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Cold

W.A.R.

Whether it's Air Conditioning or Refrigeration



Relief Valves

by: Garth Denison
Senior Application Engineer

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Pressure Relief Valves Equations

To calculate required discharge capacity in pounds of air per minute (or kg / min) for a pressure vessel, use formula:

$$C = kfDL$$

in which:

- C** = Minimum required discharge capacity of a pressure relief device in lbs. air/min.
- k** = factor dependent on units used
(k = 1 for IP units, k = 4.88 for SI units)
- f** = refrigerant factor
- D** = outside diameter of vessel in feet
- L** = length of vessel in feet

NOTE: The pressure relief valve is to have a maximum setting equal to the working pressure marked on the receiver regardless of the refrigerant in use.

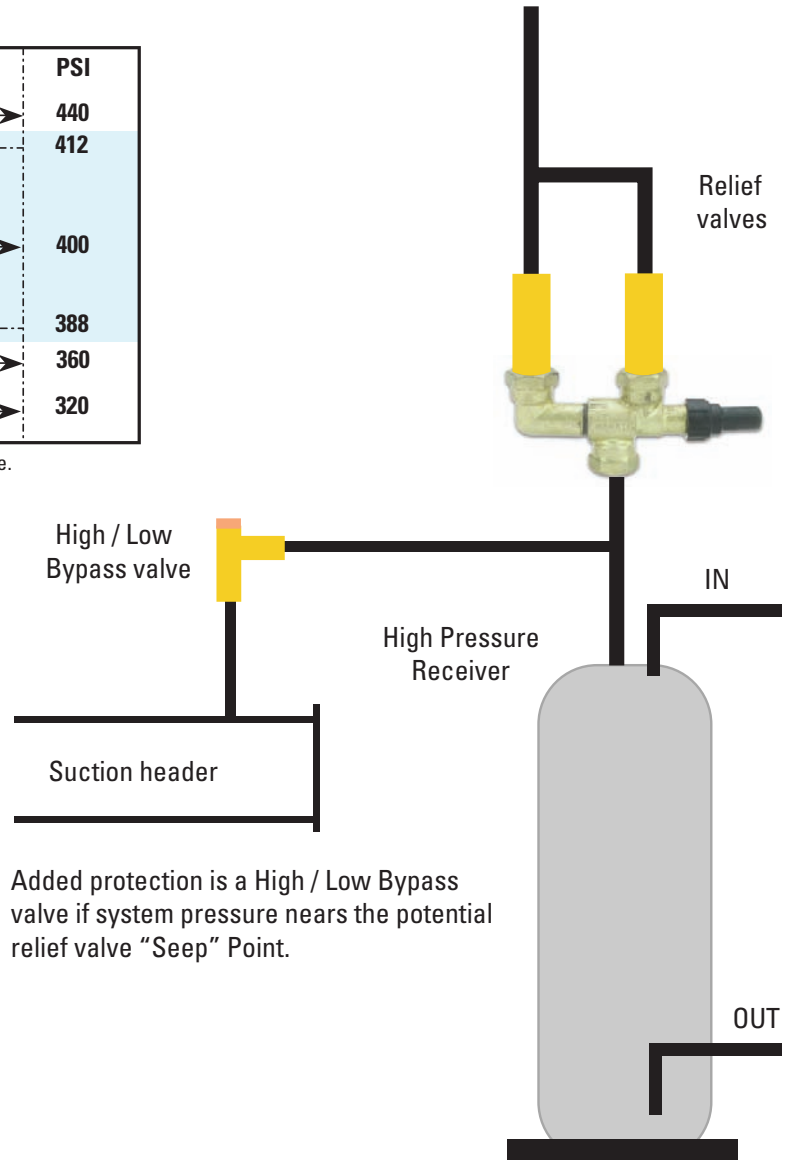
Discharge capacity (lbs. of air per minute) at standard conditions: 1 lb. of air @ 60°F = 13.34 cu. ft.

Refrigerant	Value of f
R-11, R-32, R-113, R-123, R-142b, R-152a, R-290, R-600, R-600a, R-764	1.0
R-12, R-22, R-114, R-124, R-134a, R-401A, R-401B, R-405A, R-406A, R-407C, R-409A, R-411A, R-411B, R-412A, R-414B, R-500, R-1270	1.6
R-143a, R-402B, R-403A, R-408A, R-413A	2.0
R-115, R-402A, R-403B, R-404A, R-407B, R-410A, R-502, R-507, R-509A	2.5
R-718	0.2
R-717	0.5
VLT Refrigerants	
R-23, R-170, R-744, R-1150, R-508B	1.0
R-13, R-13B1, R-503	2.0
R-14	2.5

A typical installation with a pressure vessel having a maximum working pressure of 400 PSI might be:

		PSI
+ 10 %	R.V. Full Open	440
+ 3 %	Relief Valve (R.V.) Setting	412
R.V. Setting Tolerance		400
- 3 %		388
- 10 %	Potential R.V. "Seep" Point	360
	Maximum system operating pressure	320

Relief valve parameters as a percent of R.V. set pressure.



Added protection is a High / Low Bypass valve if system pressure nears the potential relief valve "Seep" Point.

Source: Henry Technologies

Relief Valves 400 PSI:

Set at the design working pressure of the vessel OR 25% higher than the maximum working pressure of the system.

High / Low:

Set at approximately 80 - 85% of relief valve setting. 330 PSI

Relief Valve parameters table below for code parameters for a 400 PSI relief valve.

Receiver Components & Accessories

