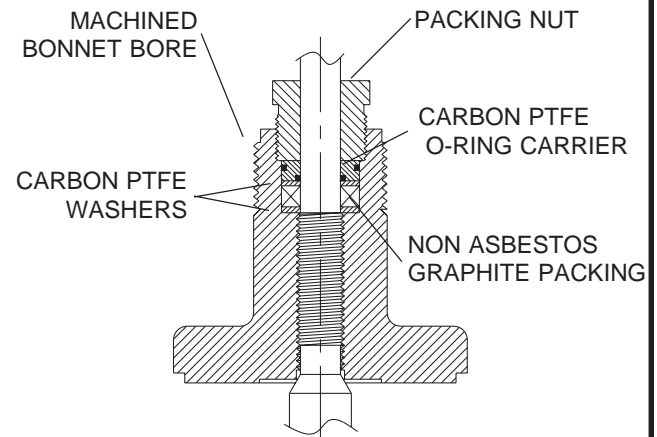
This complete line of all steel bodied valves with bolt-on bonnets are designed and built to maintain reliability both in their seating and back seating functions. This entire line is supplied with stainless steel stems and backseating capability. Corrosion resistant, high-grade stainless steel trim is available upon request. A unique carbon filled PTFE seat is standard throughout the line, lending durability to the seating surface. In addition a dual O-Ring stem packing design along with a stem packing seal is standard on all valves from 1/4” thru 12”. This innovative design seals both the valve stem and bonnet bore with independent O-Rings, which are captured in a carbon PTFE carrier. The addition of the packing provides for backup sealing capability in the unlikely event of an O-Ring failure.

A packing nut design with either 1/4” or 5/16” flats provide a generous wrench engagement

Bulletin No. 80-01H



May 2004
Installation, Service and Parts Information



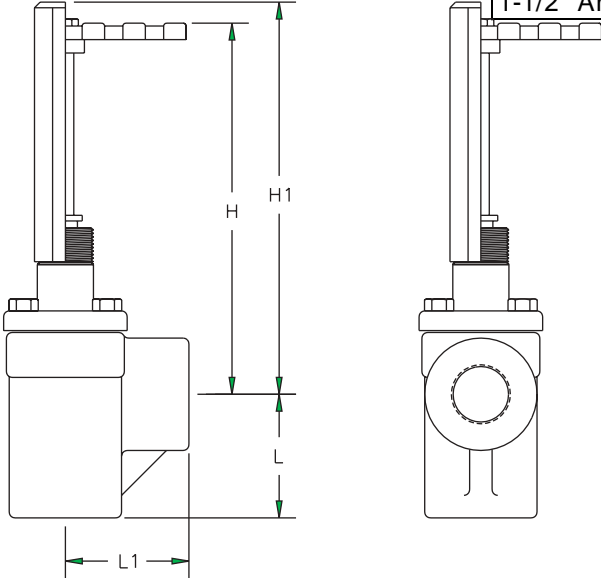
R/S Bonnet Design
(Typical of 3/4” and 1”)

area, with little likelihood of “rounding” the flat. With the O-Ring cartridge used in all valve bonnets, there will typically be no need to loosen the packing nut when opening or closing a valve. In most cases, stem resistance will be negligible allowing the valve to be easily repositioned.

Extended Bonnet

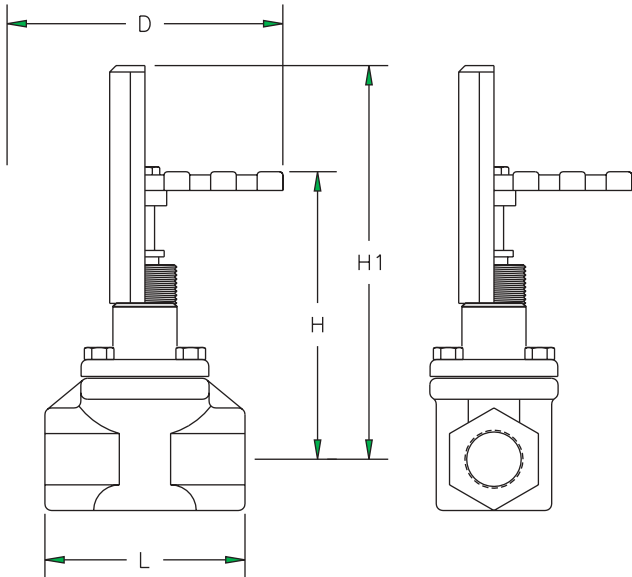
The extended bonnet is available for globe style valves in the Tee body configuration and in angle style bodies. Valves are available with either hand wheel or seal cap. These caps are exclusive to these series of valves and should not be exchanged with seal caps from other R/S service valves. Bonnet bolts, extension boss, boss clamp, packing nut, and stem are all of 300 series corrosion resistant stainless steels.

Screwed End Angle Dimensions In Inches					
Valve Size	L	L1	H	H1	D
1/4" Angle	1.75	1.75	4.50	6.00	2.50
3/8" Angle	1.75	1.75	4.50	6.00	2.50
1/2" Angle	1.75	1.75	4.50	6.00	2.50
3/4" Angle	1.50	2.00	5.75	6.50	4.00
1" Angle	1.50	2.00	5.75	6.50	4.00
1-1/4" Angle	1.63	2.50	8.00	8.50	5.40
1-1/2" Angle	1.63	2.50	8.00	8.50	5.40



Screwed End (1/4" - 1-1/2") Angle

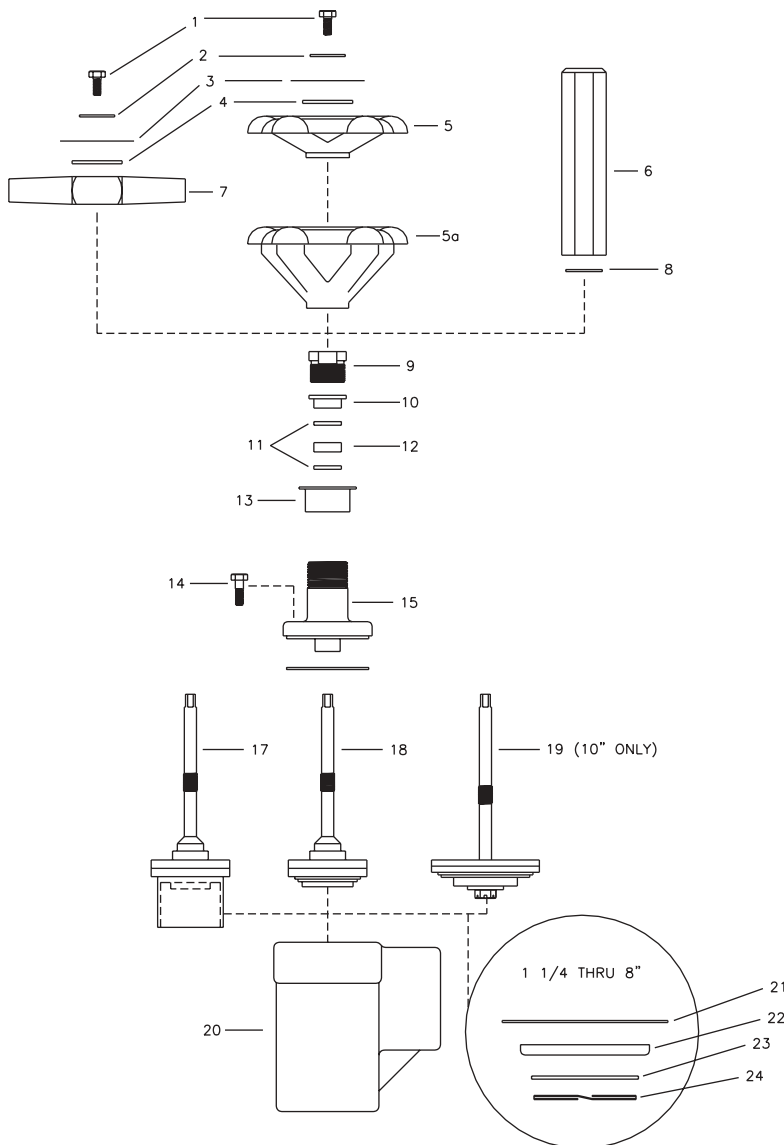
Screwed End Globe Dimensions In Inches				
Valve Size	L	H	H1	D
1/4" Globe	3.75	5.75	6.88	2.50
3/8" Globe	3.75	5.75	6.88	2.50
1/2" Globe	3.75	5.75	6.88	2.50
3/4" Globe	3.88	5.75	6.50	4.00
1" Globe	3.88	5.75	6.50	4.00
1-1/4" Globe	5.00	8.00	8.50	5.40
1-1/2" Globe	5.00	8.00	8.50	5.40



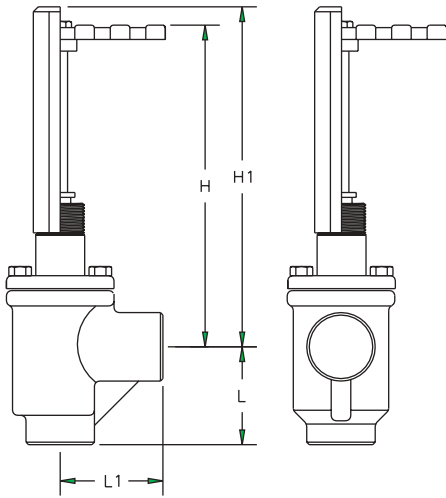
Screwed End (1/4" - 1-1/2") Globe

**SPARE PARTS FOR SCREWED END
HAND SHUT-OFF VALVES**

ITEM	DESCRIPTION	PORT SIZE						
		1/4"	3/8"	1/2"	3/4"	1"	1-1/4"	1-1/2"
1,2,4,5	Handwheel Kit	204267	204267	204267	204268	204268	204269	204269
1,2,4,5	SS Handwheel Kit	205705	205705	205705	205706	205706	205707	205707
1,2,4,7	Tee Handle	204265	204265	204265	204265	204265	204276	204276
1,2,4,7	SS Tee Handle	205712	205712	205712	205712	205712	205713	205713
6,8	Cap Kit, Seal	204273	204273	204273	204273	204273	204274	204274
9-12,	Packing Kit	204471	204471	204471	204471	204471	204272	204272
9-12, 16, 18	Plug Stem Kit	204297	204297	204297	204298	204298	204559	204559
9-12, 16, 18	SS Plug Stem Kit	205662	205662	205662	205663	205663	205664	205664
21-24	Disc Kit						204322	204322
9- 16, 18	Bonnet Assembly, Hand	205684	205684	205684	205685	205685	205686	205686
16	Gasket Pkg, Bonnet	204281	204281	204281	204282	204282	204283	204283
8	Gasket Pkg, Seal Cap	204292	204292	204292	204292	204292	204292	204292

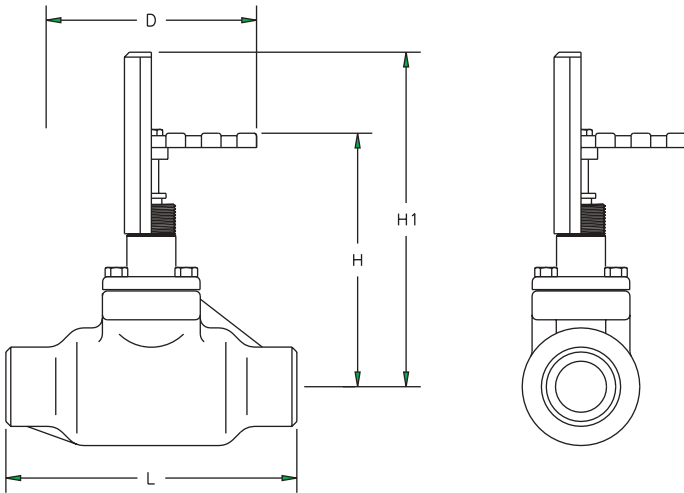


Item	Description
1	Screw, Cap
2	Lockwasher
3	Nameplate
4	Washer
5	Handwheel, std
5a	Handwheel, deep
6	Seal Cap
7	Tee Handle
8	Gasket, Seal Cap
9	Packing nut
10	O-ring carrier
11	Washer
12	Packing
13	Cap, Thread
14	Bolt
15	Bonnet
16	Gasket
17	Plug/Stem Assy
18	Plug/Stem Assy
19	Plug/Stem Assy
20	Body
21	Gasket
22	Seat Disc
23	Washer
24	Retainer



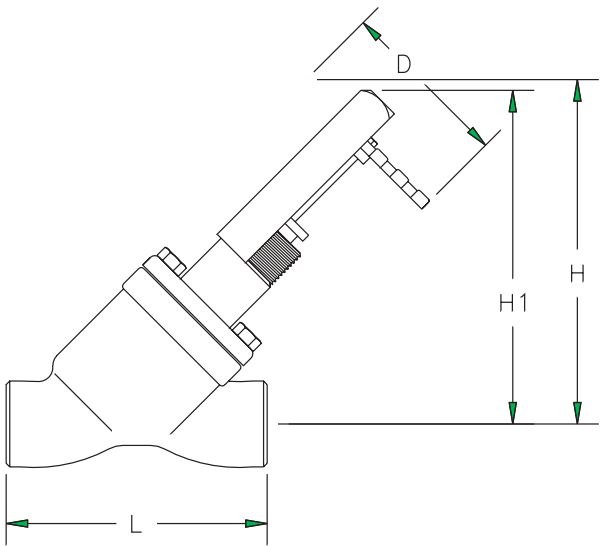
Butt Weld Angle Dimensions In Inches					
Valve Size	L	L1	H	H1	D
1-1/4" Angle	2.75	2.75	7.75	8.25	5.40
1-1/2" Angle	2.63	2.63	8.12	9.12	5.40
2" Angle	3.00	3.00	8.50	8.75	5.40
2-1/2" Angle	3.63	3.63	8.63	8.63	5.40
3" Angle	3.63	3.88	11.12	11.75	6.75
4" Angle	4.62	5.00	11.38	12.00	6.75
5" Angle	6.00	6.00	13.00	15.00	12.00
6" Angle	6.38	6.38	14.50	15.50	12.00
8" Angle	7.88	7.88	17.00	18.00	12.00
10" Angle	9.75	9.75	25.75	27.25	16.50
12" Angle	10.50	10.50	25.50	28.75	16.50

Butt Weld (1-1/4" - 12") Angle



Butt Weld Globe "T" Dimensions In Inches				
Valve Size	L	H	H1	D
3" Globe	11.00	12.50	14.00	6.75
4" Globe	12.50	14.00	15.50	6.75

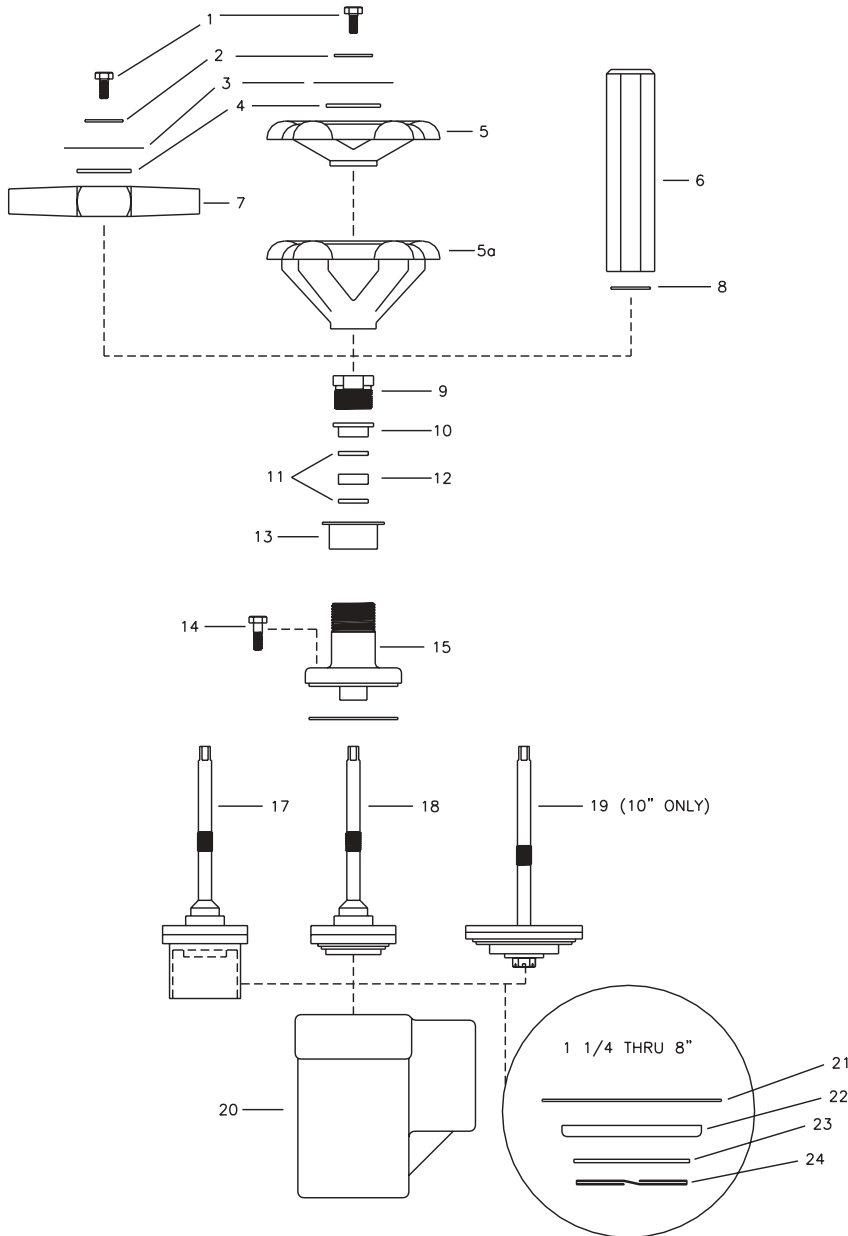
Butt Weld (3" - 4") Globe T



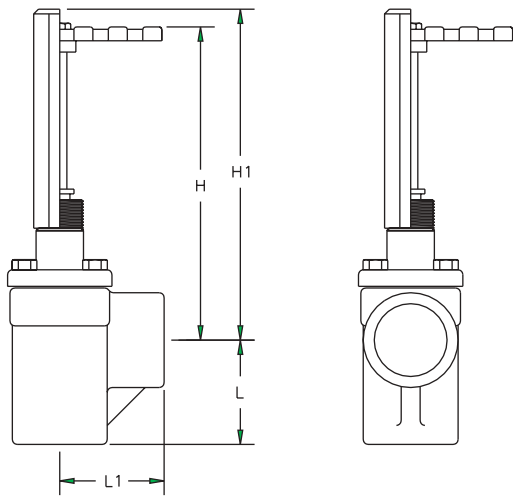
Butt Weld Globe "Y" Dimensions In Inches				
Valve Size	L	H	H1	D
1-1/4" Globe	7.25	8.25	8.12	5.40
1-1/2" Globe	7.63	8.25	8.12	5.40
2" Globe	8.12	9.75	8.75	5.40
2-1/2" Globe	9.63	10.75	9.50	5.40
3" Globe	11.25	12.88	11.88	6.75
4" Globe	12.25	13.25	12.25	6.75
5" Globe	19.00	20.25	18.00	12.00
6" Globe	22.00	21.68	18.68	12.00
8" Globe	28.25	25.00	23.00	12.00
10" Globe	35.00	35.00	32.00	16.50
12" Globe	41.00	35.62	33.62	16.50

Butt Weld (1-1/4" - 12") Globe Y

SPARE PARTS FOR BUTT WELD HAND SHUT-OFF VALVES												
ITEM	DESCRIPTION	PORT SIZE										
		1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	5"	6"	8"	10"	12"
1,2,4,5	Handwheel Kit	204269	204269	204269	204269	204270	204270	204271	204271	204271	204272	204272
1,2,4,5	SS Handwheel Kit	205707	205707	205707	205707	205708	205708	205709	205709	205709	205710	205710
1,2,4,7	Tee Handle	204276	204276	204276								
1,2,4,7	SS Tee Handle	205713	205713	205713	205713	205714	205714					
6,8	Cap Kit, Seal	204274	204274	204274	204274	204275	204275	204633	204633	204634	204635	
9-12,	Packing Kit	204472	204472	204472	204472	204473	204473	204474	204474	204474	204474	204474
9-12,16,18	Plug Stem Kit, Hand	204300	204300	204301	204302	204303	204304	204305	204306	204307	204308	
9-12,16,18	SS Plug Stem Kit, Hand	205665	205665	205666	205667	205668	205669	205670	205671	205672	205673	205674
9-12,16,18	SS Plug Stem Kit "T" Hand					205668	205669					
21-24	Disc Kit	204321	204322	204323	204324	204325	204326	204327	204328	204329	204330	205033
9-16, 18	Bonnet Assembly, Hand	205687	205687	205688	205689	205690	205691	205692	205693	205694	205695	205696
9-16, 18	Bonnet Assembly, "T" Hand					205690	205691					
16	Gasket Pkg, Bonnet	204283	204283	204284	204285	204286	204287	204288	204289	204290	204291	
8	Gasket Pkg, Seal Cap	204292	204292	204292	204292	204293	204293	204295	204295	204295	204296	204296

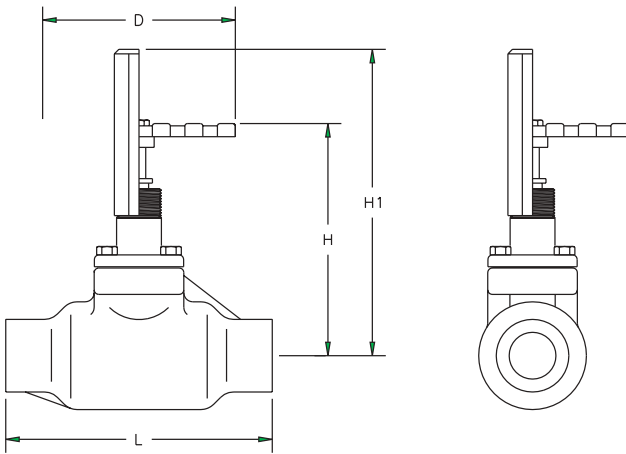


Item	Description
1	Screw, Cap
2	Lockwasher
3	Nameplate
4	Washer
5	Handwheel, std
5a	Handwheel, deep
6	Seal Cap
7	Tee Handle
8	Gasket, Seal Cap
9	Packing nut
10	O-ring carrier
11	Washer
12	Packing
13	Cap, Thread
14	Bolt
15	Bonnet
16	Gasket
17	Plug/Stem Assy
18	Plug/Stem Assy
19	Plug/Stem Assy
20	Body
21	Gasket
22	Seat Disc
23	Washer
24	Retainer



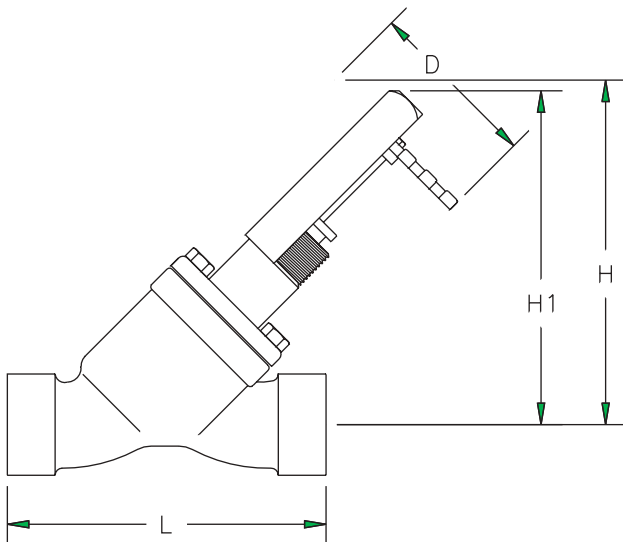
Socket Weld Angle Dimensions In Inches					
Valve Size	L	L1	H	H1	D
1/4" Angle	1.75	1.75	4.50	6.00	2.50
3/8" Angle	1.75	1.75	4.50	6.00	2.50
1/2" Angle	1.75	1.75	4.50	6.00	2.50
3/4" Angle	1.50	2.00	5.75	6.50	4.00
1" Angle	1.50	2.00	5.75	6.50	4.00
1-1/4" Angle	2.75	2.75	7.88	8.25	5.40
1-1/2" Angle	2.75	2.75	7.88	8.25	5.40
2" Angle	3.12	3.12	8.38	8.63	5.40
2-1/2" Angle	3.75	3.75	9.00	9.25	5.40
3" Angle	3.88	3.88	10.75	11.38	6.70
4" Angle	4.50	4.50	11.63	12.00	6.75

Socket Weld (1/4" - 4") Angle



Socket Weld Globe "T" Dimensions In Inches				
Valve Size	L	H	H1	D
1/4" Globe	3.75	5.75	6.88	2.50
3/8" Globe	3.75	5.75	6.88	2.50
1/2" Globe	3.75	5.75	6.88	2.50
3/4" Globe	3.88	5.75	6.50	4.00
1" Globe	3.88	5.75	6.50	4.00
1-1/4" Globe	7.00	8.88	11.00	5.50
1-1/2" Globe	8.25	10.00	12.25	5.40
2" Globe	8.25	10.00	12.25	5.40
2-1/2" Globe	9.75	13.75	14.25	5.40

Socket Weld (1/4" - 2-1/2") Globe T

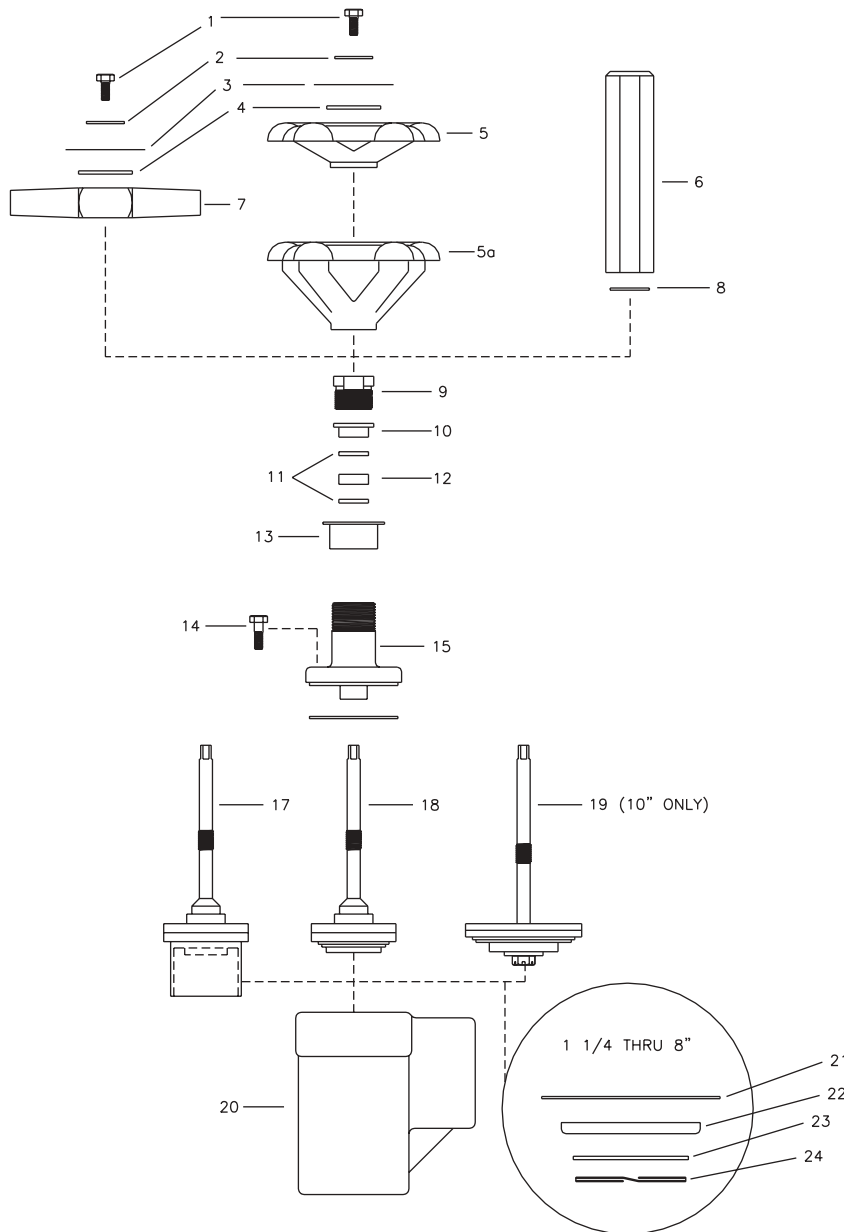


Socket Weld "Y" Dimensions In Inches				
Valve Size	L	H	H1	D
1-1/4" Globe	6.38	8.25	7.88	5.40
1-1/2" Globe	6.38	8.25	7.88	5.40
2" Globe	8.00	9.50	8.63	5.40
2-1/2" Globe	9.25	10.50	9.50	5.40
3" Globe	11.50	12.38	11.63	6.75
4" Globe	13.88	13.75	12.63	6.75

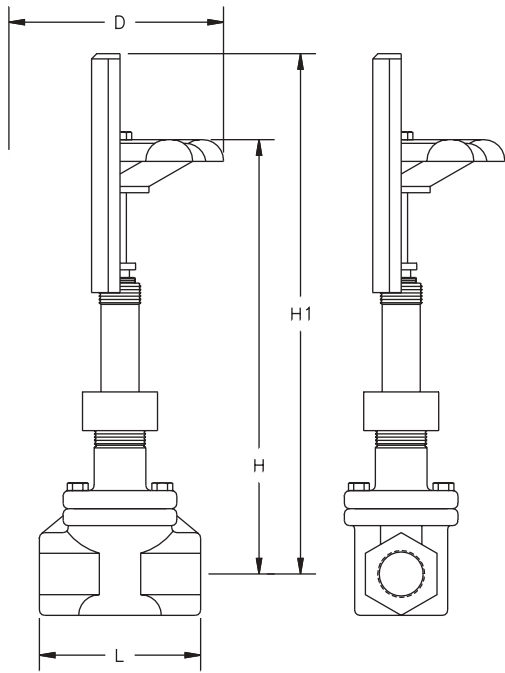
Socket Weld (1-1/4" - 4") Globe Y

**SPARE PARTS FOR SOCKET WELD
HAND SHUT-OFF VALVES**

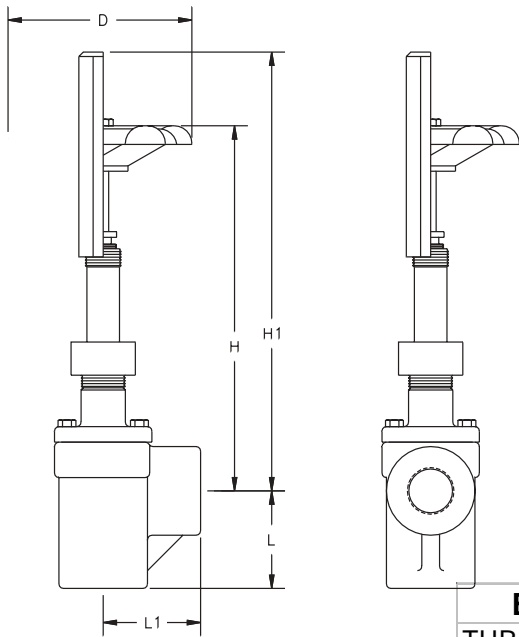
ITEM	DESCRIPTION	PORT SIZE										
		1/4"	3/8"	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"
1,2,4,5	Handwheel Kit	204267	204267	204267	204268	204268	204269	204269	204269	204269	204270	204270
1,2,4,5	SS Handwheel Kit	205705	205705	205705	205706	205706	205707	205707	205707	205707	205708	205708
1,2,4,7	Tee Handle	204265	204265	204265	204265	204265	204276	204276	204276			
1,2,4,7	SS Tee Handle	205712	205712	205712	205712	205712	205713	205713	205713	205713	205714	205714
6,8	Cap Kit, Seal	204273	204273	204273	204273	204273	204274	204274	204274	204274	204275	204275
9-12,	Packing Kit	204471	204471	204471	204471	204471	204472	204472	204472	204472	204473	204473
9-12,16,18	Plug Stem Kit, Hand	204297	204297	204297	204298	204298	204300	204300	204301	204302	204303	204304
9-12,16,18	SS Plug Stem Kit, Hand	205662	205662	205662	205663	205663	205665	205665	205666	205666	205667	205668
9-12,16,18	SS Plug Stem Kit "T" Hand						205665	205666	205666	205667		
21-24	Disc Kit						204321	204322	204323	204324	204325	204326
9-16, 18	Bonnet Assembly, Hand	205684	205684	205684	205685	205685	205687	205687	205688	205689	205690	
9-16, 18	Bonnet Assembly, "T" Hand						205687	205688	205688	205689		
16	Gasket Pkg, Bonnet	204281	204281	204281	204282	204282	204283	204283	204284	204285	204286	204287
8	Gasket Pkg, Seal Cap	204292	204292	204292	204292	204292	204292	204292	204292	204292	204293	204293



Item	Description
1	Screw, Cap
2	Lockwasher
3	Nameplate
4	Washer
5	Handwheel, std
5a	Handwheel, deep
6	Seal Cap
7	Tee Handle
8	Gasket, Seal Cap
9	Packing nut
10	O-ring carrier
11	Washer
12	Packing
13	Cap, Thread
14	Bolt
15	Bonnet
16	Gasket
17	Plug/Stem Asy
18	Plug/Stem Asy
19	Plug/Stem Asy
20	Body
21	Gasket
22	Seat Disc
23	Washer
24	Retainer



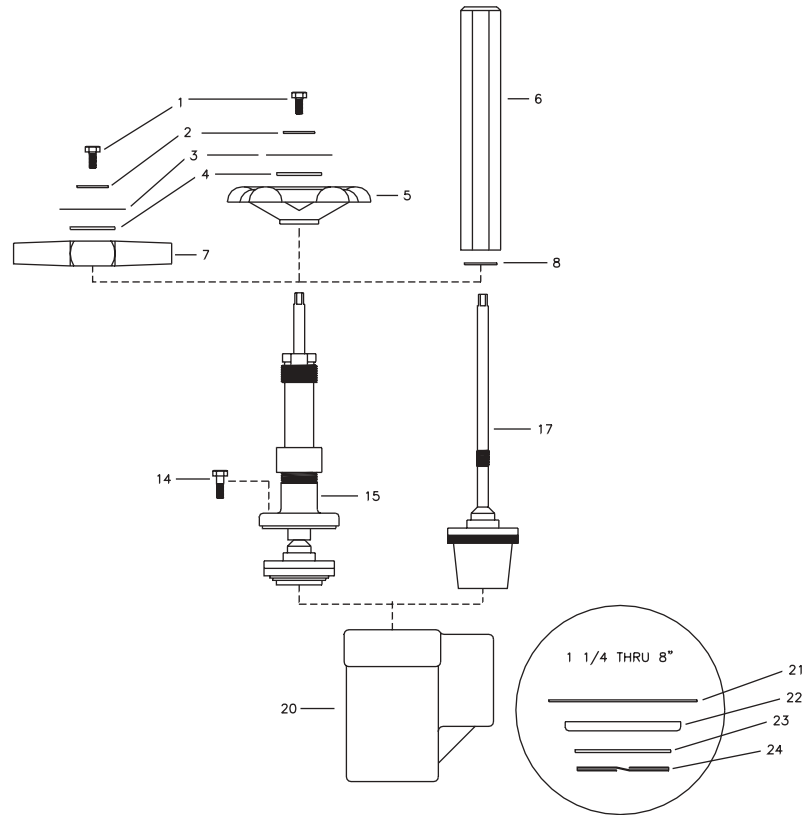
EXTENDED BONNET HAND VALVES:					
THREADED DIMENSIONS in Inches					
Valve Size,	Body Style	L	H	H1	D
1/4	Globe	3.75	7.25	8.75	2.50
3/8	Globe	3.75	7.25	8.75	2.50
1/2	Globe	3.75	7.25	8.75	2.50
3/4	Globe	3.88	8.50	9.50	4.00
1	Globe	3.88	8.50	9.50	4.00
1-1/4	Globe	7.00	9.25	10.75	5.40
1-1/2	Globe	8.25	9.25	10.75	5.40

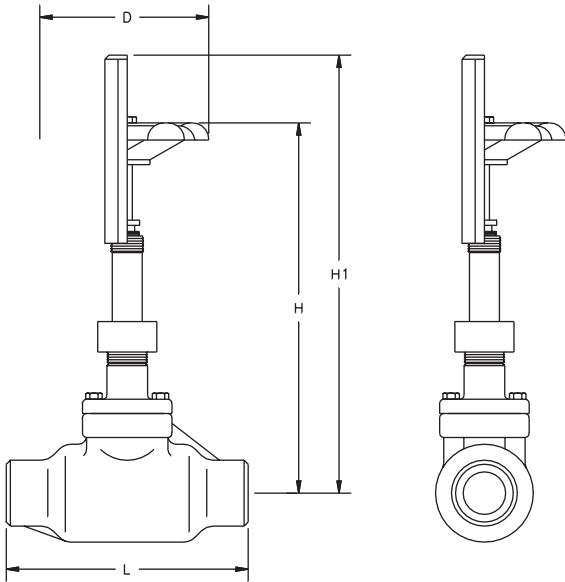


EXTENDED BONNET HAND VALVES:						
THREADED DIMENSIONS in Inches						
Valve Size,	Body Style	L	L1	H	H1	D
1/4	Angle	1.75	1.75	7.25	8.75	2.50
3/8	Angle	1.75	1.75	7.25	8.75	2.50
1/2	Angle	1.75	1.75	7.25	8.75	2.50
3/4	Angle	1.50	2.00	8.50	9.50	4.00
1	Angle	1.50	2.00	8.50	9.50	4.00
1-1/4	Angle	2.75	2.75	9.25	10.75	5.40
1-1/2	Angle	2.75	2.75	9.25	10.75	5.40

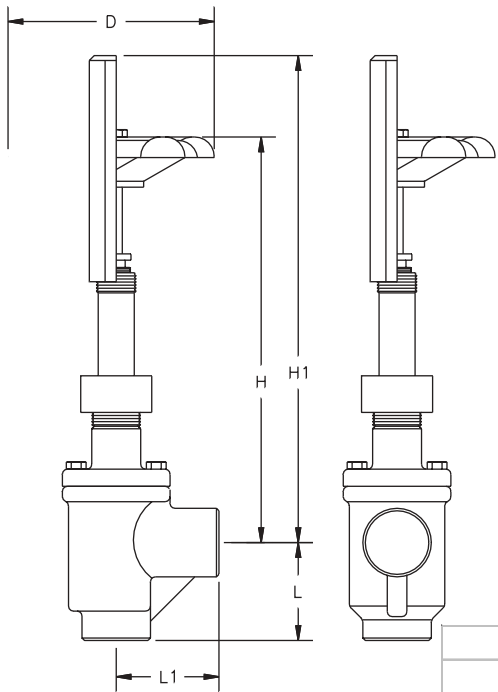
**SPARE PARTS FOR EXTENDED BONNET SCREWED END
HAND SHUT-OFF VALVES**

ITEM	DESCRIPTION	PORT SIZE						
		1/4"	3/8"	1/2"	3/4"	1"	1-1/4"	1-1/2"
1,2,4,5	SS Handwheel Kit	205705	205705	205705	205706	205706	205707	205707
1,2,4,7	SS Tee Handle	205712	205712	205712	205712	205712	205713	205713
6,8	Cap Kit, Seal	205984	205984	205984	205984	205984	205985	205985
9-12,	Packing Kit	204471	204471	204471	204471	204471	204272	204272
21-24	Disc Kit						204322	204322
9- 16, 18	Bonnet Assembly, Hand	205975	205975	205975	205976	205976	205977	205977
16	Gasket Pkg, Bonnet	204281	204281	204281	204282	204282	204283	204283
8	Gasket Pkg, Seal Cap	204292	204292	204292	204292	204292	204292	204292



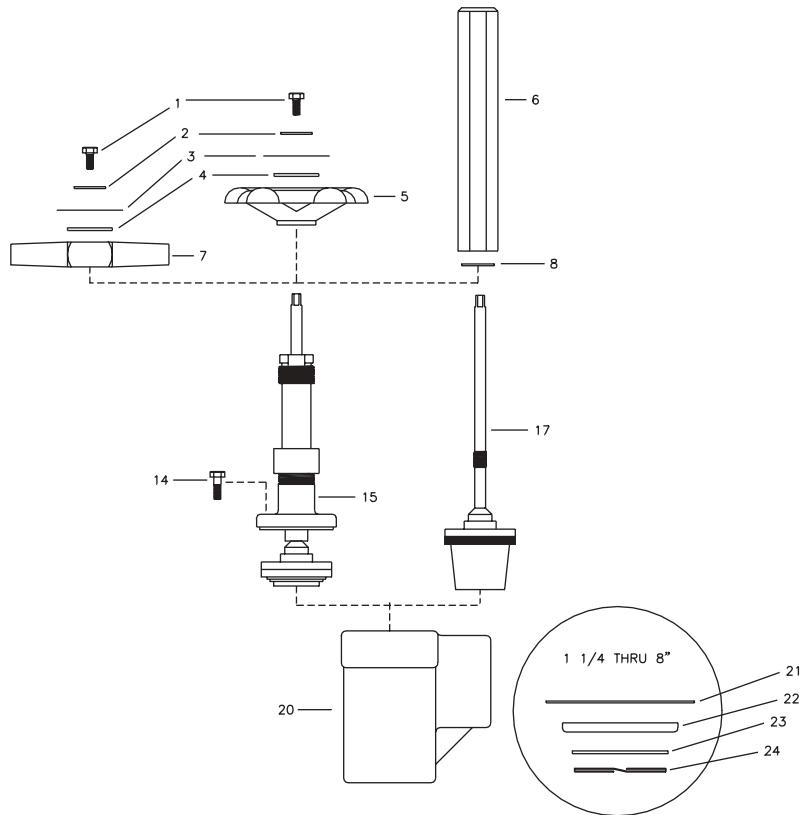


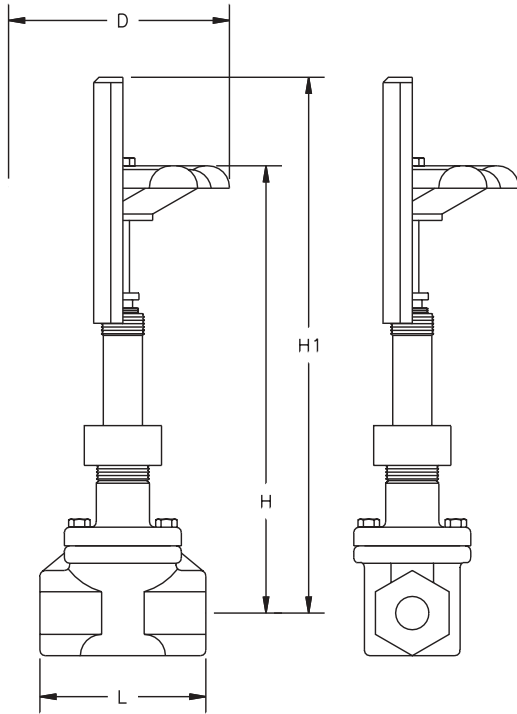
EXTENDED BONNET HAND VALVES:					
BUTT WELD DIMENSIONS in Inches					
Valve Size,	Body Style	L	H	H1	D
3	Globe	11.50	13.00	14.50	6.75
4	Globe	13.00	15.25	16.75	6.75



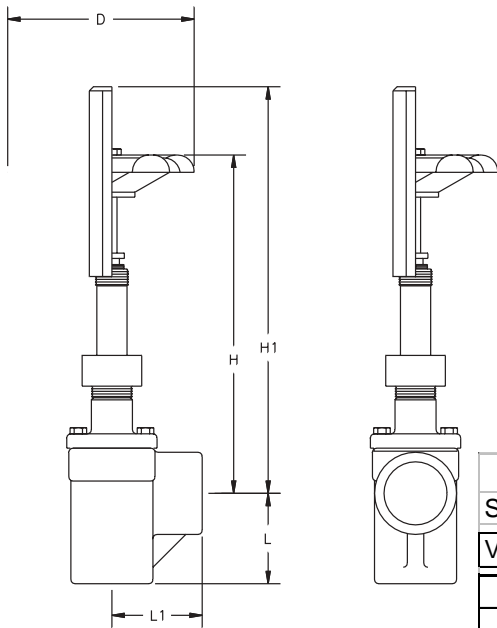
EXTENDED BONNET HAND VALVES:						
BUTT WELD DIMENSIONS in Inches						
Valve Size,	Body Style	L	L1	H	H1	D
1-1/4	Angle	2.75	2.75	9.00	10.50	5.40
1-1/2	Angle	2.63	2.63	9.00	10.50	5.40
2	Angle	3.00	3.00	10.00	11.00	5.40
2-1/2	Angle	3.63	3.63	10.50	11.50	5.40
3	Angle	3.88	3.88	11.25	12.75	6.75
4	Angle	4.50	4.50	12.75	14.25	6.75

SPARE PARTS FOR EXTENDED BONNET BUTT WELD							
HAND SHUT-OFF VALVES							
ITEM	DESCRIPTION	PORT SIZE					
		1-1/4"	1-1/2"	2"	2-1/2"	3"	4"
1,2,4,5	SS Handwheel Kit	205707	205707	205707	205707	205708	205708
1,2,4,7	SS Tee Handle	205713	205713	205713	205713	205714	205714
6,8	Cap Kit, Seal	205985	205985	205985	205985	205986	205986
9 -12,	Packing Kit	204472	204472	204472	204472	204473	204473
21-24	Disc Kit	204321	204322	204323	204324	204325	204326
9- 16, 18	Bonnet Assembly, Hand	205977	205977	205978	205979	205980	205981
9- 16, 18	Bonnet Assembly, "T" Hand					205980	205981
16	Gasket Pkg, Bonnet	204283	204283	204284	204285	204286	204287
8	Gasket Pkg, Seal Cap	204292	204292	204292	204292	204293	204293





EXTENDED BONNET HAND VALVES:					
SOCKET WELD DIMENSIONS in Inches					
Valve Size,	Body Style	L	H	H1	D
1/4	Globe	3.75	7.25	8.75	2.50
3/8	Globe	3.75	7.25	8.75	2.50
1/2	Globe	3.75	7.25	8.75	2.50
3/4	Globe	3.88	8.50	9.50	4.00
1	Globe	3.88	8.50	9.50	4.00
1-1/4	Globe	7.00	9.00	10.50	5.40
1-1/2	Globe	8.25	9.00	10.50	5.40
2	Globe	8.25	10.25	11.25	5.40
2-1/2	Globe	9.75	10.50	11.50	5.40



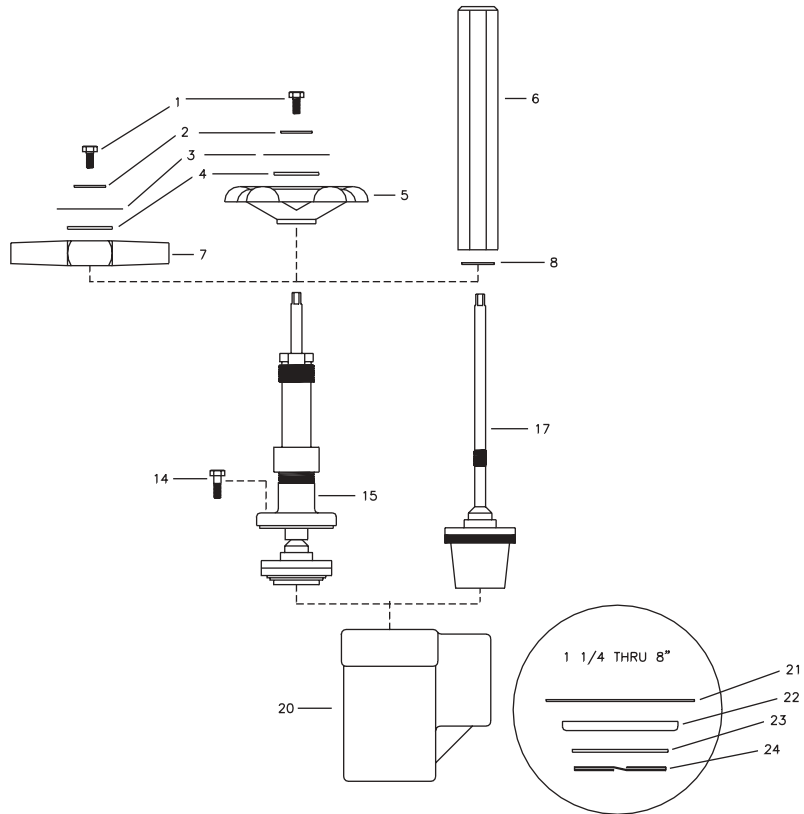
EXTENDED BONNET HAND VALVES:						
SOCKET WELD DIMENSIONS in Inches						
Valve Size,	Body Style	L	L1	H	H1	D
1/4	Angle	1.75	1.75	7.25	8.75	2.50
3/8	Angle	1.75	1.75	7.25	8.75	2.50
1/2	Angle	1.75	1.75	7.25	8.75	2.50
3/4	Angle	1.50	2.00	8.50	9.50	4.00
1	Angle	1.50	2.00	8.50	9.50	4.00
1-1/4	Angle	2.75	2.75	9.00	10.50	5.40
1-1/2	Angle	2.75	2.75	9.00	10.50	5.40
2	Angle	3.12	3.12	10.25	11.25	5.40
2-1/2	Angle	3.75	3.75	10.50	11.50	5.40
3	Angle	3.88	3.88	11.00	12.50	6.75
4	Angle	4.50	4.50	12.75	14.25	6.75

SPARE PARTS FOR EXTENDED BONNET SOCKET WELD

HAND SHUT-OFF

PORT SIZE

ITEM	DESCRIPTION	1/4"	3/8"	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"
1,2,4,5	SS Handwheel Kit	205705	205705	205705	205706	205706	205707	205707	205707	205707	205708	205708
1,2,4,7	SS Tee Handle	205712	205712	205712	205712	205712	205713	205713	205713	205713	205714	205714
6,8	Cap Kit, Seal	205984	205984	205984	205984	205984	205985	205985	205985	205985	205986	205986
9-12,	Packing Kit	204471	204471	204471	204471	204471	204472	204472	204472	204472	204473	204473
21-24	Disc Kit						204321	204322	204323	204324	204325	204326
9-16, 18	Bonnet Assembly, Hand	205975	205975	205975	205976	205976	205977	205977	205978	205979	205980	
9-16, 18	Bonnet Assembly, "T" Hand						205977	205978	205978	205979	205980	
16	Gasket Pkg, Bonnet	204281	204281	204281	204282	204282	204283	204283	204284	204285	204286	204287
8	Gasket Pkg, Seal Cap	204292	204292	204292	204292	204292	204292	204292	204292	204292	204293	204293



Installation

Screwed End. The most important factor other than the valve itself in achieving a leak-tight and secure threaded valve installation is selection and preparation of mating piping. Pipe 1-1/2" and smaller should be Schedule 80 Steel ASTM A-106 Grade B or equal, properly cut to correct length and cleanly and properly threaded with U.S. National Tapered Male Pipe Threads. The male thread sealant is recommended. Sealant should be applied evenly to act as a lubricant between the threads to avoid any chance of metal to metal galling. Valve and piping should be adequately tightened with two wrenches positioned as close together as possible, but not touching the pipe threads. In horizontal piping of suction, overfeed gas return, or condenser drain lines, globe valve or angle valve stems should be horizontal to avoid liquid trapping of gas flow at the valve body casting seat orifice.

Before putting valves into service, all pipe connections, valve seats, bonnet seals and stem seals should be tested for leaks at pressure levels called for in appropriate codes

Socket Weld, Butt Weld. Welding valves may be installed in horizontal or vertical pipelines. Stems may be horizontal or vertical or angled upward. Globe valves in horizontal suction lines or liquid overfeed return lines, condenser drain lines, purge lines, oil pot drain lines and level control column isolation valves should preferably have stems horizontal rather than upward to avoid liquid or gas trapping at valve seat orifices. Inlet pressure for all valve sizes should normally be under valve seat disc.

The valve stem should be open during welding. Normally it is not necessary to disassemble valves for welding. However, if welding is prolonged enough to overheat the body, a wet rag should be wrapped around the valve bonnet and upper body during welding. The codes applicable to the welding of socket weld valves require that the pipe be inserted into the socket until bottomed against the stop. The pipe is then to be backed out approximately 1/16 of an inch before welding.

Use of welding rings is optional but recommended for butt weld valves. They help alignment, control gap for full penetration welding and reduce welding debris entry. Welds should be annealed as necessary in accordance with good practice. Painting of valves and welds is recommended for corrosion protection. Pipe covering where applied, should have proper moisture barrier.

Shut-off valves leading to the atmosphere, even if it is temporary, must be plugged or capped to prevent corrosion inside of the valve as well as leakage due to vibration, pressure shock, or improper opening; the valve seat should be cracked open to prevent hydrostatic expansion between the valve and the cap. Valves should never directly feed a water tank because of potential internal corrosion or seat opening caused by vibration.

Before putting valves into service, all pipe connections, valve seats, bonnet seals and stem seals should be tested for leaks at pressure levels called for in appropriate codes

REFRIGERATING SPECIALTIES HAND VALVE SPECIFICATIONS								
FLOW PATH	GLOBE	ANGLE	GLOBE	ANGLE	GLOBE	ANGLE	GLOBE	ANGLE
Connections	Threaded & S.W.		Threaded & S.W.		S.W. & B.W.		Butt Weld	
Sizes	1/4", 3/8", 1/2"		3/4", 1", 1-1/4", 1-1/2"		2", 2-1/2", 3", 4", 5", 6", 8"		10", 12"	
Bonnet Type	Forged Steel		Forged Steel		Ductile Iron		Fabricated Steel	
Body Materials	Cast Steel		Cast Steel		Cast Steel		Cast Steel	
Packing Materials	Non-Asbestos Graphite		Non-Asbestos Graphite		Non-Asbestos Graphite		Non-Asbestos Graphite	
Seat Materials	25% Carbon Filled PTFE		25% Carbon Filled PTFE		25% Carbon Filled PTFE		25% Carbon Filled PTFE	

FLOW COEFFICIENT									
VALVE SIZE		GLOBE T		GLOBE Y		ANGLE		WEIGHT	
mm	Inches	Kv	Cv	Kv	Cv	Kv	Cv	Kg	Lbs
6	1/4"	2.2	2.6			3.1	3.6	1	2.2
10	3/8"	3.5	4.1			4.7	5.5	1	2.2
13	1/2"	6.2	7.2			6.9	8	1	2.2
20	3/4"	12	14			14.6	17	1.8	4.0
25	1"	18.9	22			23.2	27	1.8	4.0
32	1-1/4"	25.8	30	40.5	47	30.1	35	4.2	9.2
40	1-1/2"	37	43	45.6	53	40	46	4.5	10
50	2"	52	61	80	92.6	73	85	6	13.2
65	2-1/2"	89	103	131	153	128	149	9.5	21
75	3"	98	114	179	208	184	214	15	33
100	4"	173	202	292	340	301	350	22	47
125	5"			617	718	635	739	44	98
150	6"			788	916	811	943	60	132
200	8"			1244	1446	1280	1489	116	255
250	10"			2047	2380	2128	2475	190	417
300	12"			2820	3280	2941	3420	308	680

TORQUE REQUIREMENTS		
BOLT DIAMETER	VALVE PORT SIZE	TORQUE
5/16" (8mm)	1/4" - 1/2" (6 - 13mm)	11.0 ft lb (1.5 mkg)
5/16" (8mm)	3/4" - 1" (20 - 25mm)	12.5 ft lb (1.7 mkg)
3/8" (9.5mm)	1-1/4" - 1-1/2" (32 - 38mm)	20.8 ft lb (2.9 mkg)
7/16" (11mm)	2" (50mm)	25.0 ft lb (3.5 mkg)
1/2" (13mm)	2-1/2" (65mm)	25.0 ft lb (3.5 mkg)
1/2" (13mm)	3" (75mm)	33.3 ft lb (4.6 mkg)
1/2" (13mm)	4" (100mm)	33.3 ft lb (4.6 mkg)
5/8" (16mm)	5" - 8" (125 - 200mm)	75.0 ft lb (10.3 mkg)
5/8" (16mm)	10" (250mm)	91.6 ft lb (12.7 mkg)
PACKING NUT	VALVE PORT SIZE	TORQUE
	1/4" - 4" (6 - 100mm)	2.5 ft lb (0.3 mkg)

Safe Operation (See also Bulletin RSB)
People doing any work on a refrigeration system must be qualified and completely familiar with the system and the Refrigerating Specialties Division valves involved, or all other precautions will be meaningless. This includes reading and understanding pertinent Refrigerating Specialties Division product Bulletins and Safety Bulletin RSB prior to installation or servicing work.

Where cold refrigerant liquid lines are used, it is necessary that certain precautions be taken to avoid damage that could result from liquid expansion. Temperature increase in a piping section full of solid liquid will cause high pressure due to the expanding liquid that can possibly rupture a gasket, pipe or valve. All hand valves isolating such sections should be marked, warning against accidental closing, and must not be closed until the liquid is removed. Check valves must never be installed upstream of solenoid valves, or regulators with electric shut-off, nor should hand valve upstream of solenoid valves or downstream of check valves be close until the liquid has been removed. It is advisable to properly install relief devices in any section where liquid expansion could take place.

Avoid all piping or control arrangements that might produce thermal or pressure shock. For the protection of people and products, all refrigerant must be removed from the section to be worked on before a valve, strainer, or other device is opened or removed. Flanges with ODS connections are not suitable for ammonia service.

Warranty

All Refrigerating Specialties products are warranted against defects in workmanship and materials for a period of one year from date of shipment from originating factory. This warranty is in force only when products are properly installed, field assembled, maintained, and operated in use and service as specifically stated in Refrigerating Specialties Catalogs or Bulletins for normal refrigeration applications, unless otherwise approved in writing by Refrigerating Specialties Division. Defective products, or parts thereof returned to the factory with transportation charges prepaid and found to be defective by factory inspection will be replaced or repaired at Refrigerating Specialties option, free of charge F.O.B. factory. Warranty does not cover products that have been altered, or repaired in the field; damaged in transit, accidents, misuse, or abuse. Products disabled by dirt or other foreign substances will not be considered defective.

The express warranty above constitutes the only warranty of Refrigerating Specialties products, and is in lieu of all other warranties, expressed or implied, written or oral, including any warranty of merchantability or warranty of fitness for a particular purpose and in no event is Refrigerating Specialties responsible for any consequential damages of any nature whatsoever. No employee, agent, dealer or other person is authorized to give any warranties on behalf of Refrigerating Specialties nor to assume for Refrigerating Specialties any other liability in connection with any of its products.