

Advancing Motion and Power: A Conversation with Roger Thomas from Flender Corporation

From the “Ask the Expert” stage at Motion + Power Technology Expo 2023

Aaron Fagan, Senior Editor

In an exclusive interview conducted at the Motion + Power Technology Expo 2023 in Detroit, marketing director Roger Thomas of Flender Corporation sheds light on the Flender One helical gear unit. Our discussion delves into product development, its link between product design and digital services, and the overarching commitment of Flender toward sustainability. The Flender One's unique features, such as AIQ integration for intelligent monitoring and Metaperform gearing philosophy, are explored in detail, offering insights into its applications, gear ratio ranges, and design considerations. Roger also addresses questions about the larger housing surface, its relationship to integral cooling, and the retrofitting capabilities of the AIQ system to previous generations of Flender gearboxes. As Flender looks to the future, Roger outlines the company's vision of continued innovation, emphasizing a commitment to energy efficiency, waste reduction, and achieving CO₂ neutrality by 2030. Join us in unraveling the complexities of motion and power transmission technology with a leader at the forefront of change, Flender Corporation.



Roger Thomas, Marketing Director, Flender Corporation, roger.thomas@flender.com

Please walk us through the development of the Flender One and the link between product design and digital services.

It is encouraging to see that more and more of our customers and stakeholders want to reduce energy and carbon footprint for a sustainable future. With the same goal, Flender saw an opportunity to develop a revolutionary gear unit that meets customer needs and incorporates the latest technologies.

The new Flender One helical gear unit offers the perfect balance between thermal capacity and efficiency, ease of use and technological sophistication, and torque and transmission range, allowing it to meet customer requirements precisely. Due to its extremely low power dissipation, the gear unit pays for itself through reduced energy costs alone—in most cases, within three years.

Incorporating AIQ, our new gear unit intelligence with integrated sensor technology minimizes downtime as it monitors performance, records, and displays performance data for local analysis, decision-making, and process control.

How would you profile the typical applications for Flender One gearbox?

Typical applications include paper productions, pumps, compressors, mixers, agitators, and water turbines, to name a few.

How many gear ratio ranges are available?

103 transmission ratios from 1 to 7.1 are available for each of the 11 gearbox sizes. This provides the densest range of transmission stages available on the market and allows us to match the desired rotation speed for maximum efficiency and with a speed fit of nearly 99 percent.

Could you please define Metaperform gearing for the uninitiated?

Metaperform is a design philosophy we use at Flender to develop new products. It focuses on primary design objectives and helps us maintain focus throughout the development. The primary design objective of Flender One was to save power and energy. The aim is achieved by designing a more uniform path of contact and improved roll-off characteristics of the gears, an innovative housing design for improved heat dissipation, a wide range of transmission ratios for speed fit, and digitalization for performance monitoring.

The gearboxes have a 35 percent larger housing surface than previous models. Is that related to integral cooling?

You are correct. The surface area and the thermal capacity of Flender One have increased significantly compared to the predecessor products. The rib design is integral to efficient cooling, resulting in better heat dissipation and unparalleled thermal capacity. This eliminates the need for over-dimensioning to increase the gear unit's cooling capacity while reducing the need for additional cooling measures.

One might assume that would increase the weight or footprint of the units, but that isn't so, correct?

Although the housing surface is larger, the footprint is the same, but the weight is less.

Please tell us about AIQ.

AIQ is Flender's intelligent sensor incorporated in each Flender One when it ships from the factory. It provides insight into the operational performance of the gear unit as it monitors vibrations, temperature, and speed measurements with the overall objective of avoiding unplanned downtime and saving energy. It also calculates the remaining oil life by providing full-time monitoring, alert generation, and recommended actions if a parameter exceeds alarm thresholds.

Can AIQ be retrofitted to the previous generation of Flender gearboxes?

AIQ can be retrofitted to previous generations of Flender gearboxes. We only need customer information about the application and the type of connectivity desired to determine the correct sensor.

What is on the horizon for Flender?

We are proud of the reputation for superior quality that we have earned throughout our 120-year history. Flender One is an example of leveraging our acquired product knowledge and industry expertise to develop innovative products to deliver optimal value and customer experience.

We will continue to develop products that save energy, labor, and waste to achieve CO₂ neutrality by 2030.

We want to be recognized as the partner of choice for a sustainable future.

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Flender One is a 2022 iF Award-winning platform. Available as single-stage and multistage solutions, these gear units are suitable for over 100 applications.