



## Instruction Sheet

### Refrigeration Pressure Relief Valves

<b><u>System Pressure</u></b>	25"Hg Vacuum to 700 PSIG Maximum Working Pressure
<b><u>Compatibility</u></b>	Compatible with all HFC, HCFC & CFC Refrigerants
<b><u>Valve Set Pressure</u></b>	Stamped on valve
<b><u>Discharge Capacity</u></b>	Stamped on valve
<b><u>Temperature rating:</u></b>	T min = -40° C (-40°F) to +149°C (+ 300°F)
<b><u>Shelf Life</u></b>	2 years prior to installing on system

The user is responsible for proper installation, sizing for system and venting of Relief Valves. Refer to ANSI/ASHRAE Safety Code for Mechanical Refrigeration for guidance.

Relief valve manufacturers recommend that the system running pressure is 80% of relief valve set pressure.

**Replacement Requirements** Although the valve will reseat if not obstructed it is recommended that the valve be changed after discharge, when changing refrigerant & when equipment is rebuilt. Replace valve after any clean out of system or burn out.

**Precautions**

- Do not stand on valve.
- Do not obstruct the inlet or outlet end of valve
- Care must be taken to eliminate foreign material from getting into the valve from either end
- A trained technician must install valve.
- Avoid over torque of the valve into the system and/or the discharge end. Proper torque listed below.
- Warranty void if seal is removed.
- Do not attempt to reset valve.

### Thread Torque Recommendations

FLARE THREADS			NPTF THREADS		
Size	Min. (ft-lbs)	Max. (ft-lbs)	Size	Min. (in-lbs)	Max. (in-lbs)
1/4"	8	10	1/8"	180	190
3/8"	15	25	1/4"	240	300
1/2"	25	35	3/8"	360	420
5/8"	40	55	1/2"	420	480
3/4"	50	60	3/4"	540	600



Field evaluation of refrigerant pressure relief valves often raises questions concerning the actual performance of the valves in accordance with ASME requirements. Field testing of pressure relief valves often includes the following test:

- Internal and External Leak Test
- Thermal Shock Test
- Open/Pop Performance Test
- Refrigerant Compatibility Test

There are two primary areas of testing that raises the majority of concern. First is the Internal leakage past the seat and second is performance testing.

#### **Internal Leakage Past Seat**

Field testing for leak rate evaluation of pressure relief valves is a crucial and critical test. Often valves are tested with hand held refrigerant leak detection devices. These devices along with the procedural methods often conclude a valve is leaking past the seat. Due to the nature of the refrigerants and design of relief valves, refrigerant is often accumulated in the area of the outlet end of the valve sending a false signal that the valve is leaking. It is recommended by both Mueller and leak detection equipment manufacturers that the area to be metered shall be evacuated or cleared prior to testing. This eliminates the potential for leak accumulation. An additional recommendation to minimize false readings is to carefully read and follow the equipment manufacturer's recommendations for testing methods.

#### **Performance Testing**

Field testing for evaluation of performance of pressure relief valves includes the start to discharge (open) and full discharge (pop). Often in field evaluations an inert gas is utilized for the testing media. This media is foreign to actual application of the valve. The valve seat is designed to be installed into a refrigerant and oil environment. This controlled atmosphere provides the necessary lubricants for the valve to function correctly. Without these ingredients, field testing may often find valves that perform higher than the stamped setting on the valve. Field testing for performance should be limited to applying the valve to its natural environment before final acceptance or rejection.



## ASME SECTION VIII DIVISION 1 ALLOWABLE STANDARD

STAMPED SET PRESSURE P.S.I.G.	STAMPED SET PRESSURE BAR	Allowable Tolerance	
P.S.I.G.	BAR	-3% (MIN P.S.I.G.)	+3% (MAX P.S.I.G.)
116	7.99	112.5	119.5
150	10.34	145.5	154.5
175	12.07	169.8	180.3
200	13.79	194.0	206.0
225	15.51	218.3	231.8
250	17.24	242.5	257.5
275	18.96	266.8	283.3
300	20.68	291.0	309.0
325	22.41	315.3	334.8
350	24.13	339.5	360.5
375	25.86	363.8	386.3
400	27.58	388.0	412.0
425	29.30	412.3	437.8
450	31.03	436.5	463.5
475	32.75	460.8	489.3
500	34.47	485.0	515.0
525	36.20	509.3	540.8
550	37.92	533.5	566.5
575	39.64	557.8	592.3
600	41.37	582.0	618.0
625	43.09	606.3	643.8
650	44.82	630.5	669.5
675	46.54	654.8	695.3
700	48.26	679.0	721.0

NOTE: the above +/-3% tolerance also fulfills EN ISO 4126-1 requirements.