

Title (en)

METHOD AND DEVICE FOR PRODUCING A PRESS-HARDENED METAL COMPONENT

Title (de)

VERFAHREN UND VORRICHTUNG ZUR HERSTELLUNG EINES PRESSGEHÄRTETEN METALLBAUTEILS

Title (fr)

PROCÉDÉ ET DISPOSITIF DE FABRICATION D'UN COMPOSANT MÉTALLIQUE TREMPÉ À LA PRESSE

Publication

EP 2864506 B1 20180711 (DE)

Application

EP 13735194 A 20130619

Priority

- DE 102012012246 A 20120622
- DE 102012016075 A 20120814
- EP 2013001808 W 20130619

Abstract (en)

[origin: WO2013189597A1] The invention relates to a method for producing a metal component having at least two regions of differing strength properties within said component, obtained by differing cooling speeds of the different regions, characterized by the following method features: a metallic base body (1), which has at least austenitizing temperature, is provided, a region of the base body (1) is shielded during subsequent heat treatment of the base body (1) until the component temperature of said region has dropped to a predetermined temperature (T2) below the austenitizing temperature, but still above martensite start temperature, wherein an average cooling speed below the cooling speed which is critical for martensite formation prevails in said component region, while the unshielded region is kept to at least the austenitizing temperature, the shielding (3) is removed, the base body (1), having a graded temperature profile, is subjected to a reshaping process by a tool, wherein a cooling speed above that which is critical for martensite formation prevails at least in the previously unshielded region. A device for carrying out the method according to the invention has a shielding device (3) having one or a plurality of contoured cover elements (4) for shielding a predetermined region of a base body (1), preferably of a circuit board, wherein the shielding device (3) is designed to stay in the heating unit (2, 5) during tempering of the base body (1) before reshaping the base body in the reshaping tool.

IPC 8 full level

B21J 1/06 (2006.01); **C21D 1/673** (2006.01); **C21D 1/70** (2006.01); **C21D 8/02** (2006.01); **C21D 8/04** (2006.01); **C21D 9/00** (2006.01); **C21D 9/48** (2006.01); **F27B 5/14** (2006.01)

CPC (source: EP)

B21J 1/06 (2013.01); **C21D 1/673** (2013.01); **C21D 1/70** (2013.01); **C21D 8/0294** (2013.01); **C21D 8/04** (2013.01); **C21D 9/0068** (2013.01); **C21D 9/48** (2013.01); **F27B 5/14** (2013.01); **C21D 2211/005** (2013.01); **C21D 2211/009** (2013.01); **C21D 2221/00** (2013.01); **C21D 2221/10** (2013.01)

Citation (examination)

- WO 2010109012 A1 20100930 - VOESTALPINE AUTOMOTIVE GMBH [AT], et al
- DE 102009023195 A1 20101202 - BAYERISCHE MOTOREN WERKE AG [DE]

Designated contracting state (EPC)

AL 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 RS SE SI SK SM TR

DOCDB simple family (publication)

DE 202012007777 U1 20120918; DE 102012016075 A1 20131224; DE 102012016075 B4 20140227; EP 2864506 A1 20150429; EP 2864506 B1 20180711; ES 2688356 T3 20181102; PL 2864506 T3 20181231; PT 2864506 T 20181023; WO 2013189597 A1 20131227

DOCDB simple family (application)

DE 202012007777 U 20120814; DE 102012016075 A 20120814; EP 13735194 A 20130619; EP 2013001808 W 20130619; ES 13735194 T 20130619; PL 13735194 T 20130619; PT 13735194 T 20130619