Title (en)

METHOD FOR SHAPING OF SET OF CAPILLARIES OF COLLECTOR OF HEAT EXCHANGER, COLLECTOR OF HEAT EXCHANGER OF HEAT ENGINES WITH SET OF CAPILLARIES, SET OF CAPILLARIES OF COLLECTOR OF HEAT EXCHANGER

Title (de)

VERFAHREN ZUR FORMUNG EINES KAPILLAREN-SAMMLER-WÄRMETAUSCHER-KONVERTOR-WÄRMETAUSCHER-KAPILLAR-ANORDNUNG

Title (fr)

PROCÉDÉ DE MISE EN FORME D'ENSEMBLE DE CAPILLAIRES DE COLLECTEUR D'ÉCHANGEUR DE CHALEUR, COLLECTEUR D'ÉCHANGEUR DE CHALEUR

Publication

EP 4290161 A1 20231213 (EN)

Application

EP 23152795 A 20230121

Priority

- PL 44138222 A 20220606
- PL 44325022 A 20221222

Abstract (en)

A method for shaping a set of capillaries of collector (20) of heat exchanger (10) of heat machine (5) with the set (40) of capillaries distributing a cooling medium to sections of heat exchanger (10), according to which each capillary (41, 42, 43, 44, 45) is connected at one end to its associated distribution manifold (31, 32, 33), and at another end to its associated inflow connector (21, 22, 23, 24, 25) of the section of the heat exchanger (10).The capillary (45) is shaped of a straight section (71) and upper inflow bends (72) and lower inflow bends (73) whereas a capillary (44) situated near the distribution manifold (31, 32, 33) is given a shape of a helix that has at least one whole coil (75), the upper inflow bend (72) and the lower inflow bend (73) and to the capillary (44) adjacent the capillary (45) with the straight section (71) is added one more coil (75) and whereas to each next capillary (43, 42), going towards the distribution manifold (31, 32, 33), is added one coil more than has previous capillary, whereby a size of the capillary with coils determined by a diameter (d) of the capillary tube, a number of coils, an outer diameter (D) of coils and a spiral lead (H) of the capillary helix are selected experimentally in such a way that the flow resistance of the cooling medium of capillary tubes does of capillaries (41, 42, 43, 44, 45) one of set (40) not differ each other by more than 30%, regardless of location of the inflow connectors (21, 22, 23, 24, 25) in respect to the distribution (31, 32, 33).

IPC 8 full level

F25B 41/37 (2021.01); **F25B 39/04** (2006.01); **F28F 9/26** (2006.01); F25B 39/02 (2006.01)

CPC (source: EP)

F25B 39/04 (2013.01); **F28F 9/0275** (2013.01); F25B 39/028 (2013.01); F25B 41/37 (2021.01); F25B 2339/04 (2013.01); F25B 2500/01 (2013.01)

Citation (applicant)

- US 4770240 A 19880913 - DAWSON RICHARD T [US], et al
- US 2010059216 A1 20100311 - BRUCKMANN WILHELM [DE], et al

Citation (search report)

- [XA] DE 202011003656 U1 20110519 - STIEBEL ELTRON GMBH & CO KG [DE]
- [XA] JP 3802136 B2 20060726
- [XA] EP 1953480 A1 20080806 - DAIKIN IND LTD [JP]
- [XA] DE 102014018600 A1 20160623 - STIEBEL ELTRON GMBH & CO KG [DE]
- [A] US 2016123645 A1 20160505 - KIM DONGHWI [KR], et al

Designated contracting state (EPC)

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