Title (en)

Method of automatic and iterative process optimization of drawing operations in presses

Title (de)

Verfahren zur selbsttätigen, iterativen Prozessoptimierung von Ziehvorgängen in Pressen

Title (fr)

Procédé pour l'optimisation de processus d'emboutissage automatique et itératif aux presses

Publication

EP 0585589 B1 19960918 (DE)

Application

EP 93111631 A 19930721

Priority

DE 4229155 A 19920901

Abstract (en)

[origin: US5450347A] A method for the iterative process optimization of drawing processes, occurring in timed sequence, in drawing presses, in which the clamping force which can be set at the blank holder is reduced (in the case of fractures) or increased (in the case of folding) or maintained at the same level (in the case of acceptable parts) for a subsequent working cycle as a function of the drawn part quality of a drawn part drawn in a proceeding working cycle. In order to be able to detect the drawn part quality with respect to the criteria of fractures, acceptable or folding automatically during each working cycle and, accordingly, to be able to design the optimization process as a genuine control process which occurs automatically in a closed cycle, before the start-up of production of a specific type of a part to be drawn, a pressing stroke-dependent desired value drawing force range of the drawing force exerted on the drawn part during the drawing process is detected and the data are stored, the drawing force needing to stay within this range in order to be able to expect fracture-free and fold-free, that is to say acceptable drawn parts. During production, the pressing-stroke-dependent actual-value drawing force variation is measured and it is monitored whether this variation stays within thaws desired-value drawing force range during the entire drawing path and/or whether it has exceeded (fractures) or undershot (folds) the desired-value drawing force range. Influencing factors which are relevant to the drawing process and can be detected on the semi-finished product are also continuously detected and appropriately taken into account when setting the blank-holding force.

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B21D 24/14

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CPC (source: EP US)

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Cited by

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