

Title (en)
THROUGHFLOW ASSEMBLY

Title (de)
DURCHSTRÖMBARE ANORDNUNG

Title (fr)
DISPOSITIF POUVANT ÊTRE TRAVERSÉ

Publication
EP 3658781 B1 20230111 (DE)

Application
EP 18759898 A 20180820

Priority
• EP 17192109 A 20170920
• EP 2018072379 W 20180820

Abstract (en)
[origin: WO2019057413A1] The invention relates to an arrangement (ARG), through which a process fluid (PFF) can flow along a main flow direction (MFD), comprising an impeller (IMP) that can rotate about an axis (X) in a rotation direction (RTD) and a stationary diffuser (DFF) located downstream of the impeller (IMP) and being provided with guide vanes (VNE), wherein the impeller (IMP) has an inlet (ILI) for a substantially axial supply flow and an outlet (EXI) for a substantially radial out-flow, wherein radially and axially extending rotor blades (BLD) are arranged between a wheel disc (HWI) and a cover disc (SWI) of the impeller (IMP), the impeller channels (ICH) are separated from one another in a circumferential direction (CDR), wherein the diffuser (DFF) extends substantially radially along a main flow direction (MFD), wherein the diffuser (DFF) has an axial cover disc side (SWS) and an axial wheel disc side (HWS), which delimit an axial channel width (SAC) of the diffuser (DFF) between them, wherein the diffuser (DFF) has a diffuser inlet (ILD) for a substantially radial supply flow and a diffuser outlet (EXD), wherein guide vanes (VNE) extending axially along a blade vertical direction and radially along a through-flow direction are arranged between the wheel disc side (HWS) and the cover disc side (SWS) of the diffuser (DFF), which separate the guide vane channels (HCN) from one another in a circumferential direction (CDR). According to the invention, an inlet edge angle (LEA) for every axial blade height is defined as an angle between an inlet edge tangent (TLV) on a mean line (BWL) on an inlet edge (DLE) of the respective guide vane (VNE) and a circumferential tangent (CTG) through the inlet edge, wherein the inlet edge angle (LEA) is smaller on the cover disc side than on the wheel disc side.

IPC 8 full level
F04D 29/44 (2006.01)

CPC (source: EP US)
F04D 29/444 (2013.01 - EP US)

Citation (examination)
JP S5469811 A 19790605 - HITACHI LTD

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

DOCDB simple family (publication)
EP 3460256 A1 20190327; CN 111133203 A 20200508; CN 111133203 B 20210309; EP 3658781 A1 20200603; EP 3658781 B1 20230111; JP 2020534477 A 20201126; JP 7074957 B2 20220525; US 11225977 B2 20220118; US 2020284269 A1 20200910; WO 2019057413 A1 20190328

DOCDB simple family (application)
EP 17192109 A 20170920; CN 201880060914 A 20180820; EP 18759898 A 20180820; EP 2018072379 W 20180820; JP 2020516698 A 20180820; US 201816645090 A 20180820