

Bernoulli's Eqs. And Work

- Consider tube where both Area, height change.

$$\rightarrow W = \Delta K + \Delta U$$

$$(P_1 - P_2) V = \frac{1}{2} m (v_2^2 - v_1^2) + mg(y_2 - y_1)$$

$$(P_1 - P_2) V = \frac{1}{2} \rho V (v_2^2 - v_1^2) + \rho V g (y_2 - y_1)$$

$$P_1 + \rho g y_1 + \frac{1}{2} \rho v_1^2 = P_2 + \rho g y_2 + \frac{1}{2} \rho v_2^2$$

Note:

$$W = F d$$

$$= P A d$$

$$= P V$$

