43.) $V_ö = 44{,}8\,dm^3$ egyatomos gáz $\rightarrow f = 3$

$P = 200\,W$ $V_{b1} = V_{j1} = \frac{V_ö}{2}$

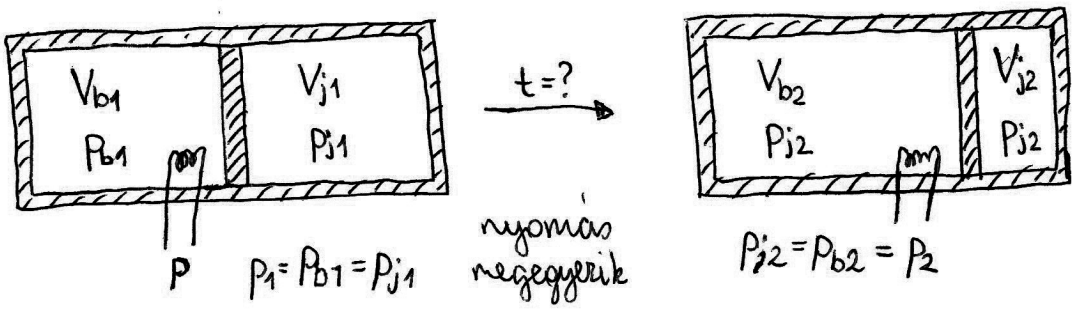
$p_1 = 10^5\,Pa$ $V_{j2} = \frac{V_{j1}}{2} \rightarrow t = ?$

$E_b = \frac{f}{2} nRT = \frac{f}{2} pV$

$\Delta E_b = Q + W$

$k = \frac{f+2}{f}$ $Q = P \cdot t$

$pV^k = áll$



$p_1 = p_{b1} = p_{j1}$ nyomás megegyezik $p_{j2} = p_{b2} = p_2$

A teljes belső energia változás:

$\Delta E_{bö} = Q + W_ö$ Q csak a fűtőszál miatt!

$\Delta E_{bb} + \Delta E_{bj} = Q + \underbrace{W_b + W_j}_{0}$ $W_b = -W_j$ egymáson végzik!

$$\frac{3}{2}(p_{b2}V_{b2} - p_{b1}V_{b1}) + \frac{3}{2}(p_{j2}V_{j2} - p_{j1}V_{j1}) = Q = P \cdot t$$

$$\frac{3}{2}\left(p_2 \frac{3}{4}V_ö - p_1 \frac{V_ö}{2} + p_2 \frac{V_ö}{4} - p_1 \frac{V_ö}{2}\right) = P \cdot t$$

$$\frac{3}{2}(p_2 V_ö - p_1 V_ö) = P \cdot t$$

$$t = \frac{\frac{3}{2}(p_2 V_ö - p_1 V_ö)}{P} = \ldots = \underline{\underline{73{,}1\,s}}$$

adiabatikus

$p_1 V_1^k = p_2 V_2^k$ jobb oldalra

$p_1 V_{j1}^k = p_2 V_{j2}^k$

$\underline{\underline{p_2 = p_1 \left(\frac{V_{j1}}{V_{j2}}\right)^k}}$