

APPLICATION NOTES

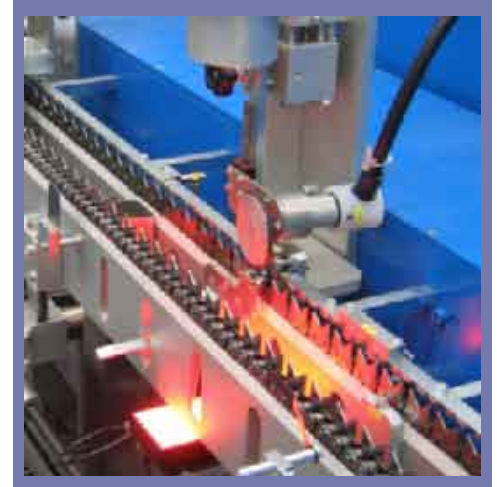
IMPACT Solutions for Medical Industry

Two Cameras Inspecting Rotating Glass Vials

Application Description

Two IMPACT A10 are deployed to measure critical dimensions of glass vials used in the medical industry. The vision systems are also required to check the quality of the rings and dot printed on the vials. The vials are moving at a rate of 90 part per minute. Camera 1 is configured to check the dimensions of the vial body, bottleneck, bulb and stem. 3 images are taken for each vial while in rotation. Camera 2 acquires 5 images per vial and checks the presence of the printed dot, the cut or score of the glass, and finally the presence, position and integrity of the code rings printed on the vial. After the initial hardware trigger signal is received by the IMPACT, the system self-triggers to obtain the subsequent images. Programming optimization was key in obtaining the fastest inspection time possible so more images can be taken while the part rotates. For example, to have the highest speed and inspection stability, the background intensity was checked on each image and its value was passed to all subsequent inspection tools for threshold adjustment. A red LED back light was used in order to give the most robust image possible for the vials with the least amount of light output degradation. Each camera uses a custom CPM control panel to allow operators to manage different models or types of vials. All the inspection results are sent to the PC as string data then saved in a text file. The data is then processed and shown in production charts within CPM and includes CP and CPK statistics.

Glass Vial Inspection Line



Application Highlights

- Inspects same vial a minimum of 3 times while in rotation - not exceeding 660ms per vial
- Easy to understand control panels for operators and setup personnel - using color keyed ROIs and measurement setup frames
- Runtime statistical charting used for easy evaluation of the lines quality performance
- Camera self triggering used to capture images at precisely rotated positions
- Performs critical glass measurements as well as printed feature location and presence

