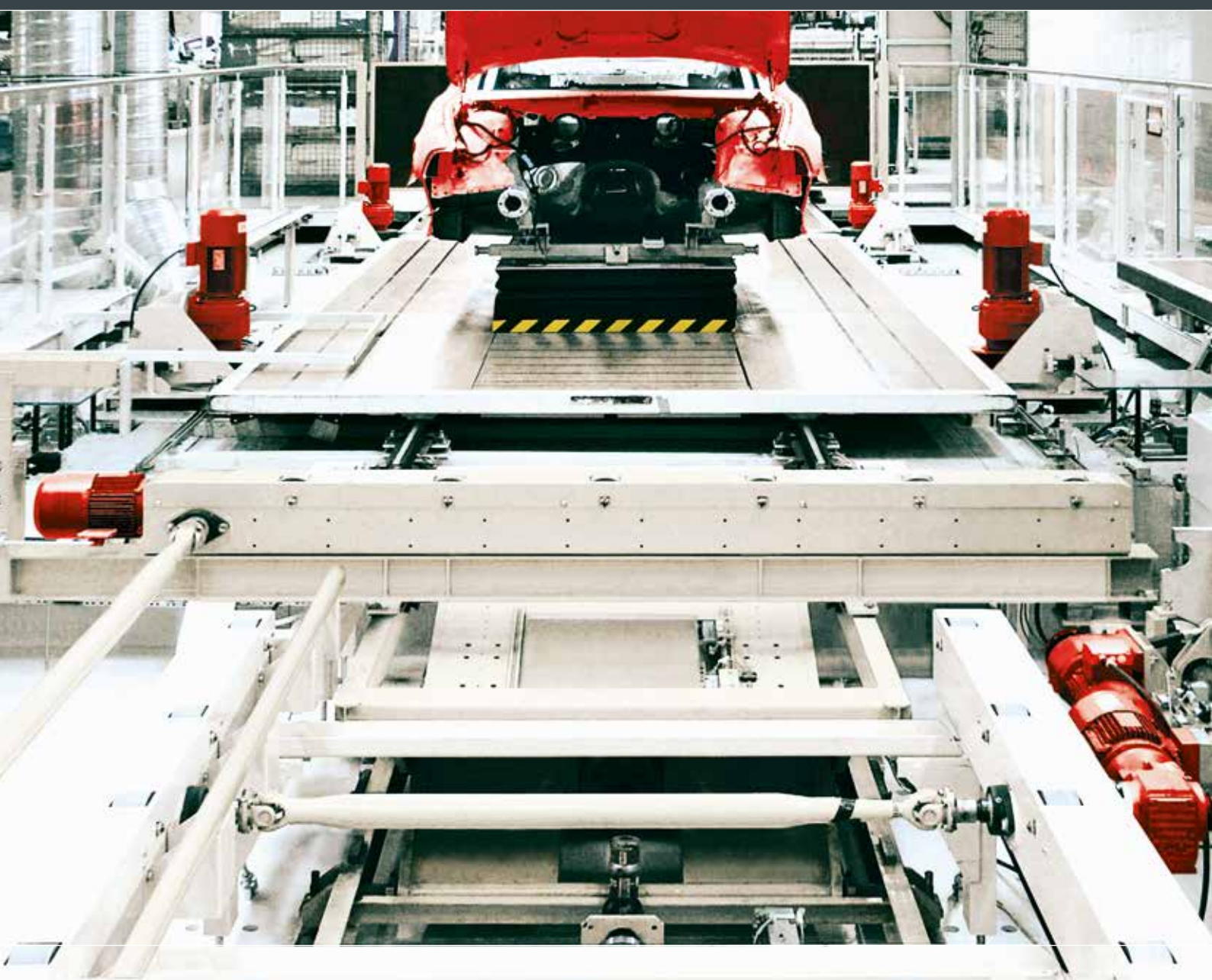


**Innovative drive and automation solutions
for the automotive industry**



Getting the automotive industry in motion

Production in the automotive industry is based on “just-in-time” (JIT) and “just-in-sequence” (JIS) processes for material provision and manufacturing. Just in time production cannot afford any downtimes. Each stop and each outage causes high follow-up costs. SEW-EURODRIVE aims at preventing such events in the first place. This is why the global player is working every day on expanding its extensive product and service portfolio for the automotive industry.

The key to a tangible competitive edge are innovative, safe, and energy-efficient concepts and products. From the comprehensive modular system of drive elements to the pre-defined packages to the individual MAXOLUTION® system solutions – SEW-EURODRIVE has the right components.

The drive specialist focuses on the topics “energy efficiency” and “safety technology” in particular with products specifically designed for this purpose. Its energy-efficient solutions make a sustainable contribution to meeting the European climate target of reducing CO₂ emissions by 20 to 25 per cent over the next ten years.

Drive technology “made by SEW-EURODRIVE” has played a vital role in ensuring smooth processes in the automotive production. SEW-EURODRIVE is a family-owned, internationally successful business with roughly 16,000

employees and sales of more than EUR 2.7 billion. With 77 Drive Technology Centers and 15 production plants in 51 countries, we make sure that the world keeps moving. And we’ve been doing that for over 85 years.

Visionary solutions from SEW-EURODRIVE for the automotive industry

SEW-EURODRIVE knows the processes in automobile production. Be it the press shop, body frame, motor plant, paint shop or final assembly – SEW-EURODRIVE offers individual and reliable automation solutions for every challenge. A few examples of application solutions from SEW-EURODRIVE for final assembly are presented below.

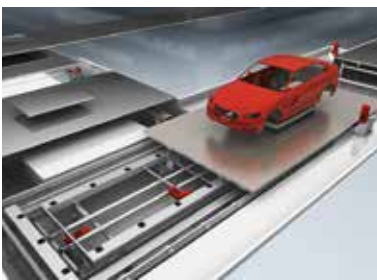


Materials handling technology ① ② ⑥

Modularity and careful use of resources are prerequisites for efficient materials handling. No trouble at all with drive technology from SEW-EURODRIVE. Be it simple conveyor tasks or complex conveyor systems, roller conveyors or SKID conveyor technology: The modular SEW-EURODRIVE materials handling technology system provides a perfect and efficient solution that can be flexibly adapted to individual requirements in any application.

SEW-EURODRIVE products for your application

- Mechatronic drive system MOVIGEAR®
- Decentralized drive controller MOVIFIT®
- The tried and tested SEW-EURODRIVE modular system
- MAXOLUTION® conveyor line

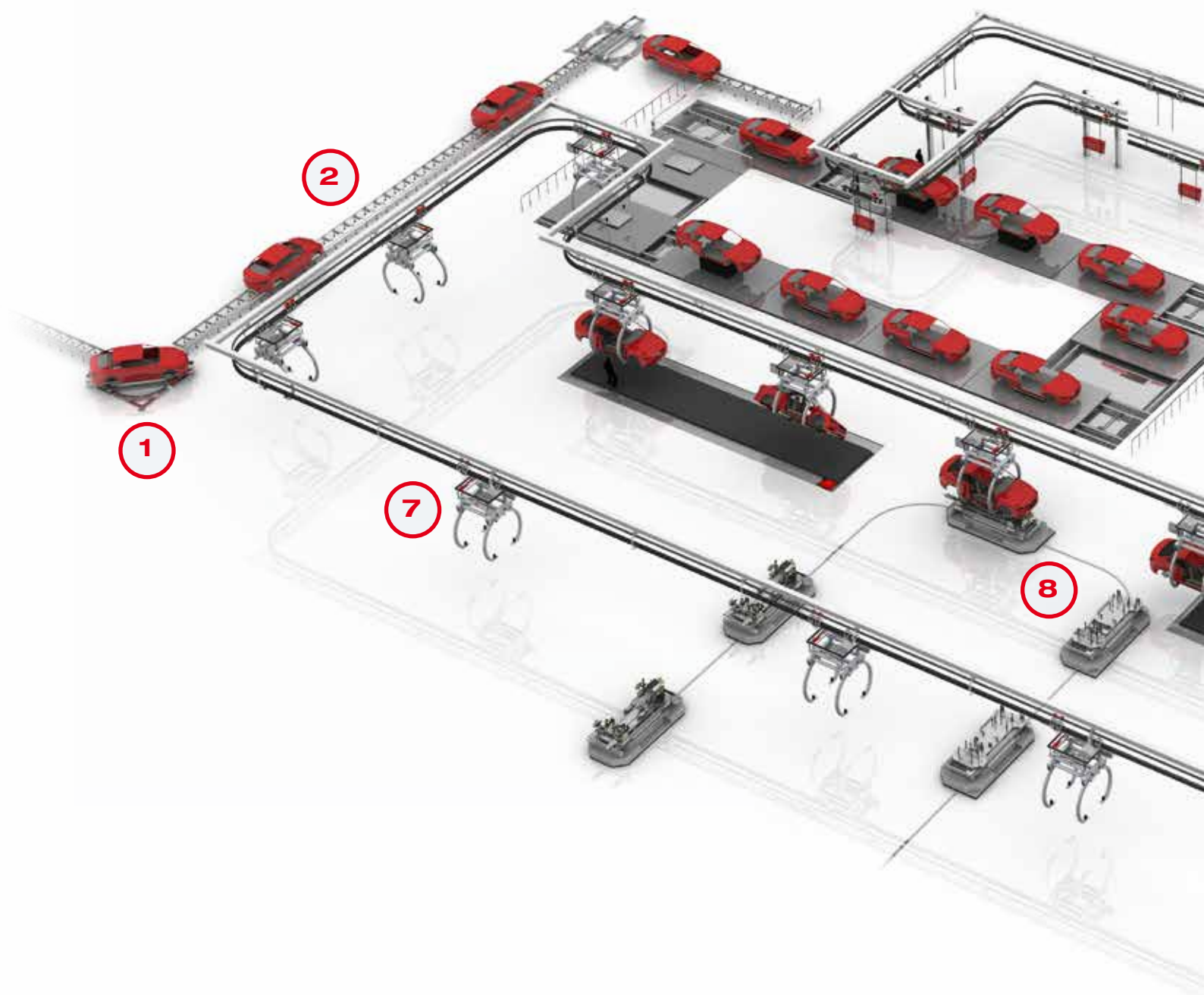


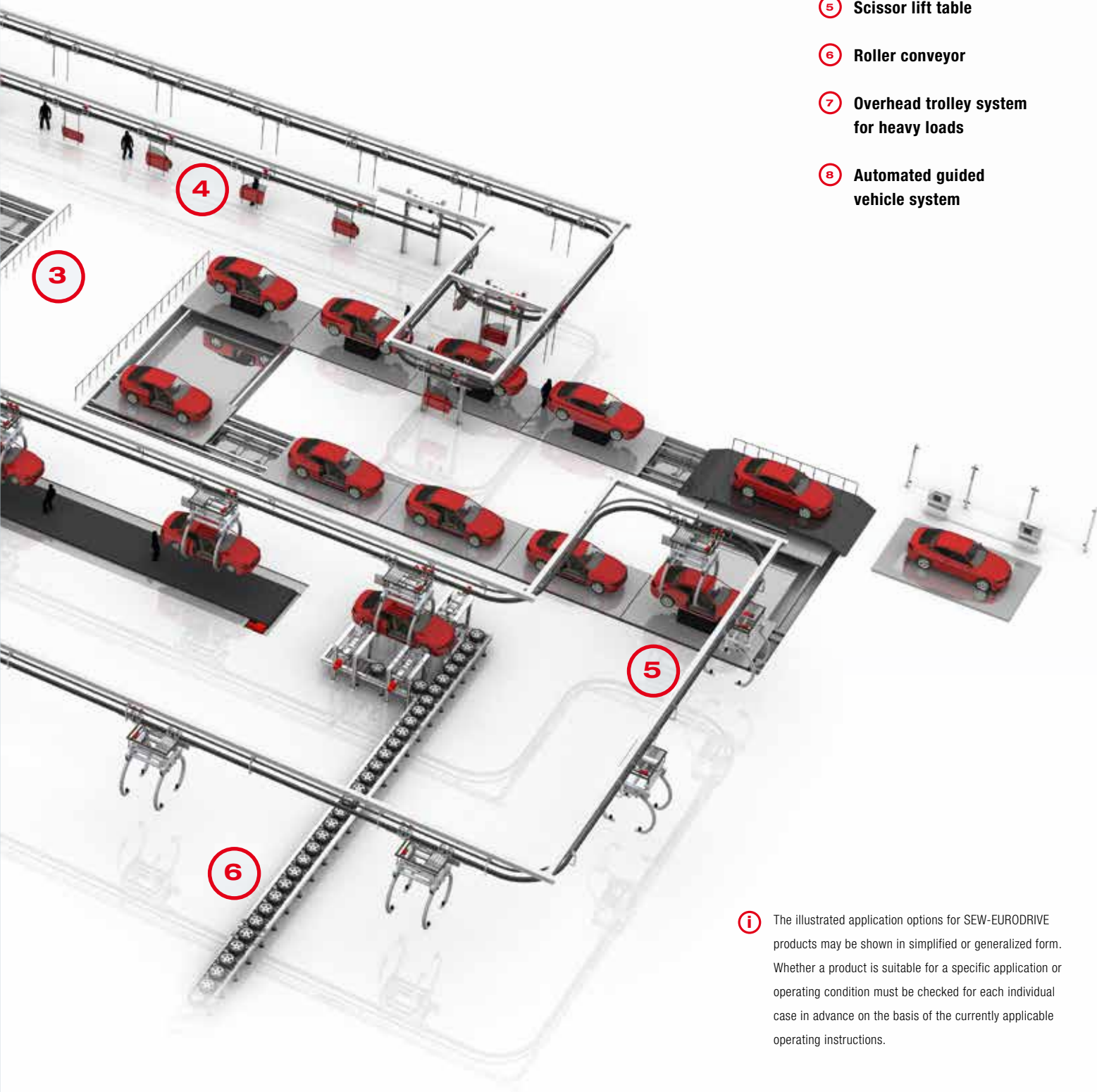
Skillet conveyor system ③ ⑤

The skillet conveyor system is an assembly of lined up skillets that continuously pass through various work stations. Each skillet is equipped with a lift table, to which power is supplied via contactless energy transfer, for example. This system solution positions the car bodies in ergonomic working heights at the different work stations. The drive solutions from SEW-EURODRIVE ensure a high degree of availability, short run-up times of the controller, standardization, and highly reliable electronics at all times.

SEW-EURODRIVE products for your application

- Decentralized (in this application mobile) drive and positioning controller MOVIPRO® for the hoist axis
- Contactless energy transfer system MOVITRANS® (optional)
- Gearmotors on the basis of the modular motor system (DR.. series) in efficiency classes IE1, IE2, and IE3
- Communication via Wireless Network Installation (WNI)
- Safety concept for the hoist drive
- Parameterizable plant software MOVIVISION®
- Decentralized drive solutions for the stationary drives





- ① SKID rotary table
- ② SKID materials handling technology
- ③ Skillet conveyor system
- ④ Overhead trolley system for light loads
- ⑤ Scissor lift table
- ⑥ Roller conveyor
- ⑦ Overhead trolley system for heavy loads
- ⑧ Automated guided vehicle system

i The illustrated application options for SEW-EURODRIVE products may be shown in simplified or generalized form. Whether a product is suitable for a specific application or operating condition must be checked for each individual case in advance on the basis of the currently applicable operating instructions.



Overhead trolley system for light and heavy loads ④ ⑦

The installation of a classical overhead trolley system requires extensive and complex technical equipment. Often, components are not specifically matched to each other. This is why these systems are not only time-consuming and cost-intensive in the planning phase, they are also prone to errors during operation. The two-stage function class concept from SEW-EURODRIVE offers an alternative: intelligent or modular overhead trolley systems that meet the increased economic requirements.

Your advantages with drive technology from SEW-EURODRIVE: Simple startup and operation, increased safety, and above all reduced costs for installation and operation.

SEW-EURODRIVE products for your application

- Decentralized (in this application mobile) drive and positioning controller MOVIPRO® for light and heavy load applications
- Contactless energy transfer system MOVITRANS® (optional)
- Disengageable gearmotors for high wheel loads on the basis of the modular motor system (DR.. series) in efficiency classes IE1, IE2, and IE3
- Communication via Wireless Network Installation (WNI)
- Parameterizable plant software MOVIVISION®
- Decentralized drive solutions for the stationary drives



Automated guided vehicle system ⑧

Automated guided vehicle systems (AGV) are nowadays used in many industry sectors to automate transportation processes. AGVs automate the in-house material flow or form the basis for flexible assembly processes. Their key advantages over other automated logistics systems are their high degree of flexibility, no obstruction of floor space, standardization, and a high degree of efficiency.

SEW-EURODRIVE products for your application

- Decentralized (in this application: mobile) drive and positioning controller MOVIPRO® for travel and hoist drives
- Contactless energy transfer with MOVITRANS®
- Disengageable gearmotors for high wheel loads
- Communication via Wireless Network Installation (WNI)
- Parameterizable plant software MOVIVISION®



MAXOLUTION® – individual system solutions for every movement

Our intelligent solutions offer a sustainable benefit also for your company. Whether you need pre-defined application solutions and individual system solutions – we deliver drive solutions that meet your specific requirements. The MAXOLUTION® system solutions are the basis for complex drive concepts that are tailored to your individual requirements.

Comprising components ranging from electro-mechanical drives and controllers to communication through to contactless energy transfer, MAXOLUTION® system solutions offer all the elements needed to implement customer-specific plant solutions.

The SEW-EURODRIVE specialists have a high level of expertise in automotive engineering. Together with developers, sales staff and service engineers, they form order-specific project teams. In this way, SEW-EURODRIVE provides optimized support from the quotation stage through to final acceptance: Competent and fast, straightforward and comprehensive.

Individual MAXOLUTION® system solutions

System expertise,
consulting
expertise

Concept
development,
project planning

Technology
modules

Project
management and
processing

Startup, accept-
ance, production
monitoring

System
documentation

Training,
maintenance

MAXOLUTION® system solutions for maximum success

For the conversion of a production line in hall 12 of the Volkswagen plant in Wolfsburg, 30 automated guided vehicles (AGV) for cockpit assembly had to be equipped with the MOVITRANS® system for contactless energy transfer within a very narrow time frame.

The project was realized by the specialist departments of Volkswagen and SEW-EURODRIVE together. The tool-making department of VW was responsible for the vehicle mechanics. SEW-EURODRIVE supplied the entire drive system with the MAXOLUTION® system solution for automated guided vehicles (AGV) including the contactless energy transfer system MOVITRANS®.

Efficient cockpit assembly at the VW plant in Wolfsburg with the MAXOLUTION® system solution from SEW-EURODRIVE



In this way, all the requirements for the transportation system were fulfilled, because MAXOLUTION® includes all necessary elements for implementing such systems. They range from planning and configuration to all electrical and mechatronic components through to startup support, installation supervision and after-sales services.

Despite the very tight schedule – three months from planning to realization (SOP) – and the

complexity of the project, the plant was ready for operation even before the scheduled date.

Helmut Wiegink of Volkswagen was impressed: "Usually, we start up the systems ourselves. But as this system was new for us, SEW-EURODRIVE performed the complete startup procedure. Everything went absolutely smoothly; the co-operation between all the people involved was excellent."

Going the energy-efficient way with effiDRIVE®

Due to rising energy prices, a stricter legal and normative framework, and a growing environmental awareness, energy-efficient drive technology has become an increasingly important issue. SEW-EURODRIVE has recognized this trend early on and offers energy-saving solutions tailored to the application with the effiDRIVE® concept.

MOVIGEAR® – energy-efficiency through innovation

Up to 50% of the energy costs can be saved

The mechatronic drive system MOVIGEAR® combines motor, gear unit and electronics in one product. With optimized interfaces between the inverter, motor and gear unit, minimized friction and current losses, and intelligent control modes, this system provides a higher overall efficiency level than any previously achieved, between 10% and 25% above that of conventional drive

solutions, and saves up to 50% of the energy costs. Special properties of the mechatronic MOVIGEAR® drive system for implementation in the automotive industry:

- Single line network installation for reduced wiring effort
- MOVIGEAR® binary or AS-Interface for simple and stand-alone applications

- Integrated safety function STO (Safe Torque Off)
- Local operation
- Pluggable sensor and power cables



Energy-saving properties of the mechatronic MOVIGEAR® drive system

- | | |
|--|---|
| ✓ Use of a drive system with high overall efficiency | <ul style="list-style-type: none"> – Highest motor efficiency due to permanent-field synchronous motor. Already now, the motor efficiency complies with the planned efficiency class IE4 (Super Premium Efficiency) of the international standard IEC 60034-T30. – Use of an efficiency-optimized parallel-shaft helical gear unit – Increased efficiency due to new electronic components and adjusted control mode |
| ✓ Energy-efficient selection of options | <ul style="list-style-type: none"> – When using the dynamic deceleration function DynaStop®, no energy is needed to release the mechanical brake. Based on the motor output, this saves up to 5% of power. |
| ✓ Dimensioning in line with demand | <ul style="list-style-type: none"> – High overload capability allows for dimensioning in line with demand – lower installed system power with higher overall efficiency |

Services throughout the value creation chain

Being a specialist in drive technology means we never stop moving. In addition to constantly optimizing our own processes, we therefore also offer a comprehensive range of services along your entire value chain. This defines the approach to adopt, while our services focus on the relevant process steps.

Engineering & selection

- Engineering consulting
- Engineering tools
- Training from SEW-EURODRIVE
- Safety services
- Energy consulting



www.sew-eurodrive.de/engineering-selection

Inquiry & order

- Shopping cart
- Transaction overview
- Electronic data interchange (EDI)
- Electronic invoicing



www.sew-eurodrive.de/inquiry-order

Startup & maintenance

- 24h Service Hotline
- Installation Consulting Service
- Startup Service
- Inspection and Maintenance Service
- etc.



www.sew-eurodrive.de/startup-maintenance

Delivery & material flow

- Electronic delivery notification
- Intelligent material flow with DriveTag



www.sew-eurodrive.de/delivery-material-flow

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