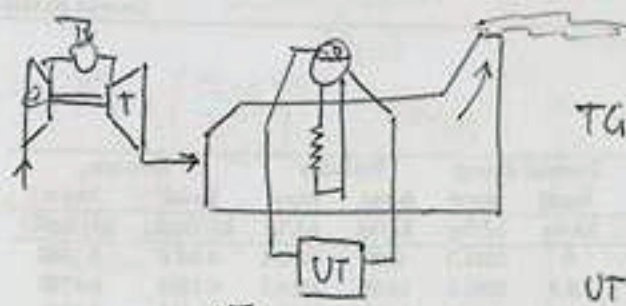


CORREZIONE PROVA 7 LUGLIO

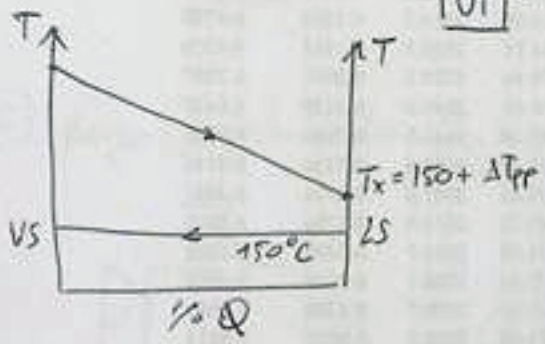
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ES. 1



$$TG \begin{cases} \dot{w}_{ac} = \\ T_{OT} = \\ c_{pac} = \end{cases}$$

$$UT \begin{cases} T_{ELA} = \\ \Delta P_{VEVA} = \\ \Delta T_{PP} = \\ U = \end{cases}$$



(A) $\dot{Q}_{cc} = \dot{m}_{ac} c_{pac} (T_{OT} - T_x) = \dot{m}_{vap} \cdot \Delta P_{VEVA} \rightarrow \dot{w}_{vap} = \frac{\dot{m}_{ac} c_{pac} (T_{OT} - T_x)}{\Delta P_{VEVA}}$

$\dot{Q}_{sc} = UA \cdot \Delta T_{ML}$ $\Delta T_{ML} = \frac{(T_{OT} - T_{ELA}) - (T_x - T_{EV})}{\ln \left(\frac{T_{OT} - T_{ELA}}{T_x - T_{EV}} \right)}$

$A = \frac{\dot{Q}_{sc}}{U \cdot \Delta T_{ML}}$

$E = \frac{\dot{Q}_{cc}}{\dot{Q}_{MAX}} = \frac{(T_{OT} - T_x)}{(T_{OT} - T_{EV})}$

$NTU = \frac{UA}{C_{MIN}} = \frac{UA}{\dot{m}_{ac} c_{pac}}$ ←

C_{MIN} è quello del fos, perché il vapore ha una C idraulica infinita, in quanto è una linea orizzontale.

(B) $T_{IN} = 15^\circ C \rightarrow T'_{IN} = 40^\circ C$

e $\frac{\dot{w}_A}{\dot{w}_{ac}} = \cos t(R)$

$\dot{V} = \cos t = \dot{m}_A \cdot \sigma_A$ $\sigma = \frac{RT}{P}$

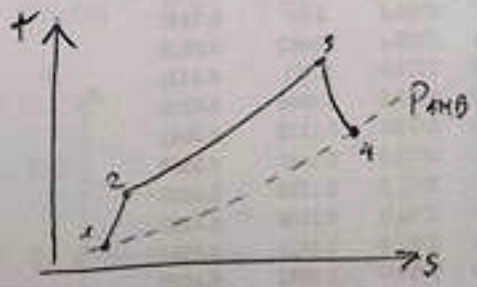
$\dot{m}_{15} \sigma_{15} = \dot{m}_{40} \sigma_{40}$

$\dot{m}_{15} \cdot \frac{RT_{15}}{P_{IN}} = \dot{m}_{40} \cdot \frac{RT_{40}}{P_{IN}}$

$\dot{m}_{15} = \dot{m}_{ac} \cdot k$

$\dot{m}_{40} = \dot{m}_{ac} \cdot k'$

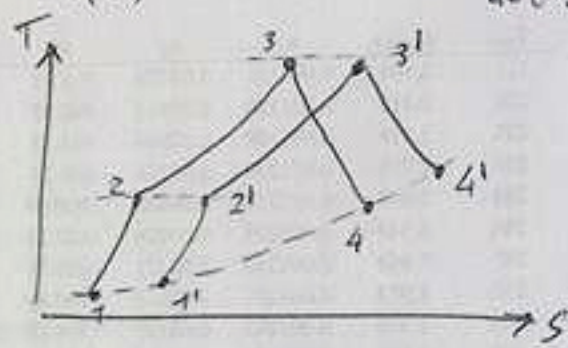
$\dot{w}_{ac} = \dot{m}_{ac} \frac{T_{15}}{T_{40}}$



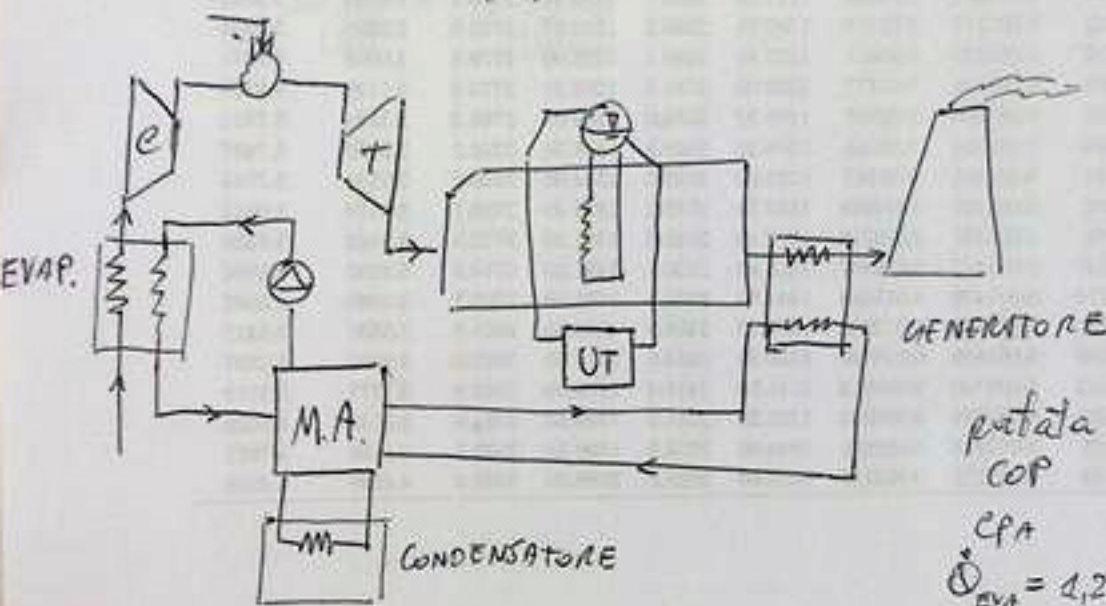
$$\dot{m}_{R10} = \frac{\dot{m}_{ac} \sqrt{TIT}}{P_3} \quad \frac{\dot{m}_{ac} \sqrt{TIT}}{P_3(15)} = \frac{\dot{m}_{ac} \cdot \sqrt{TIT}}{P_3(40)} \Rightarrow P_3 = P_3 \frac{\dot{m}_{ac}(40)}{\dot{m}_{ac}(15)}$$

$$TIT(15) = TOT(15) \cdot \left(\frac{P_3(15)}{P_4(15)} \right)^{0.22} = TIT(40)$$

$$TOT(40) = \frac{TIT(15)}{(\beta_{10})^{0.22}}$$



② faigo umidificato $T_{in} = 15^\circ C$
(T_{ca})

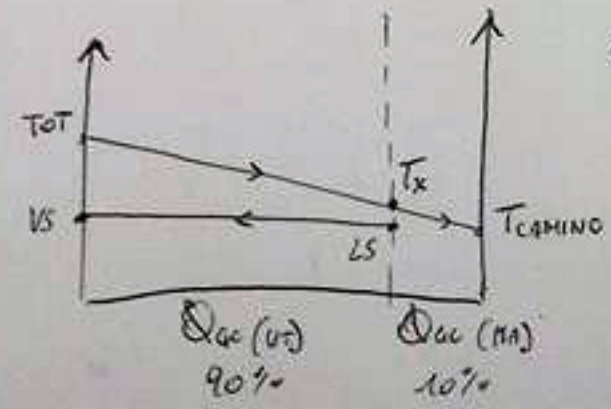


putata di Φ
COP
C_{PA}
 $\dot{Q}_{EVA} = 1,25 \dot{Q}_F$
(per umidificazione)

$$\dot{Q}_{EVA} = 1,25 (\dot{m}_{ac} \cdot c_{pa}) (40 - 15)$$

$$COP = \frac{\dot{Q}_{EVA}}{\dot{Q}_{UEN}} \Rightarrow \dot{Q}_{UEN} = \frac{\dot{Q}_{EVA}}{COP}$$

$$\dot{Q}_{UEN} = \dot{m}_{ac} \cdot c_{pac} \cdot \Delta T_{ac} \Rightarrow \Delta T_{ac} = \frac{\dot{Q}_{UEN}}{\dot{m}_{ac} \cdot c_{pac}}$$



$$T_{CAMINO} = T_x - \Delta T_{ac}$$

$$\textcircled{D} \quad \epsilon_{40}, \dot{m}_{\text{VAP}}(40)$$

$$UA_{\textcircled{A}} = \text{const.} = UA_{\textcircled{B}}$$

$$NTU_{40} = \frac{UA}{\dot{m}_{ac} \cdot c_{puc}}$$

$$\epsilon_{40} = 1 - e^{-NTU_{40}}$$

$$\stackrel{!}{=} \frac{T_{OT(40)} - T_x(40)}{T_{OT(40)} - T_{EVA}}$$

$$\Rightarrow T_x(40) = T_{OT(40)} - \epsilon_{40}(T_{OT(40)} - T_{EV})$$

$$\dot{Q}_{ac}(40) = \dot{m}_{ac}(40) c_{pac} (T_{OT(40)} - T_{EVA})$$

$$\text{de } \dot{m}_{\text{VAP}}(40) = \frac{\dot{Q}_{ac}(40)}{\Delta h_{EVA}}$$