

Title (en)
Casting mould and a casting process for the production of an engine block

Title (de)
Giessform und Giessverfahren zur Herstellung eines Motorblocks

Title (fr)
Moule de coulée et procédé de coulée pour la fabrication d'un bloc moteur

Publication
EP 0974414 A1 20000126 (DE)

Application
EP 99113976 A 19990717

Priority
• DE 19832718 A 19980721
• DE 19925512 A 19990602

Abstract (en)
The engine block has structured cooling channels in the walls between the cylinders with a reduced cross section where the channel axis intersects the cylinder axes. The cast engine block has a cooling channel in the intermediate cylinder wall with a minimum cast wall thickness of less than or equal to 5 mm. The cooling channel is wholly defined by a skin of the cast material. The cross section surface of the cooling channel is reduced from its end to a cross section surface of the cooling channel axis (14) where it intersects the cylinder axis. The minimum width of the cooling channel at the cross section surface axis at the intersection with the cylinder axis is 0.5-1.5 mm. The mold has channel molding cores (8) at the ends of the cores (2,3) to give the cylinder openings.

Abstract (de)
Bei einem Motorblock mit eng beieinander angeordneten Zylinderausnehmungen wird in einer Zylinderzwischenwand ein Kühlkanal durch Umgießen eines Formkern erzeugt, wobei für den Gießformkern vorzugsweise ein in einer Flüssigkeit lösbares, brennbares oder/und sprödes Material verwendet wird, so daß der Gießformkern nach dem Erstarren des Gußstücks leicht aus dem Kanal entfernt werden kann. Der Kanalformkern wird in der Gießform lediglich an seinen Enden gehalten, so daß ein Kühlkanal gebildet wird, der ausschließlich durch eine Gußmaterialhaut begrenzt ist. <IMAGE>

IPC 1-7
B22D 15/02

IPC 8 full level
B22C 9/10 (2006.01); **B22D 15/02** (2006.01); **B22D 19/00** (2006.01); **F02F 1/14** (2006.01); **F02F 7/00** (2006.01)

CPC (source: EP US)
B22C 9/10 (2013.01 - EP US); **B22C 9/105** (2013.01 - EP US); **B22D 19/0009** (2013.01 - EP US); **F02F 1/14** (2013.01 - EP US); **F02F 7/0007** (2013.01 - EP US); **F05C 2201/021** (2013.01 - EP US); **F05C 2251/042** (2013.01 - EP US)

Citation (search report)
• [X] EP 0197365 A2 19861015 - HALBERGERHUETTE GMBH [DE]
• [A] DE 3828093 A1 19890302 - AVL VERBRENNUNGSKRAFT MESSTECH [AT]
• [A] DE 3300924 A1 19840719 - VOLKSWAGENWERK AG [DE]
• [A] US 5217059 A 19930608 - KUHN JOHN W [US], et al
• [A] GB 2102317 A 19830202 - ROLLS ROYCE [GB]
• [A] US 4586553 A 19860506 - ALLEN GORDON L [GB], et al

Cited by
DE102007009776A1; DE102014109598A1; EP2727668A1; DE102012110592A1; DE102013101942B3; DE10112135A1; FR3075676A1; DE10153721A1; DE10153721B4; DE10153721C5; DE102017213542A1; GB2352418A; US11420251B2; DE102012101893C5; DE102017206716A1; US10550753B2; DE102012101893A1; DE102012101893B4; EP2636468A3; WO2016005806A1; US10850321B2; EP2636468B1

Designated contracting state (EPC)
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

DOCDB simple family (publication)
EP 0974414 A1 20000126; **EP 0974414 B1 20050406**; AT E292534 T1 20050415; DE 29924794 U1 20050908; DE 59911865 D1 20050512; DK 0974414 T3 20050725; ES 2241215 T3 20051016; US 6205959 B1 20010327

DOCDB simple family (application)
EP 99113976 A 19990717; AT 99113976 T 19990717; DE 29924794 U 19990717; DE 59911865 T 19990717; DK 99113976 T 19990717; ES 99113976 T 19990717; US 35814399 A 19990720