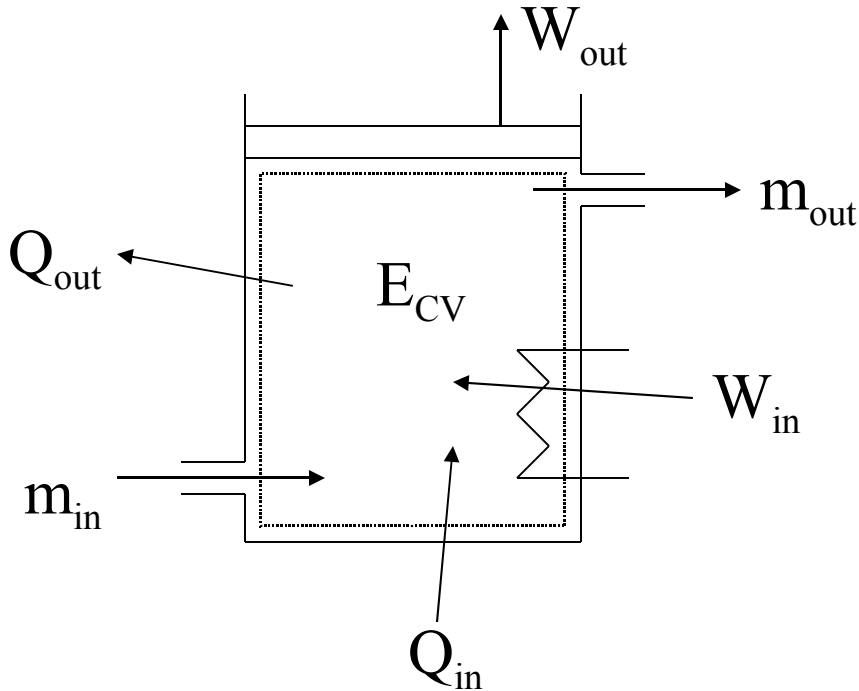


# Conservation of Energy for Open Systems

Energy can enter/leave an open system via

Heat, Work AND Mass Flow Entering/Leaving



$$\Delta E_{CV} = \underbrace{Q - W}_{\text{Net energy transfer by heat/work}} + \underbrace{E_{in}}_{\text{Total energy of entering mass}} - \underbrace{E_{out}}_{\text{Total energy of exiting mass}}$$

Net energy change of CV

Net energy transfer by heat/work

Total energy of entering mass

Total energy of exiting mass