

## Multi-axis Positioning Systems

From standard linear systems to  
individual complete solutions

## From standard to individual: New Schaeffler portfolio for positioning systems



Example of a positioning system according to customer requirements

The designers of handling systems place a high value on individual complete solutions, since these can save them a great deal of valuable time.

We have therefore developed a completely new concept for positioning systems: proven INA linear systems + smart ideas from our experienced machine system developers + flexible production capacities for short delivery times.

Schaeffler is thus in a position to offer you an economical, all-round service package – from the planning phase, through design and layout, to assembly and initial operation at your company.

The product spectrum extends from ready-to-fit, single-axis units through to completely integrated multi-axis positioning systems. All matched to customer requirements.

### **The advantages for you at a glance:**

- Components perfectly matched to each other
- Assembly and initial operation service
- Worldwide service network
- Time savings in planning, design and purchasing.

## An economical solution: Driven linear units constructed from standard components

Through the combination of perfectly matched driven linear units with appropriate accessories and drive and control elements, we can tailor the multi-axis positioning systems exactly to customer requirements.



The product portfolio of INA Linear Technology Division is one of the most comprehensive in the world. This means we can serve the widest variety of market sectors: assembly and handling, automation equipment, packaging machinery, electronic component manufacture and many others. The spectrum extends from miniature guidance systems for clean room applications to heavy duty actuators for extreme loads, such as in steel plants and rolling mills. As a systems supplier, we offer ready-to-fit complete solutions.



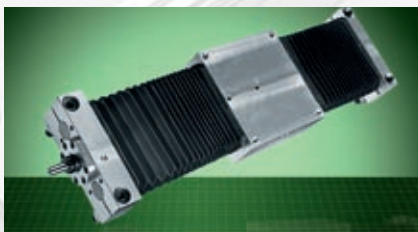
Each series has its particular advantages. Selection of the “right” linear system is guided by your requirements for

- dynamic characteristics
- load
- moving masses
- positioning and repeat accuracy
- environmental influences.



In the appropriate size for your application, you can choose between ...

- **guidance systems** (track roller and shaft guidance systems, linear recirculating ball bearing and guideway assemblies)
- **types of drive** (toothed belt and ball screw or trapezoidal lead screw drives, linear motor drives)
- linear actuators with special functions (telescopic actuators, quill type actuators, actuators with opposing carriages)
- a wide **range of accessories** (fasteners and connectors, couplings, coupling housings, ...)
- **drive and control elements** (motors, gearboxes, sensors, controllers, ...)



For applications with small to moderate stroke lengths and speeds where increased accuracy is required, **INA linear tables** of various designs are available.

## How to save on design work: Standard multi-axis positioning systems

With the proven standard multi-axis positioning systems, many applications can be realised without additional design work. This allows you to complete projects rapidly using components that are already matched to each other. You have considerably less design and planning work and within a very short time you receive a proposal from us for a positioning system with your required axis travel distances.

The standard 3 axis positioning systems are available in two classes: up to 5 kg and up to 15 kg moving mass.

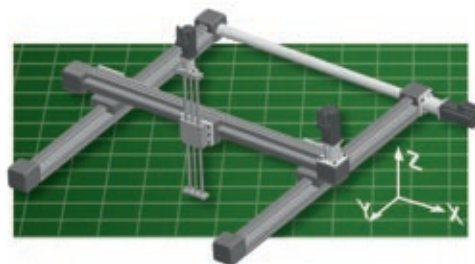
Arrangement: Gantry portal for freely selectable, three-dimensional movements

Function: Parts handling, assembly, etc.

Build status: Preconfigured ready for operation, including drive and connection equipment such as AC servomotors, controllers, cables, flexible cable carriers, etc.

### MPS301/5 (up to 5 kg moving mass)

Axis	Series	Stroke $h_{\max}$ [mm]	Acceler- ation $a$ [m/s <sup>2</sup> ]	Speed $v$ [m/s]	Repeat accuracy [mm]
X	MLF52-130 ZR	7500	4	1	± 0,1
Y	MLF52-145 ZR	1000	4	1	± 0,1
Z	LTE20-B-KGT	200	1,2	0,3	± 0,05



The axes of the multi-axis positioning system comprise:

X and Y axis: Actuator with track roller guidance system and toothed belt drive of series MLF52-ZR

Z axis: Linear table with linear ball bearing guidance system and ball screw drive of series LTE20-B-KGT

### MPS301/15 (up to 15 kg moving mass)

Axis	Series	Stroke $h_{\max}$ [mm]	Acceler- ation $a$ [m/s <sup>2</sup> ]	Speed $v$ [m/s]	Repeat accuracy [mm]
X	MKUVE20-B-ZR	7500	4	1	± 0,1
Y	MKUVE20-B-ZR	1000	4	1	± 0,1
Z	MKUVE15-KGT	200	1,2	0,3	± 0,05

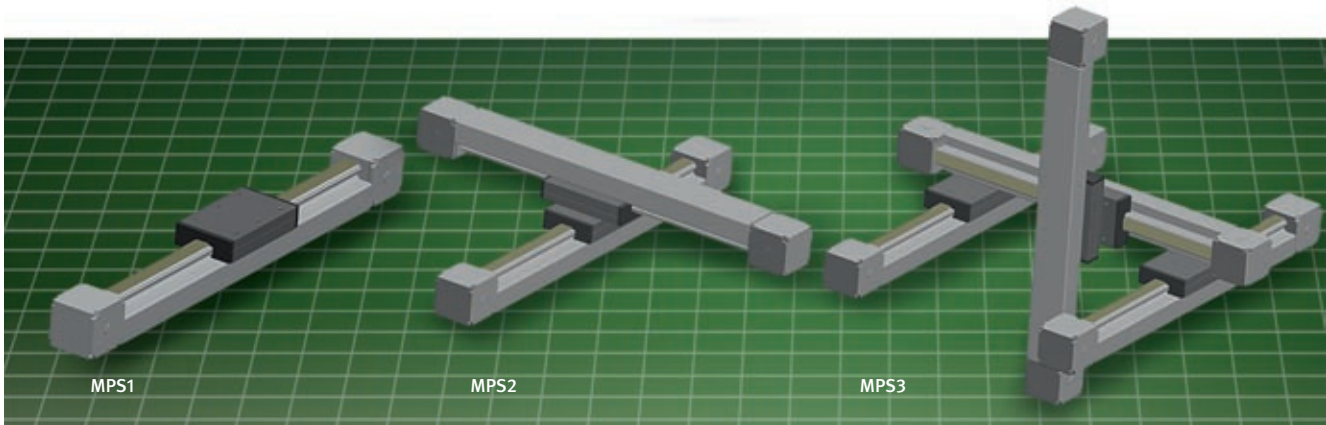


The axes of the multi-axis positioning system comprise:

X and Y axis: Actuator with linear recirculating ball bearing and guideway assembly and toothed belt drive of series MKUVE20-B-ZR

Z axis: Actuator with linear recirculating ball bearing and guideway assembly and toothed belt drive of series MKUVE15-KGT

## Tailor-made for you: Individual multi-axis systems of versatile design



Examples of possible axis configuration

You have a brief to fulfil, in which you are not making progress with a standard linear system or a standard multi-axis positioning system? Then just ask us! As a systems supplier, we can realise the requirements completely to the wishes and requirements of our customers.

An extensive modular concept of fasteners and connectors allows a large number of assembly configurations with driven linear units. You can use this to fulfil practically any requirement – for example:

- number of axes from 1 to ...
- position and positioning of linear units (assembly arrangement)
- location method
- function.

The following performance data are achievable:

- travel distance (stroke) up to 30 m
- travel speed up to 10 m/s
- moving mass up to 500 kg

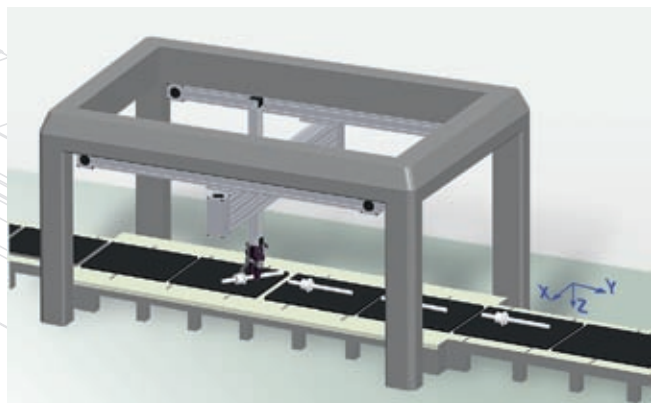
### Application example: Sorting station

Performance data for customer application

“Defined-position sorting of workpieces”

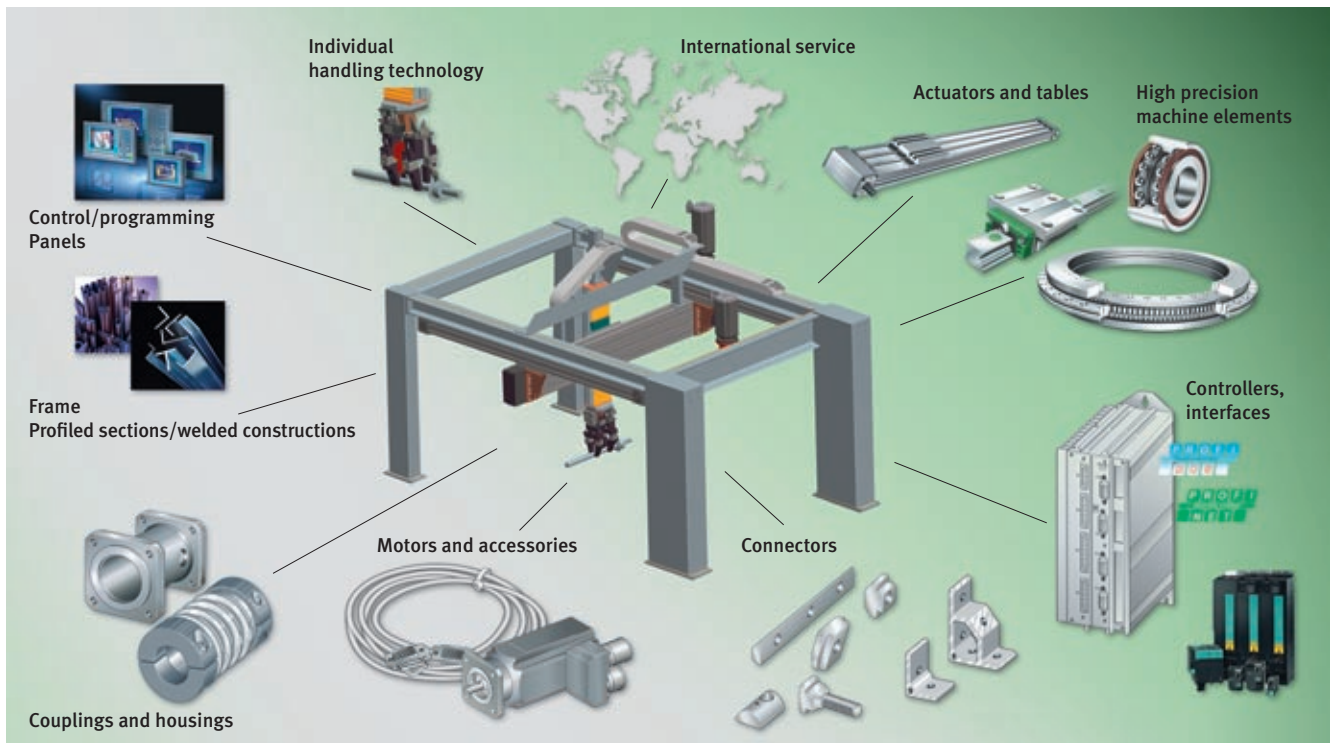
Workpiece mass: 20 kg

	X	Y	Z
Total stroke [mm]	1000	1400	400
Speed [m/s]	4,3	2,7	1,25
Acceleration [m/s <sup>2</sup> ]	19	11,5	20



Sorting station (customer application)

## Supplied to you “turnkey ready”: Ready-to-fit complete solutions



Upon request, you will receive your individual positioning system supplied by us, completely assembled and ready for operation. Our portfolio of services includes all necessary operations and preparations such as:

- project management and layout
- overall and detailed design
- preliminary and final assembly of components
- safety and control devices
- control and programming
- transport and final assembly of the positioning system
- initial operation and service
- maintenance (including remote maintenance)

All the services listed above are of course offered worldwide.



Examples of automation equipment: Triple axis positioning system

We are there to help anywhere in the world:  
Just contact us!



In order to give you our effective support, we of course require a complete description of your application. We therefore offer you a form on the Internet that interactively asks for information on the configuration and the known parameters of the planned application.

When you send us this form, one of our advisory engineers will contact you.

We look forward to your enquiry

Your path to the optimum multi-axis positioning system:

[www.ina.com/positioning\\_systems](http://www.ina.com/positioning_systems)

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