

Title (en)
METHOD AND DEVICE FOR TRANSFERRING A WORKING MEDIUM IN A LIQUID PHASE FROM A LOW-PRESSURE AREA TO A HIGH-PRESSURE AREA, AND A SYSTEM COMPRISING THE DEVICE

Title (de)
VERFAHREN UND VORRICHTUNG ZUM ÜBERFÜHREN EINES ARBEITSMITTELS IN FLÜSSIGER PHASE VON EINEM NIEDERDRUCKBEREICH IN EINEN HOCHDRUCKBEREICH UND SYSTEM MIT DER VORRICHTUNG

Title (fr)
PROCÉDÉ ET DISPOSITIF DE TRANSFERT D'UN FLUIDE DE TRAVAIL EN PHASE LIQUIDE D'UNE ZONE BASSE PRESSION À UNE ZONE HAUTE PRESSION ET SYSTÈME COMPRENANT LE DISPOSITIF

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EP 23188444 A 20230728

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PL 44237222 A 20220927

Abstract (en)
A method of transferring a working medium in a liquid phase from a low-pressure area to a high-pressure area, in which a working medium is in the gaseous phase or supercritical state, is characterized in that at least one working space (P) is moved and as a result of the moving the at least one working space (P) is opened at the CG stage in the high-pressure area and the working medium in the liquid phase, having a much higher density than the surrounding working medium in the gaseous phase or supercritical state, is caused to drop from this at least one working space (P), whereby the working medium in the liquid phase is replaced in the working space (P) by the working medium in the gaseous phase or supercritical state. A device (15) for transferring a working medium in a liquid phase from a low-pressure area to a high-pressure area, characterized in that it comprises at least:- drum (5), driven by drive (19), rotating and arranged in housing (11, 12), in which there is at least one working space (P),- bearing shafts (9) connected to drum (5) and arranged in housing (11, 12),- two floating plates (6) with openings (GC, CG) arranged in housing (11, 12) and connecting working space (P) to:- the high-pressure area upstream and downstream of the evaporator, where the working medium in the liquid phase is exchanged in the working space for the working medium in the gaseous phase or supercritical state- the area upstream and downstream of condenser (17), where the working medium in the gaseous phase or supercritical state is exchanged in working space (P) for the working medium in the liquid phase. A system comprising a device for transferring a working medium in a liquid phase from a low-pressure area to a high-pressure area, an evaporator, a condenser and at least one working device characterized in that device (15) for transferring a working medium in a liquid phase from a low-pressure area to a high-pressure area comprises at least:-drum (5), driven by drive (19), rotating and arranged in housing (11, 12), in which there is at least one working space (P),- bearing shafts (9) connected to drum (5) and arranged in housing (11, 12),- two floating plates (6) with openings (GC, CG) arranged in housing (11, 12) and connecting working space (P) to:- the high-pressure area upstream and downstream of the evaporator, where the working medium in the liquid phase is exchanged for the working medium in the gaseous phase or supercritical state- the area upstream and downstream of the condenser (17), where in the working space (P) the working medium in the gaseous phase or supercritical state is exchanged in the working space for the working medium in the liquid phase.

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Citation (applicant)

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- WO 2011092705 A2 20110804 - WINPOWER INC [BE], et al
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- ZBYNEK ZELENYVACLAV VODICKAVACLAV NOVOTNYJAKUB MASCUCH: "Gear pump for low power output ORC - an efficiency analysis", INTERNATIONAL SEMINAR ON ORC POWER SYSTEMS, 13 September 2017 (2017-09-13)
- NABORU YAMADMOHAMED MD: "Fundamental experiment of pumpless Rankine-type cycle for low temperature heat recovery", NOR ANUAR, vol. 36, 2 February 2011 (2011-02-02), pages 1010 - 1017, XP028140064, DOI: 10.1016/j.energy.2010.12.007

Citation (search report)

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