

Title (en)

Method for heat treating a moulded component and moulded component produced using the method

Title (de)

Verfahren zur Vergütung eines Gussbauteils sowie Gussbauteil hergestellt nach dem Verfahren

Title (fr)

Procédé d'amélioration d'un composant en fonte ainsi que composant en fonte fabriqué selon le procédé

Publication

EP 2371983 A1 20111005 (DE)

Application

EP 10157739 A 20100325

Priority

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Abstract (en)

The method for remuneration of aluminum cast component (1) or aluminum alloy cast component having a wall (4, 10), comprises locally heat-treating the cast component after the casting, where the heat treatment step inductively takes place by an inductor (3) arranged opposite to an area of the wall. The inductor produces an electromagnetic field, whose field lines run vertical or around vertical to the wall to be heated or the area of the wall to be treated. An electric current flowing through the inductor is regulated or controlled corresponding to the desired intensity of the heat treatment. The method for remuneration of aluminum cast component (1) or aluminum alloy cast component having a wall (4, 10), comprises locally heat-treating the cast component after the casting, where the heat treatment step inductively takes place by an inductor (3) arranged opposite to an area of the wall. The inductor produces an electromagnetic field, whose field lines run vertical or around vertical to the wall to be heated or the area of the wall to be treated. An electric current flowing through the inductor is regulated or controlled corresponding to the desired intensity of the heat treatment. An area of the cast component not subjected to the heat treatment is cooled during the heat treatment. The wall has a front side and a rear side (8), where an area of the front side is inductively heated with a first inductor and an area of the rear side is heated with a second inductor. The areas are congruent. The heat-treated wall or the heat-treated area of the wall is quenched after the heat treatment. The quenching step takes place by using a gaseous and/or liquid medium. The cooling step takes place using a medium flow. The quenching step takes place by using air flow cooling and/or nitrogen flow cooling, and by water shower cooling and/or water bath cooling. The heat treatment is carried out in single step or in two-step. The single-step heat treatment is carried out as solution glowing with temperatures of 350-550[deg] C or as heat evacuation with temperatures of 100-350[deg] C. The two-step heat treatment is carried out as solution glowing and then subsequently heat evacuation. The solution glowing grasps only the wall, only the area of the wall or the entire cast component and/or the heat evacuation grasps only the wall, only the area of the wall or the entire cast component. An independent claim is included for a cast component.

Abstract (de)

Die Erfindung betrifft ein Verfahren zur Vergütung von einem mindestens eine Wandung (4,10,11,12) aufweisenden Gussbauteil (1), insbesondere aus Leichtmetall, vorzugsweise Aluminiumgussbauteil oder Aluminiumlegierungsgussbauteil, wobei das Gussbauteil (1) nach dem Gießen zumindest lokal wärmebehandelt wird. Es ist vorgesehen, dass die Wärmebehandlung mittels mindestens einem, zumindest einem Bereich der Wandung (4,10,11,12) gegenüberliegend angeordneten Induktor (3) induktiv erfolgt. Ferner betrifft die Erfindung ein entsprechend wärmebehandeltes Gussteil (1).

IPC 8 full level

C22F 1/04 (2006.01); **C22F 1/05** (2006.01)

CPC (source: EP)

C22F 1/04 (2013.01)

Citation (search report)

- [X] WO 2004101981 A1 20041125 - DAIMLER CHRYSLER AG [DE], et al
- [X] EP 1820871 A1 20070822 - BAYERISCHE MOTOREN WERKE AG [DE]
- [X] EP 1020540 A1 20000719 - BAYERISCHE MOTOREN WERKE AG [DE]

Cited by

DE102015223960A1; DE102012010471A1

Designated contracting state (EPC)

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