

Title (en)  
Pumping device

Title (de)  
Pumpenvorrichtung

Title (fr)  
Dispositif de pompe

Publication  
**EP 1898093 B1 20090805 (DE)**

Application  
**EP 07016273 A 20070820**

Priority  
DE 102006041420 A 20060904

Abstract (en)  
[origin: EP1898093A1] The device (1) has a diaphragm pump head (2) with a fluid delivery chamber (4) and a diaphragm (3), which are hydraulically coupled to another head (8) for driving the former head. The later head has a fluid delivery chamber (10) and a diaphragm (9) which are drivable by a double-acting piston via diaphragm control chambers (5, 11). Refilling valves (38, 40) are connected to the control chambers that are impinged temporarily using the valves, during a refilling procedure, and are controlled by a diaphragm position by diaphragm control pressure, which is greater than atmospheric pressure.

IPC 8 full level  
**F04B 43/02** (2006.01); **F04B 43/06** (2006.01)

CPC (source: EP US)  
**F04B 43/026** (2013.01 - EP US); **F04B 43/067** (2013.01 - EP US)

Cited by  
EP2154371A1; DE202008010872U1

Designated contracting state (EPC)  
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DOCDB simple family (publication)  
**EP 1898093 A1 20080312; EP 1898093 B1 20090805**; AT E438801 T1 20090815; AT E547631 T1 20120315; CA 2599949 A1 20080304; CA 2599949 C 20160315; DE 102006041420 A1 20080320; DE 202007019423 U1 20120612; DE 502007001229 D1 20090917; DK 1898093 T3 20090914; DK 2108838 T3 20120625; EP 2108838 A1 20091014; EP 2108838 B1 20120229; ES 2331030 T3 20091218; JP 2008064096 A 20080321; JP 2013137031 A 20130711; JP 5221085 B2 20130626; JP 5629796 B2 20141126; US 2008056916 A1 20080306; US 2013017101 A1 20130117; US 8360750 B2 20130129

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