Title (en)

Method and system for producing a cast component

Title (de)

Verfahren und Anlage zur Herstellung eines Gussbauteils

Title (fr)

Connecteur de soupape pour tuyaux médicaux

Publication

EP 2128276 A1 20091202 (DE)

Application

EP 09160644 A 20090519

Priority

DE 102008024524 A 20080521

Abstract (en)

The casting is heat-treated after casting and extraction from the mold. After reaching a desired temperature (T s) during this treatment, it is immediately cooled. Alternatively before cooling it is held at T sfor a time interval (t h) lasting preferably 3 minutes. The interval is no more than 5 minutes. Further optional corresponding holding times of up to 30, 60, 90 or 120 seconds are quoted. The desired temperature is preferably in the range 490-540 [deg] C. This temperature (T s) is reached at 2-12 K/s, preferably 4-8 K/s. Flowing hot air is used for heating. Several nozzles produce the hot air flows. The air temperature is preferably 100-300[deg] C above the desired temperature (T s) which is to be reached. The preferred air temperature is in the range 600-720[deg] C. Subsequent forced convective cooling is to a preferred temperature of 100-150[deg] C. Several air flows from nozzles are used. The heat treatment commences within 15 seconds to 15 minutes of extraction from the mold. The heat treatment commences when the temperature of the casting (T a) is in the range 50?C-400[deg] C. A T4, T6, T7 or O heat treatment is used. The aluminum alloy used, is of a type which hardens by hot aging. The magnesium content of the aluminum alloy is 0.06-0.6 wt%, preferably 0.08-0.18 wt%. The cast component is at least partially heat-treated. An independent claim IS INCLUDED FOR the corresponding die-casting and heat treatment plant.

Abstract (de)

Die Erfindung betrifft ein Verfahren zur Herstellung eines Gussbauteils (10), insbesondere eines Druckgussbauteils, insbesondere aus einer Aluminiumlegierung, bei welchem das Gussbauteil (10) im Anschluss an den Gießprozess und das Entformen aus seiner Gießform (12) zumindest partiell einem Wärmebehandlungsverfahren unterzogen wird, wobei dass das Gussbauteil (10) bei der Wärmebehandlung nach Erreichen einer Solltemperatur (T s) unmittelbar abgekühlt oder vor dem Abkühlen während einer Haltezeit (t h) von bis zu 3 min wärmebehandelt wird. Darüber hinaus betrifft die Erfindung eine Anlage zum Herstellen eines derartigen Gussbauteils (10).

IPC 8 full level

B22D 47/00 (2006.01); **C21D 1/34** (2006.01); **C21D 1/62** (2006.01); **C22F 1/04** (2006.01); **C22F 1/05** (2006.01)

CPC (source: EP US)

B22D 47/00 (2013.01 - EP US); **C21D 1/34** (2013.01 - EP US); **C21D 1/62** (2013.01 - EP US); **C22F 1/04** (2013.01 - EP US); **C22F 1/05** (2013.01 - EP US); **C22F 1/06** (2013.01 - EP US)

Citation (applicant)

EP 0997550 B1 20021009 - ALCAN TECH & MAN AG [CH]

Citation (search report)

- [X] WO 2008049739 A1 20080502 - BDW TECHNOLOGIES GMBH & CO KG [DE], et al
- [X] WO 03040423 A1 20030515 - SALZBURGER ALUMINIUM AG [AT], et al
- [AD] EP 0997550 A1 20000503 - ALUSUISSE LONZA SERVICES AG [CH]
- [X] US 2006000571 A1 20060105 - CRAFTON SCOTT P [US], et al
- [X] WO 02063051 A2 20020815 - CONS ENG CO INC [US]
- [X] US 2005072549 A1 20050407 - CRAFTON SCOTT P [US], et al
- [A] DE 10330400 A1 20050120 - ALUTEC BELTE AG [DE]

Cited by

CN102126017A

Designated contracting state (EPC)

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 SE SI SK TR

DOCDB simple family (publication)

EP 2128276 A1 20091202; CA 2666223 A1 20091121; DE 102008024524 A1 20091126; JP 2009279654 A 20091203; US 2009288740 A1 20091126

DOCDB simple family (application)

EP 09160644 A 20090519; CA 2666223 A 20090520; DE 102008024524 A 20080521; JP 2009122981 A 20090521; US 46782309 A 20090518