

# 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

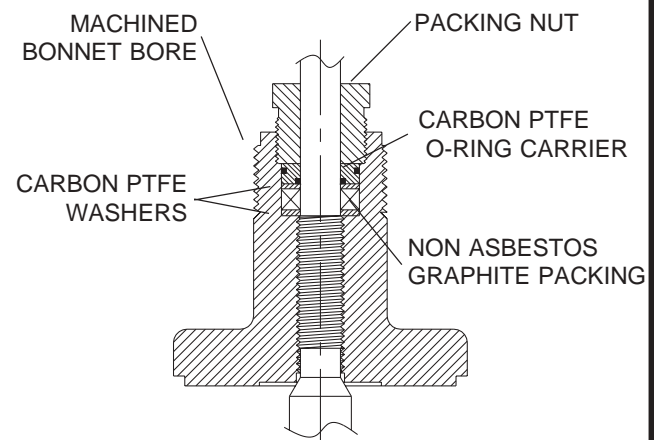
This complete line of all steel bodied valves with bolt-on bonnets are designed and built to maintain reliability both in their seating and back seating functions. This entire line is supplied with stainless steel stems and backseating capability. Corrosion resistant, high-grade stainless steel trim 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



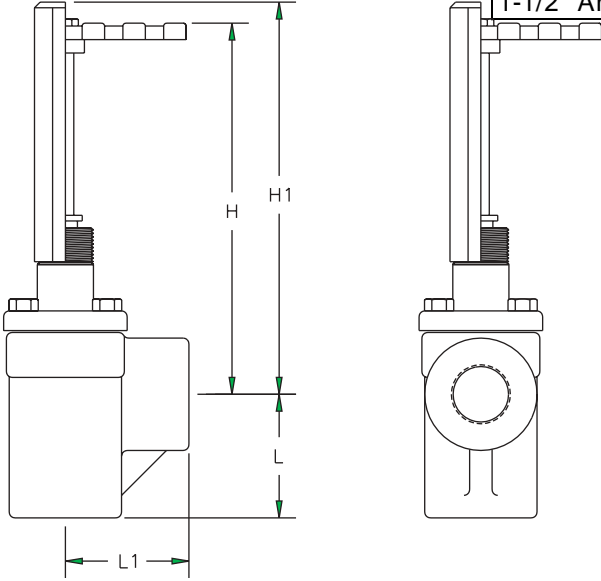
**R/S Bonnet Design**  
(Typical of 3/4” and 1”)

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

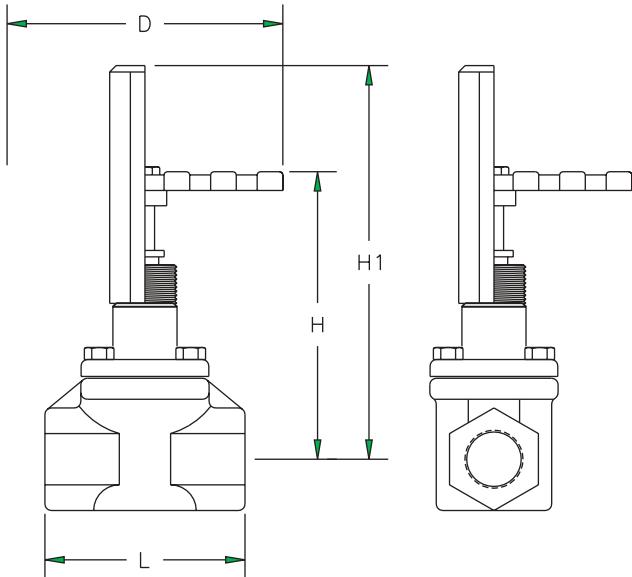
The extended bonnet is available for globe style valves in the Tee body configuration and in angle style bodies. Valves are available with either hand wheel or seal cap. These caps are exclusive to these series of valves and should not be exchanged with seal caps from other R/S service valves. Bonnet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

| <b>Screwed End Angle Dimensions In Inches</b> |      |      |      |      |      |
|---|------|------|------|------|------|
| 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**

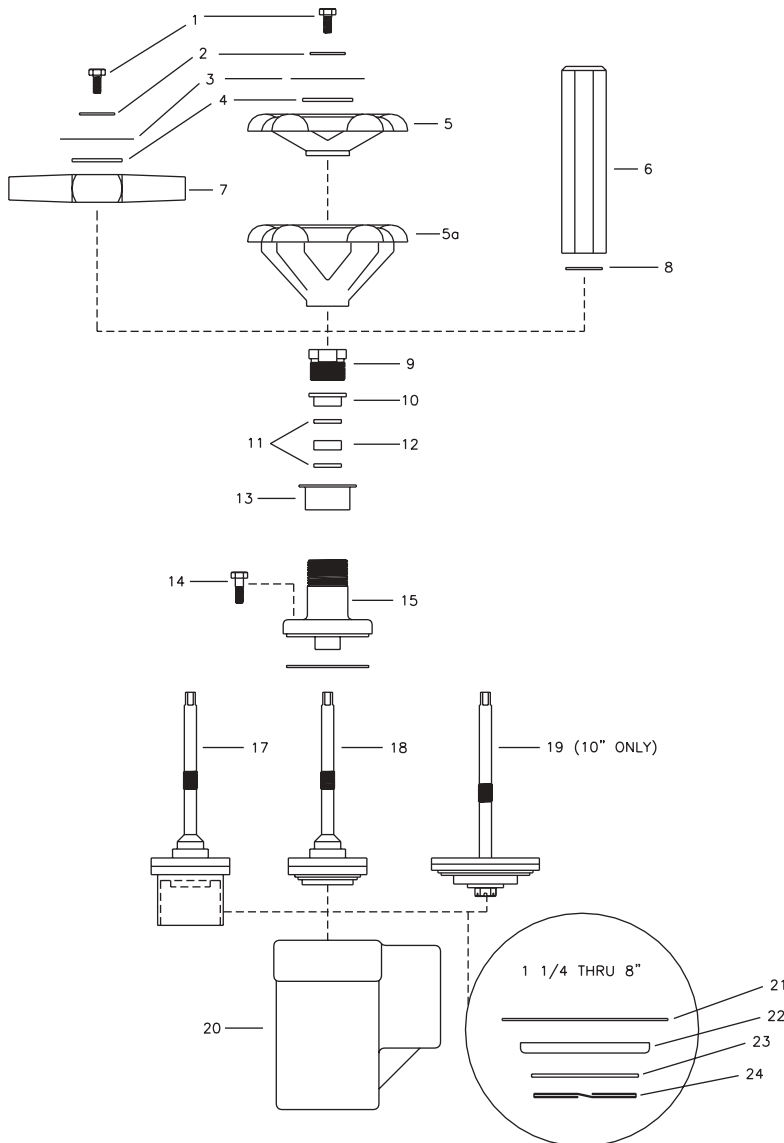
| <b>Screwed End Globe Dimensions In Inches</b> |      |      |      |      |
|---|------|------|------|------|
| Valve Size                                    | L    | H    | H1   | D    |
| 1/4" Globe                                    | 3.75 | 5.75 | 6.88 | 2.50 |
| 3/8" Globe                                    | 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 |



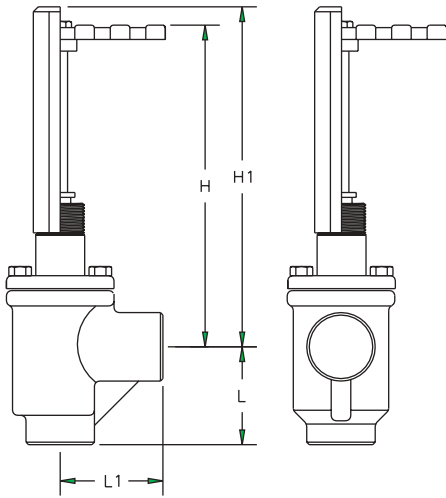
**Screwed End (1/4" - 1-1/2") Globe**

**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 |

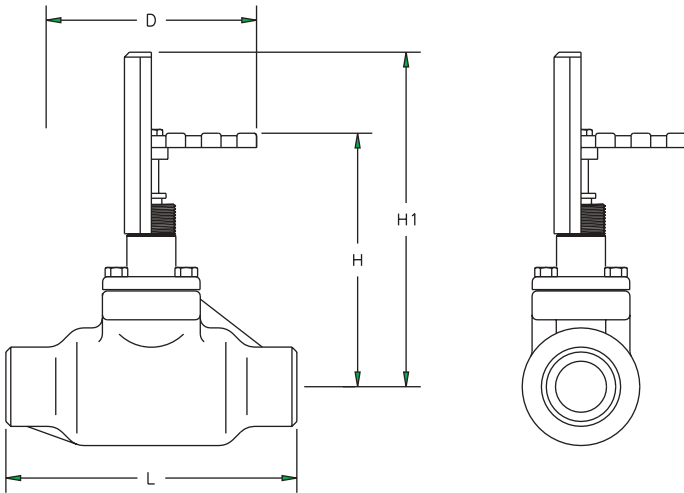


| Item | Description      |
|------|------------------|
| 1    | Screw, Cap       |
| 2    | Lockwasher       |
| 3    | Nameplate        |
| 4    | Washer           |
| 5    | Handwheel, std   |
| 5a   | Handwheel, deep  |
| 6    | Seal Cap         |
| 7    | Tee Handle       |
| 8    | Gasket, Seal 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         |



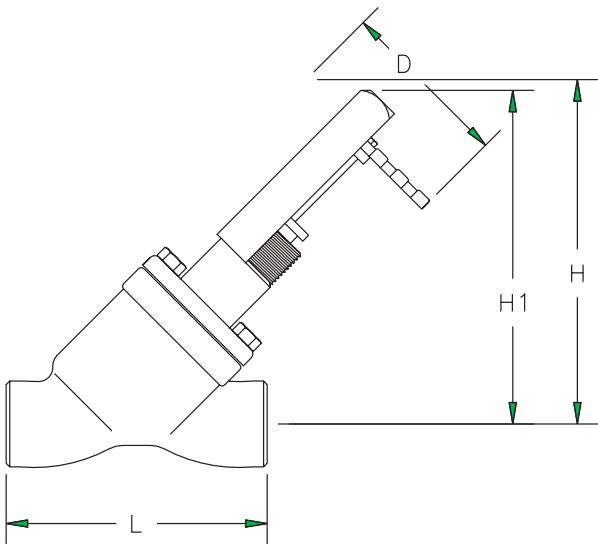
| <b>Butt Weld Angle Dimensions In Inches</b> |       |       |       |       |       |
|---|-------|-------|-------|-------|-------|
| Valve Size                                  | L     | L1    | H     | H1    | D     |
| 1-1/4" Angle                                | 2.75  | 2.75  | 7.75  | 8.25  | 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**



| <b>Butt Weld Globe "T" Dimensions In Inches</b> |       |       |       |      |
|---|-------|-------|-------|------|
| 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 |

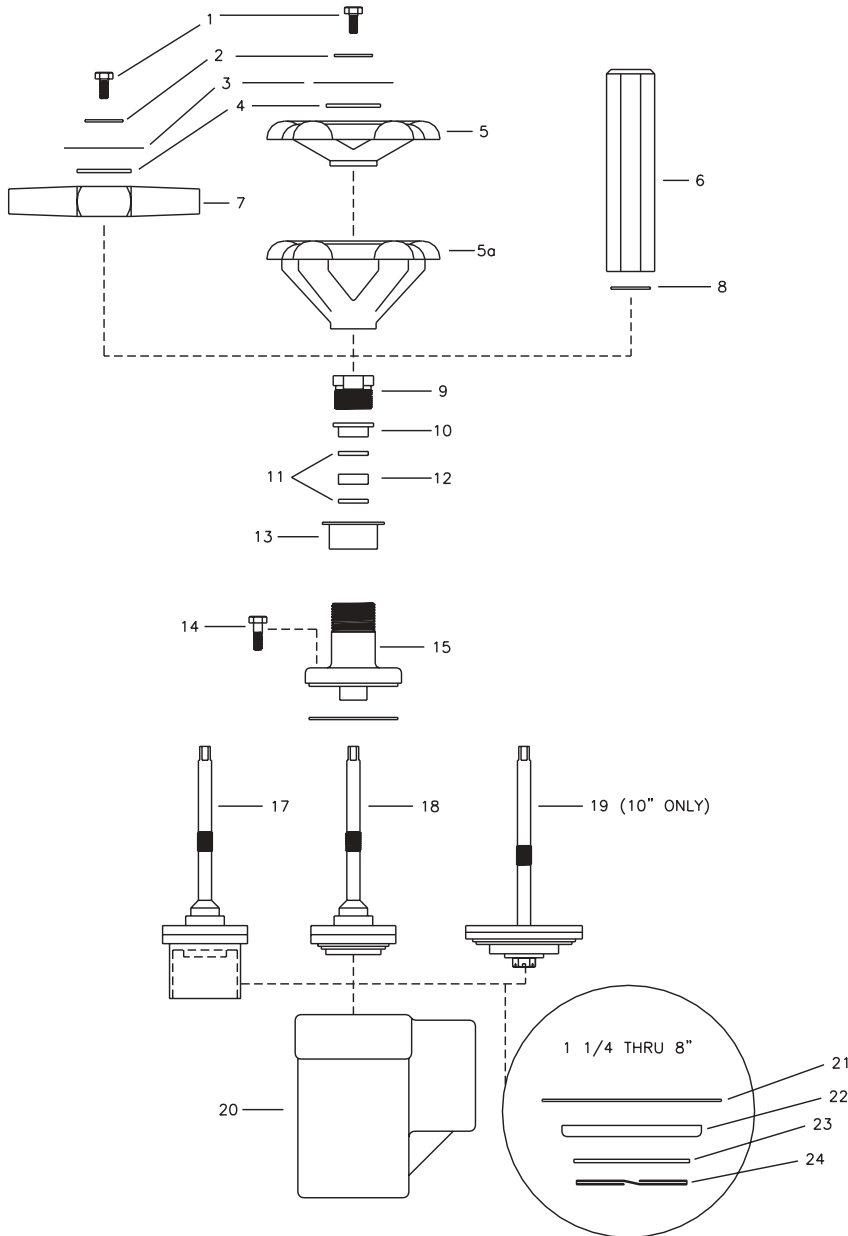
**Butt Weld (3" - 4") Globe T**



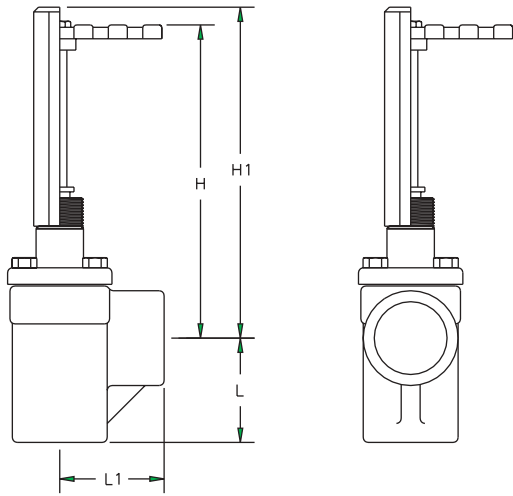
| <b>Butt Weld Globe "Y" Dimensions In Inches</b> |       |       |       |       |
|---|-------|-------|-------|-------|
| Valve Size                                      | L     | H     | H1    | D     |
| 1-1/4" Globe                                    | 7.25  | 8.25  | 8.12  | 5.40  |
| 1-1/2" Globe                                    | 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<br>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 | 204272 |
| 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 |

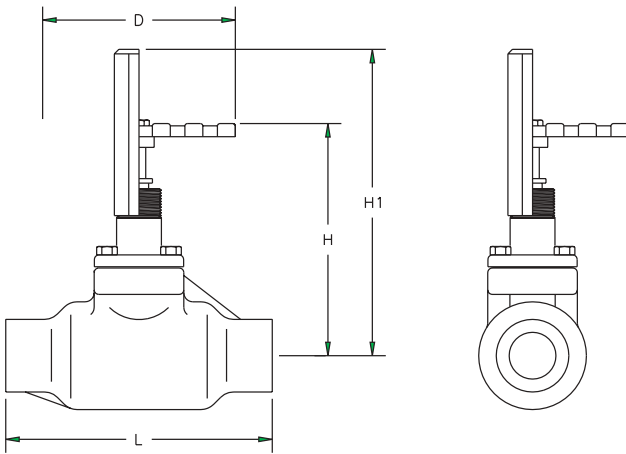


| Item | Description      |
|------|------------------|
| 1    | Screw, Cap       |
| 2    | Lockwasher       |
| 3    | Nameplate        |
| 4    | Washer           |
| 5    | Handwheel, std   |
| 5a   | Handwheel, deep  |
| 6    | Seal Cap         |
| 7    | Tee Handle       |
| 8    | Gasket, Seal 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         |



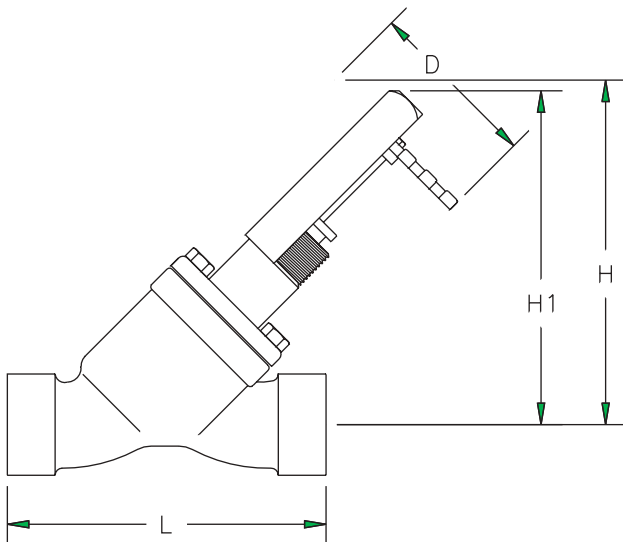
| <b>Socket Weld Angle Dimensions In Inches</b> |      |      |       |       |      |
|---|------|------|-------|-------|------|
| Valve Size                                    | L    | L1   | H     | H1    | D    |
| 1/4" Angle                                    | 1.75 | 1.75 | 4.50  | 6.00  | 2.50 |
| 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**



| <b>Socket Weld Globe "T" Dimensions In Inches</b> |      |       |       |      |
|---|------|-------|-------|------|
| 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**

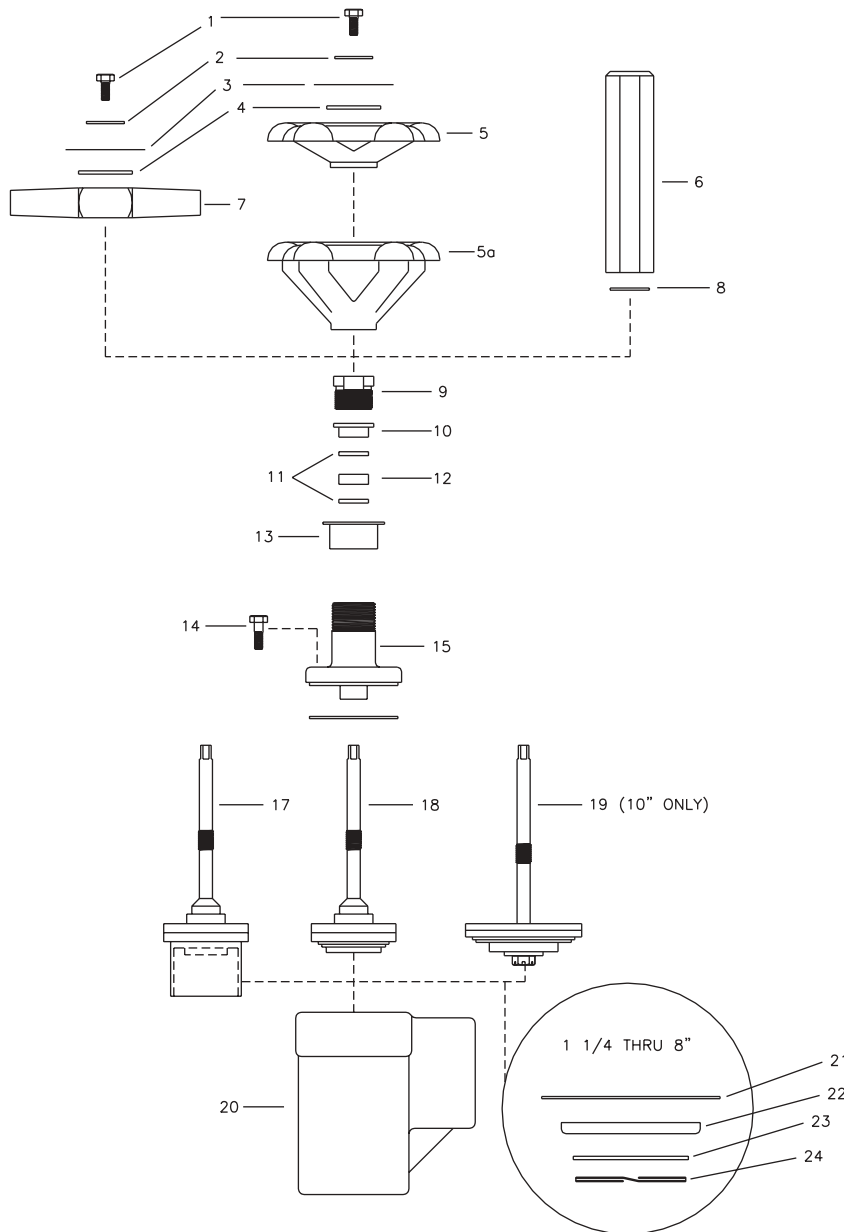


| <b>Socket Weld "Y" Dimensions In Inches</b> |       |       |       |      |
|---|-------|-------|-------|------|
| Valve Size                                  | L     | H     | H1    | D    |
| 1-1/4" Globe                                | 6.38  | 8.25  | 7.88  | 5.40 |
| 1-1/2" Globe                                | 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 |

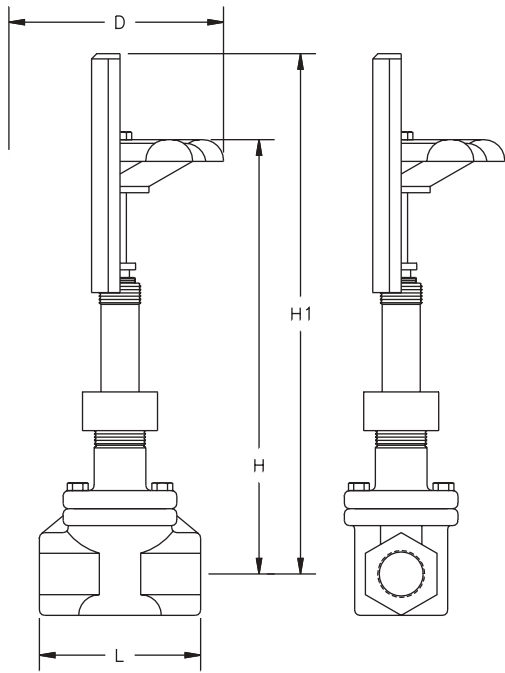
**Socket Weld (1-1/4" - 4") Globe Y**

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

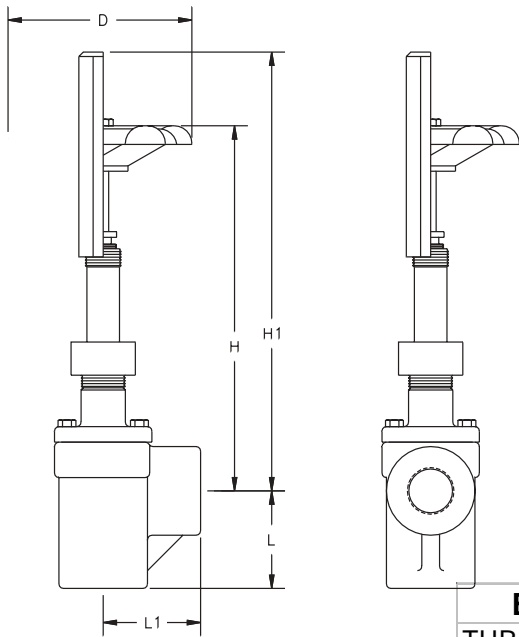
| ITEM       | DESCRIPTION               | PORT SIZE |        |        |        |        |        |        |        |        |        |        |
|------------|---------------------------|-----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|            |                           | 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 |        |
| 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         |



| <b>EXTENDED BONNET HAND VALVES:</b> |            |      |      |       |      |
|-------------------------------------|------------|------|------|-------|------|
| 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 |

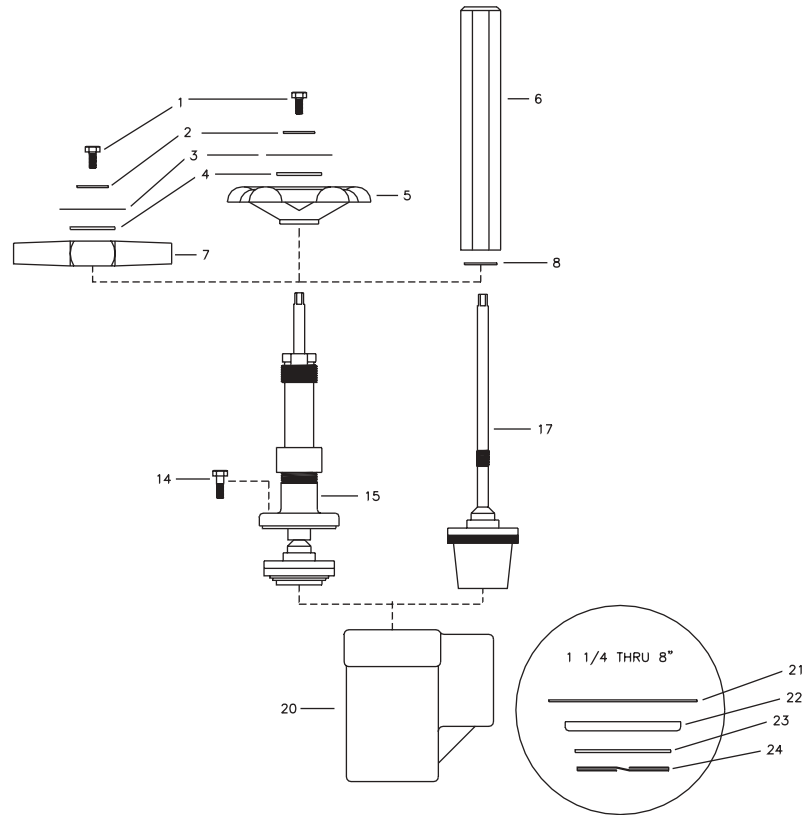


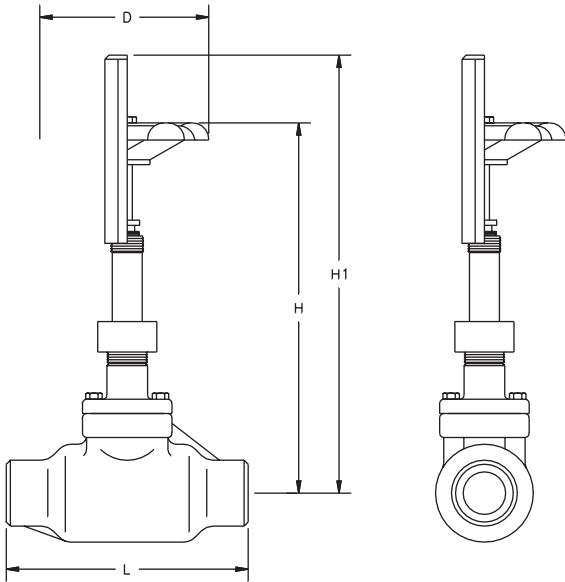
| <b>EXTENDED BONNET HAND VALVES:</b> |            |      |      |      |       |      |
|-------------------------------------|------------|------|------|------|-------|------|
| THREADED DIMENSIONS in Inches       |            |      |      |      |       |      |
| Valve Size,                         | 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 |



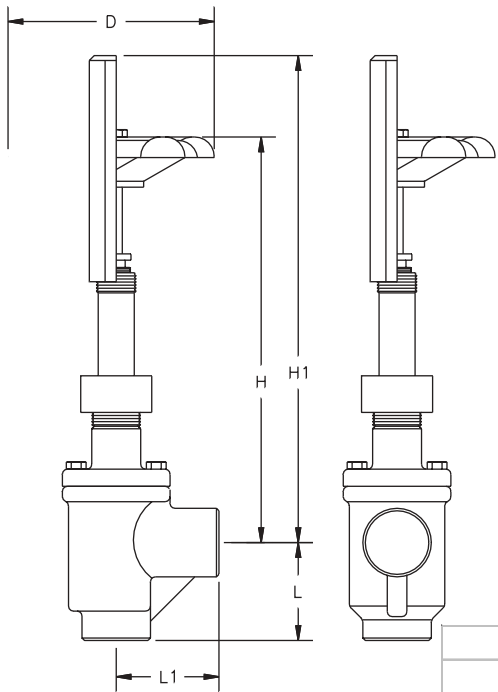
**SPARE PARTS FOR EXTENDED BONNET SCREWED END  
HAND SHUT-OFF VALVES**

| 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 |



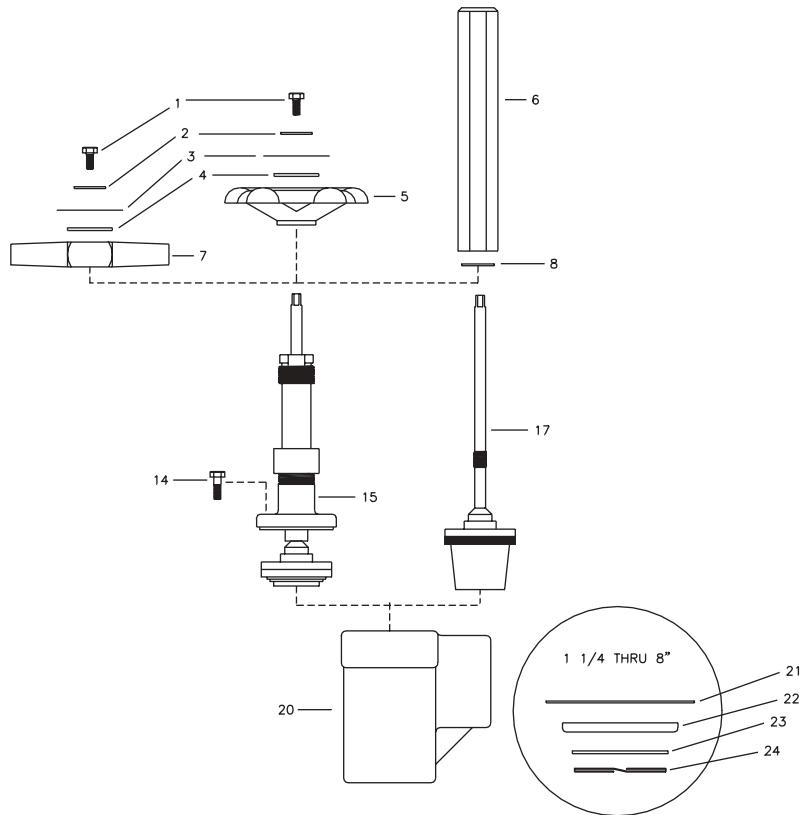


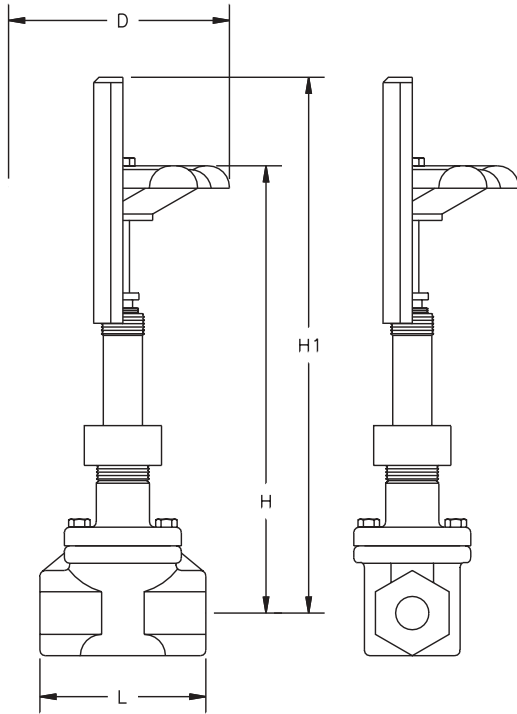
| <b>EXTENDED BONNET HAND VALVES:</b> |            |       |       |       |      |
|-------------------------------------|------------|-------|-------|-------|------|
| BUTT WELD DIMENSIONS in Inches      |            |       |       |       |      |
| Valve Size,                         | Body Style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



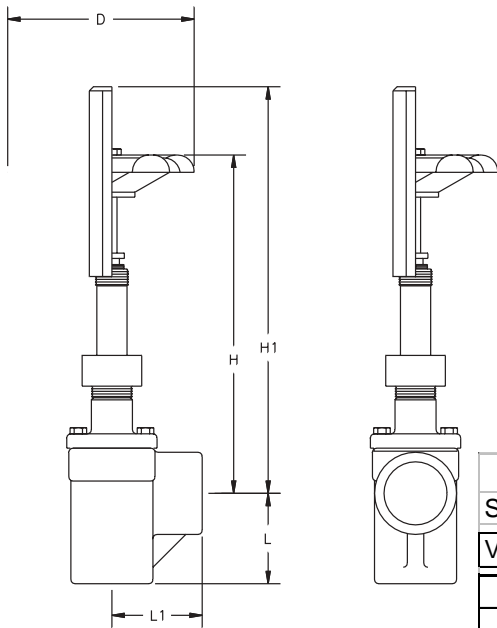
| <b>EXTENDED BONNET HAND VALVES:</b> |            |      |      |       |       |      |
|-------------------------------------|------------|------|------|-------|-------|------|
| BUTT WELD DIMENSIONS in Inches      |            |      |      |       |       |      |
| Valve Size,                         | 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 |





| <b>EXTENDED BONNET HAND VALVES:</b> |            |      |       |       |      |
|-------------------------------------|------------|------|-------|-------|------|
| 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 |



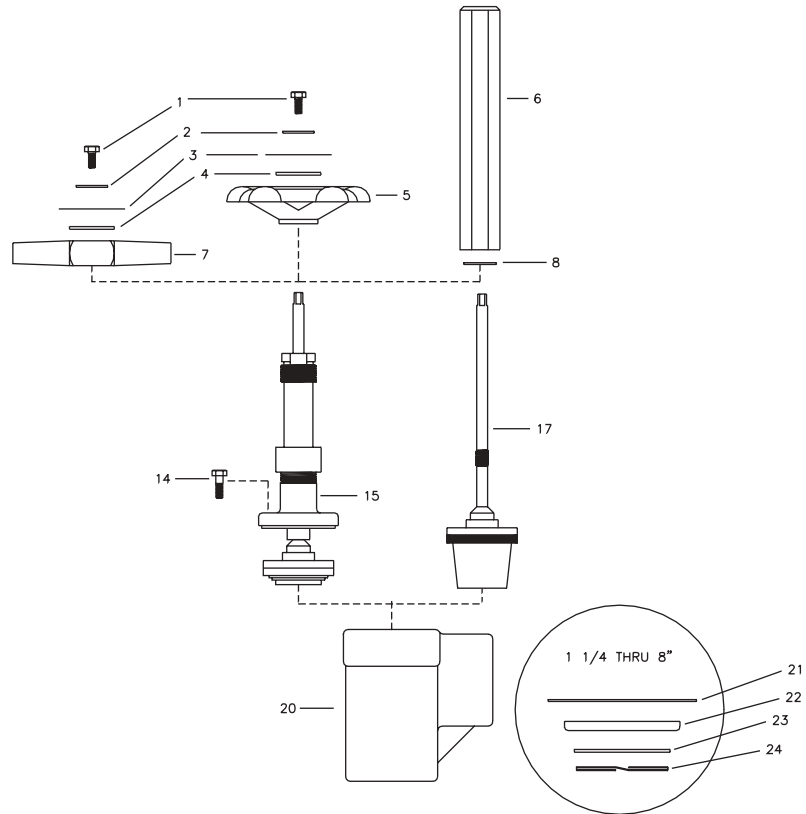
| <b>EXTENDED BONNET HAND VALVES:</b> |            |      |      |       |       |      |
|-------------------------------------|------------|------|------|-------|-------|------|
| SOCKET WELD DIMENSIONS in Inches    |            |      |      |       |       |      |
| Valve Size,                         | 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)  |
| 5/8" (13mm)         | 4" (100mm)                  | 75.0 ft lb (10.3mkg)  |
| 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.