# Plate Heat Exchangers: Efficiency and Flexibility

**Efficiency and Flexibility** | Applications | WCR Product Range

- **Easy to Remove and Clean**
  You simply remove the tie bolts and slide back the movable frame part. Now the plate pack can be inspected, pressure cleaned, or removed for refurbishment if required.
- **Expandable**
  A very significant feature of the plate heat exchanger is that it is expandable. Increasing your heat transfer requirements means simply adding plates instead of buying a new heat exchanger, saving time and money.
- **High Efficiency**
  Because of the pressed patterns in the plates and the relative narrow gaps, very high turbulence is achieved at relative low fluid velocity. This combined with counter directional flow results in very high heat transfer coefficients.
- **Compact Size**
  As a result of the high efficiency, less heat transfer area is required, resulting in a much smaller heat exchanger than would be needed for the same duty using other types of heat exchangers. Typically a plate heat exchanger requires between 20-40% of the space required by a tube & shell heat exchanger.
- **Close Approach Temperature**
  The same features that give the plate heat exchanger its high efficiency also makes it possible to reach close approach temperatures which is particularly important in heat recovery and regeneration applications. Approach temperatures of 1ºF are possible.
- **Multiple Duties in a Single Unit**
  The plate heat exchanger can be built in sections, separated with simple divider plates or more complicated divider frames with additional connections. This makes it possible to heat, regenerate, and cool a fluid in one heat exchanger or heat or cool multiple fluids with the same cooling or heating source.
- **Avoid cross contamination**
  Each medium is individually gasketed and as the space between the gaskets is vented to the atmosphere, cross contamination of fluids is eliminated.
- **Less Fouling**
  Very high turbulence is achieved as a result of the pattern of the plates, the many contact points, and the narrow gap between the plates. This combined with the smooth plate surface reduces fouling considerably compared to other types of heat exchangers.
- **Lower Costs**
  High heat transfer coefficients mean less heat transfer area and smaller heat exchangers, and sometimes even less heat exchangers. This and less space requirements, reduced flow rates, and smaller pumps means.

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