

American

American Foundry Group, Inc.
Muskogee, Oklahoma

Smart Pump Case Study

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American Smart Pump

Introduction

American Foundry Group, Inc. has been in operation for 27 years. They specialize in high-pressure valve body castings for the Petro Chemical Industry. Their facility can produce up to 12 tons of castings per day.

General Foundry Information

Product Line:	High pressure valve body castings
Casting Metal Type:	<ul style="list-style-type: none"> • Carbon Steel • High Alloy Stainless Steel
Melting Facilities:	<ul style="list-style-type: none"> • Induction <ul style="list-style-type: none"> (2) 3500 Lbx/Hr (2) 2500Lbs/Hr (1) 600 Lbs/Hr
Sand Facilities:	<ul style="list-style-type: none"> • Core Process <ul style="list-style-type: none"> Shell Phenolic Urethane No-Bake • Molding Processes <ul style="list-style-type: none"> Phenolic Urethane No-Bake
Cleaning Facilities:	<ul style="list-style-type: none"> • Blast • Grinding Stations • Cleaning Booths • Riser Burn Stations
Heat Treating:	<ul style="list-style-type: none"> • Normalize • Quench and Temper • Stress Relieve
Pattern Shop:	<ul style="list-style-type: none"> • Produce Wood, Metal, Urethane Patterns

Project Objective

The objective was to gain control of their sand mixing operation and to increase consistency and repeatability as well as reduce maintenance problems.

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Original Problems

- Continuous maintenance problems with existing chemical addition system.
- Inaccurate and Inconsistent chemical additions.
- Adding excess chemicals to compensate for chemical fluctuations.
- Resin and labor wastes due to daily calibrations.
- Having to reproduce molds because they didn't set properly

Solution

American Foundry Group installed MT Systems SMART PUMP Resin Control System. The basis for the design was to give them the repeatability and reliability over chemical addition with the objective of reducing resin levels by at least 10%.

Results and Benefits

- Reduced average chemical levels by 25%
- Reduced maintenance downtime and maintenance expenditures
- Lower Sand LOI
- Reduced iron oxide by 25%
- Increases productivity by making the job right the first time
- Reduced binder cost per casting
- Reduced mold scrap

Monetary Savings/Pay Back

Although no projected or actual pay back was calculated, the installation of MT Systems SMART PUMP has lowered present and future manufacturing cost and has improved their competitive position in the market place.