

Title (en)  
DIAPHRAGM PUMP

Title (de)  
MEMBRANPUMPE

Title (fr)  
POMPE À MEMBRANE

Publication  
**EP 2167820 A1 20100331 (DE)**

Application  
**EP 08716538 A 20080314**

Priority  
• EP 2008002043 W 20080314  
• DE 102007030311 A 20070629

Abstract (en)  
[origin: WO2009003540A1] The invention relates to a diaphragm pump (1) having a diaphragm (11), a solenoid with a movable magnet armature (8) as a drive element for the diaphragm (11), and a stop element (9) for adjusting the stroke for the drive element (8). The diaphragm pump according to the invention is characterized in that at least one elastic damper (36) is provided between the drive element (8) and a stop element (9), which elastic damper (36) has at least one compression chamber (26) which is surrounded and formed by at least one elastic boundary wall and by at least one rigid boundary wall of the drive element (8) and/or stop element (9).

IPC 8 full level  
**F04B 17/04** (2006.01); **F04B 43/04** (2006.01); **F04B 49/12** (2006.01); **F04B 49/14** (2006.01)

CPC (source: EP US)  
**F04B 17/04** (2013.01 - EP US); **F04B 17/044** (2013.01 - EP US); **F04B 43/04** (2013.01 - EP US); **F04B 49/14** (2013.01 - EP US)

Citation (search report)  
See references of WO 2009003540A1

Designated contracting state (EPC)  
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MT NL NO PL PT RO SE SI SK TR

Designated extension state (EPC)  
AL BA MK RS

DOCDB simple family (publication)  
**DE 102007030311 A1 20090102; DE 102007030311 B4 20130207**; EP 2167820 A1 20100331; EP 2167820 B1 20160914;  
JP 2010531945 A 20100930; JP 5091315 B2 20121205; US 2010196176 A1 20100805; US 8366414 B2 20130205;  
WO 2009003540 A1 20090108

DOCDB simple family (application)  
**DE 102007030311 A 20070629**; EP 08716538 A 20080314; EP 2008002043 W 20080314; JP 2010513678 A 20080314;  
US 66652108 A 20080314