

SEW
EURODRIVE

Drive india

The SEW-EURODRIVE Customer Magazine



**Revolutionary new
solutions for the
battery industry.**

Read more on Page 1.



**SEW heralds the future of
automation at Hannover Messe.**

Read more on Page 3.

Dear Reader

The four months since our last issue has been an eventful period for us in India, with conflicting data points. Politically, we have clarity and stability with the Modi government returned to power with an even bigger majority. Economically, we have mixed signals with an accommodative RBI, but on the other hand an automotive industry (among others) generating double digit negative growth numbers not seen for a decade. The Indian machine builders by and large still have a positive order book with a few really bright spots like the chemical industry, but the availability of money is as tight as it has ever been, and the mood has darkened a bit over the last month. For us at SEW India, growth in our core gear-motor business is virtually flat, but the overall growth is still good because of exceptional growth from our other business verticals like automation and service.

Our customer story for this issue explains some of the background to this, highlighting a project we have done together with Amararaja, which is at a different level of complexity and system integration from anything SEW India has done by ourselves before. We are grateful that Amararaja has chosen us for this project, honored that we have been able to complete it to their full satisfaction, and delighted to receive the follow up contract from Amararaja

to extend the scope of what we have already done. At the human level when we automate an operation like acid filling and charging for battery manufacturing, we are improving the working conditions for shop-floor technicians.

Our product story features the next generation of our decentralized control products, the MOVI-C range, that offers even more advanced features for optimization, scalability and communication interfaces.

Continuing the theme of factory automation, our feature story looks at SEW's presence at the Hannover Messe in April 2019, where it came across pretty clearly that when it comes to Industrie 4.0 - SEW 'walks the talk'.

I wish you happy reading!



M J Abraham
Managing Director, SEW-EURODRIVE India

SEW-EURODRIVE revolutionizes process for India's leading battery maker.



Amara Raja Batteries Limited (ARBL) is one of India's leading battery manufacturers with an imposing industrial presence. The company recently approached SEW-EURODRIVE for technological upgradation of its Chittoor plant. The complete automation of ARBL's logistics process by SEW has set standards for industries to follow.

ARBL is the flagship company of the Amara Raja Group, a USD 1.2 billion conglomerate with 6 companies across 14 businesses. It exports automotive and industrial batteries to 32 countries. ARBL and SEW-EURODRIVE have an ongoing partnership that grows stronger year on year.

The task.

ARBL has ambitious plans for growth and capacity expansion, as well as setting new Industry 4.0 standards. With this in mind, they wished to automate the manufacturing process to make it more efficient as well as provide a safer environment to workers.

The application from SEW was required to provide the following:

- Battery tub handling and automation, from acid filling to charging up to washing the SBD-2 (Small Battery Division).
- Automated Guided Vehicle (AGV) for transportation of tubs.
- Specialized conveyor, stackers, lift and turntable for tub handling.
- Product tracking and big data handling.
- Complete automation of the logistics process.

A complex challenge well addressed.

The solution that came out of the partnership between the two teams is a first in the global battery industry, with some impressive specifications:

- AGV track length of 750 metres in phase one which has been completed successfully, going up to 3,300 metres once the project is complete. Five AGVs are already operational, with another four to be added, with an average velocity of 0.6 metres per second.
- Each acid filling station can handle approximately 6,000 batteries per day. The facility is designed to

handle around 66,000 batteries per day in total.

Designed in consultation with the ARBL project team, SEW was able to address the complete requirement of logistics, automation, data handling and MIS.

Tough problems, innovative solutions.

Problem: To reduce operator fatigue during manual handling of batteries from the filling conveyor to the skid.

SEW Solution: Innovative scissor lift with modular belt turntable conveyor.

Problem: To handle the empty skid and feed it to the filling machine operator, and to simultaneously get back the filled skid in order to reduce the tact time.

SEW Solution: Double row conveyor with integrated stacking system, to simultaneously handle empty skids and filled skids.

Problem: To pick the skid and drop into the rack in two levels.

SEW Solution: Customized AGV with scissor lift and telescopic fork arm.

A unique project.

The ARBL project was unique, in that during its course SEW implemented the following:

- Customised conveyor concept to increase operator efficiency.
- Customised AGV concept to improve logistic efficiency.
- Industry 4.0 Concept.

Benefits galore.

- Reduction in manpower requirement by 62%.
- Space requirement for complete process reduced by 51% when compared to previous set-up.
- Forklift usage minimized.
- 60% payback benefit in the first year of application.

Smooth implementation, seamless performance.

The SEW project for ARBL was completed by March 2019. The Chittoor plant runs seamlessly on the new SEW-EURODRIVE application, and with clear guidelines on maintenance and periodic check-up schedules, no major issues are anticipated in the mid and long terms. At present SEW is engaged in the second phase of the project.



'Gotta be a better way' is not just a tag line at Amara Raja, it is the way of life of our employees. Our engineers digitally automated the formation production process with a first in kind innovative idea, at no additional cost, in the Motor Cycle battery plant, which resulted in huge reductions in resources like water, electricity and manpower. I congratulate our engineers and the SEW team for executing such a wonderful job.

Mr. Jagan Mohan G
Head – Manufacturing operations,
Amara Raja Batteries Ltd.

New decentralized automation solutions redefine performance.

SEW-EURODRIVE's new decentralized drives and mechatronics, from its MOVI-C® modular automation system is the smart and futuristic solution to get things moving in decentralized

installations. Drive components in such installations need to bring together optimal efficiency, modularity and flexibility. MOVI-C® is specifically designed keeping these in mind. It also complies with energy efficiency class IE5 to IEC TS 60034-30-2 and offers unprecedented IES2 overall system efficiency to IEC 61800-9-2. Furthermore, it combines the advantages of a decentralized installation – helping save space and money – while retaining the modularity and flexibility of SEW's overall modular concept.

MOVI-C® MODULAR AUTOMATION SYSTEM



Many requirements. Two variants.



Two new decentralized drives from MOVI-C® offer ideal solutions for decentralized installations and system topologies:

- MOVIGEAR® performance – mechatronic drive system with electronics integrated in motor as standard.
- MOVIGEAR® classic – combination of mechatronic drive and electronics installed close to motor.

Benefits of Generation C Movigear® with PROFINET on board.

- Direct fieldbus connection; no gateway or FDC required.
- Master PLC can directly communicate with individual Movigear®.
- Higher speed range: From 1:10 to 1:40, which means much smaller speeds (eg: 1.3 rpm to 53.7 rpm) are now possible.
- Motor efficiency class - IE5, according to IEC60034.

MOVI-C® specs.

- Nominal connection voltage: 3 x 380 – 500 V.
- Covers a wide range of power ratings with performance class graduation.
- Suitable for TN / TT supply systems – IT supply systems after consultation.
- 4-quadrant capability due to integrated brake chopper.
- DC 24 V switched-mode power supply (integrated in standard delivery); external 24V supply possible.
- Flexible control mode for asynchronous and synchronous motors with or without encoder.
- Control mode: U / f; VFCPLUS, CFC; ELSM®.
- Functions: speed, torque and positioning control.
- Digital motor integration.
- 4 digital inputs, 2 configurable digital inputs / outputs.
- Simplified start-up and diagnostics, thanks to MOVIKIT® modules.
- Replaceable memory module (integrated) keeps device replacement simple.
- Increased energy efficiency due to integrated standby operation and flux optimization.
- Integrated STO PI e – safety function.

What makes MOVI-C® a solution par excellence?

The technology that goes into MOVI-C® makes it a solution of tomorrow. Indeed, it is the industry's best option to automate decentralized installations

for more reasons than one:

- **Consistent:** MOVI-C® decentralized electronics is part of the consistent MOVI-C® portfolio.
- **Connected:** It can be operated at many industrial communication systems.
- **Complete:** The MOVI-C® portfolio provides complete solutions for all applications. MOVI-C® Decentralized electronics extends the portfolio even further.
- **Scalable:** It can be tailored to actual needs and requirements through applying just the required options – not more.
- **Easy to use:** Commissioning and diagnosis are optimized to ensure that time is spent effectively. Supported by engineering software MOVISUITE®, keypads and MOVIKIT® software modules.



JUST KIDDING

A neutron walked into a bar and asked the price of a drink.
The bartender replied: "For you, no charge."



SEW-EURODRIVE brings the future of automation to world's biggest technology arena.



Hannover Messe, the world's biggest fair for industrial technology, showcased the latest in global engineering technologies between April 1 and 5, 2019 at Hannover, Germany. Among more than 6,150 exhibitors showcasing their products to over 2,10,000 visitors, the SEW-EURODRIVE stand was noteworthy for its futuristic automation technologies and solutions. SEW-EURODRIVE executed a real customer order, with real electric cars assembled to show how digitization and networking can transform production facilities.

By demonstrating futuristic technologies that make it easier for the manufacturing industry to adapt to changing customer habits, SEW-EURODRIVE is emerging as one of the chief drivers of digitization and Industry 4.0 in Germany, Europe and the world.

The future of automobile production.

In recent years the two big trends driving the automotive industry are the need for increased cutomisation and disruptive technological developments. Newer production requirements have emerged from rapid changes in customer usage habits and alternative mobility concepts. To meet these requirements, SEW-EURODRIVE has come up with the automotive industry-specific MAXOLUTION® solution.

MAXOLUTION® factory automation for automotive industry is a suite of innovative and customized options in mobile materials handling technology:

- Electrified monorail systems: help factory operators with easy startup and operation, enhanced safety and flexibility, low installation and operating costs, and maximum availability.
- Storage / retrieval systems: good reliability, high throughput, low maintenance outlay and significant energy savings.
- Automated guided vehicle systems (AGVs): help production managers make their assembly and manufacturing operations flexible and adaptable to meet future challenges.

Smart technologies for smart factories.

Hannover Messe also showcased SEW-EURODRIVE's intelligent, scalable services from its DriveRadar® portfolio for smart, networked factories. Users of these technologies can monitor and analyze simple electromechanical components, individual process steps or entire systems (condition monitoring). Consequently, users can make predictions about the status of their systems and plan maintenance (predictive maintenance), thus greatly enhancing their Overall Equipment Effectiveness (OEE).

DriveRadar® offers the tools for arriving at conclusions about status, wear and tear, and capacity utilization based on real data from the installed components / systems, guiding users to recommended courses of action.

A new version of a favorite gear unit series.

SEW-EURODRIVE also unveiled a new iteration of its widely used X series industrial gear unit, Generation X.e. The new version has optimised hardware and calculation processes, so that all specific customer demands can be met in all detail.

The key challenge from a customer point of view is that bespoke solutions are often not cost-effective, whereas optimized standard products don't adequately satisfy the

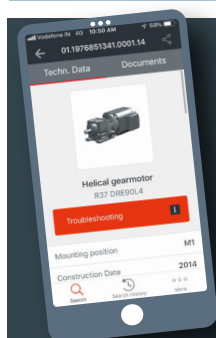
requirements of all customers. SEW has addressed this in its Generation X.e. Featuring both helical and helical-bevel gear unit designs, this series covers a torque range from 6.8 to 475 kNm.

And the world's finest audience.

The SEW-EURODRIVE stand at Hannover Messe was visited not just by an impressive number of engineers and technocrats from the world over. It also hosted delegations of government representatives from across the globe, including industry representatives and ambassadors from China, Japan, France, Kazakhstan and Mexico.



SEW brings convenience to customers' fingertips.



SEW-EURODRIVE has developed two cutting-edge mobile applications that are available for free download by any customer, both on Android and iOS. The first, Product ID Plus, gives technical information regarding a product by simply keying in the serial number (e.g. 01.1976851341.0001.14). Customers can access technical details about a given product and documents related to it. Details like the type of oil to be used for a particular serial number, the quantity of oil, voltage, current, mounting position, service factor, ratio and torque are now available literally at the customers' fingertips. It also allows customers to carry out troubleshooting and understand the basic cause of a problem.

The second app is Diagnostics. This is for the use of customers of SEW's electronic products. It enables them to learn about different errors and how to deal with them. The app, hence, provides basic diagnostics right on the customers' mobile phone.