

Title (en)  
Cooling device for the pistons of an internal combustion engine

Title (de)  
Kühlungseinrichtung für die Kolben einer Brennkraftmaschine

Title (fr)  
Dispositif de refroidissement pour pistons de moteur

Publication  
**EP 1517014 B1 20110601 (FR)**

Application  
**EP 04356150 A 20040902**

Priority  
FR 0310986 A 20030916

Abstract (en)  
[origin: EP1517014A1] The device has jet nozzles (1a-4a, 1b-4b) for receiving a coolant under pressure. The nozzles (1a-4a) are integrated to a common supply manifold (5a) with which a rigid assembly (6a) is formed. The manifold is associated to a connecting unit (7a) for its hydraulic connection with a coolant feed system provided in an engine. The rigid assembly is associated to a fixing unit for being fixed directly to an engine block. An independent claim is also included for an internal combustion engine comprising a cooling device.

IPC 8 full level  
**F01P 3/08** (2006.01); **F01P 11/04** (2006.01)

CPC (source: EP US)  
**F01P 3/08** (2013.01 - EP US); **F01P 11/04** (2013.01 - EP US)

Cited by  
DE102019112903A1; FR2885170A1; EP1728981A3; US7350484B2; DE102019112903B4

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)  
**EP 1517014 A1 20050323; EP 1517014 B1 20110601**; AT E511598 T1 20110615; AU 2004210615 A1 20050407; AU 2004210615 B2 20060216; AU 2004210615 C1 20061026; BR PI0406284 A 20050712; CN 1306152 C 20070321; CN 1598261 A 20050323; FR 2859756 A1 20050318; FR 2859756 B1 20070921; US 2005081802 A1 20050421; US 7360510 B2 20080422

DOCDB simple family (application)  
**EP 04356150 A 20040902**; AT 04356150 T 20040902; AU 2004210615 A 20040913; BR PI0406284 A 20040915; CN 200410077870 A 20040916; FR 0310986 A 20030916; US 94146304 A 20040915