

CANTY PROCESS TECHNOLOGY

Molten Metal to Mold Pour Control

Purpose: To assist operations in pouring metal into molds with consistent results to avoid under or over filling.

System:

The Mold Pour analysis system is comprised of a Canty High Temperature Camera unit, or a surveillance camera unit depending upon installation requirements, along with Vector processor for image analysis. Systems can also be provided with Ethernet cameras for connection direct to in place LAN systems. The Canty hardware/software is described in detail at the following locations:

High Temperature Camera: <http://www.jmcanty.com/overview/P.Process%20Vision/A7355.PDF>

Vector Image Processor: <http://www.jmcanty.com/overview/V.Vector/A9562.pdf>

The Camera system is designed to withstand the rigors of extreme environments and is used in boiler of all kinds, kilns, annealing ovens and glass furnaces. The software takes the process image and digitizes it so it can be processed. The problems encountered in a mold pouring line generally involve two issues

- 1) Aligning the mold opening under the crucible
- 2) Over or under filling the mold.

A skilled operator can do both well, however the task is tedious and as time goes on accuracy of work can suffer due to fatigue. The Canty Vision system is able to provide the alignment information and the pour control by mimicking the operators eye – brain analysis of the task, however the Canty system will perform the task the same way each time with no fatigue. The alignment of the mold opening can be done in several ways and is subject to each application. A typical system will have same size molds aligned in sequence. As the filled mold is moved from the center of the view the new mold enters the view. The software finds the opening and positions it under the fixed position of the crucible. This is just one technique used. Several others are employed as well depending on the system. To control the pour, the software detects the bright, molten metal as it nears the top of the fill riser. When the metal comes into view the Canty system sends a signal to the crucible to stop pouring. This allows the fill to come to the proper level in each mold thereby maximizing the casting process quality and avoiding waste.