



# APPLICATION TIPS

## Using Griswold Controls Valves for Fluids Other Than Water

Griswold Controls Valves can control the flowrate in fluids other than water, including air. A simple equation can be used to convert the flowrate of various liquids if you know the Specific Gravity of the liquid. (For a conversion for air please contact the factory.)

### Automatic Flow Limiting Valves

To determine flowrate required for a Griswold Controls cartridge use the following formula:  $Q=Q1\sqrt{SG}$

Where  
 $Q$ =Flowrate of Cartridge  
 $Q1$ =Flowrate of Liquid Desired  
 $SG$ =Specific Gravity of Liquid

For example if the application requires 13 gpm of a liquid with a SG of 1.58 then order a Griswold Controls valve with a flowrate of 16.3gpm.  $Q = 13/\sqrt{1.58} = 16.3\text{gpm}$

Since we don't offer a cartridge with flowrate of 16.3 you would round up and order a 17 gpm cartridge. If you let the factory know about this conversion they will make your valve tag say 13 GPM.

### Manual Balance Valves

To determine flowrate or pressure drop signal in a manual valve use these formulas:  $Q = Fc\sqrt{\Delta P / SG}$

Where  
 $Q$ =Flowrate Desired  
 $Fc$ =Flow Coefficient used for sizing (available in sizing calculator or literature)  
 $\Delta P$ =Signal across venturi measured in inches of water column  
 $SG$ =Specific Gravity of Liquid

The same formula can be rearranged to determine what signal is required in a manual valve to set flowrate when an alternate liquids is in system.  $\Delta P = (Q / Fc)^2 SG$

It is always important to confirm the valve EPDM o-rings are compatible with the alternate fluid. The internet offers many compatibility charts for EPDM and chemicals. If you need assistance please contact the factory.

The most common alternate liquids used in our valves are glycol water mixes. To the right are two tables that include the Specific Gravity of propylene glycol and ethylene glycol.

