

Title (en)
Multistage pump

Title (de)
Mehrstufige Pumpe

Title (fr)
Pompe multiétagée

Publication
EP 1164296 A3 20030319 (EN)

Application
EP 01113613 A 20010615

Priority
IT PD20000163 A 20000615

Abstract (en)
[origin: EP1164296A2] A multistage pump (10) comprising, in a tubular body (11), a plurality of diffusers (12) which are alternated with impellers (13), the diffusers (12) being stacked peripherally so as to form a diffuser casing (14), the impellers (13) being keyed on a shaft (15) arranged on the axis (16), a closure assembly (18) being associated with the tubular body (11) at the intake region (17) so as to lock the diffusers in the packed configuration. The pump (10) comprises two annular elements (22, 23) which are interposed between the closure assembly (18) associated with the tubular body (11) and the corresponding head (21) of the diffuser casing (14), the mutually facing surfaces of the annular elements being shaped so as to form a contact with three degrees of freedom of rotation so as to allow adaptation with correction of any errors of co-planarity in the locking on the part of the closure assembly (18) on the head (21) of the diffuser casing (14). <IMAGE>

IPC 1-7
F04D 29/42; **F04D 1/06**

IPC 8 full level
F04D 1/06 (2006.01); **F04D 29/42** (2006.01)

CPC (source: EP)
F04D 1/063 (2013.01); **F04D 29/426** (2013.01); **F04D 29/4266** (2013.01)

Citation (search report)

- [A] US 4244675 A 19810113 - BOWER JOHN R
- [A] US 2017544 A 19351015 - MCHUGH ANTHONY L
- [X] DATABASE WPI Derwent World Patents Index; AN 2000-420975, XP002227652
- [A] DATABASE WPI Derwent World Patents Index; AN 1997-478584, XP002227653

Cited by
CN105190048A; CN112901511A

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