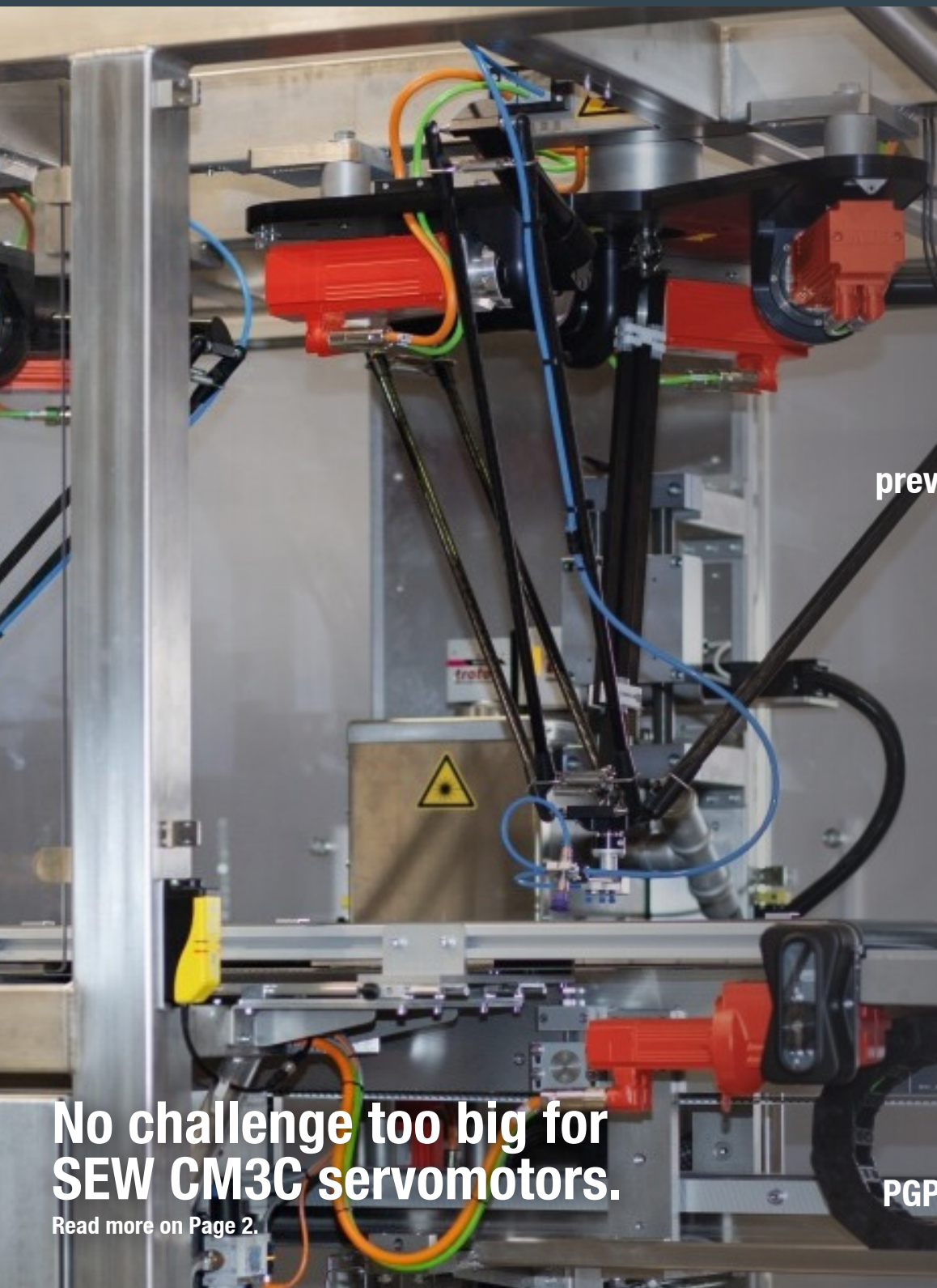


**SEW**  
**EURODRIVE**

# Drive india

*The SEW-EURODRIVE Customer Magazine*



**No challenge too big for  
SEW CM3C servomotors.**

Read more on Page 2.



**Alkesh Mistry on  
the ups and ups of  
preventive maintenance.**

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**Energy saving  
MOVIGEAR® puts  
PGP Glass on fast track.**

Read more on Page 1.

Dear Reader

Demand from the market for our products and solutions in India continues to be strong. On our standard range of products, constituting 70% of our sales value, where we assemble and supply from our three plants in Vadodara, Chennai and Pune, we maintain our best-in-class delivery performance. We have achieved this by almost doubling our stock levels to iron out the uncertainties in supply chain that everyone in the industry is facing. However, for non-stock items where we are dependent on deliveries from our global production plants, the situation continues to be very challenging. This is especially true for electronic components and products, and unfortunately there is no clarity as to when these issues will be sorted out.

SEW's top-of-the-line offering for fixed conveyor applications is the decentralised MOVIGEAR® solution, which delivers a host of benefits over the traditional architecture of standard gearmotors controlled through lengthy, labour-intensive cabling by panel-based inverters. Our customer story looks at PGP Glass, a Vadodara-based manufacturer of glass bottles. On their shop-floor we retrofitted an existing traditional conveying line with MOVIGEAR® technology, and the article details the energy saving, maintenance, noise level and ease of operation benefits

that accrued to the customer as a consequence.

As servomotors become ever more important in industry as the driving force behind fast and precise motion control, we feature SEW's newly launched CM3C range of synchronous servomotors with significant improvements in standstill torque and reduction in size and weight compared to our previous CM/CMPZ series.

Best-in-class service support is a crucial part of our value proposition, and with the range of products and industry applications that SEW products are present in, experience is of paramount importance here. In our feature story we have an interview with Alkesh Mistry, who has headed our Mechanical and Mechatronic Service vertical for two decades.

I wish you happy reading!



M J Abraham

Managing Director, SEW-EURODRIVE India

# SEW's MOVIGEAR® technology puts PGP Glass on fast track.



SEW-EURODRIVE recently set up an energy efficient application at PGP Glass that significantly improved the customer's assembly line and can easily be adapted for different industry requirements.

PGP Glass Private Limited is primarily into the manufacture of glass bottles for a variety of applications in the food and pharmaceutical industries. The application, which uses SEW's MOVIGEAR® technology, is a 30-32-meter-long conveyor where 350 to 400 bottles can be conveyed per minute. The application translated into significant reduction in energy and maintenance costs, besides reducing inventory and operating noise.

## Problems with the conventional system.

Before the SEW-EURODRIVE application, the engineers at PGP Glass were facing multiple issues with their existing system: several geared motors of different ratios, with their respective VFDs installed in a panel, with a bundle of cables routed to the geared motors. This led to issues of higher power consumption, decreased production and the need for regular maintenance. There were several drawbacks:

- Frequent oil leakage.
- Heating of motor.
- Winding damage of motor & oil seal rupture in gearbox.
- Need for speed variation for every VFD.
- Difficulty in analysing cable faults.
- VFD failures & poor control pattern leading to loss of production.
- Loss of efficiency & compromised end-product quality.

## Discussions, challenges.

The engineering teams of SEW and PGP Glass worked hand-in-hand to find a solution to these problems. SEW-EURODRIVE's MOVIGEAR® technology has been developed for exactly such applications and brings significant energy savings. The key challenge was to calculate the actual load in the working line, and to reduce the variants from eight different ones to only two. Another hurdle lay

in matching the different speeds of the geared motors, to select a speed range for MOVIGEAR®, so as to maintain the same torque requirement.

## The solution.

SEW engineers suggested MOVIGEAR® SNI technology (single line network concept), where many cables would be reduced to a single cable, and the individual VFDs would be removed, with the panel being replaced by SEW MOVIFIT® FDC. Considering the challenges, MOVIGEAR® SNI was the perfect fit, as it gives a speed variation of 200-2000 rpm with constant torque, has just one cable for energy and information transfer, with zero risk of hidden faults along the cable. It also meant simplified system planning and design, with a single controller for all eight MOVIGEAR®, with the HMI making a single point contact with all of them.

Torque speed curves and other technical parameters were discussed with the PGP Glass maintenance team. A trial was conducted onsite, and it was ensured that the retrofit solution would cater to all the technical requirements the earlier system was providing.

## Benefits galore.

SEW-EURODRIVE's new conveyor application offers PGP Glass several benefits:

- 50-70% energy savings compared to conventional motors.
- Zero maintenance.
- Simplified mechanism.
- Reduction in variants; common inventory reduced.
- One controller, one cable solution.
- Reduced noise.
- Easier implementation of synchronous operation due to group drive configuration.
- High on reliability, smooth operation.

## Another satisfied customer.

PGP Glass is very happy with the SEW-EURODRIVE conveyor solution. Thanks to satisfactory machine performance, the same system is likely to be implemented for upcoming projects as well, promising value in terms of energy savings and better performance.

*"We installed SEW's MOVIGEAR® system in our new line for automation and energy saving. We find it reliable, user-friendly, and zero-maintenance. We saved energy up to 50%-70% compared to the conventional drive system, thanks to the seamless interplay between the IE4 efficiency class motor, efficient gear unit, and integrated electronics. Moreover, combining power and communication in one cable minimises installation cost. Complete component integration and compact design reduce installation space without compromising on performance."*

- Rakesh Budhiraja, AGM-Cold End Maintenance Head, PGP Glass Pvt. Ltd., Kosamba

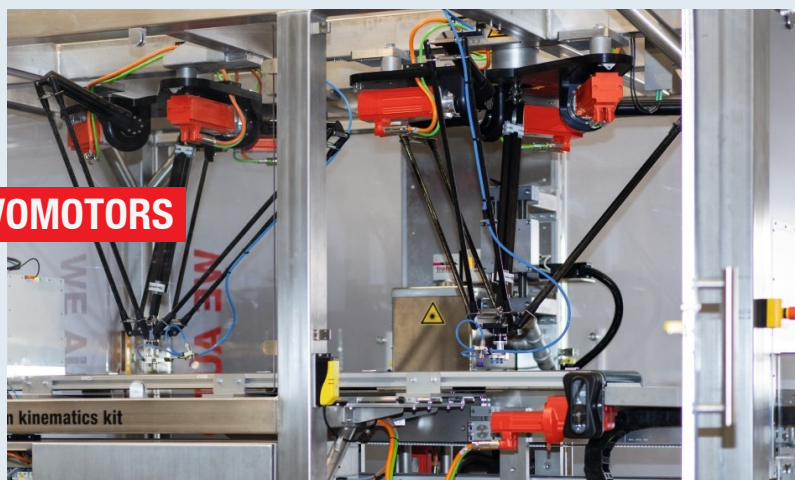


# SEW's dynamic, precise servomotors take automation challenges head-on.

When heavy external loads need to be moved rapidly, with high accelerations, and positioned with precision, servomotors that are extremely dynamic, precise and high on performance become essential. SEW-EURODRIVE's new generation of high performance motors are designed to meet these challenges head-on. The CM3C platform of servomotors is an optimization of SEW's own earlier generation of CM/CMPZ series. In the CM3C.. series, dynamics and power are rolled into one compact design. Catering to a power range of 7.5 to 115.5 Nm, this series is perfect for applications in which heavy loads need to be moved quickly, safely, and accurately.

Available in four sizes, with each size featuring three options of length, the CM3C synchronous servomotors are scalable drive solutions that are also highly flexible.

## CM3C SERVOMOTORS



### Wide range of applications.

The SEW-EURODRIVE CM3C.. series is suited for use in:

- Heavy-duty gantries.
- Cartesian robots.
- Palletizers.
- Deep drawing and forming machines.
- Dynamic removal and loading units.
- Machine tools.
- Hoist applications.
- Materials handling technology with heavy external loads.

### What makes it unique.

The new servomotor series can take on requirements its predecessors could not, because of its unique features.

- Rapid acceleration and precise control of high external loads, thanks to adjusted rotor inertia.
- Capacity for high integration in different machine and system concepts, owing to a wide selection of encoder interfaces:
  - Resolver
  - HIPERFACE®
  - MOVILINK® DDI
  - Hiperface DSL (on request)
  - EnDat2.2 (on request)
- Hygiene-friendly design makes it especially suitable for use in the food industry.

### Technology overview.

	Size 63*	Size 71*	Size 80*	Size 100*
$M_0$ Nm	2.7 – 6.4	6.5 – 14	10.5 – 22.8	19 – 40
$M_{pk}$ Nm	8.1 – 19.2	19.5 – 42	31.5 – 68.4	57 – 120
Edge dimension in mm	88	116	138	163
Speed in min <sup>-1</sup>	3 k / 4.5 k / 6 k	2 k / 3 k / 4.5 k / 6 k	2 k / 3 k / 4.5 k / 6 k	2 k / 3 k / 4.5 k

\*Each size available in three lengths: S, M and L.

- BZ spring-loaded brake with increased working capacity enables optimum braking system for hoist applications.

### When compared to CM/CMPZ series.

The new servomotor series is significantly better than the previous generation on several key parameters:

- Continuous standstill torque increased by up to: +30 %.
- Weight reduction by up to: -30 %.
- Length reduction by up to: -30 %.

### Benefits of the CM3C.. series.

- Compact design; minimal installation space.
- Spring-loaded brake with enhanced working capacity enables safe deceleration of even heavy loads.
- MOVILINK® DDI single-cable technology-- economical installation outlay.
- High flexibility, optimum drive selection thanks to the unique SEW-EURODRIVE modular

garmotor system.

- Electronic nameplate for fast, reliable start-up with autotuning.
- Many market-standard encoder interfaces enable use on third-party FIs.
- Open to global markets, thanks to international certificates and approvals (UL, CSA; EAC, ATEX, etc.).



We just want to thank you and your team for arranging such a wonderful and learning-filled session on Geared Motors.

The training was absolutely superb and I genuinely enjoyed each and every moment of it. The content was extremely informative and incredibly useful. I have attended several trainings before, but I can't recall any of them having such a strong impact. You have done a wonderful job and I appreciate your efforts.

I would love to attend future training organized or featured by you.

-- A satisfied customer of an engineering company



## SEW's service arm: upping productivity and preventing failures.

*DriveIndia catches up with Alkesh Mistry, Manager, Service for Gearmotors & Mechatronics products at SEW India, for thought provoking insights on how value-added services can benefit customers in the era of Industry 4.0.*

**Firstly, could you give a brief background about yourself and your role at SEW?**

I am an electrical engineer. I started my career with the tyre industry twenty years ago. I worked in the electrical maintenance department only for a year, but I think that was a great beginning for my technical career. I was selected in SEW in the year 2002, which means I will complete twenty years next year. Currently I am working as Manager – aftersales service for our Gearmotor and Mechatronics products. I am proud to be a part of the SEW India family.

**You have several distinct responsibilities as part of your role. Could you explain briefly what each one entails?**

I am in-charge of maintaining a strong pan India service network, in order to ensure the fastest possible response and closure of service cases and warranty claims in the shortest time possible. I work as an extended arm to our core sales and SEU team, to contribute to the continuous growth of the service business.

My team provides value-added services to our customers: health checkups, AMCs, condition monitoring and training to customers' maintenance staff, etc..

These apart, I do the in-depth analysis of product and application related failures, and submit RCFA (Root Cause Failure Analysis) reports with further recommendations and solutions.

I take care of the enhancement of skill and competency level of our field and central service staff, by imparting various trainings as a part of knowledge management. As well as the continuous development of our repair centers across India, to provide quick and quality in-house service to customers.

I am required to act in accordance with our internal QMS and ISO 9001:2015 standards for customer service.

**How large is your team and in how many locations? What are some of the challenges of managing a pan-India team of engineers?**

In my team we have seventeen members who work at our repair centers, which includes the three repair centers inside our plants located at Por, Sriperumbudur and Chakan, and two regional repair centers at Gurgaon and Bhilai. We have fourteen engineers handling field service (three in the northern region, two eastern, four in the western region and five southern); all together we are a 32-member strong team, including me. With an average of eight years of experience working with SEW, we cover the whole of India. In a nutshell, we are a strong network and an experienced team.

Coming to your second question, we have robust service processes and policies in place, which tackle all major challenges. Of course, some challenges demand more from us; sometimes arranging service resource and components during breakdowns

becomes a challenge. Last year 12% of our total field visits pan-India were for proactive services, making the alignment of these requirements alongside our regular support visits a challenge. Industry demand is different across the country, and varies from region to region. This makes the team ready to also face this by building competency, so that they can deliver results as per SEW Global standards. This is also one of the challenges.

**How is the whole approach to plant maintenance changing? What are some of the latest trends here?**

At the beginning of my career, about twenty years ago, back maintenance was mostly a reactive approach – that means, a machine is operated until it breaks down. Complete maintenance staff would be working literally for 2-3 shifts to put the machine back into operation, causing a lot of production loss. During these two decades everyone (myself included), who was dealing with machines, realized the importance of preventive maintenance, with fixed maintenance dates, in order to guarantee availability. But this most often led to unwanted maintenance.

A solution to this evolved in the form of preventive maintenance, which helps to predict when a fault event will occur based on the measurement and analysis of data, enabling planning in accordance. This involves higher costs, as it requires deeper analysis and specific skill sets. The answer to this is proactive maintenance, where the reason for a machine fault is determined and its cause can be eliminated based on the results of analysis. This is the latest trend.

Industry 4.0 necessitates machine availability when needed. With continuous monitoring of machine parameters through sensors, and collection of data that we previously couldn't access, it has become easier to predict when a failure will happen. We have the opportunity to make this transition that makes IIoT (Industrial Internet of Things) an exciting factor for maintenance technology. We have products to offer our customers and our SEU team is happy to answer any queries on this.

**Tell us about some of the latest service offerings from SEW and how they would help customers?**

There are three broad categories of services that we offer our customers:

- We offer services throughout the entire system life cycle, known as Life Cycle Services (LCS). LCS offers support to customers from our service experts in inventory management for critical spares, and professional training to customers' maintenance staff, wherein we provide both readymade and customized training packages designed by our expert trainers. Furthermore, we provide installation and startup consulting for flawless electrical and mechanical installation and startup of drive technology.

- We also offer customers various proactive services, like annual maintenance contracts and health checkups, which are periodic maintenance services from our SEW service engineers using our

unique gadgets and measuring instruments. Many of our satisfied customers are already using these services, which are helping them avoid major breakdowns and reducing the overall cost of maintenance, resulting in much better productivity.

- We are also offering drive modernization services, which we call retrofit, as well as CDM maintenance management.

**Do you have any advice for our customers that would help them keep their plants running smoothly and without downtime?**

Make the best use of our Life Cycle Services concepts, which are tailored to meet the needs of our esteemed customers by helping prevent unscheduled production downtimes, getting the complete service from one source, availing periodic checkup of their critical units, and ensuring long and trouble-free product life. We have a dedicated SEU team too, to locally support our customers all over India.

**Tell us about a couple of examples where a customer really benefitted from your team's expertise?**

One of our customers, a salt manufacturing company, had a breakdown in one of their very critical machines. They were struggling to meet production targets, and that too during stricter COVID lockdown times. They were in need of components and service support. We were able to provide them this support, much to their satisfaction, which in turn helped them supply salt during times of scarcity.

Last year we executed an interesting case study on motor stator failures related to IVC (Impulse Voltage Insulation Class) of induction motors, due to three phase voltage peaks. Variable Frequency Drives (VFDs) are commonly used to control the speed of standard AC induction motors. VFDs can sometimes contribute to the degradation of the motor's stator, if operated along with various influencing factors. This is unique and not known to end-users and OEMs. Once there was a failure, and after long analyses, using specialty diagnostics equipment, we were able to identify an inverter harmonics issue. We took up the job of improvement and protection arrangements, and now they are in operation without any further difficulties.

During the last couple of years, classroom training was not possible. Customers wanted to train their maintenance staff through online sessions, which we successfully carried out. Our customers really appreciated this.

**Tell us one thing that you really love about your job?**

Every new day comes with a new opportunity to learn something unique. Failures create paths to search for new solutions. Once we offer a solution and a machine starts working without any further issues, the sense of satisfaction we see on our customer's face gives us truly unmatched satisfaction. As I mentioned earlier, I worked in maintenance in a continuous process plant which was designed to operate 24x7. So I can very well understand the breakdown pressure on maintenance staff.

"Industry 4.0 necessitates machine availability when needed. With continuous monitoring of machine parameters through sensors, and collection of data that we previously couldn't access, it has become easier to predict when a failure will happen."