

Title (en)  
Vacuum pump

Title (de)  
Vakuumpumpe

Title (fr)  
Pompe à vide

Publication  
**EP 1234982 A1 20020828 (EN)**

Application  
**EP 01830121 A 20010222**

Priority  
EP 01830121 A 20010222

Abstract (en)  
A turbomolecular vacuum pump (5) comprises a first pumping section (1) having pumping stages with bladed rotor discs, a second pumping section (2) having pumping stages with smooth rotor discs, a third pumping section (3) having a pumping stage with a toothed rotor disc (26), and a fourth pumping section (4) of the ejector or venturi pump type. <IMAGE>

IPC 1-7  
**F04D 19/04**; **F04D 25/16**; **F04F 5/20**

IPC 8 full level  
**F04D 19/04** (2006.01); **F04D 25/16** (2006.01); **F04F 5/04** (2006.01)

CPC (source: EP)  
**F04D 19/046** (2013.01); **F04D 25/16** (2013.01); **F04F 5/04** (2013.01)

Citation (applicant)  
• EP 0445855 B1 19941026 - VARIAN SPA [IT]  
• EP 0256234 A2 19880224 - HITACHI LTD [JP]

Citation (search report)  
• [AD] EP 0445855 A1 19910911 - VARIAN SPA [IT]  
• [AD] US 4797068 A 19890110 - HAYAKAWA TADASHI [JP], et al  
• [A] US 5118251 A 19920602 - SAULGEOT CLAUDE [FR]  
• [A] EP 0340685 A2 19891108 - NIPPON FERROFLUIDICS KK [JP]

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WO2004055377A1; US7452191B2; CN100429406C; FR2952683A1; CN102713299A; EP1609990A4; CN104822943A; US7762763B2; US9175688B2; WO2004055376A3; WO2011061429A3; WO2014072276A1; US7896625B2; JP2006509955A; WO2005033522A1; WO2004055378A1

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