

Title (en)

METHOD AND PRESS TOOL FOR PRODUCING A COMPLEX SHEET METAL PART WITH HIGH DRAW DEPTH

Title (de)

VERFAHREN UND PRESSENWERKZEUG ZUR HERSTELLUNG EINES KOMPLEXEN BLECHFORMTEILS MIT HOHER ZIEHTIEFE

Title (fr)

PROCÉDÉ ET OUTIL DE PRESSE DESTINÉS À LA FABRICATION D'UN MOULAGE EN TÔLE COMPLEXE À GRANDE PROFONDEUR D'EMBOUITISSAGE

Publication

EP 3243578 A3 20171122 (DE)

Application

EP 17000777 A 20170505

Priority

DE 102016005902 A 20160513

Abstract (en)

[origin: JP2017202525A] PROBLEM TO BE SOLVED: To provide a method for producing a complex sheet metal part by means of a pressing tool and a pressing tool suited therefor. SOLUTION: An upper tool part 120 is moved downward, and at an end thereof, an inserted sheet metal M is clamped between a die ring 160 and a sheet holder 140. During a further downward movement of the upper tool part, the sheet metal M is drawn on extended insertable punch inserts 131, 132, 133 to thereby generate local material reserves. When the upper tool part is moved further downward until the die ring 160 and the holder 140 are moved to the lower end point, the punch inserts 131, 132, 133 are actively retracted, the local material reserves are released, and the metal sheet M is successfully formed in a region between the die ring 160 and a punch 130. When the upper tool part is moved further downward until a die 150 reaches the lower end point, the flow of the metal sheet material to the border region of the metal sheet is prevented, so that only the material locally reserved between the die 150 and the punch 130 is used to complete the forming. SELECTED DRAWING: Figure 1b

IPC 8 full level

B21D 22/22 (2006.01); **B21D 22/26** (2006.01)

CPC (source: CN EP US)

B21D 22/06 (2013.01 - US); **B21D 22/20** (2013.01 - CN); **B21D 22/22** (2013.01 - EP US); **B21D 22/26** (2013.01 - CN EP US); **B21D 24/04** (2013.01 - US); **B21D 24/10** (2013.01 - US); **B21D 37/10** (2013.01 - CN)

Citation (search report)

- [A] US 2012137749 A1 20120607 - PARK JOO SUK [KR]
- [A] JP 2007326112 A 20071220 - HIROSHIMA PREFECTURE, et al
- [A] DE 19842750 A1 20000406 - AUDI AG [DE]
- [A] DE 69531233 T2 20040422 - OGIHARA AMERICA CORP [US]

Cited by

DE102021100281B3; EP4026626A1

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)

DE 102016005902 B3 20170629; CN 107363147 A 20171121; CN 107363147 B 20190219; EP 3243578 A2 20171115; EP 3243578 A3 20171122; EP 3243578 B1 20181003; JP 2017202525 A 20171116; JP 6370437 B2 20180808; US 10646911 B2 20200512; US 2017326612 A1 20171116

DOCDB simple family (application)

DE 102016005902 A 20160513; CN 201710332944 A 20170512; EP 17000777 A 20170505; JP 2017096110 A 20170515; US 201715593758 A 20170512