

**PRODUCTS AND SOLUTIONS** 

# INNOVATIONS 2021

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# Who are we? The reliable partner at your side!

For almost 90 years, the owner-operated family business SEW-EURODRIVE has stood for a diverse range of values, including everything from a personal, partnership-based approach, solutions and services to responsibility, quality, tradition, innovation and a whole lot more besides.

As a market leader in drive and automation technology, we don't just power countless applications in virtually every industry. With over 18 000 employees, we're also playing a key role in shaping the future of drive technology, ensuring you and your systems and machines are always at the cutting edge — not just now, but in the future, too. We want you to achieve success with us.



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## MOVI-C® - modular automation system

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# **MOVI-C®:** modular automation system



### **POTENTIAL USES / TYPICAL APPLICATIONS**



### MOVI-C® decentralized: e.g. transport and logistics

- Rotary tables
- Scissor lift tables
- Conveyor units
- Belt conveyors



MOVI-C® modular: e.g. warehouse technology

- Storage and retrieval systems
- Indoor cranes - Conveyor vehicles



- FFS machines
- Winders
- Filling systems

### **ADVANTAGES AT A GLANCE**



### An all-rounder

MOVISUITE® is a program for planning, startup, operation and diagnostics that saves the user time and moneythanks to its optimized user-friendliness.



### Simple, standardized or customized

To help ensure a quick startup, our MOVIKIT® offers you a large number of parameterizable software modules for the controller. These can be expanded to include your custom logic in the convenient programming environment.



### One inverter system for all needs MOVI-C® is the all-in-one automation

toolkit from SEW-EURODRIVE. SEW-EURODRIVE offers flexible components for single-axis automation right through to module automation applications - one manufacturer, one end-to-end solution.



### Modular

MOVI-C® offers a complete, all-in-one modular automation system. The individual components can be used to create solutions tailored to your requirements and bus

### **OVERVIEW OF TECHNOLOGY**

### The MOVI-C®

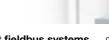
modular automation system is the all-in-one solution for automation tasks. Whether you want to implement single-axis or multi-axis applications based on standards, or custom and/or highly complex motion control applications - MOVI-C® can help you do all that and gives you the scope to achieve optimum automation for new projects.

### Designed for industrial use

The devices and software have been designed with special attention to the requirements for efficient startup, maintenance and troubleshooting. The components meet all requirements and standards regarding industrial use.

### New control modes

Newly developed and optimized control modes to support asynchronous and synchronous motors both with and without encoders on all devices ensure excellent performance while also maintaining high flexibility.



### State-of-the-art fieldbus systems Having a variety of fieldbus protocols

available is essential to flexibly integrating solutions into existing infrastructures. MOVI-C® supports all the latest standard fieldbus protocols

### Integrated, digital motor interface

The integrated, digital motor interface allows for extremely robust and high-performance

data transmission, which is well-equipped for both current and future motor functions. It opens up a whole host of new possibilities when used in conjunction with electronic nameplates or integrated and expandable diagnostic units on the motor.

### **Energy efficiency**

In addition to the inverters, which have been streamlined for efficient energy conversion, the devices in the Power and Energy

Solutions series offer a wide range of options for storing energy and releasing it again when required. This helps reduce energy spikes and increase availability, for example.

### Integrated safety technology

The inverters in the MOVIDRIVE® range come with integrated safety functions even the basic units. Higher-level safety functions can be incorporated by inserting option cards.

# **MOVI-C®:** decentralized drive technology

### **POTENTIAL USES / TYPICAL APPLICATIONS**





Logistics/storage technology



Materials handling

### **ADVANTAGES AT A GLANCE**



### Scalability/continuity!

Whether you require a control cabinet installation or inverter installations in the field, our new inverter platform offers you consistency and scalability for your complete system.

### Cost reduction!

Increase overall system efficiency thanks to condition monitoring and predictive maintenance. Increased energy efficiency thanks to integrated standby operation and flux optimization.



### Openness!

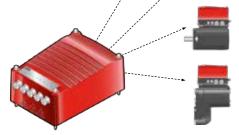
Flexible communication variants enable easy integration into modern installation topologies.



Whether it's a gearmotor with integrated frequency inverter or a field distributor for installation close to the motor, our decentralized drive solutions offer you flexibility in your application and save energy and costs.

### **OVERVIEW OF TECHNOLOGY**

- 1 decentralized inverter for 4 product families
- Available in 2 sizes (additional sizes in preparation)
- 2.0 A to 5.5 A nominal output current (7 A to 16 A in preparation)
- High overload capacity (up to 300%)
- Can be operated on various communication systems



### MOVIMOT® flexible

- Decentralized inverter for
- installation close to the motor Different drive types can
- be connected

### MOVIMOT® advanced

- Asynchronous motor (IE3) with integrated inverter
- 0.37 to 2.2 kW nominal power (up to 7.5 kW in preparation)

### **MOVIMOT®**

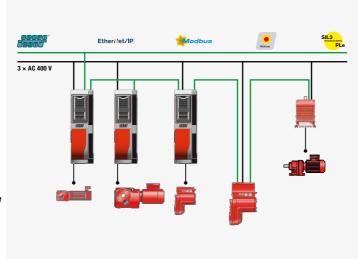
### performance

Synchronous motor (IE5) with integrated inverter

### MOVIGEAR® performance

- Gearmotor with integrated
- Highly efficient (exceeds IE5 and IES2)

### **TOPOLOGY**



### MOVI-C® DECENTRALIZED ELECTRONICS / TECHNICAL DATA



### Line voltage and assigned

motor power range  $3 \times AC 380 V - 500 V$ :

- ASM: 0.55 kW / 2 A 2.2 kW / 5.5 A
- PMM: 0.8 kW / 2 A 3.0 kW / 5.5 A

### Maximum output current

300% for 5 s

### Continuous output current

100% at f = 0 Hz

### Degree of protection

Standard IP65

### Type of cooling

Convection cooling without fan

### Ambient temperature

-25 °C to 40 °C without derating 40 °C to 60 °C with derating

### In preparation

Larger power classes: 7 to 16 A

# **MOVIMOT®** performance drive unit



### POTENTIAL USES / TYPICAL APPLICATIONS



### Conveying/sorting

- Corner transfer units
- Sorter belts
- Positioning units

# Materials handling

- Conveyor units - Lift modules - Rotary tables



### Packaging technology

- Winders
- Clock synchronizers
- Positioners

### **ADVANTAGES AT A GLANCE**



### High overload capacity!

An overload capacity of up to 300% optimizes the drive's capacity utilization and reduces the nominal connected load.



### **Environmentally friendly!**

Low-noise operation without fan plus a motor energy efficiency class ≥ IE4 to IEC TS 60034-30-2.

MOVINOT® -- ----



### Precise!

Highly dynamic, with a large speed range and optional positioning using a multi-turn absolute encoder.



### Cost-effective!

Direct wiring via terminals or quick and easy installation using optional plug connectors and the MOVILINK® DDI digital interface.

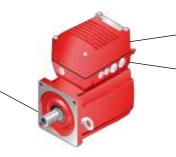
### **OVERVIEW OF TECHNOLOGY**

	MOVIMOT® perfo	VIMOT® performance				
	CM3C80S 0020	CM3C80S 0025	CM3C80S 0032	CM3C80S 0040	CM3C80M 0040	CM3C80M 0055
Inverter assignment A	2.0	2.5	3.2	4.0	4.0	5.5
Nominal torque Nm	3.6	4.5	5.7	7.2	8.0	9.0
Nominal speed min <sup>-1</sup>	2000	2000	2000	2000	2000	2000
Nominal power kW	0.75	0.94	1.19	1.51	1.68	1.88
Overload capacity %	300	300	300	300	300	300
Speed setting range without encoder	1:40	1:40	1:40	1:40	1:40	1:40
Speed setting range with encoder (EZ2Z/AZ2Z)	1:2000	1:2000	1:2000	1:2000	1:2000	1:2000
Motor energy efficiency	≙ IE5	≙ IE5	≙ IE5	≙ IE5	≙ IE5	≙ IE5

### MOVIMOT® performance

### Permanent magnet motor

Robust, energy-efficient synchronous motor from the CM3C.. series



### **Drive inverter**

Decentralized inverter with communication interface

PROFINET, EtherNet/IP™, Modbus TCP,











### **Connection unit**

For cable glands and optional plug connectors

# **MOVIGEAR®** performance drive unit

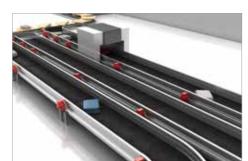


### **POTENTIAL USES / TYPICAL APPLICATIONS**



### Parcel logistics/conveying

- Transporting and identifying
- Sorting and distributing
- Loading and unloading



### Airport/baggage handling

- Transporting baggage
- Sorting and distributing
- Accumulating and buffering



### Bottling/food processing

- Bottle transportation
- Secondary packaging
- Raw materials feed

### **ADVANTAGES AT A GLANCE**



### Compact!

Nominal power of 0.8 - 2.1 kW and peak power of up to 6.3 kW, fully integrated, up to 50% lighter than conventional drive solutions.



### Universal!

The number of variants is reduced thanks to optimal dimensioning based on a large speed range and an impressive overload capacity of up to 300% for the nominal



### Efficient!

Motor energy efficiency class IE5 to IEC TS 60034-30-2 and system power loss up to 50% lower than IES2 according to IEC 61800-9-2.



### Low noise!

Some 75% guieter than typical AC motors and hygienic convection cooling without fan.

### **OVERVIEW OF TECHNOLOGY**

	Series/design	Series/design			
	MGF2-C	MGF4-C	MGF4-C/XT		
Weight kg	16	26	28		
Torque class Nm	200	400	400		
Nominal power kW	0.8	1.5	2.1		
Output speed range min <sup>-1</sup>	0.9 - 593	0.9 – 566	0.9 – 566		
Connection voltage V	380 – 500 V at 50/60 Hz	380 - 500 V at 50/60 Hz	400 – 500 V at 50/60 Hz		
Diameter of hollow shafts mm	20 / 25 / 30 / 35 / 40	30 / 35 / 40	30 / 35 / 40		

### MOVIGEAR® performance Sizes



**Communication variants:** PROFINET. EtherNet/IP™. Modbus TCP. POWERLINK, EtherCAT®/SBusPLUS,

AS-Interface, binary control



TorqLOC® hollow shaft with key

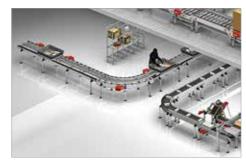


Degree of protection: IP65 standard

# **MOVIMOT®** advanced drive unit



### **POTENTIAL USES / TYPICAL APPLICATIONS**



### Materials handling technology/logistics

- Roller conveyors
- Chain conveyors
- Belt conveyors

### Materials handling

- Conveyor units
- Lift modules Rotary tables



Production technology

- Skid conveyors
- Rotary units
- Lifting/lowering conveyors

### **ADVANTAGES AT A GLANCE**



### Scalable!

Drives with a nominal power of 0.37 - 2.2 kW are available (up to 7.5 kW in preparation). A brake and/or integrated maintenance switch can optionally be



### Flexible!

Can be combined with all standard gear units in SEW-EURODRIVE's modular system. Durability, even under harsh ambient conditions, enables universal use in different sectors of industry.



### Versatile!

Advanced sensorless open-loop control and an optional single-turn encoder pave the way for reliable solutions in numerous applications.



### Cost-effective!

An optional industrial plug connector makes for easy, time-saving installation. The innovative Premium Sine Seal oil seal reduces wear in the drive unit and increases its expected service life.

### **OVERVIEW OF TECHNOLOGY**

Supported motor sizes		DRN71M	DRN80MK	DRN80M	DRN90S	DRN90L	DRN100LS
Nominal power of	Star connection	0.37	0.55	0.75	1.1	1.5	2.2
drive kW	Delta connection	0.55	0.75	1.1	1.5	2.2	_
Nominal torque of stand-alone motor		2.5	3.7	5.1	7.5	10.2	15
Nm	Delta connection	1.8	2.5	3.6	4.9	7.2	_
Speed setting	Star connection	1:10 (without encoder)	l 1:1400 (with EI8Z)				
range	Delta connection	1:20 (without encoder)	l 1:2900 (with El8Z)				

The MOVIMOT® advanced ensures an overload capacity of up to 210% of the motor's nominal torque.

### MOVIMOT® advanced

1 Asynchronous motor

Energy-efficient asynchronous motor from the DRN.. series

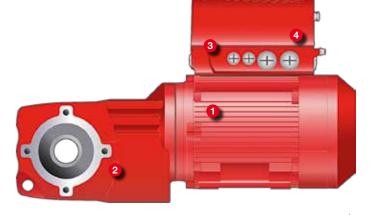
2 Optional gear unit Can be combined with gear unit series 7 or 9

3 Connection unit For cable glands and optional plug connector

### 4 Drive inverter

Decentralized inverter with communication interface

PROFINET, EtherNet/IP™ Modbus TCP, POWERLINK, EtherCAT®/SBusPLUS, AS-Interface, binary control















# **MOVITRAC®** advanced standard inverter



### **POTENTIAL USES / TYPICAL APPLICATIONS**







Vertical drives



**Palletizers** 

### **ADVANTAGES AT A GLANCE**



### Saves time!

Quick and easy startup thanks to the electronic nameplate and the use of preconfigured MOVIKIT® software



### Simplicity!

Fast, simple unit replacement in case of service without engineering PC thanks to portable memory module for storing all device data.



Connection to common control systems thanks to support of various fieldbus protocols and the CiA402 drive profile.



Configurable functional safety – from integrated STO safety function to higher quality safety functions and

### **OVERVIEW OF TECHNOLOGY**

MOVITRAC® advanced standard inverter				
Technical data	Nominal voltage (V)	1 × AC 200 – 240 3 × AC 200 – 240 3 × AC 380 – 500		
	Nominal power (kW)	0.25 – 315		
	Overload capacity	150%		
Control mode	Controlling and monitoring Synchronous and asynchronous AC motors with/without encoder Asynchronous motors with LSPM technology Synchronous and asynchronous linear motors			
Communication interface	PROFINET, EtherNet/IP™, Modb	Integrated communication interface – choose from PROFINET, EtherNet/IP™, Modbus TCP, EtherCAT®/ SBUSPLUS, EtherCAT® CiA402, POWERLINK CiA402		
Functional safety	Other safety functions configure     SBC, SDI or SLS     Safe communication configural	STO (safe torque off) in PL d integrated into the basic unit Other safety functions configurable – such as SBC, SDI or SLS Safe communication configurable via PROFIsafe/ PROFINET and FSoE (Fail Safe over EtherCAT®)		
Additional features and equipment	Configurable MOVILINK® DDI digital data interface     State-of-the-art control modes: V/f; VFCPUS; ELSM®; CFC     Control of torque, rotational speed and position     Commissioning via plug-in and scalable operating devices or MOVISUITE® engineering software     Simple startup using MOVIKIT® software modules     Portable memory module for easy unit replacement without engineering software			

### MOVITRAC® advanced



# **Power and Energy Solutions**



### **POTENTIAL USES / TYPICAL APPLICATIONS**



Dynamic machine modules Handling modules



Amusement rides Big wheel



Logistics applications Storage/retrieval system/automated small-parts warehouse

### **ADVANTAGES AT A GLANCE**



### Scalability!

Distributed DC and AC infrastructure in any combination



### Cost reduction!

- Auto-configuring components Strongly reduced peak power demand of the application
- Reduction of energy costs thanks to storage capacitors in the DC link

- High availability of individual production cells
- Uninterrupted system operation in the event of a power failure
- Reduced harmonic load in the supply



Faster changes in the factory layout

### **OVERVIEW OF TECHNOLOGY**











MDP92 power supply module with controlled DC link voltage	MDS switched-mode power supply module with AC and DC supply	MDC capacitor module DC link energy module	LSUM EDLC energy module Energy cabinet with EDLC modules
Nominal line voltage: $3 \times AC\ 200 - 500\ V$	Input voltage: 1 × AC 200 V – 3× AC 500 V or DC 150 V – 800 V	Voltage range: DC 0 – 800 V	Voltage range: DC 0 − 800 V
OC link voltage controlled:		Typical energy content: 2 kWs	Energy content up to: 3000 kWs
OC 0 - 800 V	Nominal output voltage: DC 24 V		
leader la course OF IAM	Negative Leaders Assessed 100 5 A	Connection via DC bus	Options for both parallel and series
Nominal power: 25 kW	Nominal output current: 22.5 A	0 11 1	connection
Overload capacity: 160%		Option for parallel connection	
NETIONAL CAUNCILLY, TOU 70			

# **Digital motor integration –**

# single-cable technology

### **POTENTIAL USES / TYPICAL APPLICATIONS**



Electronic nameplate: Motor and gear unit startup procedures completed in seconds.



### After purchasing

All details relating to assembly, disassembly and wear/spare parts are available online.



### Condition monitoring

- Brakes: monitoring of switching on/off and wear
- Gear units: oil age and temperature
- Motor: thermal properties, capacity utilization and hours of operation

### **ADVANTAGES AT A GLANCE**



### Far less time required during startup!

Identification and automatic startup of a gearmotor on a MOVI-C® inverter without engineering tool.



### **Errors prevented**

in the event of a malfunction! After replacing the motor, starts automatically without an engineering tool.



### Standardized connection technology!

One hybrid cable covers the data connection and power supply of all SEW-EURODRIVE synchronous and asynchronous motors with/without brake.



### 50% space saving!

Just one cable for power, encoders, temperature, brake and transmitting further diagnostic data relating to wear, capacity utilization, aging, etc.

### **OVERVIEW OF TECHNOLOGY**





Installation in control cabinet	MOVIDRIVE® technology	MOVITRAC® advanced
Inverters types	Application inverter	Standard inverter
Data interface	Integrated	Configurable
Properties	<ul> <li>The intelligent digital data cable turns the electric motor into an indirect, transparer station in the network</li> <li>Uniform interface on all MOVI-C® inverte thanks to a standardized coaxial connect</li> <li>Extremely robust, high-performance des for data transmission with coaxial data cable</li> <li>Suitable for very long cables measuring to 200 m between motor and inverter</li> </ul>	



Cable	DDI cable
Cable types	Hybrid sheathed cable, inner shielding
Material and color	PU or PVC Orange
Cross- sections	$-4 \times 1.5 - 4 \text{ mm}^2$ $-4 \times 1.0 \text{ mm}^2$ $-1 \times \text{coax}$
Motor connection	M23 (M40) or terminals
Inverter connection	Terminals



	and the second	
Motors	СМЗС	DRN
Motor types	Synchronous servomotors	Asynchronous AC motors
Series	CM3C	DRN/DR2
Sizes	63 – 100	71 – 132S
Torques	2.5 – 35 Nm	_
Power ratings	_	0.09 – 7.5 kW

Additional type designation					
Encoders	EZ2Z, AZ2Z	EI8Z			
Brakes	BZ	BE03 – BE11			
Rectifiers	BGZ, BSZ	BGZ, BGZD			

# **MOVIKIT® StackerCrane**



### POTENTIAL USES / TYPICAL APPLICATIONS



### Storage/retrieval systems

The MOVIKIT® StackerCrane effiDRIVE® can be used for all storage/retrieval systems with up to four travel axes and



### Drive variants:

- Single-mast and double-mast hoists
- Long masts (vibration damping), additional top crossbeam
- Multi-drives with dynamic load distribution



### Further options:

- Various load handling devices
- Satellite storage/retrieval systems
- Bufferless end stop limitation

### **ADVANTAGES AT A GLANCE**



### Optimized for SEW drive technology!

Coordinated with SEW-EURODRIVE hardware. From gear unit and motor to drive technology, energy management and control technology.



### Quick startup!

Preconfigured software modules support easy startup thanks to configuration and diagnostics via graphical user interface.



### Straightforward operation and diagnostics!

The integrated process data monitor makes the standardized process data profile easy to operate.



### Intelligent power supply!

Regenerative power supply modules or storage solutions can be incorporated in project planning and used as required, depending on the application.

### **OVERVIEW OF TECHNOLOGY**

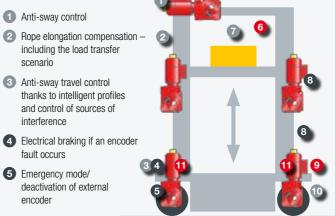
- Optimizing the travel cycles of lifting and travel drives achieves energy savings of
- Further drive axes can easily be added with the MOVIKIT® software modules Stacker-Crane. MultiMotion and MultiAxisController
- MOVIKIT® add-ons such as AntiSway or BellySway can extend the functionality. with special vibration damping functions corresponding to the mechanical components used

### **Power and Energy Solutions**

- Energy storage solutions (block-shaped or sinusoidal regenerative modules) reduce energy consumption by up to 40%
- Using storage capacitors in the DC link reduces power peaks from the supply
- Maximum availability

### Safety technology

- Meets tougher safety technology requirements (e.g. SLS, SBC) thanks to integrated safety technology



- 6 Auto leveling anti-skew, including in the event of a fault
- Anti-belly sway
- 8 Energy-optimized xy operation
- 9 Electronic differential for SRS units with cornering ability
- 10 External encoder with increased position control
- Anti-slip control electronic differential lock





Evaluation add-on

MultiMotion + MultiMotion PositionController add-on MultiAxisController + MultiMotion CombinedEncoder-





# **AC** motors

# Gear units/gearmotors

2	Gea	r units/gearmotors	
	2.1	AC motors	1
	2.2	PxG® planetary servo gear units	1
	2.3	SPIROPLAN® W29 and W39 gear units	ł

### POTENTIAL USES / TYPICAL APPLICATIONS



### **Building materials**

Bucket elevator drive on joint swing base with main motor, turbo coupling and auxiliary gearmotor



### Cranes

Slow-turning crane drive, line-powered brakemotor with compound helical gear unit



### Intralogistics

Travel unit drive in the form of a position-based, servo-dynamic brakemotor with low-backlash helical-bevel gear unit

### **ADVANTAGES AT A GLANCE**



Scalable from 0.03 to 375 kW, and from 750 to 3000 min<sup>-1</sup>!

Customized speed, rotational speed, force, torque and power, taking into account overload and safety factors.



# **Long life and reliable operation!**Thanks to high-quality wear parts

and intelligent, innovative designs, you benefit from long maintenance and inspection cycles.



# **Available and legally compliant!**Our closely knit global network of sites

our closely knit global network of sites ensures the same parts are available all over the world, taking into account local laws and regulations in a way you can plan and early on.



# Dynamic with a high load-bearing capacity!

High continuous and peak torques in the standard AC motor make it easier for you to select the right elements in the drive train — braking and holding, position and speed sensors, thermal and mechanical protection, etc.

### OVERVIEW OF TECHNOLOGY (NEW)









Туре	4-pole (NEW) DRN355MS – DRN355ML	8-pole (NEW) DRN90S - DRN132S	4-pole (NEW) DR2L180M - DR2L225S	4-pole (NEW) DR2S180M - DR2S225S
50 Hz power ratings kW	250 – 355	0.37 – 2.2	-	22 – 45
60 Hz power ratings kW hp	260 – 375 350 – 500	0.37 – 2.2	_	22 – 45
Torques Nm	M <sub>N</sub> : 1380 – 2250 M <sub>K</sub> : 4140 – 6750	M <sub>N</sub> : 4.1 − 29.5 M <sub>K</sub> : 10.8 − 70.8	M <sub>N</sub> : 165 – 300 M <sub>K</sub> : 520 – 1100	M <sub>N</sub> : 118 – 290 M <sub>K</sub> : 401 – 783
Frequencies Hz	50, 60, 50/60	50, 60, 50/60	41, 58, 71, 101	50, 60, 50/60
IE class IEC 60034-30-1	IE3	IE3	not defined	IE1
Speeds min <sup>-1</sup>	50 Hz: 1492 60 Hz: 1792 – 1794	50 Hz: 710 – 715 60 Hz: 866 – 872	41 Hz: 1200 58 Hz: 1700 71 Hz: 2100 101 Hz: 3000	50 Hz: 1477 – 1482 60 Hz: 1776 – 1785

# PxG® planetary servo gear units



### **POTENTIAL USES / TYPICAL APPLICATIONS**



P5.G.. Machine tool gantry

- Mounting press
- Drilling and pegging machine



P6.G.. Filling and transfer point

- Printing machine
- Diaper machine



P7.G.. Delta kinematics

- Laser cutting machine
- Chain magazine and tool changer

### **ADVANTAGES AT A GLANCE**



Huge time savings due to rapid integration into existing systems thanks to 100% geometrical compatibility with the market



### Customized!

Configuration designed to precisely suit your requirements in terms of service life, precision and performance thanks to a comprehensive modular system.



Up to 200% service life for seals due to use of the exclusive Premium Sine Seal.



High torque and simultaneously high speeds, even at 100% continuous duty.

### **OVERVIEW OF TECHNOLOGY**







Planetar	y servo gear units	P5.G	P6.G	P7.G
Sizes		21, 22, 31, 32, 33, 41, 42, 43, 51,	52, 53	
	1-stage	3 – 10		4 – 5.5
Gear ratio	2-stage	12 – 100		16 – 55
Tatio	3-stage	64 – 1000		64 – 550
Accelera	ation torque	66 – 840 Nm	On request	80 – 990 Nm
Rotation	al clearance	3 – 4 arcmin	·	1 arcmin
Service	life	20 000 h (DC 60%)	30 000 h (DC 100%)	20 000 h (DC 60%)
Output v	variants	Solid shaft (smooth, key or splining)	, flange block shaft with or without index bore	Flange block shaft without index bore
Lubricat	ion for life	SEW GearOil Poly E1 or SEW Grease	e HL2 E1, also in H1 (food grade)	•
Seal Premium Sine Seal or labyrinth seal (in the case of grease lubrication)		Premium Sine Seal or labyrinth seal	(in the case of grease lubrication)	



life predictions using precise calculation of corrosion protection as the contact pressure standard, no coating. distribution.

### Bearing systems Gearing surfaces

Accurate bearing service Precise and low-noise transfer of high torques using tribologically optimized gearing surfaces.

### Sealing systems Long service life thanks to exclusive Premium

Sine Seal oil seal in the

gear unit adapter.

systems High efficiency and low wear thanks to lubrication for life with SEW GearOil from the

Tribological







# **SPIROPLAN®** W..29 and W..39 gear units



### **POTENTIAL USES / TYPICAL APPLICATIONS**



Horizontal materials handling technology

- Roller conveyor
- Chain conveyor
- Belt conveyor



Mobile logistics applications

- Travel drives
- Load handling devices
- Pallet transfer shuttles



Vertical conveyor

- Lifting stations
- Transfer units

### **ADVANTAGES AT A GLANCE**



### Lightweight!

Particularly beneficial for lightweight machine designs and mobile applications.



### Efficient!

Low energy costs thanks to energy-efficient gear units with a high level of efficiency across the entire gear ratio range.



Low noise development and quiet operation at any speed, for reduced noise levels at nearby workstations.



### Future-proof!

Using the latest technologies in both gear unit and motor ensures long-term availability and functionality.

Hollow shaft with shrink

disc and flange

### **OVERVIEW OF TECHNOLOGY**



Solid shaft with key

Hollow shaft with

shrink disc







Hollow shaft with keyway



Hollow shaft with shrink disc in TorqLOC® design



Hollow shaft with key and flange



Hollow shaft with keyway and torque arm



Gear unit size	W29	W39
M <sub>amax</sub> Nm	130	200
Gear ratio range i	4.68 – 188.47	4.72 – 210.49
Motor power range kW	0.12 – 1.1	0.12 – 1.5
Hollow output shaft diameter mm	20 and 25	25 and 30
Flange diameter mm	120 and 160	160 and 200











## Motors

3	MOT	ors
	3.1	CM3C servomotors

# CM3C.. servomotors



### POTENTIAL USES / TYPICAL APPLICATIONS



- Cartesian robots
- Palletizers

Heavy-duty gantries



- Deep drawing and forming machines
- Dynamic removal and loading units
- Machine tools



- Hoist applications
- Materials handling technology with heavy external loads

### ADVANTAGES AT A GLANCE



### Can even be used in very confined installation spaces

... thanks to its extremely compact design.



## Safe deceleration of even high

... due to its spring-loaded brake with increased working capacity.



### Saving on installation outlay and costs

... due to use of MOVILINK® DDI singlecable technology.



### High flexibility and optimum drive selection

... thanks to the unique SEW-EURODRIVE modular gearmotor system.



### Also suitable for use in the food industry

... thanks to its hygiene-friendly design.



### Fast, reliable startup with autotuning

... using the electronic nameplate.



### Can also be used on third-party FIs

... thanks to the availability of many market-standard encoder interfaces.



### For global markets

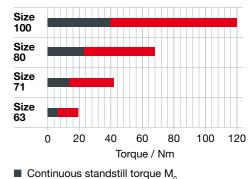
... thanks to international certificates and approvals (UL, CSA; EAC, ATEX, etc.).

### **OVERVIEW OF TECHNOLOGY**

	Size 63*	Size 71*	Size 80*	Size 100*
M <sub>o</sub> Nm	2.7 – 6.4	6.5 – 14	10.5 – 22.8	19 – 40
M <sub>pk</sub> 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

 $<sup>^{\</sup>star}$  Each size available in 3 lengths - S, M and L.



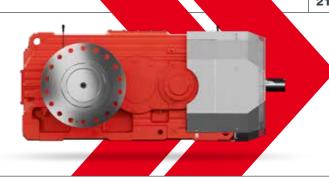


■ Maximum limit torque M<sub>nk</sub>

# Industrial gear units

mac	istrial goal arms	
4.1	Industrial gear units generation X.e	

# Industrial gear units **Generation X.e**



### **POTENTIAL USES / TYPICAL APPLICATIONS**







Belt conveyors

Crushers

Cranes

### **ADVANTAGES AT A GLANCE**



Up to 220% increase in the calculated bearing service life of the gear unit thanks to the order-specific setting of the bearing preload and use of the bearing service life calculation in accordance with ISO/TS 16281.



Thanks to an optimized gearing topology, the gear mesh is unaffected by meshing faults caused by misalignments due to external loads. Increase of the static overhung loads at unfavorable application angle up to 41%.

Longer oil service life due to lower thermal load and savings of up to 30% of the oil volume thanks to reduced oil level.

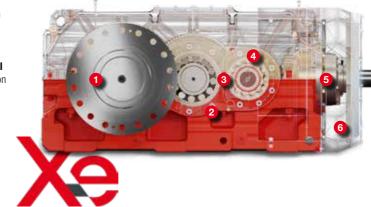
### **OVERVIEW OF TECHNOLOGY**

Туре	Helical gear unit X.F.100e - X.F.320e	Bevel-helical gear unit X.K.100e – X.K.320e
Number of sizes	23	
Stages	2- to 4-stage	
Gear ratio i	6.3 – 450	
Nominal torque M <sub>N2</sub>	6.8 – 475 kNm	
Output variants	Solid shaft: Key, smooth design, splined Hollow shaft: Keyway, shrink disk, splined, TorqLOC® hollow sha	aft mounting system

Availability of Generation X.e in the nominal torque range of 205-475 kNm from May 2021.

### **GENERATION X.e**

- 1 Contactless sealing system No wear at input and output shaft, no oil loss
- 2 Thermally improved oil level Optimum heat transfer and reduction of the oil-bath temperature
- 3 Optimized bearing preload Reduced punctual heat generation; the lower preload significantly increases the bearing service life



- 4 Optimized gearing topology Resistance to misalignments, better tolerance of tooth engagement faults caused by external loads
- 5 Improved bevel pinion

Optimized oil flow, higher thermal rating

6 Fan and fan cover concept Under one hood – various fan sizes and types

## **Contactless energy transfer system**

5 Contactless energy transfer system	
--------------------------------------	--

5.1 MOVITRANS®

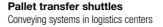
22 23

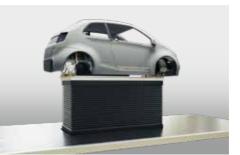
# MOVITRANS®: contactless energy transfer system



### POTENTIAL USES / TYPICAL APPLICATIONS







**Skillets with elevating table** Lifts or shuttles



Guided floor conveyor systems

Mobile systems

### ADVANTAGES AT A GLANCE



### Scalability!

Configure with ease – thanks to its system modules, MOVITRANS® can be easily adapted to suit changing system tasks and modifications.



### Cost reduction!

Lower operating costs with MOVITRANS®. It is easy to use, increases system availability and minimizes maintenance outlay in the long term.



### Efficiency!

Increase energy efficiency thanks to stateof-the-art component technologies and short power distribution distances in linear and point-based charging.



### Simplicity!

Make installation easier. No control cabinet is required to house the supply unit, and all inputs/outputs are designed with plug-in connections.

### **OVERVIEW OF TECHNOLOGY**

### STATIONARY COMPONENTS

System frequency 25 kHz or 50 kHz  $\,$ 

### 1 TES31A decentralized supply unit

Power rating: 8 kW or 16 kW (up to 48 kW in parallel connection) Line voltage  $V_{\rm line}$ :  $400-500 \ V \pm 10\%$ 

# 2 TCS31A compensation box compensates for a distance of 25 m to 30 m.

3 Field plate

Inductive point-based charging with high power ratings of up to 11 kW System frequency B: 50 kHz Can be installed in the floor or as a floor structure.

### Wedge-shaped conductors

Inductive, linear energy transfer, suitable for currents of up to 60 A. Energy transfer while traveling. Can be installed in the floor or as a floor structure.

### MOBILE COMPONENTS

# THM90E pick-up with a direct voltage output

and energy storage unit, 1.5 kW / DC 350 V series and parallel connection possible

### TDM80E pick-up

Rated output: 11 kW for 4 min. / Cyclic duration 10% Field plate nominal current: 30 A System frequency B: 50 kHz





MOVITRANS® technology works on the principle of inductive energy transfer and ensures the perfect power supply – contactless, quiet, low-maintenance and wear-free.

### **Machine automation**

	Mach		
6			

24

6.1 MAXOLUTION® automation solution for handling machines

25

# MAXOLUTION® Automation solution for handling machines



### **POTENTIAL USES / TYPICAL APPLICATIONS**





Two collaborating tripods with tracking on the lower-level conveyor belts.



Gantry

Drag-chain-free gantry solution with toothed gear drive and miniaturized control cabinet.



### Wide-area storage

Dynamic kinematics with decentralized drive technology and image processing camera.

### ADVANTAGES AT A GLANCE



### Cost-effective integration!

With this automation solution you can define the framework of your value creation. From planning and integration into the machine all the way to programming and startup – you can take care of it all yourself.



### Quick implementation!

A few easy steps to a customized kinematics solution – thanks to perfectly coordinated hardware and software in the modular robot system.



### Intuitive software solution!

The simple and time-saving way to control universal robot kinematics. The process is completely intuitive and performed directly at the machine – without any complex programming language.



### Efficient design!

Drive components designed specifically for the application save resources and support efficient solutions and lean systems.

# OVERVIEW OF TECHNOLOGY SOFTWARE:

### MOVIKIT® Robotics

This standardized software module makes light work of controlling universal robot kinematics. The process is completely intuitive and performed directly at the machine — without any complex programming language. Additional functions: Adaptable workflows, incl. 3D simulation and up to six axes controllable in various robotics models.

# MOVIKIT® Robotics add-on ConveyorTracking

A software module that is used to expand MOVIKIT® Robotics to add functions for synchronizing conveyor belts and kinematics.

### MOVISUITE® and RobotMonitor

The intuitive MOVISUITE® engineering software provides functions such as automatic IEC code generationand additional tools, including the RobotMonitor, that make for simple startup and operation.

### HARDWARE:

### Modular robot system

Designed for customer-specific requirements from any industry. Whether the robot is to be used in fish or meat processing, food packaging or to carry heavy loads in intralogistics machines.

The coordinated automation portfolio enables straightforward configuration and rapid integration thanks to defined interfaces:

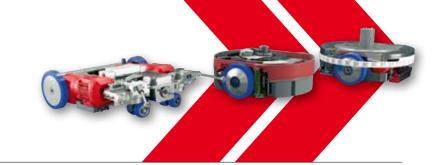
- MOVI-C® CONTROLLER progressive as motion controller and robot controller
- MOVIDRIVE® modular
   Compact, efficient axis modules that take up little space in the control cabinet.
- PxG® planetary servo gear units are compatible with standard robot kinematics. Combined with
- CMP.. synchronous motors incl. cabling, they take over the robot mechanics.



# **Factory automation**

Fact	tory automation	:
7.1	Drive modules MAXO-MS/M/DR	2
7.2	MAXOLUTION® logistics assistant	1
7.3	MAXOLUTION® assembly assistant	1
7.4	MOVITRANS® mobile systems	;

# Drive modules MAXO-MS/M/DR



### COMPONENTS







MAXO-MS/M/DR-L90

MAXO-MS/M/DR-QO

MAXO-MS/M/DR-PA

### ADVANTAGES AT A GLANCE



Innovative!

factory layout possible.





Long service life thanks to proven SEW-EURODRIVE drive technology.

### Easy!

Standardized interface for rapid vehicle design and simple startup.

### Compact!

Small design with integrated driving motors, drive inverters and contactless energy

### OVERVIEW OF TECHNOLOGY

New drive concepts enable various modes of

operation so as to enable the most efficient

### MAXO-MS/M/DR-L90

Dimensions	
Diameter × height	600 mm × 215 mm
Wheel diameter	200 mm
Ground clearance	20 mm ± 7.5 mm
Mass	96 kg

Tool flange	
Туре	Lockable pivot bearing
Flexibility	Angle of rotation 0° and 90° for turning on the spot without load carrier rotation

Power supply		
Туре	Contactless energy transfer system (point charge)	
Charging power	10 kW for 4 min (cyclic duration factor 10%)	
Charging current	DC 180 A	
System voltage	DC 60 V	

Drive data	
Туре	Differential drive with BP09 spring- loaded brakes and load-dependent pressing force adjustment
Encoder	RH1M resolver and pulse counter with Hall probe MHRM 12G2501 from Baumer
Max. travel speed	- Flat, straight ahead: 1.5 m/s - Incline, descent and curve: 0.5 m/s
Mean drive power per drive	200 W
Peak power	2000 W

### MAXO-MS/M/DR-QO

Diameter × height	606 mm × 213 mm
Wheel diameter	200 mm
Ground clearance	20 mm ± 7.5 mm
Mass	83 kg

Tool flange	
Туре	Drive module with safe rotary position
Flexibility	Omnidirectional

.,,,,	system (line charge)
System voltage	DC 120 V - 360 V
Drive data	
Туре	Differential drive
Encoder	EZ2Z encoder and pulse counter with Hall probe MHRM 12G2501 from Baumer
Max. travel speed	- Flat, straight ahead: 1.5 m/s - Incline, descent and curve: 0.5 m/s
Mean drive power	1500 W (750 W per drive)
Peak power	3500 W (1750 W per drive)

### MAXO-MS/M/DR-PA

Dimensions	
Length × width × height	775 mm × 600 mm × 206 mm
Wheel diameter	200 mm
Ground clearance	21 mm
Mass	100 kg

Tool flange	
Туре	Double swing axle
Flexibility	Differential rotation of drive unit including load carrier rotation

Type	Contactless energy transfer system (line charge), TDM90E011-D35-B06-0
Charging power	Mean charging power: 1100 W Peak power 1225 W
Charging current	DC 3.75 A
System voltage	DC 360 V
Drive data	

Туре	Differential drive with floating dou- ble swivel casters with brake
Encoder	EI7C
Max. travel speed	- Flat, straight ahead: 1.5 m/s - Incline, descent and curve: 0.5 m/s
Mean drive power	370 W

# **MAXOLUTION®**





Intralogistics

Internal transportation of large load carriers such as pallets, cage pallets and boxes



Warehouse logistics

Conducting goods transportation to, inside and out of the warehouse



**Production logistics** 

Mobile linking of process modules and production systems

### **ADVANTAGES AT A GLANCE**



### Compact!

Mounting position enables optimized layouts, more efficient use of buffer zones and simple design of transfer stations.



Extremely accurate positioning possible thanks to laser-based fine positioning.

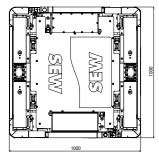


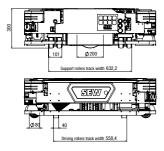
Simple maintenance thanks to modular



The 90-degree rotation of the drive module without the need to rotate the load carrier makes it possible to design smaller, more

### **OVERVIEW OF TECHNOLOGY**





	MAXO-MS-LA015
Dimensions	L = 1000 mm, W = 1000 mm, H = 300 mm
Weight	Min. 400 kg
Load capacity	Max. 1500 kg
Speed	Max. 1.5 m/s
Positioning accuracy	±2 mm to ±10 m
Stroke	Max. 235 mm
Power supply	Inductive charging, NiMH battery
Navigation	Free contour navigation/inductive/ camera system/RFID
Communication	VLC, WLAN
Curve radius	Min. 0.5 m with 0.5 m/s
Drive concept	Differential drive with rotary axis
Travel time	Up to 40 minutes



# **MAXOLUTION® Assembly assistant**



### Intralogistics

Internal transportation of small load carriers and customer-specific products



Assembly/Production

Mobile assembly platform with ergonomic stroke adjustment



**Material provision** 

Material supply for assembly and logistics

### ADVANTAGES AT A GLANCE



Ergonomic! Assembly platform with automatic and manual stroke adjustment.



Customer-specific load handling level for a range of different applications.

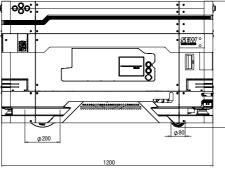


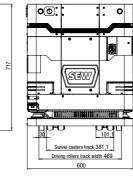
Simple maintenance thanks to modular



Can be used for assembly tasks and logistics processes.

### **OVERVIEW OF TECHNOLOGY**





	MAXO-MS-AA005
Dimensions	L = 1200 mm, W = 600 mm, H = 717 mm
Weight	Min. 450 kg
Load capacity	Max. 350 kg
Speed	Max. 0.8 m/s
Positioning	±2 mm to ±10 m
accuracy	
Stroke	Max. 300 mm
Power supply	Inductive charging, double-layer capacitor, lithium-ion battery
Navigation	Free contour navigation/inductive/RFID
Communication	VLC, WLAN
Curve radius	Min. 0.5 m with 0.5 m/s
Drive concept	Differential drive
Travel time	Up to 3 hours





# Mobile systems with MOVITRANS®



### POTENTIAL USES / TYPICAL APPLICATIONS

Mobile systems from SEW-EURODRIVE with contactless energy transfer







Logistics assistant MAXO-MS-LA015

Frame vehicle MAXO-MS-RA006

Assembly assistant MAXO-MS-AA005

### ADVANTAGES AT A GLANCE



### Scalable!

Charging while traveling or at load transfer, different charging strategies are possible depending on the application and requirements.



### Contactless!

Do without ground contact completely, make the routes traversable and transfer the energy maintenance-free and wear-free.



### **Ground clearance!**

High ground clearance for automated guided vehicles thanks to the air gap between the line cable and pick-up.



### Availability!

Use contactless energy transfer with MOVITRANS®, because it offers extremely high availability.

### **OVERVIEW OF TECHNOLOGY**

### STATIONARY COMPONENTS

System frequency 25 kHz or 50 kHz

### 1 TES31A decentralized supply unit

- Power: 8 kW or 16 kW (up to 48 kW in parallel connection)
- Line voltage  $V_{line}$ : 3 × AC 380 500 V  $\pm$  10%

### 2 TCS31A compensation box

Adjustable compensation for track lengths of 0 to 25 m

### 6 Field plate

- Inductive point-based charging with high power ratings of up to 11 kW
- System frequency B: 50 kHz
- Can be installed in the floor or on top of it

### Cable in wedge-shaped design

- Inductive linear energy transfer
- Suitable for currents of up to 60 A
- Energy transfer on the move
- Installation possible as open and cast routing in the floor or on top of it in installation plates

### Circular conductor

- Installation cast into the floor
- Not sensitive to poor ambient conditions

### Installation plates

- Installation of MOVITRANS® possible without disrupting the floor
- Combining the installation plates using grooves and tongues in a puzzle system enables rapid installation and removal of surfaces.
   This increases the flexibility and adaptability of the factory.











MOVITRANS® technology works on the principle of inductive energy transfer and ensures the perfect power supply – contactless, quiet, low-maintenance and wear-free.

# **Life Cycle Services**

8	Life	Cycle Services	3
	8.1	DriveRadar® IoT Suite for industrial gear units	3
	8.2	Retrofit	3

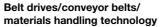
# **DriveRadar® IoT Suite for** industrial gear units

Condition-based component monitoring and maintenance forecasting



### **POTENTIAL USES / TYPICAL APPLICATIONS**







Agitators



Cranes

### **ADVANTAGES AT A GLANCE**



### Effective monitoring!

Early warning in case of critical changes in condition and abnormal operating characteristics and identification of trends through continuous monitoring and intelligent mapping.



### Increased productivity!

Transparency regarding the condition and operating characteristics of gear units boosts productivity and avoids unscheduled



### Efficient operations!

Improving the ability to plan maintenance and repairs.



### Conserves resources!

Utilizing the full service life of components and systems helps to conserve resources.

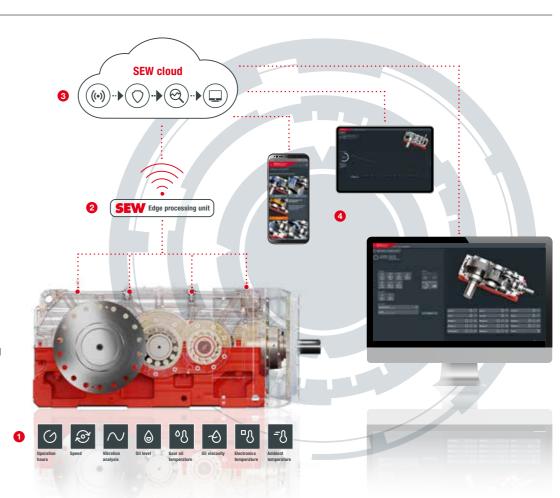
### **OVERVIEW OF TECHNOLOGY**

The DriveRadar® operating principle using the example of a Generation X.e industrial gear unit

- 1 Sensors and data acquisition
- 2 Edge processing unit (EPU) / data connection
- 3 Data calculation and data analysis
- 4 DriveRadar® IoT Suite / DriveRadar® IoT app

### The DriveRadar ® IoT Suite

- Intuitive and clear user interface
- Rapid localization of all gear units in the asset overview
- Detailed view of all measured variables and components
- Condition history automatically recorded in the event logbook
- Clear recommendations for analyzing and eliminating causes
- Validated analytics for early detection of bearing and gearing damage
- Forecast on oil level and next oil change



Modernization is part of our service throughout the entire system life cycle.



### POTENTIAL USES / TYPICAL APPLICATIONS



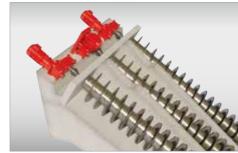
### Intralogistics applications

- Storage/retrieval system
- Horizontal materials handling technology
- Hoists



### Handling applications

- Gantry cranes
- Palletizers specialists



### Other applications

- Screw conveyors/screw pumps
- Stirrers/mixers
- Crushers
- Fans

### **ADVANTAGES AT A GLANCE**



# Safeguard system and spare part availability

by using current and available drive technology components.



# Prevent production stoppages and reduce downtimes

thanks to planned retrofitting measures and fast, efficient startup performed by SEW-EURODRIVE specialists.



### Reduce energy costs

with optimum project planning and the use of energy-efficient drive technology components.



# Optimize production processes while maintaining machine safety

by increasing the level of automation and using cutting-edge control and drive technology components.

### **OUR SERVICES AT A GLANCE**

### Component retrofit:

### Replacement of drive technology components

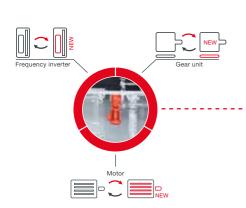
- Actual analysis and status recording
- Project planning and design
- Adaptation engineering of electrical and mechanical components
- Replacement of drive components and drive-related periphery
- Startup

### System retrofit:

### Modernization of an entire system

- Control cabinet engineering and production
- Adaptation engineering of the system and application
- Automation and application programming
- Project management
- Technical safety consulting and machine safety evaluation
- Conversion of the mechanical periphery of the application and system
- Floor installation of MOVITRANS® systems
- System acceptance

### **Component retrofit**



# System retrofit Control technology and visualization Control technology and visualization



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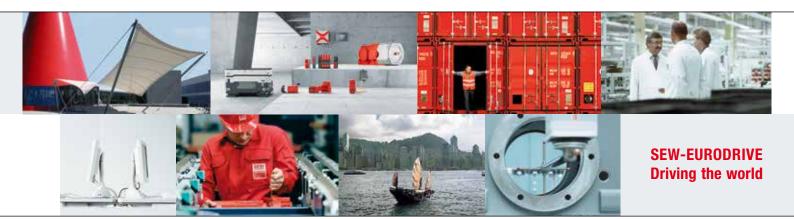
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## How we're driving the world







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