



DAS HERZ DER FRISCHE

DRY-EXPANSION EVAPORATORS

DP-274-1 EN



PURE COOLER



HEAT
EXCHANGERS



HFO
READY

Shell-and-tube Dry Expansion Evaporator: PURE COOLER

Applications

Dry expansion evaporator for low pressure cooling applications (tube side design pressure = 16,5 bar) in Air Conditioning and Process Cooling at positive and negative fluid temperatures. The PURE COOLER is also available on demand at High Pressure (tube side design pressure up to 22 bar) for water heating in heat pump applications.

Technology

With its innovative refrigerant distribution system and single-pass, counter-current design, the PURE COOLER shell and-tube evaporator series guarantees maximum efficiency, low costs and new levels of competitiveness. Ashrae 90.1 and building efficiency protocols, such as Green-building and LEED, are demanding more and more high-efficient cooling systems (COP > 5). These ratings can only be reached with the PURE COOLER product serie, which makes the dry expansion technology close to the flooded evaporation one in terms of performance.

Design features

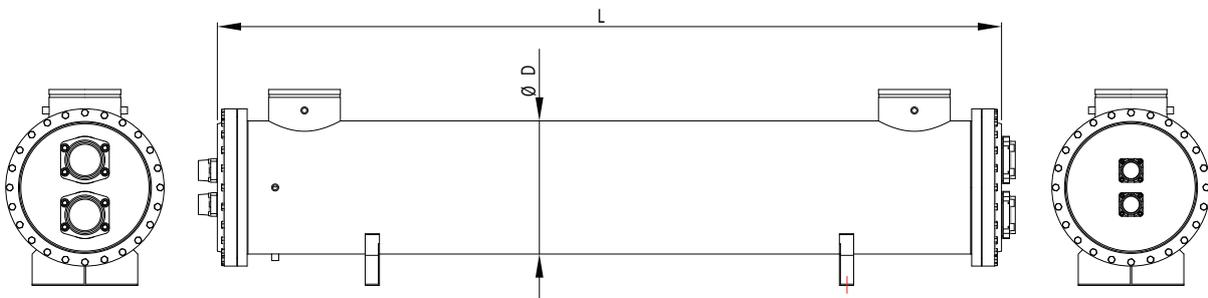
- // A unique patented refrigerant distribution system which has been optimized for R134a
- // High efficiency, single-pass, counter-current design to maximize performance
- // Plastic baffles designed to improve the water side performance and to avoid corrosion issues
- // Inner grooved tubes to maximize the R134a heat transfer coefficient and to limit the negative effects of refrigerant pressure drop
- // Fixed tube sheet design
- // Countercurrent flow configuration

Particulars for quotation

- // Thermal sizing: SmarTube calculation software.
- // Pricing: BITZER official heat exchanger and pressure vessel price list.
- // Product information: available on demand

Product series features

- // Cooling capacity range: 100 to 1750 kW (28 to 498 tons)
- // Water connection orientation: left, right or top side
- // Number of refrigerant circuits: 1 to 4
- // Shell diameters, ØD: 6 sizes from 219,1 to 610 mm (8 to 24 inch)
- // Total length, L: 2340 to 3540 mm (7,7 to 11,6 feet)

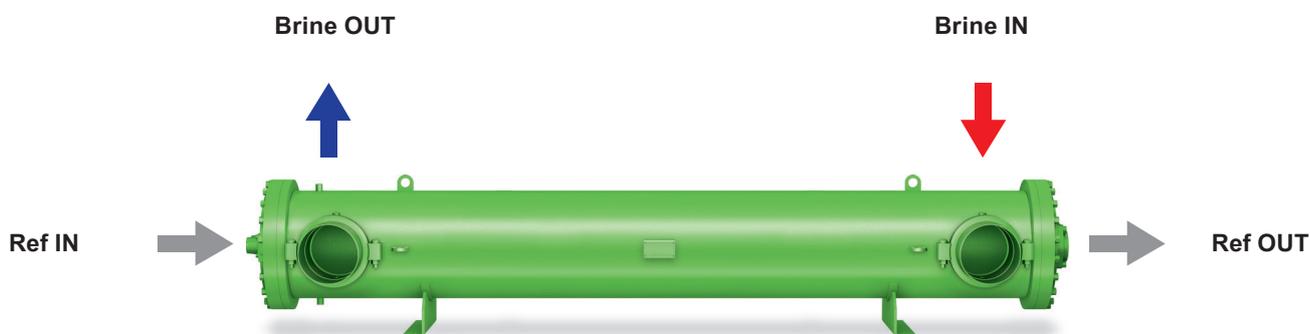


Working principle evaporator mode

// The refrigerant flows inside the tubes in a single-pass configuration.
 // The brine or water flow is counter-current in the shell outside the tubes.

Standard components material

Shell, tube-sheets:	Carbon steel
Headers:	Cast iron and carbon steel
Tubes:	Copper
Baffles:	Polymeric



Design data PED (CE) approval

Version	Tube side				Shell side			
	PS (bar)	TS max (°C)		PT (bar)	PS (bar)	TS max (°C)	TP (bar)	
STD	16,5	50	-10	23,6	10	50	-10	14,3
BT	16,5	50	-40	23,6	10	50	-40	14,3

STD Standard version // BT Low temperature version // PS Maximum allowable pressure // TS max Maximum allowable temperature // TP Test Pressure

// High Pressure version is available up to PS 22 bar on request
 // Other pressure vessel approvals and certifications available on request

Available on request

// Mounting feet (recommended)
 // Insulation
 // Heater cable to prevent freezing of shell side fluid



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