

**SEW  
EURODRIVE**

# **Drive** **India**

*The SEW-EURODRIVE Customer Magazine*

**“Innovation need  
of the hour”**

Interview with Frank Höreth, Page 3.





### Dear Reader

The financial year that just closed was a challenging one for most of us in the Engineering Industry, following on from two difficult years before that. SEW has more than a thousand customers across the country and one of the great things about my job is that I can spend time with so many wonderful people from so many different industries.

I see again and again how so many of our customers, without much help from their existing markets, are making growth "Happen" by getting into new products and services, new industries and new geographies. I see also a clear understanding that "business as usual" is not an option even for maintaining profit margins. Every year the customer needs more value for what he buys and every year what is made and given needs to be done more efficiently and more productively.

We at SEW have structured our business around these two key drivers. Year on year the share of our business that comes from services and value-added solutions is increasing, and year on year we add products and resources that are targeted at the specific needs of our customers in India, wherever you may be.

In this issue of DriveIndia we highlight a solution we have developed for a specific problem area in the cement industry that is now gaining wide acceptance. We also talk about our new DRN series of motors that have been developed to meet the EU requirement for IE3 energy efficiency that has come into force from the beginning of 2015. Last but not the least, we have an interview with Frank Hoereth, our Global Head for the Solution Business.

I wish you happy reading, and do feel free to contact us if there is anything that attracts your interest.

**M J Abraham**  
Managing Director  
SEW-EURODRIVE India

## Building a trusted relationship with the cement industry, foundation up.

SEW-EURODRIVE has partnered with prestigious names in the cement industry – such as Lafarge, Ambuja and UltraTech – to create and install upgraded Long Travel Limestone/Coal Reclaimers at customer factories. SEW is now poised to extend the solution to other players in the cement industry, with customization, technological collaboration and reliable after-sales support as the hallmarks of both ongoing and future partnerships.

Every cement plant above 2.5 MTPA production capacity would require two Limestone Reclaimers and one Stacker, or one circular Stacker-cum-Reclaimer for smooth feeding of raw materials into the plant. Limestone from mines are first crushed and then stacked in a long or circular big yard. These are subsequently lifted through a mechanism that uses a Reclaimer. Limestone is finally mixed with other minerals like iron ore, gypsum dolomite, etc., before they are all together conveyed to the Silo. The mix is ground in a vertical rolling mill and then fed into the Kiln. The application plays a key role in any cement processing plant.

### Problems with conventional systems.

The systems that were in use before this up-gradation had several problems:

- Two different motors were used for slow & fast mode operations. For slow mode, magnetic clutch & coupling arrangement was used for power transmission, which was difficult to maintain.
- Frequent breakdowns in the DC drives system.
- Efficiency of worm gearbox was very less, at only around 60 to 65%, with very high reduction ratio.
- Main worm gearbox absolute and internal parts were not available and the input shaft and pinion frequently failed. As did the chain sprocket/clutch.
- Large inventories needed.
- Huge production losses.

### Working in partnership with customers.

In 2007-08, SEW Raipur developed a retrofit application for the first time in India. The application was installed at Ambuja Cement Raipur, at a time when most cement plants were unaware of this up-gradation of Reclaimer technology. The application was an instant success, and SEW subsequently got repeat orders from Ambuja, as well as new orders from UltraTech and Lafarge Cement. SEW's team partnered with the technical teams of each of these customers and went on to develop expertise in both project planning and site commissioning.



### How SEW went about it.

The SEW Raipur team obtained the existing details of gearbox, DC Motor for fast mode & slow mode and DC drive operation details. Analysis showed that the old system was very complicated, with too many mechanical and electrical parts, like the chain sprocket, drum brake, taco-generator, base frame, DC drives & cards, etc.. SEW suggested that customers should opt for complete gear motor with brake, encoder, wheel shaft, and electrical control panel with drives.

SEW also extended on-site mechanical and D&A commissioning support to customers, and completed the retrofitting job with a trial run within the stipulated shutdown time limit. The entire operation is now mechanized and no site operator is required at the machine. It is now easily controlled from the Central Control Room.

### New system from SEW-EURODRIVE.

- **Motor:**  
SEW-make DRL motor.
- **AC drives:**  
MOVIDRIVE<sup>®</sup> with encoders & option cards.
- **Motor output rpm required:**  
Min 2 rpm; max 5 rpm.
- **Gearbox ratio:**  
170.
- **Gearbox output rpm:**  
Min 0.012 rpm; max 0.03 rpm.



### Advantages of the SEW upgraded system.

The SEW-EURODRIVE upgraded application enables smoother operations, significantly increased efficiency and reduced requirement for inventory and maintenance.

- Single motor for slow & fast mode requirement.
- Magnetic clutch arrangement removed as motor is directly attached to gearbox.

- At slow/fast speed electronic braking can be applied to Stop.
- SEW-make helical bevel gearbox replacement for worm gearbox, **resulting in increased efficiency of around 94 to 96%.**
- Less wear and tear of internals of gearbox.
- **Very less inventory & maintenance required**, resulting in higher productivity.

## A compact, light innovation to usher in a new age.

With greater awareness about environmental concerns and escalating costs, **energy efficiency** and **sustainability** have become increasingly important in re-engineering industry products. Presenting the new **DRN series IE3 Asynchronous Motors from SEW**: compact, high efficiency motors specifically designed to address these needs.

### IE3 Asynchronous Motors



### The background.

From January 1, 2015, all 2-, 4-, and 6-pole Asynchronous Motors with a power rating between 7.5 KW and 375 KW in the markets in the European Union, Switzerland and Turkey need to meet the requirements for energy efficiency class IE3. For the specified power range, with very few exceptions, Asynchronous Motors with less energy efficiency are not permissible anymore. By the start of Year 2017 the IE3 requirement will come into effect for all Asynchronous Motors with a power rating between 0.75 KW and 375 KW.

### The new DRN IE3 Asynchronous motors

SEW has developed an IE3 Motor that can take the place of the conventional IE2 Motor in a hassle-free manner, without posing fresh problems to users, such as higher costs or elaborate setting-up requirements.

The new **DRN IE3 Asynchronous Motors** are just as small, compact, and light as comparable IE2 motors of the DRE..series, and can be combined with the same gear units as the IE2 product line.

### Some clear advantages.

The unique modular concept for the **DRN IE3 Motors** comes with zero compromise, as seen from the following:

1. The entire brake portfolio is available for the new IE3 Asynchronous Motors of the DRN..series.
2. The unique built-in encoders and all known additional features are available as well.
3. The new IE3 product line is in conformity

with all worldwide design specifications and standards, e.g.: IEC 60034, NEMA MG1, CSA C22.2, ABNT, NCh 3086, and China (GB 18613).

4. The new IE3 Motors of the DRN..series meet worldwide efficiency regulations or standards, e.g.: VO 640/2009, MEPS 2006, GB 18613-2012, DoE 10 CFR Part 431 (NEMA MG1), EER2010 (CSA C390-10), and others.

### Technical data

Technical data	
Voltage range	All usual voltages
Frequency [Hz]	50, 60, 50/60
Power rating, 2-pole [KW]	0.75 – 9.2 in preparation Sizes DRN80M – DRN160M
Power rating, 4-pole [KW]	0.75 – 200/225 (1.0 – 300 hp) Sizes DRN80M – DRN315H
Power rating, 6-pole [KW]	0.75 – 7.5 in preparation Sizes DRN90S – DRN160M
Power rating, 8-pole [KW]	0.75 – 22 in preparation Sizes DRN100L – DRN225S

**THUS  
QUOTH**

Nature is the source of all true knowledge. She has her own logic, her own laws; she has no effect without cause nor invention without necessity.

-- **Leonardo da Vinci**  
Artist, inventor

## Indian Industrial Automation market all set for step change.

Indian companies must continue to come up with innovative, sustainable Automation solutions for both local and international markets, suggests **Frank Höreth**, global head of SEW's MAXOLUTION business, in an exclusive interview with **Drive India**.

*Firstly, could you tell us something about yourself and your role at SEW?*

My name is Frank Höreth. I am 50-years-old, married and I have a 16-year-old daughter.

I have been with SEW for almost 25 years. I started as an R&D engineer in the Motor Design Department, and have held various other positions in Application Engineering thereafter.

Since October 2012, I have been head of the newly created business unit MAXOLUTION, a dedicated Solution business with approximately 100 employees at the HQ.

*What are some of the big trends in Automation globally?*

Energy efficiency, stimulated through conditions such as increase of profit, rising energy costs, laws and regulations for climate protection and environmental awareness of consumers, is a key trend.

The trend to smaller quantities in industrial production, with greater variety and reduced innovation cycles for products, leads to an increasing demand for flexible intra-logistic systems. Essential elements for such flexible systems are complete modularization, including the control system, decentralized drives and installation, integrated HMI, functional safety and advanced communication technology. These, together with the mechanics and energy supply, form intelligent mechatronic modules, such as AGVs, conveyors and track switches.

*Which are the leading-edge countries or industries when it comes to Automation? What has been the driver for this?*

If we can narrow it down to the field of Factory Automation our company is focusing on, Automotive is one of the leading-edge industries. For their new factories and retrofit projects in existing factories this industry is demanding the latest Automation solutions for applications such as EMS (Electrified Monorail System) or skilnet lines, incorporating advanced communication and safety technology. Countries with the highest investments in Automotive factories until 2020 are China and Mexico.

The other and probably fastest growing industry from our point of view is the Transportation and Warehouse Logistics industry. Mega trends such as globalization, the development of mega cities and the trend toward smaller quantities in industrial production (individualization) are driving large investments in this field and require modern, highly flexible logistic concepts for goods transportation and storage.



*Given your experience, if you had to guess how Indian Industry is going to evolve over the next 3-5 years, what would you say? How does this compare with other developing economies like China?*

Looking at all BRIC countries, the Chinese market has developed by far the most dynamic, resulting in massive production capacities. Advanced Automation products have made inroads into Chinese manufacturing to achieve the highest level of quality and precision to compete on an international level. This trend is also supported by the rise of labour costs, demands for sustainable and eco-efficient production and the foreseen demographical change.

Chinese Automotive companies, for example, have already adopted advanced MAXOLUTION systems for their new factories.

Such a high level of Automation is currently not yet accepted in India and are thus not competitive. However, I strongly believe that this will change in the coming years, as our system solutions will become more competitive and easier to use.

I think that the Indian Industrial Automation market will also considerably grow in other areas such as Material Handling, Infrastructure, Pharmaceutical, Water & Waste Water, Process and Food & Beverage.

*What role does Automation play in a low-cost market like India? Will adoption be slow?*

The deployment of Automation in other countries has taken more than a hundred

years. While China has rapidly closed this gap, India in recent years has hugely trended as an export hub for various industries of many countries, while the required Automated machinery was only occasionally built locally.

In order to increase global competitiveness, Indian companies will have to continue investing in innovation and create ways to knit-together Automation solutions suitable for the local market as well as the world market. This will probably lead to a slower, but more sustainable adoption of Industrial Automation.

*Where does India fit into SEW's global plans? Are there any specific challenges in catering to the Indian market?*

At the time of starting with MAXOLUTION, Automotive was our focus industry. Most naturally, India was one of the markets of interest to us. At an early stage our Indian management committed to education and setting up of infrastructure for electronic products.

We want to be a technology ambassador that helps to successfully transform the Indian market with state-of-the-art, innovative system solutions. Our challenge, from a business unit MAXOLUTION point of view, is to have a more scalable portfolio of system solutions, meeting the requirements of a wider range of customers.

*What new innovations and applications can Indian customers expect from SEW in the near future?*

Having pointed to the scalability of our portfolio, we are going to bring a more competitive and easy-to-use EMS to market (EMS Basic), and are also looking at a basic Automation package for AGVs.

While these mainly focus on the Automotive industry, we are also working on a larger range of system solutions for the Transportation and Warehouse Logistics Industry, incorporating interesting new products and technologies.

*Work apart, what are some of the things that you look forward to when visiting India?*

During my visits I have always enjoyed the warm and friendly atmosphere here. Unfortunately, I have not yet had the opportunity to stay long enough to enjoy the other values of this country.