

Customer Requirement:

Effectively detect parts to prevent "die crash," or having double parts in a die press at once

Banner Solution:

PVD Pick-to-Light sensor with increased response speed

Why Banner?

Effective design and functionality—Banner altered a standard product to fit the customer's specific needs, allowing them to maintain their current part-out operations

Customer Benefits:

- **Enhanced quality control**—by interfacing with the press control system to monitor parts, the PVD eliminates the potential for die crashes
- **Easy installation**—the self-contained PVD automatically works in diffuse mode and self-adjusts without user intervention



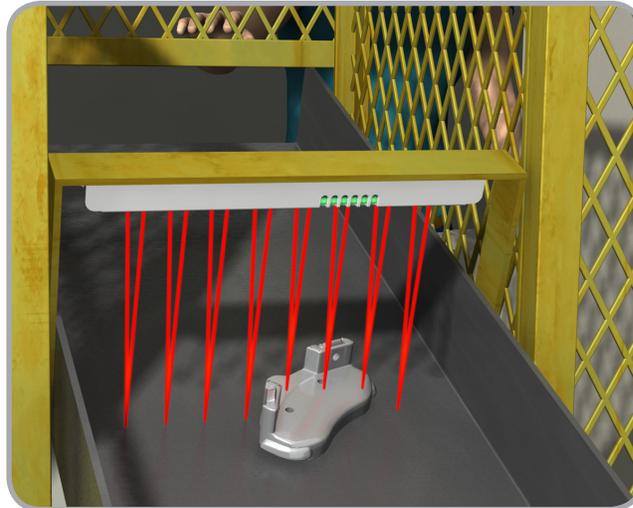
PVD Special Features:

- Model Number: PVD225Q-19693
- Increased response speed reliably detects smaller parts, which move at higher speeds, in addition to larger parts

More on bannerengineering.com:

- [Standard PVD Overview](#)
- [Product Literature](#)

Customized PVD sensor solves part-out application



The PVD sensor detects metal parts after they are removed from a die press and sent down a chute into a bin. When the sensor sees the part, it sends an output to the press control system, signaling that another part may be inserted into the die.

Background

A manufacturer creates various metal automotive parts, which are cut and shaped using a die press. In order to prevent damage to the press, "die protection" logic, or a control system for monitoring parts, is required.

Challenge

In the manufacturer's facility, operators manually insert and remove metal parts from the die press. When complete, the parts are sent into a bin via a metal chute. In order to prevent die crash (having double parts in the press at once) the customer needed a sensor that could detect various parts on the chute and send a signal to the control system, indicating that the press is free and allowing the operator to perform another stroke. The solution needed to be installed without cutting slots in the chute sides or mounting sensors at the end of the chute, which could create catch points for traveling parts.

Solution

Banner introduced the customer to the PVD Pick-to-Light sensor, an easy-to-use, self-contained parts verification sensor. Although the PVD is traditionally used for part assembly, it became an ideal solution for the customer's part-out application. First, the PVD's original design and functionality met the customer's installation requirements. The sensor automatically operates in diffuse mode, making it possible to mount it above traveling parts, and its automatic gain control tunes out the chute's reflections. Next, a response speed modification fulfilled the customer's die protection requirement. By increasing the response speed from 400 ms to 50 ms, the PVD can reliably detect smaller parts moving at higher speeds in addition to larger parts. Finally, upon part detection, the sensor sends an output to the control system, eliminating the potential for die crash and improving quality control.