

Title (en)  
TURBO MACHINE WITH STROKE-COMPENSATING PISTON

Title (de)  
TURBOMASCHINE MIT SCHUBAUSGLEICHSKOLBEN

Title (fr)  
TURBOMACHINE AVEC PISTON D'ÉQUILIBRAGE DE POUSSÉE

Publication  
**EP 2271827 A1 20110112 (DE)**

Application  
**EP 09742020 A 20090430**

Priority  
• EP 2009055271 W 20090430  
• DE 102008022966 A 20080509

Abstract (en)  
[origin: WO2009135802A1] The invention relates to a rotary engine (1), in particular a turbine, pump or compressor, comprising at least one rotor (6) and at least one process fluid (steam 3) at least partially surrounding the rotor (6), wherein the rotor (6) comprises at least one compensating piston (10) for influencing an axial stroke, wherein the compensating piston (10) has at least one diameter change (21, 22, 23, 24) of the rotor (6), wherein at least one shaft seal (31, 32, 33) is provided for sealing a first chamber(11) in which a first pressure dominates from a second pressure chamber (12) in which a second pressure dominates in such a way that a pressure difference between the first and the second pressure chamber (11, 12) is present at least part of the time and a first shaft seal (31) is disposed at the compensating piston (10) such that a first diameter change (21) is subjected to the pressure of the first pressure chamber (11) and a second diameter change (22) is subjected to the pressure of the second pressure chamber (12). To reduce the necessary design space, it is proposed that the compensating piston (10) comprise at least a third pressure chamber (13) with a third pressure, and that a second shaft seal (32) be disposed such that a third diameter change (23) be subjected to the pressure of the third pressure chamber (13).

IPC 8 full level  
**F01D 3/04** (2006.01); **F16J 15/3204** (2016.01); **F16J 15/3288** (2016.01)

CPC (source: EP)  
**F01D 3/04** (2013.01)

Designated contracting state (EPC)  
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 SE SI SK TR

Designated extension state (EPC)  
AL BA RS

DOCDB simple family (publication)  
**WO 2009135802 A1 20091112**; BR PI0912209 A2 20151006; CN 102016231 A 20110413; CN 102016231 B 20131225; DE 102008022966 A1 20091203; DE 102008022966 B4 20141224; EP 2271827 A1 20110112; EP 2271827 B1 20120905; ES 2392322 T3 20121207; JP 2011520063 A 20110714; JP 5086471 B2 20121128; PL 2271827 T3 20130228; RU 2010150344 A 20120620; RU 2507399 C2 20140220

DOCDB simple family (application)  
**EP 2009055271 W 20090430**; BR PI0912209 A 20090430; CN 200980116765 A 20090430; DE 102008022966 A 20080509; EP 09742020 A 20090430; ES 09742020 T 20090430; JP 2011507879 A 20090430; PL 09742020 T 20090430; RU 2010150344 A 20090430