



# 1" & 1-1/4" Single Port

NPT CL 600  
SWE CL 600  
FLANGED CLASS 150-600

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.



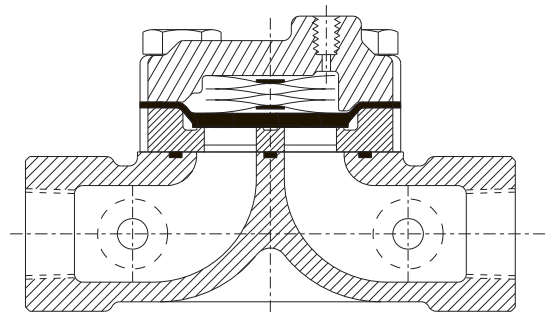
**1" Flowgrid® Valve with Series 20 Pilot**

## Specifications

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

\*\* Limited by pilot or flange rating

\*\* Reverse flow by changing pilot connections and reversing spring case



Sectional View

## Materials of Construction

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

\*Refer to diaphragm selection chart on page 2

## 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. |
| 1 1/4" Single Port Valve |              |         |
| CL600 NPT                | FG-13        | 11 lbs. |
| CL600 SWE                | FG-14        | 11 lbs. |

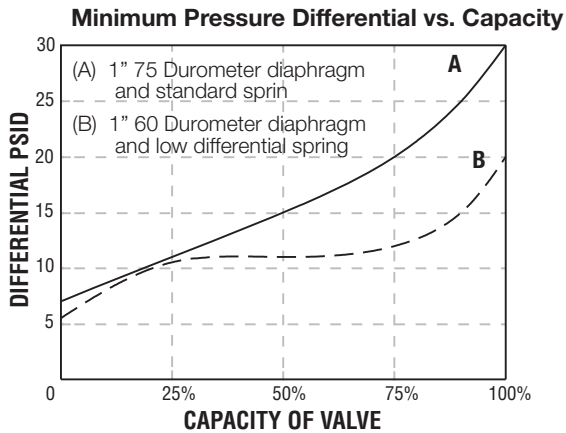
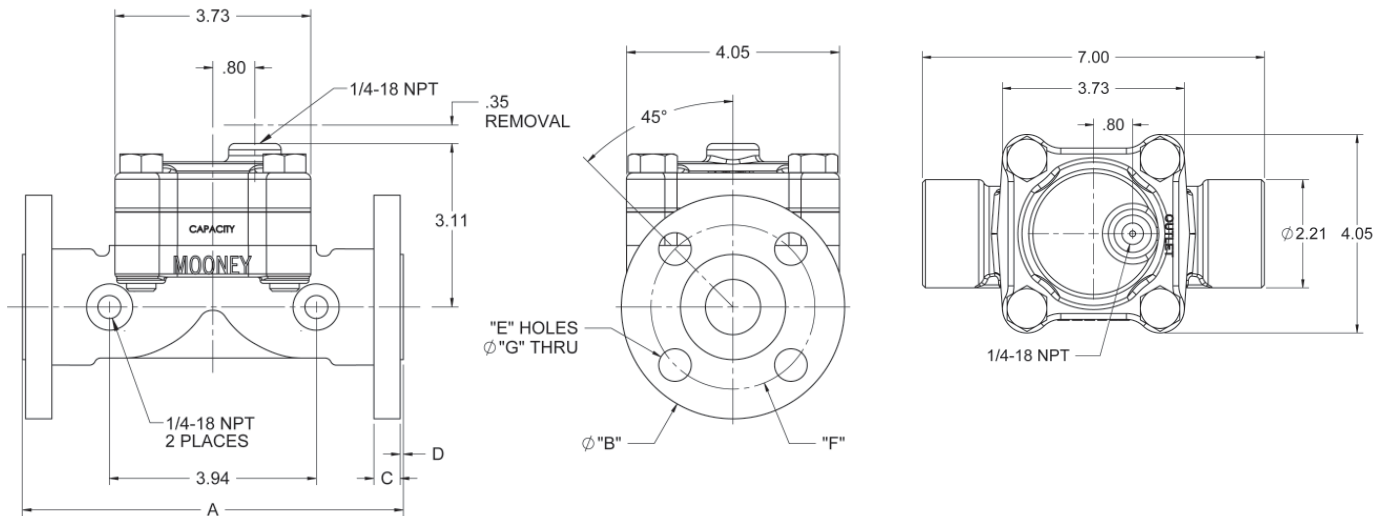
## Overpressure Protection

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 pressure 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.

## Dimensions



## Flange Dimensions

| Flange Class     | A    | B    | C   | D   | E | F    | G   |
|------------------|------|------|-----|-----|---|------|-----|
| <b>Class 150</b> | 7.25 | 4.25 | .50 | .06 | 4 | 3.12 | .63 |
| <b>Class 300</b> | 7.75 | 4.88 | .62 | .06 | 4 | 3.50 | .75 |
| <b>Class 600</b> | 8.25 | 4.88 | .69 | .25 | 4 | 3.50 | .75 |

## Flow Coefficients and Constants

| Percent Capacity | 1" Single Port Valve |                |                | Swage Factor |      |
|------------------|----------------------|----------------|----------------|--------------|------|
|                  | C <sub>v</sub>       | C <sub>1</sub> | C <sub>g</sub> | 1.5:1        | 2:1  |
| <b>100%</b>      | 13.2                 | 34             | 450            | 0.96         | 0.93 |
| <b>75%</b>       | 10.6                 | 30             | 320            | 0.97         | 0.95 |
| <b>50%</b>       | 8.9                  | 27             | 240            | 0.98         | 0.96 |
| <b>35%</b>       | 5.4                  | 26             | 140            | 1.00         | 0.99 |

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

## Diaphragm Selection

| Compound         | Temp. Range (Degrees 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 |