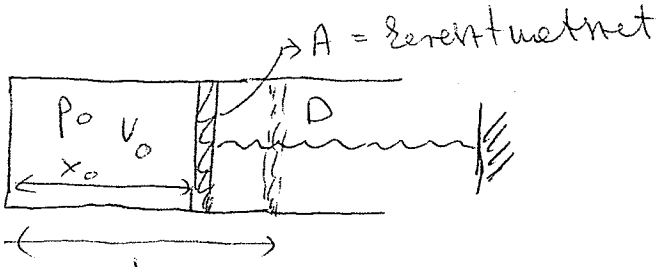
Folyamatok fajhője, HF. id.g. V-ig.

(1) $p(V) = p_0 + \frac{a}{V}$ folyamat

a.) $C_f = ?$

b.) $\Delta U = ?$, $W = ?$, $Q = ?$, ha a gáz $V_1 \to V_2$ tágul

(2)



Kezdetben a rugó nyújtatlan.
$V_0 = A \cdot x_0$

a.) Melegítjük a gázt. Hat. meg a Clapeyron mellett a C_f fajhőt!

b.) $Q = ?$, ha $V_0 \to 2V_0$-ra tágul a gáz.

c.) $D = ?$, hogy $C_f = \infty$

(3) $C_f = ?$ a $T = T_0 \cdot e^{\alpha V}$ folyamatra.

(4) $C_f = ?$ a $p_0 = p\, e^{-\alpha V}$ folyamatra.

(5) a.) $pV^2 = \text{áll.}$
b.) $p^2 V = \text{áll.}$
c.) $p/V = \text{áll.}$
} $C_f = ?$

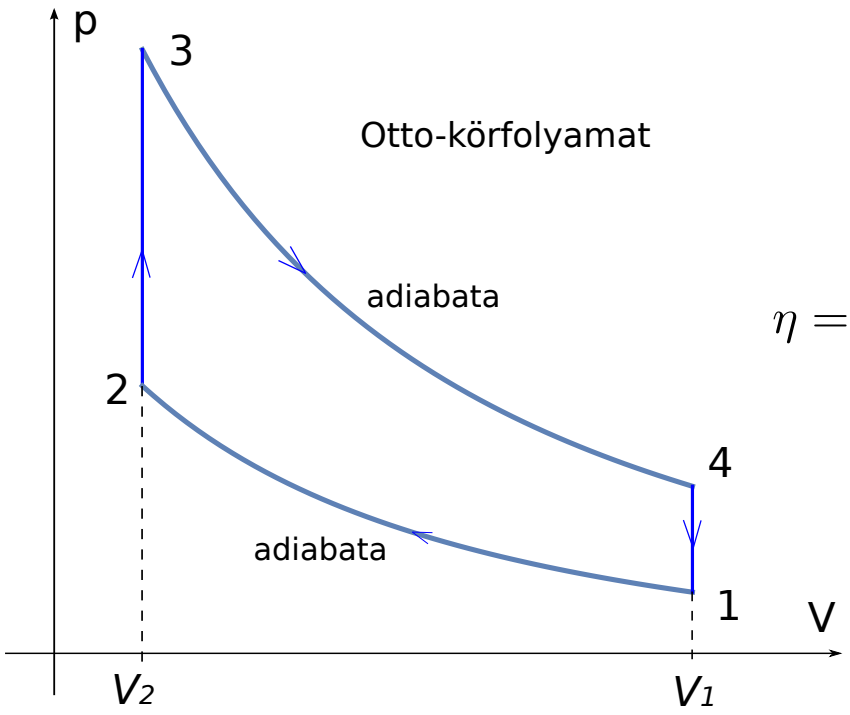
(6) Mi a folyamat, ha

a) $C_f = C_V + \alpha T$

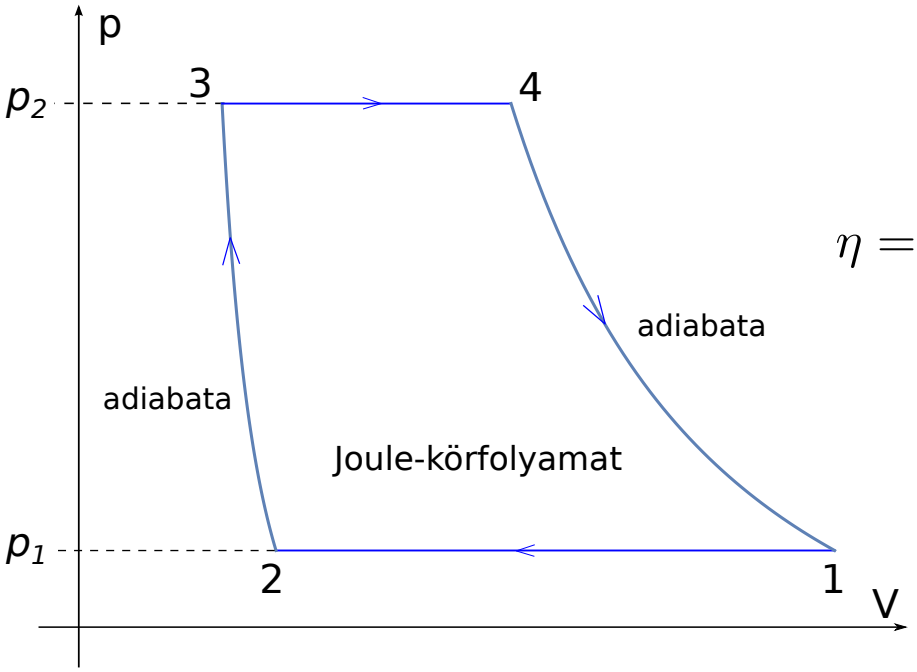
b.) $C_f = C_V + \beta \cdot V$

c.) $C_f = C_V + a \cdot p$

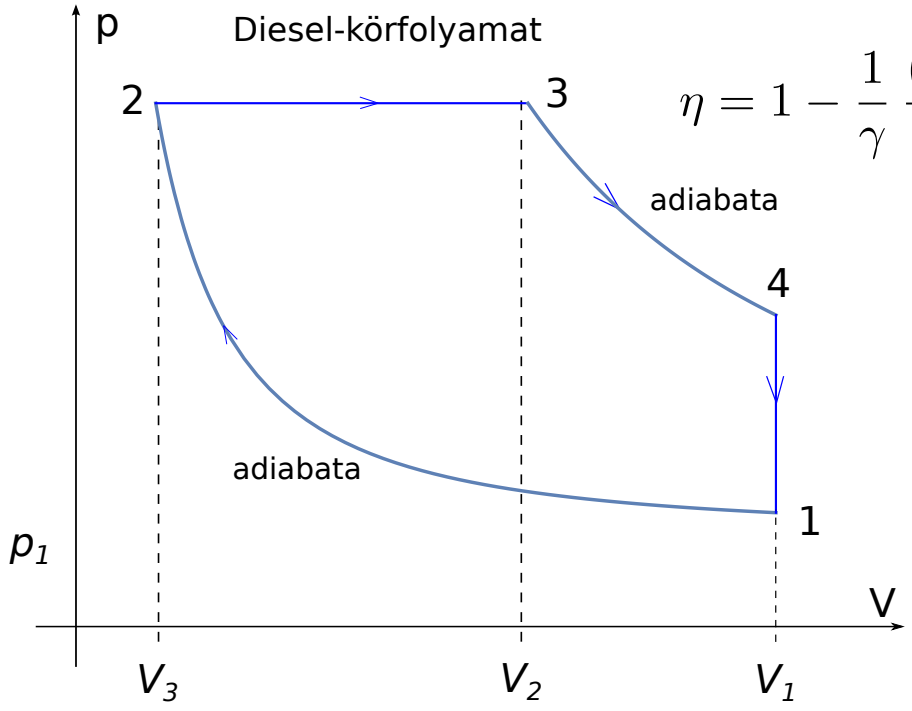
$\alpha, \beta, a = \text{áll.}$



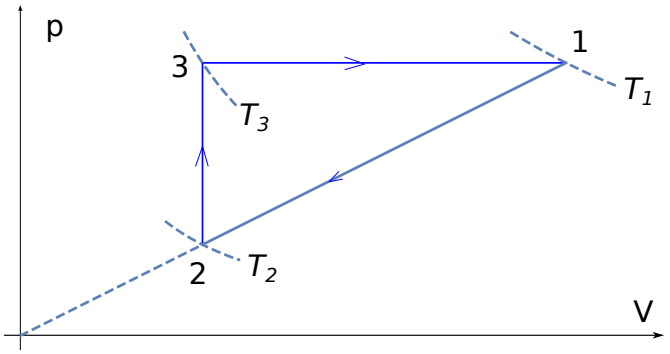
$$\eta = 1 - \left(\frac{V_2}{V_1}\right)^{\gamma-1}$$



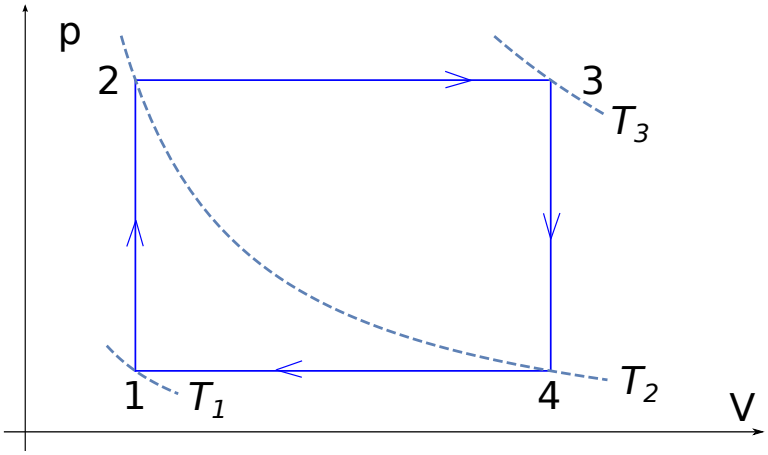
$$\eta = 1 - \left(\frac{p_1}{p_2}\right)^{\frac{\gamma-1}{\gamma}}$$



$$\eta = 1 - \frac{1}{\gamma}\,\frac{(V_2/V_1)^{\gamma} - (V_3/V_1)^{\gamma}}{V_2/V_1 - V_3/V_1}$$



$$\eta = 1 - \frac{\frac{\gamma+1}{2}(T_1 - T_2)}{T_3 - T_2 + \gamma(T_1 - T_3)}$$



$$T_2 = ? \quad (T_2 = \sqrt{T_1 T_3})$$

$$\eta = 1 - \frac{T_3 - T_2 + \gamma(T_2 - T_1)}{T_2 - T_1 + \gamma(T_3 - T_2)} = 1 - \frac{T_2 + \gamma T_1}{T_1 + \gamma T_2}$$