

Stop / Check Valves

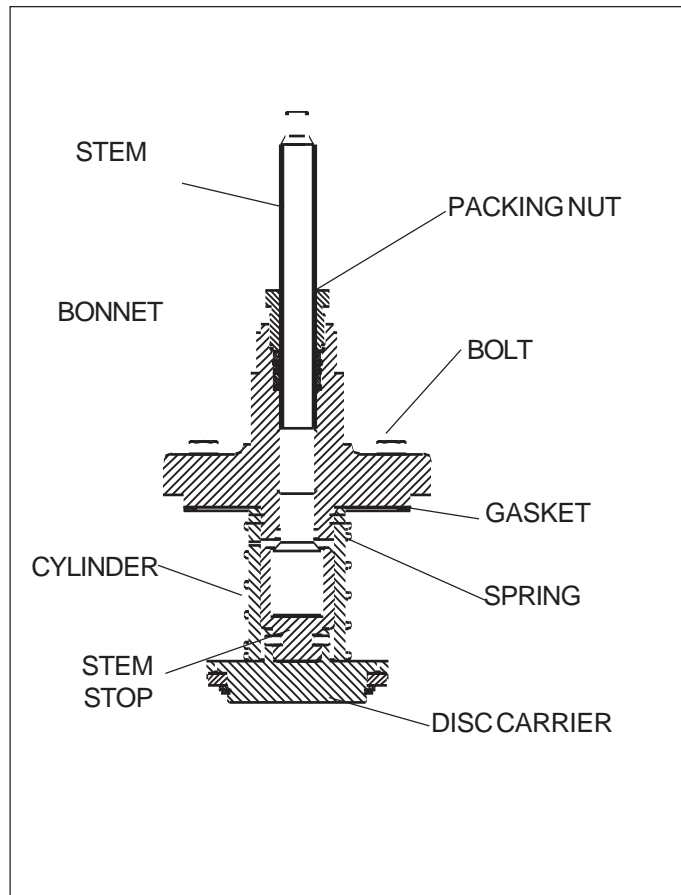
"Built Stronger to Last Longer"

Sizes: 25mm (3/4") to 200mm (8")

Suitable For: Ammonia, Fluorocarbons, Nitrogen and Carbon Dioxide

Features

- ASTM 352 LCB Cast Steel Body (3/4" thru 8")
- Maximum Safe Working Pressure 400 PSIG
- Fluid Temperature Range: -60°F to +300°F
- Stainless Steel Stem
- Reliable Back Seating
- Complete Line of Bolted Bonnets
- 25% Carbon Filled PTFE Seat (3/4" thru 8")
- Available Connections:
 - 3/4" thru 1", Screwed End
 - 3/4" thru 4", Socket Weld
 - 1-1/4" thru 8", Butt Weld
- Linear Flow "Y" Pattern Globe Body (1-1/4" thru 8") For Low Pressure Drop
- Handwheel and Seal Cap Interchangeable on Same Valve

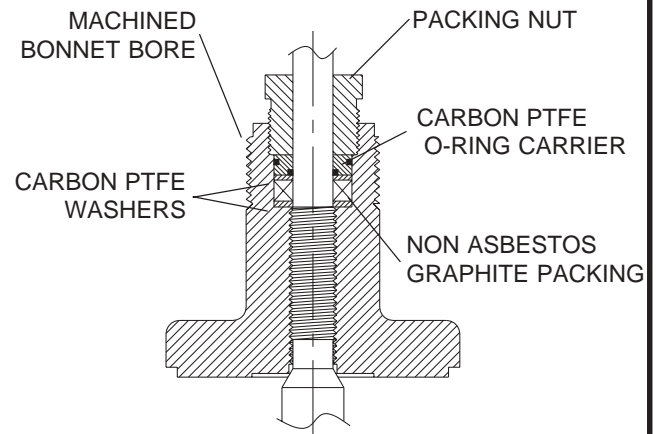


Bulletin No. 85-00A



May 2004

Installation, Service and Parts Information



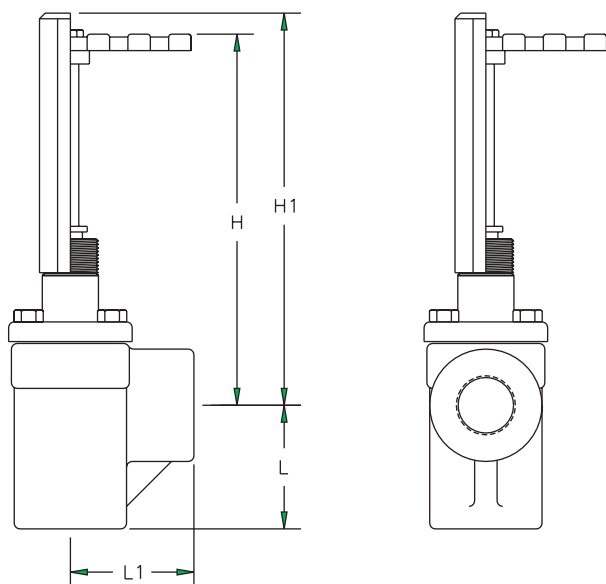
R/S Bonnet Design
(Typical of 3/4" and 1")

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 8". 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.

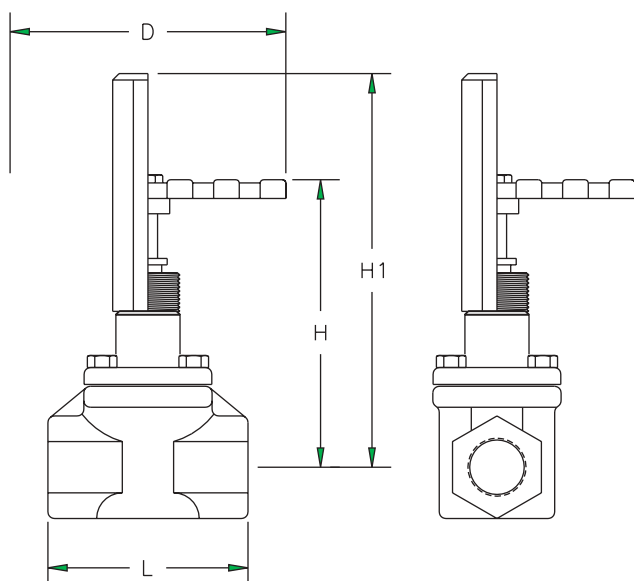
A packing nut design with either 1/4" or 5/16" flats provide a generous wrench engagement area, with little likelihood of "rounding" the flat. With the O-Ring cartridge used in all valve bonnets, there will typically be no need to loosen the packing nut when opening or closing a valve. In most cases, stem resistance will be negligible allowing the valve to be easily repositioned.

Screwed End Angle Dimensions In Inches					
Valve Size	L	L1	H	H1	D
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



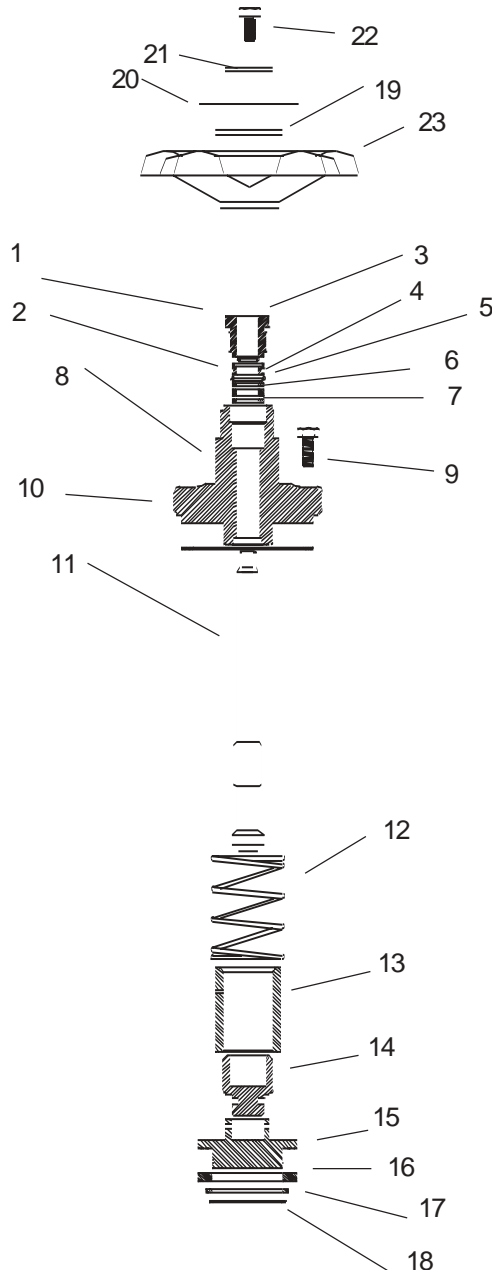
Screwed End (3/4" - 1-1/2") Angle

Screwed End Globe Dimensions In Inches				
3/4" Globe	3.88	5.75	6.50	4.00
1" Globe	3.88	5.75	6.50	4.00

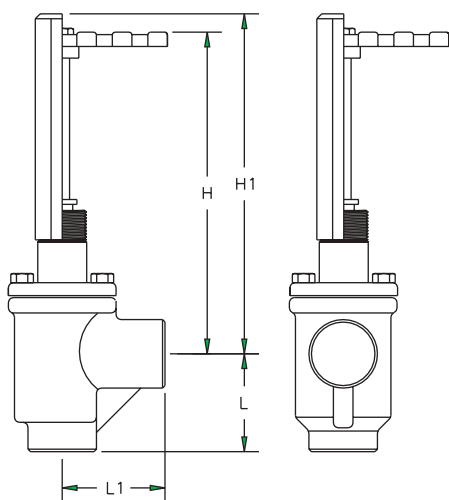


Screwed End (3/4" - 1-1/2") Globe

SPARE PARTS FOR SCREWED END STOP / CHECK VALVE			
ITEM	DESCRIPTION	3/4"	1"
19-23	Handwheel Kit	204268	204268
19-23	SS Handwheel Kit	205706	205706
	Cap Kit, Seal	204273	204273
1-7	Packing Kit	204471	204471
	Plug Stem Kit		
	SS Plug Stem Kit		
	Disc Carrier Asm	206836	206836
21-24	Disc Kit		
1-18	Bonnet Assembly, Hand	206830	206830
10	Gasket Pkg, Bonnet	204282	204282
	Gasket Pkg, Seal Cap	204292	204292

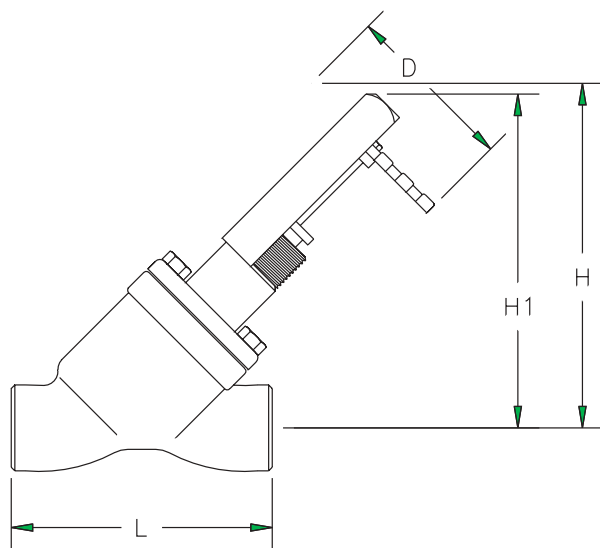


Item	Description
1	Packing nut
2	O-Ring
3	O-ring carrier
4	O-Ring
5	Washer
6	Packing
7	Washer
8	Bonnet
9	Bonnet Bolt
10	Gasket
11	Stem
12	Spring
13	Cylinder
14	Stem Stop
15	Disc Carrier
16	Seat Disc
17	Retaining Washer
18	Seat Disc Retainer
19	Washer
20	Nameplate
21	Washer
22	Screw
23	Handwheel



Butt Weld (1-1/4" - 8") Angle

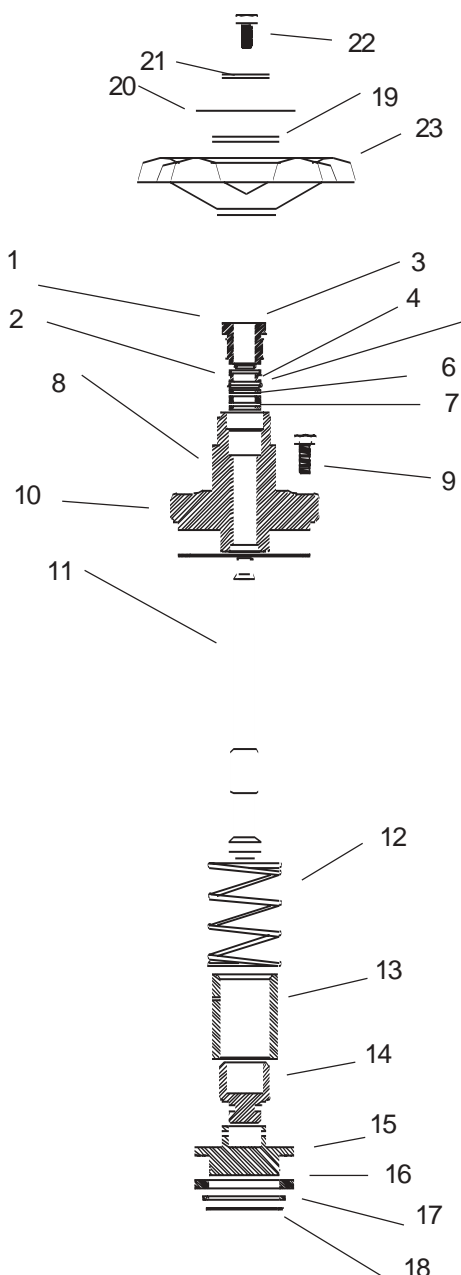
Butt Weld Angle Dimensions In Inches					
Valve Size	L	L1	H	H1	D
1-1/4" Angle	2.75	2.75	7.75	8.25	5.40
1-1/2" Angle	2.63	2.63	8.12	9.12	5.40
2" Angle	3.00	3.00	8.50	8.75	5.40
2-1/2" Angle	3.63	3.63	8.63	8.63	5.40
3" Angle	3.63	3.88	11.12	11.75	6.75
4" Angle	4.62	5.00	11.38	12.00	6.75
5" Angle	6.00	6.00	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



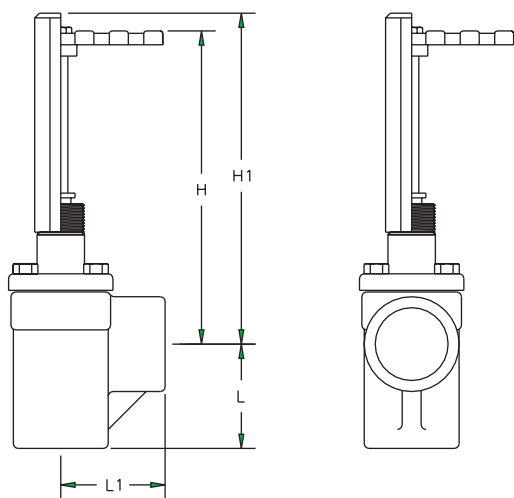
Butt Weld (1-1/4" - 8") Globe Y

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

		SPARE PARTS FOR BUTT WELD								
		STOP / CHECK VALVE								
		PORT SIZE								
ITEM	DESCRIPTION	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	5"	6"	8"
19-23	Handwheel Kit	204269	204269	204269	204269	204270	204270	204271	204271	204271
19-23	SS Handwheel Kit	205707	205707	205707	205707	205708	205708	205709	205709	205709
	Cap Kit, Seal	204274	204274	204274	204274	204275	204275	204633	204633	204634
1-7	Packing Kit	204472	204472	204472	204472	204473	204473	204474	204474	204474
	Plug Stem Kit, Hand									
	SS Plug Stem Kit, Hand									
15-18	Disc Carrier Asm	206837	206837					206853	206854	206855
21-24	Disc Kit	204322	204322	204323	204324	204325	204326	204327	204328	204329
1-18	Bonnet Assembly, Hand	206831	206831	6832	206833	206834	206835	206850	206851	206852
10	Gasket Pkg, Bonnet	204283	204283	204284	4285	204286	204287	204288	204289	204290
0	Gasket Pkg, Seal Cap	204292	201292	204292	204292	204293	204293	204295	204295	204295

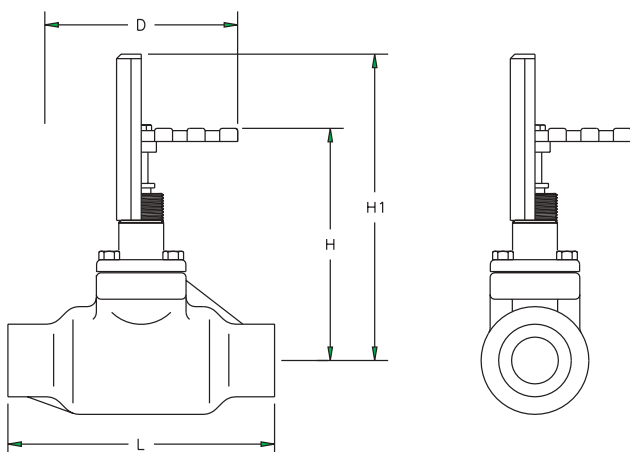


Item	Description
1	Packing nut
2	O-Ring
3	O-ring carrier
4	O-Ring
5	Washer
6	Packing
7	Washer
8	Bonnet
9	Bonnet Bolt
10	Gasket
11	Stem
12	Spring
13	Cylinder
14	Stem Stop
15	Disc Carrier
16	Seat Disc
17	Retaining Washer
18	Seat Disc Retainer
19	Washer
20	Nameplate
21	Washer
22	Screw
23	Handwheel



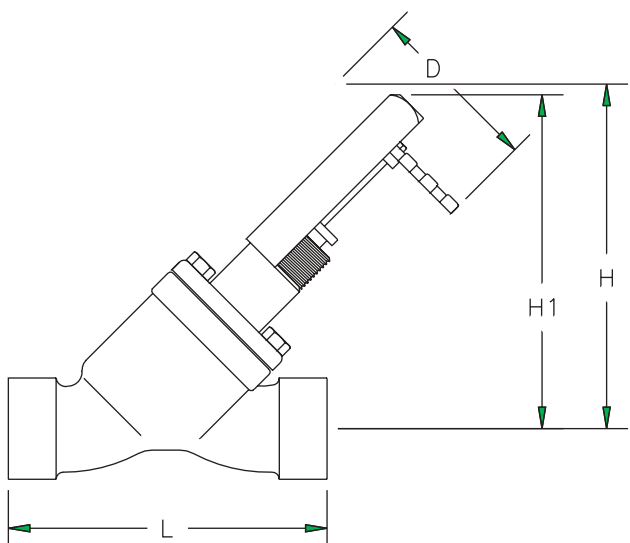
Socket Weld Angle Dimensions In Inches					
Valve Size	L	L1	H	H1	D
3/4" Angle	1.50	2.00	5.75	6.50	4.00
1" Angle	1.50	2.00	5.75	6.50	4.00
1-1/4" Angle	2.75	2.75	7.88	8.25	5.40
1-1/2" Angle	2.75	2.75	7.88	8.25	5.40
2" Angle	3.12	3.12	8.38	8.63	5.40
2-1/2" Angle	3.75	3.75	9.00	9.25	5.40
3" Angle	3.88	3.88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

Socket Weld (3/4" - 4") Angle



Socket Weld Globe "T" Dimensions In Inches				
Valve Size	L	H	H1	D
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 (3/4" - 2-1/2") Globe T

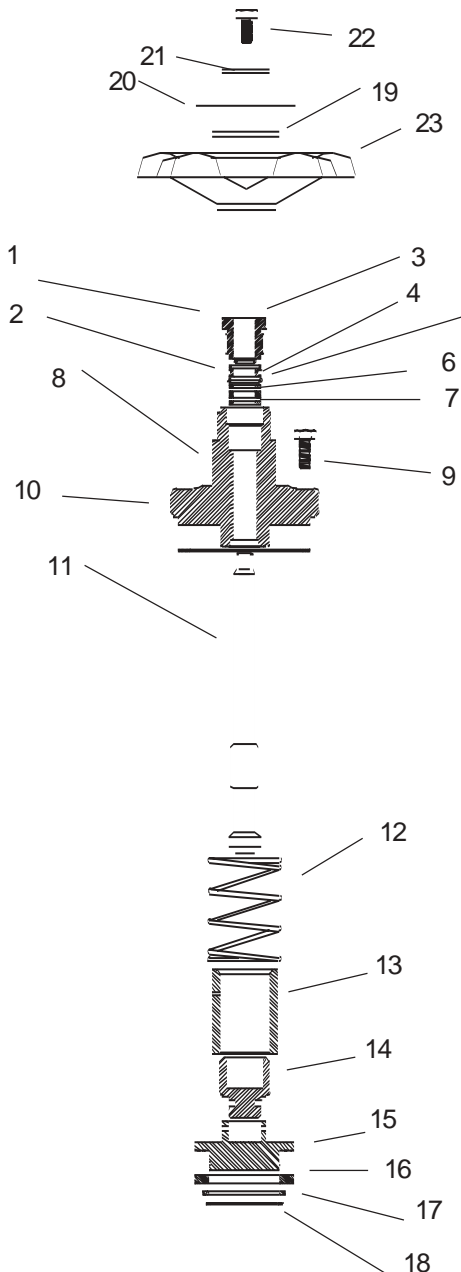


Socket Weld "Y" Dimensions In Inches				
Valve Size	L	H	H1	D
1-1/4" Globe	6.38	8.25	7.88	5.40
1-1/2" Globe	6.38	8.25	7.88	5.40
2" Globe	8.00	9.50	8.63	5.40
2-1/2" Globe	9.25	10.50	9.50	5.40
3" Globe	11.50	12.38	11.63	6.75
4" Globe	13.88	13.75	12.63	6.75

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

SPARE PARTS FOR SOCKET WELD STOP / CHECK VALVES

ITEM	DESCRIPTION	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"
19-23	Handwheel Kit	204268	204268	204269	204269	204269	24269	204270	204270
19-23	SS Handwheel Kit	205706	205706	205707	205707	205707	205707	205708	205708
	Cap Kit, Seal	204273	204273	204274	204274	204274	204274	204275	204275
1-7	Packing Kit	204471	204471	204472	204472	204472	204472	204473	204473
	Plug Stem Kit, Hand								
	SS Plug Stem Kit, Hand								
	Disc Carrier Asm	206836	206836	206837	206837				
21-24	Disc Kit			204322	204322	204323	204324	204325	204326
1-18	Bonnet Assembly, Hand	206830	206830	206831	206831	206832	206833	206834	206835
10	Gasket Pkg, Bonnet	204282	204282	204283	204283	204284	204285	204286	204287
	Gasket Pkg, Seal Cap	204292	204292	204292	204292	204292	204292	204293	204293



Item	Description
1	Packing nut
2	O-Ring
3	O-ring carrier
4	O-Ring
5	Washer
6	Packing
7	Washer
8	Bonnet
9	Bonnet Bolt
10	Gasket
11	Stem
12	Spring
13	Cylinder
14	Stem Stop
15	Disc Carrier
16	Seat Disc
17	Retaining Washer
18	Seat Disc Retainer
19	Washer
20	Nameplate
21	Washer
22	Screw
23	Handwheel

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 STOP CHECK VALVE SPECIFICATIONS				
FLOW PATH	GLOBE	ANGLE	GLOBE	ANGLE
Connections	Threaded & S.W.		S.W. & B.W.	
Sizes	3/4", 1", 1-1/4", 1-1/2"		2", 2-1/2", 3", 4", 5", 6", 8"	
Bonnet Type	Forged Steel		Ductile Iron	
Body Materials	Cast Steel		Cast Steel	
Packing Materials	Non-Asbestos Graphite		Non-Asbestos Graphite	
Seat Materials	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
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

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.