

Title (en)  
ROTOR ASSEMBLY AND VACUUM PUMP THERE WITH

Title (de)  
ROTORBAUGRUPPE SOWIE VAKUUMPUMPE DAMIT

Title (fr)  
ENSEMBLE ROTOR ET POMPE À VIDE ÉQUIPÉE DE CELUI-CI

Publication  
**EP 2722528 B1 20180530 (EN)**

Application  
**EP 12800506 A 20120531**

Priority  
• JP 2011133869 A 20110616  
• JP 2012064125 W 20120531

Abstract (en)  
[origin: EP2722528A1] Provided are a rotor having a load variation relaxation structure that relaxes load variations in the boundary portion of a cylindrical body and a cylindrical rotating portion, and a vacuum pump in which rotation performance (that is, discharge performance), reliability, and durability are improved over those in the related art by incorporating the cylindrical body. In the vacuum pump, a rotating portion made from a metal (aluminum alloy or the like) is provided with the load variation relaxation structure, which relaxes load variations caused by thermal stresses, in a joined section where the cylindrical rotating portion formed from a different material (FRP or the like) is joined. More specifically, any one from among a gentle taper, a curved section and a taper section, and a corner R is provided in the boundary portion of the rotating portion and the cylindrical rotating portion.

IPC 8 full level  
**F04D 19/04** (2006.01); **F04D 29/26** (2006.01); **F04D 29/32** (2006.01)

CPC (source: EP)  
**F04D 19/042** (2013.01); **F04D 19/044** (2013.01); **F04D 29/266** (2013.01); **F04D 29/32** (2013.01)

Citation (opposition)  
Opponent : Pfeiffer Vacuum GmbH, 35614 Aßlar, DE  
• JP 2011133869 A 20110707 - SEKISUI CHEMICAL CO LTD  
• EP 2589814 A1 20130508 - EDWARDS JAPAN LTD [JP]  
• JP 2006291794 A 20061026 - OSAKA VACUUM LTD  
• JP S62152520 A 19870707 - TOSHIBA CORP  
• JP 2007071139 A 20070322 - OSAKA VACUUM LTD  
• JP H07271241 A 19951020 - FUJI XEROX CO LTD  
• DE 19955517 A1 20010523 - LEYBOLD VAKUUM GMBH [DE]  
• EP 1101945 A2 20010523 - BOC GROUP PLC [GB]  
• DE 102008056352 A1 20100512 - OERLIKON LEYBOLD VACUUM GMBH [DE]  
• WO 2005121561 A1 20051222 - BOC GROUP PLC [GB], et al  
• EP 1318308 A2 20030611 - BOC TECHNOLOGIES LTD [JP]  
• JP H08219086 A 19960827 - DAIKIN IND LTD  
• JP 2005180265 A 20050707 - BOC EDWARDS KK  
• JP 3098139 B2 20001016  
• JP H074383 A 19950110 - OSAKA SHINKU KIKI SEISAKUSHO, et al  
• "Wutz Handbuch Vakuumtechnik: Theorie und Praxis," July 2006, article KARL JOUSTEN: "Chapter 6 & 9", pages: 167 - 183 , 319 - 354, XP055363488

Cited by  
EP2597313A3

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 2722528 A1 20140423; EP 2722528 A4 20141203; EP 2722528 B1 20180530**; CN 103562554 A 20140205; CN 103562554 B 20161221; JP 6047091 B2 20161221; JP WO2012172990 A1 20150223; WO 2012172990 A1 20121220

DOCDB simple family (application)  
**EP 12800506 A 20120531**; CN 201280026312 A 20120531; JP 2012064125 W 20120531; JP 2013520501 A 20120531