A major bread manufacturer requrested Montrose design a vision inspection system for product analysis and defect detection with top and bottom measurement.

Production Line Speed and Volume

The specification was for a bread vision inspection system for the following:

- Up to 3 loaves per second
- Top and bottom measurement

Measurements

Product analysis and defect detection included the following:

- Overhead imaging to generate color and 2D data on
     Top Color
     Bottom Color
     Split Area
     Height, Length and Width
     Slope

- Faults included:
     Too dark
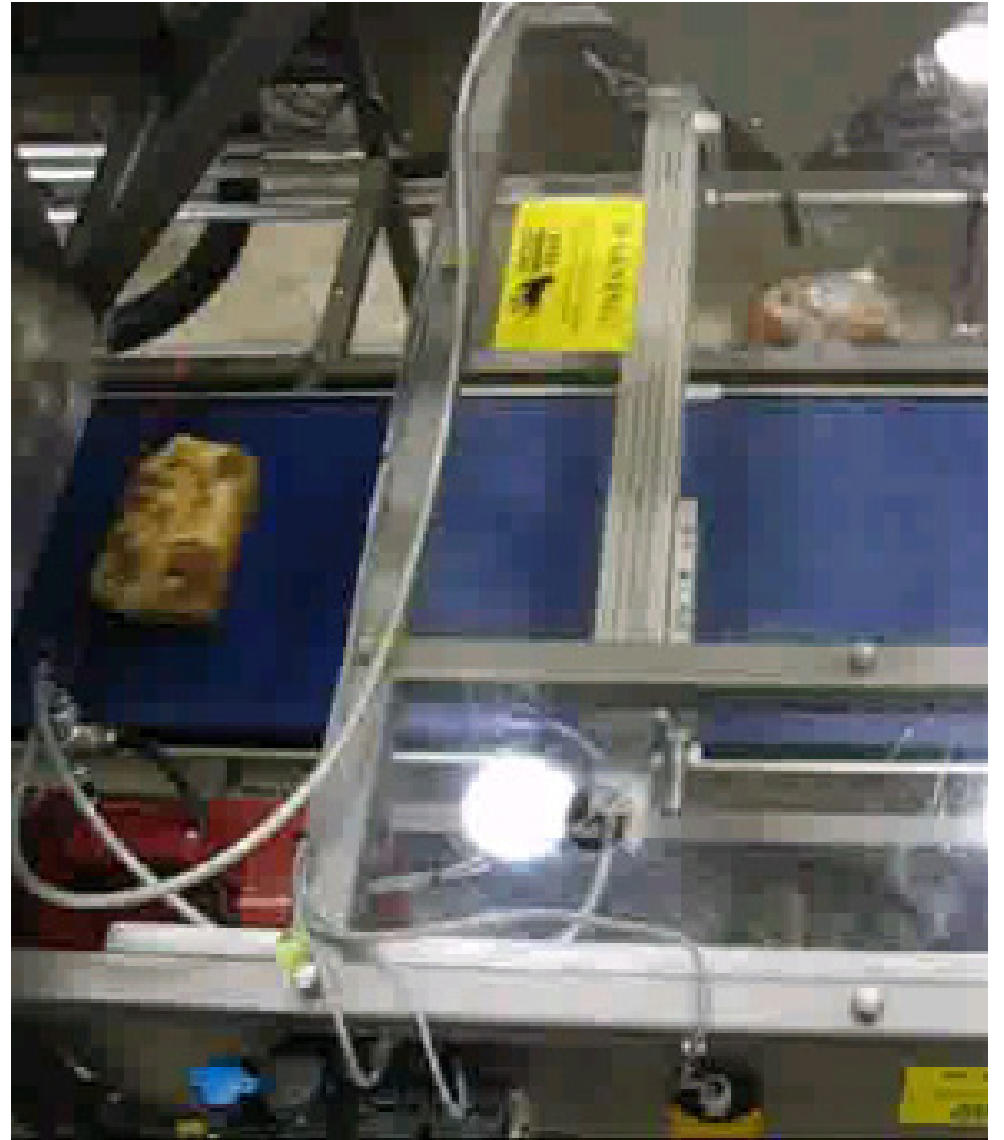   *No topping*
     Sloped
     Small spit
     Pan debris

Figure 1: MT-24 Loaf Inspection System with Top/Bottom Color Imaging

The bottom color module can measure and detect a variety of loaf bottom defects.

System Benefits

Once installed operators found they found the analysis produced precise, repeatable data that was used to improve quality and consistancy of each batch. By removing control of rejection from the operators and moving to 100% inspection rejection rates were lowered and more repeatable. With alterations to the production process a noticeable improvement of visibility of products occured and plant performance was more efficient.

Payback Opportunities

System payback was estimated at 18 months with 1 manual inspector replaced per shift by automating the inspection. Results were more repeatable and better process and product data was available to operators and managers. The system allowed a reduction of slicer operators due to reduced jamming at the slicer.

The overall customer experience moving to a vision inspection system from a manual system included better process control at every stage of the process, cost reductions and greater control over efficiency.

About Montrose Technologies

Built on the legacy Dipix brand, the innovative new Montrose systems provide customers with solutions that reduce operating costs, improve product quality, and generate critical production data. At the core of our expertise is a unique 2D/3D/color imaging engine that provides accurate size, shape and color information for randomly-oriented, fast-moving objects. This core technology is used in all of our inspection systems and ensures that every product is identified, analyzed and, if necessary, individually removed or diverted from the product stream.