



## Linear Motion solutions for material handling

We pioneer motion

**SCHAEFFLER**

# The mobile solution of the future

Automated Guided Vehicle (AGV) systems are fully autonomous robots that move and transport items in production, warehouse, and distribution centres without manual intervention or permanent conveying systems.

Material handling equipment requires smooth and fast motion to move material around an operation efficiently. Most forklift trucks and Autonomous Guided Vehicles (AGV) or Autonomous Mobile Robots (AMR) operate with electric drives. Energy efficiency is a crucial feature in material handling to increase runtime and productivity, whilst systems are still prevalent in high power lifting functions but have poor energy efficiency.

EWELLIX electromechanical actuators offered by Schaeffler provide energy-efficient alternatives for these functions in material handling.

## **From standard range to customised solutions**

Schaeffler provides a range of EWELLIX actuators, guiding systems and controllers to meet all your needs. From high-performing, robust products that have minimal play to straightforward configurations needed for less demanding jobs.

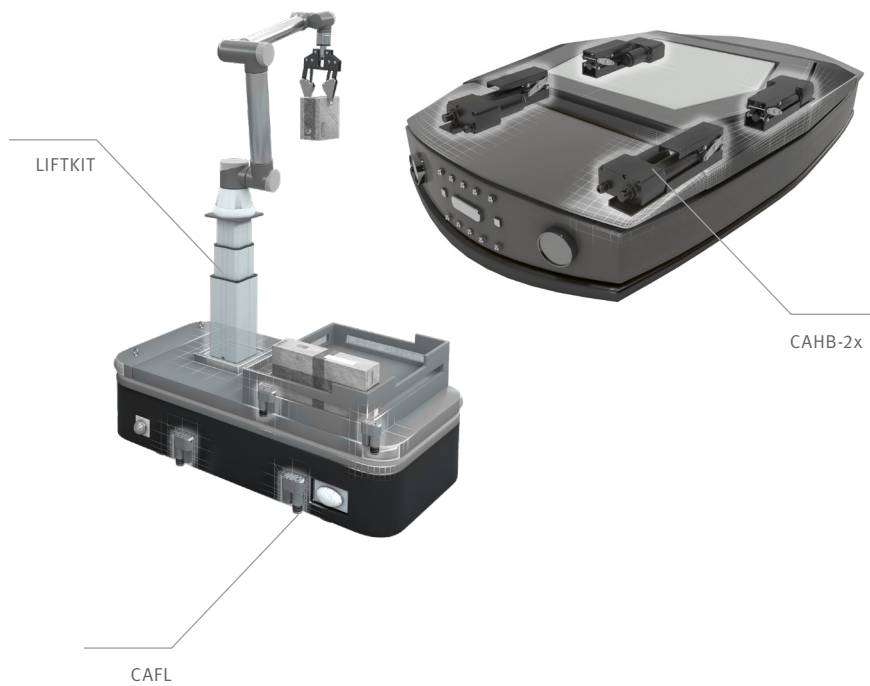
### **Application competence**

Building on our more than 30 years' experience and knowledge in handling applications, we can support you with technical advice, system setup, and customised designs throughout.



# Automated Guided Vehicles (AGV)

with EWELLIX actuators



## Features

- Oil-free operation with the same performance as hydraulic system
- High responsiveness, speed and positioning
- Integrated controller with BUS communication

## Benefits

- Oil-free
- Energy efficient
- Compactness
- Position feedback
- On-board diagnostic
- Stability
- Vertical axis
- Parallel motion

Automatically controlled or autonomous vehicles that transport a wide range of products from crates to pallets are becoming increasingly popular in today's fast-moving environment. Electromechanical actuators lift few tons in a small space for unit load AGV, move the arm of the tow tugs top module or lift the low lift truck Autonomous Mobile Robots (AMR).

The plug-and-play EWELLIX LIFTKIT offered by Schaeffler generates a vertical axis to extend the performance of the AMR and 6 axis Robot for goods-to-person operations. The EWELLIX electromechanical actuators and lifting columns offered by Schaeffler, provide efficiency, ease of operation and positioning with feedback.

## Linear actuators\*

## 7th axis solution\*



CAHB-2x



CAFL



LIFTKIT

\* EWELLIX actuators offered by Schaeffler

# Pallet truck

## with EWELLIX actuators



### Features

- Oil-free operation with the same performance as hydraulic system
- High responsiveness, speed and positioning
- Short built-in dimensions
- Integrated sensor

### Benefits

- Oil-free
- Energy efficient
- Compactness
- Position feedback
- Telematics ready

An electric pallet truck is a powered industrial truck used to lift and move materials over short distances for indoor and outdoor applications. The trend today is to use electrical solutions for lifting the fork. The EWELLIX electromechanical actuators offered by Schaeffler, provide an energy efficient and oil-free solution for smooth movement with energy recuperation and lower Total Cost of Ownership.

### High performance actuators\*



EMA-100

\* EWELLIX actuators offered by Schaeffler

# Forklifts

with EWELLIX actuators



## Features

- Oil-free operation with the same performance as hydraulic system
- High responsiveness, speed and positioning
- Integrated safety feature for lifting
- Integrated sensor

## Benefits

- Oil-free
- Energy efficient
- Smooth movement
- Lower TCO
- Energy recuperation

An electric forklift is a powered industrial truck used to lift and move materials over short distances for indoor and outdoor applications. It has become increasingly common to use electrical solutions for lifting, tilting and adjusting the fork and for steering. The EWELLIX electromechanical actuators offered by Schaeffler, provide an energy efficient and oil-free solution for smooth movement with energy recuperation and lower Total Cost of Ownership.

## High performance actuators\*    Linear actuators\*



EMA-100



CAHB-2x

\* EWELLIX actuators offered by Schaeffler

# EWELLIX Products overview



<b>Linear actuators*</b>	<b>CAHB-2x</b>	<b>CAFL</b>
Rated push load	Up to 10000 N	Up to 1700 n
Speed	Up to 57 mm/s	Up to 12 mm
Stroke	Up to 700 mm	Up to 27 to 50mm
Retracted length	Stroke + 160/235 mm	Stroke +85 mm
Static load	20000 N	7500 N



<b>High performance actuators*</b>	<b>EMA-100</b>
Rated push load	Up to 80000 N
Speed	Up to 890 mm/s
Stroke	Up to 2000 mm
Retracted length	Stroke + 326 mm
Static load	80000 N



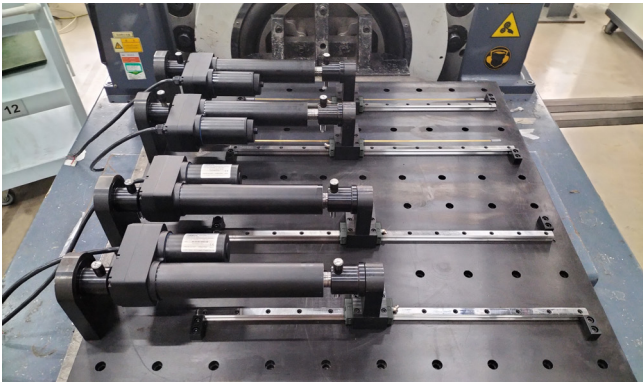
<b>7th axis for robots*</b>	<b>LIFTKIT</b>
Max dynamic payload	Up to 1500 N
Speed	Up to 80 mm/s
Stroke	Up to 1400 mm

\* EWELLIX actuators offered by Schaeffler  
More data available on request

# Your development partner

## Tested for your environment

Our expertise in mechanics and electronics and specific application requirements contribute to the development of electromechanical actuators to meet the requirements of mobile machinery manufacturers. We verify our products through a comprehensive test plan that covers all regulatory and environmental requirements.



Vibration test

### **Mechanical tests**

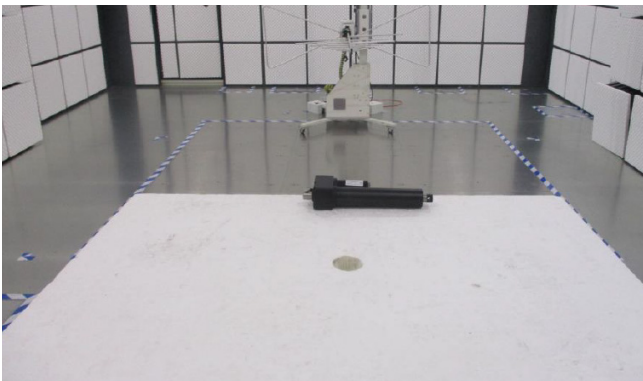
The actuators are used on mobile equipment and we put them on different test benches to validate how they withstand vibration and shock on all three axes.



Low temperature test

### **Climatic tests**

The actuators are tested in a climatic test chamber that reproduces extremely low  $-40\text{ }^{\circ}\text{C}$  and high temperatures  $+85\text{ }^{\circ}\text{C}$  and any possible variations, including humidity and corrosive atmospheres. Doing this ensures that all the functions and performance of the actuators are working as expected.



EMC test air immunity or radiation test

### **Electrical tests**

The actuators are tested with different test equipment that reproduces the electrical environment recommended by international standards, such as power supply, immunity to the electrostatic discharges, and electromagnetic compatibility during extreme cases, even during the transient mode typical on a vehicle.

# Supporting tool

## Digital

Schaeffler has developed a portfolio of tool to support customers in easy selection and calculation the right Schaeffler product for their application.

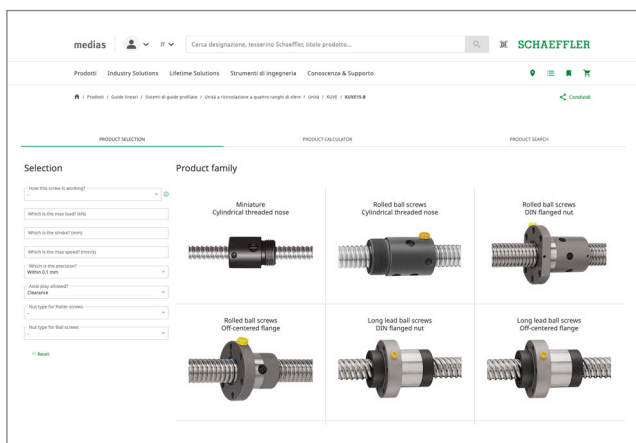
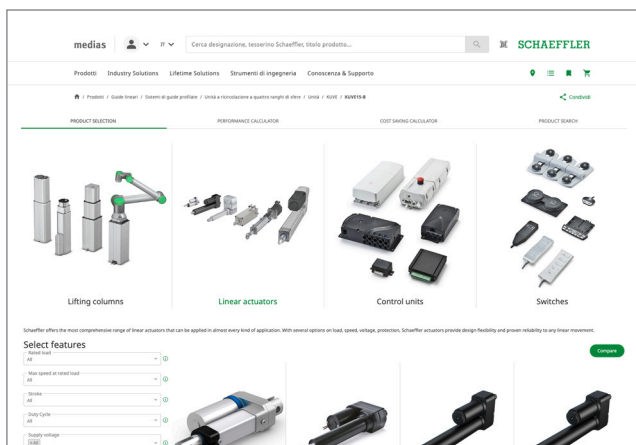
### EWELLIX Actuator select

- Product selection
- Performance calculator
- Cost saving calculator



### EWELLIX Actuator select

- > Scan QR code
- > Click on [link](#)



## Publications

Supporting documents are available for download on Schaeffler.com on each product page under the technical data section:

- Operating manual
- Mounting instruction



**EWELLIX  
CAHB-2xE/S - 31N**  
> Scan QR code  
> Click on [link](#)



**EWELLIX CAFL**  
> Scan QR code  
> Click on [link](#)



**EWELLIX High performance  
actuator EMA-100**  
> Scan QR code  
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**EWELLIX LIFTKIT**  
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