

Matthews International

Matthews International Corporation
Kingwood, West Virginia

Smart Pump Case Study

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April 1993

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October 8, 2002
Last Updated

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Introduction

Sheidow Bronze has been producing bronze and aluminum memorials, plaques and specialty items for over 53 years. They utilize their own in house craftsmen to produce special castings, each exploiting the advantages of metal casting to its technical limits.

General Foundry Information

Product Line:	Memorials, plaques, tablets, sinage, sculpture and specialty items in bronze and aluminum castings
Casting Metal Type:	<ul style="list-style-type: none"> • Bronze • Aluminum
Melting Facilities:	<ul style="list-style-type: none"> • Electric Induction Furnaces (1500 lbs/hr)
Sand Facilities:	<ul style="list-style-type: none"> • Core Process Shell & CO₂ • Molding Processes Furan No Bake Oil Sand
Cleaning Facilities:	<ul style="list-style-type: none"> • Blast • Grinding • Cleaning Booths
Pattern Shop:	<ul style="list-style-type: none"> • Wood • Metal • Urethane

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Project Objective

The objective of the project was to improve repeatability through improved, consistent, accurate chemical addition and reduced mechanical down time and problems.

Original Problems

- Continuous maintenance problems with existing chemical addition system
- Inaccurate and inconsistent chemical additions
- Addition of extra chemical to compensate for pumping fluctuations
- Resin and labor costs associated with daily calibrations of pumping system
- Scrap molds due to fluctuations in chemical delivery

Solution

Sheidow Bronze installed the first MT Systems SMART PUMP on two of their continuous mixers in March of 1988. The design criteria was to give them improved mold quality by providing repeatability and reliability over their chemical addition.

Smart Pump enables them to operate their mixer with the confidence that the system will compensate for line restrictions, chemical viscosity changes, pump wear, and operating pressure changes. If for any reason the chemical levels could not reach their set point and Smart Pump is unable to compensate, the system will alarm to notify the operator or shut down.

Results and Benefits

- Reduced chemical levels
 - Reduced maintenance downtime and maintenance expenditures
 - Reduced mold scrap
 - Increased productivity by making the job right the first time
 - Reduced binder costs per castings
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Monetary Savings/Pay Back

Even though pay back and justification was not projected or computed, it is evident that the systems have provided Sheidow Bronze with a cost competitive advantage in the market place.

Other

Sheidow Bronze Foundry Production Manager has commented that "It was just the smart thing to do!"