

Linear Unit LRE 8 D10 80x80 KGT

Linear Unit LRE 8 D14 80x80 KGT

Notes on Use and Installation

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## Symbols, safety



Important information



Observe directions for disposal



Observe directions for disposal



Maintenance



Note! Failure to observe this safety instruction can result in material damage



Warning! Failure to observe this safety instruction is likely to result in material damage, serious injury or death



Danger! Failure to observe this safety instruction can result in material damage, serious injury or death



Caution! Failure to observe this safety instruction can result in material damage or injury

## General safety information

The details and information in the installation guide are provided solely for the purposes of describing the product and the assembly and disassembly of variants of Linear Units LRE 8 D10 80x80 KGT and LRE 8 D14 80x80 KGT. The text below usually refers to these as the Linear Unit or LRE. This information does not discharge the user from the obligation to carry out his own assessments and checks. It is important to bear in mind that our products are subject to a natural process of wear and ageing. These notes contain important information that will enable you to use the product safely and appropriately. When sold, rented out or otherwise passed on to another party, this product must be handed over with the installation guide.

When installing, disassembling, operating and maintaining the Linear Unit, it is important to ensure that all moving elements are secured so that they cannot be switched on and moved unintentionally. Rotating and moving parts can cause serious injury! You must therefore read and follow the safety instructions set out below.

- All work on and with the Linear Unit must be performed with “safety first” in mind.
- Always switch off the drive unit before you start working on the Linear Unit.
- Ensure the drive unit cannot be switched on unintentionally, e.g. by affixing warning notices at the activation point or by removing the fuse from the power supply.
- Do not place your hand within the operating range of the Linear Unit’s moving parts when the unit is still switched on.
- Fit guards and covers to the moving parts of the Linear Unit to ensure they are not touched unintentionally.
- Observe the regulations pertaining to accident prevention and environmental protection that apply in the country and place of work where the product is being used.
- Use only products that are in perfect working order.

- Failure to use original spare parts will invalidate the product warranty!
- Check the product for obvious defects.
- Use the product only within the performance range described in the technical data.
- Ensure that all the safety equipment associated with the product is present, properly installed and in full working order.
- Do not alter or circumvent safety equipment, or render it ineffective.

The Linear Unit described here corresponds to the state of the art and takes into account the general principles of safety applicable at the time this installation guide was published. Nevertheless, failure to observe the safety instructions and warning notices in this installation guide may result in personal injury and damage to property.

We will assume no liability for any resulting damage or injury. We reserve the right to make technical changes that represent technical advances. Keep these installation notes in a place where they can be easily accessed by all users. Observe the directions contained in the main user guide for the completed machine.

The general safety information applies to the entire lifecycle of the partly completed machine.

#### **1. During transportation**

Observe the handling instructions on the packaging. Until it is installed, the product must be stored in its original packaging, protected from moisture and damage. Ensure that moving parts are secured when in transit and cannot cause any damage.

#### **2. During installation**

Always deactivate the power to the relevant system part and ensure it is not live before installing the product and/or plugging it in or unplugging it. Ensure the system cannot be switched back on. Lay cables and lines in such a way that they cannot be damaged and do not represent a trip hazard. Avoid areas that pose slip, trip and fall hazards.

#### **3. During commissioning**

Allow the product to acclimatise for a few hours before starting to use it. Ensure that the partly completed machine is securely and safely integrated into the completed machine. Only start up a product that has been installed in full.

#### **4. During operation**

Ensure that only persons who have been authorised by the operator have access to the immediate operating area of the system. This also applies when the system is not in operation. It must not be possible to actuate moving parts unintentionally. In the event of an emergency, malfunction or other irregularity, deactivate the system and ensure it cannot be switched back on. Prevent the possibility of persons becoming trapped in the system's accessible hazard zone.

#### **5. During cleaning**

Close all openings with suitable protective equipment to ensure that cleaning agents cannot penetrate the system. Do not use aggressive cleaning substances. Do not use a high-pressure cleaner when cleaning the system.

#### **6. During maintenance and servicing work**

Carry out the prescribed maintenance work at the intervals stipulated in the user guide. Ensure that no line links, connections or components are removed while the system is live and under pressure. Ensure the system cannot be switched back on.

#### **7. During disposal**

Dispose of the product in accordance with the national and international regulations that apply in your country.

## Correct use

Linear Units LRE 8 D10 80x80 KGT and LRE 8 D14 80x80 KGT with controller and motor are both a partly completed machine as defined in the Machinery Directive (2006/42/EC). They must only be used in accordance with the technical data and safety requirements set out in this document. Internal company requirements and the regulations that apply in the country where the product is being used must be observed. You must not make any design modifications to the aforementioned Linear Unit yourself. We will assume no liability for any resulting damage or injury. You may only install, operate and maintain the Linear Unit if:

- The Linear Unit has been integrated properly and safely into the completed machine,
- You have carefully read and understood the installation guide,
- You are appropriately qualified,
- You are authorised to do so by your company,
- You are using only original equipment from the manufacturer.

Unsafe or inappropriate use of the Linear Unit runs a risk of serious injury through crushing and cuts.

## Improper use

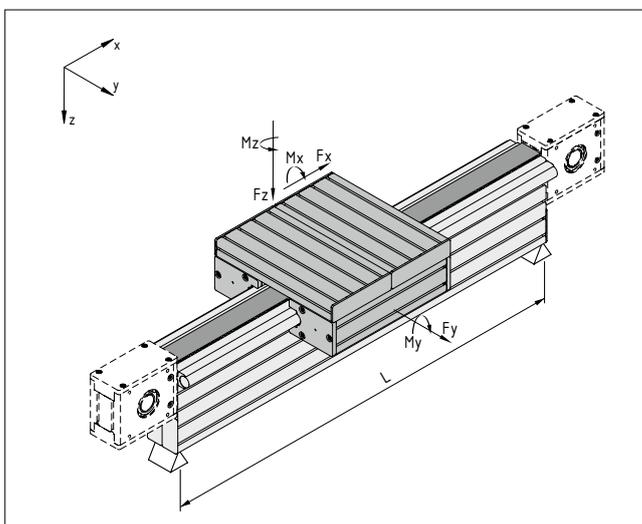
Improper use is defined as any use of the product for purposes other than those authorised in the assembly guide and under the definition of correct use. We will assume no liability for any resulting damage or injury.

## Operating parameters

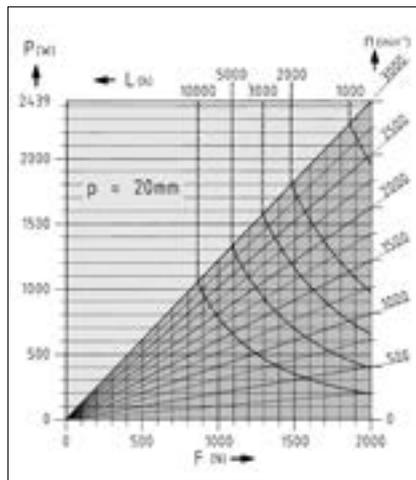
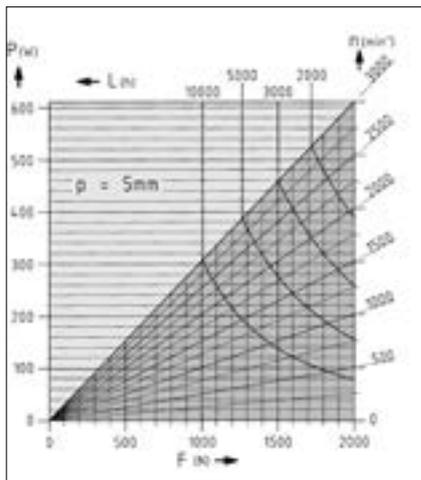
Linear Units LRE 8 D10 80x80 KGT and LRE 8 D14 80x80 KGT are generally constructed from Line 8 profiles that have been cut to size and various assemblies. Before starting assembly work, it is important to check that all parts are present.

The maximum possible drive torque is:

LRE 8 D10 80x80 KGT 20x5:	$T_D = 2 \text{ Nm}$
LRE 8 D10 80x80 KGT 20x20:	$T_D = 7.5 \text{ Nm}$
LRE 8 D14 80x80 KGT 20x5:	$T_D = 2 \text{ Nm}$
LRE 8 D14 80x80 KGT 20x20:	$T_D = 7.5 \text{ Nm}$

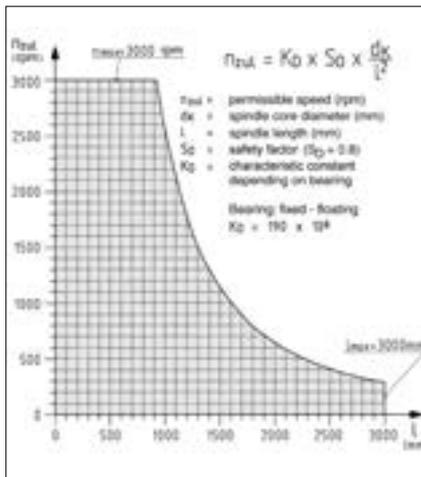


	Support width Lmax when Fz max [mm]	Support width Lmax when Fy max [mm]	Fy max [N]	Fz max [N]	Mx max [Nm]	My max [Nm]	Mz max [Nm]	Operating load Fx max [N]
Linear Unit LRE 8 D10 80x80 KGT 20x5	2500	2200	1300	880	39	35	52	2000
Linear Unit LRE 8 D10 80x80 KGT 20x20	2500	2200	1300	880	39	35	52	2000
Linear Unit LRE 8 D14 80x80 KGT 20x5	1900	1700	2400	1600	76	64	96	2000
Linear Unit LRE 8 D14 80x80 KGT 20x20	1900	1700	2400	1600	76	64	96	2000

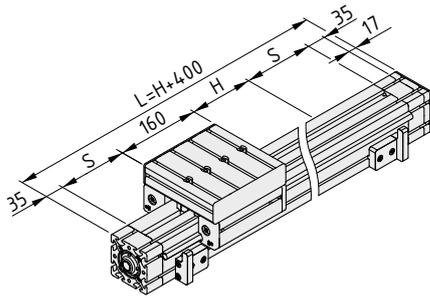


The service life of the screw and drive nut combination can be calculated based on the thrust load and drive speeds

L = Service life  
F = Force  
P = Pitch



The maximum travelling speed of the spindle units depends on the length of the spindle (see adjacent diagram).



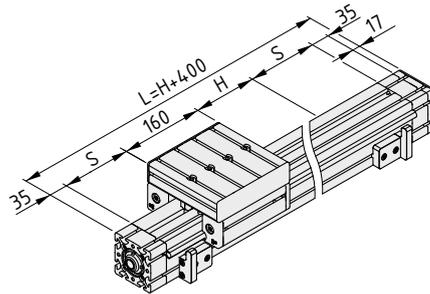
**Linear Unit LRE 8 D10 80x80 KGT 20x5**



Maximum stroke $H_{max}$	2687 mm
Safety clearance S	76.5 mm
Basic mass ( $H_{max} = 0$ mm) $m_1$	8.3 kg
Mass per mm of stroke $m_2$	12.8 g/mm
Total mass	$m = m_1 + H * m_2$
Repeatability	0.05 mm
Maximum acceleration	5 $m/s^2$
Maximum travelling speed	0.25 m/s
Feed constant per revolution	5 mm/R

1 pce.

0.0.668.12



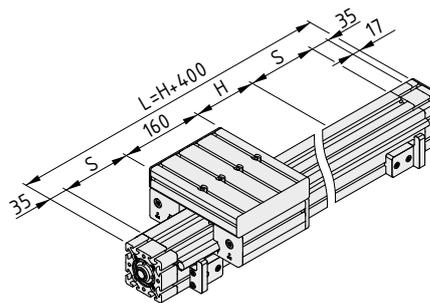
**Linear Unit LRE 8 D10 80x80 KGT 20x20**



Maximum stroke $H_{max}$	2687 mm
Safety clearance S	76.5 mm
Basic mass ( $H_{max} = 0$ mm) $m_1$	8.2 kg
Mass per mm of stroke $m_2$	12.5 g/mm
Total mass	$m = m_1 + H * m_2$
Repeatability	0.05 mm
Maximum acceleration	5 $m/s^2$
Maximum travelling speed	1 m/s
Feed constant per revolution	20 mm/R

1 pce.

0.0.668.10



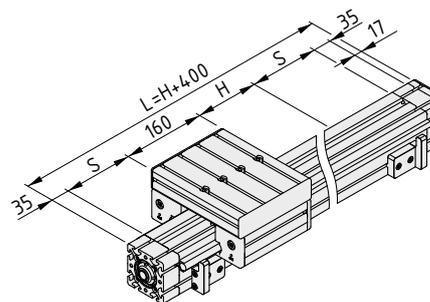
**Linear Unit LRE 8 D14 80x80 KGT 20x5**



Maximum stroke $H_{max}$	2687 mm
Safety clearance S	76.5 mm
Basic mass ( $H_{max} = 0$ mm) $m_1$	10.0 kg
Mass per mm of stroke $m_2$	14.3 g/mm
Total mass	$m = m_1 + H * m_2$
Repeatability	0.05 mm
Maximum acceleration	5 $m/s^2$
Maximum travelling speed	0.25 m/s
Feed constant per revolution	5 mm/R

1 pce.

0.0.668.06



**Linear Unit LRE 8 D14 80x80 KGT 20x20**



Maximum stroke $H_{max}$	2687 mm
Safety clearance S	76.5 mm
Basic mass ( $H_{max} = 0$ mm) $m_1$	10.0 kg
Mass per mm of stroke $m_2$	14.0 g/mm
Total mass	$m = m_1 + H * m_2$
Repeatability	0.05 mm
Maximum acceleration	5 $m/s^2$
Maximum travelling speed	1 m/s
Feed constant per revolution	20 mm/R

1 pce.

0.0.668.08



**WARNING!** The safety distance S is a reserve distance to accommodate tolerances and carriage overtravel under high loads and accelerations at the reversal point. It must be factored into the equation depending on the capabilities of the drive and Controller, but in any event should not be smaller than shown!

**Environmental considerations:**

Storage temperature: -20° C to +70° C

Relative humidity: 5 % to 85 %

Linear Unit LRE is intended as a permanent fixture to be used in an area that is protected from the weather.

The area should be free from mould and fungus and show no traces of rodents or other pests.

Do not install or use in close proximity to industrial plants that produce chemical emissions.

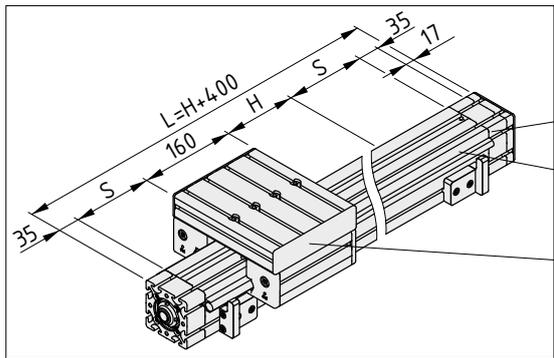
Do not install or use near sources of sand or dust.

Do not install or use in an area that is regularly exposed to high-energy surges such as those caused by presses or heavy machinery, for example.

In case of doubt regarding resistance to certain chemicals such as test oil, alloyed oils, aggressive cleaning substances, solvents or brake fluid, we advise that you consult your specialist representative.

Consult the manufacturer if using in very salty air. Deflection in the linear axis of the LRE should not exceed 1 mm over an axis of 1000 mm. In scenarios where high demands are placed on the system dynamics, supports should be added every 300 mm to 600 mm. These supports must not affect the Reverse Units.

## Preparation



Drive, e.g.: Ball Screw Unit 20x20 or Ball Screw Unit 20x5

Support profile, e.g.: Profile 8 80x80

Guide, Roller guide 8 D10/D14

Fundamentally, a Linear Unit converts a rotary motion into a translational motion.

A Linear Unit is made up of:

- Guide
- Drive
- Support profile

These components are picked for assembly and assembled in part or in full, depending on customer wishes.

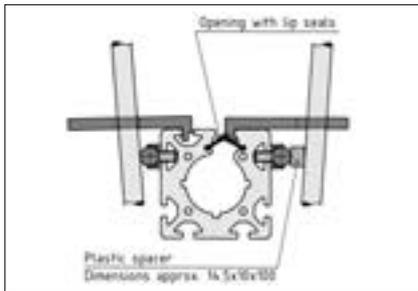
## Installation

### Shaft-Clamp Profile and Shaft D10:

There are various methods for assembling support profile, Shaft-Clamp Profile and Shaft.

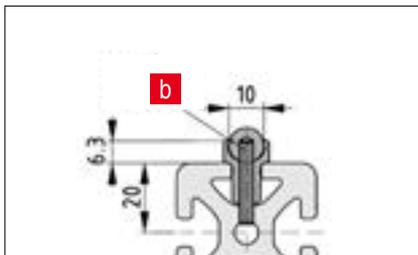
To make installation easier, apply a film of oil or grease to the outer surfaces of the Shaft-Clamp Profile that come into contact with the support profile before pressing it into the groove. Do the same to the contact points between the Shaft and Shaft-Clamp Profile and to the guiding Shaft itself. When working with short support profiles that have not yet been connected to a fixture, it is advantageous to undertake installation in the following steps:

- Press the Shaft-Clamp Profile into the relevant groove of the support profile
- Use a vice (fitted with protective jaw plates) to press in the Shaft
- Follow the same sequence for the other side



When higher loads are involved, it is advisable to secure the Shaft. Ideally, a Combination Drilling Jig **c** should be used to machine the Shaft, Shaft-Clamp Profile and Support Profile as detailed in the following steps:

- Using a carbide drill, cut a blind hole in the Shaft, 40 mm from the end face (as shown in the drawing)
- At the same distance from the end face, cut a through hole **d** through the Shaft-Clamp Profile and Support Profile together, up to the centre bore of the Support Profile
- Press dowel pin **b** DIN 6325 into the Shaft
- Install the Shaft into the Shaft-Clamp Profile as described above



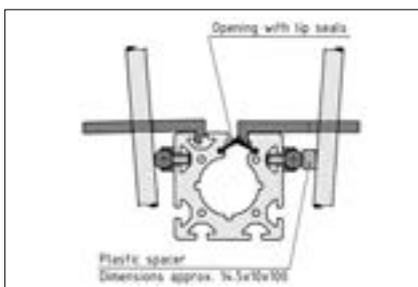
- b** DIN 6325-4x24 dowel pin
- c** Art. No. 0.0.444.68 for Shaft D10
- d**  $\varnothing$  4 mm

#### Shaft-Clamp Profile and Shaft D14:

There are various methods for assembling support profile, Shaft-Clamp Profile and Shaft.

To make assembly easier, apply a film of oil or grease to the outer surfaces of the Shaft-Clamp Profile that come into contact with the support profile before pressing it into the groove. Do the same to the contact points between the Shaft and Shaft-Clamp Profile and to the guiding Shaft itself. When working with short support profiles that have not yet been connected to a fixture, it is advantageous to undertake installation in the following steps:

- Press the Shaft-Clamp Profile into the relevant groove of the support profile
- Use a vice (fitted with protective jaw plates) to press in the Shaft
- Follow the same sequence for the other side

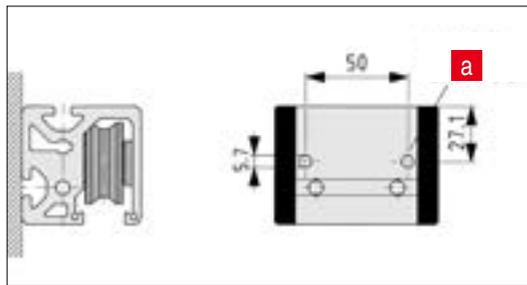
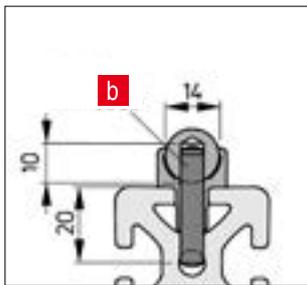


On longer stretches, when the support profiles have already been installed or are being held in a vice and the Shaft-Clamp Profile has been pressed into place, you can press the shaft into the Shaft-Clamp Profile section by section using the Mounting Aid (0.0.265.38) and a lever in the form of a suitable round steel bar.

When higher loads are involved, it is advisable to secure the Shaft. Ideally, a Combination Drilling Jig **c** should be used to machine the Shaft, Shaft-Clamp Profile and Support Profile as detailed in the following steps:

- Using a carbide drill, cut a blind hole in the Shaft, 40 mm from the end face (as shown in the drawing)
- At the same distance from the end face, cut a through hole **d** through the Shaft-Clamp Profile and Support Profile together, up to the centre bore of the Support Profile
- Press dowel pin **b** DIN 6325 into the Shaft
- Install the Shaft into the Shaft-Clamp Profile as described above

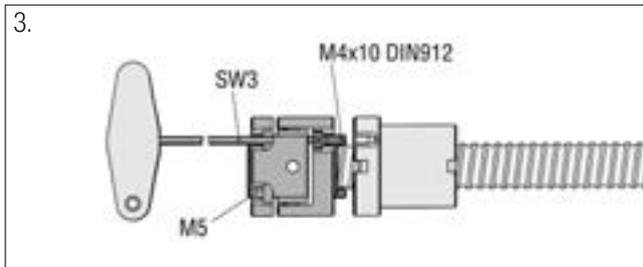
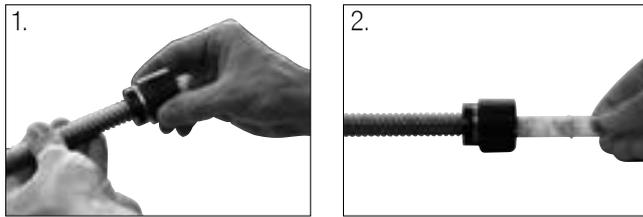
If there are undefined loads on the guide unit such as impact loads that could cause movement in the Bearing Units, the Bearing Units will need to be reinforced. You can do this by drilling and pinning **a** the Units in the positions indicated or the areas shown in dark grey.



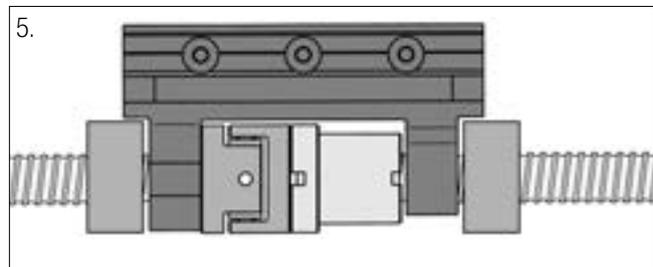
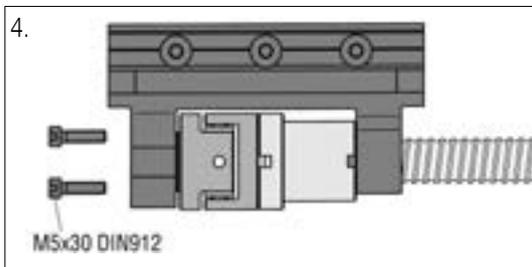
- a** DIN 7979-6x32 dowel pin
- b** DIN 6325-6x30 dowel pin
- c** Art. No. 0.0.373.55 for Shaft D14
- d** Ø 6 mm

## Installing the Linear Unit

1. Cut the screw to length and deburr it. When screwing on the drive nut, take extra care to ensure the balls do not fall out. Do not pull the assembly tube out of the drive nut under any circumstances!
2. With the assembly tube still fitted, place the drive nut against the end-face of a free end of the screw and carefully turn it onto the screw (right-hand thread).  
The assembly tube will be pushed slowly out of the nut insert as you do this. Keep the tube to use when disassembling the system.
3. If balls escape despite taking great care during installation, individual balls can be reinserted. To do this, carefully turn the drive nut up to the free end of the screw until you can see individual balls. You can then insert the escaped balls between balls that are still in the raceway (never into the return system). Do not use drive nuts that contain an insufficient number of balls in ball screw units (high noise, service life).  
Once you have installed the drive nut, you can slide on the gimbal adapter (on the flange side of the drive nut) and screw it to the drive nut. To do this, carefully turn the unit until it is approx. 20 mm from the end of the screw.
4. Next, slide on the nut connector and screw it to the gimbal adapter.
5. Slide on the two damping rings, one at either side of the yoke adapter, to fix the unit in place axially and prevent it from moving independently.



 **NOTE!** To prevent backlash in the drive train, the gimbal adapter is stiff to move.



### Installing KGT universal bearing blocks

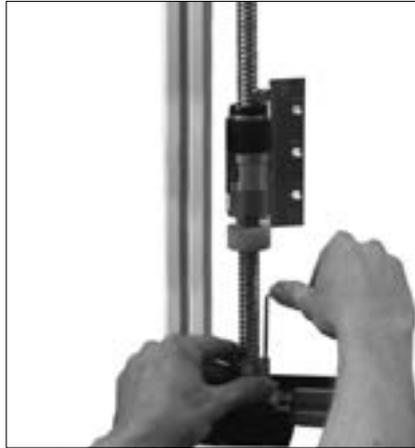
Slide the machined collet mechanism of the fixed bearing version into the bearing and fix it in place with the lock nut. Tighten the self-locking lock nut with a socket wrench. Apply sufficient tightening torque to ensure the bearing is stiff. Next, unscrew the lock nut by a quarter turn and then retighten until the bearing is free from play.

### Tensioning the screw collet mechanism, floating bearing end

It is essential to perform an alignment during installation since angle errors in the connection between the collet mechanism and screw have an adverse effect on the running characteristics of ball screw units. Generally, the open side of the fork on the yoke adapter should face toward the fixed bearing end while the operating side of the screw connection with the gimbal adapter should face toward the floating bearing end. This arrangement ensures that the otherwise asymmetrical ball screw units can be replaced and series manufactured. Install the collet mechanism of the floating bearing end first. If the bearing seat of the collet mechanism exhibits an excessive interference fit, it is advisable to modify the collet mechanism so that it can be mated by being gently tapped with a hammer. This modification is best carried out in a rotating fixture and using abrasive paper. During installation, introduce the screw into the collet mechanism vertically (to compensate for deflection). The collet mechanism must be held in the floating bearing block for this purpose (see photo). It is advisable to use a fixture made of item profiles to help with this procedure. This fixture can be used to secure the bearing block and check that the screw is being clamped centrally in the collet mechanism. The yoke adapter has already been fixed axially on the screw by the damping rings. Turn this unit to move it towards the floating bearing end so that the clamping screws of the collet mechanism can be operated. Evenly tighten the clamping screws of the collet mechanism and continuously turn the collet mechanism and screw to align

the screw flush with the hub. A limit stop above the collet mechanism can be used as a visual point of reference for angularity. You can directly identify the influence of the tightening torque on the various clamping screws at this stop.

When using a stop at a height of approx. 1,000 mm, the set run-out after tensioning should be no more than 0.5 mm. Now remove the floating bearing end collet mechanism from the floating bearing block. The collet mechanism remains attached to the screw so that the preassembled unit can be inserted into Profile 8 80x80 KGT later on.



### Tensioning the screw collet mechanism, fixed bearing end

Follow the same procedure you used for the floating bearing end to install the collet mechanism on the fixed bearing end. To do this, secure the preassembled fixed bearing block to the fixture and introduce the screw vertically.

Ensure the centre ring for the fixed bearing end is fitted before the collet mechanism is fastened in place. It cannot be fitted subsequently.



### Lubricating the screw

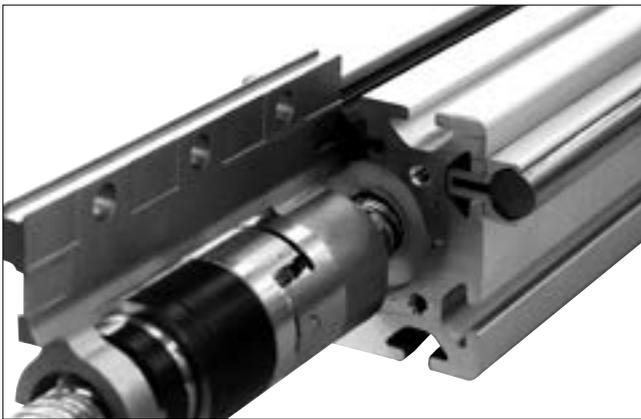
Apply a suitable grease lubrication to the preassembled screw unit. We recommend applying GLEITMO 810 (Fuchs Lubritech) with a brush.

### Inserting the preassembled screw into Profile 8 80x80 KGT

Once you have inserted the lip seals into Profile 8 80x80 KGT, you can insert the preassembled and adjusted unit into Profile 8 80x80 KGT and fix it in place.

This unit comprises:

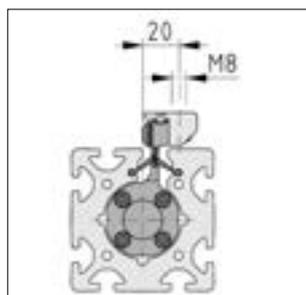
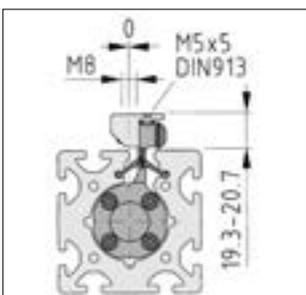
- Collet mechanism, floating bearing end
- First damping ring
- Drive nut
- Gimbal adapter
- Yoke adapter
- Screw
- Second damping ring
- Collet mechanism in fixed bearing block with centre ring



Adjust the yoke adapter at the preassembled fixed bearing end. To do this, move the yoke adapter as far as it will go towards the fixed bearing end (by turning the screw with a cranked handle or similar).

Fit the floating bearing end bearing block and centre ring over the floating bearing end collet mechanism and fix it in place temporarily, so as to limit the effects of any sagging in the screw.

The yoke adapter consists of the nut connector and carrier, which are connected together by M8 screws.



## Installing the carriage

To build a linear guide, you need a centric (fixed) Double-Bearing Unit opposite an eccentric (adjustable) Double-Bearing Unit. The roller profiles offer a range of fastening options via Line 8 grooves, which makes it far easier to mount and align them on profiles.

Align and screw-attach the non-adjustable Bearing Unit (Double-Bearing Unit 8 D14 c or Double-Bearing Unit 8 D10 c) parallel to the end of the carriage plate, i.e. the Cap on the Profile 8 160x40. Next, fasten the adjustable Bearing Units (Double-Bearing Unit 8 D14 e or Double-Bearing Unit 8 D10 e) to the other side of the carriage plate. To do this, use Screws M8x20 and T-Slot Nuts 8 St M8, heavy duty to screw the Bearing Units to the carriage plate from the underside.



**WARNING!** (Tightening torque for Hexagon Socket Head Cap Screws:  $T = 34 \text{ Nm}$ ).

You must prepare the eccentric orientation of the eccentric Bearing Units before using the guide carriage.

Use an Allen key to turn the eccentric bolt of the rollers:

Drive the bolt as far as it will go

Turn back  $\frac{1}{2}$  a turn

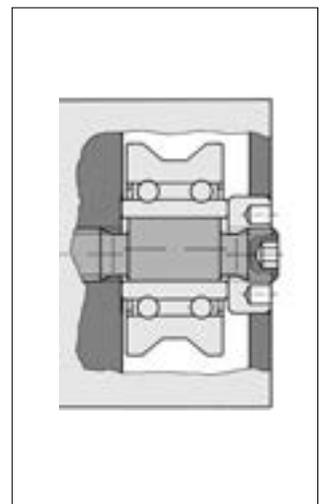
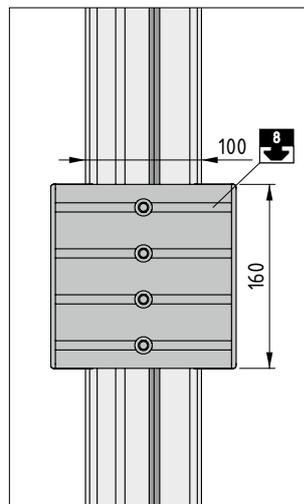
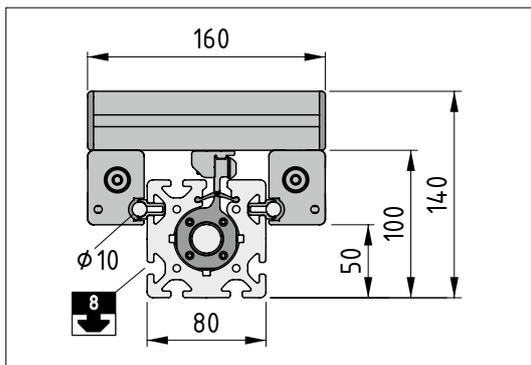
Continue turning back until the rearmost eccentric position is reached

When Bearing Units have been prepared and installed in this way, the maximum play between the rollers and Shafts can be used to adjust preload. The carriage can now be slotted onto the Shafts. When adjusting the Bearing Units to eliminate play, ensure that no excess strain is generated! To do this, keep moving the carriage over its entire travel distance until it runs on the support profile without any play and without being subjected to excessive strain. After making this adjustment, fix the position of the eccentric bolt by securing the lock nut with a Pin Spanner. While securing the lock nut with a Pin Spanner, use an Allen key to hold the bolt in its selected position.

Accessories: Pin Spanner 5 D6, 8 D10 (0.0.390.13) and 8 D14 (0.0.294.41)

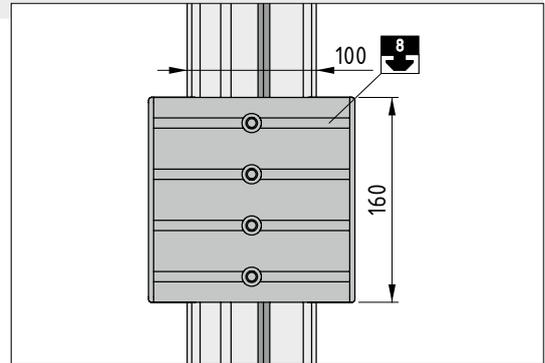
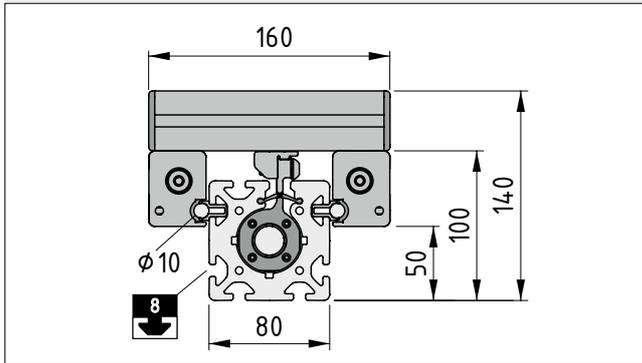
Tightening torque 8 D14:  $T = 20 \text{ Nm}$

Tightening torque 8 D10:  $T = 6 \text{ Nm}$



**Tip:** Only install the End Cap and Lubricating Systems once the adjustments have been completed, as the friction of the wipers significantly reduces the sensitivity required when adjusting the eccentric bolts.

### Application options



### Connecting the yoke adapter to the LRF carriage

Place the carriage of the linear guide onto the profile and slide it over the yoke adapter. Use the two grub screws (DIN 913-M5x5) to make height and angle adjustments to the yoke adapter.

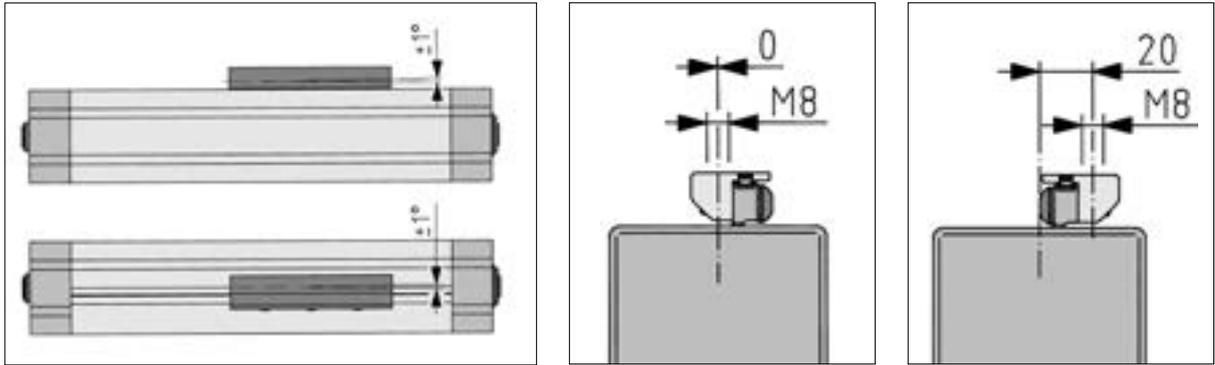


Ensure that the yoke adapter is aligned with the screw and the profile. The maximum permissible angle error must not be exceeded.

As the yoke adapter is suspended in a movable arrangement via the gimbal adapter, a range of adjustments can be made. You should select a setting that is neutral in terms of angle and height, so that you can make full use of the flexibility offered by the gimbal adapter during later use. To do this, position the yoke adapter at the end of the travel range on the KGT and align it with the carriage. Now fix the selected setting (grub screws) via the M8 screws at the side.

You can now use the prepared M8 threaded bores to connect the carriage to the set yoke adapter.

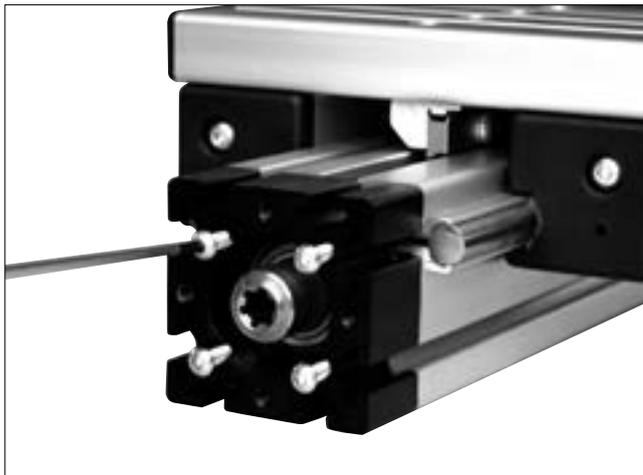
Depending on how the yoke adapter has been positioned for use, the connecting threads can be central on the carriage or offset by 20 mm.



### Installing the bearing block, floating bearing end

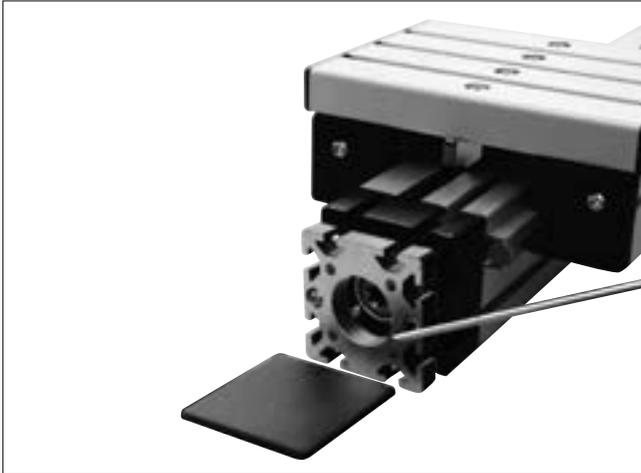
Until now, the bearing block at the floating bearing end has only been fixed in place temporarily. Now loosen the relevant screws so that the bearing block can move within the range permitted by the centre ring.

Now move the carriage to the floating bearing end. As you do this, the nut will determine the position of the screw and thus bring the bearing block at the floating bearing end into alignment (where strain is therefore at its lowest). Use Button-Head Screws M6x45 to secure the bearing block to Profile 8 80x80 KGT in this position.

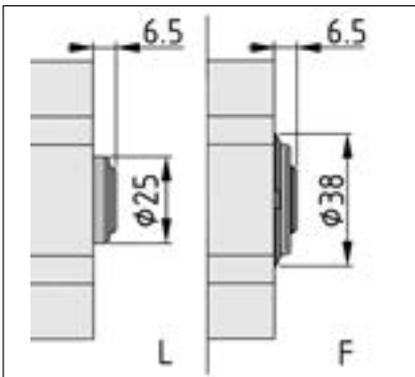


## Installing the End Cap

To cover rotating parts, screw the End Cap to the bearing block where the screw is not driven.



The collet mechanism and the lock nut (of the fixed bearing) protrude out of the profile housing of the bearing block.



## Connecting Drive Set KGT D40/D15 - 0.0.667.76

Drive Set KGT D40/D15 has been optimised for item Linear Units with a Ball Screw Unit. It connects them with a motor. This is made possible by an Adapter Plate that can be machined to suit any requirements. The central coupling bore can also be enlarged to match the drive shaft of the motor. Thanks to the integrated expanding hub coupling, the casing is particularly narrow.

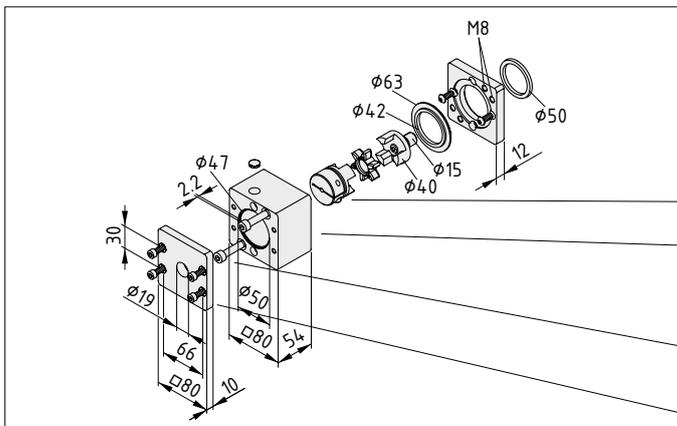
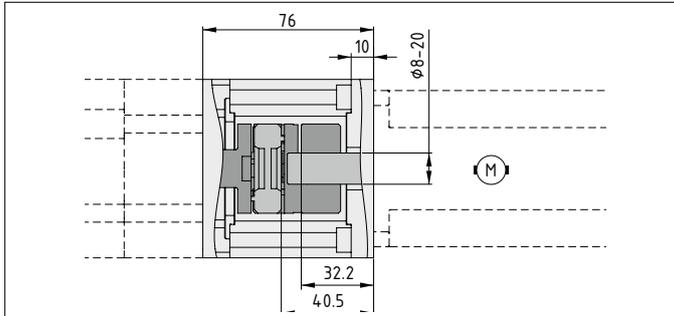
To make the connection, screw the two Hexagon Socket Head Cap Screws DIN 912 M8x60 that are supplied with the Drive Set through the Coupling Housing of the Drive Set and into the fixed bearing block of the ball screw unit.

Tightening torque:  $T = 25 \text{ Nm}$

Machine the drive casing or Adapter Plate according to the requirements of the motor or gearbox you are using and then screw it to the motor or gearbox. Take the coupling half that is to be connected to the drive shaft and drill a hole in it to match the drive shaft then connect the coupling half and the shaft.

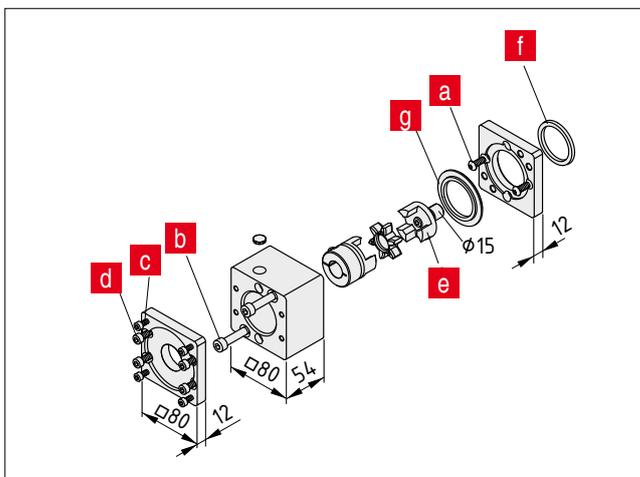
The torques transferred by the clamp connection factor in the maximum mating play for shaft fits: Shaft k6/hole H7.

Force is transferred from the coupling to the drive shaft by means of frictional resistance. The Shaft and the hole in the coupling hub must be degreased and cleaned to ensure the frictional resistance is effective. Hexagon Socket Head Cap Screws must be secured against working loose.

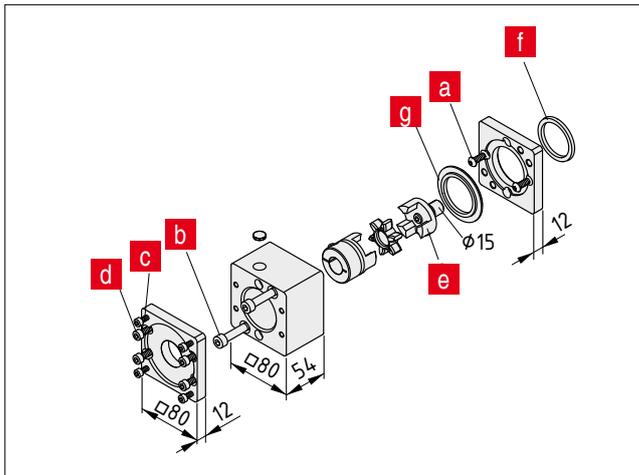


- Coupling half that accommodates the drive shaft
- Coupling Housing with hole (that can be sealed) to allow an Allen key through to generate the necessary clamping force on the drive shaft.
- Fastening screws, Hexagon Socket Head Cap Screws DIN 912 M8x60
- Adapter plate

**Connecting Drive Set KGT D40/D15 SE 60 – 0.0.672.78**  
**Connecting Drive Set KGT D40/D15 SE 80 – 0.0.672.77**



- a** Button-Head Screw ISO 7380 M6x16 for the connection to the bearing block
- b** Hexagon Socket Head Cap Screw DIN 912 M8x60
- c** Hexagon Socket Head Cap Screw DIN 912 M4x16 for the connection to the item Motor
- d** Hexagon Socket Head Cap Screw DIN 912 M6x16
- e** Expanding hub coupling D40/D15
- f** ZR1
- g** ZR2



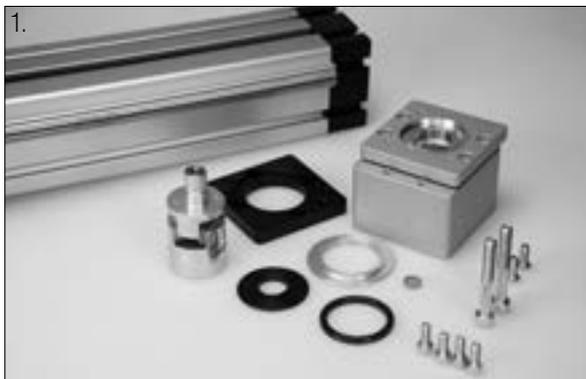
- a** Button-Head Screw ISO 7380 M6x16 for the connection to the bearing block
- b** Hexagon Socket Head Cap Screw DIN 912 M8x60
- c** Hexagon Socket Head Cap Screw DIN 912 M5x20 for the connection to the item Motor
- d** Hexagon Socket Head Cap Screw DIN 912 M6x16
- e** Expanding hub coupling D40/D15
- f** ZR1
- g** ZR2

The torques transferred by the clamp connection factor in the maximum mating play for the shaft fits: Shaft k6/hole H7. Force is transferred from the Coupling to the drive shaft by means of frictional resistance. The Shaft and the hole in the coupling hub must be degreased and cleaned to ensure the frictional resistance is effective. Hexagon Socket Head Cap Screws must be secured against working loose.

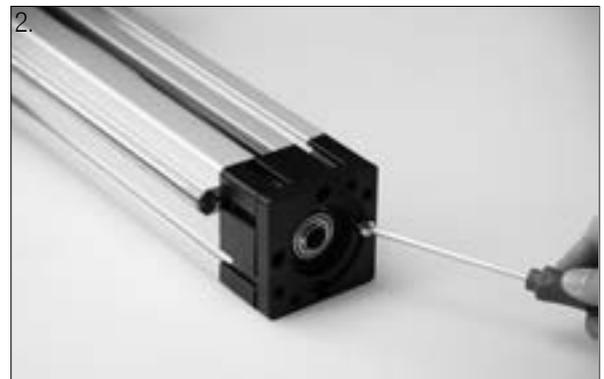
Hexagon Socket Head Cap Screws M6x20, T = 13 Nm. Working through the Coupling Housing, create a friction-based connection between the clamping hub screw (T = 9.6 Nm) of the clamp coupling half and the drive shaft.



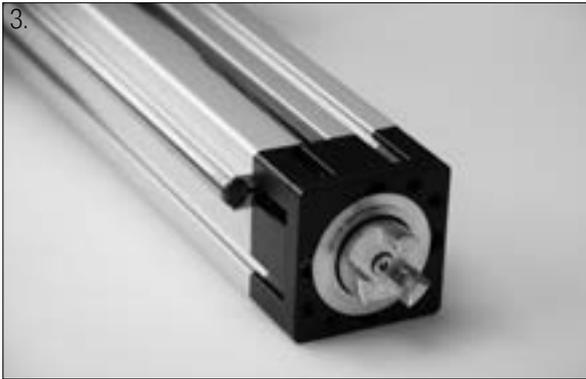
**WARNING!** Seal the opening in the Coupling Housing!



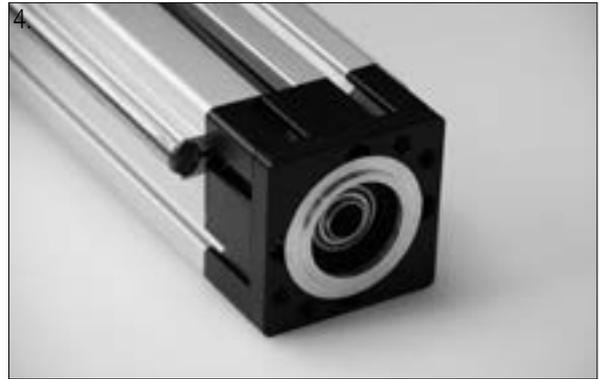
1. Drive Set KGT D40/D15 SE 60 (0.0.672.78) and Drive Set KGT D40/D15 SE 80 (0.0.672.77) are used solely to connect item Motors to Linear Unit LRE 8 D10/D14 80x80 KGT. The Drive Set is fully prepared for installation on the corresponding Linear Unit.



2. The drive shaft transfers drive torque without backlash. To ensure this functionality, position centre ring ZR1 between the bearing block and Adapter Plate. Next, screw Button-Head Screws ISO 7380 M6x16 (T = 13 Nm), which are supplied with the Drive Set, through the Adapter Plate of the Drive Set and into the bearing block of the ball screw unit.



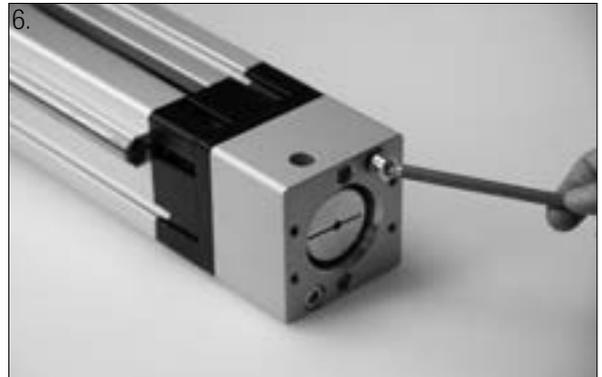
Next, use the Hexagon Socket Head Cap Screw M6x20 (T = 13 Nm) to screw on the prepared expanding hub coupling in the drive bearing block of the KGT.



Then insert centre ring ZR2.



Slot the housing over the fully assembled Coupling and screw it into place using Hexagon Socket Head Cap Screws DIN 912 M8x60 (T = 25 Nm).



The clamping screw of the Coupling can be operated through the opening in the Coupling Housing.



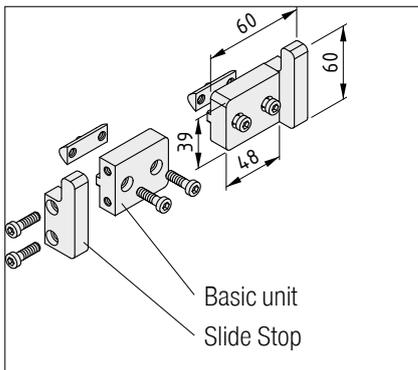
A Gearbox is not required. Use the enclosed Hexagon Socket Head Cap Screws DIN 912 M4x16 (0.0.672.78) or Hexagon Socket Head Cap Screws DIN 912 M5x20 (0.0.672.77) to connect the Motor to the secured Adapter Plate.

## Slide Stop LRE 8

The robust aluminium Slide Stop LRE 8 stops the carriage on a Linear Unit travelling past the calculated or desired point, and also acts as a homing point for the system. Thanks to its special shape, the Slide Stop can be used with shafts in various diameters and fitted at any position.



NOTE! When configured using item MotionDesigner®, most LRE-type Linear Units from item are automatically fitted with a Slide Stop that can be moved to a different position or removed entirely, as required. Some models, such as Linear Units KLE, are designed in such a way that an additional Slide Stop is unnecessary.



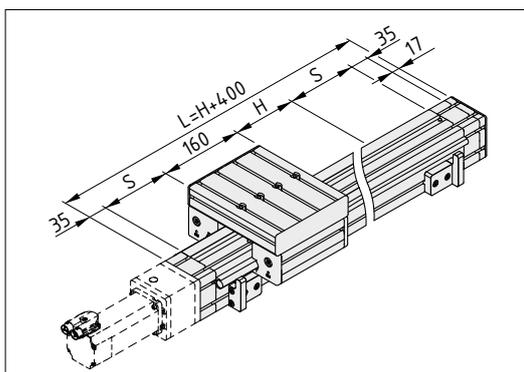
To fit Slide Stop LRE 8, first mark the desired end position on the support profile of the linear axis. This position does not need to match the maximum travel, but rather can be adapted to the transport task at hand.

Linear Unit LRE 8 D10 80x80 KGT 20x5

Linear Unit LRE 8 D10 80x80 KGT 20x20

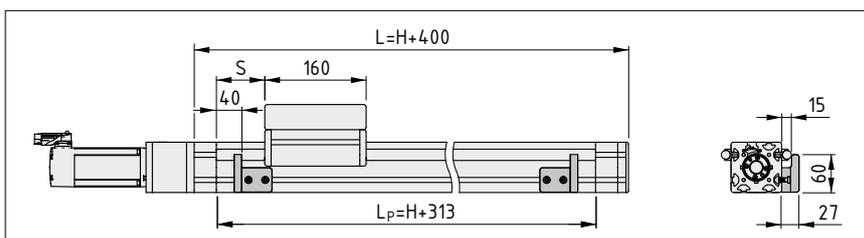
Linear Unit LRE 8 D14 80x80 KGT 20x5

Linear Unit LRE 8 D14 80x80 KGT 20x20



L = Total length as a function of stroke H

S = Safety clearance



The drawings and formulae can be used to help calculate the relevant end positions when installing the Slide Stops in relation to travel. You can use both sides of the support profile to install Slide Stop LRE 8.

In the case of Linear Units LRE with a rack drive, Slide Stop LRE 8 can only be installed on the side opposite the Motor.

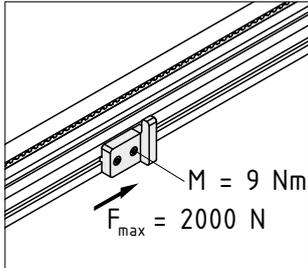
Roll the T-Slot Nuts into the groove under the shaft on the side where you are going to install the Stop.

Use two screws (M6) to attach the basic unit, but do not tighten them at this stage. When installing the basic unit, make sure the threads are facing toward the Reverse Unit.

Next, slide the basic unit along the groove until the outside edge facing the Reverse Unit is in line with the mark you made earlier and then tighten with the appropriate torque.

Finally, use two M6 screws to attach the Slide Stop to the basic unit and tighten with the appropriate torque –  $M = 9 \text{ Nm}$ .

Max. load



## Lubrication

End Cap and Lubricating Systems are essential in order to protect and lubricate the Bearing Units. These should be fitted back in place only when the guide carriage has been mounted on the Shafts. Otherwise, it is important to ensure the movable wipers are pressed back when sliding the guide carriage onto the Shaft, to ensure they are not bent.

Wipers located in the internal recesses of the end-face End Cap and Lubricating Systems are also designed to take up the lubricant. They are pressed against the guiding Shaft by a spring. These wipers are supplied pre-charged with lubricant and can be topped up with lubricant as required via the hole in the cap.

In the event of considerable soiling, you may need to replace the wipers.

## Maintenance



Ball Screw Units KGT are virtually maintenance-free. The initial greasing has to be renewed after around 400 to 500 operating hours. The following intervals vary according to operating conditions. As the amount of grease applied when renewing lubrication is lower than the initial greasing, maintenance intervals subsequently get shorter (approx. every 200 to 300 operating hours). A sprayable grease with a mineral-oil base such as GLEITMO 815 (Fuchs Lubritech) is particularly suitable. Lubrication is renewed via the lip seals. Apply a thin, even coating of grease directly to the screw.

Suitable for use in dry conditions and over the temperature range -20 °C to +70 °C.

If operating conditions are unusual, e.g. special type of installation, dust, short stroke, influence of solvents etc., the lubrication intervals must be adapted accordingly.

This information does not discharge the user from the obligation to carry out his own assessments and checks.

It is important to bear in mind that our products are subject to a natural process of wear and ageing.

The rollers of the guide are maintenance-free. The spring-loaded end cap and lubricating felts can be topped up with lubricant as required via a hole.

Recommended re-oiling period: Every 6 months or every 2500 km. The felt pieces are supplied in ready-oiled condition.

Synthetic lubrication oil ISO VG 460, e.g. recommended running oil for Linear Guides Klüber Oil 4 UH1-460).

Add the following quantity to each maintenance hole at the end of each maintenance interval: 2 ml

Grease containing solid particles (e.g. graphite and MoS<sub>2</sub> additives) must not be used.

Oil Can for Linear Guides (one actuation delivers approx. 1 ml of oil).

To ensure adequate lubrication, the carriage must cover a minimum travel distance. Minimum stroke length [mm]: 320 mm

Ideal operating conditions:

Ambient temperature: 10 °C ... 40 °C

Load: < 5 %

## Disposal



The materials used are environmentally friendly.

They can be recycled or reused (after essential reworking and the replacement of parts). The use of suitable materials and the simple dismantling procedure ensure that this product can be recycled.



Improper disposal of the KLE Linear Units can pose an environmental hazard.

You should therefore dispose of the product in accordance with the regulations that apply in your country.



Transport packaging:

The packaging must be disposed of in accordance with the return and collection systems available.

## Product development and documentation

A process of continuous product development ensures that products from item Industrietechnik GmbH always exhibit a high standard of innovation. Consequently, there could be inconsistencies between this guide and the product you have acquired. item Industrietechnik GmbH can also not exclude the possibility of errors.

We therefore ask for your understanding that the information, illustrations and descriptions provided here cannot constitute an entitlement to any claims. You can find the latest version of this guide at [www.item24.com](http://www.item24.com)

**item**

item Industrietechnik GmbH  
Friedenstrasse 107-109  
42699 Solingen  
Germany  
+49 212 6580 0  
info@item24.com  
item24.com

04/2025

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item Industrietechnik GmbH