What is Static Pressure?
Key Pressure Terms

- Static Pressure - *used for fan selection*
- Velocity Pressure - *used for measuring CFM in a system*
- Total Pressure - *used to find velocity pressure*

\[ P_T = P_S + P_V \]

All measured in Inches of Water Gauge (W.G.)
Static Pressure

• The resistance to flow (energy added by the fan) measured in Inches of Water Gauge (in wg)

Fan selection is typically based upon a CFM and Static Pressure (i.e. 500 CFM @ 0.125" wg)
Static Pressure

- Resistance to flow
- Equal in all directions
- Can be Positive or Negative
- Independent of air velocity
- Measured by pressure tap perpendicular to airflow
Total Pressure

- A fluid in motion will exert a Total Pressure on an object in its path.
Total Pressure

- Measured by pressure tap pointed directly into the air stream
Velocity Pressure

- Cannot be measured directly.
- A Pitot Tube uses both Static pressure and Total pressure taps.

![Pitot Tube Diagram]
Velocity Pressure

\[ Velocity(\text{ft/ min}) = 1096 \sqrt{\frac{P_v}{\rho}} \]

\[ \rho = 0.75 \text{lb/ ft}^2 \]

\[ Velocity = 4005 \sqrt{P_v} \]