Title (en)

SWITCHABLE COOLANT PUMP

Title (de)

SCHALTBARE KÜHLMITTELPUMPE

Title (fr)

POMPE DÉBRAYABLE POUR FLUIDE DE REFROIDISSEMENT

Publication

EP 2425138 A1 20120307 (DE)

Application

EP 09775868 A 20090430

Priority

DE 2009000618 W 20090430

Abstract (en)

[origin: WO2010124664A1] The invention relates to a switchable coolant pump for combustion engines which is driven by a pulley, wherein the impeller can be driven switchably by the pulley by way of a friction pairing. It is the aim of the invention to develop a switchable coolant pump for combustion engines of the above type, which is simple to manufacture in terms of the manufacturing engineering thereof, driven by a pulley, and which is suited particularly for smaller coolant pumps (which is to say, coolant pumps in which the distance between the pulley and the impeller is smaller than 15 mm and the pulley diameter of which is smaller than 50 mm). The switchable coolant pump according to the invention, comprising a connecting flange (9) for a pressure booster (10), said flange being disposed on the pump housing (1), and a working piston (14) disposed in a working cylinder (15), is characterized, among other things, in that on/in the pump housing (1) both the pulley (3) in a pulley bearing (2) and the pump shaft (5) in a pump bearing (4) are mounted separately, and a sleeve receptacle (17) is disposed in the pump housing (1), wherein an annular channel (19) is located in the annular bottom (18) of said receptacle, and an annular piston working sleeve (21) is inserted in the sleeve receptacle (17) in the pump housing (1), and an annular piston (24) that is provided with an annular piston packing (23) is disposed displaceably in the annular piston working sleeve (21). The pump is further characterized in that an axial bearing (25) is disposed adjacent to the annular piston (24) on the pulley side and between the annular piston (24) and a working cone (26), a final position delimitation (27) for the working cone (26) and one or more return springs (28) are disposed on the pump shaft (5), and centrally in the face (29) of the pulley (3) a driving cone (30) is disposed, which is operatively connected to the working cone (26) disposed on the pump shaft (5) when applying a negative pressure or positive pressure to the pressure connector (12).

IPC 8 full level

F04D 13/02 (2006.01); **F04D 15/02** (2006.01); **F04D 29/58** (2006.01)

CPC (source: EP US)

F04D 13/021 (2013.01 - EP US); **F04D 15/0209** (2013.01 - EP US); **F04D 29/586** (2013.01 - EP US); F01P 7/162 (2013.01 - EP US)

Citation (search report)

See references of WO 2010124664A1

Designated contracting state (EPC)

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 SE SI SK TR

DOCDB simple family (publication)

WO 2010124664 A1 20101104; CN 102439317 A 20120502; CN 102439317 B 20140702; EP 2425138 A1 20120307; JP 2012525527 A 20121022; JP 5345246 B2 20131120; US 2012107121 A1 20120503; US 8814497 B2 20140826

DOCDB simple family (application)

DE 2009000618 W 20090430; CN 200980159042 A 20090430; EP 09775868 A 20090430; JP 2012507601 A 20090430; US 200913266133 A 20090430