STEADY FLOW: HEAT EXCHANGERS

- Heat exchangers are devices in which a working fluid trades its thermal energy with another working fluid.
- These devices are typically insulated to prevent any heat exchange with the environment.

CV analysis: conservation of mass principle

Choice of the CV:

Conservation of mass:

Under steady flow:

CV analysis: energy balance principle

Choice of the CV:

Energy balance:
Simplifications:

- Steady flow:
- No change in elevation:
- No change in velocity:

Reduced energy equation: