1. **Brankamp Monitoring: Food Industry Applications  
   Cans, Bottles, Lids (Pull-Tab), Closures, Bins, Casks  
   Machines: Shell Presses, Drawing Presses, EOE: Minster**
2. Today, over 400 billion cans are manufactured in the world each year for use in the food Industry. However, it has never been possible to guarantee 100% consistent quality of the metal packaging. Many different testing procedures have proven to be too expensive and not very practicable, in economic terms. Recently there has been a move away from these post-pro­cess control techniques and towards in–process monitoring di­rectly in the machine. This provides the possibility of immediately identifying ma­nufacturing faults and selec­ting out faulty parts.

Quality problems in the ma­nufacture of pull-off lids can arise in different stages of shaping. In the first shaping stage, the bubble is drawn out of the pre-pressed shell. During this work process, there can be sporadic materi­al failures, eg., the sheet metal tears, thus the requisite shaping force reduces. The bubble is then shaped in a number of steps to form a cylindrical button. Tears can also occur during these steps. Issues are often the result of residual compounds on the tool, or chips from the clip tool.

In the channeling stage, the channel depth is checked to determine the force required to open the lid. In the riveting stage, the clip is riveted to the lid. In this stage, sporadic mi­salignment of lid and clip can occur, impacting problem-free opening of the lid.

A close up of a tin can

Description automatically generated with low confidence  
Clip-out Clip-out Failure

**The solution**

Using force sensors in the in­dividual tool stages, the sha­ping forces are measured in real-time. Faults are recognized immediately, with the result that rejecting good parts are a thing of the past. This means that in-process quality control is conside­rably more advantageous, in economic terms, than downstream checking pro­cedures