AutoForm

Sigma®

Software for Robust Processes

► Rapid determination of part quality and process capability
► Early identification of the most efficient and stable production process
► Reduced rejects of stamped parts
► Minimized downtime of press lines
► Maximized production efficiency
AutoForm-Sigma®

AutoForm-Sigma addresses stamping robustness issues during the product and tooling design phases.

AutoForm-Sigma ensures the most efficient and stable manufacturing process while simultaneously meeting the desired quality targets for the part. A stable production process with minimum rejects is a key requirement for cost-efficient manufacturing.

The ideal manufacturing environment consists of stamping processes that run smoothly and reliably, processing blank after blank, coil after coil, and producing identical parts that are within tolerance. However, the reality in the press shop can be quite different. Presses that have been producing excellent parts for weeks can suddenly produce rejects under stamping conditions that appear identical.

The reason is that in practice there are unavoidable, uncontrollable noise parameters which affect the process conditions. Material properties vary from coil to coil and from blank to blank, even when cut from the same coil, and even within a single blank itself. Process conditions vary as well since lubrication, press forces, positioning, tool temperatures, tool wear, etc., cannot always be constantly held.

AutoForm-Sigma takes into account the noise and variability that are inherent in the forming process thereby better reflecting the real state of manufacturing. Their influence on stamping process robustness is now quantifiable and predictable.

In addition, AutoForm-Sigma enables engineers to determine the process capability Cpk. The Cpk value of the process indicates its stability and reliability; it enables engineers to identify where and to what extent the current forming process will result in part rejects. By analyzing process performance and, in particular, process capability, engineers can validate the stamping process and improve it accordingly.

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By simply looking at the part, engineers can now see where and to what extent the current forming process will result in part rejects.