

Title (en)

CONTROL ARRANGEMENT FOR A MECHANICALLY CONTROLLABLE COOLANT PUMP OF AN INTERNAL COMBUSTION ENGINE

Title (de)

REGELANORDNUNG FÜR EINE MECHANISCH REGELBARE KÜHLMITTELPUMPE EINER VERBRENNUNGSKRAFTMASCHINE

Title (fr)

SYSTÈME DE RÉGULATION D'UNE POMPE À LIQUIDE DE REFROIDISSEMENT À RÉGULATION MÉCANIQUE D'UN MOTEUR À COMBUSTION INTERNE

Publication

EP 3371463 B1 20191127 (DE)

Application

EP 16785429 A 20161019

Priority

- DE 102015119098 A 20151106
- EP 2016075072 W 20161019

Abstract (en)

[origin: WO2017076644A1] The invention relates to control arrangements for mechanically controllable coolant pumps comprising an adjustable control slide (56), by means of which a through-flow cross-section of an annular gap (60) between an outlet (62) of a coolant pump impeller (20) and a surrounding conveying channel (12) can be controlled, a control pump (36), by means of which a hydraulic pressure can be generated in a flow channel (42), a first pressure chamber (72) of the control slide (56) which is formed on a first axial side of the control slide (56), a solenoid valve (78) having two valve seats (110, 112), three flow connections (118, 120, 122), and a closing member (76) which is connected to an armature (96) of the solenoid valve (76) and is axially movable, wherein the first flow connection (118) is fluidically connected to an outlet (46) of the control pump (36) and the second flow connection (120) is fluidically connected to the first pressure chamber (72) of the control slide (56). In order to be able to design such a control arrangement for the fastest possible control, according to the invention the third flow connection (122) is connected fluidically to an inlet (14) of the coolant pump (11), wherein the first valve seat (110) is formed between the first flow connection (118) and the second flow connection (120) and the second valve seat (112) is formed between the second flow connection (120) and the third flow connection (122).

IPC 8 full level

F04D 15/00 (2006.01); **F01P 5/10** (2006.01)

CPC (source: EP US)

F01P 5/10 (2013.01 - US); **F04D 13/12** (2013.01 - US); **F04D 15/0038** (2013.01 - EP US); **F01P 2005/105** (2013.01 - US); **F05D 2270/64** (2013.01 - US)

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)

WO 2017076644 A1 20170511; CN 108350890 A 20180731; CN 108350890 B 20200214; DE 102015119098 A1 20170511; DE 102015119098 B4 20190321; EP 3371463 A1 20180912; EP 3371463 B1 20191127; JP 2019500532 A 20190110; JP 6647540 B2 20200214; US 11181112 B2 20211123; US 2018320694 A1 20181108

DOCDB simple family (application)

EP 2016075072 W 20161019; CN 201680063476 A 20161019; DE 102015119098 A 20151106; EP 16785429 A 20161019; JP 2018522754 A 20161019; US 201615772815 A 20161019