

Renold Transforms Global Collaboration with PTC Solutions



Renold, a global leader in manufacturing high-precision power transmission products, faced significant operational challenges due to fragmented CAD systems and localized file storage across its 12 manufacturing sites.

Renold worked with INNEO Solutions, a trusted PTC Partner, to implement PTC's innovative Creo and Windchill solutions. With this partnership, Renold effectively addressed its challenges by standardizing its 3D CAD and PLM systems. This shift enabled increased digital efficiency, design consistency, and streamlined collaboration on a global scale. The transformation resulted in a 50% reduction in design time, with a leaner engineering team and 70% fewer CAD seats.

During the COVID-19 pandemic, these solutions proved critical, allowing Renold to maintain operational continuity by switching manufacturing between locations. Today, Renold is positioned for future growth with innovative tools and processes that enable agility, innovation, and market adaptability.

Introduction

Established in 1879, Renold has been synonymous with durability and precision in manufacturing chains, gearboxes, and couplings. From powering warehouses to ensuring the safety of submarines, Renold's products are relied on across a broad spectrum of industries such as agriculture, manufacturing, energy, food, mining, defense, and many more. However, as a company with operations in multiple countries, Renold faced mounting pressure to modernize and unify its processes to maintain efficiency and adaptability in competitive markets.

Imagine this scenario: different facilities using incompatible CAD systems, engineering teams duplicating efforts, and rising costs from inefficiencies. Recognizing these barriers, Renold committed to adopting a modernized approach to digital design and Product Lifecycle Management (PLM), ensuring it could maintain its competitive edge and uphold its commitment to reliability and innovation.

This commitment to continuous improvement is reflected in Renold's use of advanced technologies like PTC's CAD, PLM, and ThingWorx systems, crucial for optimizing product development. By using Creo for design and Windchill for data and change management, Renold is better equipped to meet modern challenges, ensuring accuracy, collaboration, and agility in an evolving landscape. ThingWorx allows systems to be accessed by more users without the need for training.

The Challenge

Renold needed to unify design systems and processes across global locations and acquired companies while ensuring standardization, data integrity, efficient change management, and seamless collaboration.

Key challenges included:

Operational Challenges

- **Fragmented Systems:** Multiple licenses of multiple CAD systems were in use, leading to inconsistencies and duplication.
- **Complex Prototyping:** Ineffective data sharing between sites increased prototyping and slowed time to market.
- **Limited Component Reuse:** Disparate databases made it difficult to reuse designs across facilities.

Market Pressures

- **Global Disruptions:** The lack of flexibility to shift production between sites increased vulnerability to supply chain challenges and regional tariffs.
- **High Costs:** Inefficient workflows drove up operational costs, reducing profitability.

Without a cohesive solution, Renold risked eroding its competitive edge and failing to meet the high standards its customers had come to expect.



The Solution

To address these issues, Renold leveraged PTC's Creo and Windchill solutions. This approach replaced outdated document-driven workflows with comprehensive, digital design models and centralized data management capabilities.

Key Actions

1. Standardizing CAD Systems

Renold consolidated its design tools, reducing 170 CAD licenses to 50 shared Creo licenses used by 80 engineers. Streamlined CAD workflows enabled engineers to embed manufacturing instructions, annotations, and quality data directly within 3D models.

As part of the migration process, Renold has opted to rebuild product data within Creo, maximizing Creo's advanced modeling and design capabilities, including the use of Advanced Assemblies, Model Based Definition, Mechanism Dynamics, and FEA Simulation. This approach allows them to take advantage of Creo's evolving feature set, which enhances design precision and supports seamless collaboration.

2. Consistent Structured Change Management

To manage rapid design evolution and improve collaboration, Renold expanded its use of PTC solutions to include Windchill to unify its Product Lifecycle Management (PLM) system for structured change management and Navigate for role-based data access. This combination has transformed Renold's PLM approach, ensuring that product changes are streamlined, visible, and accessible across the organization.

Renold has implemented clear, automated workflows for handling engineering changes, allowing teams to easily create, review, and approve requests. This structured process ensures that all changes are accurately defined and controlled, reducing the risk of errors, and enabling quick issue resolution. Real-time access to updates keeps the company's design and production efforts aligned, supporting faster and more efficient product development cycles.

3. Standardizing for Efficiency and Sustainability

Beyond design, Renold has leveraged Creo to standardize product designs and processes across its global operations. This move enhances efficiency and aligns with Renold's sustainability goals. By developing reusable design frameworks and standardizing parts, Renold reduces material waste and improves manufacturing sustainability.

With Creo at the core, consistent design standards are maintained across all product lines, enabling teams to meet quality expectations and regulatory requirements, regardless of project complexity or geographic location.

4. Enhancing Collaboration

Using Windchill's single authoritative database, teams from multiple global locations are able to collaborate more effectively. This benefits not only engineers but all stakeholders by providing controlled access to accurate, real-time data through Windchill and Navigate, minimizing miscommunication.

5. Building on a Proven Foundation

Leveraging long-term experience with PTC solutions, Renold ensured that these solutions can scale cost-effectively to meet future growth, acquisitions, and operational needs.

Why PTC Solutions?

PTC provided key advantages that aligned with Renold's goals, including:

- **Comprehensive global support** to ensure consistency across locations.
- **Scalable tools** to address changing demands while remaining cost-efficient.
- **Advanced capabilities** to integrate innovation and evolving toolsets.

Results

By implementing PTC's Creo, Windchill, and ThingWorx solutions, Renold achieved a digital transformation that provided measurable benefits.



Standardizing on Creo and Windchill, has not only streamlined our engineering processes, but has enhanced collaboration and given us the agility to meet our customers' expectations faster."

Jim Hinde, Engineering Systems Implementation Manager, Renold

Key Outcomes

1. Performance Gains

- **50% Reduction in Design Time:** Through Creo standardization, teams designed components faster and more consistently, improving speed-to-market significantly.
- **Double Throughput with a Leaner Workforce:** Utilizing centralized workflows and processes allowed Renold to double engineering productivity despite reducing staff.

2. Operational Efficiency

- **Seamless Production Shifts:** Unified CAD systems and design processes allowed Renold to flexibly shift production across sites, quickly adapting to tariffs or market demands.
- **Improved Reusability:** Centralized data management enabled higher design reuse, saving both time and cost across projects.

3. Business Continuity During COVID-19

- **Resilience to Disruptions:** The digital-first approach allowed Renold to streamline workloads and adapt quickly to changing conditions without interruptions.

4. Sustainability Gains

- **Reduced Waste:** Data standardization ensured precise design and material optimization, significantly reducing product duplication proliferation and lowering scrap rates.
- **Lower Carbon Footprint:** Through local production collaboration, it has been possible for shipping emissions to be minimized.

5. Foundation for Growth

- **Streamlined Digital Access:** Consolidated data and standardized processes prepared Renold for smoother ERP and CRM integrations.
- **Innovation Readiness:** With plans to further incorporate PTC toolsets, Renold is poised to expand more, both organically and through acquisition, encouraging future-focused design and innovation.

Conclusion

Renold Plc's strategic adoption of PTC's Creo, Windchill, and ThingWorx has significantly enhanced its product development and lifecycle management processes. By standardizing Creo for design and leveraging Windchill PLM for structured data and change management, Renold has achieved greater efficiency, accuracy, and collaboration across its global operations.

The integration of advanced technologies has enhanced Renold's ability to meet rigorous customer requirements while also supporting its sustainability goals by reducing material waste and optimizing manufacturing processes.

Renold plans to advance connectivity further through ERP and CRM platforms, ensuring global access to holistic digital data. As Renold continues to innovate and adapt to evolving industry demands, its commitment to leveraging innovative solutions positions it for sustained success and leadership in the power transmission industry.

Experience the Impact of PTC Solutions for Yourself

Are you ready to optimize your operations like Renold? [Contact us](#) today to discover how PTC's solutions can drive efficiency, scalability, and innovation for your business.

INNEO
That's IT.

Partner Spotlight: INNEO

INNEO Solutions drives digital transformation by delivering integrated engineering, simulation and IT solutions that help organizations innovate and work more efficiently.

INNEO partners with Renold to deliver licensing, training and dedicated technical expertise for their PTC Creo and Windchill solutions, helping them maximise productivity and innovation. Through this collaboration, Renold has been able to standardize its CAD and PLM environment, accelerate workflows and enhance global engineering performance.

