

Title (en)  
ENGINE-PUMP UNIT

Title (de)  
MOTOR-PUMPEN-EINHEIT

Title (fr)  
UNITÉ POMPES-MOTEUR

Publication  
**EP 2921702 A3 20151111 (DE)**

Application  
**EP 15158367 A 20150310**

Priority  
DE 102014103959 A 20140321

Abstract (en)  
[origin: US2015267699A1] A motor pump unit with a multipart housing comprises a reversible internal gear machine and an electric motor with a rotor and a stator, which is coupled to the internal gear machine via a shaft rotatably mounted in the housing. One shaft end extends from the internal gear machine axially through the rotor that is carried by the shaft. First and second connecting channel ends in the working chamber of the internal gear machine are connected via check valves in the housing to a leakage channel loop, which is fluidically connected to a leakage channel that is fluidically connected to the working chamber, and which has a shaft leakage channel extending axially through the shaft and a rotor leakage channel that is fluidically connected thereto and extends axially through the rotor and/or a gap leakage channel between the rotor and stator, which is fluidically connected to the shaft leakage channel.

IPC 8 full level  
**F04B 17/03** (2006.01); **F04B 53/04** (2006.01); **F04C 2/10** (2006.01); **F04C 11/00** (2006.01); **F04C 14/04** (2006.01); **F04C 15/00** (2006.01)

CPC (source: EP US)  
**F04B 17/03** (2013.01 - EP US); **F04B 53/04** (2013.01 - EP US); **F04C 2/084** (2013.01 - US); **F04C 2/101** (2013.01 - EP US); **F04C 2/102** (2013.01 - EP US); **F04C 11/008** (2013.01 - EP US); **F04C 14/04** (2013.01 - EP US); **F04C 15/0019** (2013.01 - US); **F04C 15/0026** (2013.01 - US); **F04C 15/0046** (2013.01 - EP US); **F04C 15/008** (2013.01 - EP US); **F04C 15/0088** (2013.01 - EP US); **F04C 15/0096** (2013.01 - EP US); **F04C 29/023** (2013.01 - US); **F04C 2240/603** (2013.01 - EP US)

Citation (search report)

- [YA] EP 2128446 A2 20091202 - BOEHNER KAI [DE]
- [YA] WO 2013099505 A1 20130704 - KAYABA INDUSTRY CO LTD [JP]
- [YA] DE 1553026 A1 19691009 - ECKERLE OTTO
- [Y] US 1819228 A 19310818 - COATES CHARLES B
- [Y] US 2469820 A 19490510 - FUGE HARRY B

Cited by  
CN110185609A; CN112985999A; EP3929439A1; CN113847238A; US10290961B2; US11719242B2

Designated contracting state (EPC)  
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Designated extension state (EPC)  
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**EP 15158367 A 20150310**; DE 102014103959 A 20140321; US 201514664349 A 20150320