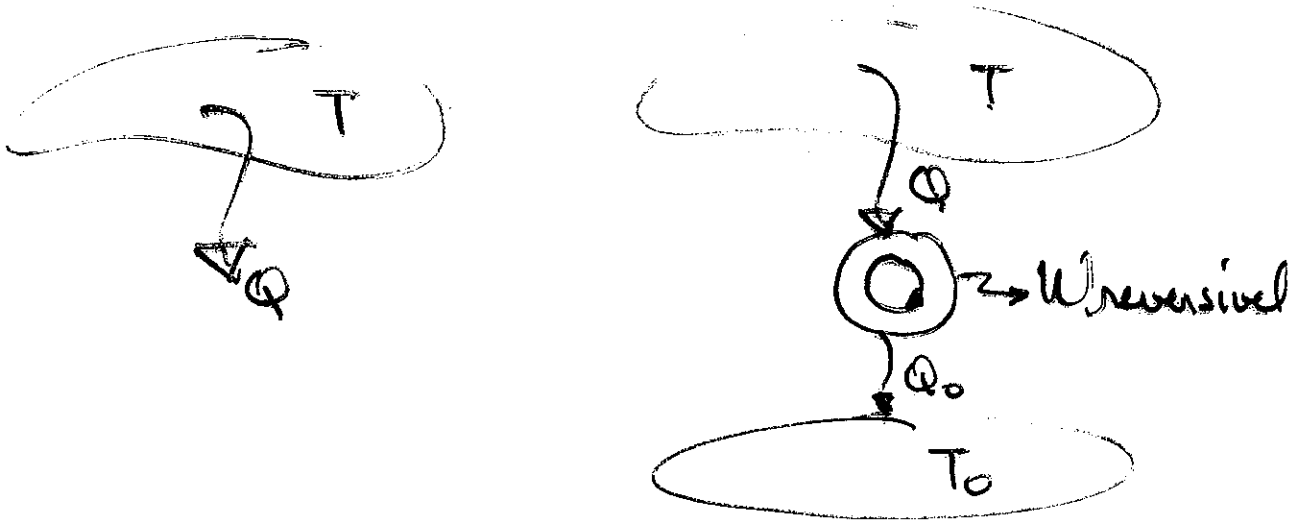
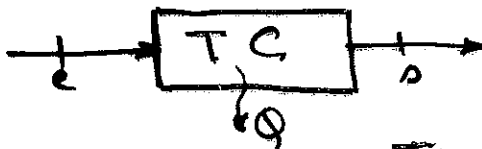
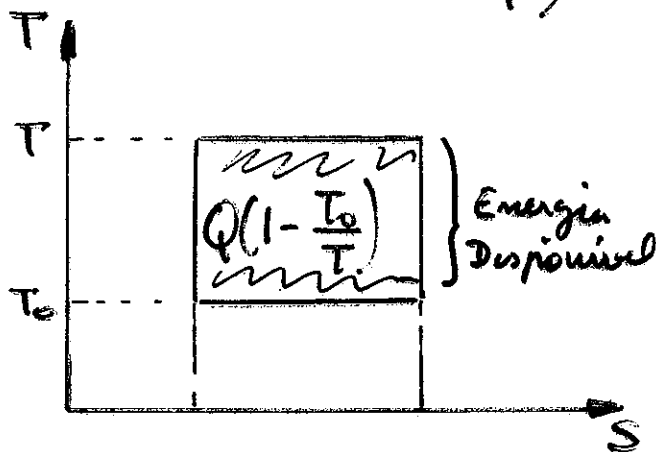


c) Máximo Trabajo (Trabajo Reversible)



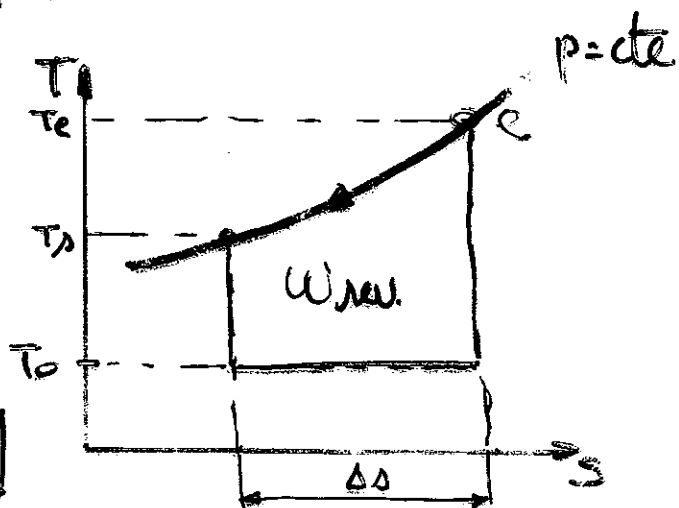
$$W_{\text{reversible}} = Q \left(1 - \frac{T_0}{T}\right)$$



$$\dot{Q} = (h_e - h_s) \dot{m}$$

$$\dot{W}_{\text{rev}} = \dot{Q} - T_0 \dot{m} \Delta s$$

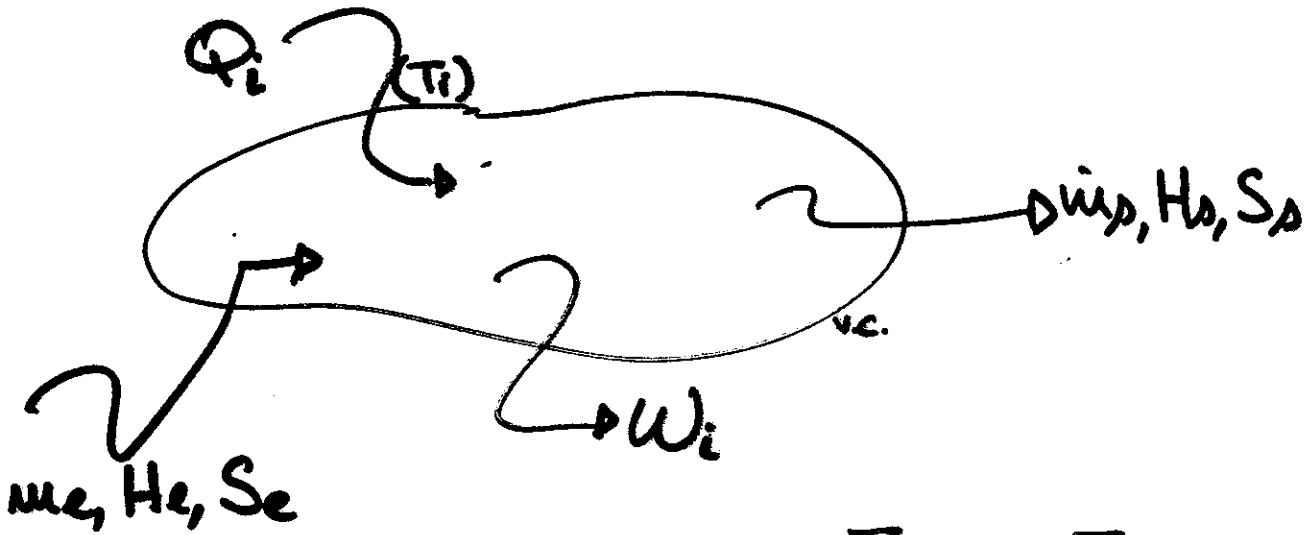
$$\dot{W}_{\text{rev}} = \dot{m} \left[h_e - h_s - T_0 (s_e - s_s) \right]$$



$$w_{\text{rev}} = \frac{\dot{W}_{\text{rev}}}{\dot{m}} = h_e - h_s - T_0 (s_e - s_s)$$

BALANÇO DE EXERGIA

(Regime Permanente, $\Delta E.C = \Delta E.P = 0$)



1ª Lei: $\sum Q_i - \sum W_i = \sum H_s - \sum H_e + q$

2ª Lei: $\sum \frac{Q_i}{T_i} + S_{gen} = \sum S_s - \sum S_e \quad (* - T_0)$

$$\sum Q_i \left(1 - \frac{T_0}{T_i}\right) - \sum W_i - T_0 S_{gen} = \sum H_s - \sum H_e - T_0 (\sum S_s - \sum S_e)$$

Balanco de Exergia

$$\sum Q_i \left(1 - \frac{T_0}{T_i}\right) - \sum W_i - T_0 S_{gen} = \sum B_{x,s} - \sum B_{x,e}$$

exergia associada à transferência de calor

exergia pura

exergia destruída

variações dos fluxos de exergia

Irreversibilidade (Exergia Destruída)

$$I = T_0 S_{ger} = W_{rev} - W_{real}$$

Exergia Específica de um Fluxo

$$b = ex = h - h_0 - T_0(p - p_0)$$

estado de equilíbrio c/meio

Exergia Específica de um Sistema

$$b_{sistema} = (ex)_{sistema} = e - e_0 + p_0(v - v_0) - T_0(p - p_0)$$

$$\eta_B = \frac{\text{exergia útil}}{\text{exergia consumida}}$$

rendimento exergetico

TRANSFERÊNCIA DE CALOR

