

Title (en)

Capacity control valve for variable displacement compressor

Title (de)

Kontrollventil für einen verstellbaren Taumelscheibenkompressor

Title (fr)

Soupape de contrôle pour un compresseur à capacité variable

Publication

EP 1512871 A1 20050309 (EN)

Application

EP 04020189 A 20040825

Priority

- JP 2003312369 A 20030904
- JP 2003332652 A 20030925

Abstract (en)

A capacity control valve includes a valve section 1 having a first or Pd-Pc valve 6, 7 and a second or Pc-Ps valve 10, 11 operating in a manner interlocked with the operation of the Pd-Pc valve. A spool valve element 11a is provided on a valve element 11 of the second or Pc-Ps valve. In a stroke region where the Pd-Pc valve is close to the fully-closed position, refrigerant passes through the clearance between the spool valve element 11a and the valve hole of the valve seat 10 of the second or Pc-Ps valve. The second or Pc-Ps valve has a characteristic such that its opening area does not change when the valve element 11 moves. This suppresses sharp changes in the pressure Pc in the crankcase, even if the solenoid current is stepwise sharply changed. <IMAGE>

IPC 1-7

F04B 27/18

IPC 8 full level

B60H 1/32 (2006.01); **F04B 27/18** (2006.01); **F04B 49/00** (2006.01); **F04B 49/06** (2006.01)

CPC (source: EP US)

F04B 27/1804 (2013.01 - EP US); **F04B 2027/1813** (2013.01 - EP US); **F04B 2027/1827** (2013.01 - EP US); **F04B 2027/1831** (2013.01 - EP US); **F04B 2027/1854** (2013.01 - EP US); **F04B 2027/1877** (2013.01 - EP US)

Citation (search report)

- [X] EP 1106831 A2 20010613 - TOYODA AUTOMATIC LOOM WORKS [JP]
- [XD] EP 1279831 A2 20030129 - TGK CO LTD [JP]
- [X] US 6010312 A 20000104 - SUITOU KEN [JP], et al

Cited by

CN101858340A; EP2818707A3; EP2821649A3; EP3951171A4; EP2743504A1; EP2916003A1; EP2918833A1; US11754194B2; US11988296B2; US11821540B2

Designated contracting state (EPC)

DE FR IT

DOCDB simple family (publication)

EP 1512871 A1 20050309; JP 2005098197 A 20050414; US 2005053474 A1 20050310

DOCDB simple family (application)

EP 04020189 A 20040825; JP 2003332652 A 20030925; US 91842004 A 20040816