



FAG



Linear Systems Solutions

Defining the Future with
the Schaeffler Group

Linear Solutions Provider



Part retrieval systems, palletizers, custom tool changers, and dispensing robots are a few of the applications that benefit from our compact, robust line of linear actuators. As a solutions provider, we offer you ready to install mechanical systems that include actuators, coupling housings, couplings, gearboxes, and mounting brackets.

With over 40 actuator models, INA offers a broad selection of sizes and configurations that will meet a wide variety of application requirements. Included are actuators with profiled rail, track roller, and ball bushing linear bearing systems along with either a belt or a ball screw drive. Aside from our traditional actuator designs, we also

have specialized designs such as telescopic actuators, clamping actuators, and actuators with multiple carriages.

In addition to our actuators, INA also provides linear motors and torque motors for demanding applications that require high speed, quick response, and high accuracy. These can be combined into easy to use systems or provided as stand alone components.

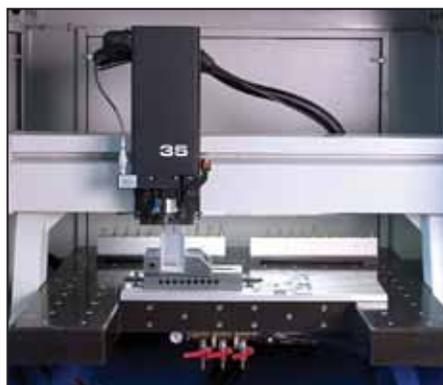
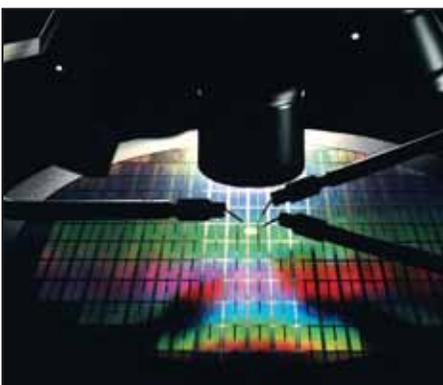
The growing need to automate processes combined with a desire to reduce machine development time and risk has increased the need for purchasing complete linear solutions. INA is well positioned to provide the linear systems to fill this need.



Configurable and robust: The MKUSE25-KGT provides a heavy duty option for ball screw driven actuator applications – available with a 5, 10, 20, or 40mm lead.

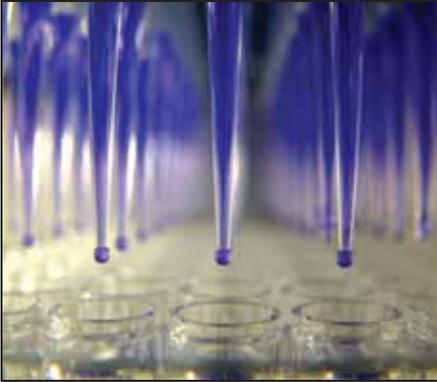


Compact and low cost: The MLFI25 is capable of reaching speeds of 8 m/s with its internal track roller linear bearing system – also available in a corrosion resistant design



Powerful and fast: Extremely high loads can be transported with the MDKUSE25-3ZR triple belt, dual rail linear actuator.

New Products



MKUVS32...KGT

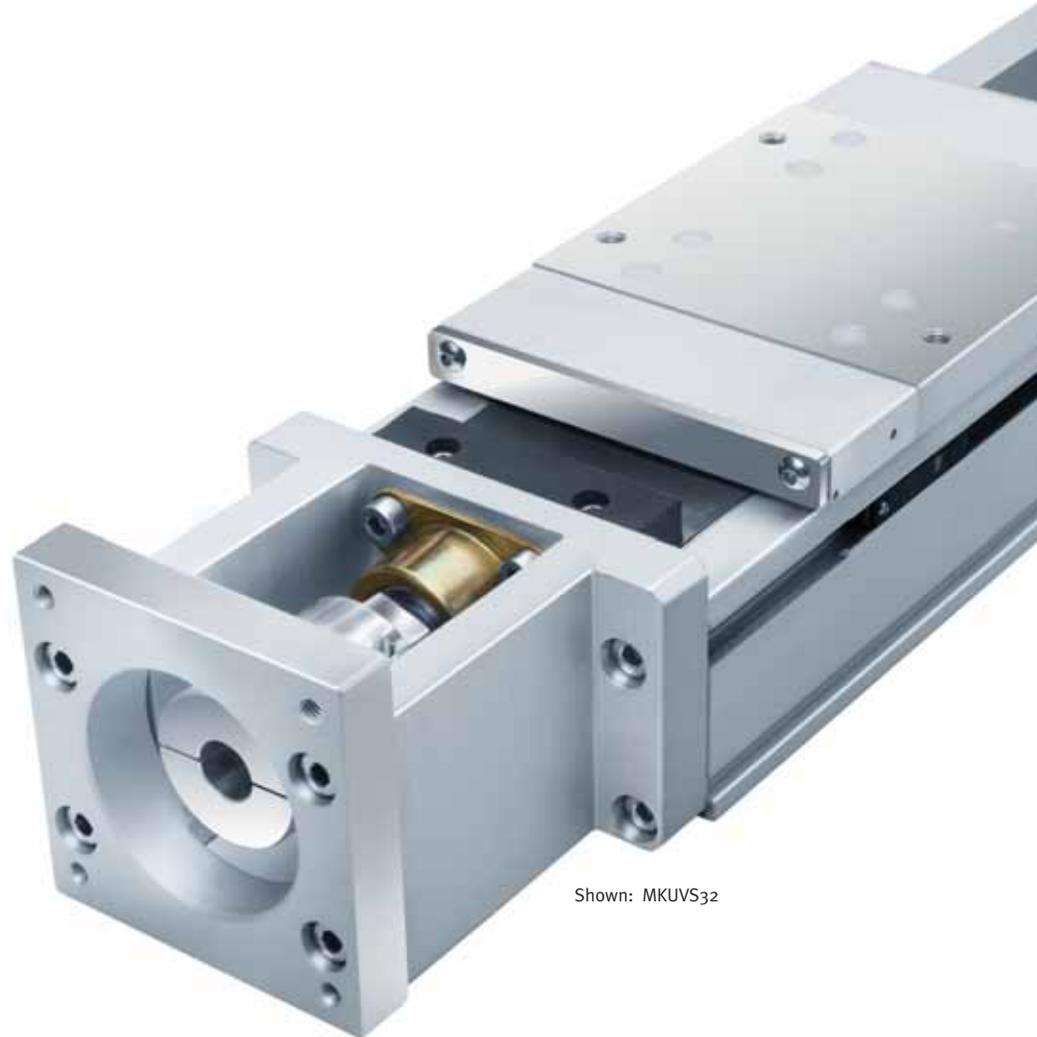
Today more than ever designers are faced with the task of getting the most functionality out of the smallest space. This trend creates the need for small, precise actuators. INA has answered this challenge with the new MKUVS32. The ball screw driven MKUVS32 provides designers with a small, powerful, and precise actuator that gives designers the flexibility to include sensors and a sealing strip in a compact and attractive package.

Key Features:

- Wide base / low height
- High capacity profiled rail linear bearing system
- Precision ball screw
- 2, 4, 10, or 20mm leads
- Optional sealing strip
- Integral groove for EOT and Home sensor
- Dual carriage option
- Stroke lengths up to 1022mm

Typical Applications:

- Automated part assembly
- Inspection systems
- Biomedical equipment
- Plasma cutters
- Automated welders
- Semiconductor equipment
- Cartesian robots



Shown: MKUVS32

MLF134...ZR / MKUVE15...ZR

One of the keys in optimizing the design of a new machine, is using the right actuator for the right application. The MLF134...ZR and MKUVE15...ZR belt driven linear actuators were designed to fill out INA's already extensive offering of belt driven linear actuators. Both actuators are built around the same extrusion, differing only in the type of linear bearing system used. The MLF134...ZR provides a track roller system which is smooth, handles medium to light loads, and is ideal for high speed applications. The MKUVE15...ZR has the KUVE15-B linear bearing system which offers higher load capacity and stiffness. Both actuators feature a unique helical toothed belt for low noise and vibration. The design of the MLF134...ZR and MKUVE15...ZR can be summarized as the perfect blend between performance and price.

Key Features:

- Compact C-Sec – 65mm wide x 85mm high
- Track roller or profiled rail linear bearing system for optimized performance
- Acculinear timing belt with helical tooth profile for low noise and vibration
- U-channel design with belt shielding internal components
- Integral groove for EOT and Home sensor
- Stroke lengths up to 5600mm

Typical Applications:

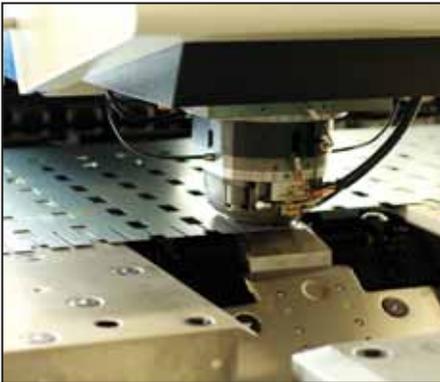
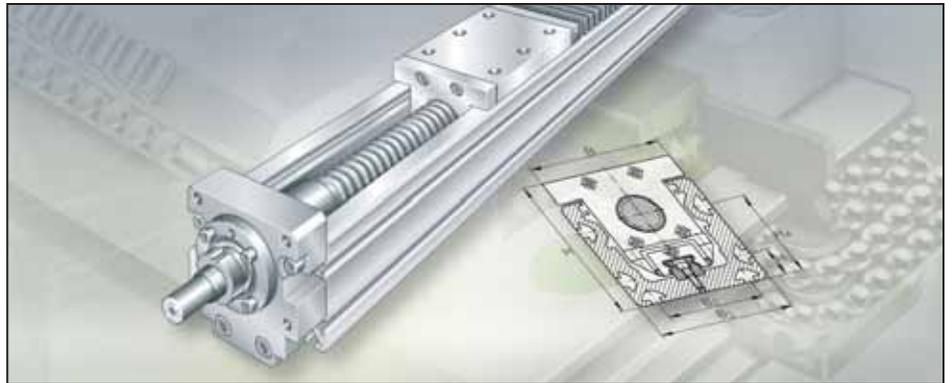
- Pick and place systems
- Small gantry robots
- Part transfer systems
- Camera positioners
- Dispensing systems

LINEAR ACTUATORS

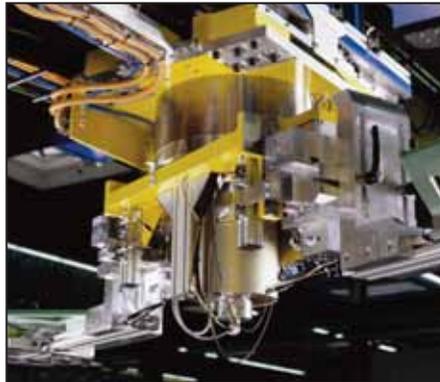
Applications

Linear Actuators can be found in a wide variety of applications in industries such as:

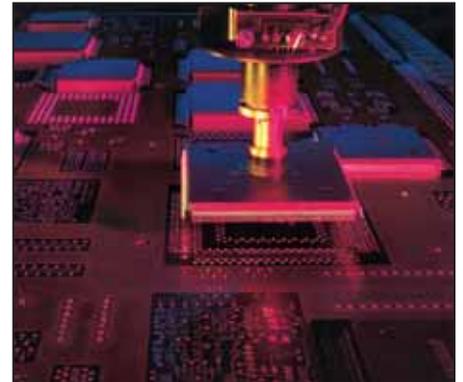
- Medical
- Pharmaceutical
- Machine Tool
- Packaging
- Material Handling
- Plant Automation
- Semi-conductor



Machine Tool / Punch Press



Packaging



Semiconductor



Printing Equipment



Medical



Plant Automation

Drives With A System – Dynamic, Flexible, Precise

Direct drives from the Schaeffler subsidiary IDAM (INA Drives and Mechatronics) offer a high performance solution to the most demanding motion control applications. These virtually wear free drives have the following advantages: handles high speeds and accelerations, excellent dynamic response, high axial rigidity, zero backlash, and excellent accuracy/repeatability.

Linear and rotary direct drives are available in a wide range of sizes and capacities. They are available as components or as part of multi-axis motion control systems that include direct drive motors, amplifiers, and controllers.

Linear Motors:

The L2 series of linear motors is especially suited for handling systems and for transporting small and medium sized loads. This design provides exceptional dynamic response and accuracy.

The L1 series is a slotted linear synchronous motor. It is often used in small and medium sized positioning systems due to its compact design and high power density. This simplicity of the motor also makes it a good choice in applications where the price to performance ratio is critical.

Torque Motors:

IDAM torque motors are ideal for applications that require high torque and smooth rotation. These slotted, high torque, synchronous motors can be designed with internal or external rotors that provide: efficient transmission of power, maximum power density, high acceleration, high velocity, wear free and friction free operation

System Solutions:

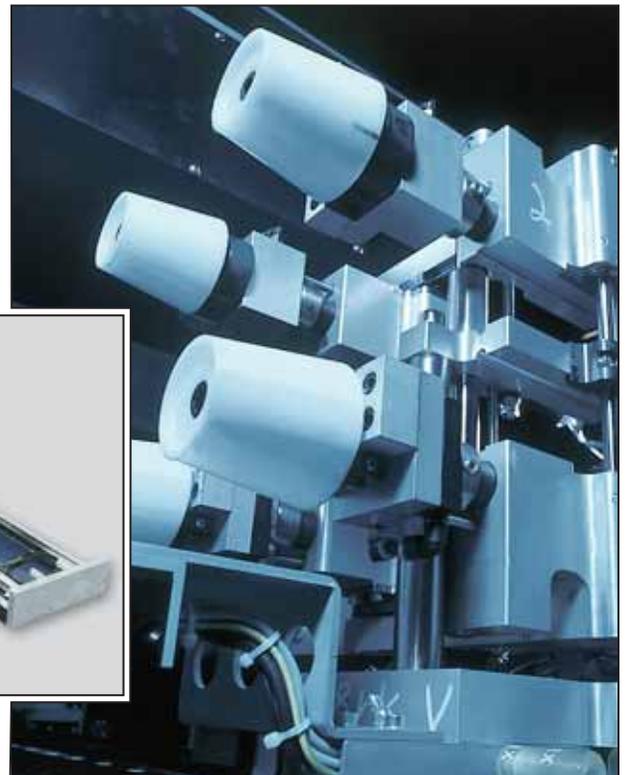
The strength of our systems approach is particularly apparent here. Through development partnerships with our customers and continuous interdisciplinary cooperation within Schaeffler, we can provide high performing, customer specific system solutions. The resulting innovative mechatronic solutions provide our customers with a way to stand out from their competition.

Does a ready to install system that includes bearings and motors all from one source give you new ideas for your machines? If so, just contact your local representative today!



In-house stands for bearing tests, including tests on the finished device

Molding, filling and sealing machine equipped with four DDS24 systems that achieve acceleration of 12 m/s^2 with an additional mass of 18 kg (photo: Adolf Illig Maschinenbau GmbH & Co. KG)



Torque motor RI: compact and powerful

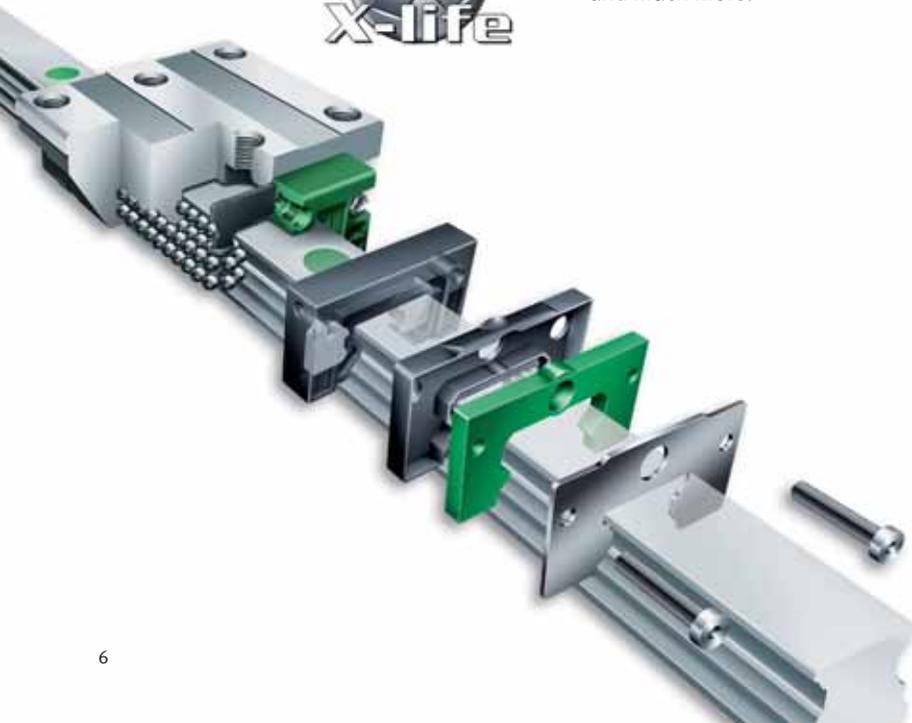


Linear system DDS24: precise and dynamic

High Performance In A Straight Line: INA Linear Guidance Systems



Dynamic linear ball bearing and guideway assemblies in X-life quality. Above: with quad spacers in the ball rows to minimize collision noise. Below: the robust design featuring a full complement of balls and the KUBE-KIT range of accessories



INA linear technology stands for a wide variety of high quality products – tried and tested and full of interesting ideas. We can offer an optimized solution for every application. Choose from the world's widest range of linear products.

INA linear recirculating ball guidance systems – a modular concept full of good ideas

Our KUBE four-row, modular linear recirculating ball guidance system is one of our proven “classics”. Two basic designs are available: either robust with a full complement of rolling elements for high loads or with quad spacers for quiet and highly-dynamic operation. Both designs are practically maintenance-free due to an integrated lubricant reservoir close to the raceway.

The user can put together the combination that best suits the particular application from a comprehensive range of components and accessories. This covers various carriage geometries, an integrated measuring system, toothed guideways, braking and clamping elements, end pieces made of metal or plastic, and much more.

We especially recommend KUBE-KIT for the food processing and packaging industry – a finely-matched sealing and lubrication concept for taking account of all ambient conditions. It contains versatile components such as front and additional wipers, sealing strips and long-term lubrication units. These accessories protect the running system of the guideways against contamination, ensure lubricant is provided when required and give long relubrication intervals.

Low-noise and without stick-slip: Track roller linear guidance systems in lightweight design

INA track roller linear guidance systems are products that are robust, insensitive to contamination and have been used for decades in many industrial sectors. They run smoothly with low friction and without stick-slip at speeds of up to 10 m/s. Various guideway geometries can be combined if oval or other curved tracks are required.

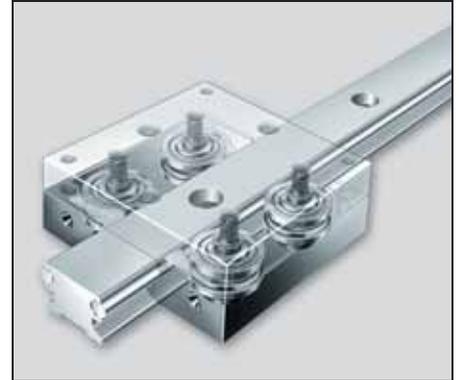


The operating life of our new lightweight linear ball bearings KN..-B is 50 % longer than its predecessor within the same dimensions

Broad Product Offering To Support Any Application



INA linear recirculating roller bearing and guideway assemblies in a packing and palletizing robot mean that the required precision at high loads as well as long-term process reliability is ensured for the machine manufacturer (photo: KRONES)



Lightweight track roller guidance system LF: reliable, fast, compact



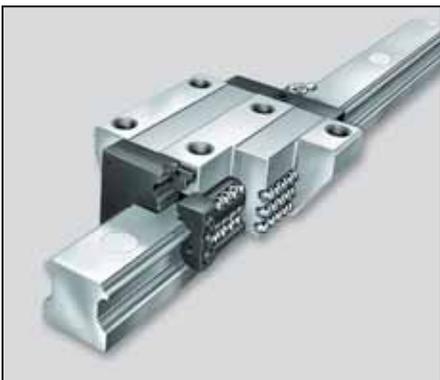
KGT Ball Screws



Laboratory analysis device with a 3-axis handling system for automatic pipette handling



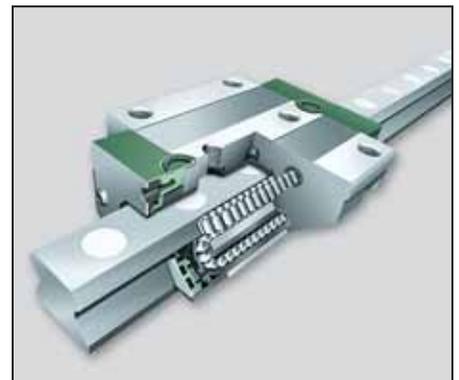
High Precision RGT Planetary Roller Screws



For high loads: Six rows of balls provide a high level of safety in applications with heavy loads



Effective corrosion protection: Linear recirculating ball bearing and guideway assembly with patented Corroct® rust protection



RUE...E: These compact high-performance guidance systems have high load carrying capacity and rigidity with long operating life



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