

Title (en)  
LIQUID PUMP

Title (de)  
FLÜSSIGKEITSPUMPE

Title (fr)  
POMPE A LIQUIDE

Publication  
**EP 1553292 A1 20050713 (EN)**

Application  
**EP 03738688 A 20030704**

Priority  
• JP 0308547 W 20030704  
• JP 2002196591 A 20020704

Abstract (en)  
The invention is directed to provide a liquid pump (lubricant circulation or lubricant supply pump) that is capable of lubricating a machine or apparatus even in a case that a passage supplying a liquid (lubricant) is in a vacuum condition. To solve the above, the invention is characterized in a liquid pump (lubricant circulation or lubricant supply pump) for delivering a liquid (lubricant) from a liquid storing portion (lubricant storing portion) to a predetermined position of at least one location, wherein at least one cylinder chamber is formed inside of the pump, a piston is arranged to reciprocate by a driving means in the cylinder chamber, the cylinder chamber is communicated with a liquid (lubricant) delivery port, so that the liquid (lubricant) discharged into a fluid passage communicating with the predetermined position of at least one location, the driving means is provided with a solenoid including an axial portion all of which or at least a part of which is made of a ferromagnetic substance and a solenoid coil that are relatively movable to each other, the axial portion all of which or at least a part of which is made of the ferromagnetic substance and the cylinder chamber are fixed by a predetermined means. <IMAGE>

IPC 1-7  
**F04B 5/00**; F04B 9/00; F04B 23/02

IPC 8 full level  
**F04B 5/00** (2006.01); **F04B 5/02** (2006.01); **F04B 17/04** (2006.01); **F04B 23/02** (2006.01); **F04C 29/02** (2006.01); **F04C 18/16** (2006.01)

CPC (source: EP KR)  
**F04B 5/00** (2013.01 - KR); **F04B 9/00** (2013.01 - KR); **F04B 17/042** (2013.01 - EP); **F04B 17/044** (2013.01 - EP); **F04B 23/02** (2013.01 - KR); **F04C 29/025** (2013.01 - EP); **F04C 18/16** (2013.01 - EP)

Cited by  
GB2619857A; CN107646075A; JP2018066288A; US10683857B2; WO2016188672A1; WO2022180496A1

Designated contracting state (EPC)  
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PT RO SE SI SK TR

DOCDB simple family (publication)  
**EP 1553292 A1 20050713**; **EP 1553292 A4 20050928**; AU 2003246275 A1 20040123; CN 1685151 A 20051019;  
JP WO2004005711 A1 20051104; KR 20050043886 A 20050511; TW 200407505 A 20040516; WO 2004005711 A1 20040115

DOCDB simple family (application)  
**EP 03738688 A 20030704**; AU 2003246275 A 20030704; CN 03815803 A 20030704; JP 0308547 W 20030704; JP 2004519273 A 20030704;  
KR 20057000165 A 20050104; TW 92118345 A 20030704