

Pressure Relief Valves, Refrigerant & Discharge Capacity

How to select a relief valve:

- Determine the minimum discharge capacity required
- Determine pressure setting. This relief setting cannot exceed the design pressure of the liquid receiver. However, the relief valve setting should be at least 25% higher than the maximum system operating pressure.
- Determine the size connection required.
- Select valve.

Discharge Capacity

The minimum required discharge capacity of the pressure relief device or fusible plug for each pressure vessel is determined by the following formula, specified by the ASHRAE Standard 15, Safety Code for Mechanical Refrigeration:

$C = kfDL$ where:

C = minimum required discharge capacity of the relief device, lb. air/min (kg air/min)

D = outside diameter of vessel, ft (m)

L = length of the vessel, ft (m)

K = factor dependent on units used (K = 1 for I-P units, K = 4.88 for SI units)

F = factor dependent on the kind of refrigerant from Discharge Capacity chart

Discharge Capacity (air/min)

psig	Prefix	A lb	B lb	C lb	D lb	E lb	F lb	G lb
235	AD	4.3	9.1	20.1	33.7	55.9	91.8	39
300	AE	5.4	11.5	25.4	42.5	70.5	115.8	49.2
350	AG	6.3	13.3	29.5	49.3	81.8	134.3	57.1
400	AH	7.1	15.2	33.5	56.1	93	152.7	64.9
425	AI	7.6	16.1	35.6	59.5	98.6	162	68.8
450	AJ	8	17	37.6	62.9	104.3	171.2	72.8

bar	Prefix	A kg	B kg	C kg	D kg	E kg	F kg	G kg
16	AD	2	4.1	9.1	15.3	25.4	41.6	17.7
21	AE	2.4	5.2	11.5	19.3	32	52.5	22.3
24	AG	2.9	6	13.4	22.4	37.1	60.9	25.9
28	AH	3.2	6.9	15.2	25.4	42.2	69.3	29.4
29	AI	3.4	7.3	16.1	27	44.7	73.5	31.2
31	AJ	3.6	7.7	17.1	28.5	47.3	77.7	33

Refrigerant

When used on the lowside of a limited-charge cascade system
(Value in parentheses is metric):

Value of F

R-23, R-170, R-744, R-1150, R-508A, R-508B	1.0 (0.082)
R-13, R-13B1, R-503	2.0 (0.163)
R-14	2.5 (0.203)

Other Applications:

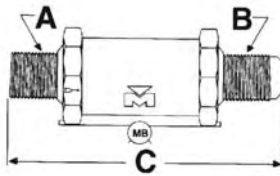
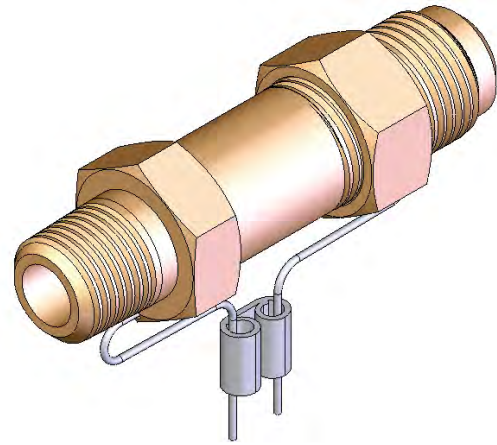
R-718	0.2 (0.016)
R-717	0.5 (0.041)
R-11, R-32, R-113, R-123, R-142b, R-152a, R-290, R-600, R-600a, R-764	1.0 (0.082)
R-12, R-22, R-114, R-1124, R-134a, R-401A, R-401B, R-401C, R-405A, R-406A, R-407C, R-407D, R-407E, R-409A, R-409B, R-411A, R-411B, R-411C, R-412A, R-414A, R-414B, R-500, R-1240	1.6 (0.131)
R-143a, R-402B, R-403A, R-407A, R-408A, R-413A	2.0 (0.163)
R-115, R-402A, R-403B, R-404A, R-407B, R-410A, R-410B, R-502, R-507A, R-509A	2.5 (0.203)



Pressure Relief Valves, Straight

Look for these Mueller advantages:

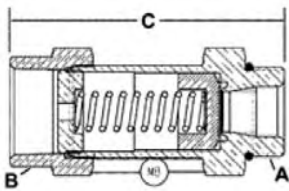
- Maximum working pressure (PS): indicated by prefix selection
- Working temperature range (TS): -40°F/300°F, -40°C/149°C
- Compatible with all CFC, HCFC and HFC refrigerants and oils
- CE Certified
- RoHS Compliant
- Designed primarily for use on liquid receiver applications above the liquid refrigerant level (It is recommended that the factory be consulted before the valves are used on other applications.)
- Satisfy ASHRAE Standard 15 code requirements for a refrigerant vessel safety device (Application information can also be found in the ASHRAE Guide and Data Book.)
- Comply with ASME code for unfired pressure vessels
- Discharge rates are Certified by National Board of Boiler and Pressure Vessel Inspectors
- Available with multiple seat configurations for a wide range of applications
- Designed for maximum discharge capacities
- High pressure settings available



Straight Thru - NPTFE Inlet to Flare Outlet

Part No.	Inlet A	Outlet B	C (in)	Wt (lb)	Discharge Table
A 15501	1/4	3/8	2 21/32	0.19	A
A 15502	3/8	3/8	2 13/16	0.33	B
A 15503	3/8	1/2	3	0.36	B
A 15504	1/2	5/8	4 3/16	0.84	C
B 33752	1/4	3/8	2 13/16	0.32	B
B 33753	1/4	1/2	3	0.41	B

Part No.	Inlet A	Outlet B	C (mm)	Wt (kg)	Discharge Table
A 15501	1/4	3/8	67	0.09	A
A 15502	3/8	3/8	71	0.15	B
A 15503	3/8	1/2	76	0.16	B
A 15504	1/2	5/8	106	0.38	C
B 33752	1/4	3/8	71	0.15	B
B 33753	1/4	1/2	76	0.19	B

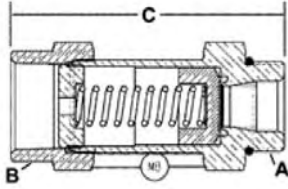


Straight Thru - NPTFE Inlet to NPTFI Outlet

Part No.	Inlet A	Outlet B	C (in)	Wt (lb)	Discharge Table
A 18356	1/2	1/2	4	0.89	G
A 18357	1/2	3/4	4	0.89	G
A 15506	3/4	3/4	5	1.49	D
A 18358	3/4	3/4	4	0.89	G
A 17840	1	1	4 9/16	1.95	E
A 18387	1	1	5	2	F
A 17834	1 1/4	1 1/4	5	2	F

Part No.	Inlet A	Outlet B	C (mm)	Wt (kg)	Discharge Table
A 18356	1/2	1/2	102	0.4	G
A 18357	1/2	3/4	102	0.4	G
A 15506	3/4	3/4	127	0.68	D
A 18358	3/4	3/4	102	0.4	G
A 17840	1	1	116	0.88	E
A 18387	1	1	127	0.91	F
A 17834	1 1/4	1 1/4	127	0.91	F

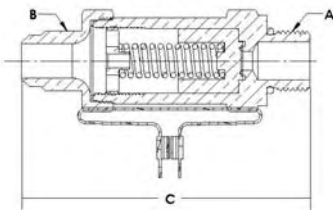
Pressure Relief Valves, Straight cont'd



Straight Thru – Straight Thread Inlet to NPTFI Outlet

Part No.	Inlet A	Outlet B	C (in)	Wt (lb)	Discharge Table
B 34444	7/8-14 UNF-2A	3/4	5	1.53	D
B 34519	1 5/16-12UNF-2S	1	4 3/8	1.37	E
B 34580	1 5/8-12UNF-2A	1 1/4	5	2	F

Part No.	Inlet A	Outlet B	C (mm)	Wt (kg)	Discharge Table
B 34444	7/8-14 UNF 2A	3/4	127	0.69	D
B 34519	1 5/16-12UNF2S	1	111	0.62	E
B 34580	1 5/8-12UNF-2A	1 1/4	127	0.91	F



Straight Thru – Straight Thread to Flare

Part No.	Inlet A	Outlet B	C (in)	Wt (lb)	Discharge Table
B 35413	7/8-14UNF-2A	5/8	4 3/16	0.86	C

Part No.	Inlet A	Outlet B	C (mm)	Wt (kg)	Discharge Table
B 35413	7/8-14UNF-2A	5/8	106	0.39	C

Prefixed for standard settings:

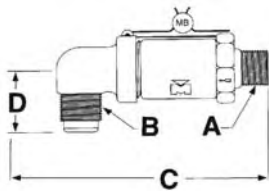
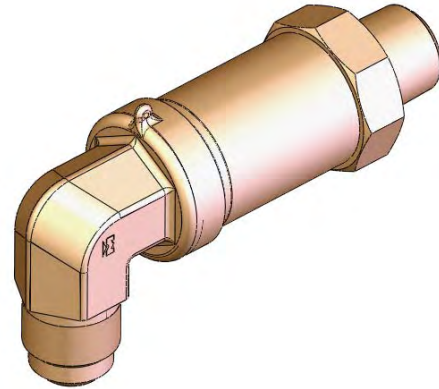
Prefix	psig	bar
AD	235	16
AE	300	21
AG	350	24
AH	400	28
AI	425	29
AJ	450	31

For valves furnished at non-standard settings, use part number as listed in specification charts and indicated exact pressure setting.

Pressure Relief Valves, Angle & Atmospheric

Look for these Mueller advantages:

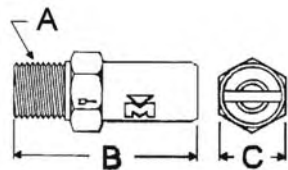
- Maximum working pressure (PS): indicated by prefix selection
- Working temperature range (TS): -40°F/300°F, -40°C/149°C
- Compatible with all CFC, HCFC and HFC refrigerants and oils
- CE Certified
- RoHS Compliant
- Designed primarily for use on liquid receiver applications above the liquid refrigerant level (It is recommended that the factory be consulted before the valves are used on other applications.)
- Satisfy ASHRAE Standard 15 code requirements for a refrigerant vessel safety device (Application information can also be found in the ASHRAE Guide and Data Book.)
- Comply with ASME code for unfired pressure vessels
- Discharge rates are Certified by National Board of Boiler and Pressure Vessel Inspectors
- Available with multiple seat configurations for a wide range of applications
- Designed for maximum discharge capacities
- High pressure settings available



Angle NPTFE to Flare

Part No.	Inlet A	Outlet B	C (in)	D (in)	Wt (lb)	Discharge Table
B 33746	1/4	3/8	2 3/8	1 1/8	0.3	B
B 33754	1/4	1/2	2 7/16	1 5/16	0.43	B
A 15512	3/8	3/8	2 3/8	1 3/8	0.36	B
A 15513	3/8	1/2	2 3/8	1 11/32	0.38	B
A 15514	1/2	5/8	4 3/32	1 9/16	0.98	C

Part No.	Inlet A	Outlet B	C (mm)	D (mm)	Wt (kg)	Discharge Table
B 33746	1/4	3/8	60	29	0.14	B
B 33754	1/4	1/2	62	33	0.20	B
A 15512	3/8	3/8	60	35	0.16	B
A 15513	3/8	1/2	60	34	0.17	B
A 15514	1/2	5/8	104	40	0.44	C



Atmospheric - NPTFE Inlet

Part No.	Inlet A	B (in)	C (in)	Wt (lb)	Discharge Table
A 15508	1/8	1 7/8	3/4	0.12	A
A 15509	1/4	2	3/4	0.13	A
A 17430	3/8	2 1/8	1	0.24	B
B 33755	1/4	2 1/8	1	NA	B

Part No.	Inlet A	B (mm)	C (mm)	Wt (kg)	Discharge Table
A 15508	1/8	48	19	0.05	A
A 15509	1/4	51	19	0.06	A
A 17430	3/8	51	25	0.11	B
B 33755	1/4	54	25	NA	B

Prefixed for standard settings:

Prefix	psig	bar
AD	235	16
AE	300	21
AG	350	24
AH	400	28
AI	425	29
AJ	450	31

For valves furnished at non-standard settings, use part number as listed in specification charts and indicated exact pressure setting.