



## MiniTec LINEAR SYSTEM

PRODUCT CATALOG



## **LINEAR SYSTEM**

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## Linear module LMS 90



### Precision and strength combined as small as possible

The linear module LMS 90 was designed for high precision and loading capacity requirements with minimum installation space. It is designed for a traversing distance up to 2845 mm. The guide, with the standard grid dimension 90 x 90

mm of our modular system, is based on highly accurate rail guides which are integrated in a profile system. They are designed for a life of up to 10,000 km.

#### Specifications

- Compact support profile 90x90 with standard profile grooves, compatible with all MiniTec construction profiles
- Fully enclosed module, guide groove covered with stainless steel tape
- Guides and spindle easily accessible through removable cover profiles
- Special grooves for external mounting of position detection sensors
- Easy installation of external switches on lateral profile grooves
- Carriage made of aluminum, precision-machined on all sides, prepared for attachments with 4 or 6 connecting threads M8 at intervals of 45 mm
- Travel up to 2845 mm
- 2 bearing units with precision ball bearings, lubricated for life, with tenon  $\varnothing$  10 mm
- Optional version with keyway or adapter plate machined according to engine specification

#### Guidance options

- Heavy-duty rail guides with permanent lubrication, versions S1 and S2
- Plastic sliding guides for very economical applications (version G)

#### Spindle options

- Ball screw tolerance class T7, right-handed, axial clearance max. 0.04 mm, repeatability 52  $\mu$ m / 300 mm
- Trapezoidal thread spindle 16x4, optional right-handed preloaded with increased accuracy

The spindle nuts in all units are designed for relubrication.

## Technical data

Model series	Spindle	Execution	Number Linear slide	Part no.	max. Traversing	Car length WL	max. Stroke
LMS 90	T 16x4	G	4	28.1001/0	0,03 m/s	135 mm	1800 mm
LMS 90	K 16x5	S1	2	28.1000/0	0,25 m/s	90 mm	2845 mm
LMS 90	K 16x10	S1	2	28.1000/1	0,5 m/s	90 mm	2845 mm
LMS 90	K 16x16	S1	2	28.1000/2	0,8 m/s	90 mm	2845 mm
LMS 90	K 16x5	S2	4	28.1002/0	0,25 m/s	135 mm	2800 mm
LMS 90	K 16x10	S2	4	28.1002/1	0,5 m/s	135 mm	2800 mm
LMS 90	K 16x16	S2	4	28.1002/2	0,8 m/s	135 mm	2800 mm

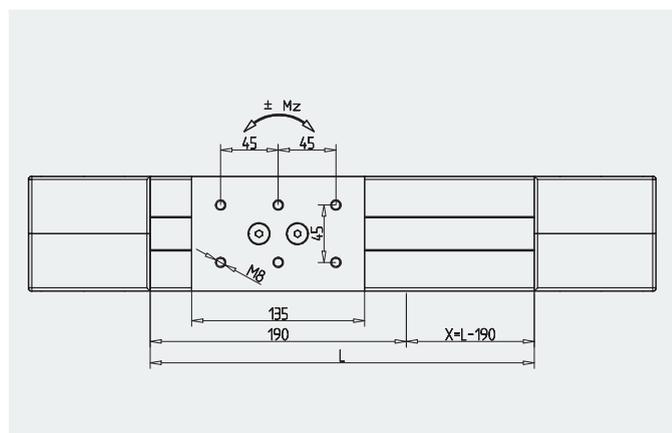
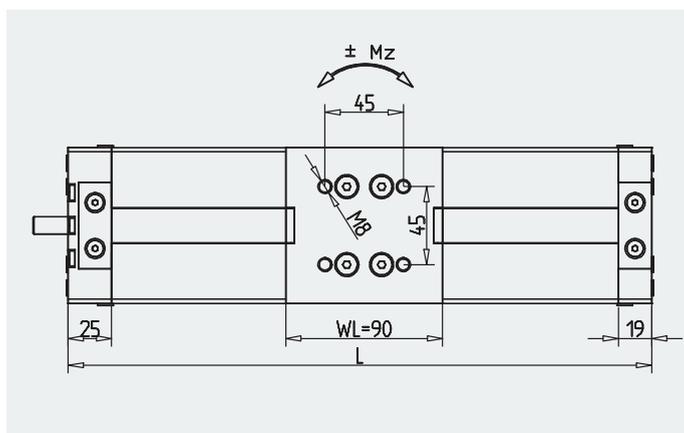
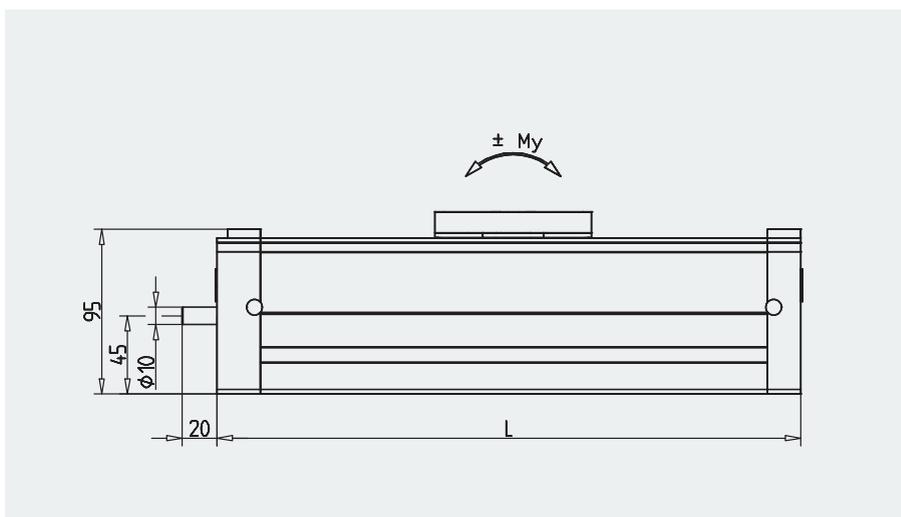
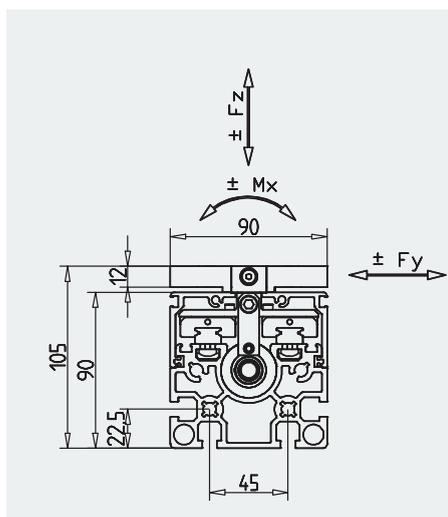
Execution	Load rating N		Permissible stat. tilting moments (Nm)		
	Cdyn	Cstat	Mx	My	Mz
S1	7620	11180	54	54	54
S2	15240	22360	108	108	108
G	2800	2800	22	22	22

### Spindle

- Acme screw T
- Ballscrew K

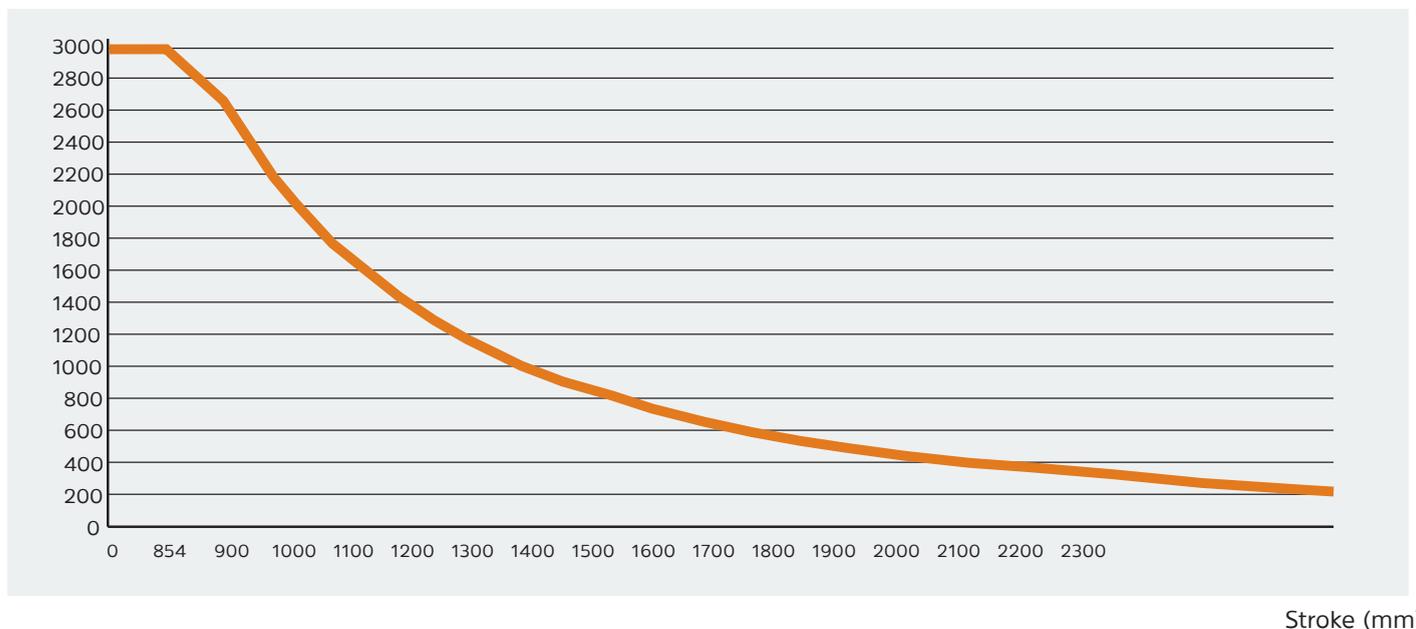
### Guidance

- 2 sliding guides each with 2 linear slides Gr. 15 G
- 2 rail guides each with 1 linear slide Gr. 15 (S1)
- 2 rail guides with 2 linear slides Gr. 15 (S2)



## Maximum speed depending on stroke

Speed (rpm.)



On request, the unit can also be equipped with an internal spindle support. As a result, the speed can be increased considerably with a corresponding stroke.

- The following can be used as a guide value:
- Single spindle support Part no. 28.1050/0:  
 $n_{\max} \times 2$
- When using the single spindle support, the stroke is shortened by 25 mm
- Twin spindle support Part no. 28.1051/0:  
 $n_{\max} \times 3$
- When using the twin spindle supports, the stroke is shortened by 60 mm.

### Calculation of the maximum speed (n<sub>max</sub>):

$$n_{\max} = \frac{1,963 \times 10^9}{(H-45)^2}$$

## ORDERING

Please enter the article number plus the desired stroke length H or the total length L. (xx.xxxx / x + stroke length or total length)

- Overall length (L) = stroke length (H) + carriage length (WL) + 50 mm
- Stroke (H)
- Car length (WL)

## Motor kits & Drive packages

### ENGINE KITS FOR LMS 90

#### Motor mounting kit LMS 90 DRM

(MiniTec Part No: 28.1040/0)

Motor mounting kit LMS for three-phase motor (for drive package with three-phase asynchronous motor, MiniTec Part no. 33.1010/0 or 33.1020/0), without motor.

#### Items supplied

- Coupling housing made of profile incl. adapter plate
- Coupling
- Screws and accessories



#### Motor mounting kit LMS 90 SERVO

(MiniTec Part no: 28.1041/0)

Motor mounting kit LMS for servomotors (for drive package with synchronous servomotor, MiniTec Part no. 33.1030/0), without motor.

#### Items supplied

- Coupling housing made of profile incl. adapter plate
- Coupling
- Screws and accessories

#### Options

- Adapted adapter plates and couplings for special motors



### DRIVE PACKAGES FOR LMS 90

#### Drive package LMS 90 DRM-POSI

(MiniTec Part No: 33.1020/0)

Three-phase asynchronous motor with encoder feedback with drive inverter for table positioning

#### Items supplied

- Three-phase asynchronous motor 0.18kW; 1320 rpm at 50Hz, version with pulse generator and temperature sensor
- Motor cable, length 5m
- Encoder cable, length 5m
- Drive inverter MDX61B for table positioning via IO for customer installation in the control cabinet
- 2 inductive proximity switches for T-slot for axial end position (NC)
- 1 proximity switch for T-slot for axial end position (NO) including motor mounting kit LMS 90 DRM (Part No.: 28.1040/0)

#### Drive package LMS 90 DRM-ECO

(MiniTec Part no.: 33.1010/0)

Three-phase asynchronous motor without encoder feedback with frequency converter for easy positioning via switch

#### Items Supplied

- Three-phase asynchronous motor 0.18kW; 1320 rpm at 50Hz, version with temperature sensor
- Motor cable, length 5m
- Drive inverter MC07B, control via IO for customer installation in the control cabinet
- 2 inductive proximity switches for T-slot for axial end position (NC)
- 1 inductive proximity switch for T-slot for axial end position (NO)
- including motor mounting kit LMS 90 DRM (Part no.: 28.1040/0)

## Drive package LMS 90 SERVO

(MiniTec Part no: 33.1030/0)

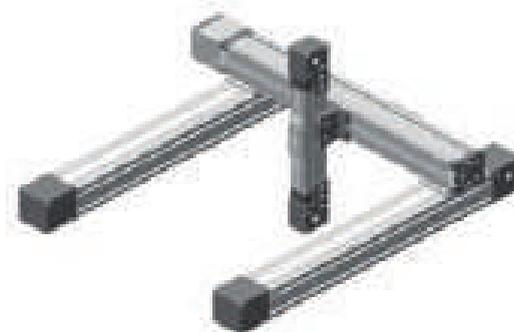
Synchronous servo motor with drive inverter for dynamic applications for table positioning.

### Items supplied

- Synchronous servo motor with 2.4 Nm nominal torque, 3000 rpm, version with resolver and temperature sensor
- Motor cable, length 5 m
- Encoder cable, length 5m
- Drive inverter MDX61B for table positioning via IO for customer installation in the control cabinet
- 2 inductive proximity switches for T-slot for axial end position (NC)
- 1 inductive proximity switch for T-slot for axial end position (NO)
- Including motor mounting kit LMS 90 Servo (Part No: 28.1041/0)

### Options

- Motor with holding brake
- Motor version with absolute encoder
- PROFIBus / PPOFIsafe / PROFINET / Ethercat Interface cards for the drive inverter°
- Additional sensors, e.g additional creep / stop positions

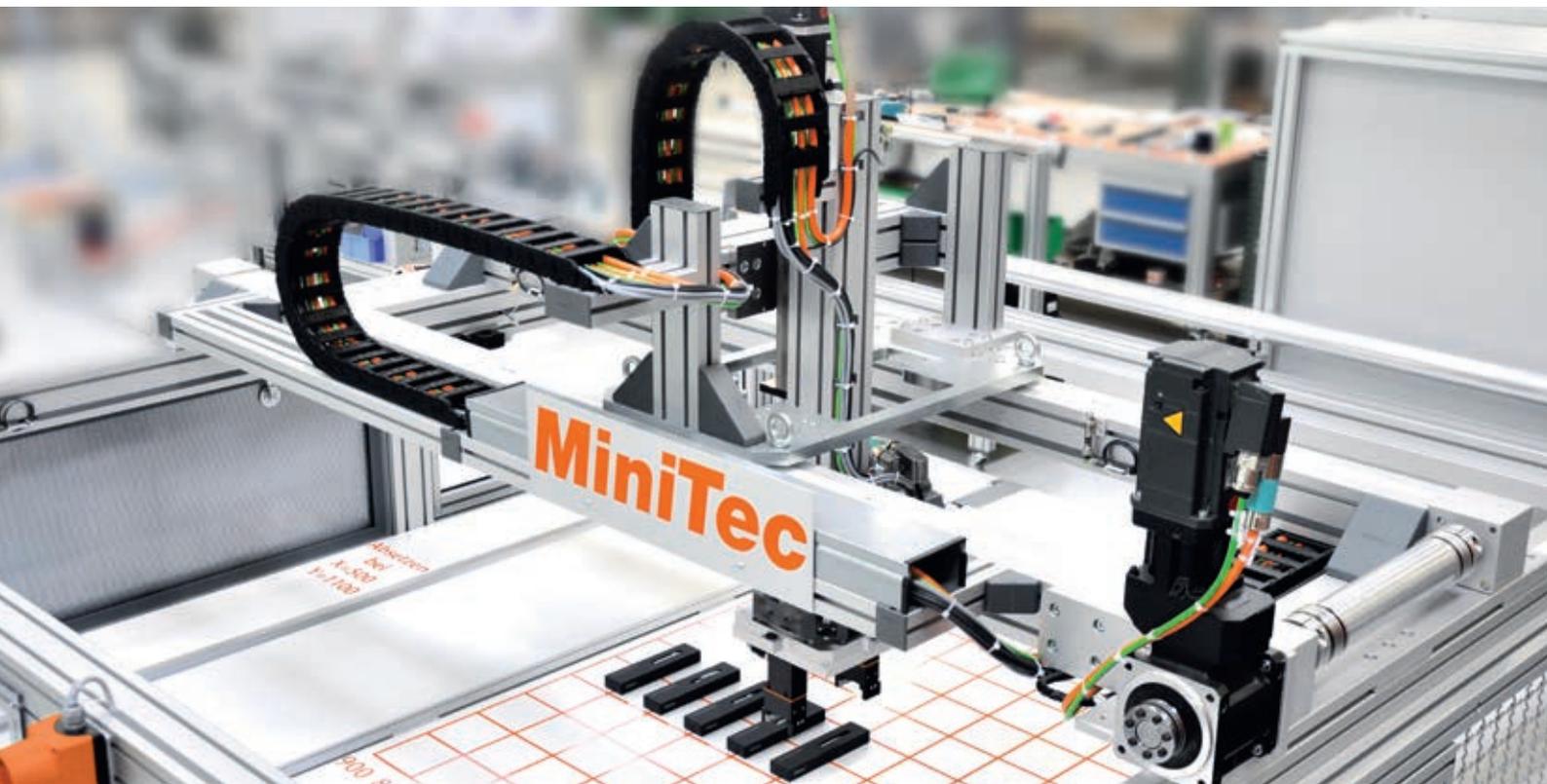


## Ready to connect positioning systems

The new high-performance module LMS 90 is also available as a ready-to-install system with drive package and control unit. mA suitable complete package is available for every task - from the particularly economical ECO version to the highly dynamic servo drive. We also carry out the commissi-

oning and application programming for you on request. Thanks to the standardized profile geometry, the LMS axes can be variably combined with each other or with all other MiniTec linear modules to form multi-axis systems.

## Linear module LMZ 90 with timing belt drive



Part no. 28.0400/0

### The new dimension of dynamics

- Compact support profile, with standard profile grooves, compatible with MiniTec construction profiles
- Integrated rail guide size 20
- With 2 runner blocks, covered by the timing belt
- Permanent lubrication with front lubrication units for up to 10,000 km service life
- Slides made of aluminium, machined on all sides, with integrated timing belt tensioners, prepared for attachments with 6 connection threads M8
- 2 deflection units with precision ball bearings
- Mounted on support profile with MiniTec Power-lock fasteners
- Prepared for motor attachment with connection shaft  $\varnothing$  17 mm with feather key
- Adapter plate is machined according to the required motor specification
- Other diameters for drive shafts on request
- Feed: 200 mm / revolution
- Max. allowable belt tensile force: 3,500 N
- Timing belt 25 AT 10, reinforced steel wire, pre-tensioned
- Assembled
- Max. travel X = 5,810 mm
- Attachment of switches on side profile grooves with standard components from the MiniTec profile system  
Traversing speed: max. 3 m/s
- Basic weight: 5,200 g
- Weight per 100 mm travel: approx. 800 g

### Delivery forms

- Fully assembled module with connection machining for the required drive;
- Fully assembled module with gearbox and motor to customer specification
- Fully assembled module with gearbox, motor and control to customer specification

### Applications

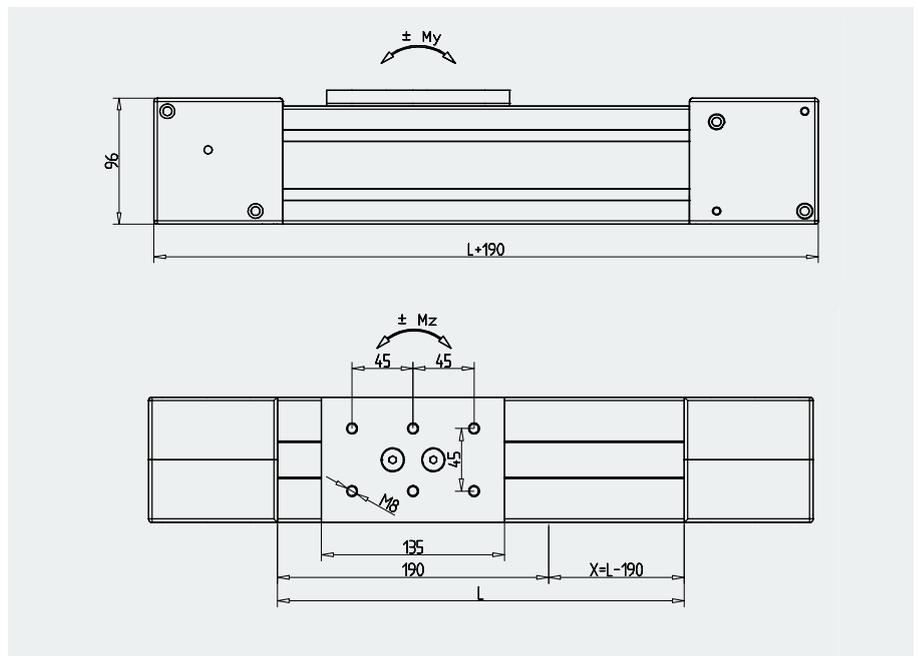
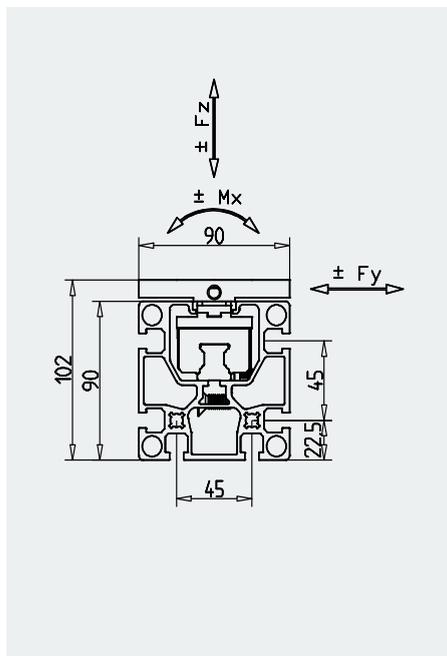
- Pick-and-Place
- Gantry robot
- Measuring equipment
- Feeds
- Handling facilities

Load rating N		Allowable static tilting moments Nm		
Cdyn	Cstat	Mx	My	Mz
18800	24400	128	240	128

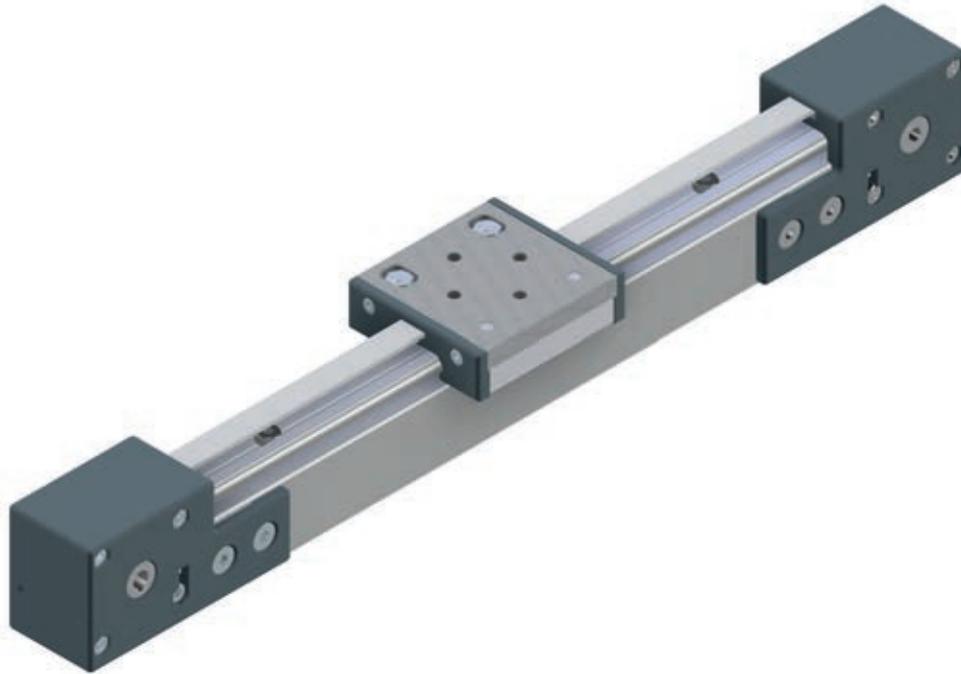
### Operating conditions

For self-supporting installation, the maximum permissible deflection from approx 3.5 mm to 4000 mm must be observed. It is recommended - especially at high dynamic load - to support the module at a distance of 300 to 600 mm.

Description	Part no.	Bore for drive shaft	Keyway	Weight
Timing belt pulley LMZ closed	28.0411/0	without		2,350 kg
Timing belt pulley LMZ 14	28.0410/1	∅ 14 mm	5 mm	2,233 kg
Timing belt pulley LMZ 16	28.0410/2	∅ 16 mm	5 mm	2,233 kg
Timing belt pulley LMZ 17	28.0410/0	∅ 17 mm	5 mm	2,233 kg
Timing belt pulley LMZ 20	28.0410/3	∅ 20 mm	6 mm	2,233 kg



## Linear System LR



### Precise, easy running and reliable

The MiniTec linear technology forms the ideal addition to the profile system. You are particularly flexible if you opt for our LR linear system. As the name says, a whole family of linear components that are coordinated with each other are available to you. The range includes ready to install linear axes as well as slides, drives, pulleys, rails and extensive accessories. Each MiniTec Series 45 profile can be used as a profile rail guide. The LR linear system has long since proven its worth in practice. Thanks to its simple structure, it is predestined for your own designs, and it can also be easily maintained

and adjusted. On the following pages you will find our ready-to-install LR modules. For an order, only the stroke/total length and the required deflection must be defined. From page 290 you will find individual components of the LR linear system.

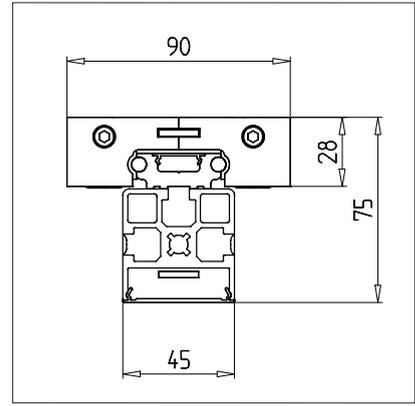
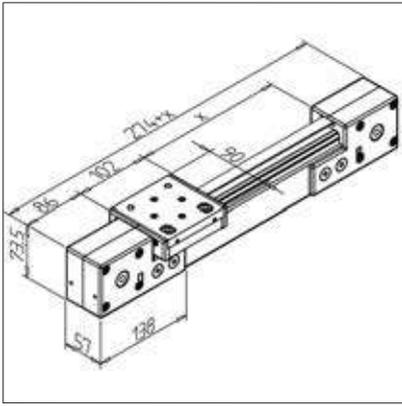
#### **LR linear axis configuration**

Further information is available at:  
[www.minitec.de/en/product/configuration-of-linear-axes](http://www.minitec.de/en/product/configuration-of-linear-axes)



## Linear axis LR 6 - 45 x 45 R

Part No. 28.0500/0



### TECHN. DATA / ITEMS SUPPLIED

- Linear guide, ready for use, consisting of:
  - 1x rail LR 6 with precision steel shafts h6, Ø 6 mm, on carrier profile 45 x 45 R
  - **Please specify stroke length X and reverse unit**
  - Max. stroke length 5867 mm
  - Stainless version **part no. 28.0500/1**
  - 1x slide LR 6 Z with integrated timing belt retainer
  - 2x timing belt pulleys
  - 1x timing belt 16 AT 5, steel reinforced
  - Weight = (basic weight) 2.25 kg
  - Extra weight = 0.322 kg / 100 mm stroke

### APPLICATIONS

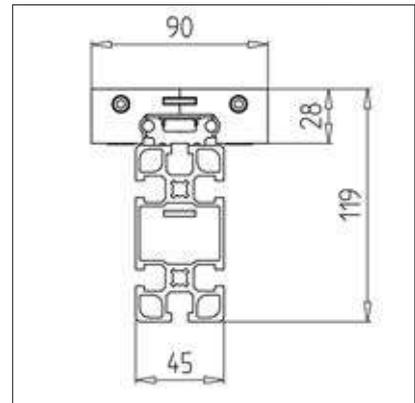
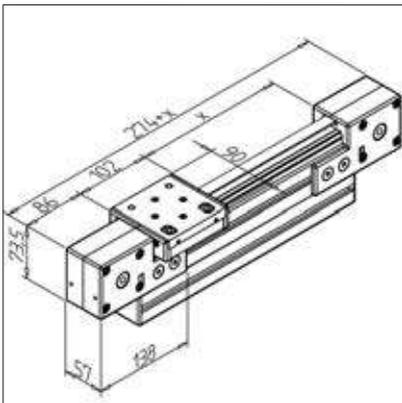
- Handling devices
- Measuring devices
- Calibration devices
- Precise guidance of doors or large extracts

### ASSEMBLY

- Strap is tensioned over the reversing unit

## Linear axis LR 6 - 45 x 90

Part No. 28.0501/0



### TECHN. DATA / ITEMS SUPPLIED

- Linear guide, ready for use, consisting of:
  - 1x rail LR 6 S with precision steel shafts h6, Ø 6 mm, on carrier profile 45 x 90 F
  - 1x carriage LR 6 Z with integrated timing belt mounting
  - 2x timing belt deflectors
  - 1x timing belt 16 AT 5, steel reinforced
  - **Please specify stroke length X and reverse unit**
  - Max. stroke length 5867 mm
  - Stainless version **part no. 28.0501/1**
  - Weight = (basic weight) 2.25 kg
  - Extra weight = 0.453 kg / 100 mm stroke

### APPLICATIONS

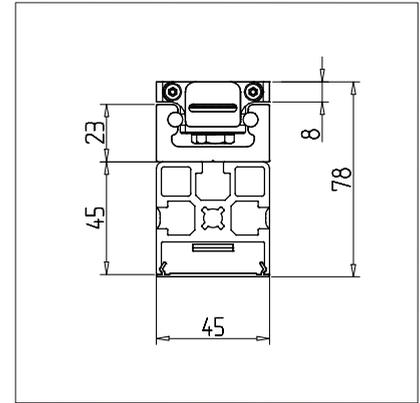
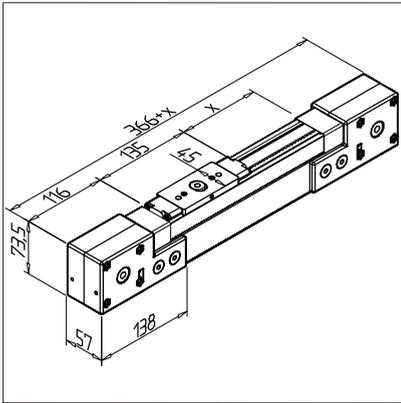
- Handling devices
- Measuring devices
- Calibration devices
- Precise guidance of doors or large extracts

### ASSEMBLY

- Strap is tensioned over the reversing unit

## Linear axis LR 6 compact 45 x 45 R

Part No. 28.0503/0



### TECHN. DATA / ITEMS SUPPLIED

- Linear guide, ready for use, consisting of:
  - 1x rail LR 6 compact with precision steel shafts h6, Ø 6 mm, on support profile 45 x 45 R
- **Please specify stroke length X and reverse unit**
- Max. stroke length 5807 mm
- Stainless version **part no. 28.0503/1**
- 1x slide LR 6 Z compact with integrated timing belt retainer
- 2x timing belt pulleys
- 1x timing belt 16 AT 5, steel reinforced
- Weight = (basic weight) 2.977 kg
- Extra weight = 0.407 kg / 100 mm stroke

### APPLICATIONS

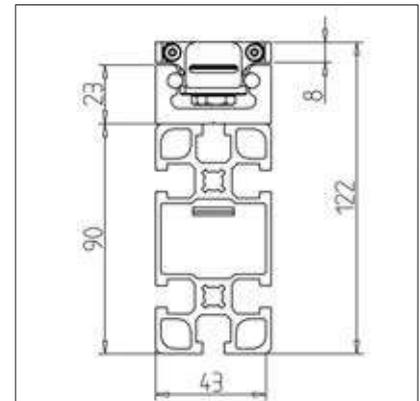
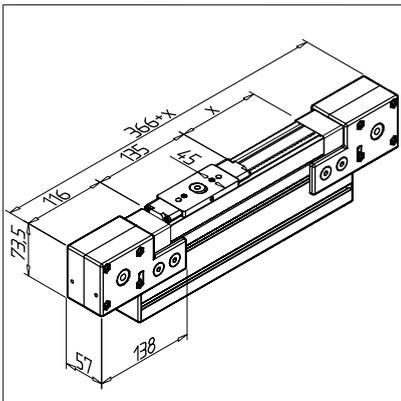
- Handling devices
- Measuring devices
- Calibration devices

### ASSEMBLY

- Strap is tensioned over the reversing unit

## Linear axis LR 6 compact 45 x 90

Part No. 28.0504/0



### TECHN. DATA / ITEMS SUPPLIED

- Linear guide, ready for use, consisting of:
  - 1x rail LR 6 with precision steel shafts h6, Ø 6 mm, on carrier profile 45 x 90, 1 Slide LW 6 Z with integrated timing belt admission, 2x timing belt pulleys 1 tooth belt 16 AT 5, steel reinforced
- **Please specify stroke length X and reverse unit**
- Max. stroke length 5807 mm
- Stainless version **part no. 28.0504/1**
- Weight = (basic weight) 3.305 kg
- Extra weight = 0.547 kg / 100 mm stroke

### APPLICATIONS

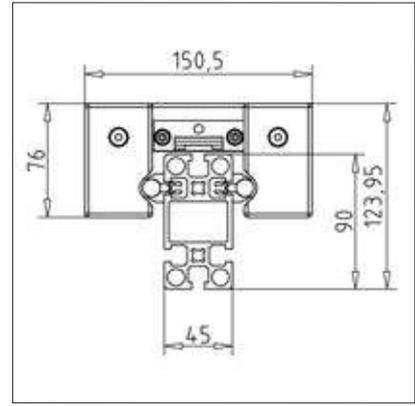
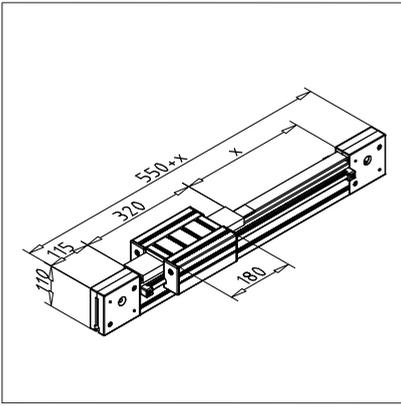
- Handling devices
- Measuring devices
- Calibration devices

### ASSEMBLY

- Strap is tensioned over the reversing unit

## Linear axis LR 12 - 45 x 90

Part No. 28.0600/0



### TECHN. DATA / ITEMS SUPPLIED

- Linear guide, ready for use, consisting of:
  - 1x rail 45 x 90 H with shaft fixation
  - 2x timing belt pulley T45
  - 2x timing belt tensioner
  - 1x slide LW 45
  - 1x timing belt 32AT10
- Please specify stroke length X and reverse unit
- Stainless version **part no. 28.0600/1**
- Weight = (basic weight) 7.37 kg
- Extra weight = 0.656 kg / 100 mm stroke

### APPLICATIONS

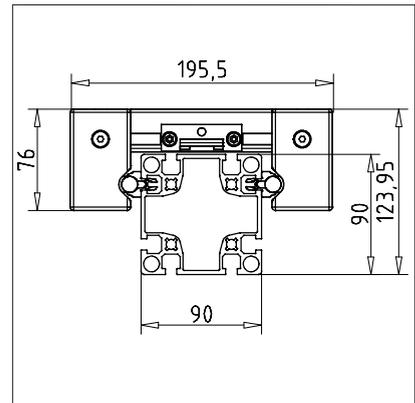
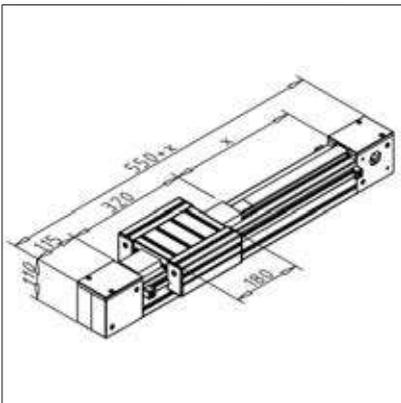
- Handling devices
- Measuring devices
- Calibration devices

### ASSEMBLY

- Belt is fastened and tensioned with the aid of timing belt tensioner

## Linear axis LR 12 - 90 x 90

Part No. 28.0601/0



### TECHN. DATA / ITEMS SUPPLIED

- Linear guide, ready for use, consisting of:
  - 1x rail LR 12 - 90 with shaft fixation
  - 2x timing belt pulley T90
  - 2x timing belt tensioner
  - 1x slide LW 90
  - 1x timing belt 32AT10
- Please specify stroke length X and reverse unit
- Stainless version **part no. 28.0601/1**
- Weight = (basic weight) 11.65 kg
- Extra weight = 0.827 kg / 100 mm stroke

### APPLICATIONS

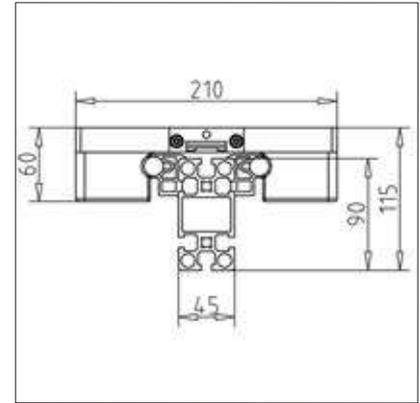
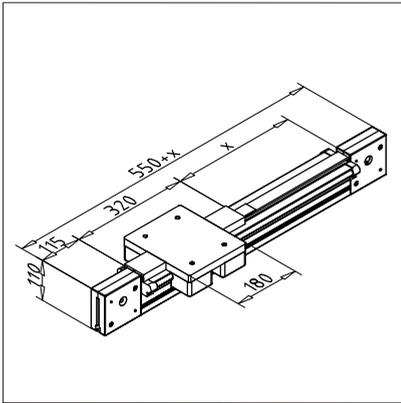
- Handling devices
- Measuring devices
- Calibration devices

### ASSEMBLY

- Belt is fastened and tensioned with the aid of timing belt tensioner

## Linear axis LR 16 - 45 x 90

Part No. 28.0802/0



### TECHN. DATA / ITEMS SUPPLIED

- Linear guide, ready for use, consisting of:
- 1x rail LR 16 - 45x90 with shaft fixation
- 2x timing belt pulley T90
- 2x timing belt tensioner
- 1x slide LR16-45
- 1x timing belt 32AT10
- **Please specify stroke length X and reverse unit**
- Weight = (basic weight) 10.19 kg
- Extra weight = 0.908 kg / 100 mm stroke

### APPLICATIONS

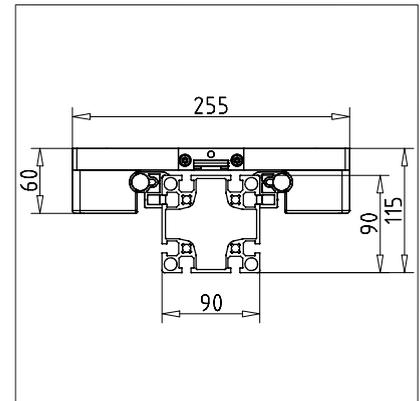
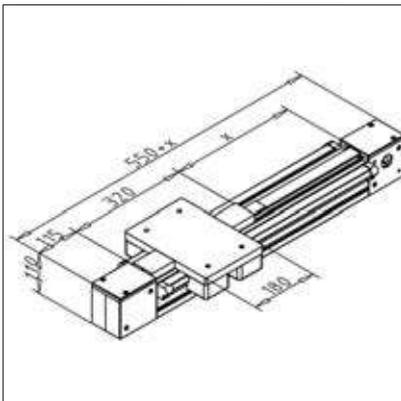
- Handling devices
- Measuring devices
- Calibration devices

### ASSEMBLY

- Belt is fastened and tensioned with the aid of timing belt tensioner

## Linear axis LR 16 - 90 x 90

Part No. 28.0800/0



### TECHN. DATA / ITEMS SUPPLIED

- Linear guide, ready for use, consisting of:
- 1x rail LR 16 - 90 with shaft fixation
- 2x timing belt pulley T90
- 2x timing belt tensioner
- 1x slide LR16-90
- 1x timing belt 32AT10
- **Please specify stroke length X and reverse unit**
- Weight = (basic weight) 14.45 kg
- Extra weight = 1.08 kg / 100 mm stroke

### APPLICATIONS

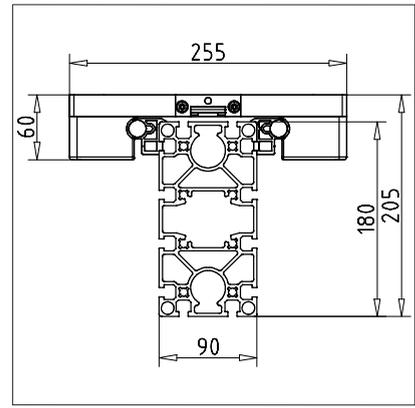
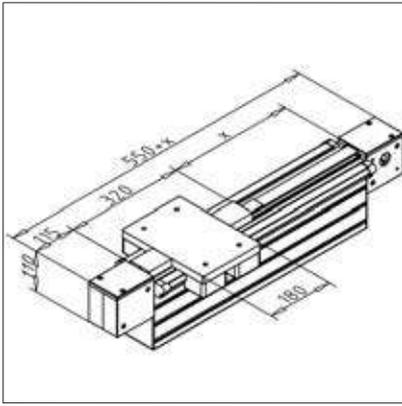
- Handling devices
- Measuring devices
- Calibration devices

### ASSEMBLY

- Belt is fastened and tensioned with the aid of timing belt tensioner

## Linear axis LR 16 - 90 x 180

Part No. 28.0801/0



### TECHN. DATA / ITEMS SUPPLIED

- Linear guide, ready for use, consisting of:
  - 1x rail LR 16 - 90x180 with shaft fixation
  - 2x timing belt pulley T90
  - 2x timing belt tensioner
  - 1x slide LR16-90
  - 1x timing belt 32AT10
- Please specify stroke length X and reverse unit
- Weight = (basic weight) 17.51 kg
- Extra weight = 1.741 kg / 100 mm stroke

### APPLICATIONS

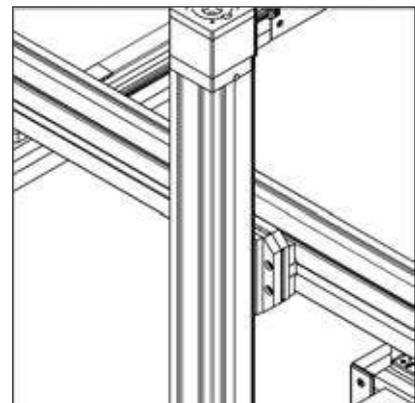
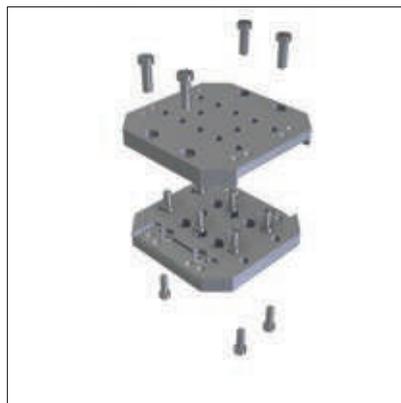
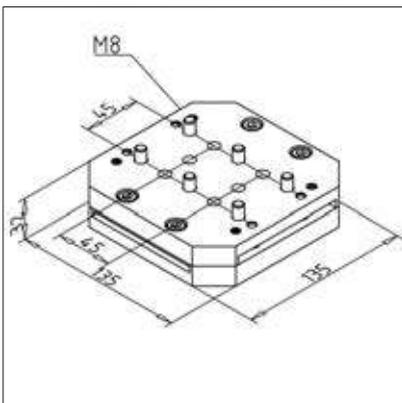
- Handling devices
- Measuring devices
- Calibration devices

### ASSEMBLY

- Belt is fastened and tensioned with the aid of timing belt tensioner

## Fastening kit 90 S-S

Part No. 28.0264/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- Adapter plate 90
- With fastening material steel, zinc plated
- Weight = 1.487 kg/piece

### APPLICATIONS

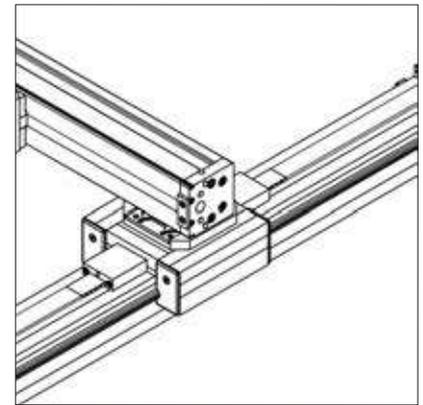
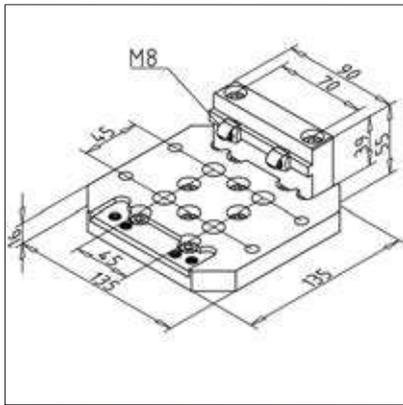
- For connection of 2 axes under 90°

### ASSEMBLY

- Both slide-mounted plates are connected:
  - LMS with LMS / LMZ or
  - LMZ with LMZ / LMS or
  - LR12 with LMS / LMZ

## Fastening kit 90 S-A 90°

Part No. 28.0173/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- Adapter plate 90
- With fastening material steel, zinc plated
- Weight = 1.039 kg/piece

### APPLICATIONS

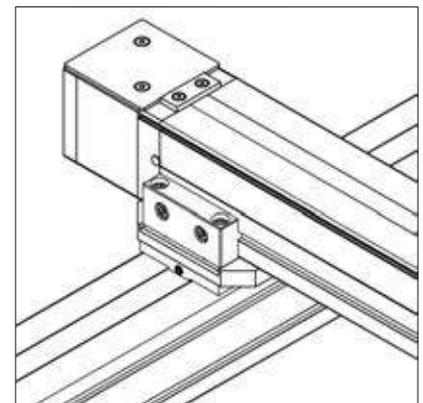
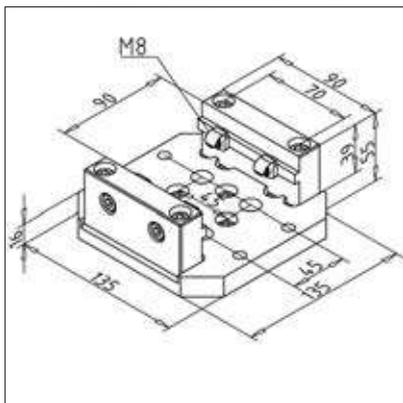
- For connection of 2 axes under 90°

### ASSEMBLY

- Large plate is mounted on slide of:
  - LR6 or
  - LR6 compact or
  - LMS or- LMZ or
  - LR12 z.B. LW 45 / LW 90 or
  - slide of adjusting units
- No plate is mounted on: Carrier profile of the cross-sectional axis

## Fastening kit 90 S-A 180°

Part No. 28.0265/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- Adapter plate 90
- With fastening material steel, zinc plated
- Weight = 1.359 kg/piece

### APPLICATIONS

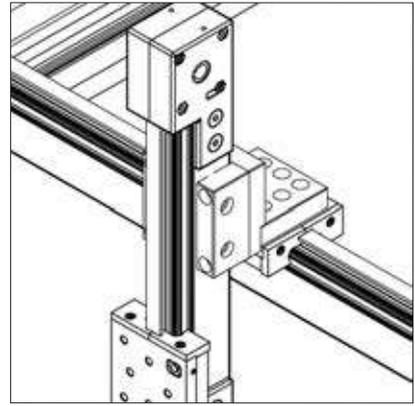
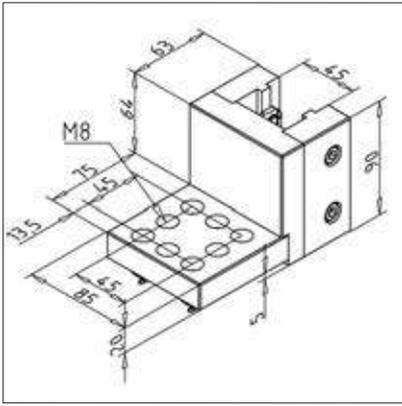
- For connection of 2 axes under 90°

### ASSEMBLY

- Large plate is mounted on slide of:
  - LR6 or
  - LR6 compact or
  - LMS or- LMZ or
  - LR12 z.B. LW 45 / LW 90 or
  - slide of adjusting units
- Small plates are mounted on: Carrier profile of the cross-sectional axis

## Fastening kit 45 S-A 90°

Part No. 28.0174/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- Adapter plate 90
- With fastening material steel, zinc plated
- Weight = 1.548 kg/piece

### APPLICATIONS

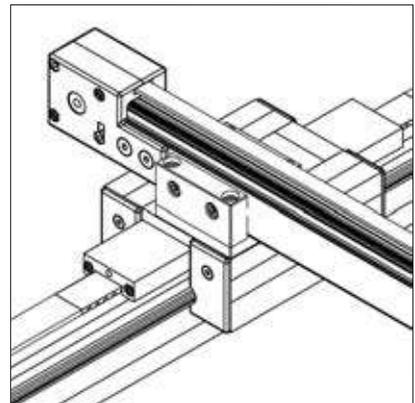
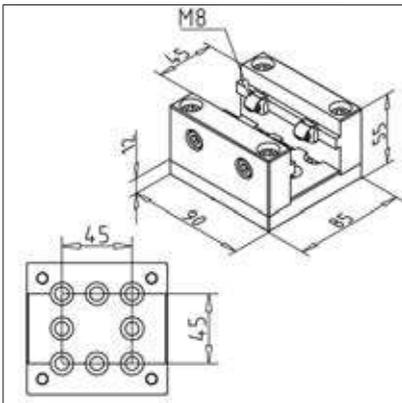
- For connection of 2 axes under 90°

### ASSEMBLY

- Large plate is mounted on slides of:
  - LR6 or
  - LR6 compact
- Small plates are mounted on: Carrier profile of the cross-sectional axis

## Fastening kit 45 S-A 180°

Part No. 28.0175/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- Adapter plate 90
- With fastening material steel, zinc plated
- Weight = 0.938 kg/piece

### APPLICATIONS

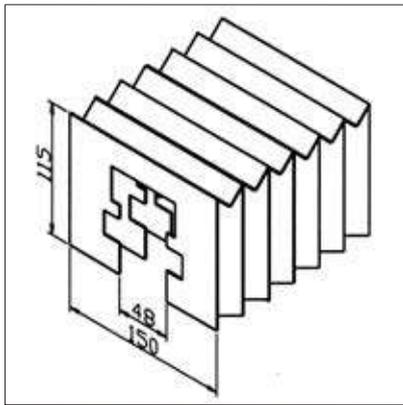
- For connection of 2 axes under 90°

### ASSEMBLY

- Large plate is mounted on slide of:
  - LR6 or
  - LR6 compact or
  - LMS or- LMZ or
  - LR12 z.B. LW 45 / LW 90 or
  - slide of adjusting units
- Small plates are mounted on: Carrier profile of the cross-sectional axis

## Bellows LR 45

Part No. 33.3007/0



### TECHN. DATA / ITEMS SUPPLIED

- Plastic, black with plastic frame
- Without fastening kit
- Max. length 6 m
- Length when pushed together for 1 m travel: - 130 mm
- Temperature resistant(-30° to +90°C)
- Resistant to most acids and oils
- Weight = 0.650 kg/m

### APPLICATIONS

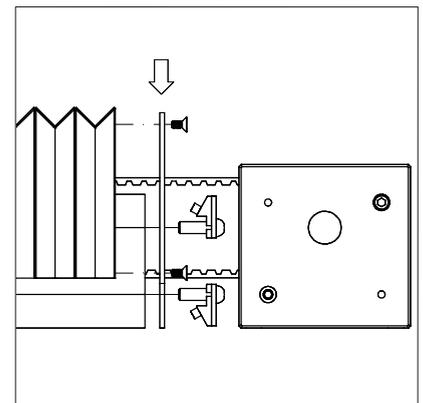
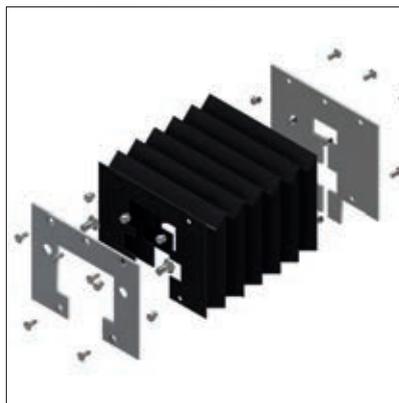
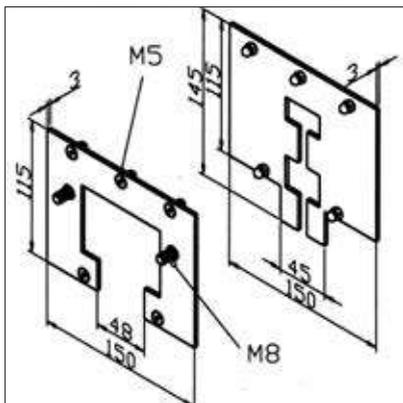
- Cover of MiniTec linear guides LR 45
- Rough working conditions, dust, chips

### ASSEMBLY

- Push bellow onto rail
- Fasten to slide or pulley with fastening kit for bellow **part no. 33.3010/0**
- Bellow is supplied without perforation
- Due to the bellows, the usable travel distance is reduced by approx. 22%
- Caution: Consider higher friction moment when dimensioning drive unit!

## Fastening kit for bellows LR 45

Part No. 33.3010/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- 1 End frame slide
- 1 End frame pulley
- Fastening kit for frame and bellow
- Weight = 0.275 kg/piece

### APPLICATIONS

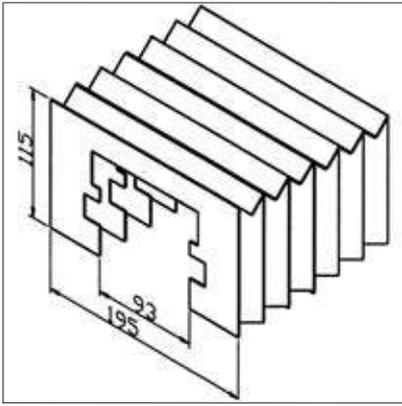
- Fastening bellows LR 45 to carriages LW 45
- Fastening bellows LR 45 to timing belt reversing unit LW 45

### ASSEMBLY

- Fasten end frame on slide
- Push bellow onto rail
- Loosen power-lock fastener on the pulley side and insert end frame pulley between rail and timing belt pulley; tighten power-lock fastener
- Fasten protective bellow by means of the supplied screws on the end frame

## Bellows LR 90

Part No. 33.3008/0



### TECHN. DATA / ITEMS SUPPLIED

- Plastic, black with plastic frame
- Without fastening kit
- Length when pushed together for 1 m travel: - 130 mm
- Max. length 6 m
- Temperature resistant(-30° to +90°C)
- Resistant to most acids and oils
- Weight = 0.750 kg/m

### APPLICATIONS

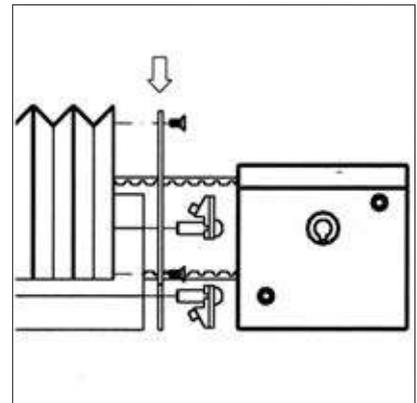
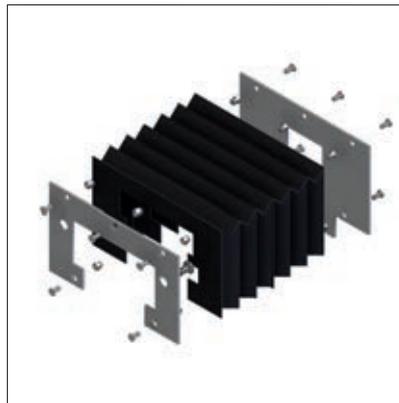
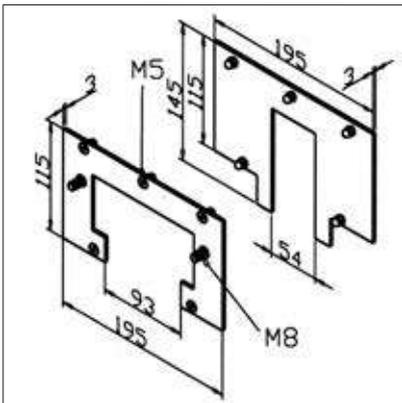
- Cover of MiniTec linear guides LR 90
- Rough working conditions, dust, chips

### ASSEMBLY

- Push bellow onto rail
- Fasten ends with attachment for bellows **part no. 33.3011/0** to carriages or reverse unit
- Bellow is supplied without perforation
- Due to the bellows, the usable travel distance is reduced by approx. 22%
- Caution: Consider higher friction moment when dimensioning drive unit!

## Fastening kit for bellows LR 90

Part No. 33.3011/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- 1 End frame slide
- 1 End frame pulley
- Fastening kit for frame and bellow
- Weight = 0.750 kg/piece

### APPLICATIONS

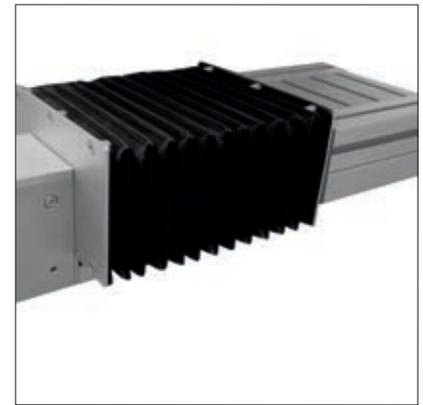
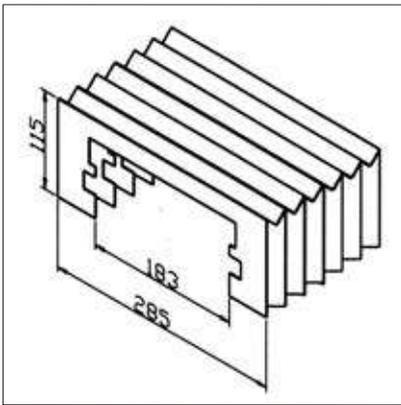
- Fastening bellows LR 90 to carriages LW 90
- Fastening bellows LR 90 to timing belt reversing unit LW 90

### ASSEMBLY

- Fasten end frame on slide
- Push bellow onto rail
- Loosen power-lock fastener on the pulley side and insert end frame pulley between rail and timing belt pulley; tighten power-lock fastener
- Fasten protective bellow by means of the supplied screws on the end frame

## Bellows LR 180

Part No. 33.3009/0



### TECHN. DATA / ITEMS SUPPLIED

- Plastic, black with plastic frame
- Without fastening kit
- Length when pushed together for 1 m travel: - 130 mm
- Max. length 6 m
- Temperature resistant(-30° to +90°C)
- Resistant to most acids and oils
- Weight = 0.950 kg/m

### APPLICATIONS

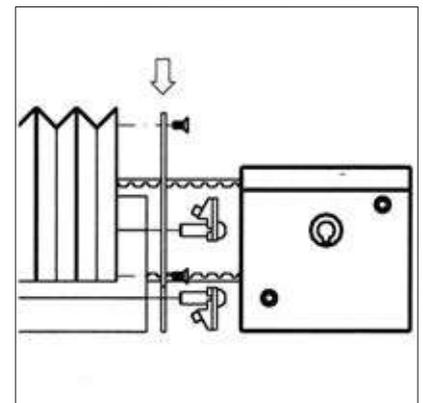
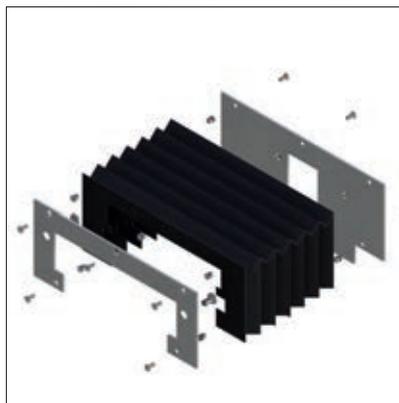
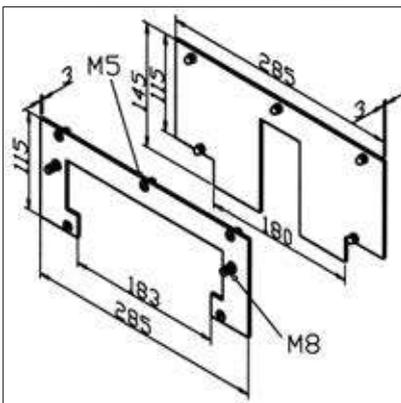
- Cover of MiniTec linear guides LR 180
- Rough working conditions, dust, chips

### ASSEMBLY

- Push bellow onto rail
- Fasten ends with attachment for bellows **part no. 33.3012/0** to carriage or reverse unit
- Bellow is supplied without perforation
- Due to the bellows, the usable travel distance is reduced by approx. 22%
- Caution: Consider higher friction moment when dimensioning drive unit!

## Fastening kit for bellows LR 180

Part No. 33.3012/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- 1 End frame slide
- 1 End frame pulley
- Fastening kit for frame and bellow
- Weight = 0.463 kg/piece

### APPLICATIONS

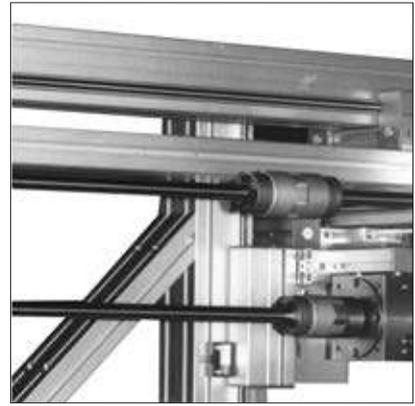
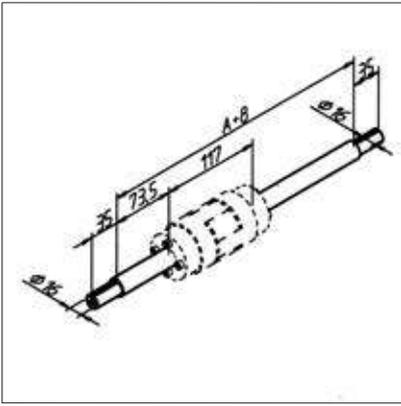
- Fastening bellows LR 180 to carriages LW 180

### ASSEMBLY

- Fasten end frame on slide
- Push bellow onto rail
- Loosen power-lock fastener on the pulley side and insert end frame pulley between rail and timing belt pulley; tighten power-lock fastener
- Fasten protective bellow by means of the supplied screws on the end frame

## Connecting shaft 45

Part No. 17.1706/0



### TECHN. DATA / ITEMS SUPPLIED

- Steel shaft  $\varnothing$  20 mm
- 2 pieces, clutch not included
- With fastening material and feather key
- Length A = light distance between timing belt pulleys
- **Please indicate distance A**
- Other lengths and finishes available upon customer request
- Weight = 2,47 kg/m

### APPLICATIONS

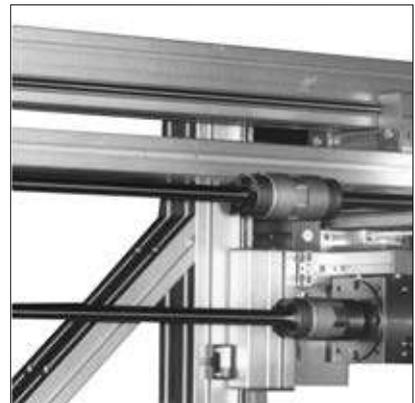
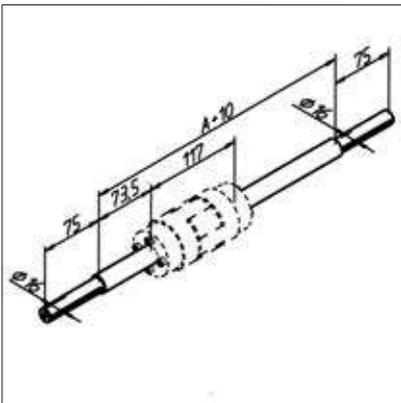
- Simultaneous transmission of 2 parallel linear guides
- Install support bearing for longer shafts

### ASSEMBLY

- Push the shafts with the feather key and the pressure plate into the timing belt reverse unit and secure with the pressure plate and the countersunk screw included
- Connect both shaft pieces with clutch **part no. 28.0180/0**

## Connecting shaft 90

Part No. 17.1706/1



### TECHN. DATA / ITEMS SUPPLIED

- Steel shaft  $\varnothing$  20 mm
- 2 pieces, clutch not included
- With fastening material and feather key
- Length A = light distance between timing belt pulleys
- **Please indicate distance A**
- Other lengths and finishes available upon customer request
- Weight = 2,47 kg/m

### APPLICATIONS

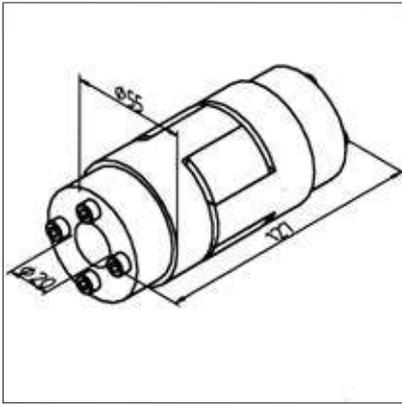
- Simultaneous transmission of 2 parallel linear guides
- Install support bearing for longer shafts

### ASSEMBLY

- Push the shafts with the feather key and the pressure plate into the timing belt reverse unit and secure with the pressure plate and the countersunk screw included
- Connect both shaft pieces with clutch **part no. 28.0180/0**

## Clutch 20

Part No. 28.0180/0



### TECHN. DATA / ITEMS SUPPLIED

- Clutch, steel with plastic inlay
- 2 tensioning sets, steel
- Max. torque 30Nm
- Weight = 0.984 kg/piece

### APPLICATIONS

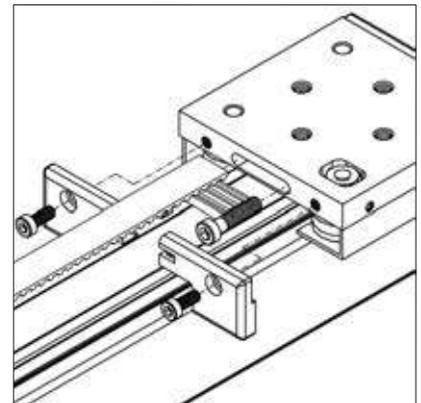
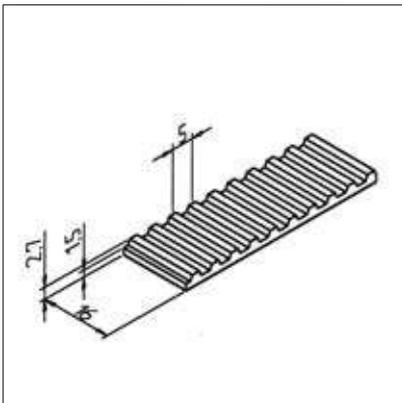
- Connection of motors to reverse unit
- Misalignment compensation with simultaneous drive of 2 parallel linear axes with connection shaft 45 **part no. 17.1706/0** or 90 **part no. 17.1706/1**

### ASSEMBLY

- Attachment with integrated tensioning device
- Adjust the axes synchronously and fasten clamping sets

## Timing belt 16 AT 5

Part No. 28.0502/0



### TECHN. DATA / ITEMS SUPPLIED

- PUR white, steel-wire reinforced
- Type 16 AT 5
- Load capacity up to 1260 N
- Weight = 0.053 kg/m

### APPLICATIONS

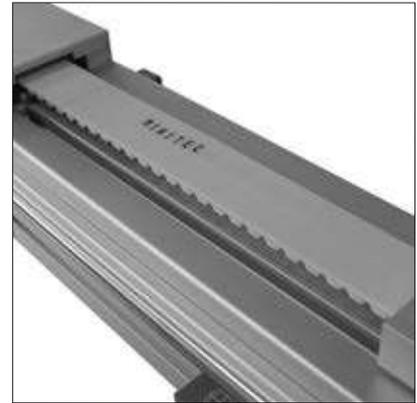
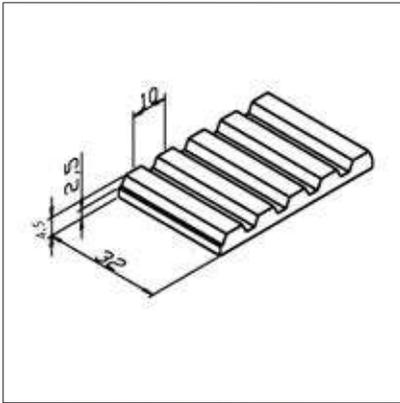
- For MiniTec linear guides LR 6 Z

### ASSEMBLY

- Insert timing belt of corresponding length into the carriage LR 6 Z
- Length determination: 2x rail length + 260 mm

## Timing belt 32 AT 10

Part No. 28.0093/0



### TECHN. DATA / ITEMS SUPPLIED

- PUR white, steel-wire reinforced
- Type 32 AT 10
- Load capacity up to 4750 N
- Weight = 0.190 kg/m

### APPLICATIONS

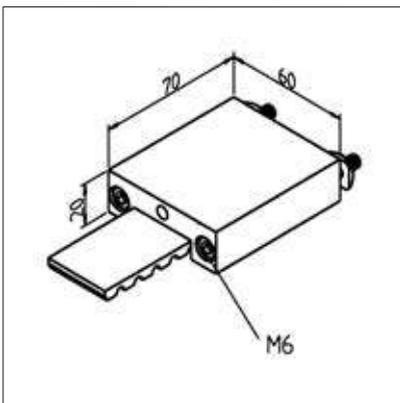
- For MiniTec-Linear guides LR 12 and LR 16
- Belt conveyors

### ASSEMBLY

- Attach the timing belt in the appropriate length to the belt tensioner

## Timing belt tensioner

Part No. 28.0090/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- With fastening material steel, zinc plated
- Housing Aluminum natural anodized
- Tension slide steel, galvanized, with inserted counterpart with 3 teeth
- For timing belt 32 AT 10
- Stainless version **part no. 28.0090/1**
- Weight = 0.244 kg/piece

### APPLICATIONS

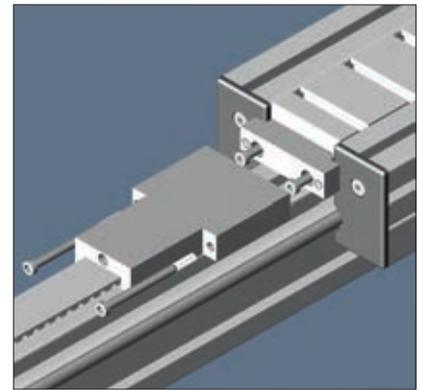
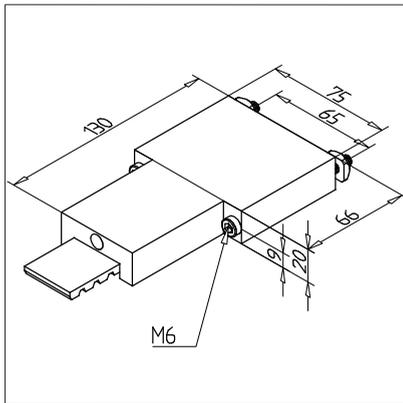
- For MiniTec-Linear guides LR 12 and LR 16
- For MiniTec belt drive

### ASSEMBLY

- Screw tight on the front of the carriage with supplied hardware
- After fixing on slide face, tension the belt central tensioning screw M8, 5 A/F
- Recommended voltage: according to design
- 1 timing belt tensioner requested per belt end

## Timing belt tensioner reinforced to slide LW90

Part No. 28.0386/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- With fastening material steel, zinc plated
- Cocking slide steel, galvanized, with inlaid counterpart with 9 teeth
- For attachment to carriage LW 45 please use the timing belt tensioner with adapter part no. 28.0386/1
- Weight = 0.473 kg/piece

### APPLICATIONS

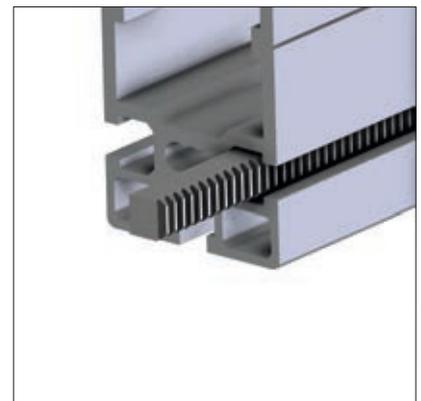
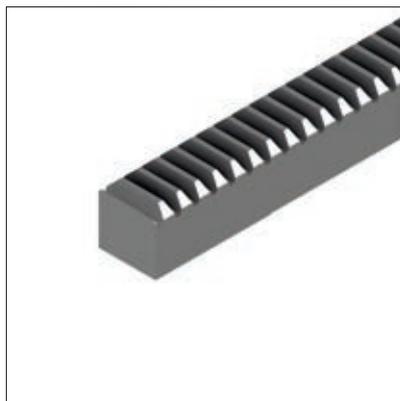
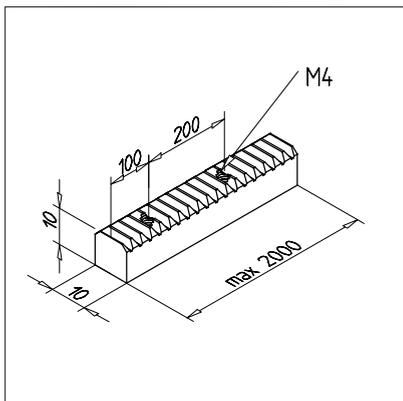
- For linear axes with higher safety requirements
- For vertically arranged axes (lifting axes) it is usually sufficient to use the upper timing belt tensioner in reinforced version

### ASSEMBLY

- Screw tight on the front of the carriage with supplied hardware
- After fixing on slide face, tension the belt central tensioning screw M8, 5 A/F
- Recommended voltage: according to design

## Toothed rack 8

Part No. 28.0051/0



### TECHN. DATA / ITEMS SUPPLIED

- Steel, bright
- Modul 1
- Weight = 0,785 kg/m
- Bar length = 2 m

### APPLICATIONS

- Linear guides with very long travels
- Linear guides for short building room
- Repeated height and length settings in grid 3.14 mm (for ex. sorting frame)

### ASSEMBLY

- Insert timing rack into profile groove
- Secure with setscrew from delivery scope - Grid 200 mm

## Connection of motors

### Timing belt pulley LR 6 & LR 6 compact

Three-phase, stepper or servo motors with drive pins up to a maximum Ø 14 mm are fastened directly to the deflection. The bore of the pulley with keyway and the adapter plate are also made to customer specification.

### Timing belt pulley T 45

Three-phase, stepper or servo motors with drive pins up to a maximum Ø 16 mm are fastened directly to the deflection. The bore of the pulley with keyway and the adapter plate are also made to customer specification.

### Timing belt pulley T 90

Three-phase, stepper or servo motors with drive pins up to a maximum Ø 24 mm are fastened directly to the deflection. The bore of the pulley with keyway and the adapter plate are also made to customer specification.

### Determination of the timing belt length

#### When using T45 and T90

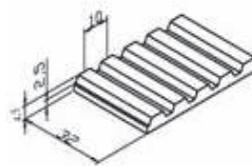
- $2 \times \text{rail length} + 2 \times 210 \text{ mm}$  (redirection)
- $-\text{Carriage length} - 2 \times 20 \text{ mm}$  (timing belt tensioner)
- $= 2 \times \text{rail length} - \text{carriage length} + 380 \text{ mm}$

#### When using LR6

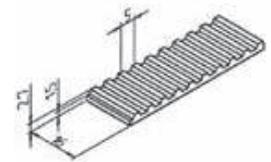
- $2 \times \text{rail length} + 260 \text{ mm}$

#### When using LR6 compact (timing belt 16 AT 5)

- $2 \times \text{rail length} + 220 \text{ mm}$



Timing belt 32 AT 10  
Part no. 28.0093/0



Timing belt 16 AT 5  
Part no. 28.0502/0

## Specifications of the pulleys in the timing belt deflection

Timing belt-redirection	LR 6	T 45 (LR 12 & LR 16)	T 90 (LR 12 & LR 16)
Effective diameter	57,3 mm	60,48 mm	60,48 mm
Width of timing belt	16 mm	32 mm	32 mm
Number of teeth	36	19	19
Drill hole for drive shaft	10 mm	8 mm	8 mm
rillable to max.	14 mm	16 mm	30 mm
Travel distance (1 turn)	180 mm	190 mm	190 mm
Timing belt	16AT5	32AT10	32AT10
Belt length in deflection	160 mm	210 mm	210 mm
Maximum torque	30 Nm	70 Nm	130 Nm

## Components - Linear system LR

This system is based on double-row profiled rollers made of ball bearing steel and hardened precision shafts made of material 1.1213 (CF 53). Guides of any length can be produced with this system.

The carriages are equipped with 2-row profiled rollers whose shaft raceway is designed as a Gothic arch. For very high loads, the trolleys can be equipped with any number of track rollers. The profiled rollers are fastened directly to the carriage plate with steel strips. No special roller profiles are required for the construction of the trolleys. This gives the construction maximum rigidity. The backlash-free adjustment of the guides is carried out with eccentric bushes.

The carriages are completely encapsulated, scraper felts are integrated into the cover caps, which simultaneously remove coarse dirt from the shafts and supply them with lubricant. The felts can be replaced quickly and easily after loosening the lateral screw connection. This advantage has

an extremely positive effect, especially in dirty or rough operating conditions.

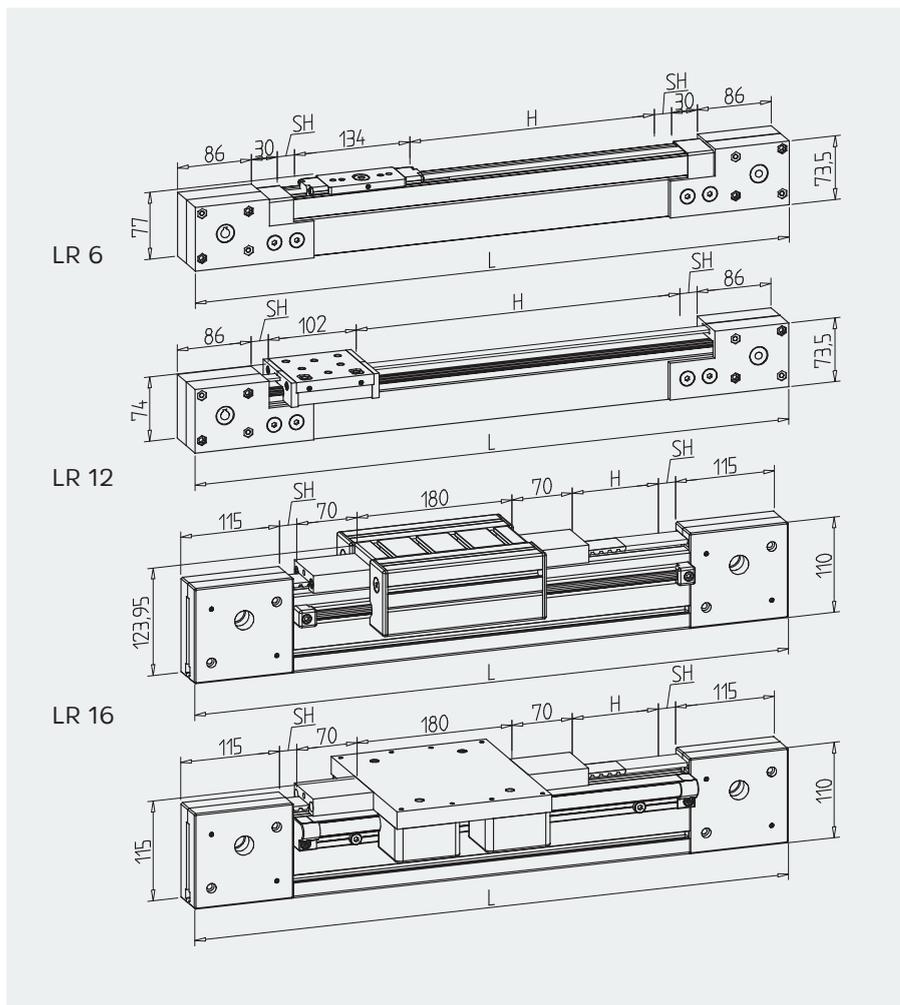
Both closed and open-frame trolleys in any length and width are possible. Please indicate the desired dimensions A and B when ordering. (see special versions on page XXX above).

X/Y tables can be produced simply by attaching 4 castors to the top of the trolley. In this configuration, the running rail of the Y-axis is made of profile 45 x 32. Cover caps LR and cover profile LR fit for the Y-axis.



X/Y-Table

### LR 6 Z compact



Safety distances „SH“ if necessary, additionally calculate and specify!

### LR 6 Z compact

Calculation of the total length L:

Required traverse H  
 + Car length (134)  
 + 2 x Timing belt pulley (172)  
 + 2 x Trap guard (60)  
 = Traverse + 366 mm \*

### LR 6

Calculation of the total length L:

Required traverse H  
 + Car length (102)  
 + 2 x Timing belt pulley (172)  
 = Traverse + 274 mm\*

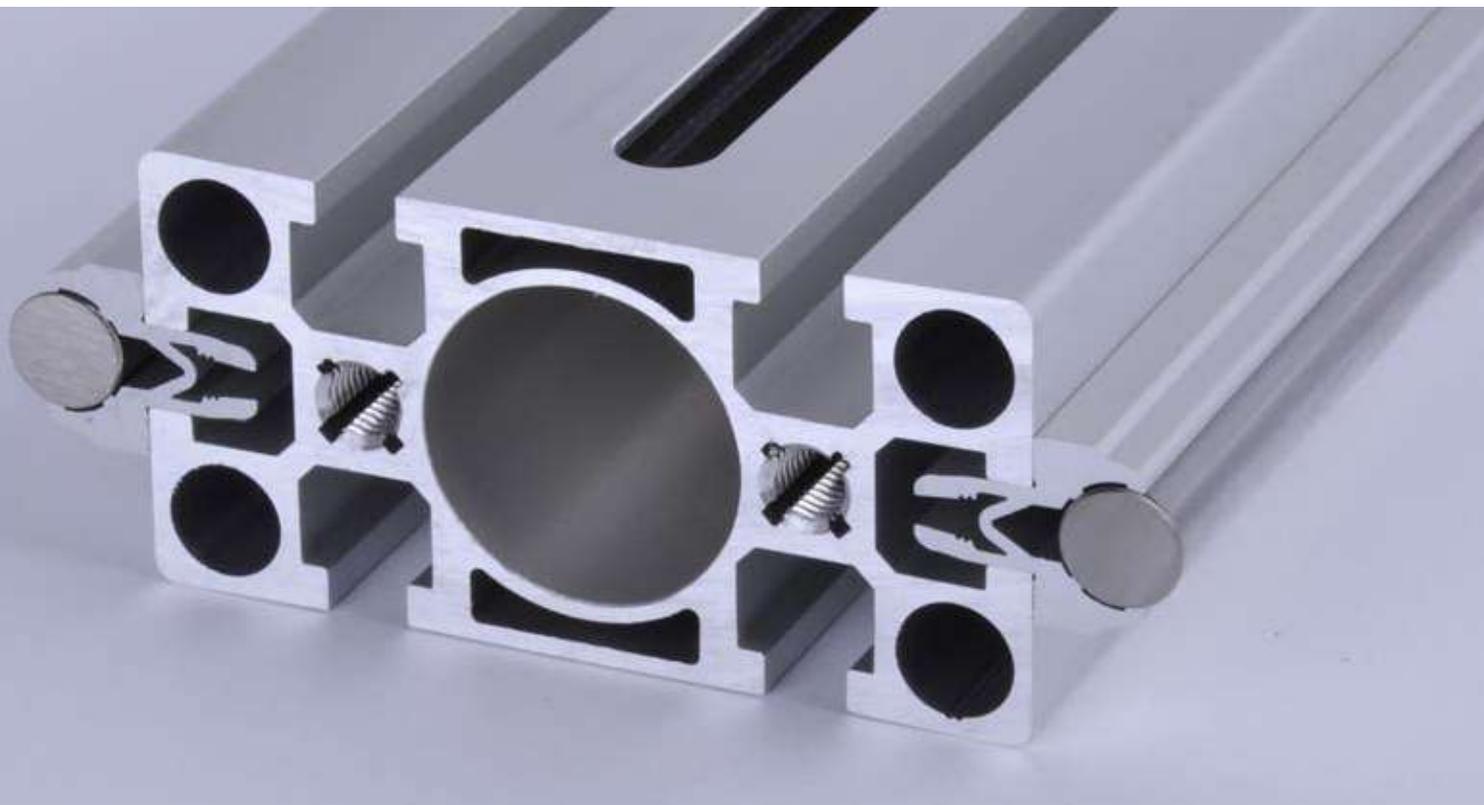
### LR 12 + LR 16

Calculation of the total length L:

Required traverse H  
 + Car length (180)  
 + 2 x Timing belt pulley (230)  
 + 2 x Timing belt tensioner (140)  
 = Traverse + 550 mm

\*Since the belt tension is applied via the timing belt deflection, this is only an indication!

# Rails



The MiniTec profile system is the ideal carrier for linear technology  
 All MiniTec profiles (except UL) can be fitted with a shaft support and a shaft.



**LR 6 compact**

Part no. 28.0119/0



**LR 6 S**

Part no. 28.0525/0



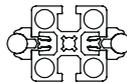
**LR 12  
 Rail 19**

Part no. 28.0009/0



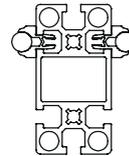
**LR 12  
 Rail 32**

Part no. 28.0010/0



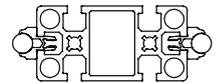
**LR 12  
 Rail 45**

Part no. 28.0006/0



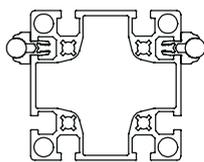
**LR 12  
 Rail 45 x 90 H**

Part no. 28.0007/2



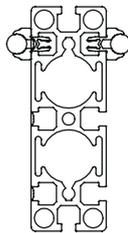
**LR 12  
 Rail 45 x 90 F**

Part no. 28.0007/1



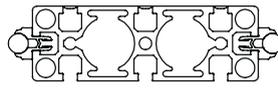
**LR 12  
 Rail 90**

Part no. 28.0008/0



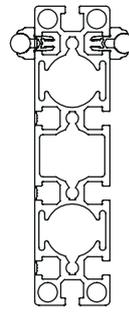
**LR 12  
 Rail 135 H**

Part no. 28.0012/2



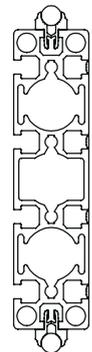
**LR 12  
 Rail 135 F**

Part no. 28.0012/1



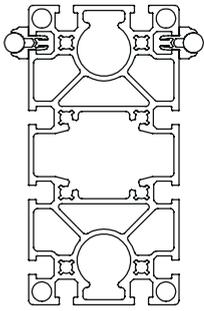
**LR 12  
 Rail 45 x 180 H**

Part no. 28.0013/2



**LR 12  
 Rail 45 x 180 F**

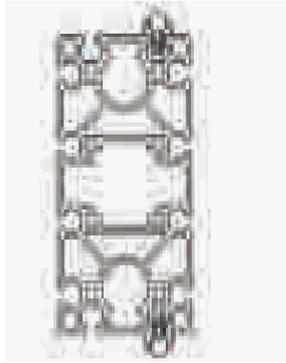
Part no. 28.0013/1



**LR 12**

**Rail 180 H**

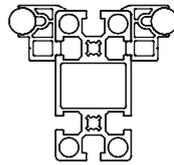
Part no. 28.0011/2



**LR 12**

**Rail 180 F**

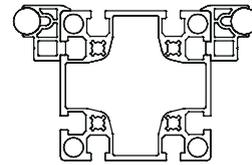
Part no. 28.0011/1



**LR 16**

**Rail LR16 - 45 x 90H**

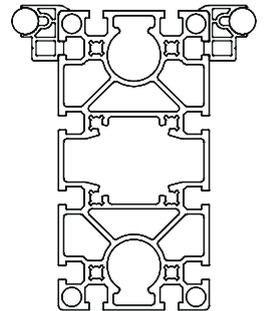
Part no. 28.0820/0



**LR 16**

**Rail LR16 - 90**

Part no. 28.0821/0

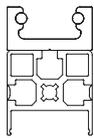


**LR 16**

**Rail LR16 - 90 x 180H**

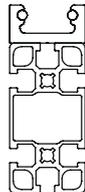
Part no. 28.0822/0

**LR 6 compact and LR 6 S - further combination possibilities:**



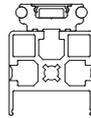
**Profile 45 x 45 R**

LR 6 compact



**Profile 45 x 90 F**

LR 6 compact



**Profile 45 x 45 R**

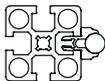
LR 6 S



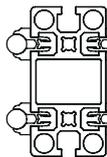
**Profile 45 x 90 F**

LR 6 S

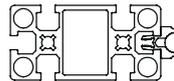
**LR 12 - further combination possibilities:**



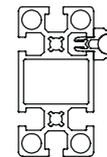
**Rail of  
Profile 45 x 45**



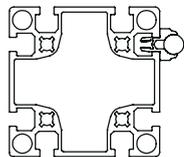
**Rail of  
Profile 45 x 90**



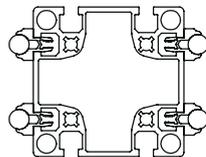
**Rail of  
Profile 45 x 90**



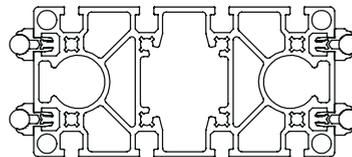
**Rail of  
Profile 45 x 90**



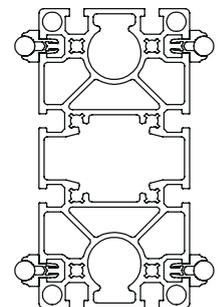
**Rail of  
Profile 90 x 90 L**



**Rail of  
Profile 90 x 90 L**

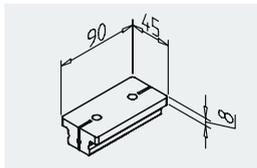


**Rail of  
Profile 90 x 180 S**



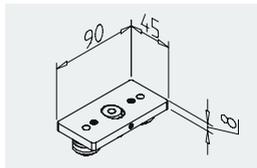
**Rail of  
Profile 90 x 180 S**

## Slide types



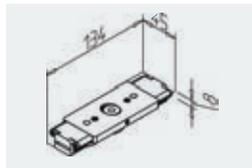
**Sliding carriage  
LR 6 compact**

Part no. 28.0127/0



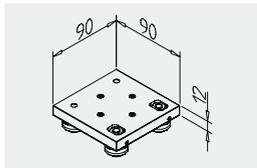
**LR 6 compact**

Part no. 28.0140/0



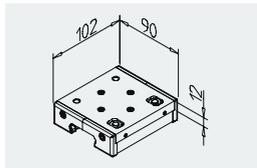
**LR 6 Z compact**

Part no. 28.0520/0



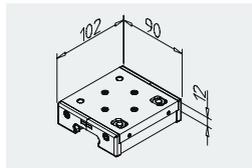
**LR 6**

Part no. 28.0138/0



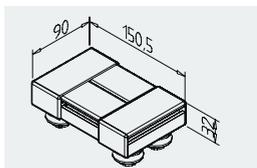
**LR 6 with cover**

Part no. 28.0138/1



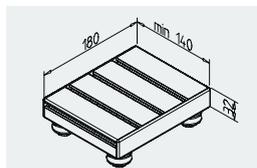
**LR 6 Z**

Part no. 28.0138/2



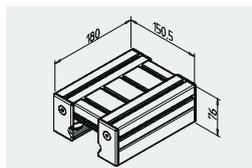
**LW 32**

Part no. 28.0088/0



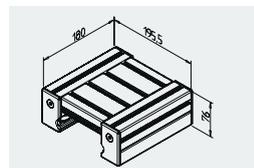
**LW 32 E**

Part no. 28.0089/0



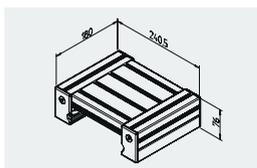
**LW 45**

Part no. 28.0091/0



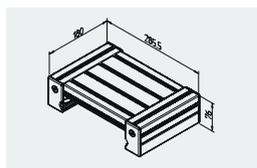
**LW 90**

Part no. 28.0092/0



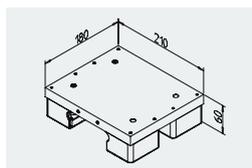
**LW 135**

Part no. 28.0084/0



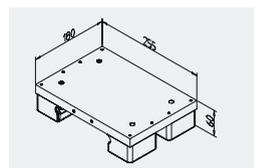
**LW 180**

Part no. 28.0087/0



**LR 16 - 45**

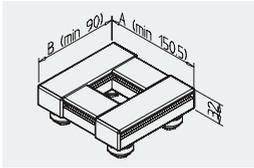
Part no. 28.0810/0



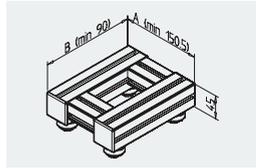
**LR 16 - 90**

Part no. 28.0811/0

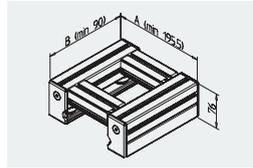
## Carriage special versions



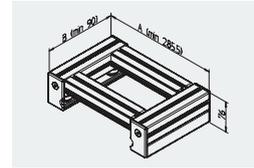
**LW 32 Special version**  
(Open Frame)  
Part no. 28.0089/2



**LW 45 Special version**  
(Open Frame)  
Part no. 28.0091/4



**LW 90 Special version**  
(Open Frame)  
Part no. 28.0092/3



**LW 180 Special version**  
(Open Frame)  
Part no. 28.0087/2

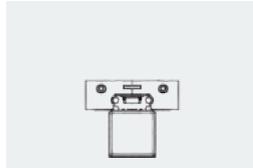
## COMBINATION POSSIBILITIES CARRIAGES AND RAILS



**LW LR 6 compact**  
Rail LR 6 compact



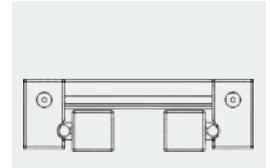
**LW LR 6 compact**  
Rail made of profile  
45 x 90 F



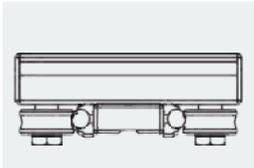
**Carriage LR 6**  
Rail LR 6 S/45



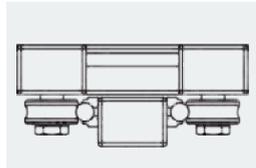
**Carriage LR 6**  
Rail LR 6 S/90



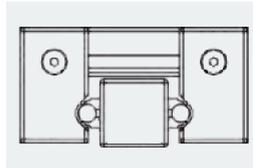
**Carriage LW 135**  
2x Special rail made  
of profile 45 x 45



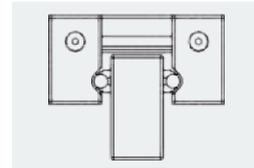
**LW 32 E**  
Rail 19



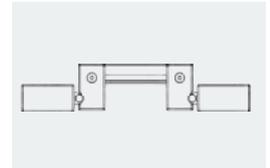
**LW 32**  
Rail 32



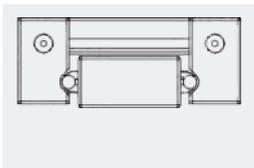
**LW 45**  
Rail 45



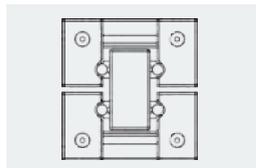
**LW 45**  
Rail 45 x 90H



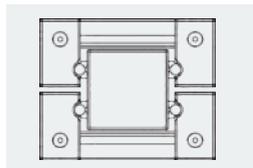
**Special carriages**  
2x Special rail made  
of profile 45 x 90



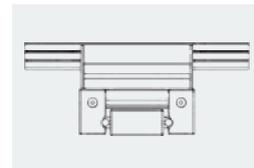
**LW 90**  
Rail 45 x 90 F



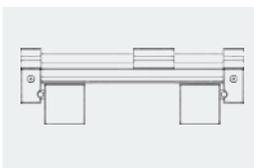
**2x LW 45**  
Special rail made of  
profile 45 x 90



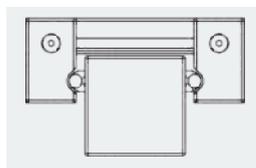
**2x LW 90**  
Special rail made of  
profile 90 x 90 L



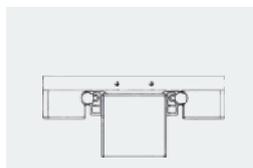
**2x LW 90**  
Rail 45 x 90 F



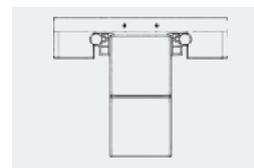
**Special carriage**  
2x Special rail made of  
profile 90 x 90 L



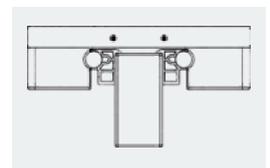
**LW 90**  
Rail 90



**LR 16-90**  
Rail LR 16 - 90



**LR 16 - 90**  
Rail LR 16 - 90 x 180H



**LR 16 - 45**  
Rail LR 16 - 45

## Permitted loads

Linear-system	LR 6		LR 12					LR 16	
Car	LR 6 Compact	Car LR 6 with 4 Bearing L = 90 mm	Car 45 with 4 Bearing L = 180 mm	Car 90 with 4 Bearing L = 180 mm	Car 135 with 4 Bearing L = 180 mm	Car 180 with 4 Bearing L = 180 mm	Car 180 with 8 Bearing L = 360 mm	Car LR 16-45	Car LR 16-90
Mx max.	40 Nm	30 Nm	79 Nm	107 Nm	130 Nm	165 Nm	240 Nm	158 Nm	214 Nm
My max.	40 Nm	75 Nm	120 Nm	120 Nm	120 Nm	120 Nm	275 Nm	288 Nm	288 Nm
Mz max.	40 Nm	40 Nm	202 Nm	202 Nm	202 Nm	202 Nm	470 Nm	323 Nm	323 Nm
Fy max.	700 N	800 N	3500 N	3500 N	3500 N	3500 N	7000 N	7000 N	7000 N
Fz max.	1100 N	640 N	1500 N	1500 N	1500 N	1500 N	3000 N	3000 N	3000 N

### Maximum traverse

Car 45 - 180: 10 m/sec

Car LR 6: 5 m/sec

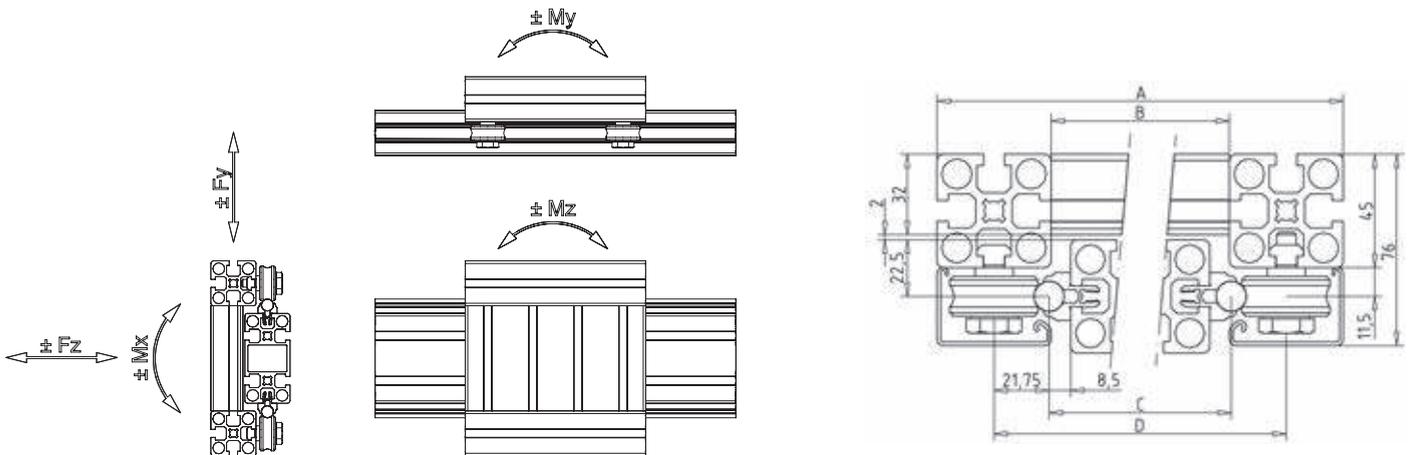
### Calculation of the permissible moment load depending on the car length,

at 4 Bearing:

$$M_y \text{ max.} = 0,89 \times (L-45) \text{ Nm}$$

$$M_z \text{ max.} = 1,50 \times (L-45) \text{ Nm}$$

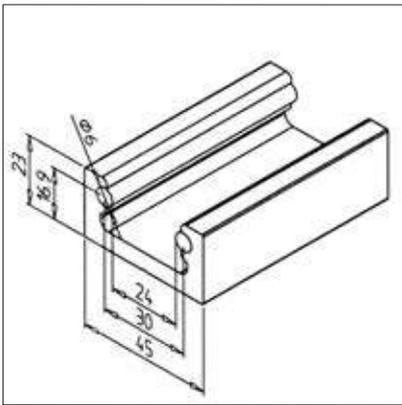
L = Car length



### Slide dimensions

Measure	Car type	LR 6 compact	LR 6	LW 45	LW 90	LW 135	LW 180	LR 16-45	LR 16-90
	A		45	90	150,5	195,5	240,5	285,5	210
B		-	-	60,5	105,5	150,5	195,5	-	-
C		30	32	62	107	152	197	85	130
D		2	60	105,5	150,5	195,5	240,5	149,5	194,5

## LR 6 compact track



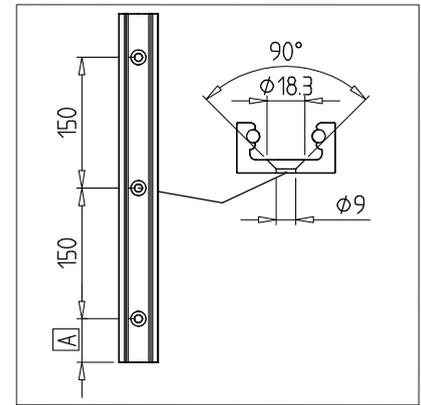
### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- 2 shafts  $\varnothing$  6 mm h6 steel
- Drilled ready for assembly  $\varnothing$  8 mm, Division 150 mm
- Stainless version **part no. 28.0149/0**
- Weight = 1.781 kg/m
- Bar length = 6 m



### APPLICATIONS

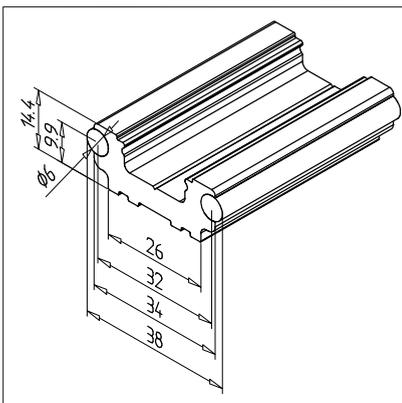
- Handling devices
- Guide large drawers
- Doors



### ASSEMBLY

- Fasten the rail with the countersunk screw M8 x 20 and the square nut M8 to the MiniTec profile
- The hole pattern is cut to size centrally. If a different edge distance is required, please specify dimension A.
- Additional hole spacing is also possible

## Rail LR 6 S



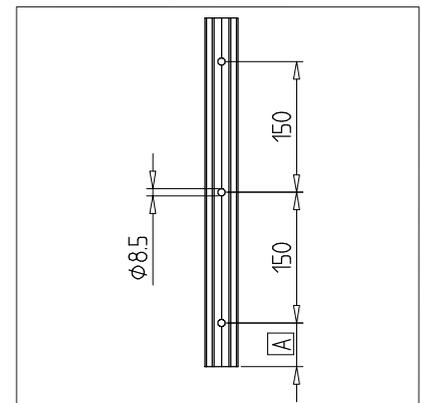
### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- 2 shafts  $\varnothing$  6 mm h6 steel
- Drilled ready for assembly  $\varnothing$  8 mm, Division 150 mm
- Stainless version **part no. 28.0526/0**
- Weight = 0.959 kg/m
- Bar length = 6 m



### APPLICATIONS

- MiniTec linear guide systems LR 6
- Handling devices
- Guide large drawers
- Doors

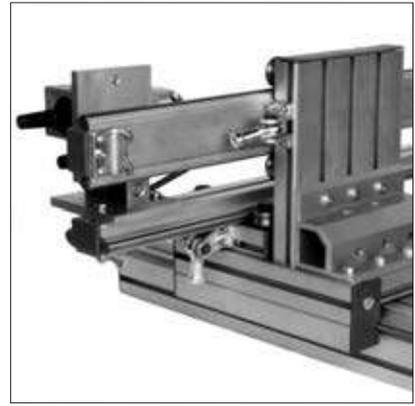
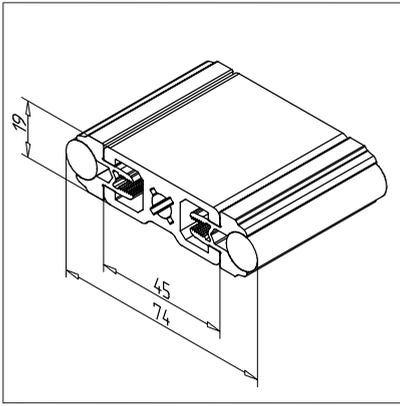


### ASSEMBLY

- Fasten the rail with the countersunk screw M8 x 20 and the square nut M8 to the MiniTec profile
- Optional cover profile, **part no. 22.1160/0**
- The hole pattern is cut to size centrally. If a different edge distance is required, please specify dimension A.
- Additional hole spacing is also possible

## Rail 19

Part No. 28.0009/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- Profile 19 x 45
- On both sides with shaft supporting profile and shafts  $\varnothing 12$  h6, pre-finished installed
- Without end caps
- Stainless version **part no. 28.0009/3**
- Weight = 3,666 kg/m
- Bar length = 6 m

### APPLICATIONS

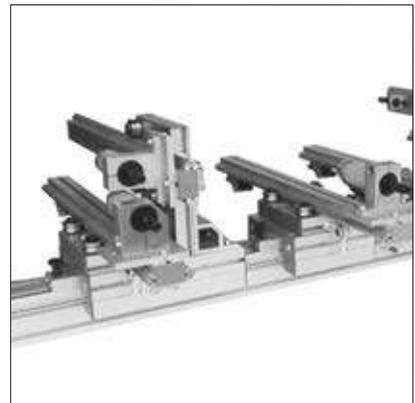
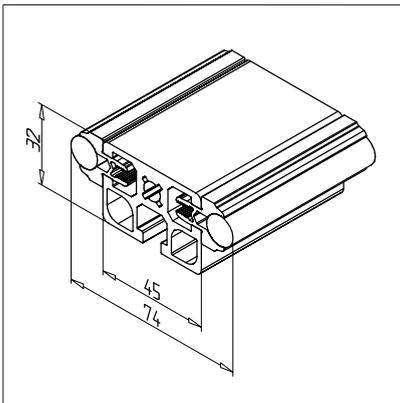
- Linear and column guides
- Longer rails with composite shafts possible

### ASSEMBLY

- For vertical use or for high speed applications, we recommend the use of shaft retention devices **part no. 28.0052/0**
- To use shaft locking devices on both sides, the shaft and shaft carrier should be at least 30 mm shorter than the total length

## Rail 32

Part No. 28.0010/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- Profile 45 x 32 F
- On both sides with shaft supporting profile and shafts  $\varnothing 12$  h6, pre-finished installed
- Without end caps
- Stainless version **part no. 28.0010/3**
- Weight = 4,161 kg/m
- Bar length = 6 m

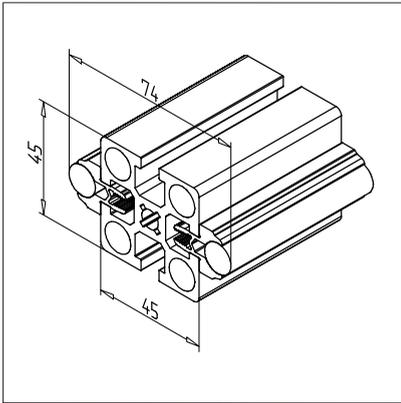
### APPLICATIONS

- Linear and column guides
- Longer rails with composite shafts possible

### ASSEMBLY

- For vertical use or for high speed applications, we recommend the use of shaft retention devices **part no. 28.0052/0**
- To use shaft locking devices on both sides, the shaft and shaft carrier should be at least 30 mm shorter than the total length

## Rail 45



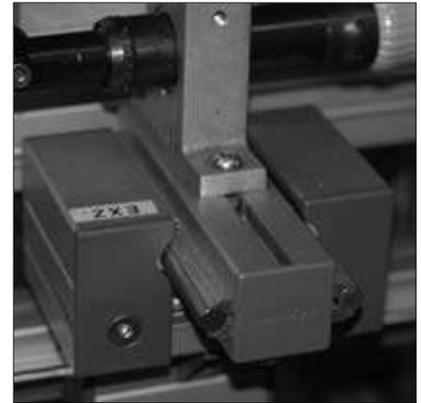
### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- On both sides with shaft supporting profile and shafts  $\varnothing 12$  h6, pre-finished installed
- Without end caps
- Stainless version **part no. 28.0006/3**
- Weight = 4,796 kg/m
- Bar length = 6 m



### APPLICATIONS

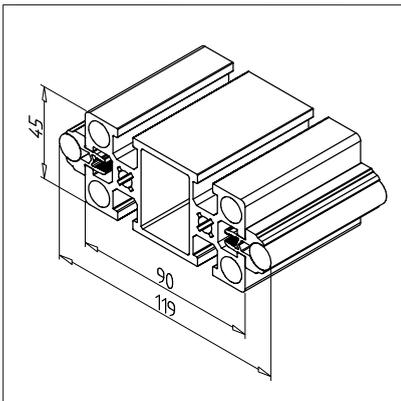
- Linear and column guides
- Longer rails with composite shafts possible



### ASSEMBLY

- For vertical use or for high speed applications, we recommend the use of shaft retention devices **part no. 28.0052/0**
- To use shaft locking devices on both sides, the shaft and shaft carrier should be at least 30 mm shorter than the total length

## Rail 45 x 90 F



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- Profile 45 x 90
- On both sides with shaft supporting profile and shafts  $\varnothing 12$  h6, pre-finished installed
- Without end caps
- Stainless version **part no. 28.0007/3**
- Weight = 6,190 kg/m
- Bar length = 6 m



### APPLICATIONS

- Linear and column guides
- Longer rails with composite shafts possible



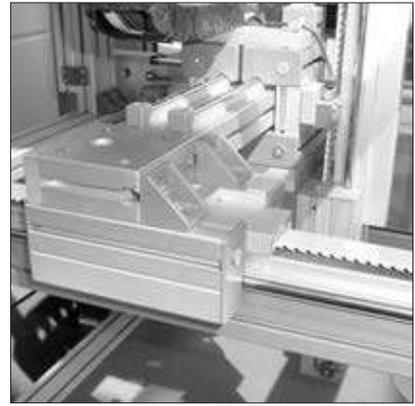
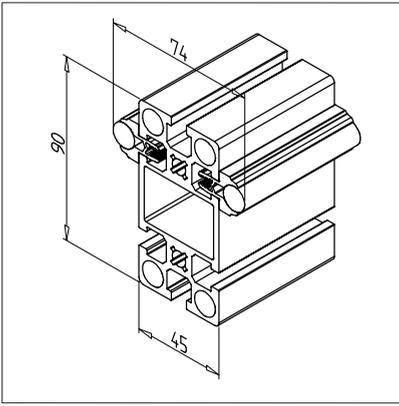
### ASSEMBLY

- For vertical use or for high speed applications, we recommend the use of shaft retention devices **part no. 28.0052/0**
- To use shaft locking devices on both sides, the shaft and shaft carrier should be at least 30 mm shorter than the total length

Part No. 28.0007/1

## Rail 45 x 90 H

Part No. 28.0007/2



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- Profile 45 x 90
- On both sides with shaft supporting profile and shafts  $\varnothing 12$  h6, pre-finished installed
- Without end caps
- Stainless version **part no. 28.0007/4**
- Weight = 6,190 kg/m
- Bar length = 6 m

### APPLICATIONS

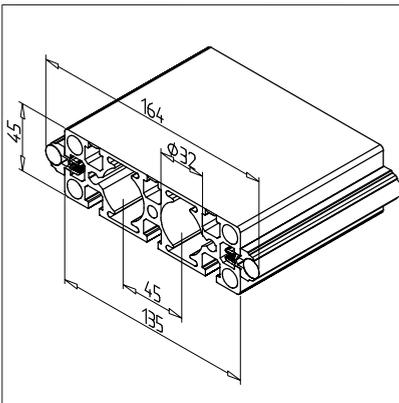
- Linear and column guides
- Belt return in profile
- Longer rails with composite shafts possible

### ASSEMBLY

- For vertical use or for high speed applications, we recommend the use of shaft retention devices **part no. 28.0052/0**
- To use shaft locking devices on both sides, the shaft and shaft carrier should be at least 30 mm shorter than the total length

## Rail 135 F

Part No. 28.0012/1



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- Profile 45 X 135 1G
- On both sides with shaft supporting profile and shafts  $\varnothing 12$  h6, pre-finished installed
- Without end caps
- Stainless version **part no. 28.0012/3**
- Weight = 8,09 kg/m
- Bar length = 6 m

### APPLICATIONS

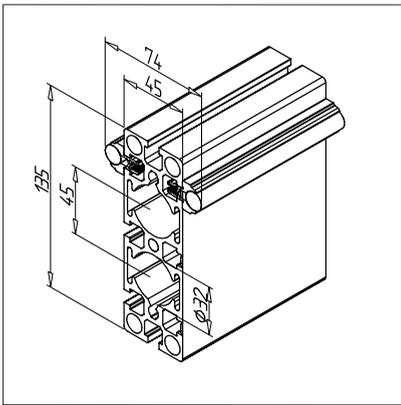
- Linear and column guides
- Longer rails with composite shafts possible

### ASSEMBLY

- For vertical use or for high speed applications, we recommend the use of shaft retention devices **part no. 28.0052/0**
- To use shaft locking devices on both sides, the shaft and shaft carrier should be at least 30 mm shorter than the total length

## Rail 135 H

Part No. 28.0012/2



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- Profile 45 X 135 1G
- On both sides with shaft supporting profile and shafts Ø 12 h6, pre-finished installed
- Without end caps
- Stainless version **part no. 28.0012/4**
- Weight = 8,09 kg/m
- Bar length = 6 m

### APPLICATIONS

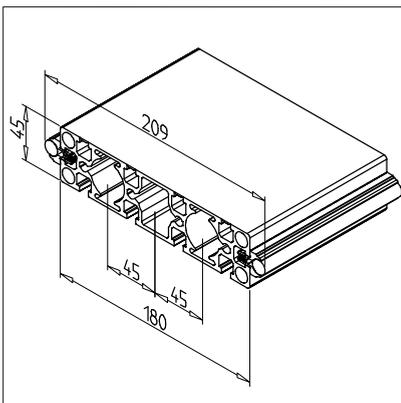
- Linear and column guides
- Longer rails with composite shafts possible

### ASSEMBLY

- For vertical use or for high speed applications, we recommend the use of shaft retention devices **part no. 28.0052/0**
- To use shaft locking devices on both sides, the shaft and shaft carrier should be at least 30 mm shorter than the total length

## Rail 45 x 180 F

Part No. 28.0013/1



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- Profile 45 X 180 1G
- On both sides with shaft supporting profile and shafts Ø 12 h6, pre-finished installed
- Without end caps
- Stainless version **part no. 28.0013/3**
- Weight = 9,466 kg/m
- Bar length = 6 m

### APPLICATIONS

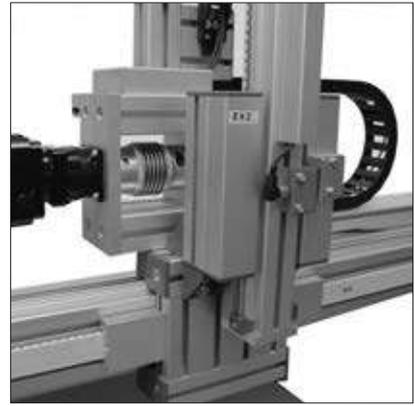
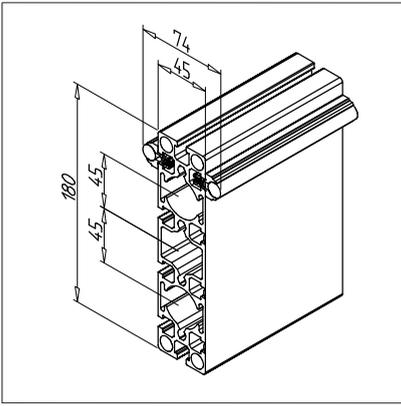
- Linear and column guides
- Longer rails with composite shafts possible

### ASSEMBLY

- For vertical use or for high speed applications, we recommend the use of shaft retention devices **part no. 28.0052/0**
- To use shaft locking devices on both sides, the shaft and shaft carrier should be at least 30 mm shorter than the total length

## Rail 45 x 180 H

Part No. 28.0013/2



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- Profile 45 X 180 1G
- On both sides with shaft supporting profile and shafts Ø 12 h6, pre-finished installed
- Without end caps
- Stainless version **part no. 28.0013/4**
- Weight = 9,466 kg/m
- Bar length = 6 m

### APPLICATIONS

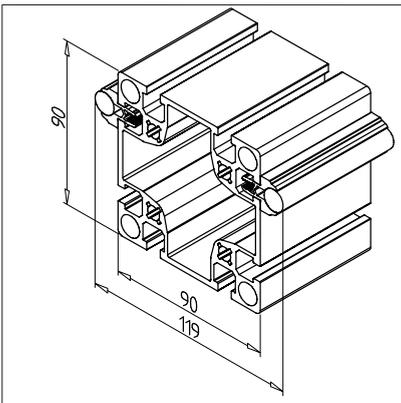
- Linear and column guides
- Longer rails with composite shafts possible

### ASSEMBLY

- For vertical use or for high speed applications, we recommend the use of shaft retention devices **part no. 28.0052/0**
- To use shaft locking devices on both sides, the shaft and shaft carrier should be at least 30 mm shorter than the total length

## Rail 90

Part No. 28.0008/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- Profile 90 x 90 L
- On both sides with shaft supporting profile and shafts Ø 12 h6, pre-finished installed
- Without end caps
- Stainless version **part no. 28.0008/3**
- Weight = 7,88 kg/m
- Bar length = 6 m

### APPLICATIONS

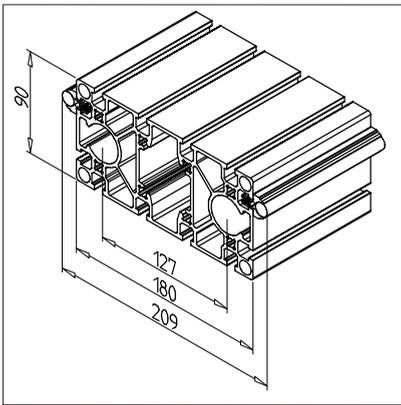
- Linear and column guides for high load
- Belt return in profile
- Longer rails with composite shafts possible

### ASSEMBLY

- For vertical use or for high speed applications, we recommend the use of shaft retention devices **part no. 28.0052/0**
- To use shaft locking devices on both sides, the shaft and shaft carrier should be at least 30 mm shorter than the total length

## Rail 180 F

Part No. 28.0011/1



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- Profile 90 X 180 S
- On both sides with shaft supporting profile and shafts  $\varnothing$  12 h6, pre-finished installed
- Without end caps
- Stainless version **part no. 28.0011/3**
- Weight = 14,516 kg/m
- Bar length = 6 m

### APPLICATIONS

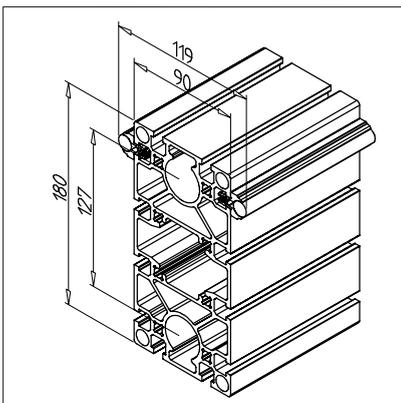
- Linear and column guides for high load
- Belt return in profile
- Longer rails with composite shafts possible

### ASSEMBLY

- For vertical use or for high speed applications, we recommend the use of shaft retention devices **part no. 28.0052/0**
- To use shaft locking devices on both sides, the shaft and shaft carrier should be at least 30 mm shorter than the total length

## Rail 180 H

Part No. 28.0011/2



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- Profile 90 X 180 S
- On both sides with shaft supporting profile and shafts  $\varnothing$  12 h6, pre-finished installed
- Without end caps
- Stainless version **part no. 28.0011/4**
- Weight = 14,516 kg/m
- Bar length = 6 m

### APPLICATIONS

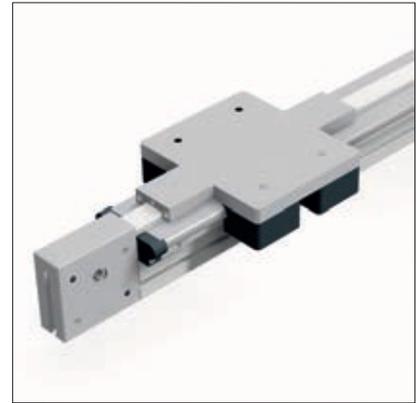
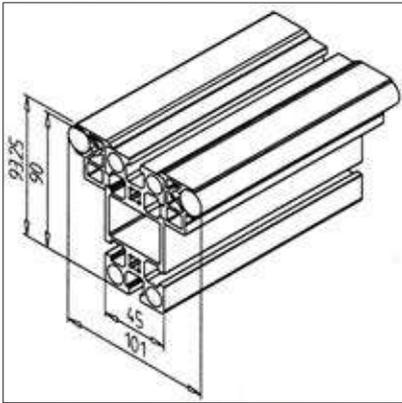
- Linear and column guides for high load
- Belt return in profile
- Longer rails with composite shafts possible

### ASSEMBLY

- For vertical use or for high speed applications, we recommend the use of shaft retention devices **part no. 28.0052/0**
- To use shaft locking devices on both sides, the shaft and shaft carrier should be at least 30 mm shorter than the total length

## Rail LR16- 45 x 90 H

Part No. 28.0820/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- Profile 45 x 90
- On both sides with shaft carrier profile LR 16 and shafts  $\varnothing$  16 h6, installed pre-assembled
- Without end caps
- Weight = 7,979 kg/m
- Bar length = 6 m

### APPLICATIONS

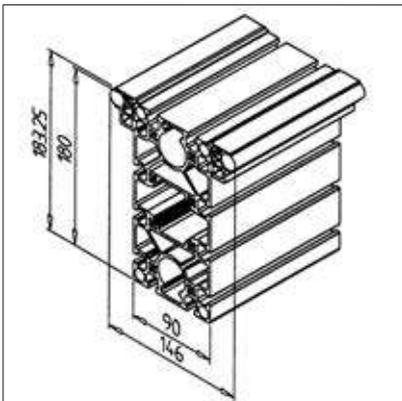
- Linear and column guides for high load
- Belt return in profile
- Longer rails with composite shafts possible

### ASSEMBLY

- For vertical use or high speed applications we recommend the use of shaft retention device LR 16 **part no. 28.0808/0** and **part no. 28.0809/0**
- To use shaft locking devices on both sides, the shaft and shaft carrier should be at least 30 mm shorter than the total length

## Rail LR16- 90 x 180 H

Part No. 28.0822/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- Profile 90 X 180 S
- On both sides with shaft carrier profile LR 16 and shafts  $\varnothing$  16 h6, installed pre-assembled
- Without end caps
- Weight = 16,278 kg/m
- Bar length = 6 m

### APPLICATIONS

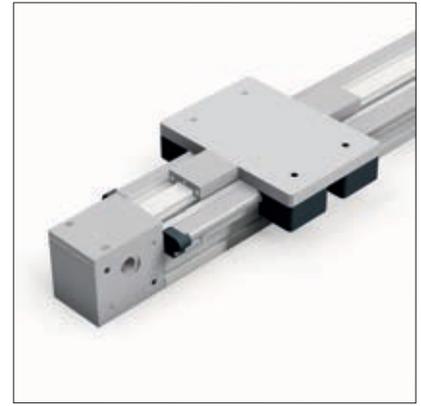
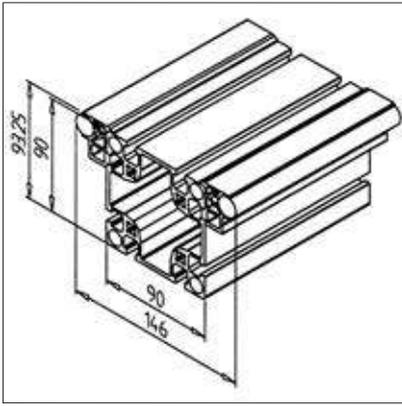
- Linear and column guides for high load
- Belt return in profile
- Longer rails with composite shafts possible

### ASSEMBLY

- For vertical use or high speed applications we recommend the use of shaft retention device LR 16 **part no. 28.0808/0** and **part no. 28.0809/0**
- To use shaft locking devices on both sides, the shaft and shaft carrier should be at least 30 mm shorter than the total length

## Rail LR16 - 90

Part No. 28.0821/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- Profile 90 x 90 L
- On both sides with shaft carrier profile LR 16 and shafts  $\varnothing 16$  h6, installed pre-assembled
- Without end caps
- Weight = 10,067 kg/m
- Bar length = 6 m

### APPLICATIONS

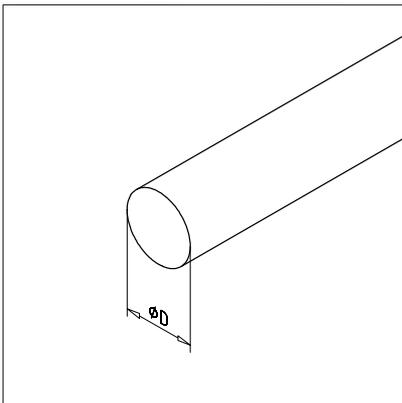
- Linear and column guides for high load
- Belt return in profile
- Longer rails with composite shafts possible

### ASSEMBLY

- For vertical use or high speed applications we recommend the use of shaft retention device LR 16 **part no. 28.0808/0** and **part no. 28.0809/0**
- To use shaft locking devices on both sides, the shaft and shaft carrier should be at least 30 mm shorter than the total length

## Shaft D 12 mm, h6 CF 53

Part No. 17.1741/0



### TECHN. DATA / ITEMS SUPPLIED

- Steel, pulled, hardened, polished
- Cf.53, hardened to  $62 \pm 4$  HRC, polished h6
- Stainless version **part no. 17.1741/1**
- Weight = 0.888 kg/m
- Bar length = 6 m

### APPLICATIONS

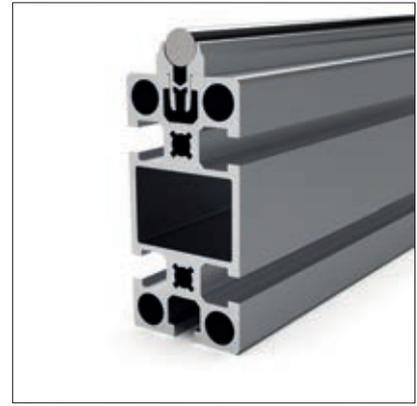
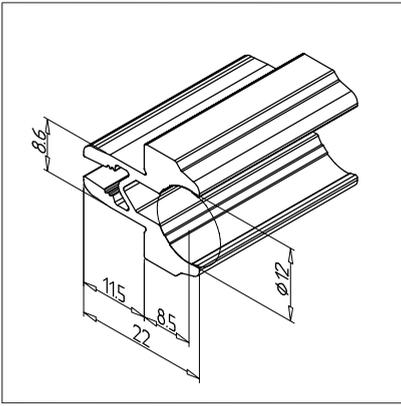
- All MiniTec-linear guides LR 12
- Linear guides with ball or sliding bushings
- Mechanical elements or drive elements

### ASSEMBLY

- Press shaft into supporting profile with appropriate tool (plastic mallet)
- For guides  $L > 6000$  mm assemble shaft with offset joints

## Shaft supporting profile LR 12

Part No. 28.0002/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, extruded, anodized E6/EV1
- Weight = 0.370 kg/m
- Bar length = 6 m

### APPLICATIONS

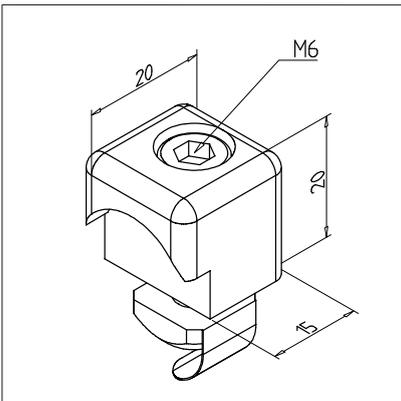
- MiniTec linear guides LR/LG

### ASSEMBLY

- Press into the groove of rail profile
- If necessary clamp with set screw M5 x 10 in position
- Hammer the shaft into the rod holder profile with a plastic hammer

## Shaft retention device

Part No. 28.0052/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, Pressure die-casting, powder-coated, grey
- With fastening material steel, zinc plated
- Stainless version **part no. 28.0053/0**
- Weight = 0.026 kg/piece

### APPLICATIONS

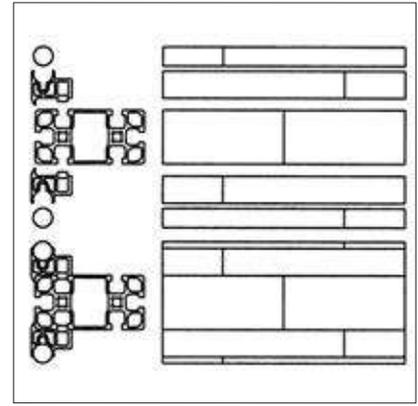
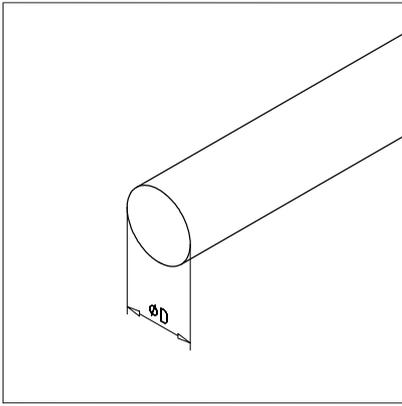
- Axial fastening of shafts in dynamically stressed linear guides

### ASSEMBLY

- Fasten the retention device at both shaft ends with fastening kit
- No machining required
- The shaft carrier profile and shafts must be 15 mm shorter than the carrier profile

## Shaft D 16 mm, h6 CF 53

Part No. 17.1743/0



### TECHN. DATA / ITEMS SUPPLIED

- Steel, pulled, hardened, polished
- Cf.53, hardened to  $62 \pm 4$  HRC, polished h6
- Weight = 1.587 kg/m
- Bar length = 6 m

### APPLICATIONS

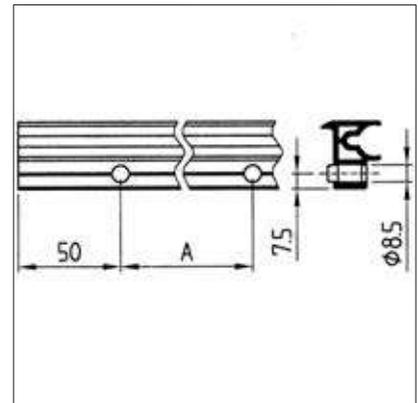
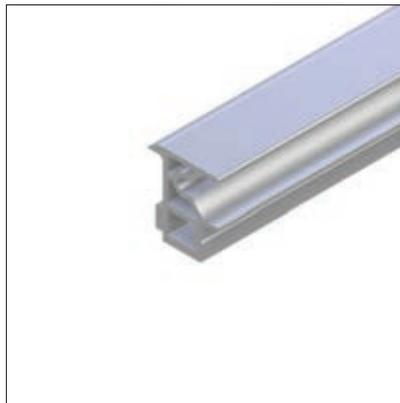
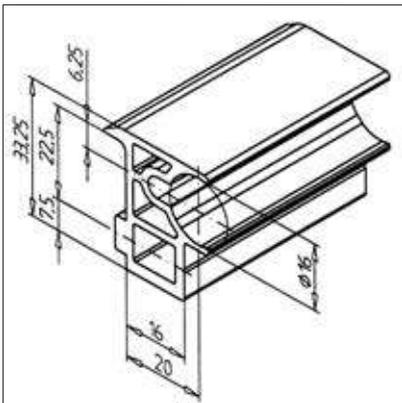
- MiniTec linear guide LR 16
- Linear guides with ball or sliding bushings
- Mechanical elements or drive elements

### ASSEMBLY

- Press shaft into supporting profile with appropriate tool (plastic mallet)
- For guides  $L > 6000$  mm assemble shaft with offset joints

## Shaft supporting profile LR 16

Part No. 28.0019/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, extruded, anodized E6/EV1
- Please order design with bore at **part no. 28.0019/1**  
grid dimension  $A = 250$  mm
- Weight = 0.845 kg/m
- Bar length = 6 m

### APPLICATIONS

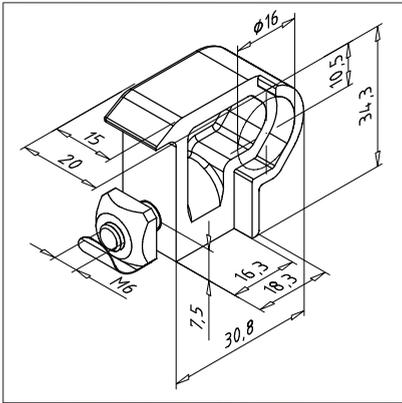
- MiniTec linear guide LR16

### ASSEMBLY

- Bore  $\phi 8.5$  in the shaft supporting profile
- Recommended distance: 50 mm from the edge, then approximately every 200 - 300 mm
- Fasten to the support profile using cylinder screw M8 x 30 and sliding nut M8
- Hammer the shaft into the rod holder profile with a plastic hammer

## Shaft retention device left LR 16

Part No. 28.0809/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, Pressure die-casting, powder-coated, grey
- With fastening material steel, zinc plated
- Weight = 0.037 kg/piece

### APPLICATIONS

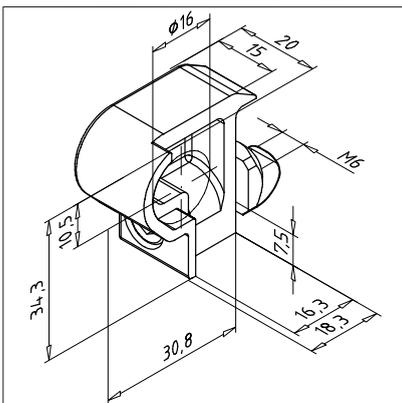
- Axial fastening of shafts in dynamically stressed linear guides

### ASSEMBLY

- Fasten the retention device at both shaft ends with fastening kit
- No machining required
- The shaft carrier profile and shafts must be 15 mm shorter than the carrier profile

## Shaft retention device right LR 16

Part No. 28.0808/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, Pressure die-casting, powder-coated, grey
- With fastening material steel, zinc plated
- Weight = 0.037 kg/piece

### APPLICATIONS

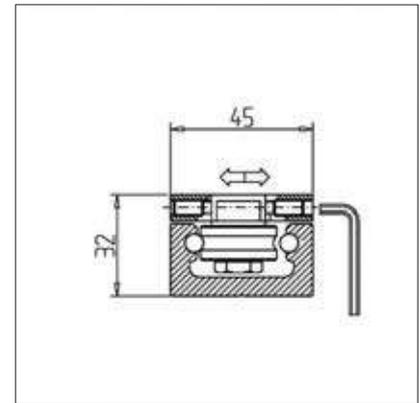
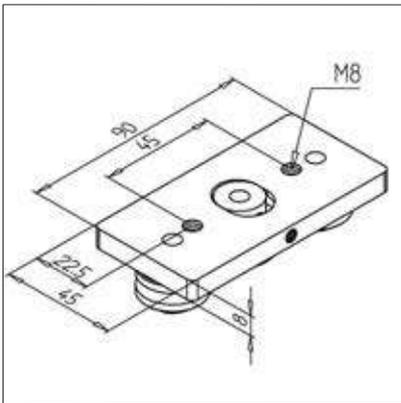
- Axial fastening of shafts in dynamically stressed linear guides

### ASSEMBLY

- Fasten the retention device at both shaft ends with fastening kit
- No machining required
- The shaft carrier profile and shafts must be 15 mm shorter than the carrier profile

## Slide LR 6 compact

Part No. 28.0140/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- 3 double row casters LR 6
- Installed with concentric mounting bolts

### Corrosion-resistant version Part no. 28.0148/0

- Weight = 0.194 kg/piece

### APPLICATIONS

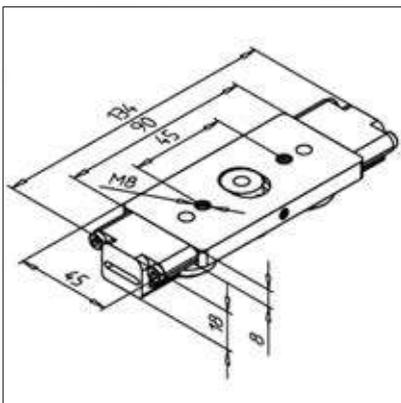
- MiniTec linear guide systems LR 6
- Handling devices
- Guide large drawers
- Doors
- Rail **part no. 28.0119/0**

### ASSEMBLY

- Slip slide onto rail
- Adjust casters with an Allen wrench SW 2.5 free play

## Slide LR 6 Z compact

Part No. 28.0520/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- Aluminum carriage plate, machined on all sides
- 3 double row casters LR 6
- Installed with concentric mounting bolts
- Stainless version **part no. 28.0524/0**
- Weight = 0.192 kg/piece

### APPLICATIONS

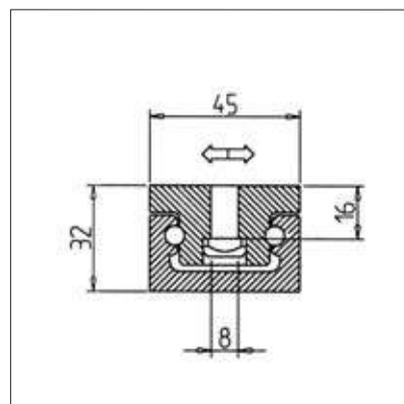
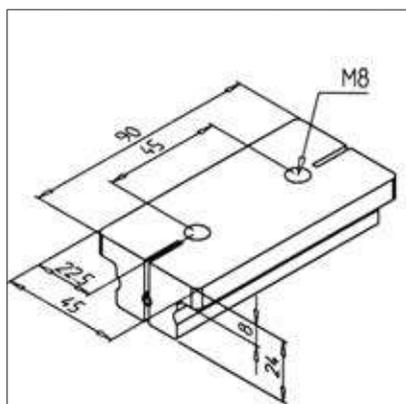
- MiniTec linear guide systems LR 6
- Material-handling in areas with shortage of space
- Fitting rail LR6 compact **part no. 28.0119/0** and Timing belt pulley LR6

### ASSEMBLY

- Slip slide onto rail
- Set the caster wheel with Allen wrench SW2 SW2.5 without play
- Set up the load to be carried on existing threads M8

## Slide LR 6 compact

Part No. 28.0127/0



### TECHN. DATA / ITEMS SUPPLIED

- PE-UHMW, black
- With square nut M8, steel zinc plated
- Weight = 0.068 kg/piece

### APPLICATIONS

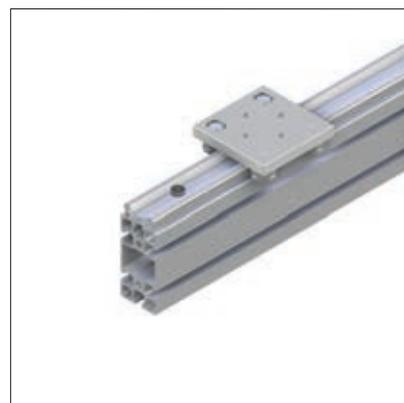
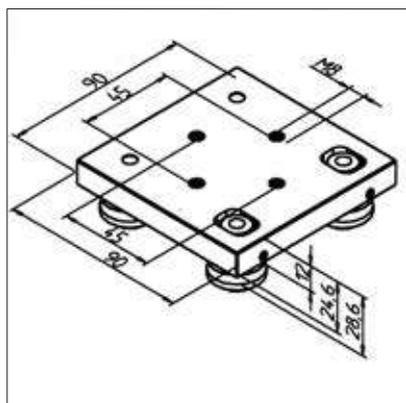
- Handling devices
- Guide large drawers
- Doors
- Rail **part no. 28.0119/0**

### ASSEMBLY

- Slip slide onto rail
- Adjust slide clearance with hexagon key

## Slide LR 6

Part No. 28.0138/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- 4 double row casters LR 6
- Installed with concentric mounting bolts
- Stainless version **part no. 28.0139/0**
- Weight = 0.400 kg/piece

### APPLICATIONS

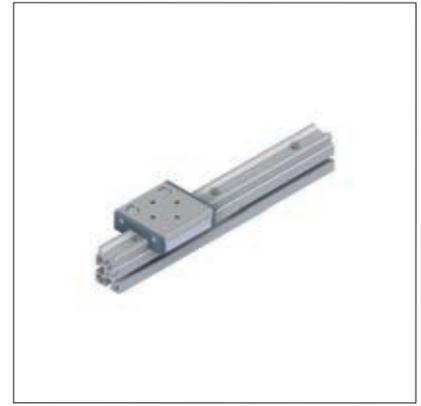
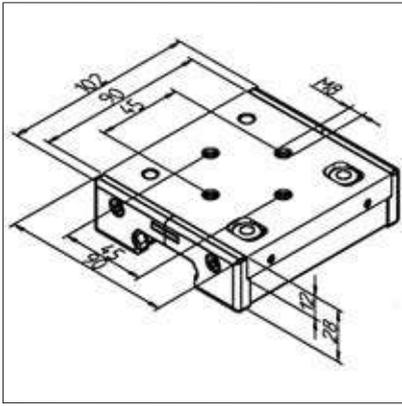
- MiniTec linear guide systems LR 6
- Handling devices
- Doors
- For rail **part no. 28.0525/0**

### ASSEMBLY

- Slip slide onto rail
- Adjust casters with an Allen wrench SW 2.5 free play
- Tighten casters with 15 Nm
- When used in extreme environment, use slide LR6 with cover, **part no. 28.0138/1**

## Slide LR 6 with cover

Part No. 28.0138/1



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- 4 double row casters LR 6
- Installed with concentric mounting bolts
- Covers with lubricating felt
- Stainless version **part no. 28.0139/1**
- Weight = 0.458 kg/piece

### APPLICATIONS

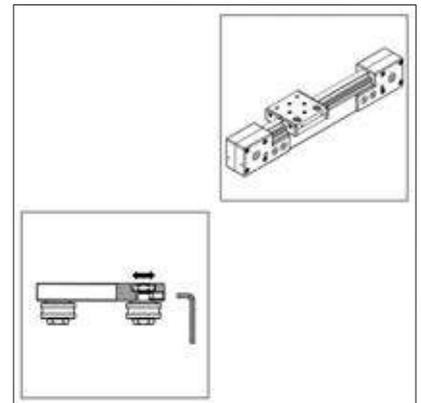
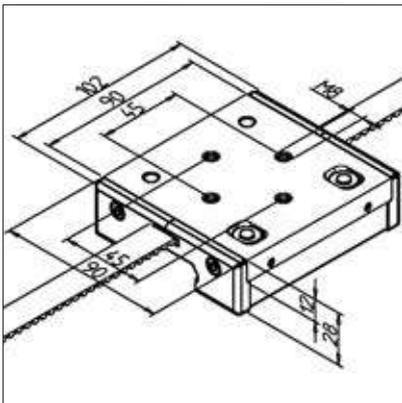
- MiniTec linear guide systems LR 6
- Handling devices
- Guide large drawers
- Doors
- For rail **part no. 28.0525/0**

### ASSEMBLY

- Slip slide onto rail
- Adjust casters with an Allen wrench SW 2.5 free play
- Tighten casters with 15 Nm
- Saturate greasing felts with appropriate oil

## Slide LR 6 Z

Part No. 28.0138/2



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- 4 double row casters LR 6
- Installed with concentric mounting bolts
- Covers with lubricating felt
- Integrated admission for timing belts
- Stainless version **part no. 28.0139/2**
- Weight = 0.502 kg/piece

### APPLICATIONS

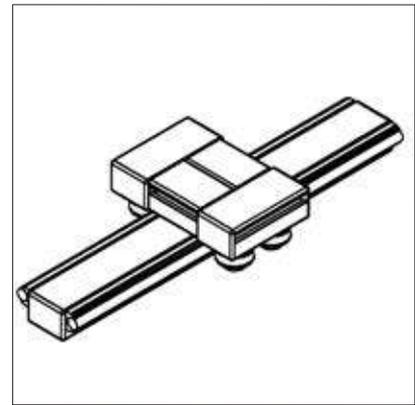
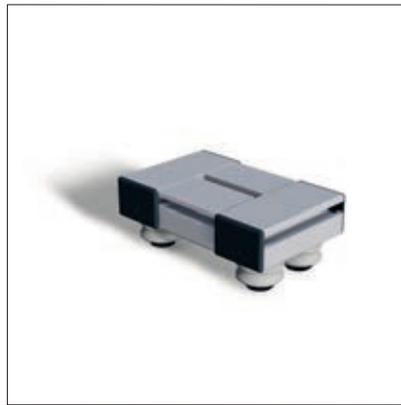
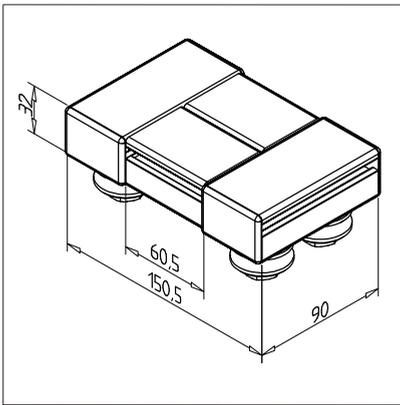
- MiniTec linear guide systems LR 6
- Handling devices
- For rail **part no. 28.0525/0**

### ASSEMBLY

- Slip slide onto rail
- Adjust casters with an Allen wrench SW 2.5 free play
- Tighten casters with 15 Nm
- Insert the timing belt into the vehicle and fasten it
- Installed cover caps

## Slide LW 32

Part No. 28.0088/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- Fully mounted carriage
- 2 concentric and 2 eccentric bearing units
- End caps
- Stainless version **part no. 28.0088/1**
- Weight = 1.060 kg/piece

### APPLICATIONS

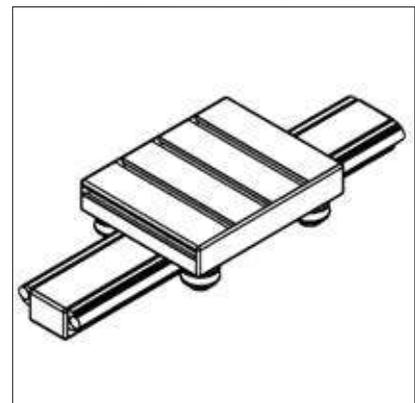
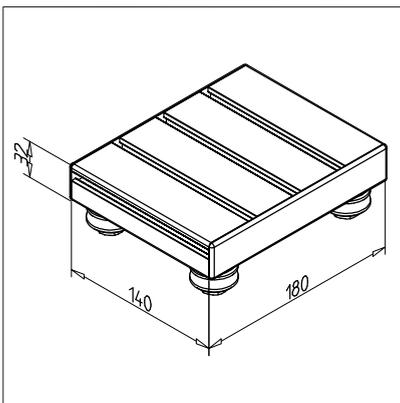
- Handling devices
- Measuring devices
- Slide units
- For rails 19 and 32

### ASSEMBLY

- Slip slide on rail 19 or 32; adjust clearance with eccentric bush

## Slide LW 32-E

Part No. 28.0089/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- Fully mounted carriage
- 2 concentric and 2 eccentric bearing units
- End caps
- Stainless version **part no. 28.0089/1**
- Weight = 1.920 kg/piece

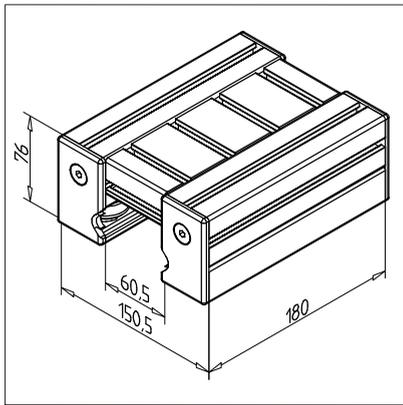
### APPLICATIONS

- 1- or multi-axis guides
- Handling devices
- Measuring devices
- For rails 19 and 32

### ASSEMBLY

- Slip slide on rail 19 or 32; adjust clearance with eccentric bush

## Slide LW 45



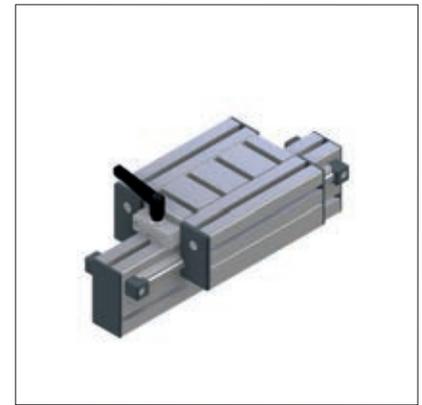
### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- Fully mounted carriage
- 2 concentric and 2 eccentric bearing units
- End caps LR and 2 cover profiles LR
- Stainless version **part no. 28.0091/3**
- Weight = 2.260 kg/piece



### APPLICATIONS

- 1- or multi-axis guides
- Linear robots
- Handling devices
- Measuring devices
- For rails 45, 45 x 90 H, 45 x 180 H and 135 H

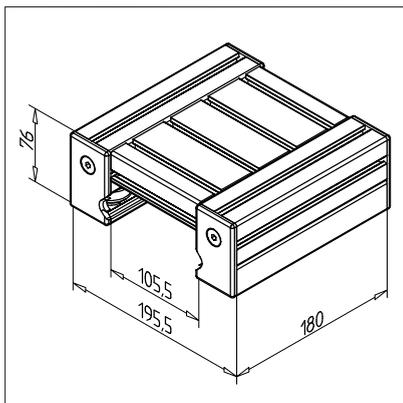


Part No. 28.0091/0

### ASSEMBLY

- Assemble slide on rail 45 or 45 x 90 H, adjust clearance with eccentric bush
- Install the cover and lubrication system
- Slide clamping unit **part no. 28.0270/0**

## Slide LW 90



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- Fully mounted carriage
- 2 concentric and 2 eccentric bearing units
- End caps LR and Cover profiles LR
- Stainless version **part no. 28.0092/2**
- Weight = 2.720 kg/piece



### APPLICATIONS

- 1- or multi-axis guides
- Linear robots
- Handling devices
- Measuring devices
- For rails 45 x 90 F, 90 x 90, 90 x 180 H



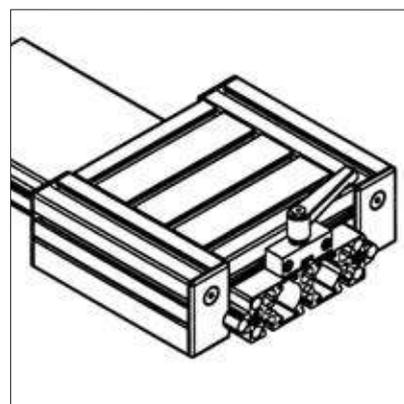
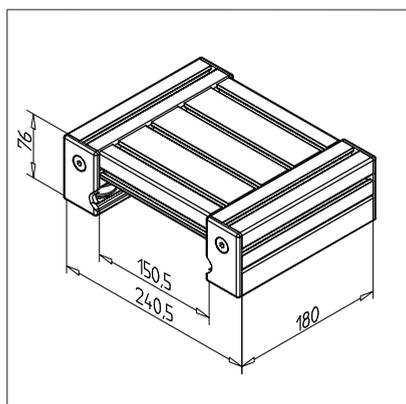
Part No. 28.0092/0

### ASSEMBLY

- Assemble slide on rail 45 x 90 F, rail 90 or rail 90 x 180 H; adjust clearance with eccentric bush
- Install the cover and lubrication system
- Slide clamping unit **part no. 28.0270/0**

## Slide LW 135

Part No. 28.0084/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- Fully mounted carriage
- 2 concentric and 2 eccentric bearing units
- End caps LR and Cover profiles LR
- Stainless version **part no. 28.0084/1**
- Weight = 3.150 kg/piece

### APPLICATIONS

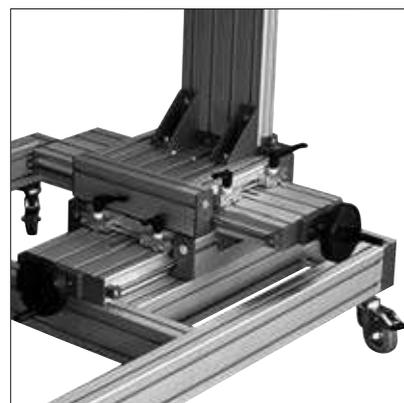
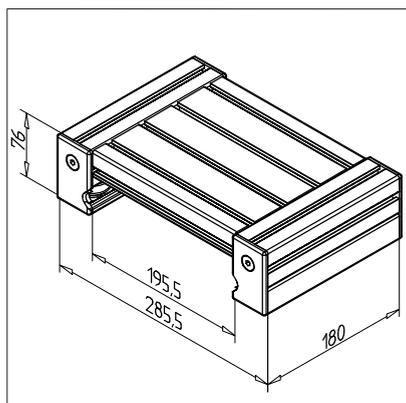
- 1- or multi-axis guides
- Linear robots
- Handling devices
- Measuring devices
- For rails 135 F

### ASSEMBLY

- Assemble slide on rail 45 x 135; adjust clearance with eccentric bush
- Install the cover and lubrication system
- Slide clamping unit **part no. 28.0270/0**

## Slide LW 180

Part No. 28.0087/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- Fully mounted carriage
- 2 concentric and 2 eccentric bearing units
- End caps LR and Cover profiles LR
- Stainless version **part no. 28.0087/1**
- Weight = 3.590 kg/piece

### APPLICATIONS

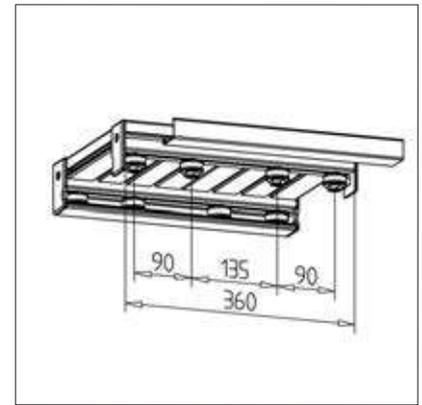
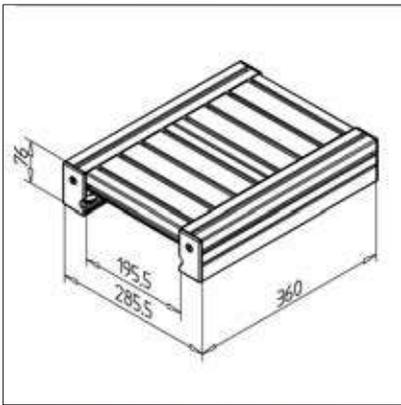
- 1- or multi-axis guides
- Linear robots
- Handling devices
- Measuring devices
- For rails 45 x 180 F and 90 x 180 F

### ASSEMBLY

- Assemble slide on rail 90 x 180; adjust clearance with eccentric bush
- Install the cover and lubrication system
- Slide clamping unit **part no. 28.0270/0**

## Slide LW 180 with 8 bearings

Part No. 28.0087/3



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- Fully mounted carriage
- With 8 concentric and 8 eccentric bearing units
- End caps LR and Cover profiles LR
- Stainless version **part no. 28.0087/1**
- Weight = 7.379 kg/piece

### APPLICATIONS

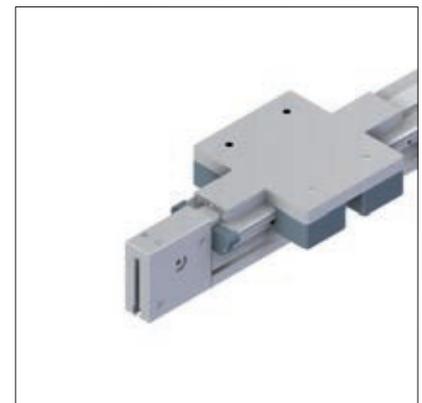
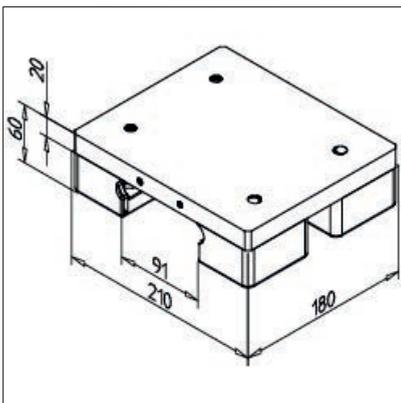
- 1- or multi-axis guides
- Linear robots
- Handling devices
- Measuring devices
- For rails 45 x 180 F and 90 x 180 F

### ASSEMBLY

- Assemble slide on rail 90 x 180; adjust clearance with eccentric bush
- Install the cover and lubrication system
- Slide clamping unit **part no. 28.0270/0**

## Slide LR 16 - 45

Part No. 28.0810/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- 2 concentric and 2 eccentric bearing units
- Weight = 3.663 kg/piece

### APPLICATIONS

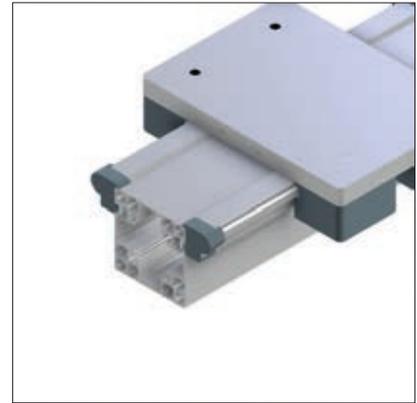
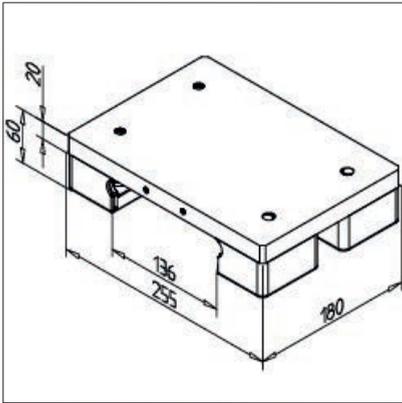
- 1- or multi-axis guides
- Linear robots
- Handling devices
- Measuring devices
- For rail LR16 45 x 90 H

### ASSEMBLY

- Push the trolley onto the rails, adjust for zero play with eccentric fastening set
- Install the cover and lubrication system

## Slide LR 16 - 90

Part No. 28.0811/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- Fully mounted carriage
- 2 concentric and 2 eccentric bearing units
- Weight = 4.101 kg/piece

### APPLICATIONS

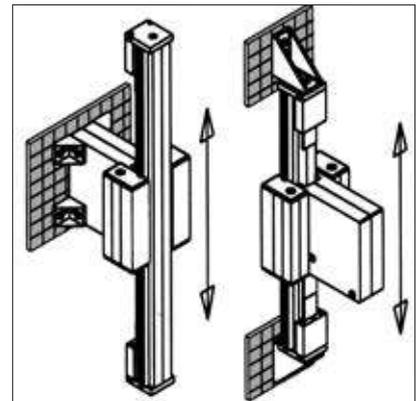
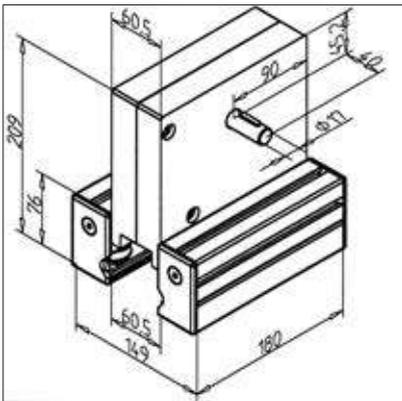
- 1- or multi-axis guides
- Linear robots
- Handling devices
- Measuring devices
- For rail LR16 90 and LR16 90x180 H

### ASSEMBLY

- Push the trolley onto the rails, adjust for zero play with eccentric fastening set
- Install the cover and lubrication system

## Belt drive 45

Part No. 28.0248/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- Shaft end  $\varnothing$  17 mm for motor connection
- 2 idler pulleys aluminium, integrated in linear slide LW 45
- Weight = 6.320 kg/piece

### APPLICATIONS

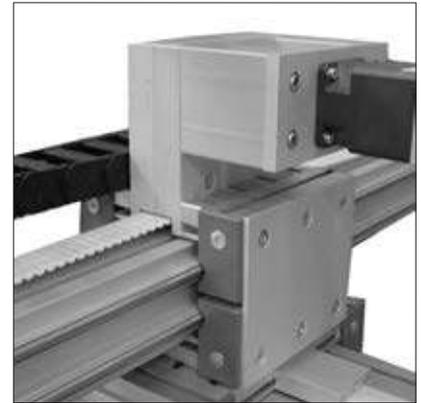
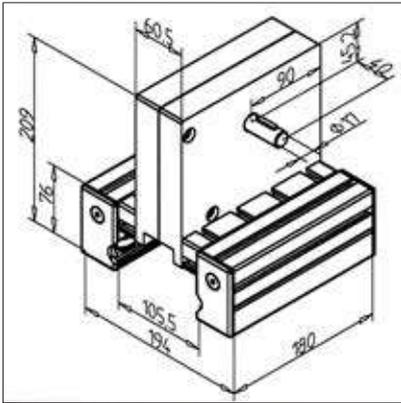
- MiniTec linear guides LR with extremely long travels, z-axis
- Use with rail 45, 45 x 90 H, 45 x 135 H and 45 x 180 H

### ASSEMBLY

- Guide the timing belt through the timing belt drive, slide it onto the rail and adjust it without play
- Fix timing belt end to rail end with timing belt tensioner **part no. 28.0090/0** and fastening plate for rail 45 **part no. 28.0054/0** or for rail 45 x 90 H **part no. 28.0056/0**
- Tighten the timing belt
- Belt length: Rail length + 212 mm

## Belt drive 90

Part No. 28.0249/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- Shaft end  $\varnothing$  17 mm for motor connection
- 2 idler pulleys aluminium, integrated in linear slide LW 90
- Weight = 6.789 kg/piece

### APPLICATIONS

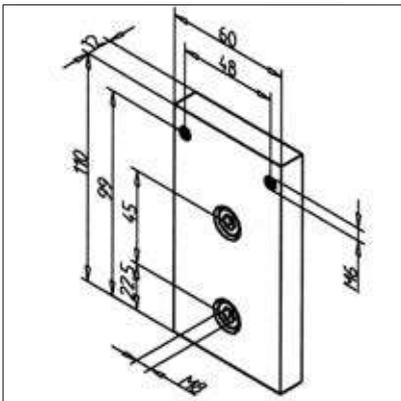
- MiniTec linear guides LR with extremely long travels, z-axis
- Use with rail 45 x 90 F, rail 90 or 90 x 180 H

### ASSEMBLY

- Guide the timing belt through the timing belt drive, slide it onto the rail and adjust it without play
- Fix timing belt end to rail end with timing belt tensioner **part no. 28.0090/0** and fastening plate for rail 90 **part no. 28.0057/0** or for rail 45 x 90 F **part no. 28.0055/0**
- Tighten the timing belt
- Belt length: Rail length + 212 mm

## Fastening kit 45/90H for timing belt tensioner

Part No. 28.0056/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- With fastening material steel, zinc plated
- Weight = 0.090 kg/piece

### APPLICATIONS

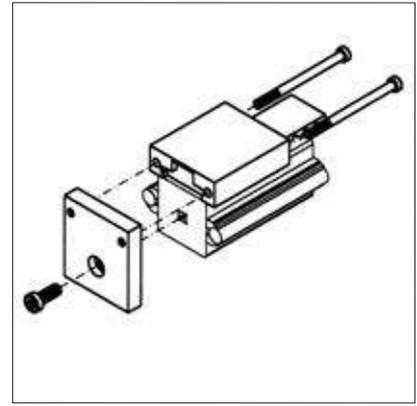
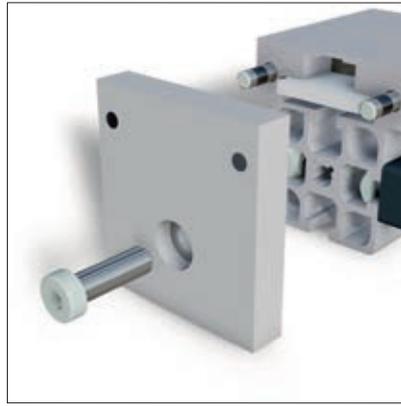
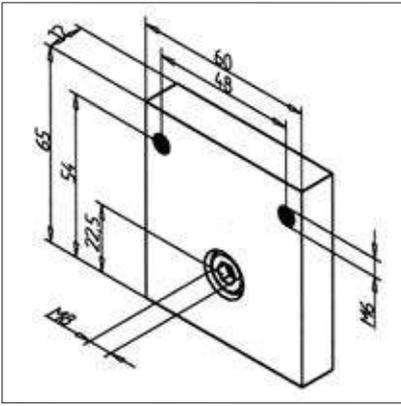
- For each timing belt tensioner one fastening kit is necessary
- Connection of timing belt tensioner to rail 45 x 90 H in connection with timing belt drive

### ASSEMBLY

- Fasten with supplied hardware to the end of the rail, then introduce thread M8
- Install timing belt tensioner

## Fastening kit 45 for timing belt tensioner

Part No. 28.0054/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- With fastening material steel, zinc plated
- Weight = 0.090 kg/piece

### APPLICATIONS

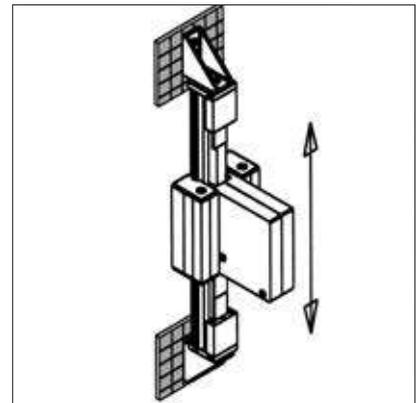
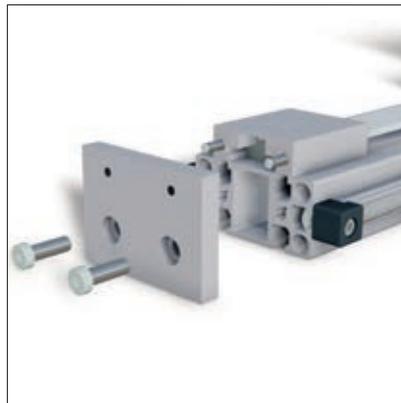
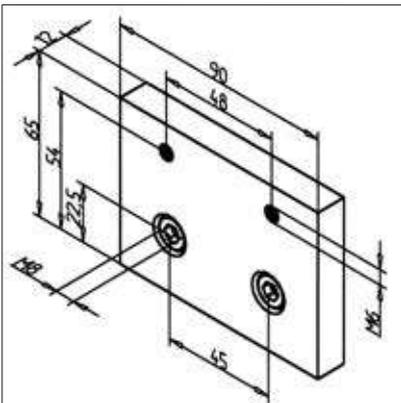
- In connection with belt drive
- For each timing belt tensioner one fastening kit is necessary
- Connection of timing belt tensioner to rail 45

### ASSEMBLY

- Fasten with supplied hardware to the end of the rail, then introduce thread M8
- Install timing belt tensioner

## Fastening kit 45/90F for timing belt tensioner

Part No. 28.0055/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- With fastening material steel, zinc plated
- Weight = 0.090 kg/piece

### APPLICATIONS

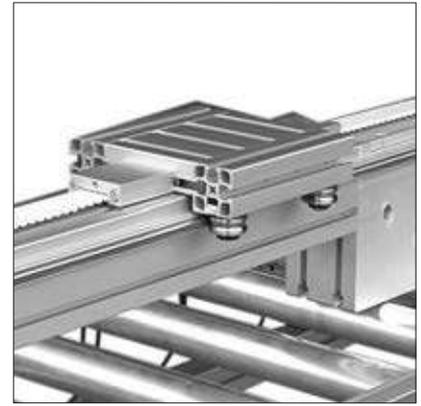
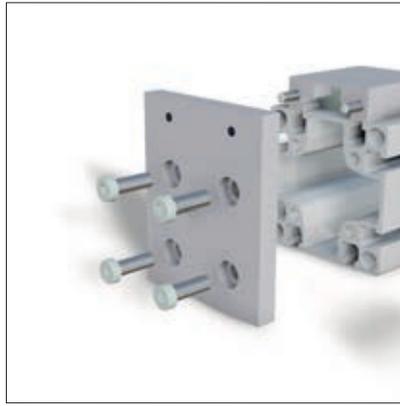
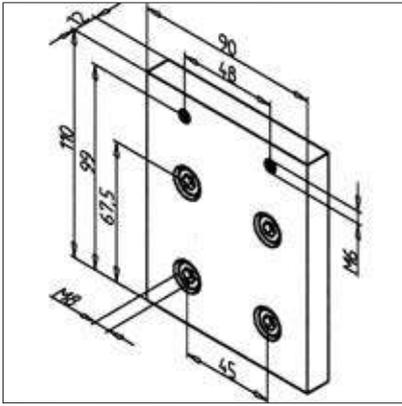
- For each timing belt tensioner one fastening kit is necessary
- Connection of timing belt tensioner to rail 45 x 90 F in conjunction with timing belt drive

### ASSEMBLY

- Fasten with supplied hardware to the end of the rail, then introduce thread M8
- Install timing belt tensioner

## Fastening kit 90 for timing belt tensioner

Part No. 28.0057/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- With fastening material steel, zinc plated
- Weight = 0.090 kg/piece

### APPLICATIONS

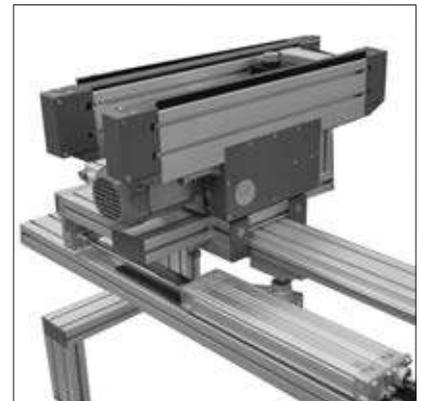
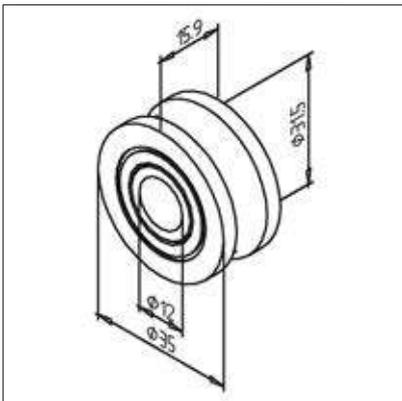
- For each timing belt tensioner one fastening kit is necessary
- Connection of timing belt tensioner to rail 90 in conjunction with timing belt drive

### ASSEMBLY

- Fasten with supplied hardware to the end of the rail, then introduce thread M8
- Install timing belt tensioner

## Ball bearing LR 12

Part No. 28.0001/0



### TECHN. DATA / ITEMS SUPPLIED

- Steel, hardened, polished
- 2-row angular ball bearing, wave groove executed as Gothic arch
- For shaft  $\varnothing$  12 mm
- Rated loads:  
dyn. C = 10.5 kN  
stat. C<sub>0</sub> = 6.0 kN
- Stainless version **part no. 28.0001/1**
- Weight = 0.068 kg/piece

### APPLICATIONS

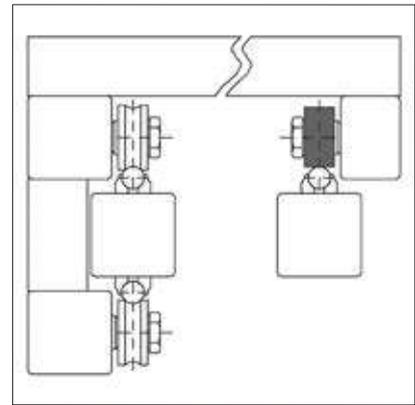
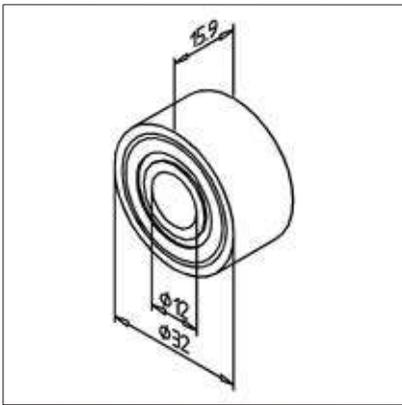
- All MiniTec-linear guides LR 12

### ASSEMBLY

- Fastening kit LRK **part no. 28.0021/0** or LRE **part no. 28.0022/0**

## Ball bearing LR 12 L

Part No. 28.0005/0



### TECHN. DATA / ITEMS SUPPLIED

- Steel, hardened, polished
- Double-row angular contact bearing
- Rated load:  
dyn. C = 8.6 kN  
stat. C<sub>0</sub> = 5.1 kN
- Weight = 0.053 kg/piece

### APPLICATIONS

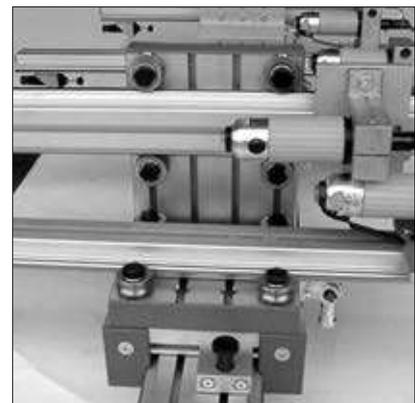
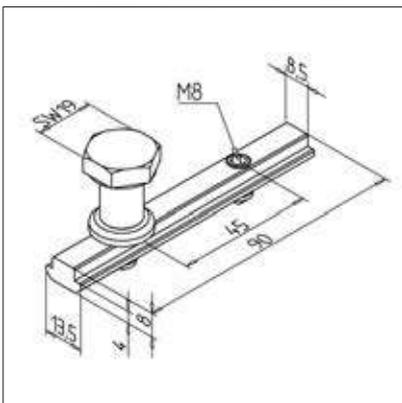
- Construction of MiniTec linear guidance systems with fixed and floating bearing block
- Compensation of distance deviations in parallel linear systems

### ASSEMBLY

- Fastening kit LRK **part no. 28.0021/0** or LRE **part no. 28.0022/0**

## Fastening kit LRK

Part No. 28.0021/0



### TECHN. DATA / ITEMS SUPPLIED

- 1 T-slot bar, steel, zinc plated with set screw
- Bolt M8 concentric, steel, black bronze finish
- Spacer 3.5 mm, polished, steel, black bronze finish
- Stainless version **part no. 28.0021/1**
- Weight = 0.100 kg/piece

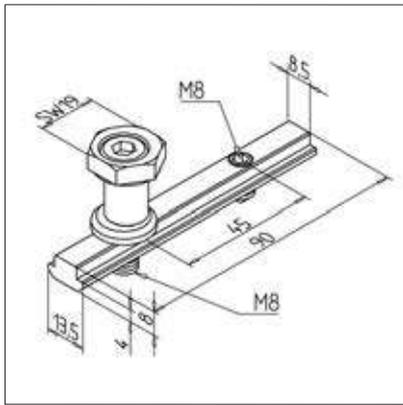
### APPLICATIONS

- MiniTec-linear guides LR 12
- Concentric attachment of ball bearings LR 12

### ASSEMBLY

- Fit the clamping strips into the underside of the profile of the carriage plate, the threaded pins being fastened into the center of the carriage
- The two threaded holes M8 without threaded pins are designed to receive the mounting bolts
- Pass the bolt through the bearing hole, place the spacer washer, and tighten with key SW 19 to the clamping strip
- Recommended torque: 25 Nm

## Fastening kit LRE



### TECHN. DATA / ITEMS SUPPLIED

- 1 T-slot bar, steel, zinc plated with set screw
- Eccentric bushing, steel, black bronze finish
- Bolt M8 concentric, steel, black bronze finish
- Spacer 3.5 mm, polished, steel, black bronze finish
- Stainless version **part no. 28.0022/1**
- Weight = 0.100 kg/piece



### APPLICATIONS

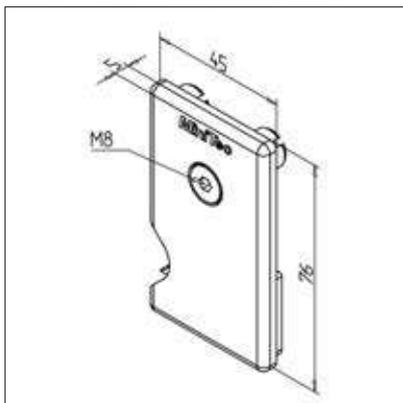
- MiniTec-linear guides LR 12
- Concentric attachment of ball bearings LR 12



### ASSEMBLY

- Fit the clamping strip similar to LRK
- Insert bolt M8 into the eccentric bushing pre-installed in the bearing bore and place the spacer washer. Pre-tighten the bolt with the Allen wrench SW4 onto the clamping bar
- Adjust bush with ring spanner width 19 mm (turn for freedom from clearance with 0,9 - 1 Nm) and fix bolt
- Recommended torque: 25 Nm

## End cap LR right grey



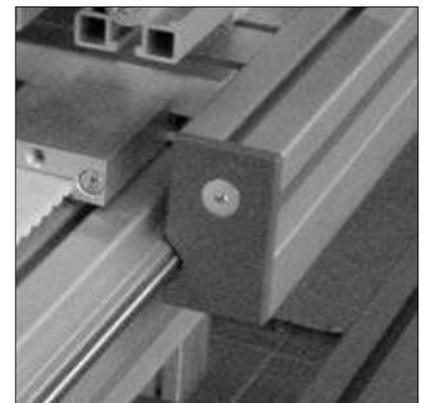
### TECHN. DATA / ITEMS SUPPLIED

- ABS, Injection Mould, grey
- With integrated, sprung wiping and lubrication felt
- Fastening kit
- Also available in black, **part no. 28.0004/0**
- Weight = 0.031 kg/piece



### APPLICATIONS

- All MiniTec-linear guides LR 12



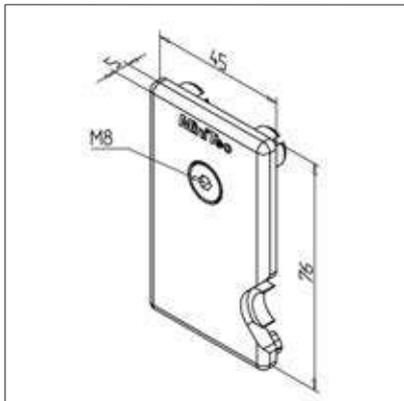
### ASSEMBLY

- Insert the lubricated felts and press fastening peg in profile 45 x 45 of the slide plate
- Fasten with supplied hardware
- Insert cover profile between the end caps
- Clean and soak felt according to implementation conditions or use a spare felt **part no. 28.0004/8**

Part No. 28.0022/0

## End cap LR left grey

Part No. 28.0004/3



### TECHN. DATA / ITEMS SUPPLIED

- ABS, Injection Mould, grey
- With integrated, sprung wiping and lubrication felt
- Fastening kit
- Also available in black, **part no. 28.0004/2**
- Weight = 0.031 kg/piece

### APPLICATIONS

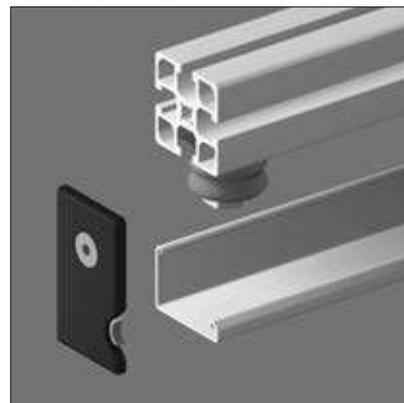
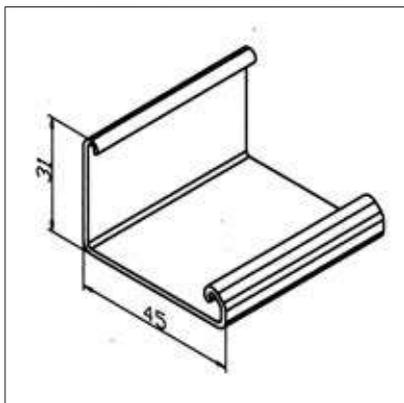
- All MiniTec-linear guides LR 12

### ASSEMBLY

- Insert the lubricated felts and press fastening peg in profile 45 x 45 of the slide plate
- Fasten with supplied hardware
- Insert cover profile between the end caps
- Clean and soak felt according to implementation conditions or use a spare felt **part no. 28.0004/8**

## Cover profile LR

Part No. 28.0049/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, extruded, anodized E6/EV1
- Weight = 0.362 kg/m
- Bar length = 6 m

### APPLICATIONS

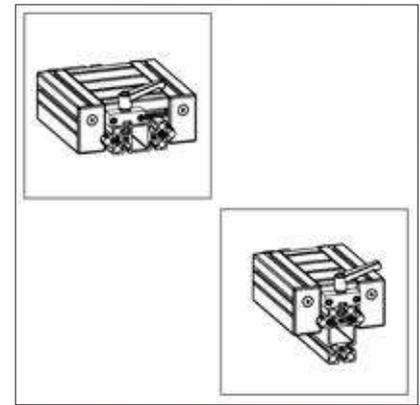
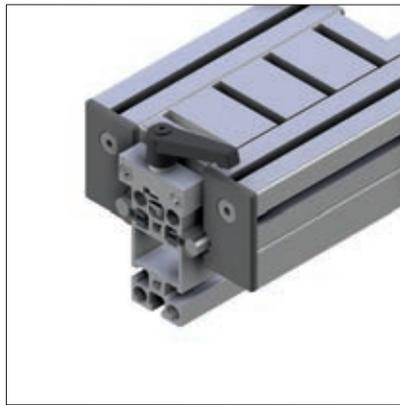
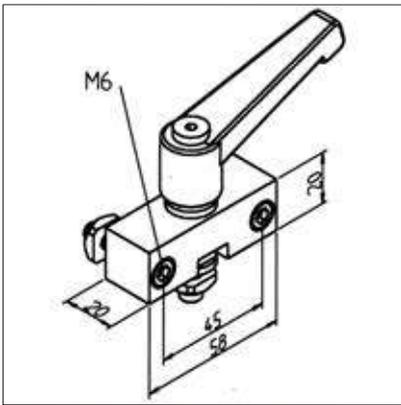
- MiniTec-linear guides LR 12

### ASSEMBLY

- Cut profile according to the length of the slide
- Insert the cover profile between the end caps; insert the felts; fasten the end caps LR on the slide by means of the supplied screws

## Slide clamping unit, top LWG / LWN / LW

Part No. 28.0270/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- With clamping device
- With fastening material steel, zinc plated
- Weight = 0.199 kg/piece

### APPLICATIONS

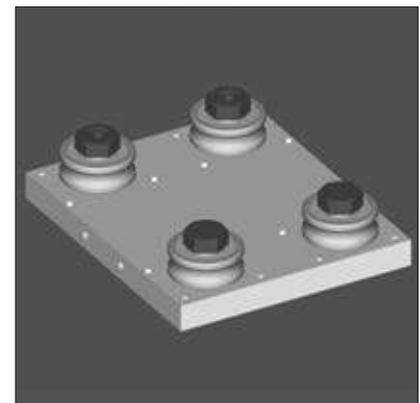
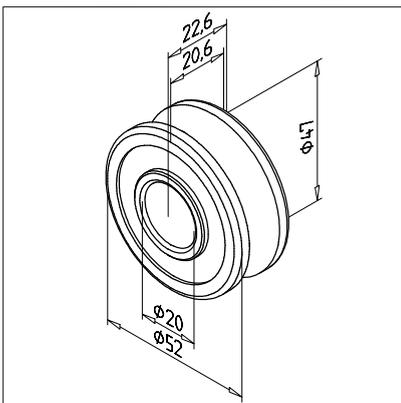
- Clamping of MiniTec slide LW and slides LWN / LWG on rail surface
- Clamping of MiniTec adjusting units

### ASSEMBLY

- Preadjust clamping shaft and lead it in profile groove
- Insert plastic element
- Install the housing block
- Secure clamping lever with installation glue Loctite 243

## Ball bearing LR 16

Part No. 50.1726/0



### TECHN. DATA / ITEMS SUPPLIED

- Steel, hardened, polished
- 2-row angular ball bearing, wave groove executed as Gothic arch
- For shaft  $\varnothing 16$
- Rated load:  
dyn. C = 13.75 kN  
stat. C<sub>0</sub> = 9.05 kN
- Weight = 0.230 kg/piece

### APPLICATIONS

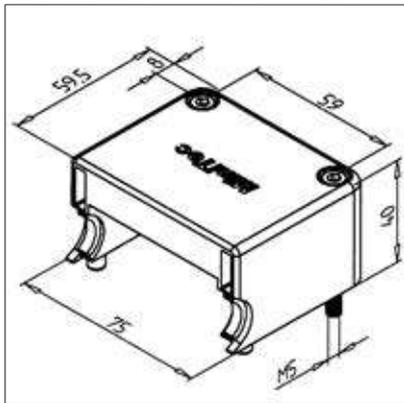
- MiniTec linear guide LR16

### ASSEMBLY

- Fastening using concentric bolts, **part no. 28.0814/0** or adjustable with eccentric bushing **part no. 28.0813/0** and screw M 12x40 **part no. 21.1257/0**

## End cap LR 16

Part No. 28.0815/0



### TECHN. DATA / ITEMS SUPPLIED

- PA, Injection Mould, grey
- With integrated, sprung wiping and lubrication felt
- With fastening material steel, zinc plated
- Weight = 0.075 kg/piece

### APPLICATIONS

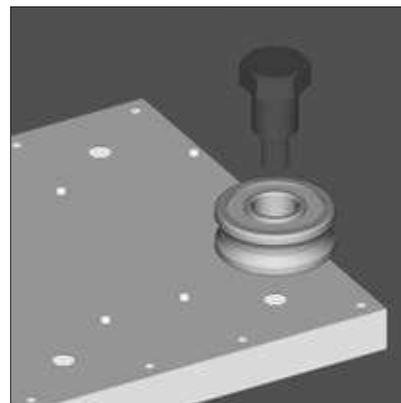
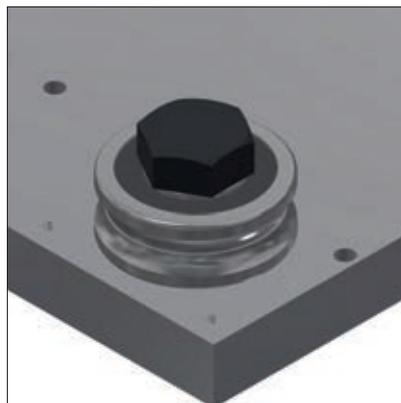
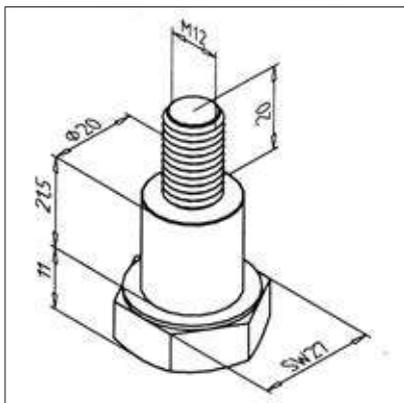
- MiniTec linear guide LR16

### ASSEMBLY

- Fasten with supplied hardware
- Clean and soak fillet according to implementation conditions or spare fillet **part no. 28.0816/0**

## Bolt concentric LR 16

Part No. 28.0814/0



### TECHN. DATA / ITEMS SUPPLIED

- Steel, burnished, black
- Bolt M12 concentric
- Weight = 0.121 kg/piece

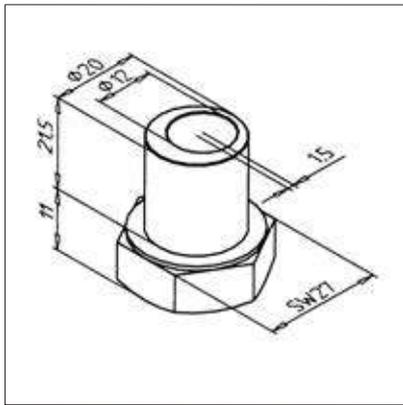
### APPLICATIONS

- MiniTec linear guide LR16
- Concentric mounting of ball bearings LR 16

### ASSEMBLY

- MiniTec linear guides LR 16
- Recommended torque: 50 Nm

## Eccentric bushing LR 16



### TECHN. DATA / ITEMS SUPPLIED

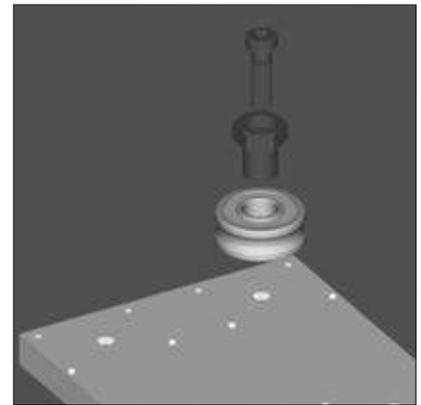
- Steel, burnished, black
- Weight = 0.059 kg/piece



### APPLICATIONS

- MiniTec linear guide LR16
- Eccentric fastening of ball bearings LR 16

Part No. 28.0813/0

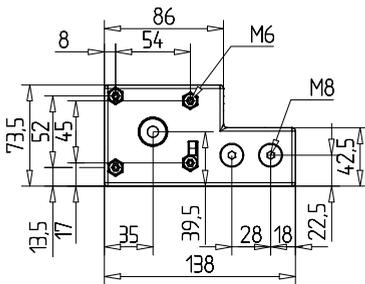
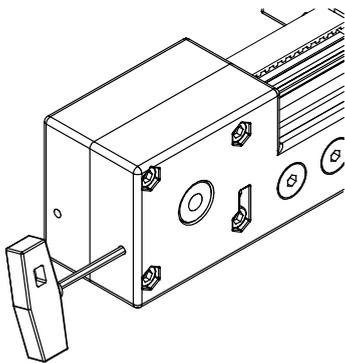
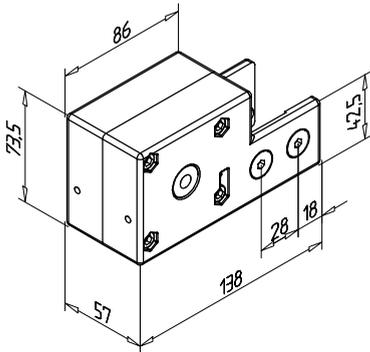


### ASSEMBLY

- Screw M12 x 45 **part no. 21.1157/0** Insert in eccentric bushing and mount loose with bearing
- Adjust the bearing to achieve zero clearance by turning the eccentric bush with the spanner (size 27) (turn back to 0.9 - 1 Nm) and hold the eccentric bush in this position, tighten the bolt
- Recommended torque: 50 Nm

# Timing belt pulley

## LR 6 & LR 6 COMPACT



### Techn. Data/Items supplied

- Aluminum GD, powder coated, grey
- Body complete with pulley

### Application

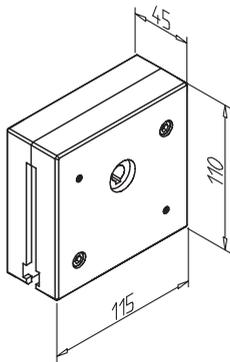
- For MiniTec linear guides LR 6 Z

### Assembly

- Insert sliding nut M8 into rail and pre-position it
- Guide timing belt through deflection
- Slide the deflection onto the end of the rail
- Pre-assemble fastening screws
- Attach timing belt to slide with hexagon socket wrench SW3 to tension the deflection
- Tighten fixing screws

Drill hole for drive shaft	Keyway	Weight	Part no.	Part no. corrosion resistant design
Ø 8 mm		0,96 kg	28.0510/0	28.0509/0
Ø 10 mm	3 mm	0,96 kg	28.0510/1	28.0509/1
Ø 11 mm	4 mm	0,96 kg	28.0510/2	28.0509/2
Ø 12 mm	4 mm	0,96 kg	28.0510/4	28.0509/4
Ø 14 mm	5 mm	0,96 kg	28.0510/3	28.0509/3

## T 45 (LR 12 + LR 16)



### Technical Data/Items Supplied

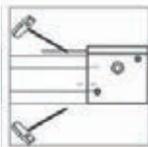
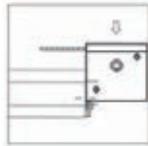
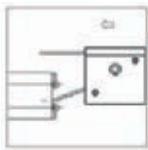
- Anodized aluminum E6/EV1
- Body complete with pulley
- 2 Precision ball bearings

### Application

- For MiniTec Linear Guides LR 12 & LR 16, freely combinable

### Assembly

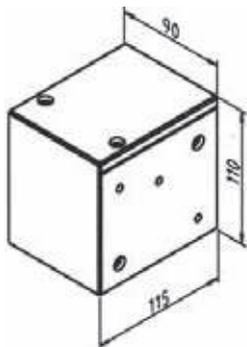
- Rail frontally provided at both ends with thread M8
- Power-lock Fastener Part no. 21.0818/0 screw in
- Guide timing belt through deflection
- Slide the deflector from above over the profile connector
- Tighten power-lock fastener
- Tighten timing belt
- For mounting use the corrosion resistant version power-lock fastener H Part no. 21.1018/1



Drill hole for drive shaft	Keyway	Weight	part no.	Part no. corrosion resistant design
without		1,170 kg	28.0614/0	28.0615/0
Ø 11 mm	4 mm	1,168 kg	28.0614/2	28.0615/2
Ø 12 mm	4 mm	1,168 kg	28.0614/6	28.0615/6
Ø 14 mm	5 mm	1,167 kg	28.0614/3	28.0615/3
Ø 15 mm	5 mm	1,165 kg	28.0614/5	28.0615/5
Ø 16 mm	5 mm	1,165 kg	28.0614/4	28.0615/4

For the connection of motors and encoders we can produce special adapter plates suitable for the application. Please refer part no. 28.0112/0

## T 90 (LR 12 + LR 16)



## Technical Data/Items Supplied

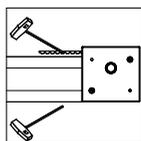
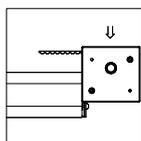
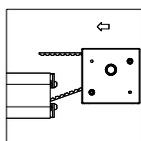
- Anodized aluminum E6/EV1
- Body complete with pulley
- 2 Precision ball bearings
- Top cover mounted

## Application

- For MiniTec-linear guides LR 12, LR 16, LR 45 x 90 F, LR 90, LR 180,

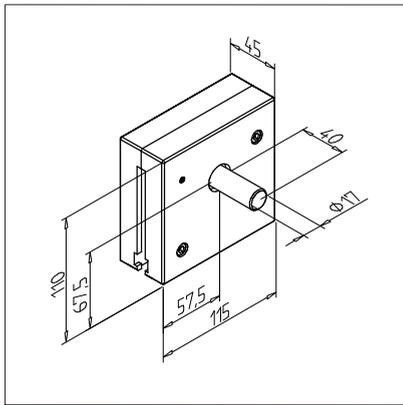
## Assembly

- Rail frontally provided at both ends with thread M8
- Power-lock Fastener Part no. 21.0818/0 screw in
- Guide timing belt through deflection
- Slide the deflector from above over the profile connector
- Tighten profile connectors
- Tighten timing belt
- For mounting use the corrosion resistant version power-lock fastener H Part no. 21.1018/1



Drill hole for drive shaft	Keyway	Weight	part no.	Part no. corrosion resistant design
without		2,800 kg	28.0082/0	28.0045/0
Ø 11 mm	4 mm	2,798 kg	28.0082/2	28.0045/2
Ø 14 mm	5 mm	2,795 kg	28.0082/3	28.0045/3
Ø 16 mm	5 mm	2,789 kg	28.0082/4	28.0045/4
Ø 19 mm	6 mm	2,775 kg	28.0082/5	28.0045/5
Ø 20 mm	6 mm	2,773 kg	28.0082/7	28.0045/7
Ø 24 mm	8 mm	2,164 kg	28.0082/6	28.0045/6

## Timing belt pulley T45 Z



### TECHN. DATA / ITEMS SUPPLIED

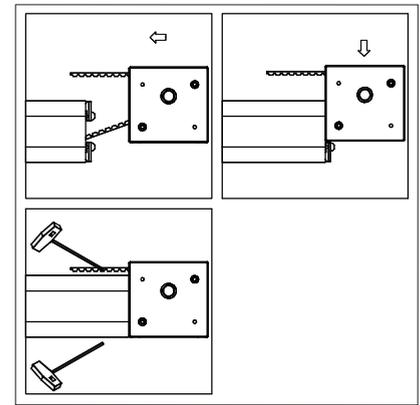
- Housing 2-piece, anodized aluminum
- Connection elements, steel, galvanised
- Aluminum pulley with stainless steel flanges for timing belt 32AT10 19 teeth, effective diameter 60.48 mm  
Required toothed belt length within the deflection 210 mm  
max. torque 70 Nm
- Base body complete with belt pulley and shaft stub
- Drive taps also available in different diameters, lengths and with keyways
- 2 ball-bearings
- Stainless version **part no. 28.0615/1**
- Weight = 1.369 kg/piece



### APPLICATIONS

- All MiniTec linear guides

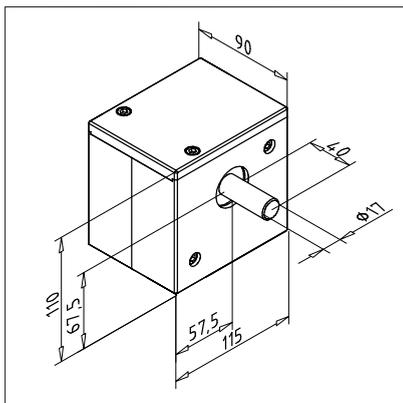
Part No. 28.0614/1



### ASSEMBLY

- Provide rails with thread M8 at both sides, screw in Power lock fastener **part no. 21.1018/0**
- Guide the timing belt through the reverse unit
- Insert pulley unit from top
- Tighten power-lock fastener
- Tighten the timing belt
- For mounting the corrosion-resistant version, use profile connector H **part no. 21.1018/1**

## Timing belt pulley T90Z



### TECHN. DATA / ITEMS SUPPLIED

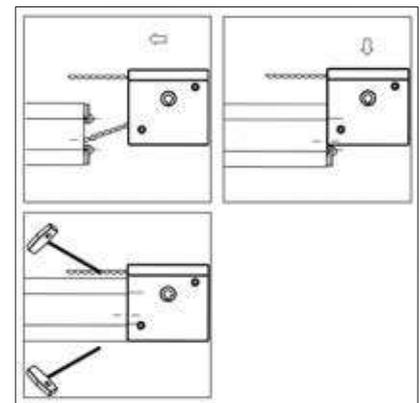
- Housing 3-piece, anodized aluminum
- Connection elements, steel, galvanised
- Aluminum pulley with stainless steel flanges for timing belt 32AT10 19 teeth, effective diameter 60.48 mm  
Required toothed belt length within the deflection 210 mm  
max. torque 130 Nm
- Base body complete with belt pulley and shaft stub
- Drive taps also available in different diameters, lengths and with keyways
- Stainless version **part no. 28.0045/1**
- 2 ball-bearings
- Weight = 2.850 kg/piece



### APPLICATIONS

- All MiniTec linear guides

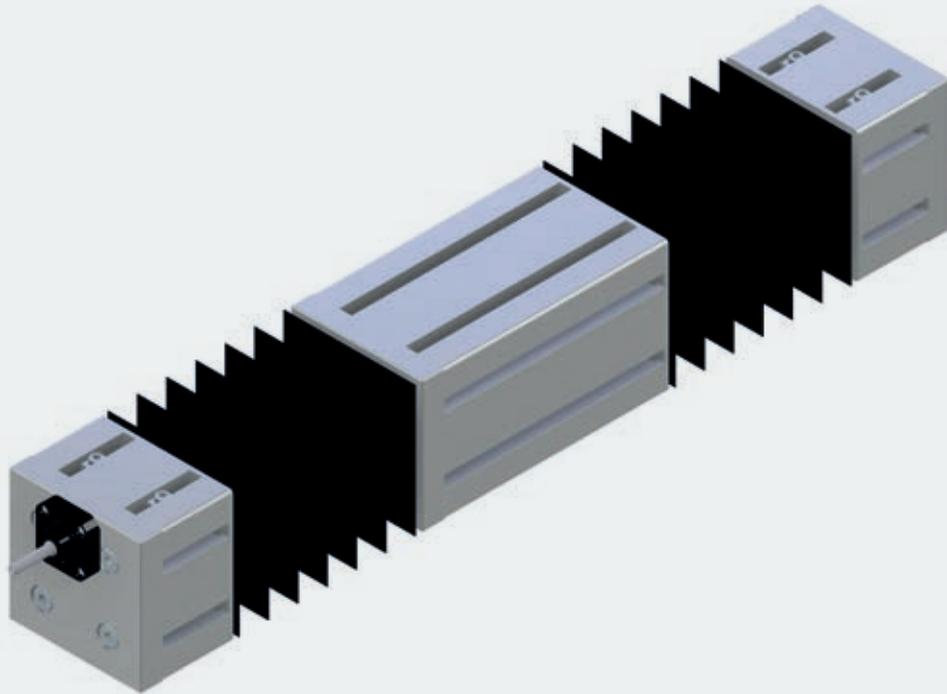
Part No. 28.0082/1



### ASSEMBLY

- Provide rails with thread M8 at both sides, screw in Power lock fastener **part no. 21.1018/0**
- Guide the timing belt through the reverse unit
- Insert pulley unit from top
- Tighten power-lock fastener
- Tighten the timing belt
- For mounting the corrosion-resistant version, use profile connector H **part no. 21.1018/1**

## LB linear system



### The solution for short traversing distances and high stroke frequency

The LB guide is based on LME 20 linear ball bearings, which are incorporated in specially designed holes in our construction profiles. Precision shafts D 20 mm give this guide high load capacity. Especially with short traversing distances and high stroke frequency, the LB guide has significant advantages. Particularly compact and economical guide elements based on our LME series of solid precision ball bearings with integrated sealing rings, which ensure high functional reliability under rough operating conditions.

The MiniTec guides of the LB series are particularly suitable for strokes up to 1000 mm. The modular design gives the designer complete design freedom in a small footprint. The ball bushings with solid outer sheath made of hardened ball bearing steel are directly mounted in the holes Ø 32 mm of the specially designed construction profiles 45 x 135, 45 x 180, 90 x 180, 90 x 45 S and 90 x 90 S.

The axial securing takes place with one-component housing adhesive. The solid ball bushes ensure extreme ease of movement, play-free guidance and low noise with a long service life. When designing LB guide systems, it must be ensured that the shaft deflection does not exceed 0.5 ° due to the load.

Further Technical Data can be found in the [MiniTec linear catalog](#). We also offer the linear guide LB complete with threaded or ball screw. All components are also available in stainless version.

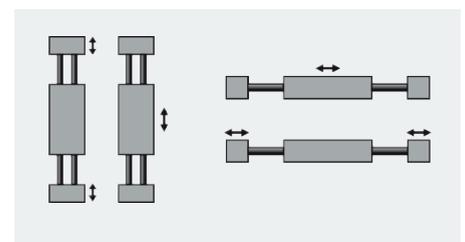
### Calculation of the service life

$$L = \frac{C}{F} \cdot 10^5$$

L = Lifetime

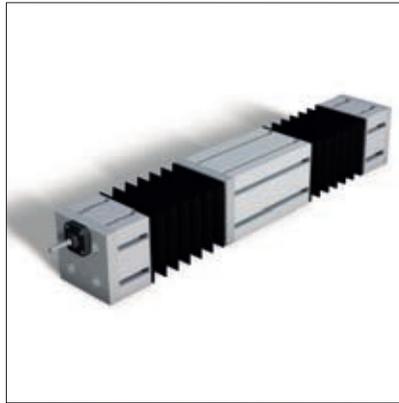
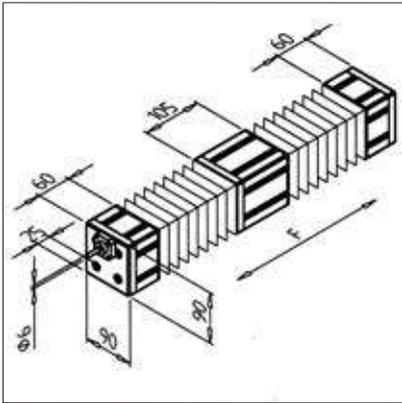
C = dyn. Load rating

F = resulting external forces



## Linear module LB 90

Part No. 28.0178/0



### TECHN. DATA / ITEMS SUPPLIED

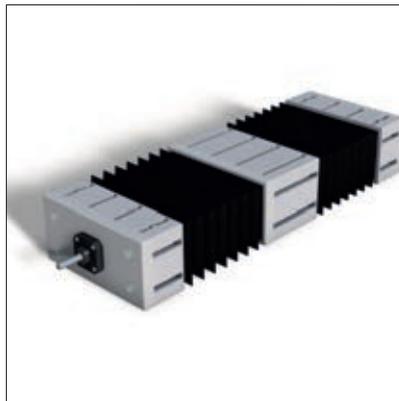
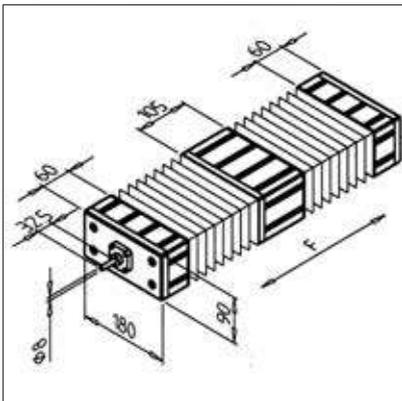
- Aluminium, anodized E6/EV1
- Ready-to-mount linear module of profile 90 x 90
- Drive unit with rolled circulating ball spindle  $\varnothing$  10 mm, incline 3
- Pitch error / 300 mm: 210  $\mu$ m (class Ct10)
- Slide guidance on 4 linear ball bearings with hardened ground precision shafts  $\varnothing$  20 mm, total length max. 760 mm
- Shaft end on the fixed side machined according to customer specifications for engine or crank connection
- Shafts and spindles covered with protective bellows
- Positioning accuracy:  $\pm$  0,1 mm
- Max. load [F] approx. 650 N

### APPLICATIONS

- Handling systems
- Z-axis in portals
- Multiple axis systems
- Grabbing units

## Linear module LB 180

Part No. 28.0179/0



### TECHN. DATA / ITEMS SUPPLIED

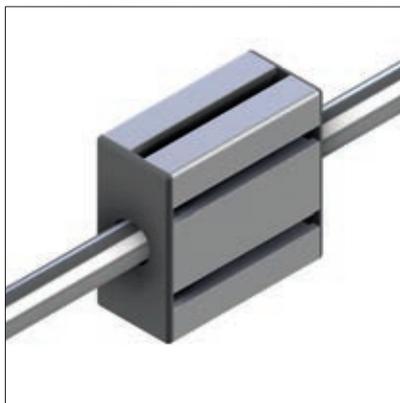
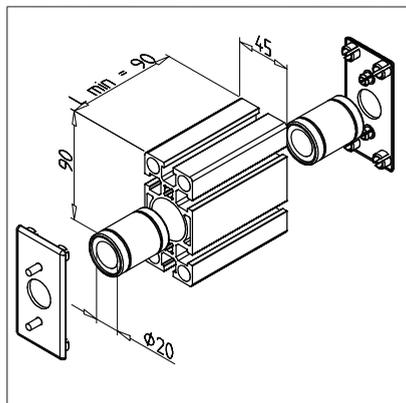
- Aluminium, anodized E6/EV1
- Ready-to-mount linear module of profile 90 x 180
- Drive unit with rolled circulated ball spindle  $\varnothing$  14 mm, incline 4
- Pitch error / 300 mm: 210  $\mu$ m (class Ct10)
- Slide guidance on 4 linear ball bearings with hardened ground precision shafts  $\varnothing$  20 mm, total length max. 950 mm
- Shaft end on the fixed side machined according to customer specifications for engine or crank connection
- Shafts and spindles covered with protective bellows
- Positioning accuracy:  $\pm$  0,1 mm
- Max. load [F] approx. 1,000 N

### APPLICATIONS

- Handling systems
- Z-axis in portals
- Multiple axis systems
- Grabbing units

## Slide LB 45

Part No. 28.0150/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- Standard length (L) 90 mm
- Profile 45 X 90 S
- Fully assembled with 2 ball bearing bushings LME 20 UU
- Profile closed on the front with cover plates LB 45
- **Other lengths on request**
- Weight = 0.550 kg/piece

### APPLICATIONS

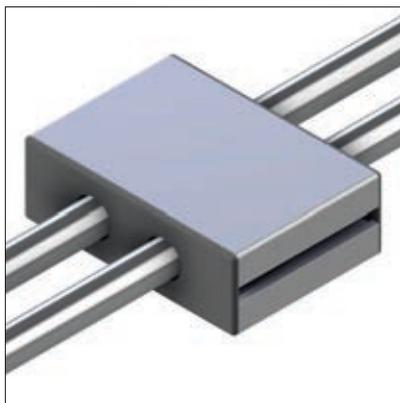
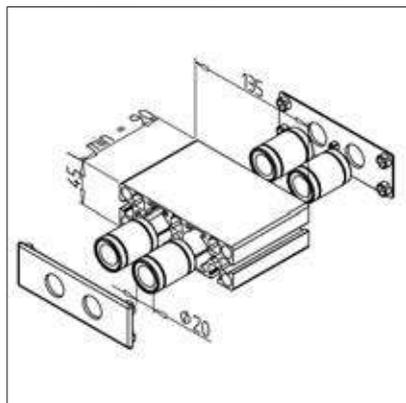
- All MiniTec linear systems LB

### ASSEMBLY

- Lead shaft through slide

## Slide LB 45 x 135

Part No. 28.0155/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- Standard length (L) 90 mm
- Profile 45 x 135
- Fully assembled with 2 ball bearing bushings LME 20 UU
- Profile face covered with end caps LB 45 x 135, grey
- **Other lengths on request**
- Weight = 0.865 kg/piece

### APPLICATIONS

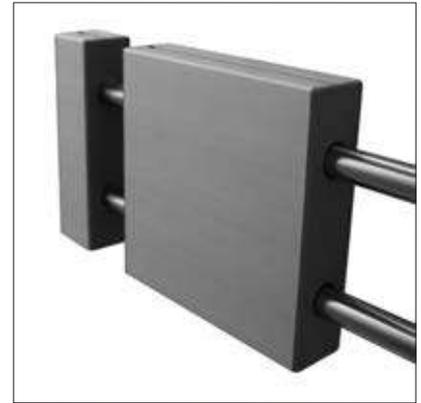
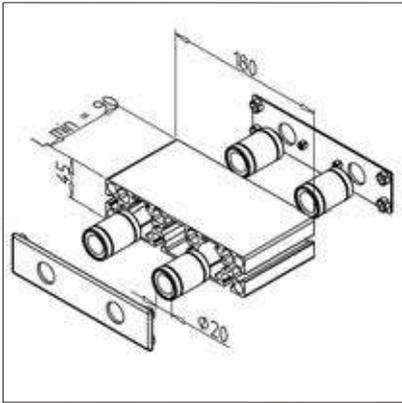
- All MiniTec linear systems LB

### ASSEMBLY

- Lead shaft through slide

## Slide LB 45 x 180

Part No. 28.0156/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- Standard length (L) 90 mm
- Profile 45 x 180
- Fully assembled with 2 ball bearing bushings LME 20 UU
- Profile face covered with end caps LB 45 x 180, grey
- **Other lengths on request**
- Weight = 1.007 kg/piece

### APPLICATIONS

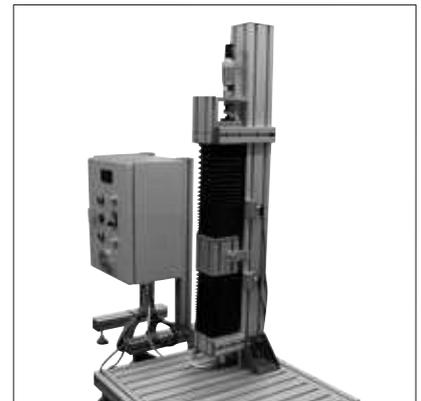
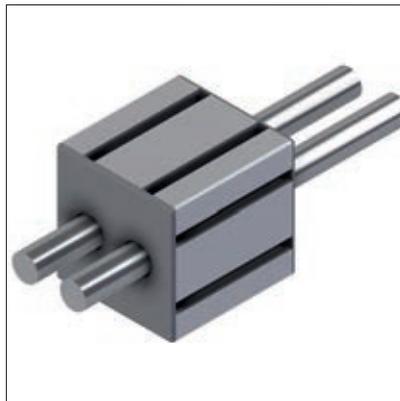
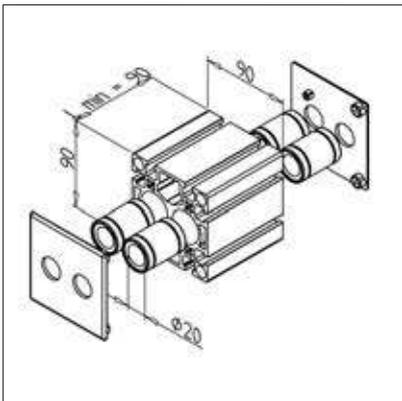
- All MiniTec linear systems LB

### ASSEMBLY

- Lead shaft through slide

## Slide LB 90

Part No. 28.0152/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- Standard length (L) 90 mm
- Profile 90 X 90 S
- Fully assembled with 4 ball bearing bushings LME 20 UU
- Profile face covered with end caps LB 90, grey
- **Other lengths on request**
- Weight = 1.070 kg/piece

### APPLICATIONS

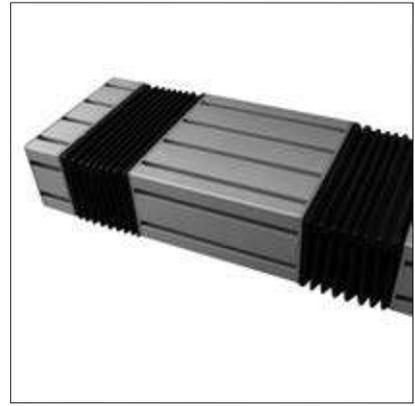
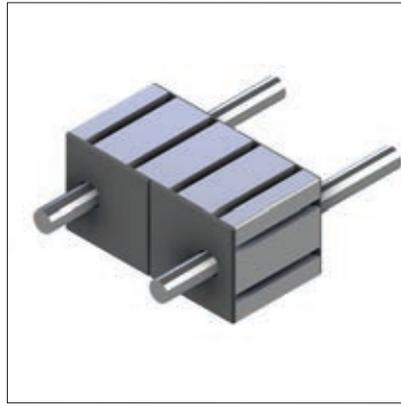
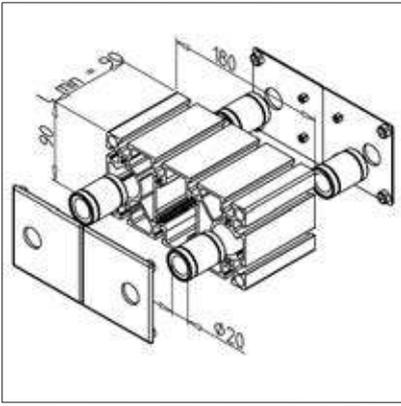
- All MiniTec linear systems LB

### ASSEMBLY

- Lead shaft through slide

## Slide LB 180

Part No. 28.0143/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- Standard length (L) 90 mm
- Profile 90 X 180 S
- Fully assembled with 4 ball bearing bushings LME 20 UU
- Profile face covered with end caps LB 180, grey
- **Other lengths on request**
- Weight = 1.500 kg/piece

### APPLICATIONS

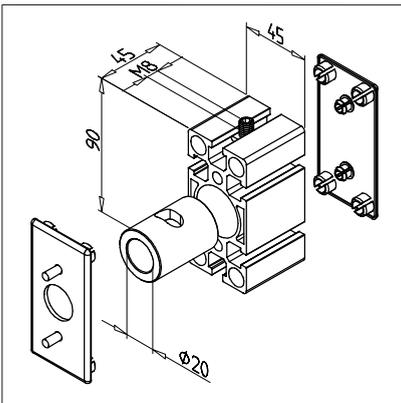
- All MiniTec linear systems LB

### ASSEMBLY

- Lead shaft through slide

## Shaft support block WB 45

Part No. 28.0151/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- Profile 45 X 90 S
- Fully assembled with centering bushing
- Shaft side with end cap LB 45, grey
- Outer side with end cap 45 x 90, grey
- Weight = 0.266 kg/piece

### APPLICATIONS

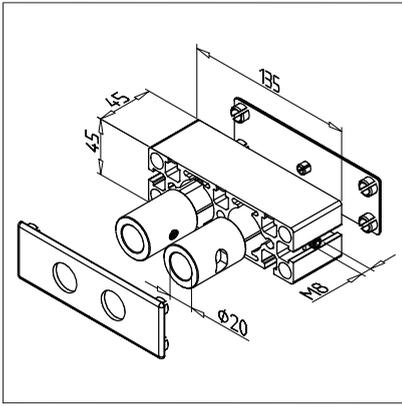
- Bearing and fastening of shaft  $\varnothing 20$  mm in MiniTec-Linear systems LB 45

### ASSEMBLY

- Insert shaft
- Tighten with set screw M8 x 35

## Shaft support block WB 45 x 135

Part No. 28.0157/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- Profile 45 x 135
- Fully assembled with centering bushing
- Shaft side with end cap LB 45 x 135, grey
- Outer side with end cap 45 x 135, grey
- Weight = 0.416 kg/piece

### APPLICATIONS

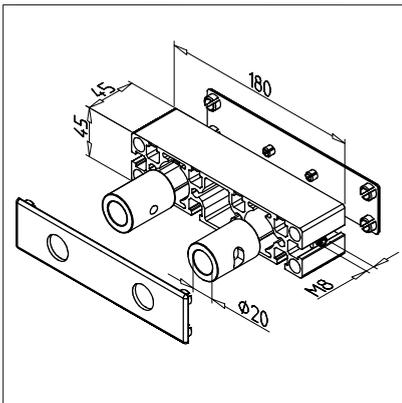
- Bearing and fastening of shaft  $\varnothing$  20 mm in MiniTec-Linear systems LB 45 x 135

### ASSEMBLY

- Insert shaft
- Tighten with set screw M8 x 35

## Shaft support block WB 45 x 180

Part No. 28.0159/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- Profile 45 x 180
- Fully assembled with centering bushing
- Shaft side with end cap LB 45 x 180, grey
- Outer side with end cap 45 x 180, grey
- Weight = 0.486 kg/piece

### APPLICATIONS

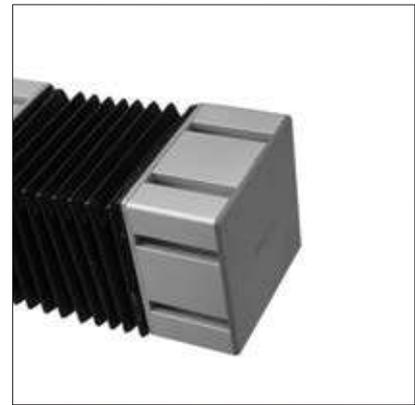
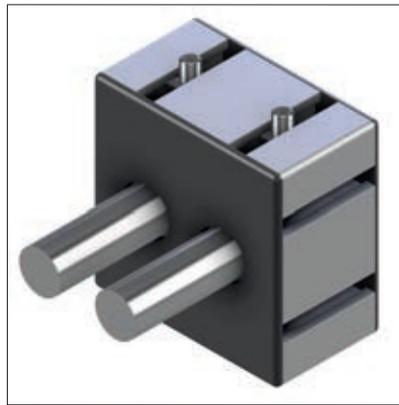
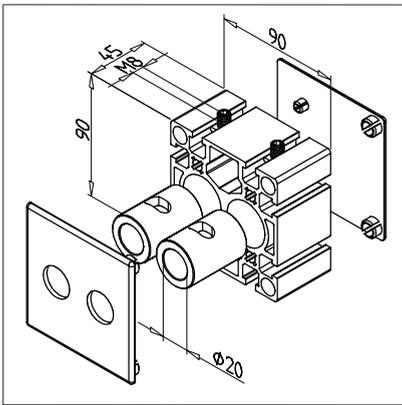
- Bearing and fastening of shaft  $\varnothing$  20 mm in MiniTec-Linear systems LB 45 x 180

### ASSEMBLY

- Insert shaft
- Tighten with set screw M8 x 35

## Shaft support block WB 90

Part No. 28.0153/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- Profile 90 X 90 S
- Fully assembled with 2 centring bushings
- Shaft side with end cap LB 90, grey
- Outer side with end cap 90 x 90, grey
- Weight = 0.521 kg/piece

### APPLICATIONS

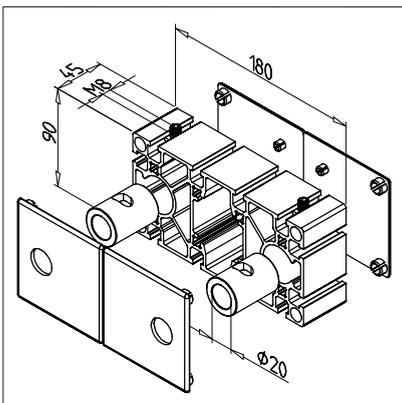
- Bearing and fastening of shaft  $\varnothing 20$  mm in MiniTec-Linear systems LB 90

### ASSEMBLY

- Insert shaft
- Tighten with set screw M8 x 35

## Shaft support block WB 180

Part No. 28.0144/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- Profile 90 X 180 S
- Fully assembled with 2 centring bushings
- Shaft side with end cap LB 180, grey
- External side with 2 end caps 90 x 90, grey
- Weight = 0.755 kg/piece

### APPLICATIONS

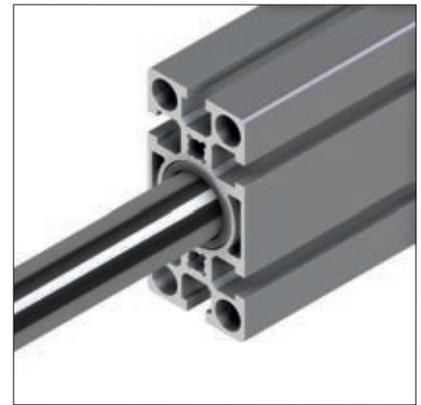
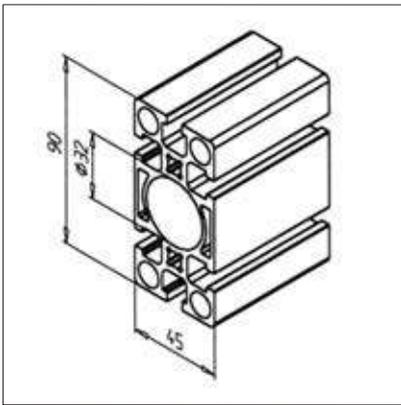
- Bearing and fastening of shaft  $\varnothing 20$  mm in MiniTec-Linear systems LB 180

### ASSEMBLY

- Insert shaft
- Tighten with set screw M8 x 35

## Profile 45 x 90 S

Part No. 20.1017/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, extruded, anodized E6/EV1
- $I_x = 113.487 \text{ cm}^4$
- $I_y = 30.719 \text{ cm}^4$
- $w_x = 25.219 \text{ cm}^3$
- $w_y = 13.653 \text{ cm}^3$
- $IT = 70.893 \text{ cm}^4$
- Weight = 3.860 kg/m
- Bar length = 6 m
- Packing unit = 24 m

### APPLICATIONS

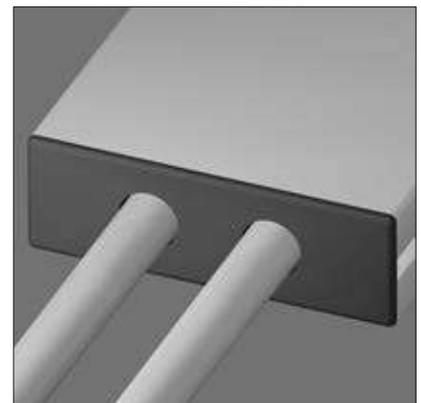
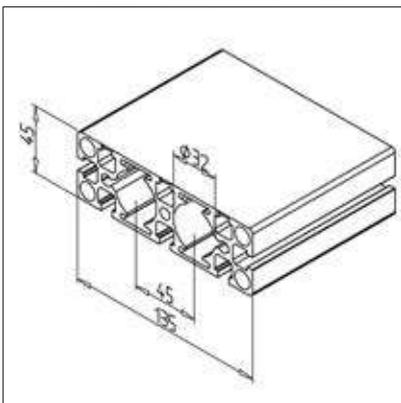
- All kinds of constructions
- Linear guides LB as slide
- Column guides
- Implementation as compressed air line with base and transport plate and sealing set
- Central bore  $\varnothing 32 \text{ mm}$  for ball-bushings LME 20, for ball-bearings 6201 or 6002, for compressed air piping or guiding of hydraulic add-in cylinders

### ASSEMBLY

- MiniTec power-lock fastener
- Mounting bracket 45 or 90
- Screw connection

## Profile 45 x 135 1G

Part No. 20.1078/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, extruded, anodized E6/EV1
- $I_x = 47.064 \text{ cm}^4$
- $I_y = 359.242 \text{ cm}^4$
- $w_x = 20.618 \text{ cm}^3$
- $w_y = 53.221 \text{ cm}^3$
- $IT = 189.739 \text{ cm}^4$
- Weight = 5.570 kg/m
- Bar length = 6 m
- Packing unit = 12 m

### APPLICATIONS

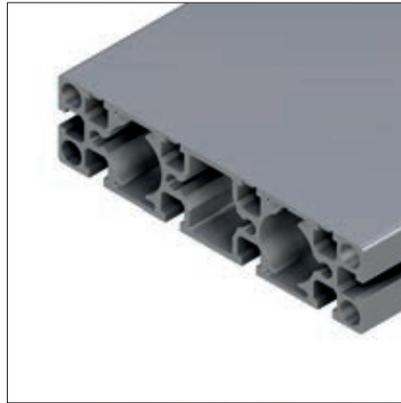
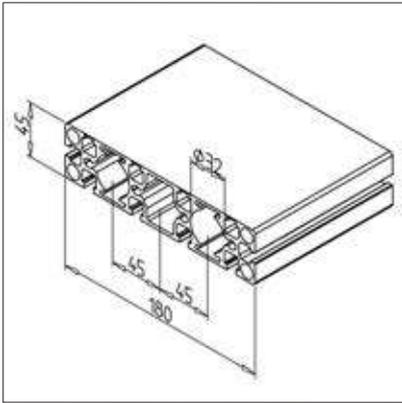
- All types of constructions, specifically for high hygiene requirements in the food industry, medical technology, bottling of beverages
- Linear guides LB as slide
- Central bore  $\varnothing 32 \text{ mm}$  for ball-bushings LME 20, for ball-bearings 6201 or 6002, for compressed air piping or guiding of hydraulic add-in cylinders

### ASSEMBLY

- MiniTec power-lock fastener
- Closed grooves can be opened with the groove opener **part no. 26.0815/0** to the desired length

## Profile 45 x 180 1G

Part No. 20.1079/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, extruded, anodized E6/EV1
- $I_x = 61.015 \text{ cm}^4$
- $I_y = 810.885 \text{ cm}^4$
- $w_x = 26.704 \text{ cm}^3$
- $w_y = 90.097 \text{ cm}^3$
- $IT = 271.248 \text{ cm}^4$
- Weight = 6.950 kg/m
- Bar length = 6 m
- Packing unit = 12 m

### APPLICATIONS

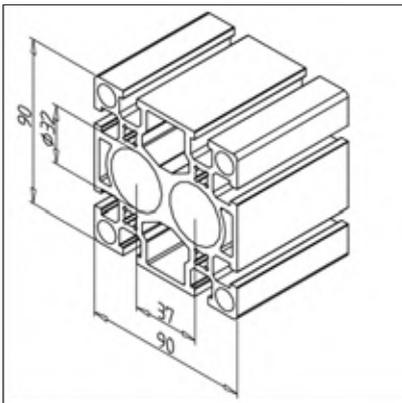
- All types of constructions, specifically for high hygiene requirements in the food industry, medical technology, bottling of beverages
- Linear guides LB as slide
- Central bore  $\varnothing 32 \text{ mm}$  for ball-bushings LME 20, for ball-bearings 6201 or 6002, for compressed air piping or guiding of hydraulic add-in cylinders

### ASSEMBLY

- MiniTec power-lock fastener
- Closed grooves can be opened with the groove opener **part no. 26.0815/0** to the desired length

## Profile 90 x 90 S

Part No. 20.1019/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, extruded, anodized E6/EV1
- $I_x = 208.888 \text{ cm}^4$
- $I_y = 223.949 \text{ cm}^4$
- $w_x = 46.419 \text{ cm}^3$
- $w_y = 49.766 \text{ cm}^3$
- $IT = 569.423 \text{ cm}^4$
- Weight = 7.514 kg/m
- Bar length = 6 m
- Packing unit = 12 m

### APPLICATIONS

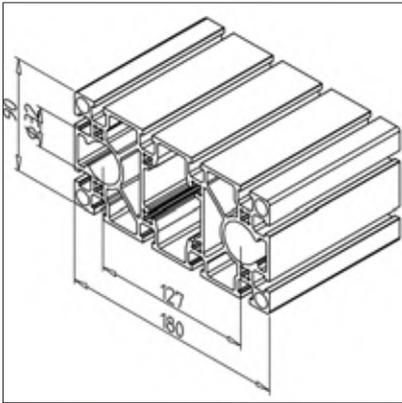
- All types of heavy constructions
- Linear guides LB as slide
- Central bore  $\varnothing 32 \text{ mm}$  for ball-bushings LME 20, for ball-bearings 6201 or 6002, for compressed air piping or guiding of hydraulic add-in cylinders

### ASSEMBLY

- MiniTec power-lock fastener
- Mounting bracket 45 or 90
- Screw connection

## Profile 90 x 180 S

Part No. 20.1013/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, extruded, anodized E6/EV1
- $I_x = 376.784 \text{ cm}^4$
- $I_y = 1421.865 \text{ cm}^4$
- $w_x = 83.729 \text{ cm}^3$
- $w_y = 157.983 \text{ cm}^3$
- $IT = 2023.299 \text{ cm}^4$
- Weight = 11.482 kg/m
- Bar length = 6 m
- Packing unit = 6 m

### APPLICATIONS

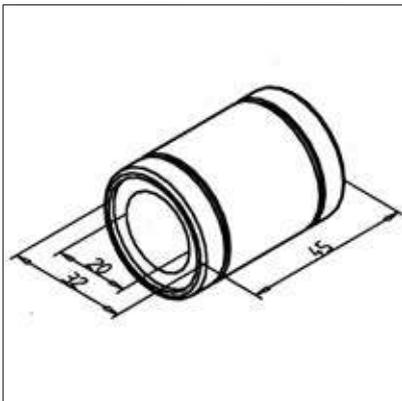
- All types of heavy constructions
- Linear guides LB as slide
- Central bore  $\varnothing 32 \text{ mm}$  for ball-bushings LME 20, for compressed air piping or guiding of hydraulic add-in cylinders

### ASSEMBLY

- MiniTec power-lock fastener
- Mounting bracket 45 or 90
- Screw connection

## Ball bushing LME 20 UU

Part No. 10.1745/0



### TECHN. DATA / ITEMS SUPPLIED

- Precision ball bushing with massive external sheath of 100Cr6
- 2 integrated sealing rings, heat resistant up to  $80^\circ\text{C}$
- Rated loads:  
dyn.  $C = 880 \text{ N}$   
stat.  $C_0 = 1400 \text{ N}$
- Weight = 0.090 kg/piece

### APPLICATIONS

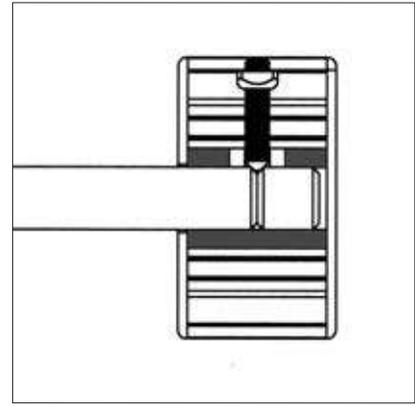
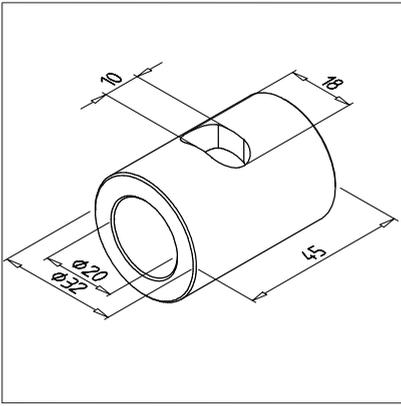
- Precision linear guides
- Linear slide system LB
- Lifting-tables
- Quattro-units

### ASSEMBLY

- Press into bore  $\varnothing 32 \text{ mm}$  of the profile
- Axial securing with single component adhesive for joining slide unit housing

## Centring bushing

Part No. 28.0146/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, bright
- Weight = 0.056 kg/piece

### APPLICATIONS

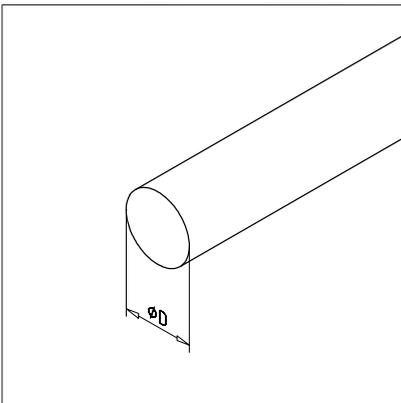
- Central shaft clamping in all shaft support blocks of the MiniTec linear systems LB

### ASSEMBLY

- Insert centering bush in bore  $\varnothing 32$  mm
- Insert shaft
- Clamps with threaded pin M8 x 35 **part no. 21.1304/1** and sliding nut **part no. 21.1351/0**

## Shaft D 20 mm, h6 CF 53

Part No. 17.1744/0



### TECHN. DATA / ITEMS SUPPLIED

- Steel, pulled, hardened, polished
- Cf.53, hardened to  $62 \pm 4$  HRC, polished h6
- Weight = 2.470 kg/m
- Bar length = 6 m

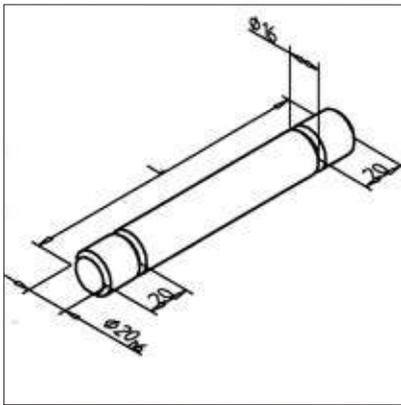
### APPLICATIONS

- Linear guide system LB
- Linear guides with ball or sliding bushings
- Mechanical elements or drive elements

### ASSEMBLY

- Secure with centering bushing into shaft support block

## Shaft D 20 for linear guide LB



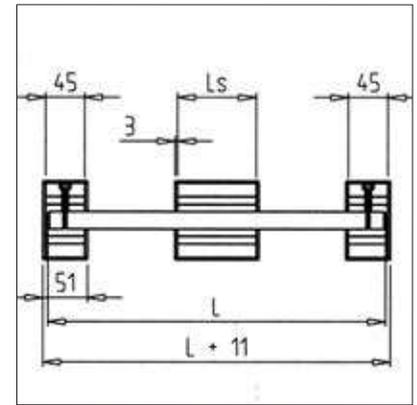
### TECHN. DATA / ITEMS SUPPLIED

- Steel
- Cf53, surface-hardened to 60 + 5 HRC and pre-sharpened
- Tolerance h6
- Processed for shaft support block WB
- Please specify dimension L
- Weight = 2,470 kg/m



### APPLICATIONS

- All MiniTec linear systems LB
- Can be used in any direction

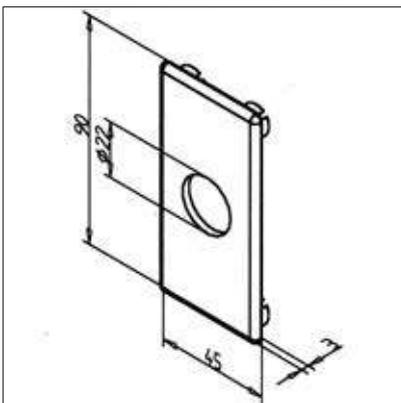


Part No. 28.0154/0

### ASSEMBLY

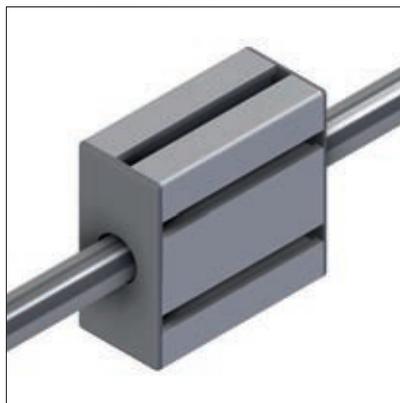
- Insert in shaft support blocks
- Clamps with threaded pin M8 x 35 **part no. 21.1304/1**

## End cap LB 45



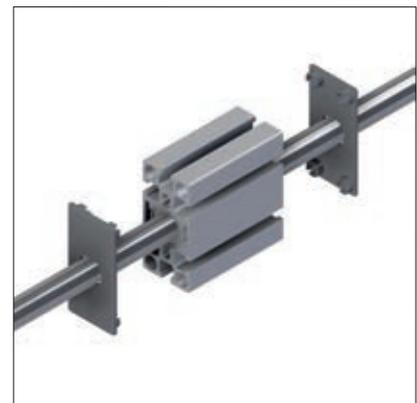
### TECHN. DATA / ITEMS SUPPLIED

- ABS, Injection Mould, grey
- Aging and oil resistant
- On request also available in black, **part no. 28.0094/0**
- 1 centric bore  $\varnothing$  22 mm
- Weight = 0.010 kg/piece



### APPLICATIONS

- Front slide cover LB 45
- Face covering of shaft support block WB 45 (shaft side)



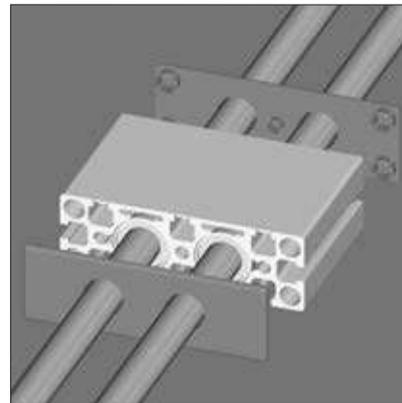
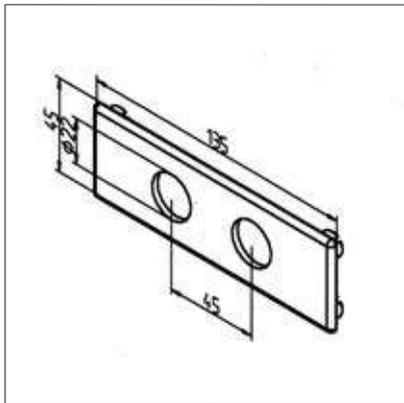
Part No. 28.0094/1

### ASSEMBLY

- Press the fastening pins into the profile holes

## End cap LB 45 x 135

Part No. 28.0101/1



### TECHN. DATA / ITEMS SUPPLIED

- ABS, Injection Mould, grey
- Aging and oil resistant
- On request also available in black, **part no. 28.0101/0**
- 2 bores  $\varnothing$  22 mm
- Weight = 0.010 kg/piece

### APPLICATIONS

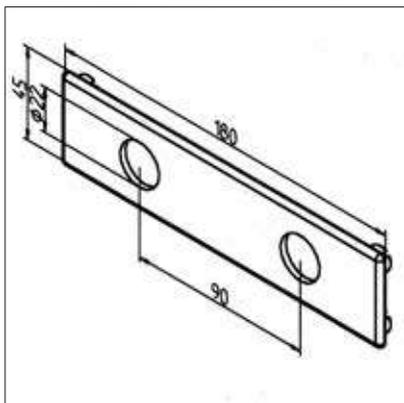
- Front slide cover LB 45 x 135
- Front cover of shaft support blocks WB 45 x 135

### ASSEMBLY

- Press the fastening pins into the profile holes

## End cap LB 45 x 180

Part No. 28.0102/1



### TECHN. DATA / ITEMS SUPPLIED

- ABS, Injection Mould, grey
- Aging and oil resistant
- On request also available in black, **part no. 28.0102/0**
- 2 bores  $\varnothing$  22 mm
- Weight = 0.010 kg/piece

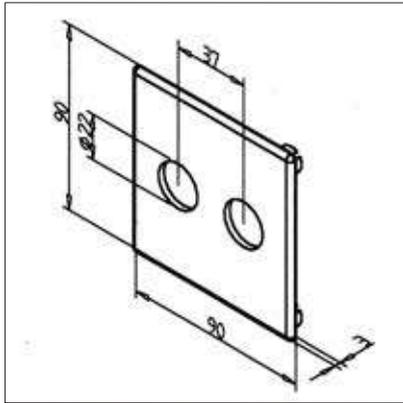
### APPLICATIONS

- Front slide cover LB 45 x 180
- Front cover of shaft support blocks WB 45 x 180

### ASSEMBLY

- Press the fastening pins into the profile holes

## End cap LB 90



### TECHN. DATA / ITEMS SUPPLIED

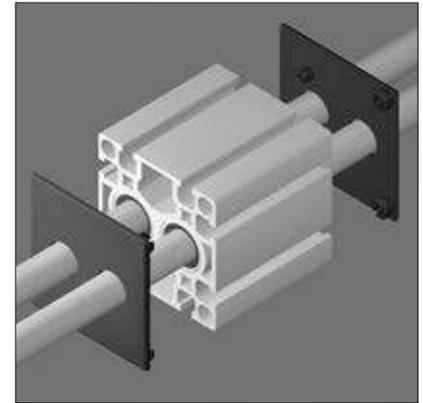
- ABS, Injection Mould, grey
- Aging and oil resistant
- On request also available in black, **part no. 28.0095/0**
- 2 bores  $\varnothing$  22 mm
- Weight = 0.018 kg/piece



### APPLICATIONS

- Front slide cover LB 90
- Front cover of shaft support blocks WB 90

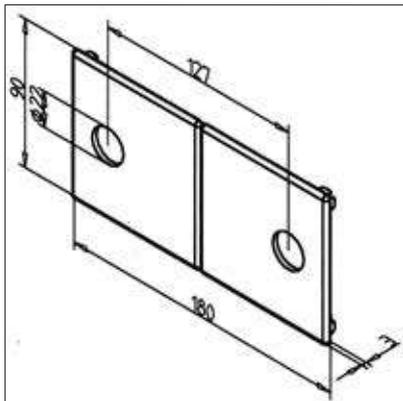
Part No. 28.0095/1



### ASSEMBLY

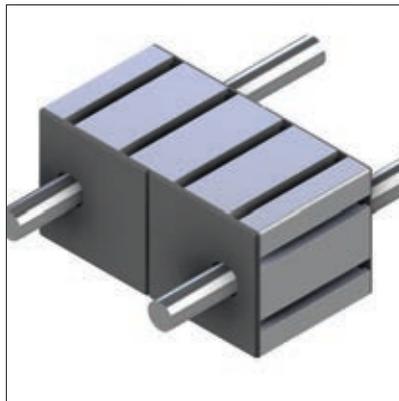
- Press the fastening pins into the profile holes

## End cap LB 180



### TECHN. DATA / ITEMS SUPPLIED

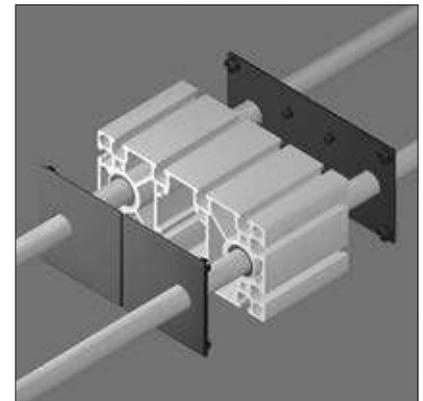
- ABS, Injection Mould, grey
- Aging and oil resistant
- On request also available in black, **part no. 28.0103/0**
- 2 bores  $\varnothing$  22 mm
- Weight = 0.037 kg/piece



### APPLICATIONS

- Front slide cover LB 180
- Front cover of shaft support blocks WB 180

Part No. 28.0103/1



### ASSEMBLY

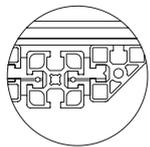
- Press the fastening pins into the profile holes

## Adjusting units

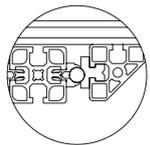
The modular structure of our adjusting units allows a large number of types with different cross-sections. Optionally also with slide clamp, spindle cover, angular gear or counter. To make your choice easier and to prevent misunderstandings, we have provided a selection program for you on our website. The selection program shows you the chosen option in a preview with short designation. To order, simply state the short designation with the required stroke length.

### Versions

MiniTec-adjusting units are ready to install modules, which are assembled strictly according to the modular principle from standard elements of our profile system. They are used in mechanical engineering, packaging technology, in filling plants and in testing technology. The adjusting units are equipped with sliding elements made of heavy-duty PE-UHMW plastic. This material is resistant to most acids and alkaline. The coefficient of friction on ground steel shafts is  $0.05 \mu$ , on anodised aluminium surfaces it is  $0.1 \mu$ .



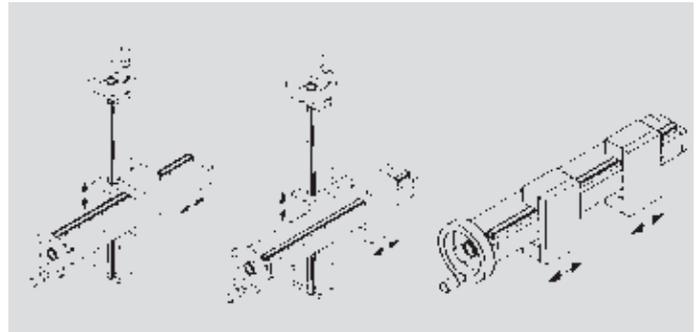
VEW series  
Slide guide on ground,  
hardened precision steel shafts  
 $\varnothing 12 \text{ mm}$ , h6, material  
Stainless steel Cf 53, Mat. no. 1.1213



VEN series  
Slide guide in profile grooves

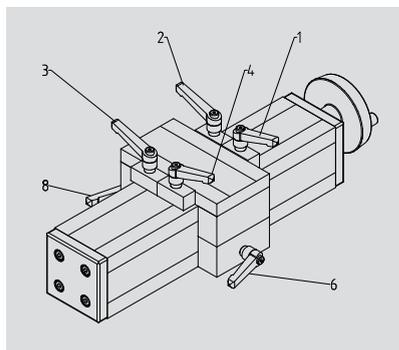
The selection program can be found at [www.minitec.de](http://www.minitec.de) in the online product catalogue under Linear system LG. We can also produce custom-made versions for you to your own specification.

### Combination options

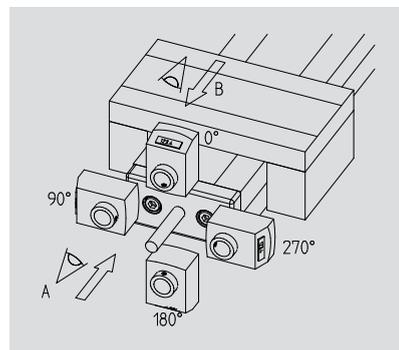


- Spindles: Trapezoidal thread spindle  $16 \times 4$ , steel, with nut made of RG 7
- Traversed distance: 1000 mm (max.)

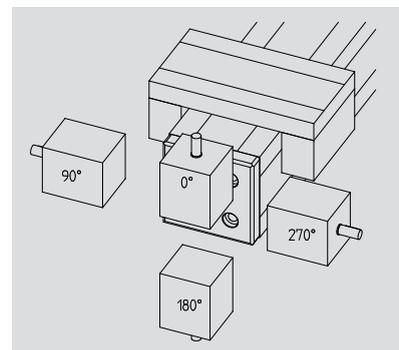
### Clamping devices



### Digital display



### Angular gear

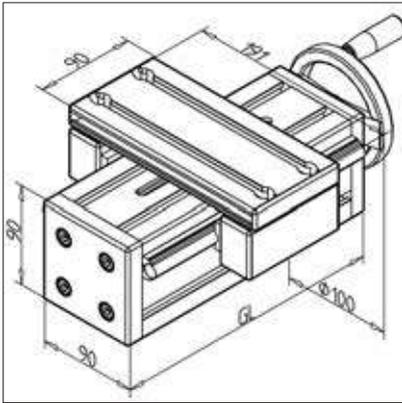


#### Adjusting unit configuration

Further information is available at:  
[www.minitec.de/en/product/configuration-of-adjusting-units](http://www.minitec.de/en/product/configuration-of-adjusting-units)

## Adjusting unit VEW 90

Part No. 28.0183/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- Slide plate of profile 19 x 90
- Spindle 16 x 4
- Basic length (GL) 120 mm (0 mm stroke)
- **Please indicate desired length of stroke**
- Weight = (basic weight) 3.03 kg
- Extra weight = 1.12 kg/100mm stroke

### APPLICATIONS

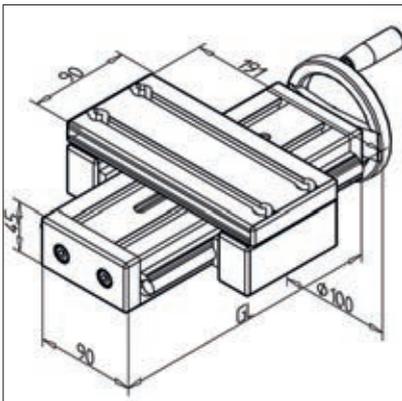
- Adjustment of conveyors
- Adjustment of feeders
- Adjustable devices

### OTHER VERSIONS

- Slide plate made of profile 32 x 180
- Deviating wagon length
- Digital display
- Angular drive
- Spindle cover
- Shafts stainless
- Options:  
With carriage clamp up **part no. 28.0183/1**  
With carriage clamping laterally **part no. 28.0183/2**

## Adjusting unit VEW 45x90 F

Part No. 28.0181/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- Slide plate of profile 19 x 90
- Spindle 16 x 4
- Basic length (GL) 120 mm (0 mm stroke)
- **Please indicate desired length of stroke**
- Weight = (basic weight) 2.31 kg
- Extra weight = 0.75 kg/100mm stroke

### APPLICATIONS

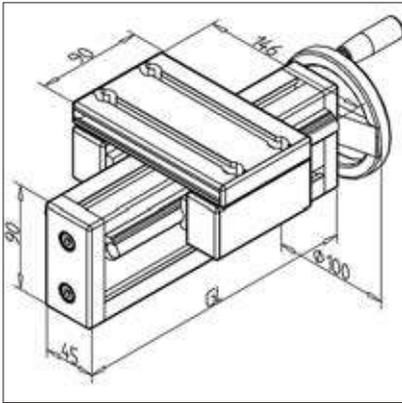
- Adjustment of conveyors
- Adjustment of feeders
- Adjustable devices

### OTHER VERSIONS

- Slide plate made of profile 32 x 180
- Deviating wagon length
- Digital display
- Angular drive
- Spindle cover
- Shafts stainless
- With slide clamping unit, top, Part no. **28.0181/1**

## Adjusting unit VEW 45x90 H

Part No. 28.0182/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- Slide plate of profile 19 x 90
- Spindle 16 x 4
- Basic length (GL) 120 mm (0 mm stroke)
- **Please indicate desired length of stroke**
- Weight = (basic weight) 2.109 kg
- Extra weight = 0.74 kg/100mm stroke

### APPLICATIONS

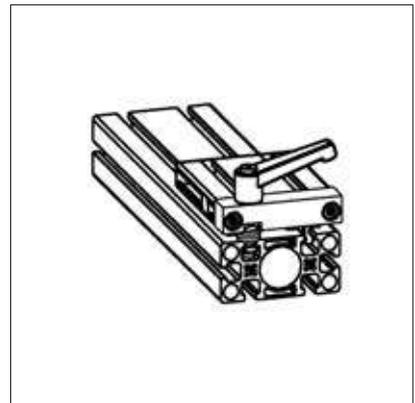
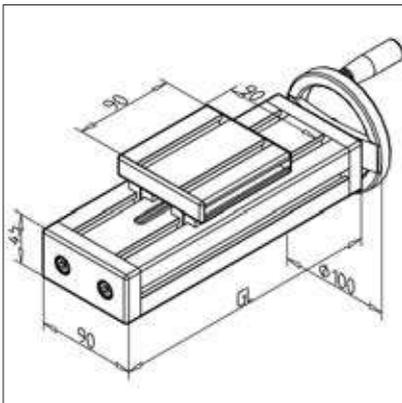
- Adjustment of conveyors
- Adjustment of feeders
- Adjustable devices

### OTHER VERSIONS

- Slide plate made of profile 32 x 180
- Deviating wagon length
- Digital display
- Angular drive
- Shafts stainless
- Options:
  - With carriage clamp up **part no. 28.0182/1**
  - With carriage clamping laterally **part no. 28.0182/2**

## Adjusting unit VEN 45x90 S

Part No. 28.0187/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- Slide plate of profile 19 x 90
- Spindle 16 x 4
- Basic length (GL) 120 mm (0 mm stroke)
- **Please indicate desired length of stroke**
- Weight = (basic weight) 2.280 kg
- Extra weight = 0.5 kg/100mm stroke

### APPLICATIONS

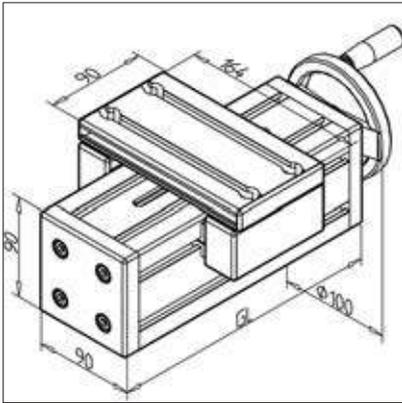
- Adjustment of conveyors
- Adjustment of feeders
- Adjustable devices

### OTHER VERSIONS

- Slide plate made of profile 32 x 180
- Deviating wagon length
- Digital display
- Angular drive
- Options:
  - With slide clamping unit (Top) **part no. 28.0187/1**

## Adjusting unit VEN 90

Part No. 28.0186/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- Slide plate of profile 19 x 90
- Spindle 16 x 4
- Basic length (GL) 120 mm (0 mm stroke)
- **Please indicate desired length of stroke**
- Weight = (basic weight) 2.75 kg
- Extra weight = 0.87 kg/100mm stroke

### APPLICATIONS

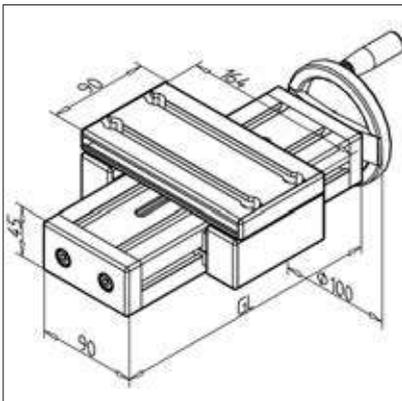
- Adjustment of conveyors
- Adjustment of feeders
- Adjustable devices

### OTHER VERSIONS

- Slide plate made of profile 32 x 180
- Deviating wagon length
- Digital display
- Angular drive
- Spindle cover
- Options:
  - With carriage clamp up **part no. 28.0186/1**
  - With carriage clamping laterally **part no. 28.0186/2**

## Adjusting unit VEN 45x90

Part No. 28.0188/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- Slide plate of profile 19 x 90
- Spindle 16 x 4
- Basic length (GL) 120 mm (0 mm stroke)
- **Please indicate desired length of stroke**
- Weight = (basic weight) 2.05 kg
- Extra weight = 0.5 kg/100mm stroke

### APPLICATIONS

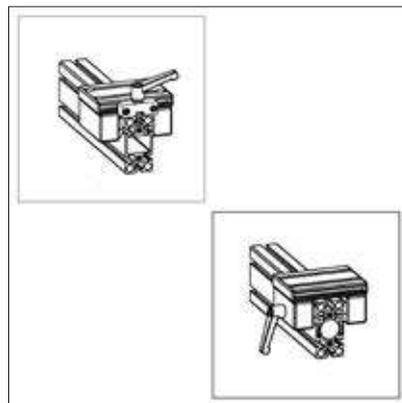
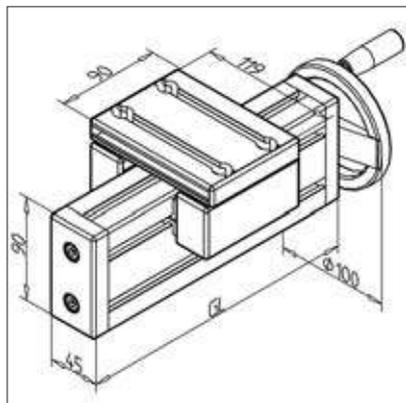
- Adjustment of conveyors
- Adjustment of feeders
- Adjustable devices

### OTHER VERSIONS

- Slide plate made of profile 32 x 180
- Deviating wagon length
- Digital display
- Angular drive
- Spindle cover
- Options:
  - With carriage clamp up **part no. 28.0188/1**
  - With carriage clamping laterally **part no. 28.0188/2**

## Adjusting unit VEN 45x90 H

Part No. 28.0185/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- Slide plate of profile 19 x 90
- Spindle 16 x 4
- Basic length (GL) 120 mm (0 mm stroke)
- **Please indicate desired length of stroke**
- Weight = (basic weight) 1.97 kg
- Extra weight = 0.49 kg/100mm stroke

### APPLICATIONS

- Adjustment of conveyors
- Adjustment of feeders
- Adjustable devices

### OTHER VERSIONS

- Slide plate made of profile 32 x 180
- Deviating wagon length
- Digital display
- Angular drive
- Options:
  - With carriage clamp up **part no. 28.0185/1**
  - With carriage clamping laterally **part no. 28.0185/2**

## Mini adjusting units

Mini adjusting units are ready to install units, which are assembled according to the modular principle from standard elements of our profile system. They are used in mechanical engineering, packaging technology, conveying technology, in filling plants and in testing technology.



Mini adjusting unit installation kit



Mini adjusting unit with profile 19 x 32



Mini adjusting unit with handle profile 32



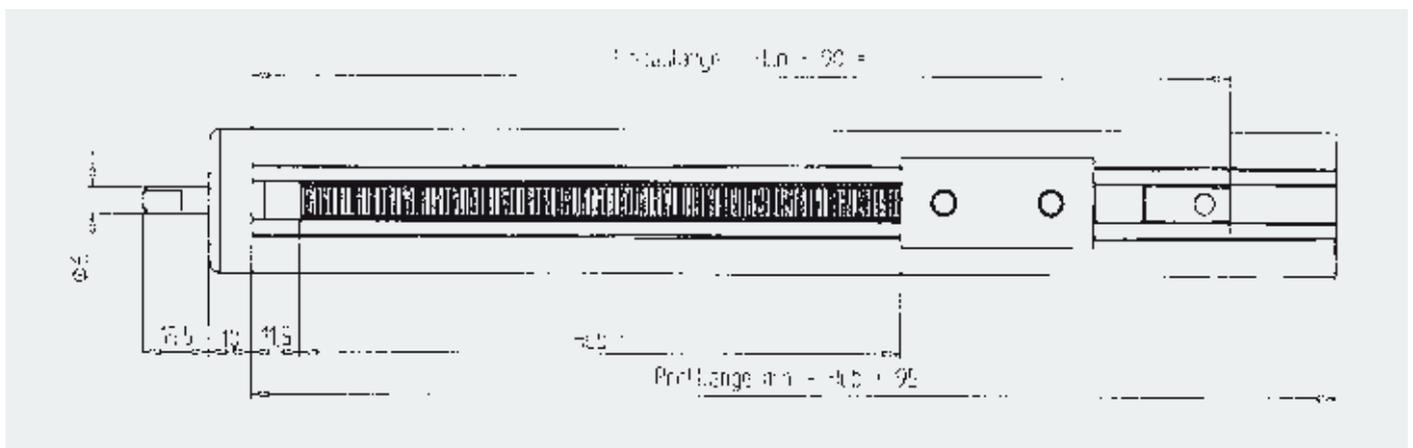
Mini adjusting unit with profile 45 x 19



Mini adjusting unit with profile 19 x 45



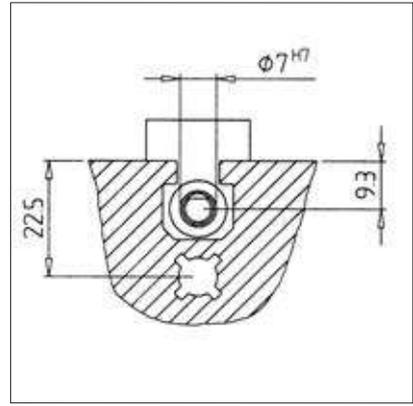
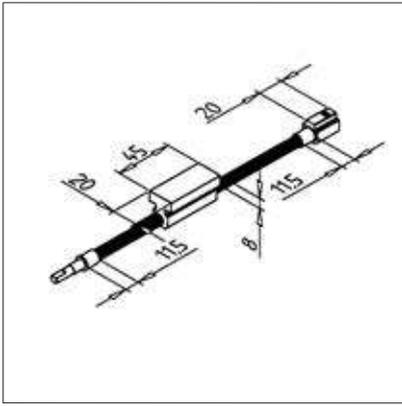
Mini adjusting unit with profile 45 x 45



- Spindles: VA metric thread M8x1.25
- Traversed distance: 895 mm (max.)
- Load capacity: 1000 g

## Mini adjusting unit installation kit

Part No. 28.0350/0



### TECHN. DATA / ITEMS SUPPLIED

- Without support profile, handwheel and bearing block for installation in existing fixture
- VA spindle M8 x 1.25
- Brass slide
- Max. load 1 - 2 kg
- Please indicate desired length of stroke

### APPLICATIONS

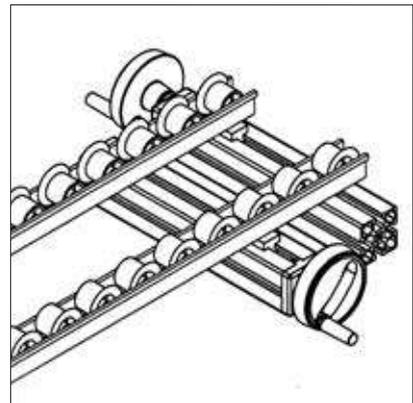
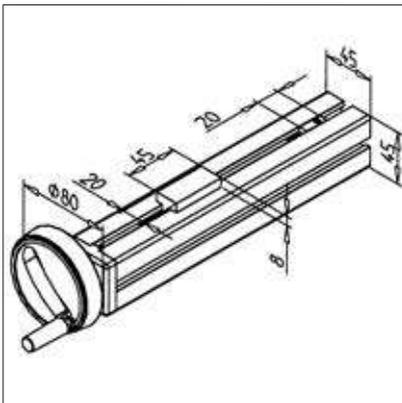
- For adjustment of the lateral guides on conveying equipment
- For adjusting sensor holders or light barriers
- For simple equipment

### ASSEMBLY

- Make bearing block according to sketch
- Push into the profile groove and fasten the end block

## Mini adjusting unit with profile 45x45

Part No. 28.0354/0



### TECHN. DATA / ITEMS SUPPLIED

- With carrier profile 45 x 45 F
- VA spindle M8 x 1.25
- Brass slide
- Max. load 1 - 2 kg
- Please indicate desired length of stroke

### APPLICATIONS

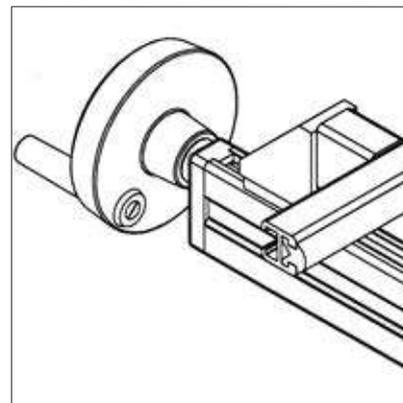
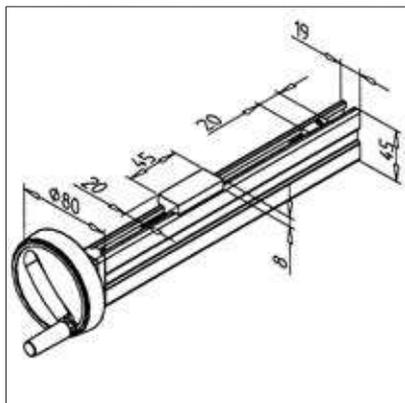
- For adjustment of the lateral guides on conveying equipment
- For adjusting sensor holders or light barriers
- For simple equipment

### ASSEMBLY

- With MiniTec power-lock fastener
- Can also be fastened with a mounting bracket
- Also available without carrier profile, **part no. 28.0354/1**

## Mini adjusting unit with profile 19x45

Part No. 28.0352/0



### TECHN. DATA / ITEMS SUPPLIED

- With carrier profile 19 x 45
- VA spindle M8 x 1.25
- Brass slide
- Max. load 1 - 2 kg
- Please indicate desired length of stroke

### APPLICATIONS

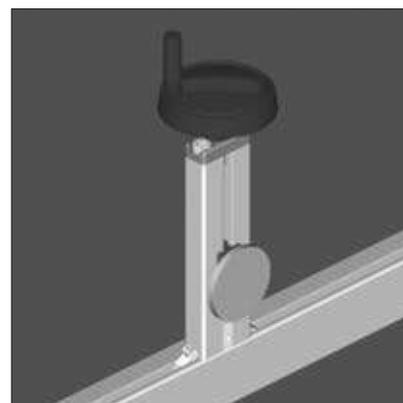
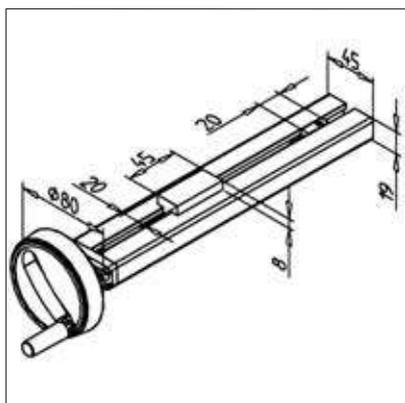
- For adjustment of the lateral guides on conveying equipment
- For adjusting sensor holders or light barriers
- For simple equipment

### ASSEMBLY

- With MiniTec power-lock fastener
- Can also be fastened with a mounting bracket
- Also available without carrier profile, **part no. 28.0352/1**

## Mini adjusting unit with profile 45x19

Part No. 28.0359/0



### TECHN. DATA / ITEMS SUPPLIED

- With carrier profile 45 x 19
- VA spindle M8 x 1.25
- Brass slide
- Max. load 1 - 2 kg
- Please indicate desired length of stroke

### APPLICATIONS

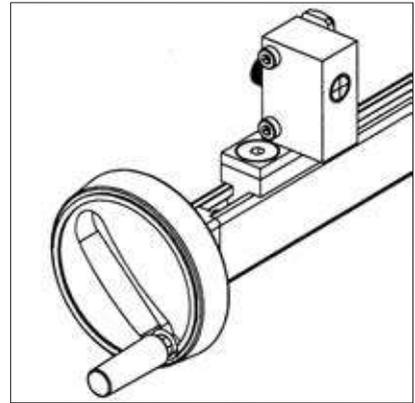
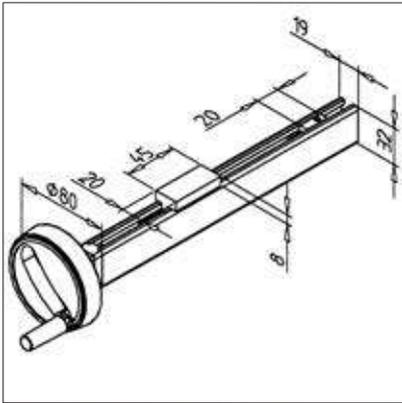
- For adjustment of the lateral guides on conveying equipment
- For adjusting sensor holders or light barriers
- For simple equipment

### ASSEMBLY

- With MiniTec power-lock fastener
- Can also be fastened with a mounting bracket
- Also available without carrier profile, **part no. 28.0359/1**

## Mini adjusting unit with profile 19x32

Part No. 28.0351/0



### TECHN. DATA / ITEMS SUPPLIED

- With carrier profile 19 x 32
- VA spindle M8 x 1.25
- Brass slide
- Max. load 1 - 2 kg
- Please indicate desired length of stroke

### APPLICATIONS

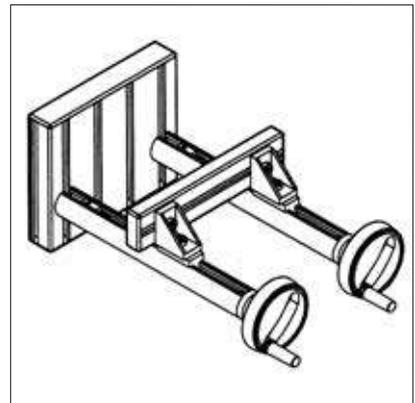
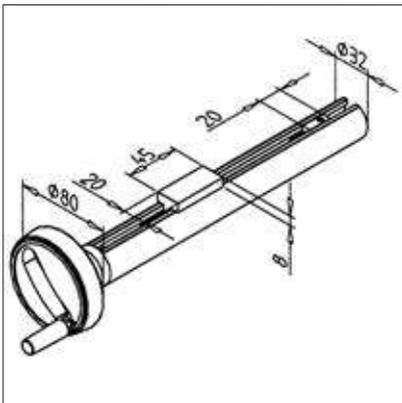
- For adjustment of the lateral guides on conveying equipment
- For adjusting sensor holders or light barriers
- For simple equipment

### ASSEMBLY

- With MiniTec power-lock fastener
- Can also be fastened with a mounting bracket
- Also available without carrier profile, **part no. 28.0351/1**

## Mini adjusting unit with handle profile 32

Part No. 28.0353/0



### TECHN. DATA / ITEMS SUPPLIED

- With carrier profile handle profile 32
- VA spindle M8 x 1.25
- Brass slide
- Max. load 1 - 2 kg
- Please indicate desired length of stroke

### APPLICATIONS

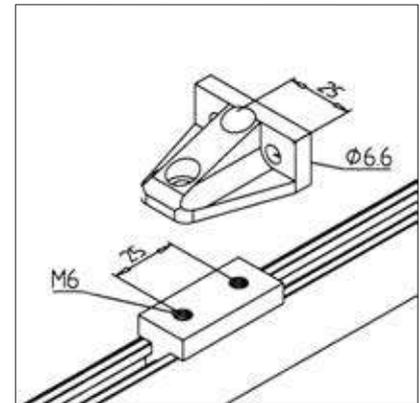
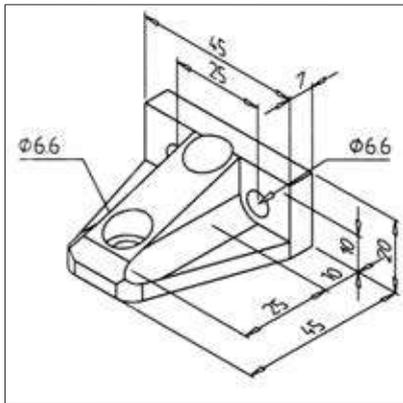
- For adjustment of the lateral guides on conveying equipment
- For adjusting sensor holders or light barriers
- For simple equipment

### ASSEMBLY

- With MiniTec power-lock fastener
- Can also be fastened with a mounting bracket
- Fasten handle profile 32 with clip, **part no. 22.1022/0**
- Also available without carrier profile, **part no. 28.0353/1**

## Bracket console for miniature adjustment

Part No. 28.0371/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- Without fastening kit
- Weight = 0.044 kg/piece

### APPLICATIONS

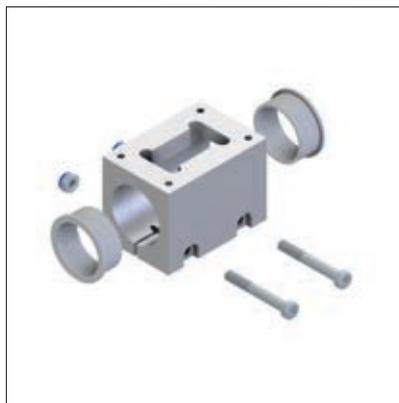
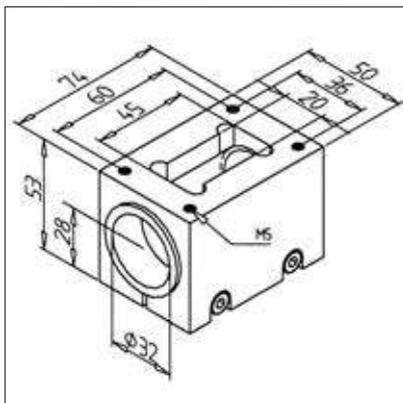
- For connection of two adjustment units **part no. 28.0351/0, 28.0352/0 and 28.0353/0**
- For adjusting small loads such as light barriers, sensors, etc.

### ASSEMBLY

- Insert two M6 threads each, 10 mm deep with a clearance of 25 mm in the slide
- With cylinder head bolts M6 x 16 **part no. 21.1238/0** Connect adjustment units together

## Slide G 32

Part No. 28.0355/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- With low-friction sliding bearing
- Without adjusting units
- Weight = 0.314 kg/piece

### APPLICATIONS

- To adjust light barriers, reflectors, lateral guides etc.

### ASSEMBLY

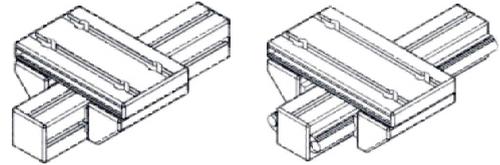
- Insert slide of mini-adjustment unit into sliding carriage and screw in the spindle
- Adjust with tensioning screws M6
- Fasten the spindle bearing to the handle profile 32

## Sliding guides



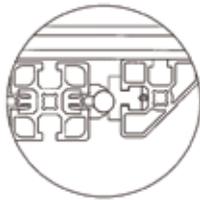
### Master high loads easily

The LN and LG sliding guides were created for applications that do not set high requirements for guiding accuracy, but in which extreme operating conditions exist. These guides are especially suitable for wet operation, in case of large amounts of dust or poor lubrication. The running blocks of the LN/LG series are based on the same modular principle as the LR linear series.



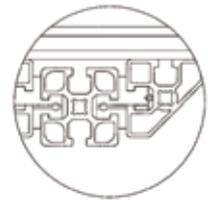
#### Series LN

Guide the carriages in profile groove or profile surface. This series is characterized by a small installation space.



#### Series LG

Guiding of carriages on ground and hardened shafts h6 made of material Cf53. Particularly advantageous is the use of guides LG in wet operation in conjunction with our stainless shafts.



**Precision:**  $\pm 0,15$  mm (LG series) and  $\pm 0,20$  mm (LN series).

The guides can be set with low clearance by providing the lateral guide rails.

**Allowable loads:** 50 N/cm load bearing slide strip (= carriage length)

**Sliding friction:** 0,05  $\mu$  on steel shaft (LG series), 0,1  $\mu$  on anodized profile surface (LN series).

This bearing can be operated without lubrication. However,

an increased slip-stick effect must be noted.

**Traversing speed:** 1 m/sec (max.)

**Continuous temperature:** 50°C (max.)

**Short-term peak load:** 70°C (max.)

The slide strip is resistant to organic acids, alkalis, aqueous solutions, inorganic salts, organic acids and alcohols. The material is only conditionally resistant to hydrocarbons and halogenated hydrocarbons.



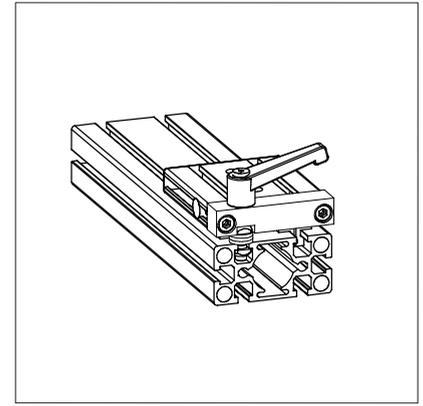
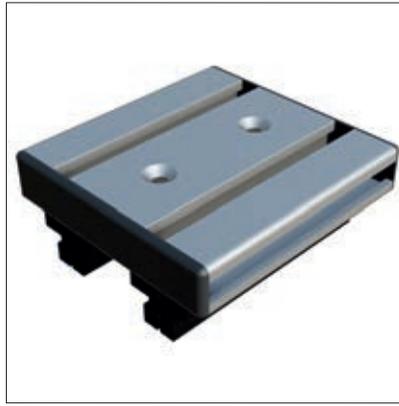
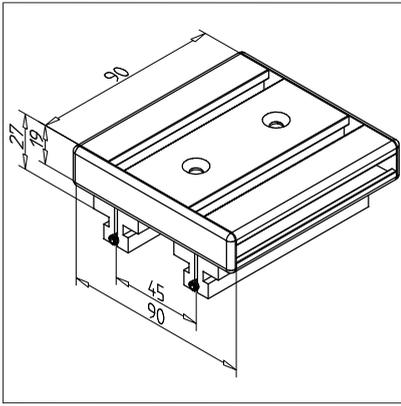
#### Sliding guides configuration

[www.minitec.de/en/product/configuration-of-sliding-guides](http://www.minitec.de/en/product/configuration-of-sliding-guides)

Further information is available at:

## Slide LWN-S

Part No. 28.0170/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- Fully mounted carriage
- 2 slide rails LN-S
- End caps
- Load capacity up to 450 N
- Clearance adjusted
- Weight = 0.260 kg/piece

### APPLICATIONS

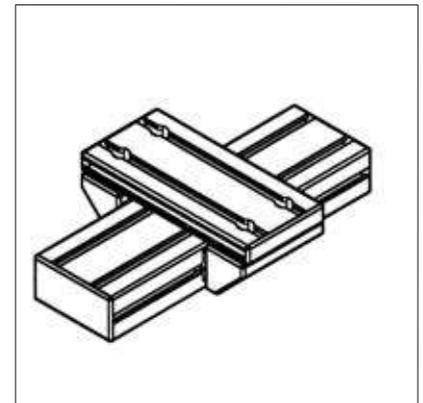
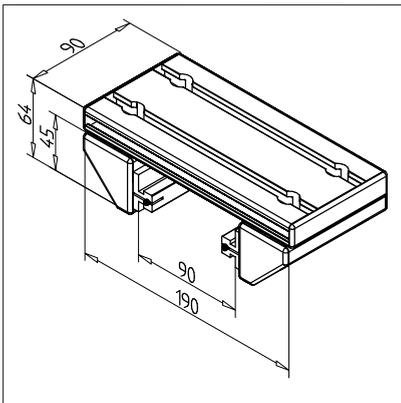
- Simple linear guides
- Slide units

### OTHER VERSIONS

- With slide clamping device at top **part no. 28.0170/1**
- Different slide lengths

## Slide LWN 45/45° - 90

Part No. 28.0197/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- Fully mounted carriage
- 2 slide rails LN
- End caps
- Load capacity up to 450 N
- Clearance adjusted
- Weight = 0.783 kg/piece

### APPLICATIONS

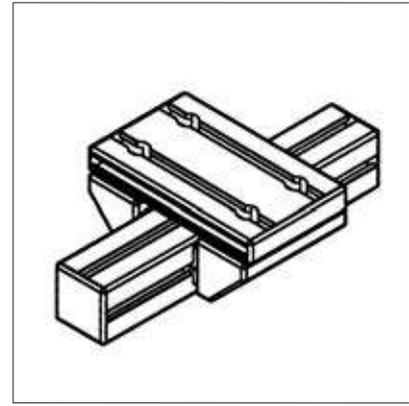
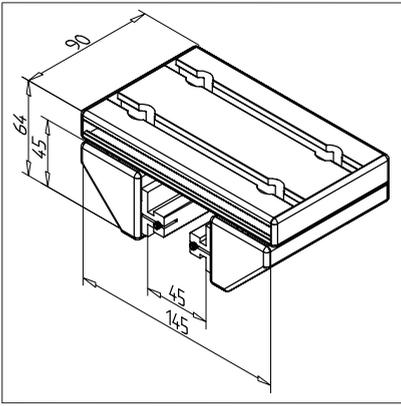
- Simple linear guides
- Slide units

### OTHER VERSIONS

- With slide clamping device at top **part no. 28.0197/1**
- Different slide lengths

## Slide LWN 45/45° - 45

Part No. 28.0196/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- Fully mounted carriage
- 2 slide rails LN
- End caps
- Load capacity up to 450 N
- Clearance adjusted
- Weight = 0.699 kg/piece

### APPLICATIONS

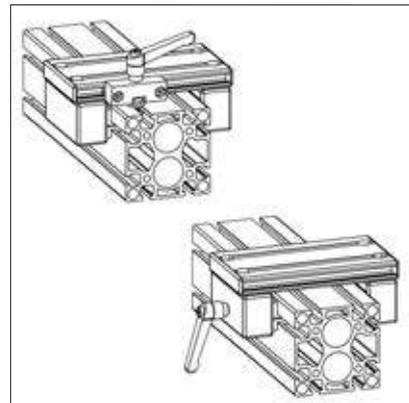
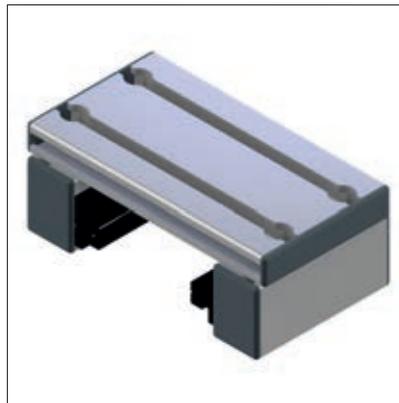
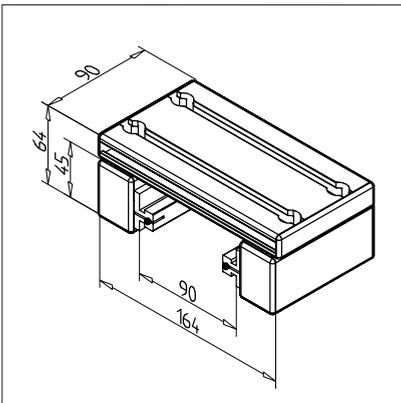
- Simple linear guides
- Slide units

### OTHER VERSIONS

- With slide clamping device at top **part no. 28.0196/1**
- Different slide lengths

## Slide LWN 32 x 45 - 90

Part No. 28.0193/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- Fully mounted carriage
- 2 slide rails LN
- End caps
- Load capacity up to 450 N
- Clearance adjusted
- Weight = 0.762 kg/piece

### APPLICATIONS

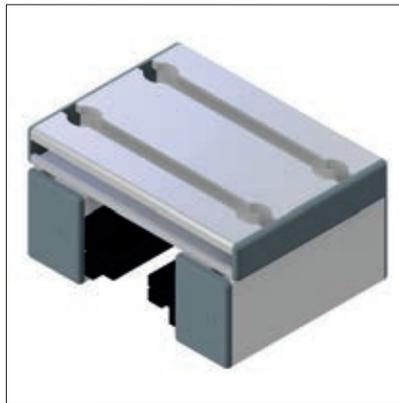
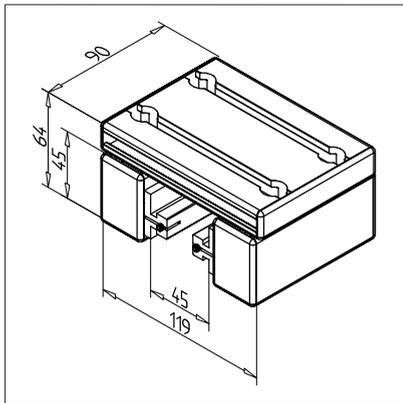
- Simple linear guides
- Slide units

### OTHER VERSIONS

- With slide clamping device at top **part no. 28.0193/1**
- With slide clamping device lateral **part no. 28.0193/2**
- Different slide lengths

## Slide LWN 32 x 45 - 45

Part No. 28.0192/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- Fully mounted carriage
- 2 slide rails LN
- End caps
- Load capacity up to 450 N
- Clearance adjusted
- Weight = 0.678 kg/piece

### APPLICATIONS

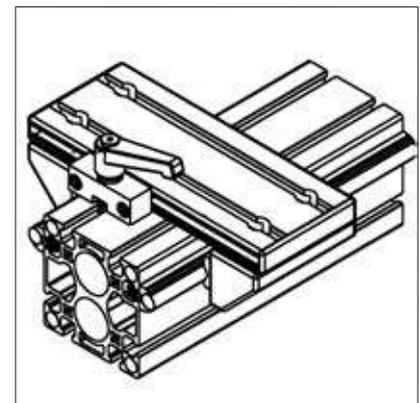
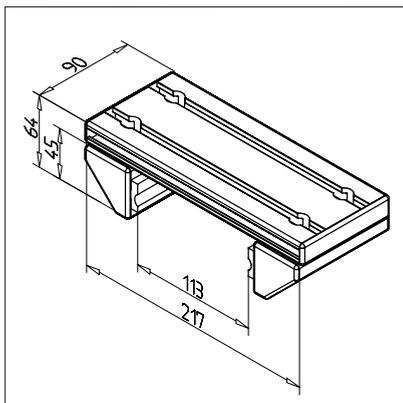
- Simple linear guides
- Slide units

### OTHER VERSIONS

- With slide clamping device at top **part no. 28.0192/1**
- With slide clamping device lateral **part no. 28.0192/2**
- Different slide lengths

## Slide LWG 45/45°-90

Part No. 28.0137/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- Fully mounted carriage
- 2 slide rails LG
- End caps
- Load capacity up to 450 N
- Clearance adjusted
- Weight = 0.831 kg/piece

### APPLICATIONS

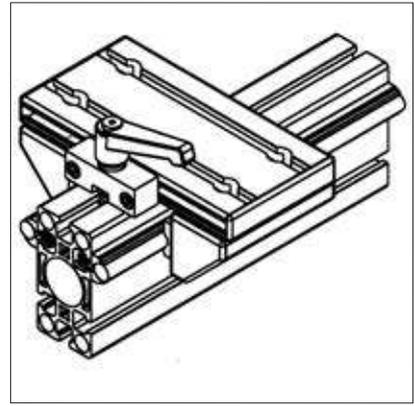
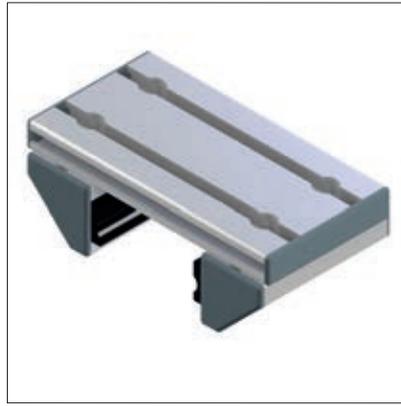
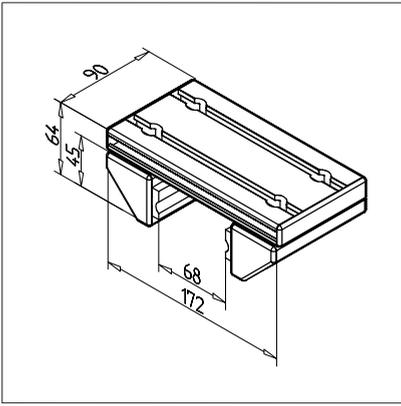
- Simple linear guides
- Slide units
- For rail 90 with shafts  $\varnothing$  12 mm

### OTHER VERSIONS

- With slide clamping at top **part no. 28.0137/1**
- Different slide lengths

## Slide LWG 45/45° - 45

Part No. 28.0136/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- Fully mounted carriage
- 2 slide rails LG
- End caps
- Load capacity up to 450 N
- Clearance adjusted
- Weight = 0.741 kg/piece

### APPLICATIONS

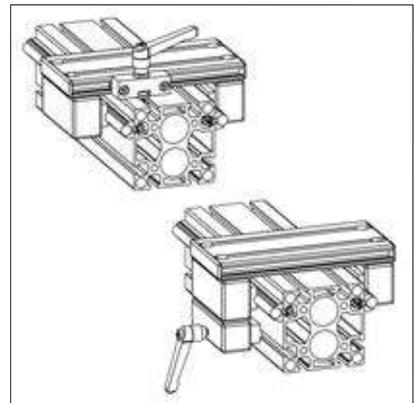
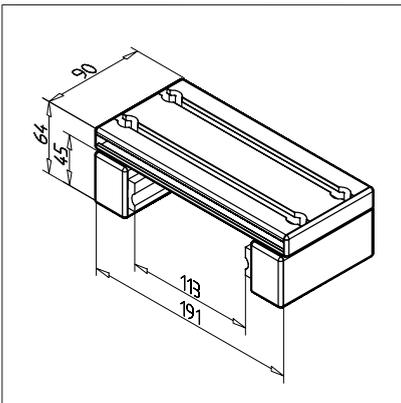
- Simple linear guides
- Slide units
- For rail 45 with shafts Ø 12 mm

### OTHER VERSIONS

- With slide clamping at top **part no. 28.0136/1**
- Different slide lengths

## Slide LWG 32 x 45 - 90

Part No. 28.0133/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- Fully mounted carriage
- 2 slide rails LG
- End caps
- Load capacity up to 450 N
- Clearance adjusted
- Weight = 0.810 kg/piece

### APPLICATIONS

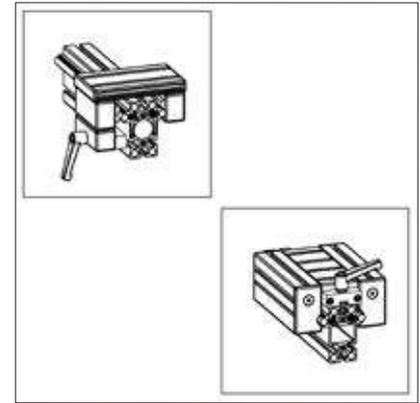
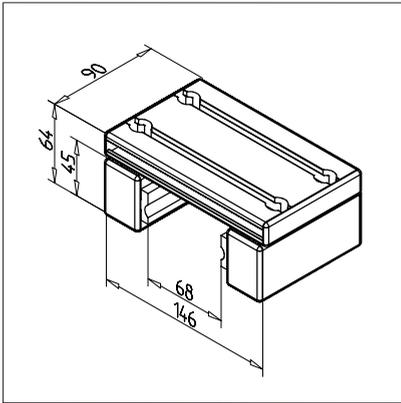
- Simple linear guides
- Slide units
- For rail 90 with shafts Ø 12 mm

### OTHER VERSIONS

- With slide clamping at top **part no. 28.0133/1**
- With slide clamping lateral **part no. 28.0133/2**
- Different slide lengths

## Slide LWG 32 x 45 - 45

Part No. 28.0132/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6/EV1
- Fully mounted carriage
- 2 slide rails LG
- End caps
- Load capacity up to 450 N
- Clearance adjusted
- Weight = 0.726 kg/piece

### APPLICATIONS

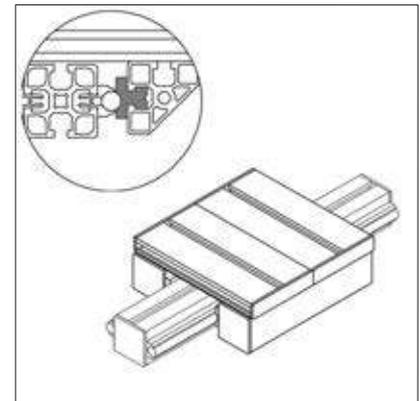
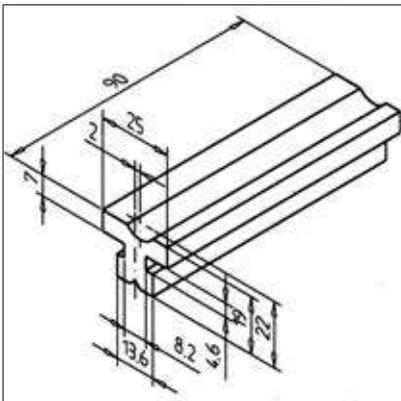
- Simple linear guides
- Slide units
- For rail 45 with shafts  $\varnothing$  12 mm

### OTHER VERSIONS

- With slide clamping at top **part no. 28.0132/1**
- With slide clamping lateral **part no. 28.0132/2**
- Different slide lengths

## Slide rail LG

Part No. 22.1094/0



### TECHN. DATA / ITEMS SUPPLIED

- PE-UHMW, black
- Fastening kit
- Allowed panel pressure: max. 10 N/mm<sup>2</sup>
- Weight = 0.029 kg/piece

### APPLICATIONS

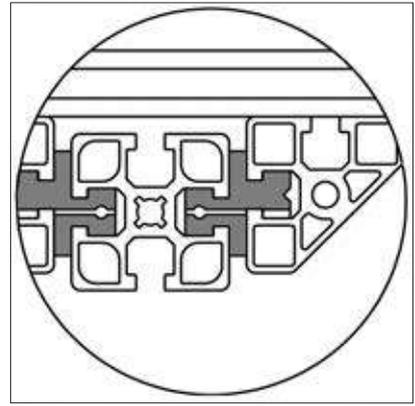
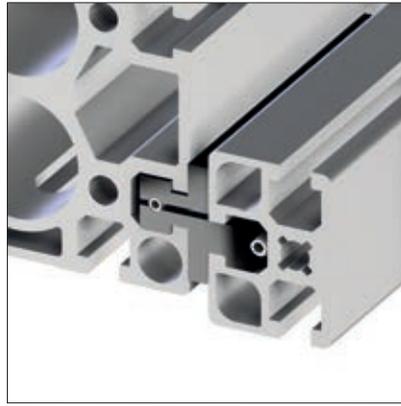
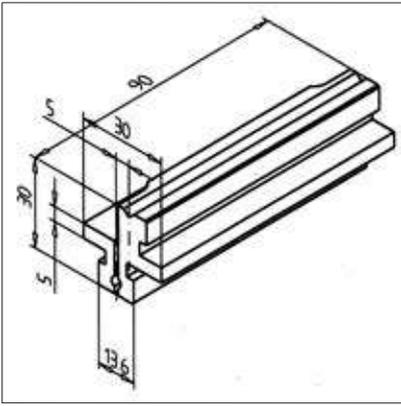
- Slide guides LG

### ASSEMBLY

- Insert into groove of lateral guide profile
- Secure with fastening material

## Slide rail LN

Part No. 22.1095/0



### TECHN. DATA / ITEMS SUPPLIED

- PE-UHMW, black
- Fastening kit
- Allowed panel pressure: max. 10 N/mm<sup>2</sup>
- Weight = 0.030 kg/piece

### APPLICATIONS

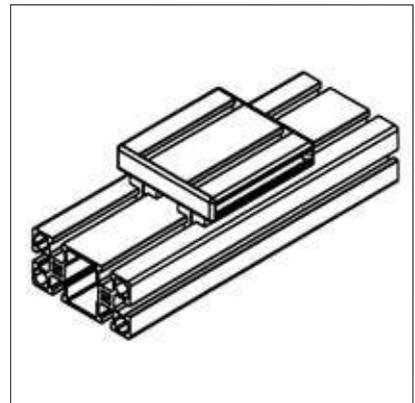
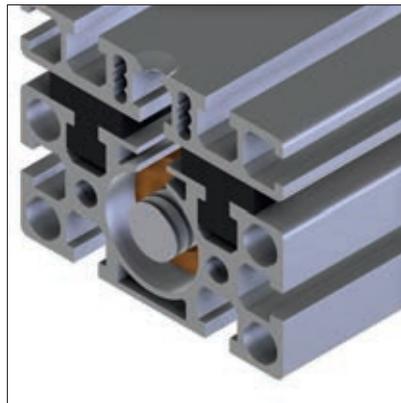
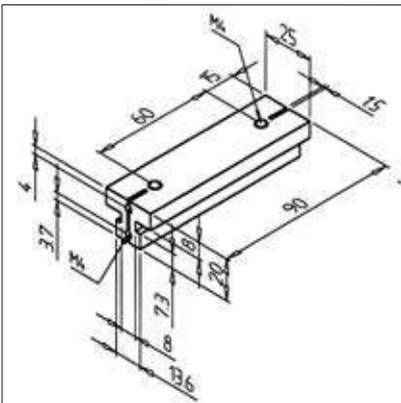
- Slide guides LN
- Adjusting units
- Heavy sliding doors
- Drawers

### ASSEMBLY

- Connect with slide plate
- Insert into grooves of the guide profile
- Adjust without clearance, use fastening kit

## Slide rail LN-S

Part No. 22.1096/0



### TECHN. DATA / ITEMS SUPPLIED

- PE-UHMW, black
- Fastening kit
- Allowed panel pressure: max. 10 N/mm<sup>2</sup>
- Weight = 0.036 kg/piece

### APPLICATIONS

- Slide guides LN-S
- Adjusting units
- Slide units
- Workpiece carrier

### ASSEMBLY

- Insert into grooves of the guide profile
- Adjust sliding rails without clearance by screwing in the side setscrews (M4)
- Connect with slide plate