Yamazaki Mazak uses SamsonBASE to improve condition monitoring and predictive maintenance



Mazak: Committed to excellence

Established in 1919, Yamazaki Mazak is a machine tooling manufacturer based in Oguchi, Japan. The company is a world leader in the manufacturing and distribution of advanced technology solutions, including CNC turning and laser processing machines. Its customer base comprises manufacturing companies across the globe.



Turning data into knowledge

During the warranty period, resolving machine failures is incredibly costly to Mazak, as engineers must travel and work on-site; sometimes multiple times, before completing a job.

Mazak also holds large datasets from aftersales services that contain historical data on all incidents that occur on customer machines. These datasets provide information into failed machine models; detailing failure reports from the customer service agents receiving customer calls, the number of engineer visits, their travelled and worked hours and their comments from repair actions.

Historically, however, only very minimal insights had been extracted from this information. So, Mazak turned to SamsonVT's condition monitoring and predictive maintenance solution, SamsonBASE, to transform data into actionable knowledge.

Mazak



SamsonVT's 5 phase solution for Mazak

Phase 1: Exploration and analysis of failure data.

- Understand the features of the data; then create and extract KPIs from the aggregated data.
- Find correlations between failures within machines and the number of visits and worked hours spent to resolve incidents.

Phase 2: Text analysis on failure reports.

• Use Natural Language Processing (NLP) to identify the type of failure for each machine, the severity of the incident, and the methods for resolution using customer and engineer reports.

Phase 4: Anomaly detection.

- From standards built in phase 3; identify anomalies in incident resolution in terms of times of repairs or number of visits.
- Understand the causes of these anomalies to improve the resolution process.

Phase 3: Report on incident resolutions.

- Relate results between phases 1 and 2 to correlate failure modes with the time of repair and the number of visits.
- Extract corresponding standards in incident resolutions for each machine and failure type.

Phase 5: Predictive analysis.

• Build a predictive model that informs on the likelihood and type of machine failure, identifies when an engineer is required, forecasts the number of visits and estimates the number of hours required for resolution.



Mazak: Maintaining its position as number one

Using the insight generated by SamsonBASE, Mazak can make considerable cost savings by improving the efficiency of incident resolution. This includes avoiding or reducing engineer visits on-site, and potentially closing incidents without a visit, and over the phone, where possible.

By working closely with SamsonVT's data scientists, Mazak can also better understand the performance of its legacy fleet, enabling the company to implement operational changes to its through-life support solutions. This directly benefits Mazak's customers through increased reliability and maintainability, enabling Mazak to maintain its world-leading position.

"SamsonVT can provide real operational insights that lead to tangible costs savings and increased performance."

Greg Cocks, Advanced Projects Manager, Yamazaki Mazak

