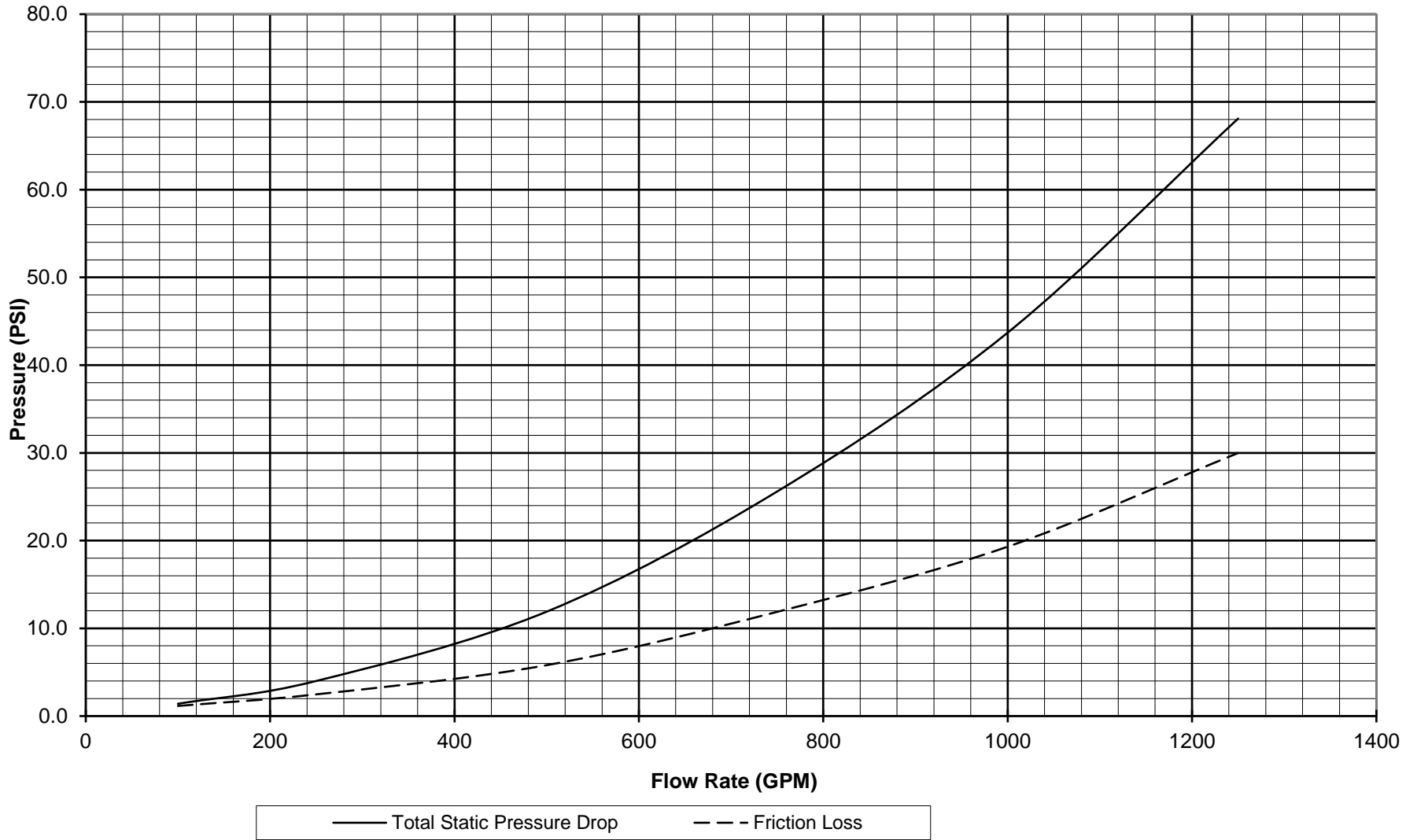
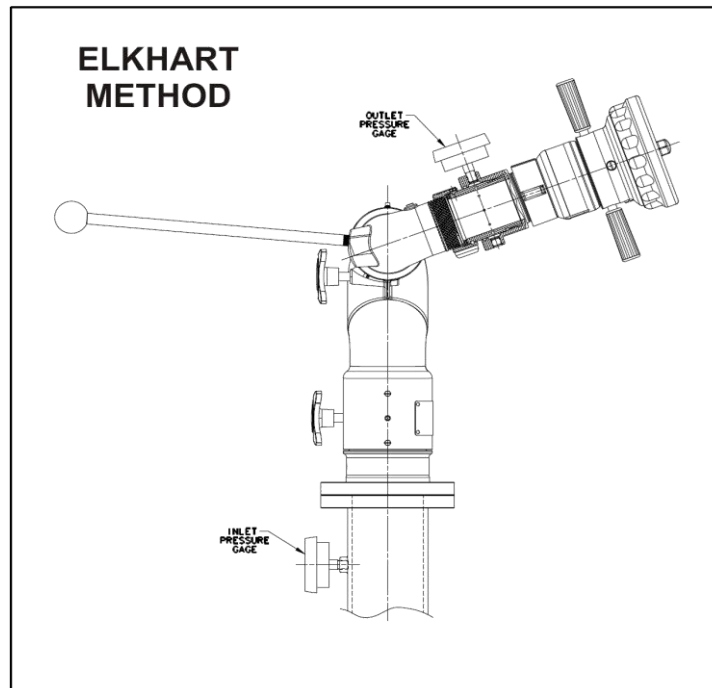


**8593-IV Copperhead® Losses**  
**4" Inlet and 2.5" Outlet**



## Interpreting Flow Data

The following graphs offer the pressure losses for the monitor (and other devices) in terms of Total Static Pressure Drop. This Total Static Pressure Drop can be found by measuring the difference between the static inlet pressure and the static outlet pressure. The static pressure at either of these points can be found using a simple pressure gauge. An illustration of this method can be seen below.



In mathematical terms, the Total Static Pressure Drop is the change in Velocity Pressure plus Friction Loss. The change in Velocity Pressure results from the change in velocity of water caused by the change in the cross section of a waterway. Friction Loss results from the drag and sidewall interference of the water through a device. A simple equation can be seen

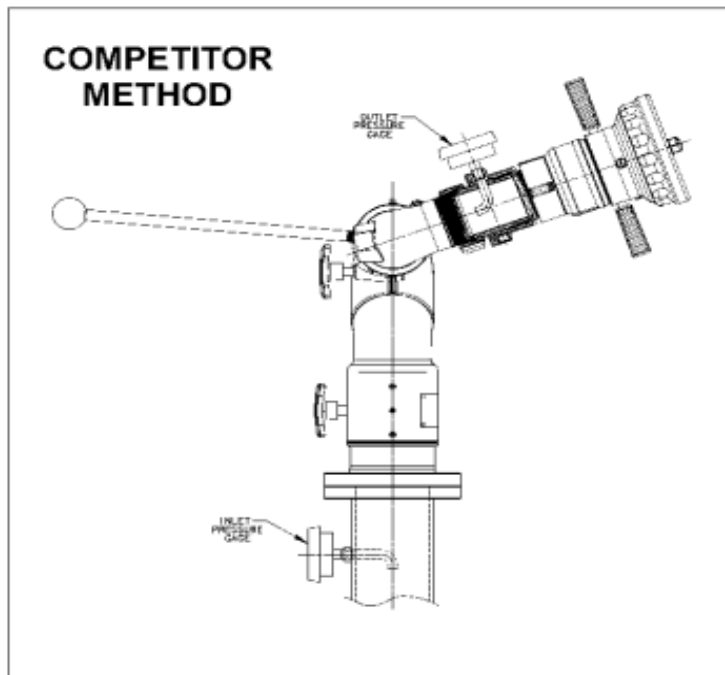
$$\Delta P_S = H_F + \Delta P_V$$

$\Delta P_S$  = Total Static Pressure Drop  
 $H_F$  = Friction Loss  
 $\Delta P_V$  = Velocity Pressure Loss

In the firefighting industry, the terms Total Static Pressure Drop and Friction Loss tend to be used interchangeably. However, these are significantly different measurements. This misconception could ultimately lead to lower than anticipated performance from equipment. **When designing a system and determining performance, Total Static Pressure Drop is the value that should always be used.** The Friction Loss curve is also supplied in order to make a comparison with competitor products that may only supply Friction Loss curves. If there are any further questions regarding this matter, please contact Elkhart Brass.

## Extra Interpretation of Flow Data

As previously stated, Elkhart Brass uses Total Static Pressure Drop to report the losses that occur in monitors and other devices. Another way to measure and report the losses in a monitor or other device is with the use of Friction Loss. Friction Loss results from the drag and sidewall interference of water flowing through a device. Friction Loss can be found by measuring the velocities at the inlet and outlet of the device. An example of this method can



Although this method of measuring the losses in a monitor or other device is technically correct, the use of this method in the field is impractical. A pitot-tube must be used in order to measure the velocities at the inlet and outlet of a device. This pitot-tube would become highly susceptible to damage from debris, such as rocks, flowing through a live water delivery system. It is important to remember that since this method of measuring losses is not typically used in practice, the Friction Loss data will not accurately portray how a device will actually

This method of presenting pressure loss data is simply an attempt to mislead a customer into believing the pressure losses are better than other competitor products. Friction Loss focuses on the effect of Kinetic Energy, which means the higher velocity at the outlet will increase the pressure at the outlet and intern decrease the overall pressure drop. Therefore, Friction Loss will always be lower than Total Static Pressure Drop. The presentation of this information could mislead a customer to believe that the product of one company is better than another because Friction Loss is being compared to Total Static Pressure Drop.