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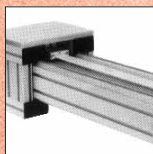
[www.profilex-systems.com](http://www.profilex-systems.com)

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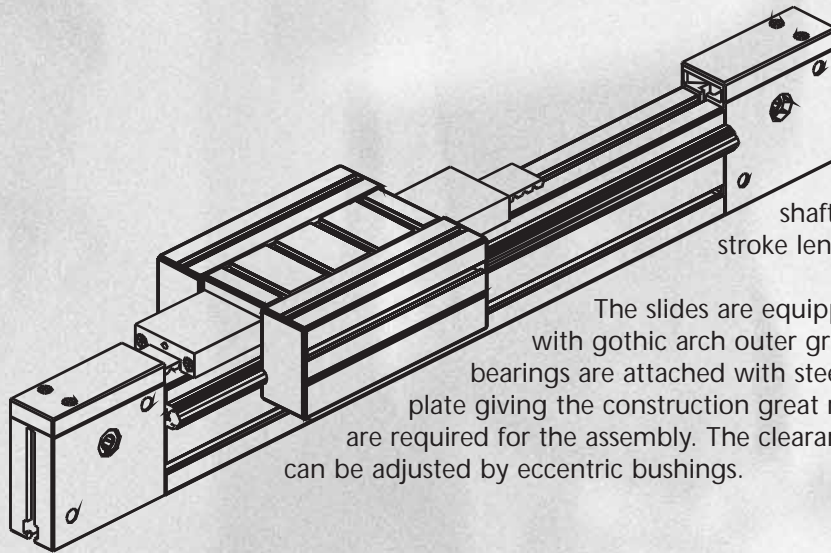
# LINEAR SYSTEMS







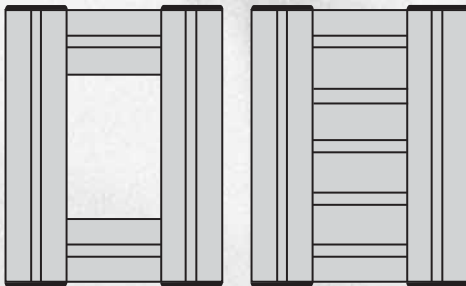
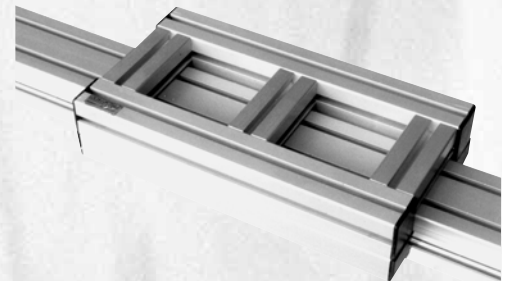
# LINEAR SYSTEM LR



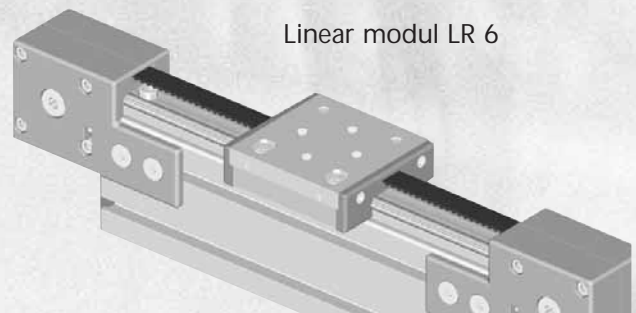
The linear system LR is based on double-row angular contact bearings made of bearing steel and hardened and ground precision shafts Ø 12 mm / Cf 53. Any required stroke length can be implemented.

The slides are equipped with double-row roller bearings with gothic arch outer grooves. For very high loads multiple bearings are attached with steel-T-Slot bars directly to the slide-plate giving the construction great rigidity. No special bearing profiles are required for the assembly. The clearance between bearings and shafts can be adjusted by eccentric bushings.

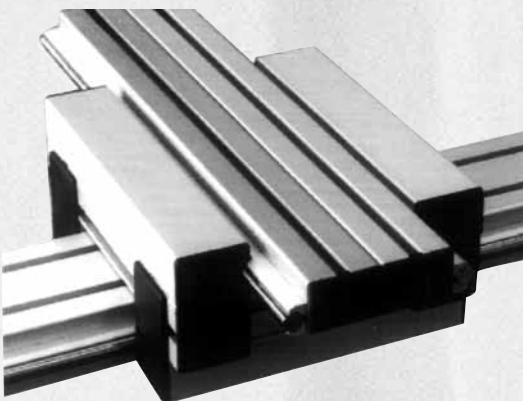
The slides are completely covered, lubrication felts are fitted in the endcaps which clean and grease the shafts. For maintenance purposes the felts can be exchanged quickly and easily without tools. This advantage is important for applications in rough working conditions



Both closed and open-frame slides with any desired length or width can be fabricated.

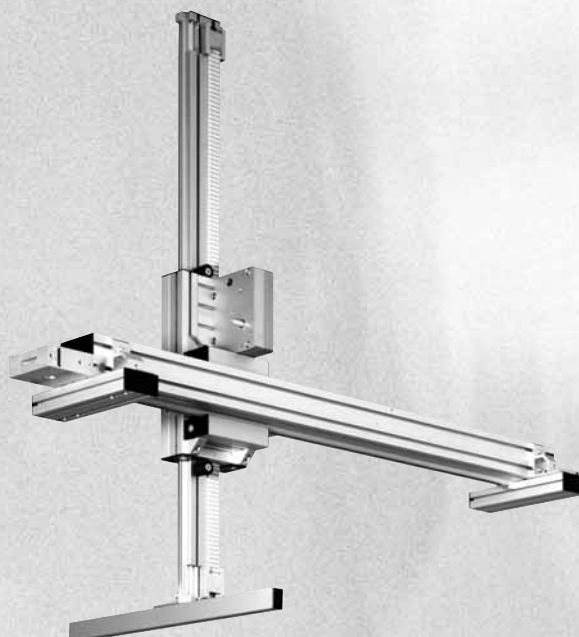


Linear modul LR 6

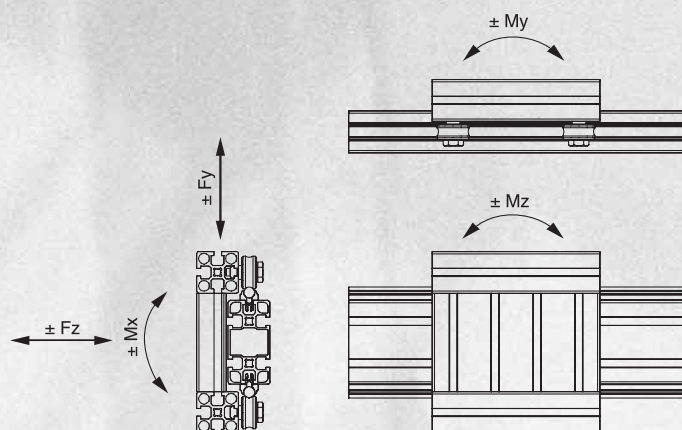


X/Y-tables are easily constructed by the attachment of 4 bearings on to the top of the slide. The guide rails for this configuration are made from profile 45 x 32. End caps LR and cover profile AL also fit the y-axis.

# LINEAR SYSTEM LR



## Load capacity

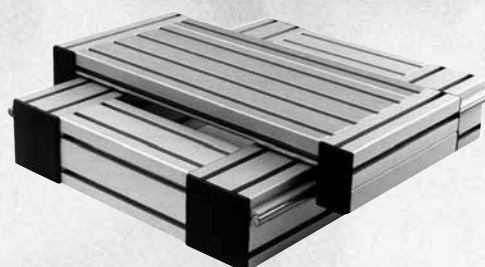


Calculation of max. moment loads as function of the slide length:

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

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

L = length of slide



Linear system Slides	<b>LR6</b> Slide LR 6 4 bearings L = 90 mm	<b>LR 12</b> Slide 45 4 bearings L = 180 mm	Slide 90 4 bearings L = 180 mm	Slide 135 4 bearings L = 180 mm	Slide 180 4 bearings L = 180 mm	Slide 180 8 bearings L = 360 mm
Mx max.	30 Nm	79 Nm	107 Nm	130 Nm	165 Nm	240 Nm
My max.	75 Nm	120 Nm	120 Nm	120 Nm	120 Nm	275 Nm
Mz max.	40 Nm	202 Nm	202 Nm	202 Nm	202 Nm	470 Nm
Fy max.	800 N	3500 N	3500 N	3500 N	3500 N	7000 N
Fz max.	640 N	1500 N	1500 N	1500 N	1500 N	3000 N

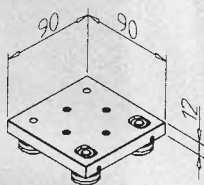
Linear system Slides	<b>LR 16</b> Slides LR 16-45	Slides LR 16-90
Mx max.	158 Nm	214 Nm
My max.	288 Nm	288 Nm
Mz max.	323 Nm	323 Nm
Fy max.	7000 N	7000 N
Fz max.	3000 N	3000 N

Maximal speed slide 45 - 180: 10 m/sec.  
Maximal speed slide LR 6: 5 m/sec.

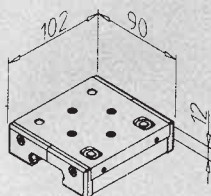


# EXAMPLES OF SLIDES

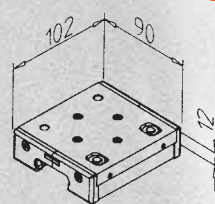
LR 6



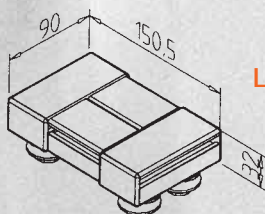
LR 6 Z with cover



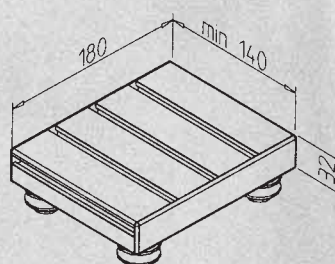
LR 6 Z



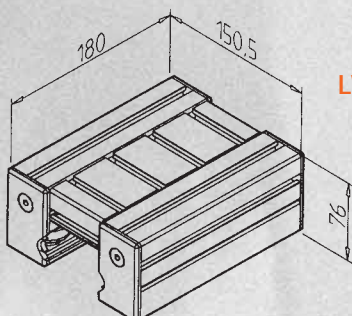
LW 32



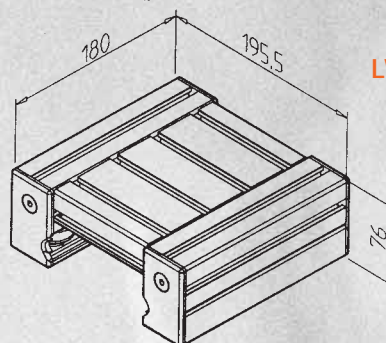
LW 32 E



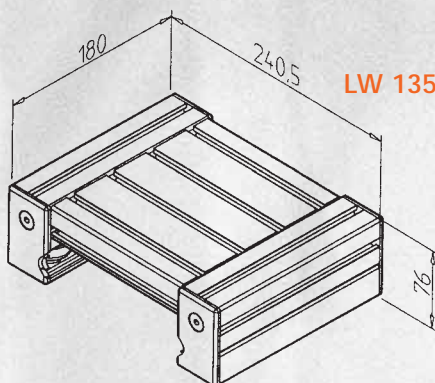
LW 45



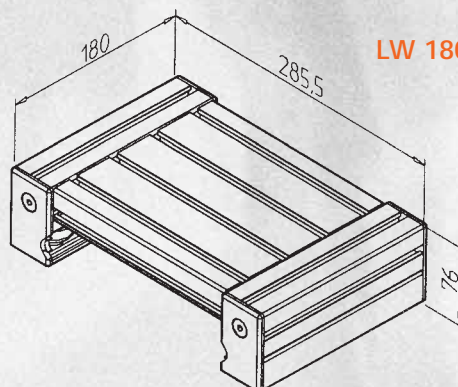
LW 90



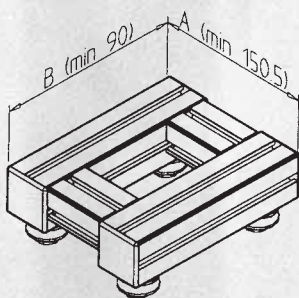
LW 135



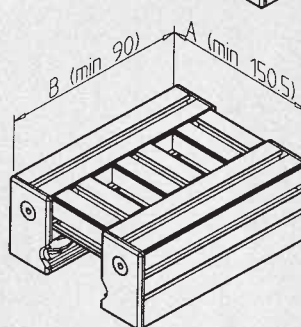
LW 180



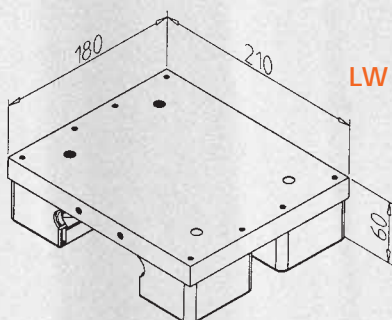
Open



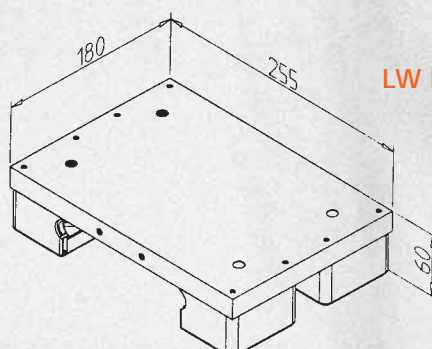
Open



LW LR 16-45



LW LR 16-90



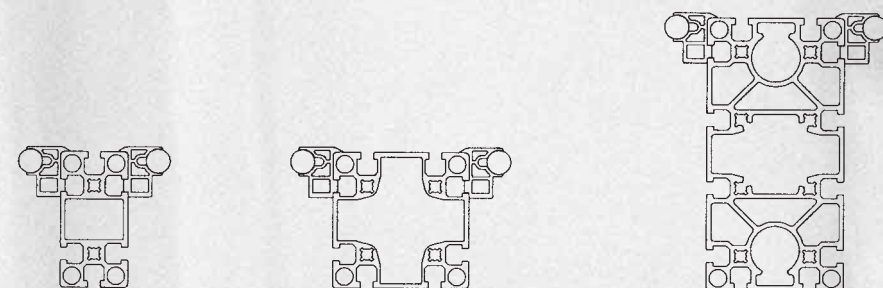
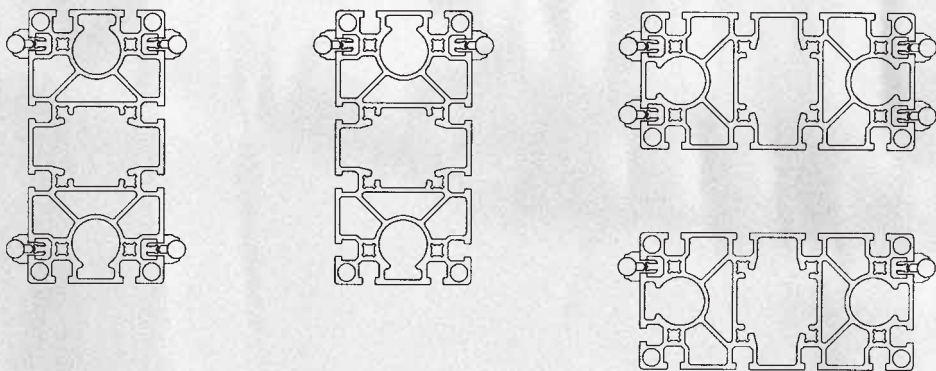
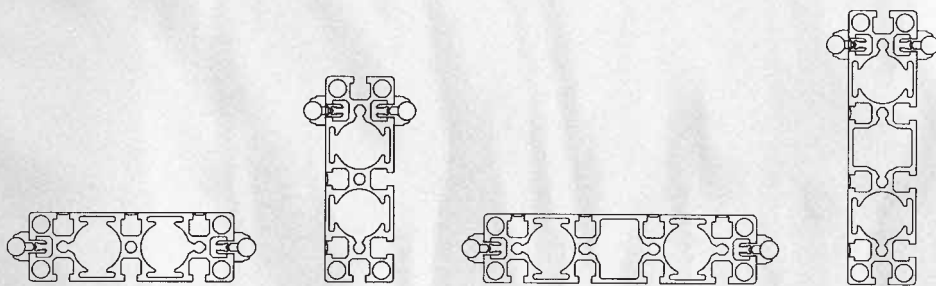
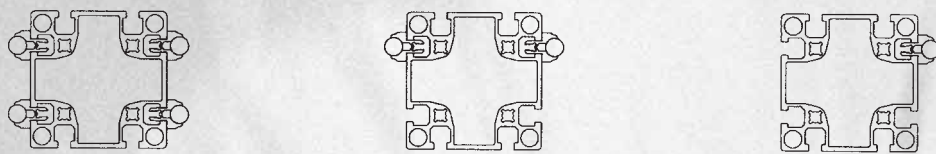
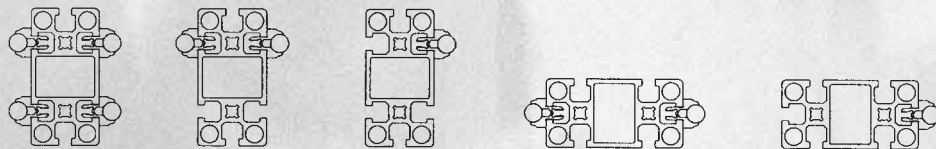
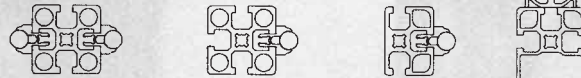


# POSSIBLE DESIGNS OF RAILS

Calculation of rail length LR 12 + LR 16  
(not for LR6)

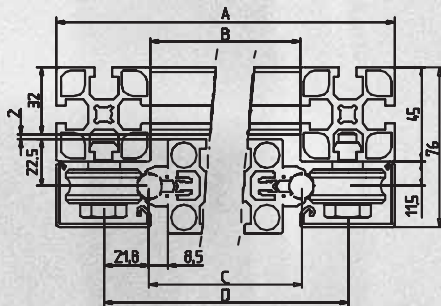
Travel  
+ Slide length  
+ 2 x Belt tensioner  
+ 40 mm Security distance

= Travel  
+ Slide length  
+ 180 mm

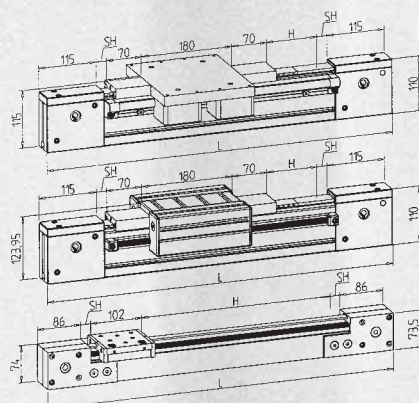
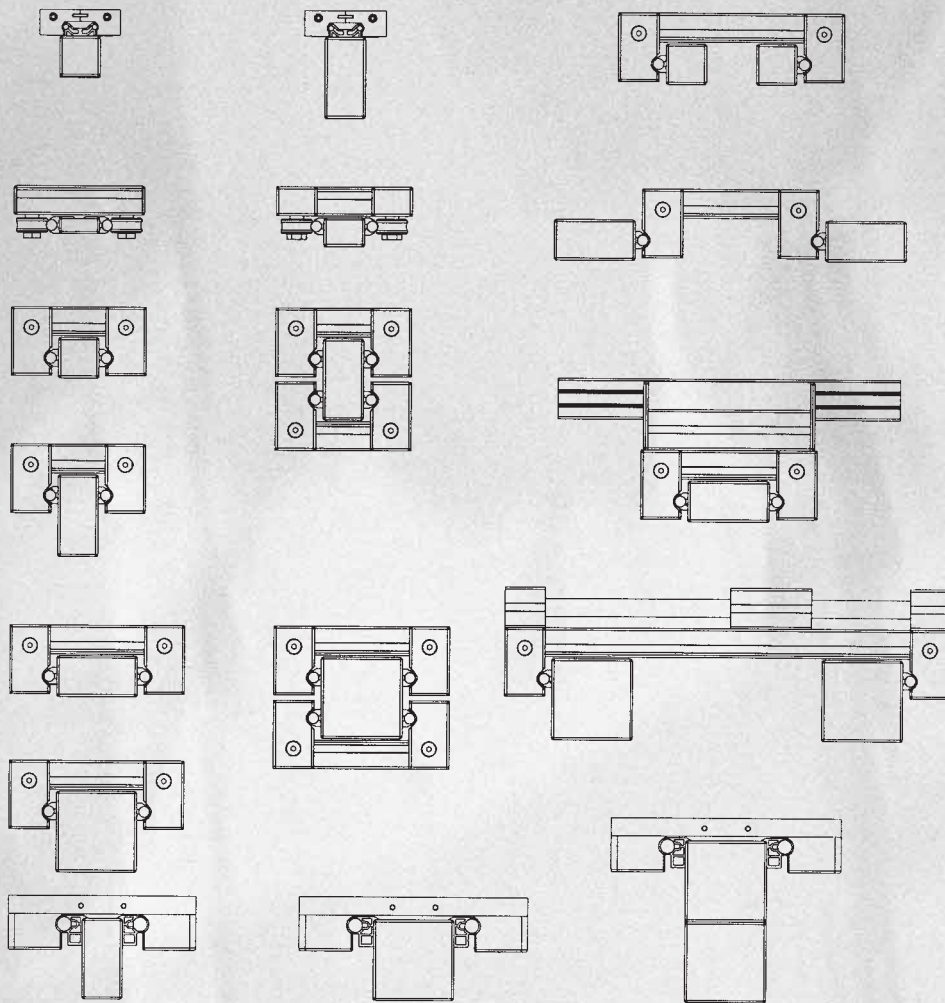




# POSSIBLE COMBINATIONS OF RAILS AND SLIDES



Slide-type	LR 6	LW 45	LW 90	LW 135	LW 180	LR 16-45	LR 16-90
A	90	150,5	195,5	240,5	285,5	210	255
B	-	60,5	105,5	150,5	195,5	-	-
C	32	62	107	152	197	85	130
D	60	105,5	150,5	195,5	240,5	149,5	194,5



## LR 12 + LR 16

Calculation of total length L:  
 Travel H  
 + Slide length  
 + 2 x Reverse unit  
 + 2 x Belt tensioner  
 + 40 mm Security distance SH

= Travel + slide length + 410 mm

\*Please note: This is just a reference value, as the belt tension is brought up by the timing belt pulley.

## LR 6

Calculation of total length L:  
 Travel H  
 + Slide length (102)  
 + 2 x Belt tensioner  
 + 40 mm Security distance SH  
 = Travel + 314 mm\*



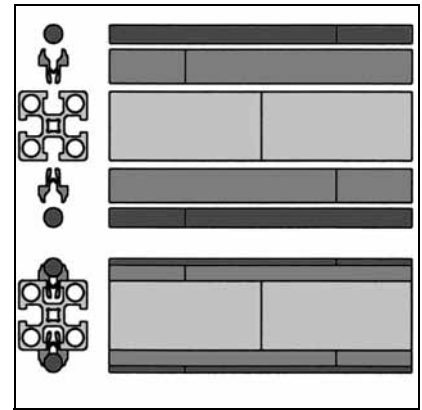
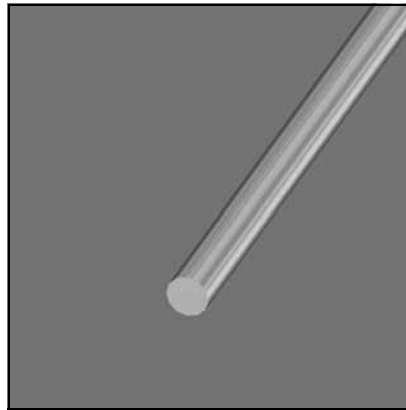
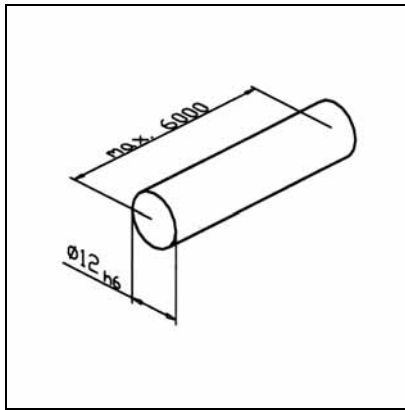


COMPONENTS  
LR



# SHAFT 12

Part. N° 17.1741/0



## TECHN. DATA / ITEMS SUPPLIED

- Cf 53, hardened 60 + 5 HRC, precision ground h6
- Weight 0,888 kg/m
- max. Length 6 m
- Stainless version Part N° 17.1760/0

## APPLICATIONS

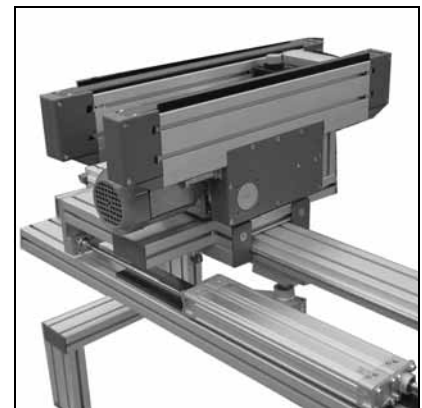
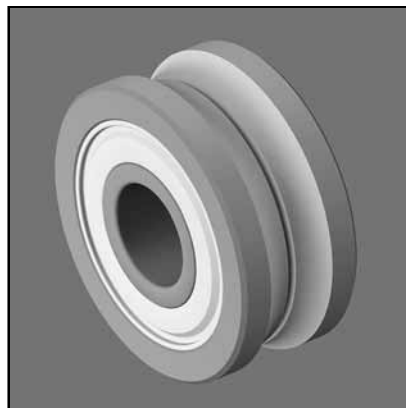
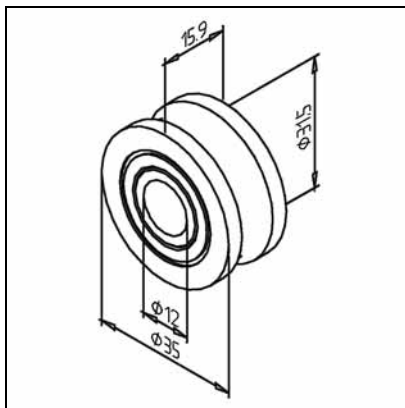
- All MiniTec linear guides LR

## ASSEMBLY

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

# BALL BEARING LR 12

Part. N° 28.0001/0



## TECHN. DATA / ITEMS SUPPLIED

- Double-row angular contact bearing
- For shaft 12
- Load capacity:
- dyn. C = 10.50 kN
- stat. C<sub>0</sub> = 6.00 kN
- Weight 0,068 kg
- Stainless version Part N° 28.0001/1

## APPLICATIONS

- All MiniTec linear guides LR

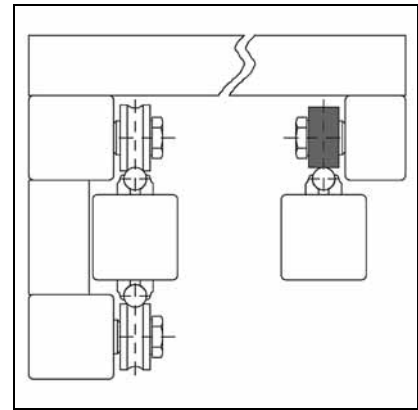
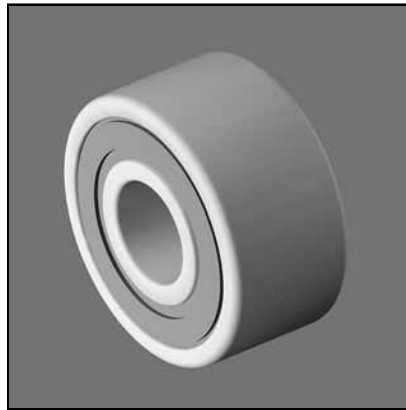
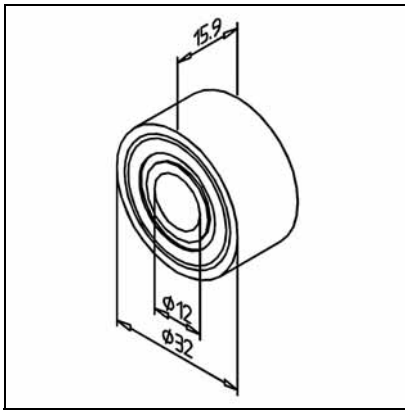
## ASSEMBLY

- With fixing kit LRK Part N° 28.0021/0 or LRE Part N° 28.0022/0



## BALL BEARING LR 12 L

Part. N° 28.0005/0



### TECHN. DATA / ITEMS SUPPLIED

- Double-row angular contact bearing	
- Load capacity:	
- dyn. C =	8.60 kN
- stat. C <sub>0</sub> =	5.10 kN
- Weight	0.06 kg

### APPLICATIONS

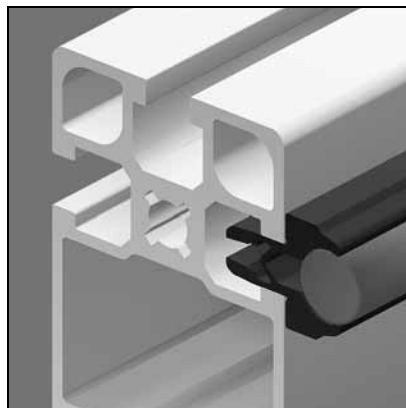
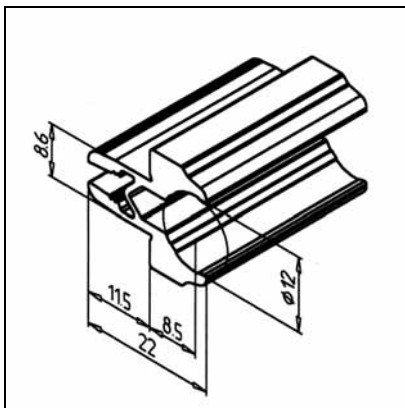
- MiniTec linear guides with movable and fixed bearing side
- Balancing deviations in distance in parallel linear systems

### ASSEMBLY

- With fixing kit LRK Part N° 28.0021/0 or LRE Part N° 28.0022/0

## SHAFT SUPPORTING PROFILE

Part. N° 28.0002/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, natural anodized E6/EV1	
- Weight	0.365 kg/m
- Length	6 m

### APPLICATIONS

- MiniTec linear guides LR/LG

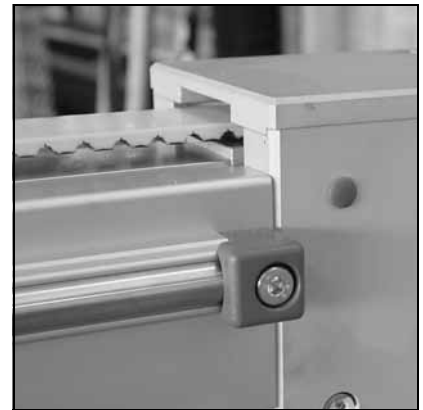
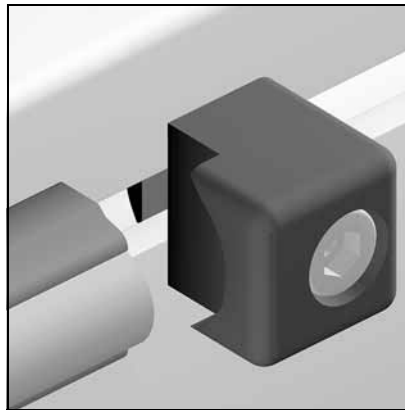
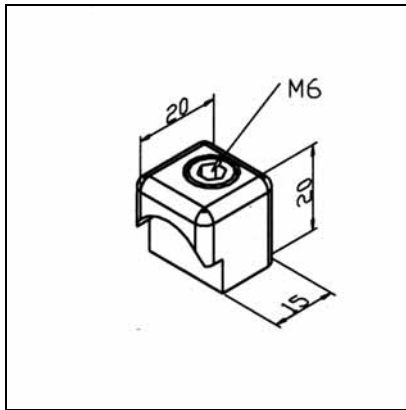
### ASSEMBLY

- Press into the groove of rail profile
- If necessary clamp with set screw M5 x 10 in position
- Press shaft into supporting profile with appropriate tool (plastic mallet)



# SHAFT RETENTION DEVICE

Part. N° 28.0052/0



## TECHN. DATA / ITEMS SUPPLIED

- Aluminium , powder coated, grey
- Fastening kit
- Weight 0,03 kg
- Stainless version Part N° 28.0053/0

## APPLICATIONS

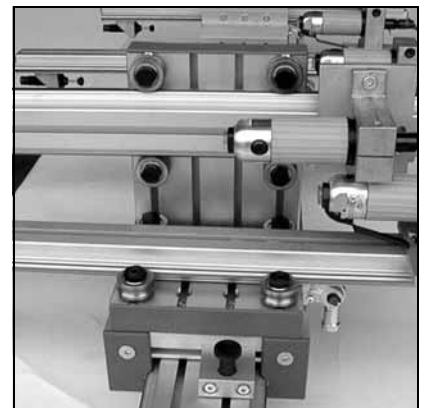
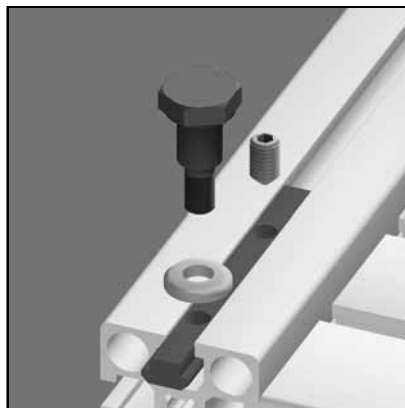
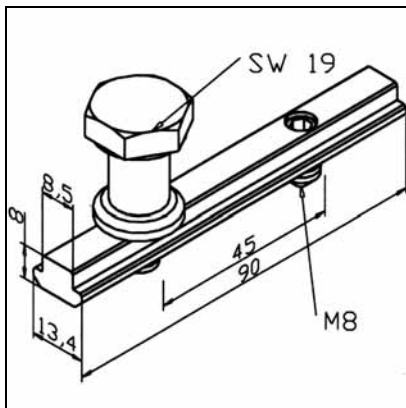
- Axial retention of shafts in dynamically stressed linear guides

## ASSEMBLY

- Fasten the retention device at both shaft ends with fastening kit
- No processing required

# FIXING KIT LRK

Part. N° 28.0021/0



## TECHN. DATA / ITEMS SUPPLIED

- 1 T-slot bar, steel, zinc plated with set screw
- 1 Bolt M8 concentric, steel, black-finished
- 1 Washer 3,5 mm, steel, precision ground, back finished
- Weight 0,1 kg
- Stainless version Part N° 28.0021/1

## APPLICATIONS

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

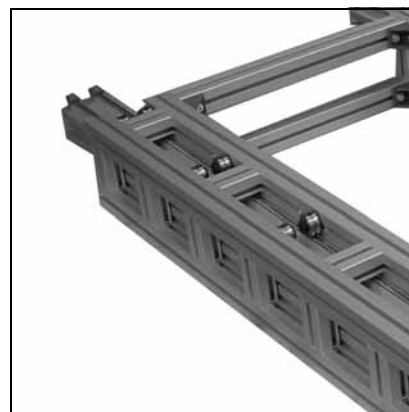
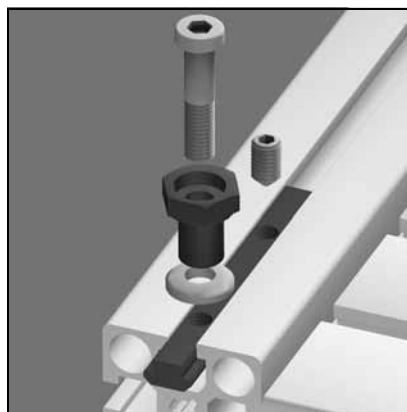
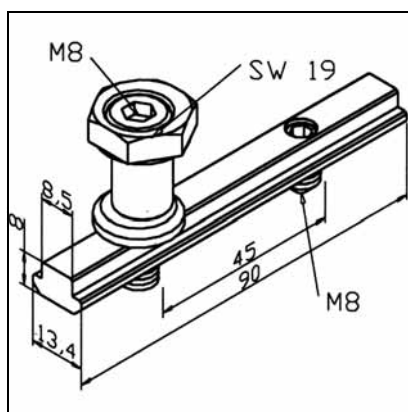
## ASSEMBLY

- Fix T-slot bar in groove of lower slide side with the set screws at inner position
- Threads M8 without set screws are used for the fixing bolts
- Insert bolt in the bearing and washer bore, Tighten firmly on T-slot bar with spanner 19 A/F
- Recommended locking torque: 25 Nm



## FIXING KIT LRE

Part. N° 28.0022/0



### TECHN. DATA / ITEMS SUPPLIED

- T-slot bar, steel, zinc plated with set screw
- Eccentric bush, steel black-finished
- Bolt M8, steel, black-finished
- Washer 3,5 mm, steel, precision ground, black finished
- Weight 0,1 kg
- Stainless version Part N° 28.0022/1

### APPLICATIONS

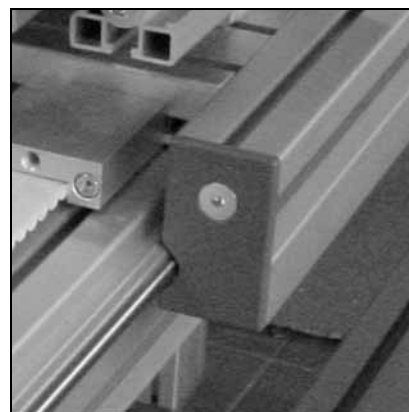
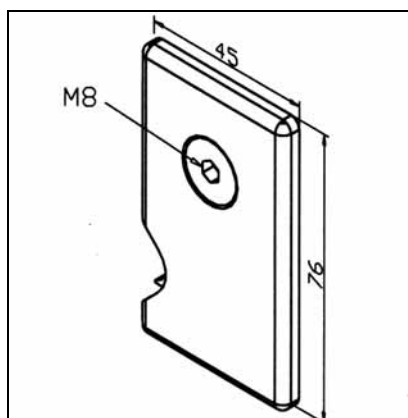
- All MiniTec linear guides LR
- Eccentric attachment of ball bearings LR 12

### ASSEMBLY

- Mounting of T-slot bar: see fixing kit LRK
- Insert eccentric bush in the bearing and washer bore, retighten T-slot bar with key 4 A/F
- Adjust bush with ring spanner width 19 mm (turn for freedom from clearance with 0,9 - 1 Nm) and fix bolt
- Recommed locking torque: 25 Nm

## END CAP LR (RIGHT)

Part. N° 28.0004/1



### TECHN. DATA / ITEMS SUPPLIED

- ABS with integrated, spring-mounted stripping and greasing felt
- Fastening kit
- Weight 0,03 kg
- Also deliverable in black, Part. N° 28.0004/0

### APPLICATIONS

- All MiniTec linear guides LR

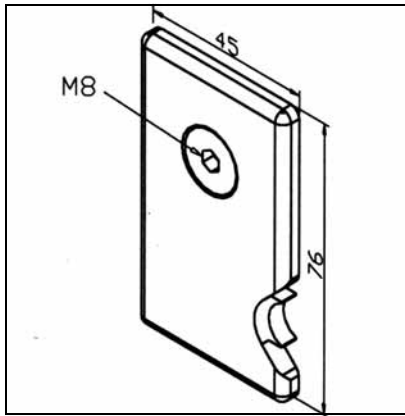
### ASSEMBLY

- Insert cover profile between the end caps
- Insert the lubricated felts and press fastening peg in profile 45 x 45 of the slide plate
- Use fastening kit
- Clean and relubricate the felt or replace it when necessary Part N° 28.0004/8



## END CAP LR (LEFT)

Part. N° 28.0004/3



### TECHN. DATA / ITEMS SUPPLIED

- ABS with integrated, spring-mounted stripping and greasing felt
- Fastening kit
- Weight 0,03 kg
- Also deliverable in black, Part. N° 28.0004/2

### APPLICATIONS

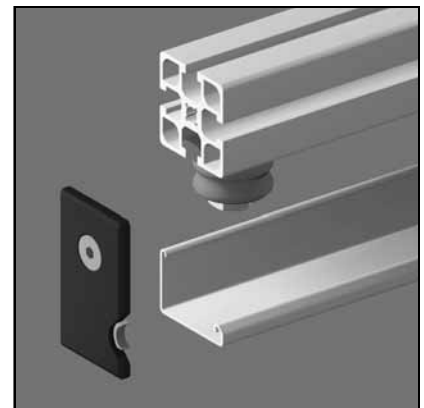
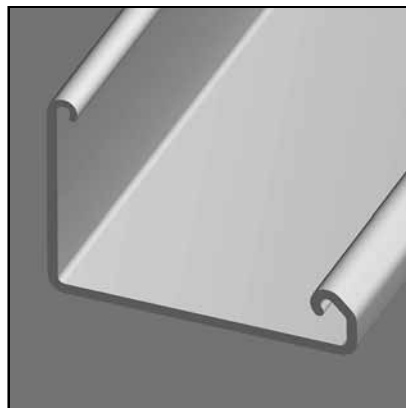
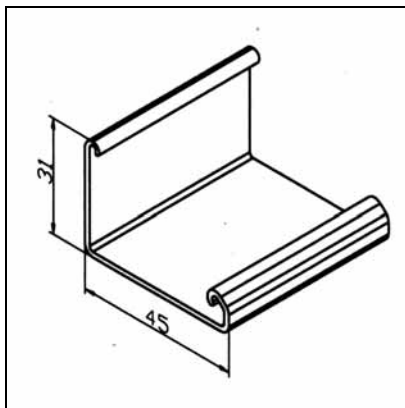
- All MiniTec linear guides LR

### ASSEMBLY

- Insert cover profile between the end caps
- Insert the lubricated felts and press fastening peg in profile 45 x 45 of the slide plate
- Use fastening kit
- Clean and relubricate the felt or replace it Part N° 28.0004/8 when necessary

## COVER PROFILE LR

Part. N° 28.0049/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, natural anodized E6/EV1
- Weight 0,362 kg/m
- Length 6,000 m

### APPLICATIONS

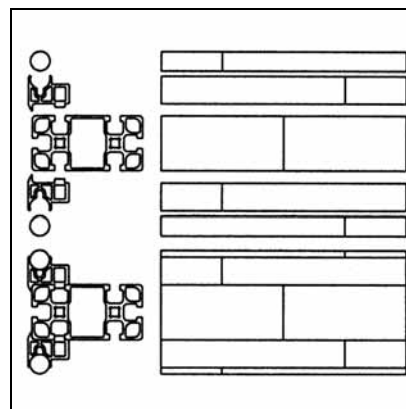
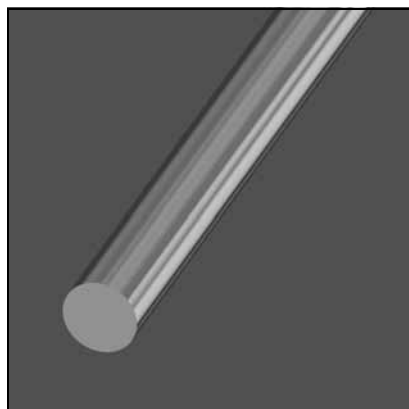
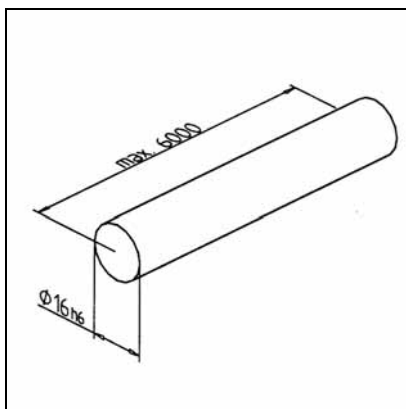
- All MiniTec linear guides LR

### 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

# SHAFT 16

Part. N° 17.1743/0



## TECHN. DATA / ITEMS SUPPLIED

- Cf 53, hardened  $60 \pm 5$  HRC, precision ground h6

- Weight 1,578 kg/m

- max. Length 6 m

## APPLICATIONS

- MiniTec linear guide LR 16

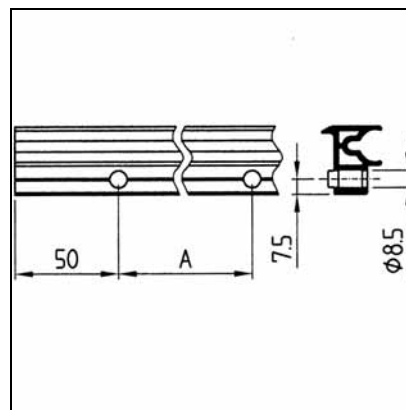
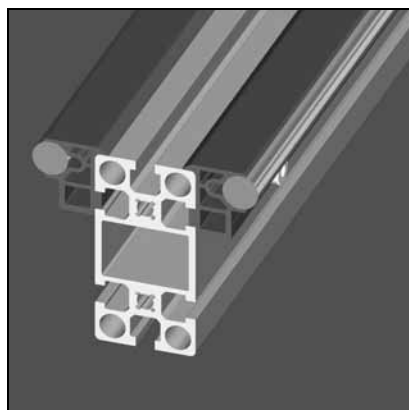
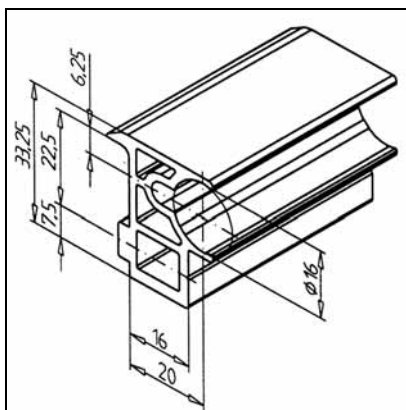
## ASSEMBLY

- Carefully hammer into the shaft carrier profile with a plastic-tipped hammer

- On guides with  $L > 6000$  mm assemble profile, shaft support and shaft with offset joints

# SHAFT SUPPORTING PROFILE LR 16

Part. N° 28.0019/0



## TECHN. DATA / ITEMS SUPPLIED

- Aluminium natur, eloxiert E6 / EV1

- Weight 0,845 kg/m

- Length 6 m

## APPLICATIONS

- MiniTec linear guide LR16

## ASSEMBLY

- Bore  $\varnothing 8.5$  in the shaft supporting profile

- Recommended distance: 50 mm from the edge, then approximately every 200 - 300 mm

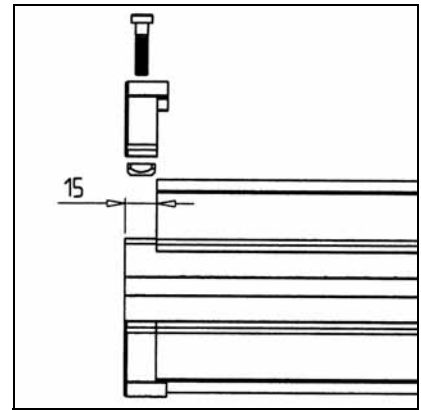
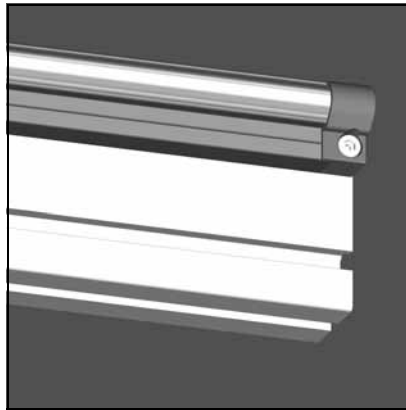
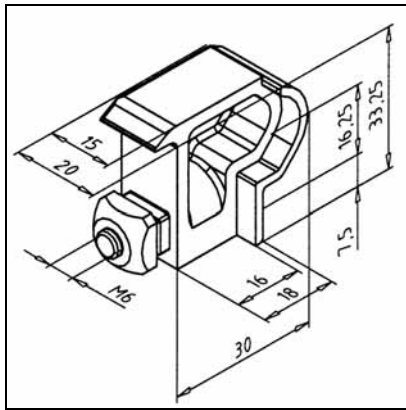
- Fasten to the carrier profile using M8 x 30 hex socket head screw and M8 square nut

- Hammer the shaft into the shaft supporting profile with a plastic-tipped hammer



# SHAFT FASTENER LEFT LR 16

Part. N° 28.0809/0



## TECHN. DATA / ITEMS SUPPLIED

- Aluminium GD, powder coated, grey
- With fastening kit
- Weight 0,04 kg

## APPLICATIONS

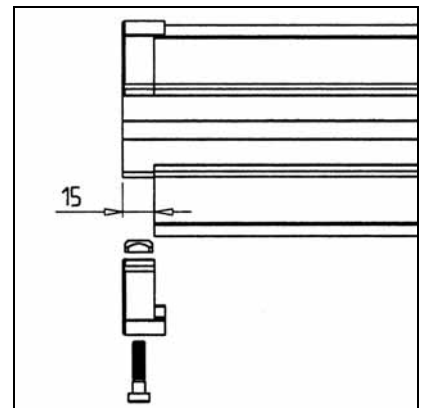
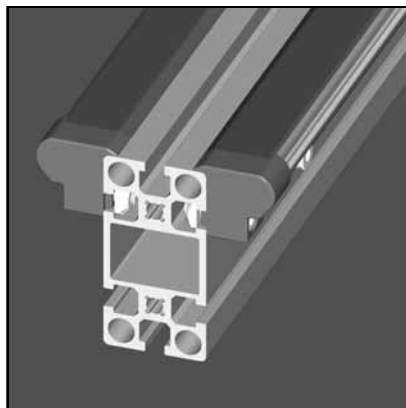
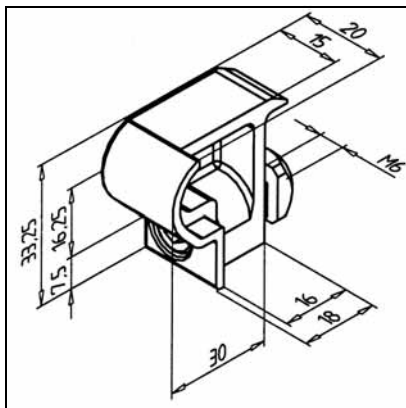
- Axial fastening of shafts in linear guides subject to heavy dynamic stress

## ASSEMBLY

- Shaft carrier profile and shafts must be 15 mm shorter on each side than the supporting profile
- Attach the shaft fastening at both ends of the shaft with supplied fastening kit
- No processing is necessary

# SHAFT RETENTION DEVICE RIGHT LR 16

Part. N° 28.0808/0



## TECHN. DATA / ITEMS SUPPLIED

- Aluminium GD, powder coated, grey
- Fastening kit
- Weight 0,04 kg

## APPLICATIONS

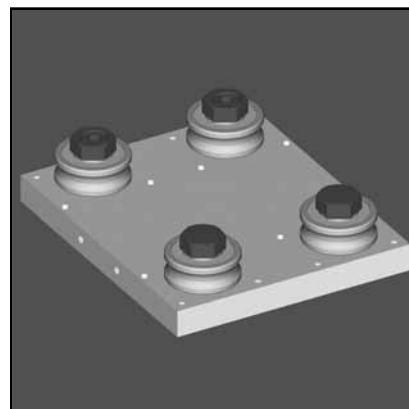
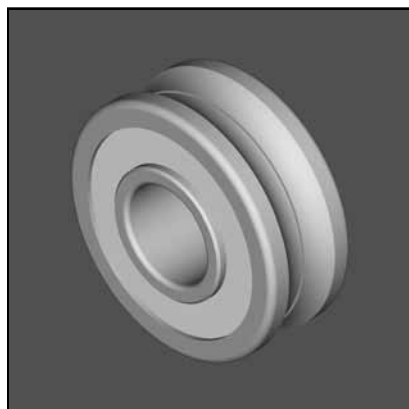
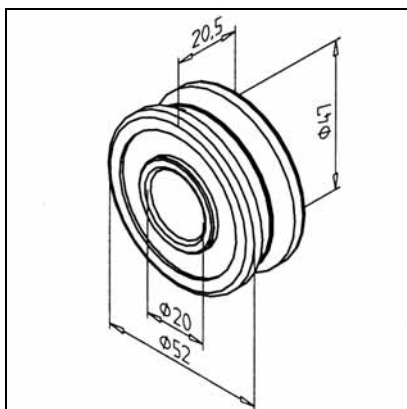
- Axial fastening of shafts in linear guides subject to heavy dynamic stress

## ASSEMBLY

- Shaft carrier profile and shafts must be 15 mm shorter on each side than the supporting profile
- Attach the shaft fastening at both ends of the shaft with supplied fastening kit
- No processing is necessary

# BALL BEARING LR 16

Part. N° 50.1726/0



## TECHN. DATA / ITEMS SUPPLIED

- Double-row angular contact bearing

- For shaft 16

- Load capacity

- dyn. C = 19.90 kN

- stat. C<sub>0</sub> = 12.60 kN

- Weight 0,2 kg

## APPLICATIONS

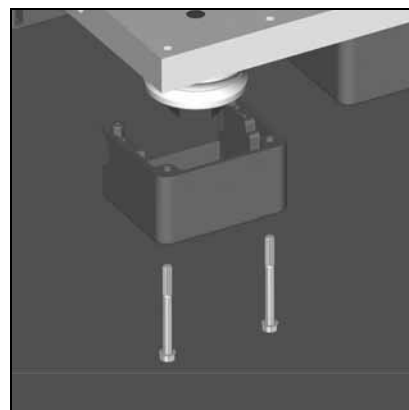
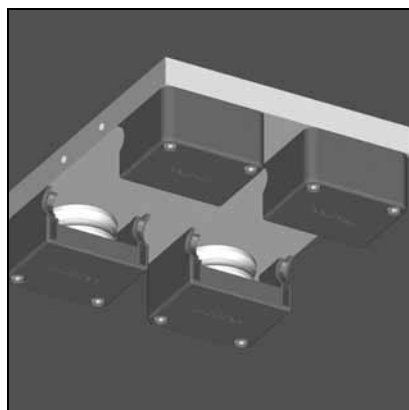
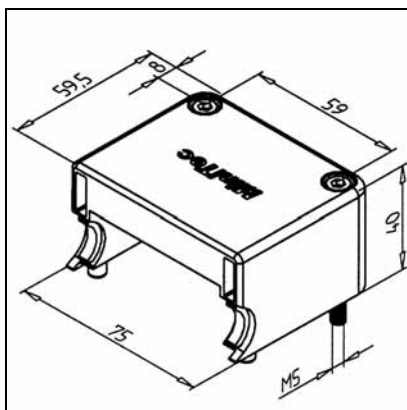
- MiniTec linear guides LR 16

## ASSEMBLY

- Fastening with central bush Part. N° 28.0814/0 or adjustable with eccentric bush Part. N° 28.0813/0 and M 12 x 40 bolt Part. N° 21.1257/0

# END CAP LR 16

Part. N° 28.0815/0



## TECHN. DATA / ITEMS SUPPLIED

- ABS with integrated, spring-mounted stripping and greasing felt

- Fastening kit

- Weight 0,055 kg

## APPLICATIONS

- MiniTec linear guides LR 16

## ASSEMBLY

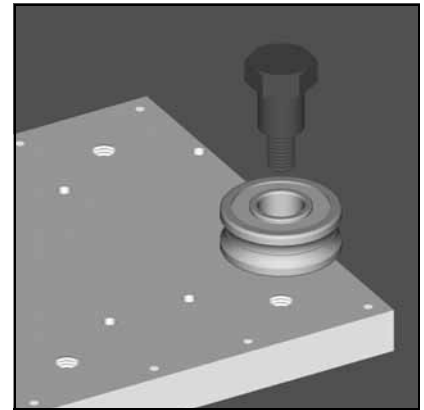
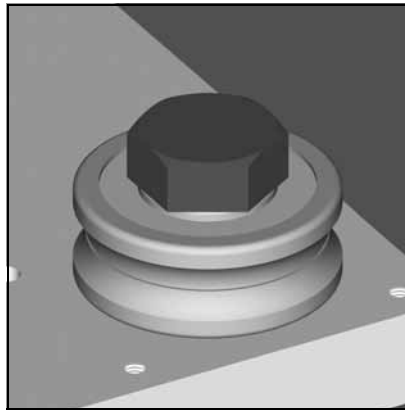
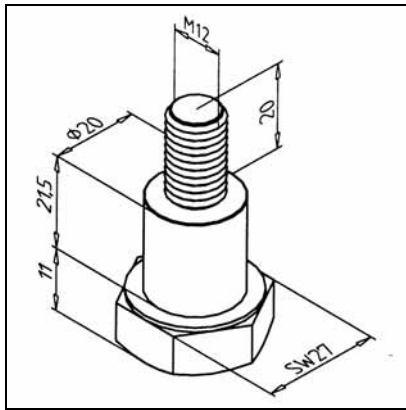
- Use fastening kit

- Depending on the conditions, clean and relubricate the felt or insert a replacement felt Part. N° 28.0816/0



# BOLT CONCENTRIC LR 16

Part. N° 28.0814/0



## TECHN. DATA / ITEMS SUPPLIED

- Bolt M12 concentric, steel, black-finished
- Weight 0,12 kg

## APPLICATIONS

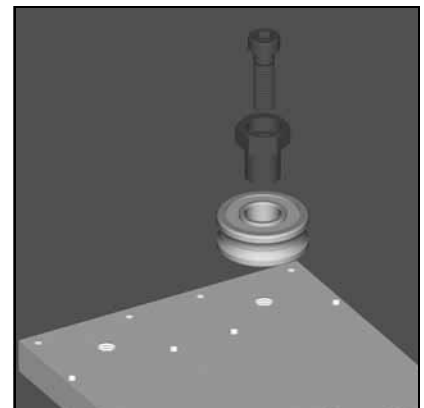
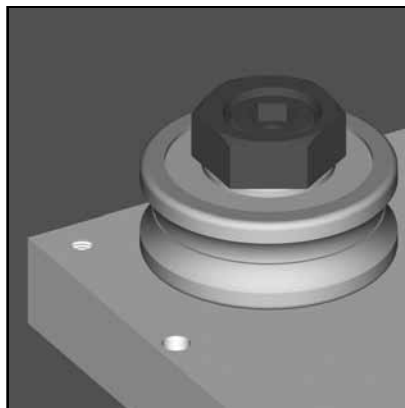
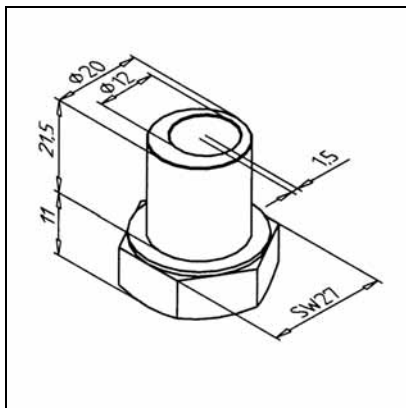
- MiniTec linear guides LR 16
- Concentric fastening of ball bearings LR 16

## ASSEMBLY

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

# ECCENTRIC BUSH

Part. N° 28.0813/0



## TECHN. DATA / ITEMS SUPPLIED

- Eccentric bush, steel, black-finished
- Weight 0,059 kg

## APPLICATIONS

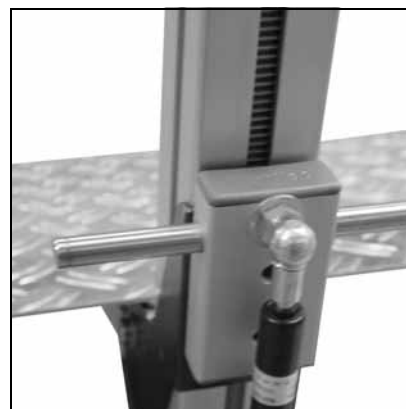
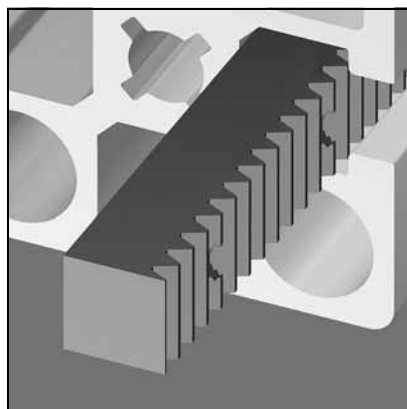
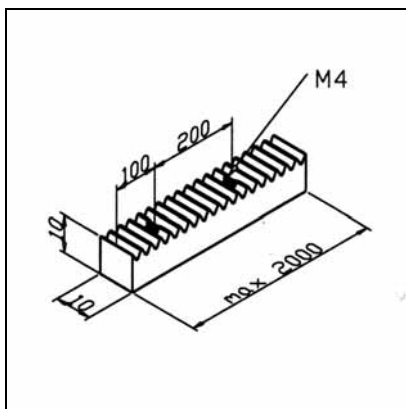
- MiniTec linear guides LR 16
- Eccentric fastening of ball bearings LR 16

## ASSEMBLY

- Insert screw M12 x 40 Part. N° 21.1257/0 into eccentric bush and assemble loosely with bearing
- Adjust the bearing by turning the eccentric bush with the spanner (wrench size 27) for zero play (with 0.9 - 1 Nm torque resistance) and hold the eccentric bush in this position. Tighten the bolt.
- Recommended tightening torque:50Nm

# TOOTHED RACK 8

Part. N° 28.0051/0



## TECHN. DATA / ITEMS SUPPLIED

- Steel	
- Modul 1	
- 1 set screw in 200 mm grid	
- Weight	0,785 kg/m
- Length	2 m

## APPLICATIONS

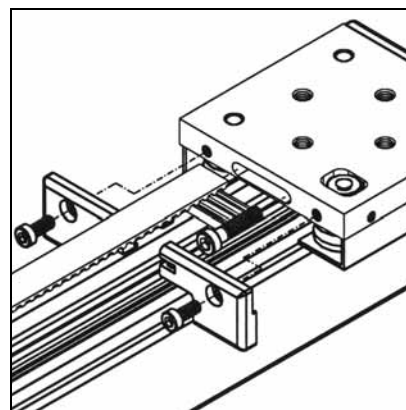
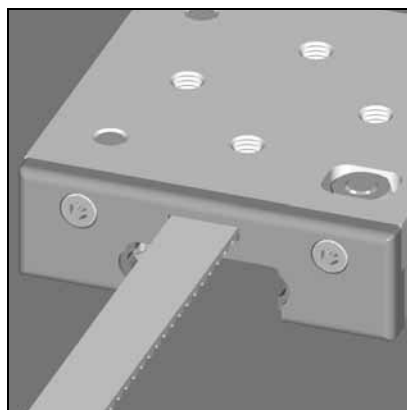
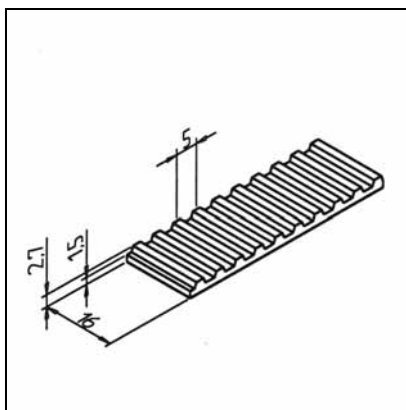
- Linear guides with extremely long strokes
- Linear guides with compact dimension overall
- Recurring height sectioning and longitudinal sectioning in 3,14 mm grid (e.g. sorting frame)

## ASSEMBLY

- Push toothed rack into profile groove
- Secure with set screw M4

# TIMING BELT 16 AT 5

Part. N° 28.0502/0



## TECHN. DATA / ITEMS SUPPLIED

- PUR white, steel-wire reinforced	
- Type 16 AT 5	
- Weight	0,052 kg/m
- Load max.	1260 N

## APPLICATIONS

- Suitable for all MiniTec linear guides LR 6 Z

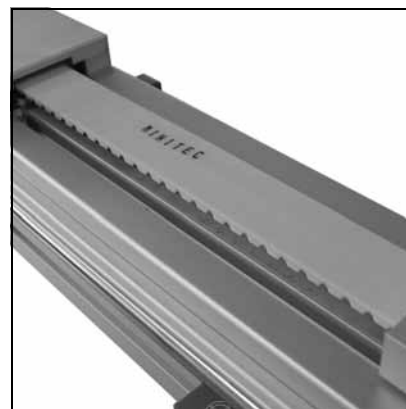
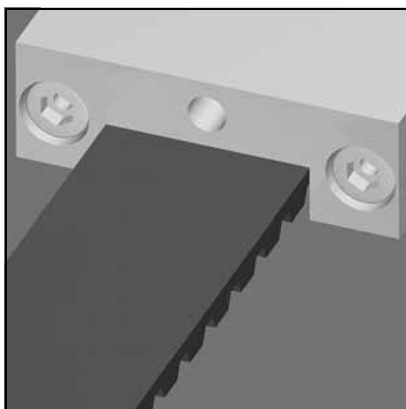
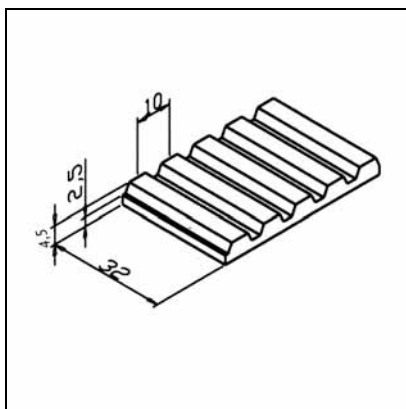
## ASSEMBLY

- Fix both sides in slide LR 6 Z
- Calculate belt length:  
 $2 \times \text{rail length} + 260 \text{ mm}$



## TIMING BELT 32 AT 10

Part. N° 28.0093/0



### TECHN. DATA / ITEMS SUPPLIED

- PUR white, reinforced with integrated wires
- Type 32 AT 10
- Weight 0,19 kg/m
- Load max. 4750 N

### APPLICATIONS

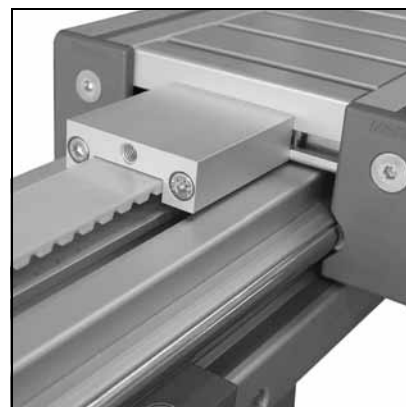
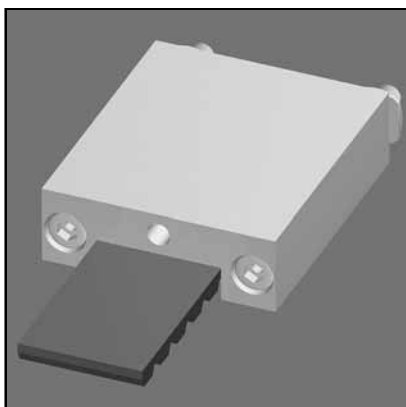
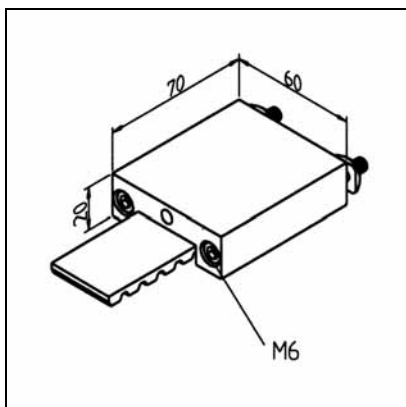
- For MiniTec linear guides LR 12 and LR 16
- For belt drives

### ASSEMBLY

- Fix timing belt optimizing belt tensioner
- Calculate belt length: see page 285

## TIMING BELT TENSIONER

Part. N° 28.0090/0



### TECHN. DATA / ITEMS SUPPLIED

- Housing, aluminium, natural anodized
- Tensioning plug, steel, zinc plated with matelung with 3 teeth
- Fitting for timing belt AT 10
- Fastening kit
- Weight 0,236 kg
- Stainless version Part N° 28.0090/1

### APPLICATIONS

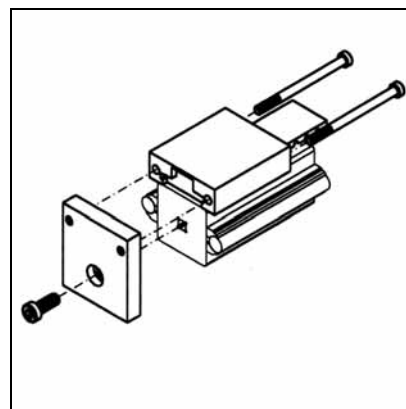
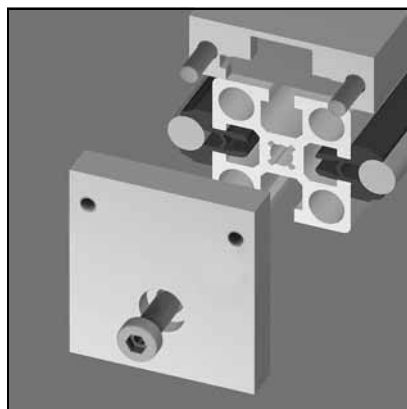
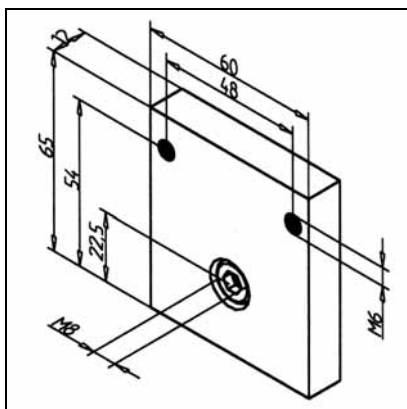
- For each end of the timing belt a timing belt tensioner is required
- For MiniTec linear guides LR 12 and LR 16
- For MiniTec belt drive

### ASSEMBLY

- Subsequent fastening on the face of the slide with fastening kit
- After fixing on slide face, tension the belt central tensioning screw M8, 5 A/F
- Recommended stretching after assembly

## FASTENING KIT FOR TIMING BELT TENSIONING DEVICE 45

Part. N° 28.0054/0



### TECHN. DATA / ITEMS SUPPLIED

- Plate aluminium, natural anodized
- Fastening kit
- Weight 0,089 kg

### APPLICATIONS

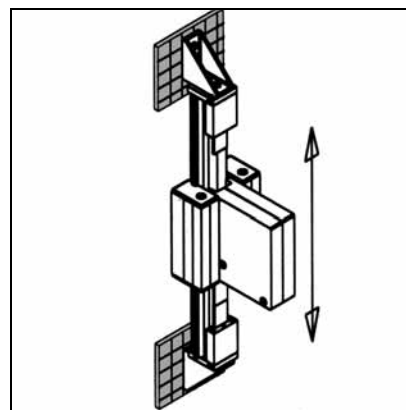
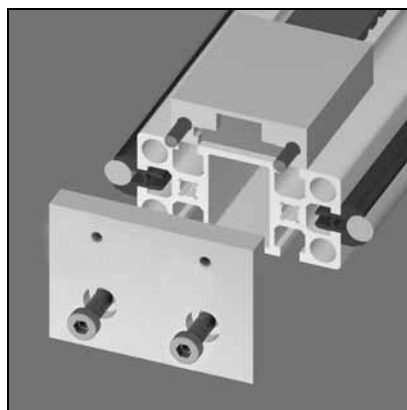
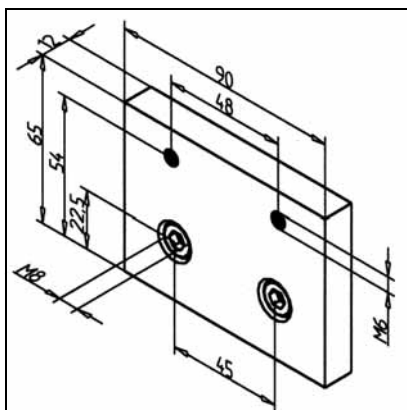
- In connection with belt drive
- For each timing belt tensioner one fastening kit is necessary
- Attachment of timing belt tensioner on rail 45

### ASSEMBLY

- Fasten with fastening kit on rail end; thread M8 required
- Mount timing belt tensioner

## FASTENING KIT FOR TIMING BELT TENSIONING DEVICE 45 X 90 F

Part. N° 28.0055/0



### TECHN. DATA / ITEMS SUPPLIED

- Plate aluminium, natural anodized
- Fastening kit
- Weight 0,089 kg

### APPLICATIONS

- For each timing belt tensioner one fastening kit is necessary
- Attachment of timing belt tensioner on rail 45 x 90 F in connection with belt drive

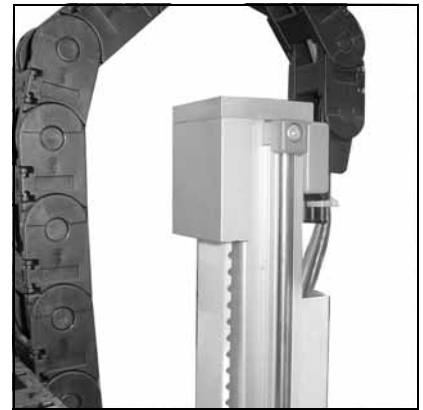
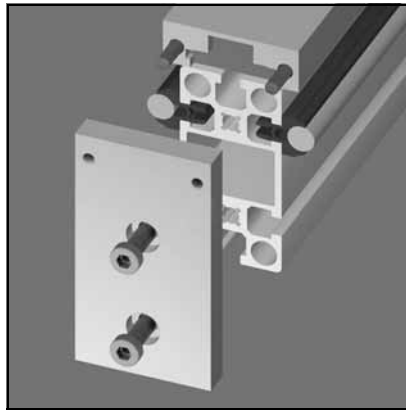
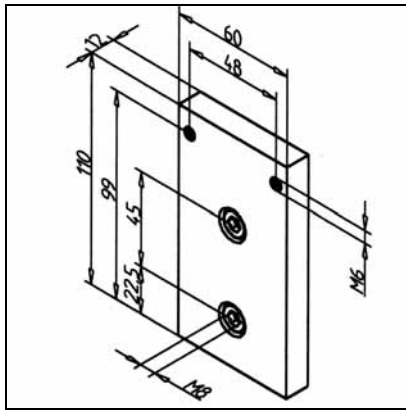
### ASSEMBLY

- Fasten with fastening kit on rail end; thread M8 required
- Mount timing belt tensioner



## FASTENING KIT FOR TIMING BELT TENSIONING DEVICE 45X90H

Part. N° 28.0056/0



### TECHN. DATA / ITEMS SUPPLIED

- Plate aluminium, natural anodized
- Fastening kit
- Weight 0,089 kg

### APPLICATIONS

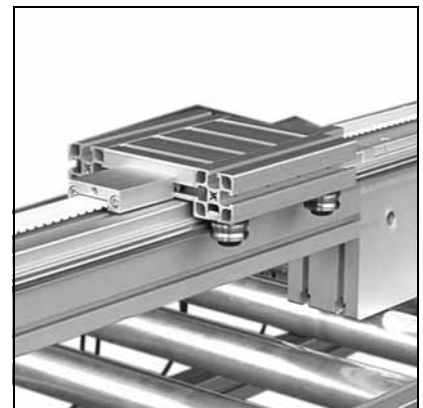
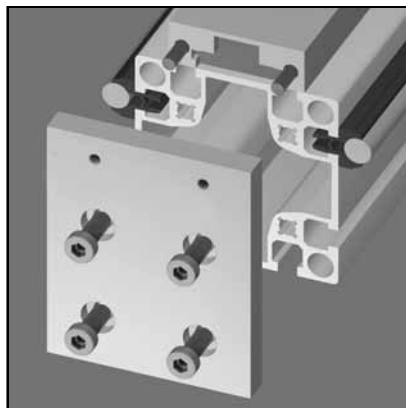
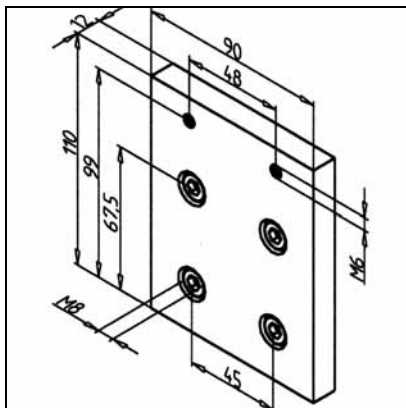
- For each timing belt tensioner one fastening kit is necessary
- Attachment of timing belt tensioner on rail 45 x 90 H in connection with belt drive

### ASSEMBLY

- Fasten with fastening kit on rail end; thread M8 required
- Mount timing belt tensioner

## FASTENING KIT FOR TIMING BELT TENSIONING DEVICE 90

Part. N° 28.0057/0



### TECHN. DATA / ITEMS SUPPLIED

- Plate aluminium, natural anodized
- Fastening kit
- Weight 0,089 kg

### APPLICATIONS

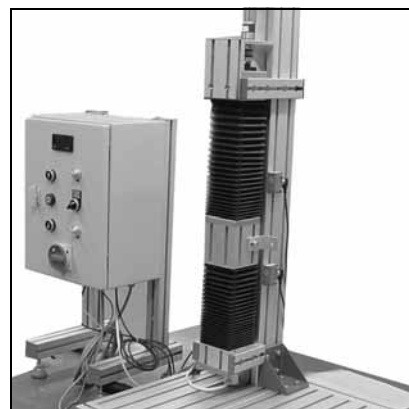
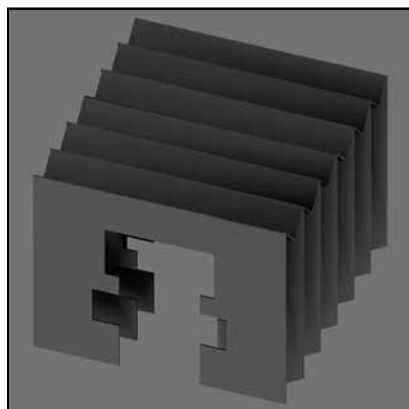
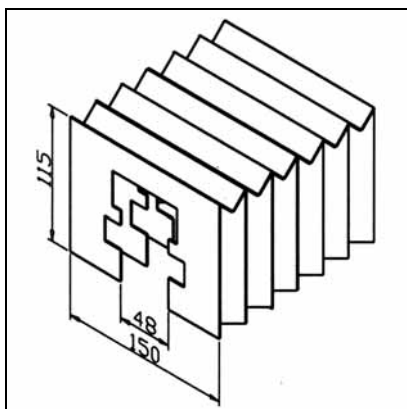
- For each timing belt tensioner one fastening kit is necessary
- Attachment of timing belt tensioner on rail 90 in connection with belt drive

### ASSEMBLY

- Fasten with fastening kit on rail end; thread M8 required
- Mount timing belt tensioner

## PROTECTIVE BELLOW LR 45

Part. N° 33.3007/0



### TECHN. DATA / ITEMS SUPPLIED

- Plastic, black with plastic frame
- Without fastening kit
- Length when pushed together for 1 m stroke: - 130 mm
- Weight 0,65 kg/m
- max. Length 6 m

### APPLICATIONS

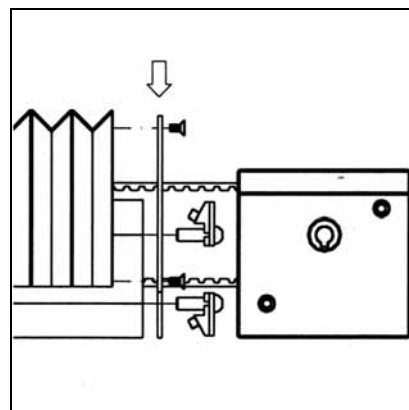
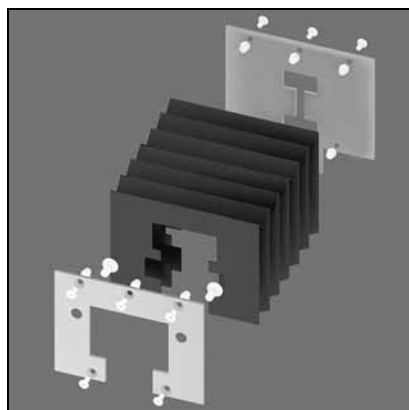
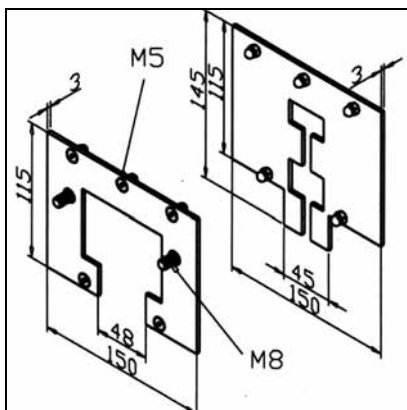
- Cover of MiniTec linear guides LR 45
- Rough working conditions, dust, chips

### ASSEMBLY

- Push bellow onto rail
- Fix ends with fastening kit for protective bellow Part N° 33.3010/0
- The stroke length is reduced by approx. 22% when bellow is used
- Caution: Consider higher friction moment when dimensioning drive unit!

## FASTENING KIT FOR PROTECTIVE BELLOW LR 45

Part. N° 33.3010/0



### TECHN. DATA / ITEMS SUPPLIED

- 1 End frame slide
- 1 End frame pulley
- Fastening kit for frame and bellow

### APPLICATIONS

- Fastening of protective bellow LR 45 on slide LW 45
- Fastening of protective bellow LR 45 on timing belt pulley T 45

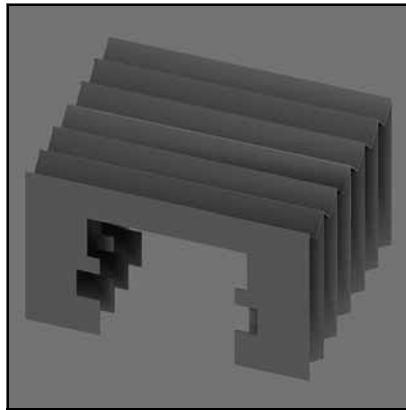
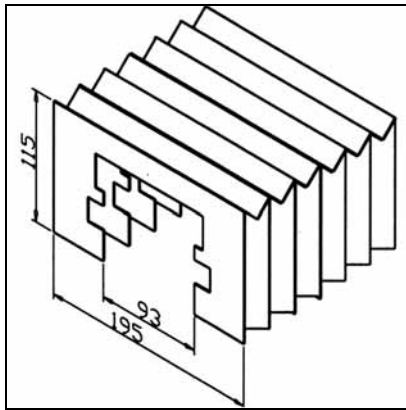
### ASSEMBLY

- Fasten end frame on slide
- Push protective bellow on 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



# PROTECTIVE BELLOW LR 90

Part. N° 33.3008/0



## TECHN. DATA / ITEMS SUPPLIED

- Plastic, black with plastic frame
- Without fastening kit
- Length when pushed together for 1 m stroke: - 130 mm
- Weight 0,75 kg/m
- max. Length 6 m

## APPLICATIONS

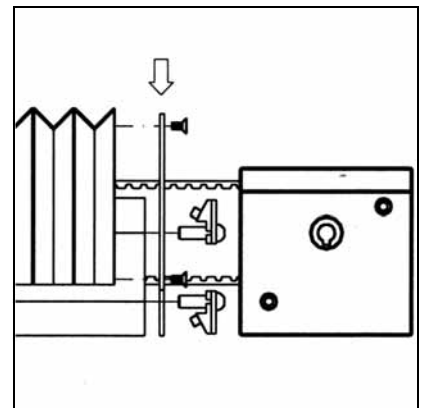
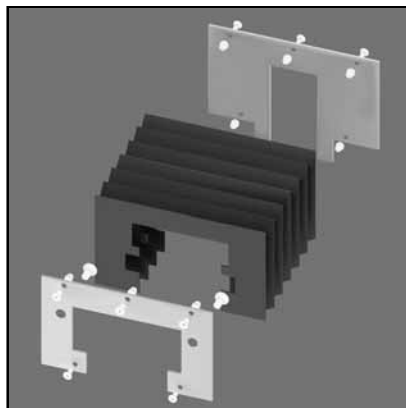
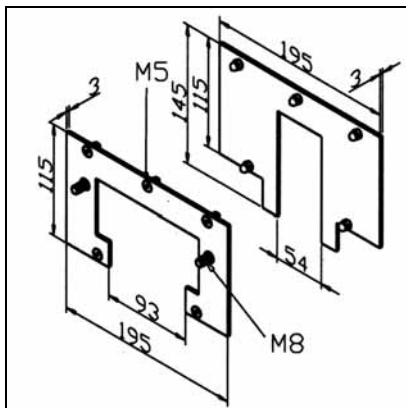
- Cover of MiniTec linear guides LR 90
- Rough working conditions, dust, chips

## ASSEMBLY

- Push bellow onto rail
- Fix ends with fastening kit for protective bellow a Part N° 33.3011/0 at slide or reverse unit
- The stroke length is reduced by approx. 22% when bellow is used
- Caution: Consider higher friction moment when dimensioning drive unit!

# FASTENING KIT FOR PROTECTIVE BELLOW LR 90

Part. N° 33.3011/0



## TECHN. DATA / ITEMS SUPPLIED

- 1 End frame slide
- 1 End frame pulley
- Fastening kit for frame and bellow

## APPLICATIONS

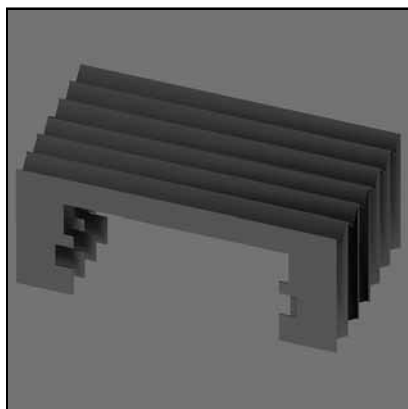
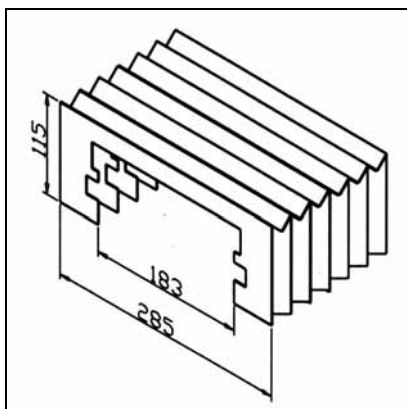
- Cover of MiniTec linear guides LR 90
- Rough working conditions, dust, chips

## ASSEMBLY

- Fasten end frame on slide
- Push protective bellow on 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

# PROTECTIVE BELLOW LR 180

Part. N° 33.3009/0



## TECHN. DATA / ITEMS SUPPLIED

- Plastic, black with plastic frame
- Without fastening kit
- Length when pushed together for 1 m stroke: - 110 mm
- Weight 0,95 kg/m
- max. Length 6 m

## APPLICATIONS

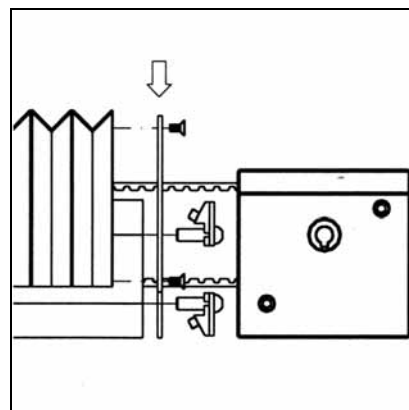
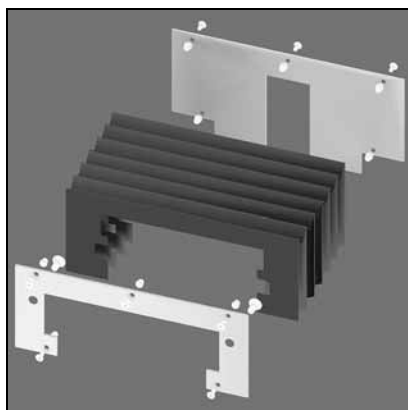
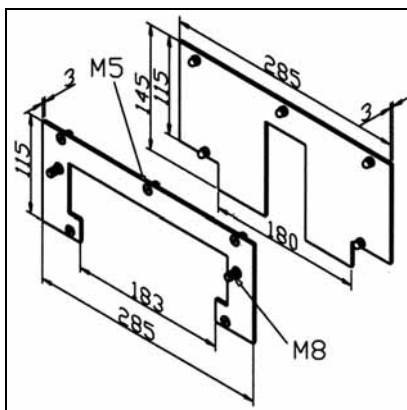
- Cover of MiniTec linear guides LR 180
- Rough working conditions, dust, chips

## ASSEMBLY

- Push bellow onto rail
- Fix ends with fastening kit for protective bellow a Part N° 33.3012/0 at slide or reverse unit
- The stroke length is reduced by approx. 22% when bellow is used
- Caution: Consider higher friction moment when dimensioning drive unit!

# FASTENING KIT FOR PROTECTIVE BELLOW LR 180

Part. N° 33.3012/0



## TECHN. DATA / ITEMS SUPPLIED

- 1 End frame slide
- 1 End frame pulley
- Fastening kit for frame and bellow

## APPLICATIONS

- Fastening of protective bellow LR 180 on slide LW 180

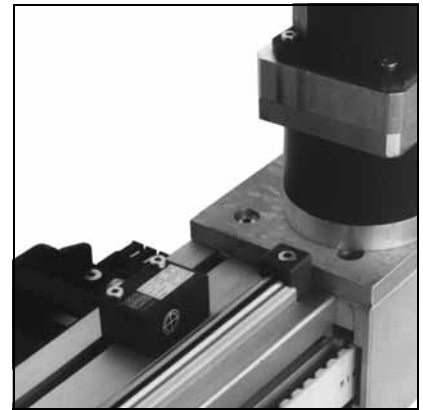
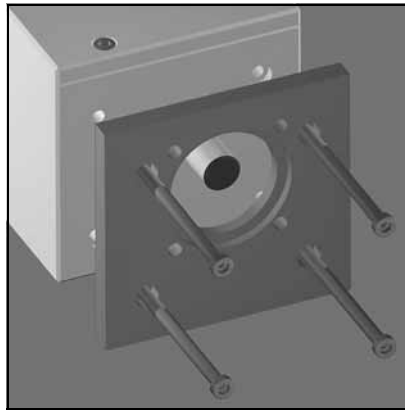
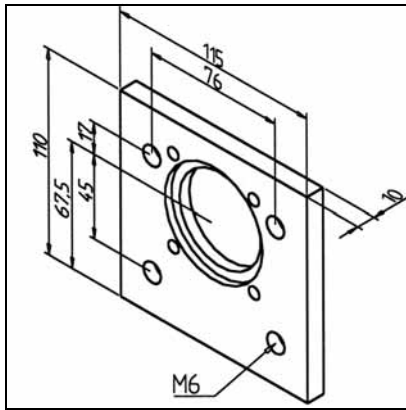
## ASSEMBLY

- Fasten end frame on slide
- Push protective bellow on 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



## ADAPTOR PLATE

Part. N° 28.0112/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, natural
- Dimension according to customers specification

### APPLICATIONS

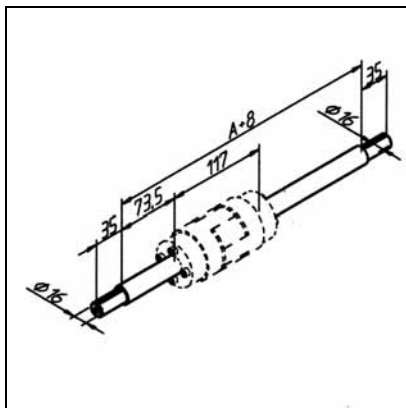
- Attachment of motors, timing belt pulley and counter

### ASSEMBLY

- Mount on timing belt pulley

## CONNECTING SHAFT 45

Part. N° 17.1706/0



### TECHN. DATA / ITEMS SUPPLIED

- Steel, Ø 20 mm
- Length and processing of ends according to customer specification
- 2 pieces, clutch not included
- Fastening kit
- Weight 2,47 kg/m
- + Spring

### APPLICATIONS

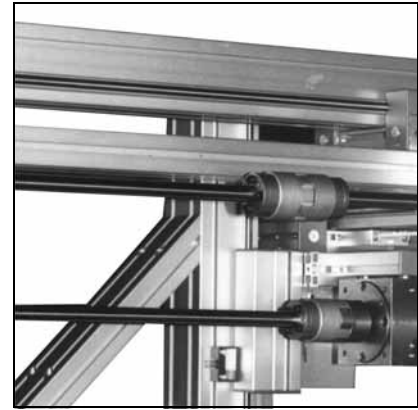
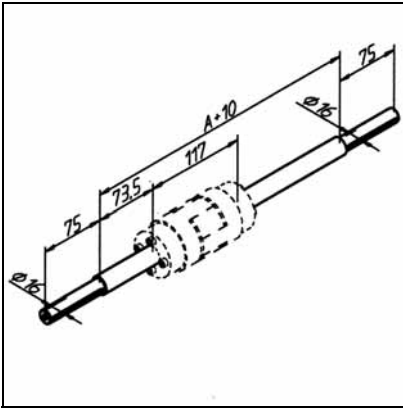
- Simultaneous transmission of 2 parallel linear guides
- Install support bearing for longer shafts

### ASSEMBLY

- Fasten shafts with spring in timing belt pulley
- Connect both shaft pieces with clutch Part N° 28.0180/0

## CONNECTING SHAFT 90

Part. N° 17.1706/1



## TECHN. DATA / ITEMS SUPPLIED

- Steel, Ø 20 mm
- Length and processing of ends according to customer specification
- 2 pieces, clutch not included
- Fastening kit
- Weight 2,47 kg/m
- + Spring

## APPLICATIONS

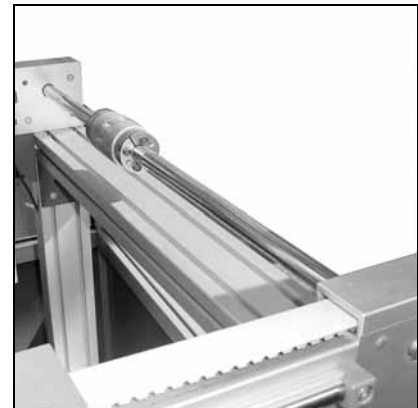
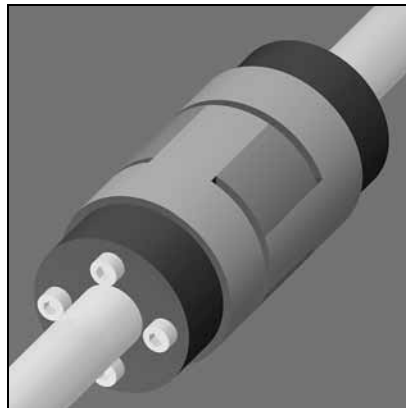
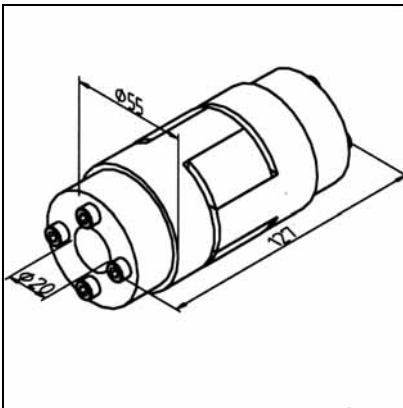
- Simultaneous transmission of 2 parallel linear guides
- For longer shafts use additional support bearing

## ASSEMBLY

- Fasten shaft with spring in timing belt pulley
- Connect both shaft pieces with clutch Part N° 28.0180/0

## CLUTCH 20

Part. N° 28.0180/0



## TECHN. DATA / ITEMS SUPPLIED

- Clutch, steel with plastic inlay
- 2 tensioning sets, steel
- Weight 0,5 kg
- Locking torque max. 30 Nm

## APPLICATIONS

- Correction of motors to reverse unit
- Correction of misalignment for simultaneous transmission of 2 parallel linear guides with connecting shaft 45 a Part N° 17.1706/0 or connecting shaft 90 Part N° 17.1706/1

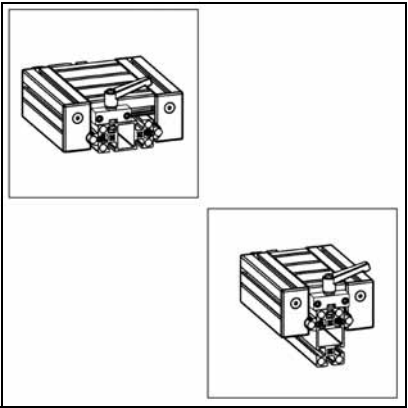
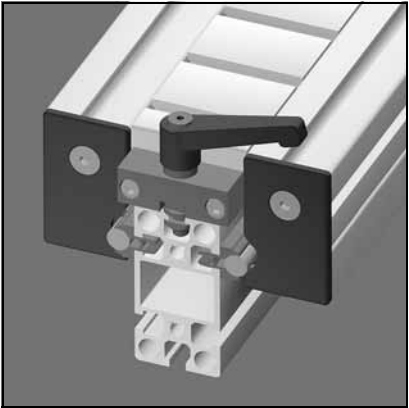
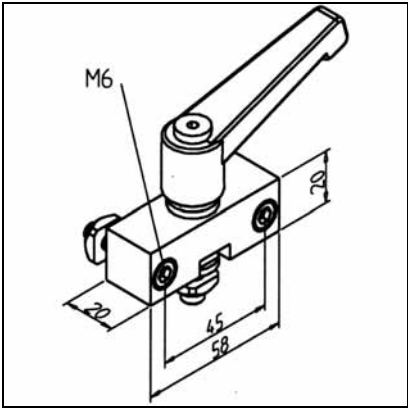
## ASSEMBLY

- Attachment with integrated tensioning device
- Position of both reverse units continuously adjustable



SLIDE CLAMPING UNIT (TOP) LWG / LWN / LW

Part. N° 28.0270/0

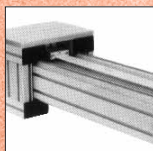


TECHN. DATA / ITEMS SUPPLIED	
- Housing, aluminium, anodized E2/E6/EV1	
- Clamp	
- Fastening kit	
- Weight	0,225 kg

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
- Mount housing block
- Secure clamping lever with mounting adhesive on clamping shaft





SYSTEM LR -  
READY FOR USE  
MODULES LR



## CONNECTION OF MOTORS



### Timing belt pulley T 45

Rotary-current-, step or servo-motors with max. shaft diameter of 16 mm are suitable. Assemble directly on the timing belt pulley. The pulley bore with fitting key groove and the connection side of the reverse unit will be designed according to customer specification.



### Timing belt pulley T 90

Rotary-current-, step or servo-motors with max. shaft diameter of 24 mm are suitable. Assemble directly on the timing belt pulley. The pulley bore with fitting key groove and the connection side of the reverse unit will be designed according to customer specification.

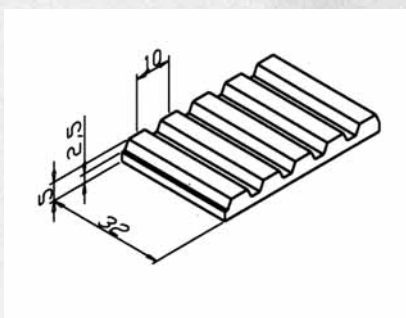
### Belt drive 45 und 90

Motors with hollow shafts can be attached directly on the slide-plate. Step and servo motors are connected via a coupling on the drive of the belt drive, diameter 17. Shaft, slide-plate or adapter plate are also available according to customer specification.

## Technical Data

Timing belt pulley:	LR6	T 45	T 90	Belt drive
Pulley				
Effective diameter	57,3 mm	60,48 mm	60,48 mm	60,48 mm
Width belt drive	16 mm	32 mm	32 mm	32 mm
Teeth	36	19	19	19
Bore	10 mm	8 mm	8 mm	8 mm
Reborable to max.	14 mm	16 mm	30 mm	drive shaft d 17
Travel (1 revolution)	180 mm	190 mm	190 mm	190 mm
Timing belt	16AT5	32AT10	32AT10	32AT10
Belt length in the reverse unit	160 mm	210 mm	210 mm	420 mm
Friction moment at 1/1000				
Belt tensioning	0.30 Nm	0.35 Nm	0.35 Nm	0.35 Nm
Maximal Load	30 Nm	70 Nm	130 Nm	30 Nm

## Calculation of the timing belt



### When using T 45 and T 90

$$2 \times \text{rail length}$$

$$+ 2 \times 210 \text{ mm belt length in reverse}$$

$$- \text{slide length}$$

$$- 2 \times 20 \text{ mm in belt tensioner}$$

$$= 2 \times \text{rail length} - \text{slide length} + 380 \text{ mm}$$

### When using belt drive

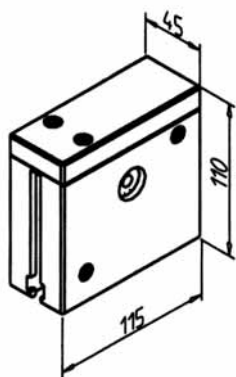
Rail length + 212 mm

### When using LR6

$2 \times \text{Rail length} + 260 \text{ mm}$



## TIMING BELT PULLEY T 45 (LR 12 + LR 16)



### Techn. data/items supplied

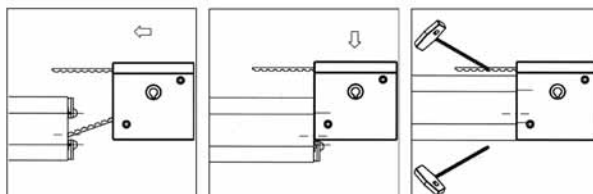
- Aluminium, anodized E6/EV1
- Completely assembled with pulley
- 2 ball bearings

### Applications

- For MiniTec linear guides LR

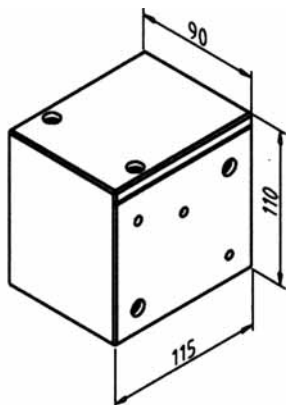
### Assembly

- Form threads M8 in both rail ends and mount power-lock fastener **Part N° 21.1018/0**
- Pass belt through the rail and through pulley unit
- Insert pulley unit from top
- Tighten set screw



Bore	Weight	Part N°	Part N° stainless steel
without	1,170 kg	28.0083/0	28.0046/0
Ø 11 mm	1,168 kg	28.0083/2	28.0046/2
Ø 12 mm	1,168 kg	28.0083/6	28.0046/6
Ø 14 mm	1,167 kg	28.0083/3	28.0046/3
Ø 15 mm	1,165 kg	28.0083/5	28.0046/5
Ø 16 mm	1,165 kg	28.0083/4	28.0046/4

## TIMING BELT PULLEY T 90 (LR 12 + LR 16)



### Techn. data/items supplied

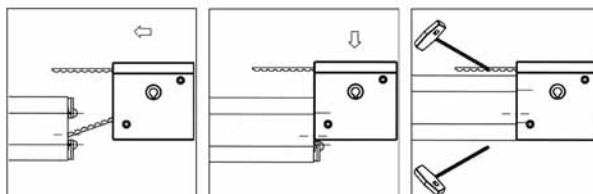
- Aluminium, anodized E6/EV1
- Completely assembled with pulley
- 2 ball bearings

### Applications

- For MiniTec linear guides LR

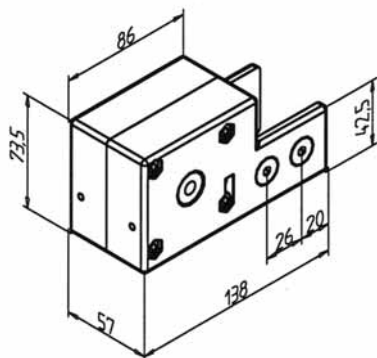
### Assembly

- Form threads M8 in both ends of rail and mount power-lock fastener **Part N° 21.1018/0**
- Pass belt through the rail and through pulley unit
- Insert pulley unit from top
- Tighten set screw



Bore	Weight	Part N°	Part N° stainless steel
without	2,800 kg	28.0082/0	28.0045/0
Ø 11 mm	2,798 kg	28.0082/2	28.0045/2
Ø 14 mm	2,795 kg	28.0082/3	28.0045/3
Ø 16 mm	2,789 kg	28.0082/4	28.0045/4
Ø 19 mm	2,775 kg	28.0082/5	28.0045/5
Ø 20 mm	2,773 kg	28.0082/7	28.0045/7
Ø 24 mm	2,164 kg	28.0082/6	28.0045/6

# TIMING BELT PULLEY LR 6



## Techn. data/items supplied

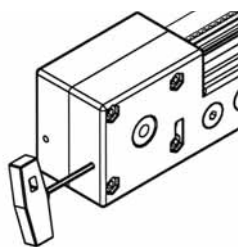
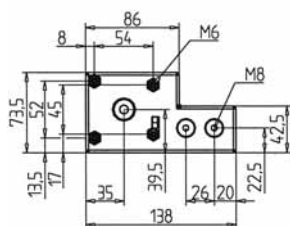
- Aluminium GD, power coated, grey
- Assembled ready for use
- with fixing kit

## Applications

- For MiniTec linear guides LR 6 Z

## Assembly

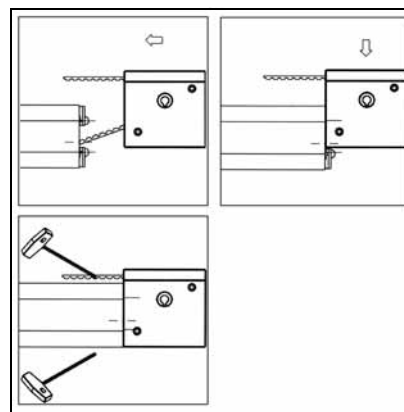
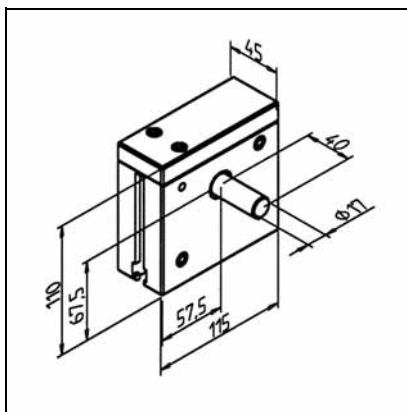
- Insert square-nuts M8 in rail
- Lead timing belt through reverse unit
- Slip reverse unit on rail and prefix screws
- Fix timing belt on slide
- Tighten timing belt at reverse unit with key 3 A/F - if necessary from both sides
- Tighten fixing screws



Bore	Weight	Part N°	Part N° stainless steel
ohne	0,96 kg	28.0510/0	28.0509/0
Ø 10 mm	0,96 kg	28.0510/1	28.0509/1
Ø 11 mm	0,96 kg	28.0510/2	28.0509/2
Ø 14 mm	0,96 kg	28.0510/3	28.0509/3

## TIMING BELT PULLEY T 45 Z

Part. N° 28.0083/1



### TECHN. DATA / ITEMS SUPPLIED

- Anodized E6 / EV1
- Completely assembled with pulley and shaft end
- 2 ball-bearings
- Top cover mounted
- Weight 1,200 kg
- Stainless version Part N° 28.0046/1

### APPLICATIONS

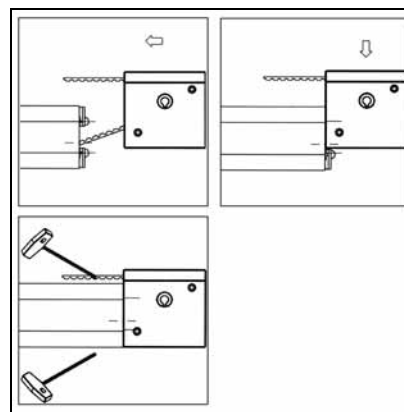
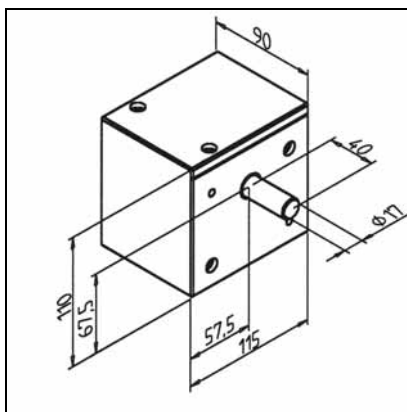
- All MiniTec linear guides

### ASSEMBLY

- Form thread M8 and mount MiniTec power-lock fastener **Part N° 21.1018/0**
- Pass belt through the rail and through pulley unit
- Insert pulley unit from top
- Tighten power-lock fastener
- Tighten the timing belt

## TIMING BELT PULLEY T 90 Z

Part. N° 28.0082/1



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, anodized E6 / EV1
- Main casting completely assembled with pulley and shaft end
- 2 ball-bearings
- Top cover mounted
- Weight 2,850 kg
- Stainless version Part N° 28.0045/1

### APPLICATIONS

- All MiniTec linear guides

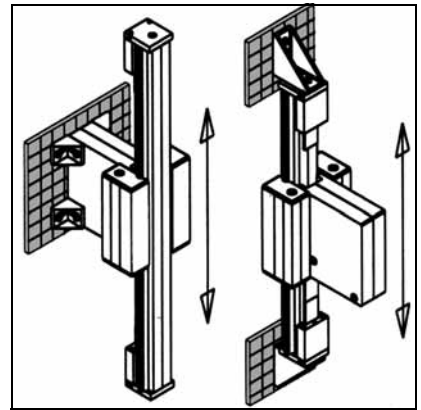
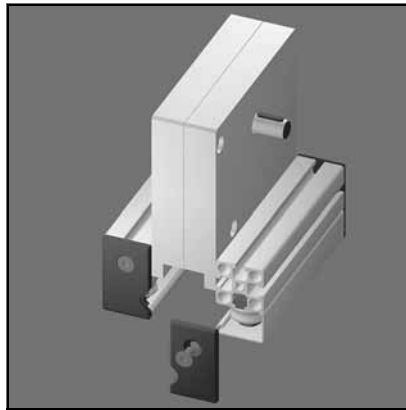
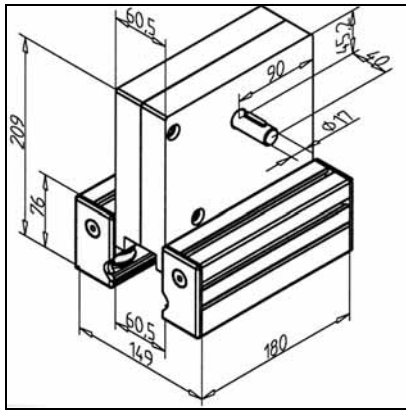
### ASSEMBLY

- Form thread M8 and mount MiniTec power-lock fastener **Part N° 21.1018/0**
- Pass belt through the rail and through pulley unit
- Insert pulley unit from top
- Tighten power-lock fastener
- Tighten the timing belt



## BELT DRIVE 45

Part. N° 28.0248/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium
- Shaft end Ø 17 for motor connection
- 2 idler pulleys aluminium, integrated in linear slide LW 45
- Weight 6,320 kg

### APPLICATIONS

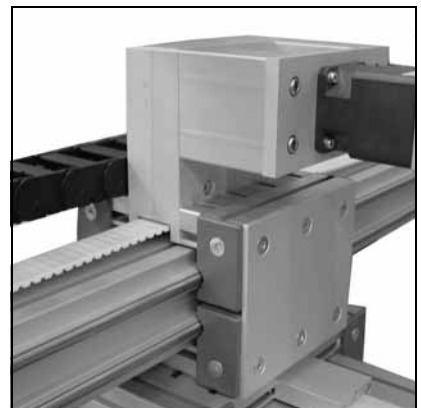
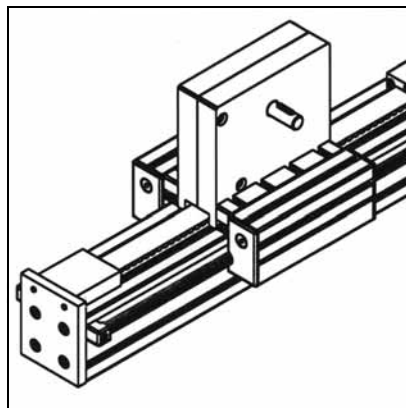
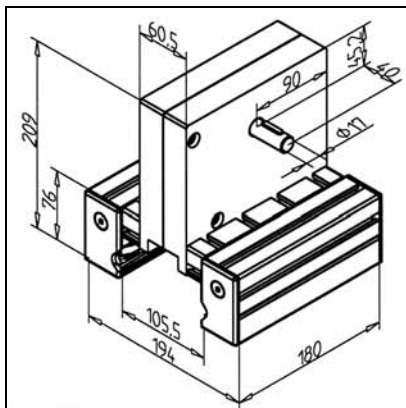
- MiniTec linear guides LR with extremely long strokes, z-axis
- Use with rail 45, 45 x 90 H, 45 x 135 H and 45 x 180 H

### ASSEMBLY

- Push the timing belt through the drive, slide drive on the rail and adjust clearance
- Fasten timing belt ends with timing belt tensioner Part N° 28.0090/0 and fastening plate for rail 45 Part N° 28.0054/0 or for rail 45 x 90 H Part N° 28.0056/0 on the rail ends
- Tighten the timing belt
- Calculation of the timing belt: rail length + 212 mm

## BELT DRIVE 90

Part. N° 28.0249/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium
- Shaft end Ø 17 for motor connection
- 2 idler pulleys aluminium, integrated in linear slide LW 90
- Weight 6,790 kg

### APPLICATIONS

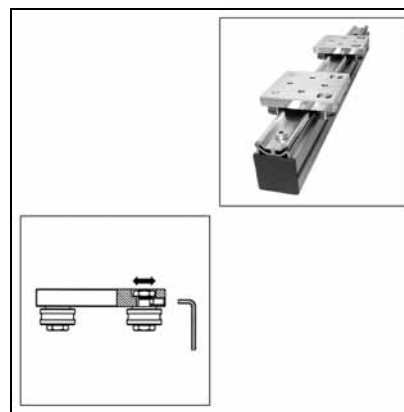
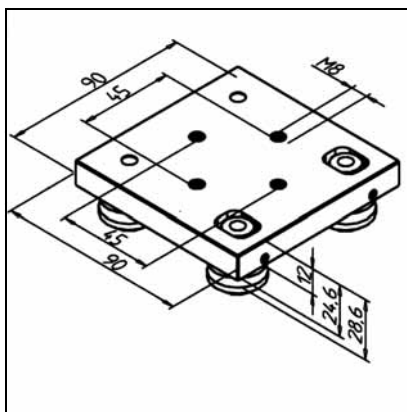
- MiniTec linear guides with extremely long strokes, z-axis
- Use with rail 45 x 90 F, rail 90 or 90 x 180 H

### ASSEMBLY

- Push the timing belt through the drive, slide drive on the rail and adjust clearance
- Fasten timing belt ends with timing belt tensioner Part N° 28.0090/0 and fastening plate for rail 45 Part N° 28.0057/0 or for rail 45 x 90 F Part N° 28.0055/0 on the rail ends
- Tighten the timing belt
- Calculation of the timing belt: rail length + 212 mm

## SLIDE LR 6

Part. N° 28.0138/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, all faces processed
- Double row, angular-contact bearings
- Assembled ready for use
- Load capacity: see page 260
- Weight 0,396 kg
- Stainless version Part N° 28.0139/0

### APPLICATIONS

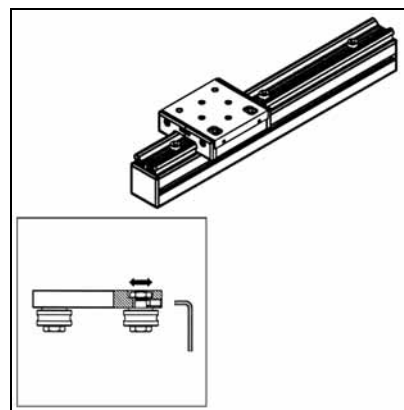
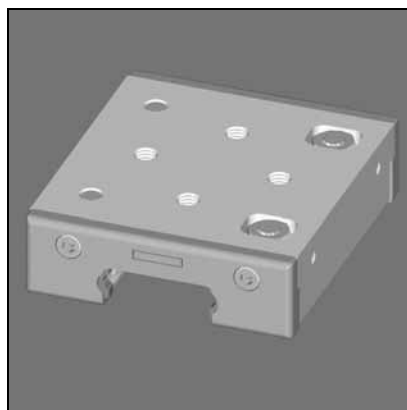
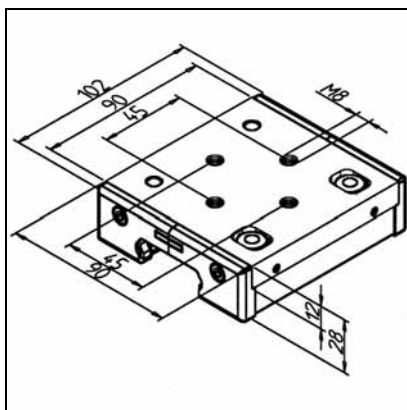
- MiniTec linear guide systems LR 6
- Material-handling
- Measuring devices
- Doors

### ASSEMBLY

- Slip slide onto rail
- Adjust clearance with key 2,5 A/F
- Tighten fixing screw with a torque of 20 Nm
- When used in extreme environment, use slide LR6 with cover, Part N° 28.0138/1

## SLIDE LR 6 WITH COVER

Part. N° 28.0138/1



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, all faces processed
- Double row, angular-contact bearings LR6
- 4 concentric fixing bush
- 4 covers, plastic grey, with spring loaded greasing-felts
- Load capacity: see page 260
- Weight 0,458 kg
- Stainless version Part N° 28.0139/1

### APPLICATIONS

- MiniTec linear guide systems LR 6
- Jigs
- Sliding doors
- Large drawers

### ASSEMBLY

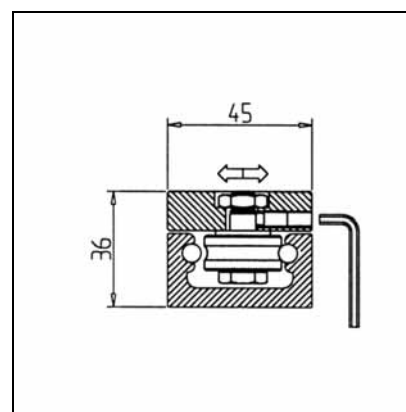
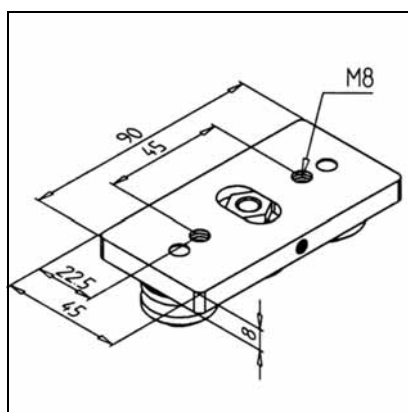
- Slip slide onto rail
- Adjust clearance with key 2,5 A/F
- Recommended torque: 20 Nm
- Saturate greasing felts with appropriate oil





## SLIDE LR6 COMPACT

Part. N° 28.0140/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, all faces machined
- 3 Double row, angular-contact bearings
- Assembled ready for use
- Weight 0,194 kg

### APPLICATIONS

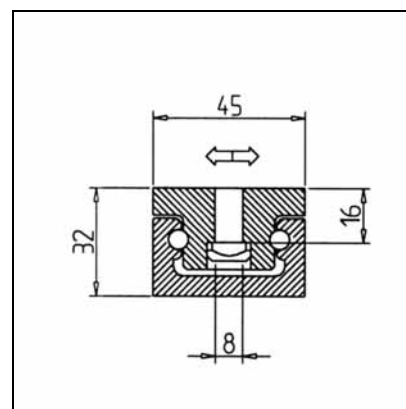
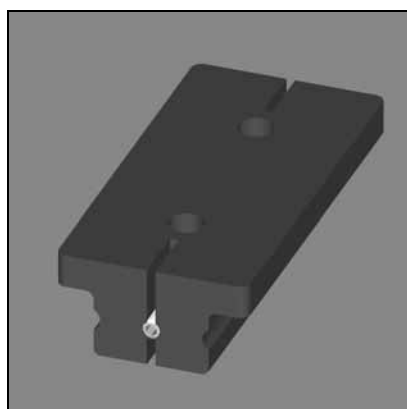
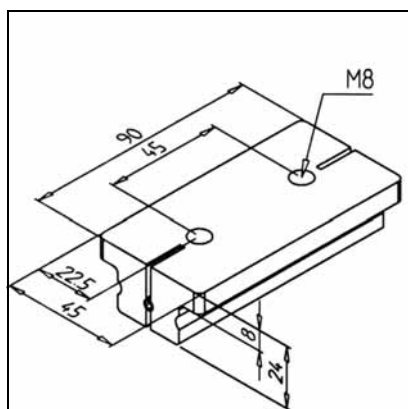
- MiniTec linear guide systems LR 6
- Material-handling
- Measuring devices
- Doors

### ASSEMBLY

- Slip slide onto rail
- Adjust clearance with key 2,5 A/F
- Tighten fixing screw with a torque of 20 Nm

## SLIDE LR6 COMPACT

Part. N° 28.0127/0



### TECHN. DATA/ITEMS SUPPLIED

- Slide PEUHMW, black
- With square nut M8, steel zinc plated
- Weight 0,068 kg

### APPLICATIONS

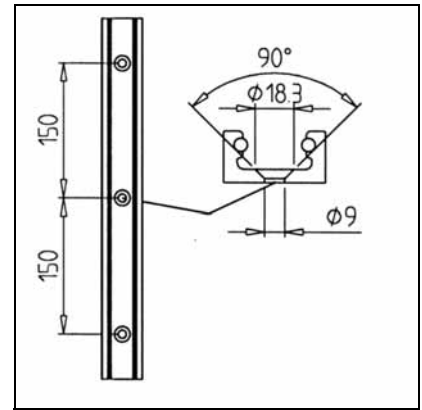
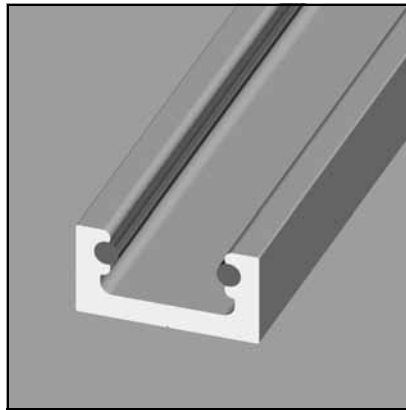
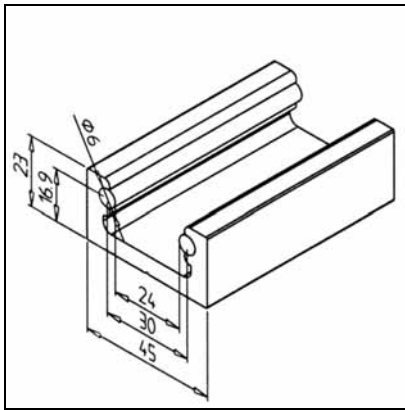
- Material-handling
- Measuring devices
- Doors

### ASSEMBLY

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

## RAIL LR 6 COMPACT

Part. N° 28.0119/0



### TECHN. DATA / ITEMS SUPPLIED

- Aluminium, natural anodized E6/EV 1
- 2 Shafts Cf 53 h6, steel, Ø 6 mm
- With fixing bores Ø 8,5 mm, grid: 150 mm
- Weight 1,779 kg/m
- Length 4 m

### APPLICATIONS

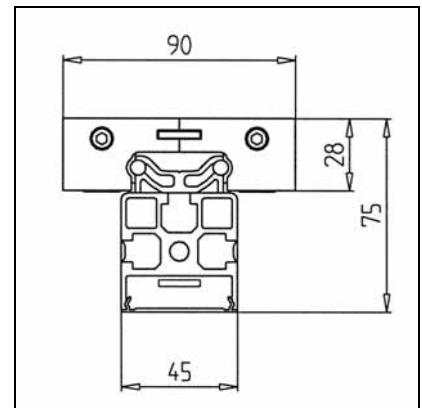
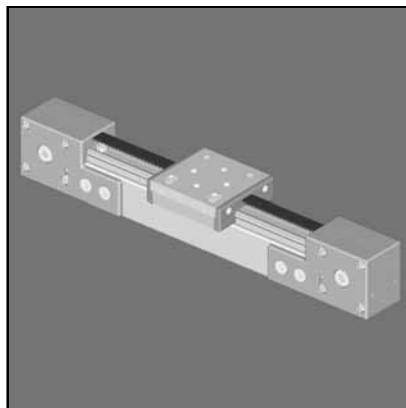
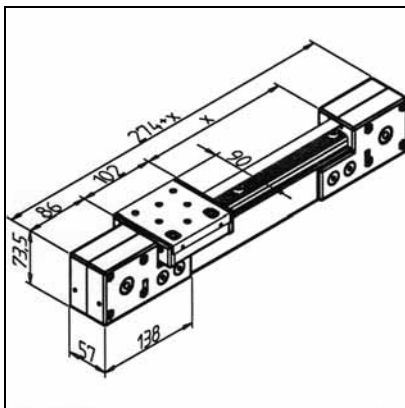
- Material-handling
- Measuring devices
- Doors

### ASSEMBLY

- Fasten rail with countersunk screws M8 x 20 and square nut M8 on MiniTec profile

## MODULE LR 6 Z 45

Part. N° 28.0500/0



### TECHN. DATA / ITEMS SUPPLIED

- Linear-guide, ready for use assembled from:
- 1 Rail LR 6 with precision-steel-shafts Ø, 6mm, h6, with profile 45 x 45 R, 1 Slide LW 6 Z with timing belt fastener, 2 timing- belt reverse units, 1 timing belt 16 AT 5, steel-reinforced
- Weight (without profile) 2,250 kg
- Weight/100 mm stroke 0,322 kg
- Please specify stroke "X" and bore of timing belt reverse unit (Ø 11 mm/Ø 14 mm/None)

### APPLICATIONS

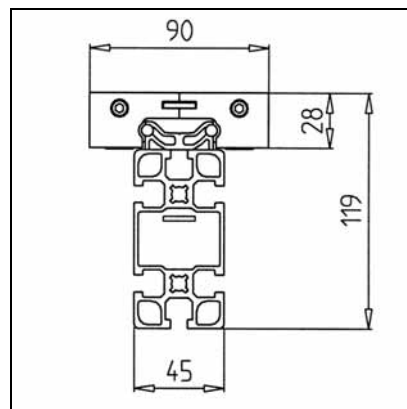
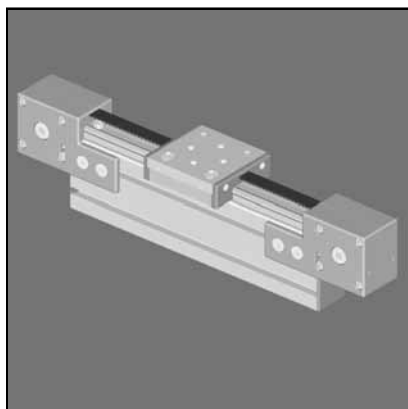
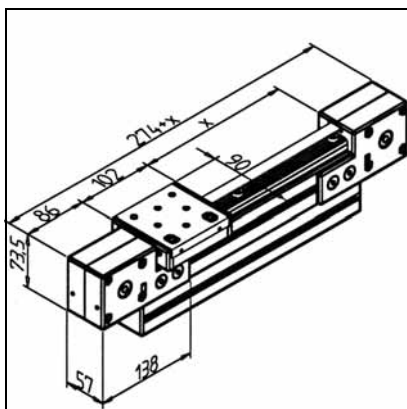
- MiniTec linear guide systems LR 6
- Material-handling
- Measuring devices
- Doors

### ASSEMBLY

- Timing-belt tensioners integrated in reverse-units

## MODULE LR 6 Z 90

Part. N° 28.0501/0



### TECHN. DATA / ITEMS SUPPLIED

- Linear-guide, ready for use assembled from:
- 1 Rail LR 6 with precision-steel-shafts Ø 6mm, h6, with profile 45 x 45 R
- 1 Slide LW 6 Z with timing belt fastener,
- 2 timing- belt reverse units 1 timing belt 16 AT 5, steel-reinforced
- Basis weight (without profile) 2,250kg
- Weight/100 mm stroke 0,453 kg
- Please specify stroke "X" and bore of timing belt reverse unit (Ø 11 mm/Ø 14 mm/None)

### APPLICATIONS

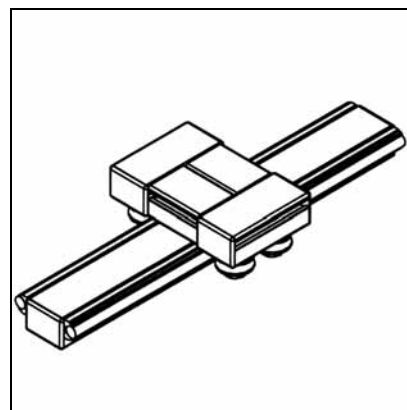
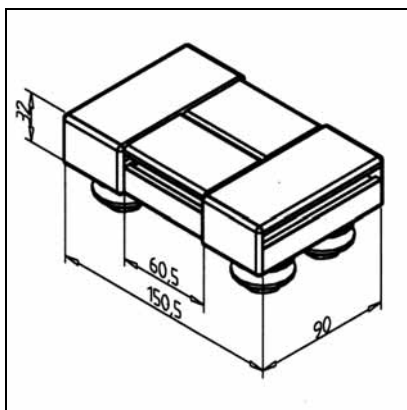
- MiniTec linear guide systems LR 6
- Material-handling
- Measuring devices
- Doors

### ASSEMBLY

- Timing-belt tensioners integrated in reverse-units

## SLIDE LW 32

Part. N° 28.0088/0



### TECHN. DATA / ITEMS SUPPLIED

- Slide completely assembled
- 2 concentric and 2 eccentric bearing units
- End caps
- Load capacity: see page 260
- Weight 1,060 kg
- Stainless version Part N° 28.0088/1

### APPLICATIONS

- Handling systems
- Measuring devices
- Automatic advance units
- For rails 19 and 32

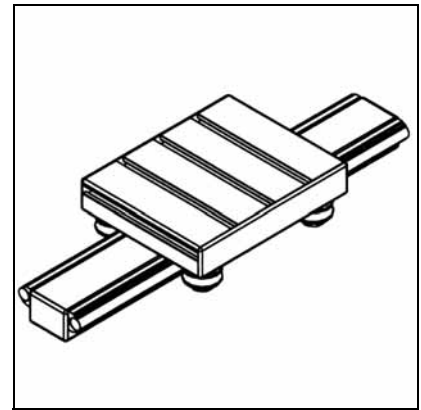
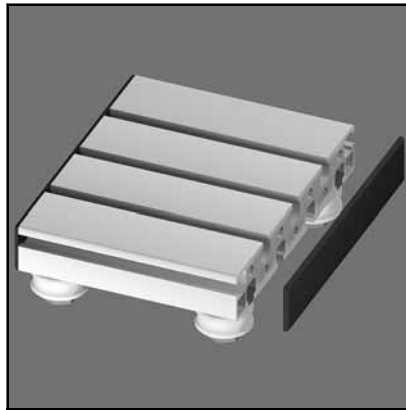
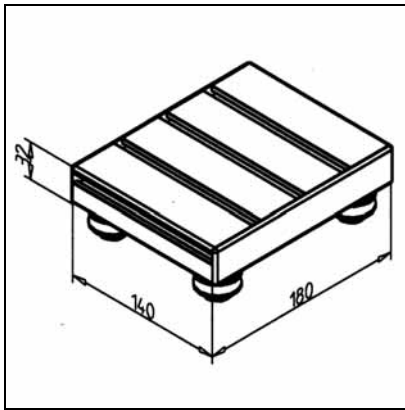
### ASSEMBLY

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



## SLIDE LW 32 E

Part. N° 28.0089/0



### TECHN. DATA / ITEMS SUPPLIED

- Slide completely assembled
- 2 concentric and 2 eccentric bearing units
- End caps
- Load capacity: see page 260
- Weight 1,920 kg
- Stainless version Part N° 28.0089/1

### APPLICATIONS

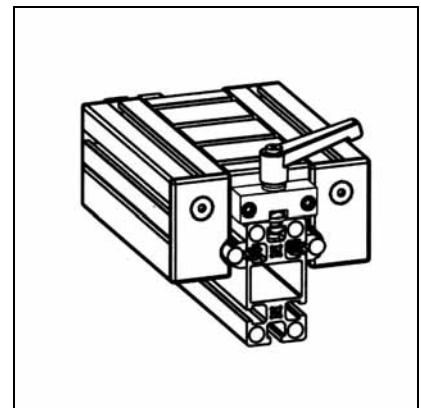
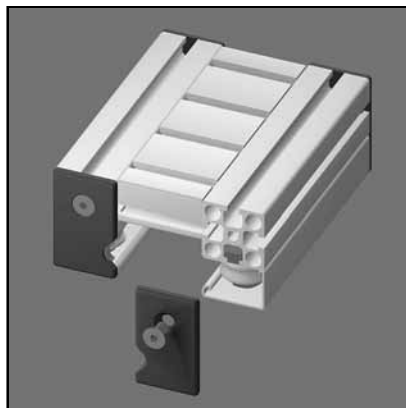
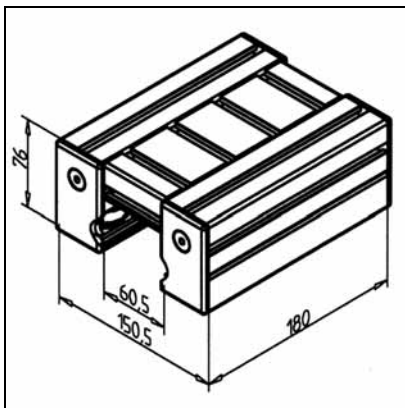
- 1- or multi-axis guides
- Handling systems
- Measuring devices
- For rails 19 and 32

### ASSEMBLY

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

## SLIDE LW 45

Part. N° 28.0091/0



### TECHN. DATA / ITEMS SUPPLIED

- Slide completely assembled
- 2 concentric and 2 eccentric bearing units
- End caps LR and 2 cover profiles LR
- Load capacity: see page 260
- Weight 2,260 kg
- Stainless version Part N° 28.0091/3

### APPLICATIONS

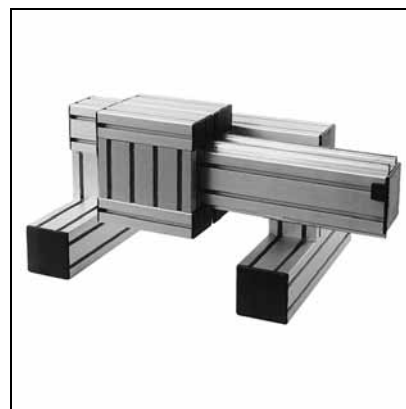
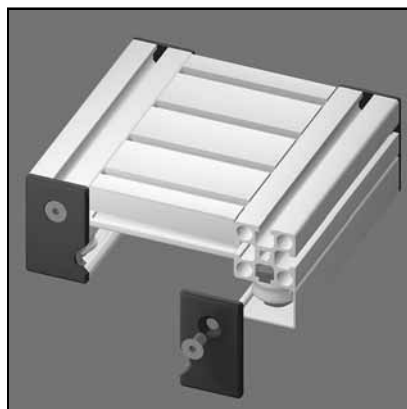
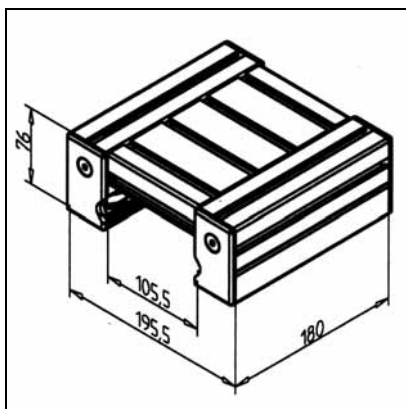
- 1- or multi-axis guides
- Linear robots
- Handling systems
- Measuring devices
- For rails 45, 45 x 90 H, 45 x 135 H and 180 H

### ASSEMBLY

- Assemble slide on rail 45 or 45 x 90 H, adjust clearance with eccentric bush
- Assemble cover and greasing system
- OPTIONS:
- Slide clamping unit Part N° 28.0270/0

## SLIDE LW 90

Part. N° 28.0092/0



### TECHN. DATA / ITEMS SUPPLIED

- Slide completely assembled
- 2 concentric and 2 eccentric bearing units
- End caps LR and Cover profiles LR
- Load capacity: see page 260
- Weight 2,700 kg
- Stainless version Part N° 28.0092/2

### APPLICATIONS

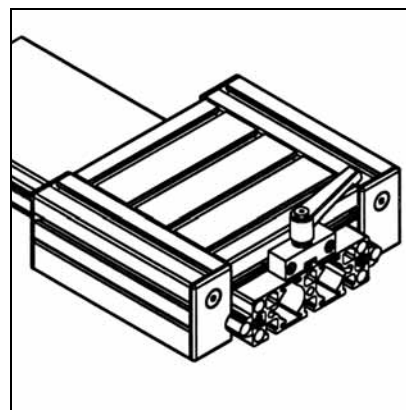
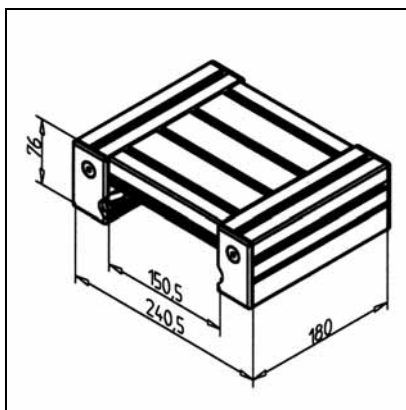
- 1- or multi-axis guides
- Linear robots
- Handling systems
- Measuring devices
- For rails 45 x 90 F, 90 x 90, 90 x 180 H

### ASSEMBLY

- Assemble slide on rail 45 x 90 F, rail 90 or rail 90 x 180 H; adjust clearance with eccentric bush
- Assemble cover and greasing system
- OPTIONS:
- Slide clamping Part N° 28.0270/0

## SLIDE LW 135

Part. N° 28.0084/0



### TECHN. DATA / ITEMS SUPPLIED

- Slide completely assembled
- 2 concentric and 2 eccentric bearing units
- End caps LR and Cover profiles LR
- Load capacity: see page 260
- Weight 3,150 kg
- Stainless version Part N° 28.0084/1

### APPLICATIONS

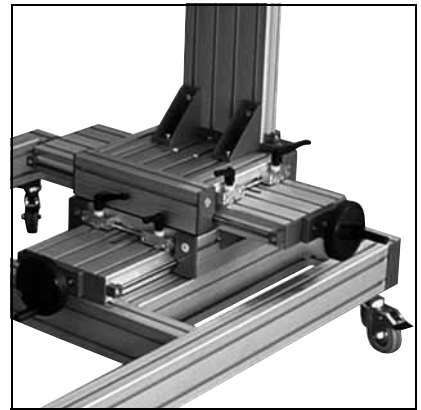
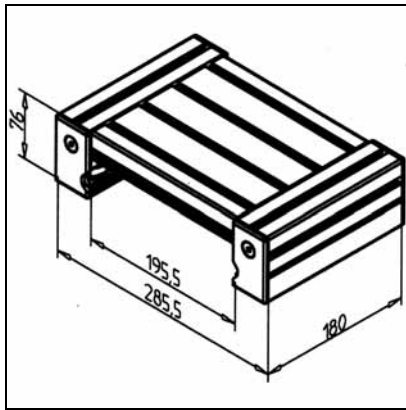
- 1- or multi-axis guides
- Linear robots
- Handling systems
- Measuring devices
- For rails 135 F

### ASSEMBLY

- Assemble slide on rail 45 x 135; adjust clearance with eccentric bush
- Assemble cover and greasing system
- OPTIONS:
- Slide clamping unit Part N° 28.0270/0

## SLIDE LW 180

Part. N° 28.0087/0



### TECHN. DATA / ITEMS SUPPLIED

- Slide completely assembled
- 2 concentric and 2 eccentric bearing units
- End caps LR and Cover profiles LR
- Load capacity: see page 260
- Weight 3,590 kg
- Stainless version Part N° 28.0087/1

### APPLICATIONS

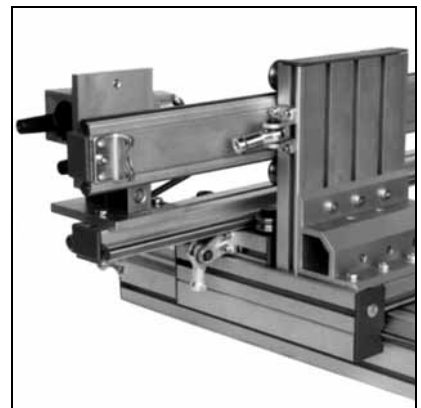
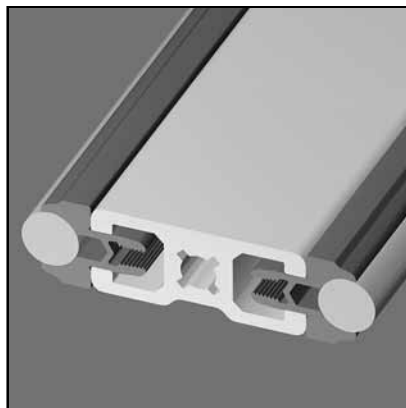
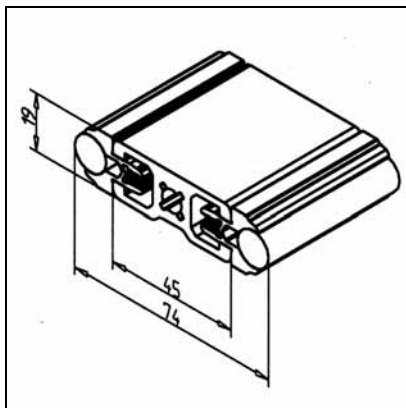
- 1- or multi-axis guides
- Linear robots
- Handling systems
- Measuring devices
- For rails 45 x 180 F and 90 x 180 F

### ASSEMBLY

- Assemble slide on rail 90 x 180; adjust clearance with eccentric bush
- Assemble cover and greasing system
- OPTIONS:
- Slide clamping unit Part N° 28.0270/0

## RAIL 19

Part. N° 28.0009/0



### TECHN. DATA / ITEMS SUPPLIED

- Profile 19 x 45
- Both sides with shaft supporting profile and shafts Ø 12 h6, ready for use
- Without end caps
- Weight 3,666 kg/m
- Length 6 m
- Stainless version Part N° 28.0009/3

### APPLICATIONS

- Linear guides
- Longer rails with composite shafts possible

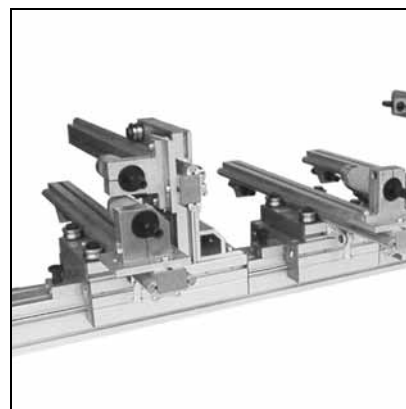
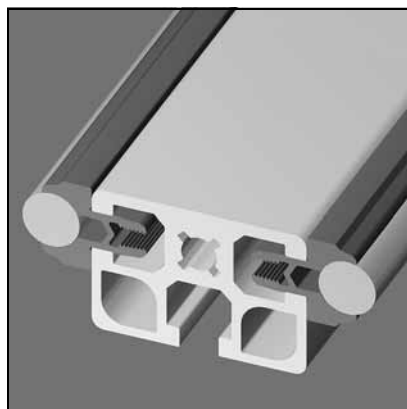
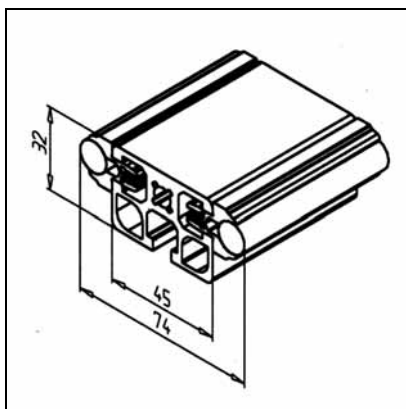
### ASSEMBLY

- For vertical use or for high speed applications, we recommend the use of shaft retention devices Part N° 28.0052/0
- Load capacity: see page 260



## RAIL 32

Part. N° 28.0010/0



### TECHN. DATA / ITEMS SUPPLIED

- Profile 45 x 32 F
- Both sides with shaft supporting profile and shafts Ø 12 h6, ready for use
- Without end caps
- Weight 4,161 kg/m
- Length 6 m
- Stainless version Part N° 28.0010/3

### APPLICATIONS

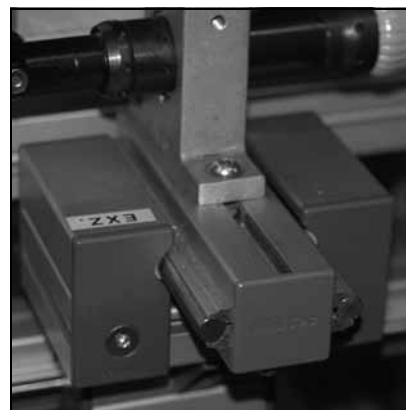
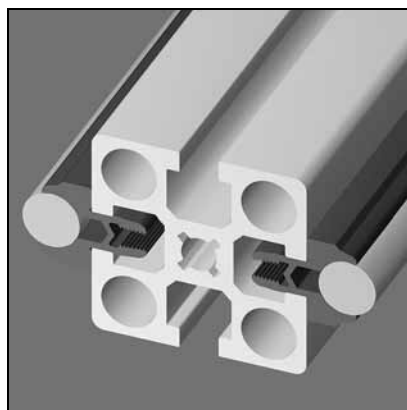
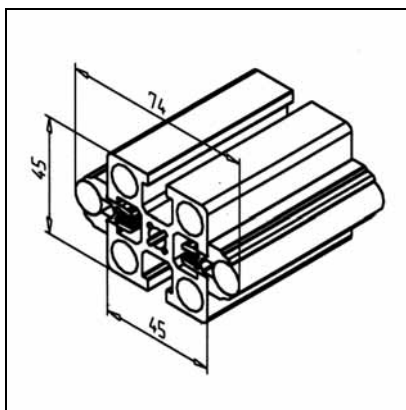
- Linear guides
- Longer rails with composite shafts possible

### ASSEMBLY

- For vertical use or for high speed applications, we recommend the use of shaft retention devices Part N° 28.0052/0
- Load capacity: see page 260

## RAIL 45

Part. N° 28.0006/0



### TECHN. DATA / ITEMS SUPPLIED

- Profile 45 x 45
- Both sides with shaft supporting profile and shafts Ø 12 h6, ready for use
- Without end caps
- Weight 4,720 kg/m
- Length 6 m
- Stainless version Part N° 28.0006/3

### APPLICATIONS

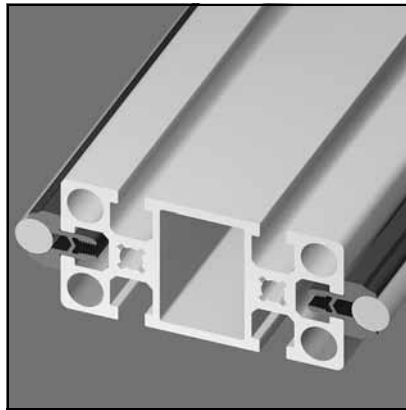
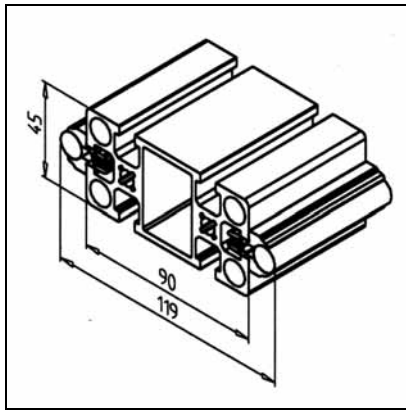
- Linear guides
- Longer rails with composite shafts possible

### ASSEMBLY

- For vertical use or for high speed applications, we recommend the use of shaft retention devices Part N° 28.0052/0
- Load capacity: see page 260

## RAIL 45 X 90 F

Part. N° 28.0007/1



### TECHN. DATA / ITEMS SUPPLIED

- Profile 45 x 90
- Both sides with shaft supporting profile and shafts Ø 12 h6, ready for use
- Without end caps
- Weight 6,190 kg/m
- Length 6 m
- Stainless version Part N° 28.0007/3

### APPLICATIONS

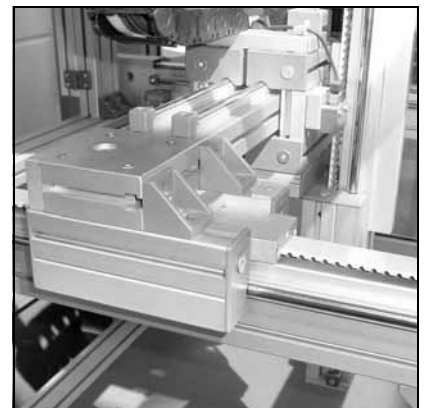
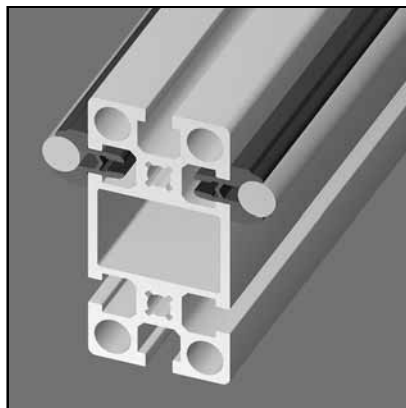
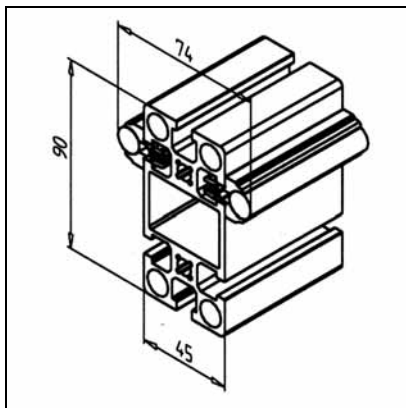
- Linear guides
- Longer rails with composite shafts possible

### ASSEMBLY

- For vertical use or for high speed applications, we recommend the use of shaft retention devices **Part N° 28.0052/0**
- Load capacity: see page 260

## RAIL 45 X 90 H

Part. N° 28.0007/2



### TECHN. DATA / ITEMS SUPPLIED

- Profile 45 x 90
- Both sides with shaft supporting profile and shafts Ø 12 h6, ready for use
- Without end caps
- Weight 6,190 kg/m
- Length 6 m
- Stainless version Part N° 28.0007/4

### APPLICATIONS

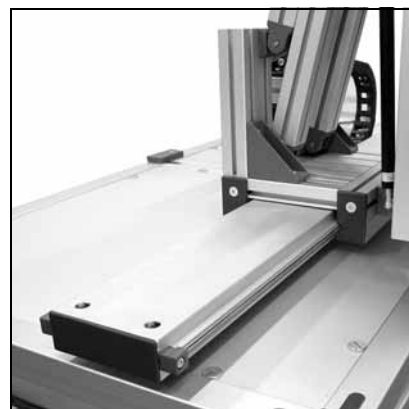
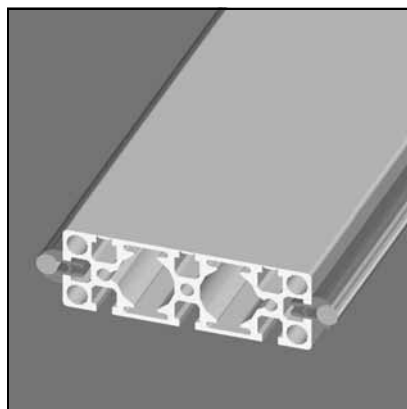
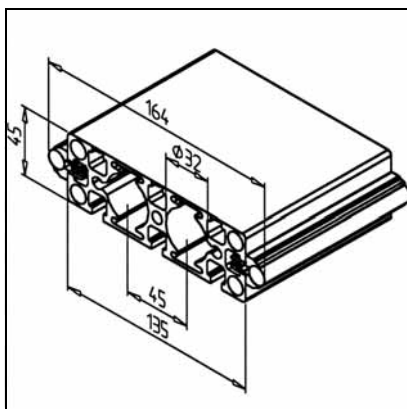
- Linear guides
- Belt return in profile
- Longer rails with shafts put together

### ASSEMBLY

- For vertical use or for high speed applications, we recommend the use of shaft retention devices **Part N° 28.0052/0**
- Load capacity: see page 260

## RAIL 135 F

Part. N° 28.0012/1



### TECHN. DATA / ITEMS SUPPLIED

- Profile 45 x 135 G
- Both sides with shaft supporting profile and shafts Ø 12 h6, ready for use
- Without end caps
- Weight 8,09 kg/m
- Length 6 m
- Stainless version Part N° 28.0012/3

### APPLICATIONS

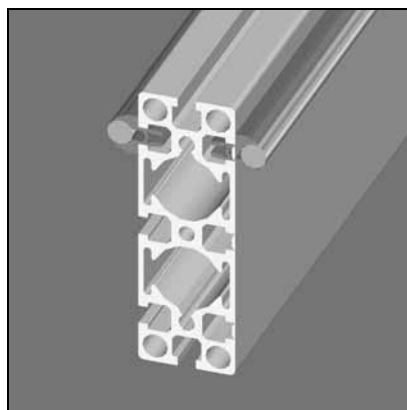
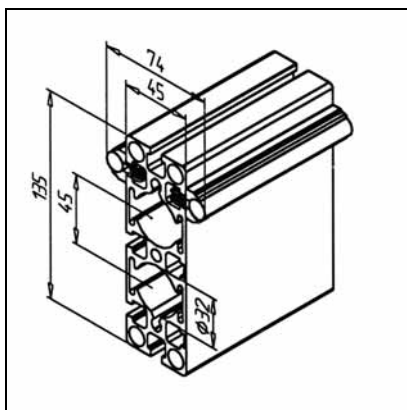
- Linear guides
- Longer rails with shafts put together

### ASSEMBLY

- For vertical use or for high speed applications, we recommend the use of shaft retention devices Part N° 28.0052/0
- Load capacity: see page 260

## RAIL 135 H

Part. N° 28.0012/2



### TECHN. DATA / ITEMS SUPPLIED

- Profile 45 x 135 G
- Both sides with shaft supporting profile and shafts Ø 12 h6, ready for use
- Without end caps
- Weight 8,090 kg/m
- Length 6 m
- Stainless version Part N° 28.0012/4

### APPLICATIONS

- Linear-guides
- Longer rails with composite shafts possible

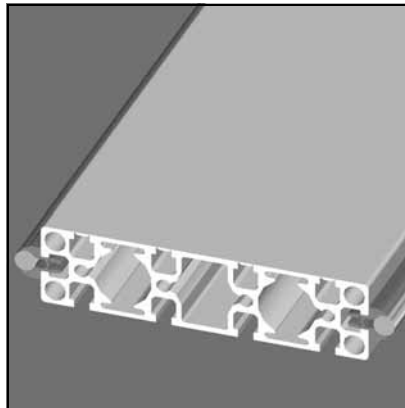
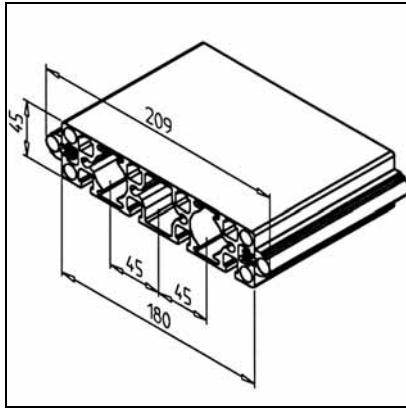
### ASSEMBLY

- For vertical use or for high speed Applications, we recommend the use of shaft retention devices Part N° 28.0052/0
- Load capacity: see page 260



## RAIL 45 X 180 F

Part. N° 28.0013/1



### TECHN. DATA / ITEMS SUPPLIED

- Profile 45 x 180 G
- Both sides with shaft supporting profile and shafts Ø 12 h6, ready for use
- Without end caps
- Weight 10,020 kg/m
- Length 6 m
- Stainless version Part N° 28.0013/3

### APPLICATIONS

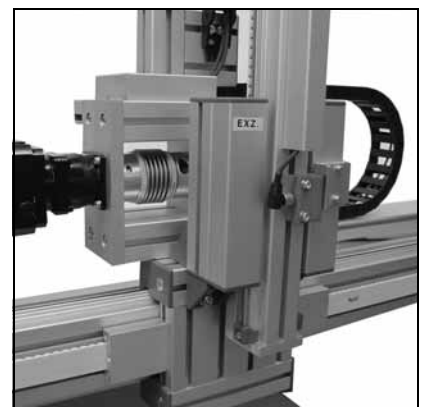
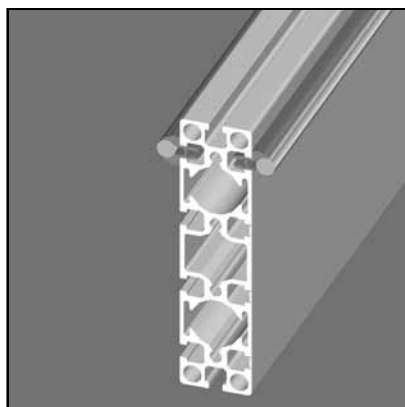
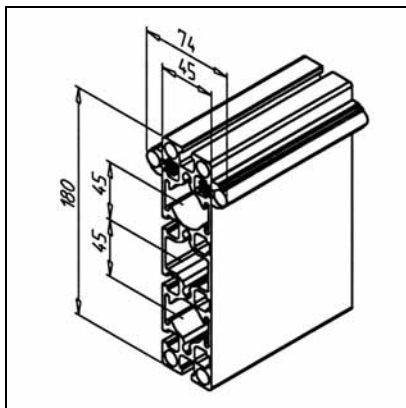
- Linear guides
- Longer rails with composite shafts possible

### ASSEMBLY

- For vertical use or for high speed Applications, we recommend the use of shaft retention devices **Part N° 28.0052/0**
- Load capacity: see page 260

## RAIL 45 X 180 H

Part. N° 28.0013/2



### TECHN. DATA / ITEMS SUPPLIED

- Profile 45 x 180 G
- Both sides with shaft supporting profile and shafts Ø 12 h6, ready for use
- Without end caps
- Weight 10,020 kg/m
- Length 6 m
- Stainless version Part N° 28.0013/4

### APPLICATIONS

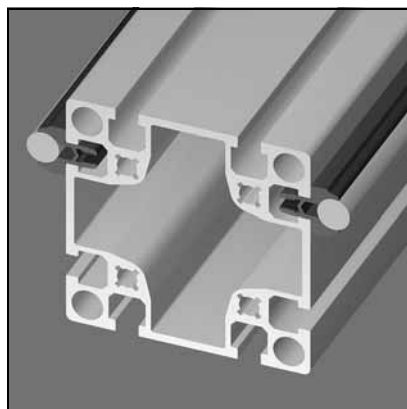
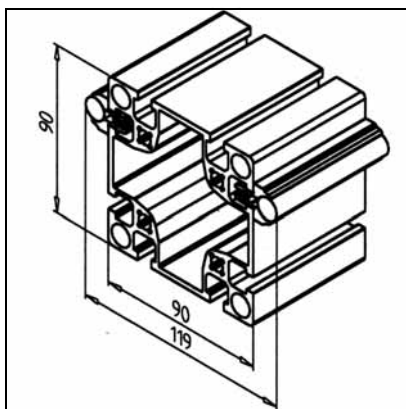
- Linear guides
- Longer rails with composite shafts possible

### ASSEMBLY

- For vertical use or for high speed applications, we recommend the use of shaft retention devices **Part N° 28.0052/0**
- Load capacity: see page 260

## RAIL 90

Part. N° 28.0008/0



### TECHN. DATA / ITEMS SUPPLIED

- Profile 90 x 90 L
- Both sides with shaft supporting profile and shafts Ø 12 h6, ready for use
- Without end caps
- Weight 7,88 kg/m
- Length 6 m
- Stainless version Part N° 28.0008/3

### APPLICATIONS

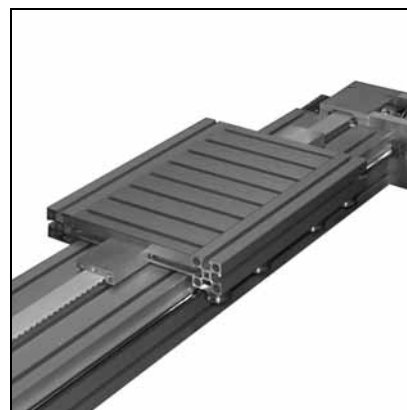
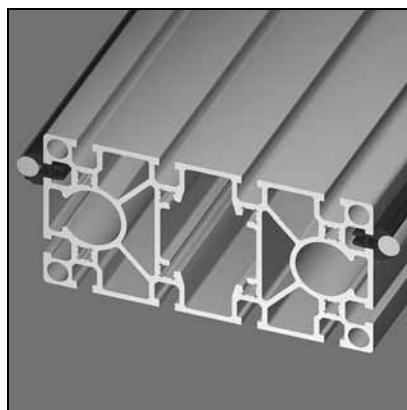
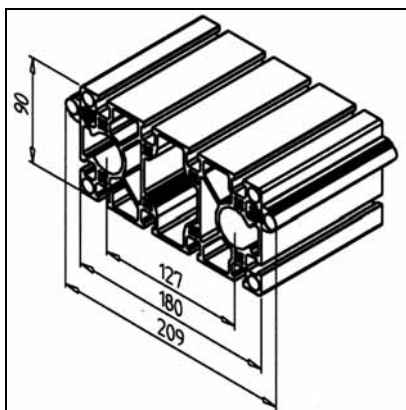
- Linear guides
- Timing belt return inside the profile
- Longer rails with composite shafts possible

### ASSEMBLY

- For vertical use or for high speed applications, we recommend the use of shaft retention devices Part N° 28.0052/0
- Load capacity: see page 260

## RAIL 180 F

Part. N° 28.0011/1



### TECHN. DATA / ITEMS SUPPLIED

- Profile 90 x 180 S
- Both sides with shaft supporting profile and shafts Ø 12 h6, ready for use
- Without end caps
- Weight 14,220 kg/m
- Length 6 m
- Stainless version Part N° 28.0011/3

### APPLICATIONS

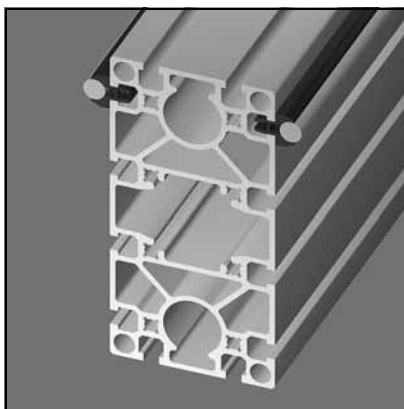
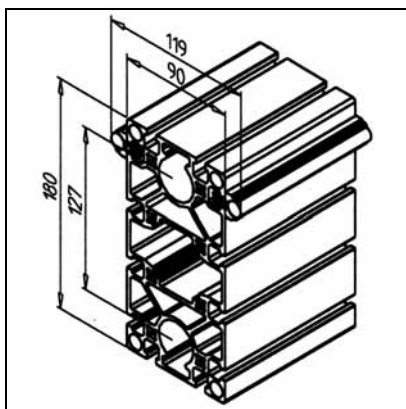
- Linear-guides
- Timing belt return inside the profile
- Longer rails with composite shafts possible

### ASSEMBLY

- For vertical use or for high speed Applications, we recommend the use of shaft retention devices Part N° 28.0052/0
- Load capacity: see page 260

## RAIL 180 H

Part. N° 28.0011/2



### TECHN. DATA / ITEMS SUPPLIED

- Profile 90 x 180 S
- Both sides with shaft supporting profile and shafts Ø 12 h6, ready for use
- Without end caps
- Weight 14,220 kg/m
- Length 6 m
- Stainless version Part N° 28.0011/4

### APPLICATIONS

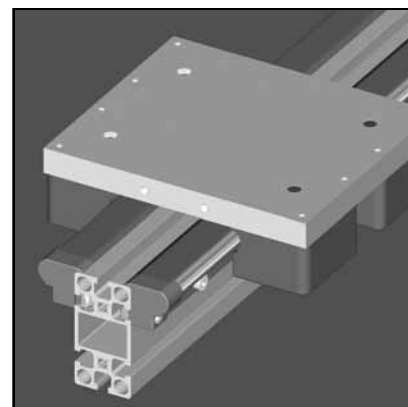
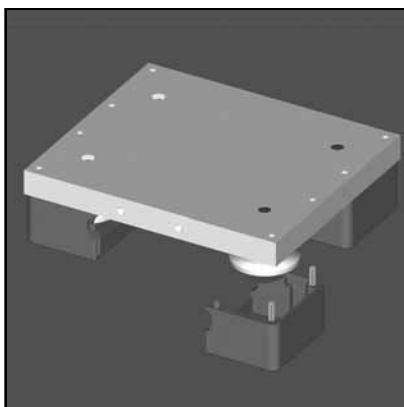
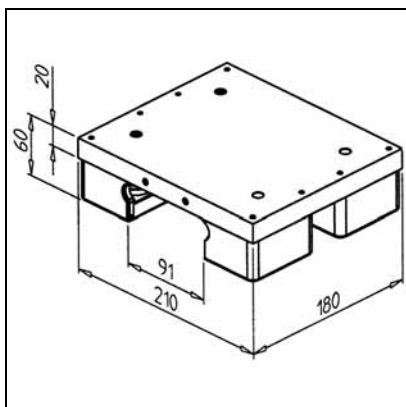
- Linear guides
- Timing belt return inside the profile
- Longer rails with composite shafts possible

### ASSEMBLY

- For vertical use or for high speed applications, we recommend the use of shaft retention devices **Part N° 28.0052/0**
- Load capacity: see page 260

## SLIDE LR16 - 45

Part. N° 28.0810/0



### TECHN. DATA / ITEMS SUPPLIED

- With 2 concentric and 2 eccentric bearing units
- Load / Bearing:
- dyn. C = 19.90 N
- stat. C<sub>0</sub> = 12.60 N
- Weight 3,640 kg

### APPLICATIONS

- Single and multi-axis guides
- Linear robot
- Handling equipment
- Measuring equipment
- For rail LR16 45x90 H

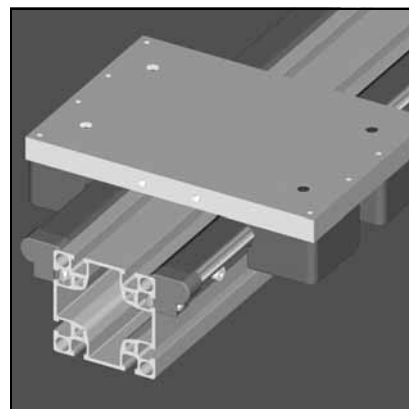
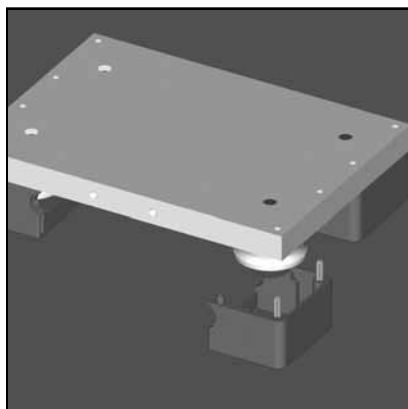
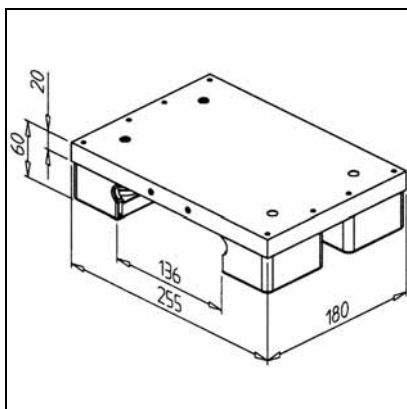
### ASSEMBLY

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



## SLIDE LR 16 - 90

Part. N° 28.0811/0



### TECHN. DATA / ITEMS SUPPLIED

- Fully assembled trolley
- With 2 concentric and 2 eccentric bearing units
- Load / Bearing:
- dyn. C = 19.90 N
- stat. C<sub>0</sub> = 12.60 N
- Weight 4,078 kg

### APPLICATIONS

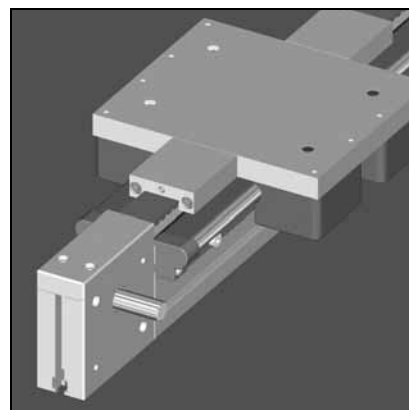
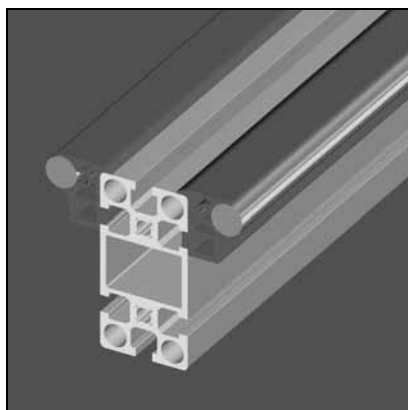
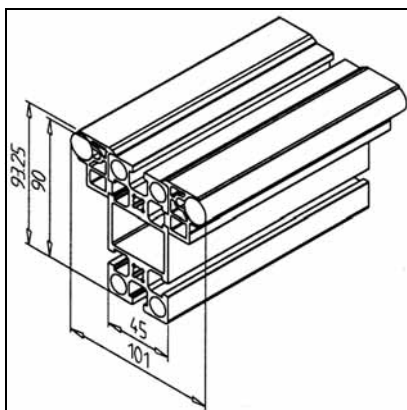
- Single and multi-axis guides
- Linear robot
- Handling equipment
- Measuring equipment
- For rail LR16 90 and LR16 90x180 H

### ASSEMBLY

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

## RAIL LR 16 45X90 H

Part. N° 28.0820/0



### TECHN. DATA / ITEMS SUPPLIED

- Profile 45 x 90
- With shaft supporting profile LR 16 and shaft with diameter 16 h6 on both sides, assembled ready to fit
- Without end caps
- Weight 7,979 kg/m
- Length 6 m

### APPLICATIONS

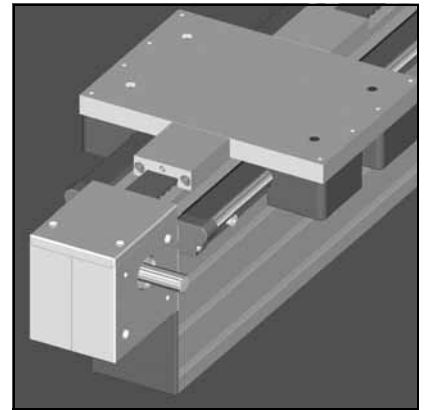
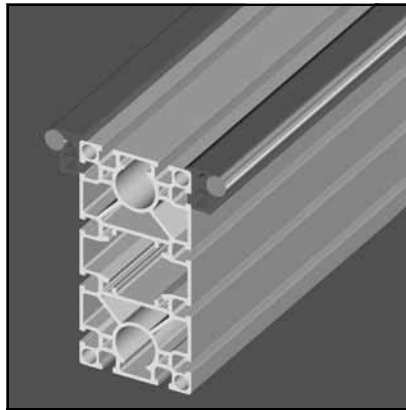
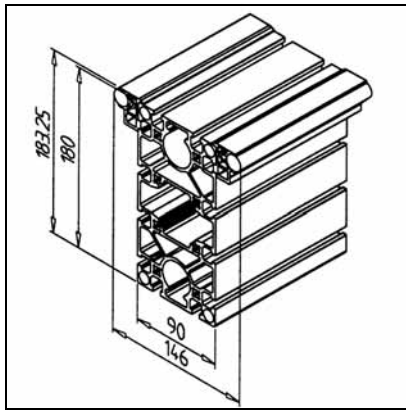
- Linear and lifting guides for high loading capacity
- Timing belt return inside the profile
- Longer rails with composite shafts possible

### ASSEMBLY

- For vertical use or for high speed applications, we recommend the use of shaft retention devices LR 16 Part. N° 28.0808/0 and 28.0809/0

## RAIL LR 16 90X180 H

Part. N° 28.0822/0



### TECHN. DATA / ITEMS SUPPLIED

- Profile 90 x 180 S
- With shaft supporting profile and shaft with diameter 16 h6 on both sides, assembled ready to fit
- Without end caps
- Weight 16,278 kg/m
- Length 6 m

### APPLICATIONS

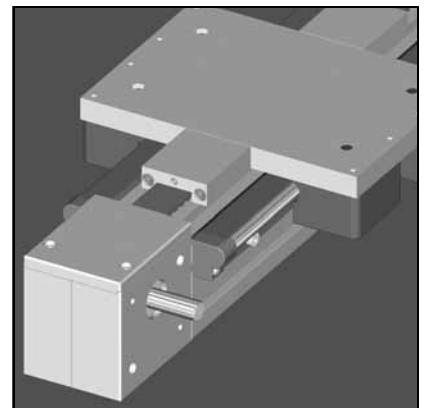
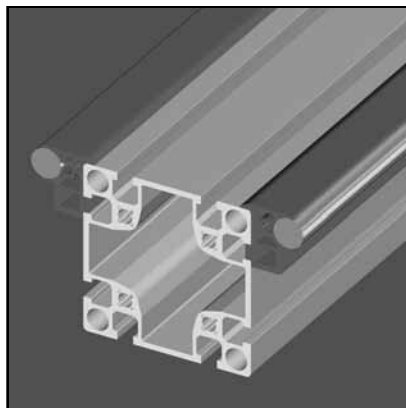
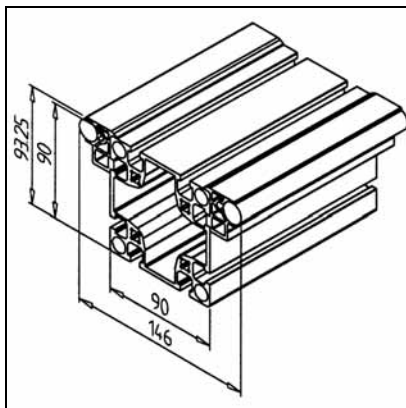
- Linear and lifting guides for high loading capacity
- Timing belt return inside the profile
- Longer rails with composite shafts possible

### ASSEMBLY

- For vertical use or for high speed applications, we recommend the use of shaft retention devices LR 16 Part. N° 28.0808/0 and 28.0809/0

## RAIL LR 16 90

Part. N° 28.0821/0



### TECHN. DATA / ITEMS SUPPLIED

- Profile 90 x 90
- With shaft supporting profile LR 16 and shaft with diameter 16 h6 on both sides, assembled ready to fit
- Without end caps
- Weight 10,067 kg/m
- Length 6 m

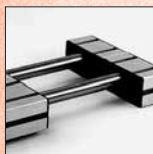
### APPLICATIONS

- Linear and lifting guides for high loading capacity
- Timing belt return inside the profile
- Longer rails with composite shafts possible

### ASSEMBLY

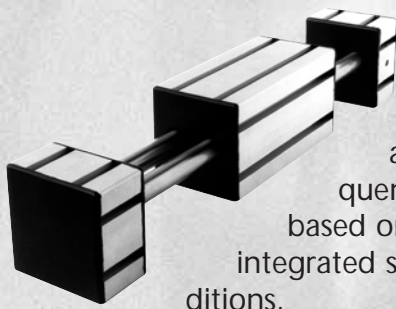
- For vertical use or for high speed applications, we recommend the use of shaft retention devices LR 16 Part. N° 28.0808/0 and 28.0809/0







## LINEAR SYSTEM LB



The LB design is based on LME 20 linear ball bearings that are built into our construction profile in the specially provided bore holes. Precision shafts D 20 mm grant the high load capacity of this guide. The LB design offers substantial advantages for short travelling distances and high stroke frequencies. Especially compact and economical guide elements based on our solid precision ball bushings from the LME series with integrated sealing rings, which provide high reliability under rough conditions.

### Possible applications

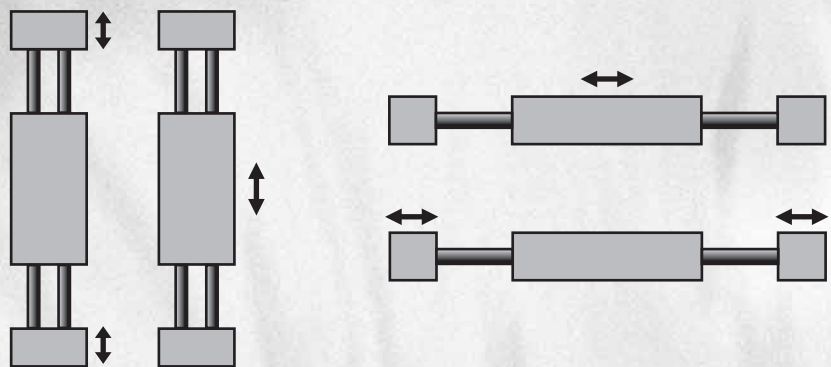
Calculation of life:

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

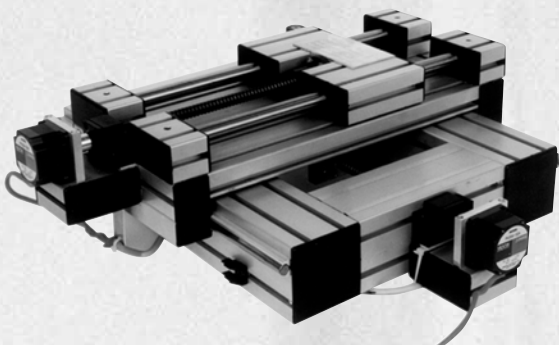
L = Life

C = Basic dynamic load rating (N)

F = Resultant load (N)



MiniTec LB series linear guides are particularly suitable for short strokes of up to 1 meter. The modular system provides absolute flexibility in the design of the guide. The ball bushings with solid outer ring made from hardened and ground bearing steel are mounted directly into the profile Ø 32 bores of the extra strong profile 45 x 135, 45 x 180, 90 x 180, 90 x 45 S and 90 x 90 S.



The axial position of the bushes is secured with one-component glue. The ball-bushing combines low friction, limited clearance, low noise and long life.

When designing a linear system LB, shaft deflection under load of max. 0.5° must be considered.

For further technical details see MiniTec catalogue "Linear bearings".  
Linear guides LB are available completely assembled with ball-screw on request.  
All components are also available in stainless version.





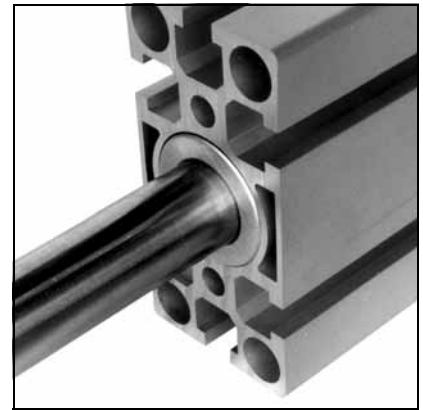
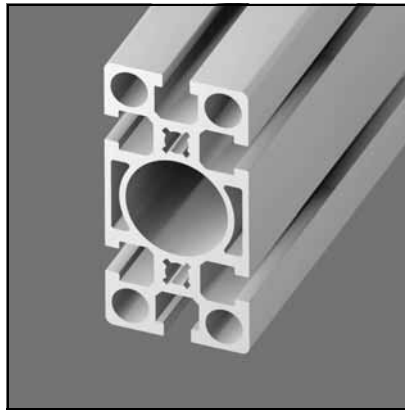
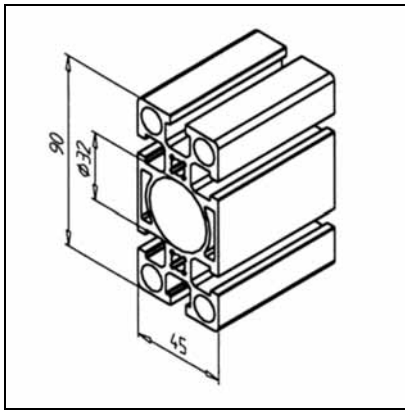
COMPONENTS  
LB





## PROFILE 45 X 90 S

Part. N° 20.1017/0



### TECHN. DATA / ITEMS SUPPLIED

- Ix =	113,487 cm <sup>4</sup>
- Iy =	30,719 cm <sup>4</sup>
- wx =	25,219 cm <sup>3</sup>
- wy =	13,653 cm <sup>3</sup>
- Weight	3,860 kg/m
- Length	6 m
- Packing unit	24 m

### APPLICATIONS

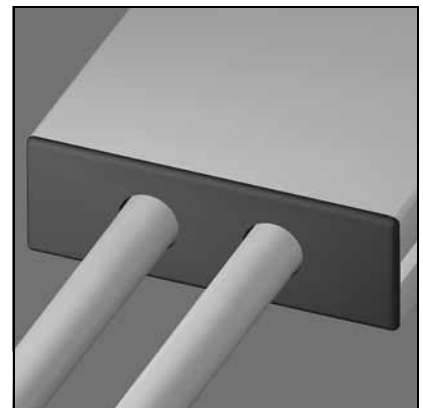
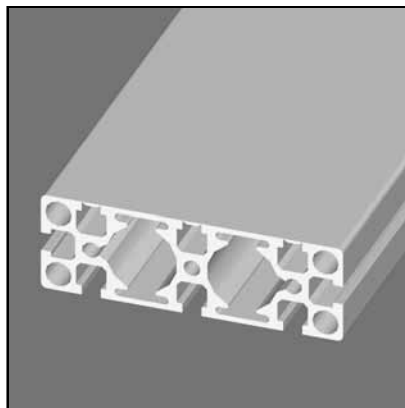
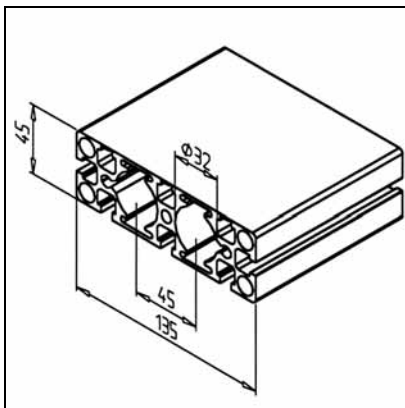
- Universal for general heavy duty constructions
- Linear guides LB as slide
- Linear guides
- 5 charities for pressed air piping
- Central bore Ø 32 mm for ball-bushings LME 20, for ball-bearings 6201 or 6002, for compressed air piping or guiding of hydraulic add-in cylinders

### ASSEMBLY

- MiniTec power-lock fastener
- Cross bolt-fastener
- Angle 45 / 90
- Screw connection

## PROFILE 45 X 135 1G

Part. N° 20.1078/0



### TECHN. DATA / ITEMS SUPPLIED

- Ix =	359,242 cm <sup>4</sup>
- Iy =	47,064 cm <sup>4</sup>
- wx =	20,618 cm <sup>3</sup>
- wy =	53,221 cm <sup>3</sup>
- Weight	5,570 kg/m
- Length	6 m
- Packing unit	12 m

### APPLICATIONS

- General constructions, particularly for use in the food industry, in medical engineering and for the filling of beverages, where strict hygienic standards are set
- Linear guides LB as slide
- Central bore Ø 32 mm for ball-bushings LME 20, for ball-bearings 6201 or 6002, for compressed air piping or guiding of hydraulic add-in cylinders

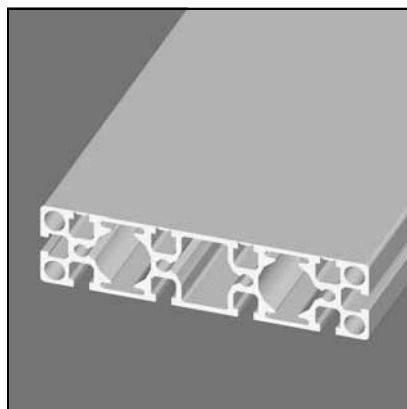
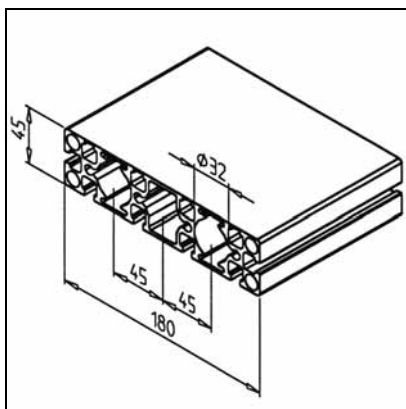
### ASSEMBLY

- MiniTec power-lock fastener
- 3 closed grooves can be opened up to the desired length, by means of the tear-off lever Part N° 26.0815/0



## PROFILE 45 X 180 1G

Part. N° 20.1079/0



### TECHN. DATA / ITEMS SUPPLIED

- lx =	810,885 cm <sup>4</sup>
- ly =	61,015 cm <sup>4</sup>
- wx =	90,097 cm <sup>3</sup>
- wy =	26,704 cm <sup>3</sup>
- Weight	6,954 kg/m
- Length	6 m
- Packing unit	12 m

### APPLICATIONS

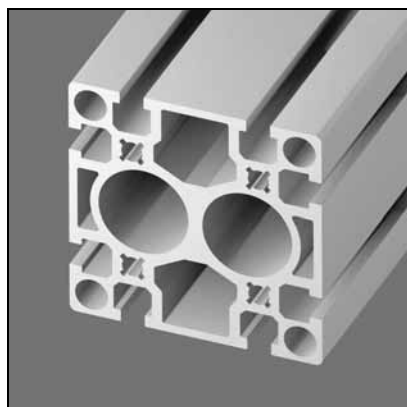
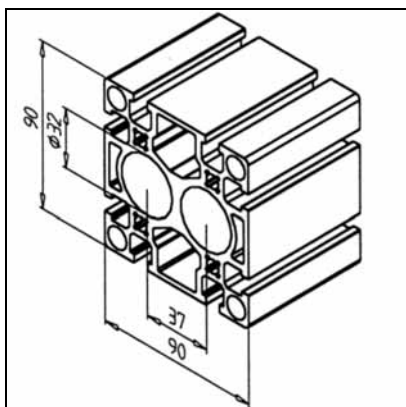
- General constructions, particularly for use in the food industry, in medical engineering and for the filling of beverages, where strict hygienic standards are set
- Linear guides LB as slide
- Central bore Ø 32 mm for ball-bushings LME 20, for ball-bearings 6201 or 6002, for compressed air piping or guiding of hydraulic add-in cylinders

### ASSEMBLY

- MiniTec power-lock fastener
- 4 closed grooves can be opened up to the desired length, by means of the tear-off lever **Part N° 26.0815/0**

## PROFILE 90 X 90 S

Part. N° 20.1019/0



### TECHN. DATA / ITEMS SUPPLIED

- lx =	223,949 cm <sup>4</sup>
- ly =	208,888 cm <sup>4</sup>
- wx =	49,766 cm <sup>3</sup>
- wy =	46,419 cm <sup>3</sup>
- Weight	7,514 kg/m
- Length	6 m
- Packing unit	12 m

### APPLICATIONS

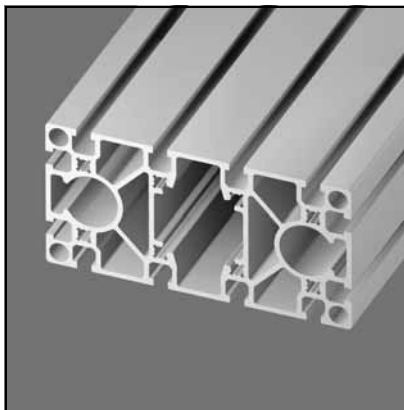
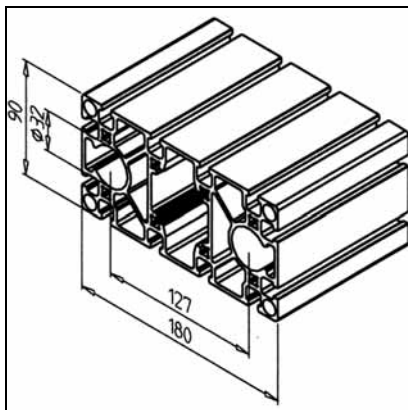
- Universal for general heavy duty constructions
- Linear guides LB as slide
- Central bore Ø 32 mm for ball-bushings LME 20, for ball-bearings 6201 or 6002, for compressed air piping or guiding of hydraulic add-in cylinders

### ASSEMBLY

- MiniTec power-lock fastener
- Angle 45 or 90
- Screw connection

## PROFILE 90 X 180 S

Part. N° 20.1013/0



### TECHN. DATA / ITEMS SUPPLIED

- I <sub>x</sub> =	1421,865 cm <sup>4</sup>
- I <sub>y</sub> =	376,784 cm <sup>4</sup>
- W <sub>x</sub> =	157,983 cm <sup>3</sup>
- W <sub>y</sub> =	83,729 cm <sup>3</sup>
- Weight	11,482 kg/m
- Length	6 m
- Packing unit	6 m

### APPLICATIONS

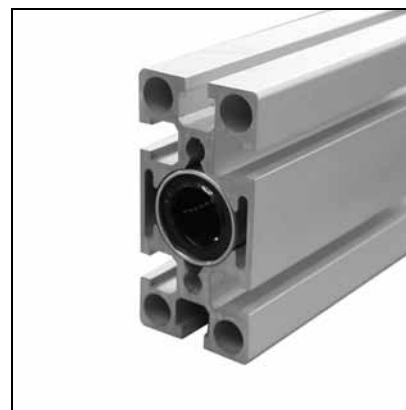
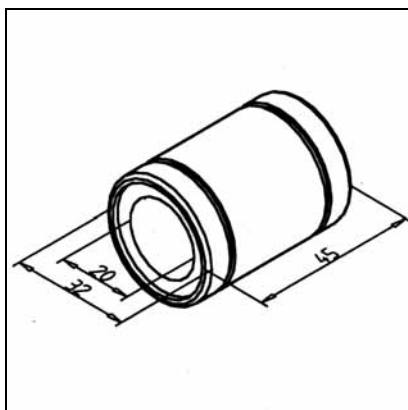
- Universal for general heavy duty constructions
- Linear guides LB as slide
- Central bore Ø 32 mm for ball-bushings LME 20, for ball-bearings 6201 or 6002, for compressed air piping or guiding of hydraulic add-in cylinders

### ASSEMBLY

- MiniTec power-lock fastener
- Angle 45 or 90
- Screw connection

## BALL BUSHING LME 20 UU

Part. N° 10.1745/0



### TECHN. DATA / ITEMS SUPPLIED

- Housing 100 Cr6	
- 2 integrated sealing rings, heat resistant up to 110°C, for higher temperatures up to 180°C use ball bushing with steel cage	
- Load:	
- dyn. C =	880 N
- stat. C <sub>0</sub> =	1.400 N
- Weight	0,090 kg

### APPLICATIONS

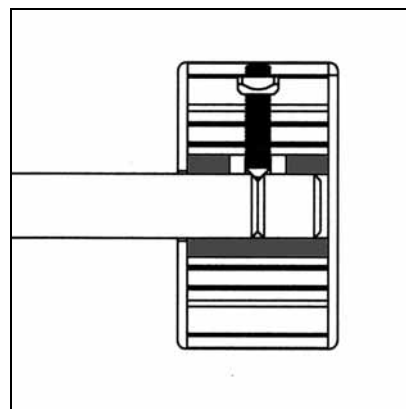
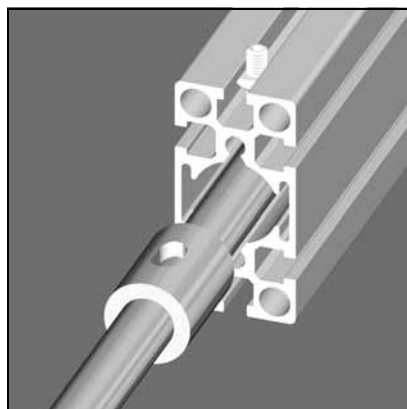
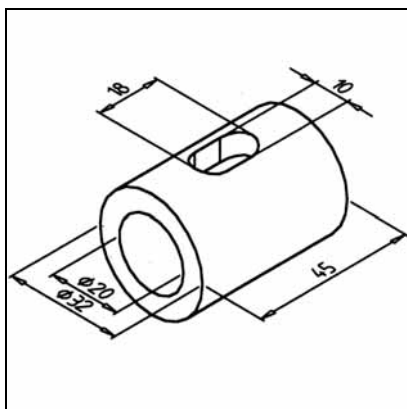
- Precision linear guides
- Linear guide LB
- Lifting-tables
- Quattro-units

### ASSEMBLY

- Push in bore 32 of the profile
- Axial securing with housing adhesive

# CENTERING BUSH

Part. N° 28.0146/0



## TECHN. DATA / ITEMS SUPPLIED

- Aluminium, natural
- Weight 0,067 kg

## APPLICATIONS

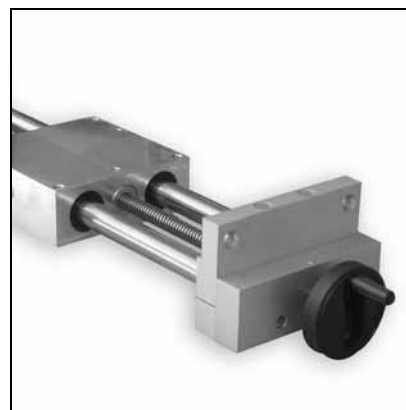
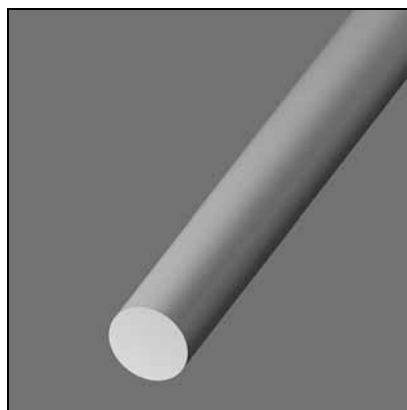
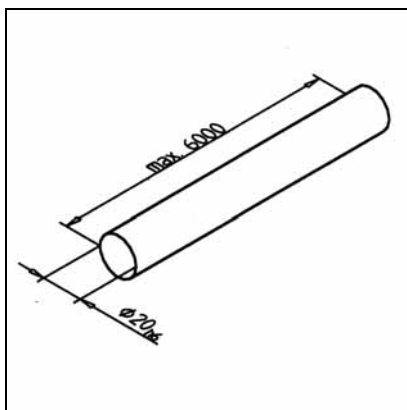
- Central clamping of shafts for all shaft supporting blocks of the MiniTec-linear system LB

## ASSEMBLY

- Insert centering bush in bore Ø 32 mm
- Insert shaft
- Attachment with set screw M8 x 35

# SHAFT 20

Part. N° 17.1744/0



## TECHN. DATA / ITEMS SUPPLIED

- Cf53, inductive hardened 60 +5 HRC ground h6
- Weight 2,466 kg/m
- Length 6 m

## APPLICATIONS

- Linear guide system LB

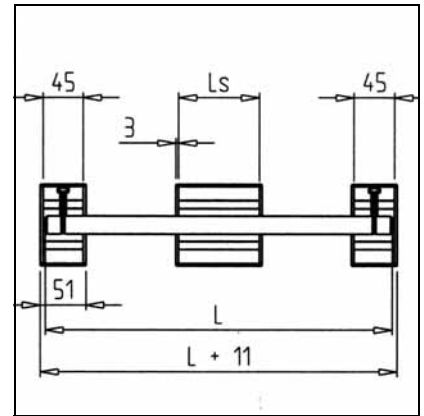
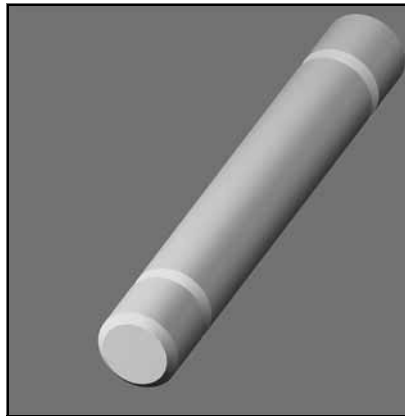
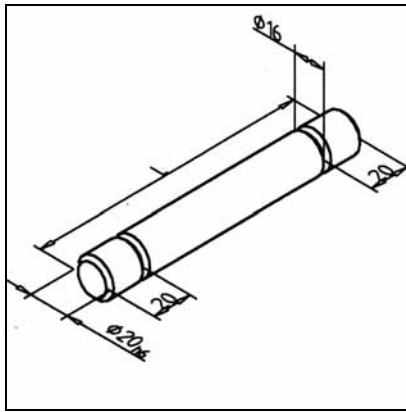
## ASSEMBLY

- With centering bush in shaft support block



# SHAFT 20 FOR LB-SYSTEM

Part. N° 28.0154/0



## TECHN. DATA / ITEMS SUPPLIED

- Steel Cf53, inductive hardened 60 +5 HRC grinded
- Tolerance h6
- Processed for shaft support block WB
- Weight 0,067 kg/m
- Please indicate measure L

## APPLICATIONS

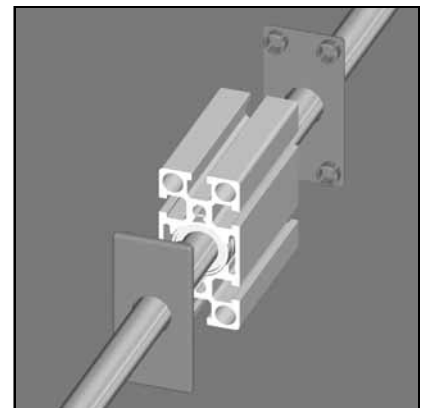
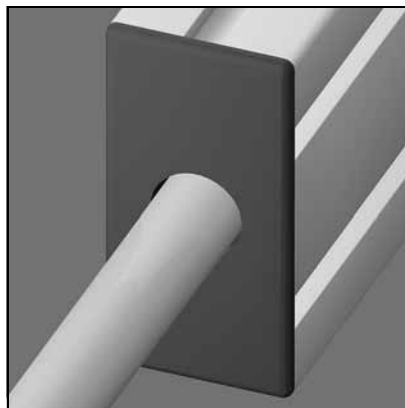
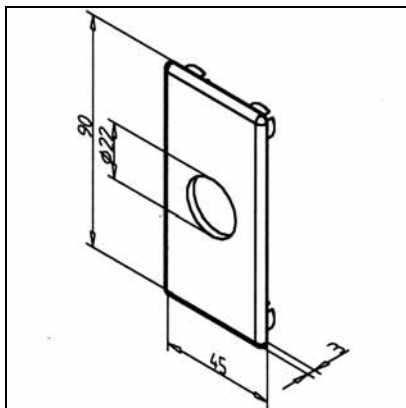
- MiniTec linear guides LB
- In each direction usable

## ASSEMBLY

- Insert in shaft support
- Clamp with set screw M8 x 35

# END CAP LB 45

Part. N° 28.0094/1



## TECHN. DATA / ITEMS SUPPLIED

- ABS, non-aging and oil resistant, grey
- On request also deliverable in black
- 1 centric bore Ø 22 mm
- Weight 0,095 kg/m

## APPLICATIONS

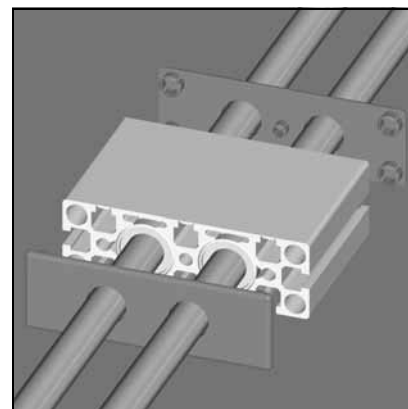
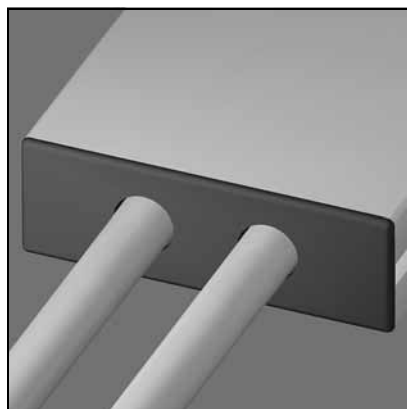
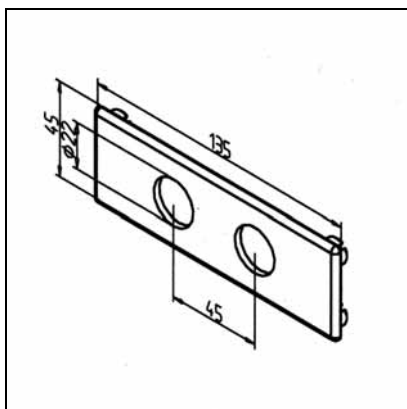
- Face covering of linear slides LB 45
- Face covering of shaft support block WB 45 (shaft side)

## ASSEMBLY

- Press into profile bores

## END CAP LB 45 X 135

Part. N° 28.0101/1



### TECHN. DATA / ITEMS SUPPLIED

- ABS, non-aging and oil resistant, grey
- On request also deliverable in black
- 2 bores Ø 22 mm
- Weight 0,017 kg

### APPLICATIONS

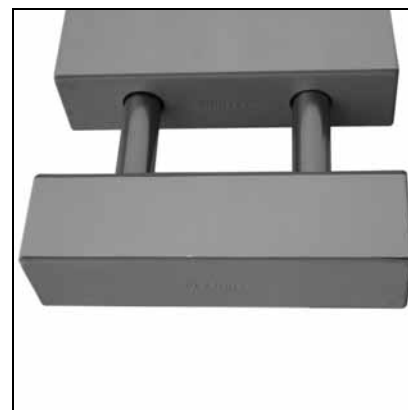
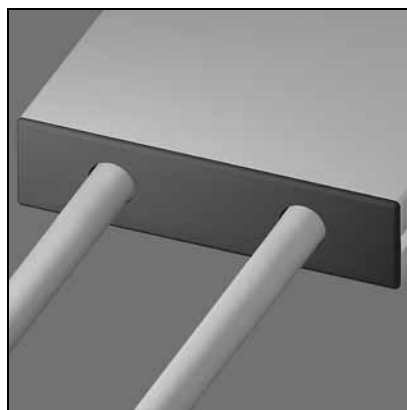
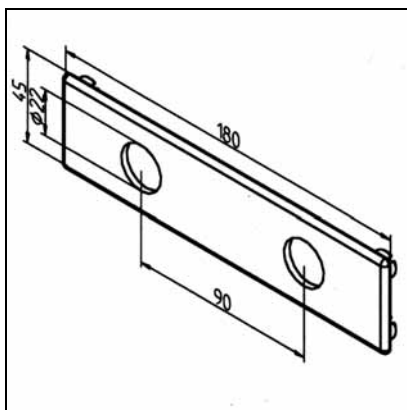
- Face covering of linear slides LB 45 x 135
- Face covering of shaft support blocks WB 45 x 135

### ASSEMBLY

- Press into profile bores

## END CAP LB 45 X 180

Part. N° 28.0102/1



### TECHN. DATA / ITEMS SUPPLIED

- ABS, non-aging and oil resistant, grey
- On request also deliverable in black
- 2 bores Ø 22 mm
- Weight 0,020 kg

### APPLICATIONS

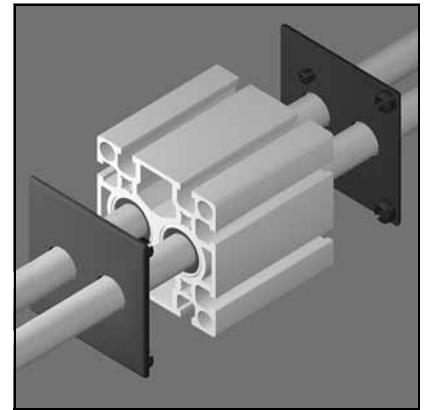
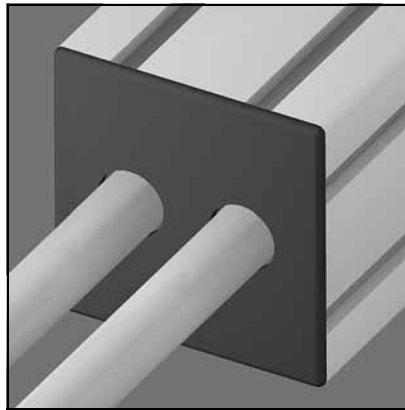
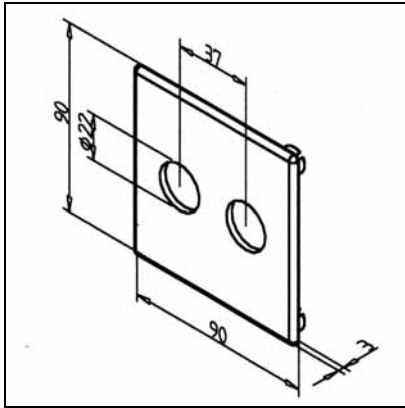
- Face covering of linear slides LB 45 x 180
- Face covering of shaft support blocks WB 45 x 180

### ASSEMBLY

- Press into profile bores

## END CAP LB 90

Part. N° 28.0095/1



### TECHN. DATA / ITEMS SUPPLIED

- ABS, non-aging and oil resistant, grey
- On request also available in black,  
Part N° 28.0095/0
- 2 bores Ø 22 mm
- Weight 0,0165 kg

### APPLICATIONS

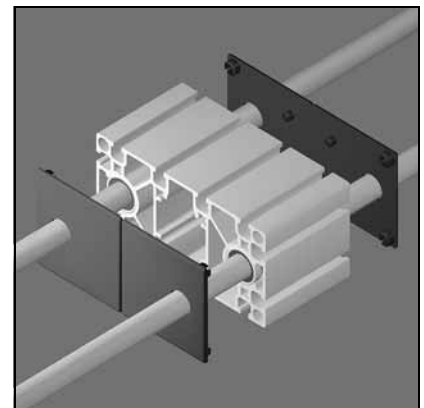
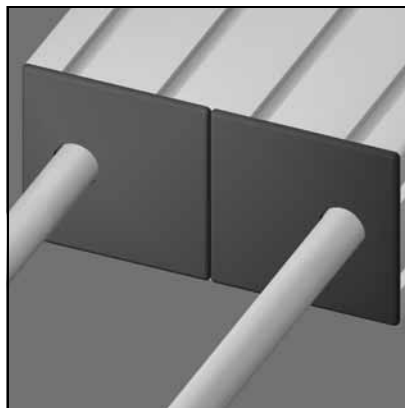
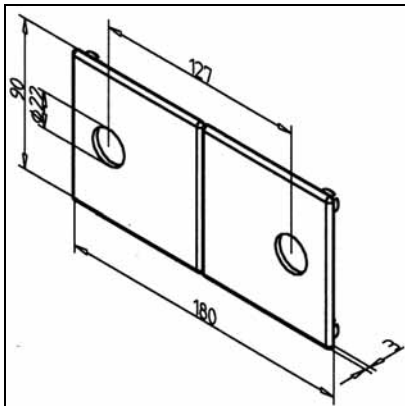
- Face covering of linear slides LB 90
- Face covering of shaft support blocks  
WB 90

### ASSEMBLY

- Press into profile bores

## END CAP LB 180

Part. N° 28.0103/1



### TECHN. DATA / ITEMS SUPPLIED

- ABS, non-aging and oil resistant, grey
- On request also available in black,  
Part N° 28.0103/0
- 2 bores Ø 22 mm
- Weight 0,037 kg

### APPLICATIONS

- Face covering of linear slides LB 180
- Face covering of shaft support blocks  
WB 180

### ASSEMBLY

- Press into profile bores



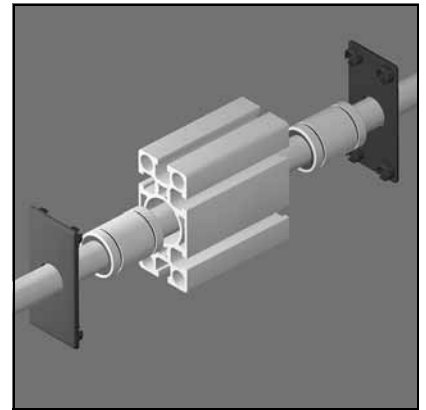
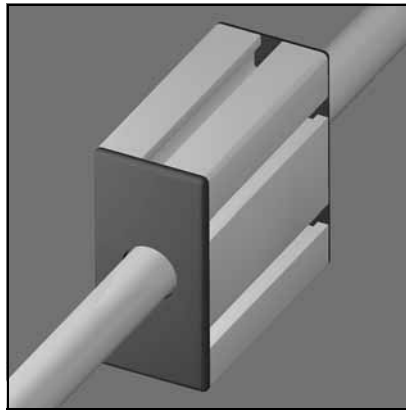
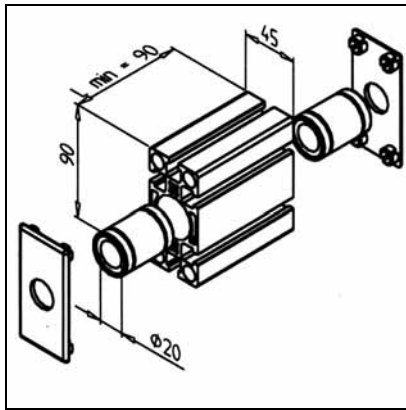


SYSTEM LB -  
READY FOR USE  
MODULES LB



# SLIDE LB 45

Part. N° 28.0150/0



## TECHN. DATA / ITEMS SUPPLIED

- Profile 45 x 90 S
- Completely assembled with 2 ball bushings LME 20 UU
- Profile face covered with end caps LB 45, grey
- Weight 0,550 kg
- Other length on request

## APPLICATIONS

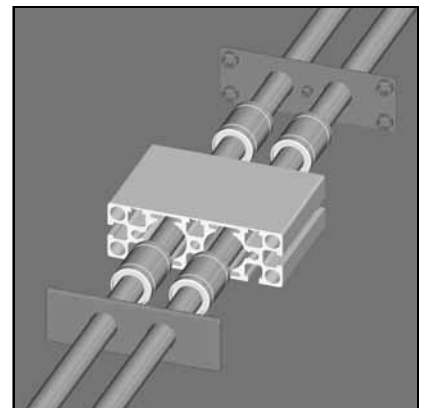
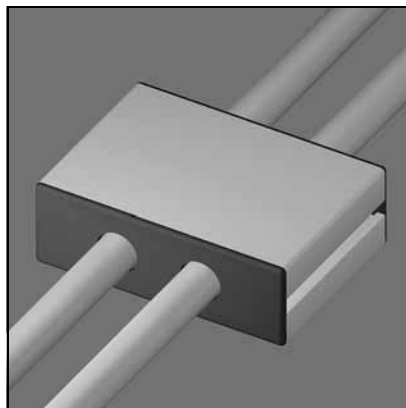
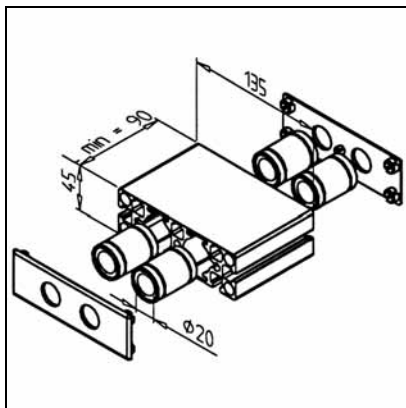
- All MiniTec linear systems LB

## ASSEMBLY

- Lead shaft through slide

# SLIDE LB 45 X 135

Part. N° 28.0155/0



## TECHN. DATA / ITEMS SUPPLIED

- Profile 45 x 135
- Completely assembled with 2 ball bushings LME 20 UU
- Profile face covered with end caps LB 45 x 135, grey
- Weight 0,865 kg
- Other length on request

## APPLICATIONS

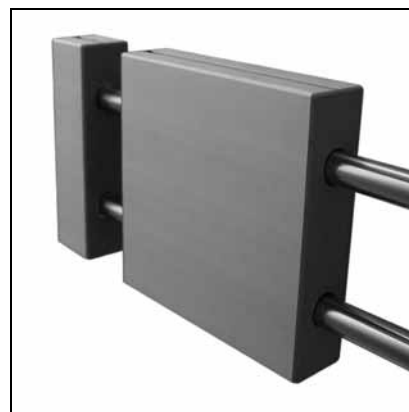
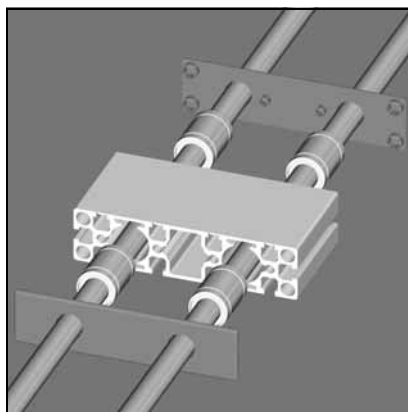
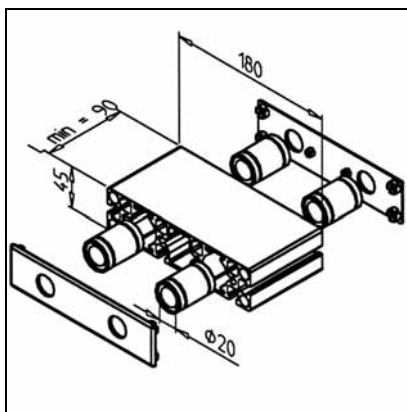
- All MiniTec linear systems LB

## ASSEMBLY

- Lead shaft through slide

## SLIDE LB 45 X 180

Part. N° 28.0156/0



### TECHN. DATA / ITEMS SUPPLIED

- Profile 45 x 180
- Completely assembled with 2 ball bushings LME 20 UU
- Profile face covered with end caps LB 45 x 180, grey
- Weight 1,007 kg
- Other length on request

### APPLICATIONS

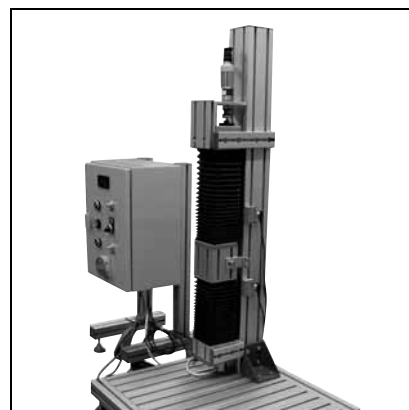
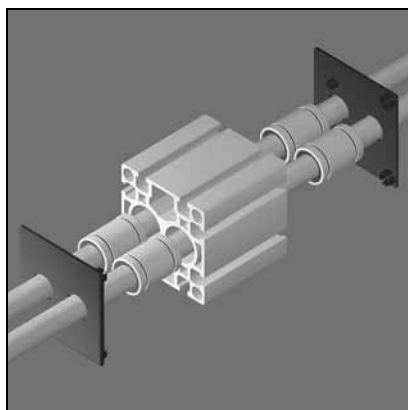
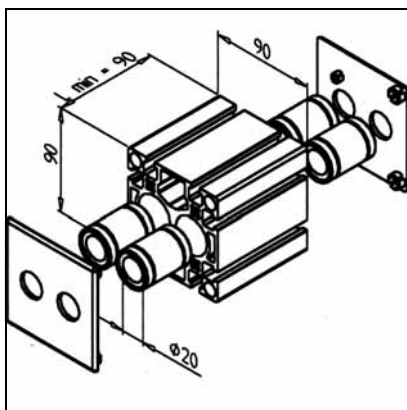
- All MiniTec linear systems LB

### ASSEMBLY

- Lead shaft through slide

## SLIDE LB 90

Part. N° 28.0152/0



### TECHN. DATA / ITEMS SUPPLIED

- Profile 90 x 90 S
- Completely assembled with 4 ball bushings LME 20 UU
- Profile face covered with end caps LB 90, grey
- Weight 1,070 kg
- Other length on request

### APPLICATIONS

- All MiniTec linear systems LB

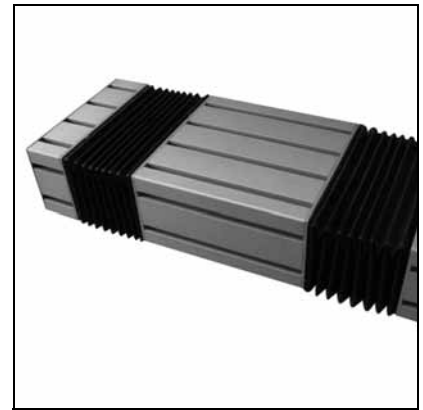
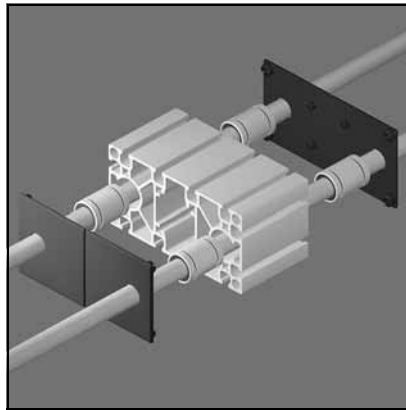
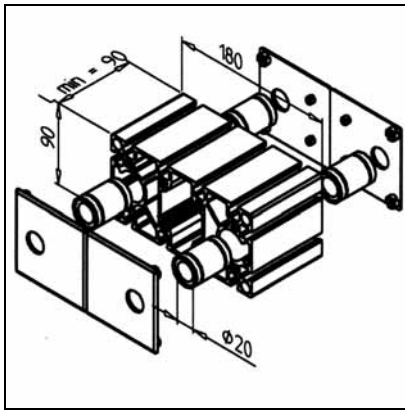
### ASSEMBLY

- Lead shaft through slide



## SLIDE LB 180

Part. N° 28.0143/0



### TECHN. DATA / ITEMS SUPPLIED

- Profile 90 x 180 S
- Completely assembled with 4 ball bushings LME 20 UU
- Profile face covered with end caps LB 180, grey
- Weight 1,500 kg
- Other length on request

### APPLICATIONS

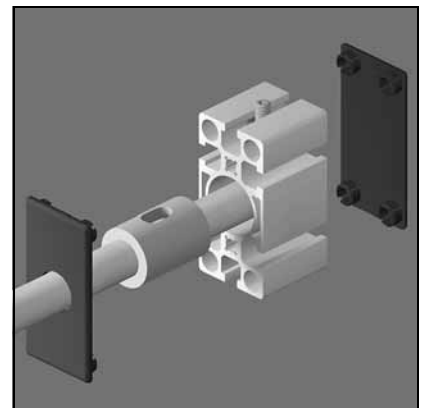
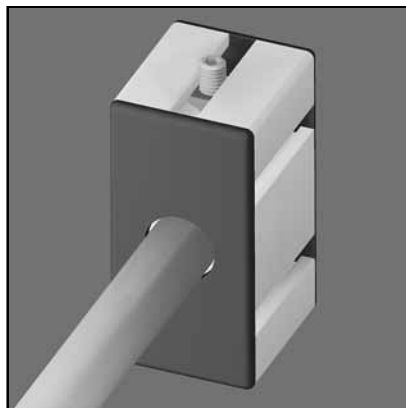
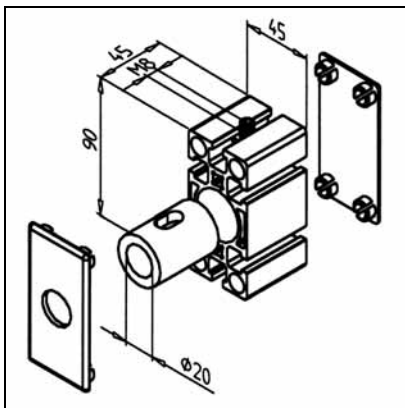
- All MiniTec linear systems LB

### ASSEMBLY

- Lead shaft through slide

## SHAFT SUPPORT BLOCK WB 45

Part. N° 28.0151/0



### TECHN. DATA / ITEMS SUPPLIED

- Profile 45 x 90 S
- Completely assembled with centering bush
- Shaft side with end cap LB 45, grey
- Outer side with end cap 45 x 90, grey
- Weight 0,526 kg

### APPLICATIONS

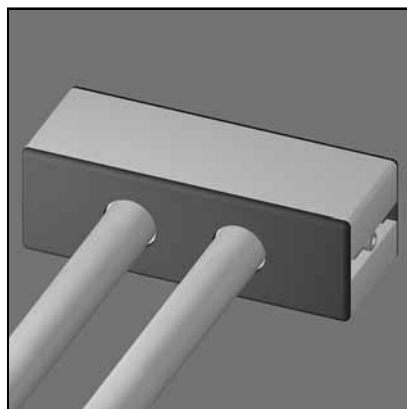
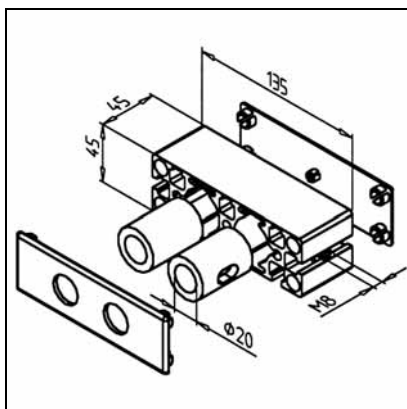
- Fastening shafts Ø 20 in MiniTec linear systems LB 45

### ASSEMBLY

- Insert shaft
- Tighten with set screw M8 x 35

## SHAFT SUPPORT BLOCK WB 45 X 135

Part. N° 28.0157/0



### TECHN. DATA / ITEMS SUPPLIED

- Profile 45 x 135
- Completely assembled with centering bush
- Shaft side with end cap LB 45 x 135, grey
- Outer side with end cap 45 x 135, grey
- Weight 0,530 kg

### APPLICATIONS

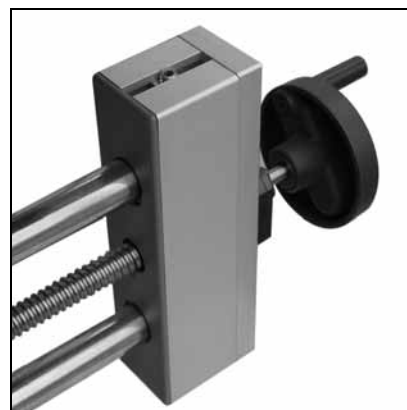
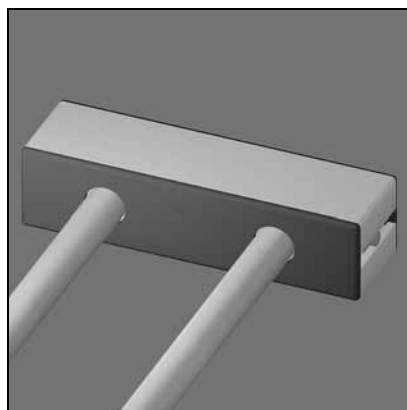
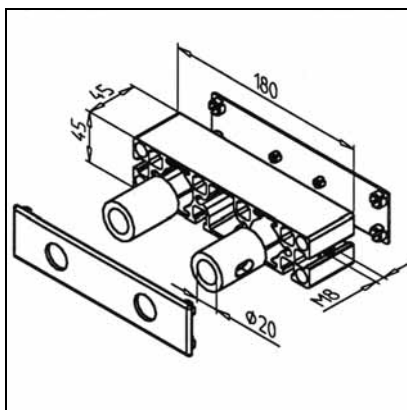
- Fastening shafts Ø 20 in MiniTec linear systems LB 45

### ASSEMBLY

- Insert shaft
- Tighten with set screw M8 x 35

## SHAFT SUPPORT BLOCK WB 45 X 180

Part. N° 28.0159/0



### TECHN. DATA / ITEMS SUPPLIED

- Profile 45 x 180
- Completely assembled with centering bush
- Shaft side with end cap LB 45 x 180, grey
- Outer side with end cap 45 x 180, grey
- Weight 0,770 kg

### APPLICATIONS

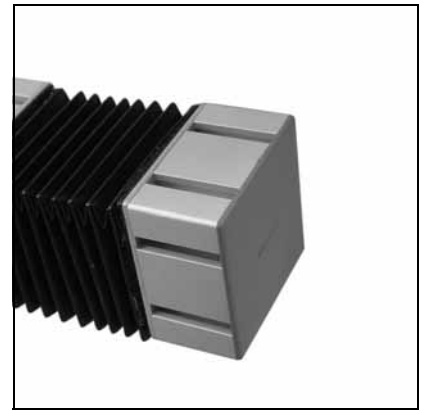
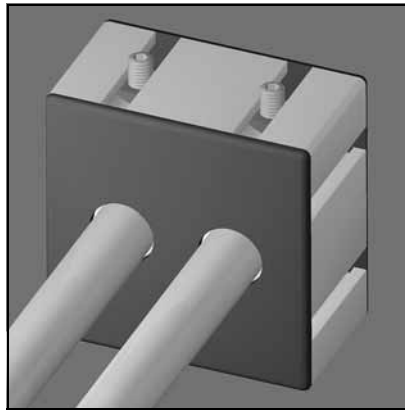
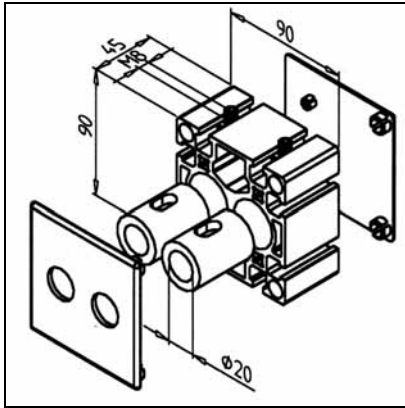
- Fastening shafts Ø 20 in MiniTec linear systems LB 45

### ASSEMBLY

- Insert shaft
- Tighten with set screw M8 x 35

## SHAFT SUPPORT BLOCK WB 90

Part. N° 28.0153/0



### TECHN. DATA / ITEMS SUPPLIED

- Profile 90 x 90 S
- Completely assembled with 2 centering bush
- Shaft side with end cap LB 90, grey
- Outer side with end cap 90 x 90, grey
- Weight 0,410 kg

### APPLICATIONS

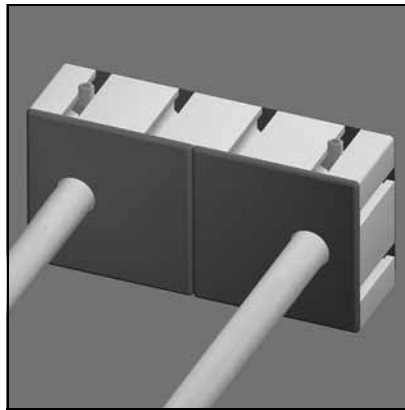
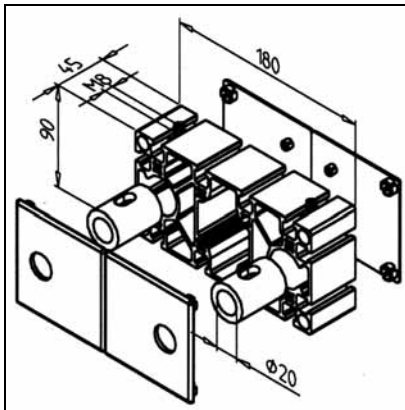
- Fastening shafts Ø 20 in MiniTec linear systems LB 90

### ASSEMBLY

- Insert shaft
- Tighten with set screw M8 x 35

## SHAFT SUPPORT BLOCK WB 180

Part. N° 28.0144/0



### TECHN. DATA / ITEMS SUPPLIED

- Profile 90 x 180 S
- Completely assembled with 2 centering bush
- Shaft side with end cap LB 180, grey
- Outer side with 2 end cap 90 x 90, grey
- Weight 0,650 kg

### APPLICATIONS

- Fastening shafts Ø 20 in MiniTec linear systems LB 180

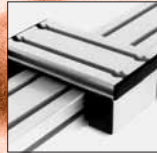
### ASSEMBLY

- Insert shaft
- Tighten with set screw M8 x 35





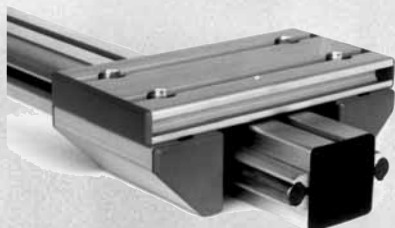




LINEAR SYSTEM LN/LG



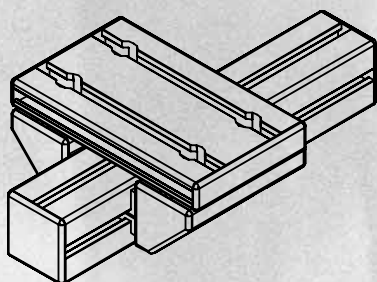
## SLIDEWAYS



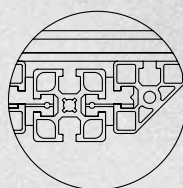
The LN/LG slideways were built for applications where demands for guidance accuracy are not high but where extreme usage conditions are present.

These guides are especially suitable for wet operation, high dust concentrations, and insufficient lubrication.

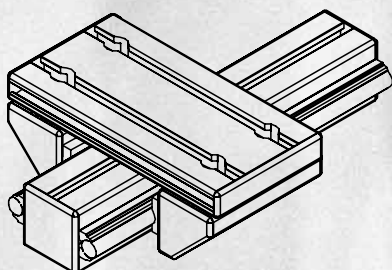
The slides series LN/LG are constructed according to the same modular principle as series LR.



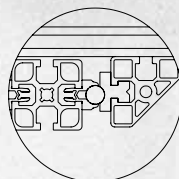
### Series LN:



Guidance in profile groove and on profile surface. This series requires little space.



### Series LG:



Guidance on ground and hardened shafts h6 made from material Cf53. For operation in humid environment we recommend the use of our stainless shafts.

Accuracy: series LG:  $\pm 0.15$  mm, series LN:  $\pm 0.20$  mm.

The lateral guide rails can be used to adjust clearance.

Max. load: 50 N/cm supporting slide rail (= slide length)

Slide friction coefficient: 0.05 on steel shaft (Series LG), 0.1 on anodized profile surface (Series LN)

This bearing requires no lubrication. Please consider higher slip-stick effect.

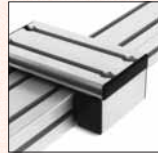
Travel: 1 m/sec (max.)

Average temperature: 50°C (max.)

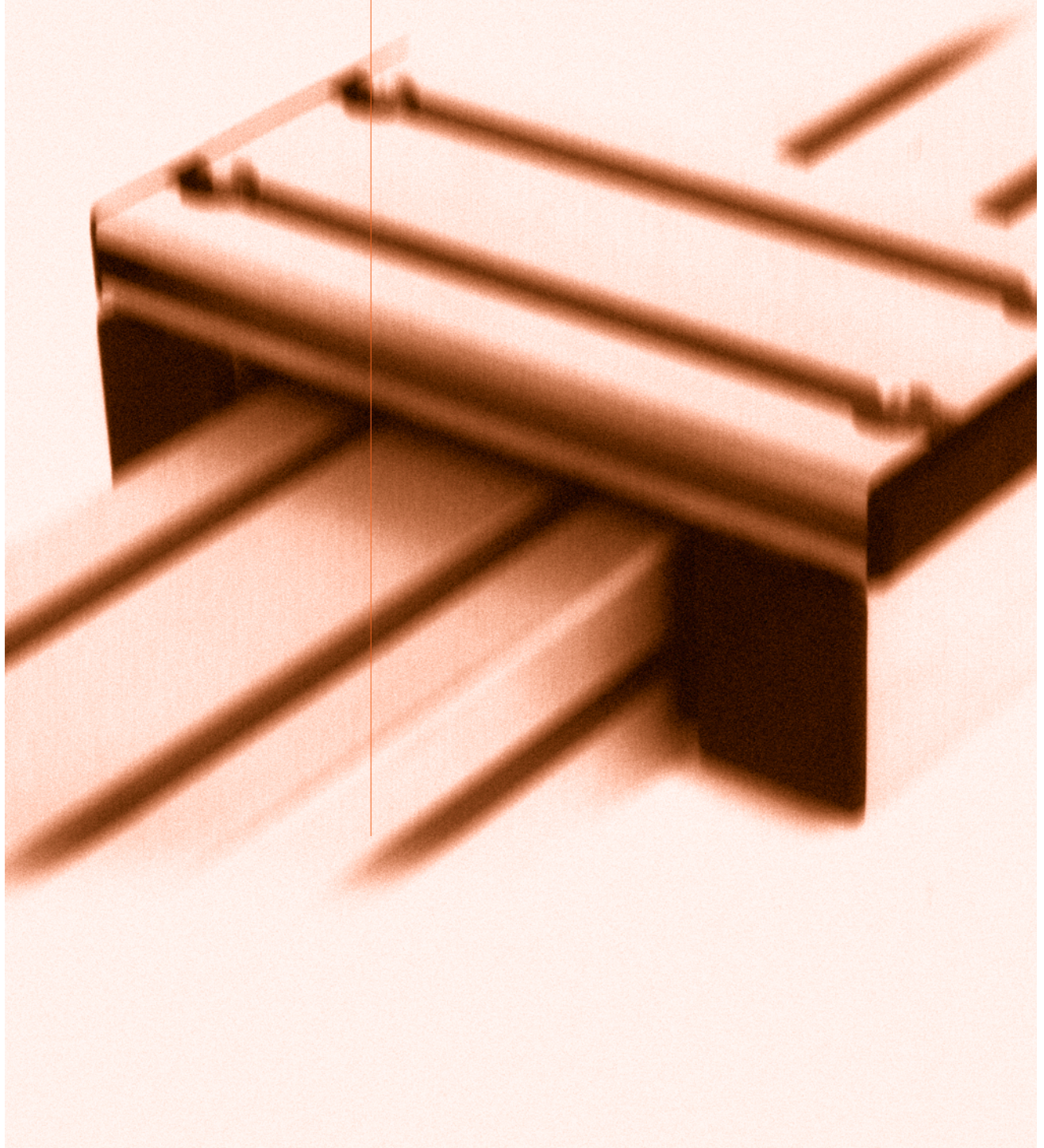
Peak load: 70°C (max.)

The slide rails are resistant to organic acids, alkalis, hydrous solutions, inorganic salt, organic acids and alcohol. They are not fully resistant to hydrocarbon and halogenated hydrocarbons.



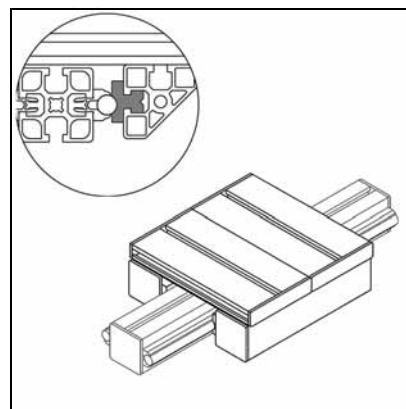
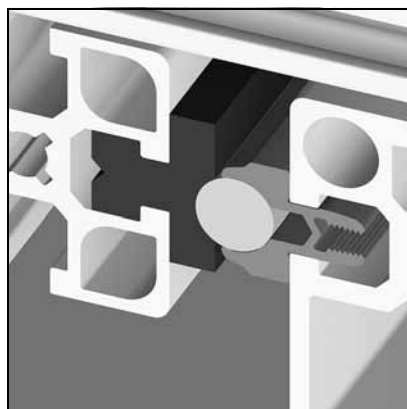
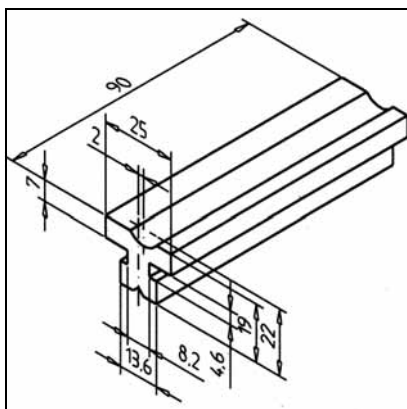


## COMPONENTS LG/LN



## SLIDE RAIL LG

Part. N° 22.1094/0



### TECHN. DATA / ITEMS SUPPLIED

- Hard plastic PE-UHMW, black
- 2 set screws
- Max. surface pressure: 10 N/mm<sup>2</sup>
- Weight 0,032 kg

### APPLICATIONS

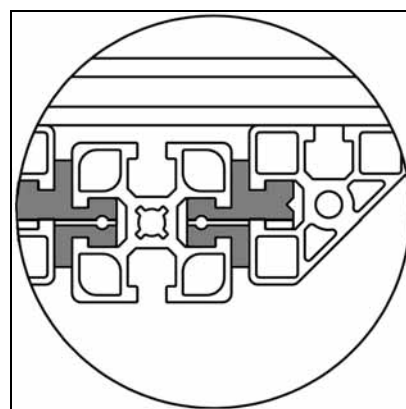
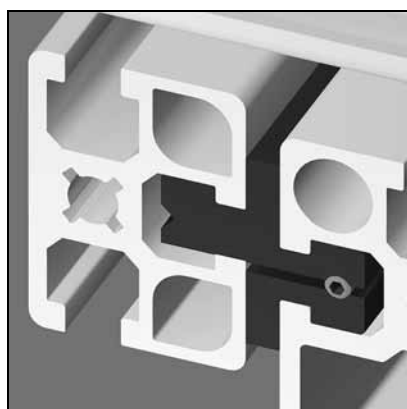
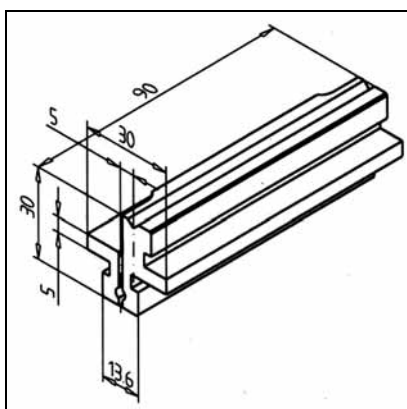
- Slide guides LG

### ASSEMBLY

- Insert into groove of lateral guide profile
- Secure with set screw

## SLIDE RAIL LN

Part. N° 22.1095/0



### TECHN. DATA / ITEMS SUPPLIED

- Hard plastic PE-UHMW, black
- Fastening kit
- Max. surface pressure: 10 N/mm<sup>2</sup>
- Weight 0,03 kg

### APPLICATIONS

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

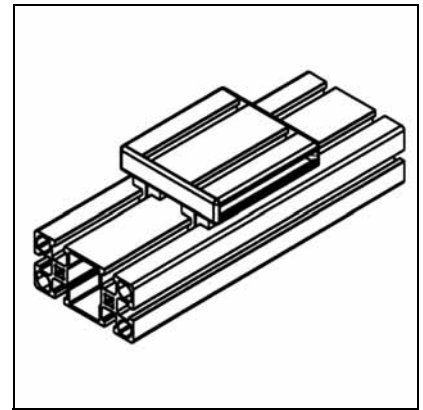
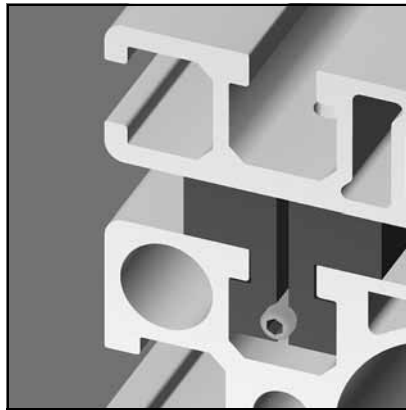
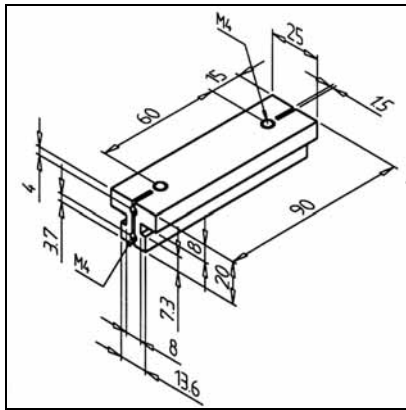
### ASSEMBLY

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



# SLIDE RAIL LN-S

Part. N° 22.1096/0



## TECHN. DATA / ITEMS SUPPLIED

- Hard plastic PE-UHMW, black
- 2 set screws M5 x 10
- Max. surface pressure: 10 N/mm<sup>2</sup>
- Weight 0,03 kg

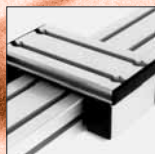
## APPLICATIONS

- Slide guides LN-S
- Adjusting units
- Automatic advance units
- Workpiece support

## ASSEMBLY

- Insert into profile groove
- Adjust without clearance
- Connect with slide plate



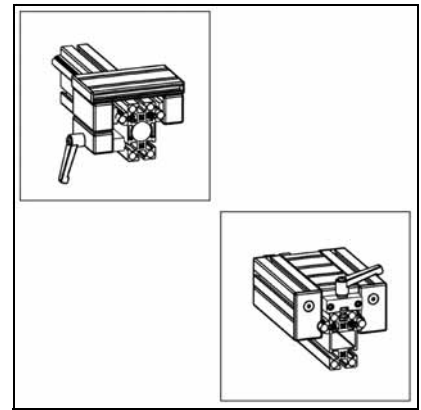
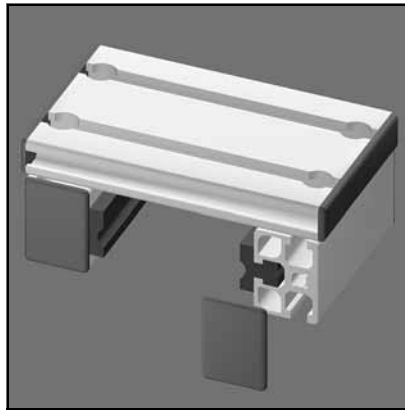
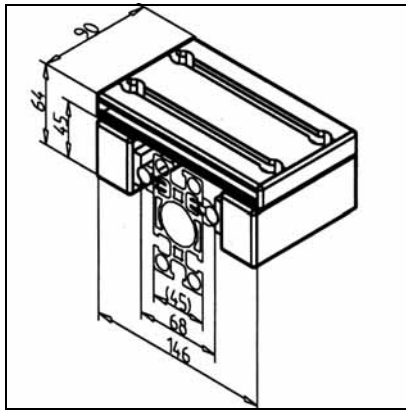


SYSTEM LN/LG -  
READY FOR USE  
MODULES LN/LG



## SLIDE LWG 32 X 45 - 45

Part. N° 28.0132/0



### TECHN. DATA / ITEMS SUPPLIED

- Slide completely assembled	
- 2 slide rails LG	
- End caps	
- Clearance adjusted	
- Load max.	450 N
- Weight	0,726 kg

### APPLICATIONS

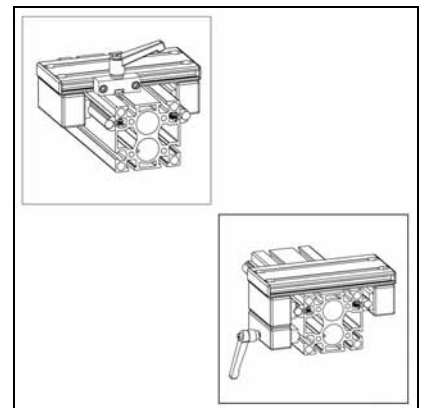
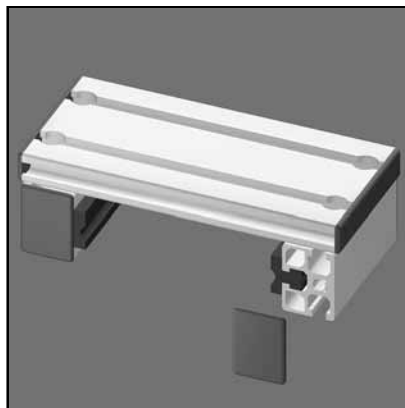
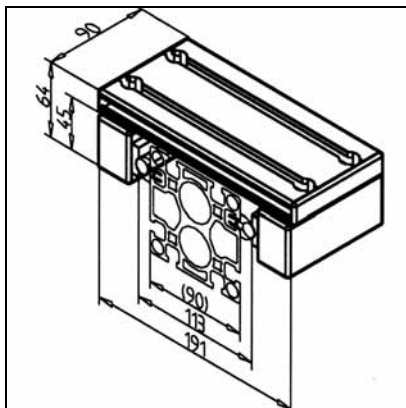
- Simple linear guides
- Automatic advance units
- Adjusting units
- For rail 45 with shafts Ø 12 mm

### SPECIAL DESIGNS

- With slide clamping unit (Top) Part N° 28.0132/1
- With slide clamping unit (Lateral) Part N° 28.0132/2
- Slide plate made of aluminium profile 32 x 180
- Different slide lengths

## SLIDE LWG 32 X 45 - 90

Part. N° 28.0133/0



### TECHN. DATA / ITEMS SUPPLIED

- Slide completely assembled	
- 2 slide rails LG	
- End caps	
- Clearance adjusted	
- Load max.	450 N
- Weight	0,810 kg

### APPLICATIONS

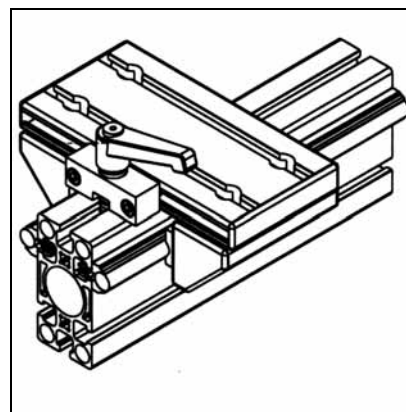
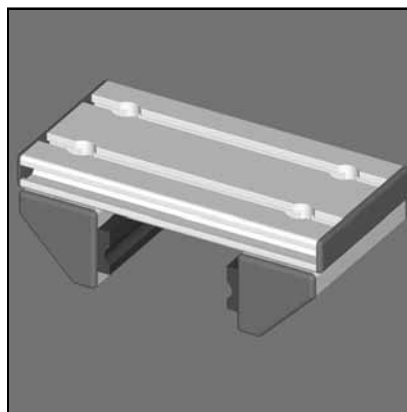
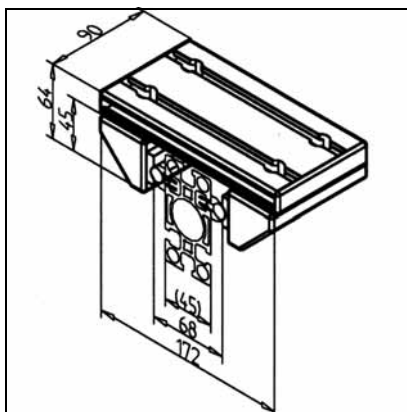
- Simple linear guides
- Automatic advance units
- Adjusting units
- For rail 90 with shafts Ø 12 mm

### SPECIAL DESIGNS

- With slide clamping unit (Top) Part N° 28.0133/1
- With slide clamping unit (Lateral) Part N° 28.0133/2
- Slide plate made of aluminium profile 32 x 180
- Different slide lengths

## SLIDE LWG 45/45° - 45

Part. N° 28.0136/0



### TECHN. DATA / ITEMS SUPPLIED

- Slide completely assembled	
- 2 slide rails LG	
- End caps	
- Clearance adjusted	
- Load max.	450 N
- Weight	0,759 kg

### APPLICATIONS

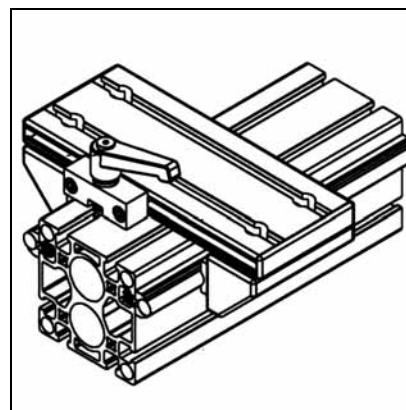
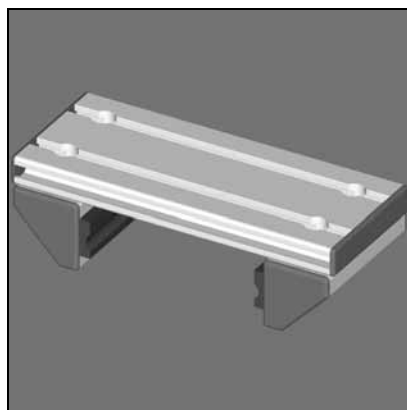
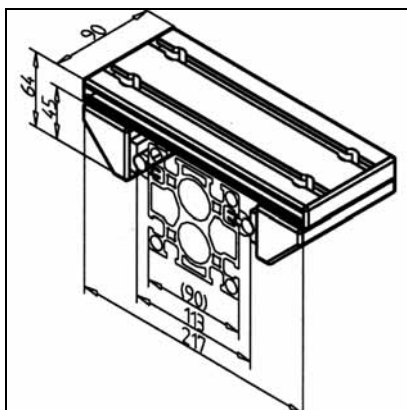
- Simple linear guides
- Automatic advance units
- For rail 45 with shafts Ø 12 mm

### SPECIAL DESIGNS

- With slide clamping unit (Top) Part N° 28.0136/1
- Slide plate made of aluminium profile 32 x 180
- Different slide lengths

## SLIDE LWG 45/45° - 90

Part. N° 28.0137/0



### TECHN. DATA / ITEMS SUPPLIED

- Slide completely assembled	
- 2 slide rails LG	
- End caps	
- Clearance adjusted	
- Load max.	450 N
- Weight	0,849 kg

### APPLICATIONS

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

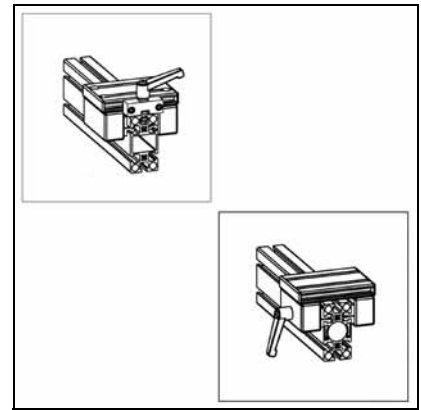
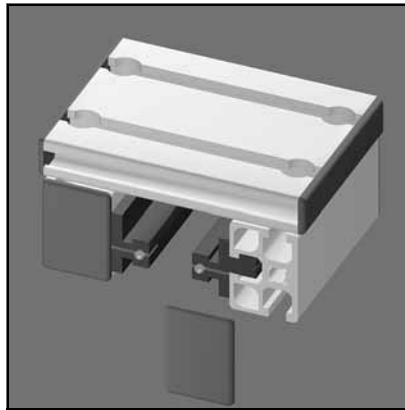
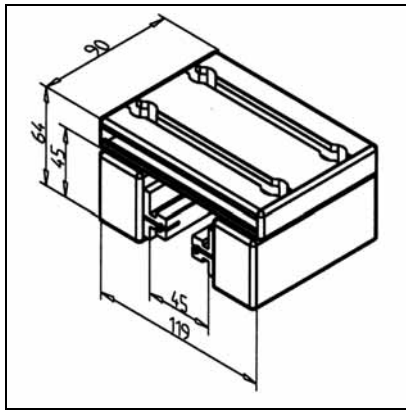
### SPECIAL DESIGNS

- With slide clamping unit (Top) Part N° 28.0137/1
- Slide plate made of aluminium profile 32 x 180
- Different slide lengths



## SLIDE LWN 32 X 45 - 45

Part. N° 28.0192/0



### TECHN. DATA / ITEMS SUPPLIED

- Slide completely assembled	
- 2 slide rails LN	
- End caps	
- Clearance adjusted	
- Load max.	450 N
- Weight	0,678 kg

### APPLICATIONS

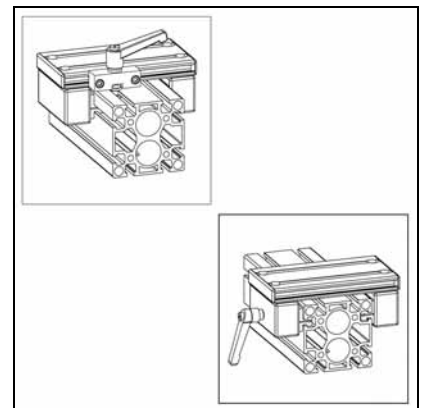
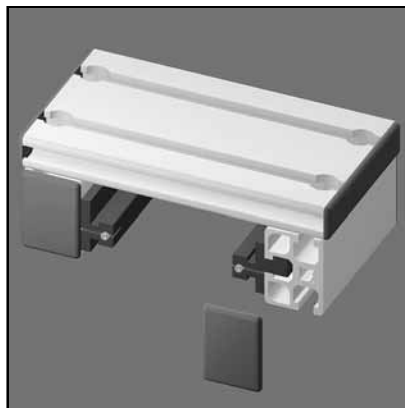
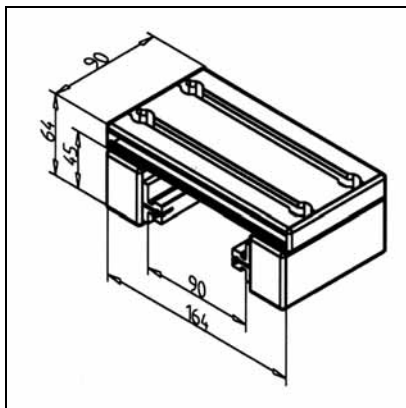
- Simple linear guides
- Automatic advance units

### SPECIAL DESIGNS

- With slide clamping unit (Top) Part N° 28.0192/1
- With slide clamping unit (Lateral) Part N° 28.0192/2
- Slide plate made of aluminium profile 32 x 180
- Different slide lengths

## SLIDE LWN 32 X 45 - 90

Part. N° 28.0193/0



### TECHN. DATA / ITEMS SUPPLIED

- Slide completely assembled	
- 2 slide rails LN-S	
- End caps	
- Clearance adjusted	
- Load max.	450 N
- Weight	0,762 kg

### APPLICATIONS

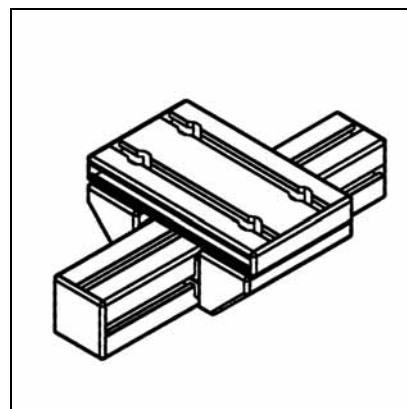
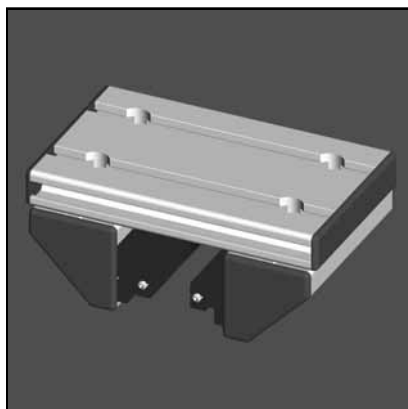
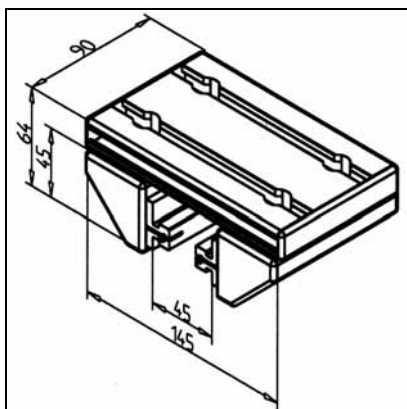
- Simple linear guides
- Automatic advance units

### SPECIAL DESIGNS

- With slide clamping unit (Top) Part N° 28.0193/1
- With slide clamping unit (Lateral) Part N° 28.0193/2
- Slide plate made of aluminium profile 32 x 180
- Different slide lengths

## SLIDE LWN 45/45° - 45

Part. N° 28.0196/0



### TECHN. DATA / ITEMS SUPPLIED

- Slide completely assembled
- 2 slide rails LN-S
- End caps
- Clearance adjusted
- Load max. 450 N
- Weight 0,699 kg

### APPLICATIONS

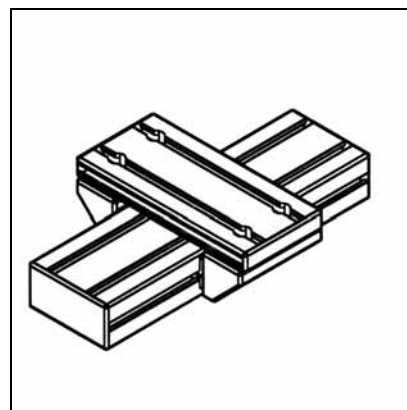
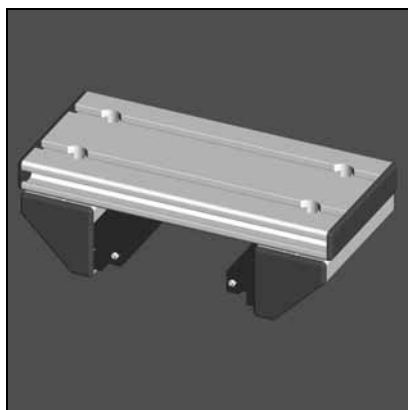
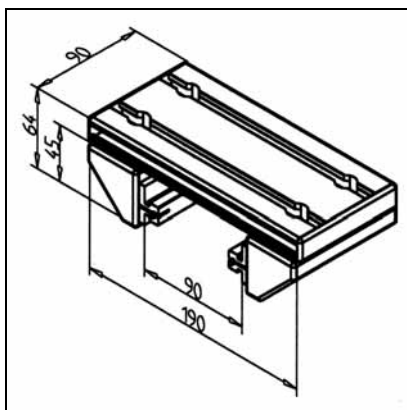
- Simple linear guides
- Automatic advance units

### SPECIAL DESIGNS

- With slide clamping unit (Top)  
Part N° 28.0196/1
- Slide plate made of aluminium profile  
32 x 180
- Different slide lengths

## SLIDE LWN 45/45° - 90

Part. N° 28.0197/0



### TECHN. DATA / ITEMS SUPPLIED

- Slide completely assembled
- 2 slide rails LN-S
- End caps
- Clearance adjusted
- Load max. 450 N
- Weight 0,782 kg

### APPLICATIONS

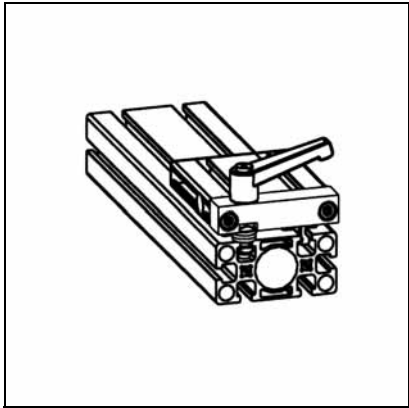
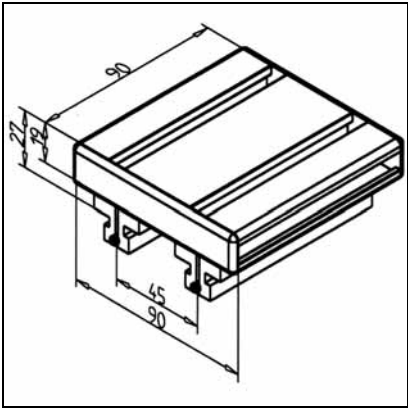
- Simple linear guides
- Automatic advance units

### SPECIAL DESIGNS

- With slide clamping unit (Top)  
Part N° 28.0197/1
- Slide plate made of aluminium profile  
32 x 180
- Different slide lengths

SLIDE LWN-S

Part. N° 28.0170/0



TECHN. DATA / ITEMS SUPPLIED	
- Slide completely assembled	
- 2 slide rails LN-S	
- End caps	
- Clearance adjusted	
- Load max.	450 N
- Weight	0,261 kg

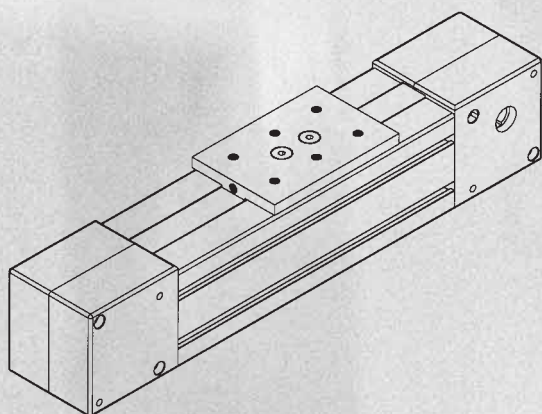
APPLICATIONS
- Simple linear guides
- Automatic advance units

SPECIAL DESIGNS
- With slide clamping unit (Top) Part N° 28.0170/1
- Slide plate made of aluminium profile 32 x 180
- Different slide lengths



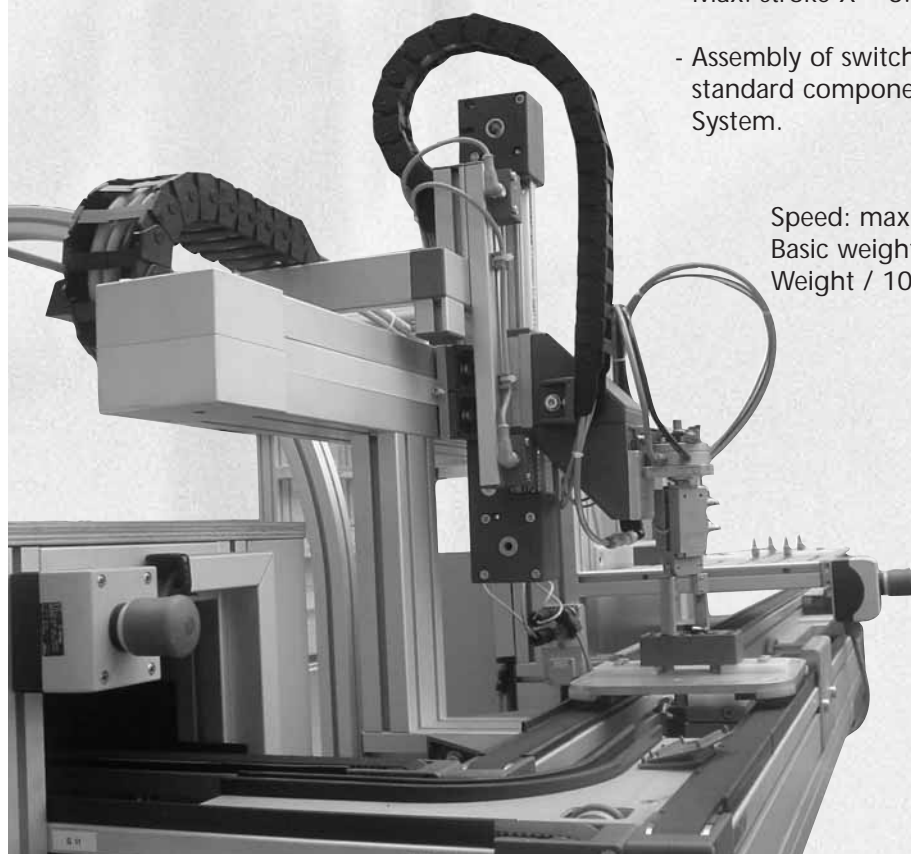
## LINEAR MODULE LMZ 90 WITH TIMING BELT

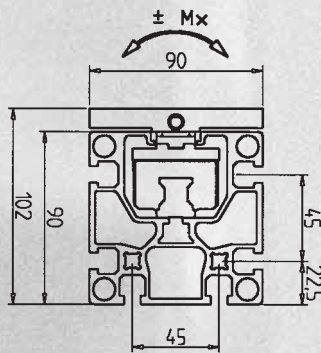
Part N° 28.0400/0



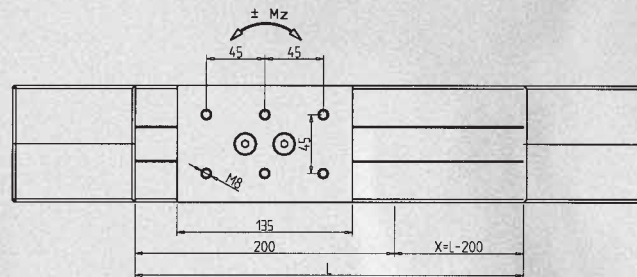
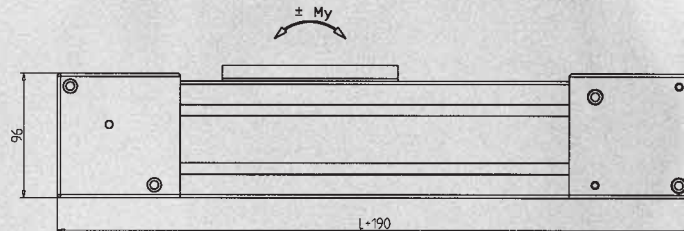
- Compact carrier profile with standard t-slots. Compatible to MiniTec construction profiles, anodized E6/EV1.
- Integrated rail 1605-804-31
- With two slides, covered by timing belt.
- Permanent lubrication. Lubrication system for a service performance up to 10000 km
- Aluminium slide (processed on all sides) with integrated timing belt tensioner and 6 connection threads M8.
- 2 deflection units with precision ball bearings, mounted on carrier profile by using MiniTec power-lock fastener, prepared for built-on motors with connection shaft (Ø 8-24 mm, with feather key deliverable). The adapter plate can be processed according to desired motor specifications.
- Infeed: 200 mm/revolution
- Max. allowable belt tractive force: 3.500 N
- Timing belt 25 AT 10, strengthened with steel wire. Mounted with preload.
- Max. stroke  $X = 3.800$  mm
- Assembly of switches lateral on t-slots with standard components of the MiniTec Profile-System.

Speed: max. 3m/s  
Basic weight: 5.200 g  
Weight / 100mm stroke: 800g





load rating N		allowable static torque Nm		
$C_{dyn}$	$C_{stat}$	$M_x$	$M_y$	$M_z$
18800	24400	128	240	240

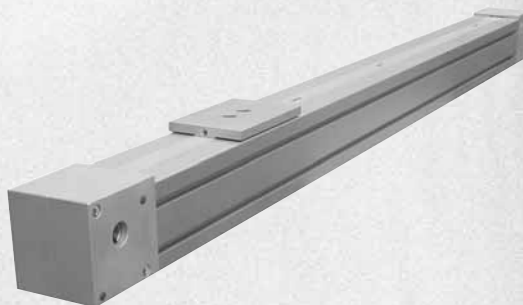


#### Deliverable versions:

- Module completely assembled with drive connection, but without drive
- Customized module completely assembled with gear and engine
- Customized module completely assembled with gear, engine and control system

#### Application examples:

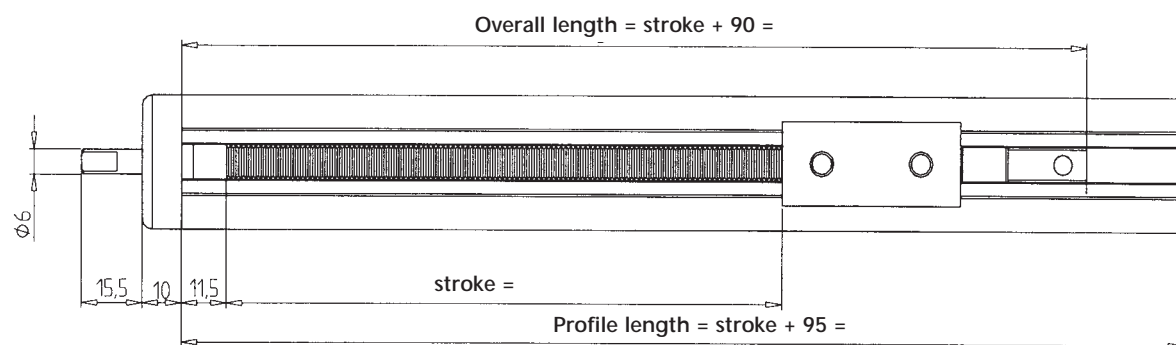
- Pick-and-Place
- Robotic palletizer
- Measuring systems
- Feedings
- Handling systems



#### Operating conditions:

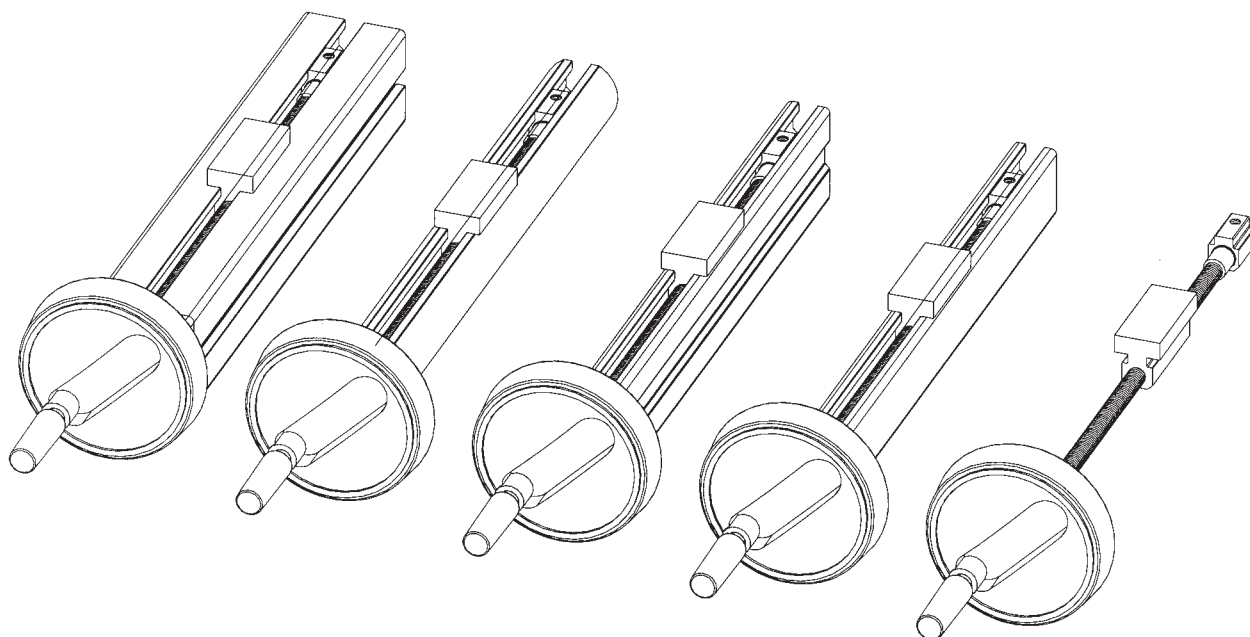
Please consider the the max. allowable deflection of 3,5 mm / 4000 mm for cantilever assemblies. To guarantee high stability, we recommend to support the module every 300 to 600mm (particularly for modules with a high dynamic load).

# MINI-ADJUSTMENT UNITS



MiniTec mini-adjustment units are ready-to-install devices that are also mounted strictly in accordance with the modular construction principle of standard elements of our profile system. They are used in machine construction, packaging equipment, filling systems and testing equipment.

## Versions



Spindles:  
Stroke:  
Load max:

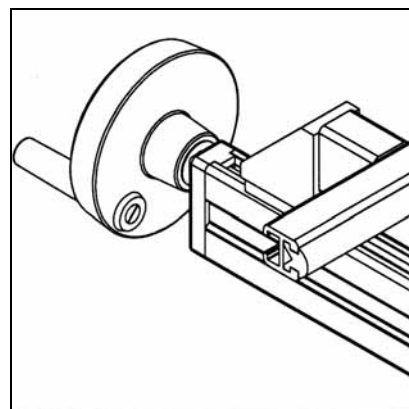
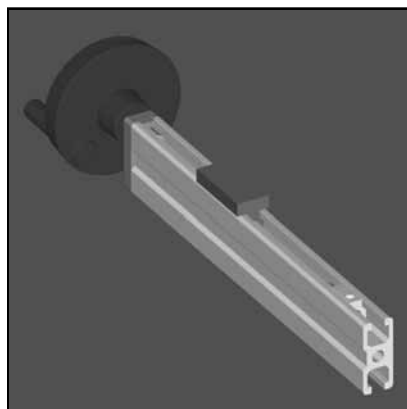
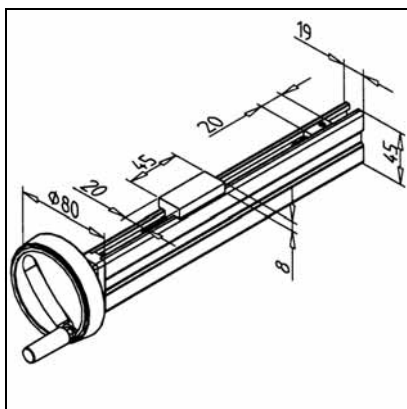
VA metric thread M8 x 1,25, slides made of brass  
895 mm (max.)  
1000 gr





## MINI ADJUSTING UNIT WITH PROFILE 19 X 45

Part. N° 28.0352/0



### TECHN. DATA / ITEMS SUPPLIED

- With carrier profile 19 x 45
- VA screw M8 x 1.25
- Brass slide
- Max. loading 1 - 2 kg
- Please quote stroke length

### APPLICATIONS

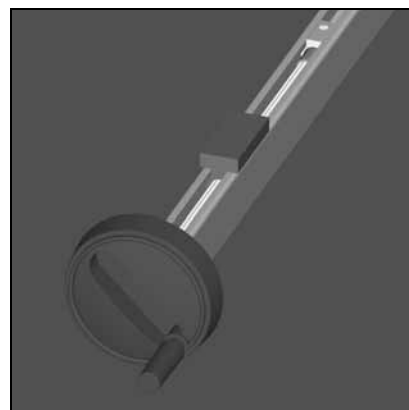
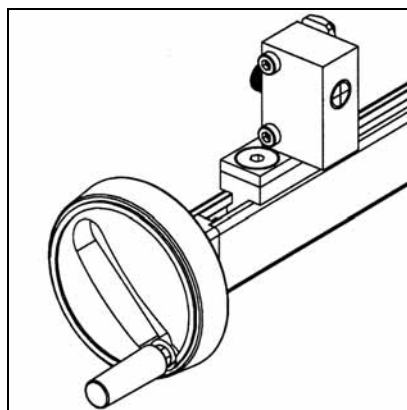
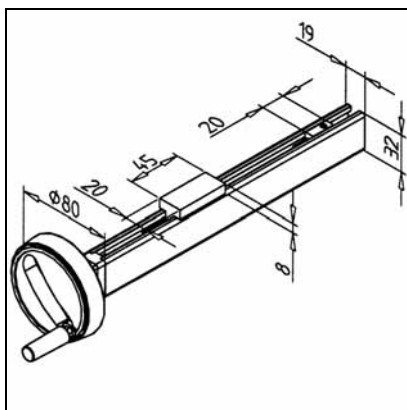
- For adjustment of the lateral guides on conveying equipment
- For adjusting sensor holders or light barriers
- For simple equipment

### ASSEMBLY

- With MiniTec power-lock fastener
- Can also be fastened with a mounting bracket
- Also available without carrier profile, Part N° 28.0352/1

## MINI ADJUSTING UNIT WITH PROFILE 19 X 32

Part. N° 28.0351/0



### TECHN. DATA / ITEMS SUPPLIED

- With carrier profile 19 x 32
- VA screw M8 x 1.25
- Brass slide
- Max. loading 1 - 2 kg
- Please quote stroke length

### APPLICATIONS

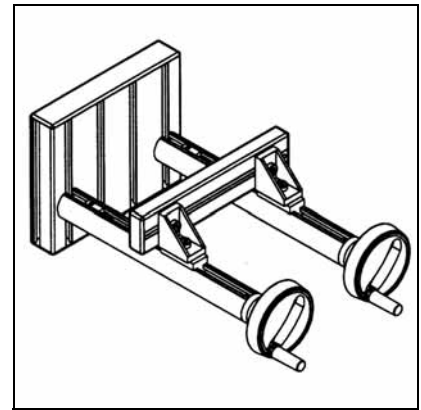
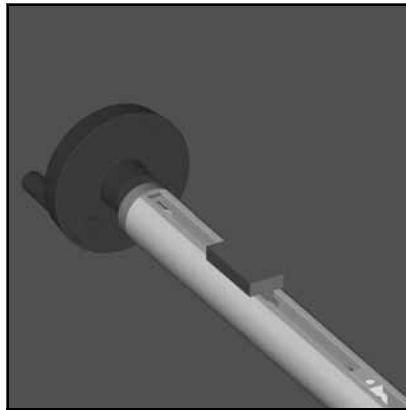
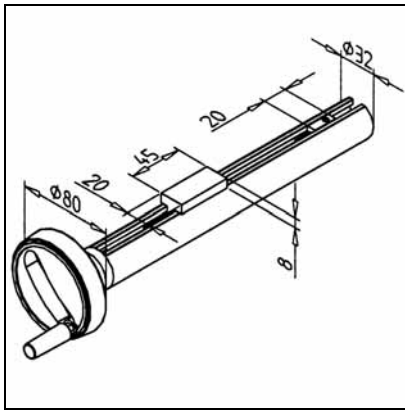
- For adjustment of the lateral guides on conveying equipment
- For adjusting sensor holders or light barriers
- For simple equipment

### ASSEMBLY

- With MiniTec power-lock fastener
- Can also be fastened with a mounting bracket
- Also available without carrier profile, Part N° 28.0351/1

## MINI ADJUSTING UNIT WITH HANDLE PROFILE 32

Part. N° 28.0353/0



### TECHN. DATA / ITEMS SUPPLIED

- With carrier profile handle profile 32
- VA screw M8 x 1.25
- Brass slide
- Max. loading 1 - 2 kg
- **Please quote stroke length**

### APPLICATIONS

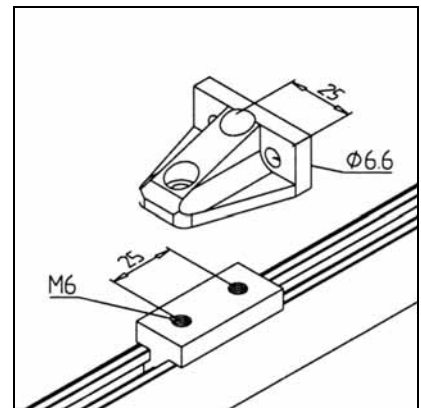
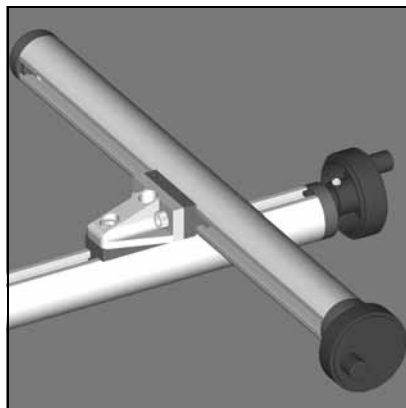
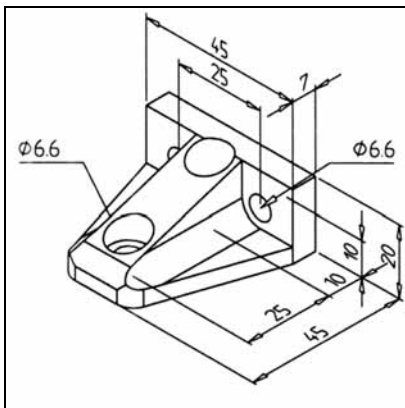
- For adjustment of the lateral guides on conveying equipment
- For adjusting sensor holders or light barriers
- For simple equipment

### ASSEMBLY

- With MiniTec power-lock fastener
- Can also be fastened with a mounting bracket
- Fasten with strap handle profile 32, **Part N° 22.1022/0**
- Also available without carrier profile, **Part N° 28.0353/1**

## BRACKET CONSOLE FOR MINIATURE ADJUSTMENT UNIT

Part. N° 28.0371/0



### TECHN. DATA/ITEMS SUPPLIED

- Console aluminium, natural anodized
- Without fastening kit
- Weight 0,044 kg

### APPLICATIONS

- For connection of two adjustment units **Part N° 28.0351/0, 28.0352/0 and 28.0353/0**
- For connecting small loads, such as light barriers, sensors etc.

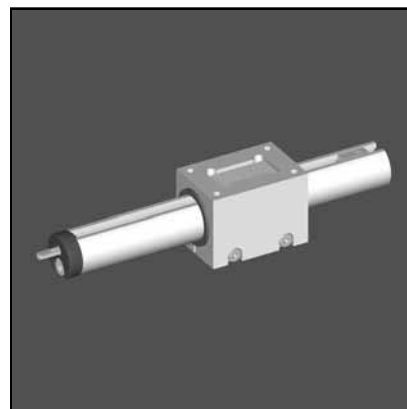
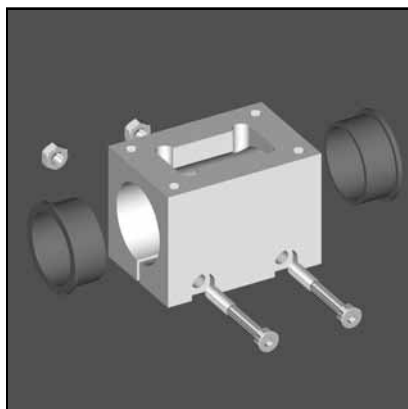
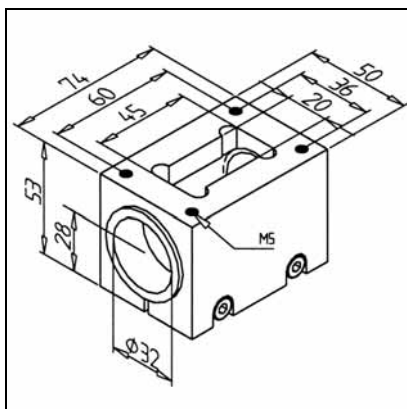
### ASSEMBLY

- Each with two M6 threads, 10 mm deep, grid 25 mm placed into slides
- Connect adjustment units with cylinder head screws M6x15



## SLIDE G 32

Part. N° 28.0355/0



## TECHN. DATA / ITEMS SUPPLIED

- Slide aluminium anodized
- slide bearing plastic
- Without adjusting units
- Weight

## APPLICATIONS

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

## ASSEMBLY

- Insert the slides of the mini adjustment unit into the sliding guides and turn the spindle
- Adjust clearance by M6 tensioning screw
- Fasten the spindle bearing to the handle profile 32

## ADJUSTING UNITS

The modular construction of our adjustment units allows various layout variants with different cross-sections. Optionally also with carriage clamps, slot covers, angled drives or counters. To simplify your selection and prevent misunderstandings, we have provided a selection program on our website. The selection program shows you the selected variants in a preview with a brief description. On your order, please state the abbreviated designation with the desired stroke length.

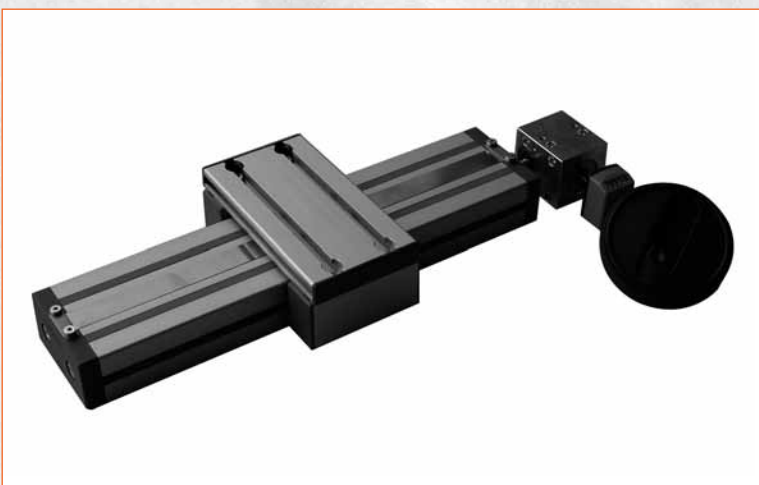
The selection menu is found at [www.mintec.de](http://www.mintec.de) in the online product catalogue under linear systems LG.

In addition, special designs according to your specification are available.

### Possible combinations:

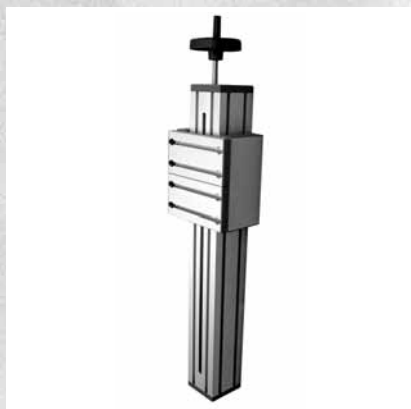


Double adjustment unit with angular drive

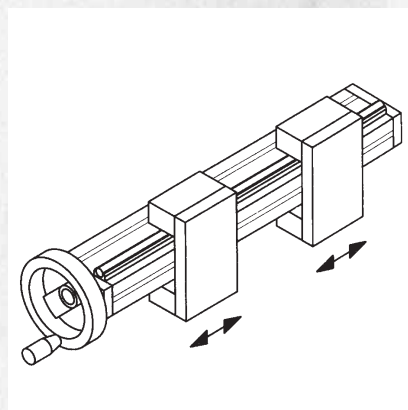
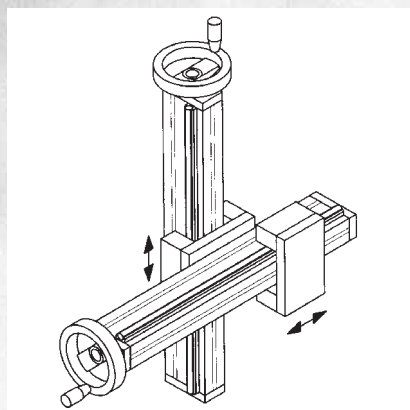
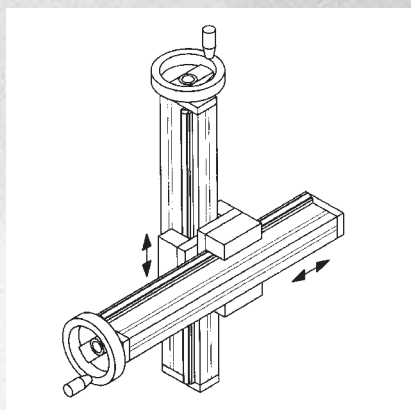


Adjustment unit with slot cover, angular drive and counter

# ADJUSTING UNITS

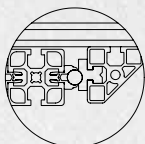


## Possible combinations:



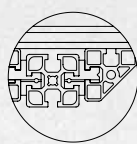
MiniTec adjusting units are ready-for-use modules that are strictly assembled according to the modular system of our standard profile elements. They are used in mechanical engineering, in the packing industry, for filling installations and testing. The adjusting units are equipped with slide elements made from plastics PE-UHMW. This material is resistant against most acids and lyes. The friction value for ground steel shafts in 0.05 and 0.1 for anodized aluminium surfaces.

## Designs



### Series VEW

Slide guidance on ground, hardend precision shafts Ø 12 mm, h6, material stainless steel Cf 53, mat. no. 1.1213



### Series VEN

Slide guidance in profile grooves

Screw:

ACME-Screw 16 x 4, St, with nut RG 7

Incline fault:

± 0.1/300 mm (max.)

Positioning accuracy:

± 0.1/300 mm

Travel:

1000 mm (max.)

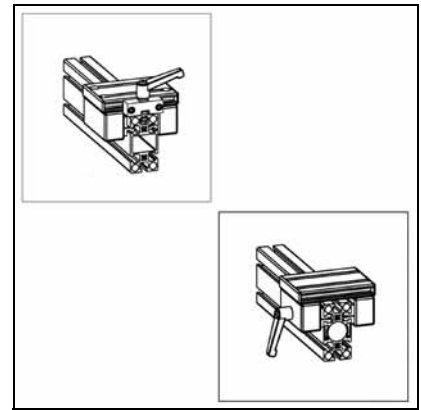
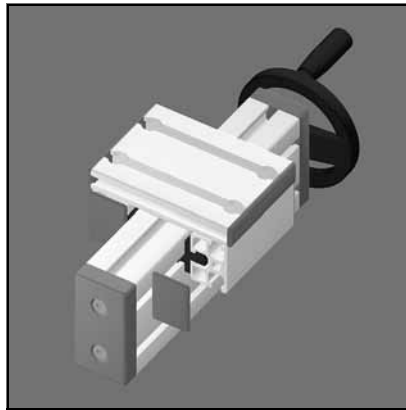
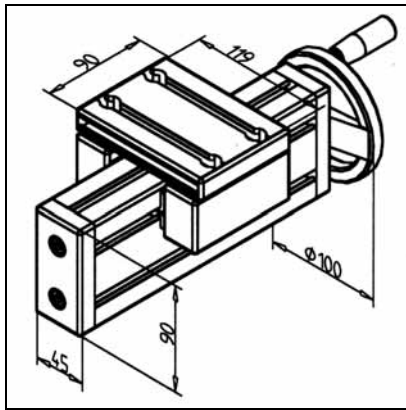
Max. load:

50 N/cm slide rail (slide length)



## ADJUSTING UNIT VEN 45 X 90 H

Part. N° 28.0185/0



### TECHN. DATA / ITEMS SUPPLIED

- Slide plate made of profile 19 x 90
- ACME screw 16 x 4
- Basic length 120 mm (0 mm stroke)
- Basic weight 1,97 kg
- Weight/100 mm stroke 0,49 kg
- Please indicate desired length of stroke

### APPLICATIONS

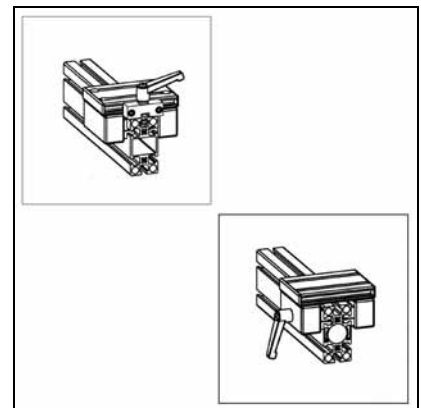
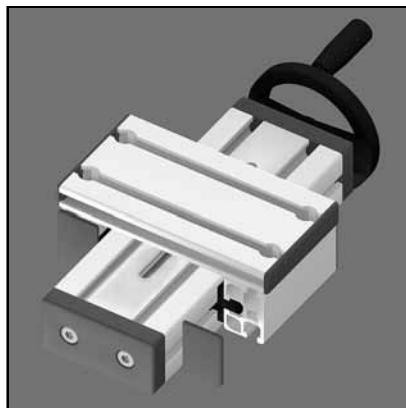
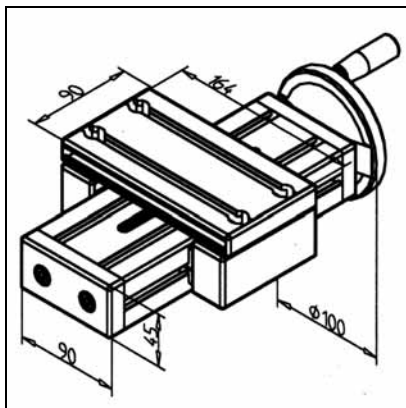
- Adjustment of conveyor systems
- Adjustment of feeders
- Adjustable devices

### SPECIAL DESIGNS

- Slide plate made of profile 32 x 180
- Different slide lengths
- Digital display
- Angular drive
- OPTIONS:  
With slide clamping unit (Top)  
Part N° 28.0185/1  
With slide clamping unit (Lateral)  
Part N° 28.0185/2

## ADJUSTING UNIT VEN 45 X 90 F

Part. N° 28.0188/0



### TECHN. DATA / ITEMS SUPPLIED

- Slide plate of profile 19 x 90
- ACME screw 16 x 4
- Basic length 120 mm (0 mm stroke)
- Basic weight 2,05 kg
- Weight/100 mm stroke 0,5 kg
- Please indicate desired length of stroke

### APPLICATIONS

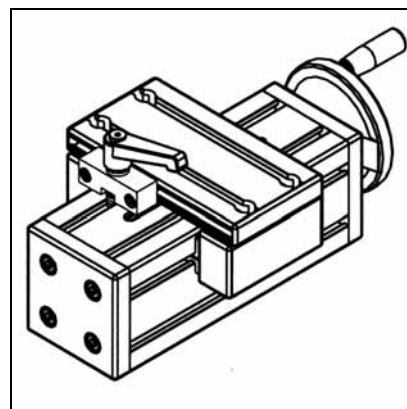
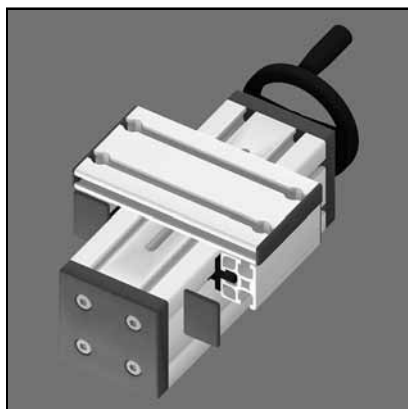
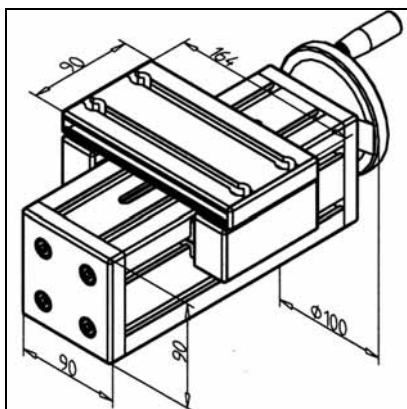
- Adjustment of conveyor systems
- Adjustment of feeders
- Adjustable devices

### SPECIAL DESIGNS

- Slide plate made of profile 32 x 180
- Different slide lengths
- Digital display
- Angular drive
- OPTIONS:  
With slide clamping unit (Top)  
Part N° 28.0188/1  
With slide clamping unit (Lateral)  
Part N° 28.0188/2

## ADJUSTING UNIT VEN 90

Part. N° 28.0186/0



### TECHN. DATA / ITEMS SUPPLIED

- Slide plate of profile 19 x 90
- ACME screw 16 x 4
- Basic length 120 mm (0 mm stroke)
- Basic weight 2,75 kg
- Weight/100 mm stroke 0,87 kg
- Please indicate desired length of stroke

### APPLICATIONS

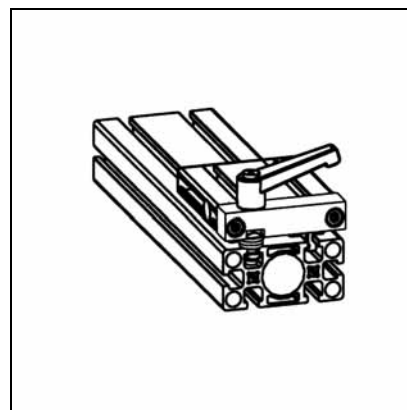
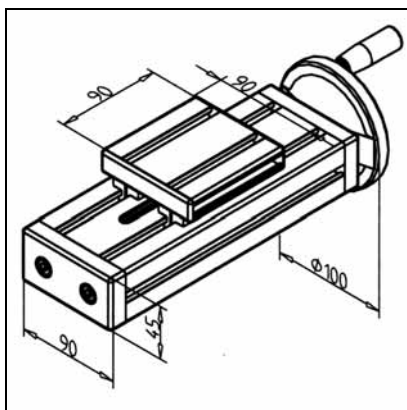
- Adjustment of conveyor systems
- Adjustment of feeders
- Adjustable devices

### SPECIAL DESIGNS

- Slide plate made of profile 32 x 180
- Different slide lengths
- Digital display
- Angular drive
- OPTIONS:  
With slide clamping unit (Top)  
Part N° 28.0186/1  
With slide clamping unit (Lateral)  
Part N° 28.0186/2

## ADJUSTING UNIT VEN 45 X 90 S

Part. N° 28.0187/0



### TECHN. DATA / ITEMS SUPPLIED

- Slide plate of profile 19 x 90
- ACME screw 16 x 4
- Basic length 120 mm (0 mm stroke)
- Basic weight 2,280 kg
- Weight/100 mm stroke 0,5 kg
- Please indicate desired length of stroke

### APPLICATIONS

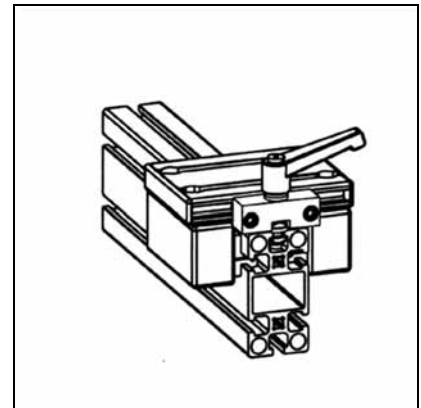
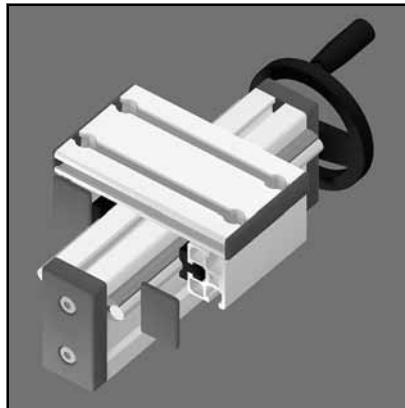
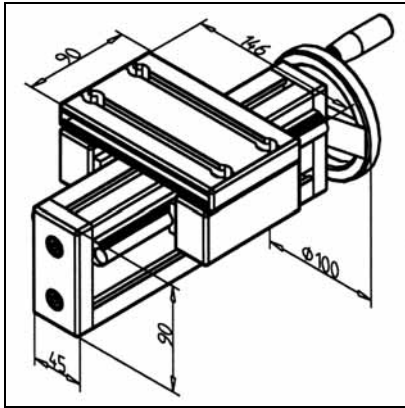
- Adjustment of conveyor systems
- Adjustment of feeders
- Adjustable devices

### SPECIAL DESIGNS

- Slide plate made of profile 32 x 180
- Different slide lengths
- Digital display
- Angular drive
- OPTIONS:  
With slide clamping unit (Top)  
Part N° 28.0187/1

## ADJUSTING UNIT VEW 45 X 90 H

Part. N° 28.0182/0



### TECHN. DATA / ITEMS SUPPLIED

- Slide plate of profile 19 x 90
- ACME screw 16 x 4
- Basic length 120 mm (0 mm stroke)
- Basic weight 2,109 kg
- Weight/100 mm stroke 0,74 kg
- Please indicate desired length of stroke

### APPLICATIONS

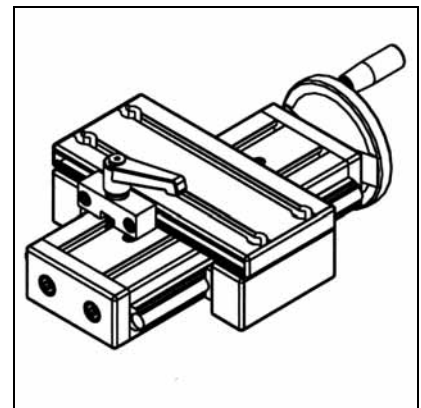
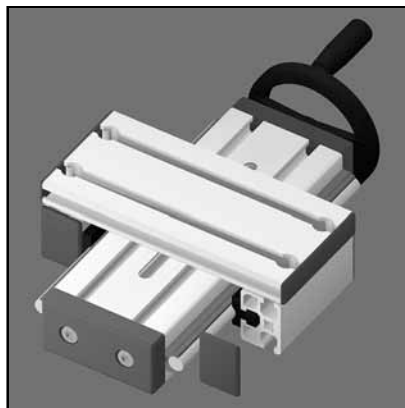
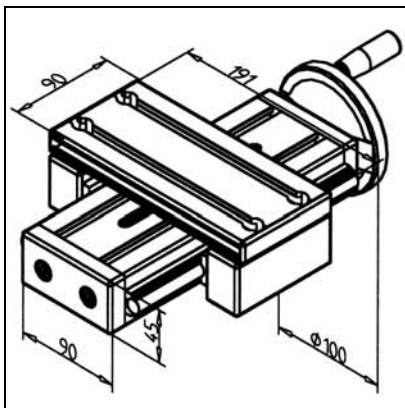
- Adjustment of conveyor systems
- Adjustment of feeders
- Adjustable devices

### SPECIAL DESIGNS

- Slide plate made of profile 32 x 180
- Different slide lengths
- Digital display
- Angular drive
- Shafts stainless
- OPTIONS:  
With slide clamping unit (Top)  
Part N° 28.0182/1  
With slide clamping unit (Lateral)  
Part N° 28.0182/2

## ADJUSTING UNIT VEW 45 X 90 F

Part. N° 28.0181/0



### TECHN. DATA / ITEMS SUPPLIED

- Slide plate of profile 19 x 90
- ACME screw 16 x 4
- Basic length 120 mm (0 mm stroke)
- Basic weight 2,31 kg
- Weight/100 mm stroke 0,75 kg
- Please indicate desired length of stroke

### APPLICATIONS

- Adjustment of conveyor systems
- Adjustment of feeders
- Adjustable devices

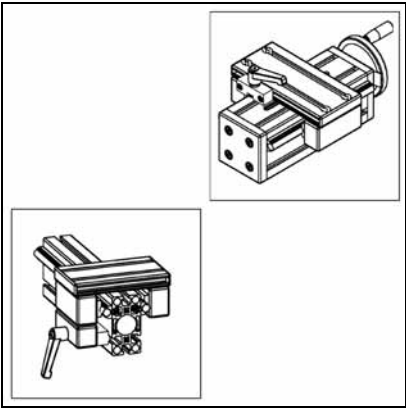
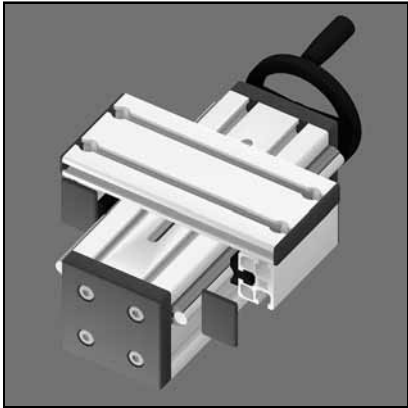
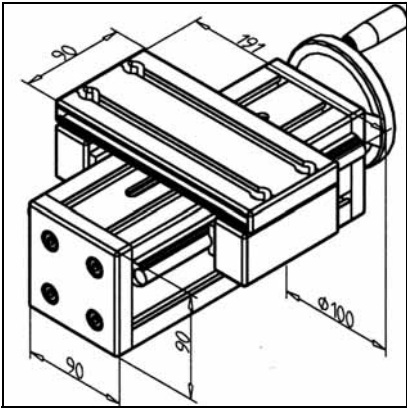
### SPECIAL DESIGNS

- Slide plate made of profile 32 x 180
- Different slide lengths
- Digital display
- Angular drive
- Shafts stainless
- OPTIONS:  
With slide clamping unit (Top)  
Part N° 28.0181/1



ADJUSTING UNIT VEW 90

Part. N° 28.0183/0



TECHN. DATA / ITEMS SUPPLIED	
- Slide plate of profile 19 x 90	
- ACME screw 16 x 4	
- Basic length 120 mm (0 mm stroke)	
- Basic weight	3,03 kg
- Weight/100 mm stroke	1,12 kg
- Please indicate desired length of stroke	

APPLICATIONS
- Adjustment of conveyor systems
- Adjustment of feeders
- Adjustable devices

SPECIAL DESIGNS
- Slide plate made of profile 32 x 180
- Different length of stroke
- Digital display
- Angular drive
- Shafts stainless
- Options: With slide clamping unit (Top) <b>Part N° 28.0183/1</b> With slide clamping unit (Lateral) <b>Part N° 28.0183/2</b>

NOTES...

