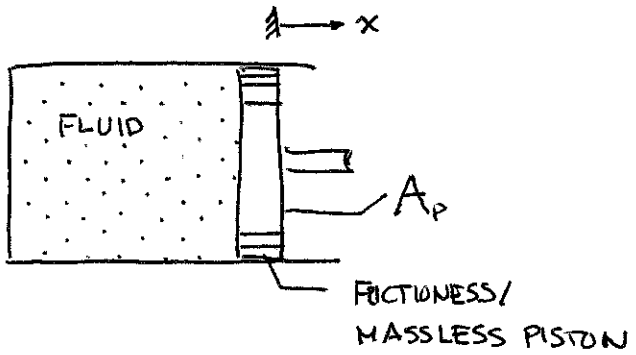
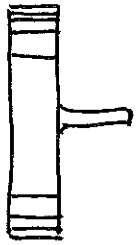
COMPRESSION/EXPANSION WORK



$$W_{IN,1-2} = \int \bar{F} \cdot d\bar{s}$$

=

MAKE PISTON SYSTEM



COLM $x \longleftrightarrow$ DIR

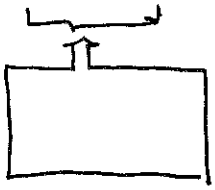
$$\frac{d}{dt}\left(P_{SYS,x}\right) = \sum F_x + \mathcal{L}_0 - \mathcal{L}_0$$

=

=

THUS

$$W_{IN,1-2} = \int -(\quad)\, dx$$



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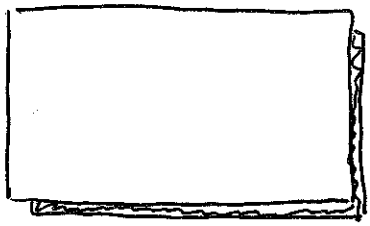
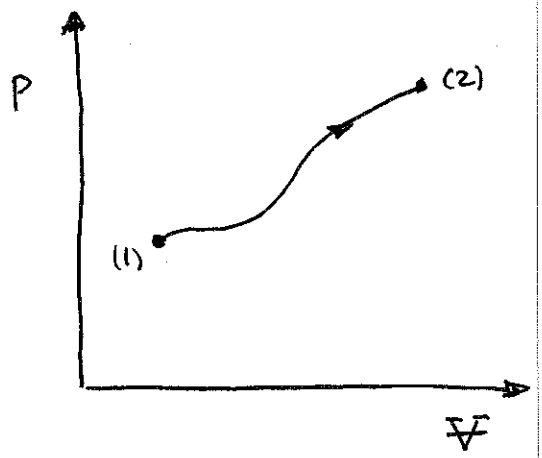
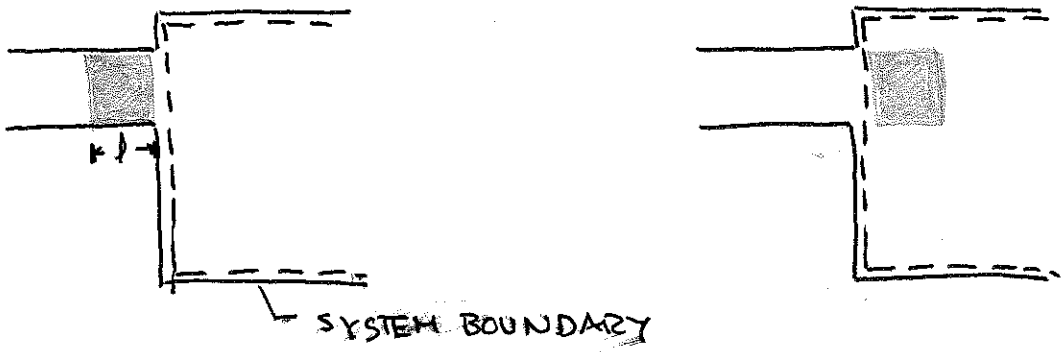




- COMP/EXP. WORK
- IN TERMS of *System properties only!*

Flow Work & Enthalpy

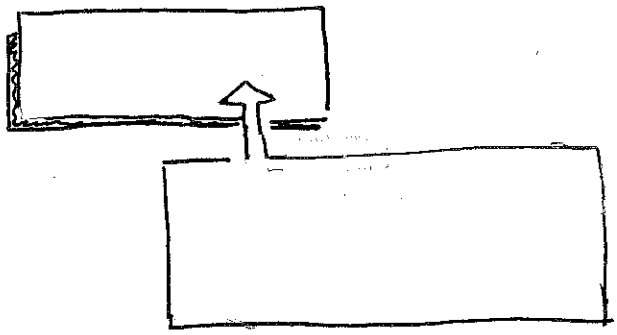
- WORK REQUIRED TO _____ _____ _____ SYSTEM!



$F =$

$W_{FLOW} =$ $=$ $=$

$\frac{W_{FLOW}}{m} =$



$$\frac{d}{dt}(E_{sys}) = \dot{Q}_{IN,NET} + \dot{W}_{IN,NET} + \sum_{IN} \dot{m}\left(u + \frac{V^2}{2} + gz\right) - \sum \dot{m}\left(u + \frac{V^2}{2} + gz\right)$$

$$\dot{W}_{IN,NON\text{-}FLOW} + \dot{W}_{IN,FLOW}$$

$$\Vert$$

← HEY! → $u + pv \equiv$

SPECIFIC