

Title (en)

Plastic working method for a holed member.

Title (de)

Verfahren zur plastischen Bearbeitung eines gelochten Glieds.

Title (fr)

Procédé de travail plastique pour un élément à trou.

Publication

**EP 0560010 A1 19930915**

Application

**EP 93100205 A 19930108**

Priority

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Abstract (en)

The present invention relates to a plastic working method for a holed member to obtain a holed member (33) with a through hole at the center by plastic working and its object is to securely prevent any defect such as an underfill from occurring. The present invention comprises a roughing process and a finishing process. In its finishing process, with an intermediate material (57) placed under compressive force caused by a punch (37) and a counter punch (39), a large diameter part or a diameter enlarging part of a mandrel (49) is pulled out of the through hole of the intermediate material (57) with inserting a small diameter part of the mandrel (47) to the same through hole so that the gap between the small diameter part of the mandrel (47) and the through hole is filled with the material. <IMAGE>

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IPC 8 full level

**B21K 1/30** (2006.01)

CPC (source: EP)

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Citation (search report)

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- [A] PATENT ABSTRACTS OF JAPAN vol. 16, no. 173 (M-1240)24 April 1992 & JP-A-04 017938 ( HONDA MOTOR CO LTD ) 22 January 1992
- [A] PATENT ABSTRACTS OF JAPAN vol. 11, no. 78 (M-570)(2525) 10 March 1987 & JP-A-61 235033 ( GOTO TANKO KK ) 20 October 1986
- [A] PATENT ABSTRACTS OF JAPAN vol. 9, no. 268 (M-424)(1991) 25 October 1985 & JP-A-60 115342 ( MITSUBISHI JUKOGYO KK ) 21 June 1985

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