

Title (en)
A TURBO COMPRESSOR PROVIDED WITH AN AXIAL BEARING COOLING ARRANGEMENT

Title (de)
TURBOVERDICHTER MIT EINER AXIALLAGERKÜHLANORDNUNG

Title (fr)
TURBOCOMPRESSEUR DOTÉ D'UN AGENCEMENT DE REFROIDISSEMENT DE PALIER AXIAL

Publication
EP 3613993 A1 20200226 (EN)

Application
EP 19192850 A 20190821

Priority
FR 1857593 A 20180822

Abstract (en)
The turbo compressor includes a drive shaft (3); an impeller (7.1) connected to an first axial end portion of the drive shaft (3); an electrical motor connected to a second axial end portion of the drive shaft (3); an axial bearing arrangement configured to limit an axial movement of the drive shaft (3) during operation, the axial bearing arrangement including an axial bearing plate (18) having an annular ring shape and facing towards the impeller (7.1); an inlet distributor (33) at least partially defining an inlet refrigerant flow path (P) ; and an axial bearing cooling arrangement including bypass openings (40) formed in the inlet distributor (33) and a bypass refrigerant flow path (43) defined by the inlet distributor (33) and the axial bearing plate (18), the bypass openings (40) being configured to derive a part of an inlet refrigerant flow, flowing into the inlet refrigerant flow path (P), into the bypass refrigerant flow path (43) so as to at least partially cool the axial bearing plate (18).

IPC 8 full level
F04D 29/057 (2006.01); **F04D 29/051** (2006.01); **F04D 29/44** (2006.01); **F04D 29/58** (2006.01); **F04D 25/06** (2006.01)

CPC (source: EP)
F04D 17/10 (2013.01); **F04D 29/0513** (2013.01); **F04D 29/441** (2013.01); **F04D 29/584** (2013.01); **F04D 25/0606** (2013.01); **F05D 2250/51** (2013.01)

Citation (search report)

- [Y] WO 2018041938 A1 20180308 - DANFOSS SILICON POWER GMBH [DE]
- [Y] US 2003059315 A1 20030327 - CHOI MOON-CHANG [KR], et al
- [A] WO 2018041949 A1 20180308 - DANFOSS SILICON POWER GMBH [DE]
- [A] US 2018142694 A1 20180524 - DAUSSIN ARNAUD [FR], et al
- [A] US 2012051957 A1 20120301 - BEERS CRAIG M [US], et al
- [A] JP 2015183568 A 20151022 - TOYOTA IND CORP

Cited by
US11591926B2; EP4105502A4; WO2022240096A1; KR20220153925A

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

Designated extension state (EPC)
BA ME

DOCDB simple family (publication)
EP 3613993 A1 20200226; EP 3613993 B1 20230719; FR 3085188 A1 20200228; FR 3085188 B1 20201225

DOCDB simple family (application)
EP 19192850 A 20190821; FR 1857593 A 20180822