

Title (en)  
PUNCHING METHOD AND PUNCHING DEVICE

Title (de)  
STANZVERFAHREN UND STANZVORRICHTUNG

Title (fr)  
PROCEDE DE POINÇONNAGE ET DISPOSITIF A POINÇONNER

Publication  
**EP 1884299 A4 20100331 (EN)**

Application  
**EP 06756578 A 20060525**

Priority  

- JP 2006310418 W 20060525
- JP 2005153770 A 20050526
- US 68587005 P 20050601

Abstract (en)  
[origin: EP1884299A1] A hole punching method capable of executing hole punching with high material yield at a low load and preventing occurrence of underfill is provided. The hole punching method includes a step of expanding a hole punching scheduled portion 2 of a raw material 1 disposed in a cavity 12 of a closed die 11 by pressing the hole punching scheduled portion 2 from opposite sides thereof across the hole punching scheduled portion 2 with a pair of large diameter punch and small diameter punch 13 and 15 different in diameter and arranged to as to face each other so that unfilled portions remain in the cavity, a step of penetrating the small diameter punch 13 into the hole punching scheduled portion 2 of the raw material 1 while releasing or after releasing pressurization by the large diameter punch 15 to the hole opening scheduled portion 2, and a step of penetrating the large diameter punch 15 into the hole punching scheduled portion 2 of the raw material 1 while pulling out or after pulling out the small diameter punch 13 penetrated in the hole punching scheduled portion 2 of the raw material 1 from the hole punching scheduled portion 2 of the raw material 1.

IPC 8 full level  
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CPC (source: EP KR)  
**B21D 28/02** (2013.01 - EP); **B21J 5/02** (2013.01 - EP KR); **B21J 5/08** (2013.01 - KR); **B21J 5/10** (2013.01 - EP KR); **B21K 1/00** (2013.01 - EP); **B21K 1/14** (2013.01 - KR); **B21K 1/761** (2013.01 - EP); **B21K 1/766** (2013.01 - EP)

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