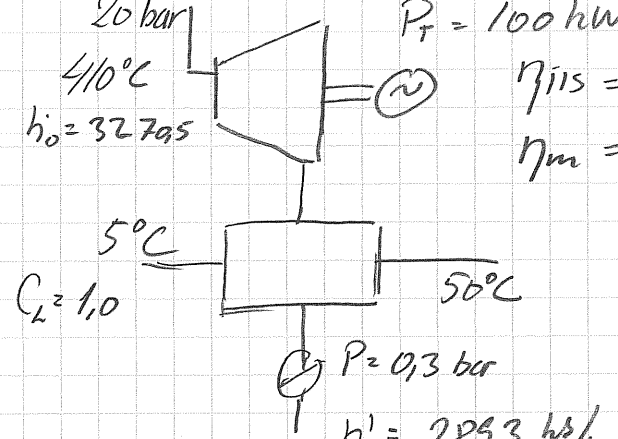
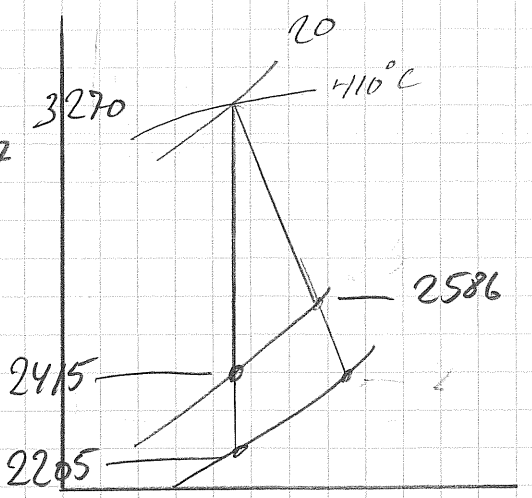
24





$h_{xis} = 2415$ kJ/kg

$h_x = h_0 - \eta_{iis} \cdot (h_0 - h_{xis}) = 3270,5 - 0,8 \cdot (3270,5 - 2415) = 2586$ kJ/kg

$$\dot{m}_{d_1} = \frac{P_T}{(h_0 - h_{xis}) \cdot \eta_{iis} \cdot \eta_m} = \frac{100}{(3270,5 - 2415) \cdot 0,8 \cdot 0,97} = 0,15 \text{ kg/s}$$

$\dot{m}_d \cdot (h_x - h') = \dot{m}_L \cdot C_L \cdot \Delta t_L \Rightarrow$

$$\dot{m}_L = \frac{\dot{m}_d \cdot (h_x - h')}{C_L \cdot \Delta t_L} = \frac{0,15 \cdot (2586 - 289,3)}{1,0 \cdot (50 - 5)} = 7,69 \text{ kg/s}$$

24.1 $\dot{m}_L = \dot{m}_L \cdot 3600 = 7,69 \cdot 3600 = \underline{27677 \text{ kg/h}}$

$Q = A \cdot k \cdot \Delta t_m$

tilnærmet $\Delta t_m = 69,1 - \frac{50+5}{2} = 41,6$ °C

24.2 $A = \frac{\dot{m}_L \cdot C_L \cdot \Delta t_L}{k \cdot \Delta t_m} \Rightarrow A = \frac{7,69 \cdot 1 \cdot (50-5) \cdot 10^3}{120 \cdot 41,6} = \underline{69,3 \text{ m}^2}$

24.3 $\dot{m}_{d_3} = \frac{P_T}{(h_0 - h_{xisny}) \cdot \eta_{iis} \cdot \eta_m} = \frac{100}{(3270,5 - 2205) \cdot 0,8 \cdot 0,97} = 0,121$ kg/s

Stigning i $\dot{m}_d = \frac{\dot{m}_{d_1} - \dot{m}_{d_3}}{\dot{m}_{d_3}} 100\% = \frac{0,151 - 0,121}{0,121} \cdot 100\% = \underline{24,5\%}$

24.4 I en kondensationsturbine kondenseres al dampen i en kondensator, så kondensatet kan pumpes tilbage på kedlen som fødevand.