

Title (en)  
METHOD AND DEVICE FOR THE REDUCTION OF CUTTING IMPACT IN A PRECISION BLANKING PRESS

Title (de)  
VERFAHREN UND VORRICHTUNG ZUM REDUZIEREN DES SCHNITTSCHLAGS IN EINER FEINSCHNEIDPRESSE

Title (fr)  
PROCÉDÉ ET DISPOSITIF DE RÉDUCTION DU CHOC DE COUPE DANS UNE PRESSE DE DÉCOUPAGE FIN

Publication  
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Application  
**EP 15002037 A 20150706**

Priority  
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Abstract (en)  
[origin: KR20170005767A] The present invention relates to a method and apparatus to reduce a cutting impact of a precise blanking press driven by hydraulics. The present invention is to generate power needed to reduce the cutting impact as direct resistance to a hydraulic chamber of a driving piston to directly apply resistance to a cutting punch such that a design of a press is simplified; costs are able to be reduced; an external hydraulic mechanical means is not additionally needed to reduce the cutting impact; and load on the press and die being able to be reduced. According to the present invention, the method of reducing the cutting impact of the precise blanking press comprises: (a) a step of detecting a position of a main piston during a stroke motion toward a stop part fixated greater before reaching a top dead center (OT), and achieving detection by a measuring unit to detect data on a position of the main piston to transmit the position to a processing central control system, and connected to the main piston; (b) a step of continuously detecting an operation pressure of pressure chambers of the main piston by pressure sensors which detect pressure values to transmit the same to the central control system; (c) a step of determining an increase in maximum pressure and operation pressure of a second pressure chamber; (d) a step of determining a maximum force of the second pressure chamber from multiplying the detected operation pressure by a working surface of the main piston, and measuring a reduction of the force; and (e) a step of delimiting pressure of a tank valve combined with the second pressure chamber based on the reduction force and the determined maximum force in accordance with step (d) such that the pressure of the second pressure chamber is controlled, working pressure of the first pressure chamber increased to generate resistant force against the cutting impact as soon as the maximum force is exceeded, and control is performed and maintained until a cutting process ends.

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Cited by  
EP3666411A1; EP3666410A1; US11878335B2; EP3831590A1; US11642716B2; EP3736061A1; US11779988B2; EP3725502A1; US11331711B2

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