7 Reasons to Automate Tool Tracking with RFID and RTLS

For many manufacturers (especially in Aerospace, Defense and Industrial Machinery), a missing tool on the shop floor can be more costly than a missing component part. Most specialized tools and tooling are single-sourced, custom made, and difficult to replace. Freestanding production tooling (e.g. a laser scriber, a lift table) or composite tooling (hard or soft molds) may take weeks to replace, causing schedule and program delays.

In this context, the word "tool" is defined as devices used to perform work in the manufacturing process (WIP) as well as fixtures, molds and other indirect materials used to make and transport WIP (often called "tooling") in daily manufacturing operations.

1. **Labor Savings** By automating tool tracking, manufacturers can dramatically reduce employee time spent on tool check-in and check-out. Improved tracking also enables increased storage of tools at the point of use, reducing employee time spent at centralized tool facilities. This is particularly important in Aerospace and Defense, where an intra-facility walk may be measured not in yards, but in miles.

2. **WIP Visibility.** Real-time insight into the tooling that carries costly WIP helps manufacturers better understand their key operational metrics such as excess inventory or unexpectedly long process cycle times, enabling investigation and reduced inventory carrying costs. WIP often represents millions of dollars in working capital – streamlining the capital allocation can lead to immediate and significant cost savings.

3. **Tool Cost Savings.** With greater visibility into tool usage, manufacturers can purchase and deploy fewer tools for usage and spares inventory, along with increasing overall asset utilization.

4. **Improved Foreign Object Damage (FOD) Management.** Better tool visibility enables better FOD control and risk mitigation, enhancing procedural and training efforts.

5. **Calibration.** When tools cannot be located, they are frequently listed as missing, although in reality they may be in use on the shop floor. As a result, a percentage of tools that require calibration may be out of spec, leading to process exceptions that cause quality issues. RFID-enabled tool tracking ensures that these tools can be located and calibrated according to the required schedule.

6. **Audit Compliance.** Government contractors are subject to their own internal audits as well as DCMA and DCAA audits, so they must document the location of company-owned and government-owned tools, and demonstrate appropriate right-to-use. If not, they face the high costs of a Corrective Action Request (CAR) and risk progress payment delays and fines. RFID-enabling tool tracking greatly reduces these risks and costs, by immediately locating program-specific tools at the time of audit, and by alerting the tool operator before improper use of a right-to-use tool.

7. **ERP Efficiency.** Real-Time Tool Tracking data may inform an ERP, Program Management and MRO system, making end-to-end manufacturing and logistics processes more efficient. For instance, if a tool is associated with a specific step in the assembly process, the WIP Tracking system can be informed when the tool is checked out and update the production status.

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