

Title (en)  
Control valve for variable displacement compressor

Title (de)  
Regelventil für einen Verdichter variabler Verdrängung

Title (fr)  
Soupape de contrôle pour un compresseur à capacité variable

Publication  
**EP 1647710 A1 20060419 (EN)**

Application  
**EP 05022396 A 20051013**

Priority  
JP 2004298794 A 20041013

Abstract (en)  
In a control valve for a variable displacement compressor a solenoid plunger is divided into a first plunger 26 and a second plunger 22 with a diaphragm 29 disposed therebetween for sensing the suction pressure Ps. The second plunger 22 is urged by a spring 24 away from the diaphragm 29 simply in axial contact with an axially guided shaft 17 that transmits changes of the suction pressure Ps as sensed by the diaphragm 29 to a valve element 16. When an attractive force is generated by the solenoid to move the second plunger 22, no couple of forces can act on the shaft 17. The shaft 17 is smoothly sidable to assure an enhanced control performance of the control valve.

IPC 8 full level  
**F04B 27/18** (2006.01); **F04B 49/00** (2006.01); **F04B 49/08** (2006.01)

CPC (source: EP KR US)  
**F04B 27/14** (2013.01 - KR); **F04B 27/1804** (2013.01 - EP US); **F04B 39/10** (2013.01 - KR); **F04B 2027/1813** (2013.01 - EP US);  
**F04B 2027/1827** (2013.01 - EP US); **F04B 2027/1854** (2013.01 - EP US); **F04B 2027/1859** (2013.01 - EP US)

Citation (search report)

- [PX] EP 1574711 A2 20050914 - TGK CO LTD [JP]
- [A] EP 1046818 A2 20001025 - TGK CO LTD [JP]
- [X] PATENT ABSTRACTS OF JAPAN vol. 2003, no. 01 14 January 2003 (2003-01-14)
- [A] PATENT ABSTRACTS OF JAPAN vol. 2000, no. 10 17 November 2000 (2000-11-17)
- [A] PATENT ABSTRACTS OF JAPAN vol. 2000, no. 07 29 September 2000 (2000-09-29)

Designated contracting state (EPC)

DE FR

DOCDB simple family (publication)

**EP 1647710 A1 20060419**; CN 1760544 A 20060419; JP 2006112271 A 20060427; KR 20060052192 A 20060519; US 2006083625 A1 20060420

DOCDB simple family (application)

**EP 05022396 A 20051013**; CN 200510112611 A 20051011; JP 2004298794 A 20041013; KR 20050095774 A 20051012;  
US 24725705 A 20051012