

LinMot®

Smart solutions are
driven by **LinMot**



LinMot

Industrial Linear Motors Product Overview

LinMot & MagSpring

We develop, build and sell high quality linear motors, linear rotary motors, linear modules and linear systems for use in industrial automation. The customer receives everything for linear motion from a single source. NTI AG was founded in 1993 as an independent business unit of the Sulzer Group and has been an independent company since 2000. NTI AG is headquartered in Spreitenbach near Zurich, Switzerland. As an international, innovative company with an experienced customer service, sales and support network with over 150 locations worldwide, we are always a competent and reliable partner for the realisation of linear and rotary motion.

Mission

«Our aim is to push linear direct drive technology more strongly as a standard design element.»

NTI AG, LinMot® and MagSpring® stand for excellent products and outstanding service. Just as innovation is embedded in the NTI name, it is also the foundation of our daily work. We are driven by a relentless desire to improve and work with our customers to develop direct drive solutions that meet their specific needs. We develop drive solutions for markets where reliability, durability, flexibility, dynamics and precision are critical.

Our aim is to promote linear direct drive technology as a standard design element. This will enable us to offer highly efficient drive solutions and make a significant contribution to the overall conservation of resources.



You can find the entire product range in our online catalogue
shop.linmot.com

Linear Motors 4

P01 Motors	6
P02 Motors.....	6
P10-54	7
P10-70	7
Specifications at a Glance	8

Linear Modules..... 10

Short-stroke Modules DM01.....	12
Z-axes with Load compensation DM03.....	13
Long-stroke Modules FM01.....	14
Long-stroke Modules EM01.....	14
Combinations	15
Specifications at a Glance	16

Linear Rotary Motors 18

PR01.....	20
PR02.....	22
PR04.....	22
Specifications at a Glance	24

Stainless Steel Products 26

Stainless Steel Linear Motors	28
SSC Motors	28
SSC Motors 3x400VAC.....	28
SSCP Motors.....	29
SSCP Slim Motors	29
Stainless Steel Linear Modules	30
SM01 Modules.....	30
SM02 Modules	30
H01 Stainless Steel Linear Guides.....	31
Stainless Steel Gripper Modules	31
Stainless Steel Linear Rotary Motors	32
Customised Solutions.....	32

ATEX Motors..... 33

Servo Drives 36

A 1100.....	40
C 1100.....	40
C 1250-MI	41
C 1251-MI.....	42
Functional Safety.....	43
C 1400	44
E 1400.....	44
D 1150	45
Linear Motor PD03	45
Process Monitoring.....	46
Commissioning.....	47
LinMot Designer.....	48

Gripper 50

GM50	50
GM51.....	50

Stainless Steel Gripper..... 51

GM01.....	51
GM02	51

Multi-Axis Systems 52

MagSpring..... 54

Industry Solutions..... 56

Food Products	56
Wood Processing	56
Textile Machines.....	56
Semiconductors & Electronics.....	57
Laboratory Automation.....	57
Automotive.....	57
Medical & Pharmaceutical.....	58
Handling & Assembling	58
Printing & Labelling.....	59
Packaging.....	59

Linear Motors

LinMot motors are highly dynamic linear direct drives with outstanding efficiency. The simple and robust tubular design facilitates the installation of the motor, reduces the space requirement and achieves an unrivalled power density. In contrast to conventional drive solutions, LinMot solutions do not require mechanical transmission elements - this simplifies the design, reduces wear and thus minimises maintenance effort and costs.

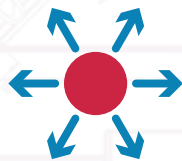
Single-cable solution
with rotatable connector
or cable outlet



Electronic type plate
Integrated position and
temperature sensors



High
dynamics



Freely positionable
with programmable
parameters



Control of the
process variables

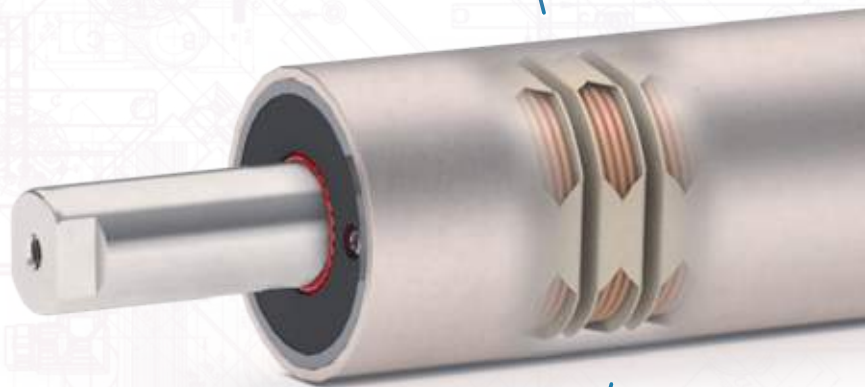


Plug &
Play

Series P10

The P10 series motors are the most powerful motors from LinMot and comprise two motor families characterised by 3-phase technology. They are controlled via servo drives with direct mains supply. The integrated position sensors, which supply the standard encoder signals on the market, mean that these motors can also be controlled very easily with drives from other manufacturers.

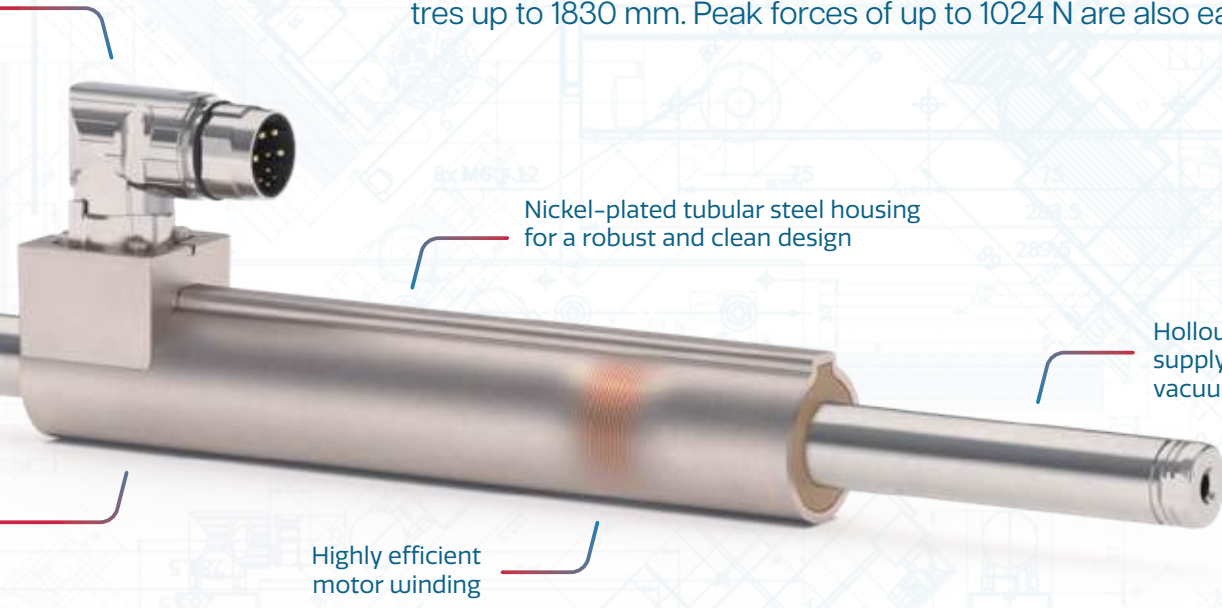
Optional, one-piece clamping flange
with passive fan or liquid cooling



Highly efficient winding design
with 3x400VAC technology

Series P01

The P01 series of compact low-voltage drives covers a wide range of applications and performs dynamic positioning tasks in the low to medium load range. Together with the short motors and the P02 motors, they comprise 8 sizes. The slider lengths vary and provide a stroke range from a few millimetres up to 1830 mm. Peak forces of up to 1024 N are also easily achieved.



Nickel-plated tubular steel housing for a robust and clean design

Hollow slider option for the supply of compressed air or vacuum

Highly efficient motor winding



Ready for industry 4.0



Overload protection



High precision



Long service life



Integrated position sensors optionally with A/B, Sin/Cos or BiSS-C output and PTC or PT1000 temperature monitoring

Interchangeable plain bearing kits

The design of linear motors makes them a standard element in mechanical engineering, often replacing pneumatic drives and mechanical cam discs. Applications range from fast positioning, lifting and pushing movements through synchronous pick and place applications to complete gantry palletising robots.

P01 Motors Universal

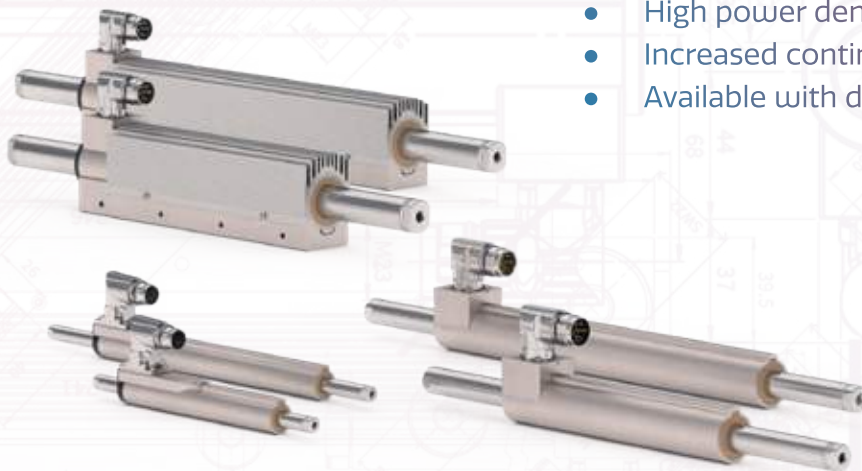
- Universal design for a wide range of applications
- Highly dynamic motors
- Available with cable outlet or rotatable IP67 connector

Stroke up to	mm	1830
Max. force	N	44-1024
Nominal force	N	11-354
Max. speed	m/s	6.9
Repeatability	mm	0.05/0.01
Stator length	mm	162-409



P02 Motors High Performance

- Particularly strong magnetic circuit for increased force and operating temperature
- High power density motors
- Increased continuous force and acceleration
- Available with directly integrated mounting flange



Stroke up to	mm	1830
Max. force	N	44-1024
Nominal force	N	11-409
Max. speed	m/s	8.2
Repeatability	mm	0.05/0.01
Stator length	mm	162-409

Short Motors Compact

Stroke up to	mm	1860
Max. force	N	29-255
Nominal force	N	11-68
Max. speed	m/s	8.2
Repeatability	mm	0.05/0.01
Stator length	mm	90/105/150

- Compact design
- Use where space is limited
- Integrated mounting flange
- Selectable cable outlet for 3 positions (rear/left/right)



P10-54

Power Packages

Stroke up to	mm	2240
Max. force	N	892
Nominal force	N	278
Max. speed	m/s	11.1
Repeatability	mm	0.01
Stator length	mm	222-402

- 230VAC and 3x400VAC technology
- Rotatable push-pull TWIN connector for power and encoder cables
- 1-piece clamping flange
- Can also be controlled with standard servo drives from third-party suppliers



P10-70



High Power







Stroke up to	mm	1770
Max. force	N	557-2720
Nominal force	N	68-914
Max. speed	m/s	7.4
Repeatability	mm	0.05/0.01
Stator length	mm	180-500

- 3x400VAC technology
- Extremely high accelerations
- Separate connection for sensor and power cable
- Can also be controlled with standard servo drives from third-party suppliers



Specifications at a Glance

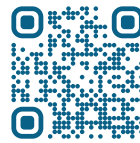
Motor Family P01/P02	Options					
	 Max. stroke	 Max. force	 Max. cont. force	 Hollow shaft	 Stainless steel	 Functional Safety
P01-23	780 mm	86.4 N	30 N	<input checked="" type="checkbox"/>		
P02-23S	780 mm	67.1 N	24 N	<input checked="" type="checkbox"/>		
P01-23 HP	780 mm	138 N	46 N	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
P01-37	1480 mm	308 N	96 N	<input checked="" type="checkbox"/>		
P01-37S	1480 mm	255 N	67 N	<input checked="" type="checkbox"/>		
P01-37 HP	1480 mm	255 N	87 N	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
P01-48	1710 mm	1020 N	340 N	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
P01-48 HP	1740 mm	1020 N	408 N	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Motor Family P10	Options					
	 Max. stroke	 Max. force	 Max. cont. force	 Hollow shaft	 Stainless steel	 Functional Safety
P10-54	1540 mm	871 N	270 N	<input checked="" type="checkbox"/>		
P10-70	1450 mm	2720 N	890 N	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

Typical areas of application

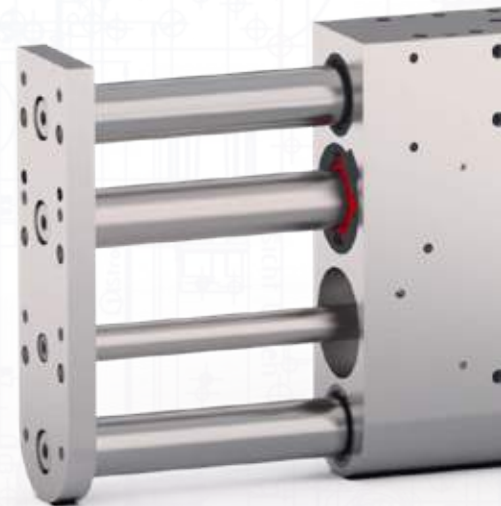
- Handling systems
- Filling systems
- Inspection systems
- Feeding systems
- Mounting systems
- Stacking systems
- Sorting and rejection systems
- Plastic injection moulding machines
- Packaging machines
- Textile machinery
- Assembly systems
- Printing and labelling machines
- Wood, glass and ceramic processing machines
- Handling, pick and place, measuring, counting, dosing, sealing

Find out more about our products on our website.



Linear Modules

LinMot Linear Modules are precise, easy to install and ready to use linear systems that are energy efficient and require little installation space. These products offer high guidance accuracy and allow dynamic and precise positioning of the load while absorbing external forces, torsional and bending moments. The high degree of standardisation and modularity means that the linear modules can be flexibly combined. This allows easy configuration of multi-axis systems such as gantry, semi-gantry or pick-and-place.



Peak forces
over 1000N



High
dynamics



Simple
installation



Stroke lengths
up to 2 m

Type Long-stroke Modules

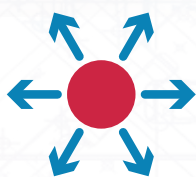
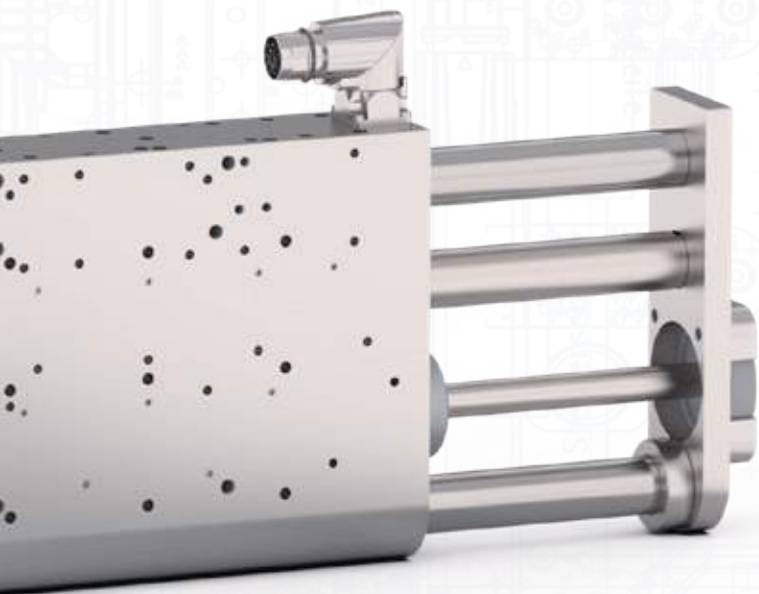
Moving Stator Linear Modules offer high guidance accuracy, precise load positioning and reliable operation, even with heavy loads and over long distances. They consist of a special aluminium profile on which up to 2 high precision rails with up to 4 ball bearing carriages per stator can be mounted. They can be assembled into a gantry or semi-gantry construction without additional adapters and are mechanically compatible with many other LinMot products. All this, plus the fact that several stators can be driven on the same guide, makes the linear modules a powerful tool for any automation task.



Type **Short-stroke Modules**

Linear modules with a moving

carriage provide dynamic and precise load positioning in a very compact housing with exceptional running characteristics. The modules feature a low moving mass and high bending and torsional stiffness. High-resolution encoders make it easy to implement precise applications. The integrated load compensation makes the modules the perfect Z-axis option. Their compactness also makes them ideal for highly dynamic positioning tasks in the short to medium stroke range.



Freely positionable with programmable parameters



High load capacity



Long service life



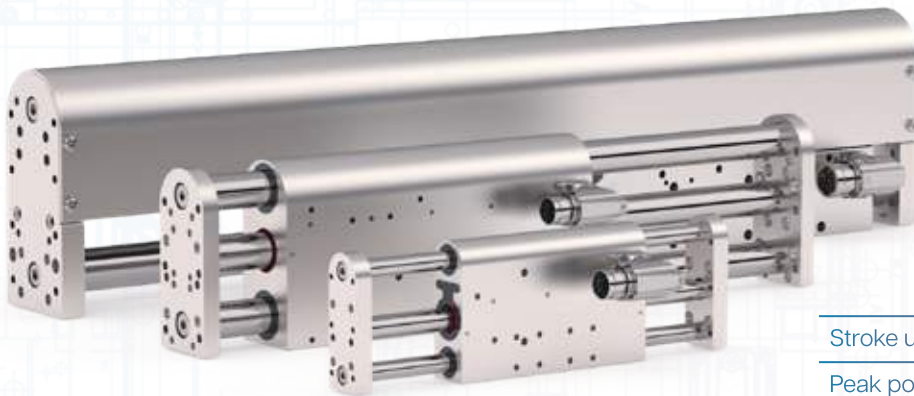
Plug & Play

The linear module product range covers several performance classes with all the stroke lengths required, guaranteeing millions of precise load changes. With linear modules and guides, you can choose between different sizes, countless stroke lengths and many available options. We offer the optimum solution for every application.



Short-stroke Modules DM01

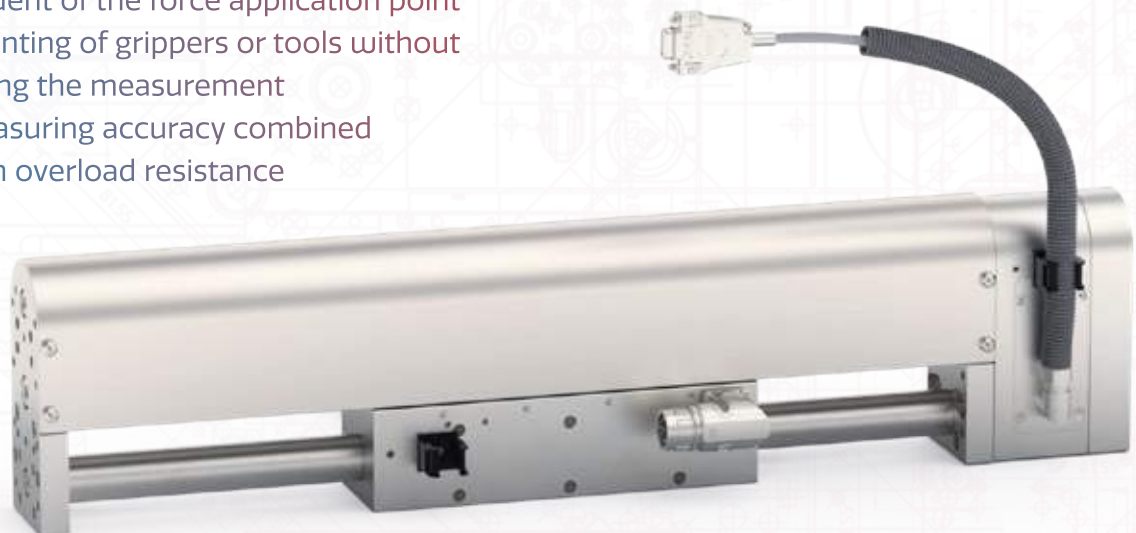
- Guide system with high bending stiffness
- Anodised aluminium housing for easy cleaning
- Corrosion-resistant, hard chrome-plated guide shafts
- Linear ball bearing with food-grade lubricant (NSF H1)
- 1 module, 1 article number, ready-to-install
- Fast commissioning and low engineering effort



Stroke up to	mm	575
Peak power	N	67-572
Moving mass	kg	0.46-8.86
Typical payload	kg	0.5-30
Max. speed	m/s	5

Option Integrated Force Sensor

- Front flange with force sensors for direct attachment to DM01 modules
- Realisation of force-controlled applications such as joining or pressing
- Implementation of process controls based on force profiles
- Decoupled force measurement in the direction of movement independent of the force application point
- Any mounting of grippers or tools without influencing the measurement
- High measuring accuracy combined with high overload resistance



Option

Clean Room ISO4

The particle emission behaviour of the DM01 series was tested by Fraunhofer IPA in accordance with standard 184-230609797 and the linear modules were certified with the „Fraunhofer TESTED DEVICE®“ test mark for cleanroom class ISO4.



Fraunhofer

TESTED® DEVICE

NTI AG - LinMot
Report No. NT 2009-1177

Perfect for use in:

- Semiconductor manufacturing
- Medical technology and pharmacy
- Food technology
- Microsystem production
- Precision engineering
- Optics
- Display production
- Photovoltaics

Z-Axes with Load Compensation

DM03

- With reinforced MagSpring® for vertical load compensation
- 3 sizes in the stroke range up to 695 mm and forces up to 572 N
- Linear ball bearing with food-grade lubricant (NSF H1)
- Optionally with force sensor and high-precision absolute position sensor
- Slim design for optimum series layout
- Direct mounting of the load with absorption of shear forces
- Corrosion-resistant, hard chrome-plated guide rods
- Simple load simulation with LinMot Designer software
- Can be combined as required to create multi-axis systems

Stroke up to	mm	695
Peak power	N	67-572
Moving mass	kg	0.58-6.16
Typical payload	kg	0.5-15
Max. speed	m/s	5



Long-stroke Modules FM01

- Compact, highly dynamic guide for long-stroke applications and multi-axis configurations
- High accuracy, high rigidity, high speed
- High-precision profile rail guide
- Compatible with LinMot products
- Configurable with one or more stators per guide

Stroke up to	mm	2150
Peak power	N	128-1020
Moving mass	kg	1.1-5.85
Max. speed	m/s	5



Long-stroke Modules EM01

- Heavy-duty guide for applications where stability and resistance to moment loads are crucial.
- High motion accuracy
- Extreme load capacity and rigidity
- 2 high-precision profile rail guides with 4 carriages
- Compatible with LinMot products
- Configurable with one or more stators per guide

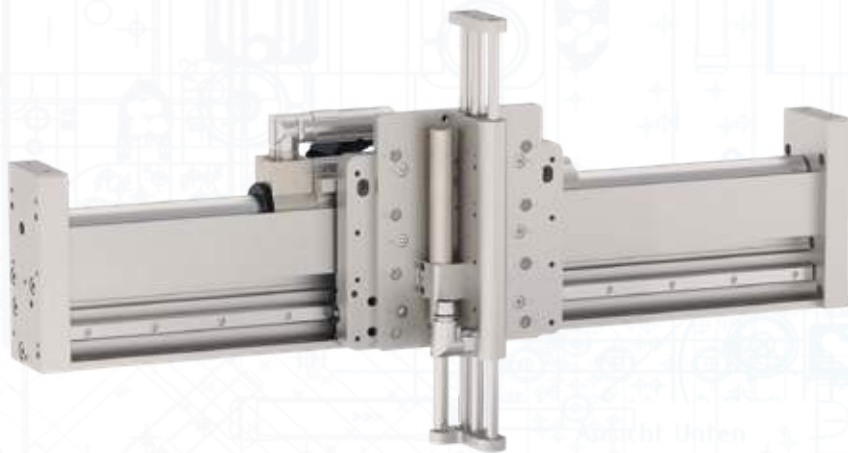
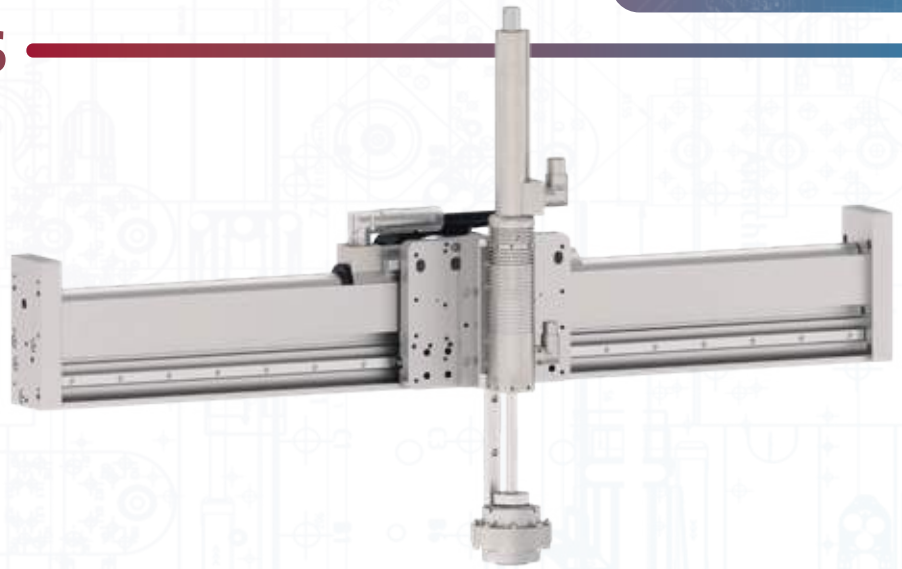
Stroke up to	mm	1838
Peak power	N	128-572
Moving mass	kg	2.14-5.97
Max. speed	m/s	5



Combinations

Pick, Rotate & Place

FM01-48x240 &
PR01-52 with gearbox

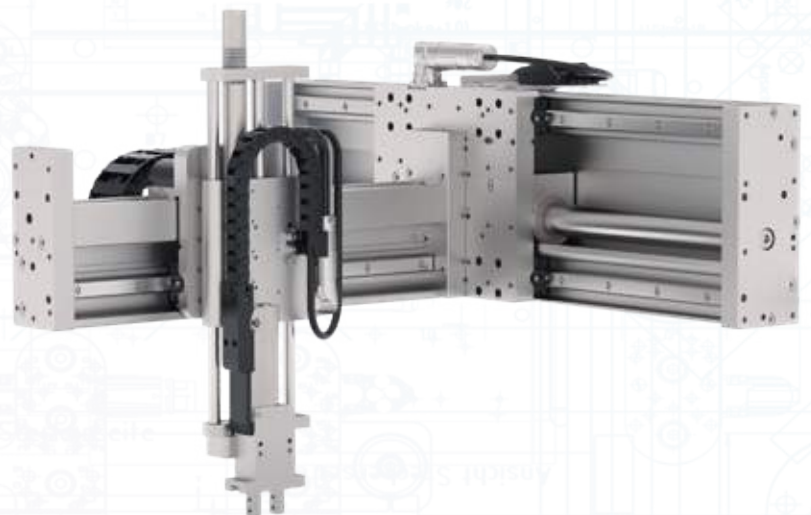


Pick & Place

FM01-48x240 &
DM01-23x160 and MagSpring

Semi Gantry






















FM01-37x120 & EM01-48x150 with
DM03-23x80 with GM50-23x80

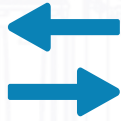










Gantry

2x EM01-48x240 &
EM01-37x120 with PR02-38

Specifications at a Glance

Linear Modules Short stroke						Option 
	Max. stroke	Max. force	Max. cont. force	Typical payload	Force sensor	High-resolution position sensor
DM01-23x80	350 mm	67 N	25 N	≤ 7 kg		
DM03-23x80	290 mm	67 N	27 N	≤ 3 kg		
DM01-23x160	270 mm	138 N	50 N	≤ 7 kg		
DM03-23x160	270 mm	138 N	50 N	≤ 5 kg		
DM01-37x120	495 mm	255 N	87 N	≤ 16 kg		
DM03-37x120	695 mm	255 N	87 N	≤ 15 kg		
DM01-48x150	575 mm	360 N	150 N	≤ 30 kg		
DM03-48x150	275 mm	360 N	150 N	≤ 20 kg		
DM01-48x240	485 mm	572 N	233 N	≤ 40 kg		
DM03-48x240	285 mm	572 N	233 N	≤ 25 kg		

Linear Modules Long-stroke	 Max. stroke	 Max. force	 Max. cont. force	 Typical payload	Option  High-resolution position sensor
EM01-37Sx60	1895 mm	128 N	16 N	≤ 15 kg	
FM01-37Sx60	1895 mm	128 N	16 N	≤ 7 kg	
EM01-37Sx120	1835 mm	255 N	35 N	≤ 30 kg	
FM01-37Sx120	1835 mm	255 N	35 N	≤ 15 kg	
EM01-48x150	1405 mm	360 N	100 N	≤ 40 kg	
FM01-48x150	1405 mm	360 N	100 N	≤ 20 kg	
EM01-48x240	1315 mm	572 N	170 N	≤ 80 kg	
FM01-48x240	2150 mm	572 N	170 N	≤ 30 kg	
FM01-48x360	2030 mm	1020 N	170 N	≤ 30 kg	

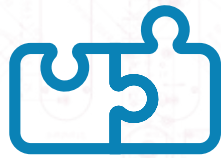
Linear Rotary Motors

LinMot linear rotary motors are highly flexible, dynamic and reliable. They combine two electromagnetic servomotors in a single slimline housing, enabling independent linear and rotary movements in the simplest way. Complex tasks such as locking, screwing, mounting and much more can be achieved with this single component.

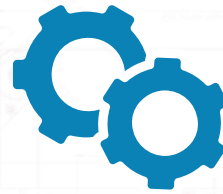
The durable modules also offer a high level of reliability and can be equipped with many options. LinMot offers linear rotary motors in two different series.



Independent and
synchronous motion
control possible



Programmable
in operation



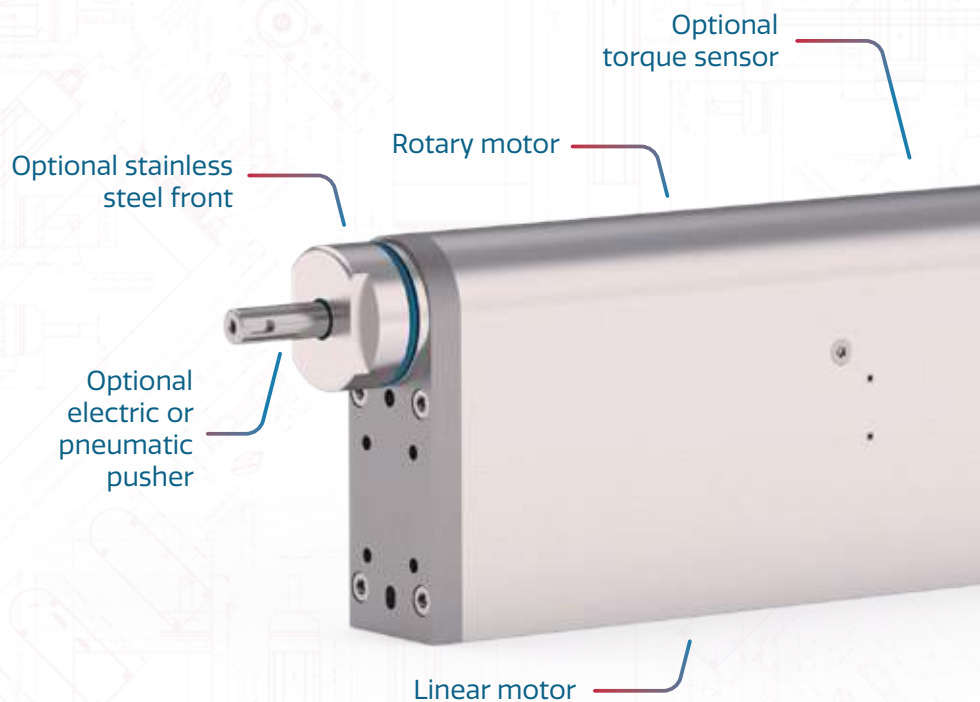
Plug &
Play



Ready for
Industry 4.0

Series PRO2

The PRO2 motor series features a design that integrates the motors and ancillary components into a slim, easy-to-clean housing. The parallel design of the PRO2 linear and rotary motors, together with the additional options, ensures a minimised installation length. This makes it much easier to integrate the drives into compact machine designs.

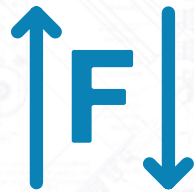


Series PR01

Thanks to the serial arrangement of linear and rotary motors, the PR01 linear rotary motors enable the realisation of very compact solutions on a very small footprint. Depending on the application, the drives can be designed with MagSpring® weight compensation or a gear ratio and also offer other interesting equipment options.



Continuous rotary movement



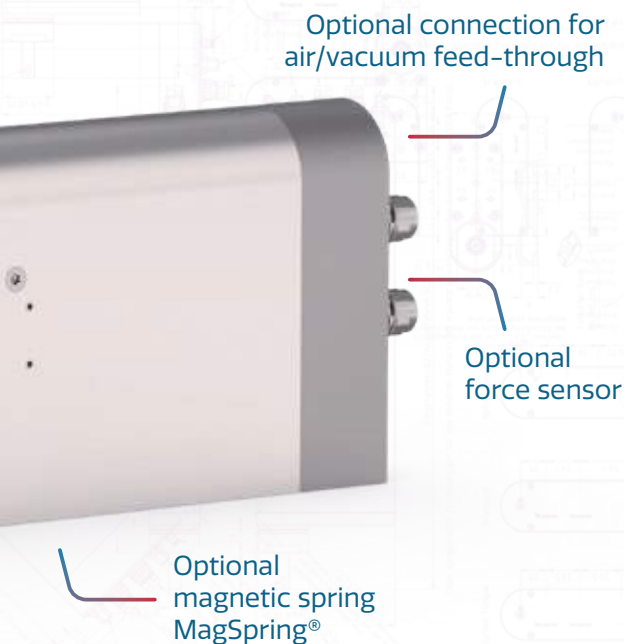
Linear force control



Torque control



Long service life



LinMot linear rotary motors are available with options and additional components, so that even unusual applications can be realised. For example, the user can choose from the following features:

MagSpring® load compensation, pneumatic brake, wiper, stainless steel front, hollow shaft, pneumatic/electromagnetic plunger, torque and force sensor and force sensor. A detailed overview is provided on the following pages.

The innovative drives also provide all the necessary data packages for networked production in line with 'Industry 4.0'. Real-time monitoring and optional sensors provide detailed production data such as linear position, angle of rotation, current force or torque.

- Serial construction principle with the smallest possible footprint
- Linear direct drive
- Rotary direct drive
- Synchronised & independent linear and rotary motions
- Integrated position sensors
- Absolute temperature feedback
- Programmable position/motions profiles
- Programmable pressing force
- Programmable torque
- Endless turning
- „Single turn“ absolute encoder

Stroke up to	mm	300
Peak power	N	255-1024
Nominal force	N	51-203
Max. speed	m/s	3.9
Max. torque	Nm	1.5-8.9
Nominal torque	Nm	0.32-1.9
Max. num. of rev.	rpm	1000-1500
Repeatability	mm	0.05/0.01
Length	mm	503-1222



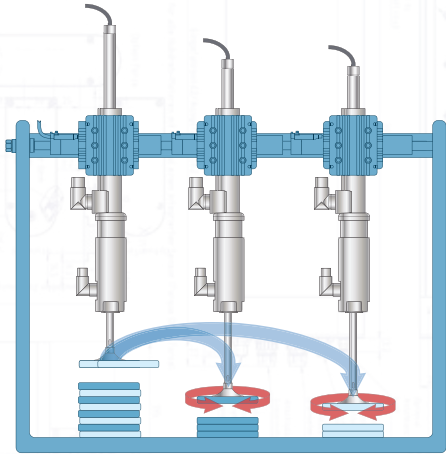
PR01 with Gearbox

- For applications with high inertia loads
- For applications with high torque
- 3 selectable gear ratios
- With guide rails to bear transverse forces



Stroke up to	mm	150
Peak power	N	1024
Nominal force	N	203
Max. speed	m/s	3
Transmission ratio	i	1:5/1:7/1:10
Max. torque	Nm	40/56/75
Nominal torque	Nm	8.2/12/17

Options PR01

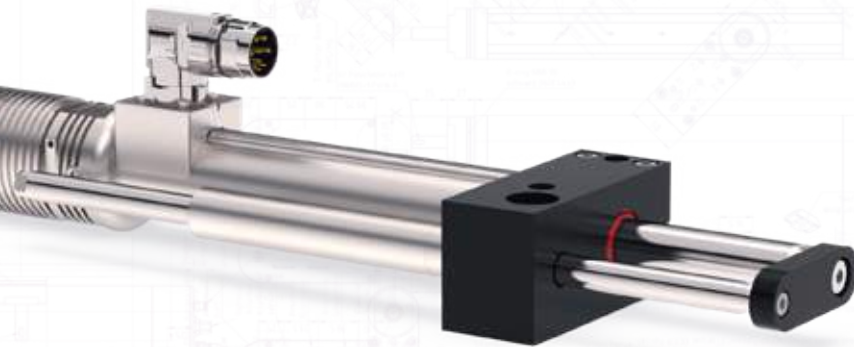


Hollow Shaft

- Version with hollow shaft
- Inner diameter 2.5 / 4.0 mm
- Simple compressed air supply
- Can be upgraded to a vacuum gripper
- Can be combined with a pneumatic gripper

Stainless Steel Front

- Linear rotary shaft and module front made of stainless steel EN 1.4404 / AISI 316
- Hygienic design
- Resistant to cleaning agents
- Optimum use in the food sector
- Optimum use in the chemical sector



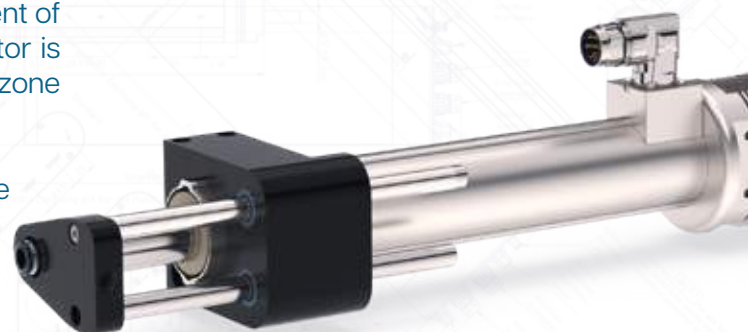
MagSpring

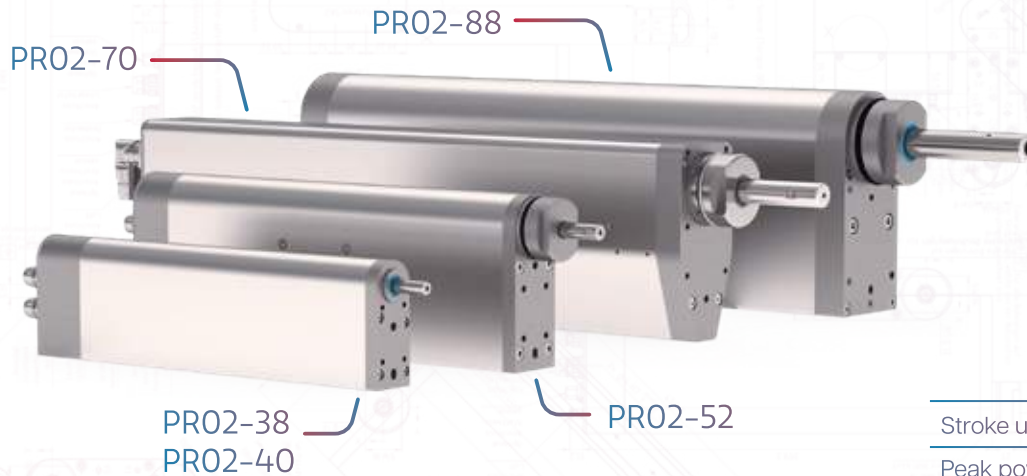
If the weight of the linear rotary axis is to be compensated passively, a magnetic spring "MagSpring" can be installed. LinMot offers the appropriate flange and adapter for easy installation.

Cam Kit/Brake Kit

The multi-part cam kit offers the user an easy way to couple the linear rotary motor to an emergency baffle. In the event of a power failure, the moving part of the linear rotary motor is forcibly moved upwards out of the collision-endangered zone by the baffle control.

LinMot also offers a brake kit. The pneumatic brake included in the kit provides the braking effect. This is activated when de-energised and acts directly on the splitter shaft, which is installed parallel to the motor axis.





- Parallel design principle with short installation length
- PR02-70 Linear rotary motor with special design, ideal for compact rotary transfer machines
- Option of integrated MagSpring® for load compensation
- Torque measuring shaft and / or force sensor option
- Optional front flange and linear rotary shaft made of stainless steel
- Hollow shaft option for air feed-through (compressed air / vacuum)
- Option linear rotary motor completely in stainless steel
- Pusher option for gripping on position / force or for ejecting parts
- Independent linear and rotary motions
- Extensive range of strokes

Stroke up to	mm	300
Peak power	N	67-572
Nominal force	N	25-230
Max. speed	m/s	2.9 - 7.3
Max. torque	Nm	1.2-10
Nominal torque	Nm	0.32-2.64
Max. num. of rev.	rpm	1000-1500
Repeatability	mm	0.05/0.01
Length	mm	350 - 1018

PR04-52

- Special version of the PR02 series
- Very large stroke range of 200 mm
- Smallest footprint and overall dimensions
- Perfect for use in robotic systems
- Ideal for pick-rotate-place applications



Stroke up to	mm	200
Peak power	N	255
Nominal force	N	75
Max. speed	m/s	3.9
Max. torque	Nm	2.2
Nominal torque	Nm	0.55
Max. num. of rev.	rpm	1000
Repeatability	mm	0.05
Length	mm	632

Option

Force & Torque Sensor

Torque and force sensors enable precise, reproducible and recordable capping and assembly processes, which are often required in the pharmaceutical or medical industry.

Thanks to continuous process monitoring in real time, every assembled product can be tracked.

- Calibrated force and torque sensors
- Force/torque control in a closed control loop
- Process monitoring in real time
- High-precision capping and assembly processes
- Data acquisition and process monitoring
- Industry 4.0



Option

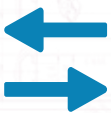





















Pusher

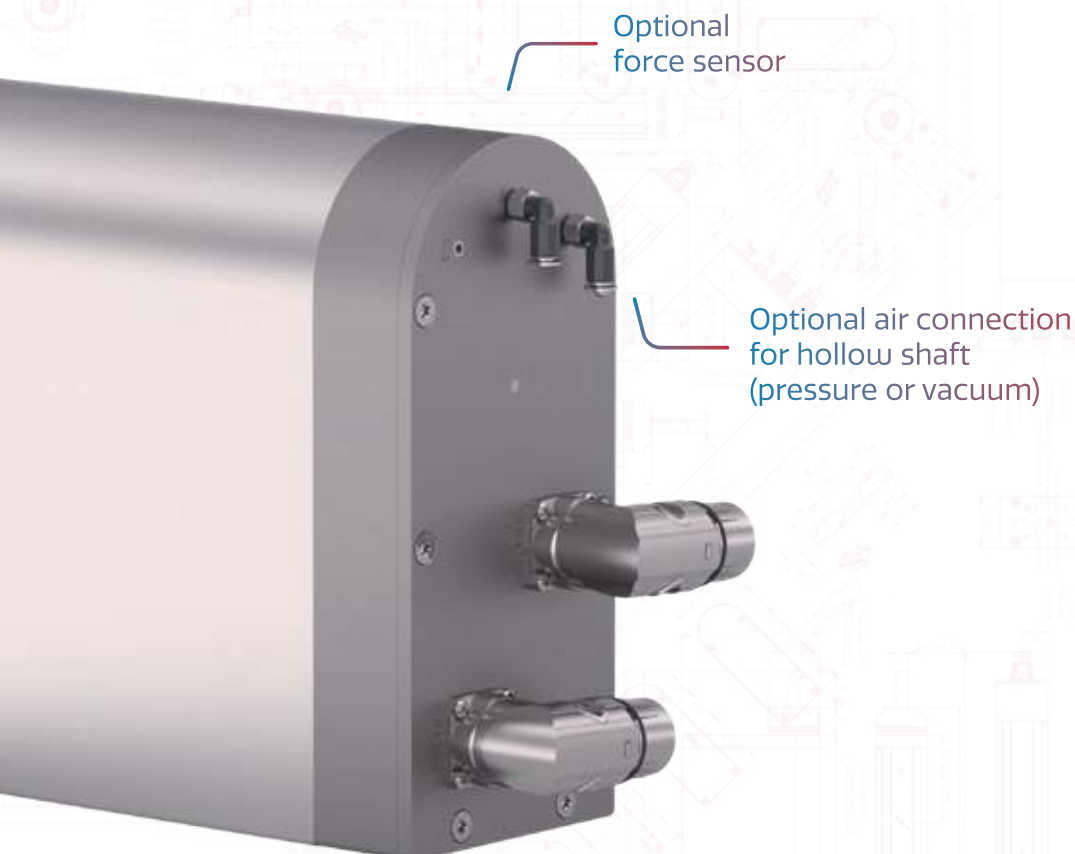
The pusher option allows the user a second axial, telescopic movement. This option can be used to eject gripped elements or operate mechanical grippers. The pusher can be driven electrically or pneumatically.

Stroke up to	mm	25
Peak force (Electr. pusher)	N	300
Peak force (Pneum. Pusher)	N	400
Pusher diameter	mm	6-8

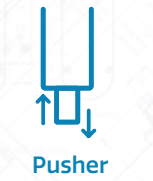
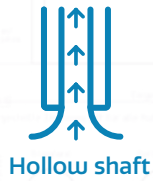
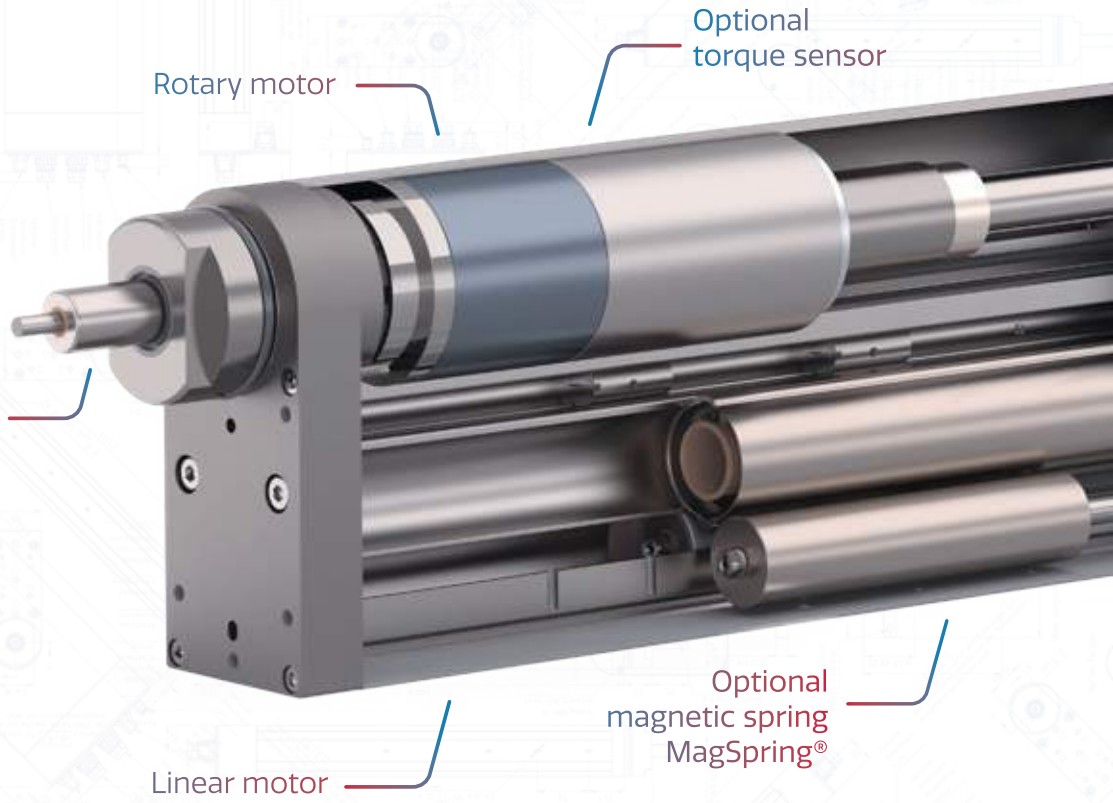


Specifications at a Glance

Motor Family PR01	 Stroke Force	 U/min. Torque	 MagSpring	 Hollow shaft	 Brake	 Emergency backdrop
PR01-52	≤ 150 mm ≤ 255 N	≤ 1500 U/min. ≤ 2.2 Nm				
PR01-70	≤ 150 mm ≤ 572 N	≤ 1000 U/min. ≤ 9 Nm				
PR01-84	≤ 300 mm ≤ 572 N	≤ 1000 U/min. ≤ 10 Nm				
PR01-52 with gearbox	≤ 100 mm ≤ 255 N	≤ 150 U/min. ≤ 20 Nm				
PR01-84 with gearbox	≤ 150 mm ≤ 1024 N	≤ 100 U/min. ≤ 75 Nm				



Motor Family PR02	 Stroke Force
PR02-38 PR02-40	≤ 70 mm ≤ 67 N
PR02-52	≤ 100 mm ≤ 255N
PR02-70	≤ 240 mm ≤ 572 N
PR02-88	≤ 300 mm ≤ 572 N



≤ 1500 U/min.
≤ 1.2 Nm

✓

✓

✓

✓

✓

✓

≤ 1500 U/min.
≤ 2.2 Nm

✓

✓

✓

✓

✓

✓

≤ 1000 U/min.
≤ 9 Nm

✓

✓

✓

✓

✓

✓

≤ 1000 U/min.
≤ 10 Nm

✓

✓

✓

✓

✓

✓

Stainless Steel Products

LinMot also offers a stainless steel version in each product family. These drive elements guarantee the highest level of hygiene. The compact linear motors, linear rotary motors, linear modules and grippers are designed for demanding environments and are manufactured in EN 1.4404/AISI 316 stainless steel.



Linear Motors



Linear Rotary Motors



Hygienic Design

To meet the most stringent hygiene standards, these motors and modules are designed without unnecessary corners, edges, holes and threads to prevent the accumulation of bacteria and dirt. The FDA-approved bearing material is specifically designed for use in the food and pharmaceutical industries.



High chemical Resistance

LinMot stainless steel products offer the highest level of hygiene. The compact linear motors and guides, linear modules and grippers are designed for demanding environments and are manufactured in EN 1.4404/AISI 316 stainless steel. They can be used in systems for processing food or pharmaceutical products. They can easily withstand extreme loads and corrosive environments and are easy to maintain using all standard industrial cleaning methods.



Ready for Industry 4.0

All linear motors are fitted with temperature monitoring sensors which transmit data to the drive. The data can be analysed in the PLC so that the motor can be kept within a constant temperature range depending on the process (e.g. food such as fish). As an option, LinMot offers integrated water cooling for low surface temperatures on some motor types, resulting in higher performance with reduced germ formation.



Linear Modules



Gripper



Suitable for Wash-Down

The windings of the linear motors are fully encapsulated in epoxy resin, protecting the copper filling and stator package from condensation and corrosion. Thanks to their high degree of sealing, they comply with protection class IP69K according to DIN EN 60529. The special plastic bearings ensure easy cleaning and significant time savings in wash-down applications. The drives are also ideal for in-place cleaning such as CIP and SIP.



Perfect for the Food and Pharmaceutical Industries

Cleanliness and the avoidance of germs are key criteria in the food processing and pharmaceutical industries. LinMot's stainless steel series meets both requirements perfectly. The hygienic design and selected materials ensure that washing processes can be carried out. Sensors and integrated water cooling ensure that the surface temperature remains constantly low, thus reducing the formation of germs. The remarkably low abrasion of the stainless steel products provides an ideal basis for clean room applications, especially in the pharmaceutical sector.

SSC Motors Standard

This motor series is the stainless steel counterpart to the standard linear motors. The most common sizes are available with additional options, which are very useful in the food processing and pharmaceutical sectors.

- Compact design with integrated fluid cooling
- Fully encapsulated housing
- Replaceable plain bearings (FDA)

Stroke up to	mm	1070
Peak power	N	210-721
Nominal force	N	36-350
Max. speed	m/s	4.7
Repeatability	Nm	±0.05
Stator length	Nm	296-515



SSC Motors 3x400VAC High Power

As the SSC version of the proven P10-70 linear motors, this motor series combines the advantages of the stainless steel range with the functionalities of the 70 series motors. The proven 3x400VAC technology and LinMot servo drives with direct mains supply ensure ideal integration into any machine concept.

- 3x400VAC technology
- Optionally with integrated water cooling
- Flexible control options
- Expandable with special mounting flanges

Stroke up to	mm	1610
Peak power	N	1120-2180
Nominal force	N	115-710
Max. speed	m/s	6.4
Repeatability	Nm	±0.05
Stator length	Nm	350-420



SSCP Motors

Powerful and compact

The SSCP stainless steel linear motors have excellent thermal behaviour, resulting in increased continuous force and power density. The intelligent design of the motors allows a larger slider diameter to be used with a fixed stator size, resulting in improved performance.

Stroke up to	mm	1455
Peak power	N	67-572
Nominal force	N	12-198
Max. speed	m/s	7.4
Repeatability	Nm	±0.05
Stator length	Nm	120-317

- Compact design and outstanding thermal behaviour thanks to efficient technology
- Integrated mounting flange for easy attachment
- Reduced effort with 1-cable technology
- Optionally with cable outlet and IP67 connector



SSCP Slim Motors

Extremely compact

The P01-23 -SSCP linear motors are the slimmest members of the stainless steel product family. In addition to the simple, purely tubular motor variant, LinMot also offers a motor with an integrated mounting flange. The established single-cable solution with LinMot encoder technology is also available for this motor type.

Stroke up to	mm	780
Peak power	N	67-138
Nominal force	N	21-35
Max. speed	m/s	7.3
Repeatability	Nm	±0.05
Stator length	Nm	175-255

- Simple and slim design (Installation of 1225 motors per m2 possible)
- Available with or without integrated mounting flange
- Efficient cleaning and removal of germs and microorganisms
- Low cable requirements thanks to 1-cable technology



SM01 Modules Short-stroke Modules

The SM01 linear modules are complete drive solutions consisting of a linear guide with integrated LinMot linear motors and optionally attached MagSpring® vertical load compensation elements. The mounting options on the end plates provide various application options.

- Low friction and precise positioning
- Optional stainless steel MagSpring
- Optimally designed for „in-place“ cleaning processes such as CIP and SIP
- Available with plain or recirculating ball bearings
- Automatic motor parameterisation thanks to electronic nameplate

Stroke up to	mm	100-765
Peak power	N	128-477
Nominal force	N	26-172
Max. speed	m/s	4.9



SM02 Modules Long-stroke Modules

As with the SM01 linear modules, the SM02 modules are complete drive solutions consisting of a linear guide and a LinMot linear motor. However, the guide rods are fixed and the stator is the moving part to which loads can be attached. The modules are designed for long and dynamic strokes

- „Moving stator“ principle for long, dynamic motion
- Designed for portal constructions
- Delivered fully assembled
- Optimally designed for „in-place“ cleaning processes such as CIP and SIP
- Available with plain or recirculating ball bearings
- Automatic motor parameterisation thanks to electronic nameplate

Stroke up to	mm	110-1010
Peak power	N	255-572
Nominal force	N	48-160
Max. speed	m/s	3.9



GM01/GM02 Gripper

Precise Gripping and Moving

The GM01/02 parallel gripper completes LinMot's stainless steel line as a further element thanks to the easy coupling and standardisation of materials. In combination with the SM01 and SM02 guides, a complete pick-and-place application can be realised in stainless steel EN 1.4404. A combination that is highly resistant to chemicals and has an enormous service life even under difficult conditions.

- High flexibility in the selection of gripped goods
- Lightweight materials (FDA)
- Wash-down safe
- High degree of protection IP69
- High degree of freedom for position and clamping force

Max. opening/closing stroke range	mm	≤ 470
Max. clamping force	N	134-276
Max. gripper speed (close/open)	m/s	3.5



H01 Stainless Steel Linear Guides

Guidance for SSC Motors

H01 stainless steel guides are compact guide units for the operation of LinMot motors of the P01-37-SSC and P01-48-SSC series together with clearance sliders. They consist of two guide blocks, two guide shafts and a load mounting plate.

- Compact guide (IP69K) for SSC motors with clearance rotors
- Plain bearings with FDA approval
- Hardened stainless steel shaft
- No seals; connections are welded
- Motor interior can be completely flushed

Stroke up to	mm	58-510
Peak power	N	210-477
Nominal force	N	36-240
Max. speed	m/s	4.7



SSCH Linear Rotary Motors

In the SSCH version, the proven linear torque motor technology is protected by a stainless steel housing. As a result, these motors have a maximum IP protection rating of IP69s and can withstand in-place cleaning processes such as CIP and SIP. The combination of rotary and linear motion makes this version of the linear rotary motor a key element of automation in the food, pharmaceutical and medical industries.

- Motor housing and linear rotary shaft made of stainless steel
- Integrated MagSpring® for load compensation
- Hollow shaft for vacuum and compressed air feed-through
- Independent linear and rotary motion

Stroke up to	mm	110
Peak power	N	255
Nominal force	Nm	2.2
IP protection class		IP69S

PR01-52 SSCH



Stroke up to	mm	100
Peak power	N	255
Nominal force	Nm	2.2
IP protection class		IP69S

- High chemical resistance
- Option of integrated MagSpring for load compensation (pushing or pulling)
- Independent linear and rotary motion

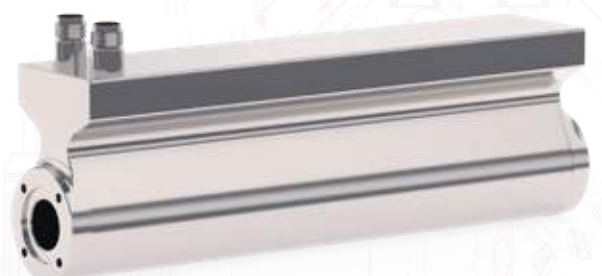


PR02-52 SSCH

Customised Solutions

- Specially designed for pharmaceutical and food applications where space is limited
- Welded connections
- Fully encapsulated (IP69K)
- Specially developed connectors
- Control via fieldbus

Stainless Steel Motor with integrated Servo Drive



P01-48 EX

Explosion-proof

In an environment with explosive gases, vapour-air mixtures or combustible dusts, special electric motors are required. ATEX motors have been designed for these specific conditions. They are certified for use in potentially explosive atmospheres (zones 1/2 and 21/22). The stator is completely encapsulated in epoxy resin. Additional temperature sensors constantly monitor the surface temperature of the motor.

Stroke up to	mm	1070
Peak power	N	210-694
Nominal force	N	36-363
Max. Speed	m/s	4.7
Repeatability	Nm	±0.05
Stator length	Nm	296-515

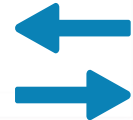


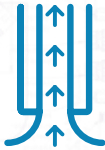






Typical Areas of Application

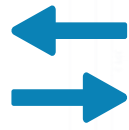
- Filling
- Dosing
- Dosing of:
 - Beauty products
 - Cosmetics
 - Liquids containing alcohol
 - Cleaning agents and much more
- Use in:
 - Printing machines
 - Plastic processing machines
 - Chemical industry
 - Petrochemical industry
 - Pharmaceutical industry



Specifications at a Glance

Linear Motors	 Max. stroke	 Max. force	 Max. cont. force	 Hollow shaft
P01-23x80 HP SSCP Slim	780 mm	67 N	21 N	
P01-23x160 HP SSCP Slim	780 mm	138 N	35 N	
P01-37Sx60F HP SSCP	1455 mm	128 N	39 N	
P01-37Sx120 HP SSCP	1395 mm	255 N	78 N	
P01-37x120 HP SSC	680 mm	210 N	93 N	
P01-48x150 HP SSCP	1355 mm	360 N	138 N	
P01-48x150 HP SSC	1070 mm	312 N	161 N	
P01-48x240 SSC	980 mm	496 N	240 N	
P01-48x240 HP SSCP	1265 mm	572 N	198 N	
P01-48x360 SSC	860 mm	721 N	350 N	
P10-70x160 SSC	1610 mm	1120 N	350 N	
P10-70x240 SSC	1530 mm	1650 N	510 N	
P10-70x320 SSC	1450 mm	2180 N	700 N	

Linear Modules Short stroke



Max. stroke



Max. force



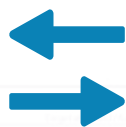
Typical
payload



MagSpring

	Max. stroke	Max. force	Typical payload	MagSpring
SM01-37Sx60 SSCP	580 mm	128 N	≤ 5 kg	
SM01-37Sx120 SSCP	520 mm	255 N	≤ 10 kg	
SM01-48x150 SSCP	555 mm	312 N	≤ 25 kg	
SM01-48x240 SSCP	465 mm	477 N	≤ 40 kg	

Linear Modules Long stroke



Max. stroke



Max. force



Typical
payload

	Max. stroke	Max. force	Typical payload
SM02-37Sx120 SSCP	1010 mm	255 N	≤ 10 kg
SM02-48x150 SSCP	975 mm	360 N	≤ 25 kg
SM02-48x240 SSCP	885 mm	572 N	≤ 50 kg

Servo Drives

The comprehensive selection of LinMot servo drives impresses with its dynamics, high flexibility and wide range of functions. Our servo drives can also be easily integrated into any type of application. The drives are designed for precise control, an optimised force/torque ratio and a wide range of functions. LinMot Servo Drives optimally complement the range of linear motors, linear modules and linear rotary motors. It is also crucial that they are easy to operate and work reliably - saving you time and money.



Flexible & integrable

Wide range of applications: From simple point-to-point to complex multi-axis applications

Discrete analogue, digital and serial interfaces, fieldbuses and real-time Ethernet.

Technology functions such as force/torque control and process monitoring

Safe & reliable

Drives available with or without STO

Functional safety SIL2 and PL d with SLS, SOS, SS1, SS2, SBC, SBT

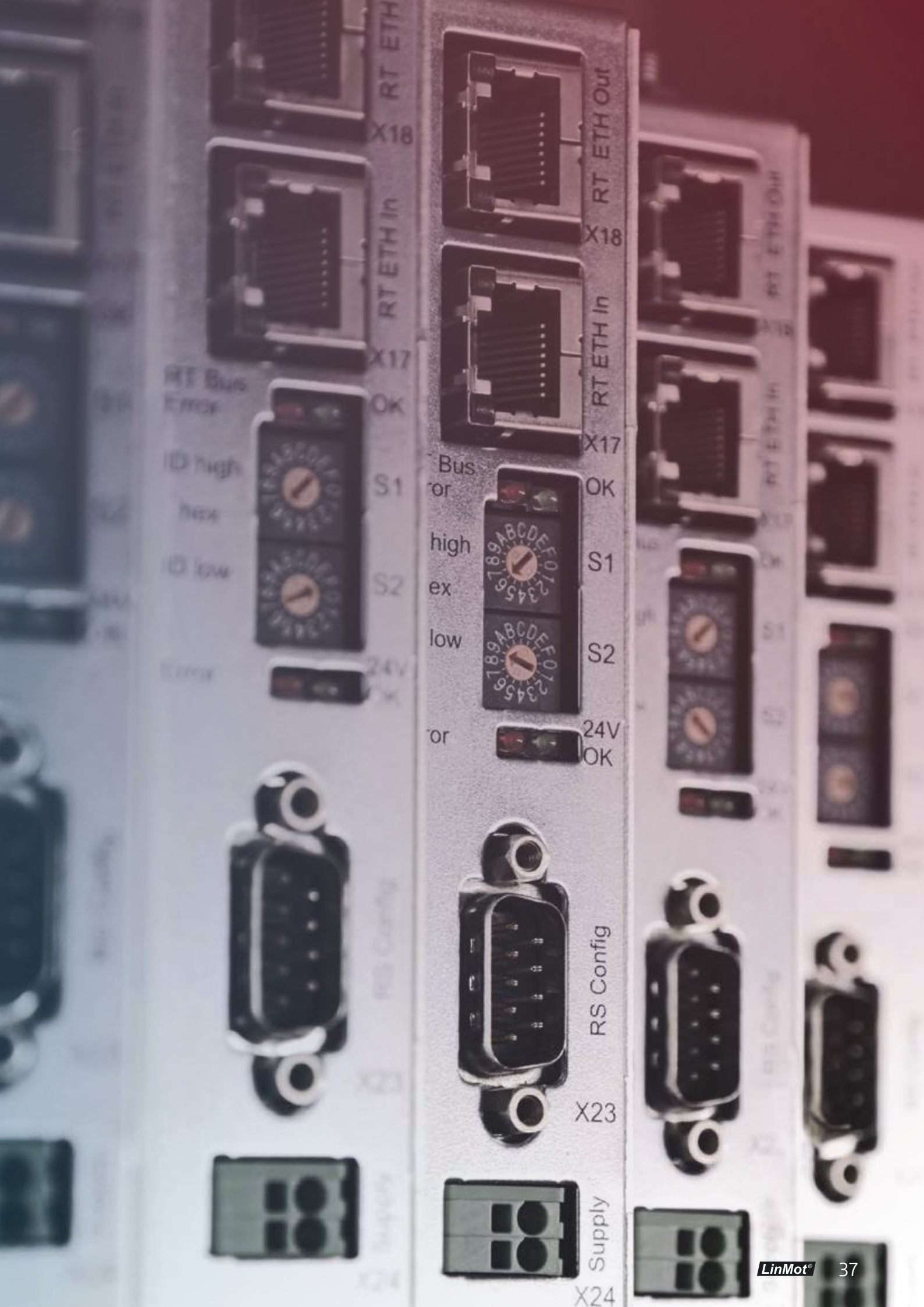
In addition to CE and UL, optional amplifier inputs for measurement applications including calibration certificate are available

User-friendly

Immediately ready for operation and enable everything to be parameterised via fieldbus

Compact, slim design and easy installation and commissioning

Function blocks and programme examples for all common PLC control systems



RT ETH X18

RT ETH In X17

RT ETH Out X18

RT ETH In X17

RT Bus Error OK

ID high S1

hex

ID low S2

24V OK

Bus or OK

high S1

ex

low S2

or 24V OK

RS Config X23

RS Config X23

Supply X24

Supply X24

Control system

SIEMENS



BECKHOFF



Schneider Electric

BOSCH



Interfaces



DeviceNet

EtherNet/IP

CANopen



LinMot Drives



LinMot



LinMot Motors & Modules



Control of third-party products such as linear motors, EC/DC motors, solenoids, etc.

LinMot products can be integrated into all standard control systems

OMRON

Lenze

CODESYS

NATIONAL INSTRUMENTS
LabVIEW™

MATLAB®
SIMULINK®

KEB



ETHERNET
POWERLINK

EtherCAT™

sercos
the automation bus

RS 485

RS 232

CC-Link IE Field



LinMot Drives



3rd Party Drives



LinMot®



P10-54 & P10-70



Third-party products AC Servo

A 1100

Small Drive for Instrument Engineering



- 24...72VDC
- CE/UL/CSA
- Digital IOs
- PLC or stand-alone solutions
- Supports Plug and Play motors (PnP)

CANopen

C 1100

Compact Drive/Point to Point

- 24...72VDC
- CE/UL/CSA
- Real-time (streaming)
- Digital and analogue IOs
- Interface for incremental and absolute sensor
- Supports Plug and Play motors (PnP)
- PLC or stand-alone solutions
- Safe torque off (STO)



C 1250-MI

Compact Drive/Multi-Interface

- 24...72VDC
- CE / UL / CSA
- Configurable bus interface
- Synchronised control (Drive Profile)
- PLC or stand-alone solutions
- Absolute / relative positioning commands
- Jerk-limited drive commands
- Travelling along curves
- Real-time (streaming)
- Digital and analogue IOs
- Safely switched off moment
- Interface for optional incremental or absolute sensor
- Supports Plug and Play



CC-Link IE Field



PROFI
NET

EtherNet/IP

ETHERNET
POWERLINK

sercos
the automation bus

EtherCAT

C 1251-MI

Drive with Functional Safety

- 24...72VDC
- CE/UL/CSA
- Real-time (streaming)
- Digital and analogue IOs
- Integrated functional safety, TÜV certified
- Safe fieldbus communication and safe digital IOs
- Up to SIL 2 (EN 61508) and PL d (EN ISO 13849)
- Configuration & backup via SD memory card
- Configuration via fieldbus
- Supports Plug and Play motors (PnP)
- PLC or stand-alone solutions
- Calibrated measuring amplifier input
- Synchronous control (drive profiles)
- Process monitoring & real-time data analysis
- Multi-interface drive to reduce spare parts, service and storage costs



CC-Link IE **Field**

ETHERNET **POWERLINK**

EtherNet/IP™

sercos
the automation bus

Safety over
EtherCAT™

EtherCAT™

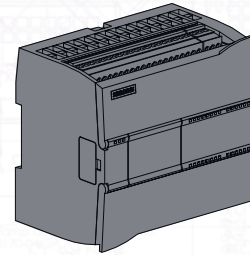
open **SAFETY**

PROFI
NET®

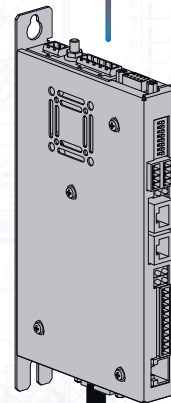


Functional Safety

- Single-cable solution
- Reliable and harmonised
- Up to SIL 2 (EN 61508) and PL d (EN ISO 13849)
- Same design for safety and standard products
- Complete, certified safety range from a single source
- Linear motors and modules with integrated safety encoder
- C1251-2S Drive with integrated safety functions and safe digital IOs

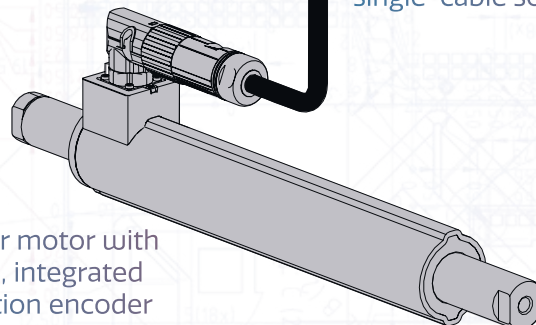


Safety control/PLC



C1251-2S Drive with functional safety

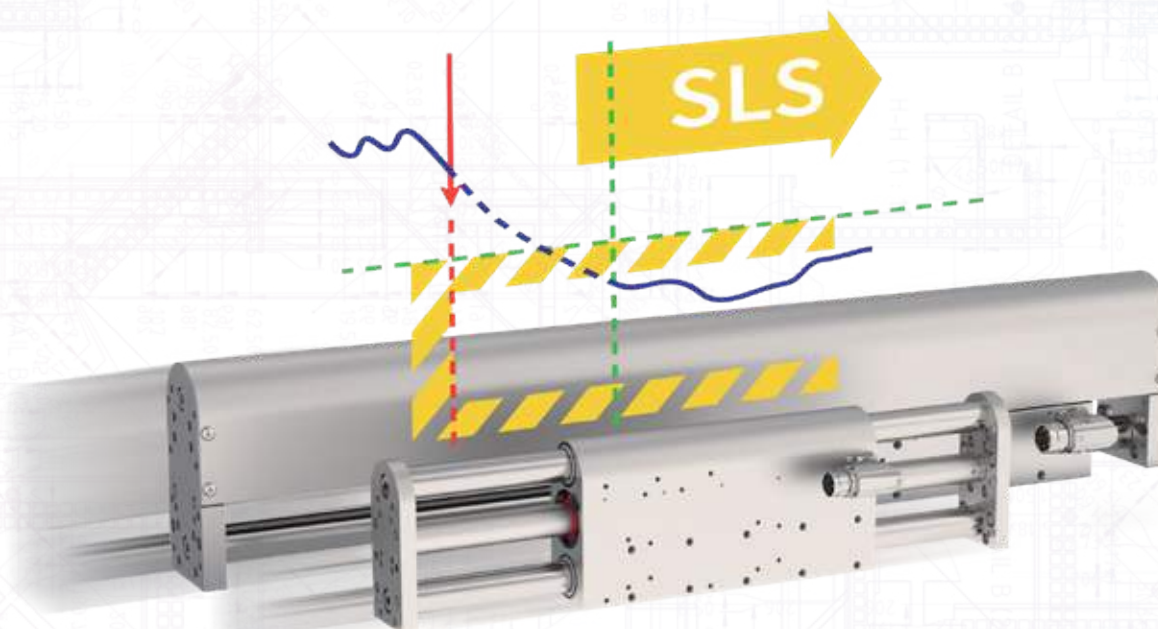
Motor cable/
single-cable solution



Linear motor with safe, integrated position encoder

SLS	Safe Limited Speed
SBT	Safe Brake Test
SBC	Safe Brake Control

STO	Safe Torque Off
SS1	Safe Stop 1
SS2	Safe Stop 2
SOS	Safe Operating Stop



C 1400 Universal



- 1x 200...240VAC
- Up to 100 programmable motion profiles
- Serial configuration interface
- Control of LinMot and AC servomotors
- Interface for incremental and absolute sensor
- Freely programmable command table with up to 255 commands



E 1400 High-End

- Control of LinMot and AC servomotors
- Commands for absolute/relative positioning
- Jerk-limited motion commands
- Supports travel time curves and cam discs
- Real time (streaming)
- Synchronous control (drive profiles)
- Master encoder synchronisation (In/Out)
- PLC or stand-alone solutions
- Configuration via fieldbus / remote access via Ethernet
- Digital and analogue IOs
- Safe torque off (STO)
- Interface for incremental and absolute sensor
- Position encoder simulation output
- Master-slave circuit
- Analogue force/speed specification
- Supports Plug and Play motors (PnP)



D 1150

„Close by“ Drive

- 24...72VDC
- Decentralised control of the drive component
- Installation close to the motor
- Compact IP65 housing
- Real-time (streaming)
- Synchronous control (drive profiles)



Linear Motor PD03

Integrated Servo Drive



- Powerful linear motor with integrated drive
- Compact design
- High dynamics
- Simple cabling (daisy chain)
- Integrated mounting flange
- Low cabling effort
- Low total costs
- Simple commissioning

Stroke up to	mm	135
Peak power	N	255
Nominal force	N	35
Max. speed	m/s	3.2
Max. acceleration	m/s ²	450
Repeatability	mm	±0.05
Stator length	mm	400
Slider length	mm	240



Process Monitoring

With the new “Process Monitoring” application, LinMot is taking the next step towards Industry 4.0. The user can define up to 16 monitoring windows in which the measured variables that are decisive for the process can be monitored, visualised and evaluated. Due to the drive’s fast cycle time, individual measuring points are recorded at the highest sampling rate to guarantee the user the best possible resolution.

Initial evaluation results are available from as little as 5 ms and can be further processed by the higher-level control system.



Simple PLC communication

Designed for high-precision processes

No additional hardware required

Improved production time and quality control

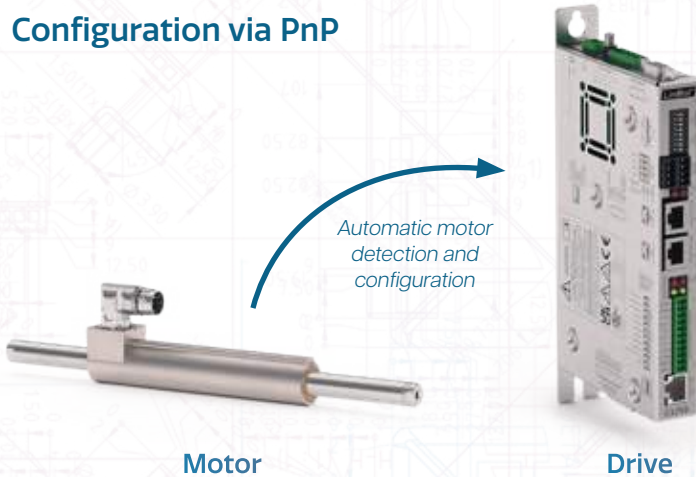
Real-time data evaluation, independent of the bus cycle time

Up to 16 different, individually configurable monitoring windows

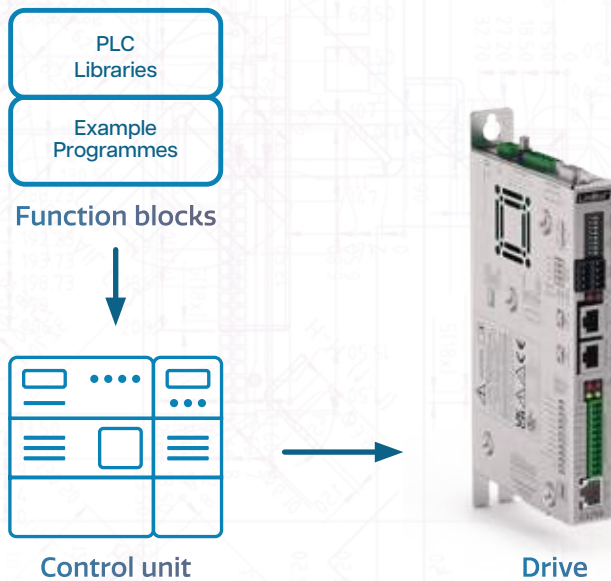
Commissioning by a Click

Proven Technology to get moving quickly.

Configuration via PnP



Configuration via PLC



Fully automatic Configuration of the Motor Data

The Plug and Play (PnP) technology established in the computer sector is also used by LinMot for the commissioning of linear motors.

In LinMot motors, the parameters are stored directly on the stator. The drive reads the values when it is switched on and sets the parameters accordingly. With this automatic device recognition, there is no need to select the required type parameters from an extensive library.

Integrated Servo Drive

LinMot drives have all standard fieldbus interfaces for connection to a higher-level control system.

For easy integration into the control system, the customer is provided with extensive function blocks and example programs. These modules allow LinMot Drives to be integrated directly and quickly into the control system.

In addition to standard motion commands, the function blocks can also be used to perform functions such as drive parameterisation and configuration directly from the controller. The complete drive configuration for each axis is stored on the control unit.

In the event of maintenance or replacement, this enables, among other things, automatic detection and parameterisation of the drive via the bus. This eliminates the need for manual and time-consuming drive configuration in the event of a fault.

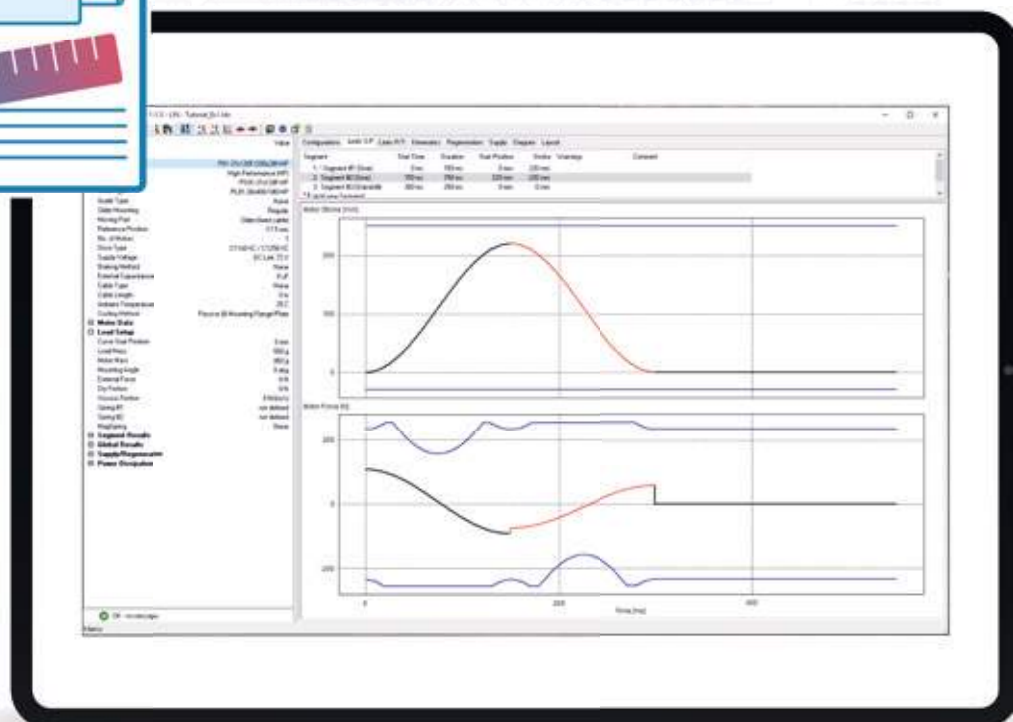
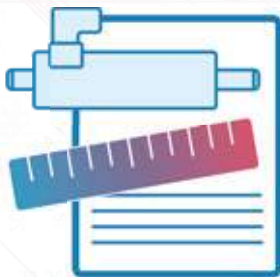
LinMot Designer

The Tool for correct Dimensioning

The use of a linear drive system starts with the design of the linear motors. To support the designer in this step, LinMot provides an easy-to-use tool in the form of the LinMot Designer design programme.

Based on the desired motion sequences and loads, the LinMot Designer calculates the parameters required to select a drive and displays them in relation to the selected motor type and control electronics.

- Design of linear / rotary motors
- Release of the selected motor
- Specification of all global data
- Simulation of the desired motion
- Determination of kinematic data
- Determining the power requirement of the motor
- „Cost-efficiency“ function and CO₂ calculation for comparison of pneumatic application compared to linear motors





ME OUT
ME IN
CMD OUT
CMD IN

6 Force DHCP
5 Bootstrap
4 ME CAN Term
3 CMD CAN Term
2 CMD RS485 Term
1 Anln2 Pull Down

OFF ON

1 +5VDC
9 Sens A
2 Sens A
10 Sens B
3 Sens B
11 Sens Z
4 Sens Z
12 Sens Alarm
0 GND
13 Hall Sw U
6 Hall Sw /U
14 Hall Sw V
7 Hall Sw /V
15 Hall Sw W
8 Hall Sw /W

Error
Warning

CONFIG RS232

X4 11 QuickStop, PTC2
X4 10 IO, PTC1
X4 9 IO, LIM+
X4 8 IO, LIM-
X4 7 IO, HSW
X4 6 IO, TRIG
X4 5 IO, CAP
X4 4 IO, AN
X4 3 IO, /BRK
X4 2 +24VDC
X4 1 DGND

ID HIGH (5..8)

ID LOW (1..4)

RT BUS Error

REAL TIME ETHERNET

Gripper

As a specialist in linear motion and manufacturer of linear direct drives, the LinMot enables its customers to set up multi-axis systems such as semi-gantry, gantry or pick and place by using its linear motors, modules and guides. LinMot also offers the grippers required in this environment as linear direct drives. The user benefits from grippers that are designed to interact with the overall system. They have been developed and designed to grip light objects at lightning speed. Controlled by the multifunctional LinMot servo drives, the movement characteristics of the gripper fingers can be freely programmed. This means that the specific requirements of the application in terms of speed, positioning or force application can be easily met.

GM50 Fast Gripping

- Closing or opening time less than 20 ms
- Smooth gripping thanks to freely programmable motion profiles
- No energy consumption in fully open or closed position
- Maintains positive locking in the event of a power failure, easy to open by hand
- Compatible with all common Ethernet interfaces and fieldbuses
- Drag chain connection for clean cabling



GM51 Fast Gripping & endless Turning

- Integrated rotary motor for endless rotation
- High accuracy of the absolute encoder and therefore of the angular positioning
- Position monitoring of the gripper fingers via the linear motor and therefore no external sensors or rotation-interfering cables required
- Closing or opening time less than 20 ms
- Smooth gripping thanks to freely programmable motion profiles
- No energy consumption in fully open or closed position
- Maintains positive locking in the event of a power failure, easy to open by hand
- Compatible with all common Ethernet interfaces and fieldbuses
- Drag chain connection for clean cabling

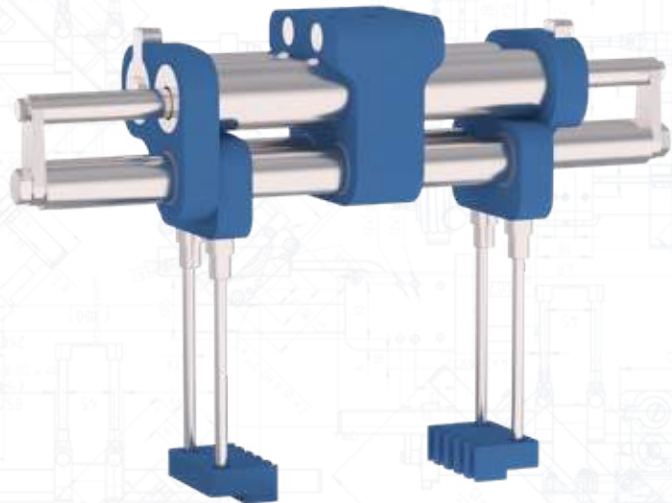


Stainless Steel Gripper

The user also has access to a complete linear drive system for use in demanding environments. The GM01/02 parallel grippers complete LinMot's stainless steel line as a further element thanks to easy coupling and standardisation of materials. In combination with the SM01 and SM02 guides, for example, a complete pick-and-place application can be realised in EN 1.4404 stainless steel. A combination that is highly resistant to chemicals and has an enormous service life.

GM01 Precise Gripping and Moving

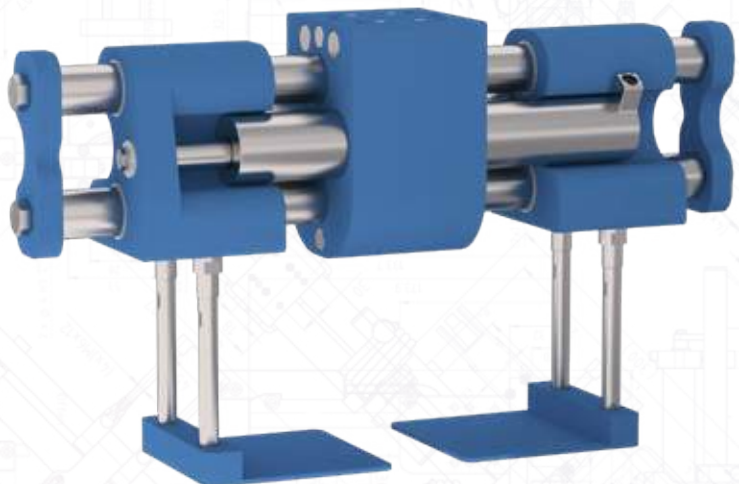
- High flexibility in the selection of gripped goods
- Lightweight materials (FDA)
- Wash-down safe
- High degree of protection IP69
- High degree of freedom for position and clamping force



Max. opening/ closing stroke range	mm	≤ 170
Max. clamping force	N	134-276
Max. gripper speed (close/open)	m/s	3.5

GM02 Large Gripping Material

Max. opening/ closing stroke range	mm	≤ 470
Max. Clamping force	N	134-276
Max. Gripper speed (close/open)	m/s	3.5



Multi-Axis Systems

LinMot Modular System for Handling and Assembly Applications

Balancing skills shortages, increasing production demands, safety requirements and the need for sustainable processes is a major challenge for many machine builders. To meet these complex requirements, LinMot offers an innovative and easily configurable modular system for highly dynamic handling and assembly systems with integrated functional safety.

The comprehensive product range of the LinMot modular system covers almost all customer and industry-specific requirements. For example, the ISO 4-certified linear modules of the DM01 series are available for force-controlled or clean-room applications (Figure 2). Longer strokes and the integration of up to four carriages are possible with the FM01 and EM01 series linear modules (Figure 1). These modules safely absorb external forces, torsional and bending moments, and can be combined into semi-gantry, gantry or other multi-axis systems and put into operation immediately without additional adapters or specially designed components. LinMot components also meet the highest demands as Z-axis: Especially for vertical applications, the slim DM03 linear module offers a large stroke range with integrated load compensation (Figure 3). This module can also be equipped with a high-resolution position sensor in the module or a force sensor at the front.

For highly dynamic rotary motion, the LinMot portfolio includes dynamic linear rotary motors (Figure 3) with integrated force and torque sensors, air feed-through and stainless steel front. The PR01 and PR02 series and their special versions are extremely versatile and use sensors to provide detailed information such as vertical position, press force, impact force, closing angle and torque. To meet the special requirements of the food and pharmaceutical industries, LinMot also offers a range of products in stainless steel 1.4404, with hygienic design, high chemical resistance and IP69 protection.

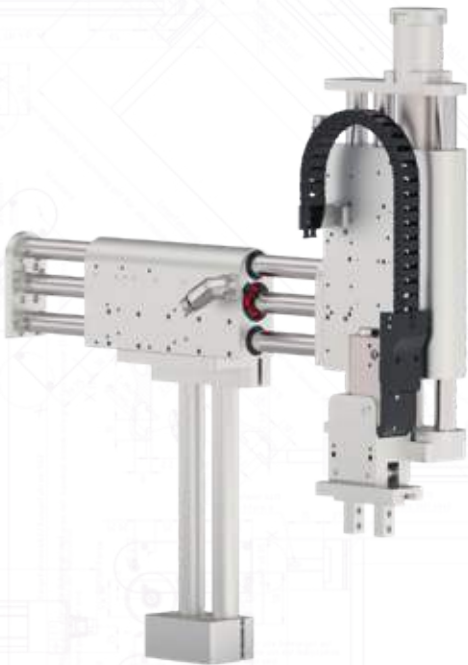
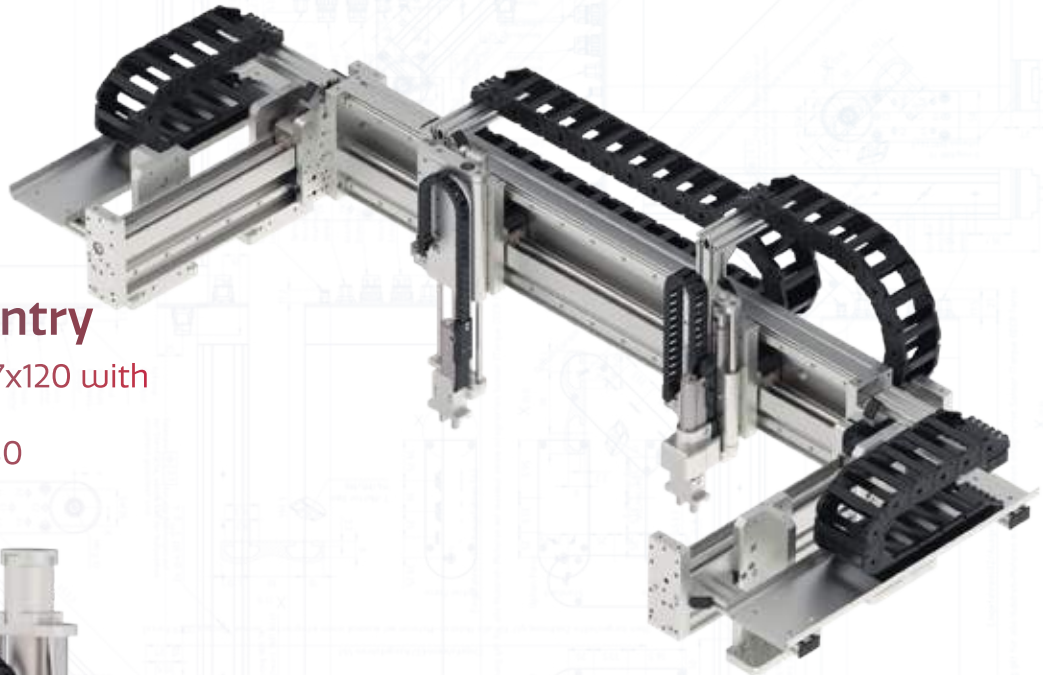
Your Benefits

- Can be integrated into the customer's PLC
- Flexible design of the workspace
- Various kinematics as complete modules that can be ordered
- Process applications with simple configuration wizards
- Energy and cost-efficient components with high dynamics
- Simple programming interface for creating customised processes
- Complete safety monitoring integrated in the -2S Servo Drive, no additional hardware required
- Ideal for applications that require precise motion and repetitive positioning, such as highly dynamic sorting, pick-and-place and assembly applications, as well as sealing, screwing and handling processes.

Combinations

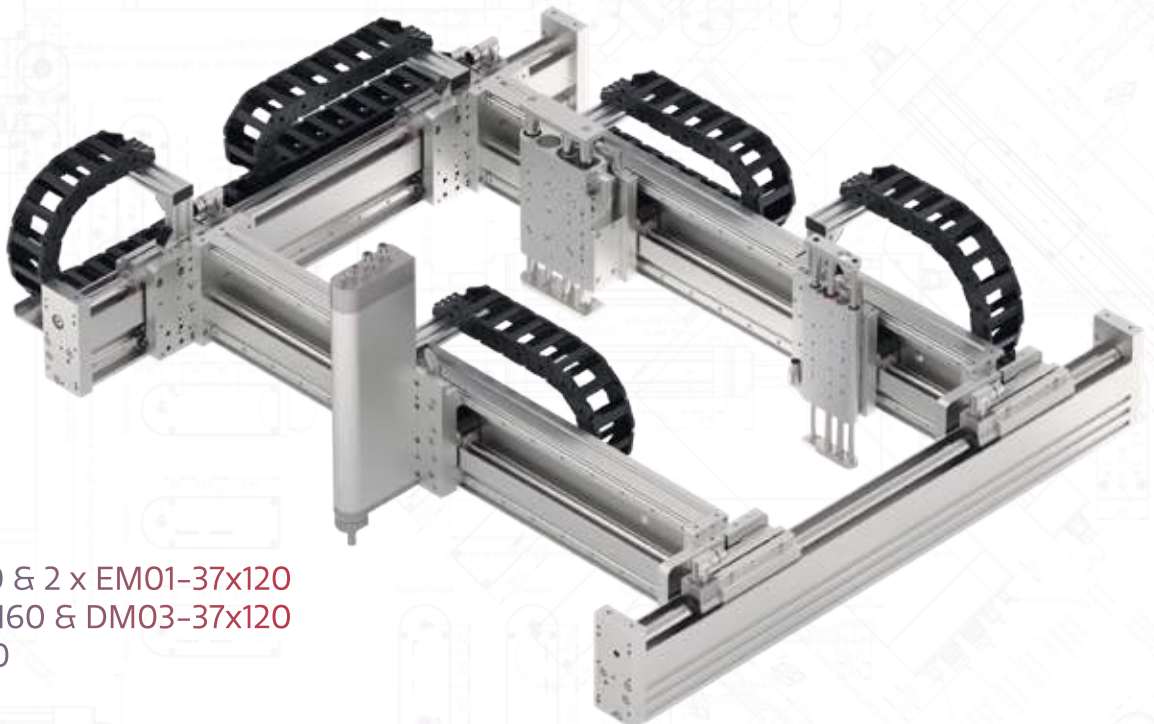
1. Double Semi Gantry

2x FM01-37x120 & EM01-37x120 with
DM03-23x80 with
GM50-23x80 & GM51-23x80



2. Pick & Place

DM01-37x120 & DM03-37x120
with GM50-37x60



3. Gantry

2x FM01-48x150 & 2 x EM01-37x120
with DM03-23x160 & DM03-37x120
and PR02-52x60

MagSpring

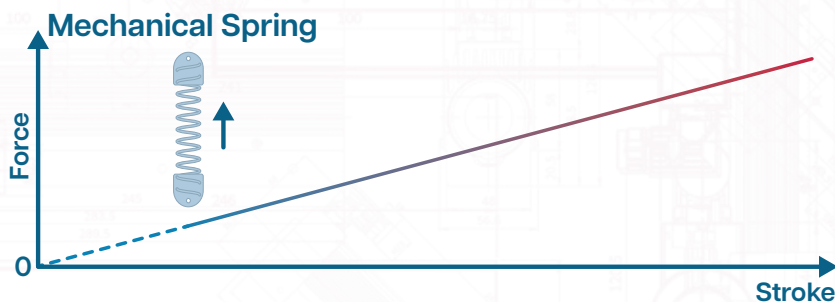
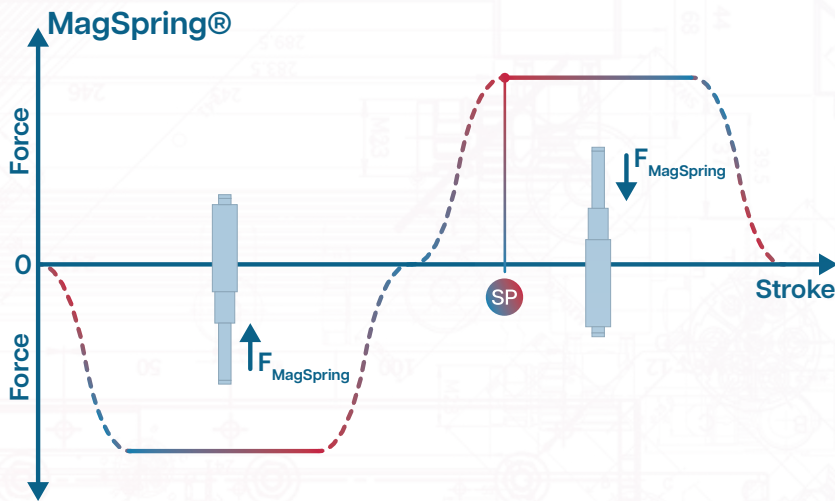
Weightlessness in every Move

In a vertical installation position, linear motors and other direct drives must constantly apply a constant force to counteract the weight force.

LinMot has developed the MagSpring® “magnetic spring” for exactly this purpose.

With a MagSpring® installed parallel to the linear motor, the weight force can be compensated passively. This prevents the axis from lowering when no power is applied. The linear motor is only used for the actual positioning or dynamic force application and can be scaled down accordingly.

The operation is based on the attraction of permanent magnets. As a result, no power supply (electricity, compressed air, etc.) is required, so the product also scores highly in terms of sustainability.



The constant force-displacement characteristic enables a wide range of applications, such as the generation of a constant contact force regardless of position, the application of a constant holding force over a wide stroke range, or one-sided force support in drive applications.

M01-20



Constant force	N	11 / 17 / 22
Stroke (constant force)	mm	≤ 290
Stator mass	g	75-388
Slider mass	g	75-280

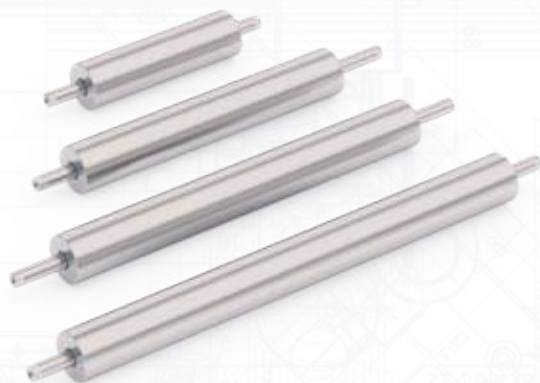
M01-37

Constant force	N	40 / 50 / 60
Stroke (constant force)	mm	≤ 350
Stator mass	g	440-2200
Slider mass	g	75-420



M01-40

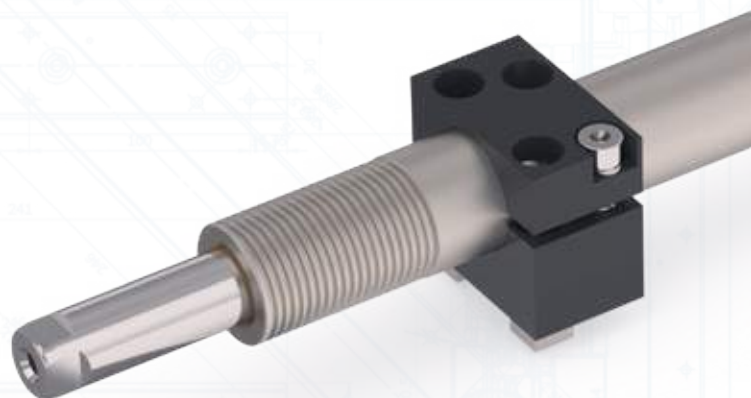
Stainless Steel



Constant force	N	40 / 50 / 60
Stroke (constant force)	mm	< 350
Stator mass	g	440-2200
Slider mass	g	75-420

Product Features

- Simple construction
- Constant force over the entire stroke range
- Purely passive, requires neither electricity nor compressed air
- Ideal for compensating the weight force
- Especially suitable for dynamic motion
- Different stroke ranges and forces
- Can be combined with various LinMot linear modules



Industry Solutions

The right Linear Motor for every Application

Food Products



LinMot drives provide machine builders with optimal components for putting the manufacturing and packaging processes in motion in the food products industry. In combination with freely programmable motion parameters via the drive, the motors provide a high level of flexibility for various applications.

- Beverage filling
- Single and multiple closures
- Weight products
- Metering products
- Sorting using pushers or pull noses
- Reject products
- Cutting food products
- Packaging
- Placing products in packages
- Sealing
- Compressing
- etc.

Textile Machines

Modern weaving machines profit by the LinMot technology for years. In the machines, the motors are used for example for laying and positioning of additional threads. Especially when it comes to the stitch weaving, they take over the work of the stitch drive axes. Also for the precise winding of textile yarn, the machine engineers prefer to use linear motors. For this purpose, LinMot has programmed a complete function block that controls the entire winding process and can be easily started by the PLC.



Wood Processing



Linear technology ensures automatic step width adjustment, for example, in order to guarantee optimal material cuts. In addition to this, there are other possible applications.

- Automatic step width adjustment
- Precise cuts for endless materials
- etc.
- Rapid transport of drills
- Handling of material

Semiconductors & Electronics

In the semiconductor industry, the availability of systems and machines is an absolute requirement.

Modern electronics production must be capable of handling frequent product changes. With innovative drive solutions from LinMot and intelligent drive and controls components, production and conveying applications can be implemented effectively.

- **Front-end machines**
- **Back-end machines**
- **Wafer handling**
- **Semiconductor handling**
- **Semiconductor inspection machines**
- **Semiconductor packaging machines**
- **Populating machines**
- **Flying probe testers**
- **Depaneling**
- **CD/DVD production systems & packaging machines**
- **etc.**

Automotive

Linear drive components from LinMot lead to greater flexibility and productivity in the automotive industry. They can effectively provide not only functional and durability tests for automobiles, but also applications all along the manufacturing process. This especially includes applications in the areas of assembly, material management, and error inspection.

- **Functional and durability tests**
- **Assembling**
- **Material management**
- **Error inspection**
- **etc.**

Laboratory Automation

Automated workstations or laboratory equipment require a high level of flexibility and reproducibility from the selected drives.

LinMot components meet these requirements and are quiet, low maintenance, clean room compatible and ensure smooth movements. The unusually compact LinMot drives are ideal for use in automated equipment because they take up very little space themselves.

- **Handling**
- **Loading and unloading**
- **Material management**
- **Error inspection**
- **etc.**



Medical & Pharmaceutical



The range of applications for linear drives in the medical and pharmaceutical sector is very broad.

For handling blood samples, counting and filling pills, or packing challenging medications, LinMot drive components provide a high level of dynamics and precision for implementing these tasks.

The hygienic design of the linear motors makes it possible to cleanly process these highly sensitive products in accordance with clean room regulations.

- Flexible filling stations
- Metering and counting
- Insertion
- Closures
- Pressing of closures
- Carton packaging
- Labeling
- Pick and place systems
- Product handling and palletizing
- Blister & tray handling
- Packing systems for blisters & trays
- etc.



Handling & Assembling



In addition to an increased flexibility, a modern facility requires a maximum production speed and a secure traceability in the form of a complete electronic process documentation.

With freely programmable and highly dynamic linear motors, the plant engineer finds the optimal components for a modern production machine.

- Feeders
- Transfer systems
- Pick & place modules
- Palletizing units
- Stacking units
- XY tables
- Precision pressing
- Sorting systems
- Automatic screwdrivers
- Metering units
- Gluing stations
- Quality assurance
- Test fixtures
- Camera positioning
- Lighting positioning
- etc.

 **Printing & Labelling**

Sensitive products can be printed more quickly using linear motor technology, because the printing process is performed using position, speed, and force control. The force impacts associated with pneumatic solutions do not occur.

In general, the freely programmable force and motion profiles lead to decisive process improvements in comparison with other types of drives, opening up many fields of application.



- Inspection systems
- Paper feeding
- Decorating
- Color mixing systems
- Pad printing
- Screen printing
- Doctor blade controls
- Labeling
- etc.

 **Packaging**



The highly dynamic and durable drives ensure high productivity and availability. The programmable drives can be adapted quickly to new products and types of packaging at the push of a button, providing continuous monitoring of motion parameters.

In many of these applications, linear motors are used as replacements for pneumatic cylinders, in order to make machines and systems more flexible, productive, and reliable while simultaneously reducing the energy cost for each package.

- Insertion
- Feeding
- Guiding
- Carton packaging
- Sealing
- Labeling
- Unloading
- Discharge
- etc.

ALL LINEAR MOTION FROM A SINGLE SOURCE

The LinMot logo consists of the word "LinMot" in a bold, italicized, sans-serif font, with a registered trademark symbol (®) to the upper right. The text is white and is set against a black rectangular background. A horizontal bar with a red-to-blue gradient is positioned above the logo.

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