Title (en)

CRYOGENIC REFRIGERATION OF A PROCESS MEDIUM

Title (de)

KRYOGENE KÜHLUNG EINES PROZESSMEDIUMS

Title (fr)

RÉFRIGÉRATION CRYOGÉNIQUE DE MILIEU DE TRAITEMENT

Publication

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Application

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Abstract (en)

[origin: GB2571346A] A cryogenic refrigeration system comprises a conduit 2 supplying a flow 10 of a process medium (helium or nitrogen), a counter flow heat exchanger 3 thermally coupled to a heat exchanger section 2A of the conduit and comprises an inlet 34 at a cold end 30 and an outlet 36 at the warm end 32 of the heat exchanger. A first pressure regulator 4 in fluid communication with the conduit is arranged downstream of the heat exchanger section and a vessel 5 in fluid communication with the conduit is arranged downstream of the first pressure regulator. The vessel is in fluid communication with the inlet of the heat exchanger and provides an evaporated gas flow from the process medium to the inlet of the heat exchanger. The conduit is free of any evaporation heat exchanger upstream of the heat exchanger section. Also disclosed is a method for cryogenic refrigeration of a process medium. A load (6, fig 4) may be located within the liquid phase or located external of the vessel (fig 5). A plurality of heat exchangers in series and/or parallel may be used (figs 6A, 6B). The system and method are used to reduce exergetic losses.

IPC 8 full level

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CPC (source: EP GB KR US)

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Citation (search report)

See references of WO 2019162515A1

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