

Title (en)  
DEVICE FOR COOLING A CONSUMER WITH A SUPER-COOLED LIQUID IN A COOLING CIRCUIT

Title (de)  
VORRICHTUNG ZUM KÜHLEN EINES VERBRAUCHERS MIT EINER UNTERKÜHLTEN FLÜSSIGKEIT IN EINEM KÜHLKREISLAUF

Title (fr)  
DISPOSITIF DE REFROIDISSEMENT D'UN DISSIPATEUR AVEC UN LIQUIDE SURREFROIDI DANS UN CIRCUIT DE REFROIDISSEMENT

Publication  
**EP 3017238 B1 20201104 (DE)**

Application  
**EP 14736664 A 20140618**

Priority  
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Abstract (en)  
[origin: CA2917035A1] According to the prior art, a super-cooled liquid medium, for example a super-cooled liquid nitrogen, is pumped through a sub-cooler and is thereby cooled by the same medium that evaporates in the vacuum. This super-cooled nitrogen is then used as a coolant for a consumer. If only a small amount of heat is emitted by the consumer to the nitrogen, the liquid medium can be guided in the circuit, in which the sub-cooler is arranged. For compensating volume fluctuations, such a circuit requires a compensation vessel which, however, is very expensive and can furthermore only be operated in the presence of a super-cooled medium when either a part of the medium is heated using external energy, or an inert gas which boils at very low temperatures has to be used as a pressure compensation medium. According to the invention, it is proposed that the supply container for the liquid medium is integrated into the cooling circuit and is used as a compensation vessel. As a result, the use of a separate compensation vessel can be dispensed with.

IPC 8 full level  
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CPC (source: EP RU US)  
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Citation (examination)  
US 7263845 B2 20070904 - LEE RON CLARK [US]

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