

Epicor White Paper

5 Ways To Transform the Medical Device Industry Using MES

By: Andrew Robling



Introduction

Medical Device manufacturers are under constant pressure to ensure they are delivering parts on time, and of the highest quality. To further challenge the industry, Medical Device manufacturers must comply with both their customers and the industry regulators' stringent requirements. These pressures are driving medical device manufacturers to look for new ways to reduce costs, improve quality, and become more efficient on the shop floor.

From the shop floor to the top floor, Manufacturing Execution Systems(MES) are providing real value that can help to drive efficiency, quality, and compliance improvements across many areas in the Medical Device Manufacturing Industry.

Imagine what you could do with instant, accurate machine data and process information directly from the machine. Even depth and dimension are within reach with the help of a manufacturing execution system (MES). Medical parts, supply, and equipment manufacturers use MES for real-time production monitoring and analysis to improve throughput, boost quality, and reduce scrap. You can achieve more capacity with the same machines and improve overall equipment effectiveness (OEE)—working more efficiently and profitably.

This white paper highlights five ways to boost your performance with the right manufacturing execution system.



1. Automated Process Control

Statistical Process Control (SPC) with an MES solution uses IoT sensors to automatically capture process parameters like temperatures, pressures and vibration levels. By establishing minimum and maximum threshold parameters for each process value that you are collecting you can be immediately alerted to any potential violation. A Manufacturing Execution System (MES) can use the real-time, automatic data to help you respond to production conditions before making bad parts. Collecting SPC information in an automated fashion helps to provide consistent results without constant oversight.

SPC can further utilize statistical methods, quantitative and graphic analysis of the process parameters you are capturing, to evaluate and assess the stability of your process and the resulting quality of its production. Medical Device manufacturers that implement automated process control increase production, and take the guesswork out of quality control.

2. Statistical Quality Control

Many MES solutions also have mechanisms to help measure Statistical Quality Control (SQC). Unlike SPC, SQC typically measures a characteristic of a part after it has been manufactured. Often this is done to ensure that the part meets the customers exacting specifications. An MES solution can prompt operators or quality technicians when they need to do an inspection based on sample frequencies that you have established, and what it is that needs to be inspected. An operator can manually input dimensional information or some gage readings can be brought in automatically when parts are being measured. The MES solution can help determine when you have a good or a bad part based on thresholds you have established.

All the information being gathered can be stored so you can compare to process parameters and other cycle type readings.

3. Real-time information

An MES solution collects data directly from equipment and operators on the shop floor in real time, minimizing inaccurate and time-consuming manual data collection. With information instantly in your hands, you can become proactive—anticipate and solve production problems before they happen. Real-time insight helps you pinpoint critical issues, reduce waste, and improve quality and customer service. Everyone in the plant and throughout the business can take action to improve manufacturing performance.

4. Alerts and Notifications

There is probably no other industry, where understanding immediately when there is a problem, is as important then in the Medical Device manufacturing industry.

Alerts & Notifications automates shop floor communications with automatic messaging and escalation, so supervisors, managers, maintenance crews, and engineers can respond to conditions in the plant immediately.

“Before the mold opens, we know if the product is good or bad. That translates into a better product for our customer, because we’re actually building in the quality rather than inspecting it.”

Mitch Stein, Plant Manager - Rexam

When process conditions need attention, when production stops, or when operators need help, an MES solution can notify the right people. MES solutions have different ways to send out messages including:

- sending a text message
- sending an email
- turning on a light stack
- making an announcement over the PA system
- turning on music

Being notified in real-time of issues means that you can respond quickly and take action to make sure your plant is running as efficiently as possible.

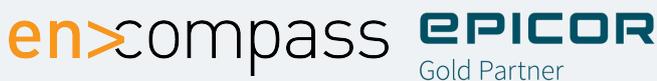
5. Edge Computing

Some MES solutions have edge devices that can be hooked into your equipment. This can be a great competitive advantage for you in that instead of just being alerted to a problem the edge device can trigger and

action at the machine. For example, the edge device could control the output reject chute based upon the process parameters you are monitoring. When the edge device detects a part is outside your defined thresholds it can then open the gate on the conveyer and eject a part.

Conclusion

If you’re ready to find more capacity and do more with your existing resources and anticipate and solve manufacturing problems before they happen, then it’s time to evaluate your manufacturing execution system options. The best MES system for medical parts, supply, and equipment manufacturers is one that captures production and process data directly from the machine, provides depth and dimension of information, and delivers accurate, real-time production analysis.



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