

$$\rho_{\text{H}_2} = 1,22 \frac{\text{kg}}{\text{m}^3}$$

DATI

$$\dot{M}_{\text{H}_2} = 800 \frac{\text{kg}}{\text{h}} \rightarrow \dot{M}_{\text{H}_2} = \frac{800 \text{ kg/h}}{3600 \text{ s/h}} = 0,222 \frac{\text{kg}}{\text{s}}$$

$$\Delta p = 105 \text{ mm H}_2\text{O}$$
$$t_{\text{H}_2} = 105 \cdot 9,81 = 1030 \text{ Pa}$$

$$\zeta_v = 0,30$$

$$Q = \frac{\dot{M}_{\text{H}_2}}{\rho_{\text{H}_2}} = 0,182 \frac{\text{m}^3}{\text{s}}$$

$$P_{V_2} = \frac{Q \Delta p_{t_2}}{2v} = \frac{0,182 \times 1030}{0,30} = 625 \text{ W}$$


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$$S_1 = 0,95 \frac{\text{kg}}{\text{m}^3}$$

$$Q = 0,182 \frac{\text{m}^3}{\text{s}}$$

$$2v = 0,30$$

$$\Delta p_{t_1} = \frac{\Delta p_{t_2}}{S_2} S_1 = \frac{1030}{1,22} \cdot 0,95 = 802 \text{ Pa}$$

$$P_{V1} = \frac{Q \Delta P_{z1}}{2v} = \frac{0,182 \times 802}{0,30} = 487 \text{ W}$$

$$\rho_2 = 1,23 \frac{\text{kg}}{\text{m}^3}$$

DATI

$$Q = 450 \text{ m}^3/\text{h} \rightarrow Q = \frac{450 \text{ m}^3/\text{h}}{3600 \frac{\text{s}}{\text{h}}} = 0,125 \frac{\text{m}^3}{\text{s}}$$

$$\Delta p_{t_2} = 180 \text{ mm H}_2\text{O} = 180 \times 9,81 \frac{\text{h}}{\text{s}} = 1766 \text{ Pa}$$

$$\zeta_v = 0,28$$

$$P_{v_2} = \frac{Q \Delta p_{t_2}}{\zeta_v} = \frac{0,125 \times 1766}{0,28} = 788 \text{ W}$$

$$S_1 = 1,30 \frac{\text{kg}}{\text{m}^3}$$

$$Q = 0,125 \frac{\text{m}^3}{\text{s}}$$

$$v_v = 0,28$$

$$\Delta p_{t_1} = \frac{\Delta p_{t_2}}{S_2} \cdot S_1 = \frac{1766}{1,23} \cdot 1,30 = 1867 \text{ Pa}$$

$$P_{V1} \approx \frac{Q \Delta P_{z1}}{2v} \approx \frac{0,125 \times 1867}{0,28} \approx 833 \text{ W}$$