

The effect of forming parameters on the sheet stretch in incremental sheet forming (ISF) process on CNC lathe machine

ABSTRACT

The effect of forming parameters during the incremental sheet forming process (ISF) was studied for a circular shape sheet part. ISF is known as a rapid prototyping method to produce sheet metal parts in a batch production series. ISF has found to be useful and advantageous which increases its application in industry. A CNC lathe machine was used in this study because it was easily programmed to move an indenter which worked as the tool, through the sheet metal which was clamped on a plain rounded mold. The work also investigated the influence of some process variables such as spindle speed, tool material; tool feed rate and temperature during the forming procedure. The results showed that a proper spindle speed and tool feed rate at some stage in the forming process improved the surface quality and the rate of penetration.

Keyword: CNC forming; Forming; Incremental sheet forming (ISF); ISF