

Title (en)
REFRIGERATION DEVICE AND FACILITY

Title (de)
KÜHLVORRICHTUNG UND ANLAGE

Title (fr)
DISPOSITIF ET INSTALLATION DE RÉFRIGÉRATION

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Application
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Abstract (en)
[origin: WO2021023455A1] Low-temperature refrigeration device arranged in a frame (100) and comprising a working circuit (10) forming a loop and containing a working fluid, the working circuit (10) forming a cycle comprising in series: a compression mechanism (2, 3), a cooling mechanism (4, 5, 6), an expansion mechanism (7) and a heating mechanism (6, 8), the device (1) comprising a refrigeration heat exchanger (8) intended to extract heat from at least one member (125) by exchanging heat with the working fluid, the mechanisms for cooling and reheating the working fluid comprising a common heat exchanger (6) in which the working fluid transits in counter-flow in two separate transit portions of the working circuit (10), the compression mechanism comprising at least two compressors (2, 3) and at least one motor (14, 15) for driving the compressors (2, 3), the working fluid expansion mechanism comprising at least one rotary turbine (7), the device comprising at least one drive motor (14, 15) comprising a drive shaft, one end of which drives a compressor (2) and the other end of which is coupled to a turbine (7), the motor (14) being attached to the frame (100) at at least one fixed point (104), the common heat exchanger (6) being attached to the frame (100) at at least one fixed point (106), the two counter-flow transit portions of the common heat exchanger (6) being orientated in a longitudinal direction (A) of the frame (100), the drive shaft of the drive motor (14, 15) being orientated in a direction parallel or substantially parallel to the longitudinal direction (A) and the turbine (7) and the compressor (2) being arranged relatively longitudinally such that the turbine (7) is located longitudinally on the side corresponding to the relatively cold end of the common heat exchanger (6) when the device is being operated and the compressor (2) is located longitudinally on the side corresponding to the relatively hot end of the common heat exchanger (6) when the device is being operated.

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