Linear Motion solutions for plastic and rubber

We pioneer motion

SCHAEFFLER

Innovations for more sustainability in the plastics industry

It is hard to imagine modern life without plastics. Their applications range from packaging to electronics to all kinds of vehicles. With the ever-increasing use of plastics, the performance and efficiency of plastics machinery have become key requirements for plastics processors

The use of plastics poses a challenge in terms of sustainability, but at the same time offers opportunities to save weight and reduce energy consumption. The manufacturing of plastic parts requires machines that are capable of reducing the wall thickness of containers and packaging, adding layers of recycled material while complying with health and safety regulations. Process control and performance thus become key parameters for these machines.

The energy consumption of the machines itself is also an important factor in the net impact of plastic parts and components, and the electrification of fluid-powered functions is crucial to improve efficiency.

Schaeffler strives to be the best partner for machine builders and users who want to set new standards for performance and reliability in plastics processing.

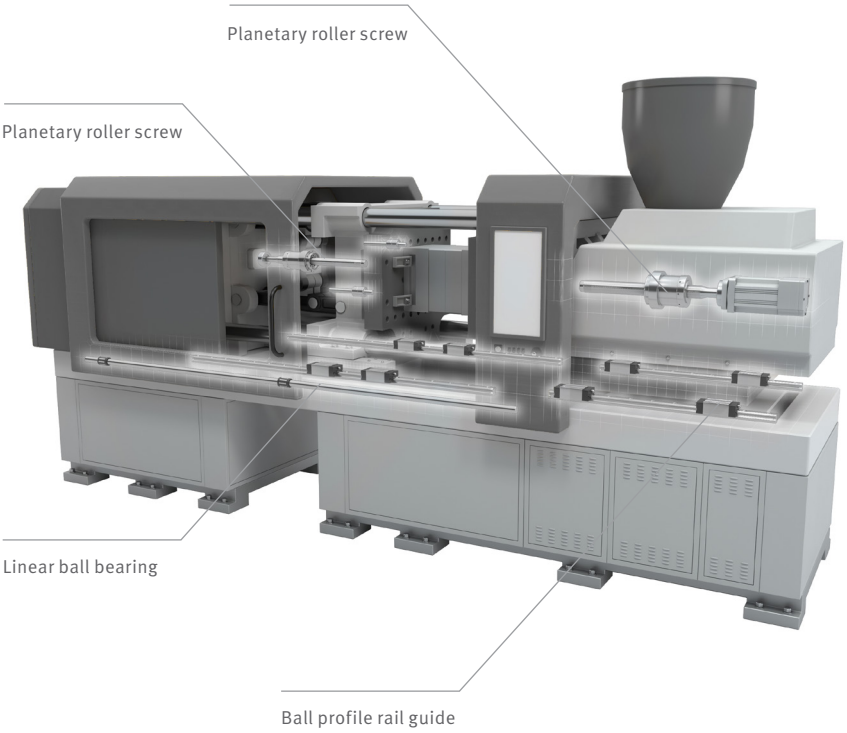
We support customers with linear motion solutions that are ideally suited for plastics processing and provides:

- High performance products with high reliability
- Compact and robust design
- Extensive industry experience and knowledge
- Strong customisation capabilities
- Global presence and support

Value proposition

- Excellent repeatability with high-precision positioning
- Increased productivity
- High energy efficiency
- Minimum downtime with outstanding reliability
- Compact and space saving design
- Reduced carbon footprint
- Easy integration
- Long service life

Plastic injection moulding



Features

- High speed and acceleration
- High force capacity
- High efficiency and robustness
- Clean production environment for medical andelectronics

Benefits

- Precise positioning with high repeatability
- Optimised process controllability
- Customisation for easy integration
- Minimum downtime with outstanding reliability
- Long service life due to roller screw technology
- Long service life due to corrosion resistant and self-aligning linear guides

Plastic injection moulding is facing ever-increasing challenges in injecting plastic parts in a more sustainable way. Machine manufacturers need to increase injection pressure for thinner-walled packaging and achieve the highest movement speeds for lower dry cycles and higher productivity.
Our roller screw technology offers high speed, quiet running and the most compact solution for injection, clamping and ejection functions.
Schaeffler's broad range of linear guides can fulfil most operating and auxiliary functions (machine doors) as well.
Mould linear movements such as slides, core pulls, ejection, or hot runner valves can also benefit from the wide range of linear components or compact EWELLIX electromechanical actuators Schaeffler offers.

EWELLIX High performance actuators **Roller screws** **Linear guides**

CASM-32/40/63

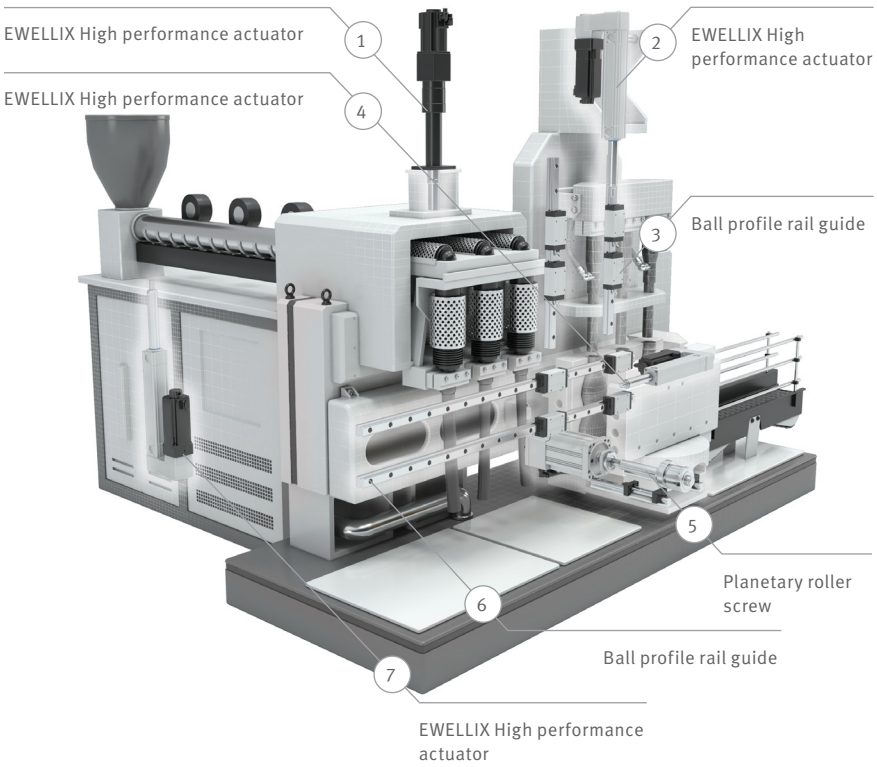
CEMC

Planetary roller screws

KLLT

LBB/LBCD

Plastic blow moulding



1	Parison wall thickness control	2	Calibration
3	Calibration unit guiding	4	Mould carriage side movement
5	Mould closing	6	Mould carriage
7	Bobbing		

Plastic blow moulding is facing growing challenges in producing more sustainable plastic containers. Machine manufacturers have to implement the best techniques for energy efficiency and process control.
Our roller screw technology offers unrivalled performance and low torque operation for high precision small movements of parison wall thickness control. Its high power density, lifetime and peak load acceptance make it also perfect for neck calibration, injection, bobbing and mould clamping.
All Schaeffler linear guides are also perfectly suitable for parison cutting, carriage movements or grippers guiding.

Features

- High speed and acceleration
- High peak load on closing and calibrating functions
- High lifetime on small movement under high load for parison control
- Precise guiding and stiffness for overhanging parison cutter
- Long stroke and tolerance to height difference for carriages guiding

Benefits

- Ideal solution for moving high loads with precise positioning and high speed
- Precise positioning and high speed are required
- Optimised process controllability
- Shorter design and commissioning time
- Minimum downtime with outstanding reliability
- Long service life due to roller screw technology

EWELLIX
High performance actuators **Ball and roller screws** **Linear guides**


SRSA/SVSA


EMA-100


CASM-32/40/63

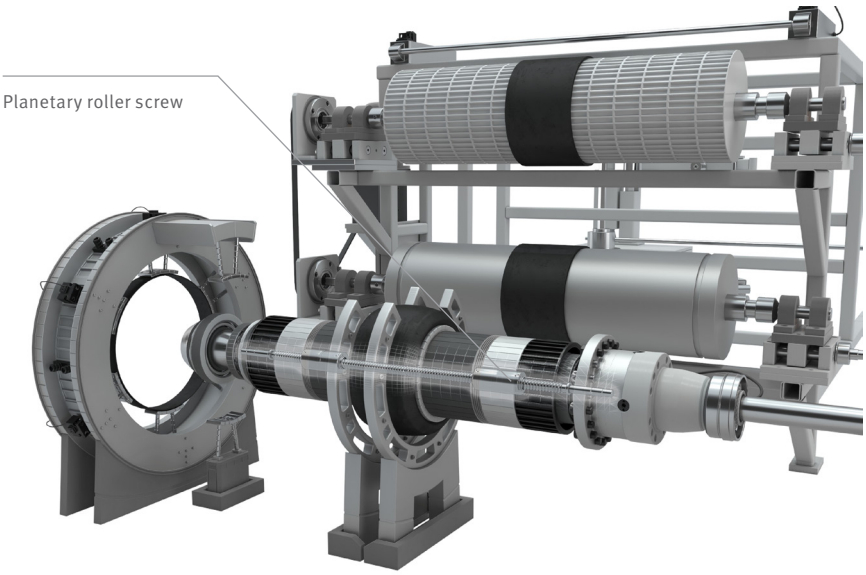

Ball screws


Roller srews


KLLT


LBB/LBCD

Tyre manufacturing



Features

- High speed and acceleration capabilities
- High peak load for pressing functions
- High lifetime with small movement under high load
- High tolerance to harsh environment
- Right- and left-hand thread on the same shaft
- Perfectly symmetrical and timed movement

Benefits

- Space saving compact solution
- Improved process controllability
- Shorter design time thanks to a wide range of product variants and options
- Shorter design and commissioning time
- Minimum downtime with outstanding reliability
- Long service life due to roller screw technology

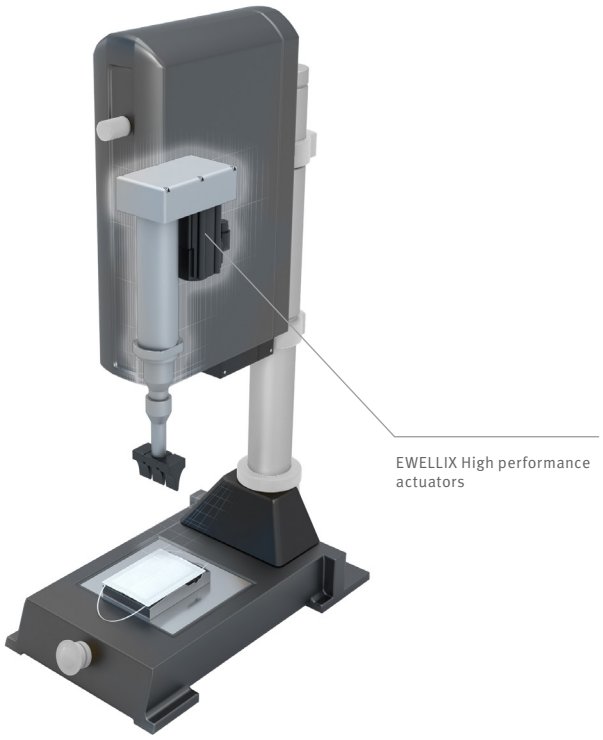
Tyre building machines are a key element of tyre manufacturing in which all components such as tread, sidewall, inner liner, body ply, bead, and cord body are joined together. The components must be pushed axially and symmetrically in several assembly steps.
Our roller screws can be offered in special versions with two nuts on the same shaft, one being right-handed and the other left-handed. It results in the smoothest and most robust design to achieve perfect tyres with very low maintenance.
Other tyre manufacturing applications require pressing functions, for which Schaeffler supplies perfectly suited linear components and EWELLIX high performance actuators.

EWELLIX High performance actuators **Roller screws**

EMA-100

Roller screws

Plastic welding



Features

- High process accuracy and repeatability
- High duty for automated versions
- Compactness
- Quick machine set-up
- Low noise operation thanks to absence of recirculation of rolling elements
- Compact and easy to integrate actuators or components

Benefits

- Long service life due to roller screw technology
- Excellent technology for pressing applications over few millimetres
- Smooth and low noise operation
- Shorter design and commissioning time
- Minimum downtime with outstanding reliability

Welding is one of the most widely used processes for bonding polymers, valued for its speed, flexibility, and low cost. The market is now calling for more controlled and consistent welding processes, especially in the medical industry. EWELLIX high performance and compact actuators offered by Schaeffler provide the dynamics, the resolution and repeatability necessary to meet these new demands.
For highly customised solutions, we can also support the integration of all key components (screws, guides etc.)
They are suitable for most plastic welding processes requiring a piloted pressing function, including:

- Ultrasonic welding
- Hot plate welding
- Laser welding
- Friction welding

EWELLIX High performance actuators **Roller screws** **Linear guides**

SEMC

CEMC

Roller screws

KLLT

Products overview





EWELLIX High performance actuators	SRSA / SVSA	EMA-100	CASM-32/40/63	CEMC	SEMC
Dynamic axial force	Up to 500 kN	Up to 80 kN	Up to 5,4 kN	Up to 25 kN	Up to 10 kN
Dynamic load capacity	Up to 572 kN	Up to 106 kN	Up to 21 kN	Up to 59 kN	Up to 27,4 kN
Speed	Up to 1111 mm/sec	Up to 890 mm/s	Up to 1067 mm/s	Up to 480 mm/s	Up to 600 mm/s
Max. stroke	1500 mm	2000 mm	800 mm	300 mm	125 mm

More data available on request



Ball and roller screws	SP	SR	SV
Diameter	8 to 16 mm	8 to 240 mm	8 to 125 mm
Lead	2 to 5 mm	2 to 50 mm	1 to 5
Acceleration	up to 4000 rad/s^2	up to 20000 rad/s^2	up to 4000 rad/s^2
Dynamic load capacity	from 2,2 kN to 7,6 kN	from 8 kN to 4 000 kN	from 8.5 kN to 756 kN
Maximum speed	120000/Ø rpm	160000/Ø rpm	30000/Ø rpm



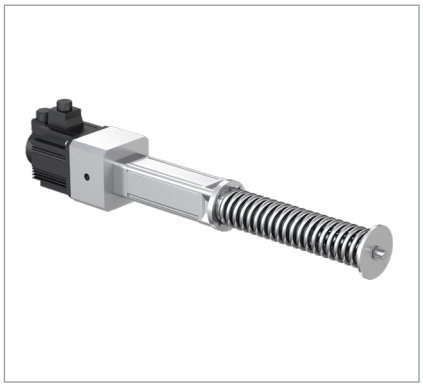
Linear guides	LB-range	KLLT-range	KUEM-E
Size and range	3 to 80	15 to 45	7 to 15
Dynamic load rating	Up to 37,5 kN	Up to 59,2 kN	Up to 6,5 kN
Speed	Up to 5 m/sec	Up to 5 m/sec	Up to 5 m/sec
Acceleration max	100 m/s2	up to 75 m/s2	up to 140 m/s2

Your engineering partner

Customisation

With more than 50 years of experience, we provide customers with tailor-made solutions that fit any application needs. Our extensive product knowledge, combined with engineering expertise, transforms customer needs into tailored solutions. Focusing on client-specific requests, our engineers help customers develop and implement cost-effective solutions to optimise the performance of the application.

EWELLIX EMA made of stainless steel

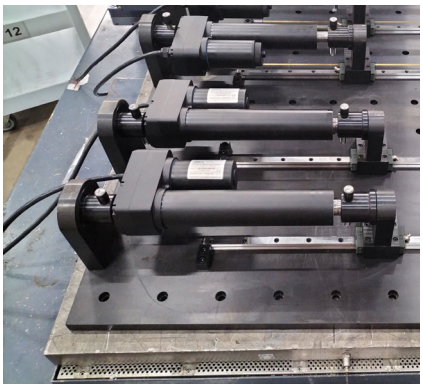


EWELLIX CASM with spring around the push tube

Cylinder with very long stroke length

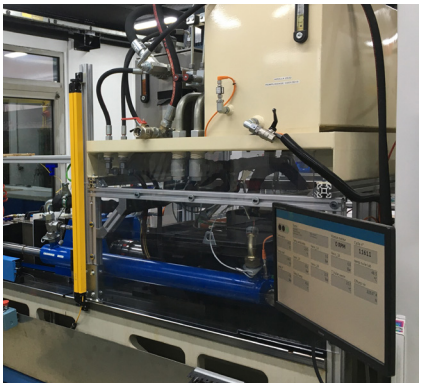
Testing capacities

All our products are extensively tested for their key parameters according to a comprehensive test plan that covers all regulatory and environmental requirements and meets the most stringent industry standards. We are able to test all components down to the ball or roller screw. In addition, we can simulate mechanical, electrical and environmental application conditions.



Vibraton test

EWELLIX EMA testing



Roller screws testing

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

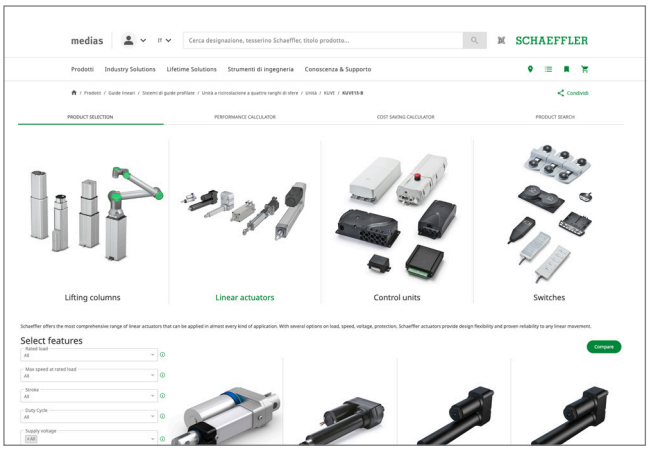
- Product selection
- Performance calculator
- Cost saving calculator

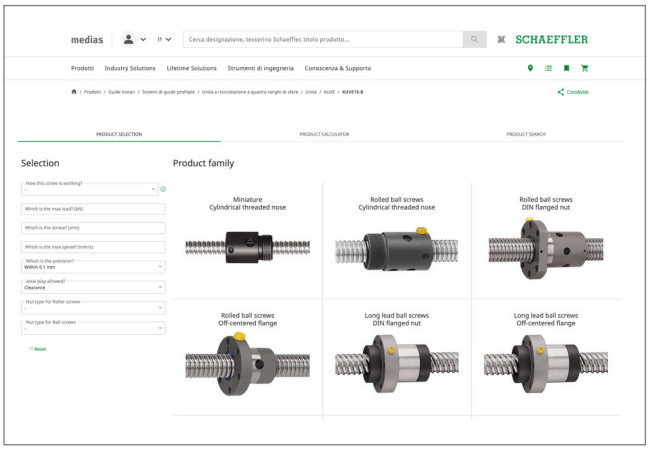
Ball and Roller Screw select

- Product selection
- Product calculator
- Product verification

Linear guides select

- Product selection
- Product calculator
- Cross reference





EWELLIX Actuator select
› Scan QR code
› Click on link

Ball and Roller Screw 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

Roller screws
› Scan QR code
› Click on link

EWELLIX High performance actuator CASM-32/40/63
› Scan QR code
› Click on link

Ball profile rails LTT
› Scan QR code
› Click on link

Ball screws
› Scan QR code
› Click on link

EWELLIX High performance actuator SEMC
› Scan QR code
› Click on link

Miniature profile rails KUEM-E
› Scan QR code
› Click on link

EWELLIX High performance actuator SRSA
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EWELLIX High performance actuator CEMC
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EWELLIX High performance actuator EMA-100
› Scan QR code
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Linear ball bearings LBB
› Scan QR code
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