Title (en)

Arrangement of cooling channels in a turbine blade

Title (de)

Anordnung von Kühlkanälen in einer Turbinenschaufel

Title (fr)

Agencement de canaux de refroidissement dans une aube de turbine

Publication

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Application

EP 13185944 A 20130925

Priority

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Abstract (en)

[origin: WO2015044007A1] The invention relates to an arrangement (1) of a plurality of cooling channels (6, 7, 9, 11, 12, 13, 14, 15, 16, 17) within a turbine blade for conveying cooling fluid, wherein the cooling channels (6, 7, 9, 11, 12, 13, 14, 15, 16, 17) lead through the turbine blade, which comprises a blade root (2), a blade tip (4), a leading edge (3), and a trailing edge (5), to one or more cooling-fluid outlets (18, 19a-19g), wherein the cooling channels (6, 7, 9, 11, 12, 13, 14, 15, 16, 17) are connected to each other at selected locations (8, 10) and extend separately from each other in other regions in such a way that, in the event of damage to the turbine blade in the region of one cooling channel (6, 7, 9, 11, 12, 13, 14, 15, 16, 17), the cooling by the other cooling channels (6, 7, 9, 11, 12, 13, 14, 15, 16, 17) remains largely unimpaired, wherein at least one cooling channel begins in a region (8) near the leading edge (3) and near the blade root (2) and leads as a diagonal channel (9) through the turbine blade into a region (10) near the trailing edge (5) and near the blade tip (4).

Abstract (de)

Die Erfindung betrifft eine Anordnung (1) von mehreren Kühlkanälen (6, 7, 9, 11, 12, 13, 14, 15, 16, 17) innerhalb einer Turbinenschaufel zur Förderung von Kühlfluid, wobei die Kühlkanäle (6, 7, 9, 11, 12, 13, 14, 15, 16, 17) durch die Turbinenschaufel, welche einen Schaufelfuß (2), eine Schaufelblattspitze (4), eine Eintrittskante (3) und eine Austrittskante (5) aufweist, zu einem oder mehreren Kühlfluidauslässen (18, 19a-19g) führen, wobei die Kühlkanäle (6, 7, 9, 11, 12, 13, 14, 15, 16, 17) so an ausgewählten Stellen (8, 10) miteinander verbunden sind und in anderen Bereichen voneinander getrennt verlaufen, dass bei einer Beschädigung der Turbinenschaufel im Bereich eines Kühlkanals (6, 7, 9, 11, 12, 13, 14, 15, 16, 17) die Kühlung durch die anderen Kühlkanäle (6, 7, 9, 11, 12, 13, 14, 15, 16, 17) weitgehend unbeeinträchtigt bleibt.

IPC 8 full level

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CPC (source: EP US)

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