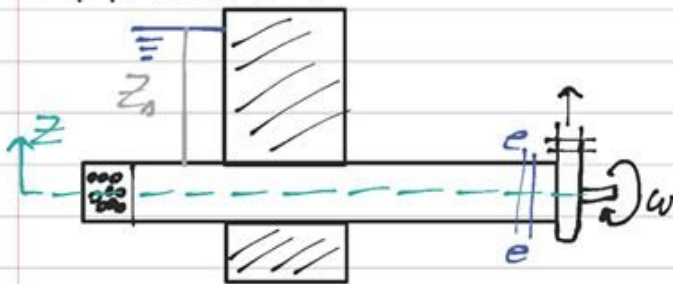


PHA2304

04



$$z_s + \left(\frac{P_s}{\rho g} \right)_{abs} + \frac{V_s^2}{2g} = z_d + \frac{V_d^2}{2g} + \left(\frac{P_d}{\rho g} \right)_{abs} + \Delta H_s \Leftrightarrow$$

$$\left[\left(\frac{P_d}{\rho g} \right)_{abs} + \frac{V_d^2}{2g} - \frac{P_v}{\rho g} \right] = \left(\frac{P_{atm}}{\rho g} \right)_{abs} + z_s - \Delta H_s$$

$$NPSH_{req} = \left(\frac{P_{atm}}{\rho g} \right)_{abs} + \Delta z - \Delta H_s - \frac{P_v}{\rho g}$$

$$* \text{ Dica: } (P_{abs})_{atm} = \rho_{Hg} \cdot g \cdot h_{Hg} = 13600 \cdot 9,81 \cdot 0,76 = 101361 \text{ Pa}$$

$$\left(\frac{P_{atm}}{\rho g} \right)_{abs} = \frac{101361}{1000 \cdot 9,81} = 10,33 \text{ m} ; \left(\frac{P_{atm}}{\rho g} \right) = 10,33 - \frac{z}{900}$$

$$\rightarrow \left(\frac{P_v}{\rho g} \right) = 0,077 \cdot e^{0,0558 \cdot \Theta} , \text{ com } \Theta \text{ em } ^\circ \text{C}$$

$$\rightarrow \text{Diâmetro ótimo da flange de sucção: } D_{g \text{ ótimo}} = 4,5 \cdot \sqrt[3]{\frac{Q}{n}}$$

com Q em m^3/s ; n em rpm ; D em m

$$\rightarrow NPSH_{req} \approx 0,203 \cdot \omega_1^{3/4} \cdot H^* ; \omega_1 = \omega \cdot \frac{\sqrt{Q^*}}{(gH^*)^{3/4}}$$

$\rightarrow \eta_{man}$