

# Mazak Europe



## Engineering Without Limits: How Mazak Europe Streamlined and Scaled

Mazak Europe faced the growing pains of legacy systems, clunky processes, and a mountain of paper trails. Today, they've transformed into a digitally driven operation, streamlining workflows, empowering teams, and doubling engineering output. Here's how they made the leap.

Headquartered in Worcester, England, Yamazaki Mazak UK Ltd serves as the European hub for manufacturing and engineering within the Mazak Europe organization. With 18 technical and service centers across Europe, Mazak is a global leader in machine tool manufacturing, specializing in multi-tasking CNC machines, laser systems, and smart factory automation. The company's customer base includes industries that demand precision, customization, and rapid delivery, such as aerospace, automotive, defense and medical devices.

## Challenge: Paper Siloes and Sequential Processes

Prior to its digital transformation, Mazak Europe was hampered by disconnected, paper-based systems and siloed departments. The absence of a unified platform and single source of truth created inefficiencies across engineering and production rooted in fragmented, paper-based manual workflows. Engineering operated in isolation with its own data silo, and departments like production were left to interpret specifications from paper copies and home-grown tools.

"We rarely make the exact same specification of a machine twice," said Chris Johnson, Engineering Manager at Yamazaki Mazak UK Ltd. "A single machine has the potential for 23 quadrillion combinations of features and components! It's an enormous options list. The advantage is that our customers can order exactly what they want. The downside of that much optionality is that we typically don't pre-build completed machines, although we do have a few stock machines. We create exactly what the customer wants."

With no single source of truth, the company relied on photocopied drawings, siloed systems, and outdated CAD tools that couldn't keep pace with their complex machine designs. Time would be lost to non-productive tasks such as searching for part numbers, version confusion, and slow sequential processes. Communication gaps between engineering and manufacturing compounded the problem, last-minute reworks, and missed feedback loops.

The absence of an integrated, concurrent engineering process, and robust traceability not only slowed operations but also frustrated staff. At the core, Mazak needed a platform that could unify teams, streamline Manufacturing Bill of Materials (MBOM) creation, and support the intricacy of their configure-to-order production model.



**We have a lot of parts, complexity and data. It felt like we were fighting our legacy systems and paper-based processes every day," said Johnson. "Engineering had no visibility into what changed during production. It was inefficient, frustrating, and unsustainable for growth objectives.**



## Solution: Mazak's Digital Leap

Mazak Europe had a strategic priority to increase its market share. To modernize its workflows and reduce time to market, the company adopted PTC Creo and Windchill as part of a strategic digital transformation. The goal was to enable parallel collaboration, consolidate product data, and empower every department to work in parallel from a single source of truth.

PTC Windchill was selected as the Product Lifecycle Management (PLM) platform to unify data and streamline collaboration, and PTC Creo replaced legacy CAD systems, offering high-performance 3D modeling, simulation, and seamless integration with Windchill. The implementation was led by PTC DXP Services.

"It wasn't just about new software. We needed solutions designed for mechanical engineering, with native integration and the ability to simulate performance instantly," added Johnson. "Creo hit every mark, and with Windchill, data management just seamlessly happens in the background."

Creo's Simulate Live capabilities revolutionized Mazak's design process. Engineers now run stress simulations in seconds as opposed to several hours, verifying deflection and vibration tolerances with micron-level precision.

"Previously, simulations would take around 10-20 minutes, mainly because the analysis would need to be conducted and reviewed in a different environment before then moving back to the modelling environment," he added. "This meant making changes, altering the study, remeshing and running the study again, viewing results and then moving back to the modelling and so on. Now that we have a tightly integrated and slick

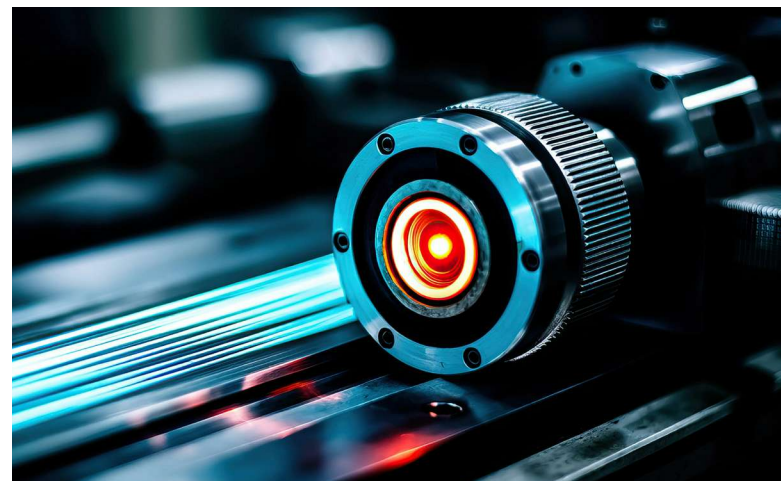
simulation environment that produces results almost instantly, it makes the whole process orders of magnitude faster. It gives our engineers real creative freedom and drastically shortens time to market."

Windchill Navigate has also brought transformation to the shop floor. Massive 50-inch touchscreens give our production staff immediate access to MBOMs and 3D models, tailored to each customer's configuration.



**"Staff can now click on a machine's serial number on the screen and instantly see the exact MBOM and 3D model for that build. No more print-outs. No more chasing part numbers. Just clarity, speed, and confidence,"**

said Johnson.





## Benefits: Collaboration in Motion

Just seven months after going live with PTC, Mazak Europe more than doubled its engineering capacity for machine customization. This not only increased design output but also boosted employee satisfaction and cross-departmental efficiency.

Compliance and traceability have also improved, especially critical post Brexit, which introduced new export documentation requirements. Windchill ensures that every part is properly classified and documented, supporting both legal and operational standards.

Because Creo models are directly linked to Windchill-managed product data, Mazak Europe now has a seamless design-to-manufacturing flow, reducing manual handoffs and errors. Departments now have real-time collaboration with design, engineering, and manufacturing teams now working from a unified data source, improving both transparency and speed.

"This has also helped us address other challenges, such as redundant part creation across regions, which previously led to inventory inefficiencies," Johnson added. "By enabling reuse of parts, reducing waste, and maintaining our profit margins amid competitive global pressures, we are paving the way for future growth. We've also deliberately designed a custom interface tailored for all levels of technical understanding as well as meeting the digital expectations of our younger employees."

Mazak's use of Windchill aligns strongly with wider industry PLM modernization, particularly through initiatives in change management, part classification and standardization, and manufacturing process plans.

"Before Windchill, finding a single part number could take

us more than 20 minutes. Now it takes five seconds. That kind of transformation is hard to quantify, but you feel the impact every day," said Johnson. "PTC has transformed how we work from faster design decisions to real-time shop floor access. We're more agile, more accurate, and far better connected across the business."

## Looking Ahead – Beyond the Factory Floor to Service and IoT

"In just a few months, we've gone from frustration and fragmentation to clarity and momentum. The way our teams collaborate now from design to the shop floor is faster, smarter, and more connected. It's completely reshaped how we deliver for our customers," Johnson added.

Mazak Europe is now exploring the use of PTC Arbortext for documentation and spare parts ordering.

"Looking ahead, we're excited to explore how Windchill can become our single source of truth not just for engineering and production, but for service and spare parts too," concluded Johnson. "By integrating our platform with PTC, we see huge potential to make customer support even smarter and more responsive."

## Results

- **Accelerated Time to Market** – through concurrent engineering and reduced design cycle times
- **Increased Engineering Design Output** – more than doubled within seven months of implementation
- **Real-Time Collaboration** – across engineering, production, and planning
- **Reduced Manual Errors** – by automating MBOM creation from sales codes
- **Improved Employee Experience** – with intuitive tools and faster workflows
- **5-Second Part Retrieval** – compared to 20+ minutes before
- **Simulation Speed** – stress testing reduced from hours to seconds
- **Compliance & Documentation** – automated for export and military classification

- **Improved Design Quality** – with precise modeling and performance scenarios
- **Seamless Integration** – between CAD and PLM platforms
- **Data Reuse** – to eliminate redundant parts and support inventory efficiency
- **Scalable Platform** – to support future IoT and service documentation enhancements



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Chris Johnson, Engineering Manager, Yamazaki Mazak UK Ltd

## Customer Quick Facts | Company Overview

Company	Yamazaki Mazak UK Ltd (Mazak Europe)
Headquarters	European HQ in Worcester, UK
Industry	Machinery Manufacturing
PTC Products	Windchill and Creo
Employees	500+ employees across Europe
Website	<a href="http://mazak.com/eu-en">mazak.com/eu-en</a>