

Title (en)  
COOLING DEVICE FOR AN INTERNAL COMBUSTION ENGINE

Title (de)  
KÜHLVORRICHTUNG FÜR EINE VERBRENNUNGSKRAFTMASCHINE

Title (fr)  
DISPOSITIF DE REFROIDISSEMENT POUR MOTEUR A COMBUSTION INTERNE

Publication  
**EP 1955001 A1 20080813 (DE)**

Application  
**EP 06807567 A 20061026**

Priority  
• EP 2006067799 W 20061026  
• DE 102005058204 A 20051202

Abstract (en)  
[origin: WO2007062939A1] A cooling device is proposed which can be produced by the diecasting process and which has a heat-transfer unit (1; 27, 28) surrounded by an outer shell (14; 31), wherein a casing (20) through which coolant flows is formed between the heat-transfer unit (1; 27, 28) and the outer shell (14; 31), said casing (20) being subdivided by webs (3, 4, 5, 6; 29, 30, 34, 35, 36, 37) in such a way that a passage (21; 33) through which coolant flows is formed between the outer shell (14; 31) and the outer casing (2) of the heat-transfer unit (1; 27, 28). To this end, the webs (3, 4, 5, 6; 29, 30, 34, 35, 36, 37) are arranged in such a way that this circulating flow is effected in a meander shape. Compared with a spiral flow, this results in degrees of freedom with regard to the arrangement of the coolant inlets (12; 32) and coolant outlets (13; 38). Furthermore, such cooling devices can be produced and assembled in a cost-effective manner and have a high efficiency.

IPC 8 full level  
**F28D 9/00** (2006.01); **F28D 7/10** (2006.01); **F28F 3/04** (2006.01); **F28F 3/12** (2006.01); **F28F 9/22** (2006.01)

CPC (source: EP US)  
**F28D 7/106** (2013.01 - EP US); **F28D 9/0031** (2013.01 - EP US); **F28F 3/048** (2013.01 - EP US); **F28F 3/12** (2013.01 - EP US); **F28F 9/00** (2013.01 - EP US); **F28F 9/22** (2013.01 - EP US); **F28D 21/0003** (2013.01 - EP US); **F28F 2250/102** (2013.01 - EP US); **F28F 2255/14** (2013.01 - EP US)

Citation (search report)  
See references of WO 2007062939A1

Cited by  
EP2284470A3; EP2284471A3

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

DOCDB simple family (publication)  
**WO 2007062939 A1 20070607**; DE 102005058204 A1 20070614; DE 102005058204 B4 20080724; EP 1955001 A1 20080813; EP 2413080 A2 20120201; EP 2413080 A3 20130529; JP 2009517625 A 20090430; US 2009050302 A1 20090226

DOCDB simple family (application)  
**EP 2006067799 W 20061026**; DE 102005058204 A 20051202; EP 06807567 A 20061026; EP 11184872 A 20061026; JP 2008542690 A 20061026; US 9589206 A 20061026