

Press release

Strong drive solution for delicate melt

At HANNOVER MESSE, SEW-Eurodrive is showcasing a new industrial gear unit solution – real and digital – using the example of Conche

Bruchsal/Hanover 2025 – At the trade fair stand at HANNOVER MESSE, SEW-EURODRIVE will be demonstrating on the basis of various industries and applications that digital applications associated with real drives are no longer indispensable in the future. This also applies to the newly combined planetary gearmotor with right-angle bevel-helical preliminary stage and special oil cooling, which is demonstrated using the example of chocolate conche.

Conching requires a drive with high speed and space-saving design

Conching is about making the delicate melt of the chocolate. For this purpose, the chocolate manufacturers operate their machines at a relatively high speed. This means that up to 3000 revolutions enter the gear unit, which translates this speed to a special kneading and agitator. "These machines run around eight hours in continuous duty per batch," explains Tamiem Badawi, Head of Product Management Industrial Gear Units at SEW-Eurodrive. "Such an application requires a drive with a strong motor and gear units with a relatively small gear ratio."

Industrial planetary gear unit with bevel-helical preliminary stage and large motor

SEW-EURODRIVE has comprehensively revised its P-X.e industrial gear unit series to meet the requirements of many customers who want to operate their vertical machines at high speeds and a robust drive. At the trade fair stand in Hanover, the drive and automation specialist will be showcasing this combination of a two-stage P.2e planetary gear unit and a single-stage bevel-helical gear unit preliminary stage based on the X.e. series. This right-angle preliminary stage allows a relatively large motor (e.g. from the DRN.. or another IEC or NEMA motor) to save space. Both gear units are available in several stages with small gear ratios. Combined with a drive package, the available gear ratios range from 22.4 to 142. In combination with the high drive power of the motor, relatively high speeds occur on all rotating parts.

"This causes a relatively high amount of heat that has to be dissipated. For this reason, we have optimized our existing oil cooling system for X.e gear units and also standardized it for this new P.X1KP.e combination," says Tamiem Badawi, describing the solution. This cooling system sucks the oil from the common oil chamber of the planetary gear unit and bevel-helical gear unit via the X.E. gear unit and cools it via a shell and tube heat exchanger. The cooled oil is then pumped back into the gear units, where it is transported to the lubrication points via the pressure lubrication lines. The common oil chamber also ensures that a larger oil volume is available and thermal compensation is possible between the slow-running X.e gear unit and the faster-running planetary gear unit.

Image

Chocolate conche

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www.sew-eurodrive.de/press

Contact person

SEW-EURODRIVE GmbH & Co KG
Corporate Communication
Ernst-Blickle-Strasse 42
76646 Bruchsal
Germany
www.sew-eurodrive.com

Ms. Wilma Berweiler
Press Spokesperson
T +49 7251 75-2552
wilma.berweiler@sew-eurodrive.de

Reader inquiries

SEW-EURODRIVE GmbH & Co KG
Press and Public Relations
Ernst-Blickle-Strasse 42
76646 Bruchsal
Germany
T +49 7251 75-0

press@sew-eurodrive.de
www.sew-eurodrive.com

A particular challenge when designing the new drive was that a large motor with high drive power had to be docked onto the relatively small housing of the X.e gear unit. Using and adapting existing motor adapters from the X series, it was possible to create a stable platform for connecting the motor.

"This is where the best of two industrial gear unit worlds come together," says Tamiem Badawi. "This combination is now ideal for use in a conche. But because we offer a lot of options here, the solution also fits very well with other applications, such as washing presses."

High thermal limit power

A standard solution also means that everything is easy to calculate and anchored in the corresponding tools. The new cooling system in particular enables high thermal limits, which is reflected in the efficiency and sustainability of the system. For example, if the oil is cooled down from 90 to approx. 70 degrees Celsius, this results in a calculated oil service life of a factor of 2. At the same time, this temperature results in a very good viscosity, which means that the losses in the oil can be reduced by 20 percent compared to an oil cooled to 45 degrees.

Condition monitoring with DriveRadar® IoT Suite for industrial gear units

"Our digital solutions are the perfect complement to our mechanical products," says Tamiem Badawi, and is delighted that digitalization is also a key topic at HANNOVER MESSE. In almost all customer discussions, the question would arise: "What do you have in terms of condition monitoring solutions?"

SEW-EURODRIVE has created an application platform with the DriveRadar® IoT Suite that creates the desired transparency regardless of the industry or application. "In the past, critical applications have seen the gear units dimensioned very large so that they can safely withstand the loads. And if it was very critical, the customer also put a replacement gear unit in stock," recalls Tamiem Badawi. However, oversizing is not resource-friendly. This is why the desire for more sustainability and efficiency is also driving the trend toward digital solutions.

The same trend has long been known from cars. These are becoming more and more expensive in the purchase process, which means that the on-board computer is now indispensable for monitoring. "Investments in industrial gear units in particular are moving quickly toward 50,000 or 100,000 euros. This kind of automated monitoring is simply part of this," emphasizes Tamiem Badawi. Sometimes it was just a matter of small details. For example, if a customer wants to check in the morning whether their machine has run successfully overnight, they can easily check this at the breakfast table in the morning using their DriveRadar® app. They no longer have to look into complicated factory control as before or ask someone who is familiar with technology for help.

At the same time, machine and system operators are increasingly under pressure to achieve even more service life, achieve even higher throughput and ensure even higher availability. All this can only be achieved through automation and automated monitoring.

About SEW-EURODRIVE

Founded in 1931, SEW-EURODRIVE GmbH & Co KG is a family business headquartered in Bruchsal, near Karlsruhe, in the Baden-Württemberg region of Germany. Today, SEW-EURODRIVE is one of the world's leading specialists in drive and automation technology, with more than 22 000 employees, 17 production plants, and 92 Drive Technology Centers in 57 countries.

As a market leader in its field, SEW-EURODRIVE keeps applications, processes, systems, and machinery moving in countless sectors – from airport logistics to industrial processes. With around 800 employees working in research and development, the company is making an innovative contribution to shaping the future of drive technology.

Proximity to customers is one of SEW-EURODRIVE's top priorities. An extensive sales and service network provides professional advice on site and ensures the rapid availability of spare parts and repairs – anywhere in the world.

Alongside its headquarters and production facilities in Bruchsal and its plant in Graben-Neudorf, the company operates 30 other sites across Germany. SEW-EURODRIVE has also had a presence in Canada, the partner country for HANNOVER MESSE 2025, for over 50 years. Its headquarters there are in Toronto.