

According to the Bernoulli's statement the stagnation pressure is equal to the addition of static pressure and dynamic pressure.

Stagnation pressure or total pressure = Static pressure + Dynamic pressure

Fluid flow velocity:

The essential initial parameters which are required to calculate the fluid flow velocity are density (ρ) of the fluid, Static and stagnation pressure which are applied by the fluid flow.

Dynamic pressure of the fluid = $\frac{1}{2} \rho V^2$

Where “V” is the velocity of the fluid.

Therefore according to Bernoulli's statement

Total pressure = Static pressure + Dynamic pressure

$$T.P = S.P + \frac{1}{2} \rho V^2$$

$$\frac{1}{2} \rho V^2 = T.P - S.P$$

$$\rho V^2 = 2(T.P - S.P)$$

$$V = \sqrt{2(T.P - S.P) / \rho}$$

$$V = \sqrt{2(T.P) - (S.P) / \rho}$$

Venturimeter:

A venturimeter is a device which is used for measuring the rate of fluid flow in order to controlling the required tasks of fluid systems. The venturimeter consists of following 3 parts.

- Converging part
- Throat and
- Diverging part

Principle:

The principle of venturimeter is that when a fluid flows through the venturimeter, it will accelerates in the short convergent portion and than