

## Title (en)

Method for manufacturing castings with integrated components

## Title (de)

Verfahren zur Herstellung von Gussteilen mit integrierten Bauteilen

## Title (fr)

Procédé de fabrication de pièces de fonte dotées de composants intégrés

## Publication

**EP 2158988 A1 20100303 (DE)**

## Application

**EP 08105119 A 20080825**

## Priority

EP 08105119 A 20080825

## Abstract (en)

The method for producing cast parts with integrated components, which have a high surface hardness than the remaining cast part, comprises casting the integrated component simultaneously with the remaining cast part, and subjecting the integrated component to a surface treatment after casting process. The surface treatment comprises a surface hardening with a hardness of larger than 50 harmonic related carrier (HRC) and a surface coating with a hardness of larger than 50 HRC, and has a layer thickness of 0.1 mm. The surface treatment is produced by high-speed flame spraying. The method for producing cast parts with integrated components, which have a high surface hardness than the remaining cast part, comprises casting the integrated component simultaneously with the remaining cast part, and subjecting the integrated component to a surface treatment after the casting process. The surface treatment comprises a surface hardening with a hardness of larger than 50 harmonic related carrier (HRC) and a surface coating with a hardness of larger than 50 HRC, and has a layer thickness of 0.1 mm. The surface treatment is produced by high-speed flame spraying, and is carried out with a tungsten carbide containing metal powder with the composition of tungsten carbide-nickel-chromium-boron-silicon 67-33 (WC-NiCrBSi67-33). The cast part with the integrated component is produced from a cast iron alloy with spheroidal graphite.

## Abstract (de)

Es wird ein Verfahren zur Herstellung von Gussteilen mit integrierten Bauteilen vorgeschlagen, wobei das integrierte Bauteil bereichsweise eine wesentlich höhere Oberflächenhärte als das übrige Gussteil aufweist. Das integrierte Bauteil wird gleichzeitig mit dem übrigen Gussteil gegossen und das integrierte Bauteil wird nach dem Giessvorgang einer Oberflächenbehandlung unterworfen. Die Gussteile werden als Anbaurahmen für schwere mechanisch angetriebene Maschinen mit einem integrierten Lagerbolzen verwendet.

## IPC 8 full level

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## Citation (applicant)

- JP S5725276 A 19820210 - NISSAN MOTOR
- JP 2003221639 A 20030808 - AISIN TAKAOKA LTD
- US 3876091 A 19750408 - MACDONALD RAYMORE D

## Citation (search report)

- [X] JP S5725276 A 19820210 - NISSAN MOTOR
- [X] JP 2003221639 A 20030808 - AISIN TAKAOKA LTD
- [A] DE 19649919 A1 19980604 - ACTECH GMBH ADV CASTING TECH [DE]
- [A] DE 19504949 C1 19960822 - IFU ENGINEERING UND CONSULTING [DE]
- [A] JP S6024263 A 19850206 - HITACHI METALS LTD, et al
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- [A] JP S60174249 A 19850907 - NIHON CEMENT
- [AD] US 3876091 A 19750408 - MACDONALD RAYMORE D
- [A] DE 10342582 A1 20041125 - HALBERG GUSS GMBH [DE], et al
- [A] R. GONZALEZ, M.A. GARCIA, I. PENUELAS, M. CADENAS, MA. DEL ROCIO FERNANDEZ, A. HERNANDEZ BATTEZ, D. FELGUEROSO: "Microstructural study of NiCrBSi coatings obtained by different processes", WEAR, no. 263, 23 August 2007 (2007-08-23), pages 619 - 624, XP002502198, ISSN: 0043-1648

## Designated contracting state (EPC)

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