

Title (en)

Control valve for variable displacement compressor

Title (de)

Regelventil für einen Verdichter mit variabler Verdrängung

Title (fr)

Soupape de contrôle pour compresseur de déplacement variable

Publication

**EP 2784320 A2 20141001 (EN)**

Application

**EP 14160650 A 20140319**

Priority

JP 2013066787 A 20130327

Abstract (en)

A control valve according to one embodiment includes a body having a main passage communicating a discharge chamber with a crankcase and a sub-passage communicating the crankcase with a suction chamber, a main valve provided in the main valve passage, a sub-valve provided in the sub-passage, a power element for receiving the suction pressure of the suction chamber and generating a drive force exerted in an opening direction of the main valve in accordance with the magnitude of the suction pressure, and a solenoid for generating a drive force in a closing direction of the main valve in accordance with the amount of current supplied. The control valve is configured such that the sub-valve remains closed when the main valve is controlled and such that the sub-valve is opened after the main valve is closed. Also, a change in the area of opening of the sub-valve relative to the uplift amount of the sub-valve element from the sub-valve seat is larger than that of the main valve relative to the uplift amount of the main valve element from the main valve seat.

IPC 8 full level

**F04B 27/18** (2006.01)

CPC (source: EP)

**F04B 27/1804** (2013.01); **F04B 2027/1813** (2013.01); **F04B 2027/1827** (2013.01); **F04B 2027/1831** (2013.01); **F04B 2027/1877** (2013.01)

Citation (applicant)

JP 2008240580 A 20081009 - TGK CO LTD

Cited by

US11555489B2; EP3505758A4; DE102014218525A1; DE102014218525B4; EP3754190A4; EP3734067A4; EP3760864A4; US12018663B2; US11994120B2; US11156301B2; US11873804B2; EP3744978A4; EP3734070A4; US11225962B2; US10451048B2; US11873805B2; US11480166B2; US11391388B2; US11536257B2; US11802552B2; US11927275B2; US12012948B2; US11319940B2; US11401923B2; US11841090B2; US11378194B2; US11473683B2; US11598437B2; US10557463B2; US10801480B2; US11473684B2; US12025237B2

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)

**EP 2784320 A2 20141001**; **EP 2784320 A3 20160727**; **EP 2784320 B1 20190807**; JP 2014190247 A 20141006; JP 6103586 B2 20170329; KR 102129731 B1 20200703; KR 20140118808 A 20141008

DOCDB simple family (application)

**EP 14160650 A 20140319**; JP 2013066787 A 20130327; KR 20140033868 A 20140324