

Title (en)

APPARATUS AND METHOD FOR HOT STAMPING OF METAL SHEETS WITH MODULATION OF THE QUENCHING RATE

Title (de)

VORRICHTUNG UND VERFAHREN ZUM HEISSPRÄGEN VON BLECHEN MIT MODULATION DER ABSCHRECKRATE

Title (fr)

APPAREIL ET PROCÉDÉ D'ESTAMPAGE À CHAUD DE FEUILLES MÉTALLIQUES AVEC MODULATION DE LA VITESSE DE TREMPÉ

Publication

**EP 4032631 A1 20220727 (EN)**

Application

**EP 21153409 A 20210126**

Priority

EP 21153409 A 20210126

Abstract (en)

Described herein are an apparatus (1) and a method for hot stamping of metal sheets (MS) with simultaneous modulation of the quenching rate. The apparatus (1) comprises:- a first die portion (2);- a second die portion (4), which defines, upon coupling with the first die portion (2), a die cavity (6) configured to impart a desired shape on a metal sheet (MS) to be subjected to stamping, the die cavity (6) being delimited by walls (2W; 16W) of the first die portion (2) and walls (10W, 12W; 16W) of the second die portion (4);- a first cooling jacket (8) provided in at least part of the first die portion (2), the first cooling jacket (8) being configured to operate in a relation of heat exchange with the die cavity (6) through at least part of the walls (2W, 16W) of the first die portion (2) that define the die cavity (6);- a second cooling jacket (14) provided in at least part (10, 12) of the second die portion (4), the second cooling jacket (14) being configured to operate in a relation of heat exchange with the die cavity (6) through at least part of the walls (10W, 12W, 16W) of the second die portion (4) that define the die cavity (6). One or more mobile elements (16) are prearranged in at least one of the die portions for modulation of the quenching rate.

IPC 8 full level

**B21D 22/02** (2006.01); **B21D 22/06** (2006.01); **B21D 22/20** (2006.01); **B21D 53/88** (2006.01); **C21D 1/673** (2006.01); **B21D 22/22** (2006.01)

CPC (source: EP)

**B21D 22/022** (2013.01); **B21D 22/06** (2013.01); **B21D 22/208** (2013.01); **B21D 53/88** (2013.01); **C21D 1/18** (2013.01); **C21D 1/673** (2013.01); **C21D 7/13** (2013.01); **C21D 11/005** (2013.01); **B21D 22/22** (2013.01)

Citation (search report)

- [XAYI] US 2017225214 A1 20170810 - BECKER JUERGEN [DE], et al
- [XAYI] US 2017252791 A1 20170907 - LOESCH SIEGFRIED [DE]
- [XAI] WO 2017019855 A1 20170202 - MAGNA INT INC [CA], et al

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

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

**EP 4032631 A1 20220727**

DOCDB simple family (application)

**EP 21153409 A 20210126**