FreePoint™ Technologies Inc.

Tool & Die Manufacturers

Application Notes

by FreePoint Technologies Inc.

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About Tool & Die Manufacturers

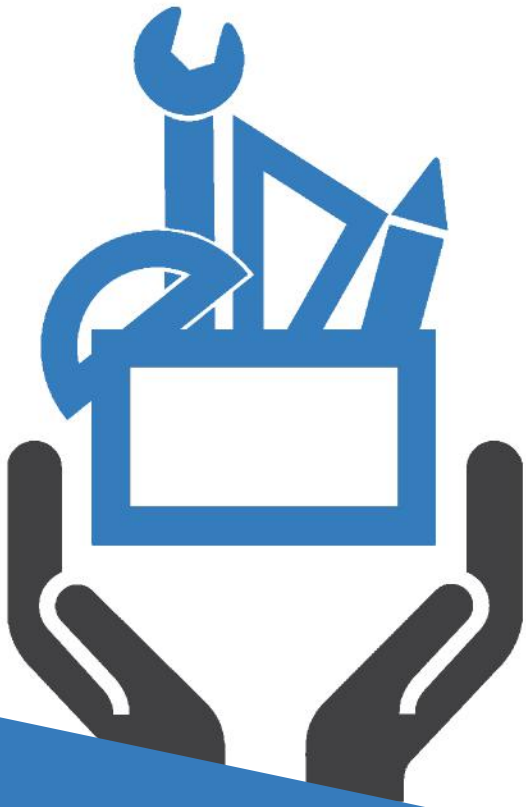
INDUSTRY OVERVIEW

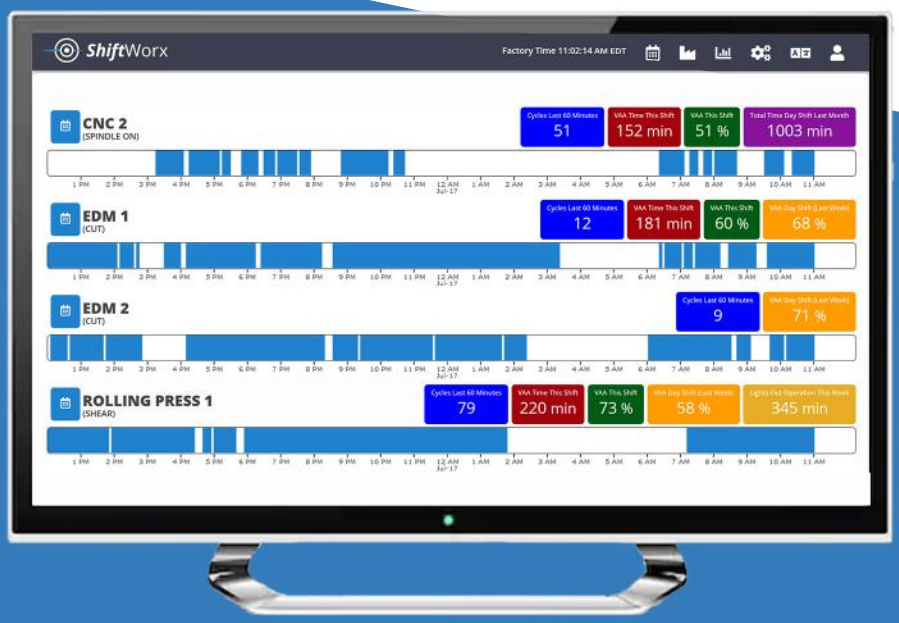
Tool & die manufacturers run high value, low quantity production of unique parts in a production process with many dynamic variables. Machine uptime is the most common indication of productivity in most shops, with the belief that when the spindle is running (“making chips”), the company is making money.

There is actually far more to it than that, but from a day-to-day, plant floor perspective, it often is a matter of keeping the machines in a value adding state (i.e. “making chips”), and collecting empirical information along the way so that management can make “data driven decisions” where large investments of capital may be concerned, to remain competitive in the future.

Examples of Machines Monitored:

- CNC Machines & Mills
- Matching Centers
- EDM Machines

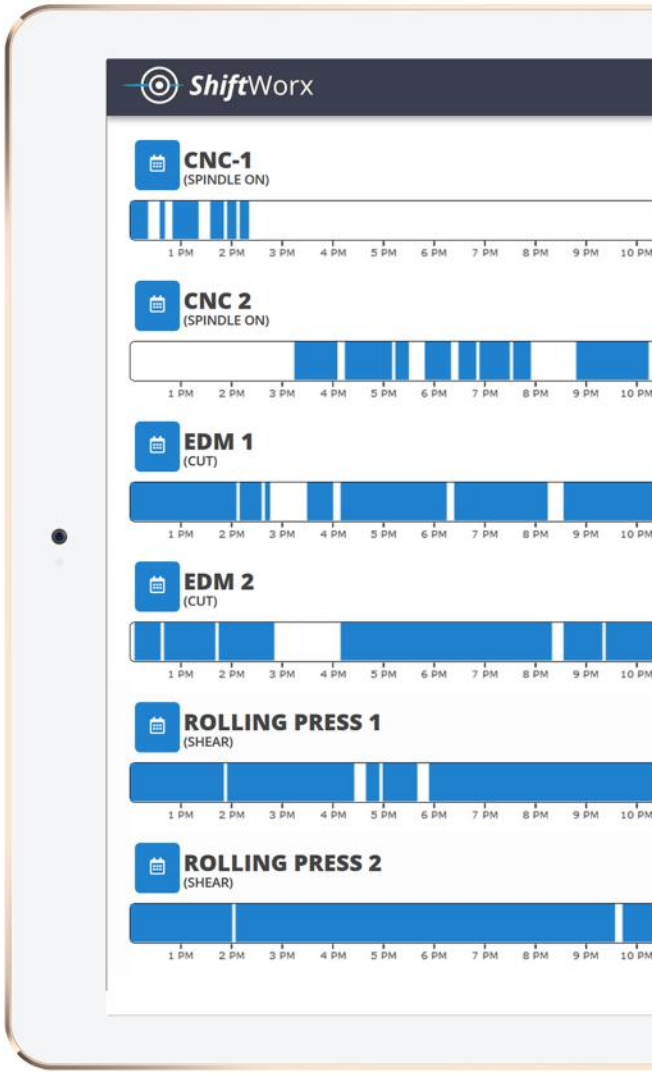




The Challenge

There is a wide variety of machines (type, brand, age) and most are not connectable in a standard or cost-efficient fashion. Modifying older machines brings with it the risk of unexpected downtime (and service may not be readily available). Newer machines often require proprietary (brand/type specific) software, and sometimes warranty is an issue. In most cases, the machines are counted on to hit tight production schedules and can't be taken out of production for any length of time to be upgraded or retrofitted for a monitoring system.

In a typical machine shop, the machine's downtime may be close to its uptime. (Uptime typically ranges from 30% to 70%, meaning the machine is often not running close to 50% of the time). In order to improve productivity, it is very important to know the reasons why the machine is not running but collecting all the information related to every non-value added time is either very arduous, or not accurate enough to be meaningful.



> FreePoint's non-invasive solution approach to machine monitoring addresses all the challenges and mitigates all the above risks.

The Solution

FreePoint connects non-invasively to all CNC machines on the shop floor.

FreePoint's ShiftWorx system enables manufacturers to easily identify areas of improvement while increasing the number of jobs going through one machine. By visualizing their uptime and downtime on the ShiftWorx dashboard, Operators are focused on getting the machine back to a value adding condition (i.e. "making chips"). Placing dashboards on LCD screens on the plant floor, or making them available on the PC at the CNC machine, puts everyone on the same page and has proven to drive productivity improvement by 10% to 15%, and in some cases more.

Examples of the signals that can be monitored:

- "End of Program"
- Spindle Running
- Machine "In Alarm"
- Axis in Motion
- Machine "In-Cycle"

Narrative

Using our "Narrative" module, Operators are engaged in the data collection process by empirically identifying all the non-value adding periods (down time causes), giving management the information they need to make better decisions.

Notifications

Using our "Notifications" module, supervisors, managers and maintenance staff can be alerted via text or email whenever a critical machine has stopped for a defined period of time, minimizing or eliminating unnecessary down time.

The Outcome

With real-time data visibility provided by ShiftWorx, manufacturers will be much better positioned to increase production as well as profitability.

- Identify Areas of Improvement
- Visualize Machine Uptime & Downtime
- Optimize Machine Scheduling
- Increase # of Jobs Being Run
- Imrove Profitability
- Increase Production Capacity

KPI's & Measurements

Uptime
(by hour/shift/day/period)

"In Cycle" Time
(by hour/shift/day/period)

Cycles Complete
(by hour/shift/day/period)

Production Time
% of time the line has been running

Set Up time
Average set up time by machine/job

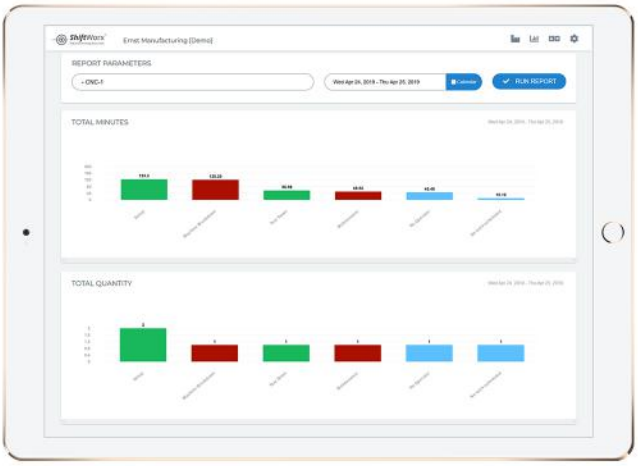
Downtime
Reasons for non-productive time

Expert Insights

FreePoint Chairman, Paul Hogendorn

All manufacturers wants to see more active time on the dashboard and less inactive time. However, that is not necessarily the case in this industry. A high utilization number may mean that the machine is too slow and should be replaced. A low utilization number may simply mean that there is not enough work available for the machine, or not enough people scheduled to keep it running.

Machine uptime percentages between 55% and 75% can indicate a "healthy process" for the folks on the floor, but this kind of KPI needs to be considered relative to all the other factors by management to determine effectiveness, profitability and sustainability.



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Interested in an IIoT Solution?

Reach out to us today to speak with an Account Manager.

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