

Small PlantStar Installation in 1995 Still Producing Big Benefits for Bamar Plastics

A custom injection molder, specializing in precision parts made from thermoplastic engineering resins, wanted a window into the processes of their machines

Objective

Bamar Plastics' initial goal when they implemented the PlantStar MES was to set limits on key process parameters—their plant engineers wanted to know when the process was drifting on their Boy Machines with manual controls.

Solutions and Results

SYSCON-PlantStar installed Panorama®, their top-tier production monitoring system, at Bamar Plastics. Twenty injection molding presses are monitored by Panorama's software, and every four presses have a SYSCON-PlantStar DCM touchscreen data-collection unit. Bamar Plastics' technicians also use a portable DCM for easy access to real-time information. Panorama is linked with Bamar's ERP system for further visibility of the plant floor relative to the company's efficiency and profitability.

Achieves "Lights-Out" Production Runs

As soon as Panorama was installed, Bamar set control limits on all of its key process parameters. For example, cycle times, peak injection pressure, ram position and barrel temperatures were attached to visual alarms. The system produces accurate and relevant information over Bamar's expectations. "The system gives us a wealth of information. We have so much confidence in that information that we routinely run "lights out" on nights, weekends and holidays. We just let the system watch the presses and review the process logs later," said Jim McVay, Vice-President and General Manager.

Doesn't Miss a Shot

Not all manufacturing runs are eligible for lights-out operation and Bamar takes advantage of Panorama's ability to monitor and troubleshoot newly developed production runs in real time. Stuck parts or plugged gates in multi-cavity tools are caught in a single shot by tracking the shot size. In addition, this high level of monitoring identifies worn machine components that need attention, thereby avoiding catastrophic failure and downtime.

Bamar also maintains tight control over cycle times: an increase in cycle times triggers an alarm so the cause can be immediately addressed. Panorama detects variances in sub cycles and reveals exactly which part of the cycle is contributing to the problem. They use cycle counts as another way to anticipate tool maintenance.

Thrives on a Lean Workforce

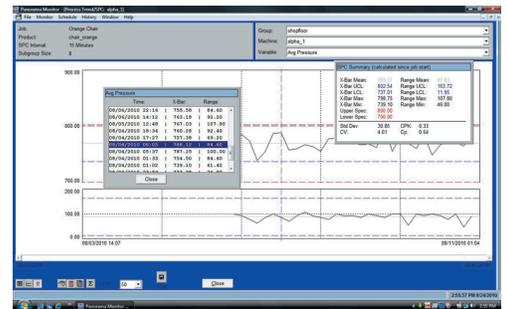
Another unforeseen benefit of the PlantStar installation was that the control over every aspect of Bamar's manufacturing process—purchasing, quality control, machine operation and maintenance—allows the company to operate with a small workforce. "We've even increased our workflow without adding people," said Mr. McVay.

Results

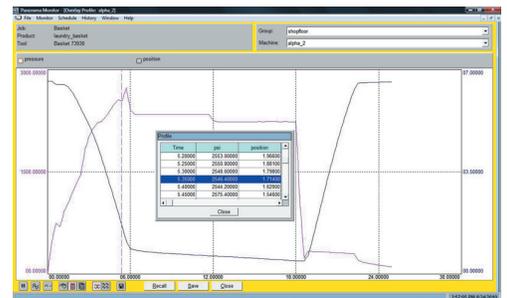
- Achieved "lights-out" production
- Gained benefits over the initial goal



The Shop Floor at Bamar Plastics



Panorama's Process SPC Screenshot



Panorama's Profile Overlay Screenshot

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The Effect of Increased Productivity and Sales on a 20-Machine Molding Plant

A productivity increase of 20% can double or even triple your profitability

Fixed and Variable Overhead	Current Operation: 20 Presses	20% Increased Productivity: 16 Presses	20% Increase in Sales: 4 Presses	Increased Sales and Productivity Total
All Overhead	\$3,780,000	\$3,742,500		\$3,742,500
Over-Absorbed Overhead			\$718,500	\$718,500
Labor				
20 Operators x \$10/hr x 3 Shifts x 40 hr/wk x 50 wk/yr	\$1,200,000			
16 Operators x \$10/hr x 3 Shifts x 40 hr/wk x 50 wk/yr		\$960,000		\$960,000
4 Operators x \$10/hr 3 Shifts x 40 hr/wk x 50 wk/yr			\$240,000	\$240,000
Material @ 34.3% of Sales*				
Resin - 20 Presses	\$2,875,657			
Resin - 16 Presses		\$2,875,657		\$2,875,657
Resin - 4 Presses			\$575,131	\$575,131
Total Manufacturing Costs	\$7,855,657	\$7,578,157	\$1,533,631	\$9,111,788
Pre-Tax Profit at 6.3%*				
Profit on 20 Presses	\$528,182			
Profit on 16 Presses		\$805,682		\$805,682
Profit on 4 Presses			\$105,637	\$105,637
Total Sales	\$8,383,839	\$8,383,839	\$1,639,268	\$10,023,107
Profit				
Profit on 20 Presses at 6.3%	\$528,182			
Profit on 16 Presses at 6.3%		\$805,682		\$805,682
Profit on 4 Presses at 6.3%			\$105,637	\$105,637
Over-Absorbed Overhead			\$718,500	\$718,500
Total Profit	\$528,182	\$805,682	\$824,137	\$1,639,819
% Profit		9.60%	50.30%	16.30%
Profit Increase		53%		209%

* Material and Profit ratios taken from SPI's "Financial and Operating Ratios" report, 1999. Source: Robert A. Beard Associates

