

COMPUTING NET ENGINE PRESSURE WHEN DRAFTING

$$\text{NEP} = \text{Suction Side Work} + \text{Discharge Side Work}$$

- Work performed on the discharge side of the pump is indicated on the pump's discharge gauge
- Work performed on the suction side of the pump is determined by computing the following formula:

$$\text{Work (psi)} = \frac{\text{Lift (in feet)} + \text{Intake Hose Friction Loss (psi)}}{2.3 \text{ feet}}$$

Steps:

1. Determine the lift (*in feet*)
2. Determine the friction loss in the intake hose used
3. Add lift and friction loss together
4. Divide by 2.3 (2.3 is the amount of lift (*in feet*) that 1psi of water pressure will support)

EXAMPLE: A pumper is discharging 1000 GPM at a pressure of 142psi. The pumper is drafting water with a lift of 10 feet through 20 feet of 5" hard suction hose and strainer. What is the NEP?

$$\text{NEP} = \text{Suction Side Work} + \text{Discharge Side Work}$$

$$\text{SS Work} = \frac{10 \text{ feet} + 9.5\text{psi}}{2.3 \text{ ft.}} = \frac{19.5 \text{ ft. psi}}{2.3 \text{ ft.}} = 8.47\text{psi}$$

$$\text{Discharge Side Work} = 142\text{psi}$$

$$\text{NEP} = 8.47\text{psi} + 142\text{psi}$$

$$\text{NEP} = 150\text{psi}$$