

Plate Heat Exchanger

Sales of Plate Heat Exchangers upon specification.

We are able to supply you with different types of Plate Heat Exchangers.

Materials for PHE:

- AISI 304
- AISI 316/316L/316TI
- SMO
- HASTELLOY
- TITANIUM

The Plate Heat Exchanger will be supplied as a complete unit, ready for mounting on set.

Scope of application:
District heating, Central Heating and Marine Industry.

Central Cooling, Air Contitioning, Solar Heating, and Process Water.

Normal range for standard Plate Heat Exchanger.

Working pressure: 10 barg
Temperatur range: -20°C to +140°C - depending on the Gasket material.

We are able to do different designs, and supply you with Plate Heat Exchangers for different pressures and temperatures.



Plate heat exchanger history

The plate heat exchanger (PHE) was invented by Dr Richard Seligman in 1923 and revolutionised methods of indirect heating and cooling of fluids.

A plate heat exchanger is a type of heat exchanger that uses metal plates to transfer heat between two fluids. This has a major advantage over a conventional heat exchanger in that the fluids are exposed to a much larger surface area because the fluids spread out over the plates. This facilitates the transfer of heat, and greatly increases the speed of the temperature change. It is not as common to see plate heat exchangers due to the fact that they need well-sealed gaskets to prevent the fluids from escaping, although modern manufacturing processes have made them feasible.

The concept behind a heat exchanger is the use of pipes or other containment vessels to heat or cool one fluid by transferring heat between it and another fluid. In most cases, the exchanger consists of a coiled pipe containing one fluid that passes through a chamber containing another fluid. The walls of the pipe are usually made of metal, or another substance with a high thermal conductivity, to facilitate the interchange, whereas the outer casing of the larger chamber is made of a plastic or coated with thermal insulation, to discourage heat from escaping from the exchanger.

The plate heat exchanger is a specialized design well suited to transferring heat between medium- and low-pressure liquids. Welded, semi-welded and brazed heat exchangers are used for heat exchange between high-pressure fluids or where a more compact product is required. In place of a pipe passing through a chamber, there are instead two alternating chambers, usually thin in depth, separated at their largest surface by a corrugated metal plate. The plate produces an extremely large surface area, which allows for the fastest possible transfer. Making each chamber thin ensures that the majority of the volume of the liquid contacts the plate, again aiding exchange. The plate design ensures that turbulent flow is maintained within the heat exchanger.

The working principle states that the PHE consists of a series of thin, corrugated plates that are gasketed, welded together or brazed together depending on the application. The plates are compressed in a rigid frame to create an arrangement of parallel flow channels with alternating hot and cold fluids. Due to corrugations in the plate, highly turbulent flow increases the heat transfer rate. All plate heat exchangers look similar on the outside. The difference lies on the inside, in the details of the plate design and the sealing technologies used.

