

Title (en)

METHOD FOR OPERATING A CIRCULATION SYSTEM AND CIRCULATION SYSTEM

Title (de)

VERFAHREN ZUM BETRIEB EINES ZIRKULATIONSSYSTEMS SOWIE ZIRKULATIONSSYSTEM

Title (fr)

PROCÉDÉ DE FONCTIONNEMENT D'UN SYSTÈME DE CIRCULATION ET SYSTÈME DE CIRCULATION

Publication

EP 4007832 C0 20240508 (DE)

Application

EP 19868154 A 20191121

Priority

- EP 2019062547 W 20190515
- EP 2019000317 W 20191121
- DE 102018111579 A 20180515

Abstract (en)

[origin: WO2019219785A1] The invention relates to a method for operating a circulation system (10) comprising a cooling device (12, 14) with an input port (12a, 14a) and an output port (12b, 14b) for cooling water. Said method comprises the following steps; determining, in particular calculating, a change in the temperature of the water between the initial region and the end region according to a model of the axial change in temperature for the first partial section adjacent to the output port (12b, 14b), starting from a temperature start value T_{MA} $T_{MA}^* < T_{soll}$, and a volume flow start value V_{z^*} , determining, in particular calculating, a change in the temperature of the water between the initial region and the end region for each further partial section according to the model of the temperature change, under the constraint that the water temperature in the initial region of the partial section is equal to the water temperature in the end region of the partial section, to which the given partial section is adjacent, and selecting the value T_a of the water temperature and the value V_z of the volume flow at the output port (12b, 14b) in such a way that in the end region of each partial section the water temperature is T_{ME} $T_{ME} < T_{soll}$ and at the inlet port (12a, 14b) the water temperature $T_b < T_{soll}$ with $T_{soll} - T_b < \Theta$ is set, wherein $\Theta > 0$ is a predetermined value. The invention also relates to a circulation system for implementing said method.

IPC 8 full level

E03B 7/04 (2006.01); **F24D 17/00** (2022.01)

CPC (source: EP IL KR US)

E03B 7/04 (2013.01 - EP IL US); **E03B 7/045** (2013.01 - EP IL KR); **F24D 17/0073** (2013.01 - EP IL KR); **F24D 17/0078** (2013.01 - EP US); **F24D 19/1054** (2013.01 - US); **F24D 17/0073** (2013.01 - US); **F24D 17/02** (2013.01 - EP)

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Participating member state (EPC – UP)

AT BE BG DE DK EE FI FR IT LT LU LV MT NL PT SE SI

DOCDB simple family (publication)

WO 2019219785 A1 20191121; AU 2019270362 A1 20210107; AU 2019446081 A1 20220106; BR 112020023043 A2 20210202; BR 112021022701 A2 20220118; CA 3100102 A1 20191121; CA 3140513 A1 20201119; CN 112585324 A 20210330; CN 112585324 B 20230103; CN 114127371 A 20220301; CY 1124377 T1 20220722; DK 3601688 T3 20210628; EP 3601688 A1 20200205; EP 3601688 B1 20210324; EP 4007832 A1 20220608; EP 4007832 B1 20240508; EP 4007832 C0 20240508; ES 2879912 T3 20211123; HR P20210994 T1 20210917; HU E055249 T2 20211129; IL 278651 B 20220601; IL 288025 A 20220101; JP 2021523314 A 20210902; JP 2022533083 A 20220721; JP 7393012 B2 20231206; KR 20210029717 A 20210316; KR 20220062229 A 20220516; LT 3601688 T 20210910; MX 2020012082 A 20210623; MX 2021013831 A 20220322; PL 3601688 T3 20211129; PT 3601688 T 20210630; RS 62102 B1 20210831; SA 520420530 B1 20221025; SA 521430822 B1 20231012; SG 11202011254S A 20201230; SG 11202112646X A 20211230; SI 3601688 T1 20210930; US 11525247 B2 20221213; US 2021189701 A1 20210624; US 2022205647 A1 20220630; US 2023130061 A1 20230427; WO 2020228921 A1 20201119

DOCDB simple family (application)

EP 2019062547 W 20190515; AU 2019270362 A 20190515; AU 2019446081 A 20191121; BR 112020023043 A 20190515; BR 112021022701 A 20191121; CA 3100102 A 20190515; CA 3140513 A 20191121; CN 201980038597 A 20190515; CN 201980097152 A 20191121; CY 211100560 T 20210623; DK 19729444 T 20190515; EP 19729444 A 20190515; EP 19868154 A 20191121; EP 2019000317 W 20191121; ES 19729444 T 20190515; HR P20210994 T 20210623; HU E19729444 A 20190515; IL 27865120 A 20201111; IL 28802521 A 20211111; JP 2020564667 A 20190515; JP 2021567835 A 20191121; KR 20207035222 A 20190515; KR 20217039931 A 20191121; LT 19729444 T 20190515; MX 2020012082 A 20190515; MX 2021013831 A 20191121; PL 19729444 T 20190515; PT 19729444 T 20190515; RS P20210789 A 20190515; SA 520420530 A 20201112; SA 521430822 A 20211111; SG 11202011254S A 20190515; SG 11202112646X A 20191121; SI 201930075 T 20190515; US 201917055344 A 20190515; US 201917611291 A 20191121; US 202218064455 A 20221212