Title (en)

METHOD FOR WARM SWAGING AL-MG ALLOY PARTS

Title (de)

VERFAHREN ZUM TIEFZIEHEN VON TEILEN AUS AL-MG-LEGIERUNGEN UNTER WARMER TEMPERATUR

Title (fr)

PROCEDE D'EMBOUTISSAGE A TIEDE DE PIECES EN ALLIAGE Al-Mg

Publication

EP 1601478 A1 20051207 (FR)

Application

EP 04713927 A 20040224

Priority

- FR 2004000407 W 20040224
- FR 0302335 A 20030226

Abstract (en)

[origin: US2006130941A1] A method for the production of swaged aluminum alloy parts, by production of a 0.5 mm-5 mm thick alloy strip made of 1-6 wt. % Mg, <1.2 wt. % Mn, <1 wt. % Cu, <1 wt. % Zn, <3 wt. % Si, <2 wt. % Fe, <0.4 wt. % Cr, Zr<0.3, other elements <0.1 each, total of <0.5, the remainder being Al, cutting a blank from the strip, locally or totally heating the blank at a temperature of 150-350° C. for <30 secs, and swaging the heated blank with the aid of heated tools, at least partially, at a temperature of 150-350° C. in the presence of a lubricant which is compatible with later operations. The swaged parts are automotive body work parts.

IPC 1-7

B21D 22/20; C22C 21/06

IPC 8 full level

B21D 22/20 (2006.01); **C22F 1/047** (2006.01)

CPC (source: EP KR NO US)

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Citation (search report)

See references of WO 2004076092A1

Cited by

WO2018011069A1; FR3053979A1; EP2548670A1; DE102011051943A1; WO2018185425A1; US11649536B2; WO2015004340A1; EP3199655A2; US11939655B2; EP3839085A1; WO2021122621A1

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