

Title (en)  
COOLANT PUMP, ESPECIALLY ELECTRIC CONVECTION-COOLED COOLANT PUMP WITH INTEGRATED DIRECTIONAL CONTROL VALVE,  
AND CORRESPONDING METHOD

Title (de)  
K HLMITTELPUMPE, INSBESONDERE STR MUNGSGEK HLTE EL EKTRISCHE K HLMITTELPUMPE MIT INTEGRIERTEM WEGEVENTIL,  
SOWIE VERFAHREN HIERF R

Title (fr)  
POMPE DE FLUIDE REFRIGERANT, EN PARTICULIER, POMPE ELECTRIQUE A REFROIDISSEMENT HYDRAULIQUE, A DISTRIBUTEUR  
INTEGRE, ET PROCEDE CORRESPONDANT

Publication  
**EP 1608876 A1 20051228 (DE)**

Application  
**EP 04718939 A 20040310**

Priority  
• EP 2004002455 W 20040310  
• DE 10314526 A 20030331

Abstract (en)  
[origin: WO2004088143A1] The invention relates to a coolant pump for a coolant circuit of the internal combustion engine of a motor vehicle, which comprises at least one cooling circuit and one bypass circuit. The coolant pump comprises a coolant pump housing (14) which is provided with an intake pipe (22), a bypass pipe (14) and a pressure pipe (34). A coolant pump electric motor (26) is arranged in the coolant pump housing (14) and drives a pump impeller (32) via a pump shaft (30). Its motor housing (28) is situated in the coolant flow. A directional control valve (40) is integrated into the coolant pump housing (14). The invention is characterized in that the intake pipe (22) is arranged in the area of the end of the pump motor facing away from the pump impeller (32). The bypass pipe is arranged in an area downstream of the intake pipe (22) and the pressure pipe (34) is arranged in an area downstream of the bypass pipe (24). Only the coolant that can be taken in by the cooler via the intake pipe is guided past the pump motor in a peripheral flow (50), especially through a flow channel (56) limited by the outer wall (52) of the pump motor housing (28) and the facing inner wall (54) of the pump housing and/or the facing inner wall (60) of the directional control valve (40). The invention also relates to a corresponding method.

IPC 1-7  
**F04D 29/42**; F04D 29/58; F01P 7/14

IPC 8 full level  
**F01P 5/10** (2006.01); **F01P 7/16** (2006.01); **F04D 29/42** (2006.01); **F04D 29/58** (2006.01); **F01P 7/14** (2006.01)

CPC (source: EP US)  
**F01P 5/10** (2013.01 - EP US); **F01P 7/16** (2013.01 - EP US); **F04D 13/06** (2013.01 - EP US); **F04D 15/0016** (2013.01 - EP US);  
**F04D 29/426** (2013.01 - EP US); **F04D 29/5806** (2013.01 - EP US); **F01P 2007/146** (2013.01 - EP US); **F05D 2270/62** (2013.01 - EP US)

Citation (search report)  
See references of WO 2004088143A1

Cited by  
CN102439317A

Designated contracting state (EPC)  
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PL PT RO SE SI SK TR

DOCDB simple family (publication)  
**WO 2004088143 A1 20041014**; AT E367532 T1 20070815; DE 10314526 A1 20041021; DE 10314526 B4 20071129;  
DE 502004004367 D1 20070830; EP 1608876 A1 20051228; EP 1608876 B1 20070718; EP 1608876 B8 20071003; ES 2286621 T3 20071201;  
JP 2006522259 A 20060928; JP 4545143 B2 20100915; US 2006216166 A1 20060928; US 7334543 B2 20080226

DOCDB simple family (application)  
**EP 2004002455 W 20040310**; AT 04718939 T 20040310; DE 10314526 A 20030331; DE 502004004367 T 20040310; EP 04718939 A 20040310;  
ES 04718939 T 20040310; JP 2006504621 A 20040310; US 55146705 A 20050930