THE CHALLENGE

Inventory Process Causing Excessive Downtime

Current inventory procedures at an industrial filtration membrane manufacturing plant were expensive and inefficient causing excessive downtime.

Inefficient Barcode Tracking Technology

Twice-yearly audits required two days of manufacturing downtime and significant labor using the time-consuming barcode technology. Each serialized filter in inventory needed to be moved and scanned individually, resulting in hindered productivity and efficiency.

RFID and MOM Traceability Solution

Solution: MOM Software Supports RFID Technology

To minimize downtime, a plan was put in place to upgrade the manufacturer's tracking system. MOM software that interfaced with the existing ERP and RFID system was installed. This software uses a variety of industry-standard protocols to minimized downtime. The barcoding procedures were updated and optimized to enhance user experience resulting in increased production and distribution efficiency.

POLYTRON

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EXECUTIVE SUMMARY

RFID and Traceability Solution Increases Production and Distribution Efficiency

Client: Industrial Filtration Membrane Manufacturer

Challenge:
- Expensive, inefficient inventory procedures
- Inefficient distribution
- Unable to meet customer demand for product with IoT compatibility

Solution:
- RFID system coupled with MOM-based traceability solution
- Interface with ERP
- A plan to minimize downtime during implementation

Results:
- Production efficiency increased while production costs decreased
- Barcoding procedures updated and optimized to enhance user experience
- Better durability of tags, no need for line of sight scanning, increased data capture

Barcode Tracking Decreased Productivity

The Senior Industrial Engineer at a filtration membrane manufacturer was frustrated by the limitations of his barcode tracking technology.

Every six months, his plant's productivity took a big hit as his team prepared for audits that required each serialized filter in the company's entire inventory of large industrial filters had to be moved and scanned individually.

Completing these audits required two days of manufacturing downtime – plus significant labor.

Twice-yearly Audits Cause Excessive Downtime

In addition to the twice-yearly, labor-intensive inventory process and downtime, the barcode technology was further hindering the manufacturer's efficiency and productivity:

- Each filter had a unique serial number
- Barcode labels were printed on each filter for tracking
- Every filter needed 100% wet testing
- Each individual filter had unique characteristics measured during wet testing
- The company's ERP provider held every filter detail including wet test results and history

Frustration on the plant floor was compounded by extremely time-consuming barcode reading which limited the manufacturer's ability to efficiently manage manufacturing and product data:

- Barcodes had to be oriented in a specific direction to be read
- The barcode reader could detect only one filter at a time
- Data updates required reprinting barcodes
- Even with minor damage, barcodes were no longer readable

This made leveraging IoT difficult and slowed the manufacturer's progress toward important smart manufacturing benefits, while also reducing its customers' ability to track filtration performance.

The Senior Industrial Engineer saw that updated barcode technology would bring multiple advantages but wasn't sure where to start or how to make the changes without expensive disruption to production.

Solution: Implement MOM Software to Support RFID Technology

By partnering with Polytron, the manufacturer gained the expertise it needed to create a plan for upgrading their tracking system that minimized downtime.

Polytron implemented MOM software to deliver traceability and support the use of RFID technology. The software uses a variety of industry-standard protocols to connect to existing infrastructure, creating a solution that interfaced with the ERP and RFID system (allowing for the traceability and filtering of data), and provided dashboards, data entry forms and reports.

The Polytron-designed solution allowed the manufacturer to create an IoT-compatible product for customers. System features enabled gathering and utilizing of inventory and production data more thoroughly and with much less labor:

- Filter traceability and interface to ERP
- User interface for RFID handheld readers
- Platform to grow system into other areas
- RFID fixed readers and antennas throughout facility for tracking of WIP
- RFID handheld readers for inventory management

Further Benefits of the RFID System:

- Passive tag can be read from any orientation
- Multiple tags on filters can quickly be read at one time
- Tags hold valuable data for product end users
- Tags are harder to damage and can be buried under a protective layer

Results: Increased Production and Distribution Efficiency While Cutting Costs

- Plant-wide inventory reconciliation performed in half the time
- Measurable ROI based on significant reduction in labor and downtime previously required to manually sort the product during regular inventory management audits
- Complete traceability makes it possible to meet regulatory requirements, address customer concerns, and comply with audits
- Vital product information and quality data stored on each individual product provides real-time visibility to customers

Before the RFID system was in place, inventory reconcilliation could take between 6 and 24 hours to complete. With the updated system, the process has been shortened to 3 hours!

Providing Extra Value

The new RFID system delivered all of the manufacturer's needs. Water test data for each filter can be saved to the user memory of the RFID tag to be read by plant and warehouse personnel and the end-user. The RFID tag is not affected by abrasion, UV light, or other environmental conditions, so the tag will last the lifetime of the filter. The biggest savings was cutting the time needed for the labor-intensive inventory reconciliation process in less than half - what took 6 to 24 hours to complete, can now be done in just 3 hours!

About Polytron, Inc.

Since 1983, Polytron has been an industry leading system integration and engineering consulting firm delivering a broad spectrum of innovative manufacturing solutions. Polytron serves manufacturers in the food, beverage, consumer packaged goods, chemical, and life sciences industries across North America.

To learn more about Polytron, visit us online **(www.polytron.com)** or contact us **(www.polytron.com/contact-us)** to talk to a specialist today.

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