

Title (en)

INTERNAL COMBUSTION ENGINE HAVING A COOLANT JACKET WHICH SURROUNDS THE COMBUSTION CHAMBERS

Title (de)

BRENNKRAFTMASCHINE MIT EINEM DIE BRENNRÄUME UMGEBENDEN KÜHLMITTELMANTEL

Title (fr)

MOTEUR À COMBUSTION INTERNE COMPRENANT UNE CHEMISE DE REFROIDISSEMENT ENTOURANT LES CHAMBRES DE COMBUSTION

Publication

EP 3215730 A1 20170913 (DE)

Application

EP 15767457 A 20150916

Priority

- DE 102014222734 A 20141106
- EP 2015071237 W 20150916

Abstract (en)

[origin: WO2016071031A1] The invention relates to an internal combustion engine having a plurality of combustion chambers (1) which are arranged next to one another in a cylinder row in a cylinder crankcase and are surrounded on both sides of the cylinder row by a common coolant jacket (2). As a result, the coolant passes from a coolant collecting rail (3) through an inlet (4) which is configured as a supply on the circumferential side to the walls (not shown) which enclose the combustion chambers (1). Subsequently, the coolant is discharged through an outlet (6) which serves as a drain. Immediately downstream of the inlet (4), the supplied coolant stream is divided into two part streams which flow around the cylinder row in opposite flow directions (7, 8) and meet one another in the region of the outlet (6). By virtue of the fact that the inlet (4) is arranged on an outlet side (9) which is hot during operation for the combustion gases of the internal combustion engine and the outlet (6) is arranged on a suction side (10) for the fresh air which is fed to the internal combustion engine, the entire coolant stream is first of all fed to the relatively hotter side of the cylinder crankcase. A substantial increase in efficiency of the cooling action is achieved as a result. Moreover, the respective overall length of the coolant part streams between the inlet (4) and the outlet (6), which coolant part streams in the process flow in each case through both a coolant jacket section on the outlet side (9) and a coolant jacket section on the suction side (10), matches. As a result of said arrangement, a very favourable homogeneous distribution of the flow and the throttle points in the part streams, in particular as a result of the cylinder head screws which are provided in the cylinder crankcase, is possible without additional throttling.

IPC 8 full level

F02F 1/10 (2006.01)

CPC (source: EP)

F02F 1/108 (2013.01); **F02F 2001/106** (2013.01)

Citation (search report)

See references of WO 2016071031A1

Designated contracting state (EPC)

AL 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 RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

WO 2016071031 A1 20160512; DE 102014222734 A1 20160512; EP 3215730 A1 20170913; EP 3215730 B1 20210414

DOCDB simple family (application)

EP 2015071237 W 20150916; DE 102014222734 A 20141106; EP 15767457 A 20150916