

Title (en)

WARM PRESS FORMING METHOD AND AUTOMOBILE FRAME COMPONENT

Title (de)

HEISSPRESSFORMVERFAHREN UND KAROSSERIEKOMPONENTEN EINES KRAFTFAHRZEUGS

Title (fr)

PROCÉDÉ DE FORMAGE SOUS PRESSION À CHAUD ET COMPOSANT DE CHÂSSIS D'AUTOMOBILE

Publication

EP 2823905 B1 20170111 (EN)

Application

EP 13757922 A 20130304

Priority

- JP 2012048725 A 20120306
- JP 2013001316 W 20130304

Abstract (en)

[origin: EP2823905A1] Disclosed is a method for forming a steel sheet having a tensile strength of 440 MPa or more into a press-formed part including a flange portion and other portions by press forming, the method includes: heating the steel sheet to a temperature range of 400 °C to 700 °C; and then press-forming the heated steel sheet using draw forming to obtain a press-formed part, with the steel sheet being held at a press bottom dead point in the die for one second to five seconds. In this way, geometric changes such as springback that occur in a panel can be suppressed, the dimensional accuracy of the panel can be enhanced accordingly, and the desired mechanical properties can easily be obtained in the press-formed part.

IPC 8 full level

B21D 22/20 (2006.01); **B21D 53/88** (2006.01); **B21J 1/06** (2006.01); **B21K 7/12** (2006.01); **C21D 1/673** (2006.01); **C21D 8/02** (2006.01); **C21D 9/00** (2006.01); **C21D 9/46** (2006.01); **C22C 38/00** (2006.01); **C22C 38/02** (2006.01); **C22C 38/12** (2006.01); **C22C 38/14** (2006.01); **C22C 38/20** (2006.01); **C22C 38/24** (2006.01); **C22C 38/28** (2006.01); **C22C 38/44** (2006.01); **C22C 38/50** (2006.01); **C22C 38/60** (2006.01); **C23C 2/06** (2006.01); **C23C 2/28** (2006.01)

CPC (source: EP US)

B21D 22/02 (2013.01 - EP); **B21D 22/208** (2013.01 - EP US); **B21J 1/06** (2013.01 - US); **B21K 7/12** (2013.01 - US); **C21D 1/673** (2013.01 - EP US); **C21D 8/0226** (2013.01 - EP US); **C21D 9/46** (2013.01 - EP US); **C22C 38/00** (2013.01 - EP US); **C22C 38/001** (2013.01 - EP US); **C22C 38/002** (2013.01 - EP US); **C22C 38/005** (2013.01 - EP US); **C22C 38/007** (2013.01 - EP US); **C22C 38/02** (2013.01 - EP US); **C22C 38/04** (2013.01 - EP US); **C22C 38/06** (2013.01 - EP US); **C22C 38/08** (2013.01 - EP US); **C22C 38/105** (2013.01 - EP US); **C22C 38/12** (2013.01 - EP US); **C22C 38/14** (2013.01 - EP US); **C22C 38/20** (2013.01 - EP US); **C22C 38/24** (2013.01 - EP US); **C22C 38/28** (2013.01 - EP US); **C22C 38/44** (2013.01 - EP US); **C22C 38/50** (2013.01 - EP US); **C22C 38/60** (2013.01 - EP US); **C23C 2/06** (2013.01 - EP US); **C23C 2/28** (2013.01 - EP US); **C23C 2/29** (2022.08 - EP US); **B21D 53/88** (2013.01 - EP US); **C21D 2211/004** (2013.01 - EP US); **C21D 2211/005** (2013.01 - EP US)

Citation (opposition)

Opponent : ThyssenKrupp Steel Europe AG

- JP 2011230189 A 20111117 - JFE STEEL CORP
- JP 2006212663 A 20060817 - NIPPON STEEL CORP
- US 2005257862 A1 20051124 - ASAI TATSUYA [JP], et al
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