

Heat Recovery System

General Information

Traditional ways of CO₂ evaporation are by means of steam, ambient air or electricity. Ambient air operated CO₂ evaporators are only applicable when the ambient air temperature is high enough. The use of steam and electricity results in high energy costs. As production costs are mainly energy costs, breweries look for savings on energy consumptions.

Energy balance

In a brewery several media are available which are used for cooling down the product and machinery, such as the compressors. Examples are NH₃, glycol, ice water and cooling water. The return flow of the media can be used for CO₂ evaporation. This way of operation has a dual energy advantage. The CO₂ is evaporated by means of a medium that contains free energy. But the NH₃-plant, glycol plant or cooling towers are also loaded less, because the medium has already been pre-cooled. By installing such a system, breweries are able to recover and save much energy.

Direct or indirect system

To heat recovery systems, Haffmans have developed a direct and an indirect system. The direct system can be applied for glycol or cooling water operation. In case the system works with NH₃, an indirect system is offered. The indirect system is specially developed to avoid cross-contamination between CO₂ and NH₃ which triggers an unwanted chemical reaction. A superheater is available as an option for both systems. The superheater takes care of the additional heating to consumption temperature in case too cold a medium is used.



Beverage CO₂ Systems



Technical information

Features

Direct and indirect solution available,
 Robust design,
 Completely piped and wired,
 All necessary valves and controls for full automatic operation,
 Plug-and-play skid-mounted.

Advantages

No steam or electricity needed,
 Operation not depending on ambient air temperature,
 Direct system has a small footprint,
 Direct system does not consume additional energy, but saves energy,
 Indirect system has a low energy consumption (re-circulation pump),
 Indirect system avoids cross-contamination between CO₂ and NH₃.

Benefits

Saves evaporation energy,
 Saves energy at NH₃ plant, glycol plant or cooling tower,
 Low maintenance,
 Full automatic operation,
 Short payback time.

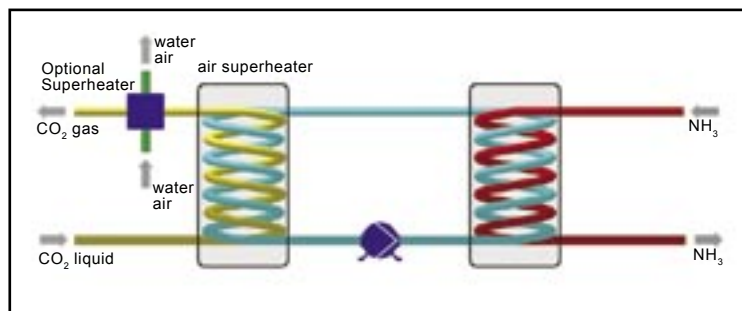
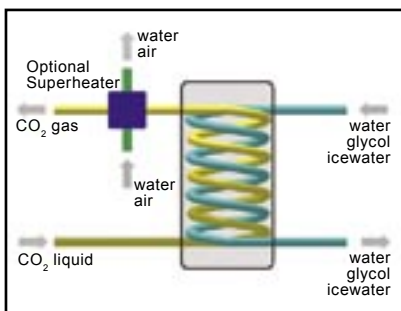
Scope of supply

- Heat exchanger(s)
- Re-circulation pump (indirect system)
- Control Panel
- Valves and controls for full automatic operation
- All mounted, completely piped and wired on a base-frame
- Superheater (optional)
- Insulation (optional)

Technical data

Applicable mediums: NH₃, glycol, ice-water, cooling water
 Design pressure: PN25
 CO₂ temperature inlet: -22 to -26 °C

Haffmans B.V. reserve the right to make changes in the technical specifications at any time.



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