

Hand Shut-Off and Expansion Valves

Installation Information Rev. A

Type: Angle, Globe "T" & Globe "Y"

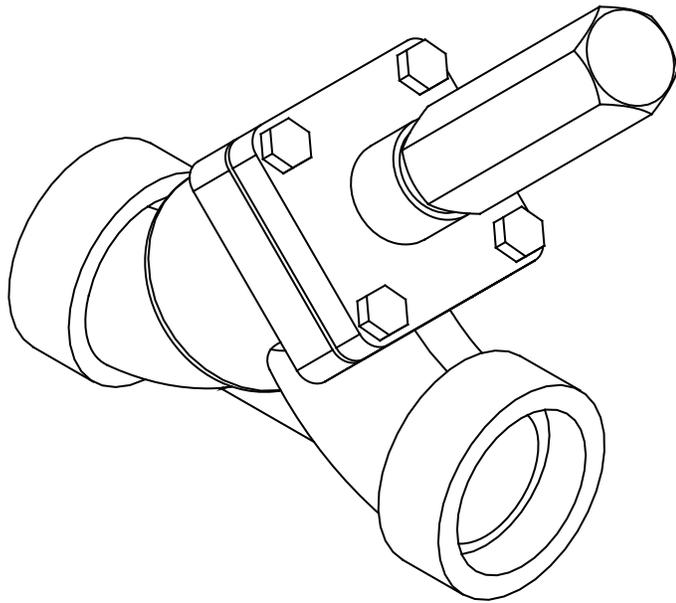
Sizes: 6 - 300 mm (1/4" - 12")

Design Working Pressure: 27.6 bar (400 psig)



Purpose:

Refrigerating Specialties Division offers a complete line of cast iron-steel body valves with stainless steel trim. Hand valves are available in threaded (FPT), socket weld (SW), and butt weld (BW) connections with options in globe "T", angle, and globe "Y" body style. Designed and built to maintain reliability both in their seating and back seating functions. Maintenance costs are reduced and simplified with bolt-on bonnets.



Standard and Extended Bonnets

Contact Information: Product Features:

Parker Hannifin Corporation
Refrigerating Specialties Division
2445 South 25th. Avenue
Broadview, IL 60155-3891

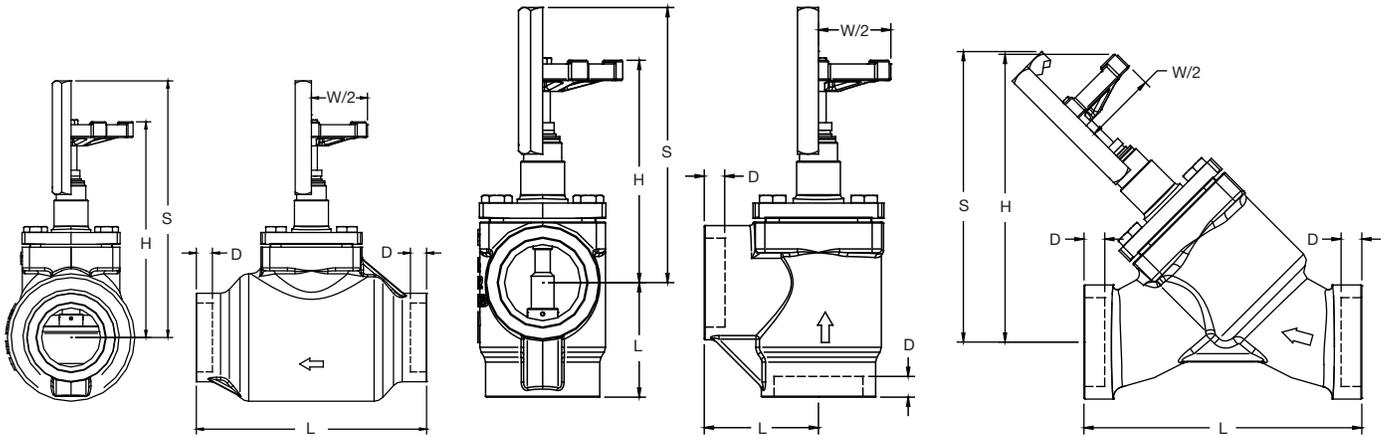
phone (708) 681-6300
fax (708) 681-6306

www.parker.com/refspec

- Suitable for Ammonia, R-22, R-507, R-134a, CO₂, Nitrogen and other common refrigerants
- ASTM 352 LCB Cast Steel Body 6 – 300 mm (1/4" - 12")
- Fluid Temperature Range: -50° C to 204° C (-60° F to 400° F)
- Type 303 Stainless Steel Stem and packing nut; 304 Stainless Steel Bolts
- Reliable Back Seating
- Complete Line of Bolted Bonnets
- 25% Carbon Filled PTFE Seat
- Linear flow "Y" Pattern Globe Bodies (1-1/4" - 12") for Low Pressure Drop
- Extended Bonnets for Insulation
- Hand wheel and Seal Cap Interchangeable on Same Valve



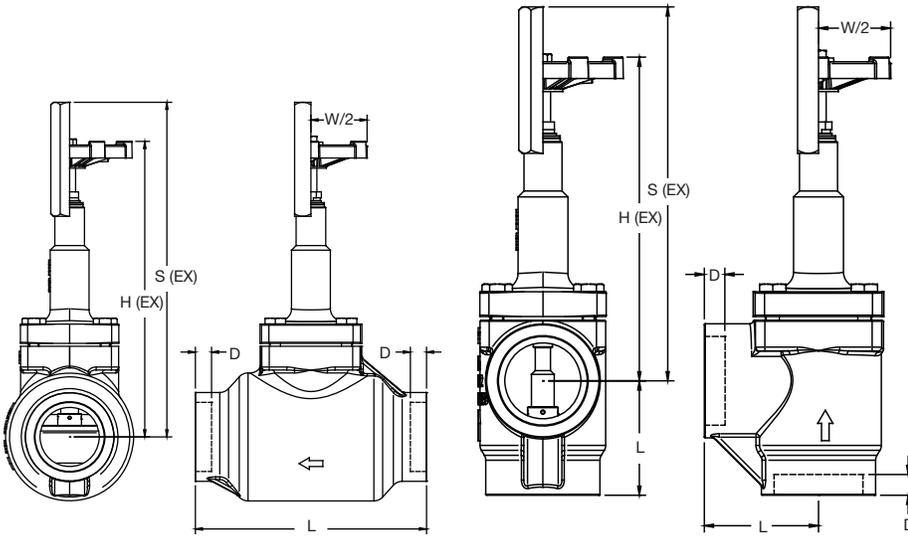
ENGINEERING YOUR SUCCESS.



SW Globe "T" Valve

SW Angle Valve

SW Globe "Y" Valve

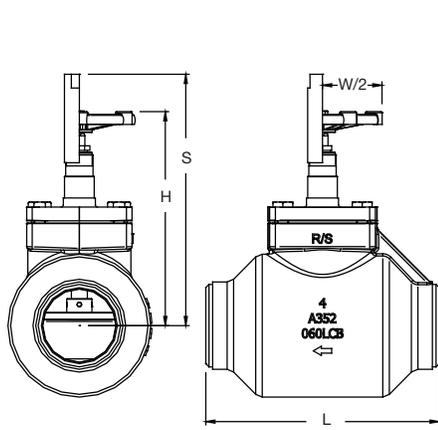


SW EX Globe "T" Valve

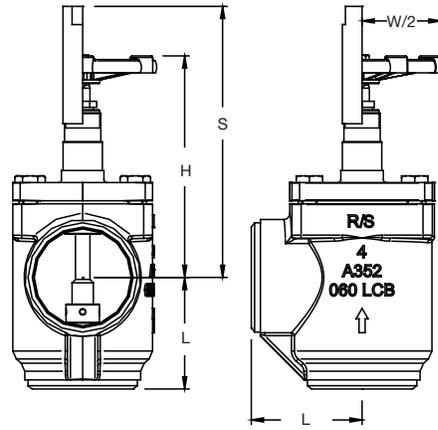
SW EX Angle Valve

Valve Size	D	W	Globe "T"					Angle					Globe "Y"		
			L	H	S	H (EX)	S (EX)	L	H	S	H (EX)	S (EX)	L	H	S
6 mm (1/4")	10.4 mm (0.41")	63.5 mm (2.50")	93.7 mm (3.69")	114.3 mm (4.50")	142.9 mm (5.63")	-	-	44.5 mm (1.75")	114.3 mm (4.50")	142.9 mm (5.63")	-	-	158.8 mm (6.25")	165.1 mm (6.50")	196.9 mm (7.75")
10 mm (3/8")	10.4 mm (0.41")	63.5 mm (2.50")	93.7 mm (3.69")	114.3 mm (4.50")	142.9 mm (5.63")	-	-	44.5 mm (1.75")	114.3 mm (4.50")	142.9 mm (5.63")	-	-	158.8 mm (6.25")	165.1 mm (6.50")	196.9 mm (7.75")
13 mm (1/2")	10.4 mm (0.41")	63.5 mm (2.50")	93.7 mm (3.69")	114.3 mm (4.50")	142.9 mm (5.63")	142.9 mm (5.63")	184.2 mm (7.25")	44.5 mm (1.75")	114.3 mm (4.50")	142.9 mm (5.63")	142.9 mm (5.63")	184.2 mm (7.25")	202.4 mm (7.97")	174.6 mm (6.88")	209.6 mm (8.25")
20 mm (3/4")	13.6 mm (0.53")	108.0 mm (4.25")	99.5 mm (3.92")	152.4 mm (6.00")	190.5 mm (7.50")	190.5 mm (7.50")	215.9 mm (8.50")	52.4 mm (2.06")	152.4 mm (6.00")	190.5 mm (7.50")	190.5 mm (7.50")	215.9 mm (8.50")	228.6 mm (9.00")	215.9 mm (8.50")	231.8 mm (9.13")
25 mm (1")	12.7 mm (0.50")	108.0 mm (4.25")	99.5 mm (3.92")	152.4 mm (6.00")	190.5 mm (7.50")	190.5 mm (7.50")	215.9 mm (8.50")	52.4 mm (2.06")	152.4 mm (6.00")	190.5 mm (7.50")	190.5 mm (7.50")	215.9 mm (8.50")	285.8 mm (11.25")	257.2 mm (10.13")	285.8 mm (11.25")
32 mm (1-1/4")	14.3 mm (0.56")	136.5 mm (5.38")	174.8 mm (6.88")	165.1 mm (6.50")	206.4 mm (8.13")	206.4 mm (8.13")	257.2 mm (10.13")	67.6 mm (2.66")	165.1 mm (6.50")	206.4 mm (8.13")	206.4 mm (8.13")	228.6 mm (9.00")	339.7 mm (13.38")	279.4 mm (11.00")	304.8 mm (12.00")
40 mm (1-1/2")	14.3 mm (0.56")	136.5 mm (5.38")	207.8 mm (8.18")	168.3 mm (6.23")	209.6 mm (8.25")	209.6 mm (8.25")	292.1 mm (11.50")	66.3 mm (2.61")	168.3 mm (6.23")	209.6 mm (8.25")	209.6 mm (8.25")	244.5 mm (9.63")	-	-	-
50 mm (2")	17.3 mm (0.68")	136.5 mm (5.38")	207.8 mm (8.18")	171.5 mm (6.75")	219.1 mm (8.63")	219.1 mm (8.63")	292.1 mm (11.50")	78.1 mm (3.08")	171.5 mm (6.75")	219.1 mm (8.63")	219.1 mm (8.63")	254.0 mm (10.00")	-	-	-
65 mm (2-1/2")	17.3 mm (0.68")	136.5 mm (5.38")	241.3 mm (9.50")	209.6 mm (8.25")	231.8 mm (9.13")	231.8 mm (9.13")	311.2 mm (12.25")	92.1 mm (3.63")	209.6 mm (8.25")	231.8 mm (9.13")	231.8 mm (9.13")	266.7 mm (10.50")	-	-	-
75 mm (3")	17.3 mm (0.68")	158.8 mm (6.25")	-	-	-	-	-	92.7 mm (3.65")	257.2 mm (10.13")	295.3 mm (11.63")	295.3 mm (11.63")	282.6 mm (11.13")	-	-	-
100 mm (4")	20.8 mm (0.82")	158.8 mm (6.25")	-	-	-	-	-	112.0 mm (4.41")	273.1 mm (10.75")	308.0 mm (12.13")	308.0 mm (12.13")	327.0 mm (12.88")	-	-	-

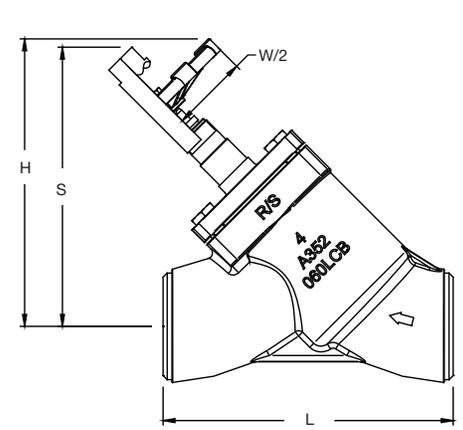
Socket Weld (SW) Valve Dimension Table for Standard and Extended (EX) Bonnets



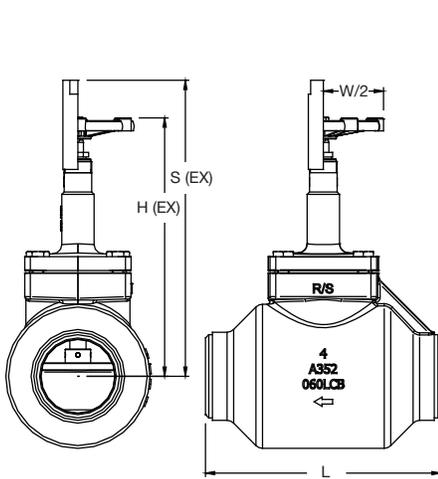
WN Globe "T" Valve



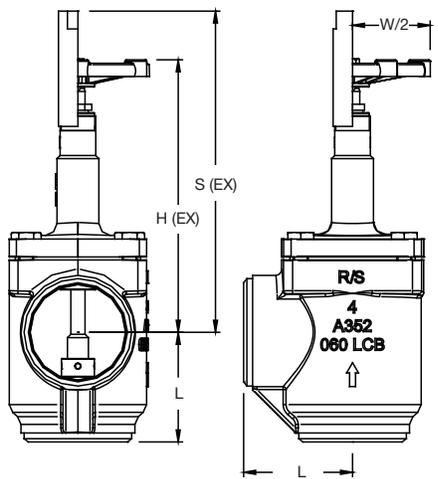
WN Angle Valve



WN Globe "Y" Valve



WN EX Globe "T" Valve



WN EX Angle Valve

Valve Size	W	Globe "T"					Angle					Globe "Y"		
		L	H	S	H (EX)	S (EX)	L	H	S	H (EX)	S (EX)	L	H	S
32 mm (1-1/4")	136.5 mm (5.38")	-	-	-	-	-	67.6 mm (2.66")	165.1 mm (6.50")	206.4 mm (8.13")	206.4 mm (8.13")	228.6 mm (9.00")	177.8 mm (7.00")	165.1 mm (6.50")	196.9 mm (7.75")
40 mm (1-1/2")	136.5 mm (5.38")	-	-	-	-	-	66.3 mm (2.61")	168.3 mm (6.23")	209.6 mm (8.25")	209.6 mm (8.25")	244.5 mm (9.63")	193.8 mm (7.63")	165.1 mm (6.50")	196.9 mm (7.75")
50 mm (2")	136.5 mm (5.38")	-	-	-	-	-	77.1 mm (3.04")	171.5 mm (6.75")	219.1 mm (8.63")	219.1 mm (8.63")	254.0 mm (10.00")	206.2 mm (8.12")	174.6 mm (6.88")	209.6 mm (8.25")
65 mm (2-1/2")	136.5 mm (5.38")	-	-	-	-	-	92.1 mm (3.63")	209.6 mm (8.25")	231.8 mm (9.13")	231.8 mm (9.13")	266.7 mm (10.50")	247.7 mm (9.75")	215.9 mm (8.50")	231.8 mm (9.13")
75 mm (3")	158.8 mm (6.25")	282.6 mm (11.13")	308.0 mm (12.13")	346.1 mm (13.63")	336.6 mm (13.25")	346.1 mm (13.63")	91.4 mm (3.60")	257.2 mm (10.13")	295.3 mm (11.63")	295.3 mm (11.63")	282.6 mm (11.13")	285.8 mm (11.25")	257.2 mm (10.13")	285.8 mm (11.25")
100 mm (4")	158.8 mm (6.25")	304.8 mm (12.00")	390.5 mm (15.38")	425.5 mm (16.75")	387.4 mm (15.25")	425.5 mm (16.75")	112.0 mm (4.41")	273.1 mm (10.75")	308.0 mm (12.13")	308.0 mm (12.13")	327.0 mm (12.88")	300.1 mm (11.82")	279.4 mm (11.00")	304.8 mm (12.00")
125 mm (5")	304.8 mm (12.00")	-	-	-	-	-	154.0 mm (6.06")	301.6 mm (11.88")	400.1 mm (15.75")	-	-	489.0 mm (19.25")	377.8 mm (14.88")	447.7 mm (17.63")
150 mm (6")	304.8 mm (12.00")	-	-	-	-	-	162.6 mm (6.40")	384.2 mm (15.13")	482.6 mm (19.00")	-	-	555.6 mm (21.88")	457.2 mm (18.00")	527.1 mm (20.75")
200 mm (8")	304.8 mm (12.00")	-	-	-	-	-	200.0 mm (7.88")	447.7 mm (17.63")	546.1 mm (21.50")	-	-	717.6 mm (28.25")	546.1 mm (21.50")	616.0 mm (24.25")
250 mm (10")	412.8 mm (16.25")	-	-	-	-	-	247.7 mm (9.75")	117.5 mm (4.63")	682.6 mm (26.88")	-	-	892.2 mm (35.13")	730.3 mm (28.75")	771.5 mm (30.38")
300 mm (12")	412.8 mm (16.25")	-	-	-	-	-	266.7 mm (10.50")	736.6 mm (29.00")	793.8 mm (31.25")	-	-	1027.4 mm (40.45")	844.6 mm (33.25")	885.8 mm (34.88")

Weld Neck (WN) Valve Dimension Table for Standard and Extended (EX) Bonnets

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 seats, and stem seals should be tested for leaks at pressure levels called for in appropriate codes.

Socket and Butt Weld

Welding valves may be installed in horizontal or vertical pipelines. Stems may be horizontal, 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 seat valve disc, although not required.

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.

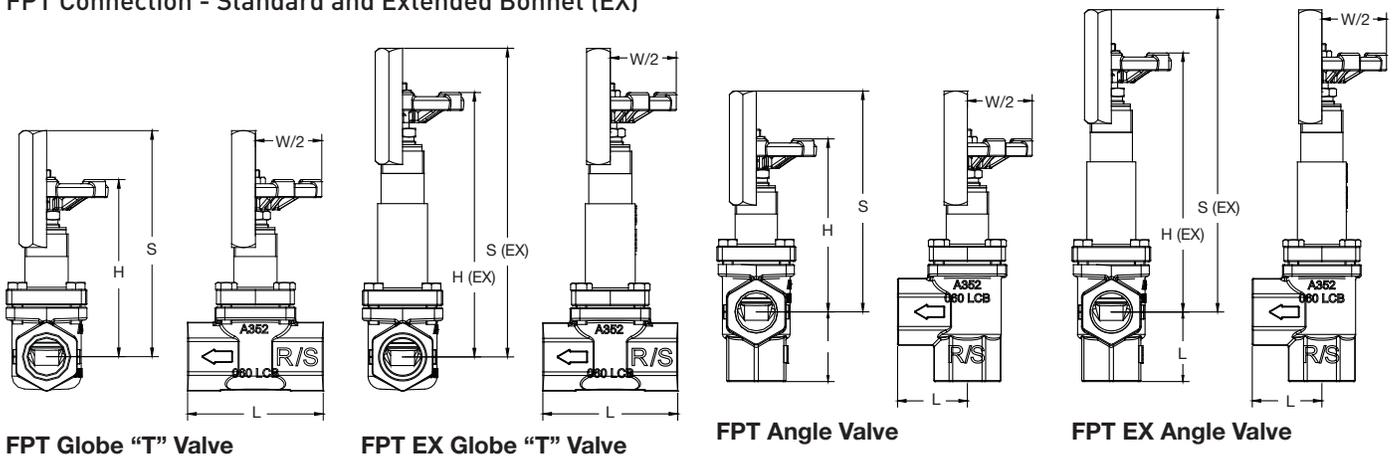
Use of welding rings is optional but recommended for

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 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 seats, and stem seals should be tested for leaks at pressure levels called for in appropriate codes.

FPT Connection - Standard and Extended Bonnet (EX)



Valve Size	W	Globe "T"					Angle				
		L	H	S	H (EX)	S (EX)	L	H	S	H (EX)	S (EX)
6 mm (1/4")	63.5 mm (2.50")	93.7 mm (3.69")	114.3 mm (4.50")	143.0 mm (5.63")	—	—	44.5 mm (1.75")	114.3 mm (4.50")	143.0 mm (5.63")	—	—
10 mm (3/8")	63.5 mm (2.50")	93.7 mm (3.69")	114.3 mm (4.50")	143.0 mm (5.63")	—	—	44.5 mm (1.75")	114.3 mm (4.50")	143.0 mm (5.63")	—	—
13 mm (1/2")	63.5 mm (2.50")	93.7 mm (3.69")	114.3 mm (4.50")	143.0 mm (5.63")	184.2 mm (7.25")	206.5 mm (8.13")	44.5 mm (1.75")	114.3 mm (4.50")	143.0 mm (5.63")	184.2 mm (7.25")	206.5 mm (8.13")
20 mm (3/4")	108.0 mm (4.25")	99.6 mm (3.92")	152.4 mm (6.00")	190.5 mm (7.50")	215.9 mm (8.50")	254.0 mm (10.0")	52.4 mm (2.06")	152.4 mm (6.00")	190.5 mm (7.50")	215.9 mm (8.50")	254.0 mm (10.0")
25 mm (1")	108.0 mm (4.25")	99.6 mm (3.92")	152.4 mm (6.00")	190.5 mm (7.50")	215.9 mm (8.50")	254.0 mm (10.0")	52.4 mm (2.06")	152.4 mm (6.00")	190.5 mm (7.50")	215.9 mm (8.50")	254.0 mm (10.0")

FPT Valve Dimension Table for Standard and Extended (EX) Bonnets

Safe Operation (See Bulletin RSBHV)

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 which could result from liquid expansion. Temperature increase in a piping section full of solid liquid will cause high pressure due to the expanding liquid which 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 valves upstream of solenoid valves or downstream of check valves be closed 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 which 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.

