INFLUENCE OF DRAWBEADS ON THE SPRINGBACK BEHAVIOUR

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Acknowlegement

Here is the acknowledgement must be written

Abstract

Numisheet 2008 Conference attracts international participation from the metal forming industry and university professors interested in sheet metal forming technology, with a strong emphasis on forming simulation. The Numisheet 2008 Conference include the latest developments in metal forming technology, which is a rapidly growing and challenging opportunity for application of science to industry. One of the hallmarks of the conference is the Numisheet Benchmark Study

Abstrak

Here is the abstract in Malay

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Chapter 1

Introduction

The Numisheet Conferences occur once every three in location between North America, Europe and Asia. The conference attracts international participation from the metal forming industry and university professors interested in sheet metal forming technology, with a strong emphasis on forming simulation. The Numisheet Conference Proceedings include the latest developments in metal forming technology, which is a rapidly growing and challenging opportunity for application of science to industry

One of the hallmarks of the conference is the Numisheet Benchmark Study, which is a set of three blind tests prepared one year prior to the conference. Numisheet 2008 Benchmark Problem II is provided by Daimler AG. For this benchmark, the well known S-Rail geometry as shown in Figure 1.1 was chosen. In this benchmark, study the influence of different drawbeads geometries; smooth bead and locking bead on the springback behavior for steel is to be examined using numerical simulation. The illustrations of the drawbeads are shown in.[3, 1]

1.1 Background of Study

Sheet metal forming is one of the most widely used manufacturing processes for the fabrication of a wide range of products in many industries. The reason behind sheet metal forming gaining a lot attention in modern technology is due to the ease with which metal may be formed into useful shapes by plastic deformation processes in which the volume and

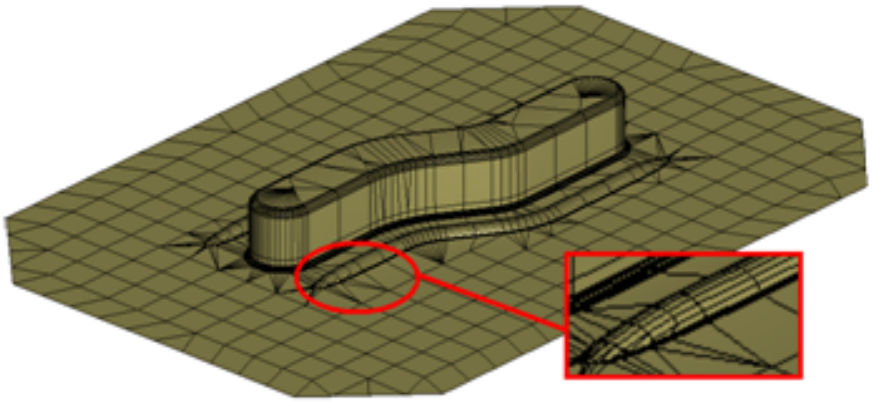

Figure 1.1: R-rail geometry

Chapter 2

Literature Review

The sheet metal forming process, in theory, can be viewed as relatively straight forward operation where a sheet of material is plastically deformed into desired shape. In practice, however, variations in blank dimensions, material properties and environmental conditions make the predictability and reproducibility of a sheet metal forming process difficult. Apart from this, springback properties of sheet metal make it extremely tedious to design appropriate tooling for a given process. [2]. Figure 2.1 shows.....

The explanation of the Hubolt formula

$$f(t) = \int_{s0}^{s1} d\,(x) \tag{2.1}$$

where x is the displacement.

In Eq.2.1 can be derived from another equation as written by

$$ffdfd \tag{2.2}$$

This is another example

$$dsd\nabla f \tag{2.3}$$

as mention in Chapter 2.

2.1 dded

2.1.1 dddd

Table 2.1: Data structure

node	x	y	z
1			
2			

Chapter 3

Methodology

dsds

$$ff \tag{3.1}$$

References

[1] Marcela Morvidone, Bob L. Sturm, and Laurent Daudet. Incorporating scale information with cepstral features: Experiments on musical instrument recognition. *Pattern Recognition Letters*, In Press, Corrected Proof:–, 2010.

[2] Emilie Poirson, Philippe Depincae, and Jean-Francois Petiot. User-centered design by genetic algorithms: Application to brass musical instrument optimization. *Engineering Applications of Artificial Intelligence*, 20(4):511 – 518, 2007.

[3] R. Rodriguez, E. Arteaga, D. Rangel, R. Salazar, S. Vargas, and M. Estevez. Mechanical, chemical and acoustic properties of new hybrid ceramic-polymer varnishes for musical instruments. *Journal of Non-Crystalline Solids*, 355(2):132 – 140, 2009.