

Title (en)
VARIABLE DISPLACEMENT COMPRESSOR

Title (de)
VERSTELLBARER VERDICHTER

Title (fr)
COMPRESSEUR À DÉPLACEMENT VARIABLE

Publication
EP 2423507 A1 20120229 (EN)

Application
EP 10783162 A 20100603

Priority
• JP 2010003724 W 20100603
• JP 2009136544 A 20090605

Abstract (en)
Disclosed is a variable displacement compressor having improved compressor performance such as reduced pulsation and improved durability and resistance to pressure and allowing smooth and high-precision control of a swash plate tilt angle at a target tilt angle by using an axial movement member. The variable displacement compressor is provided with a cylinder head in which a suction chamber and a discharge chamber are formed, a cylinder block having a cylinder bore into which a piston is inserted at a condition capable of being reciprocated, a crank chamber formed by the cylinder block and a front housing, a swash plate which is disposed in the crank chamber and which is rotated with a main shaft and is supported so that the tilt angle thereof can be changed relative to the main shaft, and a movement conversion mechanism for converting the rotational movement of the swash plate to the reciprocating movement of the piston, wherein: a suction path for intake of a suction gas into the compressor is formed so as to open into the crank chamber; a communication path for communicating the crank chamber and the suction chamber is provided in the cylinder block; around the main shaft, an axial movement member is provided that can move in a direction along the axis of the main shaft in an essentially one to one correspondence with the tilt angle of the swash plate; the axial movement member is disposed such that one end is applied with the pressure in the crank chamber, and the other end is applied with an intermediate pressure between the pressure in the discharge chamber and the pressure in the suction chamber; and an intermediate pressure control mechanism which can control the intermediate pressure is also provided.

IPC 8 full level
F04B 27/18 (2006.01); **F04B 27/10** (2006.01)

CPC (source: EP KR US)
F04B 27/08 (2013.01 - KR); **F04B 27/1054** (2013.01 - EP US); **F04B 27/14** (2013.01 - KR); **F04B 27/1804** (2013.01 - EP US);
F04B 2027/1813 (2013.01 - EP US); **F04B 2027/1831** (2013.01 - EP US); **F04B 2027/185** (2013.01 - EP US); **F04B 2027/1859** (2013.01 - EP US)

Cited by
EP3026264A1; EP2927492A3; CN105649921A; CN104929892A; EP2921701A3; US9850886B2; US9651035B2

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 SE SI SK SM TR

DOCDB simple family (publication)
EP 2423507 A1 20120229; **EP 2423507 A4 20130814**; CN 102459897 A 20120516; JP 2010281289 A 20101216; JP 5519193 B2 20140611;
KR 20120024874 A 20120314; US 2012073430 A1 20120329; WO 2010140374 A1 20101209

DOCDB simple family (application)
EP 10783162 A 20100603; CN 201080025159 A 20100603; JP 2009136544 A 20090605; JP 2010003724 W 20100603;
KR 20117031366 A 20100603; US 201013376346 A 20100603