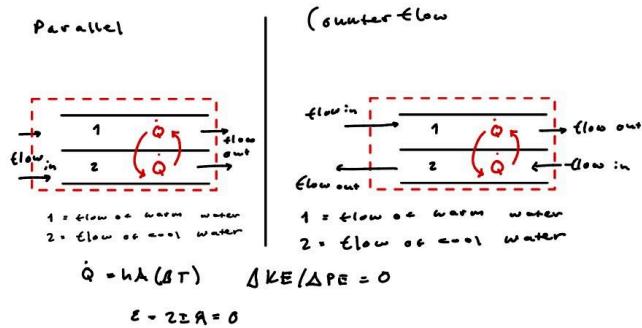


Heat Exchanger: A heat exchanger is a device that transfers thermal energy between two or more fluids (liquids or gases) without them mixing, used for heating or cooling applications. It works by transferring heat from a hotter fluid to a colder one through a solid, conductive barrier, or sometimes via direct contact.

Diagram:

System Diagram



Changes: These are 3 changes that could affect the device:

- Changing the flow from parallel to counterflow
- Increasing water temperature
- Pinching/compressing the tube

Effects:

	Cold water temp before interacting with heat exchanger (Celsius)	Cold water temp after interacting with heat exchanger (Celsius)	Hot water temp before interacting with heat exchanger (Celsius)	Hot water temp after interacting with heat exchanger (Celsius)
Parallel	4.0	23.6	43.1	27.3
Counterflow	6.3	28.1	43.1	23.0
Hotter water	4.0	23.0	50.0	30.0
Pinched	9.6	24.9	42.4	26.5

Counterflow:

- Increased temperature in the cold water
- Decrease temperature in the hot water after interaction

Hotter Water:

- Smaller change in temperature from interaction

Pinched:

- Increased temperature of the cold water
- Decreased temperature by a small amount of hot water.