

Title (en)
SCREW COMPRESSOR WITH MULTILAYER ROTOR SCREW COATING

Title (de)
SCHRAUBENVERDICHTER MIT MEHRSCICHTIGER BESCHICHTUNG DER ROTORSCHRAUBEN

Title (fr)
COMPRESSEUR À VIS AVEC REVÊTEMENT MULTI-COUCHE DES VIS DE ROTOR

Publication
EP 3399191 B1 20200527 (DE)

Application
EP 17169341 A 20170503

Priority
EP 17169341 A 20170503

Abstract (en)
[origin: WO2018202520A1] The invention relates to a screw compressor comprising a compressor housing (11) having two rotor screws (1, 2) which are mounted therein in an axially parallel manner, engage with one another in a compression chamber (18), can be driven by a drive and are rotationally synchronised with one another, wherein the rotor screws (1, 2) each have a single- or multi-part main body (24) with two end surfaces (5a, 5b, 5c, 5d) and a profiled surface (12a, 12b) extending therebetween, as well as shaft ends (30) protruding beyond the end surfaces (5a, 5b, 5c, 5d), wherein at least the profiled surface (12a, 12b) is multi-layered, having a first, inner layer (3) and a second, outer layer (4), wherein the first, inner layer (3) and the second, outer layer (4) both contain or are made of a thermoplastic material, wherein particles (25) or pores (32) promoting a running-in process are embedded in the second, outer layer (4), and the thermoplastic material defines a matrix for receiving the particles (25) or for forming the pores (32).

IPC 8 full level
F04C 18/08 (2006.01); **F04C 18/16** (2006.01)

CPC (source: EP US)
F04C 18/084 (2013.01 - EP US); **F04C 18/16** (2013.01 - EP US); **F04C 27/009** (2013.01 - US); **F04C 2230/91** (2013.01 - EP US); **F04C 2240/20** (2013.01 - US); **F04C 2240/30** (2013.01 - US); **F04C 2240/50** (2013.01 - US); **F05C 2225/08** (2013.01 - EP); **F05C 2253/18** (2013.01 - EP)

Citation (opposition)
Opponent : Atlas Copco Airpower, naamloze vennootschap
• US 2003126733 A1 20030710 - BUSH JAMES W [US], et al
• US 4466785 A 19840821 - BISWAS CHANDI P [US]
• US 5554020 A 19960910 - RAO V DURGA N [US], et al
• WO 2008088600 A1 20080724 - SUMAN ANDREW W [US]
• US 2014023540 A1 20140123 - HEIDECKER MATTHEW J [US], et al
• CN 105710789 A 20160629 - XIE ZE
• US 3502453 A 19700324 - BARATTO EUGENE L
• KR 19980061640 A 19981007
• ES 1052890 U 20030301 - NUOVA ROMA S L [ES]
• US 4077922 A 19780307 - FARRISSEY JR WILLIAM J, et al
• EP 0255870 A2 19880217 - MOPLEFAN SPA [IT]
• CN 101096079 A 20080102 - SICHUAN SANTAI GURUI IND CO LT [CN]
• GB 1440550 A 19760623 - RHONE POULENC SA
• US 2016169009 A1 20160616 - OKAMOTO TETSUSHI [JP], et al
• US 2015300340 A1 20151022 - ISHIDA YOSHINORI [JP], et al
• CN 103216447 A 20130724 - SHANGHAI YILIN LUBRICATING MATERIAL CO LTD
• WO 2016013558 A1 20160128 - NTN TOYO BEARING CO LTD [JP]
• US 2012100029 A1 20120426 - IKEDA YUKIKO [JP], et al
• US 2015003996 A1 20150101 - KRISHNA KALAGA MURALI [IN], et al
• US 2008248269 A1 20081009 - SHIBUYA NOBUHIRO [JP], et al
• US 5364250 A 19941115 - AOKI MASAKAZU [JP], et al

Cited by
WO2020260192A1; BE1027351B1; CN114025909A; JP2022539012A; WO2024042075A1; BE1027351A1

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 3399191 A1 20181107; EP 3399191 B1 20200527; CN 110621880 A 20191227; CN 110621880 B 20210827;
DE 112018002311 A5 20200123; ES 2813051 T3 20210322; US 11649823 B2 20230516; US 12031537 B2 20240709;
US 2020240411 A1 20200730; US 2023258180 A1 20230817; US 2024309869 A1 20240919; WO 2018202520 A1 20181108

DOCDB simple family (application)
EP 17169341 A 20170503; CN 201880028981 A 20180426; DE 112018002311 T 20180426; EP 2018060673 W 20180426;
ES 17169341 T 20170503; US 201816610291 A 20180426; US 202318296163 A 20230405; US 202418676650 A 20240529