

Title (en)
Diaphragm pump for fluids

Title (de)
Membranpumpe für Fluide

Title (fr)
Pompe à membrane pour fluides

Publication
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Application
EP 03425591 A 20030911

Priority
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Abstract (en)
Diaphragm pump for fluids including at least one chamber (1a, 2a) a wall of which is at least partially made up of a flexible membrane (1b, 2b) movable to and from a rigid opposite wall (1d, 2d) of the chamber by means of a working operative fluid acting on the back side of the membrane, with respect to said rigid wall, operated by a piston (9, 10, 28) that slides inside a relative cylinder connected to the back of the membrane and containing said operative fluid, said chamber (1a, 2a) being provided with a suction opening (A1, A2) and a delivery opening (M1, M2) each provided with respective valve means. The pump includes a linear electric motor with one stationery armature (19) and one mobile armature (18) sliding along a rectilinear trajectory. The piston (9, 10, 28) operating said membrane operative fluid is connected directly to the movable armature (18) of said linear electric motor. Furthermore, means (20) are provided for adjusting the speed of said movable armature of the motor, for adjusting the pump stroke and for inverting the movement direction. <IMAGE>

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IPC 8 full level
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Citation (search report)
• [X] US 6280149 B1 20010828 - ABLE STEPHEN D [US], et al
• [X] DE 10163662 A1 20030710 - SCHWARZER KLEMENS [DE], et al
• [X] DE 10013797 A1 20011004 - SIEMENS AG [DE]
• [X] US 5106274 A 19920421 - HOLTZAPPLE MARK [US]
• [A] US 3791768 A 19740212 - WANNER W
• [A] EP 0578999 A1 19940119 - RUPP WARREN INC [US]

Cited by
US9845794B2; CN107304762A; US8152476B2; EP2860400A3; US2015098837A1; CN104514702A; CN109026584A; US9850889B2; US11002270B2; EP2048361A1; WO2015042677A1

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