

Title (en)

PROCESS FOR PRODUCTION OF ALUMINUM ALLOY FORMINGS, ALUMINUM ALLOY FORMINGS AND PRODUCTION SYSTEM

Title (de)

VERFAHREN ZUR HERSTELLUNG VON ALUMINIUMLEGIERUNGSFORMLINGEN, ALUMINIUMGELIERUNGSFORMLINGE UND PRODUKTIONSSYSTEM

Title (fr)

PROCÉDÉ DE PRODUCTION DE PIÈCES FORGÉES EN ALLIAGE D'ALUMINIUM, PIÈCES FORGÉES EN ALLIAGE D'ALUMINIUM ET SYSTÈME DE PRODUCTION

Publication

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Application

EP 07792004 A 20070731

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Abstract (en)

The present invention are to provide a method for producing an aluminum-alloy shaped product that exhibits high-temperature mechanical strength superior to that of a conventional aluminum-alloy forged product. The present invention provides a method for producing an aluminum-alloy shaped product, comprising a step of forging a continuously cast rod of aluminum-alloy serving as a forging material, in which the aluminum-alloy contains Si in an amount of 10.5 to 13.5 mass %, Cu in an amount of 2.5 to 6 mass %, Mg in an amount of 0.3 to 1.5 mass % and Ni in an amount of 0.8 to 4%, and satisfies a relational expression of "Ni (% by mass) $\#Y$ ($-0.68 \times \text{Cu}(\% \text{ by mass}) + 4.2(\% \text{ by mass})$), and heat treatment and heating steps including a step of subjecting the forging material to pre-heat treatment (82), a step (87) of heating the forging material during a course of forging of the forging material and a step of subjecting an aluminum-alloy shaped product to post-heat treatment (89), said pre-heat treatment(82) including treatment of maintaining the forging material at a temperature of -10 to 480°C for two to six hours.

IPC 8 full level

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Cited by

CN113846241A; CN106078231A; EP2453034A4; US2013115129A1; US9222151B2; US2016271687A1; US10022788B2; US10189080B2

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