

SEW
EURODRIVE

Drive India

The SEW-EURODRIVE Customer Magazine

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Attractive prizes
to be won!
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industrie 4.0 factory:
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Dear Reader

The last 4 months have definitely been eventful, to say the least. Keeping supply chains, factories, deliveries and service going through the middle of a pandemic was not something any of us expected to be facing in our careers. However, we have to deal with what the world throws at us to the best of our abilities, and at SEW we have got pretty quickly back on track within the parameters laid down by the authorities, and in an environment of ever-changing guidelines and ever-increasing cases. Especially so in support of the food, pharma and biotech companies that are essential in feeding us and bringing us out of this situation.

For our customer story for this issue we look at Axtel Industries, a Halol-based company that delivers complete end-to-end process lines, especially in the food industry, but also in the other critical industries mentioned above. SEW has a long, close and engineering-driven relationship with Axtel, and we are happy to have been able to contribute to their steady development as a preferred, trusted and reputed company in the field. This story looks at a specialised product from SEW's vast range that was able to solve a specific problem in an agitator.

The product story carries on from the customer story by taking a closer look

at the specialised 'EBD' agitator gear motor that was able to solve the Axtel problem.

One of the key drivers for the manufacturing industry, as a fallout of the pandemic, is going to be a renewed push towards automation, especially the automation of material handling and movement, but done in a way that is intelligent, self-diagnostic, system integrated and highly flexible. SEW has been moving precisely in this direction of automation, and our feature article highlights how we have achieved this in our new, state-of-the-art, Industrie 4.0 factory in Graben-Neudorf, Germany.

I wish you happy reading!



M J Abraham
Managing Director, SEW-EURODRIVE India

SEW gear unit with agitator design offers just-right answer to Axtel.



SEW-EURODRIVE recently developed an innovative drive system for Axtel Industries Ltd. (www.axtelindia.com) for their range of Vertical Single Shaft Mixers. SEW's new Agitator Design Gear Unit portfolio has found numerous applications across industries. This standard gear unit in SEW's special agitator design helps Axtel with mixing and blending.

Axtel is a leading supplier of complete process plants and individual equipment spanning various requirements in the food processing value chain—from handling raw ingredients to the final stages of processing. The company caters to a wide variety of industries that include confectionary, spices, condiments and seasonings, instant mixes, snack foods, aqua feed and several more. The engineering teams at Axtel and SEW-EURODRIVE worked hand in hand to understand the limitations with the standard gear unit and install the new unit in under eighteen months.

A challenge and a solution.

Axtel's designers had specific problems with the standard main geared motor at the top of the vertical mixer wherein it was subjected to unbalanced radial forces during rotation of the mixing tool, causing it to move in a horizontal plane. Axtel then approached us for an improvement over their traditional design. The mixer has three main components: the mixing tool, the extended bearing housing and the main geared motor with the hollow shaft. SEW engineers suspected that the centre lines of the three components weren't collinear.

The solution to this was a gear unit with an integrated extended bearing hub, which is

precisely what the standard gear unit in SEW's special agitator design is able to offer. This unit comes with an option of a Dry Well design, which ensures no oil leakage from the gearbox.

The original EBD (Extended Bearing housing) was removed, ensuring collinearity of centre lines between the mixing tool and the gear hollow shaft.

The application.

- Ideal for mixing dry, moist, and viscous materials at variable filling levels in a short mixing time.
- Spiral mixing blade initiates a 3-D flow of powder, creating helical upward movement on the periphery and downward flow in the centre. This enables excellent mixing results and

complete discharge.

- Can be designed to comply with FDA and 3-A Sanitary Standards for use as sterile mixer and reactor which meets EHEDG requirements.
- If mixing process needs deagglomeration, hi-speed refiners (cutting rotors) can be installed. Once deagglomerated, the powders can then be dispersed evenly into a homogeneous mix.

Benefits of the SEW solution.

- Reduced vertical height of mixer.
- Dry Well design on output side blocks oil from reaching seals and are designed to guard against seals from leaking and contaminating the mixing medium.
- Unit has larger output bearing span as compared to the standard gear unit, and hence better radial load handling capacity.
- Two taper greasing nipples for relubrication of output bearing.
- Inbuilt oil leak sensor.

"We have had a long, close association with the SEW team and we value their engineering expertise. This development is yet another example of how the Axtel and SEW teams were able to work together to come up with a precise solution for vertical mixers."

-- Ajay Parikh
Executive Director, Axtel Industries Ltd.

SEW's Agitator Design Gear Units.

- All gear units in agitator design are equipped with an extended bearing hub specifically optimized for use in mixers and agitators.
- Using three proven standard gear unit series - R / K / F - Now made available in the new agitator design.
- Applications: Blenders, mixers, agitators, kneaders & surface aerators.
- Areas: Food & beverage, recycling & environmental technology, paper, cellulose & wastewater industries.



Read more about SEW's Agitator Design Gear Units in our product article on the next page.

SEW's optimized, more economical gear technology finds many takers.

The new and special agitator design from SEW-EURODRIVE goes into three successful and widely used R/F/K standard gear unit series. These cover almost every application for a variety of industries, ranging from biotechnology to pharmaceutical, chemical, food and beverage to recycling, environmental technology, paper, cellulose, wastewater, and many others. The agitator design is perfect for use in mixers, industrial agitators and heavy-duty mixers, multiple paddle mixers and surface aerators, as well as in kneading machines.

For the helical gear units from SEWEURODRIVE, the RM.. series has long been available as a variant for mixer and agitator applications. The two FM../FAM.. series, available as parallel-shaft helical units, and the KM../KAM.. series, available as helical-bevel units, have now been added to the portfolio.

AGITATOR DESIGN GEAR UNITS



The next level of optimization.

The agitator shafts with the mixing element can now be inserted straight into the hollow drive shafts. In most cases, additional bearings can also be done away with.

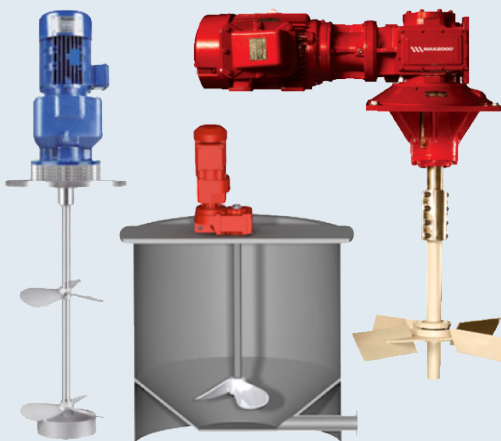
Overview.

- Permissible overhung loads: 25,000 N – 1,76,500 N.
- Motors for sizes ranging in power: 0.12 kW – 90 kW.
- Maximum permitted gear unit output torque: 820 Nm – 18,000 Nm.

One technology, many options.

The agitator design from SEW-EURODRIVE offers the following options to its users:

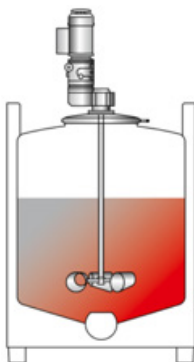
- Doubled output sealing.
- Reinforced bearing on the B-side to increase overhung load for high speed applications (gear units with small ratios).
- Local lubrication for shaft end bearings.
- Dry Well design as an option – prevents product from being contaminated by leaking lubricant.
- Housing material GGG40 for increased dynamic overhung load.



Sizes and versions available.

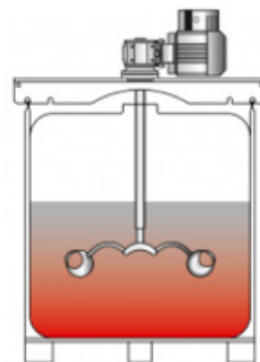
Parallel shaft design:

- FAM67 – FAM157 (hollow shaft).
- FM67 – FM157 (solid shaft).



Right-angled shaft design:

- KAM67 – KAM157 (hollow shaft).
- KM67 – KM157 (solid shaft).



Advantages of the agitator design.

- Safe operation, thanks to high permitted overhung loads.
- No additional bearing required for agitator shaft; structural simplicity and greater economy.
- Versatile combination options; shaft & flange dimensions compatible with standard market dimensions.
- Many options, design variants available, enabling greater flexibility and customization.
- SEW-EURODRIVE Service expertise.

**JUST
KIDDING**



A glass, a glass and a glass.

Optimist: The glass is half full.

Pessimist: Nope. If you notice, the glass is half empty.

Engineer: Correction guys. The glass is twice the size it needs to be.

Technology enables social distancing at SEW's Graben-Neudorf smart factory.

The world is in the grip of a pandemic, and our survival depends on how well we adapt. Particularly in factories, it is a steep challenge to adhere to the norms of social distancing because workers are often forced to come together and cooperate at close quarters. This is where SEW-EURODRIVE's Graben-Neudorf smart factory shows the way, with smart processes, intelligent assistance systems and mobile robots.



A pioneer in Industry 4.0, the Graben-Neudorf factory converts the production and assembly areas into a cyber-physical production system. This takes the groundwork off the employees' shoulders. They turn instead into vital architects who link the steps in an automated process. The system thus creates a human-technology collaboration that does away with the need for people to work in close proximities.

Based on the Lean philosophy.

The production and logistics concept at the Graben-Neudorf factory is based on the Lean philosophy. Here an efficient overall process is achieved by interconnecting individual production and assembly steps. This leads to a quantifiable betterment of production time, productivity and, consequently, a competitive production area with improved delivery and throughput times. Intelligent information exchange across interfaces enables monitoring of the complete value-chain process, *from customer order to customer delivery*.

Simulated and real routes.

Simulations allow the routes of mobile assistance systems to be tested and optimized until they deliver the best results. Then, a few clicks transfer them to real systems and controllers. The assistance systems are guided in different ways—inductively, via sensors, or automatically via the laser SLAM process. Assistance systems can be deployed with a high level of flexibility, depending on the guidance system.

Cyber-physical systems.

SEW-EURODRIVE uses different assistance systems for the cyber-physical production system at the Graben-Neudorf plant.

1. Logistics assistants: These are used for material delivery. They route themselves automatically through production and logistics areas.

Product for logistics assistants.

MAXOLUTION® Logistics Assistants.

Benefits.

- Safe autonomous travel to destination, thanks to swarm intelligence with which the assistants move freely within spaces in perfect coordination with other vehicles.
- Smooth process sequence thanks to navigation, positioning and communication technology.
- Fast, wear-free travel via MOVITRANS® contactless inductive energy transmission; usable as line cable and for point charging.

2. Assembly assistants: These are used in the assembly cells to assist machinists by adapting to the heights they are working at, or by carrying vital information to be provided to them at appropriate times.

Product for assembly assistants.

MAXOLUTION® assembly.

Benefits.

- Intelligent workbench that enables safe working directly on assistant.
- Smooth process sequence thanks to navigation, positioning and communication technologies.
- Fast, wear-free travel via MOVITRANS® contactless inductive energy transmission; usable as line cable and for point charging.

3. Logistics capsules: SEW-EURODRIVE's logistics capsules will possibly be used by all factories in the future. Apart from the components to be installed, these hold information on their content and place of delivery. They travel autonomously throughout factory premises and find vehicles for loading.

Product for logistics capsules.

MAXOLUTION® Logistics Capsule
MAXO-MS-CA015 for up to 1,350 kg payload.

Benefits.

- Robotic gripper arms take over physically strenuous parts of the procedure.
- Integrates cutting-edge technology for location, navigation and communications, making process sequences smooth.
- MOVITRANS® contactless energy transfer system operates by induction; usable as line cable and for intermittent point charging.

4. Mobile handling assistants: These are for routine factory tasks. They automatically process tasks in the production and assembly areas, assisting workers. These are currently in use for assembling lathes and milling machines.

Product for handling assistants.

MAXOLUTION® handling assistant
MAXO-MS-LA001 for up to 10 kg payload.

Benefits.

- Integrated robot gripper arms relieve workers off physically strenuous work steps.
- Navigation, positioning and communication technologies smoothen process sequence.
- MOVITRANS® contactless inductive energy transmission.

Reader Quiz

Please answer the following questions for a chance to win Amazon gift vouchers! Just send an email with the question number along with the correct answer (e.g Q1. - a) to marketing@seweurodriveindia.com. Please include your full name, designation and company working for.

Winners will be chosen through a lucky draw and the lucky winners will each get an Amazon gift voucher worth ₹1,000.

We thank all readers who participated in our previous quiz and hope for your continued support! We also hope you enjoyed your voucher.

1. Which one of these is a key benefit of the gear unit with agitator design that SEW installed at Axtel?

- a) Reduced vertical height of mixer
- b) Inbuilt oil leak sensor
- c) Dry well design on output side
- d) All of the above

2. The permissible overhung loads for the SEW Agitator Design Gear Unit comes in the range:

- a) 25,000 N – 1,76,500 N
- b) 3,00,000 N – 4,00,000 N
- c) 5,000 N – 15,500 N
- d) None of the above

3. What are the advantages of the SEW Agitator Design Gear Unit?

- a) Safe operation
- b) Shaft & flange dimensions compatible with standard market dimensions
- c) SEW-EURODRIVE's service expertise
- d) All of the above

4. Which of the following would you NOT find at SEW-EURODRIVE's Graben-Neudorf smart factory?

- a) Mobile robots
- b) Intelligent assistance systems
- c) Standard assembly lines with only manual labor
- d) Smart processes

5. Which of the following is a key feature of SEW-EURODRIVE's Graben-Neudorf smart factory?

- a) Cyber physical production systems
- b) Improved productivity and throughput times
- c) Simulations for testing and optimizing routes
- d) All of the above

Last date for receiving responses: 30th August 2020.