EPSILON
Controls & Automation

Application Note...

Customer
A Government sector large scale packaging drums manufacturing company

Customer requirements
Reliable defect detection on flanges of drum top after clamping

Epsilon Solution
Two P4-OR camera are use for 2 inch and ¾ inch flange inspection from top with 12 and 16mm lens respectively and white dome light

Why Epsilon?
Epsilon was chosen on merits of solving complex application and its service record

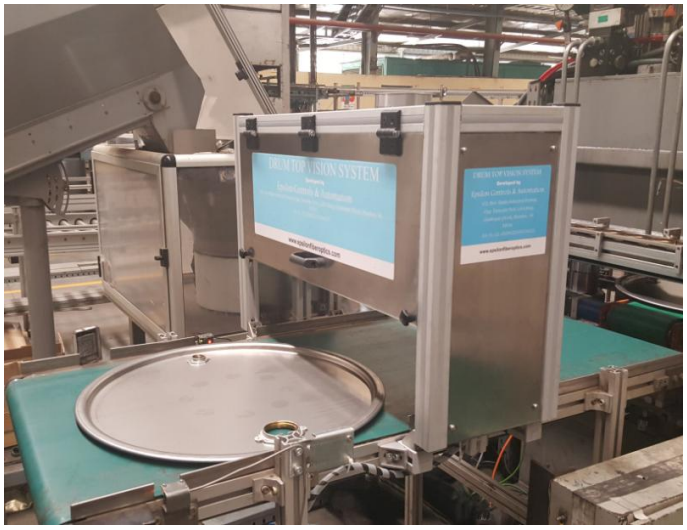
Customer Benefits
Solution – A long pending problem was solved and the customer was relieved from human errors and oversight

User Interface – Epsilon's intelligent controller with pass fail audio visual indication to monitor inspection results, product change push buttons and camera ready indication.

PresencePLUS P4-OR Features
- Uses one or multiple sensing tools for expanded application flexibility and extended sensor usability
- Features compact, self-contained P4 housing
- Includes remote TEACH, configurable I/Os, live video and communications standard to all PresencePLUS sensors

Learn More
Visit www.epsilonfiberoptics.com for more applications

Detect the defects on flanges of drum top



Deployed 360mm from its target, two P4-ORs with12and 16mm lens respectively and white dome light inspects for detecting defects on flanges of drum top on running conveyor

Background
Special application done for drums and drum tops manufacturing industry. At the time of clamping operation following defects occurred on flanges of drum top-missing flange, damaged flange, not clamping, plate position not proper and wrong diameter depth. The defective tops pass through a conveyor and automatically assemble on drum through automatic line. The application calls for a very reliable system to detect defect on drum top.

Challenge
The size of the flanges are big, color of the parts are not same it may be shiny/silver/lacquer. Defect on product is also very small damage at top/side or wrong fitment of clamp position or wrong diameter depth. Drum top traveling at speeds of up to 14/minute. These factors call for a very accurate vision system. The overhead mercury lamp factory lighting generates uneven lighting with several hotspots and flicker. We overcome this factor by providing complete SS enclosure.

Solution
The Epsilon P4-OR image sensor provides a simple way to detect defects on drum top using edge, circle detect and pattern find tools. The image of the 2 inch and ¾ inch flange is compared with the pre-Saved image for each batch. In event of a defected top one electronic output is generated from each Camera. In this case, output is used to stop the conveyor and operator manually removes the defective top.