

## Customer Requirement:

Detect residual plastic in detergent bottle molds

## Banner Solution:

T-GAGE™ M18T Series

## Why Banner?

**More accurate sensing at an affordable cost**—Banner enabled the customer to save on costs by replacing inefficient and unreliable technology with the highly accurate and easy-to-use T-GAGE

## Customer Benefit:

**Improved quality control**—by detecting the presence of residual plastic in open bottle molds, the T-GAGE helps prevent new bottles from forming, eliminating waste and saving maintenance expenses

## T-GAGE temperature sensor improves quality control for plastic bottle manufacturer



*A Michigan-based packaging company manufactures a variety of bottle shapes and sizes for leading detergent companies. The T-GAGE has been incorporated into their proprietary technology to ensure proper bottle molding.*

## Background

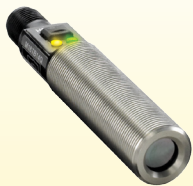
Using proprietary blow mold and wheel technology, a Michigan-based packaging company develops a variety of plastic containers for brand name consumer cleaning products.

## Challenge

The blow mold process begins by melting plastic into parisons (tube-like forms with holes in one end for compressed air to pass through). The parisons are clamped into molds that are attached to a mechanical wheel, which continuously rotates throughout each stage in the process. As air is pumped into the molds, the parisons are blown into the desired bottle shape. The plastic hardens, the mold opens to eject the bottles and the process repeats. If residual plastic is left in the molds, the next parison will form incorrectly or the mechanical wheel may stall. In order to avoid these setbacks, the company installed mechanical switches after the point of ejection—any leftover plastic would trigger the switch. When this technology began to fail, they turned to Banner for a more efficient solution.

## Solution

Banner introduced the customer to the infrared T-GAGE temperature sensor. Using the T-GAGE's intuitive push-button teach mode, the customer can set limits to trigger an output. Because the bottles are ejected at the same place every time, two T-GAGEs are placed at this location to sense both sides of the mold after it opens and drops the bottle. This way, the sensors determine whether any material is leftover by sensing the higher temperature of the residual plastic. If they detect a temperature that falls within the set limits—meaning leftover plastic is present in the mold—the machine is prevented from filling it with a new parison, improving quality control and limiting maintenance costs.



### T-GAGE M18T Features:

- Passive infrared sensing
- Provides an analog output corresponding to temperature sensed
- Averages temperature within its field of view
- Can be configured through a push-button interface

### More on [bannerengineering.com](http://bannerengineering.com):

- [T-GAGE M18T Series Overview](#)
- [Product Literature](#)