

Title (en)
Method of press hardening and cutting of a sheet material

Title (de)
Verfahren zum Presshärten und Schneiden eines Blechmaterials

Title (fr)
Procédé pour le durcissement et découpe d'une tôle

Publication
EP 2583768 B1 20161214 (DE)

Application
EP 12006819 A 20121001

Priority
DE 102011116714 A 20111022

Abstract (en)
[origin: EP2583768A1] The tool comprises: two tool parts (200, 300) that are moved, relative to each other, in a working direction and between which a heated sheet metal material is formed by applying a compressive force acting in the working direction; and a separation device, with which a separation operation is executed at the metal material present between the tool parts. The separation device comprises a separation vane that is movable transverse to the working direction, with which the separation operation is executable after forming the metal material in a steep section extending to the working direction. The tool comprises: two tool parts (200, 300) that are moved, relative to each other, in a working direction and between which a heated sheet metal material is formed by applying a compressive force acting in the working direction; and a separation device, with which a separation operation is executed at the sheet metal material present between the tool parts. The separation device comprises a separation vane that is movable transverse to the working direction, with which the separation operation is executable after forming the sheet metal material in a steep section extending to the working direction. One of the tool parts is formed with a tool segment (220) that is supported resiliently on a base plate of the tool part and with a cooling device (230, 330) for the active cooling of a tool effective area. The movable separation vane: is passively actuated; is shifted in a direction transverse to the working direction; is formed for cutting or punching the sheet metal material; and comprises a given direction of movement that vertically extends to the steep section. The tool further comprises: a driver for the passive operation of the separation vane; a spring device (240) for resilient support of the tool segment at the base plate, where the spring device acts as a gas pressure spring and a nitrogen spring; and a drive element for the active operation of the separation vane. A cross-section line for the separation operation executed by the movable separation vane partially passes in a non-active cooled steep section. An independent claim is included for a method for press hardening a sheet metal material.

IPC 8 full level
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CPC (source: EP)
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Cited by
DE102020202998B3; FR3017810A1; EP2902130A1; FR3046733A1; DE102018215545A1; DE102018215545B4; WO2017121786A1; DE102020201407A1; DE102020201407B4; EP3060687B1; EP3868900B1

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