

Title (en)

A MULTI-EVAPORATOR REFRIGERATION CIRCUIT

Title (de)

KÄLTEKREISLAUF MIT MEHREREN VERDAMPFERN

Title (fr)

CIRCUIT DE RÉFRIGÉRATION À MULTIPLES ÉVAPORATEURS

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Application

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Abstract (en)

[origin: WO2012168544A1] The invention relates to a multi-evaporator refrigeration circuit of low pressure receiver type adapted to use carbon dioxide as a refrigerant, comprising at least a compressor (1); a condenser/gas cooler (2); a first throttling valve (4); a liquid/vapour separator (5); a pressure limiting valve (9); a liquid level sensing device (22); at least one evaporator (7); and a suction receiver (8). The refrigeration circuit is adapted to feed the liquid refrigerant to the at least one evaporator (7) from said separator (5) through a second throttling device (6). In the refrigeration circuit at least one ejector (14) comprising a suction port (15) is included in parallel to the first throttling valve (4). The refrigeration circuit is adapted to drive cold liquid from the suction receiver (8) to the suction port (15) of said at least one ejector (14), being the charge transfer activated by the flow transfer, for maintaining a sufficient liquid level in the separator (5) even if the mass flow circulating in evaporators (7) is higher than the mass flow evaporated, through an opening of one valve (10) in the line from the suction receiver (8) to the suction port (15) of the ejector (14), based on a maximum level signal generated by the liquid level sensing device (22), whenever the level of liquid in said suction receiver (8) is above a maximum set level. The present invention also relates to a method in a booster refrigeration circuit including a low temperature circuit, where the liquid mass flow exiting evaporator(s) 18 is evaporated in one circuit of one heat exchanger 16, which other circuit is arranged for circulation of the whole liquid mass flow feeding both MT and LT evaporators.

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Cited by

FR3139889A1; EP3739279A1; US11493247B2; US11333449B2; WO2018177956A1; US10816245B2; US10775086B2; US11460230B2; US11754320B2

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