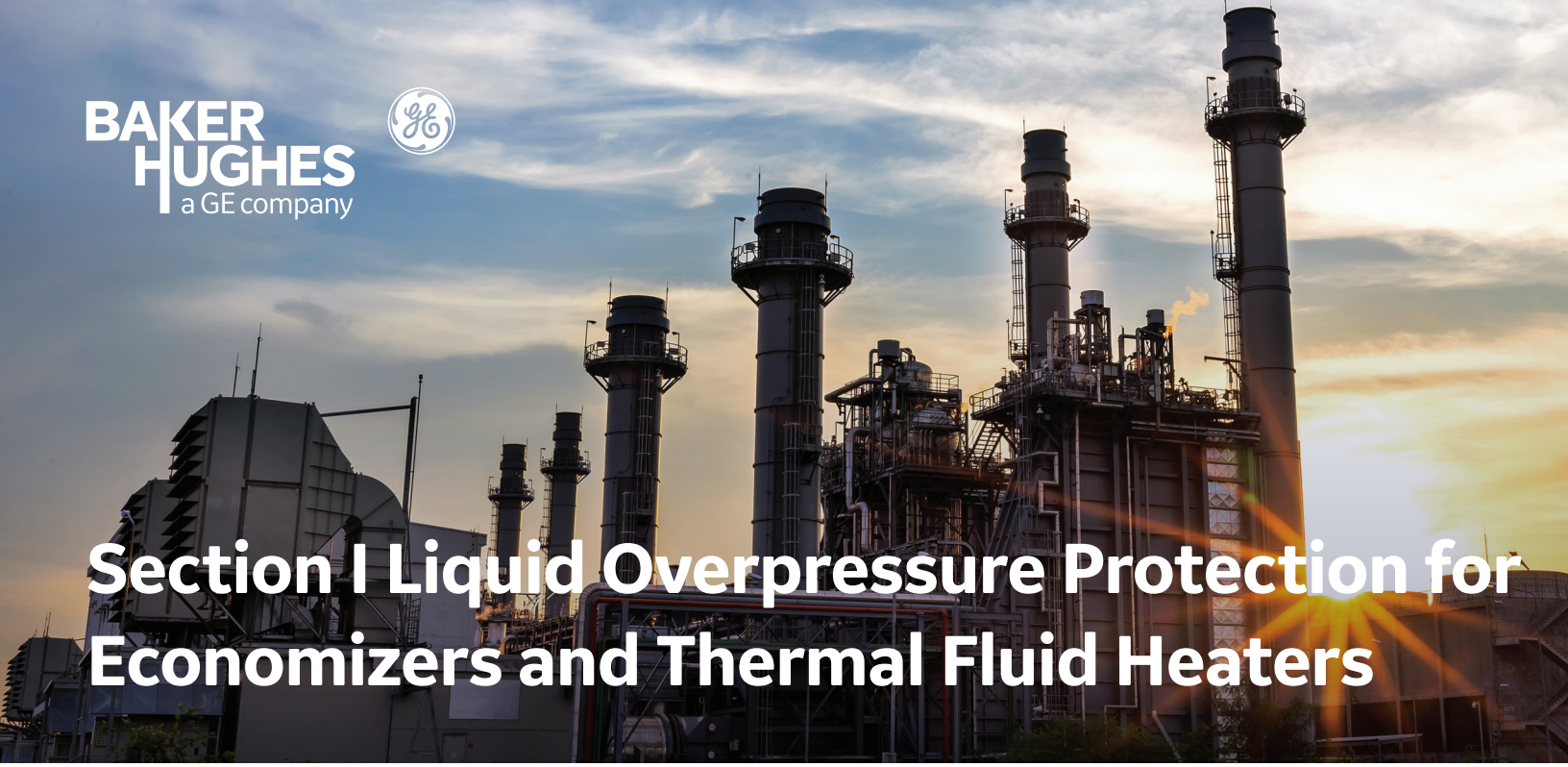


Section I Liquid Overpressure Protection for Economizers and Thermal Fluid Heaters

Faster Start-up

30%

Faster ramp & 1st pass yield[1]

Cost of Ownership

$2K-$6K

Annual PRV Repair[1]

Operating Cost Savings

$50K

Per PRV Release[1]

[1] Savings vary by application and start-up process

The Right Valve for the Right Application

Contact your local Green Tag* Center to upgrade to a 1900 LA1 or 2900 LA1.

valves.bhge.com

Until 2017, ASME B&PVC only addressed steam as the relief media in Section I applications. However, valves installed on economizers and thermal fluid heaters are known to relieve on water as the process fluid.

THE CHALLENGE

Steam valves are not designed to relieve in liquid applications, resulting in a rapid opening/closing known as **'chatter', which induces premature wear and seat leakage**.

Without the proper trim, each overpressure event can yield **valve damage**, and invoke **interrupted start-up down time for service repair**.

THE SOLUTION

The 2017 Edition of ASME B&PVC Section I expanded coverage to allow overpressure protection of economizers and thermal fluid heaters using **liquid-certified valves** sized at **10% accumulation**.

The **Consolidated* 1900 spring-loaded and 2900 pilot-operated safety relief valves** are now Section I certified for these liquid applications. Upgrade your 1900/P, 2900-40 or, in many cases, competitor steam valves with drop in replacement of the 1900 LA1 or 2900 LA1 **without piping modification**.

In addition, the **2900 LA1 and 2900-40 valves now feature a heavier inconel main valve spring for closing force stability** during low pressure start-up conditions, and a **pilot line snubber to dampen rapid pressure transients**, such as water hammer, that often occur during start-up.

Consolidated
1900/P Series

Consolidated
1900 LA1 Series

Consolidated
2900 LA1 Series

*Denotes a trademark of Baker Hughes, a GE company LLC.

GEA34304 06/2019

Mooney* Flowgrid* Valve

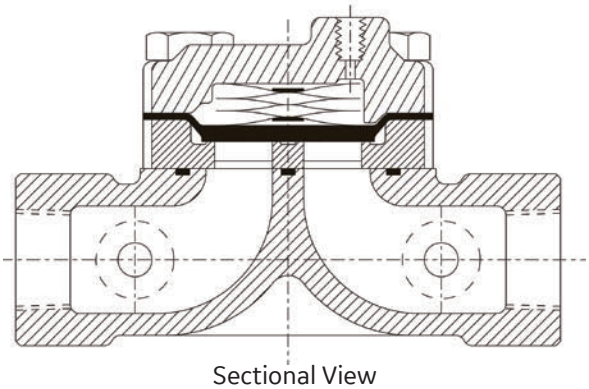
1”

NPT CL 600 | SWE CL 600 | FLANGED CLASS 150-600

1” Flowgrid Valve with Series 20 Pilot

The 1” Flowgrid valve is an economical and easy to maintain pilot operated valve for both gas and liquid applications.

The valve is designed to be used in conjunction with a self contained pilot control system as pictured. The 1” regulator is the perfect size when a “farm tap regulator” is too small. The low profile and easy in line maintenance make it ideal for skid mounted, vault and enclosure installations.



Sectional View

Specifications

Size	1”
Body Style	Single Port (1”)
End Connections	1” CL 150,300, 600 Flanged, 1” CL600 NPT, CL600 SWE
Temperature	Working -20°F to 150°F Emergency -40°F to 175°F
Max. Operating Differential	1000 psi
Max. Emergency Differential	1500 psi
Min. Differential	Refer to graph on page 2
Cracking Differential	Refer to graph on page 2
Max. Inlet Pressure	1480 psig (1)
Outlet Pressure Range	Limited By Pilot
Flow Direction	Bi-Directional (2)
Body Taps	Two 1/4” - 18NPT

(1) Limited by pilot or flange rating
(2) Reverse flow by changing pilot connections and reversing spring case

Materials of Construction

Body & Spring Case	ASTM A 216 GR WCB Carbon Steel
Throttle Plate	17 - 4PH Stainless Steel or A515 Carbon Steel with ENC Coating
Diaphragm	Nitrile/Nylon (1) Optional (Viton/Nylon)
O-Ring & Seals	Nitrile, Optional (Viton)
Bolting	ASTM A 193 GR B-7 or Equal
Spring	301 Stainless Steel

(1) Refer to diaphragm selection chart on page 2

Overpressure Protection

The Flowgrid Valve is bi-directional and has a full ANSI rating on both the inlet and outlet. Overpressure protection is required only if the pressure can exceed the flange or body rating.

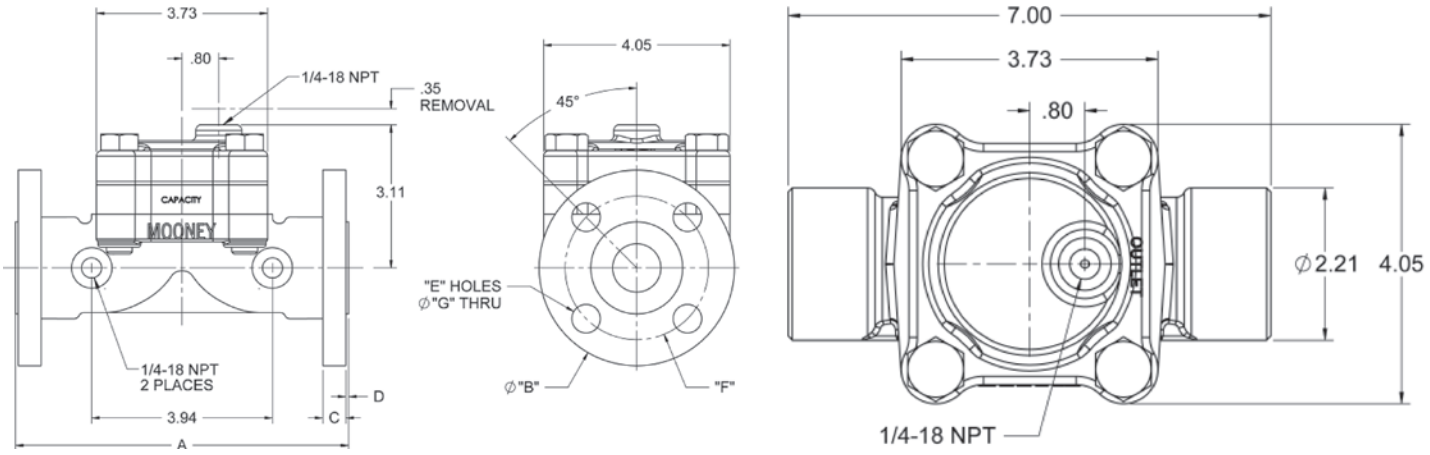
The pilots, like most regulators, may have an outlet pres- sure rating lower than the inlet pressure rating. If this is the case then some external form of overpressure protection must be provided for the pilot.

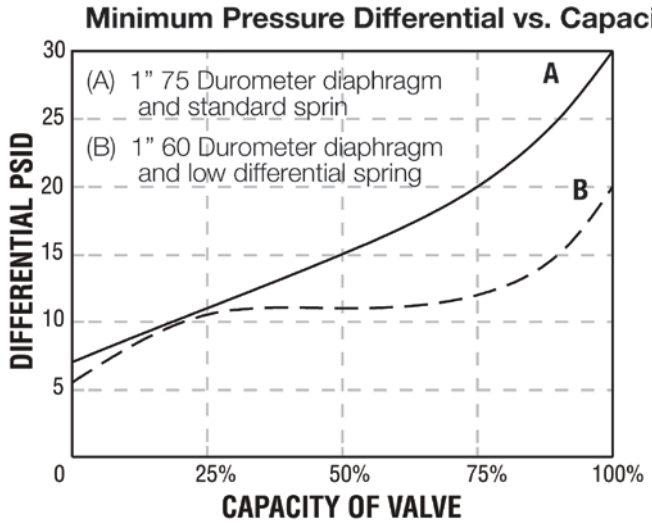
Anytime the Flowgrid valve or pilot system is exposed to pressure in excess of its rating it should be inspected for damage.

Stock Numbers

1” Single Port Valve	Stock Number	Weight
150# Flanged	FG-54	13 lbs.
300# Flanged	FG-55	16 lbs.
600# Flanged	FG-56	17 lbs.
CL600 NPT	FG-11	11 lbs.
CL600 SWE	FG-12	11 lbs.

Dimensions





Flange Dimensions

Flange Class	A	B	C	D	E	F	G
Class 150	7.25	4.25	.50	.06	4	3.12	.63
Class 300	7.25	4.88	.62	.06	4	3.50	.75
Class 600	8.25	4.88	.69	.25	4	3.50	.75

Flow Coefficients and Constants

1" Single Port Valve				Swage Factor	
% Capacity	Cv	C_1	C_g	.5:1	:1
100%	13.2	34	450	0.96	0.93
75%	10.6	30	320	0.97	0.95
50%	8.9	27	240	0.98	0.96
35%	5.4	26	140	1.00	0.99

NOTE: Allow a 5% factor of safety when calculating relief capacity

Diaphragm Selection

Compound	Temp. Range (°F)	Maximum Differential	Characteristics	Recommended Applications
75 Duro	-20 to 150	1000 psid	Best All Around Material	60 psid to Max. Differential
60 Duro	-25 to 150	300 psid	Best Shutoff at Low Differential Pressure	Low Differential (100 psid or less) or Low Temperature
80 Duro High ACN	-5 to 175	1000 psid	Higher Abrasion and Swelling Resistance	High Differential (400 psid or higher) or Abrasive Conditions with Distillates
80 Duro Low ACN	-20 to 150	1000 psid	Higher Abrasion Resistance and Low Temperature Flexibility	High Differential (400 psid or higher) or Abrasive Conditions at Low Temperatures

BAKER HUGHES a GE company

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GEA34011 12/2018