

## Air-cooled heat exchangers (ACHE)



devices that transfer heat between a process fluid and ambient air without the need for external cooling water. They consist of finned tubes through which the hot process fluid flows, and the fins increase the surface area for better heat transfer to surrounding. The ambient air then carries away the heat, cooling the process fluid.

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## Bayonet Heat Exchanger



is a smaller-diameter tube inserted into a larger-diameter tube that has been capped at one end, The fluid flow is typically entering the inner tube and returning in the opposite direction. The design can be expensive due to the need of a double channel design, and eliminates any thermal expansion problems, it also creates a unique none-freezing-side for cryogenic fluids.

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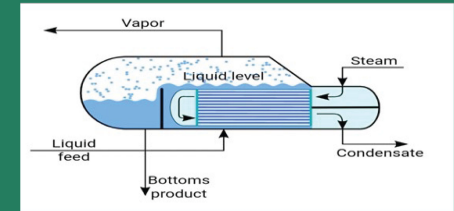
## Chiller



Removes heat from a liquid coolant via a vapor-compression, adsorption refrigeration, or absorption refrigeration cycles, and the liquid can then be circulated through a heat exchanger to cool equipment, or another process stream, also used in dehumidify air in commercial, industrial condensing side of the chiller can be either air or water cooled.

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## Re-Boiler



plays an essential role in transferring heat to and from the process fluid in a chemical process, it takes a process fluid and turns it into steam, or a mixture of steam and condensate, and its most common use is to start a distillation process. Types of Re-Boilers are: Thermosyphon, Kettle, Fired, and Forced recirculation.

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