

Title (en)  
WATER PUMP

Title (de)  
WASSERPUMPE

Title (fr)  
POMPE À EAU

Publication  
**EP 3597880 A4 20201118 (EN)**

Application  
**EP 18767300 A 20180319**

Priority  
• KR 20170033835 A 20170317  
• KR 2018003178 W 20180319

Abstract (en)  
[origin: EP3597880A1] Provided is a water pump including: a body portion including a housing where an inlet port and a discharge port through which cooling water is introduced and discharged are provided, an impeller accommodated inside the housing and introducing or discharging the cooling water via rotation, a rotation shaft coupled to the impeller and rotating the impeller by receiving external driving power, and a cooling water flow rate control unit arranged above the impeller and operating to selectively open or close the discharge port; a cylinder portion provided above the cooling water flow rate control unit and formed therein a hydraulic space accommodating cooling water that applies pressure to the cooling water flow rate control unit; a piston located inside the hydraulic space and pressurizing the cooling water present inside the hydraulic space; a driving unit coupled to a side surface of the cylinder portion and moving the piston forward or backward; and a lock preventing member located at an inner surface of the cylinder portion that faces a front surface or a rear surface of the piston, and formed of an elastic material. According to the water pump of the present disclosure, the lock preventing member is provided to fundamentally prevent a situation in which the piston is unable to move by contacting the inner wall of the cylinder portion.

IPC 8 full level  
**F01P 5/10** (2006.01); **F01P 5/12** (2006.01); **F01P 7/14** (2006.01); **F01P 7/16** (2006.01); **F04D 13/06** (2006.01); **F04D 15/00** (2006.01); **H02K 1/16** (2006.01); **H02K 1/26** (2006.01); **H02K 41/035** (2006.01)

CPC (source: EP KR US)  
**F01P 5/10** (2013.01 - EP); **F01P 5/12** (2013.01 - KR US); **F04D 13/06** (2013.01 - KR); **F04D 15/0022** (2013.01 - KR US); **F04D 15/0038** (2013.01 - EP US); **F04D 25/026** (2013.01 - US); **F04D 29/086** (2013.01 - US); **F04D 29/468** (2013.01 - US); **F01P 5/12** (2013.01 - EP); **F01P 2005/125** (2013.01 - US); **F04D 15/0263** (2013.01 - US); **F05D 2270/64** (2013.01 - EP US)

Citation (search report)  
• [XA] DE 102011084861 A1 20130425 - SCHAEFFLER TECHNOLOGIES AG [DE]  
• [A] WO 2013075855 A2 20130530 - SCHAEFFLER TECHNOLOGIES AG [DE], et al  
• [A] US 2016040584 A1 20160211 - RUSSALIAN VIGEL [US], et al  
• [A] DE 102006034960 A1 20080131 - AUDI AG [DE]  
• [A] JP 2016217156 A 20161222 - AISIN SEIKI  
• See references of WO 2018169378A1

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 3597880 A1 20200122; EP 3597880 A4 20201118**; CN 110475953 A 20191119; JP 2020510784 A 20200409; KR 101881029 B1 20180725; US 2020102970 A1 20200402; WO 2018169378 A1 20180920

DOCDB simple family (application)  
**EP 18767300 A 20180319**; CN 201880018757 A 20180319; JP 2019548273 A 20180319; KR 20170033835 A 20170317; KR 2018003178 W 20180319; US 201816494760 A 20180319