شركة إنجاز للطاقة والمشاريع
ENJAZ ENERGY & PROJECTS

VAPOUR ABSORPTION HEAT PUMP

SUSTAINABLE SOLUTIONS FOR ENERGY & UTILITY

HEAT PUMP

- Heat flows naturally from a higher temperature to a lower temperature.
- Heat pumps, however, can force the heat flow in the other direction, using a relatively small amount of high-quality drive energy (Steam, electricity, fuel or high-temperature waste heat).
- Heating COP: 1.65

SYSTEM COMPARSION

THERMAX

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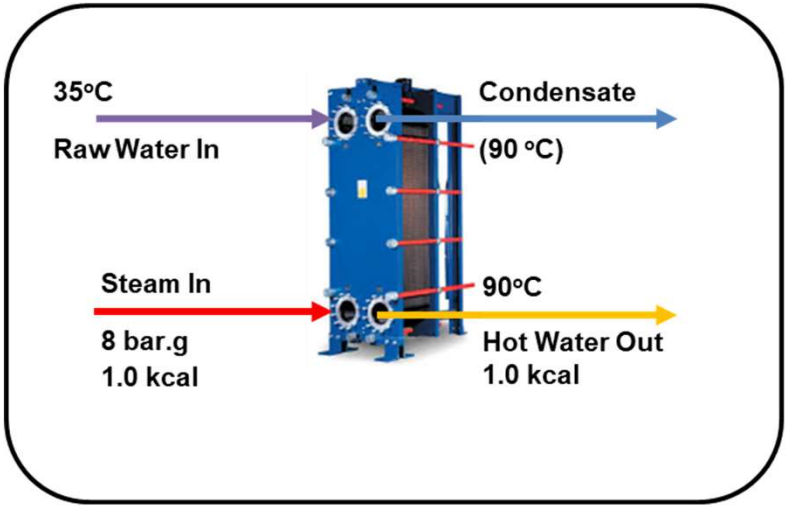
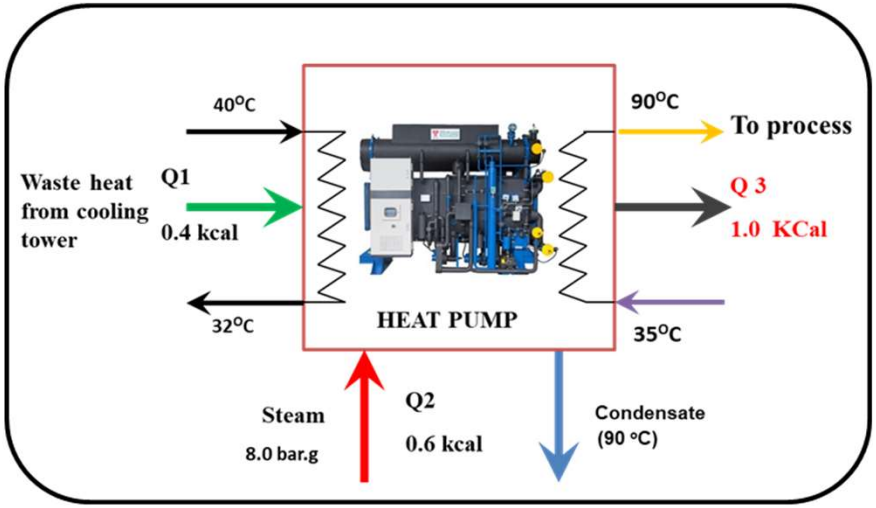
CONVENTIONAL SYSTEM



THERMAX SOLUTION



40% Savings in Energy

HEAT PUMP

HEAT SOURCE: Steam, Hot Water, Direct Fuel Firing & Exhaust Gas

CAPACITY:

Heating : 0.25 MW – 40 MW

TEMPERATURE RANGE:

Hot water : 35 – 90^{o}C

Delta T : 55^{o}C max

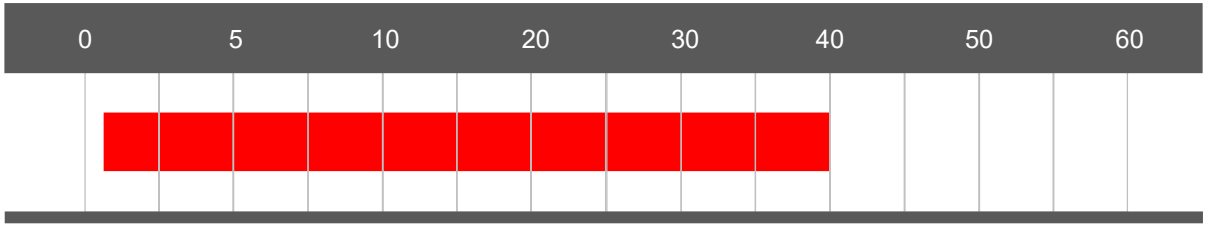
HEAT ENERGY AVAILABLE IN THE FORM OF

HIGH TEMPERATURE HEAT SOURCE:

- Dry Saturated Steam (2 – 10 bar.g)
- High Temperature Hot Water (140 – 180^{O}C)
- Exhaust Gas (275 – 600^{O}C)
- Fuel (Natural Gas, LPG, Diesel)

WASTE HEAT SOURCE

- Cooling tower water
- Geothermal water
- Process hot water
- Flue gas condensation heat



HEAT PUMP

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Waste Heat

Cooling tower water
Geothermal water
Process hot water
Engine LT Jacket water

Hot Water

Up to 110°C

Driving Energy

Steam (2 – 10 bar.g)
Hot water (140 – 180 °C)
Exhaust Gas (300 – 600 °C)
Fuel (Natural gas, LPG, Propane, Diesel)

ABSORPTION HEAT PUMP

40% Savings in Energy Input

SALIENT FEATURES

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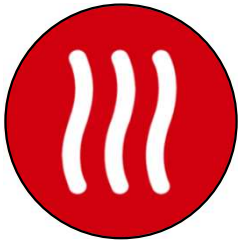
Heat Pump is used for the Low Temp Hot Water Generation up to temp of 90^{O}C

Direct Savings on the Live Energy Consumption up to 40%

If the low Grade Heat Recovery is done from the cooling tower water evaporative losses also can be brought down, saves water



The Hot Water can be used for the Low Temp Process Heating Application

HEAT PUMP TYPE I - INSTALLATIONS

Erding, Germany

Thisted, Denmark

Vesforbrandeing, Denmark

HEAT PUMP INSTALLATIONS

Jönköping, Sweden
4 MW

Thisted District Heating
10.5 MW

Copenhagen District Heating, Denmark
27.5 MW

Bjerringbro, Denmark.
2.5 MW

Karlstad, Sweden
9.5 MW

Vestforbraending, Sweden
21 MW