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Hägglunds drive flexibility adds strength to the mix

Eurorubber and Hägglunds solutions from Bosch Rexroth have an enduring 25-year relationship. The partnership builds on reliability, but also on a shared aim to achieve the highest levels of performance. In a new Hägglunds drive upgrade for an internal mixer, that ambition is especially clear.

Located near Parma, Italy, Eurorubber Industries S.R.L was founded as a manufacturer of rubber compounds for tire retreading. The company prides itself not only on quality, but also on constant innovation. Since 1970, Eurorubber has expanded into compounds for numerous sectors, ranging from automotive, construction and civil engineering applications to homewares, domestic appliances, marine products and general technical components.

Eurorubber provides an extensive, highly customized range of rubber compounds in many viscosities and hardnesses. Working to meet customers' specific production requirements, the company develops tailored compounds for all types of applications, either by modifying base recipes or by developing entirely new mixtures. Delivered on time and with the highest quality, these mixtures are often fine-tuned on the customer's production line, making Eurorubber a partner throughout the development phase.

Pursuing performance together

Since 1996, Eurorubber's innovation capabilities have been supported by Hägglunds solutions from Bosch Rexroth. Hägglunds hydraulic drive systems are well known in the rubber industry, where they excel on calenders, extruders and both open and closed mixers. The company's first Hägglunds drive system was on a tangential mixer with a capacity of 240 liters.

Eurorubber's partnership with Bosch Rexroth continues today with renewed focus. Eurorubber was acquired by Certech Group in 2020 and is undergoing a relaunch phase, targeting even greater performance and new product advances.

One of the steps in that process has been the upgrade of an internal mixer, where the original Hägglunds MB 1150 hydraulic motor has been replaced with a next-generation Hägglunds CBm 1200.

Smarter power for internal mixers

Internal mixers have traditionally been driven by electro-mechanical systems. However, Eurorubber has long seen the many advantages in a Hägglunds hydraulic solution.

Mounted directly on the shaft without a gearbox, the high-torque Hägglunds motor drastically reduces mixer footprint, especially as the hydraulic drive unit can be flexibly placed some distance away. The drive system provides full torque from zero speed, infinitely variable speeds within its range and an unlimited ability to start and stop – all of which boost mixing productivity.

In addition, a Hägglunds system delivers torque smoothly, which reduces the risk of mechanical failures. Likewise, the large reserve of torque means flexibility to deal with critical mixing situations. If a blackout causes the mixture in the chamber to cool, for example, the high-torque motor is able to restart the mixer.

Greater efficiency with intermeshing rotors

The internal mixer that Eurorubber chose to upgrade is one with an intermeshing design, where rotors with varying center distance interact in a two-shaft system. Mixing occurs not only between the rotor and the wall of the chamber, but also between the two rotors.

To a large extent, this design has taken over from older tangential mixer technology. Since the rotors have smaller clearances, raw material is fed into the mixer more slowly than with a tangential rotor, and the cycle time generally increases. However, the greater shear force applied between the rotors means the properties of the rubber can be improved. Moreover, the excellent distribution and cooling performance make the combined rotor system especially suitable for heat-sensitive compounds and high-quality rubber mixtures.

Given their somewhat longer cycle time, mixers with intermeshing rotors are well served by a further Hägglunds advantage. When the components are loaded in, the machine must be able to adapt the mixing process to suit the recipe, increasing and decreasing speed before ramping up to maximum when the final ingredient is loaded. A Hägglunds system is more effective in making these speed changes, saving around three seconds in the production of a mixture. Over the course of a year, these many small gains amount to a significant increase in production.

Advancing performance is plug-and-play

Added to all these Hägglunds advantages is yet another: the simplicity of upgrading. Because the drive system is modular and involves no gearbox or foundations, changes can be made to increase performance without any major impact on the machine design.

Such was the case with Eurorubber's internal mixer, where the Hägglunds MB 1150 motor was easily switched out in favor of the Hägglunds CBM 1200. This was a plug-and-play exchange, as the two motors are fully interchangeable. Without having made any mechanical modifications, Eurorubber can now take advantage of higher efficiency in meeting the same technical specifications. This means not only higher performance, but energy savings as well.

"By supplying Eurorubber with the latest Hägglunds CBm 1200 drive, we were able to offer a high-performance upgrade solution that can increase annual productivity," says Paolo Greci, Engineering and Maintenance Manager at Eurorubber Industries. "It is vital to us to offer our long-standing customers and partners the best solutions with an innovative and future-focused approach."

About Eurorubber

Eurorubber Industries S.R.L. is a rubber compounder with high focus on quality and innovation. This is reflected in careful selection of raw material suppliers, high traceability, consolidated production processes, cutting-edge production lines and a constant drive to improve. The company has held ISO 9001 certification since 1991 and provides an extensive range of rubber compounds to numerous industries.
Since January 2020, Eurorubber has been a fully owned part of the Certech Group, a leading supplier of systems, components and support for ceramics processing.

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