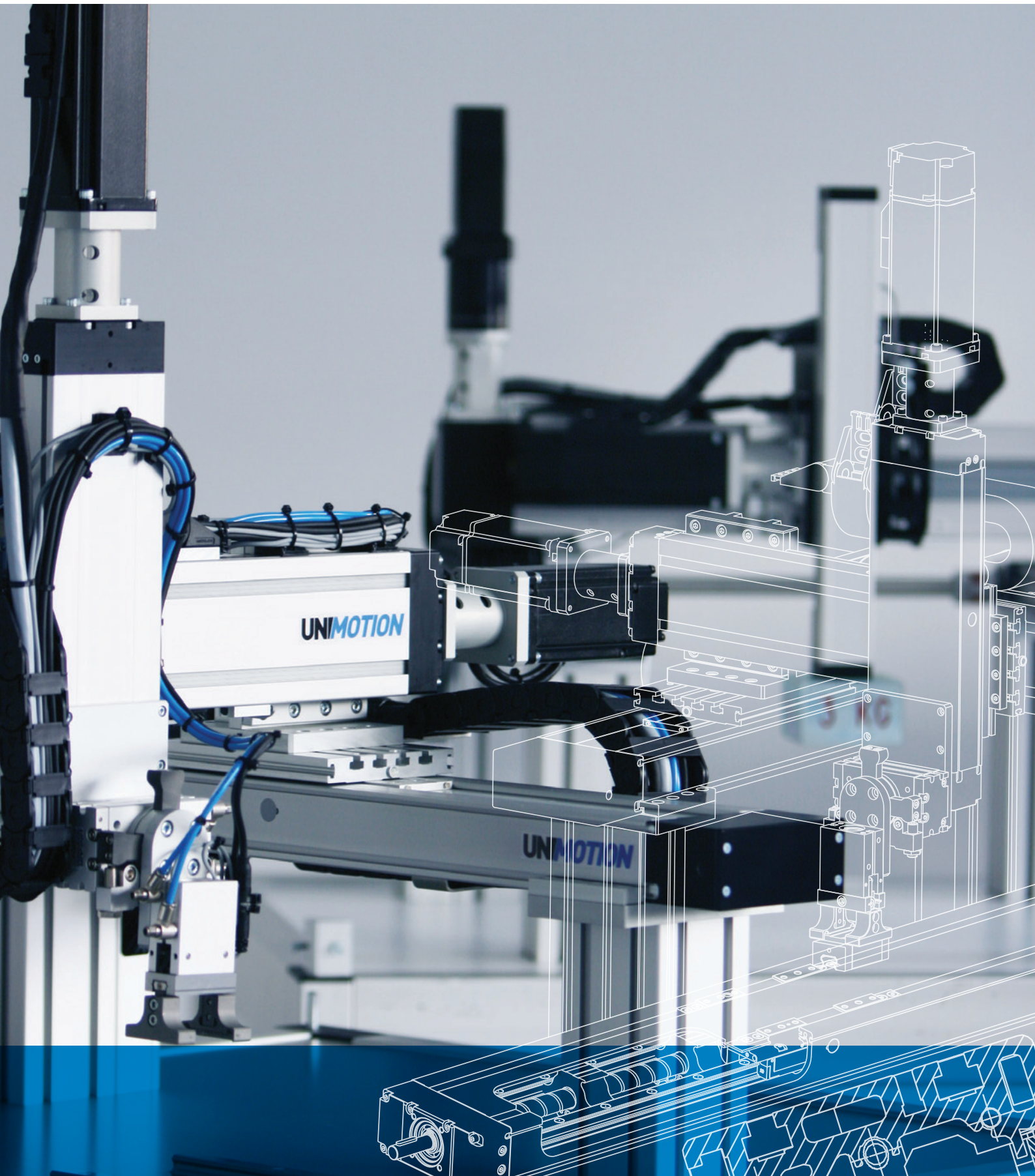


# UNIMOTION

## PRODUCT CATALOGUE





# ALL UNDER ONE ROOF

## PRODUCTION, CONSTRUCTION, ENGINEERING AND WAREHOUSE

We operate in the field of customized machinery, offering individual and integrated solutions such as testing machines and assembly lines with its own development. Experience in long-term individual technology solutions has led the company to become a linear motion technology solution provider.

### 25 YEARS OF EXPERIENCE



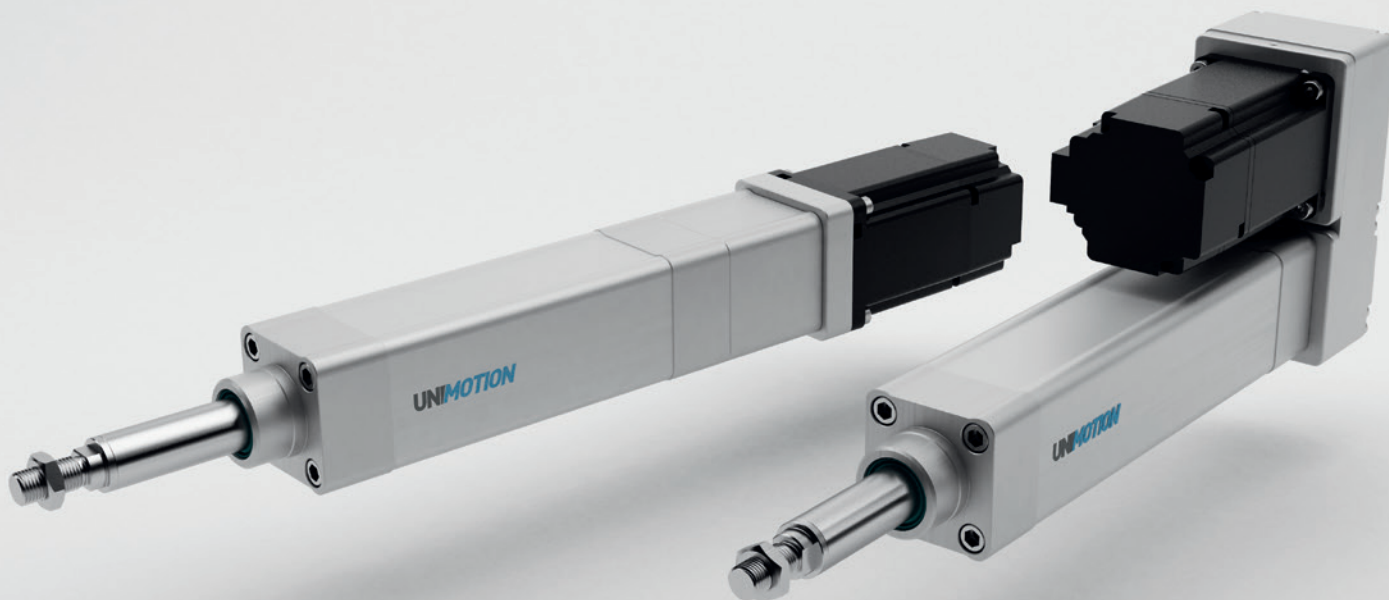
Our modern machinery with various CNC machining centres and CNC automatic lathes enables high-precision manufacturing and in-depth in-house production capabilities. For example, we ourselves manufacture the drive shafts with the pulleys and machine the ball screw ends.

We ensure the constant quality and performances for our outstanding products through the following machines:

- annealing machine station for the ball screw
- straightening machine
- several CNC machines and automatic lathes with power tools
- two 4-axis machining centres with a highly modern, fully automated pallet changing system
- high precision CNC machining machine with a travel distance of 3.5m,
- 5-axis CNC machine with a travel distance of 7m for 5-axis sawing, drilling and machining jobs where our linear-axis profiles are machined
- one Wenzel 6m-long CNC measuring machine
- one Wenzel 3D coordinate CNC measuring machine

This is why, quality, reliability, a good price/performance ratio and short delivery times are harmonised to perfection. Thus, in the production of our standard linear units as well as individual and complex special linear units, we can guarantee high capacity, flexibility and precision.





# ELECTRIC CYLINDERS

## PNCE SERIES - 32, 40, 50, 63

ISO  
15552



The PNCE are electric cylinders with a precision ball screw drive. The electric cylinder is based on the standard ISO 15552. Its outer design and dimensions are very similar to pneumatic cylinders.

High performance features such as:

- high speeds,
- good positioning accuracy and
- high repeatability

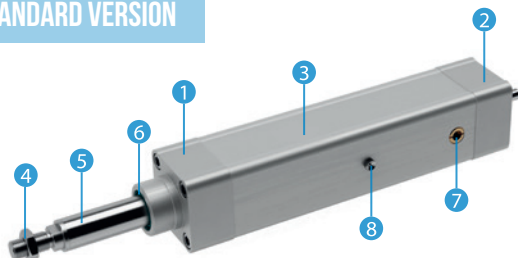
are ensured through a precision ball screw with reduced backlash (preload on request) of the ball nut and non-rotating piston rod. For a long service life the re-lubrication can be done through a lubrication nipple.

The design with its smooth surfaces enables easy cleaning of the cylinder. In combination with a lubricant class H1 it is also suitable for food & beverage applications. It can be additionally equipped with switches and ISO standard accessories.

**Maximum stroke: 1200 mm**  
**Maximum travel speed: 2,5 m/s**

**Maximum axial load: 16500 N**  
**Axial backlash: <0,02 mm**

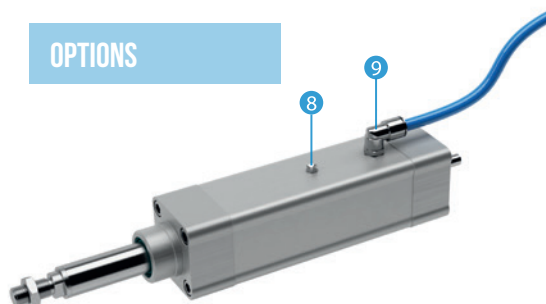
### STANDARD VERSION



- 1 – Front cap
- 2 – Drive cap
- 3 – Smooth cylinder profile
- 4 – Hex nut

- 5 – Piston rod (stainless steel) with an anti-rotation device
- 6 – Piston rod seal
- 7 – Pressure compensation
- 8 – Lubrication nipple

### OPTIONS



- 8 – Lubrication nipple
- 9 – Connection for pressure compensation

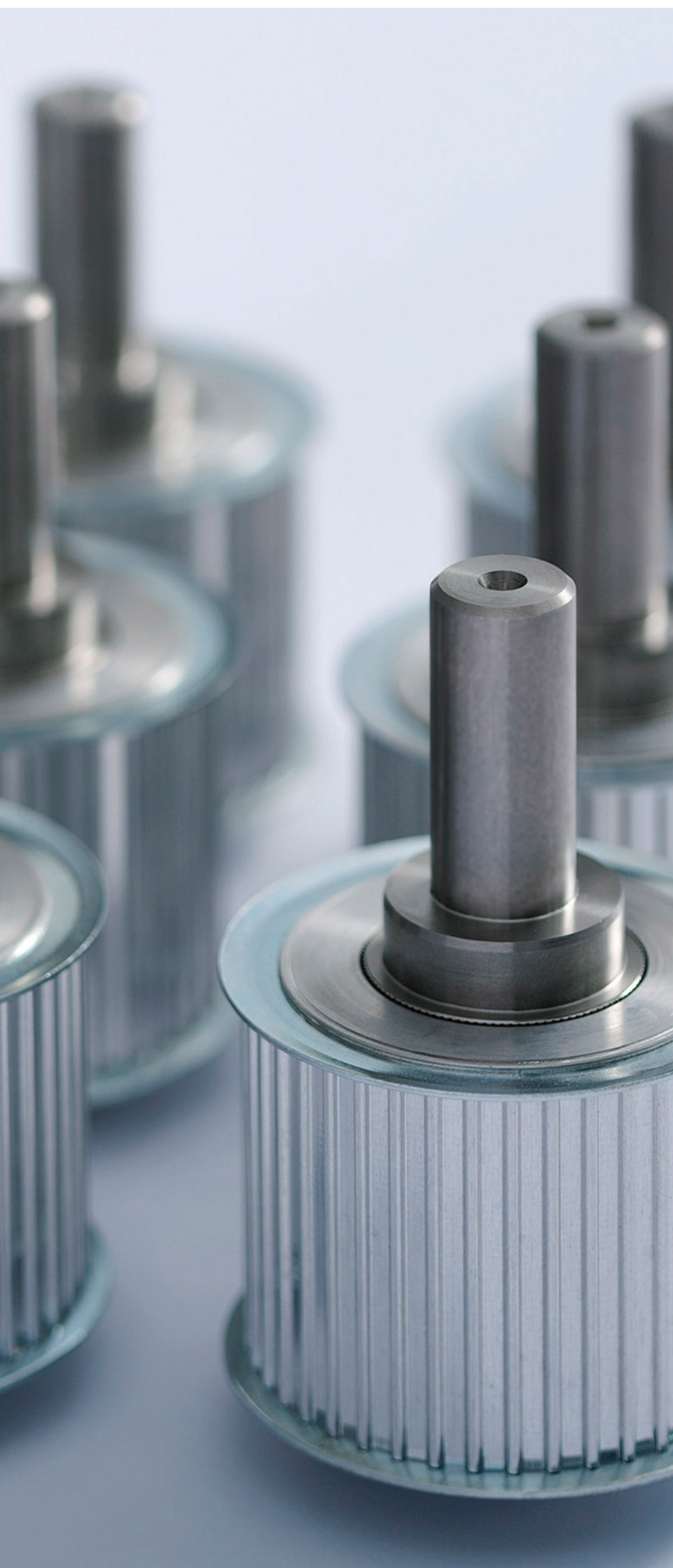
- IP65 protection class (IP65)

- IP65 protection class with corrosion resistance (IP65CR)

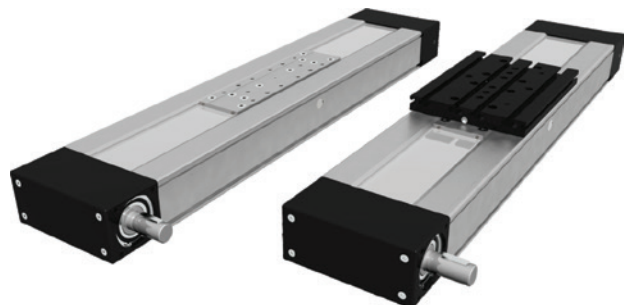
- For applications in the food industry (FI)



# BELT DRIVE



**CTJ SERIES** - 90, 110, 145, 200



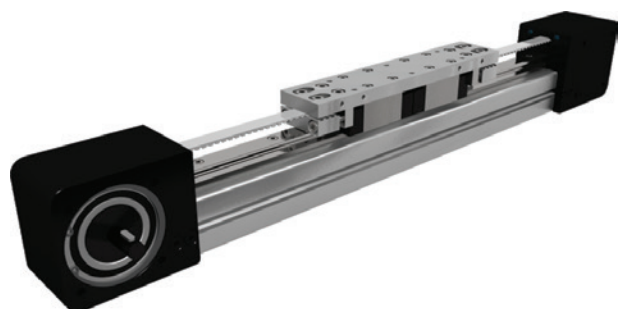
**MTJ AND MRJ SERIES** - 40, 65, 80, 110



**MTJ Z SERIES** - 40, 65, 80, 110



**MTJ ECO SERIES** - 40

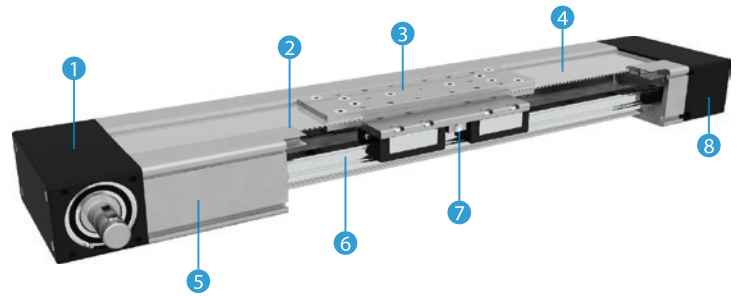




A compact linear unit with an AT toothed belt with steel cords and two parallel, integrated zero-clearance guide rail systems. A compact hard anodized aluminium profile with additionally in one-step machined internal surfaces for precise and optimal movements. The linear unit is driven by a zero-clearance drive pulley. The polyurethane timing belt is guided in the profile slot and protects all the parts in the profile from different contaminations. Lubrication ports for the central re-lubrication of the ball rail guide system.

**Travel speed:  $v \leq 6$  m/s**

**Repeatability precision:  $\pm 0,08$  mm**



- 1 - Drive block with pulley
- 2 - Aluminium cover
- 3 - AT polyurethane toothed belt with steel tension cords
- 4 - Carriage; with built in Magnets

- 5 - Aluminium profile-Hard anodized
- 6 - Two integrated Linear Ball Guideways
- 7 - Central lubrication port on both sides
- 8 - Tension End with integrated belt tensioning system



A compact linear unit with a precision-extruded aluminium profile and AT toothed belt with steel cords and zero-clearance drive pulley. The polyurethane timing belt is guided in the profile slot and protects all the parts in the profile from different contaminations. For better protection of the internal parts, the linear unit can be sealed with a corrosion-resistant protection strip. A lubrication port for the central re-lubrication of the ball rail guide system.

**MTJ 40, 65, 80, 110**

Linear unit with an integrated zero-clearance guide rail system inside the profile.

**Travel speed:  $v \leq 6$  m/s**

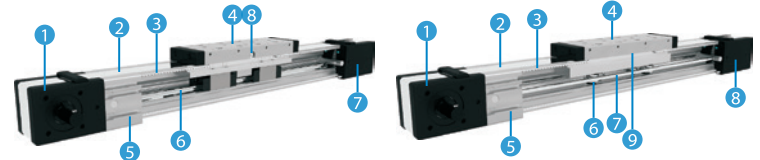
**Repeatability precision:  $\pm 0,08$  mm**

**MRJ 40, 65, 80, 110**

Linear unit with the integrated Track Rollers inside the profile.

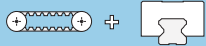
**Travel speed:  $v \leq 10$  m/s**

**Repeatability precision:  $\pm 0,08$  mm**



- 1 - Drive block with pulley
- 2 - Corrosion-resistant protection strip (available also without protection strip)
- 3 - AT polyurethane toothed belt with steel tension cords
- 4 - Carriage; with built in Magnets
- 5 - Aluminium profile-Hard anodized
- 6 - Linear Ball Guideway
- 7 - Tension End with integrated belt tensioning system
- 8 - One central lubrication

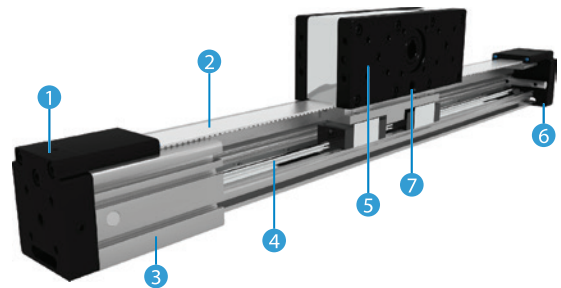
- 1 - Drive block with pulley
- 2 - Corrosion-resistant protection strip (available also without protection strip)
- 3 - AT polyurethane toothed belt with steel tension cords
- 4 - Carriage; with built in Magnets
- 5 - Aluminium profile-Hard anodized
- 6 - Track Roller (journal Bearing)
- 7 - Two hardened steel Round guide (58/60 HRC)
- 8 - Tension End with integrated belt tensioning system
- 9 - One central lubrication port



The Omega linear units with an AT toothed belt with steel cords and an integrated zero-clearance guide rail system inside the profile are suitable for vertical application. The drive carriage can be stationary mounted while the aluminium profile moves in the vertical directions. This enables its low travelling mass and makes the linear unit suitable for vertical movements. A lubrication port for the central re-lubrication of the ball rail guide system.

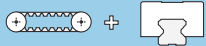
**Travel speed:  $v \leq 6$  m/s**

**Repeatability precision:  $\pm 0,08$  mm**



- 1 - Tension End with integrated belt tensioning system
- 2 - AT polyurethane toothed belt with steel tension cords
- 3 - Aluminium profile-Hard anodized
- 4 - Linear Ball Guideway

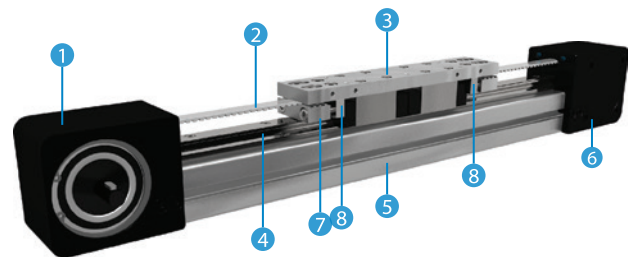
- 5 - Drive block with pulley, Motor flange; with built in Magnets
- 6 - Tension End with integrated belt tensioning system
- 7 - Central lubrication port



The linear unit is a powerful and cost-effective version based on precision-extruded aluminium profile and equipped with an AT toothed belt with steel cords and an integrated zero-clearance guide rail system outside the profile. It makes for easy and accurate linear movements. Lubrication ports for the re-lubrication of the ball rail guide system.

**Travel speed:  $v \leq 3$  m/s**

**Repeatability precision:  $\pm 0,1$  mm**



- 1 - Drive block with pulley
- 2 - AT polyurethane toothed belt with steel tension cords
- 3 - Carriage
- 4 - Linear Ball Guideway

- 5 - Aluminium profile-Hard anodized
- 6 - End block
- 7 - Belt Tension system
- 8 - Lubrication port



# BALL SCREW DRIVE



**MTV SERIES** - 65, 80, 110

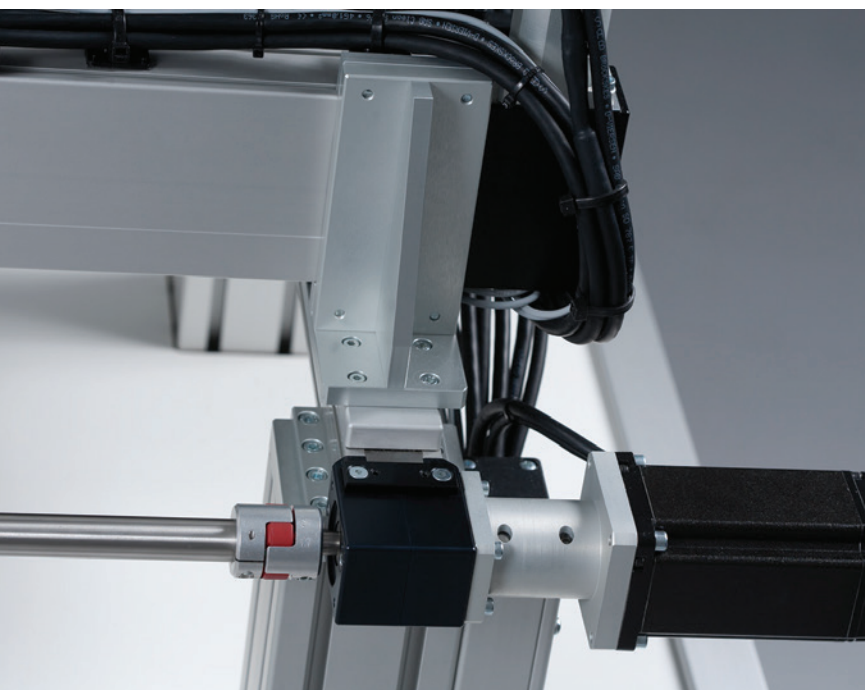


**CTV SERIES** - 90, 110, 145, 200



AVAILABLE ALSO FOR  
CLEANROOM APPLICATION

## ACCESSORIES



### FIXING ELEMENTS

#### CLAMPING FIXTURES



The clamping fixtures are used for mounting the Linear Units. They are placed in the slot on the side of the profile of the Linear Unit.

#### CONNECTION ELEMENTS



Fixing and connection elements to combine the linear units to a multi-axis system.

#### CENTRING RINGS



Centring rings are used to position a Linear Unit on a connection plate or any customer's product on the linear unit.

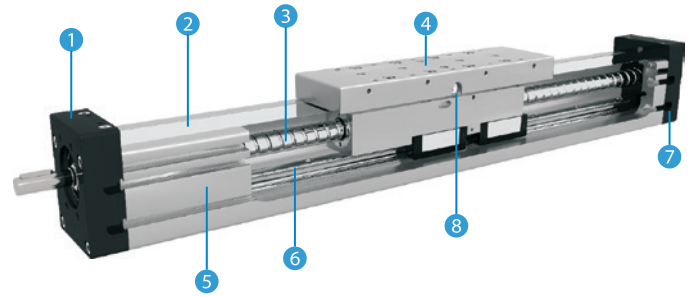


Linear units with a precision ball screw drive and integrated zero-clearance guide rail system inside the profile. A compact hard anodized aluminium profile with additionally in one-step machined internal surfaces for precise and smooth movements. The linear unit is sealed with a corrosion-resistant protection strip which protects all the parts in the profile from dust and other contaminations. A lubrication port for the central re-lubrication of the ball screw drive and the ball rail guide system.

**Repeatability precision ISO7:  $\pm 0,02$  mm**

**Repeatability precision ISO5:  $\pm 0,01$  mm**

Optional: Trapezoidal thread



- 1 - Drive block with floating bearing
- 2 - Corrosion-resistant protection strip
- 3 - Ball screw tolerance ISO 7 (ISO 5 available on request)
- 4 - Carriage, with built in Magnets

- 5 - Aluminium profile-Hard anodized
- 6 - Integrated Linear Ball Guideway
- 7 - End block with fixed bearing
- 8 - One central lubrication port

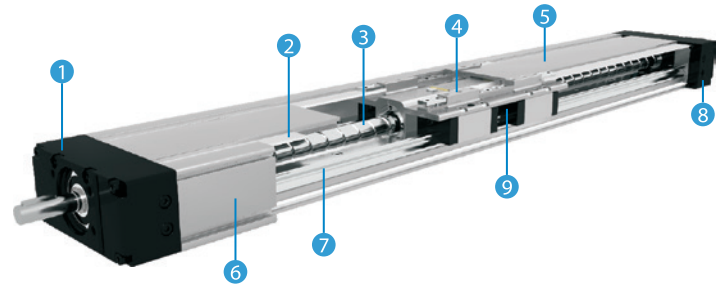


A compact linear unit with precision ball screw drive and two parallel, integrated zero-clearance guide rail systems. A compact hard anodized aluminium profile with additionally in one-step machined internal surfaces for precise and smooth movements. Two parallel circulating sealing strips and an aluminium cover protects all the parts in the profile from dust and other contaminations. Lubrication ports for a central re-lubrication of the ball screw drive and the ball rail guide system.

**Repeatability precision ISO7:  $\pm 0,02$  mm**

**Repeatability precision ISO5:  $\pm 0,01$  mm**

Optional: Trapezoidal thread



- 1 - Drive block with floating bearing
- 2 - Gap-type seal of antistatic PU strip (recirculating)
- 3 - Ball screw tolerance ISO 7 (ISO 5 available on request)
- 4 - Carriage; with built in Magnets

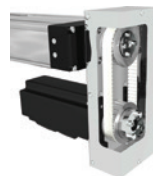
- 5 - Aluminium cover
- 6 - Aluminium profile-Hard anodized
- 7 - Two integrated Linear Ball Guideways
- 8 - End block with fixed bearing
- 9 - Central lubrication port; both sides

## SENSORS



- Mechanical switch
- Induction switch
- Magnetic field sensor

## MOTOR SIDE DRIVE



- The motor belt side drive can be designed and manufactured for any motor according to the customer's specifications
- Attachment of pulley with clamping set
- Timing Belt tensioning system
- Anodized aluminium housing

## SYNCHRONIZATION SHAFT



- For synchronizing two parallel linear units
- Backlash-free transmission and torsionally stiff
- Various executions: with an elastomer coupling or with a bellows coupling for compensation of misalignments.

## MOTOR ADAPTER



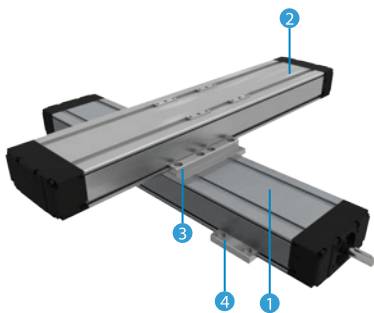
- A motor adapter can be designed and manufactured for any motor according to the customer's specifications
- Anodized aluminium



# MULTI-AXIS SYSTEMS

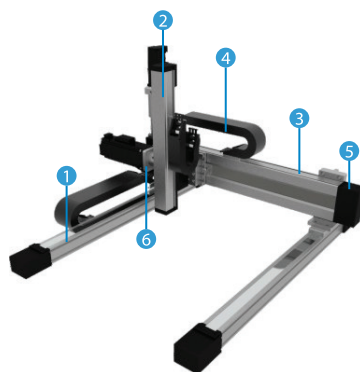
## FOR ENDLESS POSSIBILITIES.

The Linear units can be combined to various multi-axes linear systems and ensure an excellent price/performance ratio within a short delivery time. We offer a strong technical support in calculation and determination of individual multi-axis system solutions. A flexible combination of linear units with various kinds of switches, brackets, clamping fixtures and customized motor adapters provide a final multi-axis system solution available in 3D drawings.



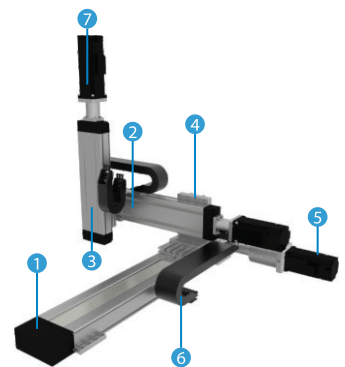
### X-Y CROSS TABLE SYSTEM

- 1 - X-Axis: Ball screw driven linear unit CTV
- 2 - Y-Axis: Ball screw driven linear unit CTV
- 3 - Connection element with centring ring
- 4 - Clamping fixture to attach the X-Y system



### 2X-Y-Z BRIDGE SYSTEM

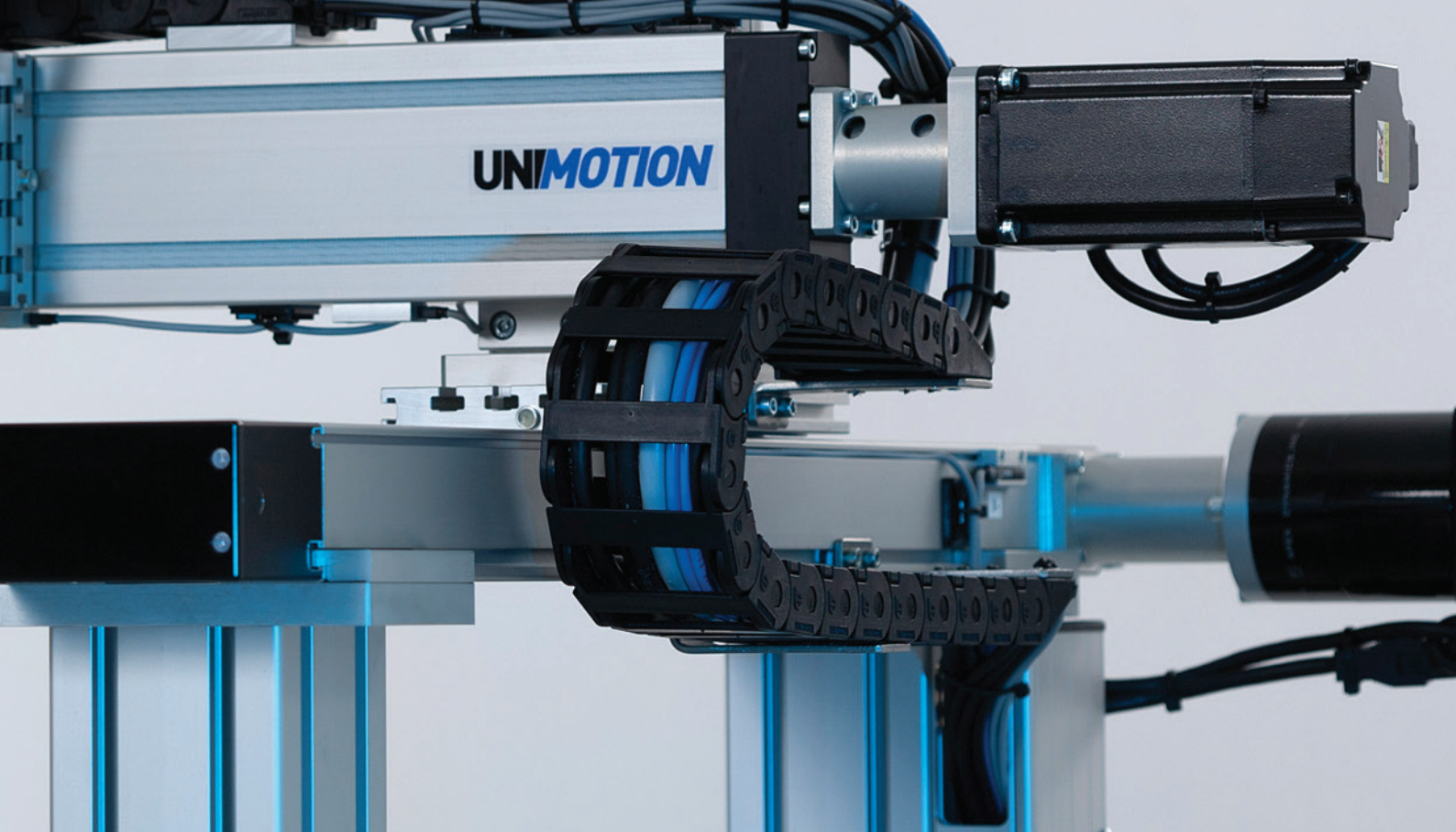
- 1 - X-Axis: Belt driven Linear unit MTJ
- 2 - Z-Axis: Belt driven omega linear unit MTJZ
- 3 - Y-Axis: Belt driven Linear unit CTJ
- 4 - Energy chain
- 5 - Fixing bracket with centring rings and fixing elements
- 6 - Motor adapter



### X-Y-Z SYSTEM

- 1 - X-Axis: Belt driven Linear unit CTJ
- 2 - Y-Axis: Ball screw driven linear unit CTV
- 3 - Z-Axis: Ball screw driven linear unit CTV
- 4 - Fixing bracket with centring rings and fixing elements
- 5 - Servo motor
- 6 - Energy chain
- 7 - Motor adapter





We can also build for you a gantry system or a portal as a complete assembled machine together with the frame, protections and other necessary elements to fit your exact requirements. You can use our Linear unit selection software or call our experts to save time and optimize your solution.

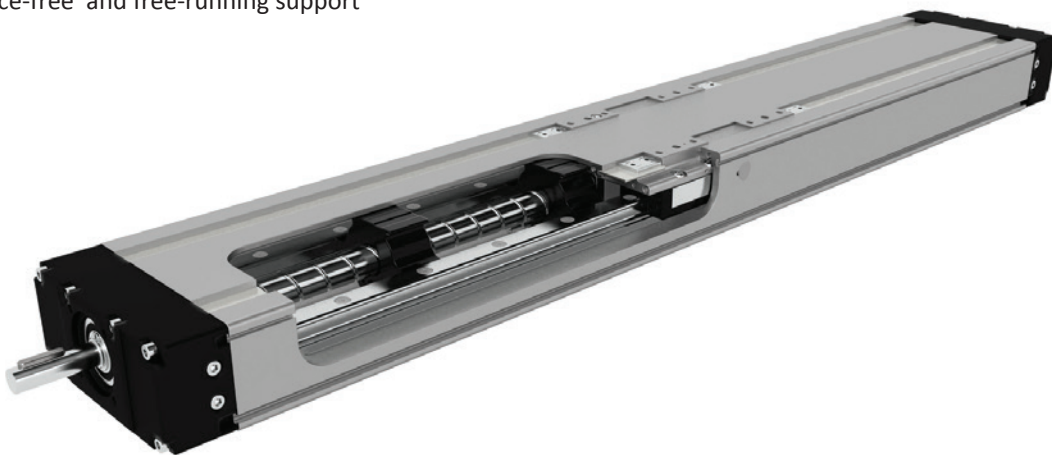


Selective Coating device from KC-Produkte for electronic circuit boards.

# SPECIAL PROJECT

## AT YOUR REQUEST

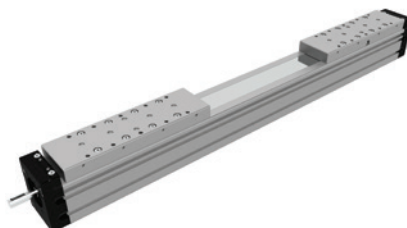
Ball screw supports for higher travel speed of linear unit at long stroke.  
-Maintenance-free and free-running support



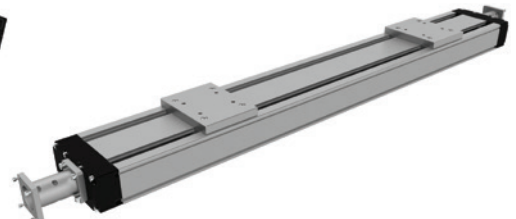
XYZ Portal with Flatbed equipped.



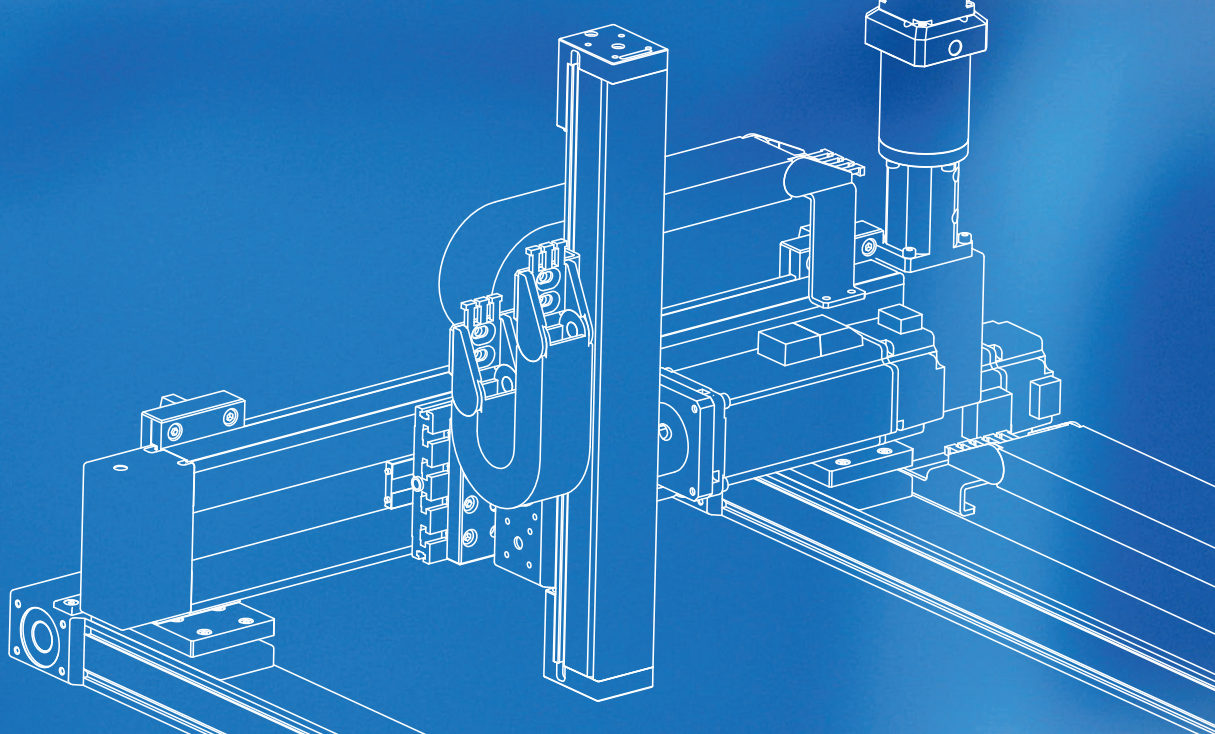
Ball screw driven linear unit with two at the same time driven carriages. Both carriages are driven by one ball screw with left and right-hand thread.



Linear unit with two separate trapezoidal screw drive. Each carriage can be moved individually by its own drive.







# CALCULATE YOUR LINEAR UNIT

## WITH LINEAR UNITS SELECTION

We have many years of experience and are upgrading daily, so we can meet any challenge and can optimize the solutions for your projects.

Our staff is innovative and creative, we respond quickly and are available at any point of the process, from the concept to implementation.

### CALCULATE YOUR OWN PROJECT!

The calculation program "LINEAR UNITS SELECTION" enables the fast and simple selection of a suitable linear axis based on your application data. As a result of the interpretation of this data, the program provides you with diverse information, e.g. driving torque, rotation speed, maximal process speed, durability and other information about a particular product.



For more information and contact forms  
visit us online:

[www.unimotion.de](http://www.unimotion.de)



## WE DISTRIBUTE ALL OVER THE WORLD

We cover all major markets, if you wish to contact us, send us an enquiry, we would be happy to assist you.


# UNIMOTION

Unimotion GmbH  
Waldstraße 20  
D - 78736 Epfendorf

Tel: +49 (0) 7404 930 85 60  
[www.unimotion.de](http://www.unimotion.de)

Fax: +49 (0) 7404 930 85 61  
e-mail: [vertrieb@unimotion.de](mailto:vertrieb@unimotion.de)



 For more information and contact forms  
visit us online:

# [www.unimotion.de](http://www.unimotion.de)