MACHINE VISION SOLUTIONS
Shuttleworth is committed to helping our customers improve product quality, lower costs and increase production yields by providing simplified machine vision solutions.
OVERVIEW

MACHINE VISION BENEFITS

- Quick Return on Investment
- Reduced Labor / Increased Profits
- Improved Product Quality
- Flexible Setup & Product Changes
- Complete Product Testing
  & Vision Inspection Simulation
- Accurate Quoting with Limited Cost Overruns
- Quick Implementation & Easy Integration

MACHINE VISION APPLICATIONS

- Inspection: Missing Features or Product Flaws
- Measurement: Size Measurement
  or Location Checking
- Kit Verification: Package Complete
- Product Counting: Case Complete
  or Product Staging
- Sorting: Reject, Assembly or Packaging
- Product Locating: Pick & Place Locating
  or Machine Guidance
- Barcode / OCR Reading: Printing
  or Product Verification
THE SHUTTLEWORTH ADVANTAGE

Improving your product quality doesn’t have to be difficult. With our Machine Vision capabilities, we can help you simplify your packaging and assembly processes to maximize your inspection capabilities, product quality, and overall manufacturing efficiencies.

Benefits

QUICK RETURN ON INVESTMENT
Throughout the past few years, Vision Systems have become much simpler to integrate with the vision tools becoming more flexible and robust even for very complex, demanding applications. At the same time, the pricing for these Vision Sensors has steadily dropped because of the continually-growing, competitive market.

Many vision integrators tend to use complex and very expensive hardware that, quite simply, is not required for the majority of applications. At Shuttleworth, we understand how vision sensors work and how to apply them. Our vision experts will work with you to identify a cost-effective solution that will have a quick return on investment.

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Reducing Your Risk

COMPLETE PRODUCT TESTING & VISION INSPECTION SIMULATION

No longer is it required to purchase expensive vision hardware, only to find out it did not perform to the expectations of the application. Simulations and actual Vision Sensor testing can prove the application will work on the production floor. This limits the risk on systems and helps add to the success and speed of bringing hardware online.

ACCURATE QUOTING WITH LIMITED COST OVERRUNS

Simulations allow testing of multiple systems to find the product that best fits the application. This capability limits the opportunity for cost overruns when implementing a Vision Sensor. This is beneficial for finding the right system at the most reasonable price point.

QUICK IMPLEMENTATION & EASY INTEGRATION

Bringing a Vision System online no longer requires countless hours of trial and error. If implemented and tested properly, the application should only require fine tuning to bring the results required to make a successful installation.
Additional Benefits

**REDUCED LABOR / INCREASED PROFITS**
If your assembly line operators or setup people are continually looking at quality/inspection flaws or are manually diverting or rejecting product, Shuttleworth can help. We can incorporate a Vision System for these areas to allow product inspection to be performed earlier and more often which will help to reduce scrap. Another benefit is that it will enable faster defect detection to prevent defective products from reaching the end customer.

**IMPROVED PRODUCT QUALITY**
Vision Systems can also multitask, checking a variety of features on a product in just a few milliseconds. Unlike manual labor, cameras don’t need to take breaks. Shuttleworth can program a Vision System to establish the quality decision of an acceptable part. By using several cameras, we can echo the inspection back to a local host for verification and documentation of each product.

**FLEXIBLE SETUP & PRODUCT CHANGES**
Flexibility is a standard feature in Vision Sensors with Ethernet being the key form of communications. Product changes, result changes, and general setup can easily be managed with standard PLC or PC control systems. Shuttleworth can integrate Vision Sensors into almost any control architecture.
MACHINE VISION APPLICATIONS

INSPECTION: MISSING FEATURES OR PRODUCT FLAWS

Bread is running down a conveyor that will eventually have peanut butter and jelly sandwiched between. For quality purposes, the bread needs to be checked for holes prior to the insertion process. Shuttleworth can incorporate a Vision Sensor to detect these holes with minimal effort along with verifying the size of a slice of bread. Vision tools can be set to detect a contrast difference between the hole and the bread itself. Thresholds can also be set to fine-tune the vision reject tool for unacceptable hole size.

MEASUREMENT: SIZE MEASUREMENT OR LOCATION CHECKING

A circuit board has four holes, one in each corner. The holes need to be located in the correct position for final assembly. Shuttleworth can add a Vision Sensor to check the location of each hole in relationship to each other, along with the diameter of each hole, for a simple snap-in assembly operation. We can also add vision tools to verify components are positioned properly on the circuit board, reducing board failure downstream in the testing process.

KIT VERIFICATION: PACKAGE COMPLETE

When a blood kit is packaged, it can be checked to see if each component is in its correct location. Shuttleworth can incorporate pattern and presence vision tools to check each known component's position and verify its location in the carton. The same scanning operation can also read a barcode for verification of correct components in the correct carton.

PRODUCT COUNTING: CASE COMPLETE OR PRODUCT STAGING

A packaging line has a conveyor that indexes rows of candy bars forward. The package requires all candy bars face up for presentation on a store shelf. Shuttleworth can add a Vision Sensor to verify that all candy bars are in a row and all the wrapper labels are face up before signaling the stacking operation to start.
SORTING: REJECT, ASSEMBLY OR PACKAGING

A single packaging line has various packages of paper plates with different print patterns conveying to an array of wrappers. Each package of plates needs sorted to the correct wrapper line. We can add a Vision Sensor to use a pattern and color tool to determine the wrapper line to which the stack of plates will be diverted.

PRODUCT LOCATING:
PICK & PLACE LOCATING OR MACHINE GUIDANCE

Sandwich cookies are running in a food manufacturing facility and are assembled by robotics. We can add a Vision Sensor to detect the position and angle of the cookie lid on a flat conveyor belt and send the coordinates to the robot. The robot would then pick the lid with a vacuum head and place it on the bottom iced cookie half. Verification of a complete cookie lid can also be verified during the pattern find.

BARCODE / OCR READING: PRINTING OR PRODUCT VERIFICATION

A multi-pack of cartoned fruit pies needs verified before being cased. Shuttleworth can incorporate a Vision Sensor to read the text on each carton to verify all flavors are in queue before being cased. If one is missing, an error is detected and the process is halted. Shuttleworth Machine Vision solutions can also verify barcodes and carton quality in the same operation.
From automotive and electronics, to paper conversion and pharmaceuticals, to food and consumer good markets and beyond, manufacturers across the globe rely on Shuttleworth’s proven product handling solutions to increase line efficiency, maximize profitability, and minimize risk. As part of the ProMach Product Handling business line, Shuttleworth helps our packaging customers protect and grow the reputation and trust of their consumers. ProMach is performance, and the proof is in every package.