

Title (en)

MULTI-STAGE PISTON-TYPE VACUUM PUMP AND METHOD FOR OPERATING THIS PUMP

Title (de)

MEHRSTUFIGE KOLBENVAKKUMPUMPE UND VERFAHREN ZUM BETRIEB DIESER PUMPE

Title (fr)

POMPE A VIDE A PISTON A ETAGES MULTIPLES ET PROCEDE PERMETTANT DE LA FAIRE FONCTIONNER

Publication

**EP 1392973 A1 20040303 (DE)**

Application

**EP 02776503 A 20020510**

Priority

- DE 10127082 A 20010602
- EP 0205126 W 20020510

Abstract (en)

[origin: DE10127082A1] The multiple stage vacuum pump has at least one pair of pistons (2,3) defining multiple compression stages, each with a piston section (4-7) , a cylinder section (16-19) and a working chamber (11-14) with inlet (41-44) and outlet (54-57) valves. The inlet opening of the inlet valve is formed as a radial slit in the wall of the respective cylinder section, with a height of ten to twenty percent of the piston stroke.

IPC 1-7

**F04B 35/04**; **H02K 33/16**

IPC 8 full level

**F04B 39/10** (2006.01); **F04B 25/00** (2006.01); **F04B 25/02** (2006.01); **F04B 27/02** (2006.01); **F04B 35/04** (2006.01); **F04B 37/14** (2006.01); **F04B 37/16** (2006.01); **H02K 33/16** (2006.01)

CPC (source: EP)

**F04B 25/00** (2013.01); **F04B 25/02** (2013.01); **F04B 35/045** (2013.01); **F04B 37/14** (2013.01); **H02K 33/16** (2013.01)

Citation (search report)

See references of WO 02099280A1

Designated contracting state (EPC)

AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR

DOCDB simple family (publication)

**DE 10127082 A1 20021205**; EP 1392973 A1 20040303; JP 2004527692 A 20040909; WO 02099280 A1 20021212

DOCDB simple family (application)

**DE 10127082 A 20010602**; EP 0205126 W 20020510; EP 02776503 A 20020510; JP 2003502370 A 20020510