TRIDENT
World Class Components

Relief Valve

P/N's: 30.071.0, 30.067.0, 30.067.1, 30.068.0, 30.067.2, 30.068.2

Product Data Sheet

Relief Valve

NFPA 20 requires that a safety relief valve to be installed on the discharge side of foam pumps as a mechanism to prevent system over-pressurization for protection of personnel and property. The relief valve must be sized to relieve 100% of the rated pump capacity at a pressure not exceeding 125% of the relief valve set pressure. Trident offers safety relief valves specifically designed for foam fire protection systems utilizing a positive displacement foam pump, and a relief valve is available for each size Trident GP Series Foam Pump offered.

All Trident safety relief valves are bronze and stainless steel construction, with operating set pressures available from 50 PSI [3.5 BAR] to 330 PSI [23 BAR]. The safety relief valve set pressure is typically set at 10% over the foam system designed operating pressure. Each valve is factory set and tested. The relief valve pressure adjusting mechanism is capped and secured with a seal wire to provide evidence of tampering.

UL listed Trident GP Series Foam Pumps are provided with safety relief valves that have been inspected and tested by Underwriter's Laboratories under UL 448C.

Design Features:

- Automatic operation – no manual adjustment required.
- Pre-set operating pressure.
- All bronze, brass, and stainless steel construction with PTFE seals and EPDM seating.
- Suitable for all types of foam concentrates, including fluoroproteins and thixotropic types.
- Back pressure tight.

Applications:

Balanced pressure and direct injection foam firefighting systems.

Specifications:

The safety relief valve shall be assembled of bronze, brass, and stainless steel components with PTFE seals and EPDM seating, all compatible with any foam concentrate type. Valve inlet and outlet ports shall be of NPT connections, sized as shown on the following chart.

Relief valve design shall have the pressure spring mounted above the valve body away from full exposure to the foam concentrate.

Each safety relief valve shall be factory set and tested to a specific set pressure for the foam system designed operating pressure.

Technical Data:

Materials of Construction:

- **Body:** C83600 Cast Bronze.
- **Nozzle:** 360 Alloy Brass.
- **Spring:** 17-7 Stainless Steel.
- **Hood & Cap:** 360 Alloy Brass.
- **Seating Material:** EPDM.

Device Details:

- **Pressure Set Range:** 50 - 330 PSI [3.5 – 23 BAR].
- **Hydrostatic Pressure Test:** 600 PSI [41 BAR].
- **Piping Connections:** All NPT, per chart.
- **Maximum Operating Temperature Rating:** 200°F [93°C].
- **Assembly Weight:** See Chart.
- **Finish:** Brass.

See Other Side For Details and Dimensions

Trident Emergency Products, LLC
2940 Turnpike Drive | Suite #9 | Hatboro, PA 19040 USA
☎ 215-293-0700 🖷 215-293-0701
sales@tridentdirect.com

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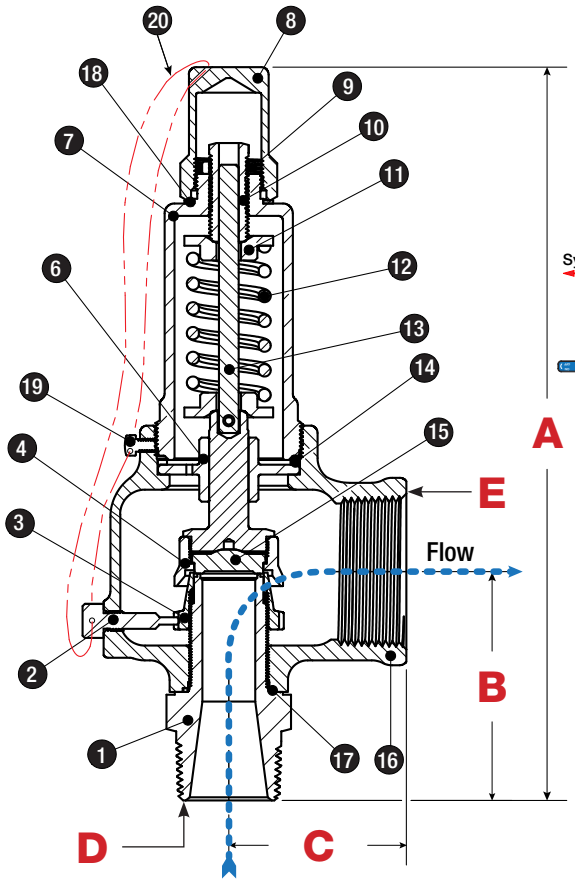
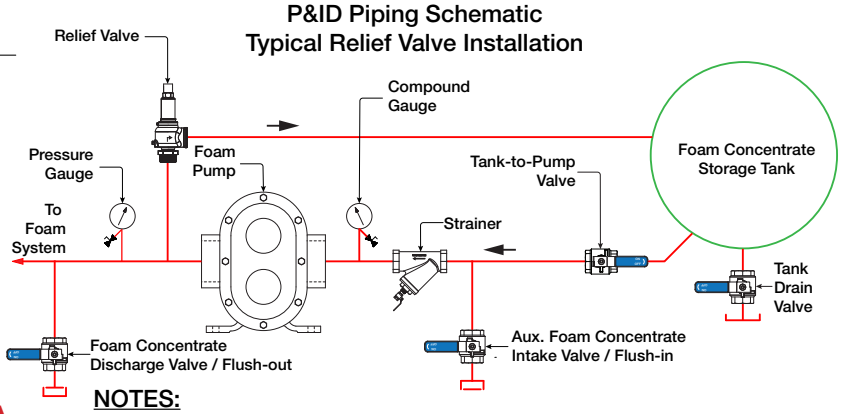


P&ID Piping Schematic
Typical Relief Valve Installation



NOTES:

1. Schematic Represents a Typical Relief Valve Installation into Foam System Piping. Final Design to be Determined by Foam System Engineer and Authority Having Jurisdiction (AHJ).
2. NFPA 20 Does Not Allow for a Shut-off Valve In The Relief Valve Discharge Piping Back To Tank.
3. Exact Valve Types and Stand-by Positions are to be Determined By Foam System Engineer and Authority Having Jurisdiction (AHJ).

Legend:

Normally Open Valve
Normally Closed Valve
Relief Valve

(5) Not Visible in This View
(21) Attached to Valve Body

Item	Description	Material
1	Nozzle	Brass
2	Lock Screw	Brass
3	Lower Ring	Stainless
4	Disc Holder	Brass
5	Disc Holder Shaft	Brass
6	Disc Guide	Brass
7	Bonnet	Brass/Bronze
8	Hood	Brass
9	Lock Nut	Brass
10	Pressure Screw	Brass
11	Spring Plate	Brass
12	Spring	Stainless
13	Spring Post	Brass
14	Disc Guide Washer	PTFE
15	Disc	Stainless
16	Body	Brass/Bronze
17	Nozzle Washer	PTFE
18	Gasket	PTFE
19	Lock Screw	Brass
20	Seal Wire	Braided Steel
21	Nameplate	Stainless

Dimensional Data - US [Metric]

Trident Relief Valve	A	B	C	D	E	Weight US Pounds Kilograms
Part Number	Height	Height to Center of Outlet	Width From Center of Inlet to Edge of Outlet	Male NPT Inlet Port	Female NPT Outlet Port	Lbs. [kG.]
30.071.0	7.38" [187.4mm]	2.38" [60.5mm]	1.63" [41.4mm]	3/4" [19.0mm]	3/4" [19.0mm]	2 Lbs. [0.9 kG.]
30.067.0	9.25" [235.0mm]	2.88" [73.2mm]	2.25" [57.2mm]	1-1/2" [38.1mm]	1-1/2" [38.1mm]	5 Lbs. [2.2 kG.]
30.067.1	10.25" [260.3mm]	3.38" [85.8mm]	2.63" [66.8mm]	1-1/2" [38.1mm]	2" [50.8mm]	9 Lbs. [4.0 kG.]
30.068.0	10.25" [260.3mm]	3.38" [85.8mm]	2.63" [66.8mm]	2" [50.8mm]	2" [50.8mm]	9 Lbs. [4.0 kG.]
30.067.2	11.75 [298.5mm]	3.50" [88.9mm]	2.88" [73.2mm]	1-1/2" [38.1mm]	2-1/2" [63.5mm]	16 Lbs. [7.3kG.]
30.068.2	14.25" [361.9mm]	4.0" [101.6mm]	3.25" [82.5mm]	2" [50.8mm]	3" [76.2mm]	24 Lbs. [10.8 kG.]

Contact Trident Emergency Products for Relief Valves used in UL® Listed foam pump applications for proper selection.

Trident Emergency Products, LLC
2940 Turnpike Drive | Suite #9 | Hatboro, PA 19040 USA
☎ 215-293-0700 🖷 215-293-0701
sales@tridentdirect.com

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Relief Valve Selection Chart for **GP Series**™ Foam Pumps

Min: 50 PSI [3.4 BAR]
Max: 330 PSI [22.7 BAR]

Available Relief Valve Models and Sizes Based On Maximum Flow Rate at Specific Set Pressure Point

Available Set Pressure Points		#30.071.0.xxx 3/4" x 3/4" [19.0 x 19.0]		#30.067.0.xxx 1-1/2" x 1-1/2" [38.1 x 38.1]		#30.067.1.xxx 1-1/2" x 2" [38.1 x 50.8]		#30.068.0.xxx 2" x 2" [50.8 x 50.8]		#30.067.2.xxx 1-1/2" x 2-1/2" [38.1 x 63.5]		#30.068.2.xxx 2" x 3" [50.8 x 76.2]	
PSI	BAR	GPM	LPM	GPM	LPM	GPM	LPM	GPM	LPM	GPM	LPM	GPM	LPM
50	3.4	25	94.6	66	249.8	123	465.6	123	465.6	206	779.8	316	1196.2
55	3.8	29	109.8	68	257.4	129	488.3	129	488.3	216	817.6	331	1253.0
60	4.1	31	117.3	72	272.5	135	511.0	135	511.0	225	851.7	346	1309.8
65	4.5	32	121.1	75	283.9	141	533.7	141	533.7	234	885.8	360	1362.7
70	4.8	33	124.9	79	299.0	146	552.7	146	552.7	243	919.9	374	1415.7
75	5.2	34	128.7	82	310.4	151	571.6	151	571.6	252	953.9	387	1465.0
80	5.5	35	132.5	86	325.5	156	590.5	156	590.5	260	984.2	400	1514.2
85	5.9	37	140.1	90	340.7	161	609.5	161	609.5	268	1014.5	412	1559.6
90	6.2	38	143.8	93	352.0	166	628.4	166	628.4	276	1044.8	424	1605.0
95	6.6	39	147.6	96	363.4	170	643.5	170	643.5	283	1071.3	435	1646.7
100	6.9	40	151.4	99	374.8	175	662.4	175	662.4	291	1101.6	447	1692.1
125	8.6	44	166.6	110	416.4	195	738.2	195	738.2	325	1230.3	499	1888.9
150	10.3	48	181.7	121	458.0	214	810.1	214	810.1	356	1347.6	547	2070.6
175	12.1	52	196.8	132	499.7	231	874.4	231	874.4	385	1457.4	591	2237.2
200	13.8	56	212.0	142	537.5	247	935.0	247	935.0	411	1555.8	632	2392.4
225	15.5	59	223.3	150	567.8	262	991.8	262	991.8	436	1650.4	670	2536.2
250	17.2	63	238.5	158	598.1	276	1044.8	276	1044.8	460	1741.3	706	2672.5
275	19.0	66	249.8	167	632.2	290	1097.8	290	1097.8	482	1824.6	741	2805.0
300	20.7	69	261.2	172	651.1	302	1143.2	302	1143.2	504	1907.8	774	2929.9
330	22.8	72	272.5	180	681.4	320	1211.3	320	1211.3	524	1983.6	805	3047.3

Use Trident Performance Curves to Determine Pump Flow (GPM) at Required Operating Pressure (PSI) and Speed (RPM).

Selection Instructions for **Fixed Systems**

1. Determine final foam pump flow based on model selection, required system operating pressure and driver speed.
2. Select relief valve set pressure point by adding 10% to the system operating pressure and rounding up to the next set pressure point in the chart above.
3. Select relief valve size/part number based on foam pump flow and required set pressure point. Required relief valve flow cannot be less than flow shown on chart for specific model and set pressure point selected. **Example**: A foam system requiring 130 GPM [492 LPM] foam concentrate flow at 200 PSI [13.8 BAR] would require a pump to flow a minimum of 150 GPM [567 LPM] (15% extra) and a relief valve with a set pressure point of 225 PSI [15.5 BAR]. The **minimum** relief valve selection would be #30.067.0.225. **However** this may change based on actual pump driver speed and foam pump flow.

NOTE: Relief valve Part Numbers shown above in RED are to be used in applications requiring UL® Listing.

Selection Instructions for **Mobile Apparatus**

1. As foam pump flow and pressure ranges vary on mobile apparatus, the best approach is to size the valve for the worst case condition. **Example**: A GP300 operating at 1800 RPM @ 250 PSI [17.2 BAR] will flow approximately 310 GPM [1173 LPM]. Relief valve set pressure point for this operating pressure should be 275 PSI [19.0 BAR]. Valve selection would be #30.067.2.275.

⚠ WARNING

Relief Valves are a Pressure Safety Device designed to protect personnel and equipment - proper relief valve selection is important. Per NFPA 20, Do Not install a shut-off valve between the pump and the relief valve or the relief valve and the storage tank. Contact Trident Emergency Products with any questions regarding proper selection or installation of a relief valve. **SAFETY FIRST.**

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