

Title (en)  
PUMP DEVICE

Title (de)  
PUMPVORRICHTUNG

Title (fr)  
DISPOSITIF DE POMPE

Publication  
**EP 3115608 A4 20171101 (EN)**

Application  
**EP 15757983 A 20150225**

Priority  
• JP 2014043471 A 20140306  
• JP 2015055335 W 20150225

Abstract (en)  
[origin: EP3115608A1] The purpose of the present invention is to suppress the occurrence of unevenness in a rotor of an internal gear pump, suppress the formation of gaps between the end surfaces (side surfaces) of an inner rotor and an outer rotor, and to prevent a decline in volume efficiency. Thus, the pump device of the present invention includes an internal gear pump (10), in which an inner rotor (13) is inscribed to an outer rotor (12), and includes a plate member (7) which is provided to an end surface of the rotors. The plate member (7) is formed of a material having high hardness, has a shape that does not block a suction port (150), has a through-hole (73) formed therein, and has O-ring grooves (71,72), which each have a continuous shape and house an O-ring formed therein.

IPC 8 full level  
**F04C 2/10** (2006.01); **F01C 21/10** (2006.01); **F04C 15/00** (2006.01)

CPC (source: EP KR US)  
**F01C 21/108** (2013.01 - EP KR US); **F04C 2/102** (2013.01 - EP KR US); **F04C 15/0015** (2013.01 - US); **F04C 15/0019** (2013.01 - US); **F04C 15/0026** (2013.01 - EP KR US); **F04C 15/0038** (2013.01 - EP US); **F04C 2240/20** (2013.01 - US); **F04C 2240/801** (2013.01 - EP KR US); **F04C 2270/16** (2013.01 - EP KR US)

Citation (search report)  
• [X] DE 102012213771 A1 20140206 - BOSCH GMBH ROBERT [DE]  
• [X] WO 2012079982 A2 20120621 - BOSCH GMBH ROBERT [DE], et al  
• [E] EP 2971775 A1 20160120 - BOSCH GMBH ROBERT [DE]  
• [E] EP 2909479 A1 20150826 - BOSCH GMBH ROBERT [DE]  
• See references of WO 2015133342A1

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

DOCDB simple family (publication)  
**EP 3115608 A1 20170111**; **EP 3115608 A4 20171101**; CN 105980710 A 20160928; JP 2015169107 A 20150928; JP 6347478 B2 20180627; KR 20160132039 A 20161116; TW 201540955 A 20151101; US 2017067463 A1 20170309; WO 2015133342 A1 20150911

DOCDB simple family (application)  
**EP 15757983 A 20150225**; CN 201580006836 A 20150225; JP 2014043471 A 20140306; JP 2015055335 W 20150225; KR 20167026813 A 20150225; TW 104104650 A 20150212; US 201515121965 A 20150225