

Title (en)

TURBOCHARGER, HAVING A STEEL MATERIAL FOR HIGH-TEMPERATURE APPLICATIONS

Title (de)

ABGASTURBOLADER, DER EINEN STAHL-WERKSTOFF FÜR HOCHTEMPERATUR-ANWENDUNGEN AUFWEIST

Title (fr)

TURBOCOMPRESSEUR À GAZ D'ÉCHAPPEMENT COMPRENANT UN MATÉRIAU D'ACIER DESTINÉ À DES UTILISATIONS À TEMPÉRATURE ÉLEVÉE

Publication

EP 3861145 A1 20210811 (DE)

Application

EP 19782583 A 20191001

Priority

- DE 102018217057 A 20181005
- EP 2019076651 W 20191001

Abstract (en)

[origin: WO2020070163A1] The invention relates to a turbocharger (1), comprising a turbine housing (21), which has an accommodating region for a turbine rotor disk (12) of the turbocharger (1), which accommodating region is arranged centrally with respect to a turbine housing axis (2a), and at least one turbine spiral channel (22), which tapers helically toward the accommodating region for the turbine rotor disk (12), wherein a wastegate valve, having a spindle arm and a valve plate arranged on the spindle arm, or a variable exhaust-gas guiding device, having bearing disks and guide vanes, is arranged in the turbine housing, characterized in that at least one of the following components: turbine housing, spindle arm and valve plate, or bearing disks and guide vanes, has a steel material (21a) for high-temperature applications, the material composition of which comprises, in addition to iron, Fe, at least the following alloying constituents in amounts within the specified limits in weight percent: carbon, C: 0.4-0.5%; silicon, Si: 1.25-1.75%; manganese, Mn: 3.0-12.0%; chromium, Cr: 19.5-20.5%; nickel, Ni: 5.0-6.0%; niobium, Nb: 1.00-1.5%. Said material composition ensures sufficient temperature resistance of the components, while having a lower nickel content and being less expensive in comparison with other high-temperature materials.

IPC 8 full level

C22C 38/02 (2006.01); **C22C 38/42** (2006.01); **C22C 38/46** (2006.01); **C22C 38/48** (2006.01); **C22C 38/52** (2006.01); **C22C 38/56** (2006.01); **C22C 38/58** (2006.01); **F02B 37/00** (2006.01); **F02C 6/12** (2006.01)

CPC (source: EP US)

C22C 38/02 (2013.01 - EP); **C22C 38/42** (2013.01 - EP); **C22C 38/46** (2013.01 - EP); **C22C 38/48** (2013.01 - EP); **C22C 38/52** (2013.01 - EP); **C22C 38/58** (2013.01 - EP); **F01D 17/165** (2013.01 - US); **F01D 25/005** (2013.01 - US); **F01D 25/24** (2013.01 - US); **F02B 37/162** (2019.04 - EP); **F02B 37/18** (2013.01 - EP); **C21D 2211/001** (2013.01 - EP); **F05D 2220/40** (2013.01 - US); **F05D 2250/15** (2013.01 - US); **F05D 2250/25** (2013.01 - US); **F05D 2300/171** (2013.01 - US)

Citation (search report)

See references of WO 2020070163A1

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)

WO 2020070163 A1 20200409; CN 112771192 A 20210507; DE 102018217057 A1 20200409; EP 3861145 A1 20210811; US 11454132 B2 20220927; US 2021388738 A1 20211216

DOCDB simple family (application)

EP 2019076651 W 20191001; CN 201980065633 A 20191001; DE 102018217057 A 20181005; EP 19782583 A 20191001; US 201917282816 A 20191001