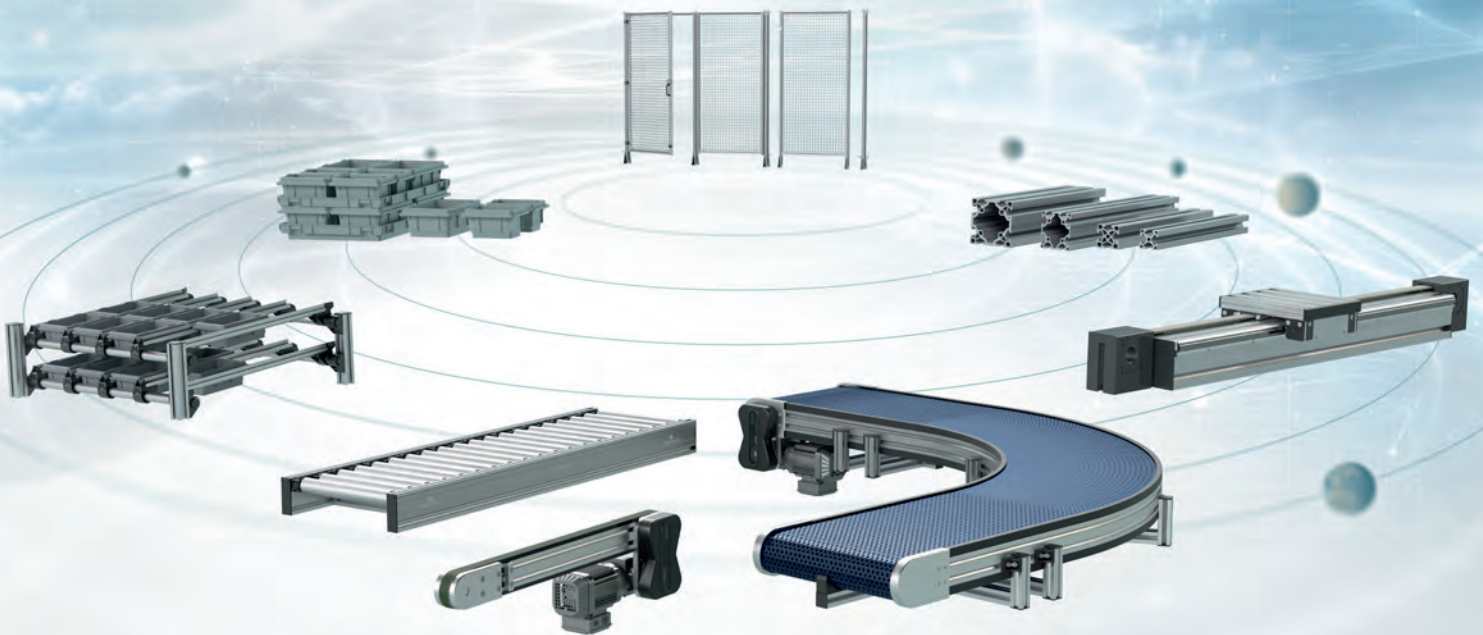



ROBOTUNITS®



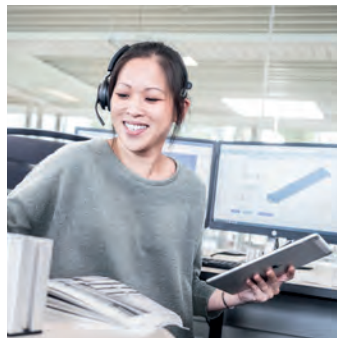
The world's simplest, fastest and most flexible
Modular Automation System

INGENIOUSLY SIMPLE
SIMPLY INGENIOUS



At Robotunits quality is the result of continuous improvement in our products and processes. Our team consists of highly motivated, top class experts, which support our customers with competent service. Individual customer support stands out through precision and short reaction times.

A worldwide manufacturer, Robotunits delivers world-class products to our customers locally through our extensive distribution network. This ensures that our customers are supported exactly when and where they need it.



Outstanding Quality



Uncompromising Service



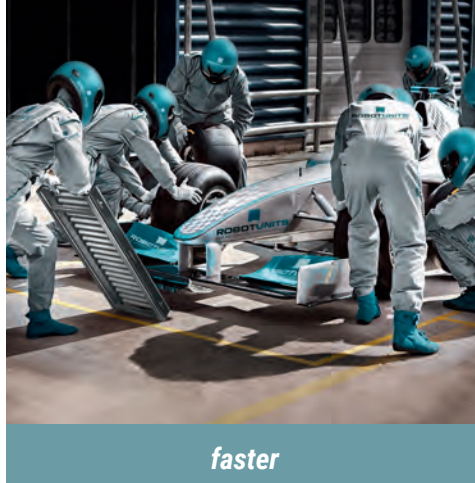
Fastest Delivery Times

Simply faster, simply flexible, simply more success!

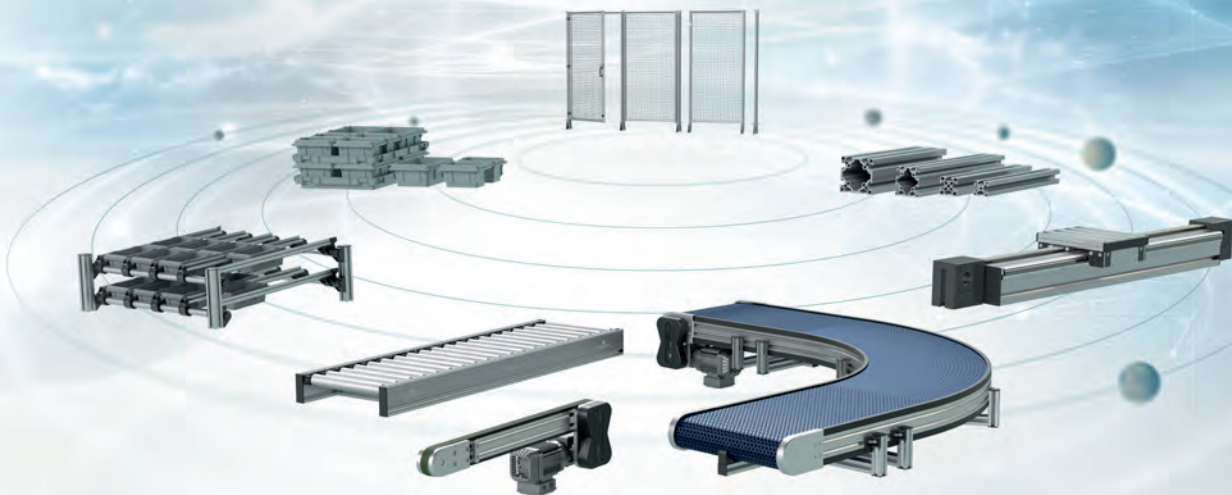
Efficiency, flexibility and speed are increasingly crucial for economic success.

At Robotunits we give 100 % to ensure that our customers always have a head start in terms of delivery, design and assembly times. This is guaranteed by our unique Modular Automation System, which offers a maximum of possibilities and advantages with minimal components. In terms of flexibility, variety, design and assembly, we satisfy the highest technical demands and offer enormous savings potential.

This means that our customers not only enjoy their work more, but also quite simply enjoy more success.



The world's simplest, fastest and most flexible Modular Automation System



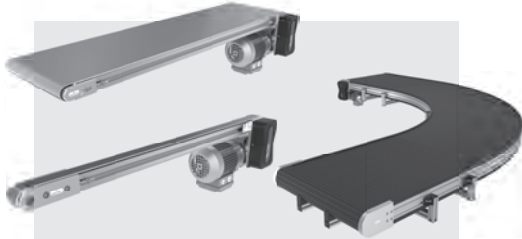
INGENIOUSLY SIMPLE
SIMPLY INGENIOUS

"More with less"

No matter what you are planning – with our flexible Modular Automation System, you are guaranteed to succeed in every project quickly, easily and safely.

The Modular Automation System from Robotunits offers a maximum of possibilities with minimal components. Thanks to the high degree of standardization, all components of the modular system can be easily integrated. Play-free and vibration-safe, without drilling or milling. Decades of project experience and personal customer service guarantee time and cost savings for our customers.

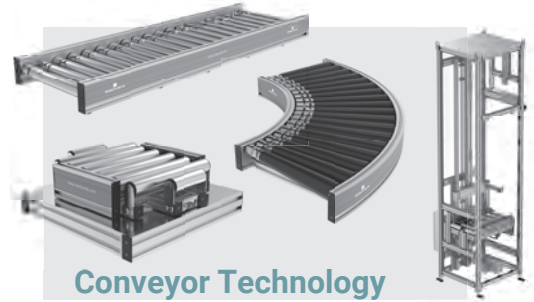
The Modular Automation System



Conveyor Technology

- Belt Conveyors
- Modular Belt Conveyors
- Timing Belt Conveyors
- Side Guide System

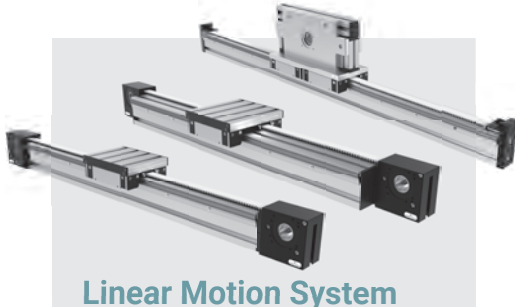
Page 6



Conveyor Technology

- Powered Roller Conveyor
- Transfer Unit 90°
- Turntable
- Lift Station

Page 34



Linear Motion System

- Linear Motion Unit 50
- Linear Motion Unit 100
- Linear Motion Unit 50 with Omega Drive

Page 52



Extrusion Technology and Fastening Technology

- 40 mm Series
- 50 mm Series

Page 62

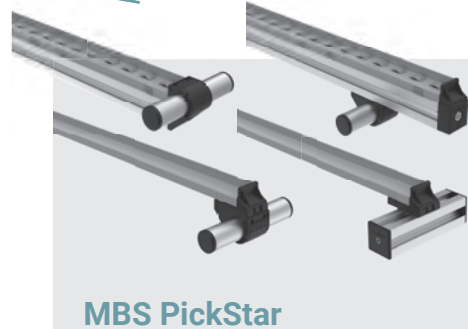
The Modular Automation System



Safety Fence System

- Basic System
- Allround System

Page 90



MBS PickStar

- MBS PickStar RL System
- MBS PickStar GL System

Page 110



Tote System

- Small Parts Tote

Page 132



Accessories

- Belt Conveyor Accessories
- Safety Fence Accessories
- Linear Motion Accessories
- General Modular Accessories

Page 140



THE JUST-IN-TIME CONVEYOR TECHNOLOGY



Success is often measured by efficiency and speed. For Robotunits customers this means always keeping one step ahead regarding the time required for delivery, design and assembly.

An important contributor to this is the fact that the Belt Conveyor System is seamlessly integrated into the Modular Automation System.

Advantages like these, as well as great product variety, maximum technical excellence and enormous potential to save time and money in design and assembly, are what makes Robotunits so unique. Special designs are available upon request.



Impressive delivery times

- production time for your individual Belt Conveyor: 1 week
- Just-In-Time delivery



Custom-made sizes

- select any standard frame width between 40 mm and 1200 mm
- select any conveyor length up to 12 m, longer units available upon request
- pre-assembled and height adjustable legs as an option
- fast adjustments to meet your individual requirements



Flexibility in drive options and positions

- choose drive option and position of motor
- maintenance-free timing belt drive
- space saving direct drive



Speed

- standard speed ranges from 2.6 m/min to 58 m/min
- higher speeds available upon request
- Speed Controller optional



Idler options

- roller diameters of 40 mm, 50 mm or 80 mm
- nose bar (16 mm diameter) for transfer of small parts



Wide variety of belts

- accumulation belt
- low & high friction belts
- high durability belts for abrasive and corrosive use



Fully integrated conveyor system

- compatible with all our extrusion sizes
- frame built with standard extrusion system
- accessible T-slot on 3 sides of the conveyor frame
- this makes it quick and easy to attach accessories or structural elements (i.e. stops) to the machine frame



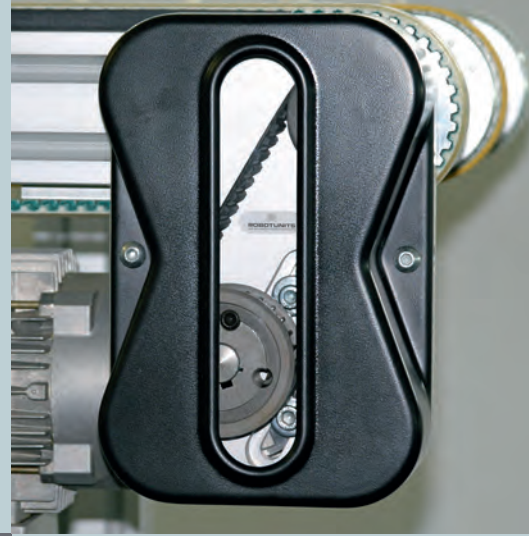
Save time, cut cost

- shortest lead time
- quick configuration of your custom conveyor
- every Belt Conveyor comes fully assembled and tested
- outstanding price/performance ratio



Safety

- self-adjusting safety guard between the Belt Conveyor roll and the slider bed
- timing belt guard with window for visual inspection
- complete documentation meeting the latest Machinery Directive



Just-In-Time Conveyor Technology

Belt Conveyor

Page 10

<p>Belt Conveyors 40 C4N</p>  <p>P. 12</p>	<p>Belt Conveyors 50 C5N</p>  <p>P. 14</p>	<p>Belt Conveyors 80 C8N</p>  <p>P. 16</p>	<p>Stand for C4N/C5N C4F</p>  <p>P. 18</p>	<p>Stand for C8N/C8M C8F</p>  <p>P. 19</p>
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Modular Belt Conveyors

Page 20

<p>Straight Modular Belt Conveyors C8M</p>  <p>P. 22</p>	<p>Curved Modular Belt Conveyors C8M</p>  <p>P. 24</p>	<p>Stand for C8N/C8M C8F</p>  <p>P. 19</p>
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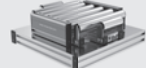

Timing Belt Conveyors

Page 26

<p>Timing Belt Conveyors 40 C4T</p>  <p>P. 28</p>	<p>Timing Belt Conveyors 80 C8T</p>  <p>P. 30</p>	<p>Stand for C4T C4G</p>  <p>P. 32</p>	<p>Stand for C8T C8G</p>  <p>P. 33</p>
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Powered Roller Conveyor

Page 34

<p>Powered Roller Conveyor Straight R5S</p>  <p>P. 38</p>	<p>Powered Roller Conveyor Merge R5M</p>  <p>P. 39</p>	<p>Powered Roller Conveyor Curved R5C</p>  <p>P. 40</p>	<p>Transfer Unit 90° R5T</p>  <p>P. 41</p>	<p>Turntable R5R</p>  <p>P. 42</p>	<p>Lift Station R5L</p>  <p>P. 43</p>	<p>Stand for R5_</p>  <p>P. 44</p>
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Side Guide System

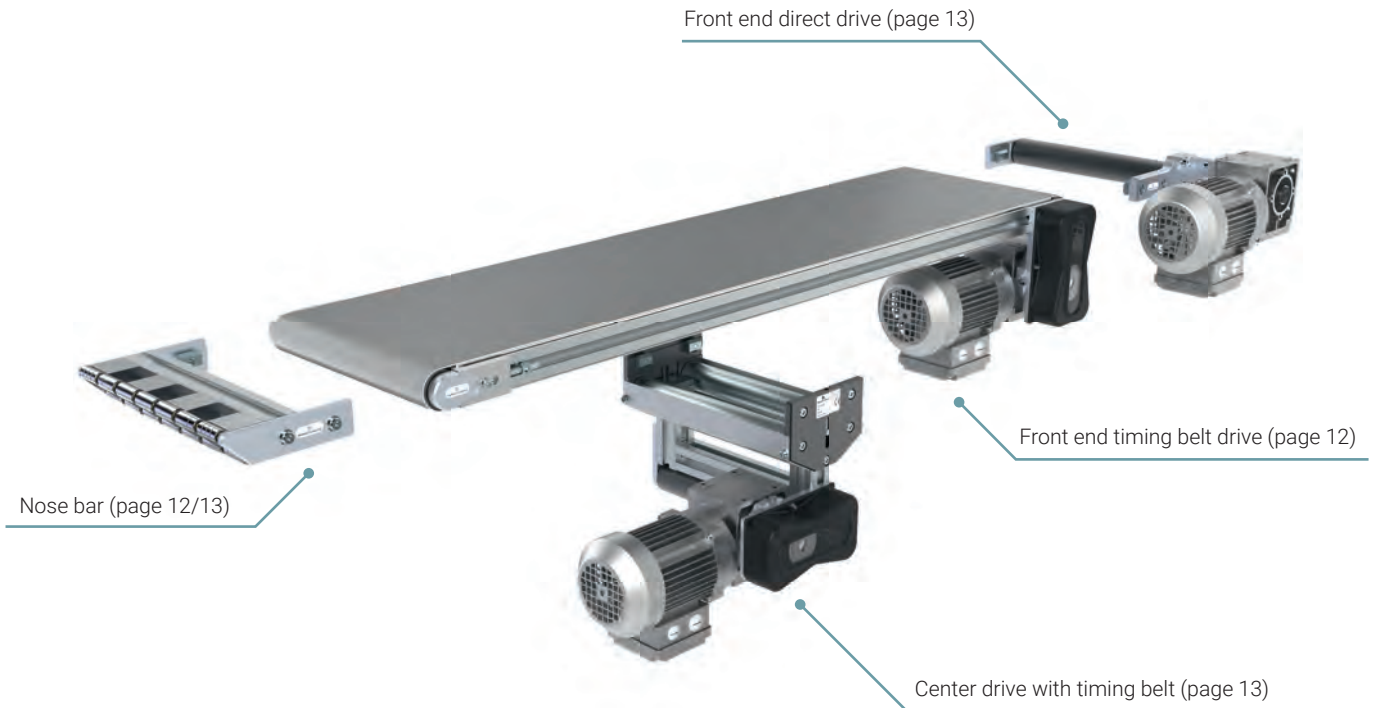
Page 46

<p>Side Guide Base COP4561</p>  <p>P. 48</p>	<p>Side Guide Clamp With Rod CO_90_</p>  <p>P. 49</p>	<p>Side Guide Clip COP4570</p>  <p>P. 50</p>	<p>Side Guide End Piece COP4590</p>  <p>P. 50</p>	<p>Side Guide Plastic COL4590</p>  <p>P. 51</p>
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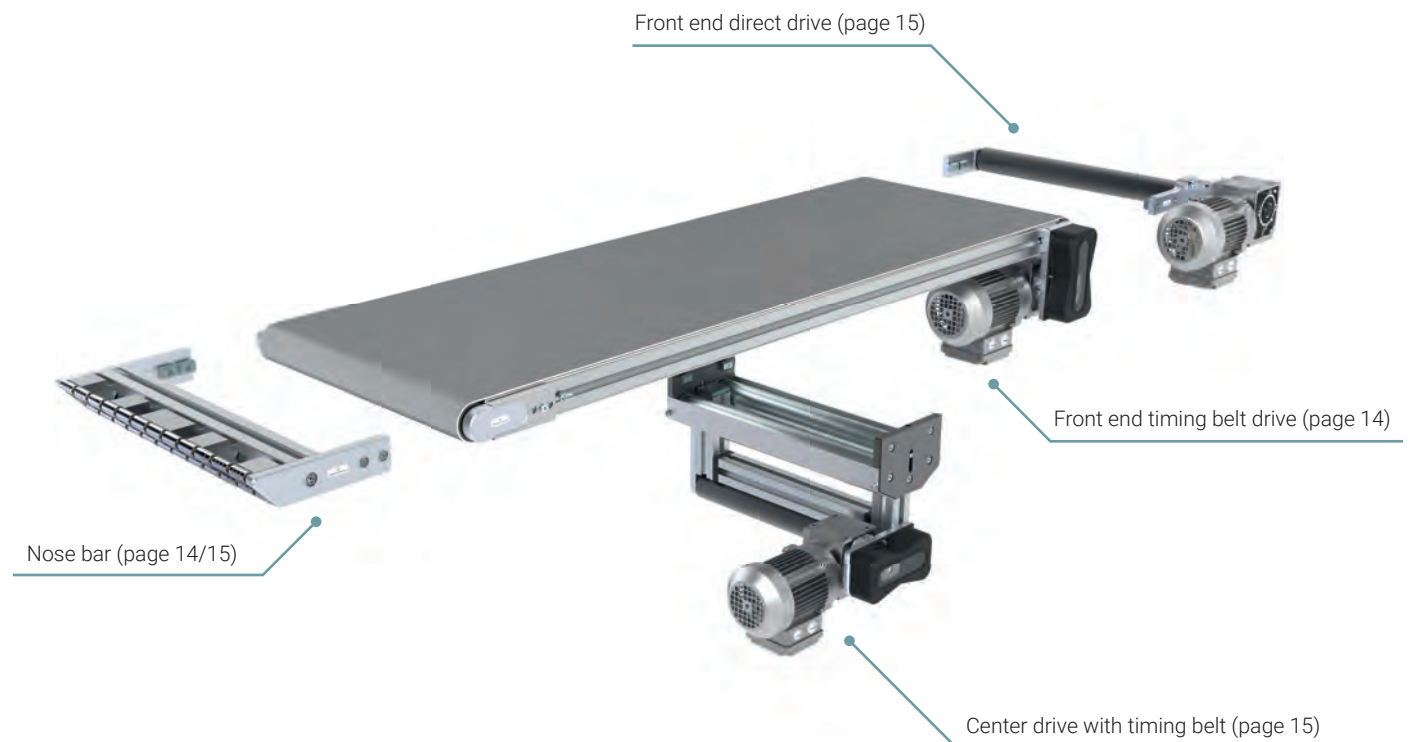
Conveyor Technology Accessory Overview

Page 142

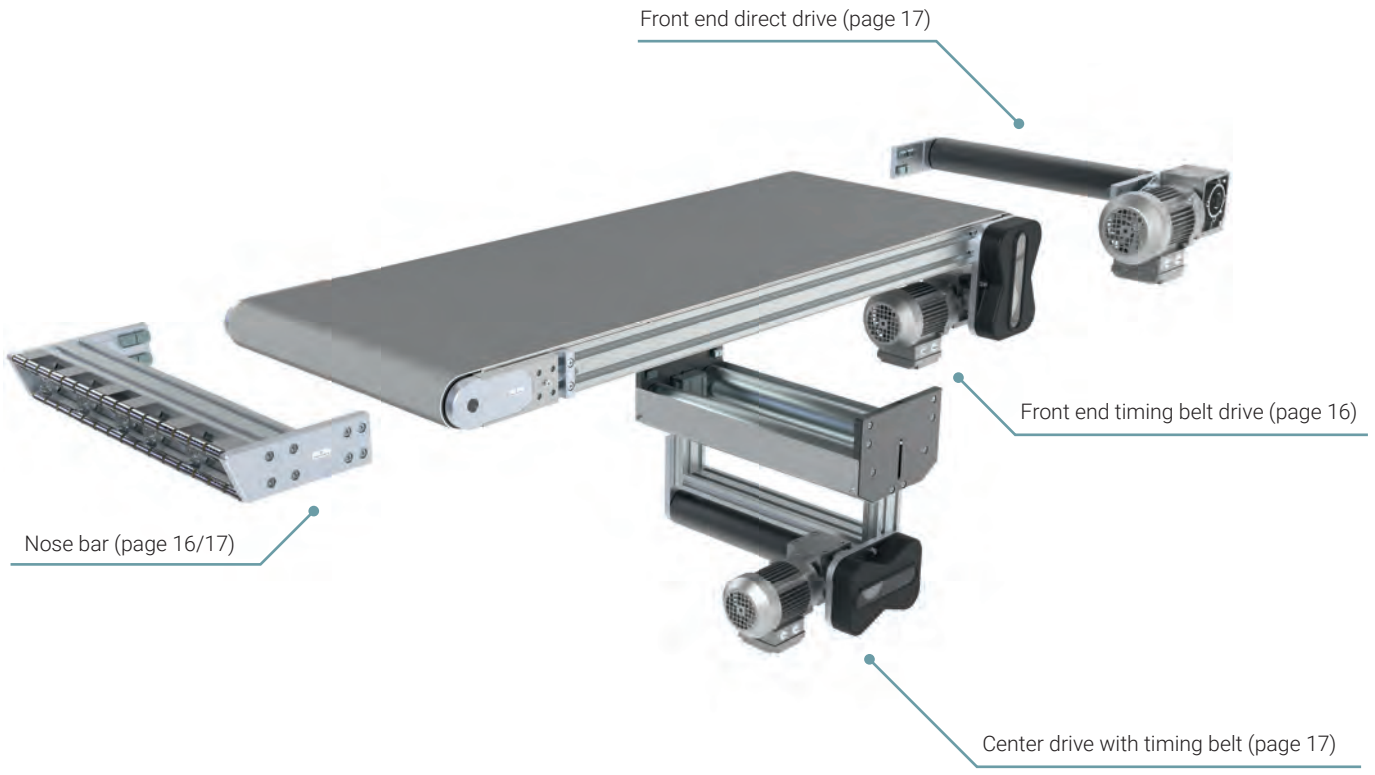
C4N Belt Conveyor Drive Options



C5N Belt Conveyor Drive Options



C8N Belt Conveyor Drive Options



**Application**

Used for a wide variety of conveying applications

Technical Data

Belt speeds from 3 m/min up to 55 m/min

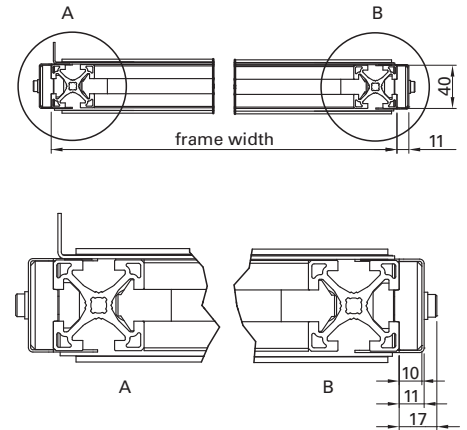
Drive power depending on belt speed and load ranging from
0.12 kW to 0.37 kW
(208-230/460V; 50/60Hz; IP54)
Max. total load of material 240 kg

Belt Type

low friction, high friction, accumulation, food grade, cut & oil resistant, cleated for incline transport, integrated belt side guides, etc.

C4N without side guides

Belt width = frame width - 10 mm



Side Guides for Belt Conveyors
see page 46

C4N with side guides

Frame width \leq 120 mm

Belt width = frame width - 15 mm

Frame width > 120 mm

Belt width = frame width - 20 mm

Drive Option¹**Front End Timing Belt Drive**

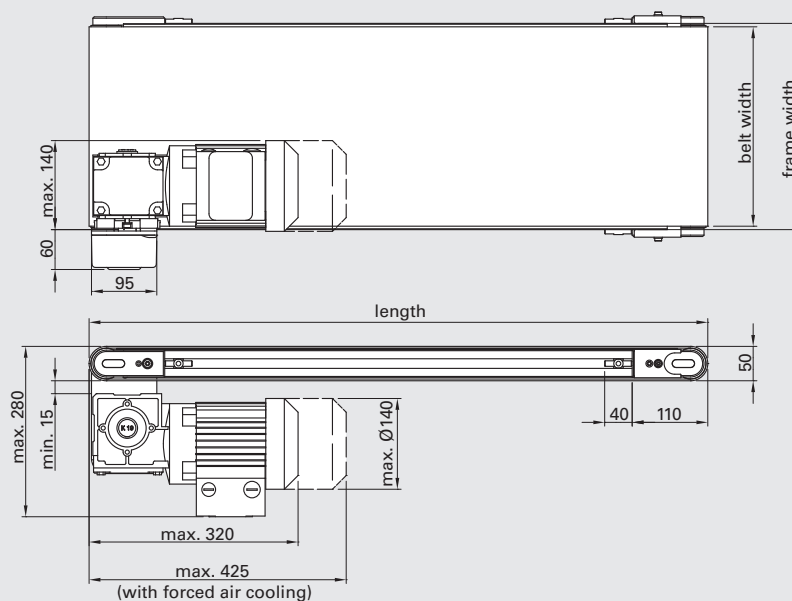
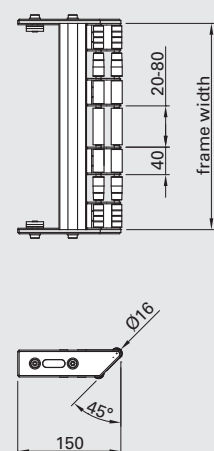
- A** Front end timing belt drive, left
- B** Front end timing belt drive, right
- C** Front end timing belt drive, left, tail end nose bar
- D** Front end timing belt drive, right, tail end nose bar

Front End Direct Drive

- E** Front end direct drive left
- F** Front end direct drive, right
- G** Front end direct drive, left, with tail end nose bar
- H** Front end direct drive, right, with tail end nose bar

Center Drive With Timing Belt

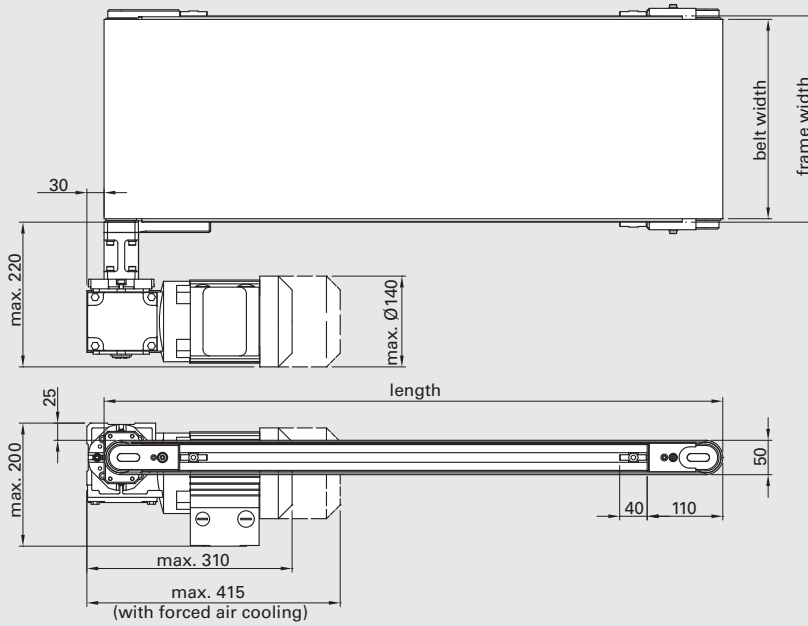
- K** Center drive with timing belt
- L** Center drive with timing belt and front end nose bar
- N** Center drive with timing belt and tail end nose bar
- Q** Center drive with timing belt and nose bar on both ends

Front End Timing Belt Drive**Optional: nose bar**

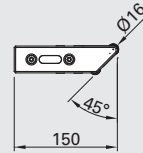
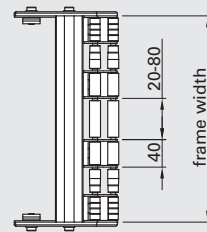
1) Standard direction is pulling. The running direction of all drives can be changed by reversing the polarity of the motor.

Drawing dimensions in mm

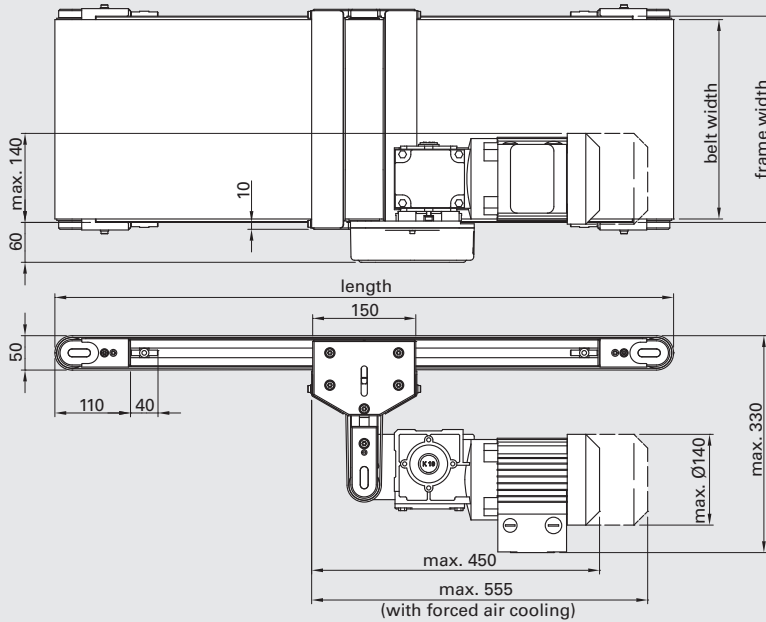
Front End Direct Drive



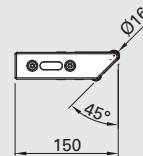
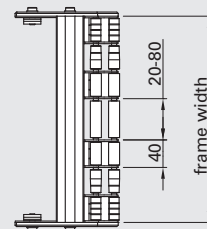
Optional: nose bar



Center Drive With Timing Belt



Optional: nose bar



Standard Widths And Lengths²

Description	Frame Width	Max. length
Belt Conveyor 40	40 mm	12000 mm
Belt Conveyor 40	80 mm	12000 mm
Belt Conveyor 40	120 mm	12000 mm
Belt Conveyor 40	160 mm	12000 mm

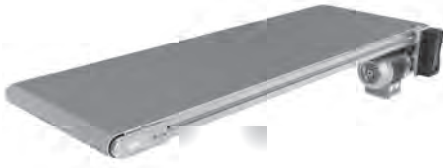
Description	Frame Width	Max. length
Belt Conveyor 40	200 mm	12000 mm
Belt Conveyor 40	240 mm	12000 mm
Belt Conveyor 40	300 mm	12000 mm
Belt Conveyor 40	400 mm	12000 mm

Please note the minimum length to width ratio of 1.5:1.

Request For Quote / Order

Please use our Belt Conveyor configuration tool or our request form at www.robotunits.com

2) Special widths and special lengths are available upon request.
Drawing dimensions in mm



Application

Used for a wide variety of conveying applications

Technical Data

Belt speeds from 3 m/min up to 67 m/min

Drive power depending on belt speed and load ranging from

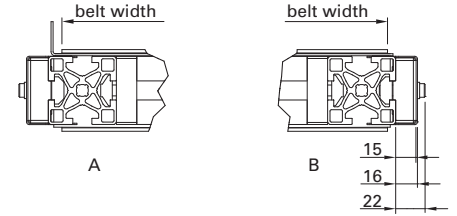
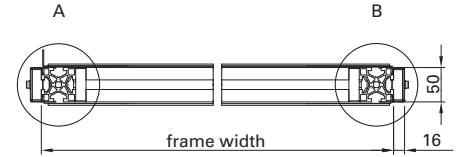
0.12 kW to 0.37 kW

(208-230/460V; 50/60Hz; IP54)

Max. total load of material 340 kg

Belt Type

low friction, high friction, accumulation, food grade, cut & oil resistant, cleated for incline transport, integrated belt side guides, etc.



Side Guides for Belt Conveyors see page 46

$Belt\ width = frame\ width - 20\ mm$

Drive Option¹

Front End Timing Belt Drive

- A** Front end timing belt drive, left
- B** Front end timing belt drive, right
- C** Front end timing belt drive, left, tail end nose bar
- D** Front end timing belt drive, right, tail end nose bar

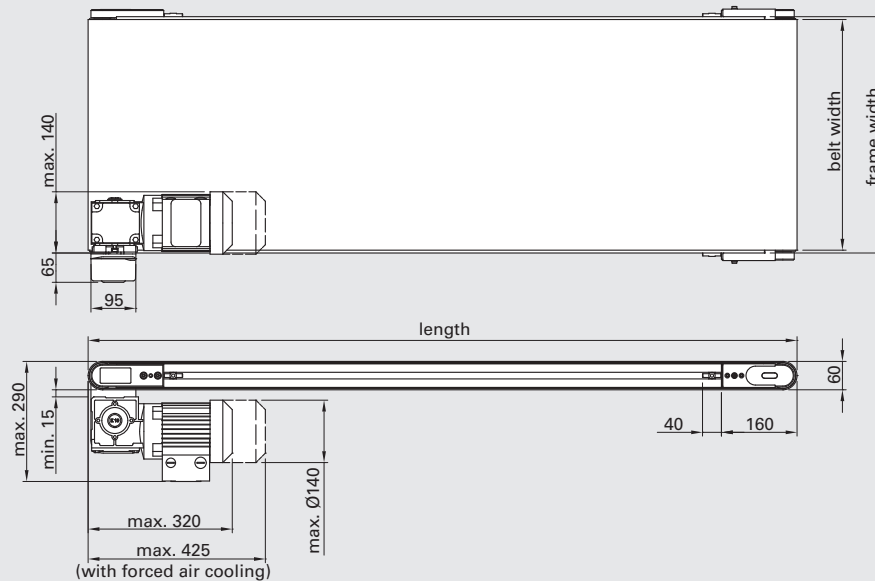
Front End Direct Drive

- E** Front end direct drive left
- F** Front end direct drive, right
- G** Front end direct drive, left, with tail end nose bar
- H** Front end direct drive, right, with tail end nose bar

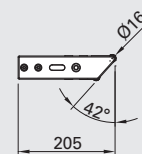
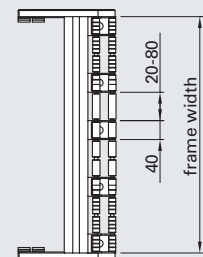
Center Drive With Timing Belt

- K** Center drive with timing belt
- L** Center drive with timing belt and front end nose bar
- N** Center drive with timing belt and tail end nose bar
- Q** Center drive with timing belt and nose bar on both ends

Front End Timing Belt Drive

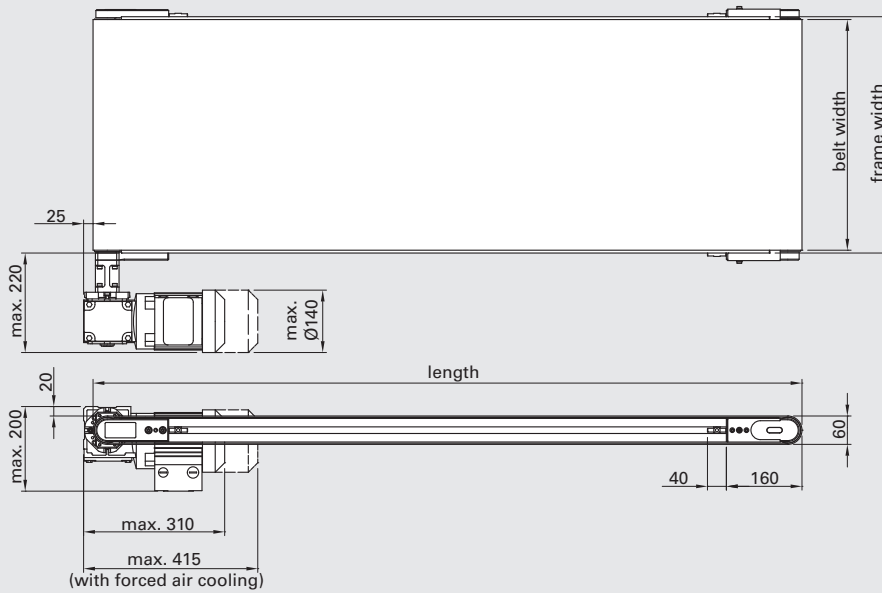


Optional: nose bar

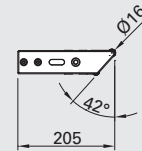
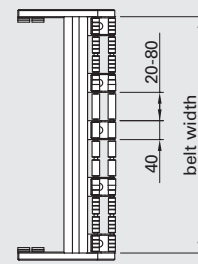


1) Standard direction is pulling. The running direction of all drives can be changed by reversing the polarity of the motor.
Drawing dimensions in mm

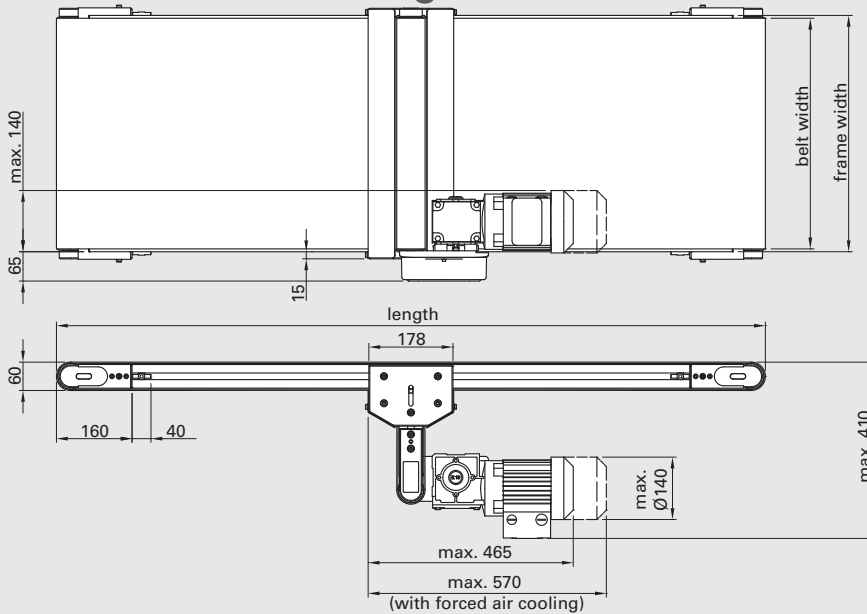
Front End Direct Drive



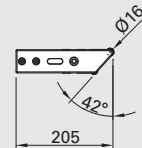
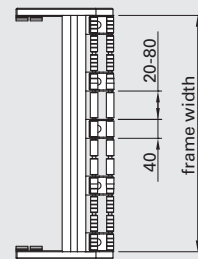
Optional: nose bar



Center Drive With Timing Belt



Optional: nose bar



Standard Widths And Lengths²

Description	Frame Width	Max. length
Belt Conveyor 50	400 mm	12000 mm
Belt Conveyor 50	500 mm	12000 mm
Belt Conveyor 50	600 mm	12000 mm

Design Options

Side view



Please note the minimum length to width ratio of 1.5:1.

Request For Quote / Order

Please use our Belt Conveyor configuration tool or our request form at www.robotunits.com

2) Special widths and special lengths are available upon request.
Drawing dimensions in mm



Application

Used for a wide variety of conveying applications

Technical Data

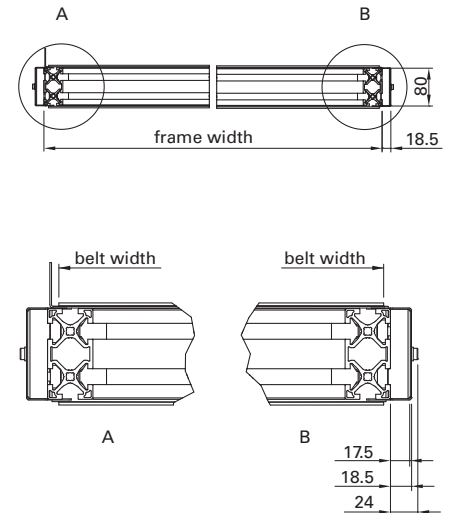
Belt speeds from 5 m/min up to 65 m/min

Drive power depending on belt speed and load ranging from 0.25 kW to 0.55 kW (208-230/460V; 50/60Hz; IP54)
Max. total load of material 800 kg

Belt Type

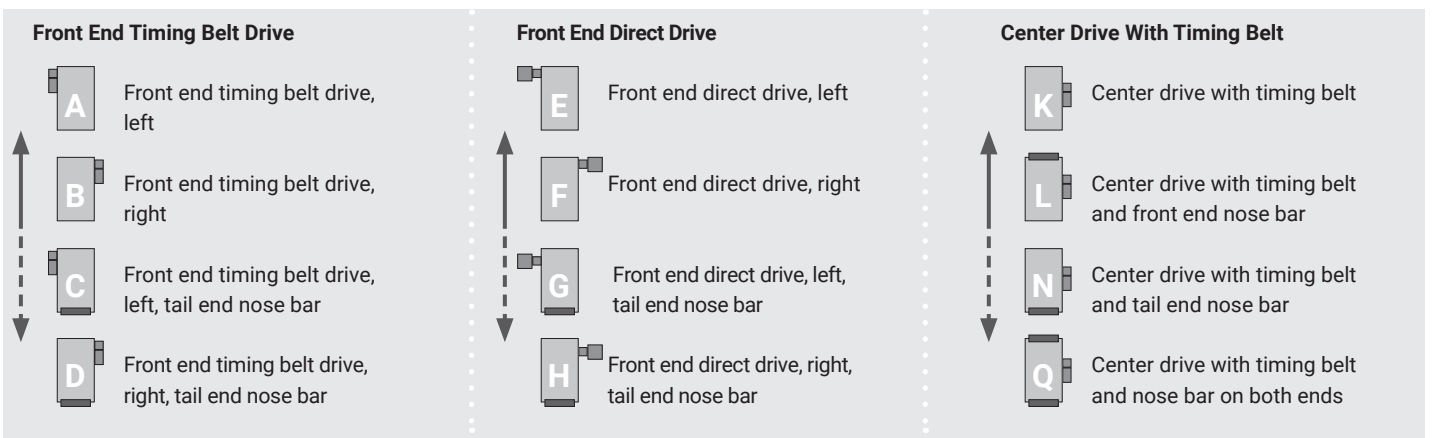
low friction, high friction, accumulation, food grade, cut & oil resistant, cleated for incline transport, integrated belt side guides, etc.

$Belt\ width = frame\ width - 20\ mm$

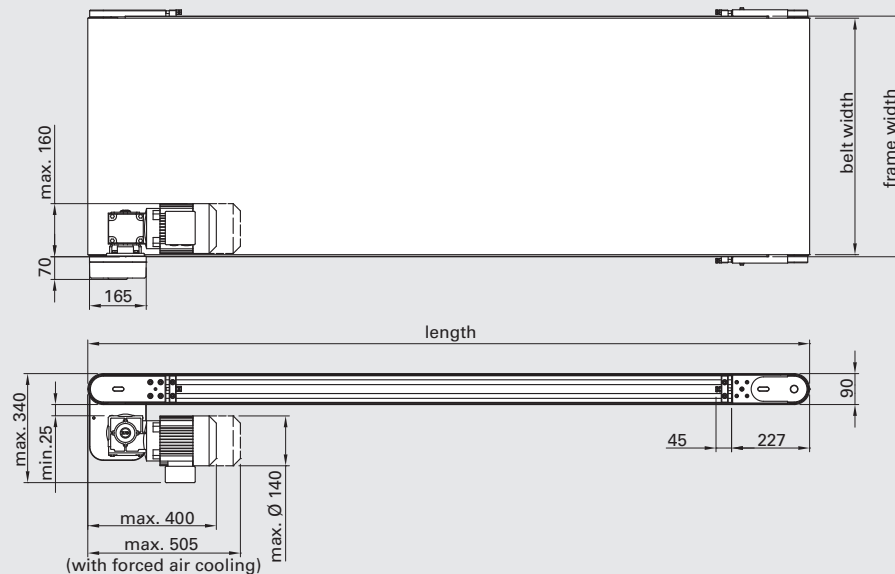


Side Guides for Belt Conveyors see page 46

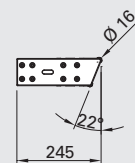
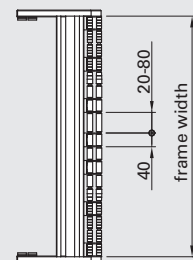
Drive Option¹



Front End Timing Belt Drive



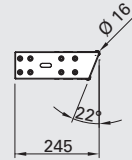
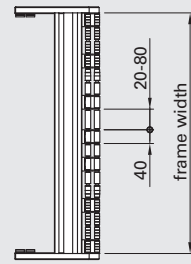
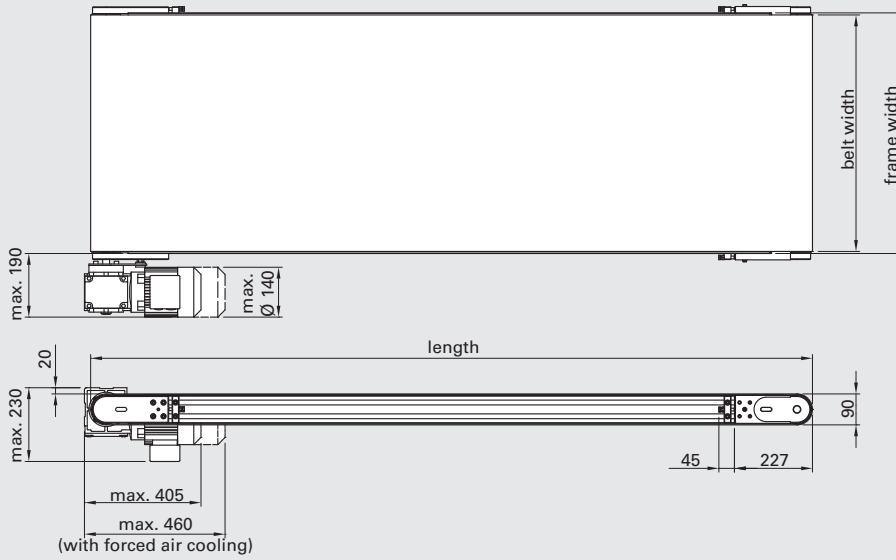
Optional: nose bar



1) Standard direction is pulling. The running direction of all drives can be changed by reversing the polarity of the motor.
Drawing dimensions in mm

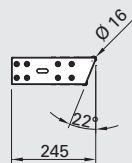
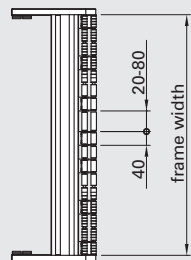
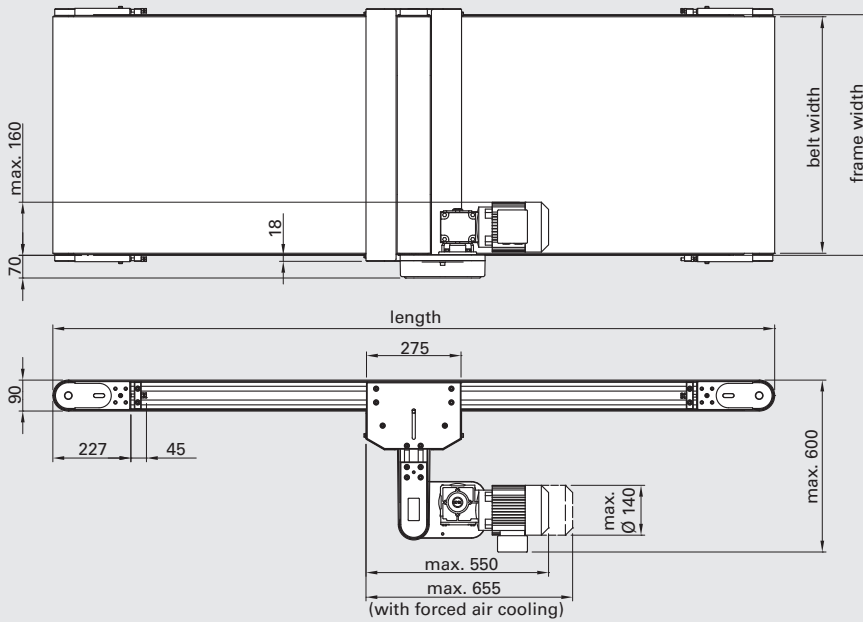
Front End Direct Drive

Optional: nose bar



Center Drive With Timing Belt

Optional: nose bar



Standard Widths And Lengths²

Description	Frame Width	Max. length
Belt Conveyor 80	600 mm	12000 mm
Belt Conveyor 80	700 mm	12000 mm
Belt Conveyor 80	800 mm	12000 mm
Belt Conveyor 80	1000 mm	12000 mm
Belt Conveyor 80	1200 mm	12000 mm

Design Options

Side view



Please note the minimum length to width ratio of 1.5:1.

Request For Quote / Order

Please use our Belt Conveyor configuration tool or our request form at www.robotunits.com

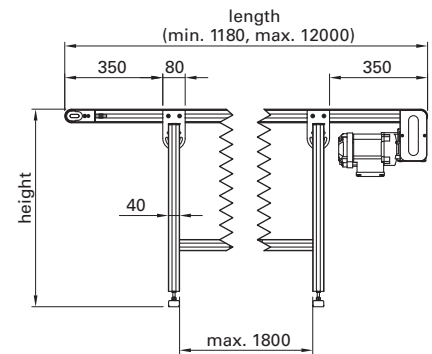
2) Special widths and special lengths are available upon request.
Drawing dimensions in mm

**Application**

Stand for Belt Conveyor 40 and 50

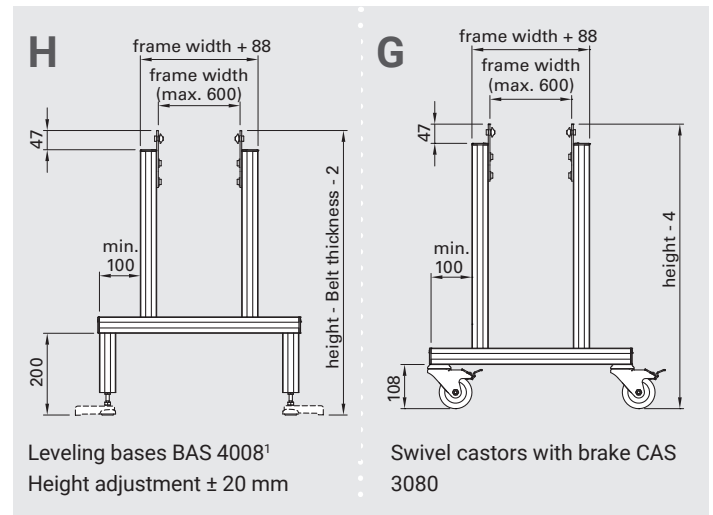
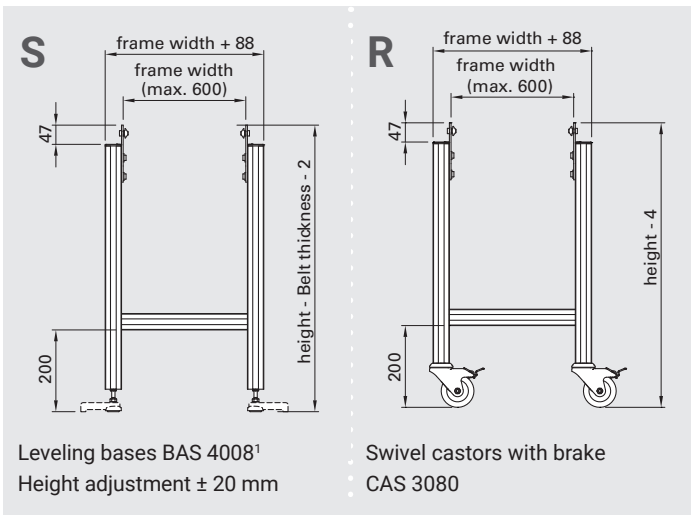
Technical DataMaterial: clear anodized aluminum;
galvanized GD-Zn; galvanized steel; rubber**Scope of Delivery**Stand segment fully assembled and
attached to belt conveyor if applicable

Wide conveyor stand offers additional
stability when conveyor heights exceed
3 times the frame width.



Standard Conveyor Stands

Wide Conveyor Stands



Order Code

Description	Order Code ²			
	Frame Width	Type	Length	Height
Stand for C4N/C5N	---	- NN	---	---

1) Optionally with Floor Mounting Plate BAP 4500

2) Please complete the order code by adding the corresponding parameters for order processing.

Drawing dimensions in mm

C8F

Stand for C8N/C8M



Application

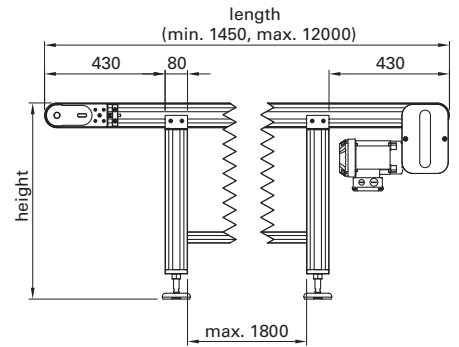
Stand for Belt Conveyor 80 and Modular Belt Conveyor 80

Technical Data

Material: clear anodized aluminum; galvanized GD-Zn; galvanized steel; rubber

Scope of Delivery

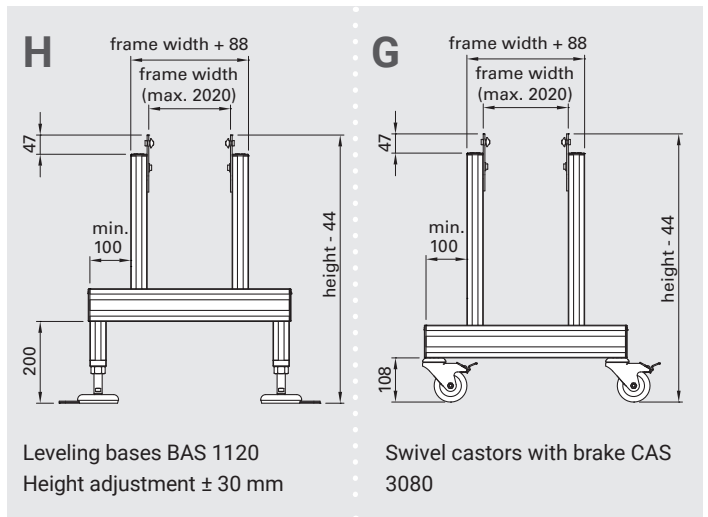
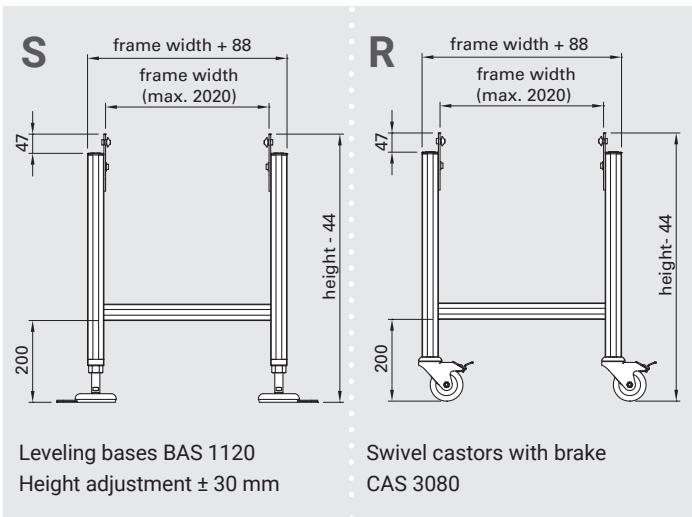
Stand segment fully assembled and attached to belt conveyor if applicable



Wide conveyor stand offers additional stability when conveyor heights exceed 3 times the frame width.

Standard Conveyor Stands

Wide Conveyor Stands



Order Code

Description	Order Code ¹			
	Frame Width	Type	Length	Height
Stand for C8N/C8M	C8F	---	_ NN	---

1) Please complete the order code by adding the corresponding parameters for order processing.

Drawing dimensions in mm

C8M Straight Modular Belt Conveyor Drive Options

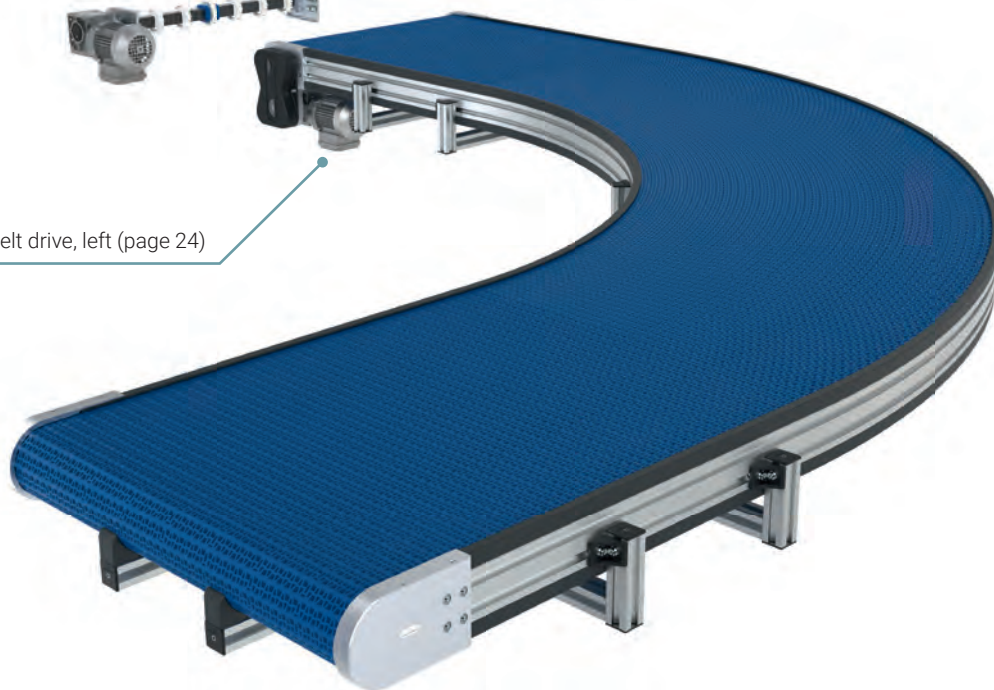


C8M Curved Modular Belt Conveyor Drive Options

Front end direct drive, left (page 25)



Front end timing belt drive, left (page 24)



**Application**

Used for a wide variety of conveying applications

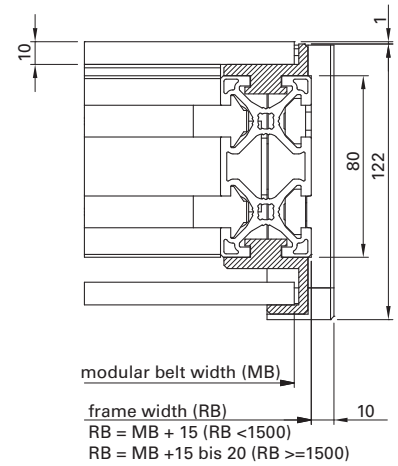
Technical Data

Belt speeds from
6 m/min up to 50 m/min

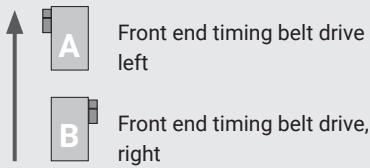
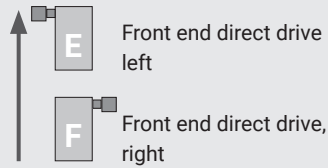
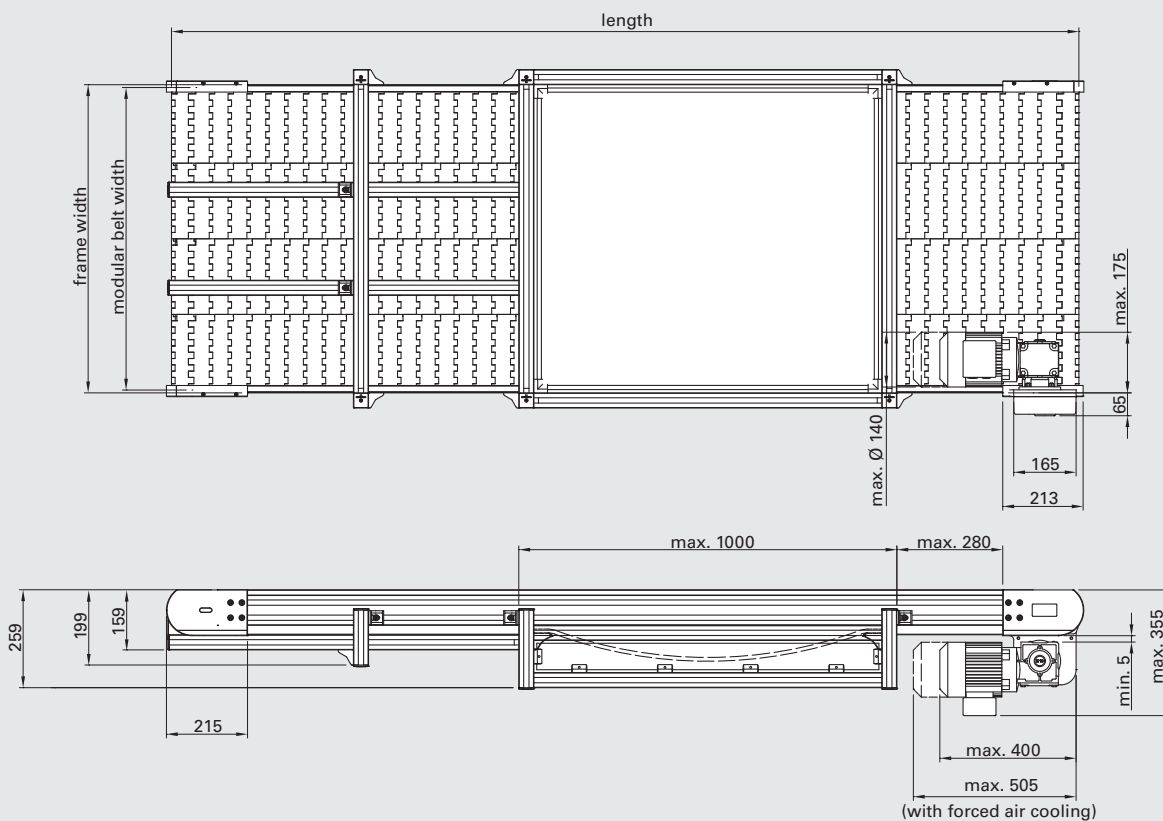
Drive power depending on belt speed and load ranging from
0.25 kW to 0.55 kW
(208-230/460V; 50/60Hz; IP54)
Max. total load of material 750 kg
Modular belt pitch 1 inch

Modular belt design

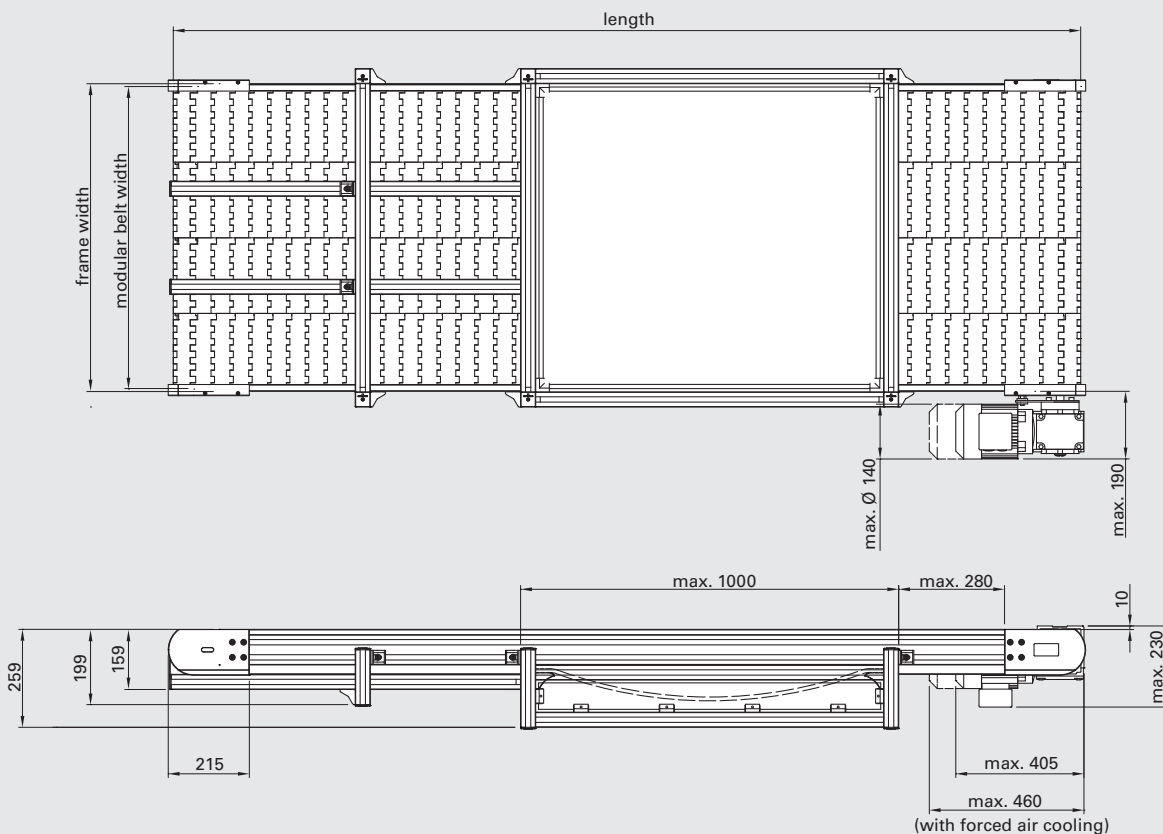
Modular belt open
Modular belt closed



Side Guides for Modular Belt Conveyors
see page 46

Drive Option¹**Front End Timing Belt Drive****Front End Direct Drive****Front End Timing Belt Drive**

Front End Direct Drive



Design Options²

Side view



Length And Frame Width

Description	Min. length ³	Max. length ³	Min. modular belt width ⁴	Max. modular belt width ⁴
C8M Straight front end timing belt drive	1500 mm	12000 mm	150 mm	2000 mm
C8M Straight front end direct drive	1500 mm	12000 mm	150 mm	2000 mm

Request For Quote / Order

Please use our request form at www.robotunits.com.

- 1) Only pulling direction is possible
- 2) Design options on request
- 3) Special lengths are available upon request
- 4) Modular belt widths can be ordered ranging from min. 150 mm to max. 2000 mm in steps of 50 mm.

Drawing dimensions in mm

C8M

Curved Modular Belt Conveyors



Application

Used for a wide variety of conveying applications

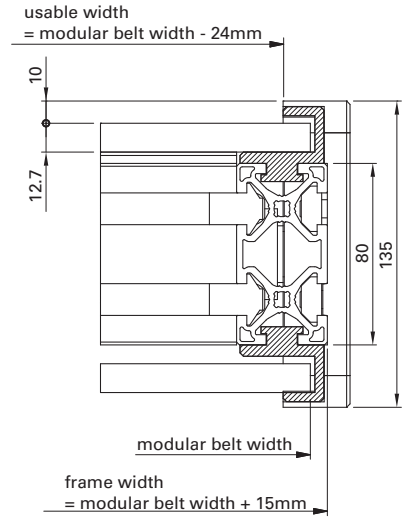
Technical Data

Belt speeds from 6 m/min up to 30 m/min

Drive power depending on belt speed and load ranging from 0.25 kW to 0.55 kW (208-230/460V; 50/60Hz; IP54)
 Maximum load to be conveyed: on request
 Modular belt pitch 1 inch

Modular belt design

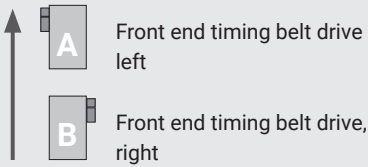
Modular belt open



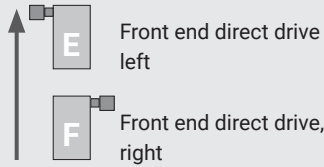
Side Guides for Modular Belt Conveyors see page 46

Drive Option¹

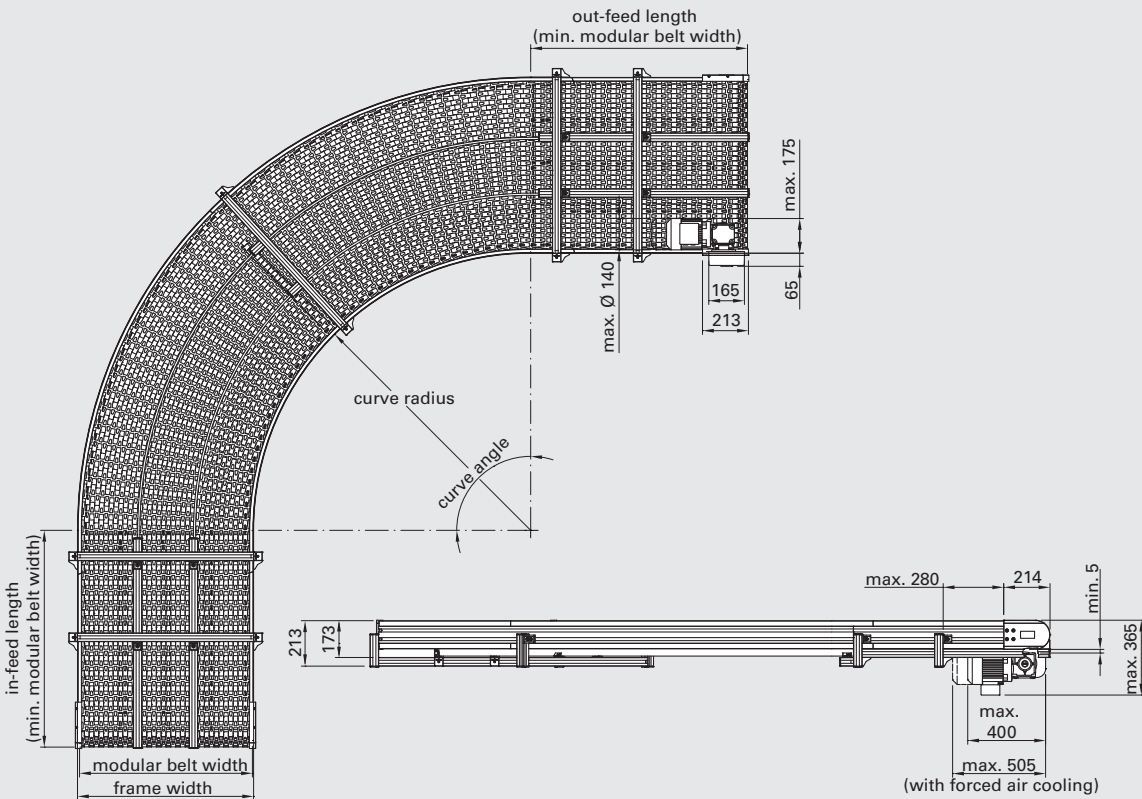
Front End Timing Belt Drive



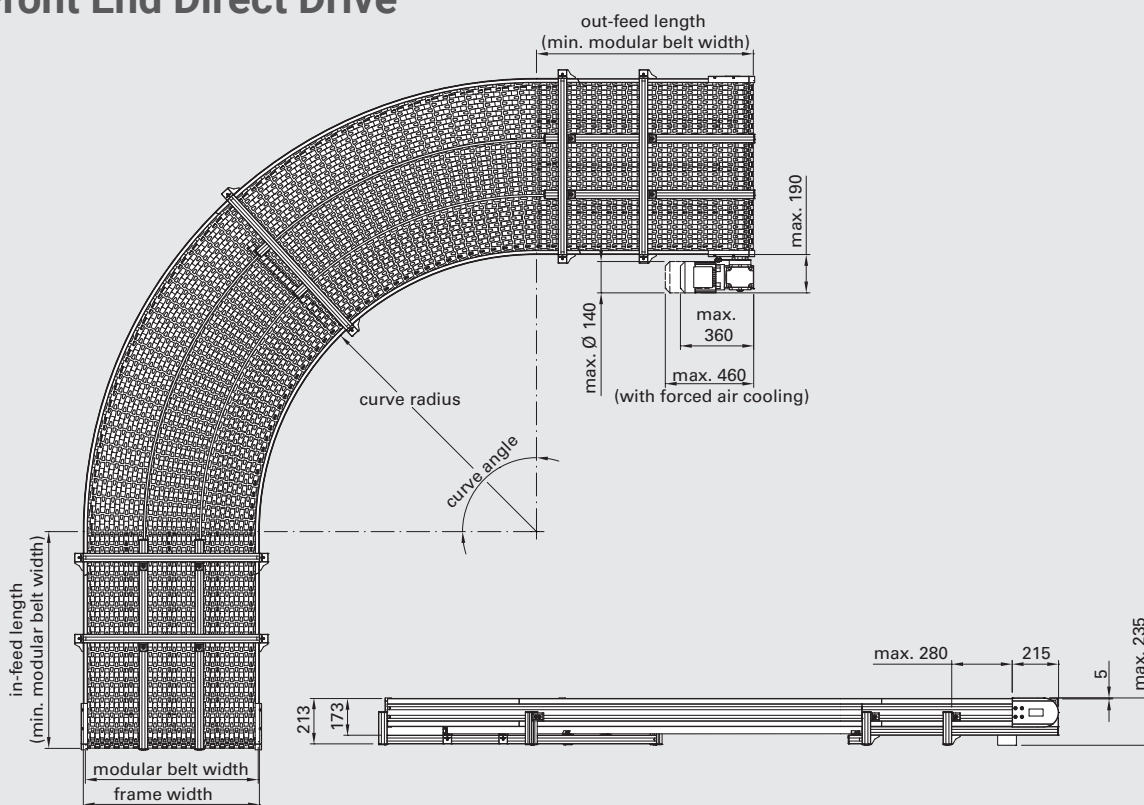
Front End Direct Drive



Front End Timing Belt Drive



Front End Direct Drive



Design Options²

Side view



Top view



Frame Width

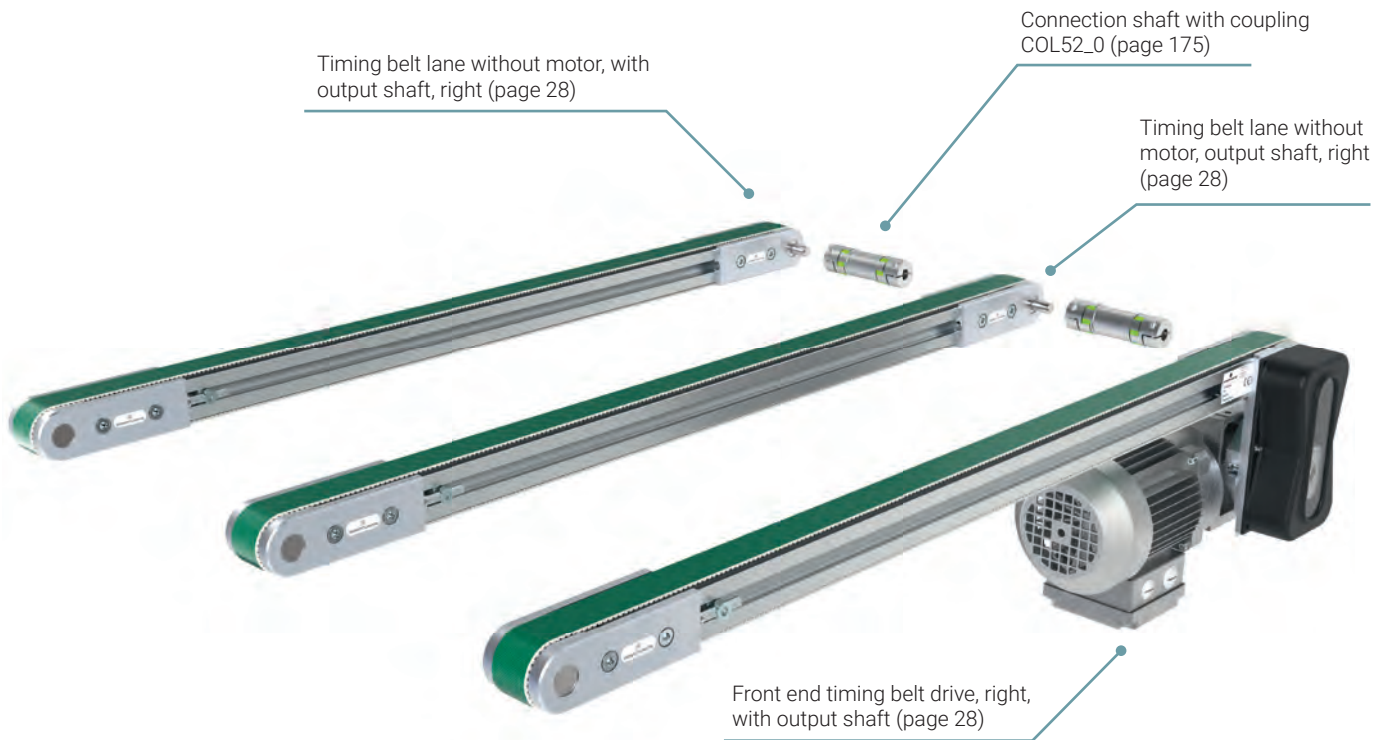
Description	Frame width min. ³	Frame width max. ³
C8M Curved front end timing belt drive	215 mm	1215 mm
C8M Curved front end direct drive	215 mm	1215 mm

Request For Quote / Order

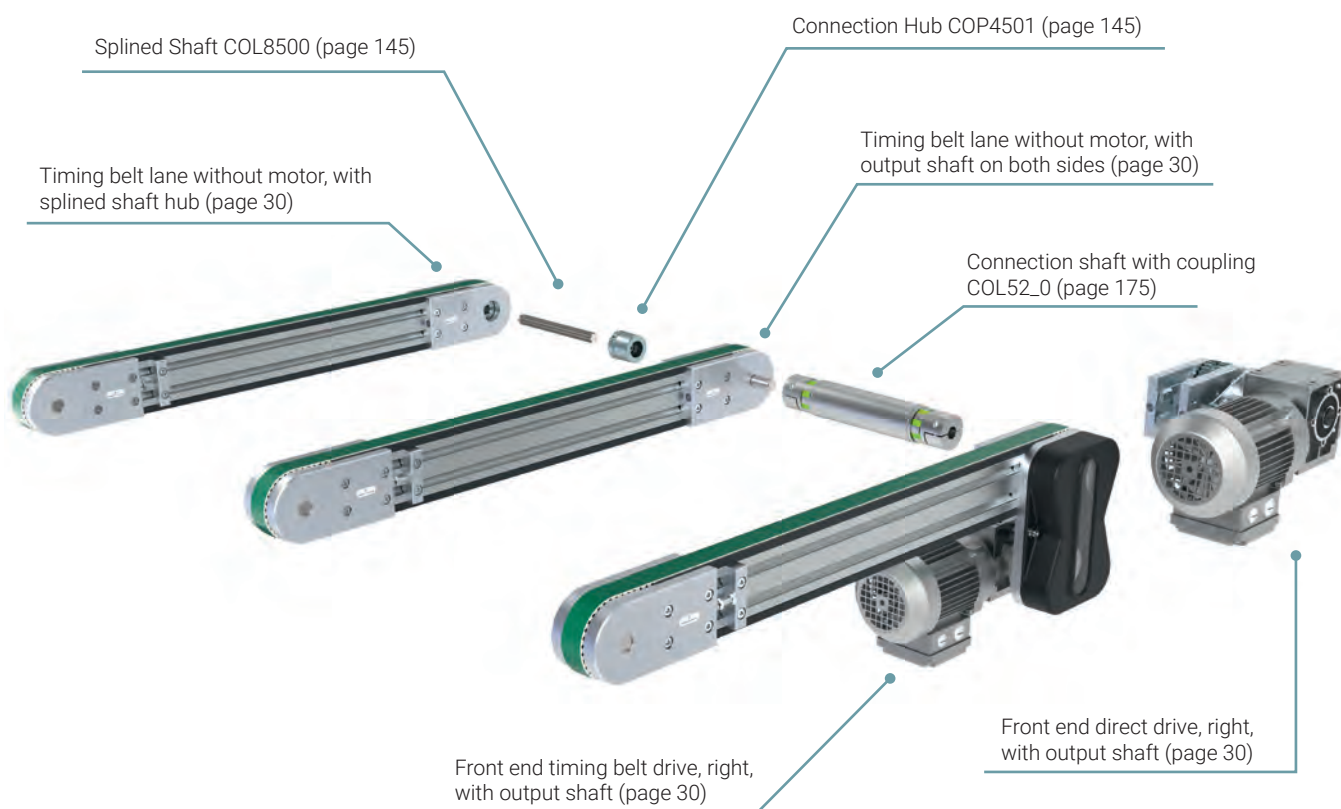
Please use our request form at www.robotunits.com.

- 1) Only pulling direction is possible
 - 2) Design options on request
 - 3) Frame widths can be ordered ranging from min. 215 mm to max. 1215 mm in steps of 50 mm.
- Drawing dimensions in mm

C4T Timing Belt Conveyor Drive And Connection Options



C8T Timing Belt Conveyor Drive And Connection Options



**Application**

Used for a wide variety of conveying applications

Technical Data

Speeds from 3 m/min up to 58 m/min

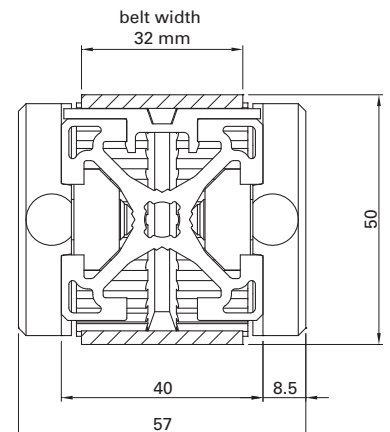
Drive power depending on belt speed and load ranging from 0.12 kW to 0.37 kW (208-230/460V; 50/60Hz; IP54)
Max. total load of material 160 kg

Pulley

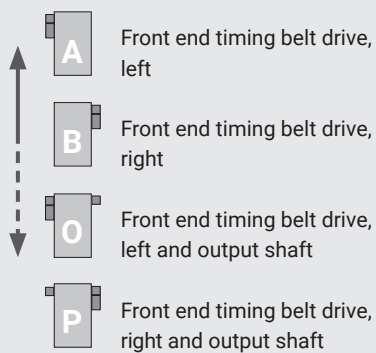
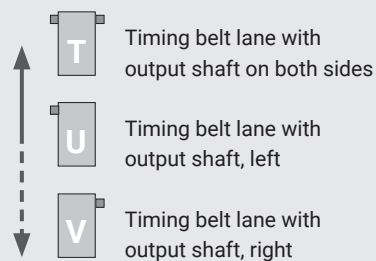
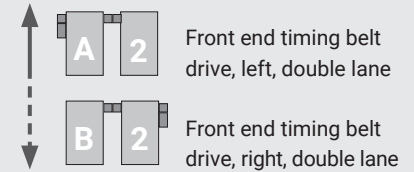
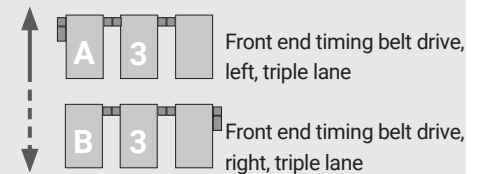
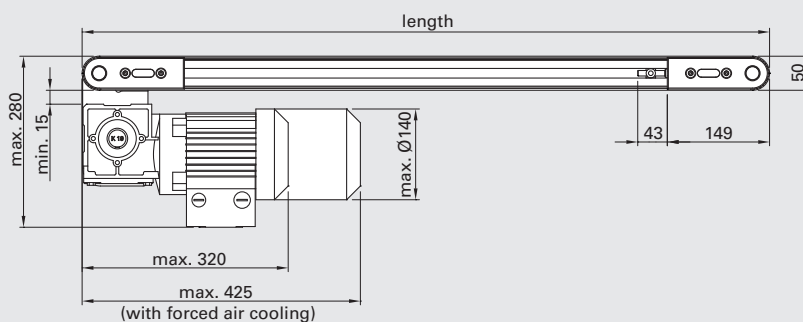
Number of teeth per pulley = 30
Pitch circle diameter = 47.75 mm

Belt Type

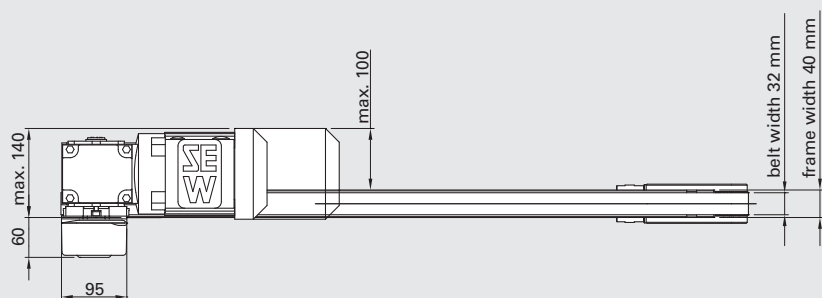
Standard application, cleated for incline transport, accumulation, etc.



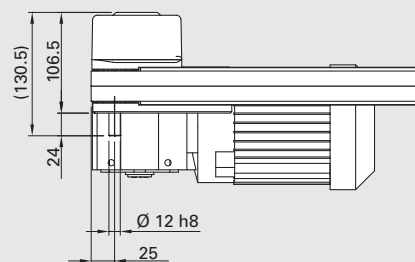
Side Guides for Timing Belt Conveyors see page 46

Drive Option¹**Front End Timing Belt Drive****Timing Belt Lane Without Motor****Front End Timing Belt Drive, Double Lane****Front End Timing Belt Drive, Triple Lane****Front End Timing Belt Drive**

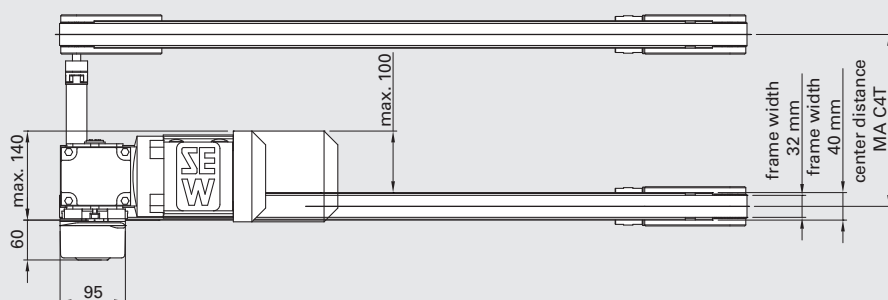
Front End Timing Belt Drive



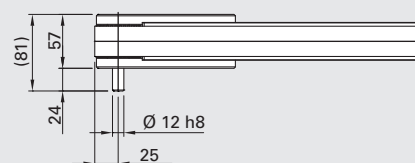
O/P



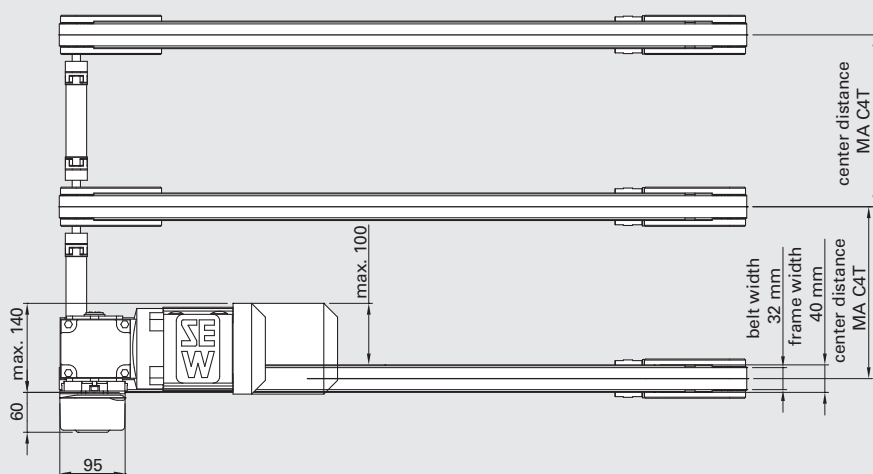
Front End Timing Belt Drive, Double Lane



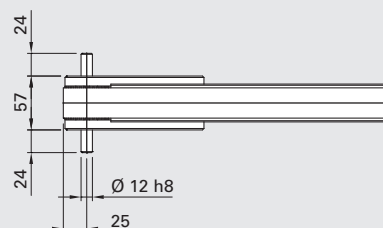
U/V



Front End Timing Belt Drive, Triple Lane



T



Length And Frame Width

Description	Min. length	Max. length	MA1	MA2
Timing Belt Conveyor 40 Front end timing belt drive	400 mm	12000 mm		
Timing Belt Conveyor 40 Front end timing belt drive, double lane	400 mm	12000 mm	----	
Timing Belt Conveyor 40 Front end timing belt drive, triple lane	400 mm	12000 mm	----	----
Timing Belt Conveyor 40 Timing belt lane without motor	400 mm	12000 mm		

Order Placement

Please use our Belt Conveyor configuration tool or our request form at www.robotunits.com

1) Standard direction is pulling. The running direction of all drives can be changed by reversing the polarity of the motor.
Drawing dimensions in mm

**Application**

Used for a wide variety of conveying applications

Technical Data

Speeds from 6 m/min up to 66 m/min

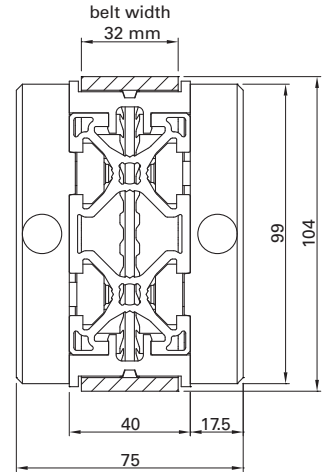
Drive power depending on belt speed and load ranging from 0.25 kW to 0.37 kW
(208-230/460V; 50/60Hz; IP54)
Max. total load of material 400 kg

Pulley

Number of teeth per pulley = 32
Pitch circle diameter = 101.85 mm

Belt Type

Standard application, cleated for incline transport, accumulation, etc.



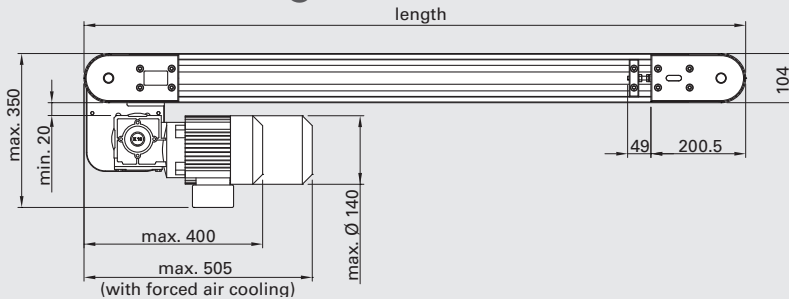
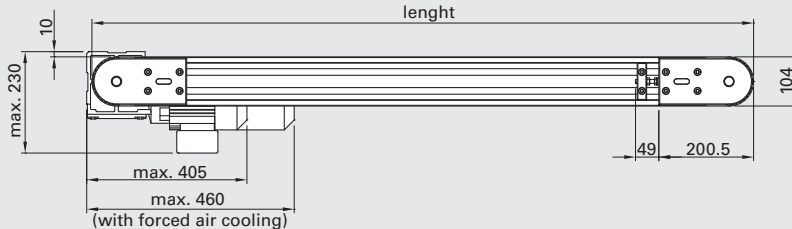
Side Guides for Timing Belt Conveyors see page 46

Drive Option¹**Front End Timing Belt Drive, Fmax 4000 N**

- A** Front end timing belt drive, left
- B** Front end timing belt drive, right
- O** Front end timing belt drive, left and output shaft
- P** Front end timing belt drive, right and output shaft

Front End Direct Drive, Fmax 6000 N

- E** Front end direct drive left
- F** Front end direct drive, right
- R** Front end direct drive, left and output shaft
- S** Front end direct drive, right and output shaft

Front end timing belt drive**Front end direct drive****Front End Drive, Double Lane**

- A 2** Front end timing belt drive, left, double lane
- B 2** Front end timing belt drive, right, double lane
- E 2** Front end direct drive, left, double lane
- F 2** Front end direct drive, right, double lane

Front End Drive, Triple Lane

- A 3** Front end timing belt drive, left, triple lane
- B 3** Front end timing belt drive, right, triple lane
- E 3** Front end direct drive left, triple lane
- F 3** Front end direct drive right, triple lane

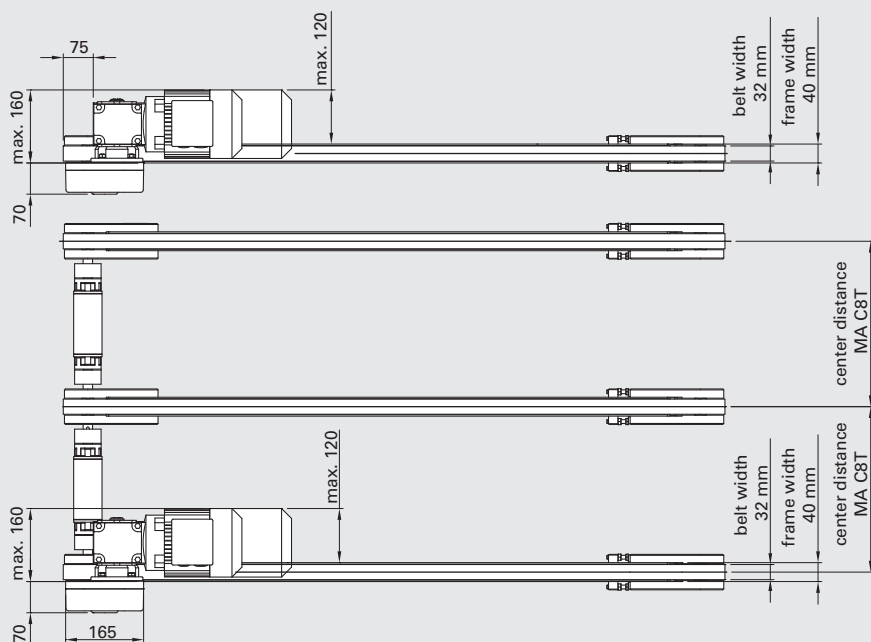
Timing Belt Lane Without Motor

- T** Timing belt lane with output shaft on both sides
- U** Timing belt lane with output shaft, left
- V** Timing belt lane with output shaft, right

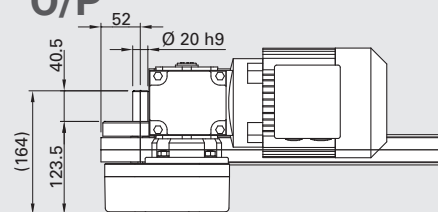
Timing Belt Lane Without Motor, Adjustable

- W** Timing belt lane with splined shaft hub

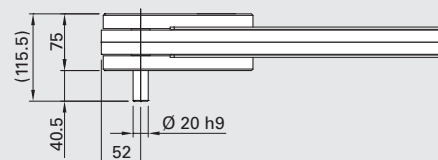
Front End Timing Belt Drive, Double-, Triple Lane



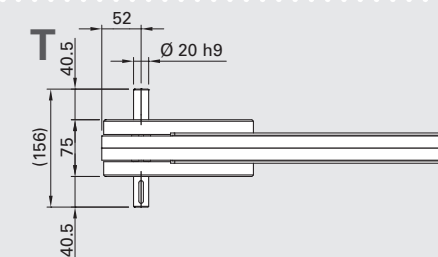
O/P



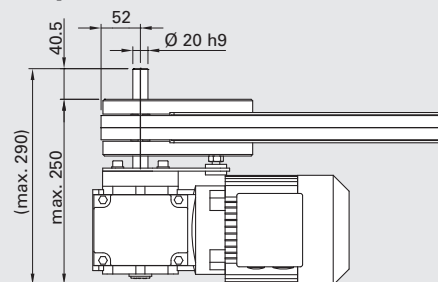
U/V



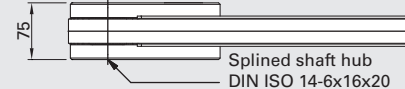
T



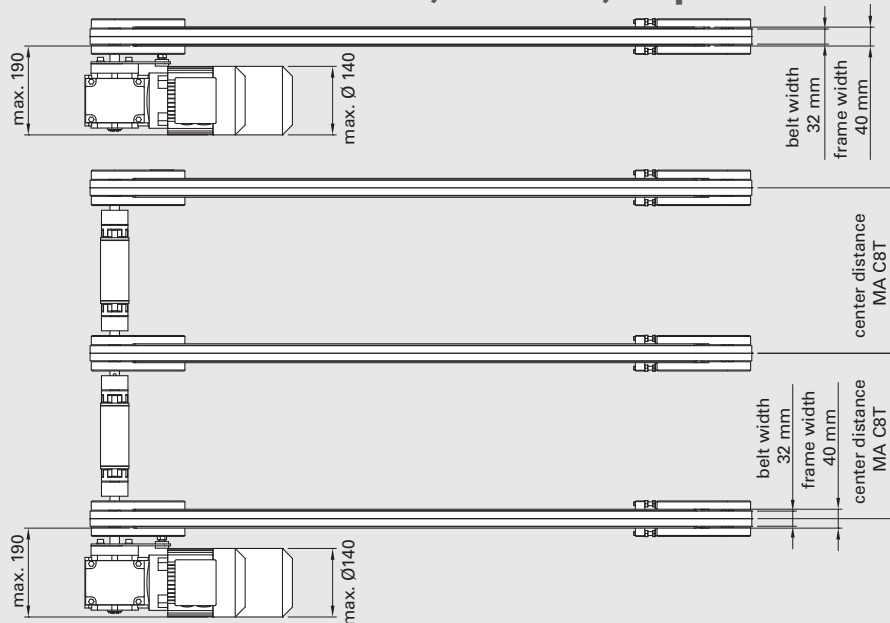
R/S



W, adjustable



Front End Direct Drive, Double-, Triple Lane



Length And Frame Width

Description	Min. length	Max. length	MA1	MA2
Timing Belt Conveyor 80 Front end timing belt drive	550 mm	12000 mm		
Timing Belt Conveyor 80 Front end timing belt drive, double lane	550 mm	12000 mm	----	
Timing Belt Conveyor 80 Front end timing belt drive, triple lane	550 mm	12000 mm	----	----
Timing Belt Conveyor 80 Front end direct drive	550 mm	12000 mm		
Timing Belt Conveyor 80 Front end direct drive, double lane	550 mm	12000 mm	----	
Timing Belt Conveyor 80 Front end direct drive, triple lane	550 mm	12000 mm	----	----
Timing Belt Conveyor 80 Timing belt lane without motor	550 mm	12000 mm		

Order Placement

Please use our Belt Conveyor configuration tool or our request form at www.robotunits.com

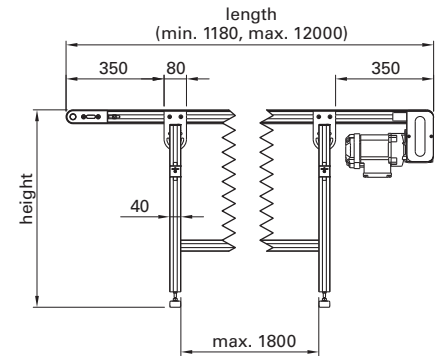
1) Standard direction is pulling. The running direction of all drives can be changed by reversing the polarity of the motor.

C4G

Stand for C4T

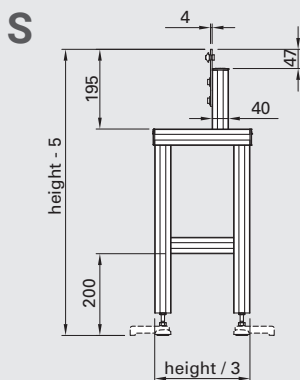
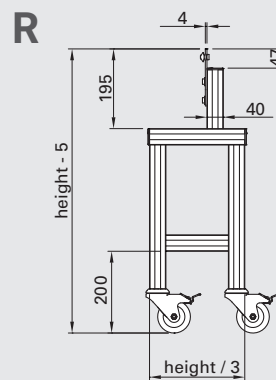
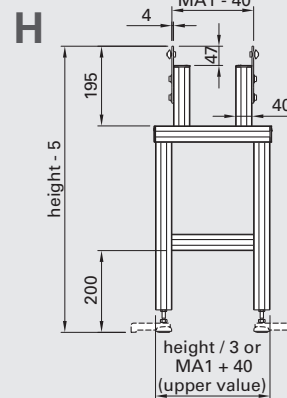
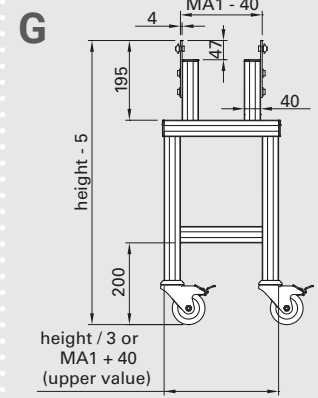
**Application**

Stand for Timing Belt Conveyor 40

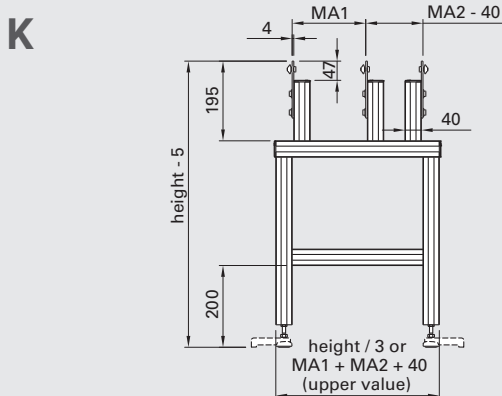
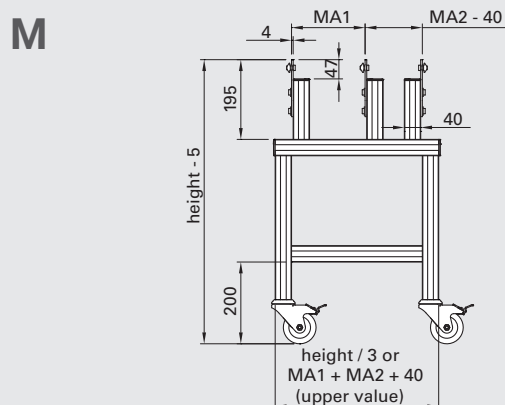
Technical DataMaterial: clear anodized aluminum;
galvanized GD-Zn; galvanized steel;
rubber**Scope of Delivery**Stand segment fully assembled and
attached to belt conveyor if applicable

Stand Types: Single Lane

Stand Types: Double Lanes

Leveling bases BAS 4008¹
Height adjustment ± 20 mmSwivel castors with brake
CAS 3080Leveling bases BAS 4008¹
Height adjustment ± 20 mmSwivel castors with brake CAS
3080

Stand Types: Triple Lane

Leveling bases BAS 4008¹
Height adjustment ± 20 mmSwivel castors with brake
CAS 3080

Order Code

Description	Order Code ²				
	Length	Type	Height	MA1	MA2
Stand for C4T	---	_ NN	---	---	---

1) Optionally with Floor Mounting Plate BAP 4500

2) Please complete the order code by adding the corresponding parameters for order processing.

Drawing dimensions in mm

C8G

Stand for C8T



Application

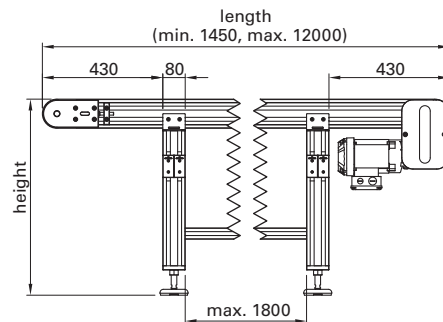
Stand for Timing Belt Conveyor 80

Technical Data

Material: clear anodized aluminum; galvanized GD-Zn; galvanized steel; rubber

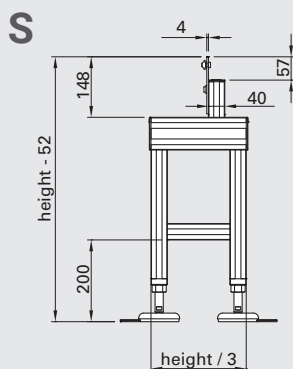
Scope of Delivery

Stand segment fully assembled and attached to belt conveyor if applicable

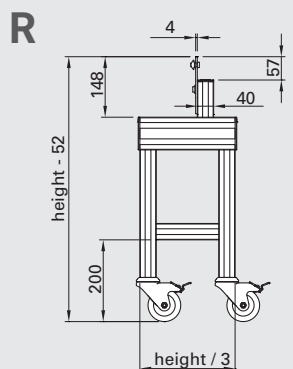


Stand Types: Single Lane

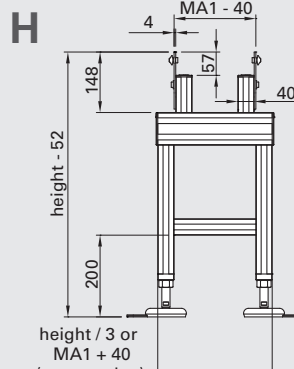
Stand Types: Double Lanes



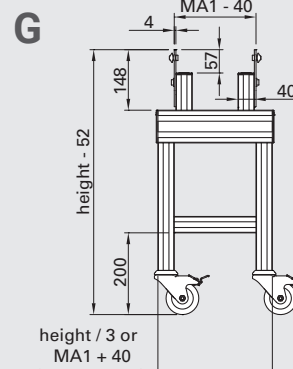
Leveling bases BAS 1120
Height adjustment ± 30 mm



Swivel castors with brake CAS 3080

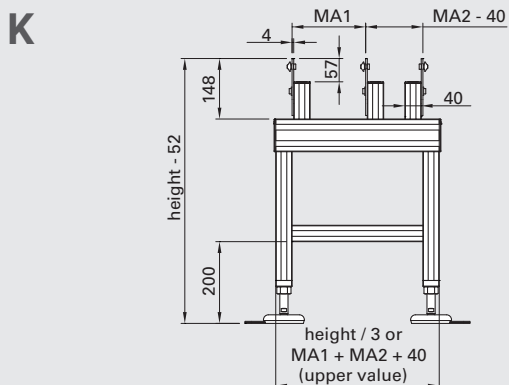


Leveling bases BAS 1120
Height adjustment ± 30 mm

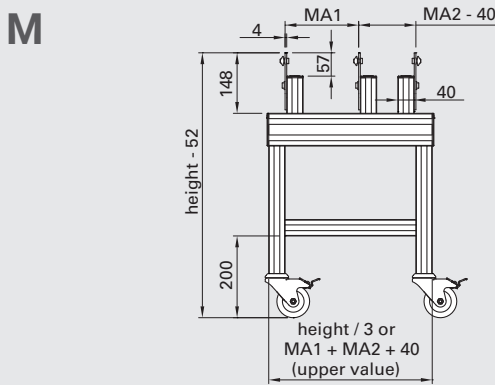


Swivel castors with brake CAS 3080

Stand Types: Triple Lane



Leveling bases BAS 1120
Height adjustment ± 30 mm



Swivel castors with brake CAS 3080

Order Code

Description	Order Code ¹				
	Length	Type	Height	MA1	MA2
Stand for C8T	---	- NN	---	---	---

1) Please complete the order code by adding the corresponding parameters for order processing.

Drawing dimensions in mm

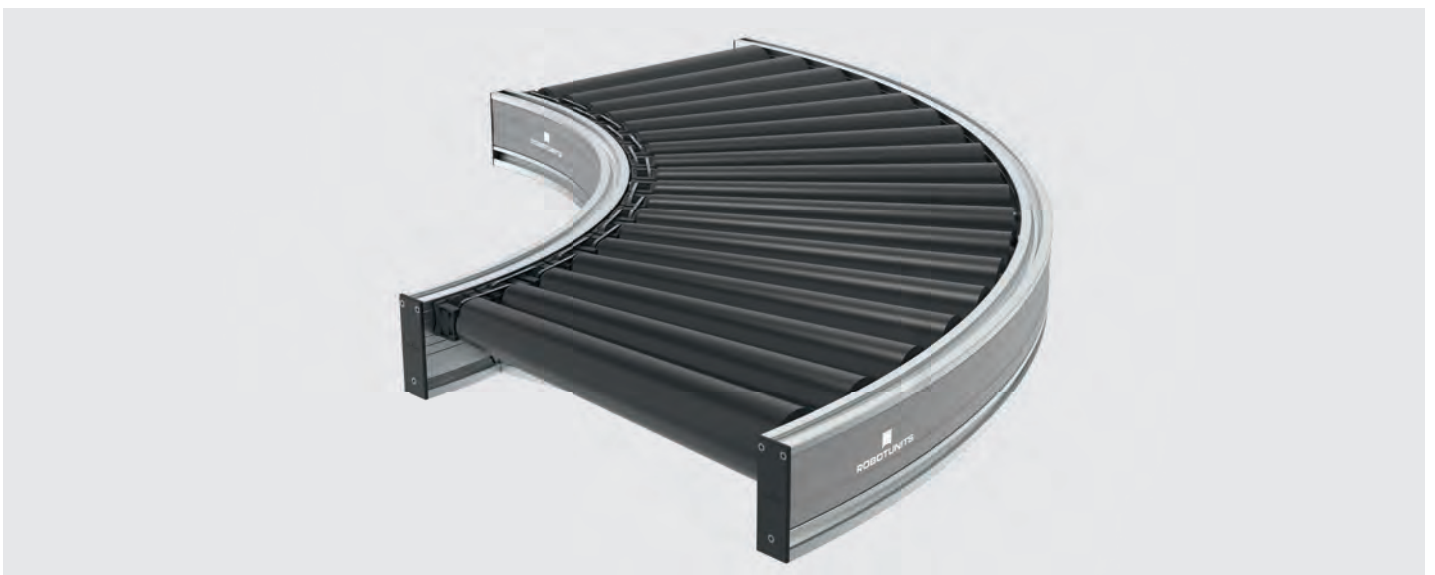
Powered Roller Conveyor Straight



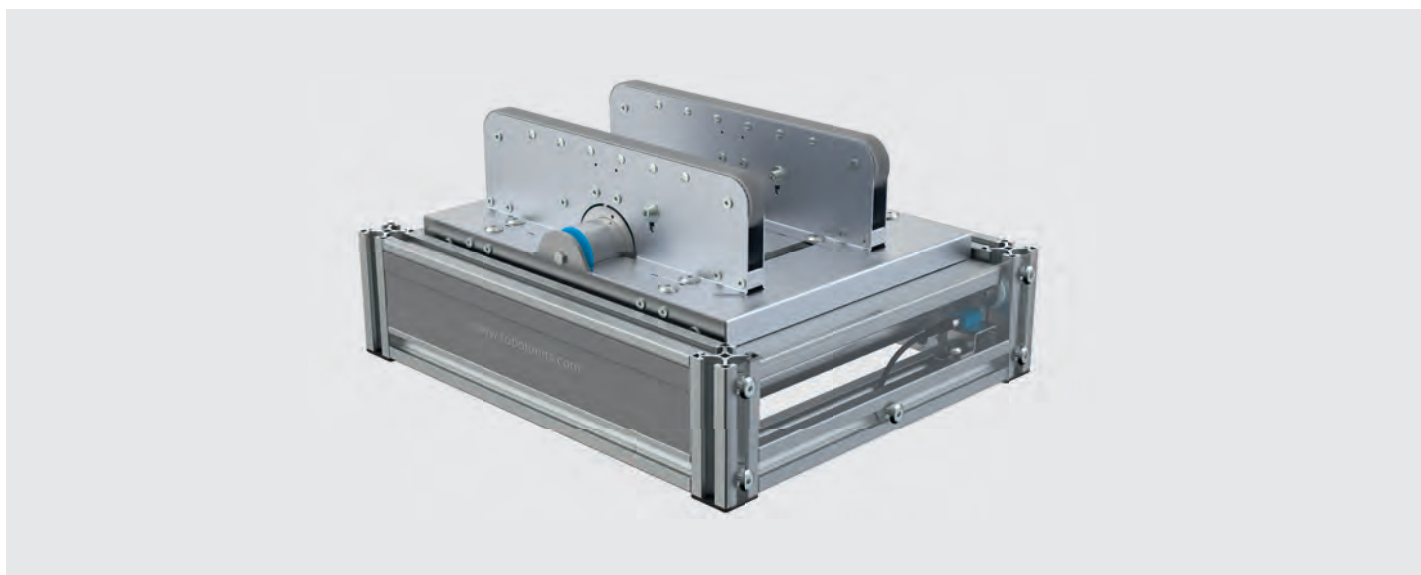
Powered Roller Conveyor Merge



Powered Roller Conveyor Curved



Transfer Unit 90°




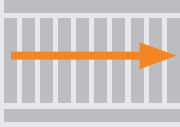


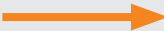
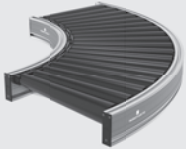

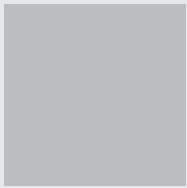




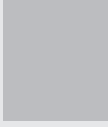

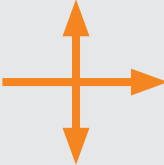
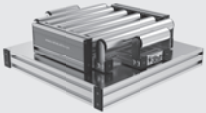

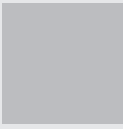

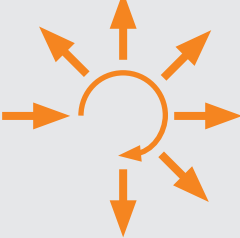

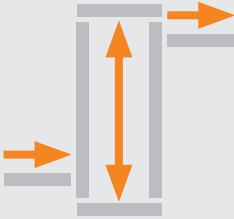
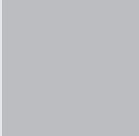

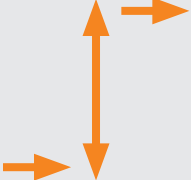
Turntable



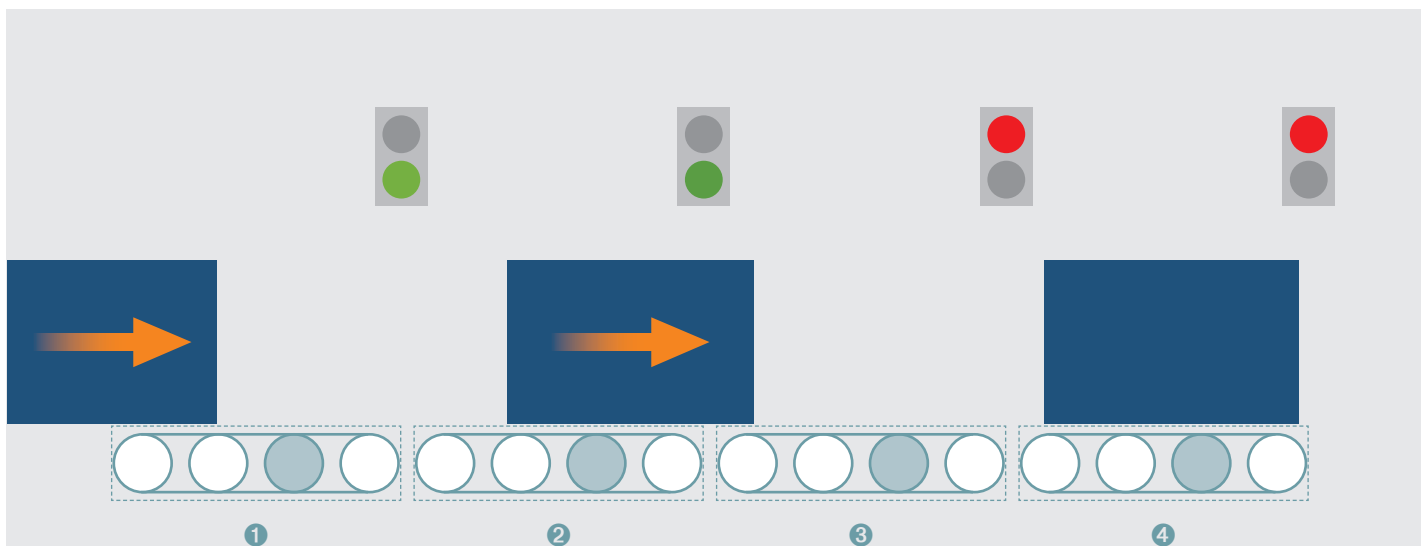
Lift Station



Powered Roller Conveyor Modules

Module	Material alignment Available range Transfer	Space requirement	Output (cycles/h)	Applications
	 <p>0°</p>		 <p>max. 2000</p>	
	 <p>45° / 90°</p>		 <p>max. 2000</p>	
	 <p>0° / ±90°</p>		 <p>max. 1500</p>	
	 <p>0° - 270°</p>		 <p>max. 350</p>	
	 <p>0°</p>		 <p>max. 350</p>	

Zero Pressure Accumulation



The roller conveyor with zero pressure accumulation logic (ZPA) is divided into individual zones. The different zones are interconnected and communicate with each other. If a transported product is running towards an occupied zone ④, the product remains in the previous free zone ③. When the occupied zones become free ④, upstream zones follow automatically ③.

Advantages

- + "Plug and Play" solution with decentralized controller = no primary control required (e.g. PLC)
- + Only the required rollers turn = energy efficient
- + Zero pressure (no-contact) conveying

Drive Technology

Brushless 24 V DC motor

Drive head for power transmission using Poly-V belts

Safeguard integrated into roller

Advantages compared to 230/400V:

- + Lower energy consumption and operating costs
- + Reduced wear = less maintenance
- + Reduced noise



Side Guides for Powered Roller Conveyors
see page 47

Supported control protocols:



Application

Zero pressure accumulation of products in various sizes.

Technical Data

Brushless 24 V DC motor
Speed Code / Speed:
15 = 2 to 20 m/min (Alternative)
20 = 10 to 28 m/min (Standard)
35 = 15 to 50 m/min (Alternative)
Temperature range: from +2°C to +40°C
Max. Continuous current per motorized roller: 2.5 A
Ø Continuous current per motor roller: 1.5 A
Conveyor rollers driven by Poly-V belts
Roller material: galvanized steel
Belt material: Chloroprene with PA tension members
Frame material: clear anodized aluminum
Max. product load: 50 kg

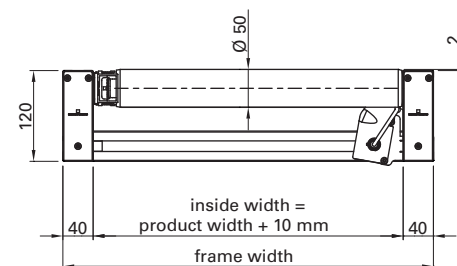
Control Unit:

Completely pre-installed incl. sensors

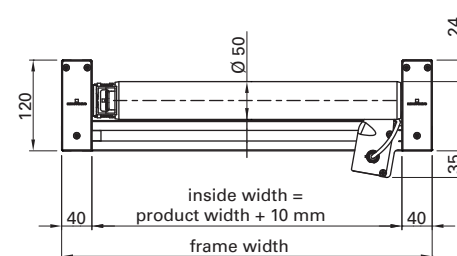
Configuration:

Zero pressure accumulation control logic
(not with EtherCAT)

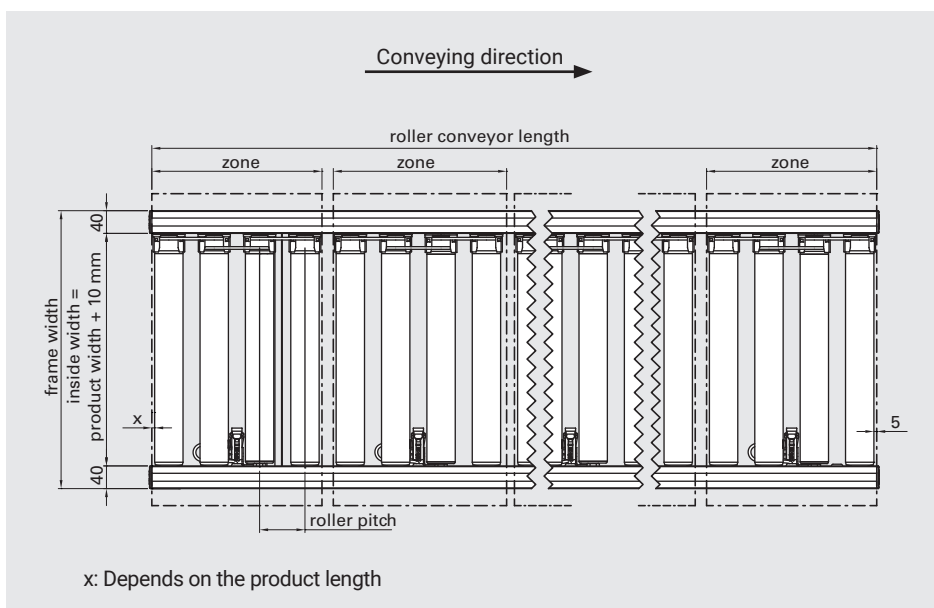
Option without side guides



Option with side guides

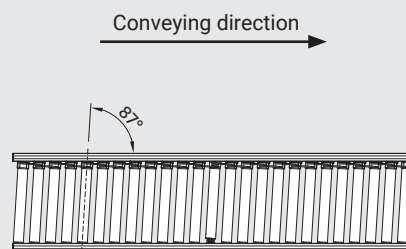


Dimensions



Variant

Angled Powered Roller Conveyor



Standard Dimensions

Description	Box (LxW)	Inside width	Frame width	Roller pitch	Standard length up to
Powered Roller Conveyor Straight	400 x 300 mm	310 mm	390 mm	105 mm	6000 mm
Powered Roller Conveyor Straight	300 x 400 mm	410 mm	490 mm	80 mm	6000 mm
Powered Roller Conveyor Straight	600 x 400 mm	410 mm	490 mm	160 mm	6000 mm
Powered Roller Conveyor Straight	600 x 400 mm	610 mm	690 mm	105 mm	6000 mm

Special widths (min. inside width 310 mm, max. inside width 1210 mm), special lengths and special roller pitch are available on request.
Guide line for roller pitch calculation = product length in conveying direction / 3.75

R5M

Powered Roller Conveyor Merge



Side Guides for Powered Roller Conveyors
see page 47

Supported control protocols:



Application

Zero Pressure accumulation conveying and merging into an existing conveyor line

Technical Data

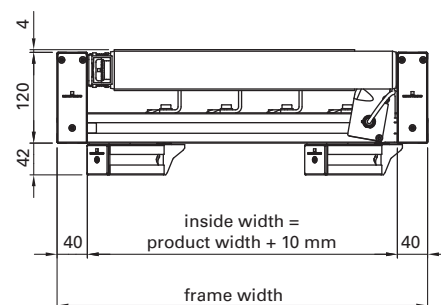
Brushless 24 V DC motor
Speed Code / Speed:
15 = 2 to 20 m/min (Alternative)
20 = 10 to 28 m/min (Standard)
35 = 15 to 50 m/min (Alternative)
Temperature range: from +2°C to +40°C
Max. Continuous current per motorized roller: 2.5 A
Ø Continuous current per motor roller: 1.5 A
Conveyor rollers driven by Poly-V belts
Roller material: galvanized steel
Belt material: Chloroprene with PA tension members
Frame material: clear anodized aluminum
Max. product load: 50 kg

Control Unit:

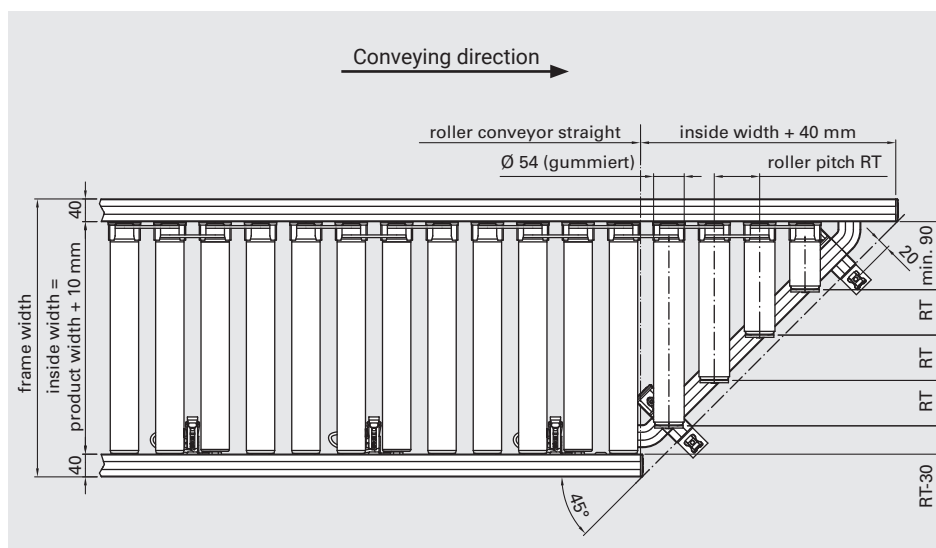
Completely pre-installed incl. sensors and control cabinet

Configuration:

Zero pressure accumulation control logic with downstream roller conveyor (not with EtherCAT)

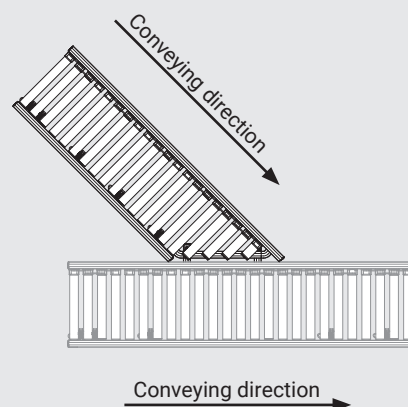


Dimensions



Layout

Powered Roller Conveyor Straight with Merge



Standard Dimensions

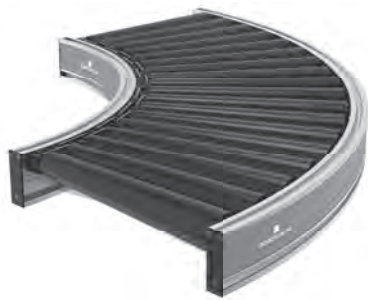
Description	Box (LxB)	Inside width	Frame width	Roller pitch	Standard length up to
Powered Roller Conveyor Merge	400 x 300 mm	310 mm	390 mm	105 mm	6000 mm
Powered Roller Conveyor Merge	300 x 400 mm	410 mm	490 mm	80 mm	6000 mm
Powered Roller Conveyor Merge	600 x 400 mm	410 mm	490 mm	160 mm	6000 mm
Powered Roller Conveyor Merge	400 x 600 mm	610 mm	690 mm	105 mm	6000 mm

Special dimensions are available on request.

Drawing dimensions in mm

R5C

Powered Roller Conveyor Curved



Side Guides for Powered Roller Conveyors
see page 47

Supported control protocols:

**Application**

Zero pressure accumulation of products in various sizes.

Technical Data

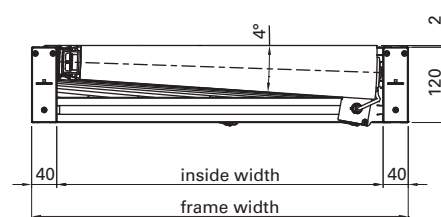
Brushless 24 V DC motor
Speed Code / Speed:
15 = 2 to 20 m/min (Alternative)
20 = 10 to 28 m/min (Standard)
35 = 15 to 50 m/min (Alternative)
Temperature range: from +2°C to +40°C
Max. Continuous current per motorized roller: 2.5 A
Ø Continuous current per motor roller: 1.5 A
Conveyor rollers driven by Poly-V belts
Roller material: galvanized steel, conical plastic attachments
Belt material: Chloroprene with PA tension members
Frame material: clear anodized aluminum
Max. product load: 50 kg

Control Unit:

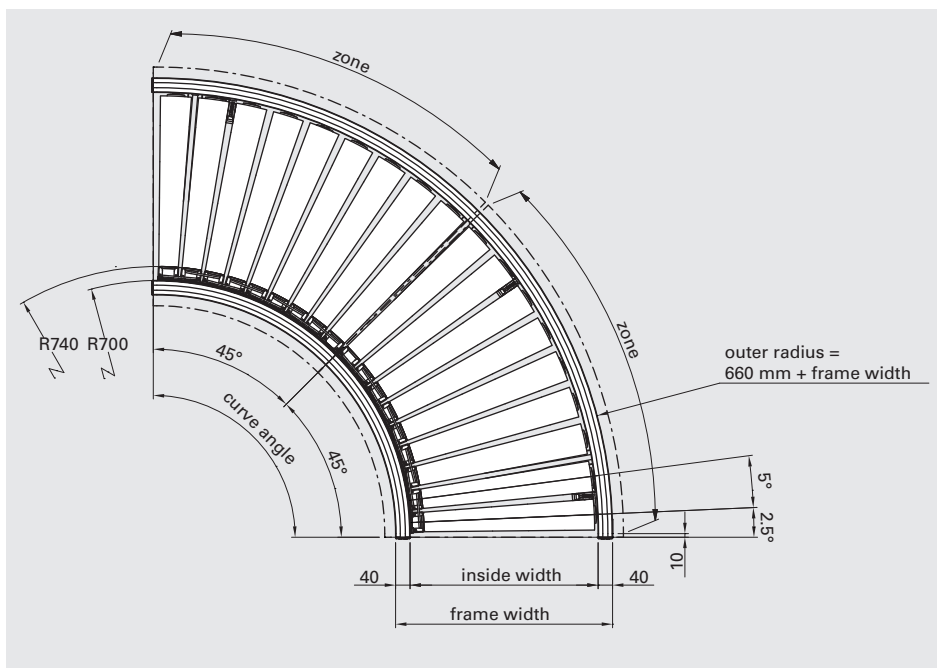
Completely pre-installed incl. sensors

Configuration:

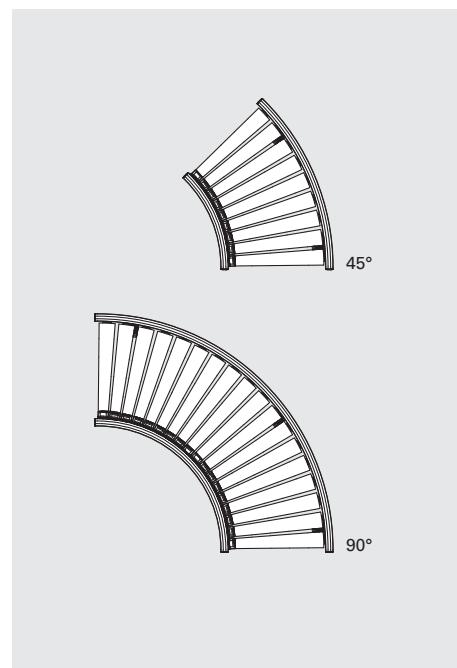
Zero pressure accumulation control logic (not with EtherCAT)



Dimensions



Standard Angles



The inside width depends on the dimensions of the transported product. Inside width min. 310 mm, inside width max. 1040 mm
Special curve angles are available on request.

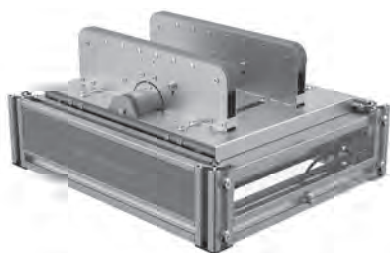
Request For Quote / Order

Please use our request form at www.robotunits.com.

Drawing dimensions in mm

R5T

Transfer Unit 90°



Side Guides for Powered Roller Conveyors
see page 47

Supported control protocols:

**Application**

90 degree transfer of products in various sizes. It can be integrated into any zone of a Powered Roller Conveyor Straight.

Technical Data

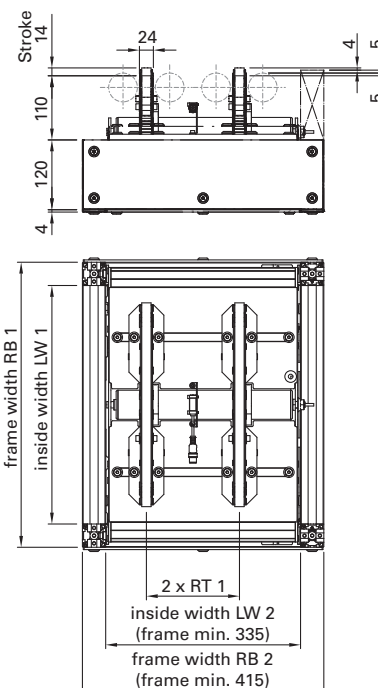
Motor: 24 V DC motor for lift motion with a temperature range from +2°C to +40°C
Max. Continuous current per motorized roller: 3.5 A
Roller material: galvanized steel
Timing belt material: PU
Time for Stroke: 0.5 s
Max. product load: 50 kg

Control unit:

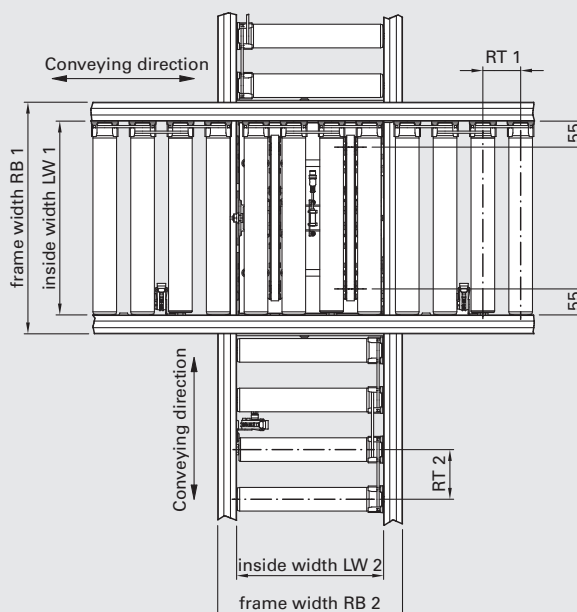
Completely pre-installed incl. sensors

Configuration:

Zero pressure accumulation control logic with downstream roller conveyor (not with EtherCAT)



Dimensions



Standard Dimensions

Description	Box (LxB)	Powered Roller Conveyor with Transfer Unit 90°			In-feed or out-feed Powered Roller Conveyor		
		LW 1	RB 1	RT 1	LW 2	RB 2	RT 2
Transfer Unit 90°	400 x 300 mm	310 mm	390 mm	105 mm	410 mm	490 mm	80 mm
Transfer Unit 90°	300 x 400 mm	410 mm	490 mm	80 mm	310 mm	390 mm	105 mm
Transfer Unit 90°	600 x 400 mm	410 mm	490 mm	160 mm	610 mm	690 mm	105 mm
Transfer Unit 90°	400 x 600 mm	610 mm	690 mm	105 mm	410 mm	490 mm	160 mm

Special dimensions are available on request.

Drawing dimensions in mm



Side Guides for Powered Roller Conveyors
see page 47

Supported control protocols:



Application

Correctly positioned turning of products in various sizes

Technical Data

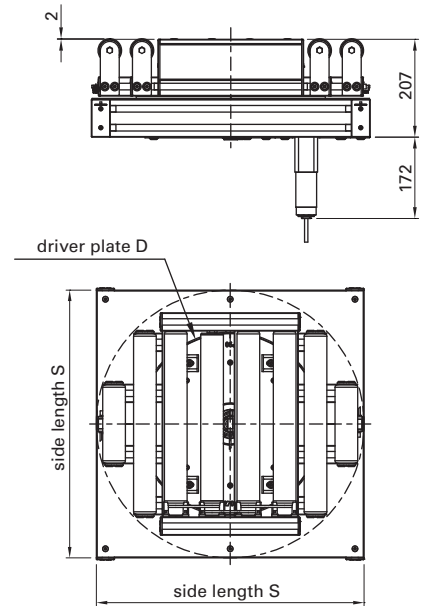
Brushless 24 V DC motor for lift and belt
Temperature range from +2°C to +40°C
Max. Continuous current per motorized roller: 2.5 A
Turning range: 0° – 270°
Cycle time for 90°: 2.5 s
Max. product load: 50 kg

Control unit:

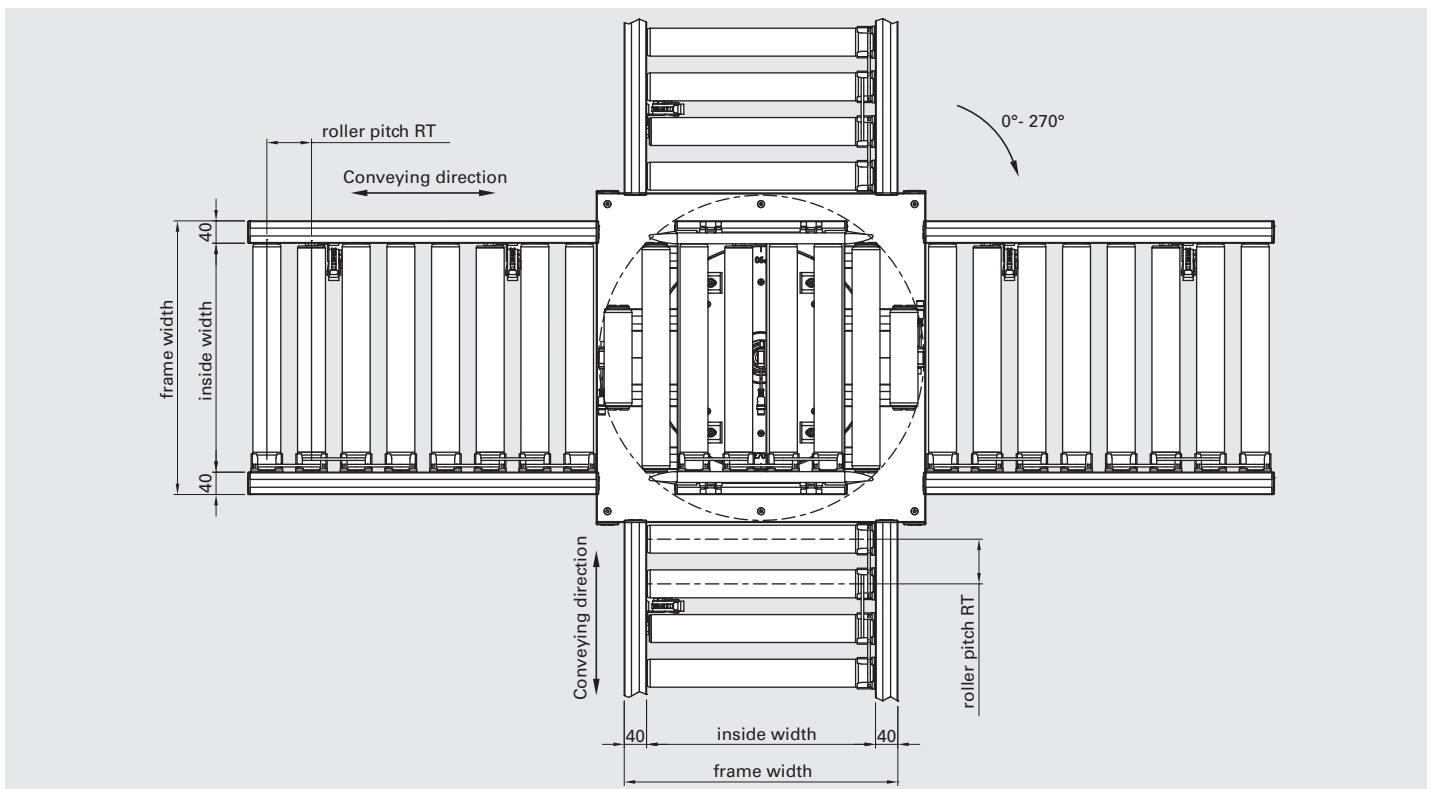
Completely pre-installed incl. sensors

Configuration:

Zero pressure accumulation control logic with downstream roller conveyor (not with EtherCAT)



Dimensions



Standard Dimensions

Description	Box (LxW)	Roller Conveyor on the Turntable			Turntable	
		Inside width	Frame width	Roller pitch	Side length S	Carriage plate D
Turntable with Powered Roller Conveyor	400 x 300 mm	310 mm	390 mm	105 mm	590 mm	Ø 400 mm
Turntable with Powered Roller Conveyor	300 x 400 mm	410 mm	490 mm	80 mm	590 mm	Ø 400 mm
Turntable with Powered Roller Conveyor	600 x 400 mm	410 mm	490 mm	160 mm	790 mm	Ø 630 mm
Turntable with Powered Roller Conveyor	400 x 600 mm	610 mm	690 mm	105 mm	790 mm	Ø 630 mm

Special dimensions are available on request.

Drawing dimensions in mm

R5L

Lift Station With Powered Roller Conveyor



Application

Zero pressure accumulation conveying of products in different sizes over 2 levels

Technical Data

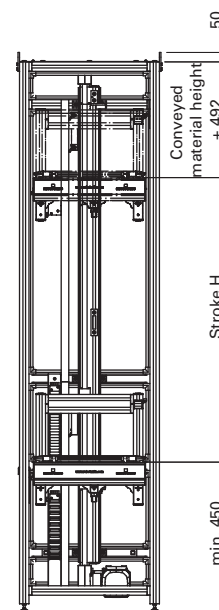
Lift station with three-phase geared motor 400V
 Speed max. 1 m/s
 Acceleration max. 0,7 m/s²
 Roller conveyor with brushless 24V DC motor
 Speeds from 10 to 28 m/min
 Temperature range from + 2°C bis + 40°C
 Frame material: clear anodized aluminum
 Enclosure with polycarbonate panels, optional with safety tunnel and door

Control Unit:

Completely pre-installed incl. sensors and control cabinet

Configuration:

Zero pressure accumulation control logic with downstream roller conveyor (not with EtherCAT)

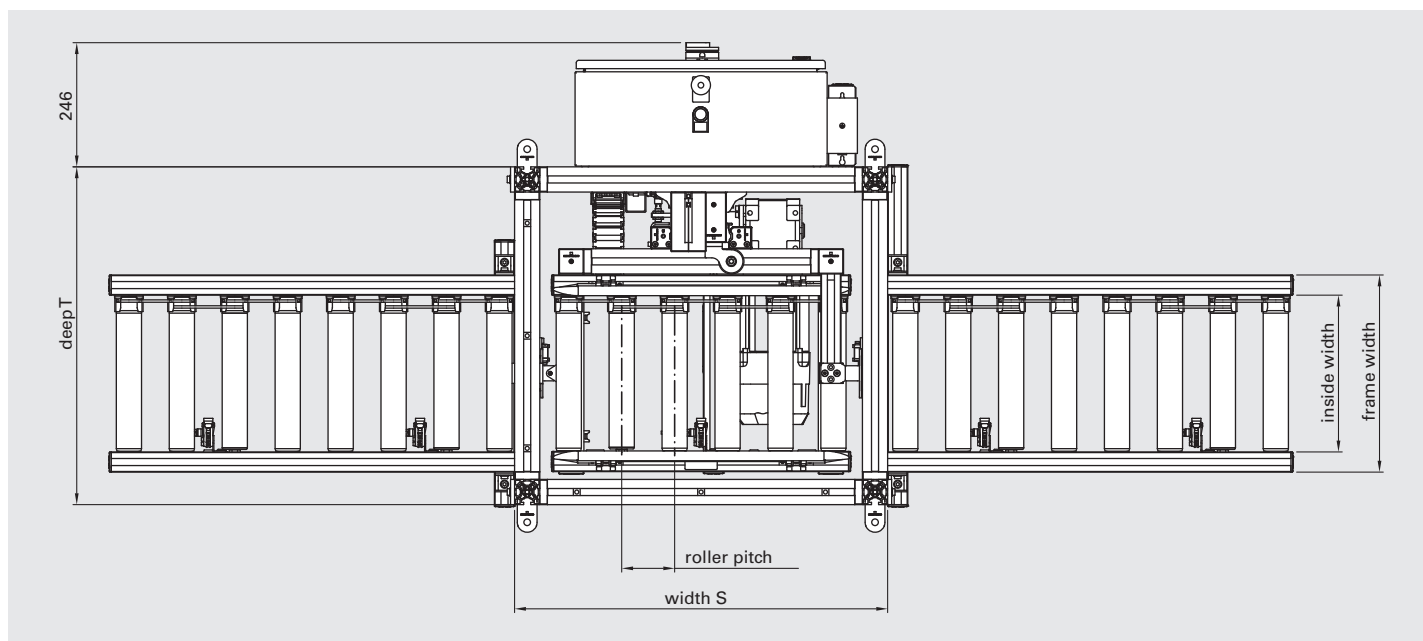


Side Guides for Powered Roller Conveyors see page 47

Supported control protocols:



Dimensions



Standard Dimensions

Description	Box (LxW)	Roller Conveyor with Lift Station			Lift Station	
		Inside width	Frame width	Roller pitch	Base area (SxT)	Max. Hub h
Lift Station with Powered Roller Conveyor	400 x 300 mm	310 mm	390 mm	105 mm	740 x 670 mm	5000 mm
Lift Station with Powered Roller Conveyor	300 x 400 mm	410 mm	490 mm	80 mm	755 x 770 mm	5000 mm
Lift Station with Powered Roller Conveyor	600 x 400 mm	410 mm	490 mm	160 mm	1015 x 770 mm	5000 mm
Lift Station with Powered Roller Conveyor	400 x 600 mm	610 mm	690 mm	105 mm	740 x 970 mm	5000 mm

Special dimensions are available on request.

Drawing dimensions in mm

**Application**

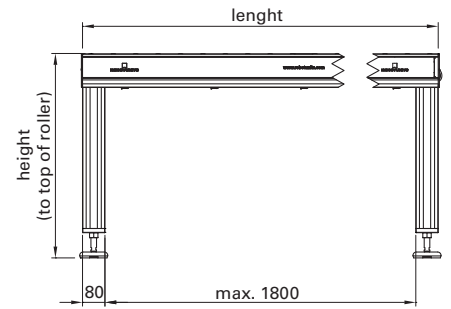
Stand for Powered Roller Conveyor
Straight

Technical Data

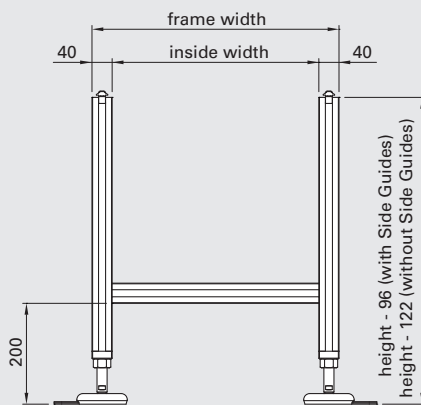
Material: clear anodized aluminum,
galvanized GD-Zn, galvanized steel,
PA 6 or rubber

Scope of Delivery

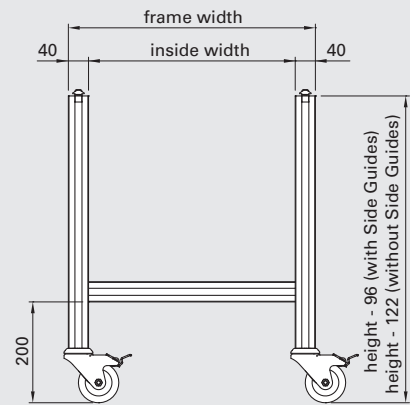
Stand segment fully assembled



Standard Conveyor Stand

S

Leveling bases BAS 1120
Height adjustment ± 30 mm

R

Swivel Castors with brake
CAS 3080

Order Code

Description	Order Code ¹		
	Frame width	Type	Height
Stand for R5S	R5F	---	_ NN

1) Please complete the order code by adding the corresponding parameters for order processing.

Drawing dimensions in mm

R5G

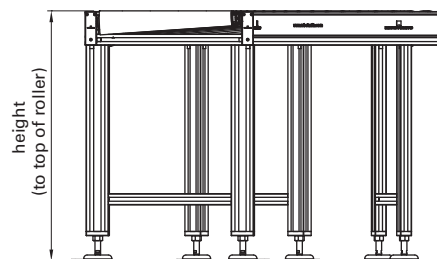
Stand for R5C



Application
Stand for Powered Roller Conveyor
Curved

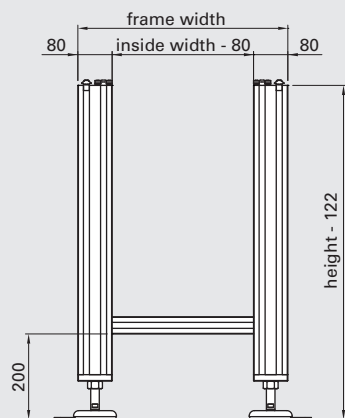
Technical Data
Material: clear anodized aluminum,
galvanized GD-Zn, galvanized steel,
PA 6 or rubber

Scope of Delivery
Stand segment fully assembled



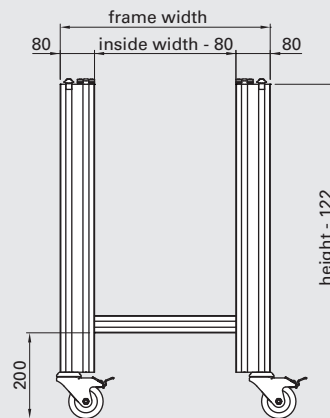
Standard Conveyor Stand

S



Leveling bases BAS 1120
Height adjustment ± 30 mm

R



Swivel Castors with brake
CAS 3080

Order Code

Description	Order Code ¹		
	Frame width	Type	Height
Stand for R5C	R5G	_ NN	----

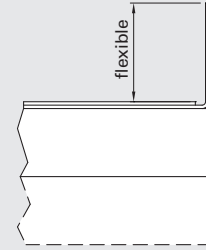
1) Please complete the order code by adding the corresponding parameters for order processing.
Drawing dimensions in mm

Side Guide System for Belt, Timing Belt and Modular Belt Conveyors

Belt Conveyor (integrated)



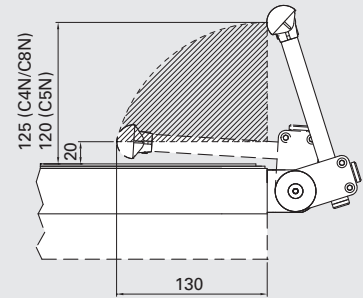
see catalog
page 16 (C4N)
page 18 (C5N)
page 20 (C8N)



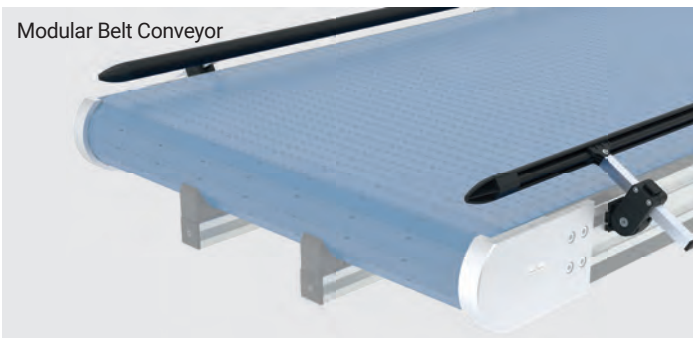
Belt Conveyor



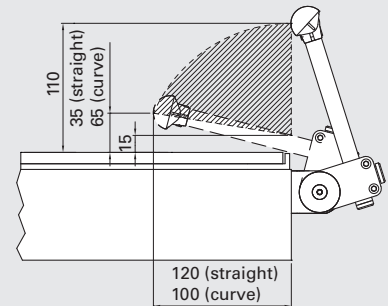
Guide range with
standard square
tube length:
150 mm
(special length
possible)



Modular Belt Conveyor



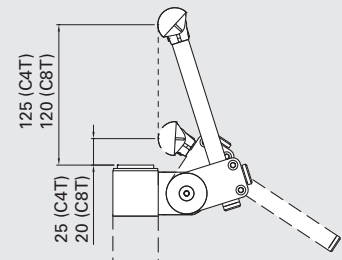
Guide range with
standard square
tube length:
150 mm
(special length
possible)



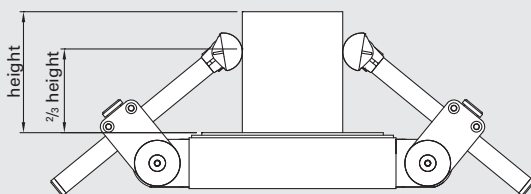
Timing Belt Conveyor



Guide range with
standard square
tube length:
150 mm
(special length
possible)



Construction



Recommended height for side guide



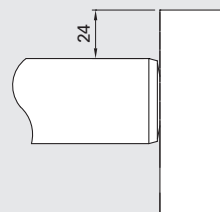
Adjustment range side guide

Side Guide System for Powered Roller Conveyors

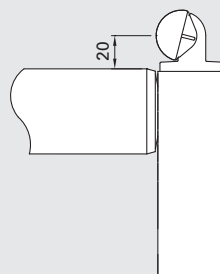
Integrated (only with Powered Roller Conveyor Straight)



see catalog page 38



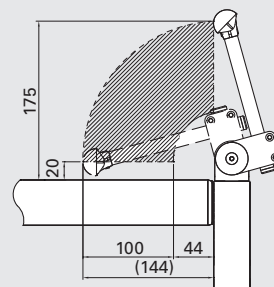
Rigid



Flexible, with overhang



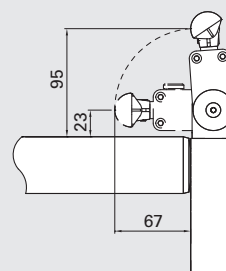
Guide range with standard square tube length: 150 mm (special length possible)



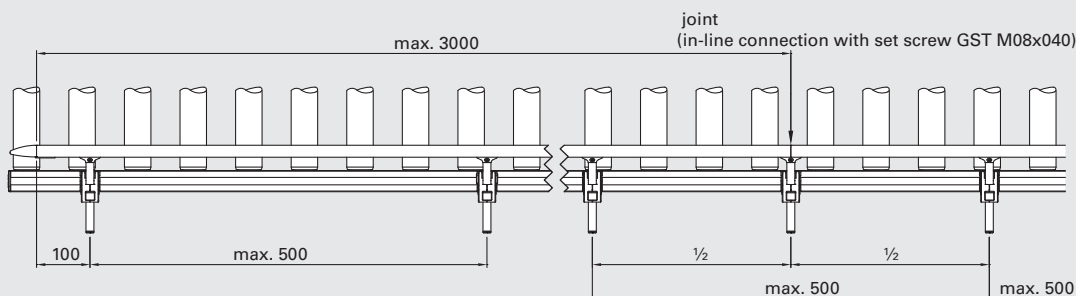
Flexible, without overhang



Guide range with standard square tube length: 30 mm (special length possible)



Assembly



Divide side guide base or clip evenly.
Attention: Do not exceed maximum distances!

Application

For individual positioning of side guides

Technical Data

Material:

Basic part: PA6 black

Brackets: PA6 GF30 black

End cap: 18x18 PE-LLD

Hardware material: Galvanized steel

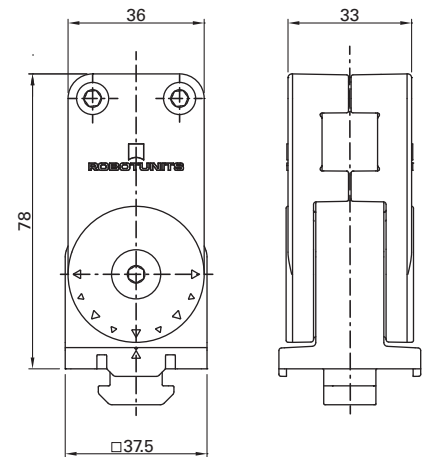
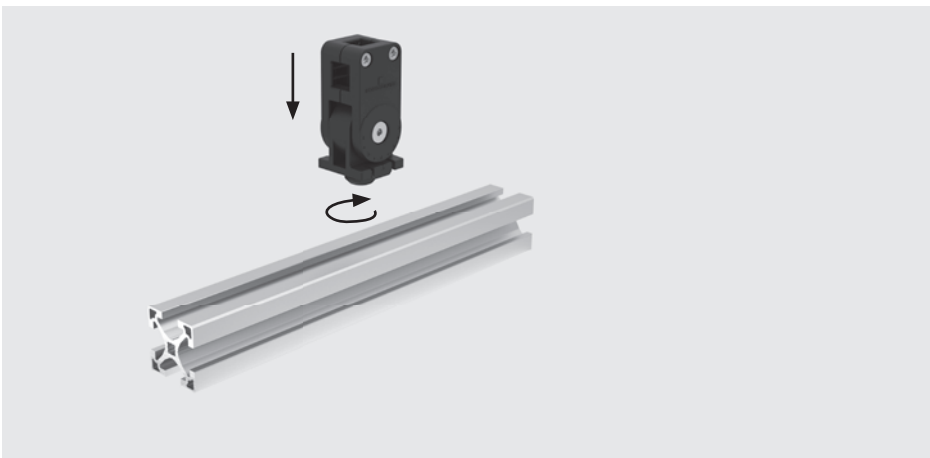
Scope of Delivery

- 1 Side Guide Basic Part
- 1 Side Guide Nut Holder
- 1 Side Guide Bracket Screw
- 2 Screw IBS M05x025
- 2 Hexagon nuts SKM M005
- 1 Screw IBS M08x030 EXNIKO
- 1 Washer SIS M08x13x0.8
- 1 Hexagon nut SKM M008
- 1 CAP 1818 cover cap

Tightening Torque

IBS M05x025 = 6 Nm

IBS M08x030 EXNIKO = 10 Nm

**Assembly****Order Code**

Description	Order Code	Weight
Side Guide Base	COP4561	0.095 kg

CO_900_

Side Guide Clamp With Rod



Application

For individual positioning of side guides

Technical Data

Material:

Clamping part: PA6.6 black

End cap: 15x15 PE-LLD

Square tube: Aluminium EN AW-6060-T66

Fixing material: Galvanized steel

Scope of Delivery

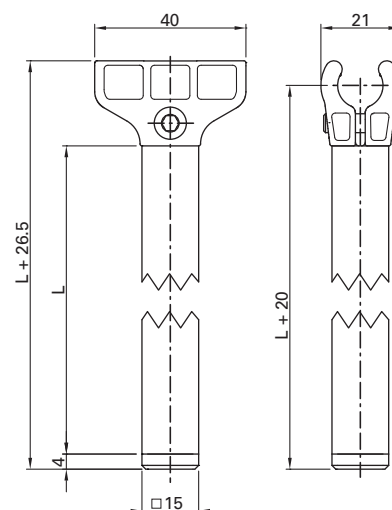
1 Side Guide Clamping Part

1 Screw IBS M05x014

1 Hexagon nut SKM M005

1 CAP 1515 cover cap

1 Square tube 15x15 length 150 mm or variable



Order Code

Description	Order Code ¹	Weight
Side Guide Clamp with Rod, length 150 mm	COP9001	0.045 kg
Side Guide Clamp with Rod, cut to length	COL9000SNN	

1) Please complete the order by adding the corresponding parameters for order processing.

Drawing dimensions in mm

COP4570

Side Guide Clip

**Application**

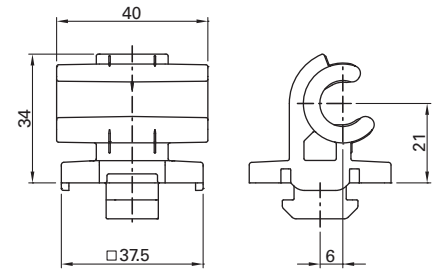
To accommodate side guides

Technical Data

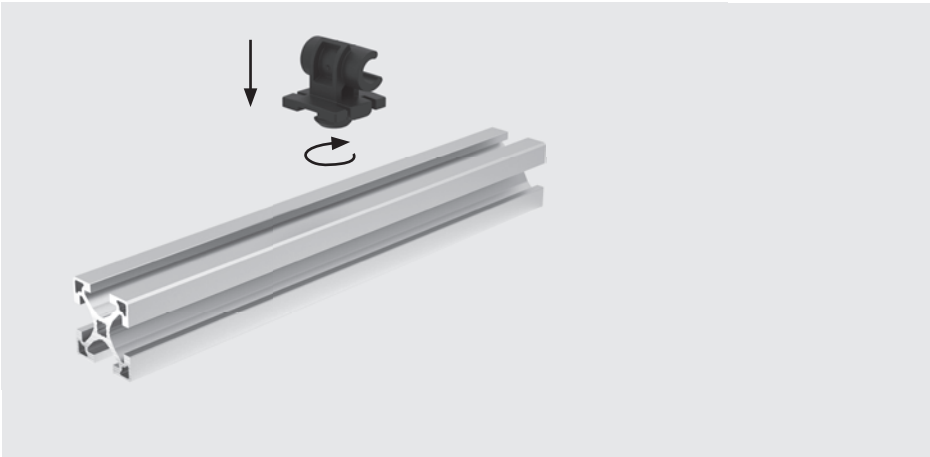
Material: PA6 black

Scope of Delivery

10 Side Guide Clips



Assembly



Order Code

Description	Order Code	Weight/Piece
Side Guide Clip, pack of 10 pcs.	COP4570	0.020 kg

COP4590

Side Guide End Piece

**Application**

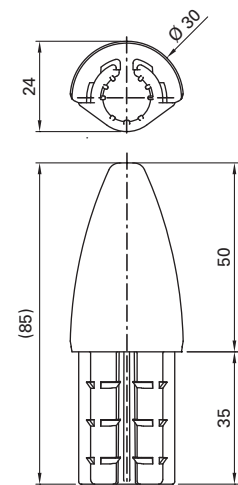
To cover ends of Side Guides

Technical Data

Material: PP ESD black

Scope of Delivery

4 Side Guide End Pieces



Order Code

Description	Order Code	Weight/Piece
Side Guide End Piece, pack of 4 pcs.	COP4590	0.010 kg

COL4590

Side Guide Plastic

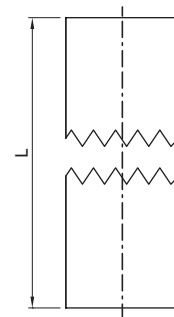
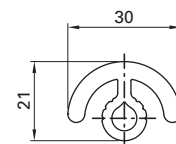
**Application**

Side Guide for conveyors

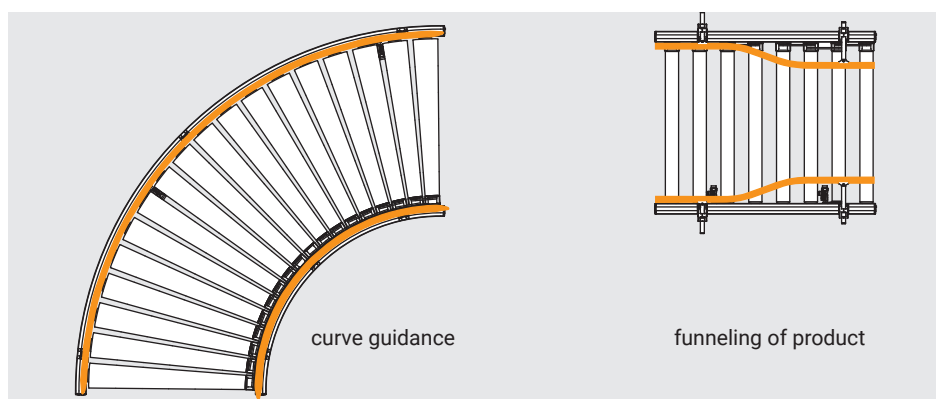
Technical Data

Material: PVC-U black

Plastic profile is thermoformable by using
a heat gun (softening point 80°C)



Application



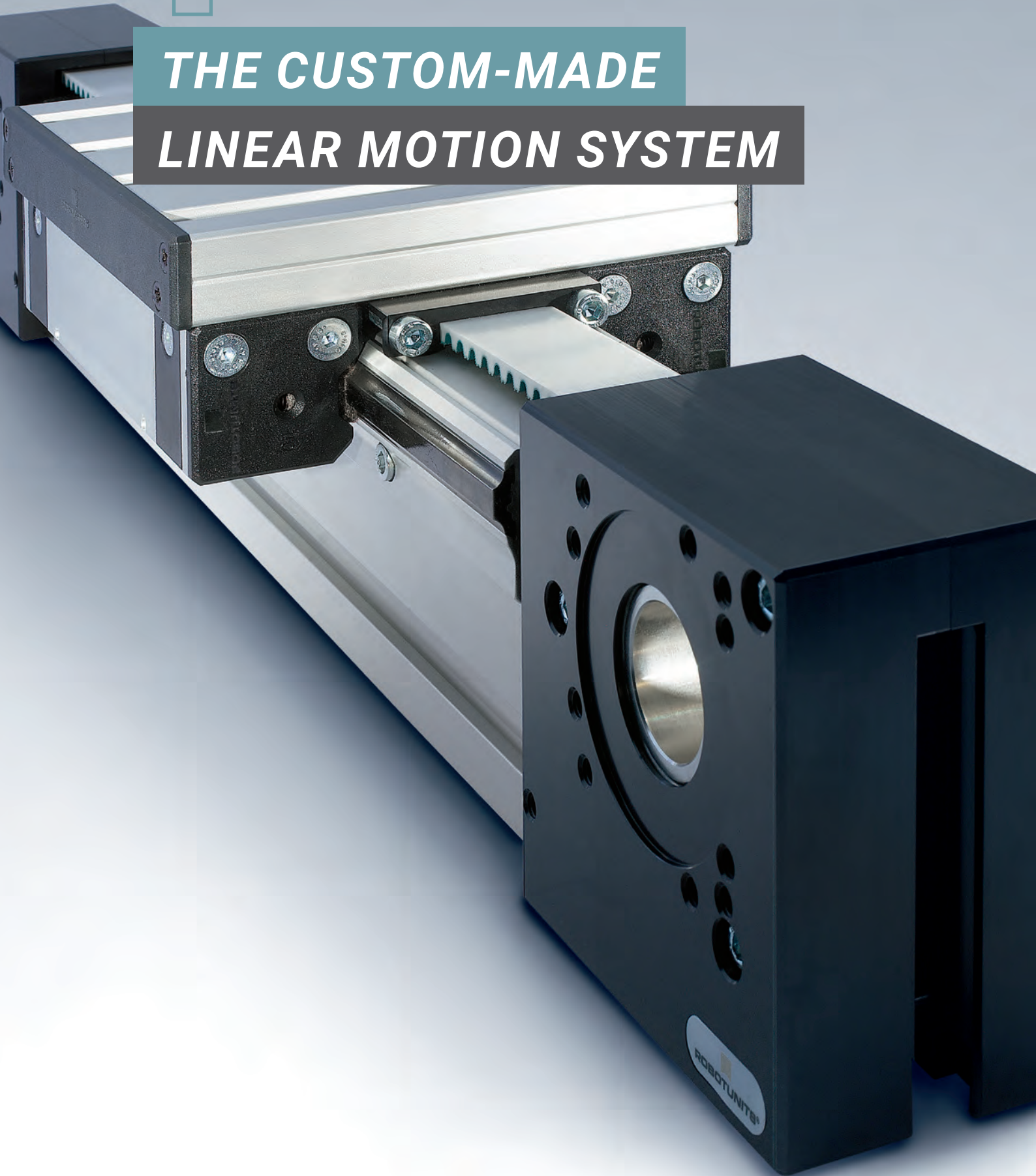
Order Code

Description	Order Code ¹	Weight/Meter
Side Guide Plastic, stock length 3000 mm	COL4590NNN	0.340 kg
Side Guide Plastic, cut to length	COL4590SNN	0.340 kg

1) Please complete the order by adding the corresponding parameters for order processing.
Drawing dimensions in mm



**THE CUSTOM-MADE
LINEAR MOTION SYSTEM**



Customized linear motion technology. Based on our proven Extrusion and Fastening Technology, we have developed Linear Motion Units that meet the highest customer expectations in terms of versatility, stability and efficiency.

Robotunits offers a Linear Motion System of the highest quality and precision, with a maximum potential for cost and time savings in design and assembly.



Fully integrated Linear Motion System

- completely compatible with the entire Modular Automation System
- belt return inside the extrusion
- leaves 3 sides of the extrusion free for additional attachments
- available in 50 mm series



It runs and runs and runs ...

- single or double idlers can be used, depending on the load
- high strength due to special captive design of idler extrusion
- large rollers
- integrated fastening option for Flexible Energy Chain



Guiderails instead of guide systems

- easily mounted guiderails eliminate the need for a separate guide system
- playfree datum edge positioning
- hardened, tempered steel guiderail allow heavier loads
- high wear resistance allows smooth and quiet operation
- quick and easy assembly



Modular design of linear motion units

- customized linear motion units, from single units to complex 3 axis gantry systems
- single and multiple guiderails available in one system
- X-,Y-,Z-combinations possible
- almost limitless combinations



Drive options

- motor selection tailored to performance requirements
- minimal design time through expansion coupling system
- one size pulley for all chassis sizes



Protection against damage

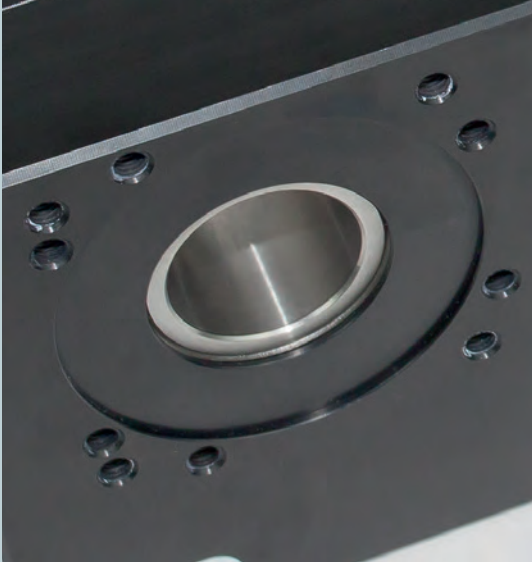
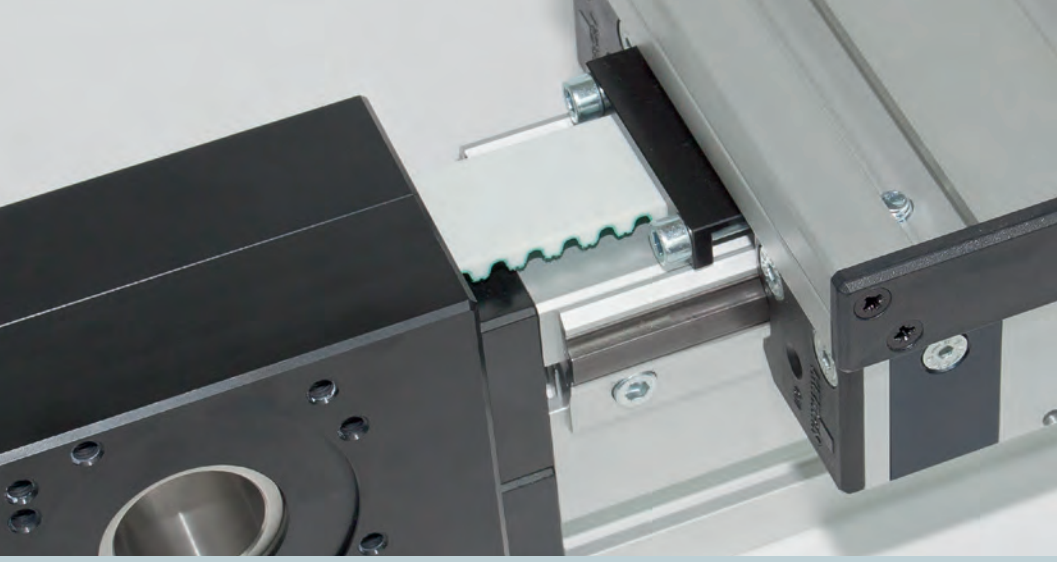
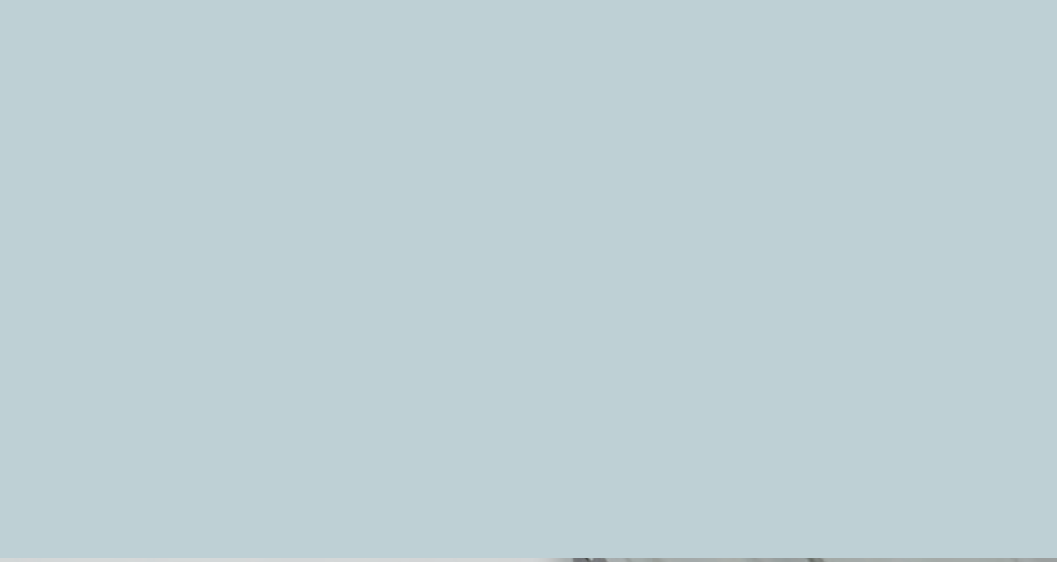
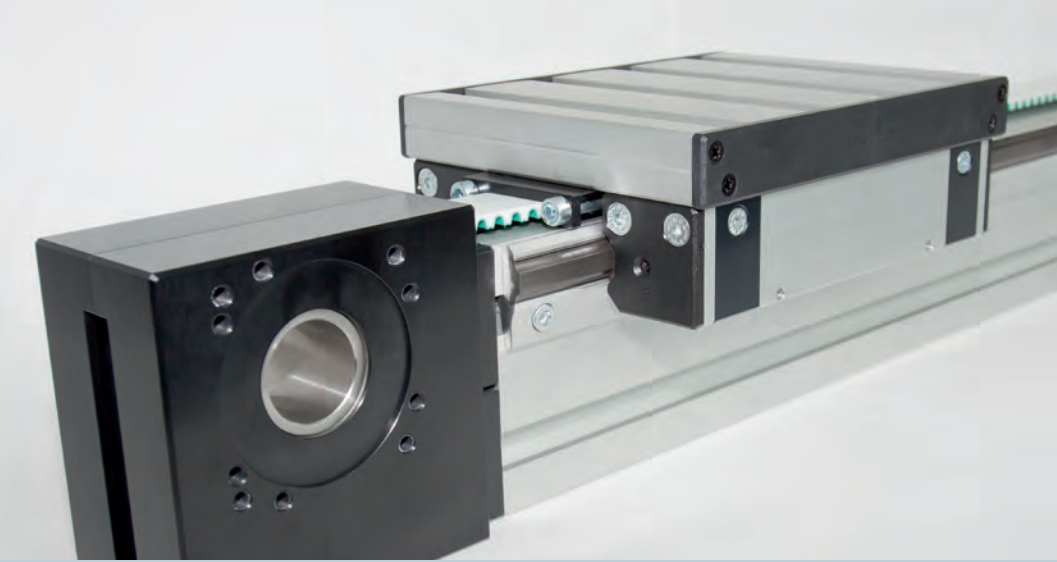
- integrated overrun protection prevents mechanical damage



Save time, cut cost

- easy selection of components
- easy to order
- minimal design time required
- quick and easy attachment of accessories
- easy installation





The Custom-Made Linear Motion System

Linear Motion Unit 50

Page 58

Linear Motion
Unit 50
LIL5010



P. 58



Linear Motion Unit 100

Page 59

Linear Motion Unit
100
LIL1010



P. 59

Linear Motion Unit 50 With Omega Drive

Page 60

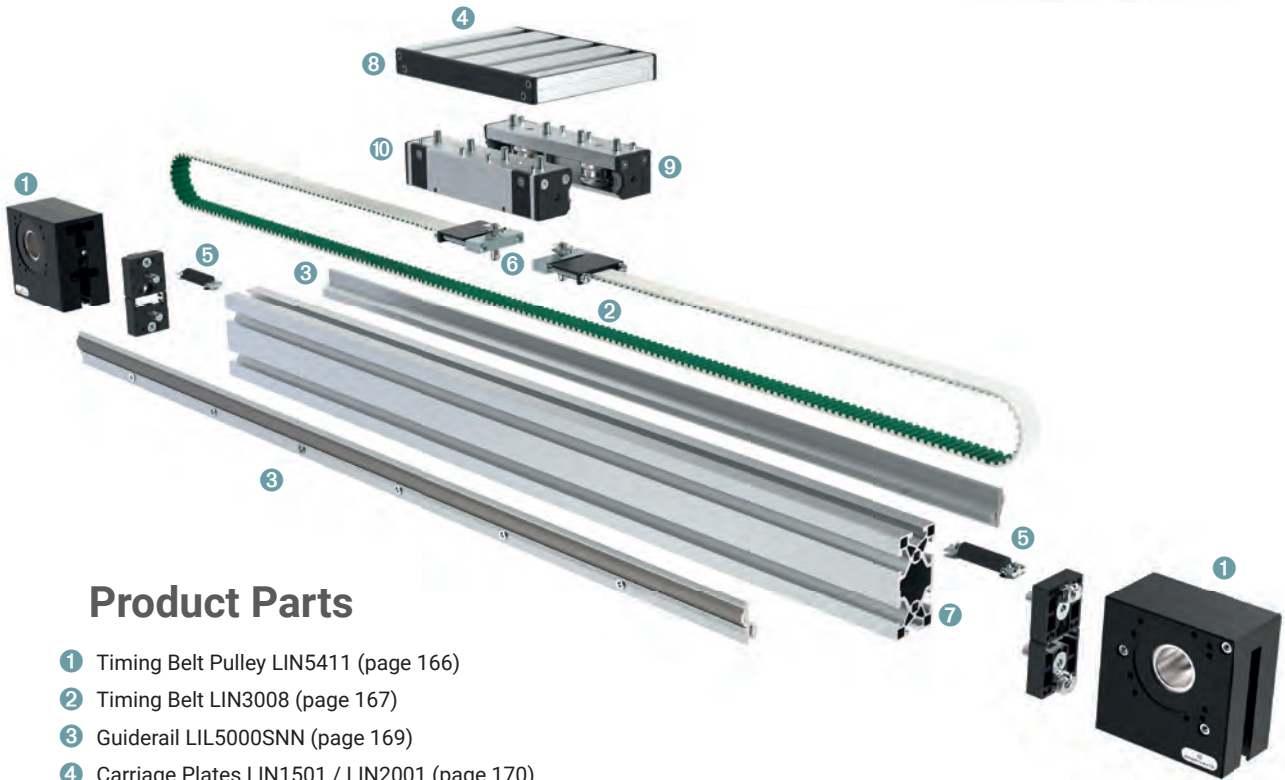
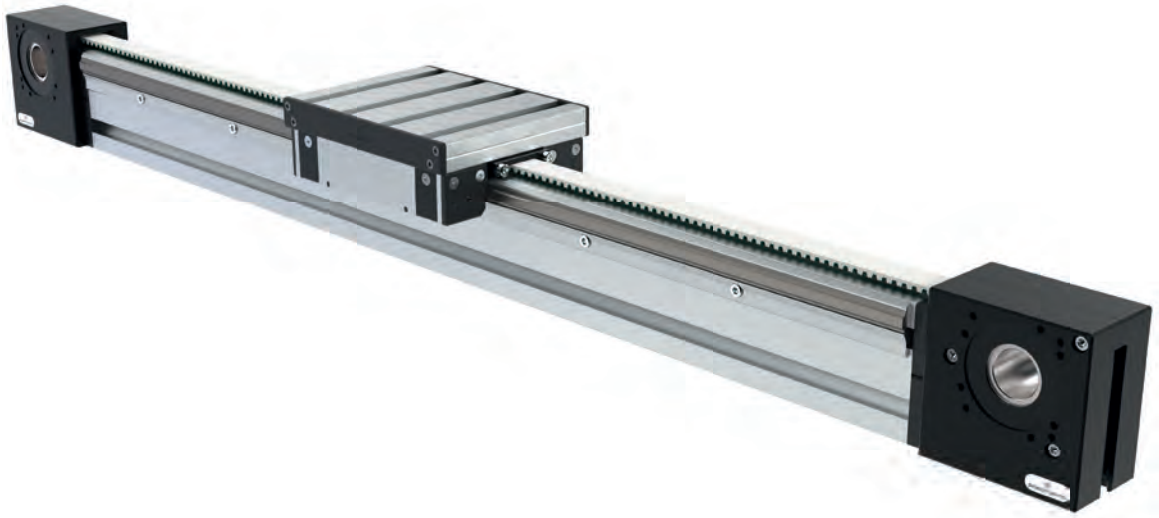
Linear Motion Unit
50 With Omega drive
LOL5010



P. 60

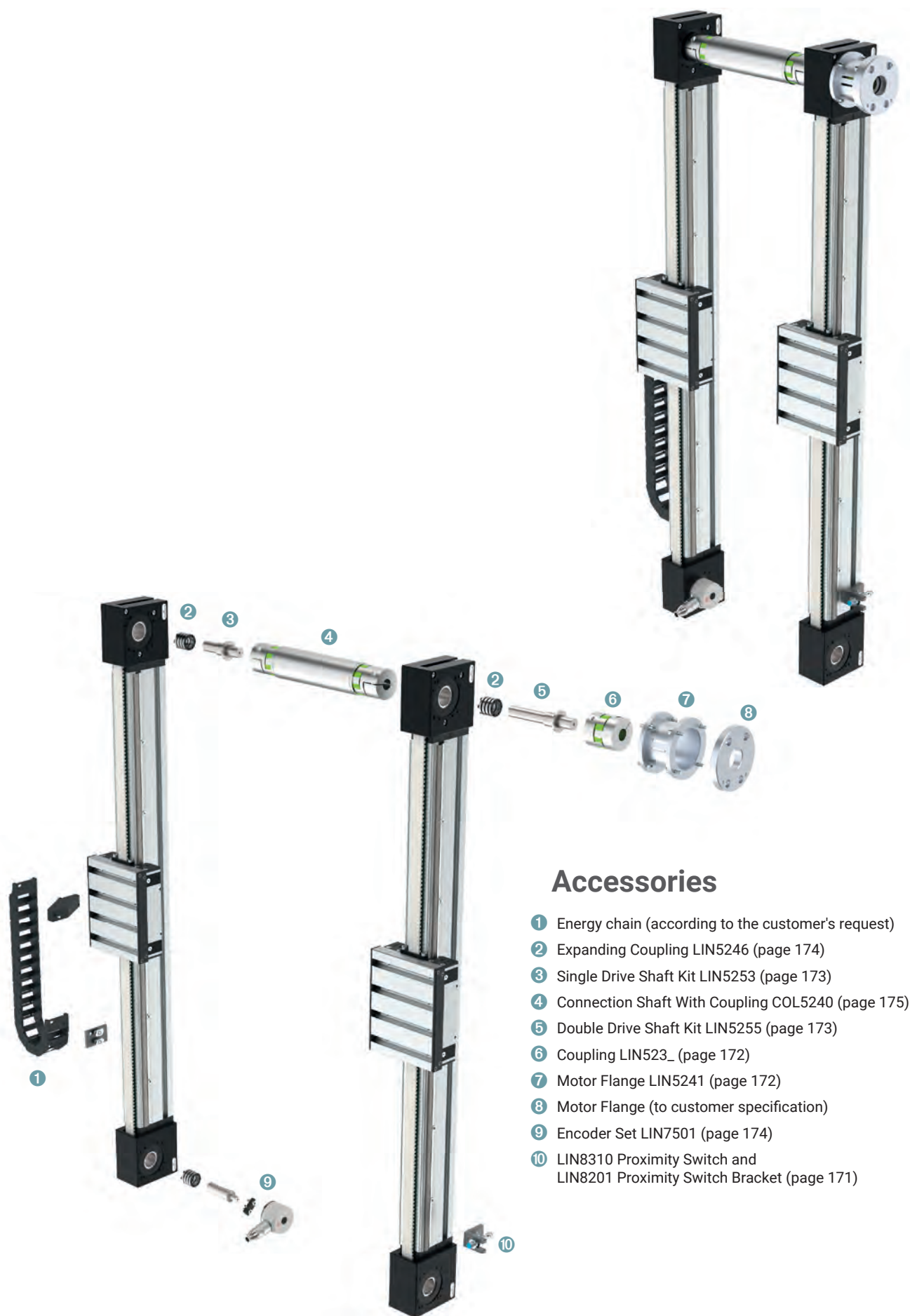
Linear Motion Accessories Overview

Page 143



Product Parts

- 1 Timing Belt Pulley LIN5411 (page 166)
- 2 Timing Belt LIN3008 (page 167)
- 3 Guiderail LIL5000SNN (page 169)
- 4 Carriage Plates LIN1501 / LIN2001 (page 170)
- 5 Limit Stop LIN5191 (page 170)
- 6 Timing Belt Clamp LIN3221 (page 167)
- 7 Extrusions, 50x50, 50x100, 50x200, or 100x100 (starting page 70)
- 8 End Cap CAP2521 (page 177)
- 9 Single Idler Kit, concentric LIN5001 or Double Idler Kit, concentric LIN5011 (page 168)
- 10 Single Idler Kit, eccentric LIN5003 or Double Idler Kit, eccentric LIN5013 (page 168)



Accessories

- ① Energy chain (according to the customer's request)
- ② Expanding Coupling LIN5246 (page 174)
- ③ Single Drive Shaft Kit LIN5253 (page 173)
- ④ Connection Shaft With Coupling COL5240 (page 175)
- ⑤ Double Drive Shaft Kit LIN5255 (page 173)
- ⑥ Coupling LIN523_ (page 172)
- ⑦ Motor Flange LIN5241 (page 172)
- ⑧ Motor Flange (to customer specification)
- ⑨ Encoder Set LIN7501 (page 174)
- ⑩ LIN8310 Proximity Switch and LIN8201 Proximity Switch Bracket (page 171)



Application

For transportation and exact positioning of parts.

Technical Data

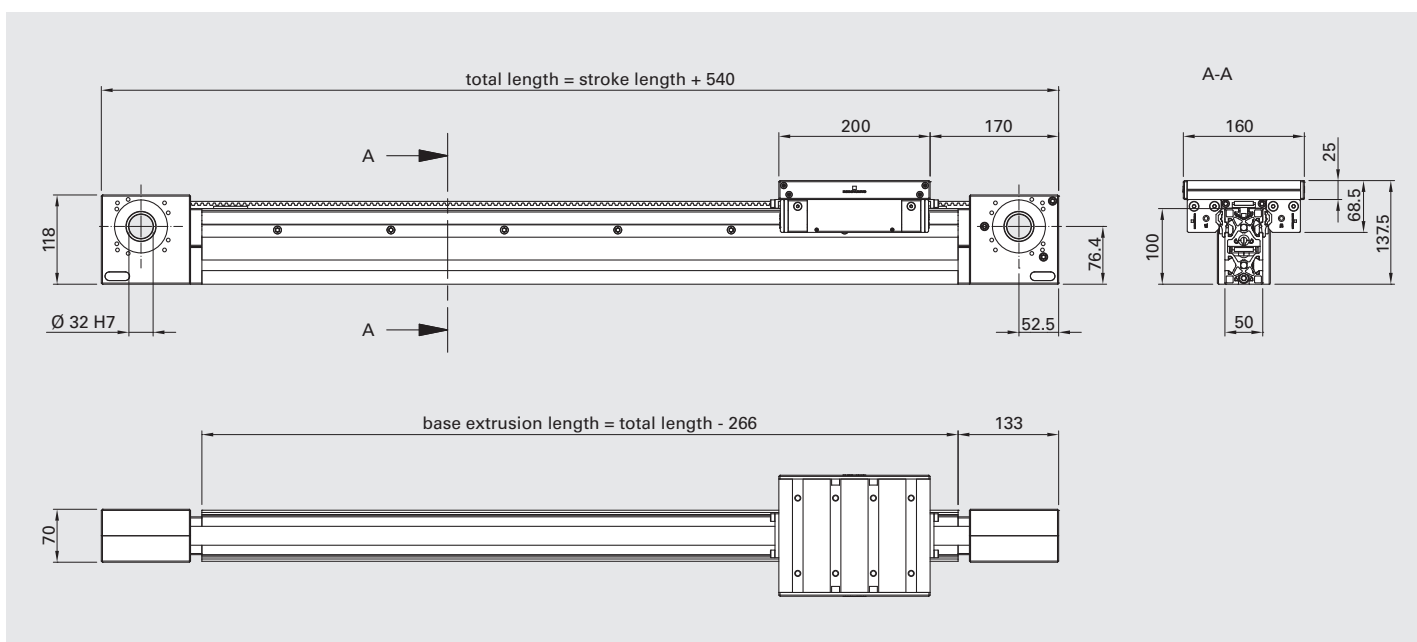
Base extrusion 50x100 (PIL 5010)
 Standard carriage plate: 200x150 mm
 Md max.: 60 Nm (max. transmittable drive torque)
 Carriage stroke per revolution: 200 mm
 Pitch circle diameter: 63.66 mm
 Idle torque: 1 Nm
 Positioning accuracy: ± 0.2 mm (without drive backlash)
 Weight of carriage: 2.66 kg

Assembly Instructions

See page 195

Eccentric Key LIN 9990 (page 169) is needed to adjust the eccentric roller

Dimensions



Order Code

Description	Order Code ¹		
	Base Extrusion	Type	Stroke Length
Linear Motion Unit 50	LIL 5010	SNN	—

1) Please complete the order by adding the corresponding parameters for order processing.
 Drawing dimensions in mm

LIL1010

Linear Motion Unit 100



Application

For transportation and exact positioning of parts.

Technical Data

Base extrusion 100x100 (PIL 1010)
 Standard carriage plate: 200x200 mm
 Md max.: 60 Nm (max. transmittable drive torque)
 Carriage stroke per revolution: 200 mm
 Pitch circle diameter: 63.66 mm
 Idle torque: 1 Nm
 Positioning accuracy: ± 0.2 mm (without drive backlash)
 Weight of carriage: 3.04 kg

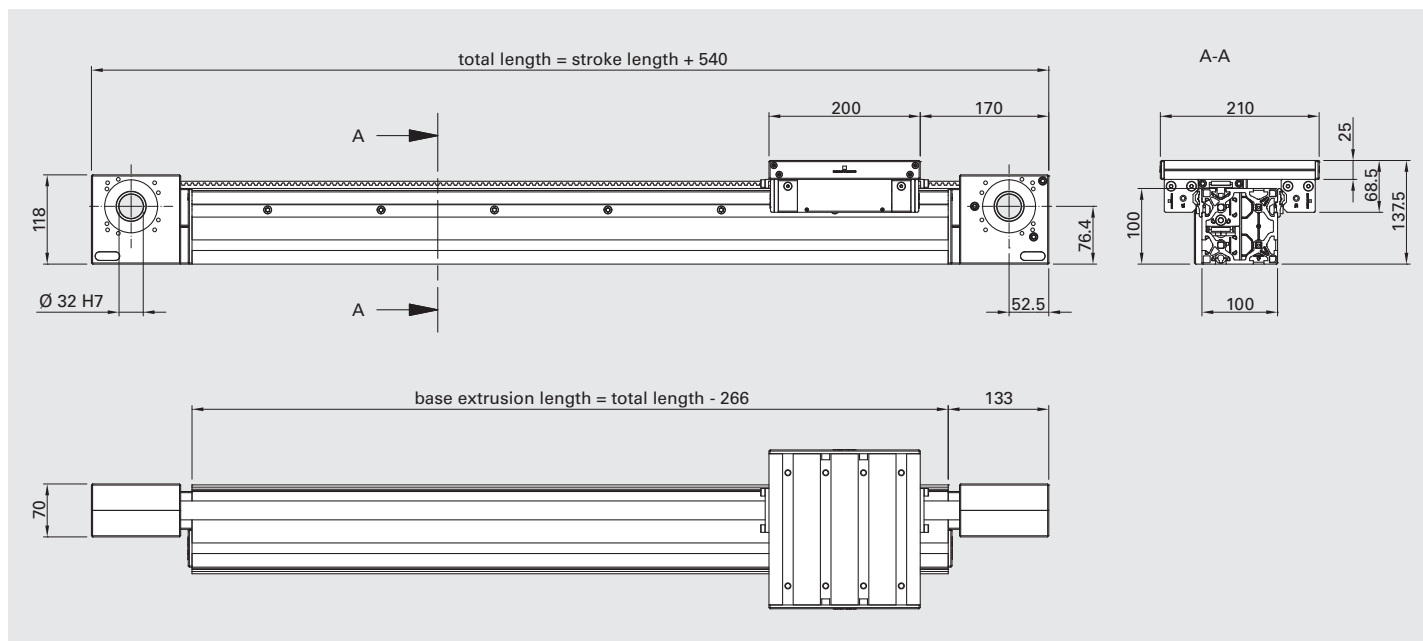
Assembly Instructions

See page 195

Eccentric Key LIN 9990 (page 169) is needed to adjust the eccentric roller



Dimensions

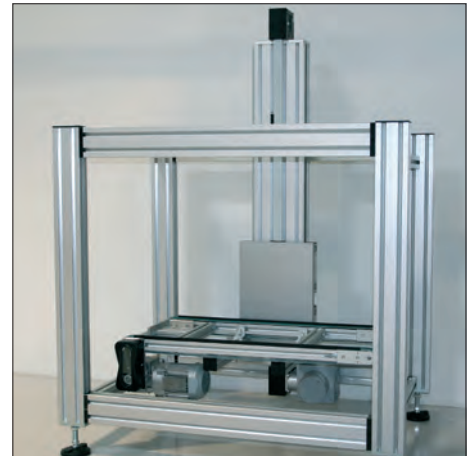
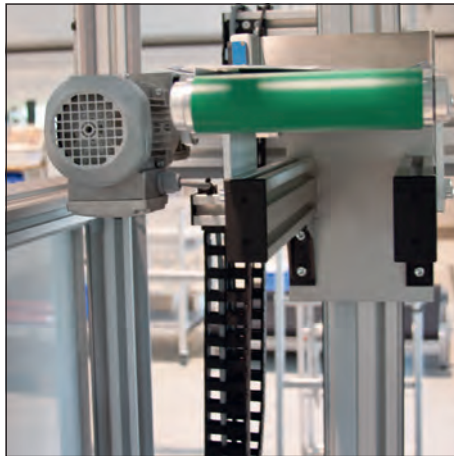
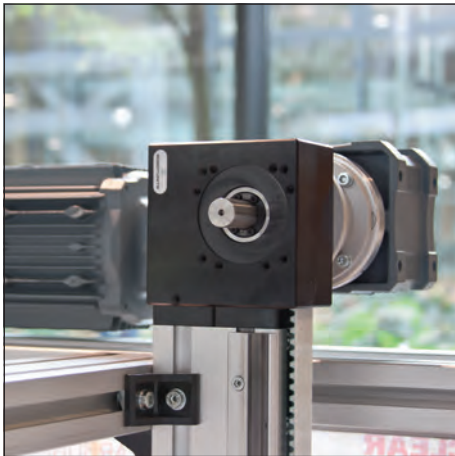
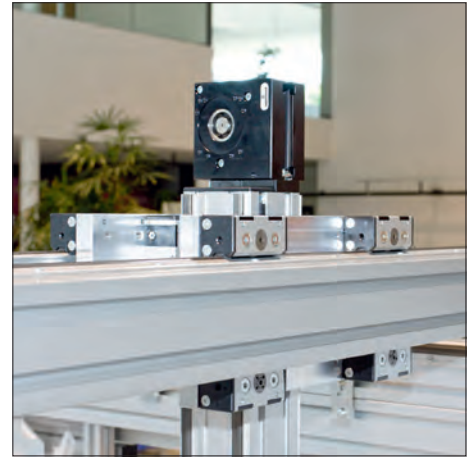
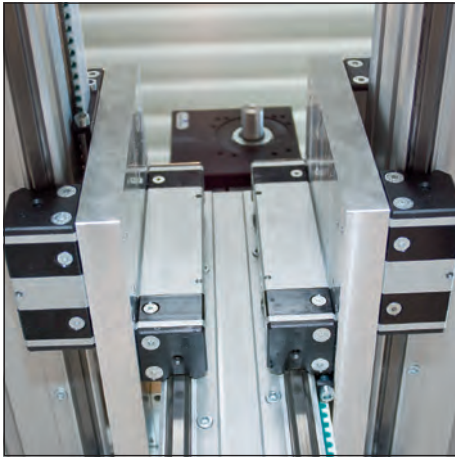
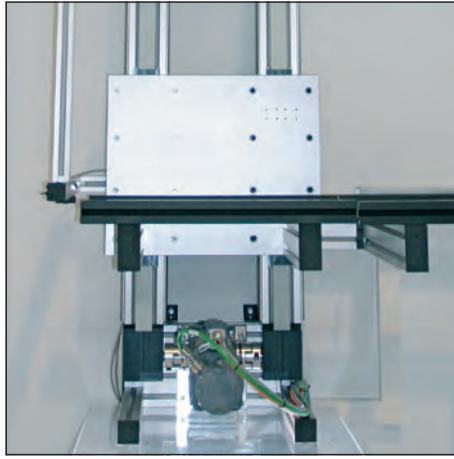
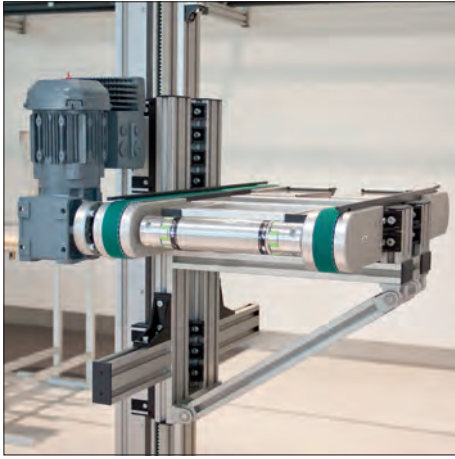
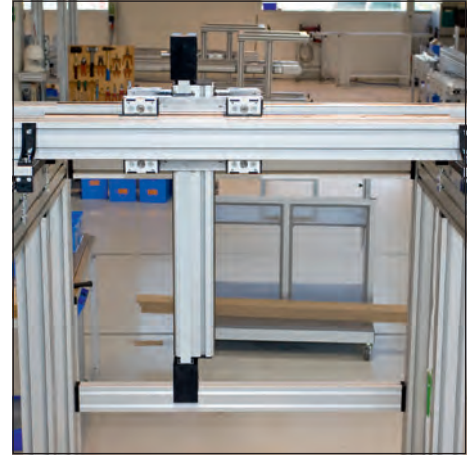
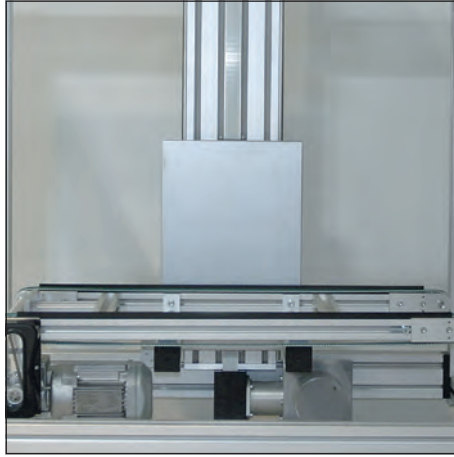
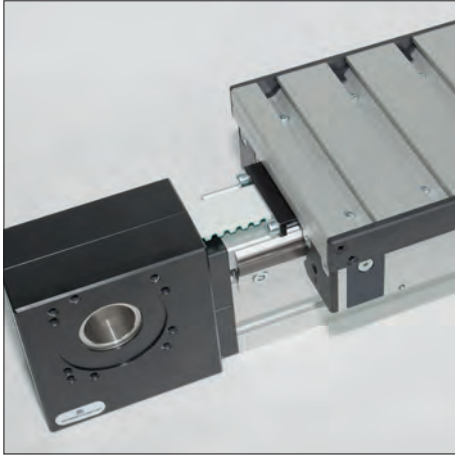


Order Code

Description	Order Code ¹		
	Base Extrusion	Type	Stroke Length
Linear Motion Unit 100	LIL 1010	SNN	—

1) Please complete the order by adding the corresponding parameters for order processing.
 Drawing dimensions in mm

Linear Motion Unit and Lift Application Examples





***THE SMART
EXTRUSION- AND
FASTENING TECHNOLOGY***



The key elements of the Modular Automation System are the unique Extrusion and Fastening Technologies. Extrusions, available in 40 mm and 50 mm size systems, are fully compatible due to a common 14 mm slot size.

In combination with a strong Fastening Technology, the system is unique in its stability and rigidity as well as in its enormous potential for time savings - from design to assembly.



One slot size fits all

- 13 profile shapes in 40 mm and 50 mm extrusion sizes simplify the application
- large, uniform 14 mm wide and 14mm deep T-slot
- same T-slot dimensions for all extrusions in the Modular Automation System
- post insertion of heavy duty Drop-in Nuts up to M8 possible



Maximum stability

- worldwide unique play-free, accurate and centrally aligned connections
- single fastener provides up to 4 tons of tensile strength
- tubular honeycomb structure for outstanding torsion and load resistance
- maximum stability for all your applications



One fastener, double value

- two-sided fastener provides equal strength on both sides of the connection
- twice the strength for the price of one
- no additional connectors needed
- strength comparable to a welded connection



Any hole drilled is one hole too many

- all connections made without drilling or milling
- maximum wall thickness in key areas
- unlimited re-usability
- for required hole an integrated location groove guarantees precise and straight drilling



Stability increases with every turn

- every turn positions centering inserts tighter into the T-slot
- absolutely play-free, accurate and centrally aligned connection
- concave surface of extrusion guarantees durable vibration resistance
- low fastener height saves space in your design



Inserting the drop-in nut

- simple and quick insertion of the drop-in nut into the 14 mm wide T-slot
- leaf spring assembly protects drop-in nut against unintended movement, guaranteed contact surface
- to position the the drop-in nut, just slide to stop position



Anything is possible - even post assembly

- simple post-assembly integration of struts without dismantling the frame
- easy repositioning of struts at any time
- no cutting of existing structures
- no surface treatment required



Save time, cut cost

- minimal assembly time required
- simple and quick selection of Extrusion and Fastening Technology
- no measuring of boreholes and no drawings necessary
- length of the extrusion is the only measurement needed
- labeled and tapped extrusions allow immediate assembly



The Smart Extrusion Technology

Extrusion, 40 mm Series

Page 66

Extrusion 16x40
PIL1640



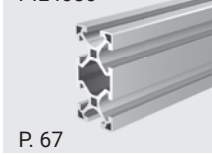
P. 66

Extrusion 40x40
PIL4040



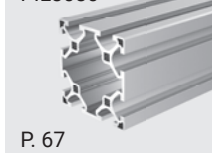
P. 66

Extrusion 40x80
PIL4080



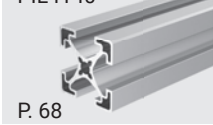
P. 67

Extrusion 80x80
PIL8080



P. 67

Lean Line Extrusion
40x40
PIL4140



P. 68

Lean Line Extrusion
40x80
PIL4180



P. 68

Extrusion 40x120
PIL4012

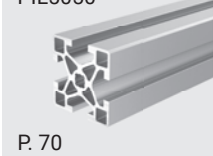


P. 69

Extrusion, 50 mm Series

Page 70

Extrusion 50x50
PIL5050



P. 70

Extrusion 50x100
PIL5010



P. 70

Extrusion 50x200
PIL5020



P. 71

Extrusion 100x100
PIL1010



P. 72

Extrusion 100x200
PIL1020



P. 72

Extrusion 25x200
PIL2520



P. 73

The Strong Fastening Technology

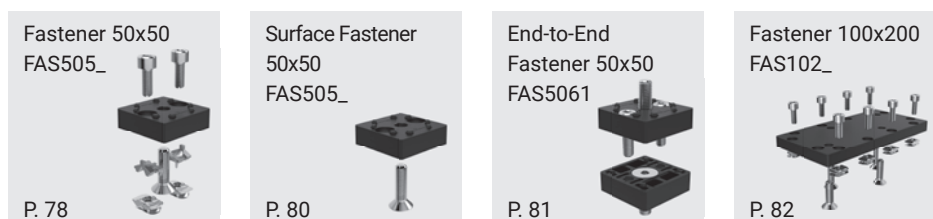
Fastening Technology 40 mm Series

Page 74



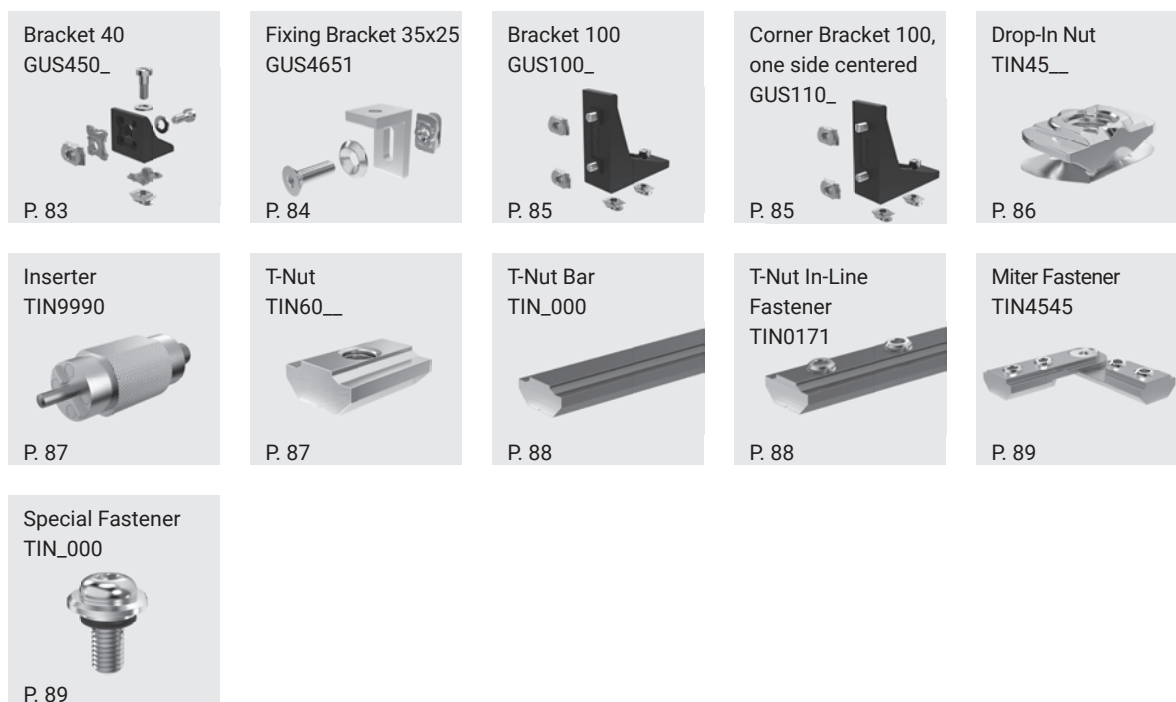
Fastening Technology 50 mm Series

Page 78



Fastening Technology 40 mm and 50 mm Series

Page 83



PIL1640

Extrusion 16x40

**Application**

- Signs, shelves, racks
- Hand rails, guide rails
- MRO equipment
- etc.

Technical Data

Material: EN AW-6063-T66 clear anodized aluminum

Section modulus W_x : 2.9 cm³

Section modulus W_y : 1.0 cm³

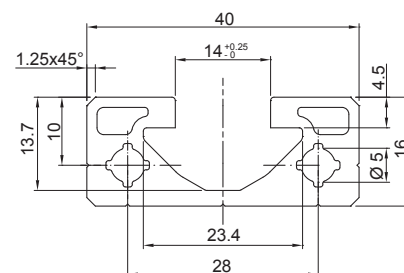
Geometrical moment of inertia:

against x I_x : 5.8 cm⁴

against y I_y : 0.8 cm⁴

against torsion I_t : 0.6 cm⁴

Cross sectional area A: 323.6 mm²

**Tolerances and Deflection**

see pages 198 to 199

Extrusion, stock length: 6050 mm

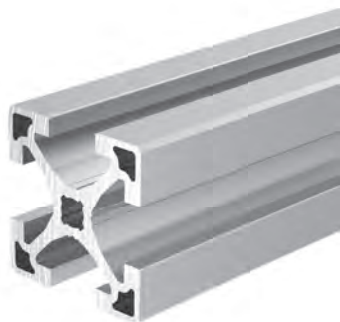
(usable length 6000 mm)

Order Code

Description	Order Code ¹	Weight/Meter
Extrusion 16x40, cut to length, M6x15 thread on both ends	PIL1640SNN	0.890 kg
Extrusion 16x40, stock length 6050 mm	PIL1640NNN	0.890 kg

PIL4040

Extrusion 40x40

**Application**

- Machine guardings
- Enclosures
- Safety fence panels & doors
- Light weight machine frames
- Shelves, racks, trolleys (MRO equipment)
- etc.

Technical Data

Material: EN AW-6063-T66 clear anodized aluminum

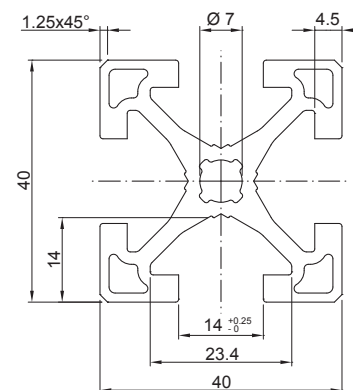
Section modulus $W_x = W_y$: 4.3 cm³

Geometrical moment of inertia:

against x + y $I_x = I_y$: 8.6 cm⁴

against torsion I_t : 0.7 cm⁴

Cross sectional area A: 554.6 mm²

**Tolerances and Deflection**

see pages 198 to 199

Extrusion, stock length: 6050 mm

(usable length 6000 mm)

Order Code

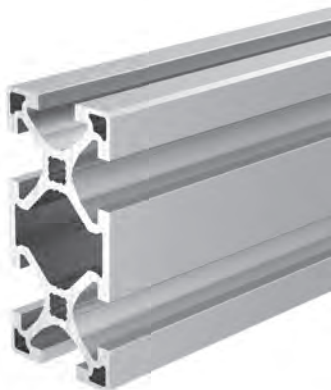
Description	Order Code ¹	Weight/Meter
Extrusion 40x40, cut to length, M8x50 thread on both ends	PIL4040SNN	1.530 kg
Extrusion 40x40, stock length 6050 mm	PIL4040NNN	1.530 kg
Extrusion 40x40, 80 pcs., stock length 6050 mm	PIL4040PAC	1.530 kg

1) Please complete the order by adding the length parameters for cut to length orders.

Drawing dimensions in mm

PIL4080

Extrusion 40x80



Tolerances and Deflection
see pages 198 to 199

Application

- Machine guardings
- Enclosures
- Safety fence panels & doors
- Machine frames
- Workstations
- Shelves, racks, trolleys (MRO equipment)
- etc.

Technical Data

Material: EN AW-6063-T66 clear anodized aluminum

Section modulus W_x : 15.4 cm³

Section modulus W_y : 8.4 cm³

Geometrical moment of inertia:

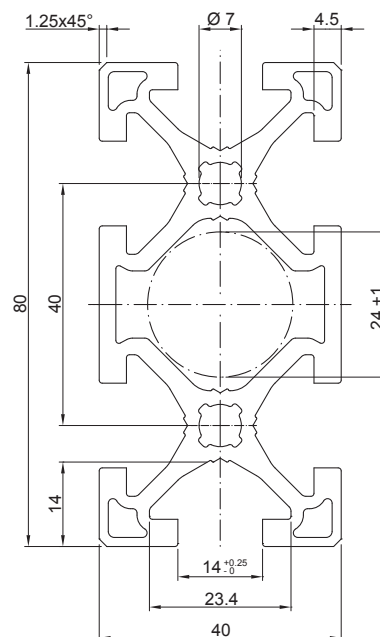
against x I_x : 61.6 cm⁴

against y I_y : 16.8 cm⁴

against torsion I_t : 9.3 cm⁴

Cross sectional area A: 1013.2 mm²

Extrusion, stock length: 6050 mm
(usable length 6000 mm)



Order Code

Description	Order Code ¹	Weight/Meter
Extrusion 40x80, cut to length, M8x50 thread on both ends	PIL4080SNN	2.780 kg
Extrusion 40x80, stock length 6050 mm	PIL4080NNN	2.780 kg
Extrusion 40x80, 40 pcs., stock length 6050 mm	PIL4080PAC	2.780 kg

PIL8080

Extrusion 80x80



Tolerances and Deflection
see pages 198 to 199

Application

- Machine frames
- Workstations
- Machine guardings
- Enclosures
- Shelves, racks, trolleys (MRO equipment)
- etc.

Technical Data

Material: EN AW-6063-T66 clear anodized aluminum

Section modulus $W_x = W_y$: 28.0 cm³

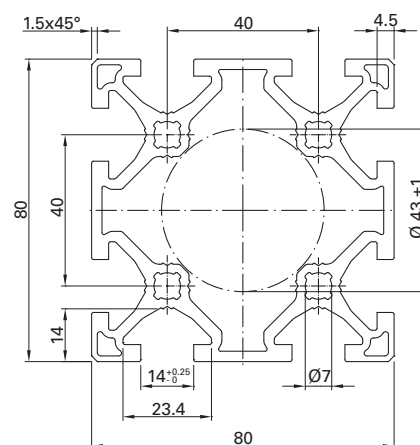
Geometrical moment of inertia:

against x + y $I_x = I_y$: 112.0 cm⁴

against torsion I_t : 59.5 cm⁴

Cross sectional area A: 1547.0 mm²

Extrusion, stock length: 6050 mm
(usable length 6000 mm)



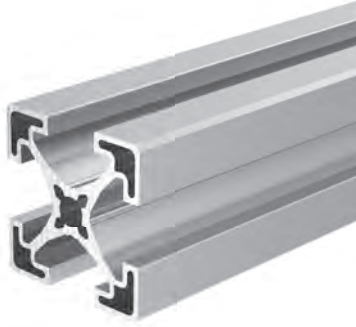
Order Code

Description	Order Code ¹	Weight/Meter
Extrusion 80x80, cut to length, M8x50 thread on both ends	PIL8080SNN	4.280 kg
Extrusion 80x80, stock length 6050 mm	PIL8080NNN	4.280 kg
Extrusion 80x80, 25 pcs., stock length 6050 mm	PIL8080PAC	4.280 kg

1) Please complete the order by adding the length parameters for cut to length orders.
Drawing dimensions in mm

PIL4140

Extrusion 40x40 Lean Line

**Application**

- Machine guardings
- Enclosures
- Safety fence panels
- Light weight machine frames
- Workstations
- Shelves, racks, trolleys (MRO equipment)
- etc.

Technical Data

Material: EN AW-6063-T66 clear anodized aluminum

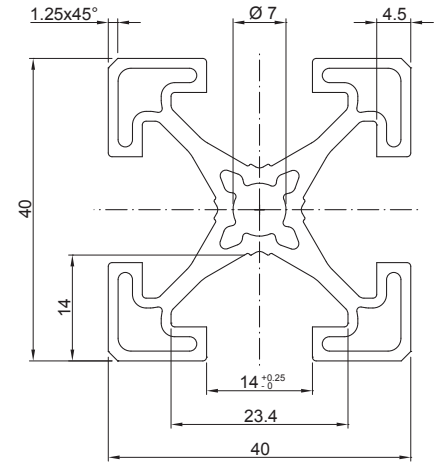
Section modulus $W_x = W_y$: 3.3 cm³

Geometrical moment of inertia:

against x + y $I_x = I_y$: 6.5 cm⁴

against torsion I_t : 0.6 cm⁴

Cross sectional area A: 431.0 mm²



Tolerances and Deflection
see pages 198 to 199

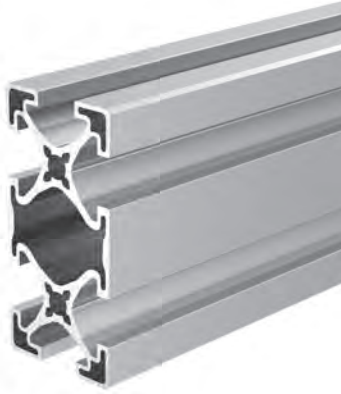
Extrusion, stock length: 6050 mm
(usable length 6000 mm)

Order Code

Description	Order Code ¹	Weight/Meter
Extrusion 40x40 Lean Line, cut to length, M8 thread on both ends	PIL4140SNN	1.160 kg
Extrusion 40x40 Lean Line, stock length 6050 mm	PIL4140NNN	1.160 kg
Extrusion 40x40 Lean Line, 80 pcs., stock length 6050 mm	PIL4140PAC	1.160 kg

PIL4180

Extrusion 40x80 Lean Line

**Application**

- Machine guardings
- Enclosures
- Safety fence panels
- Light weight machine frames
- Workstations
- Shelves, racks, trolleys (MRO equipment)
- etc.

Technical Data

Material: EN AW-6063-T66 clear anodized aluminum

Section modulus W_x : 11.9 cm³

Section modulus W_y : 6.4 cm³

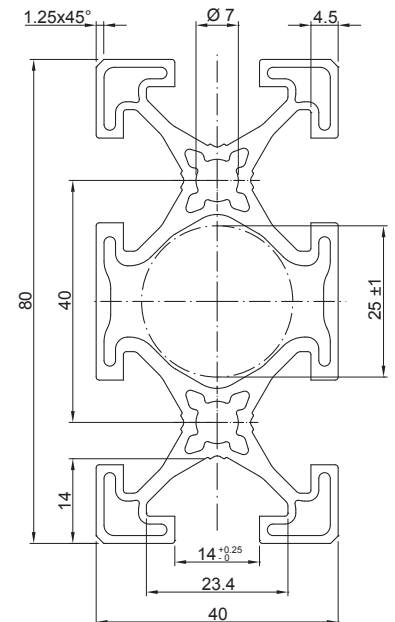
Geometrical moment of inertia:

against x I_x : 47.4 cm⁴

against y I_y : 12.8 cm⁴

against torsion I_t : 5.9 cm⁴

Cross sectional area A: 790.8 mm²



Tolerances and Deflection
see pages 198 to 199

Extrusion, stock length: 6050 mm
(usable length 6000 mm)

Order Code

Description	Order Code ¹	Weight/Meter
Extrusion 40x80 Lean Line, cut to length, M8 thread on both ends	PIL4180SNN	2.140 kg
Extrusion 40x80 Lean Line, stock length 6050 mm	PIL4180NNN	2.140 kg
Extrusion 40x80 Lean Line, 40 pcs., stock length 6050 mm	PIL4180PAC	2.140 kg

1) Please complete the order by adding the length parameters for cut to length orders.

Drawing dimensions in mm

PIL4012

Extrusion 40x120



Tolerances and Deflection

see pages 198 to 199

Cover Extrusion For PIL4012

see pages 177

Application

- Roller conveyor
- Cable ducts
- Manual workstations
- In- and outfeed conveyors

Technical Data

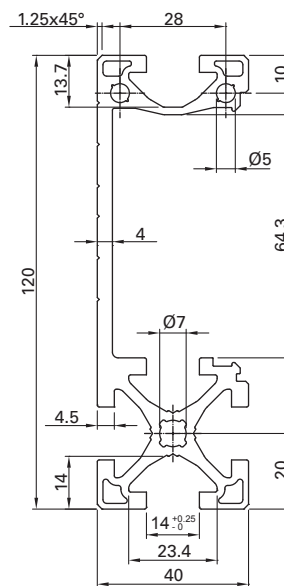
Material: clear anodized aluminum

Section modulus W_x : 27.6 cm³Section modulus W_y : 6.8 cm³

Geometrical moment of inertia:

against x I_x : 182.2 cm⁴against y I_y : 19.3 cm⁴against torsion I_t : 1.2 cm⁴Cross sectional area A: 1108.8 mm²

Thread dimension: M6x50, M8x50

Extrusion, stock length: 6050 mm
(usable length 6000 mm)

Order Code

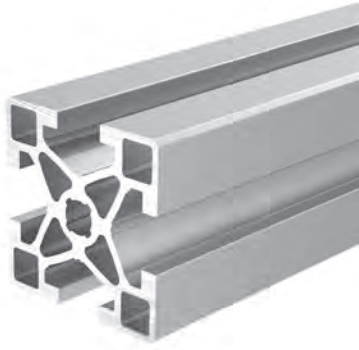
Description	Order Code ¹	Weight/Meter
Extrusion 40x120, cut to length, M6 or M8 thread on both ends	PIL4012SNN	3.050 kg
Extrusion 40x120, stock length 6050 mm	PIL4012NNN	3.050 kg
Extrusion 40x120, 24 pcs., stock length 6050 mm	PIL4012PAC	3.050 kg

1) Please complete the order by adding the length parameters for cut to length orders.

Drawing dimensions in mm

PIL5050

Extrusion 50x50

**Application**

- Machine frames
- Robot frame structures
- Workstations
- Machine guardings
- Enclosures
- Shelves, racks, trolleys (MRO equipment)
- etc.

Technical Data

Material: EN AW-6063-T66 clear anodized aluminum

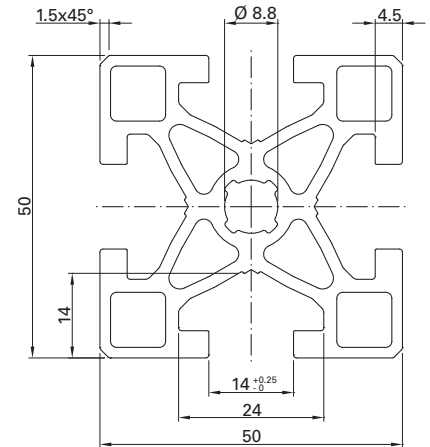
Section modulus $W_x = W_y$: 8.0 cm³

Geometrical moment of inertia:

against x + y $I_x = I_y$: 20.0 cm⁴

against torsion I_t : 4.8 cm⁴

Cross sectional area A: 857.5 mm²



Tolerances and Deflection
see pages 198 to 199

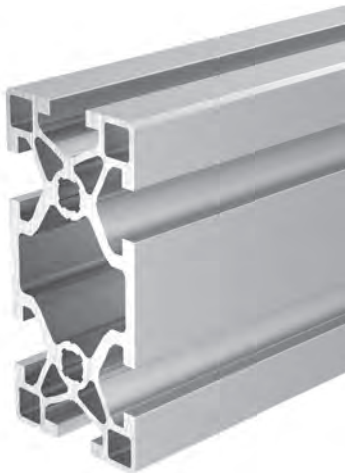
Extrusion, stock length: 6050 mm
(usable length 6000 mm)

Order Code

Description	Order Code ¹	Weight/Meter
Extrusion 50x50, cut to length, M10x50 thread on both ends	PIL5050SNN	2.350 kg
Extrusion 50x50, stock length 6050 mm	PIL5050NNN	2.350 kg
Extrusion 50x50, 64 pcs., stock length 6050 mm	PIL5050PAC	2.350 kg

PIL5010

Extrusion 50x100

**Application**

- Machine frames
- Robot frame structures
- Workstations
- Base support for Linear Motion Units & gantries
- Machine guardings
- Enclosures
- Shelves, racks, trolleys (MRO equipment)
- etc.

Technical Data

Material: EN AW-6063-T66 clear anodized aluminum

Section modulus W_x : 29.7 cm³

Section modulus W_y : 16.6 cm³

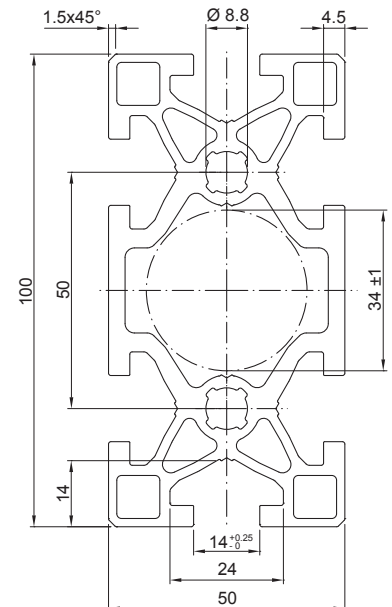
Geometrical moment of inertia:

against x I_x : 148.5 cm⁴

against y I_y : 41.4 cm⁴

against torsion I_t : 37.0 cm⁴

Cross sectional area A: 1559.3 mm²



Tolerances and Deflection
see pages 198 to 199

Extrusion, stock length: 6050 mm
(usable length 6000 mm)

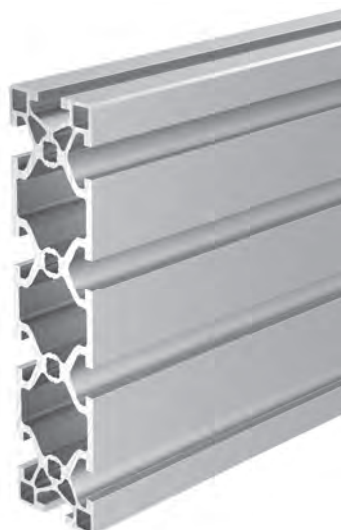
Order Code

Description	Order Code ¹	Weight/Meter
Extrusion 50x100, cut to length, M10x50 thread on both ends	PIL5010SNN	4.290 kg
Extrusion 50x100, stock length 6050 mm	PIL5010NNN	4.290 kg
Extrusion 50x100, 32 pcs., stock length 6050 mm	PIL5010PAC	4.290 kg

1) Please complete the order by adding the length parameters for cut to length orders.
Drawing dimensions in mm

PIL5020

Extrusion 50x200



Tolerances and Deflection
see pages 198 to 199

Application

- Heavy duty machine frames
- Robot frame structures
- Workstations
- Base support for Linear Motion Units & gantries
- Machine guardings
- Enclosures
- Shelves, racks, trolleys (MRO equipment)
- etc.

Technical Data

Material: EN AW-6063-T66 clear anodized aluminum

Section modulus W_x : 107.8 cm³

Section modulus W_y : 33.6 cm³

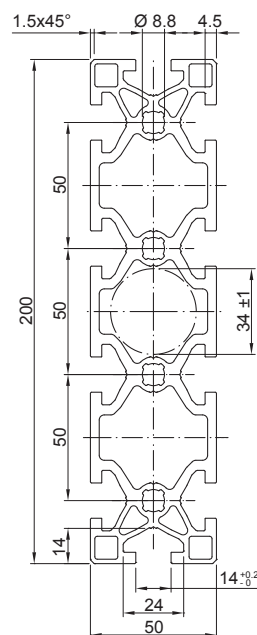
Geometrical moment of inertia:

against x I_x : 1077.8 cm⁴

against y I_y : 84.1 cm⁴

against torsion I_t : 107.0 cm⁴

Cross sectional area A: 2962.8 mm²



Extrusion, stock length: 6050 mm
(usable length 6000 mm)

Order Code

Description	Order Code ¹	Weight/Meter
Extrusion 50x200, cut to length, M10x50 thread on both ends	PIL5020SNN	8.150 kg
Extrusion 50x200, stock length 6050 mm	PIL5020NNN	8.150 kg
Extrusion 50x200, 16 pcs., stock length 6050 mm	PIL5020PAC	8.150 kg

1) Please complete the order by adding the length parameters for cut to length orders.
Drawing dimensions in mm

PIL1010

Extrusion 100x100

**Application**

- Heavy duty machine frames
- Robot frame structures
- Workstations
- Base support for Linear Motion Units & gantries
- Machine guardings
- Enclosures
- Shelves, racks, trolleys (MRO equipment)
- etc.

Technical Data

Material: EN AW-6063-T66 clear anodized aluminum

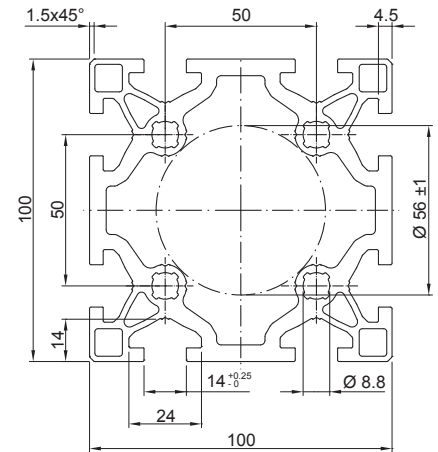
Section modulus $W_x = W_y$: 61.1 cm³

Geometrical moment of inertia:

against x + y $I_x = I_y$: 305.6 cm⁴

against torsion I_t : 256.0 cm⁴

Cross sectional area A: 2714.4 mm²

**Tolerances and Deflection**

see pages 198 to 199

Extrusion, stock length: 6050 mm
(usable length 6000 mm)

Order Code

Description	Order Code ¹	Weight/Meter
Extrusion 100x100, cut to length, M10x50 thread on both ends	PIL1010SNN	7.480 kg
Extrusion 100x100, stock length 6050 mm	PIL1010NNN	7.480 kg
Extrusion 100x100, 16 pcs., stock length 6050 mm	PIL1010PAC	7.480 kg

PIL1020

Extrusion 100x200

**Application**

- Heavy duty machine frames
- Robot frame structures
- Workstations
- Base support for Linear Motion Units & gantries
- Machine guardings
- Machine enclosures
- Shelves, racks, trolleys (MRO equipment)
- etc.

Technical Data

Material: EN AW-6063-T66 clear anodized aluminum

Section modulus W_x : 220.2 cm³

Section modulus W_y : 132.9 cm³

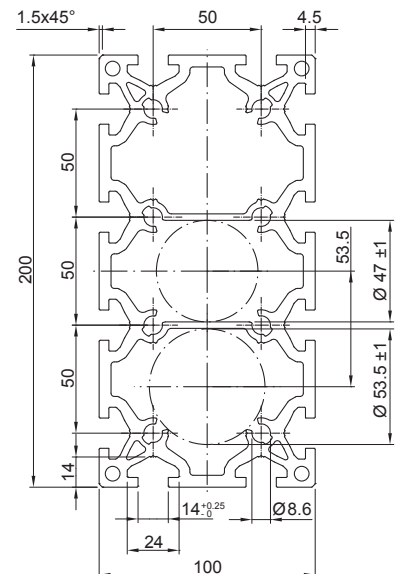
Geometrical moment of inertia:

against x I_x : 2202.2 cm⁴

against y I_y : 664.4 cm⁴

against torsion I_t : 794.0 cm⁴

Cross sectional area A: 5128.7 mm²

**Tolerances and Deflection**

see pages 198 to 199

Extrusion, stock length: 6050 mm
(usable length 6000 mm)

Order Code

Description	Order Code ¹	Weight/Meter
Extrusion 100x200, cut to length, M10x50 thread on both ends	PIL1020SNN	13.700 kg
Extrusion 100x200, stock length 6050 mm	PIL1020NNN	13.700 kg
Extrusion 100x200, 8 pcs., stock length 6050 mm	PIL1020PAC	13.700 kg

PIL2520

Extrusion 25x200



Tolerances and Deflection
see pages 198 to 199

Application

- Carriage plates for Linear Motion Units
- Workstations
- Shelves, racks, trolleys (MRO equipment)
- etc.

Technical Data

Material: EN AW-6063-T66 clear anodized aluminum

Section modulus W_x : 102.8 cm³

Section modulus W_y : 14.1 cm³

Geometrical moment of inertia:

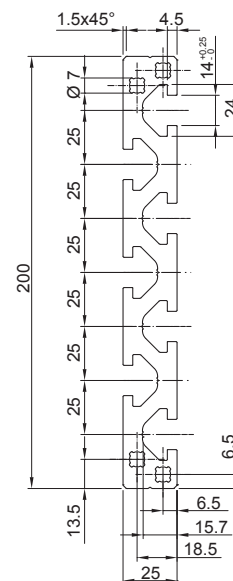
against x I_x : 1027.9 cm⁴

against y I_y : 17.6 cm⁴

against torsion I_t : 9.8 cm⁴

Cross sectional area A: 2891.7 mm²

Extrusion, stock length: 6050 mm
(usable length 6000 mm)



Order Code

Description	Order Code ¹	Weight/Meter
Extrusion 25x200, cut to length, M8x15 thread on both ends	PIL2520SNN	7.900 kg
Extrusion 25x200, stock length 6050 mm	PIL2520NNN	7.900 kg

1) Please complete the order by adding the length parameters for cut to length orders.
Drawing dimensions in mm

FAS1641

Fastener 16x40

**Application**

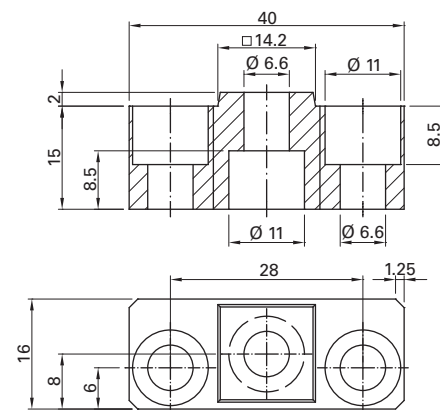
90° fastener for extrusion PIL1640

Technical Data

Material: clear anodized aluminum, galvanized steel

Tightening torque

IBS M06x018 = 10 Nm



Order Code

Description
Fastener 16x40 Kit

Scope of Delivery

FAS1640	TIN4506	IBS M06x018
1	1	3

Order Code

FAS1641

Weight
0.045 kg

FAS404_

Fastener 40x40

**Application**

90° fastener on 40 mm series for extrusion PIL 4040 and PIL 4080 transverse

Technical Data

Material: galvanized GD-Zn, galvanized steel

Load index

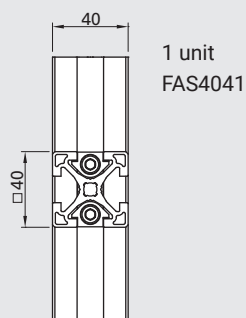
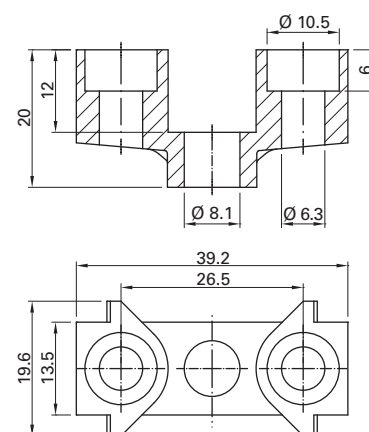
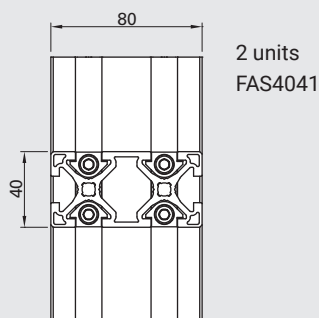
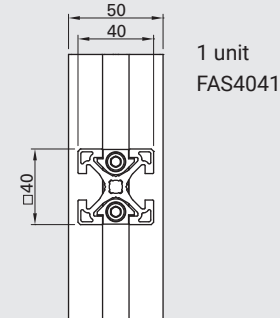
See page 200

Tightening torque

IBS M06x018 = 10 Nm

LKS M08x025 = 12 Nm

Transfer resistance per conductive connection: < 0,4 Ω

1 unit
FAS40412 units
FAS40411 unit
FAS4041

Order Code

Description
Fastener 40x40
Fastener 40x40 Kit
Fastener 40x40 Kit, parts packed separately, pack of 100 pcs.

Scope of Delivery

FAS4040	TIN4506	IBS M06x018	LKS M08x025
1	-	-	-
1	2	2	1
100	200	200	100

Order Code

FAS4040
FAS4041
FAS4041CPPAC0100Weight
0.029 kg
0.076 kg
7.500 kg

Drawing dimensions in mm

FAS408_

Fastener 40x80

**Application**

90° fastener on 40 mm series for extrusion

- PIL4080, longitudinal
- PIL8080

Technical Data

Material: galvanized GD-Zn, galvanized steel

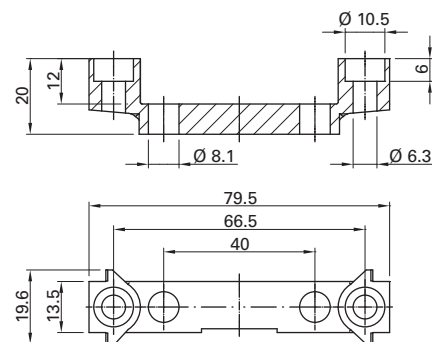
Load index

See page 200

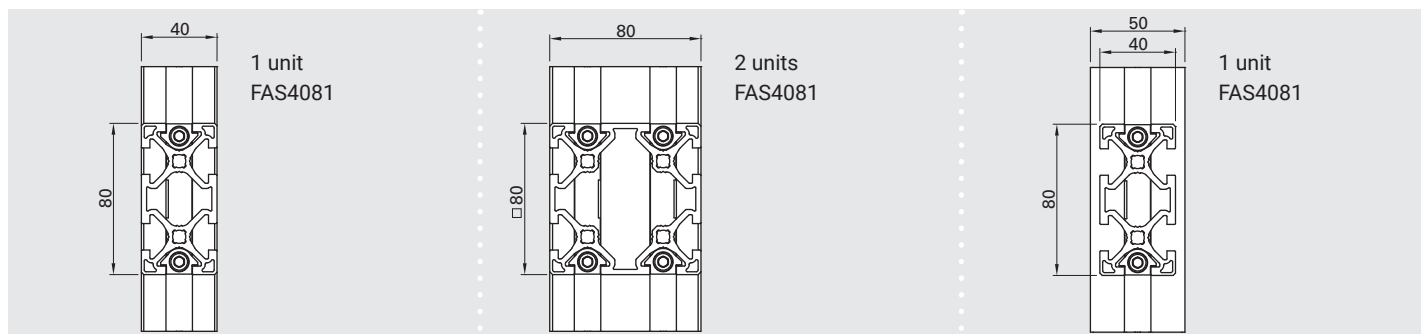
Tightening torque

IBS M06x018 = 10 Nm

LKS M08x025 = 12 Nm



Transfer resistance per conductive connection: < 0,4 Ω



Order Code

Description	Scope of Delivery				Order Code	Weight
	FAS4080	TIN 4506	IBS M06x018	LKS M08x025		
Fastener 40x80	1	-	-	-	FAS4080	0.054 kg
Fastener 40x80 Kit	1	2	2	2	FAS4081	0.115 kg
Fastener 40x80 Kit, parts packed separately, pack of 100 pcs.	100	200	200	200	FAS4081CPPAC0100	11.400 kg

Drawing dimensions in mm

FAS4049

Surface Fastener 40x40

**Application**

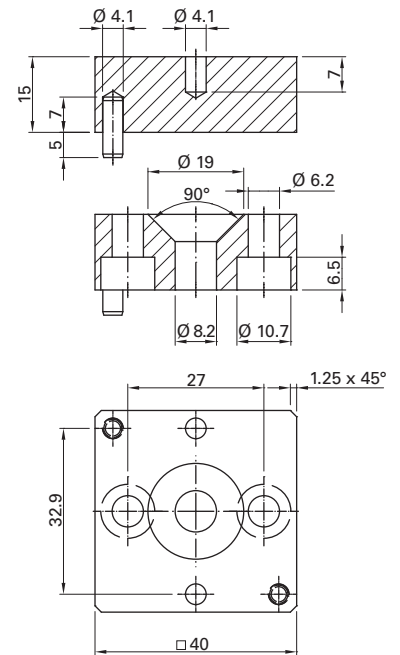
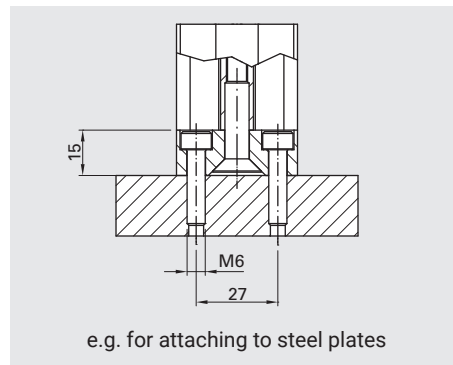
Used for connections to non-Robotunits surfaces on 40 mm series for extrusion PIL4040

Technical Data

Material: clear anodized aluminum, galvanized steel

Tightening torque

SKS M08x030 = 15 Nm

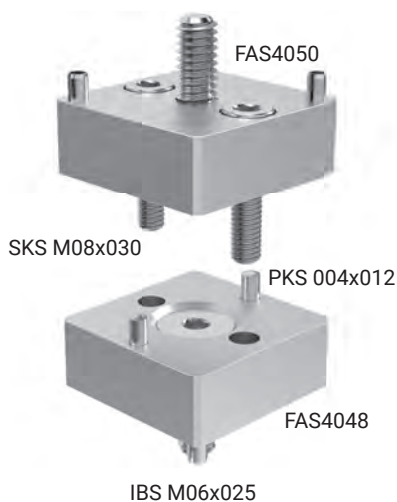


Order Code

Description	Scope of Delivery		Order Code	Weight
	FAS4048	SKS M08x030		
Surface Fastener 40x40 Kit	1	1	FAS4049	0.070 kg

FAS4051

End-to-End Fastener 40x40

**Application**

Used for end-to-end connections of 40 mm series for extrusion PIL4040

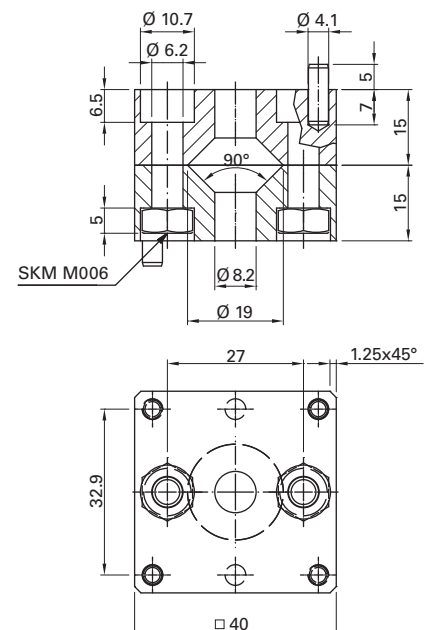
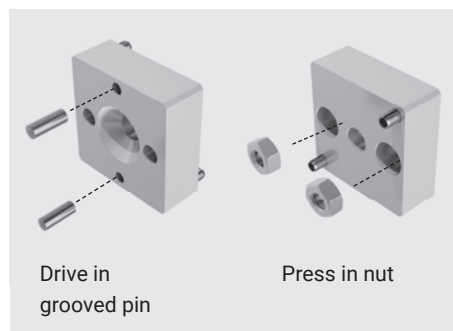
Technical Data

Material: clear anodized aluminum, galvanized steel

Tightening torque

SKS M08x030 = 15 Nm

IBS M06x025 = 10 Nm



Order Code

Description	Scope of Delivery					Order Code	Weight
	FAS4048	FAS4050	SKS M08x030	IBS M06x025	PKS 004x012		
End-To-End Fastener 40x40 Kit	1	1	2	2	2	FAS4051	0.160 kg

GUS454_

Angle Fastener 45°

**Application**

For rigid 45° bracing, e.g.:

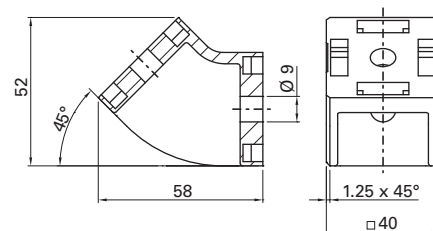
- Guardings
- Frames

Technical Data

Material: zinc die cast or galvanized steel

Tightening torque

IBS M08X025 = 26 Nm
IBS M08x020NIKO = 20 Nm



Order Code

Description	Scope of Delivery					Order Code	Weight
	GUS4540	TIN4508	IBS M08x025	IBS M08x020NIKO	BLS M008		
Angle Fastener 45°	1	-	-	-	-	GUS4540	0,224 kg
Angle Fastener 45° Kit	1	1	1	1	2	GUS4541	0,262 kg

GUS4_41

Elbow Joint 40

**Application**

For variable angle connections, e.g.:

- Guardings
- Frames
- Swing arms

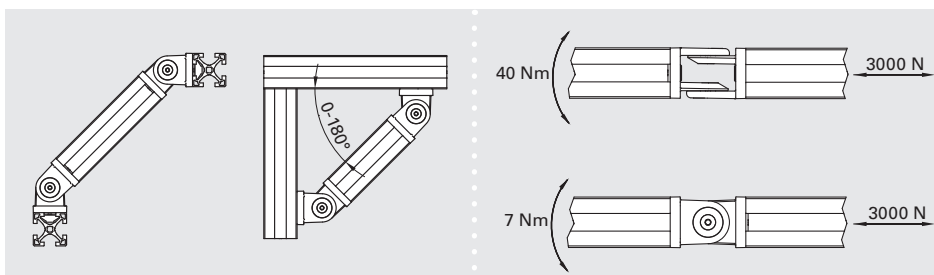
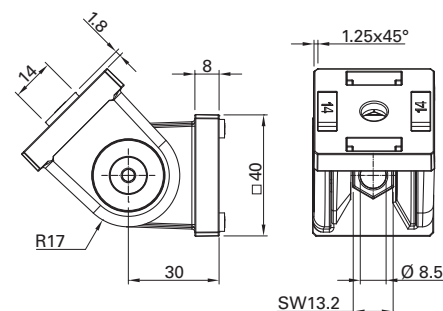
Technical Data

Material: zinc diecast or galvanized steel

Pivoting range: +/- 90°

Tightening torque

IBS M08x016NIKO = 20 Nm
Clamp screw = 8 Nm



Order Code

Description	Scope of Delivery				Order Code	Weight
	GUS4040	GUS4140	TIN4508	IBS M08x016NIKO		
Elbow Joint 40 with Centering Parts	1	-	-	-	GUS4040	0,132 kg
Elbow Joint 40 with Centering Parts, pack of 10 pcs.	10	-	-	-	GUS4040PAC0010	1,320 kg
Elbow Joint 40 Kit	1	-	2	2	GUS4041	0,179 kg
Elbow Joint 40 Kit with Clamping Lever	-	1	2	2	GUS4141	0,251 kg

Drawing dimensions in mm

**Application**

Used for 90° connections of heavy-duty structures in the 50 mm series for extrusions:

- PIL5050
- PIL5010
- PIL5020

Technical Data

Material: GD-Zn black KTL coated, galvanized steel

Load index

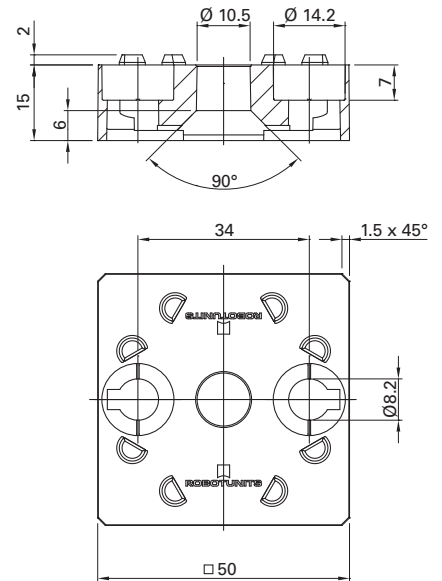
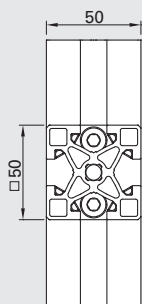
See page 200

Tightening torque

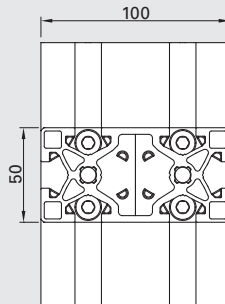
IBS M08x020 = 26 Nm

SKS M10x035 = 40 Nm

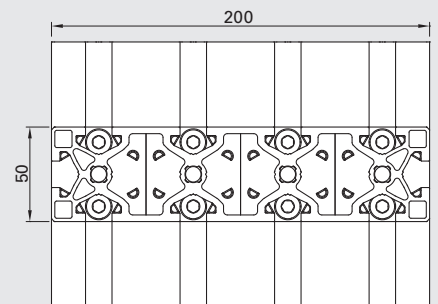
Transfer resistance per conductive connection: < 0,4 Ω

**Assembly**

1 units FAS5051



2 units FAS5051



4 units FAS5051

Order Code

Description	Scope of Delivery					Order Code	Weight
	FAS5050	FAS5052	TIN4508	IBS M08x020	SKS M10x035		
Fastener 50x50	1	-	-	-	-	FAS5050	0.144 kg
Fastener 50x50, pack of 100 pcs.	100	-	-	-	-	FAS5050PAC	14.400 kg
Fastener 50x50 Kit	1	2	2	2	1	FAS5051	0.219 kg
Fastener 50x50 Kit, parts packed separately, pack of 100 pcs.	100	200	200	200	100	FAS5051CPPAC0100	21.800 kg
Centering Insert for Fastener 50x50	-	1	-	-	-	FAS5052	0.004 kg

Drawing dimensions in mm

FAS505_

Fastener 50x50 Single-Sided

**Application**

Used for 90° connections of heavy-duty structures in the 50 mm series for extrusions:

- PIL5010
- PIL1010
- PIL5020

Technical Data

Material: GD-Zn black KTL coated, galvanized steel

Load index

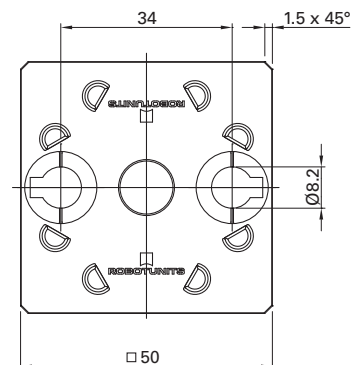
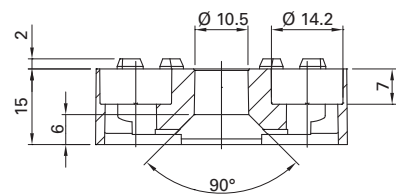
See page 200

Tightening torque

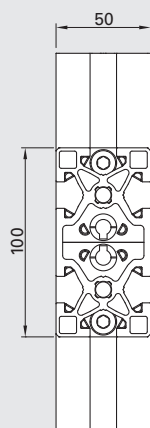
IBS M08x020 = 26 Nm

SKS M10x035 = 40 Nm

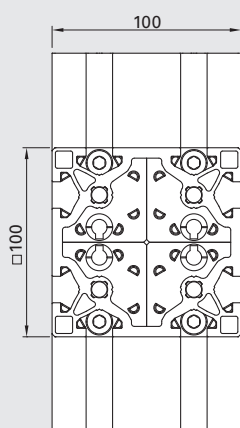
Transfer resistance per conductive connection: < 0,4 Ω



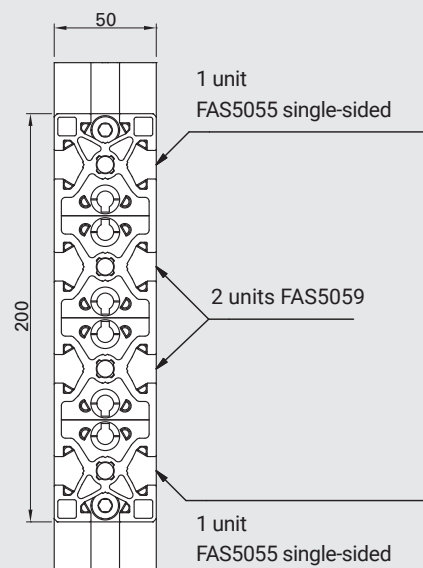
Assembly



2 units FAS5055 single-sided



4 units FAS5055 single-sided



Order Code

Description	Scope of Delivery					Order Code	Weight
	FAS5050	FAS5052	TIN4508	IBS M08x020	SKS M10x035		
Fastener 50x50 Kit, single-sided	1	1	1	1	1	FAS5055	0.193 kg
Fastener 50x50 Kit, single-sided, parts packed separately, pack of 100 pcs.	100	100	100	100	100	FAS5055CPPAC0100	19.300 kg

Drawing dimensions in mm

**Application**

Used for connections to non-Robotunits surfaces. 90° connection for massive structures in the 50 mm series for extrusions

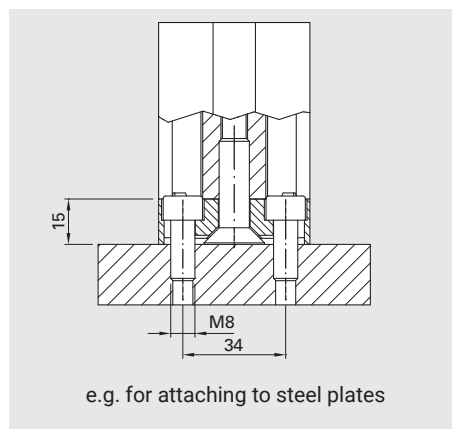
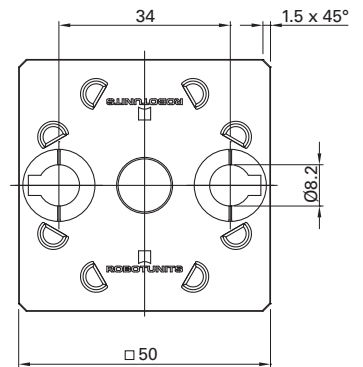
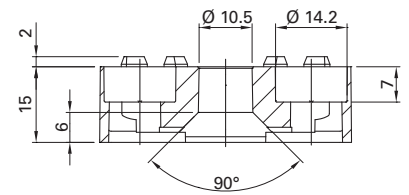
- PIL5050
- PIL5010
- PIL1010
- PIL5020

Technical Data

Material: GD-Zn black KTL coated, galvanized steel

Tightening torque

SKS M10x035 = 40 Nm

**Order Code**

Description	Scope of Delivery		Order Code	Weight
	FAS5050	SKS M10x035		
Surface Fastener 50x50 Kit	1	1	FAS5059	0.168 kg

Drawing dimensions in mm

FAS5061

End-To-End Fastener 50x50

**Application**

Used for end-to-end connections of 50 mm series extrusions for

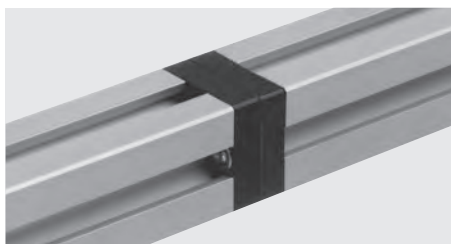
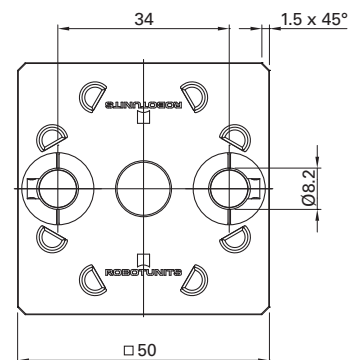
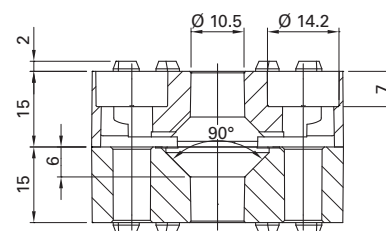
- PIL5050
- PIL5010
- PIL1010
- PIL5020

Technical Data

Material: GD-Zn black KTL coated, galvanized steel

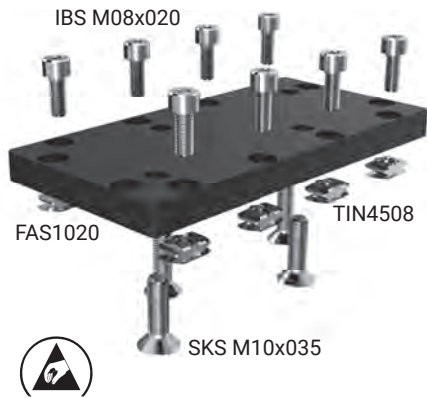
Tightening torque

IBS M08x020 = 26 Nm
SKS M10x035 = 40 Nm

**Order Code**

Description	Scope of Delivery				Order Code	Weight
	FAS5050	FAS5060	IBS M08x025	SKS M10x035		
End-To-End Fastener 50x50 Kit	1	1	2	2	FAS5061	0.374 kg

Drawing dimensions in mm

**Application**

Used for 90° connections of heavy duty structures of PIL1020

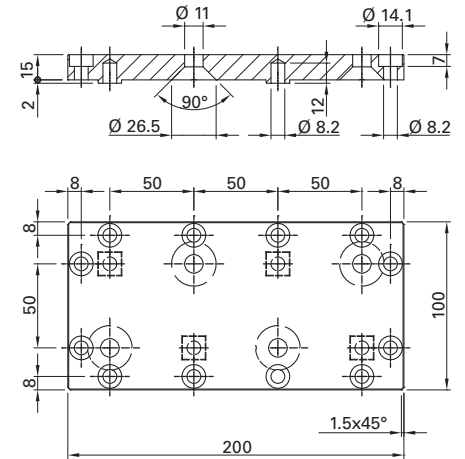
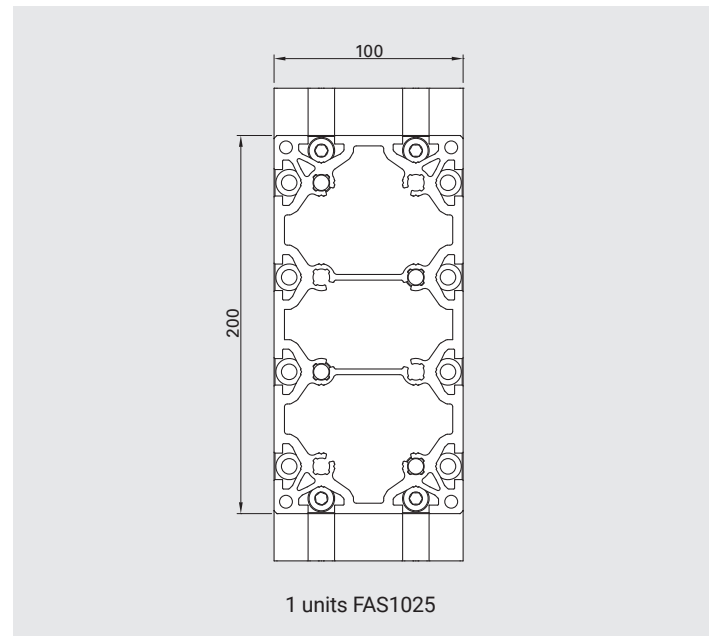
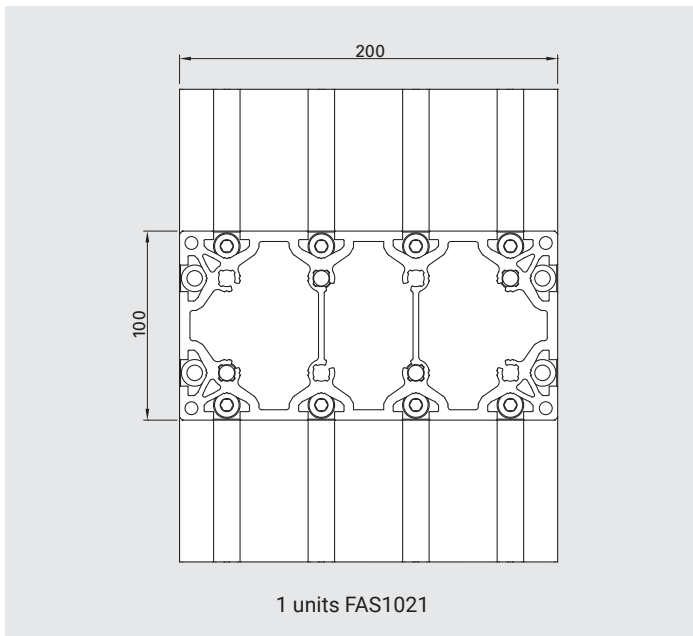
Technical Data

Material: black anodized aluminum, galvanized steel

Tightening torque

IBS M08x020 = 26 Nm
SKS M10x035 = 40 Nm

Transfer resistance per conductive connection: < 0,4 Ω

**Cross Fastener****In-Line Fastener****Order Code**

Description	Scope of Delivery				Order Code	Weight
	FAS1020	TIN4508	IBS M08x020	SKS M10x035		
Cross Fastener 100x200 Kit	1	8	8	4	FAS1021	1.000 kg
In-Line Fastener 100x200 Kit	1	4	4	4	FAS1025	0.920 kg

Drawing dimensions in mm

GUS450_

Corner Bracket 40/50

**Application**

Used for 90° connections and as strengthening element in combination with Robotunits fasteners, for both 40 mm and 50 mm series extrusions, e.g.:

- 40/40 series combination
- 50/50 series combination
- 40/50 series combination

Connections to non-Robotunits extrusions and surfaces, e.g.:

- Mounting of table tops
- Fastening to non-Robotunits extrusions
- Fastening to walls

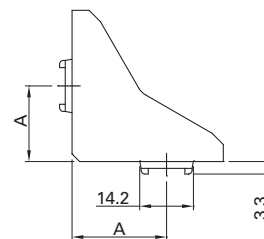
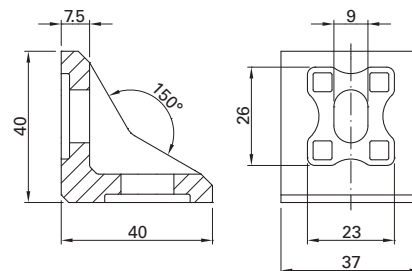
Technical Data

Material: GD-Zn black KTL coated, galvanized steel

Tightening torque

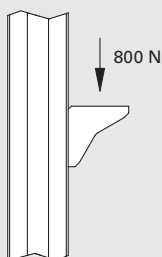
IBS M08x020NIKO = 20 Nm

By turning the centering insert (GUS4502), the angle bracket can be used in either the 40 mm or the 50 mm series.

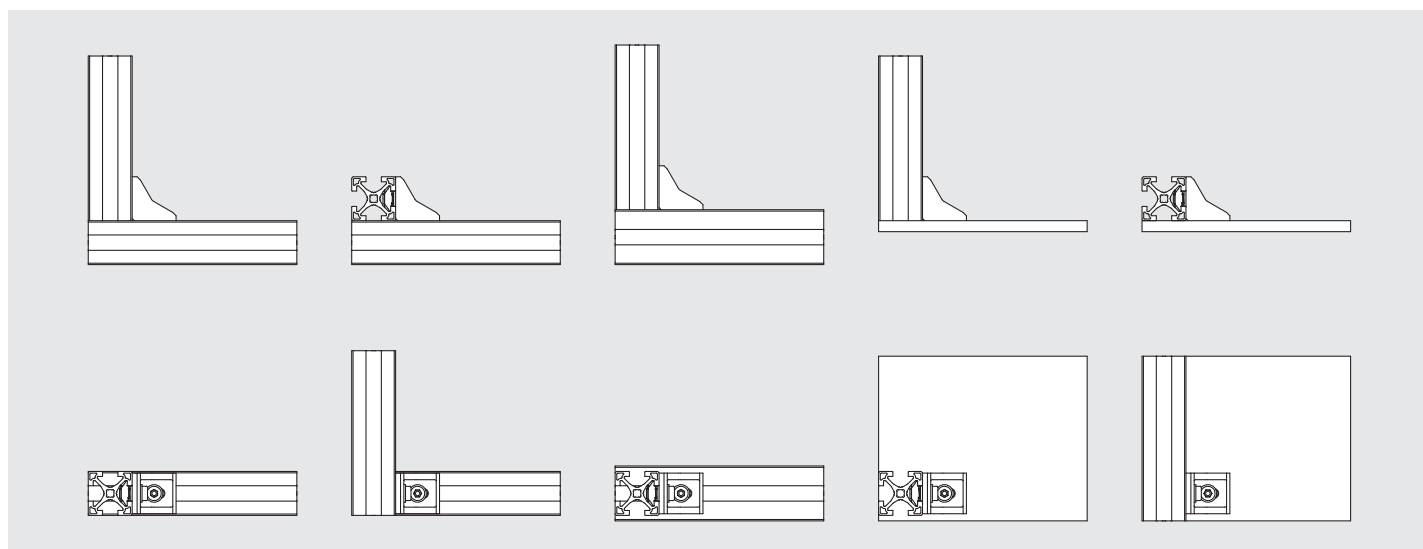


A in 40 mm series = 20

A in 50 mm series = 25



Applications



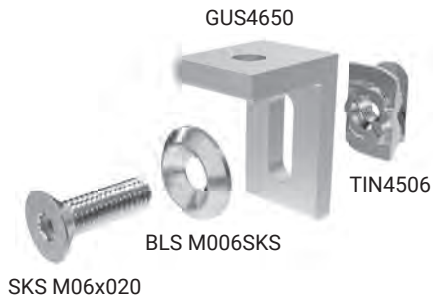
Order Code

Description	Scope of Delivery					Order Code	Weight
	GUS4500	GUS4502	TIN4508	IBS M08x020NIKO	BLS M008		
Corner Bracket 40/50, pack of 50 pcs.	50	-	-	-	-	GUS4500PAC	9.920 kg
Corner Bracket 40/50 Kit	1	2	2	2	2	GUS4501	0.186 kg
Corner Bracket 40/50 Kit, parts packed separately, pack of 100 pcs.	100	200	200	200	200	GUS4501CPPAC0100	18.200 kg
Corner Bracket 40/50 Kit, parts packed separately, pack of 1000 pcs.	1000	2000	2000	2000	2000	GUS4501CPPAC1000	182.000 kg
Centering Insert for Corner Bracket 40/50, pack of 100 pcs.	-	100	-	-	-	GUS4502PAC	1.280 kg

Drawing dimensions in mm

GUS4651

Fixing Bracket 35x25

**Application**

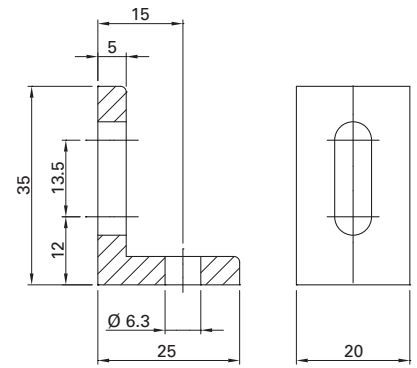
Used for 90° connections and as strengthening element in combination with Robotunits extrusion technology with non-Robotunits components. Particularly suitable for fixing table plates and similar surface elements

Technical Data

Material: clear anodized aluminum galvanized steel

Tightening torque

SKS M06x020 = 9 Nm



Applications

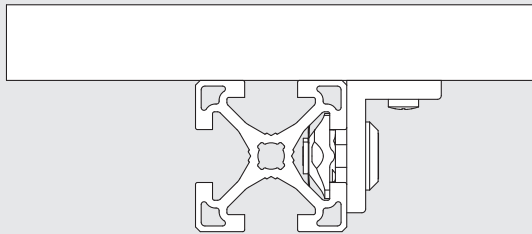
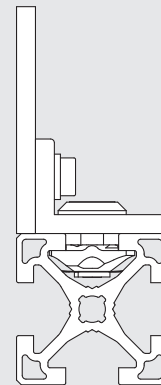


Table plate fastening



Surface element fastening

Order Code

Description	Scope of Delivery				Order Code	Weight
	GUS4650	TIN4506	SKS M06x020	BLS M006SKS		
Fixing Bracket 35x25 Kit	1	1	1	1	GUS4651	0.030 kg

Drawing dimensions in mm

GUS100_

Corner Bracket 100

**Application**

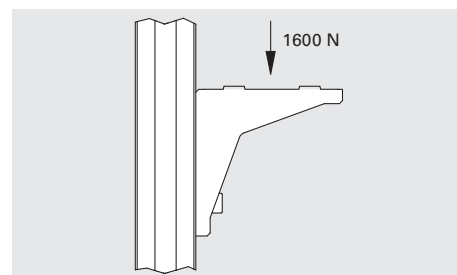
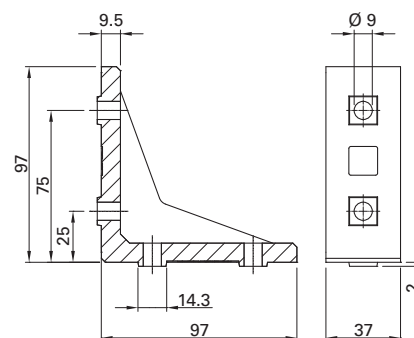
Used for 90° connections and as strengthening element in combination with Robotunits fasteners. The GUS 1000 can also be used with 40 mm series extrusions parallel to T-slot centerline.

Technical Data

Material: GD-Zn black KTL coated, galvanized steel

Tightening torque

IBS M08x020 = 26 Nm



Order Code

Description	Scope of Delivery			Order Code		Weight
	GUS1000	TIN4508	IBS M08x020			
Corner Bracket 100 Kit	1	4	4	GUS1001	0.615 kg	
Corner Bracket 100 Kit, parts packed separately, pack of 100 pcs.	100	400	400	GUS1001CPPAC0100	60.600 kg	
Corner Bracket 100, pack of 16 pcs.	16	-	-	GUS1000PAC	8.288 kg	

GUS110_

Corner Bracket 100, one side centered

**Application**

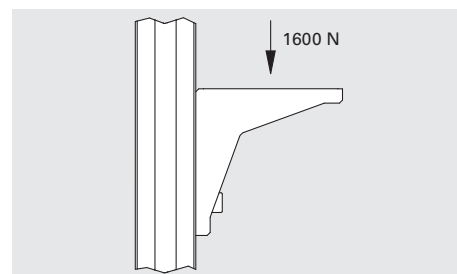
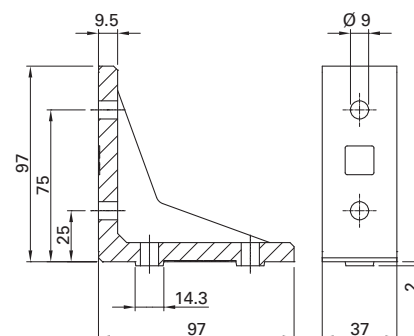
Used for 90° connections and as strengthening element in combination with Robotunits fasteners and non-Robotunits extrusions and surfaces. The GUS 1100 can also be used with 40 mm series extrusions parallel to T-slot centerline.

Technical Data

Material: GD-Zn black KTL coated, galvanized steel

Tightening torque

IBS M08x020 = 26 Nm



Order Code

Description	Scope of Delivery			Order Code		Weight
	GUS1100	TIN4508	IBS M08x020			
Corner Bracket 100 Kit, one side centered	1	4	4	GUS1101	0.615 kg	
Corner Bracket 100 Kit, one side centered, parts packed separately, pack of 100 pcs.	100	400	400	GUS1101CPPAC0100	60.200 kg	
Corner Bracket 100 one side centered, pack of 16 pcs.	16	-	-	GUS1100PAC	8.224 kg	

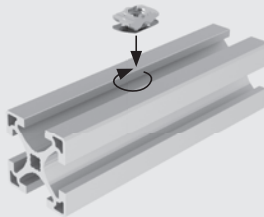
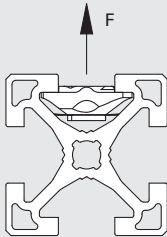
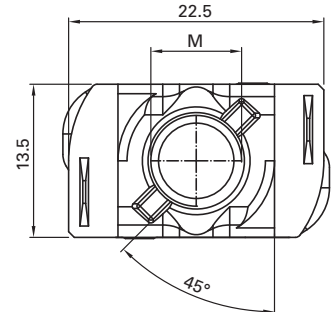
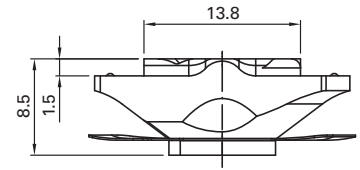
**Application**

Used for 40 mm and 50 mm series extrusions

- Conductive
- Self-centering
- Slip protection (leaf springs)
- Anti-twist safeguard

Technical Data

Material: galvanized steel

**Order Code**

Description	F ¹	Order Code	Weight
Drop-in Nut M4	1500 N	TIN4504	0.010 kg
Drop-in Nut M4, pack of 100 pcs.	1500 N	TIN4504PAC0100	1.000 kg
Drop-in Nut M4, pack of 1000 pcs.	1500 N	TIN4504PAC1000	10.000 kg
Drop-in Nut M5	3000 N	TIN4505	0.010 kg
Drop-in Nut M5, pack of 100 pcs.	3000 N	TIN4505PAC0100	1.000 kg
Drop-in Nut M5, pack of 1000 pcs.	3000 N	TIN4505PAC1000	10.000 kg
Drop-in Nut M6	4500 N	TIN4506	0.010 kg
Drop-in Nut M6, pack of 100 pcs.	4500 N	TIN4506PAC0100	1.000 kg
Drop-in Nut M6, pack of 1000 pcs.	4500 N	TIN4506PAC1000	10.000 kg
Drop-in Nut M8	6000 N	TIN4508	0.010 kg
Drop-in Nut M8, pack of 100 pcs.	6000 N	TIN4508PAC0100	1.000 kg
Drop-in Nut M8, pack of 1000 pcs.	6000 N	TIN4508PAC1000	10.000 kg

1) Pull-out values are based on screw quality 8.8

Drawing dimensions in mm

TIN9990

Inserter



New, with built-in magnet

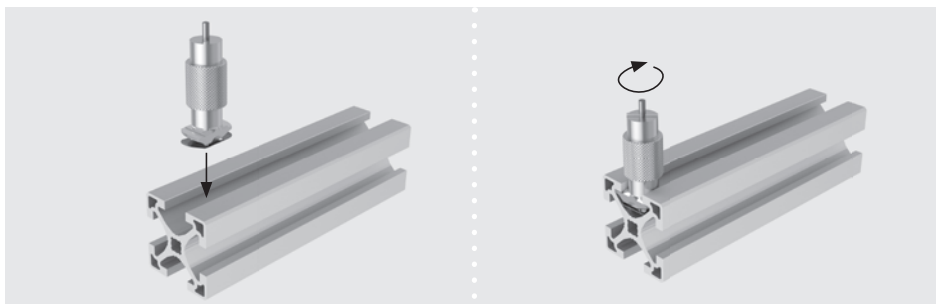
Application

Assembly tool for inserting Drop-in Nuts into T-slot.

Technical Data

Material: galvanized steel

Assembly



Order Code

Description	Order Code	Weight
Inserter	TIN9990	0.045 kg

TIN60_

T-Nut

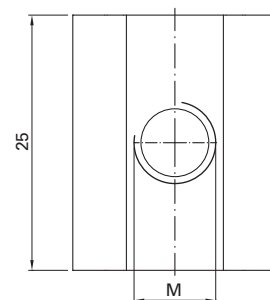
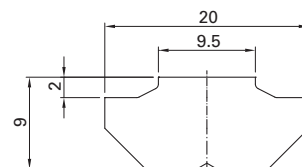
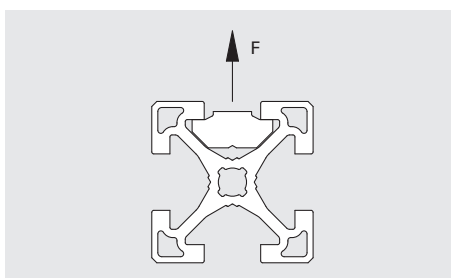
**Application**

For 40 mm series and 50 mm series extrusions

- Self-centering

Technical Data

Material: galvanized steel



Order Code

Description	F ¹⁾	Order Code	Weight
T-Nut M8	7500 N	TIN6008	0.027 kg
T-Nut M10	7500 N	TIN6010	0.025 kg

1) Pull-out values are based on screw quality 8.8
Drawing dimensions in mm

TIN4590

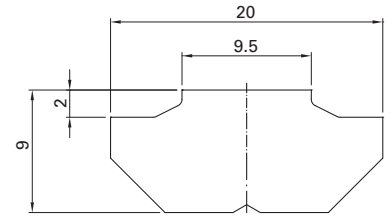
T-Nut Bar

**Application**

Used for specific applications with 40 mm and 50 mm series extrusions

Technical Data

Material: untreated steel
Stock length: 3030 mm



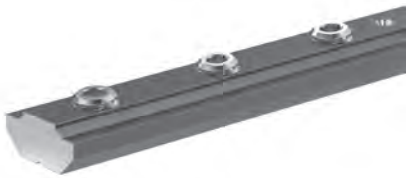
Order Code

Description	Order Code	Weight
T-Nut Bar, cut to length	TIN4590SNN	1.125 kg/m
T-Nut Bar, stock length 3030 mm	TIN4590NNN	3.375 kg



TIN0171

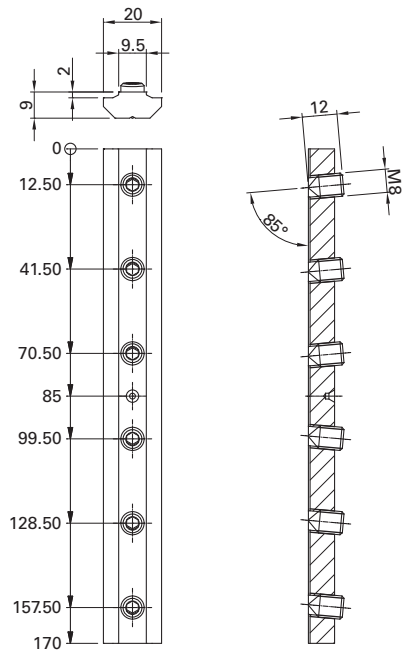
T-Nut In-Line Fastener

**Application**

Used for end-to-end connections of 40 mm and 50 mm series extrusions

Technical Data

Material: galvanized steel



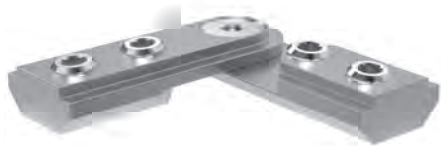
Order Code

Description	Scope of Delivery		Order Code	Weight
	Base Part	GST M08x012 SPI		
T-Nut In-Line Fastener	1	6	TIN0171	0.196 kg

Drawing dimensions in mm

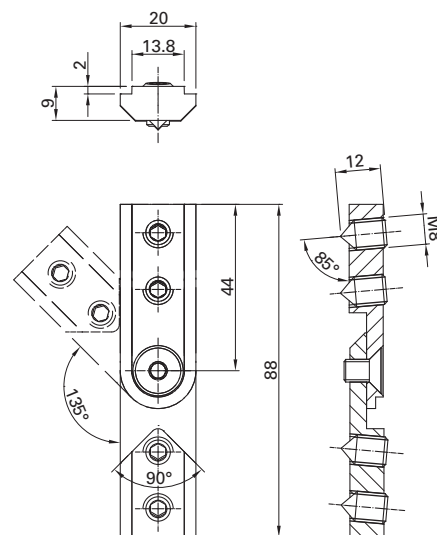
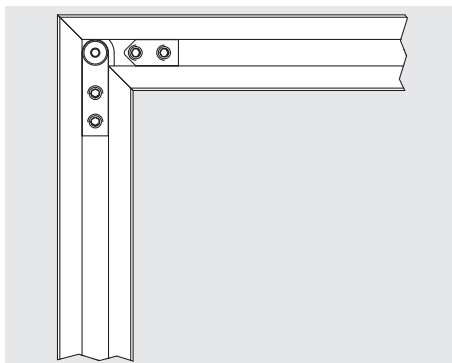
TIN4545

Miter Fastener



Application
Fasteners for extrusions with miter cuts

Technical Data
Material: galvanized steel



Order Code

Description	Scope of Delivery				Order Code	Weight
	Base Part countersunk	Base Part thread	GST M08x012 SPI	SKS M06x010		
Miter Fastener	1	1	4	1	TIN4545	0.098 kg

TIN_000

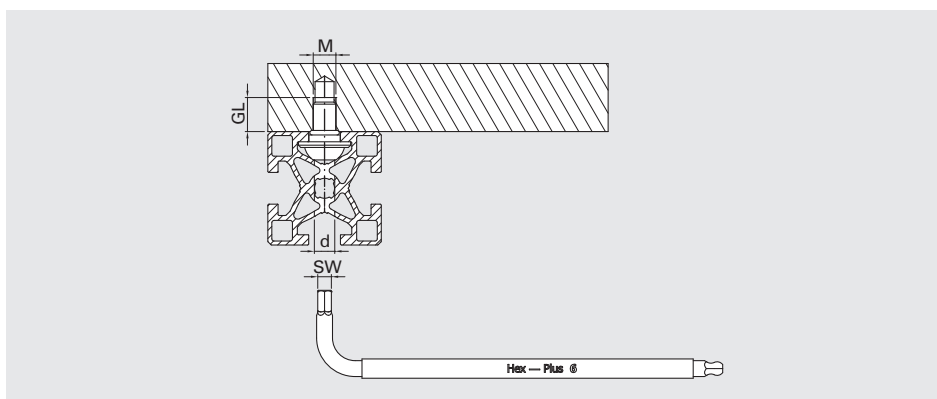
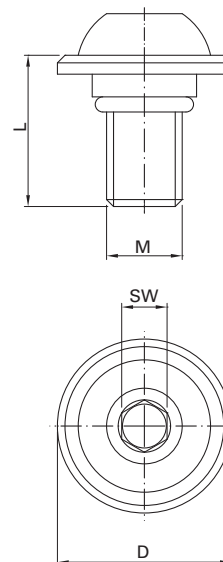
Special Fastener



Application
For mounting parts onto Robotunits extrusions where no holes are to be seen from the outside of the assembly

In contrast with all other Robotunits fasteners, this fastener requires drilling.

Technical Data
Material: galvanized steel, NBR



Order Code

Description	GL	SW	M	d	D	L	Order Code	Weight
Special Fastener 40	15	5	M8	7	20	20	TIN4000	0.016 kg
Special Fastener 50	15	6	M10	9	23	20	TIN5000	0.032 kg



***EASILY CONSTRUCTED
SAFETY FENCE SYSTEM***



Safety standard requirements have never been as demanding as today. National and international standards have to be considered. Quickly changing production requirements and continuous upgrades and adaptations require a flexible and time-saving Safety Fence System.

Order completely pre-assembled components that are easily and quickly installed. Nothing is so simple and safe as the Safety Fence System from Robotunits.



Turn-key offer

- included in the price and delivery: ready-to-insert, completely assembled elements (including safety fence foot and connectors between elements)
- modular safety fence system with flat and door panels
- standard widths from 518 mm to 1507 mm or special-width panels
- standard height 2200 mm or special height panels



Ready to install

- easy installation of fully assembled panels
- minimum installation time



One Mesh Clip, many functions

- impact rated up to 80 kg at 10 km/h
- small number of parts
- visually appealing design



High flexibility

- quick installation of all panels
- panels can be easily removed to gain access to machine area
- adjustable to any angle



Easy installation

- only one person required for setup
- only one Allen wrench size needed
- reusable components



Fully integrated Safety Fence System

- uniform slot size and shape
- completely compatible with entire Modular Automation System
- quick and easy attachment of accessories
- use of standard screws and standard panels



Save time, cut cost

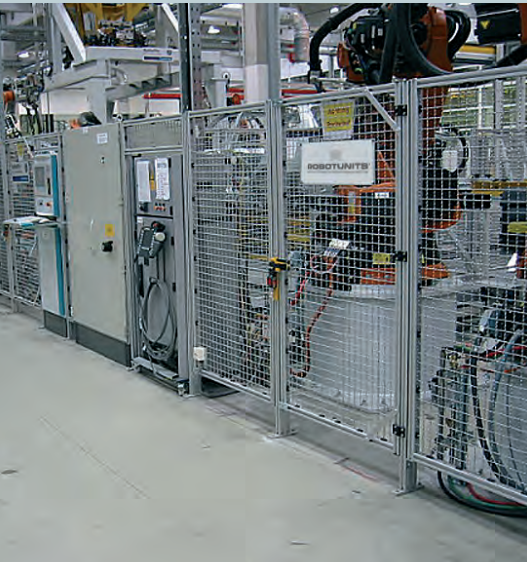
- no additional design expenses
- simple panel selection
- efficient one-person installation
- simple adjustment and setup on-site
- just one order code for the complete safety fence panels
- easy attachment of accessories (safety switches, etc.)



Safety

- complete documentation
- meets European Machinery Safety Standards and the latest automotive industry specifications



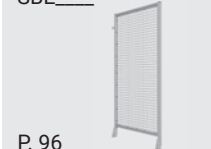


Easily constructed Safety Fence System

Basic System

Page 94

Basic Panel
SBE____



P. 96

Basic Single Door
SBS1044



P. 98

Basic Double Door
SBD2083



P. 99

Basic Sliding Door
SBF0872

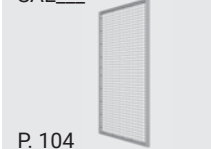


P. 100

Allround System

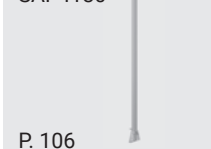
Page 102

Allround Panel
SAE____



P. 104

Allround Post
SAP4180



P. 106

Allround Single Door
SAS1044



P. 107

Allround Double Door
SAD2083



P. 108

Allround Sliding Door
SAF0872



P. 109

Safety Fence Accessory Overview

Page 142



Safety Distances for Safety Systems

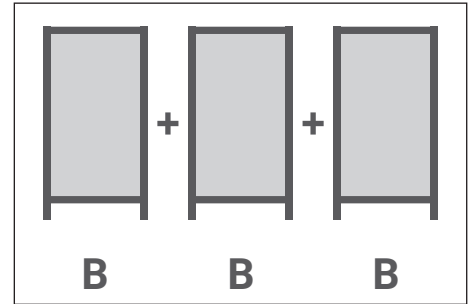
Page 201

Basic System

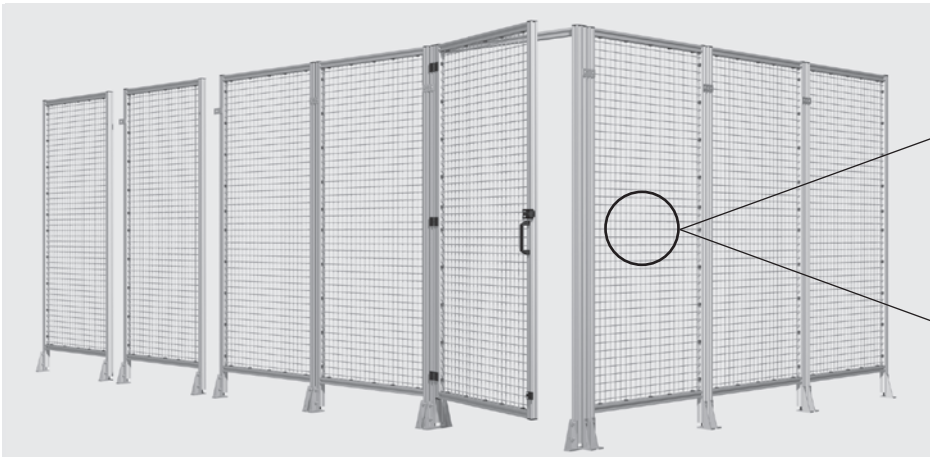
The Basic system is the “classic” among Robotunits safety fence systems. Easy to use and low in price. Ideal for standard applications in machine design and in production automation. The Basic system is capable of stopping up to 80 kg at 10 km/h.

How does the Basic system work?

With the Basic system, the Basic panels (B) or Basic doors (D) are lined up and then directly connected with one another using Safety Fence Fasteners.



Basic System Overview



Panel Options

Weld Mesh with Weld Mesh Clip



Polycarbonate with Panel Profile



Basic Panel



Basic Doors

Single Door



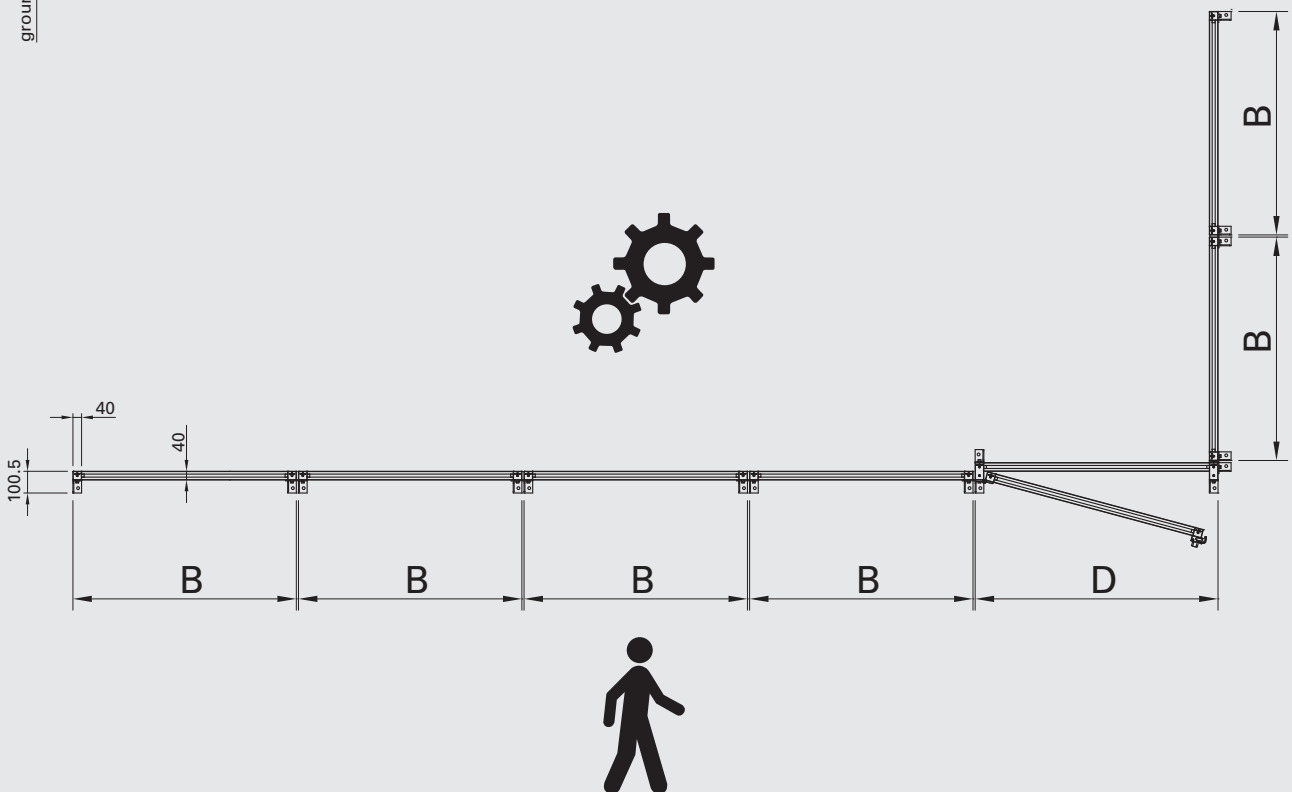
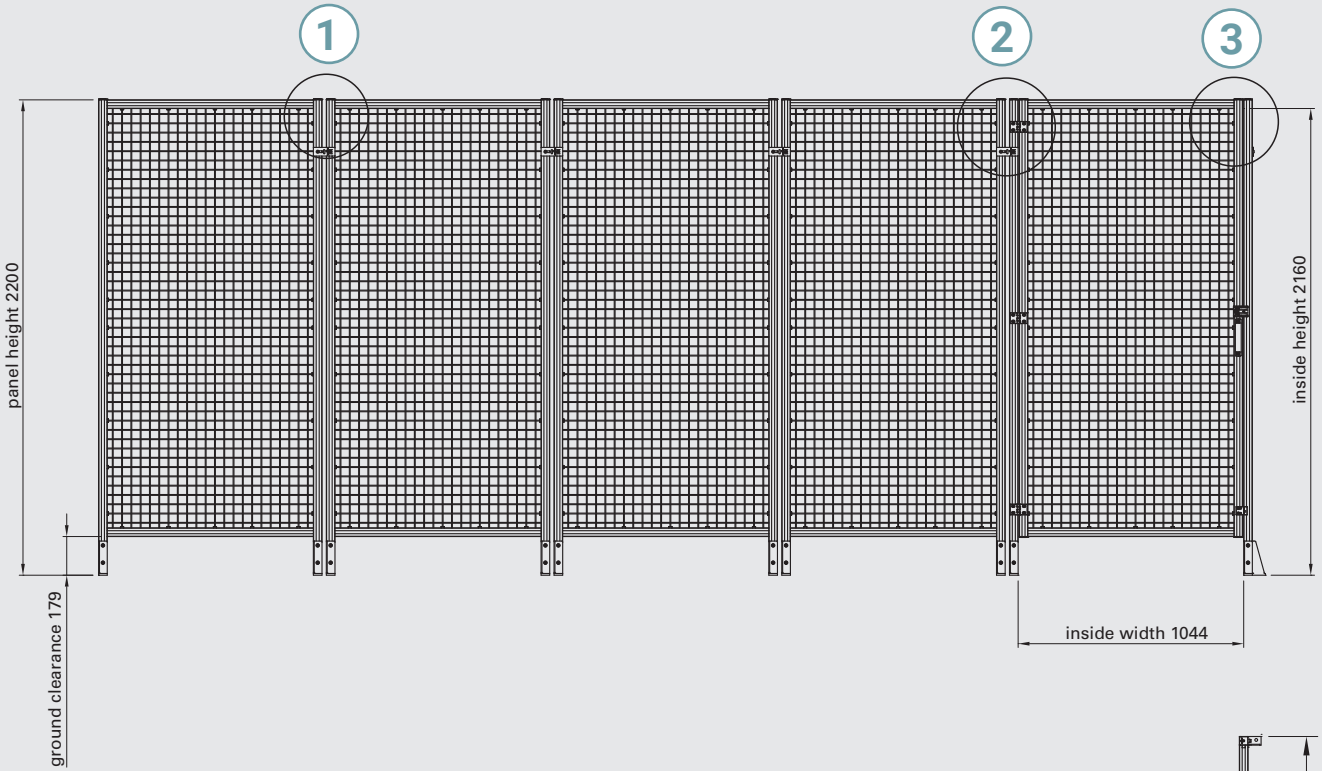
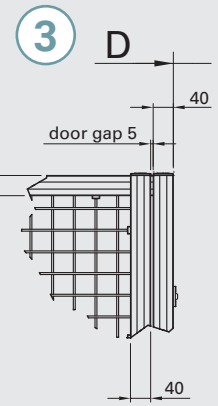
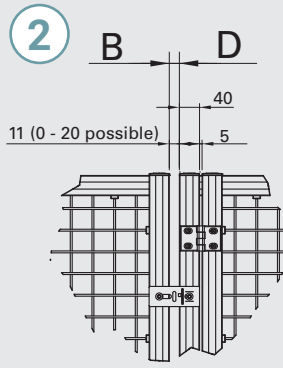
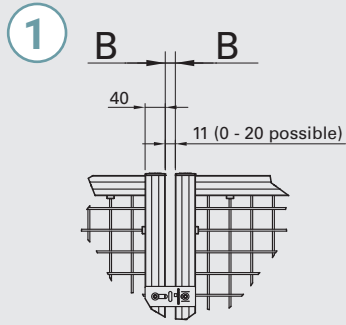
Double Door

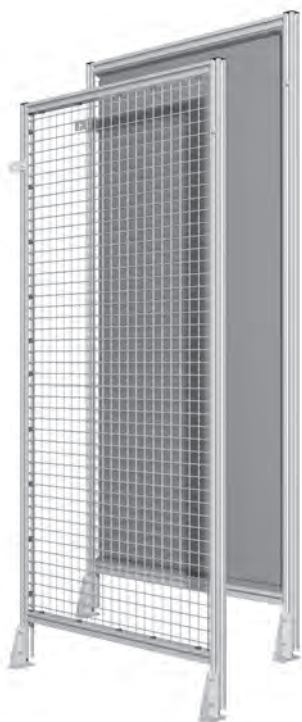


Sliding Door



Basic System Dimensions



**Panel Options:**

Weld Mesh or
4 mm thick Polycarbonate

**Application**

For general safety fencing

Technical Data

Material: EN AW-6063-T66 clear anodized aluminum; galvanized steel, powder-coated, chrome silver steel; black ABS V0 composite; Weld Mesh or Polycarbonate; conductive Weld Mesh and frame; Safety Fence Floor Bracket height adjustable from - 20 / + 5 mm

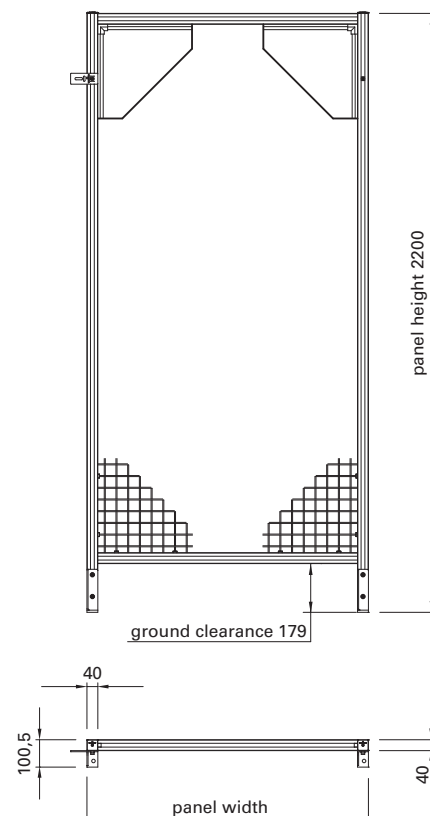
Scope of Delivery

Completely pre-assembled, consisting of:

- 2 Post Extrusions 40x40 PIL4140
 - 2 Horizontal Extrusions 40x40 PIL4140
 - 4 Fasteners FAS4041
 - 1 Safety Fence Fastener TIN4511
 - 2 End Caps CAP4041
 - 2 Safety Fence Floor Brackets BAP2051
- Panel option according to the order code:
- Weld Mesh with Weld Mesh Clip and Safety Fence Mesh Retainer
 - Polycarbonate with Panel Profile

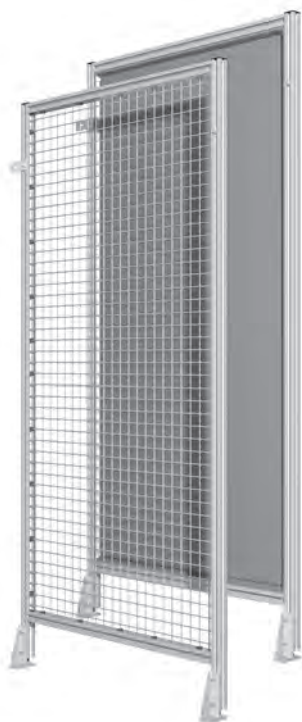
Design tip:

Standard widths offer an outstanding price/performance ratio and quick delivery.

**Order Code**

Description	Order Code	Weight
Basic Panel Standard Width, Weld Mesh, 518x2200 mm	SBE0518SNA	11.797 kg
Basic Panel Standard Width, Weld Mesh, 776x2200 mm	SBE0776SNA	14.610 kg
Basic Panel Standard Width, Weld Mesh, 1034x2200 mm	SBE1034SNA	17.425 kg
Basic Panel Standard Width, Weld Mesh, 1507x2200 mm	SBE1507SNA	22.584 kg
Basic Panel Standard Width, Polycarbonate, 518x2200 mm	SBE0518PNA	12.993 kg
Basic Panel Standard Width, Polycarbonate, 776x2200 mm	SBE0776PNA	16.120 kg
Basic Panel Standard Width, Polycarbonate, 1034x2200 mm	SBE1034PNA	19.246 kg
Basic Panel Standard Width, Polycarbonate, 1507x2200 mm	SBE1507PNA	24.977 kg

Drawing dimensions in mm

**Panel Options:**

Weld Mesh or
4 mm thick Polycarbonate

**Application**

For general safety fencing

Technical Data

Material: EN AW-6063-T66 clear anodized aluminum; galvanized steel, powder-coated, chrome silver steel; black ABS V0 composite; Weld Mesh or Polycarbonate; conductive Weld Mesh and frame; Safety Fence Floor Bracket height adjustable from - 20 / + 5 mm

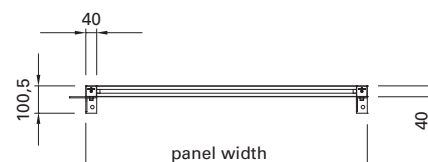
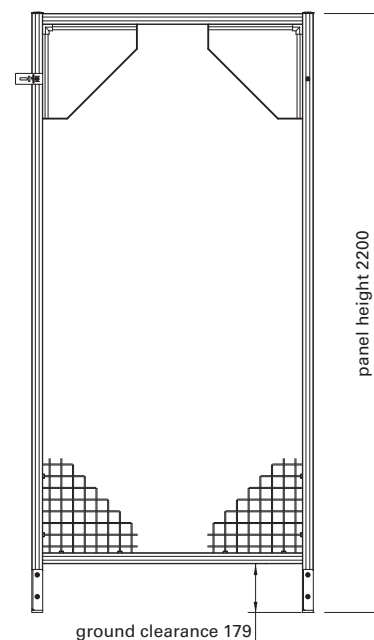
Scope of Delivery

Completely pre-assembled, consisting of:

- 2 Post Extrusions 40x40 PIL4140
 - 2 Horizontal Extrusions 40 x 40 PIL4140
 - 4 Fasteners FAS4041
 - 1 Safety Fence Fastener TIN4511
 - 2 End Caps CAP4041
 - 2 Safety Fence Floor Brackets BAP2051
- Panel option according to the order code:
- Weld Mesh with Weld Mesh Clip and Safety Fence Mesh Retainer
 - Polycarbonate with Panel Profile

Note for Polycarbonate panel option:

Any special widths from 152 to 1506 mm are available.

**Order Code**

Description	Order Code	Weight
Basic Panel Special Width, Weld Mesh, 131x2200 mm	SBE0131SNA	7.578 kg
Basic Panel Special Width, Weld Mesh, 174x2200 mm	SBE0174SNA	8.046 kg
Basic Panel Special Width, Weld Mesh, 217x2200 mm	SBE0217SNA	8.515 kg
Basic Panel Special Width, Weld Mesh, 260x2200 mm	SBE0260SNA	8.984 kg
Basic Panel Special Width, Weld Mesh, 303x2200 mm	SBE0303SNA	9.453 kg
Basic Panel Special Width, Weld Mesh, 346x2200 mm	SBE0346SNA	9.922 kg
Basic Panel Special Width, Weld Mesh, 389x2200 mm	SBE0389SNA	10.391 kg
Basic Panel Special Width, Weld Mesh, 432x2200 mm	SBE0432SNA	10.859 kg
Basic Panel Special Width, Weld Mesh, 475x2200 mm	SBE0475SNA	11.328 kg
Basic Panel Special Width, Weld Mesh, 561x2200 mm	SBE0561SNA	12.266 kg
Basic Panel Special Width, Weld Mesh, 604x2200 mm	SBE0604SNA	12.735 kg
Basic Panel Special Width, Weld Mesh, 647x2200 mm	SBE0647SNA	13.204 kg
Basic Panel Special Width, Weld Mesh, 690x2200 mm	SBE0690SNA	13.672 kg
Basic Panel Special Width, Weld Mesh, 733x2200 mm	SBE0733SNA	14.141 kg
Basic Panel Special Width, Weld Mesh, 819x2200 mm	SBE0819SNA	15.079 kg
Basic Panel Special Width, Weld Mesh, 862x2200 mm	SBE0862SNA	15.548 kg
Basic Panel Special Width, Weld Mesh, 905x2200 mm	SBE0905SNA	16.018 kg
Basic Panel Special Width, Weld Mesh, 948x2200 mm	SBE0948SNA	16.487 kg
Basic Panel Special Width, Weld Mesh, 991x2200 mm	SBE0991SNA	16.956 kg
Basic Panel Special Width, Weld Mesh, 1077x2200 mm	SBE1077SNA	17.894 kg
Basic Panel Special Width, Weld Mesh, 1120x2200 mm	SBE1120SNA	18.363 kg
Basic Panel Special Width, Weld Mesh, 1163x2200 mm	SBE1163SNA	18.832 kg
Basic Panel Special Width, Weld Mesh, 1206x2200 mm	SBE1206SNA	19.301 kg
Basic Panel Special Width, Weld Mesh, 1249x2200 mm	SBE1249SNA	19.770 kg
Basic Panel Special Width, Weld Mesh, 1292x2200 mm	SBE1292SNA	20.239 kg
Basic Panel Special Width, Weld Mesh, 1335x2200 mm	SBE1335SNA	20.708 kg
Basic Panel Special Width, Weld Mesh, 1378x2200 mm	SBE1378SNA	21.177 kg
Basic Panel Special Width, Weld Mesh, 1421x2200 mm	SBE1421SNA	21.646 kg
Basic Panel Special Width, Weld Mesh, 1464x2200 mm	SBE1464SNA	22.115 kg

Drawing dimensions in mm



Left-hand hung Single Door

Design tip:

Safety fence door elements may need to be additionally grounded.

Application

For general safety fencing

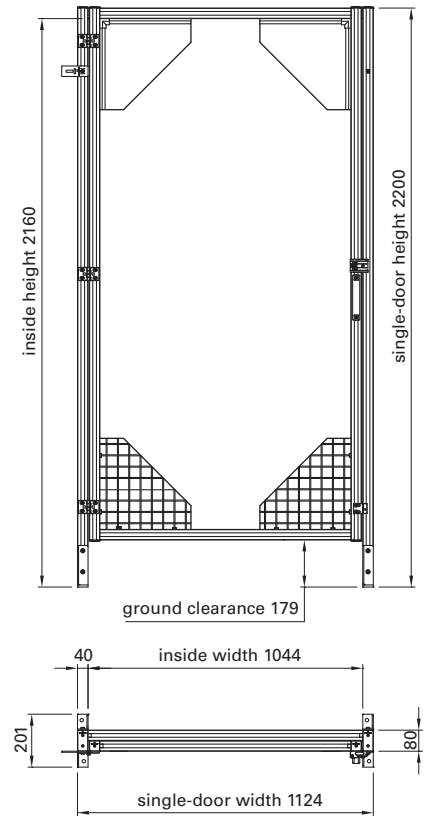
Technical Data

Material: EN AW-6063-T66 clear anodized aluminum; galvanized steel, powder-coated, chrome silver steel; black ABS V0 composite; Weld Mesh or Polycarbonate; conductive Weld Mesh and frame; Safety Fence Floor Bracket height adjustable from - 20 / + 5 mm

Scope of Delivery

Completely pre-assembled, consisting of:

- 2 Post Extrusions 40 x 80 PIL4180
 - 1 Horizontal Extrusion 40 x 40 PIL4140
 - 4 Door Panel Extrusions 40 x 40 PIL4140
 - 6 Fasteners FAS4041
 - 1 Safety Fence Fastener TIN4511
 - 4 End Caps CAP4041
 - 2 End Caps CAP4081
 - 4 Safety Fence Floor Brackets BAP2051
 - 1 Handle DOR4501
 - 3 Hinges DOR4511
 - 1 Door Catch DOR4553
 - 1 Door Stop DOR4555
- Panel option according to the order code:
- Weld Mesh with Weld Mesh Clip and Safety Fence Mesh Retainer
 - Polycarbonate with Panel Profile



Order Code

Description	Order Code	Weight
Basic Single Door, Weld Mesh, hinge on the left	SBS1044SLA	29.974 kg
Basic Single Door, Weld Mesh, hinge on the right	SBS1044SRA	29.974 kg
Basic Single Door, Polycarbonate, hinge on the left	SBS1044PLA	31.795 kg
Basic Single Door, Polycarbonate, hinge on the right	SBS1044PRA	31.795 kg

Drawing dimensions in mm

SBD2083

Basic Double Door



Left-hand hung Double Door

Design tip:

Safety fence door elements may need to be additionally grounded.

Application

For general safety fencing

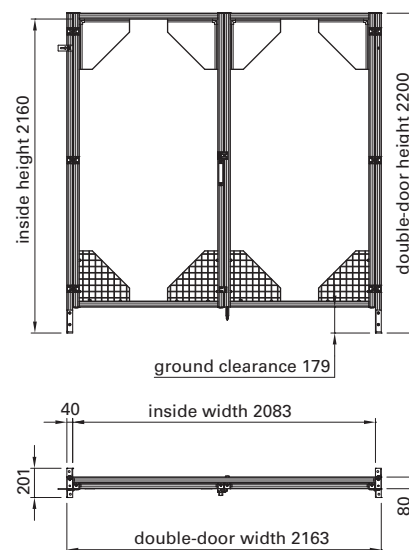
Technical Data

Material: EN AW-6063-T66 clear anodized aluminum; galvanized steel, powder-coated, chrome silver steel; black ABS V0 composite; Weld Mesh or Polycarbonate; conductive Weld Mesh and frame; Safety Fence Floor Bracket height adjustable from - 20 / + 5 mm

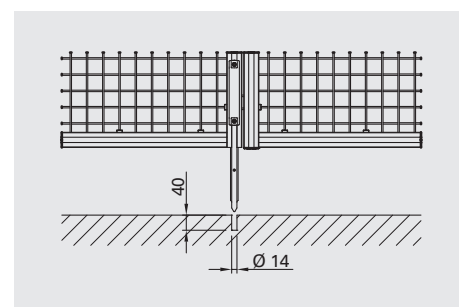
Scope of Delivery

Completely pre-assembled, consisting of:

- 2 Post Extrusions 40 x 80 PIL4180
 - 1 Horizontal Extrusion 40 x 40 PIL4140
 - 8 Door Panel Extrusions 40 x 40 PIL4140
 - 10 Fasteners FAS4041
 - 1 Safety Fence Fastener TIN4511
 - 7 End Caps CAP4041
 - 2 End Caps CAP4081
 - 4 Safety Fence Floor Brackets BAP2051
 - 1 Handle DOR4501
 - 6 Hinges DOR4511
 - 1 Door Catch DOR4553
 - 1 Door Stop DOR4555
 - 1 Floor Catch DOR4561
- Panel option according to the order code:
- Weld Mesh with Weld Mesh Clip and Safety Fence Mesh Retainer
 - Polycarbonate with Panel Profile



Floor Catch



Order Code

Description	Order Code	Weight
Basic Double Door, Weld Mesh, hinge on the left	SBD2083SLA	48.098 kg
Basic Double Door, Weld Mesh, hinge on the right	SBD2083SRA	48.098 kg
Basic Double Door, Polycarbonate, hinge on the left	SBD2083PLA	51.739 kg
Basic Double Door, Polycarbonate, hinge on the right	SBD2083PRA	51.739 kg

Drawing dimensions in mm



Sliding door opening on right

Design tip:

Safety fence door elements may need to be additionally grounded.

Application

For general safety fencing

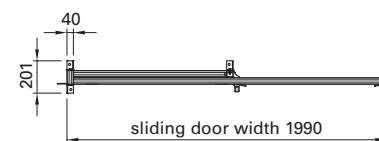
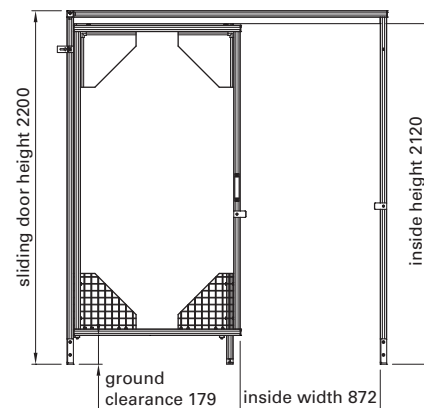
Technical Data

Material: EN AW-6063-T66 clear anodized aluminum; galvanized steel, powder-coated, chrome silver steel; black ABS V0 composite; Weld Mesh or Polycarbonate; conductive Weld Mesh and frame; Safety Fence Floor Bracket height adjustable from - 20 / + 5 mm

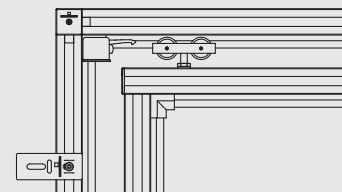
Scope of Delivery

Completely pre-assembled, consisting of:

- 2 Post Extrusions 40 x 80 PIL4180
 - 1 Horizontal Extrusion 40 x 40 PIL4140
 - 4 Sliding Door Extrusions 40 x 40 PIL4140
 - 3 Fixed Panel Extrusions 40 x 40 PIL4140
 - 10 Fasteners FAS4041
 - 1 Fastener FAS4081
 - 1 Safety Fence Fastener TIN4511
 - 9 End Caps CAP4041
 - 5 Safety Fence Floor Brackets BAP2051
 - 2 Roller Sets DOR4031
 - 2 Sliding Door Stops DOR4032
 - 1 Sliding Door Track DOL4034
 - 1 Handle DOR4501
 - 2 Centering Guides DOR4571
 - 2 Sliders DOR4573
- Panel option according to the order code:
- Weld Mesh with Weld Mesh Clip and Safety Fence Mesh Retainer
 - Polycarbonate with Panel Profile

**Rubber stop**

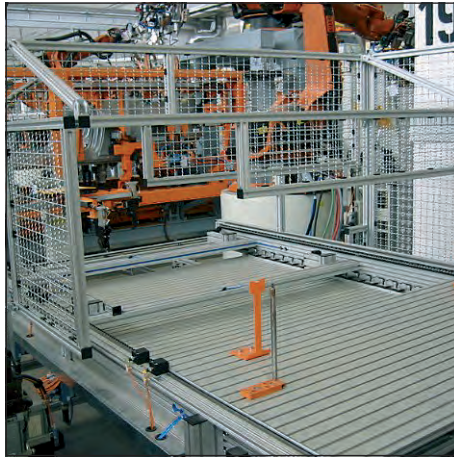
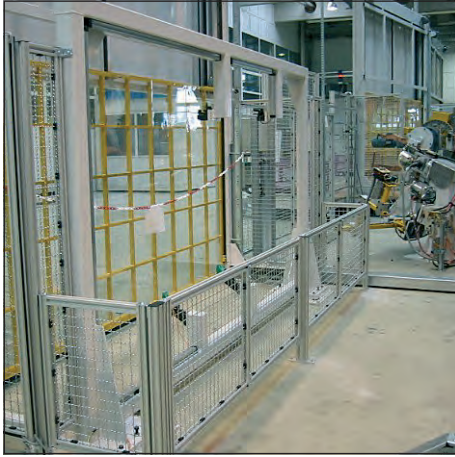
Rubber stop with retention spring

**Order Code**

Description	Order Code	Weight
Basic Sliding Door, Weld Mesh, opening on the left	SBF0872SLA	46.060 kg
Basic Sliding Door, Weld Mesh, opening on the right	SBF0872SRA	46.060 kg
Basic Sliding Door, Polycarbonate, opening on the left	SBF0872PLA	50.202 kg
Basic Sliding Door, Polycarbonate, opening on the right	SBF0872PRA	50.202 kg

Drawing dimensions in mm

Safety Fence Application Examples

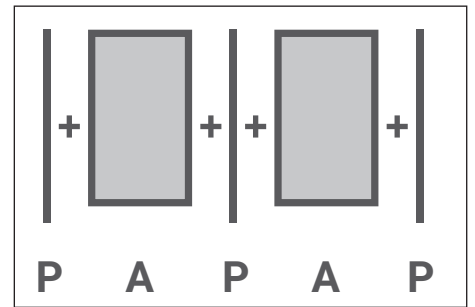


Allround System

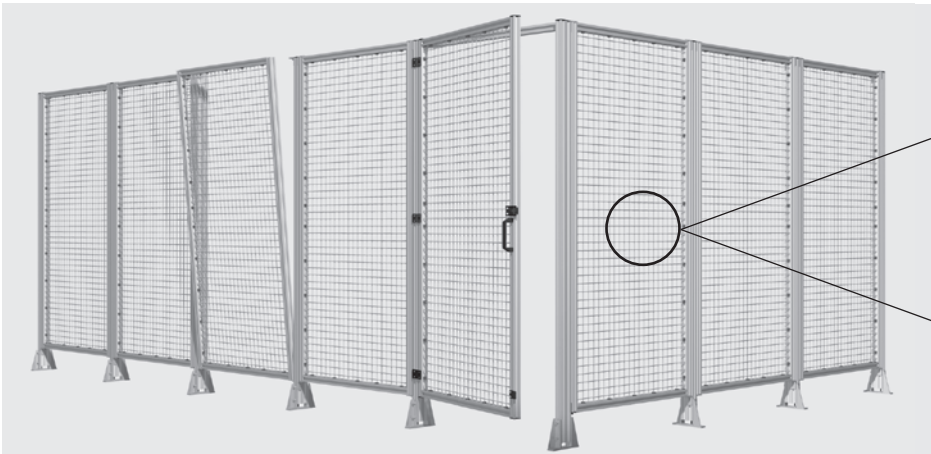
The Allround system offers high flexibility. Panels can be attached and removed from the pre-assembled posts. This allows for easy access to the safety area without disconnecting any accessories attached to the posts, e.g. air hoses, safety equipment etc. The Allround system is capable of stopping up to 80 kg at 10 km/h.

How does the Allround system work?

In the Allround System, Allround panels (A) are fitted and bolted to the pre-assembled posts (P).



Allround System Overview



Panel Options

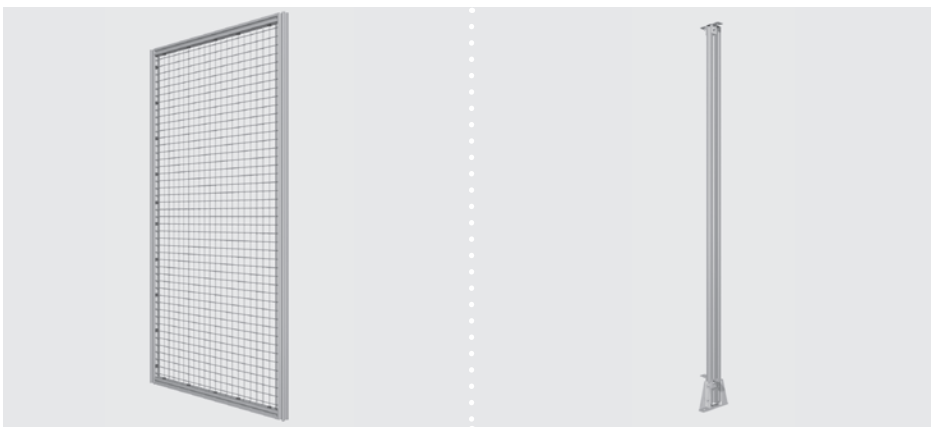
Weld Mesh with Weld Mesh Clip



Polycarbonate with Panel Profile



Allround Panel and Post



Allround Doors

Single Door



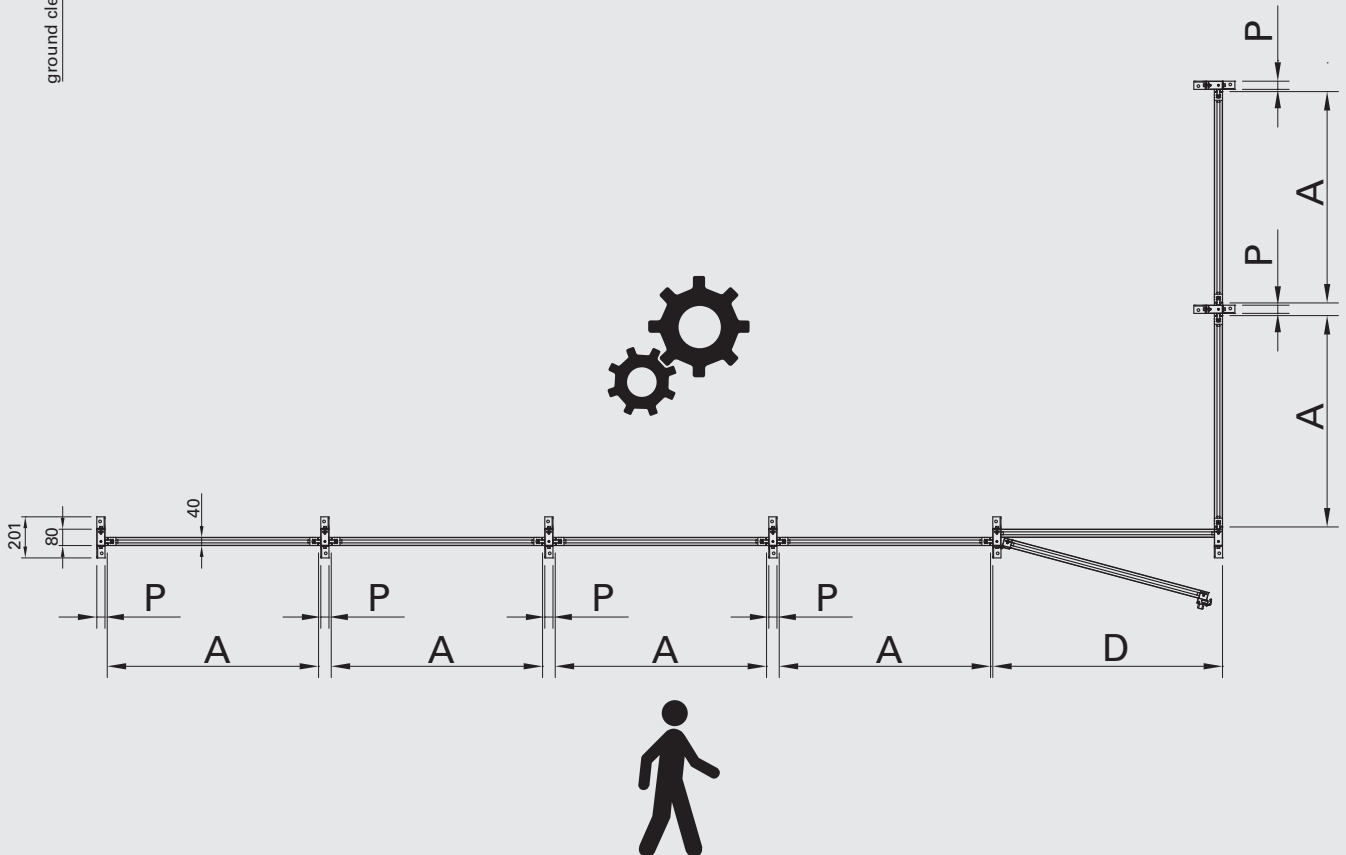
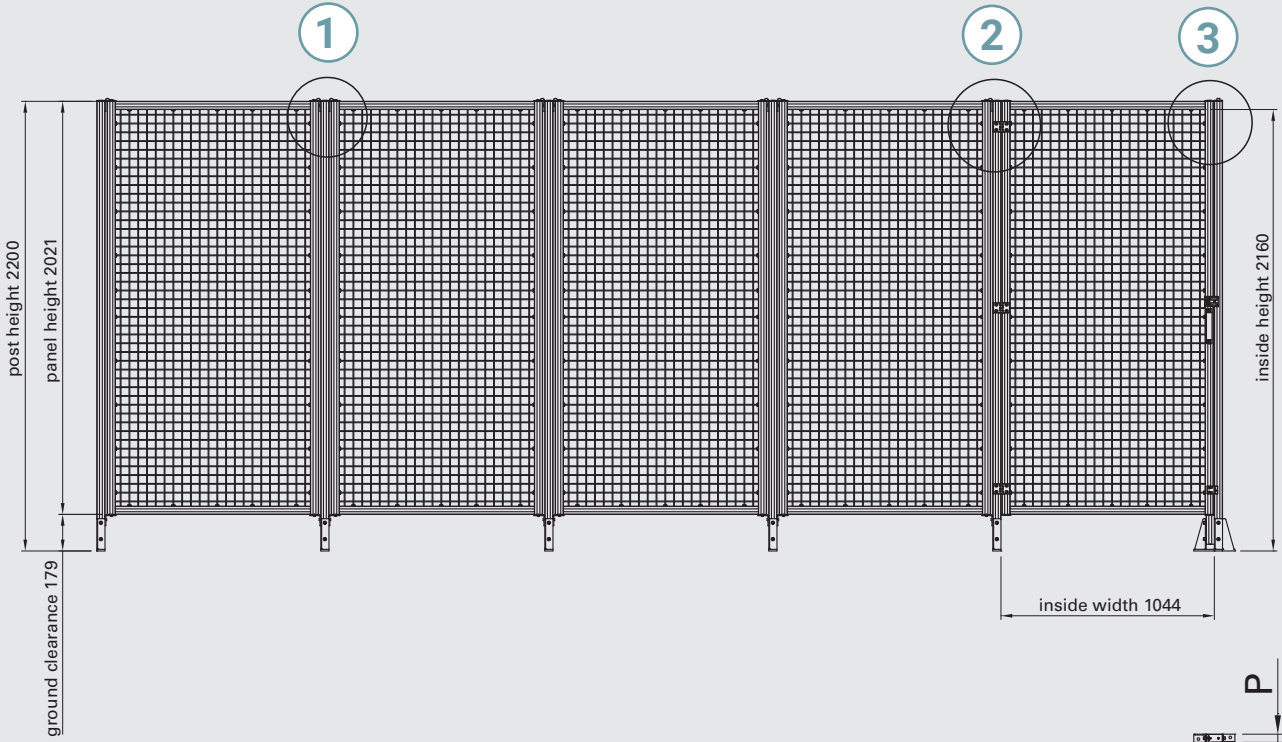
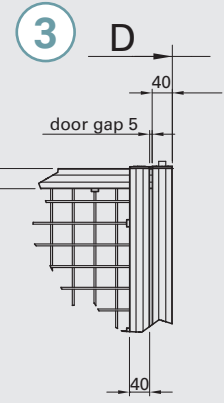
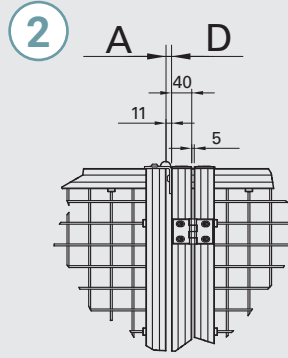
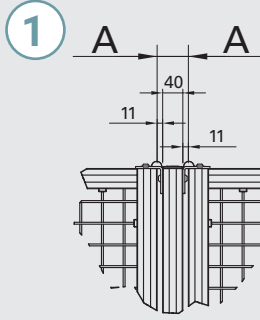
Double Door



Sliding Door



Allround System Dimensions



**Panel Options:**

Weld Mesh or
4 mm thick Polycarbonate

Application

For general safety fencing in combination with Allround posts

Technical Data

Material: EN AW-6063-T66 clear anodized aluminum; galvanized steel; Weld Mesh or Polycarbonate; conductive Weld Mesh and frame

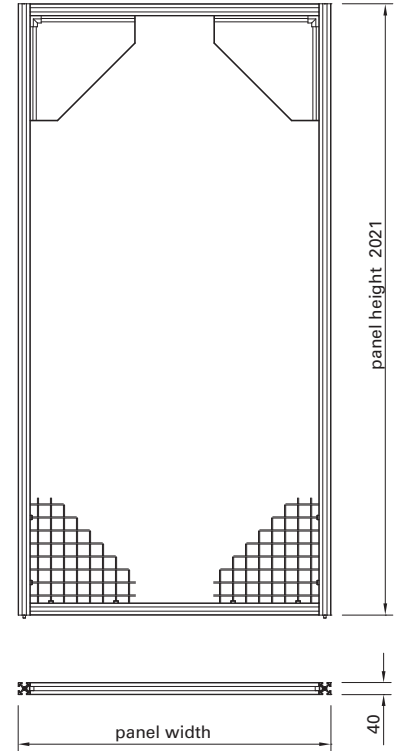
Scope of Delivery

Completely pre-assembled, consisting of:

- 4 Extrusions 40x40 PIL4140
 - 4 Fasteners FAS4041
 - 2 Bolts SSP4900
- Panel option according to the order code:
- Weld Mesh with Weld Mesh Clip and Safety Fence Mesh Retainer
 - Polycarbonate with Panel Profile

Design tip:

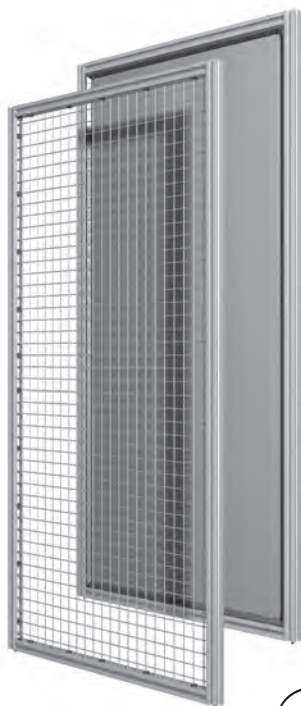
Standard widths offer an outstanding price/performance ratio and quick delivery.



Order Code

Description	Order Code	Weight
Allround Panel Standard Width, Weld Mesh, 518x2021 mm	SAE0518SNN	10.034 kg
Allround Panel Standard Width, Weld Mesh, 776x2021 mm	SAE0776SNN	12.847 kg
Allround Panel Standard Width, Weld Mesh, 1034x2021 mm	SAE1034SNN	15.661 kg
Allround Panel Standard Width, Weld Mesh, 1507x2021 mm	SAE1507SNN	20.820 kg
Allround Panel Standard Width, Polycarbonate, 518x2021 mm	SAE0518PNN	11.230 kg
Allround Panel Standard Width, Polycarbonate, 776x2021 mm	SAE0776PNN	14.356 kg
Allround Panel Standard Width, Polycarbonate, 1034x2021 mm	SAE1034PNN	17.482 kg
Allround Panel Standard Width, Polycarbonate, 1507x2021 mm	SAE1507PNN	23.214 kg

Drawing dimensions in mm



Panel Options:
Weld Mesh or
4 mm thick Polycarbonate



Application

For general safety fencing in combination with Allround posts

Technical Data

Material: EN AW-6063-T66 clear anodized aluminum; galvanized steel, Weld Mesh or Polycarbonate; conductive Weld Mesh and frame

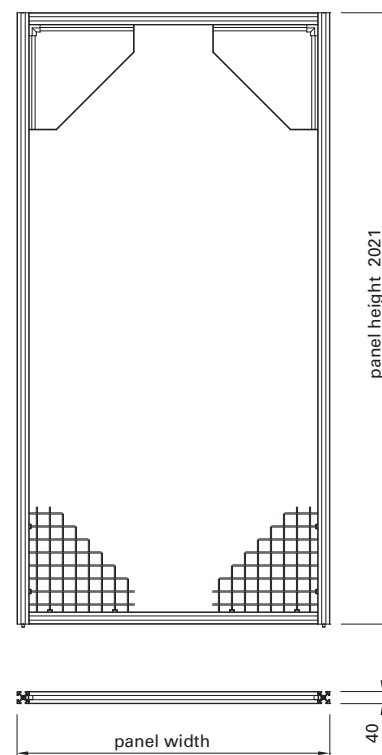
Scope of Delivery

Completely pre-assembled, consisting of:

- 4 Extrusions 40x40 PIL4140
 - 4 Fasteners FAS4041
 - 2 Bolts SSP4900
- Panel option according to the order code:
- Weld Mesh with Weld Mesh Clip and Safety Fence Mesh Retainer
 - Polycarbonate with Panel Profile

Note for Polycarbonate panel option:

Any special widths from 152 to 1506 mm are available for 4 mm thick Polycarbonate panel option



Order Code

Description	Order Code	Weight
Allround Panel Special Width, Weld Mesh, 131x2021 mm	SAE0131SNN	5.815 kg
Allround Panel Special Width, Weld Mesh, 174x2021 mm	SAE0174SNN	6.283 kg
Allround Panel Special Width, Weld Mesh, 217x2021 mm	SAE0217SNN	6.752 kg
Allround Panel Special Width, Weld Mesh, 260x2021 mm	SAE0260SNN	7.221 kg
Allround Panel Special Width, Weld Mesh, 303x2021 mm	SAE0303SNN	7.690 kg
Allround Panel Special Width, Weld Mesh, 346x2021 mm	SAE0346SNN	8.159 kg
Allround Panel Special Width, Weld Mesh, 389x2021 mm	SAE0389SNN	8.628 kg
Allround Panel Special Width, Weld Mesh, 432x2021 mm	SAE0432SNN	9.096 kg
Allround Panel Special Width, Weld Mesh, 475x2021 mm	SAE0475SNN	9.565 kg
Allround Panel Special Width, Weld Mesh, 561x2021 mm	SAE0561SNN	10.503 kg
Allround Panel Special Width, Weld Mesh, 604x2021 mm	SAE0604SNN	10.972 kg
Allround Panel Special Width, Weld Mesh, 647x2021 mm	SAE0647SNN	11.441 kg
Allround Panel Special Width, Weld Mesh, 690x2021 mm	SAE0690SNN	11.909 kg
Allround Panel Special Width, Weld Mesh, 733x2021 mm	SAE0733SNN	12.378 kg
Allround Panel Special Width, Weld Mesh, 819x2021 mm	SAE0819SNN	13.316 kg
Allround Panel Special Width, Weld Mesh, 862x2021 mm	SAE0862SNN	13.785 kg
Allround Panel Special Width, Weld Mesh, 905x2021 mm	SAE0905SNN	14.254 kg
Allround Panel Special Width, Weld Mesh, 948x2021 mm	SAE0948SNN	14.723 kg
Allround Panel Special Width, Weld Mesh, 991x2021 mm	SAE0991SNN	15.192 kg
Allround Panel Special Width, Weld Mesh, 1077x2021 mm	SAE1077SNN	16.130 kg
Allround Panel Special Width, Weld Mesh, 1120x2021 mm	SAE1120SNN	16.599 kg
Allround Panel Special Width, Weld Mesh, 1163x2021 mm	SAE1163SNN	17.068 kg
Allround Panel Special Width, Weld Mesh, 1206x2021 mm	SAE1206SNN	17.537 kg
Allround Panel Special Width, Weld Mesh, 1249x2021 mm	SAE1249SNN	18.006 kg
Allround Panel Special Width, Weld Mesh, 1292x2021 mm	SAE1292SNN	18.475 kg
Allround Panel Special Width, Weld Mesh, 1335x2021 mm	SAE1335SNN	18.944 kg
Allround Panel Special Width, Weld Mesh, 1378x2021 mm	SAE1378SNN	19.413 kg
Allround Panel Special Width, Weld Mesh, 1421x2021 mm	SAE1421SNN	19.882 kg
Allround Panel Special Width, Weld Mesh, 1464x2021 mm	SAE1464SNN	20.351 kg

Drawing dimensions in mm

**Application**

Posts for Safety Fence Components

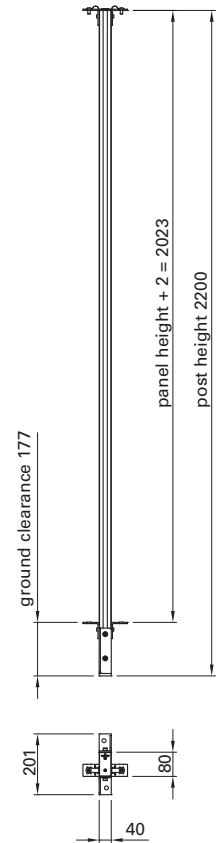
Technical Data

Material: EN AW-6063-T66 clear anodized aluminum; galvanized steel, powder-coated, chrome silver steel; black ABS V0 composite, conductive, Safety Fence Floor Bracket height adjustable 20 - 5 mm with Screw Retainer

Scope of Delivery

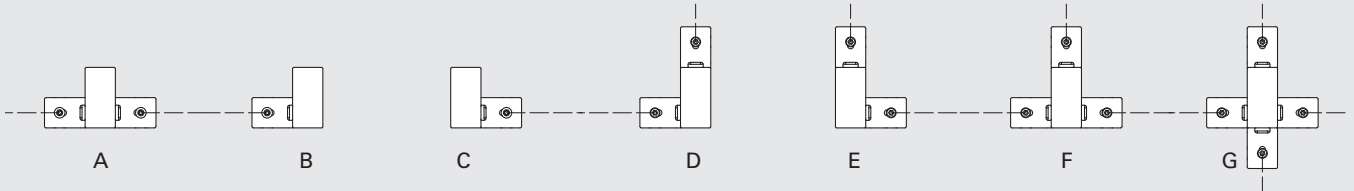
Completely pre-assembled, consisting of:

- 1 Post Extrusion 40 x 80 PIL4180
- 90° Safety Fence Fastener TIN4520 incl. mounting material
- 1 End Cap CAP4081
- 2 Safety Fence Floor Brackets BAP2051
- Screw Retainer SSP5500 as per attachment option



Attachment of Safety Fence Fastener,
Type A

Safety Fence Fastener Attachment Options



Order Code

Description	Order Code	Weight
Allround Post, attachment option A	SAP4180ANA	6.467 kg
Allround Post, attachment option B	SAP4180BNA	6.187 kg
Allround Post, attachment option C	SAP4180CNA	6.187 kg
Allround Post, attachment option D	SAP4180DNA	6.467 kg
Allround Post, attachment option E	SAP4180ENA	6.467 kg
Allround Post, attachment option F	SAP4180FNA	6.747 kg
Allround Post, attachment option G	SAP4180GNA	7.027 kg

Drawing dimensions in mm

SAS1044

Allround Single Door



Left-hand hung Single Door

Design tip:

Safety fence door elements may need to be additionally grounded.

Application

For general safety fencing

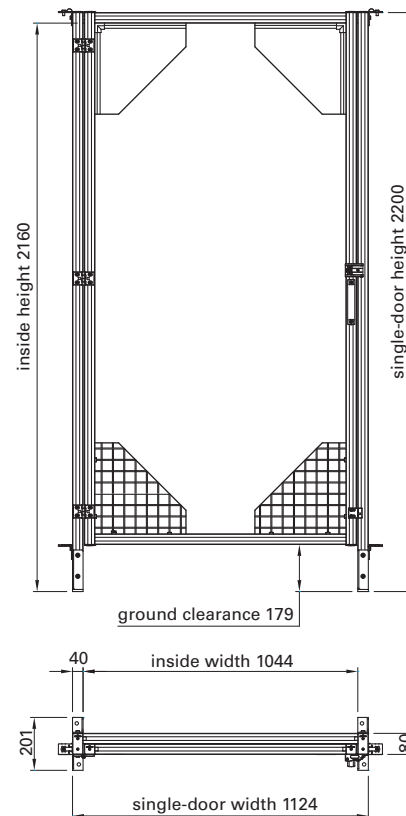
Technical Data

Material: EN AW-6063-T66 clear anodized aluminum; galvanized steel, powder-coated, chrome silver steel; black ABS V0 composite; Weld Mesh or Polycarbonate; conductive Weld Mesh and frame; Safety Fence Floor Bracket height adjustable - 20 / + 5 mm, with Screw Retainer

Scope of Delivery

Completely pre-assembled, consisting of:

- 2 Post Extrusions 40 x 80 PIL4180
 - 1 Horizontal Extrusion 40 x 40 PIL4140
 - 4 Door Panel Extrusions 40 x 40 PIL4140
 - 6 Fasteners FAS4041
 - 4 90° Safety Fence Fasteners TIN4521
 - 4 End Caps CAP4041
 - 2 End Caps CAP4081
 - 4 Safety Fence Floor Brackets BAP2051
 - 1 Handle DOR4501
 - 3 Hinges DOR4511
 - 1 Door Catch DOR4553
 - 1 Door Stop DOR4555
 - 2 Screw Retainers SSP5500
- Panel option according to the order code:
- Weld Mesh with Weld Mesh Clip and Safety Fence Mesh Retainer
 - Polycarbonate with Panel Profile



Order Code

Description	Order Code	Weight
Allround Single Door, Weld Mesh, hinge on the left	SAS1044SLA	30.381 kg
Allround Single Door, Weld Mesh, hinge on the right	SAS1044SRA	30.381 kg
Allround Single Door, Polycarbonate, hinge on the left	SAS1044PLA	32.202 kg
Allround Single Door, Polycarbonate, hinge on the right	SAS1044PRA	32.202 kg

Drawing dimensions in mm



Left-hand hung Double Door

Design tip:

Safety fence door elements may need to be additionally grounded.

Application

For general safety fencing

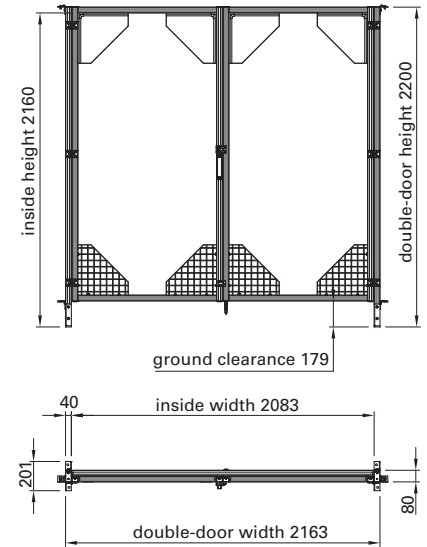
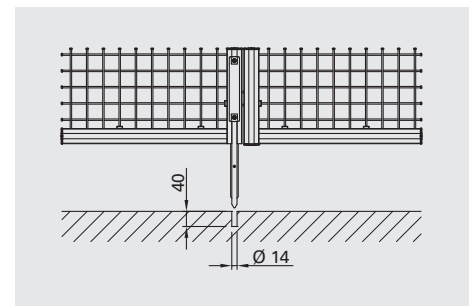
Technical Data

Material: EN AW-6063-T66 clear anodized aluminum; galvanized steel, powder-coated, chrome silver steel; black ABS V0 composite; Weld Mesh or Polycarbonate; conductive Weld Mesh and frame; Safety Fence Floor Bracket height adjustable - 20 / + 5 mm, with Screw Retainer

Scope of Delivery

Completely pre-assembled, consisting of:

- 2 Post Extrusions 40 x 80 PIL4180
 - 1 Horizontal Extrusion 40 x 40 PIL4140
 - 8 Door Panel Extrusions 40 x 40 PIL4140
 - 10 Fasteners FAS4041
 - 4 90° Safety Fence Fasteners TIN4521
 - 7 End Caps CAP4041
 - 2 End Caps CAP4081
 - 4 Safety Fence Floor Brackets BAP2051
 - 1 Handle DOR4501
 - 6 Hinges DOR4511
 - 1 Door Catch DOR4553
 - 1 Door Stop DOR4555
 - 1 Floor Catch DOR4561
 - 2 Screw Retainers SSP5500
- Panel option according to the order code:
- Weld Mesh with Weld Mesh Clip and Safety Fence Mesh Retainer
 - Polycarbonate with Panel Profile

**Floor Catch****Order Code**

Description	Order Code	Weight
Allround Double Door, Weld Mesh, hinge on the left	SAD2083SLA	48.505 kg
Allround Double Door, Weld Mesh, hinge on the right	SAD2083SRA	48.505 kg
Allround Double Door, Polycarbonate, hinge on the left	SAD2083PLA	52.146 kg
Allround Double Door, Polycarbonate, hinge on the right	SAD2083PRA	52.146 kg

Drawing dimensions in mm

SAF0872

Allround Sliding Door



Sliding door opening on right

Application

For general safety fencing

Technical Data

Material: EN AW-6063-T66 clear anodized aluminum; galvanized steel, powder-coated, chrome silver steel; black ABS V0 composite; Weld Mesh or Polycarbonate; conductive Weld Mesh and frame; Safety Fence Floor Bracket height adjustable - 20 / + 5 mm, with Screw Retainer

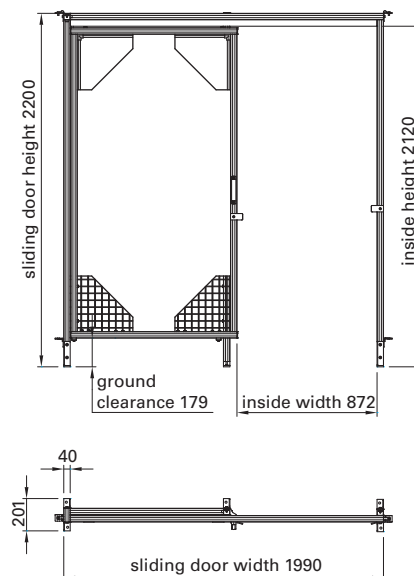
Scope of Delivery

Completely pre-assembled, consisting of:

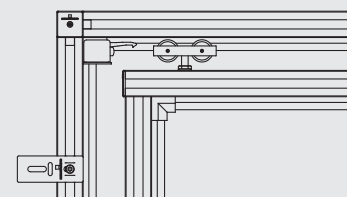
- 2 Post Extrusions 40 x 80 PIL4180
 - 1 Horizontal Extrusion 40 x 40 PIL4140
 - 4 Sliding Door Extrusions 40 x 40 PIL4140
 - 3 Fixed Panel Extrusions 40 x 40 PIL4140
 - 10 Fasteners FAS4041
 - 1 Fastener FAS4081
 - 4 90° Safety Fence Fasteners TIN4521
 - 9 End Caps CAP4041
 - 5 Safety Fence Floor Brackets BAP2051
 - 2 Roller Sets DOR4031
 - 2 Sliding Door Stops DOR4032
 - 1 Sliding Door Track DOL4034
 - 1 Handle DOR4501
 - 2 Centering Guides DOR4571
 - 2 Sliders DOR4573
 - 2 Screw Retainers SSP5500
- Panel option according to the order code:
- Weld Mesh with Weld Mesh Clip and Safety Fence Mesh Retainer
 - Polycarbonate with Panel Profile

Design tip:

Safety fence door elements may need to be additionally grounded.

**Rubber stop**

Rubber stop with retention spring

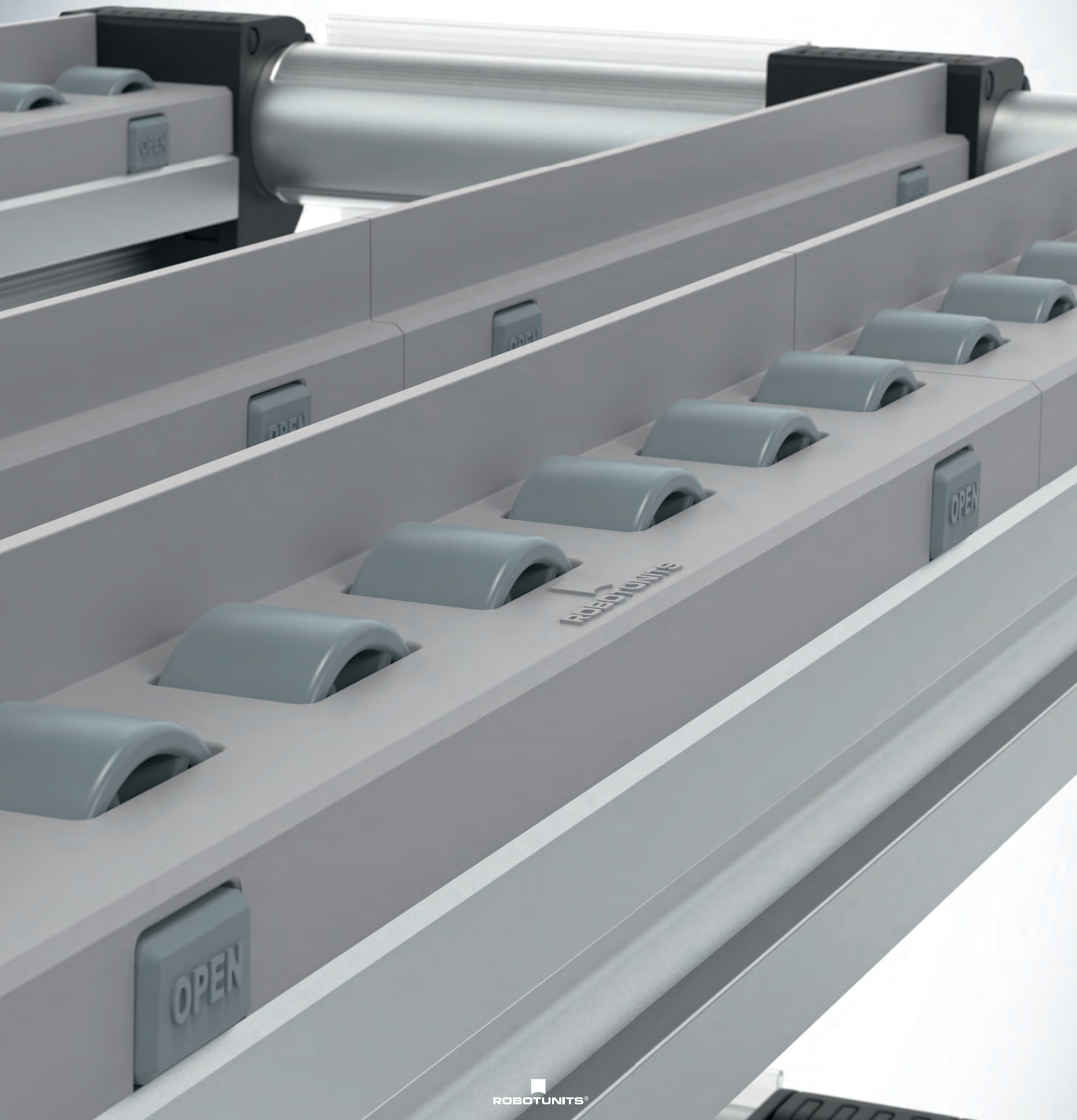
**Order Code**

Description	Order Code	Weight
Allround Sliding Door, Weld Mesh, opening on the left	SAF0872SLA	46.452 kg
Allround Sliding Door, Weld Mesh, opening on the right	SAF0872SRA	46.452 kg
Allround Sliding Door, Polycarbonate, opening on the left	SAF0872PLA	50.593 kg
Allround Sliding Door, Polycarbonate, opening on the right	SAF0872PRA	50.593 kg

Drawing dimensions in mm



THE VERSATILE
MBS PICKSTAR



Modern factories are geared towards high speed production. Time pressure increases constantly. Changeover time between production runs need to be shorter. Therefore product cycles and demanding customers require a new dimension in flexibility.

The solution is now available: Robotunits expands its Modular Automation System with a unique concept for material handling. Only 8 multifunctional components allow for a large range of applications.



Individual lengths and widths

- lane length and width can be easily adjusted
- no tools needed to change lane width
- additional tracks can be added if load requires



Adjustable angle

- infinitely adjustable angle
- track can be attached to the tube clamp in the front, or in the T-slot of the extrusion
- brakes can be inserted anywhere on the track to control the speed of the box



Safe and rigid design

- rigid system through Robotunits Fastening Technology
- tight fitting track covers prevent contamination of roller tracks
- low noise level due to special gliding bearings
- entire construction available for ESD
- anti-Reverse can be placed anywhere on the track
- colored anti-reverse shows maximum fill level



High flexibility

- open T-slots can be used to install additional components
- tracks can be inserted in any of the Robotunits extrusions
- quick assembly without special tools
- system can be easily adjusted for new requirements



System compatible

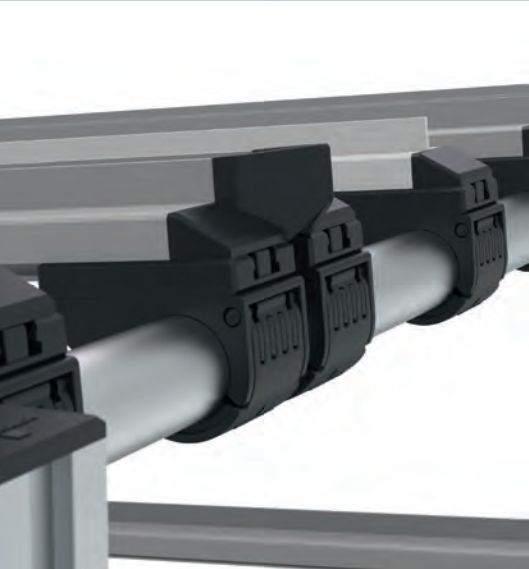
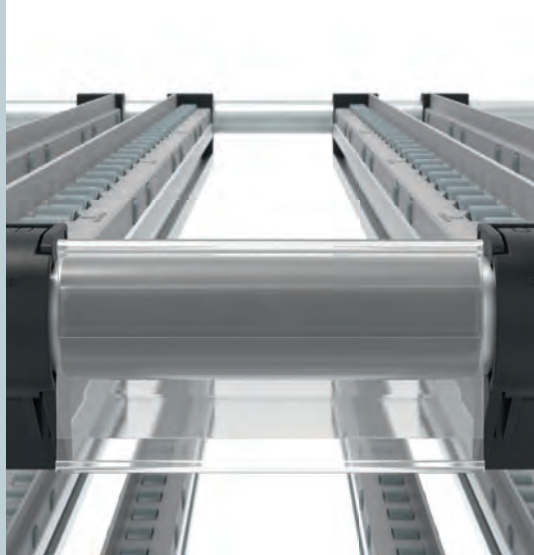
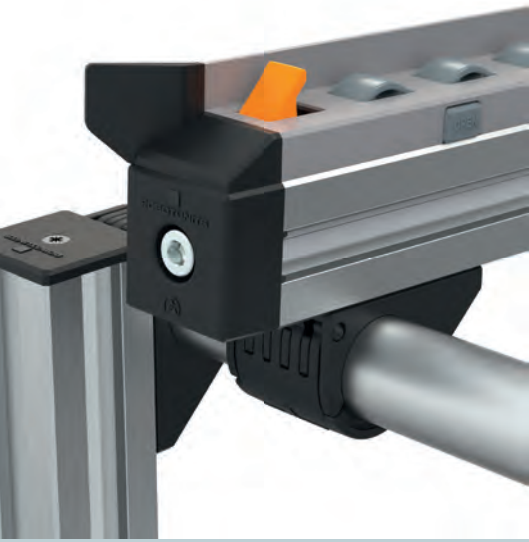
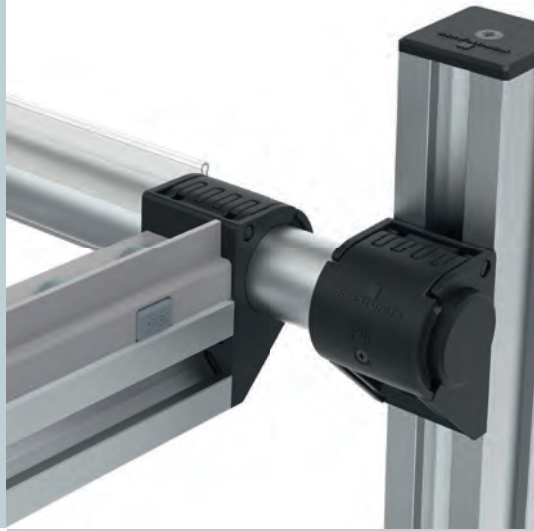
- all components fully compatible with the Robotunits Modular Automation System
- multifunctional stop elements allow safe in-feed and removal of material
- unlimited applications due to 14 mm T-slot
- reduced inventory cost due to multifunctional parts



Save time, reduce cost

- minimal design effort necessary
- snap-in connections for quick assembly
- minimal training required
- individual adjustments possible





The versatile MBS PickStar

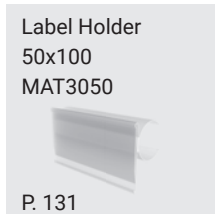
MBS PickStar RL System

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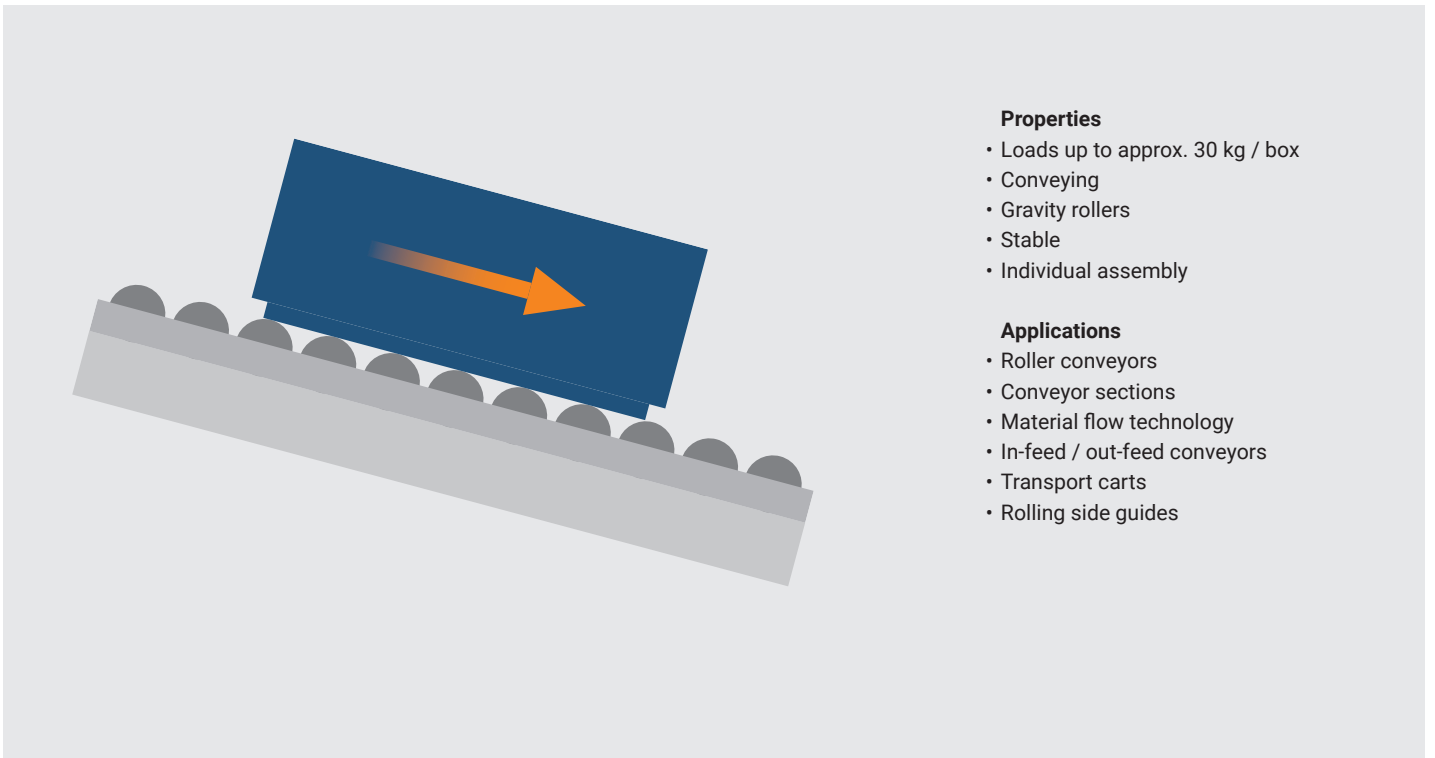


MBS PickStar GL System

Page 124



MBS PickStar RL System



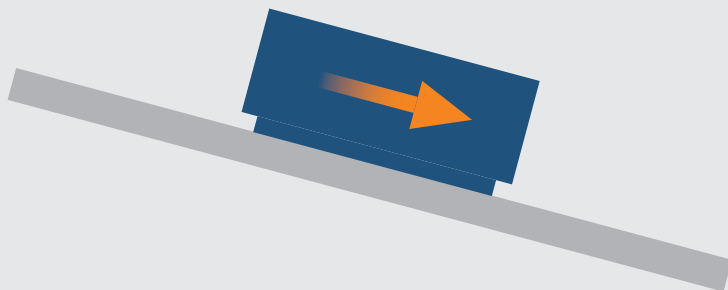
Compact System Options



Ergonomic System Options



MBS PickStar GL System



Properties

- Loads up to approx. 5 kg / box
- Storage (deposit, warehousing)
- Manual operation
- Low overall height
- Few components
- Low price

Applications

- Manual workstation

Round System Options



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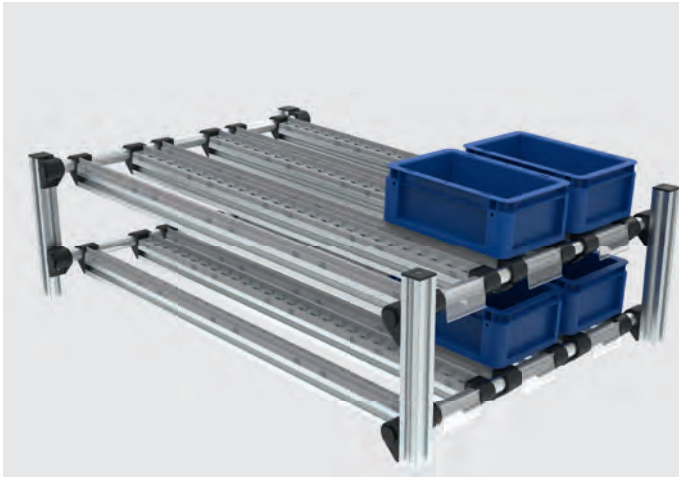
Square System Options



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MBS PickStar RL System - Compact



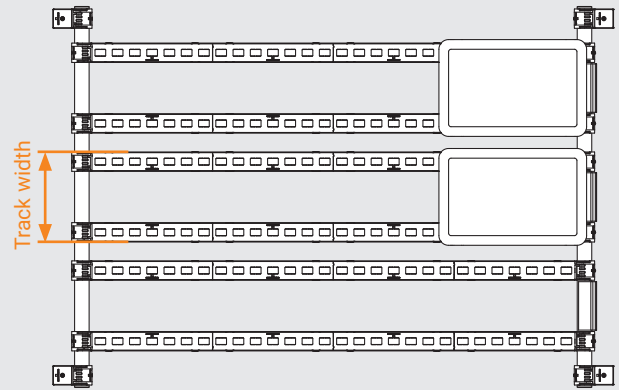
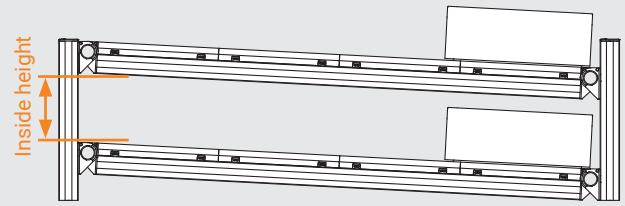
Benefits

- Flexible track width, inside height
- Lower overall height
- Few components

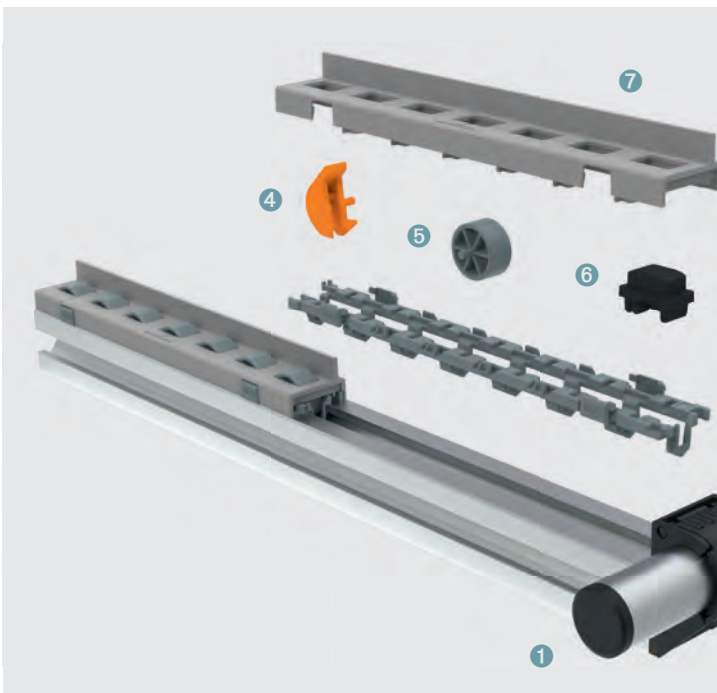
Application

- KANBAN carts, workstations

Multiple combination options available



Design MBS PickStar RL System - Compact



- 1 Round Tube 30x2 PIL3002 (page 130)
- 2 Tube Clamp ESD Front Kit MAT3011 (page 120)
- 3 Label Holder MAT3050 (page 131)
- 4 Anti-Reverse For Roller Track MAT4575 (page 123)
- 5 Roller for Roller Track
- 6 Brake for Roller Track MAT4580 (as of page 122)
- 7 Roller Track With Side Guides MAT4591 (as of page 119)

MBS PickStar RL System - Ergonomic



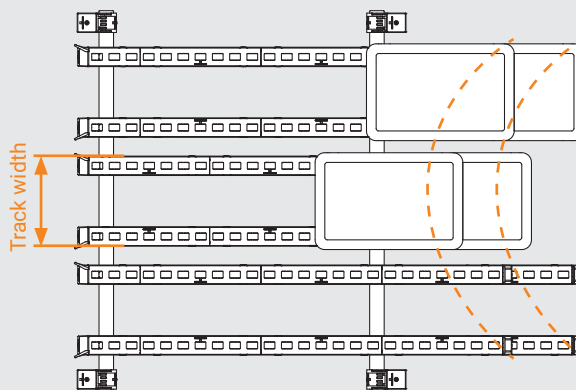
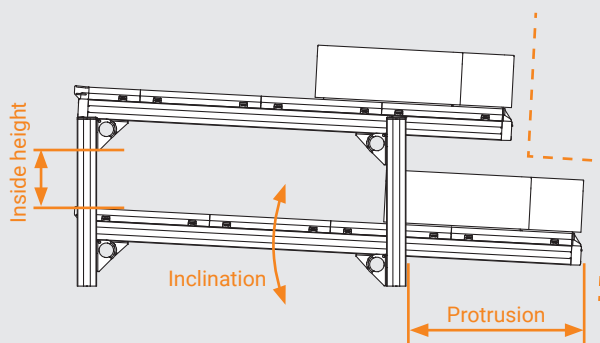
Benefits

- Flexible adjustable inclination, track width, protrusion, inside height
- Staggered configuration
- Individual arrangement

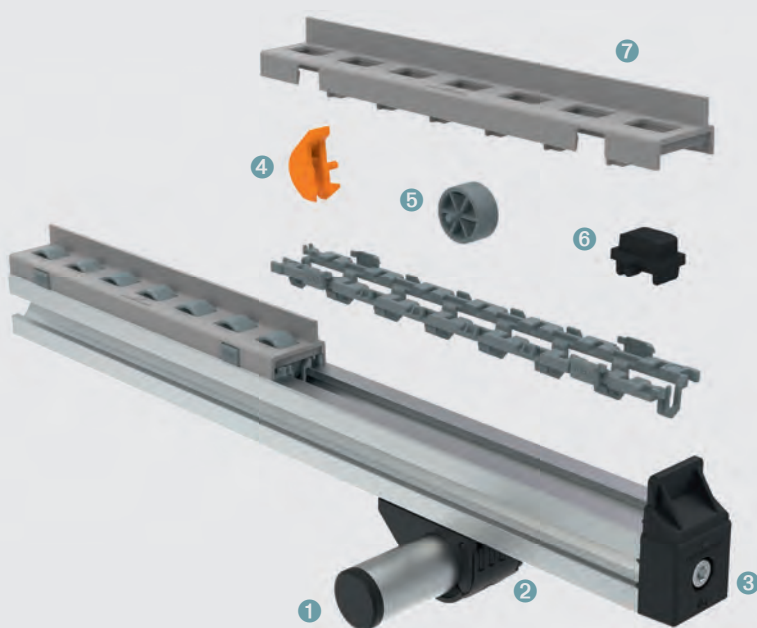
Application

- Ergonomic (semi-circular) gripping chamber application

Multiple combination options available



Design MBS PickStar RL System - Ergonomic



- 1 Round Tube 30x2 PIL3002 (page 130)
- 2 Tube Adapter ESD Kit (page 127)
- 3 Front Part ESD Stop Kit (page 121)
- 4 Anti-Reverse For Roller Track MAT4575 (page 123)
- 5 Roller for Roller Track
- 6 Brake for Roller Track MAT4580 (as of page 122)
- 7 Roller Track With Side Guides MAT4591 (as of page 119)

MAT4561



MAT4563



Application

For roller conveyors, e.g. for:

- Material flow technology
- Manual workstations
- In- and out-feed conveyors
- Transport carts
- Rolling side guides

Technical Data

Material: Base part and gray PP or black PP cover (ESD conductive)

Roller gray POM-C or black POM-C (ESD conductive)

Max. load per unit 15 kg

Inclination angle (depending on the product to be transported)

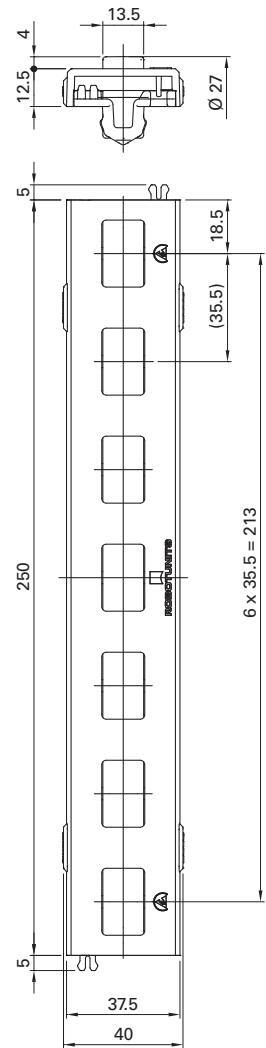
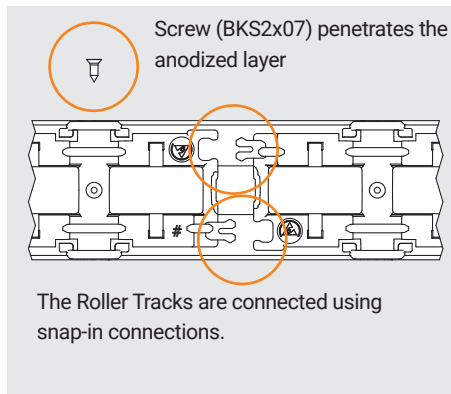
MAT4561: 4° to 5°

MAT4563: 5° to 6°

Surface resistance per Roller Track

$R_s < 35 \text{ M}\Omega$

ESD Conductivity



Order Code

Description	Scope of Delivery				Order Code	Weight
	Base Part	Cover	Castors	BKS2x07		
Roller Track Kit, 250 mm	1	1	7	-	MAT4561	0.112 kg
Roller Track Kit, cut to length, 108 mm	1	1	3	-	MAL4561SNN0108	0.048 kg
Roller Track Kit, cut to length, 143 mm	1	1	4	-	MAL4561SNN0143	0.064 kg
Roller Track Kit, cut to length, 178 mm	1	1	5	-	MAL4561SNN0178	0.080 kg
Roller Track Kit, cut to length, 213 mm	1	1	6	-	MAL4561SNN0213	0.096 kg
Roller Track ESD Kit, 250 mm	1	1	7	1	MAT4563	0.114 kg
Roller Track ESD Kit, cut to length, 108 mm	1	1	3	1	MAL4563SNN0108	0.049 kg
Roller Track ESD Kit, cut to length, 143 mm	1	1	4	1	MAL4563SNN0143	0.065 kg
Roller Track ESD Kit, cut to length, 178 mm	1	1	5	1	MAL4563SNN0178	0.082 kg
Roller Track ESD Kit, cut to length, 213 mm	1	1	6	1	MAL4563SNN0213	0.098 kg

Drawing dimensions in mm

MA_459_

Roller Track With Side Guide

MAT4591



MAT4593



Application

For roller conveyors, e.g. for:

- Material flow technology
- Manual workstations
- In- and out-feed conveyors
- Transport carts

Technical Data

Material: Base part and gray PP or black PP cover (ESD conductive)

Roller gray POM-C or black POM-C (ESD conductive)

Max. load per unit 15 kg

Inclination angle (depending on the product to be transported)

MAT4591: 4° to 5°

MAT4593: 5° to 6°

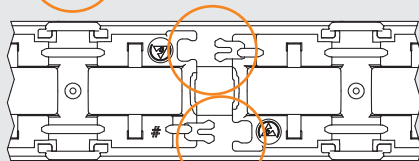
Surface resistance per Roller Track

$R_s < 35 \text{ M}\Omega$

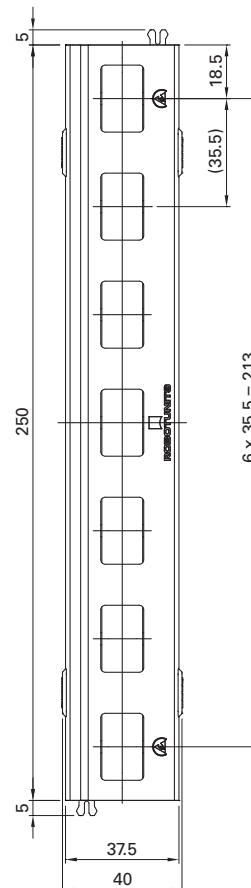
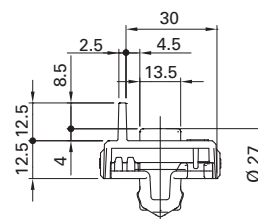
ESD Conductivity



Screw (BKS2x07) penetrates the anodized layer



The Roller Tracks are connected using snap-in connections.



Order Code

Description	Scope of Delivery				Order Code	Weight
	Base Part	Cover	Castors	BKS2x07		
Roller Track with Side Guide Kit, 250 mm	1	1	7	-	MAT4591	0.122 kg
Roller Track with Side Guide Kit, cut to length, 108 mm	1	1	3	-	MAL4591SNN0108	0.052 kg
Roller Track with Side Guide Kit, cut to length, 143 mm	1	1	4	-	MAL4591SNN0143	0.070 kg
Roller Track with Side Guide Kit, cut to length, 178 mm	1	1	5	-	MAL4591SNN0178	0.087 kg
Roller Track with Side Guide Kit, cut to length, 213 mm	1	1	6	-	MAL4591SNN0213	0.104 kg
Roller Track ESD with Side Guide Kit, 250 mm	1	1	7	1	MAT4593	0.124 kg
Roller Track ESD with Side Guide Kit, cut to length, 108 mm	1	1	3	1	MAL4593SNN0108	0.053 kg
Roller Track ESD with Side Guide Kit, cut to length, 143 mm	1	1	4	1	MAL4593SNN0143	0.071 kg
Roller Track ESD with Side Guide Kit, cut to length, 178 mm	1	1	5	1	MAL4593SNN0178	0.089 kg
Roller Track ESD with Side Guide Kit, cut to length, 213 mm	1	1	6	1	MAL4593SNN0213	0.106 kg

Drawing dimensions in mm

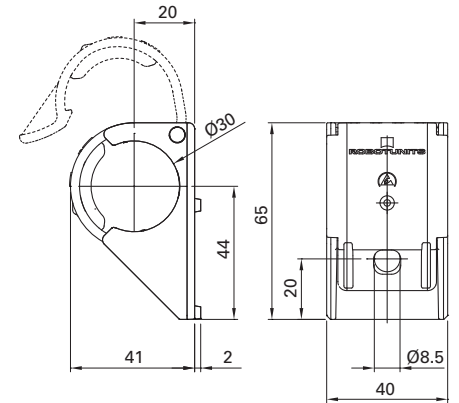
**Application**

Connector for fastening the Round Tube to the face or T-slot of the extrusion; Clamp can be opened without tools

Technical Data

Material: Base Part PA6, black (ESD conductive) Clamping Part PA6, black (ESD conductive) and TPV rubber, black
Fastening material: galvanized steel

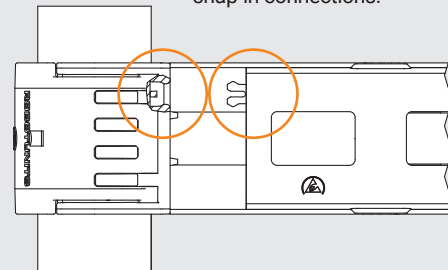
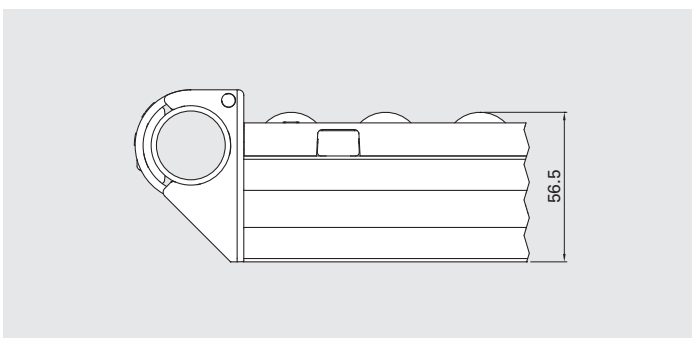
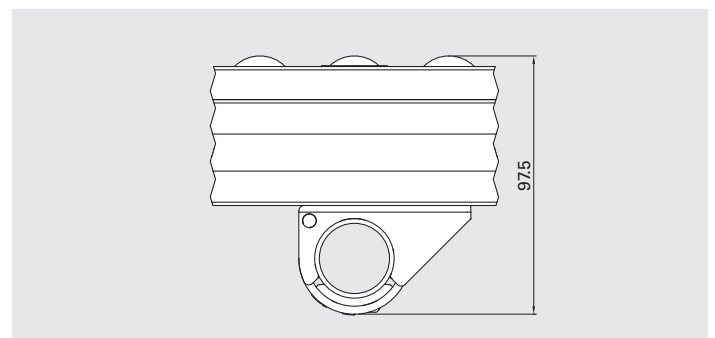
Surface resistance per Tube Clamp
 $R_s < 35 \text{ M}\Omega$

**ESD Conductivity**

Screw (BKS2x07) penetrates the anodized layer



The Roller Tracks are connected using snap-in connections.

**Compact Installed Height****Ergonomic Installed Height****Order Code**

Description	Scope of Delivery						Order Code	Weight
	Base Part	Clamping Part	IBS M08x018NIKO	BLS M008S02	BKS 2x07	TIN4508		
Tube Clamp ESD Front Kit	1	1	1	1	1	-	MAT3011	0.052 kg
Tube Clamp ESD T-Slot Kit	1	1	1	1	1	1	MAT3021	0.062 kg

Drawing dimensions in mm

MAT455_

Front Part

MAT4553

Stop Insert

IBS M08x025



Base Part



Application

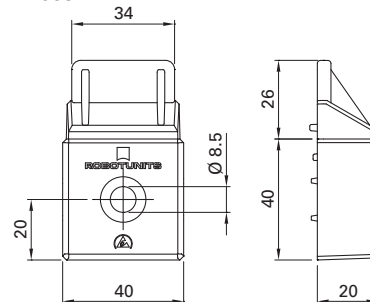
Material stop at the start or the end of the Roller Track
In-feed, removal or transfer support in combination with Roller Track Without Side Guides

Technical Data

Material: PA6, black (ESD conductive)
Fastening material: galvanized steel

Surface resistance per Front Part
 $R_s < 35 M\Omega$

MAT4553



MAT4555

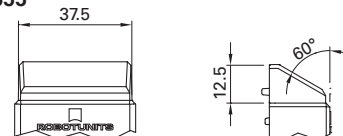
Flat Insert

IBS M08x025



Base Part

MAT4555



MAT4557

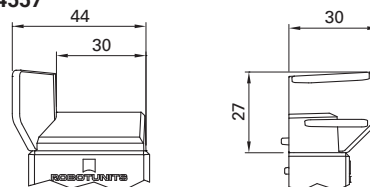
Left Insert

IBS M08x025



Base Part

MAT4557



MAT4559

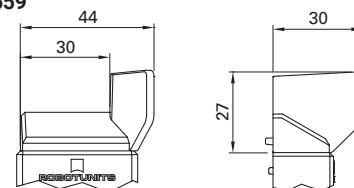
Right Insert

IBS M08x025

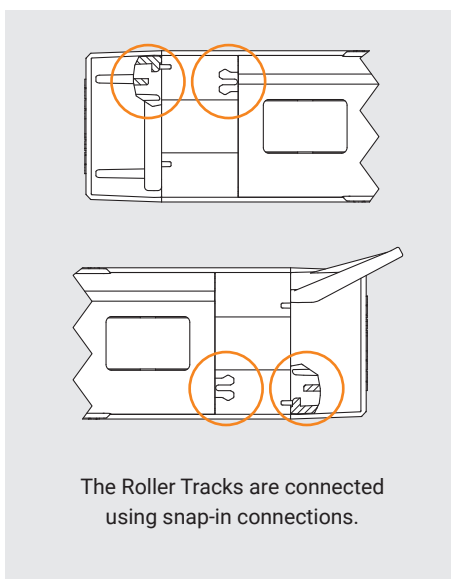


Base Part

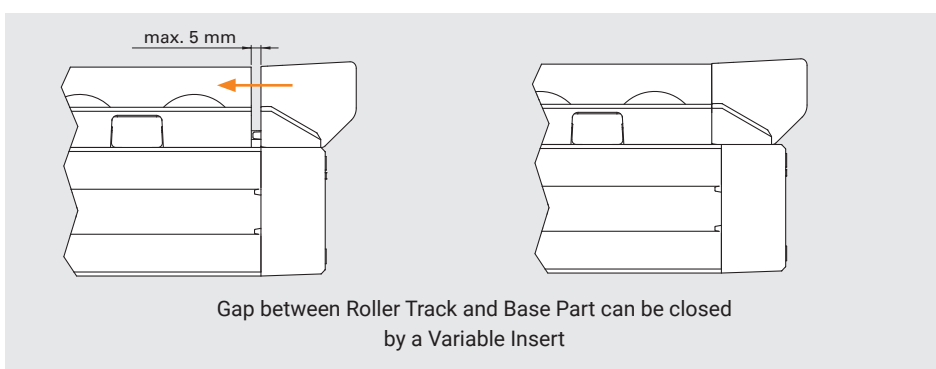
MAT4559



ESD Conductivity



Variable Inserts



Order Code

Description	Scope of Delivery			Order Code	Weight
	Base Part	Insert	IBS M08x025		
Front Part ESD Stop Kit	1	1 (stop)	1	MAT4553	0.036 kg
Front Part ESD Flat Kit	1	1 (flat)	1	MAT4555	0.034 kg
Front Part ESD Left Kit	1	1 (left)	1	MAT4557	0.035 kg
Front Part ESD Right Kit	1	1 (right)	1	MAT4559	0.035 kg

Drawing dimensions in mm

MAT4580

Brake For Roller Track



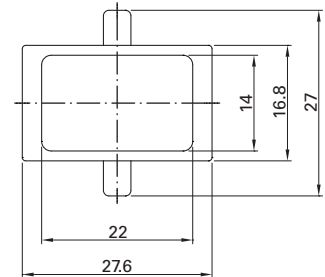
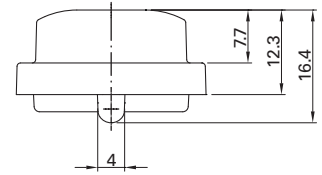
Application

Slowing down the transported product

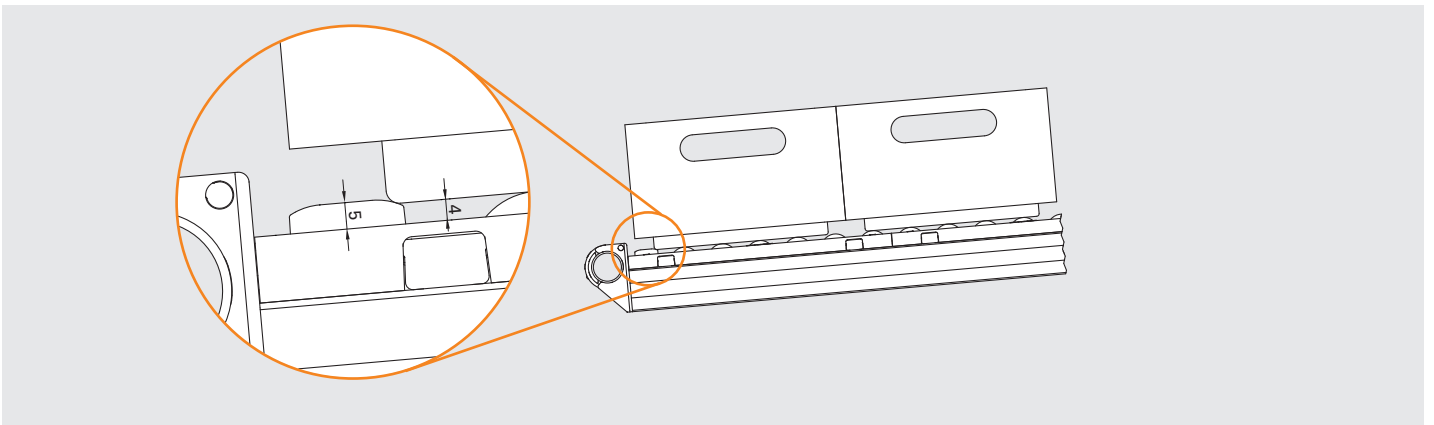
Technical Data

Material: TPV rubber, black

- Easy retrofitting possible.
(Switch Roller with Brake)
- Depending on the product
(weight, condition of bottom, etc.)
several Brakes can be installed



Function



Order Code

Description	Order Code	Weight
Brake for Roller Track	MAT4580	0.003 kg

Drawing dimensions in mm

MAT4575

Anti-Reverse For Roller Track



Application

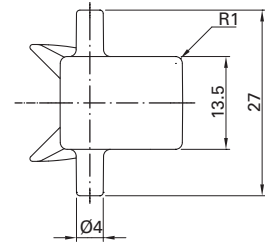
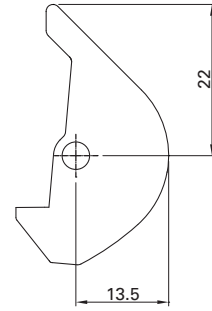
Material stop at the start or end of the Roller Track
 Prevents product at the back of the shelf from sliding down when product at the front is removed

Fill level indicator through signal color (visible = empty)

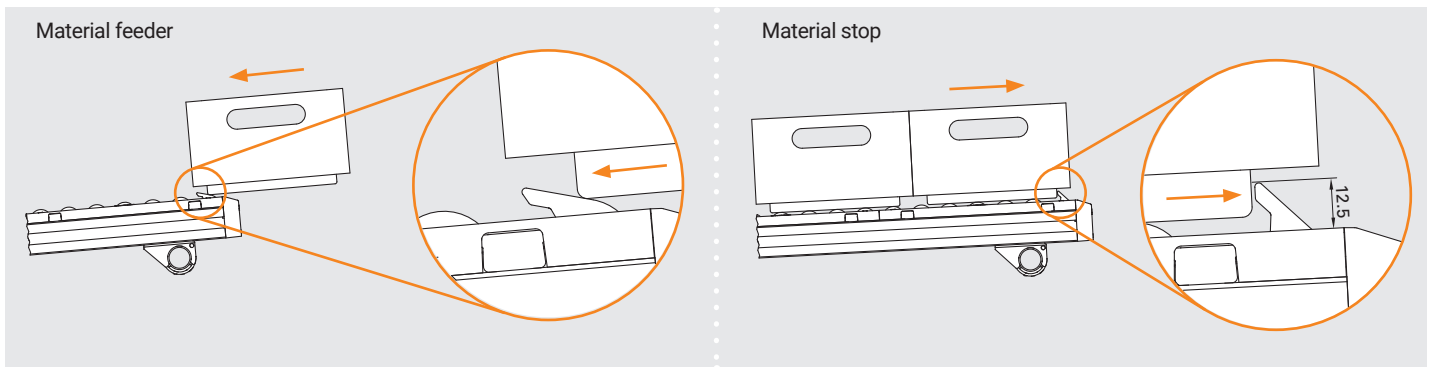
Technical Data

Material: POM-C orange

Easy retrofitting possible.
 (Switch Roller with Anti-Reverse for Roller Track)



Function

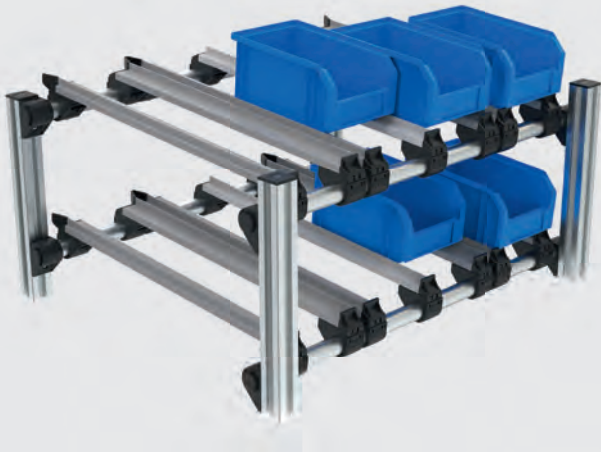


Order Code

Description	Order Code	Weight
Anti-Reverse for Roller Track Kit	MAT4575	0.006 kg

Drawing dimensions in mm

MBS PickStar GL System - Round

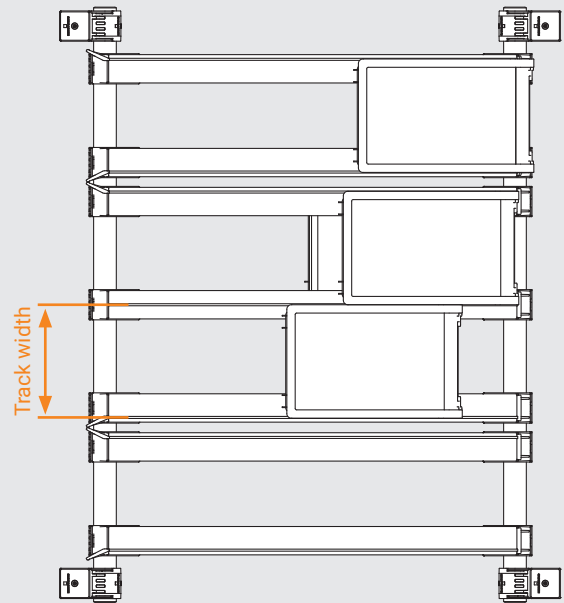
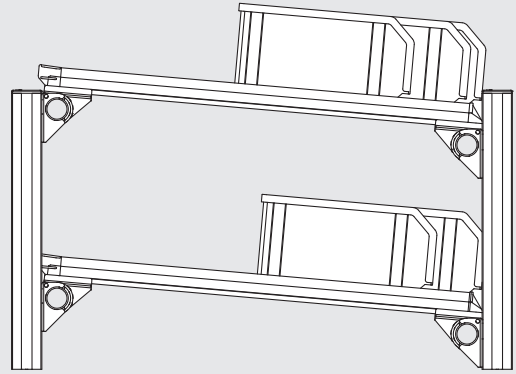


Benefits

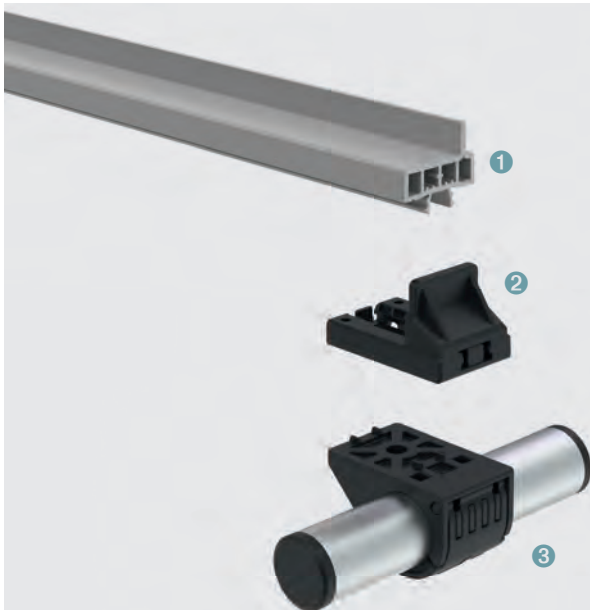
- Flexible adjustable track width
- Simpler assembly
- Freely adjustable incline

Application

Workstation with short tracks

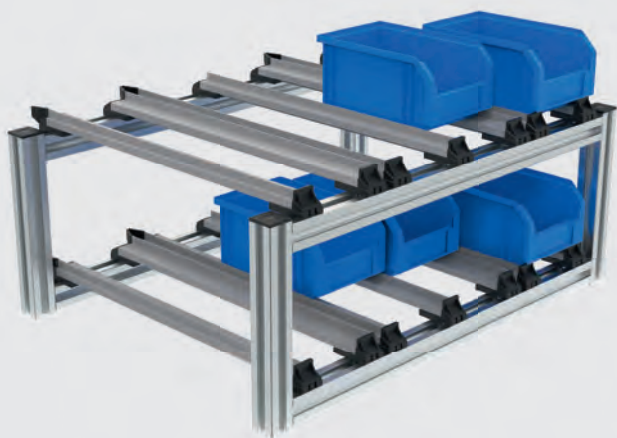


Design MBS PickStar GL System - Round



- 1 Sliding Rail With Side Guide MAL4532 (page 126)
- 2 Tube Adapter ESD Stop Kit MAT3033 (page 127)
- 3 Round Tube 30x2 PIL3002 (page 130)

MBS PickStar GL System - Square

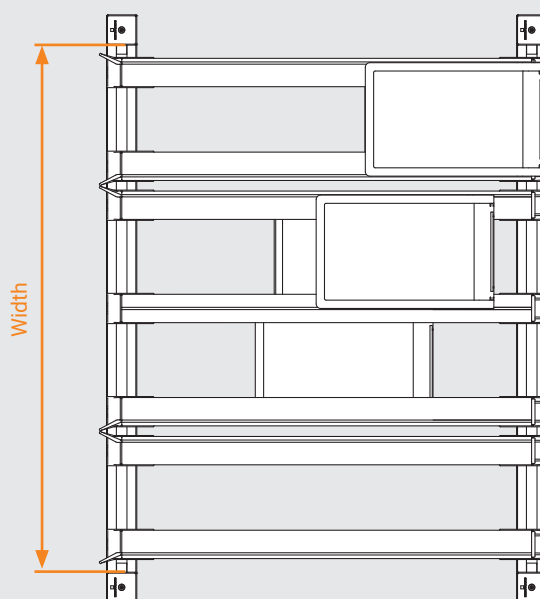
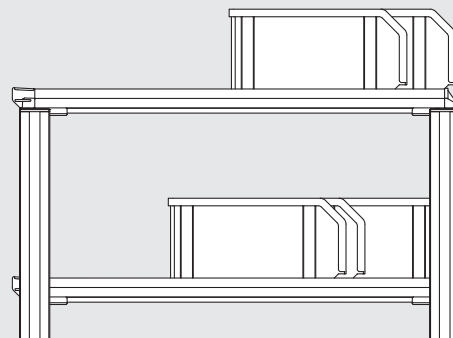


Benefits

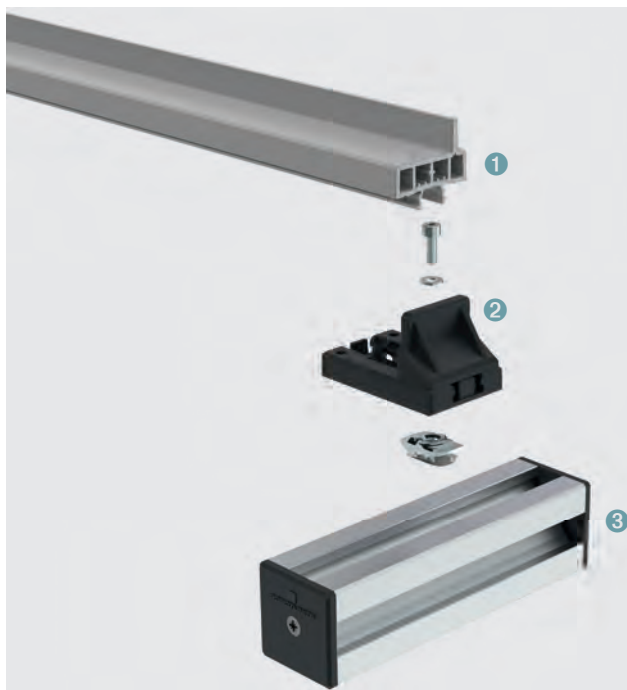
- Sturdy frame design
- Greater width
- Subsequent installation directly onto extrusions

Application

Integration into existing extrusion frame



Design MBS PickStar GL System - Square



- 1 Sliding Rail With Side Guide MAL4532 (page 126)
- 2 Extrusion Adapter ESD Stop Kit MAT4033 (page 128)
- 3 Extrusion Technology (page 64)

MAL4530



MAL4532



MAL4534



Application

- For sliding tracks, e.g. for:
- Manual workstations

Technical Data of Sliding Rail (MAL4530)

Material:	gray PVC-U (antistatic)
Modulus of elasticity E:	3000 N/mm ²
Section modulus W_x :	0.5 cm ³
Section modulus W_y :	1.6 cm ³
Area moment of inertia I_x :	0.6 cm ⁴
Area moment of inertia I_y :	2.9 cm ⁴
Max. load per unit m:	1.5 kg

Technical Data of Sliding Rail With Side Guide (MAL4532)

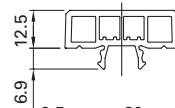
Material:	gray PVC-U (antistatic)
Modulus of elasticity E:	3000 N/mm ²
Section modulus W_x :	0.7 cm ³
Section modulus W_y :	1.7 cm ³
Area moment of inertia I_x :	1.2 cm ⁴
Area moment of inertia I_y :	3.4 cm ⁴
Max. load per unit m:	2.5 kg

Technical Data of Sliding Rail With Center Guide (MAL4534)

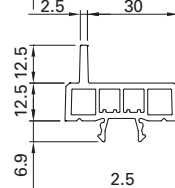
Material:	gray PVC-U (antistatic)
Modulus of elasticity E:	3000 N/mm ²
Section modulus W_x :	0.7 cm ³
Section modulus W_y :	1.6 cm ³
Area moment of inertia I_x :	1.2 cm ⁴
Area moment of inertia I_y :	2.9 cm ⁴
Max. load per unit m:	2.5 kg

Surface resistance per sliding rail
 $R_s < 100 \text{ G}\Omega$

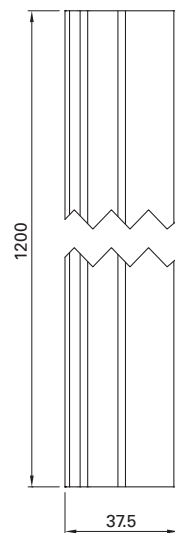
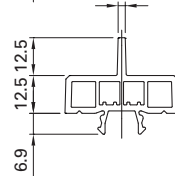
MAL4530



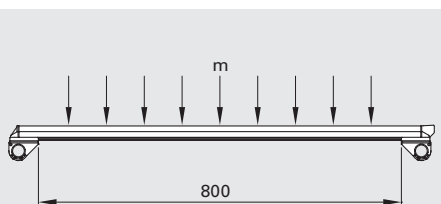
MAL4532



MAL4534

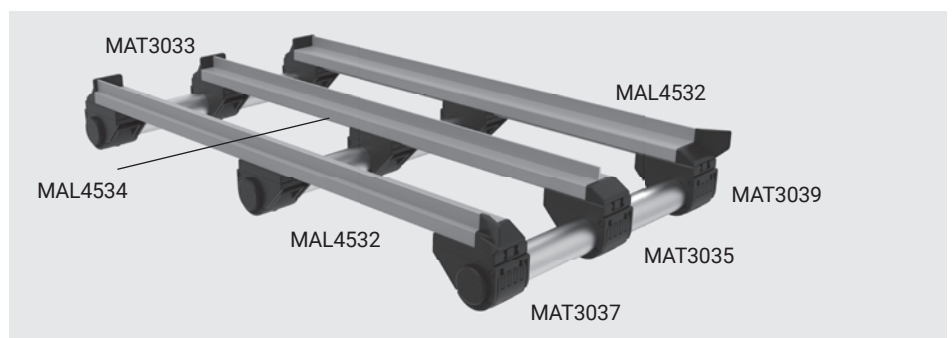


Load



m = Maximum load per 800 mm of sliding rail

Application



Order Code

Description	Order Code ¹	Weight/Meter
Sliding Rail, cut to length	MAL4530SNN	0.290 kg
Sliding Rail, stock length 1200 mm	MAL4530NNN	0.290 kg
Sliding Rail with Side Guide, cut to length	MAL4532SNN	0.330 kg
Sliding Rail with Side Guide, stock length 1200 mm	MAL4532NNN	0.330 kg
Sliding Rail with Center Guide, cut to length	MAL4534SNN	0.330 kg
Sliding Rail with Center Guide, stock length 1200 mm	MAL4534NNN	0.330 kg

1) Please complete the order by adding the length parameters for cut to length orders.
 Drawing dimensions in mm

MAT303_

Tube Adapter

MAT3031



Application

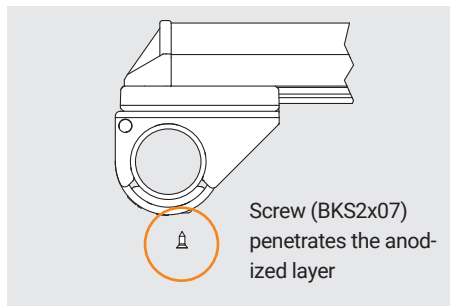
Adapter to connect the Round Tube to the Sliding Rail

Technical Data

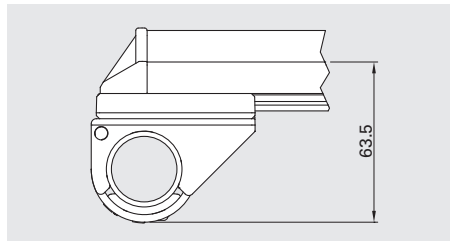
Material: Base part and adapter plate PA6, black (ESD conductive)
 Clamping Part PA6, black (ESD conductive) and TPV rubber black
 Inserts: PA6, black (ESD conductive)
 Conductivity screw: galvanized steel

Surface resistance per Tube Adapter
 $R_s < 35 M\Omega$

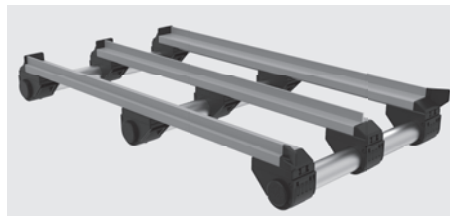
ESD Conductivity



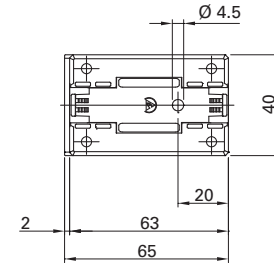
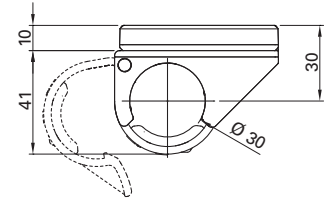
Round Installed Height



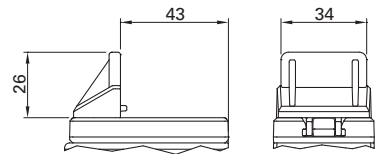
Application



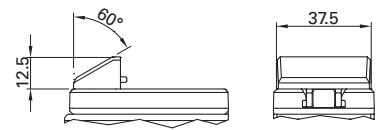
MAT3031



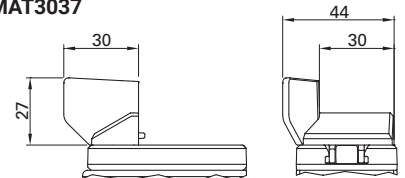
MAT3033



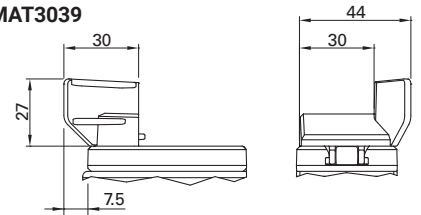
MAT3035



MAT3037



MAT3039



MAT3033



MAT3035



MAT3037



MAT3039



Order Code

Description	Scope of Delivery					Order Code	Weight
	Base Part	Clamping Part	Adapter plate	Insert	BKS 2x07		
Tube Adapter ESD Kit	1	1	1	-	1	MAT3031	0.054 kg
Tube Adapter ESD Stop Kit	1	1	1	1 (stop)	1	MAT3033	0.061 kg
Tube Adapter ESD Flat Kit	1	1	1	1 (flat)	1	MAT3035	0.059 kg
Tube Adapter ESD Left Kit	1	1	1	1 (left)	1	MAT3037	0.060 kg
Tube Adapter ESD Right Kit	1	1	1	1 (right)	1	MAT3039	0.060 kg

Drawing dimensions in mm

MAT4031

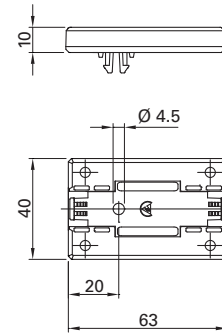
**Application**

Adapter to connect the extrusion to the Sliding Rail

Technical Data

Material: Adapter plate PA6, black (ESD conductive) Inserts: PA6, black (ESD conductive) Fastening material: galvanized steel

MAT4031



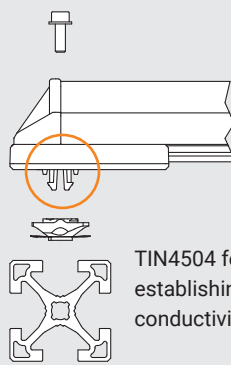
MAT4033



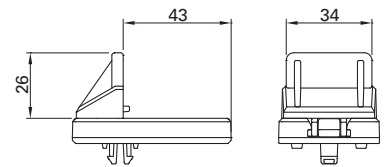
Surface resistance per Extrusion Adapter $R_s < 35 \text{ M}\Omega$

ESD Conductivity

To attach to the extrusion cut off tabs flush



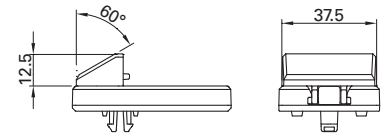
MAT4033



MAT4035



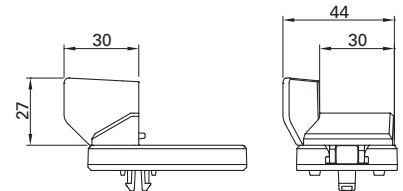
MAT4035



MAT4037



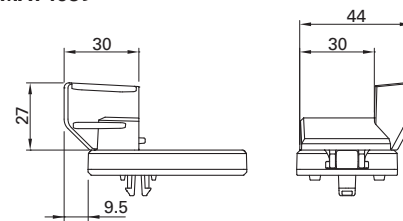
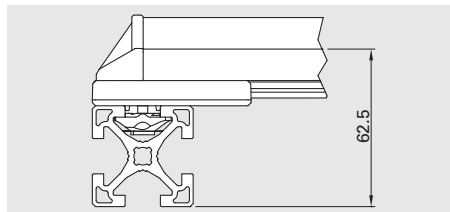
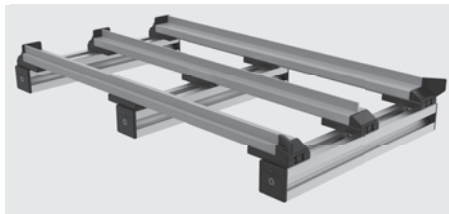
MAT4037



MAT4039



MAT4039

**Round Installed Height****Application****Order Code**

Description	Scope of Delivery					Order Code	Weight
	Adapter plate	Insert	SKS M04x012	BLS M004	TIN 4504		
Extrusion Adapter ESD Kit	1	-	1	1	1	MAT4031	0.027 kg
Extrusion Adapter ESD Stop Kit	1	1 (stop)	1	1	1	MAT4033	0.034 kg
Extrusion Adapter ESD Flat Kit	1	1 (flat)	1	1	1	MAT4035	0.032 kg
Extrusion Adapter ESD Left Kit	1	1 (left)	1	1	1	MAT4037	0.033 kg
Extrusion Adapter ESD Right Kit	1	1 (right)	1	1	1	MAT4039	0.033 kg

Drawing dimensions in mm

MAT903_

Adapter

MAT9031



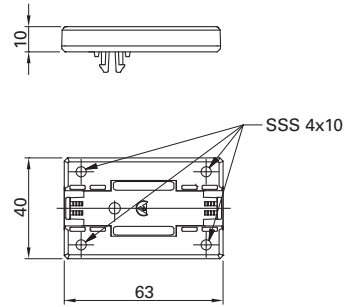
Application

Connector for fastening the Sliding Rail for protruding sections or partitioned Sliding Rails

Technical Data

Material: Adapter plate PA6, black (ESD conductive)
 Inserts: PA6, black (ESD conductive)
 Fastening material: galvanized steel

MAT9031

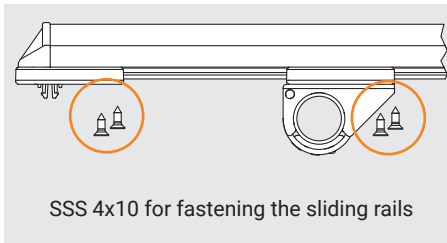


MAT9033

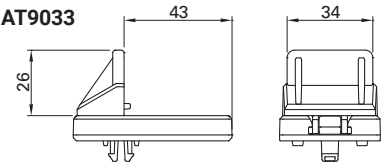


Surface resistance per Adapter
 $R_s < 35 M\Omega$

Round Protrusion



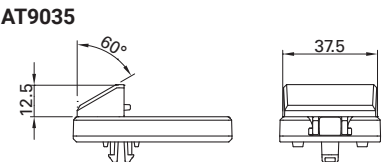
MAT9033



MAT9035



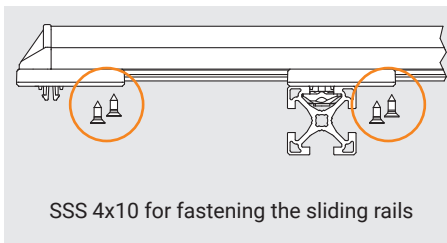
MAT9035



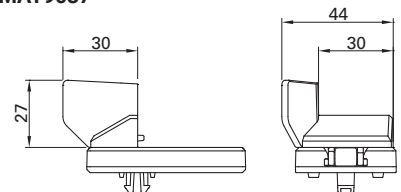
MAT9037



Square Protrusion



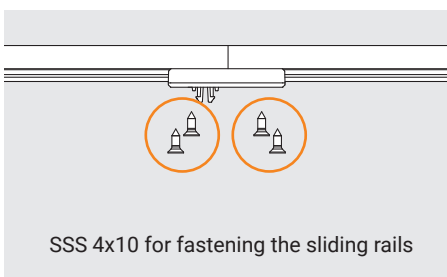
MAT9037



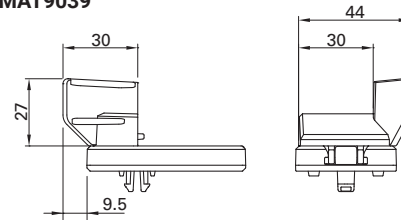
MAT9039



Partitioning



MAT9039



Order Code

Description	Scope of Delivery			Order Code	Weight
	Adapter plate	Insert	SSS 4x10		
Adapter ESD Kit	1	-	4	MAT9031	0.017 kg
Adapter ESD Stop Kit	1	1 (stop)	4	MAT9033	0.024 kg
Adapter ESD Flat Kit	1	1 (flat)	4	MAT9035	0.022 kg
Adapter ESD Left Kit	1	1 (left)	4	MAT9037	0.023 kg
Adapter ESD Right Kit	1	1 (right)	4	MAT9039	0.023 kg

Drawing dimensions in mm

PIL3002

Round Tube 30x2

**Application**

- Universally useful, e.g. as
- Material flow technology
 - Manual workstations
 - In- and out-feed conveyors
 - Signage and shelving
 - Transport carts
 - Table frames

Technical Data

Material: EN AW-6063-T66 clear anodized aluminum

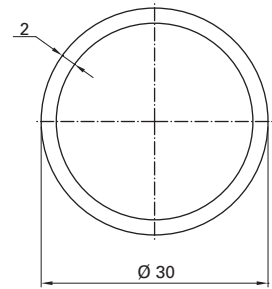
Section modulus $W_x = W_y$: 1.16 cm³

Area moment of inertia

against x + y $I_x = I_y$: 1.73 cm⁴

against torsion I_t : 3.47 cm⁴

Cross sectional area A: 175.9 mm²



Extrusion, stock length: 6050 mm
(usable length 6000 mm)

Order Code

Description	Order Code ¹	Weight/Meter
Round Tube 30x2, cut to length	PIL3002SNN	0.475 kg
Round Tube 30x2, stock length 6050 mm	PIL3002NNN	0.475 kg
Round Tube 30x2, 175 pcs., stock length 6050 mm	PIL3002PAC	0.475 kg

CAP3002

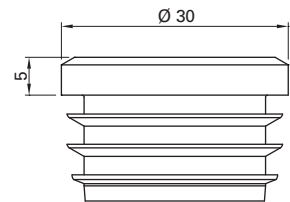
End Cap For Round Tube 30x2

**Application**

End Cap for Round Tube

Technical Data

Material: PE, black



Order Code

Description	Order Code	Weight
End Cap for Round Tube 30x2	CAP3002	0.004 kg

1) Please complete the order by adding the length parameters for cut to length orders.
Drawing dimensions in mm

MAT3050

Label Holder 50x100

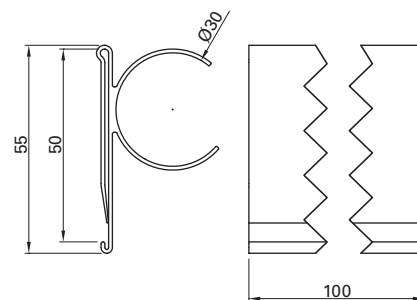
**Application**

Labels can be inserted into transparent Label Holder
Label Holder can be snapped on directly to Round Tube

Technical Data

Material: PVC transparent

Max. label size 50x100 mm



Order Code

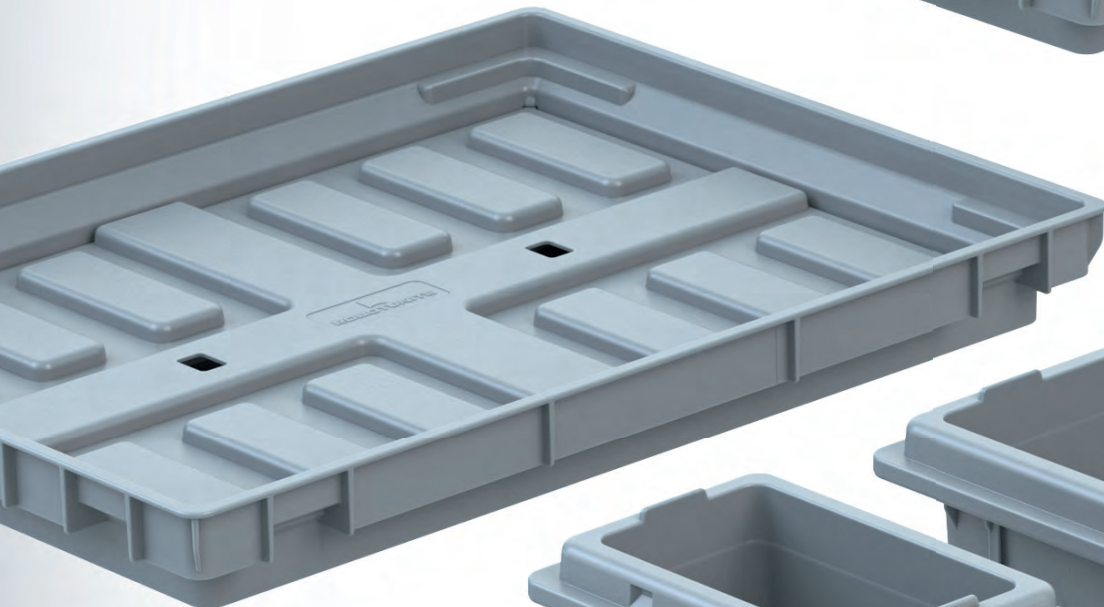
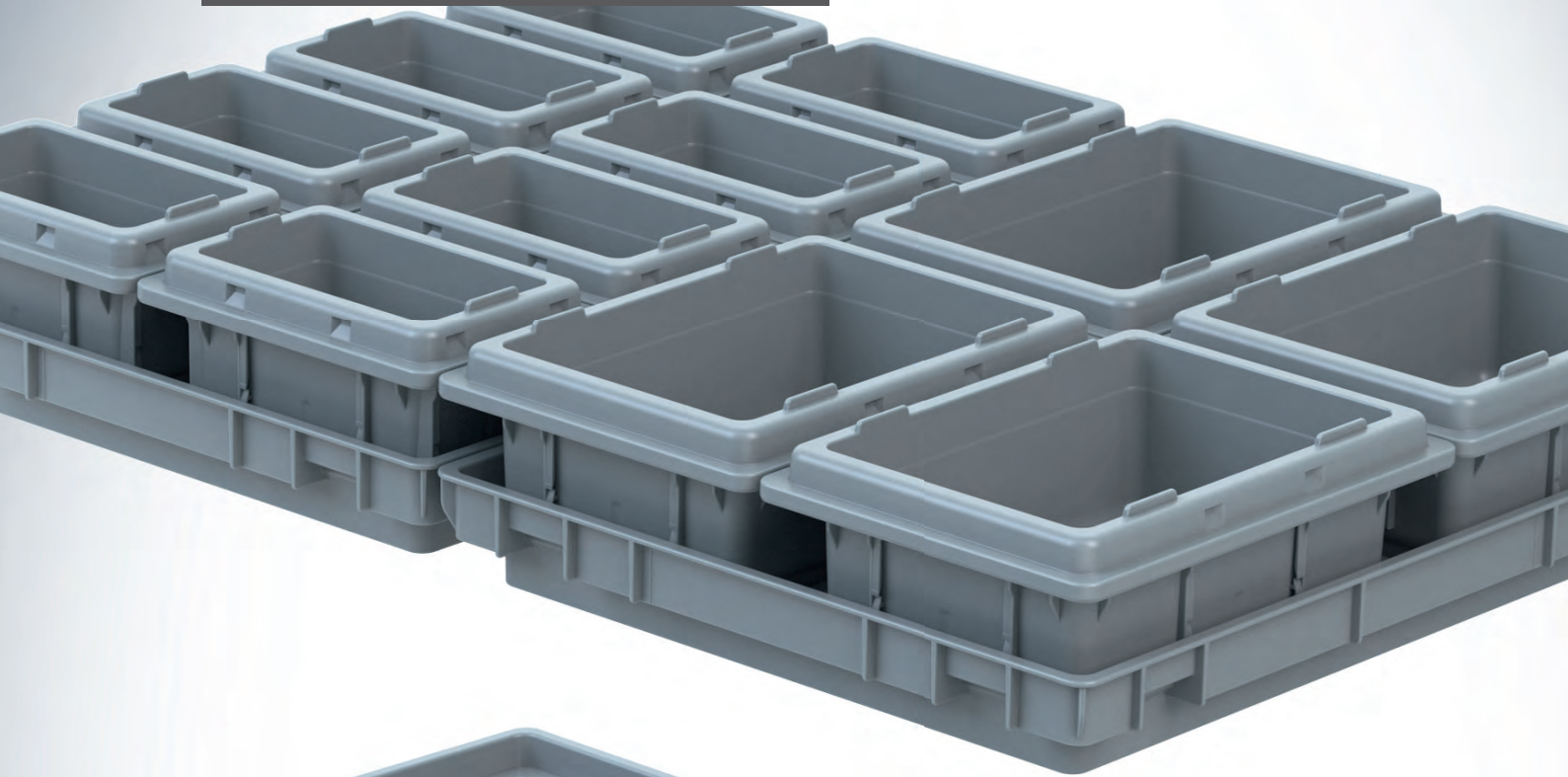
Description	Order Code	Weight
Label Holder 50x100	MAT3050	0.023 kg

Drawing dimensions in mm





THE MODULAR TOTE SYSTEM



The Robotunits Tote System has been designed as an additional feature for the transport or storage of products in material handling. The main benefits of this new system are modularity, stability, and the seamless integration into the entire Modular Automation System. Whether it's sealed cardboard boxes for general cargo or bulk goods, we supply a customizable system to meet your needs.



Container system

- design has been specially adapted to our Kanban system
- optimized gripping capability for robots due to form-fit interface on the tote
- can be combined with the entire Modular Automation System



Safe and stable construction

- can be easily stacked on top of each other
- stacking nubs for non-slip transport
- ribbed base rim for best rolling characteristics on roller tracks



Can be used individually in the PickStar system

- track lengths and widths can be adjusted in just a few steps
- track width can be adjusted without tools
- number of tracks can be adapted to the transport weight



Highly flexible

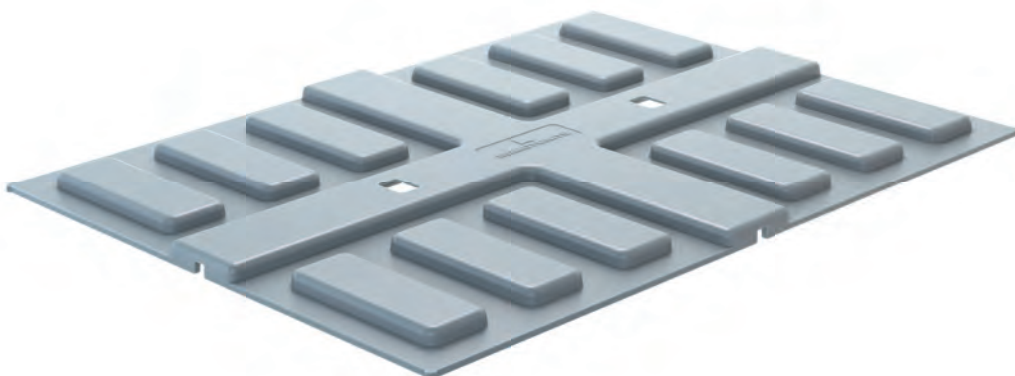
- tote dimensions allow for optimized stacking on trays and inlays
- allows for secure robot handling of tote
- trays and covers can be used multifunctionally (e.g. as tool or workpiece carrier)



Save time, reduce costs

- easy to learn, minimal training needed
- easy to integrate






The modular Tote System

Small Parts Tote System

Tote
150x100 / 200x150
BOX____

P. 138

Tray / Inlay
400x300
BOX403_

P. 139



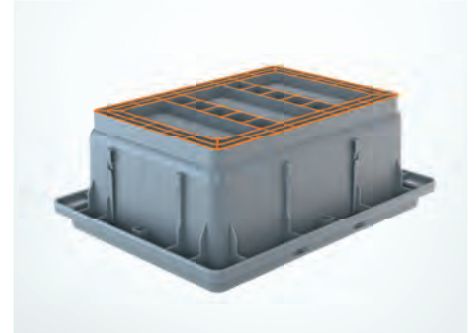
Small Parts Tote System - Product features



Stacking nubs for non-slip transport



Tray can be used multifunctionally (e.g. as a tool or workpiece carrier)



Ribbed base rim for best rolling performance on roller tracks



Can be stacked on top of each other with reference line for max. filling height

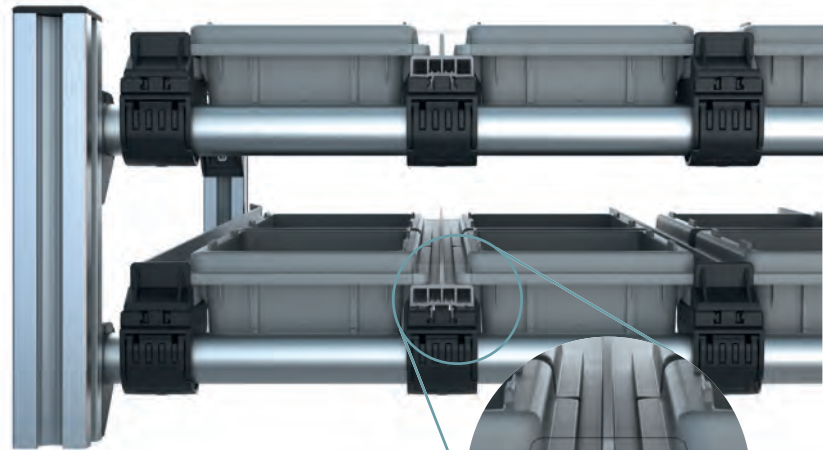


Optimal for being gripped by robots



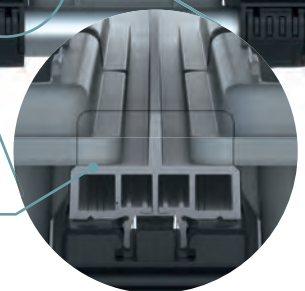
Box holders available as accessories

Combination - ideally integrated with the MBS PickStar



Two combinable standard sizes

Mounting bracket for sliding rail

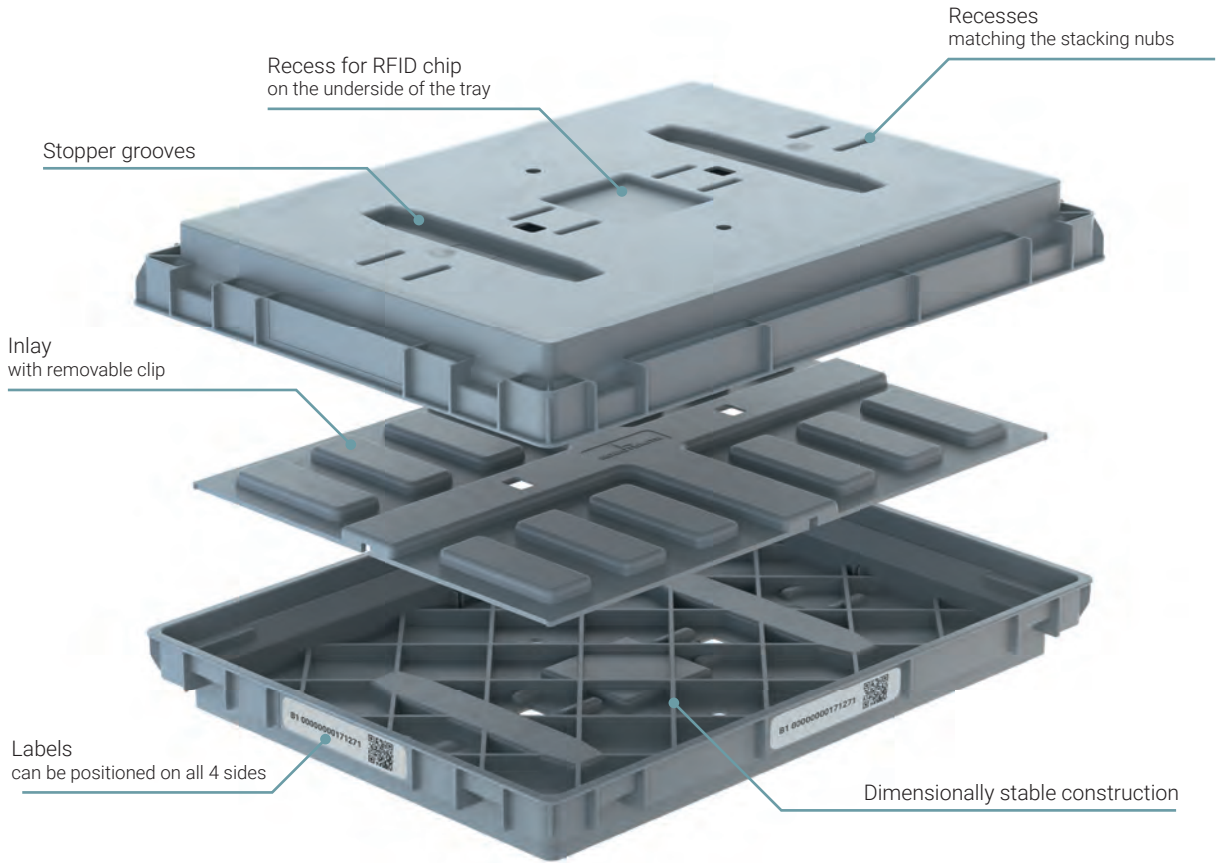


Labels can be positioned on all 4 sides

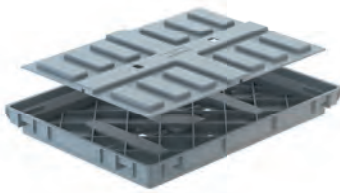


Also available as ESD version

Tray - Product features



Stackable - from tray to pallet



Tray with inlay



Tray with filled inlay



Tray used as sandwich board



Sandwich board filled



Tray used as a lid



Pallet



Tote 150x100x75



Tote 200x150x75

Application

Small parts tote, compatible with the entire Robotunits Tote System:

- Dimensionally stable
- Stackable
- Ergonomic
- Labeling on all 4 sides (slide-in or stick-on)

Technical data

Material: PP, ESD is available on request

Temperature resistance:

-20°C to +60°C, briefly +75°C

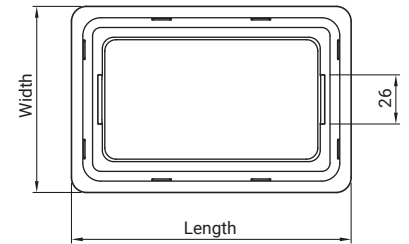
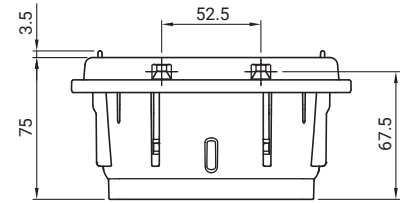
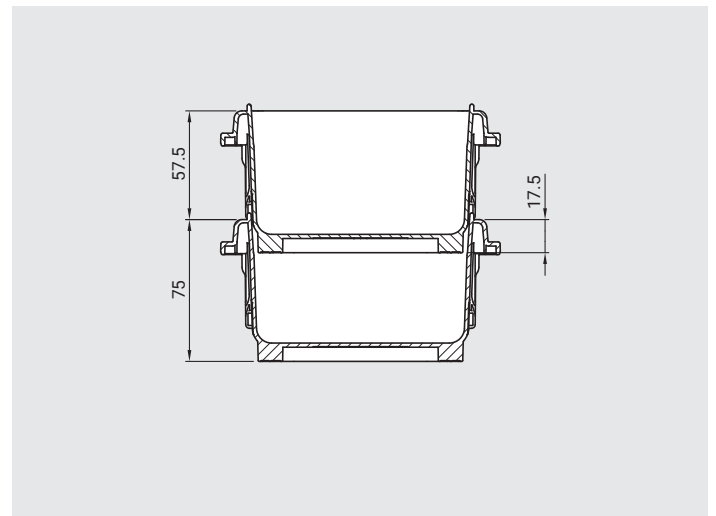
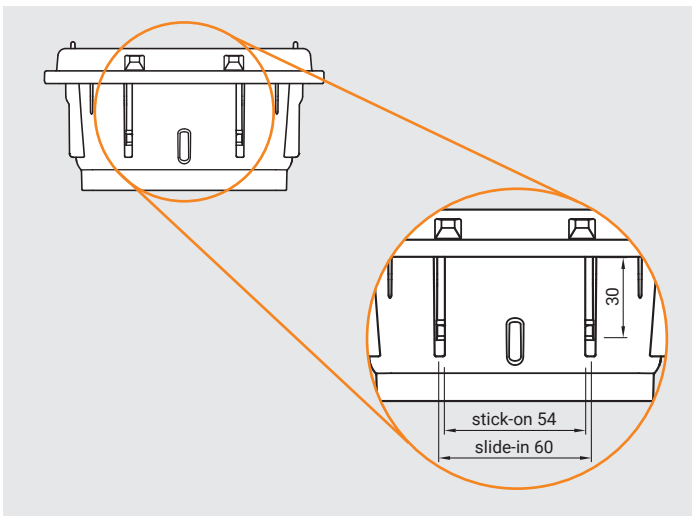
Load capacity

150x100 = 2.2 kg

200x150 = 4.4 kg

Stacking load

100 kg

**Label dimensions****Stacking dimensions****Order code**

Description	Outer dimensions		Inner dimensions		Volume: Liter	Order code	Weight/pc.
	Length	Width	Length	Width			
Tote 150x100x75, pack of 112 pcs.	148	98	110	60	0.45	BOX1510PAC0112	0.100 kg
Tote 200x150x75, pack of 56 pcs.	198	148	160	110	1.18	BOX2015PAC0056	0.170 kg

Drawings: Dimensions in mm

BOX403_

Tray 400x300 / Inlay 400x300



Tray 400x300



Inlay 400x300



Tray with inlay 400x300

Application

Tray, compatible with the entire Robotunits Tote System

- Dimensionally stable
- Stackable
- Replaceable inlay
- Low noise on conveyor lines
- Identification through side and bottom recesses for coding (e.g. data matrix)
- Stopper grooves
- Water drainage openings

Technical data

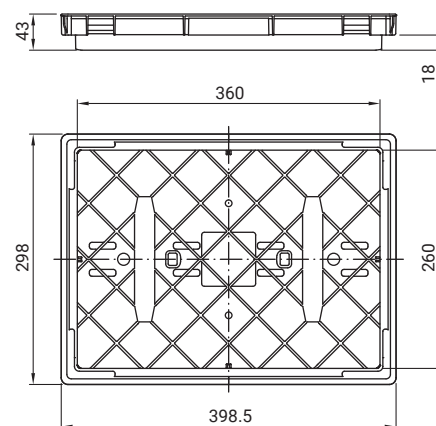
Material: PP, ESD is available on request

Temperature resistance:

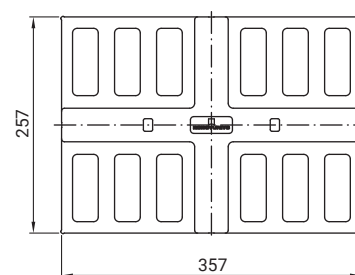
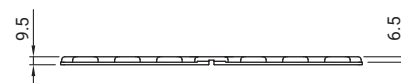
-20°C to +60°C, briefly +75°C

Load capacity

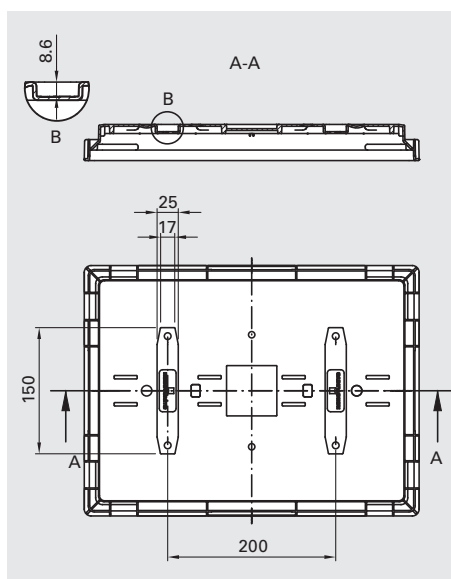
17.5 kg



Tray 400x300



Inlay 400x300

Stopper groove**Order code**

Description	Order code	Weight/pc.
Tray 400x300, pack of 264 pcs.	BOX4030PAC0264	0.455 kg
Inlay 400x300, pack of 264 pcs.	BOX4031PAC0264	0.335 kg

Drawings: Dimensions in mm



MULTIFUNCTIONAL ACCESSORIES



Every small detail has a big impact on the entire system, especially when countless accessories fill hundreds of catalog pages. Developing an accessory for every new application fundamentally contradicts our concept of a World-Class Product Range.

Our accessories are multifunctional and fit not only to an exactly defined component, but to all other components in the entire Modular Automation System.



Cover or fasten

- universally usable Cover or Insert Extrusion
- fits 40 mm and 50 mm extrusions
- suitable for mounting 4 mm to 6 mm thick panels
- covers T-slots and protects against dust and water spray
- suitable for cable routing
- easy to assemble: snap in and go



Everything is possible with a single hinge

- universal hinge fits all applications
- one hinge for all doors
- attachment of non-Robotunits components possible



Fine-tuning and Fastening element

- multifunctional Fine-Tuning and Fastening Element
- form located positioning
- infinitely adjustable
- post-assembly insertion possible



Unique clamping device allows easy attachment of parts

- facilitates mounting of 3 mm to 10 mm thick panels without drilling
- clamping device is quickly mounted by inserting it into the slot
- no drilling of panels required
- parts can be reused
- fits 40 mm and 50 mm extrusions



Save time, cut cost

- multifunctional accessories reduce your cost of ordering and your inventory overhead
- standard labeling saves even more time in assembly and storage



Multifunctional Accessories

Conveyor Technology Accessories

Speed Controller
CCN 0004



P. 144

Power Supply 24V
301437



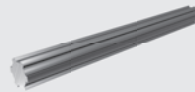
P. 144

Connection Hub
COP 4501



P. 145

Splined Shaft
COL 8500



P. 145

Tilt Plate 80
TIN 4561



P. 154

Tilt Plate 80 Bent
TIN 4571



P. 155

Connection Shaft
with Couplings
COL 52_0



P. 175

Fine-Tuning and
Fixing Element
TIN 4501



P. 178

Safety Fence Floor
Bracket
BAP 205_



P. 184

Anchor Bolt
BAP 2900



P. 184

Leveling Bases
BAS ____



P. 186

Castors
CAS ____



P. 188

Safety Fence Accessories

Weld Mesh
PAN ____



P. 146

Panel
PAN ____



P. 146

Weld Mesh Clip
SSP 4520



P. 147

Mesh Retainer
SSP 4515



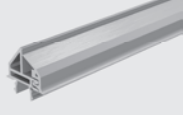
P. 147

Clamping Device
PIN 452_



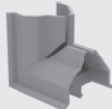
P. 148

Panel Profile
CAL 451_



P. 149

90° Corner Piece
CAN 4501



P. 150

270° Corner Piece
CAN 4503



P. 151

Safety Fence
Fastener
TIN 4511



P. 152

90° Safety Fence
Fastener
TIN 4521



P. 153

Bolt
SSP 4900



P. 156

Screw Retainer
Screw
SSP 5500



P. 156

Handle
DOR 4501



P. 157

Magnet Holder
DOR 4541



P. 157

Door Latch
DOR 4551



P. 158

Door Catch
DOR 4553



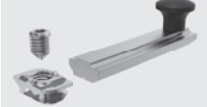
P. 159

Door Stop
DOR 4555



P. 160

Safety Slide
DOR 4557



P. 160

Hinge
DOR 4511



P. 161

Sliding Door
Track
DOL 4034



P. 162

Roller Set
DOR 4031



P. 162

Sliding Door Stop
DOR 4032



P. 163

Centering Guide
DOR 4571



P. 163

Slider
DOR 4573



P. 163

Door Support
Castor
DOR 456_



P. 164

Floor Catch
DOR 4561



P. 165

Safety Fence Floor
Bracket
BAP 205_



P. 184

Anchor Bolt
BAP 2900




P. 184

Linear Motion System Accessories

<p>Timing Belt Pulley LIN 5400</p>  <p>P. 166</p>	<p>Timing Belt LIL 3008</p>  <p>P. 167</p>	<p>Timing Belt Clamp LIN 3221</p>  <p>P. 167</p>	<p>Idlers LIN 50__</p>  <p>P. 168</p>	<p>Eccentric Key LIN 9990</p>  <p>P. 169</p>	<p>Guiderail LIL 5000</p>  <p>P. 169</p>
<p>Carriage Plate LIN 1501 / 2001</p>  <p>P. 170</p>	<p>Limit Stop LIN 5191</p>  <p>P. 170</p>	<p>Proximity Switch Bracket LIN 8201</p>  <p>P. 171</p>	<p>Proximity Switch LIN 8310</p>  <p>P. 171</p>	<p>Angle Plug with Cable LIN 8312</p>  <p>P. 171</p>	<p>Motor Flange LIN 5241</p>  <p>P. 172</p>
<p>Coupling LIN 523__</p>  <p>P. 172</p>	<p>Driveshaft/Encoder Shaft LIN 52__</p>  <p>P. 173</p>	<p>Expanding Coupling LIN 5246</p>  <p>P. 174</p>	<p>Encoder LIN 7501</p>  <p>P. 174</p>	<p>Connection Shaft with Coupling COL 5240</p>  <p>P. 175</p>	

General Modular Accessories

<p>Connection Shaft with Couplings COL 52_0</p>  <p>P. 175</p>	<p>Cover Extrusion for PIL 4012 CAL 4012</p>  <p>P. 176</p>	<p>End Cap CAP__</p>  <p>P. 177</p>	<p>Cable Block PIN 4530</p>  <p>P. 177</p>	<p>Plastic Hook PIN 4590</p>  <p>P. 178</p>	<p>Fine-Tuning and Fixing Element TIN 4501</p>  <p>P. 178</p>
<p>Linear Slider LIN 404_/LIN 505_</p>  <p>P. 179</p>	<p>Cover/Insert Extrusion CAL 45_ _</p>  <p>P. 180</p>	<p>T-Slot Sliding Rail CAL 4540</p>  <p>P. 181</p>	<p>Aluminum Cover Extrusion CAL 4545</p>  <p>P. 181</p>	<p>Anti-Slip Profile CAL 4560</p>  <p>P. 182</p>	<p>Gasket CAL 4565</p>  <p>P. 183</p>
<p>Safety Fence Floor Bracket BAP 205_</p>  <p>P. 184</p>	<p>Anchor Bolt BAP 2900</p>  <p>P. 184</p>	<p>Base and Transport Plates BAP __</p>  <p>P. 185</p>	<p>Leveling Bases BAS __</p>  <p>P. 186</p>	<p>Floor Mounting Plate BAP 4500</p>  <p>P. 187</p>	<p>Castors CAS __</p>  <p>P. 188</p>
<p>Allen Key for Hex Socket Head Cap Screws EQL 1001_</p>  <p>P. 190</p>	<p>1/4" Hex Bit with Ball End EQL 1005_</p>  <p>P. 191</p>				



CCN0004

Speed Controller



European version

Speed Controller type may vary by country / region

Application

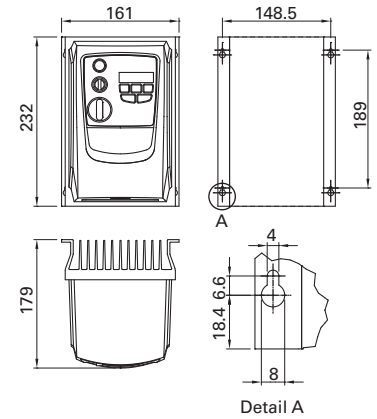
Variable frequency drive for controlling motor speed

Technical Data

Input voltage: 230 or 400 VAC
 Input frequency: 50/60 Hz
 Power output: 0.75 kW
 IP rating: IP66

Scope of delivery: Speed Controller un-wired or Controller with CEE oder SCHUKO plug, power cable and connecting cable to the conveyor

Completely wired when ordering with conveyor, otherwise 3 m cable with flying leads



Order Code

Description	Order Code ¹	Weight
Speed Controller (not wired)	CCN0004	2,300 kg

301437

Power Supply 24V



European version

Power Supply type may vary by country / region

Application

Power supply with rotary switch for switching the conveyor on and off

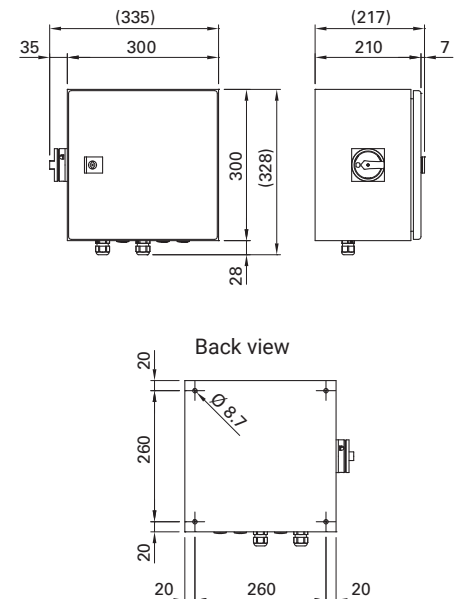
A maximum of 12 motor rollers may be connected to one power supply.

Technical Data

Housing material: powder-coated RAL 7035
 Operating voltage: 400 VAC
 Power frequency: 50 Hz
 Control voltage: 24 VDC
 Power rating: 10 A
 Connected load: 6.9 kW
 IP rating: IP54

Scope of delivery: Power Supply 24V with CEE plug, power cable and connection cable to the conveyor

Completely wired when ordering with conveyor, otherwise 3 m cable with open end



Order Code

Description	Order Code ¹	Weight
Power Supply 24V	301437	10 kg + 0.2 kg/m power cable connection

1) Please complete the order by adding the desired length of the power supply cable connection.
 Drawing dimensions in mm

COP4501

Connection Hub



Application

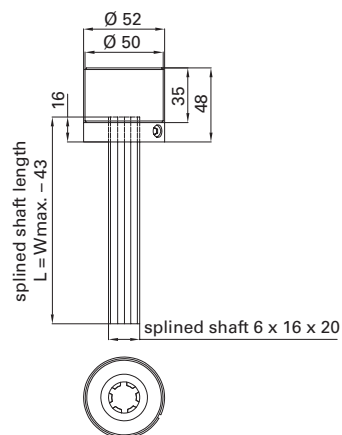
For connecting adjustable timing belt conveyors

Technical Data

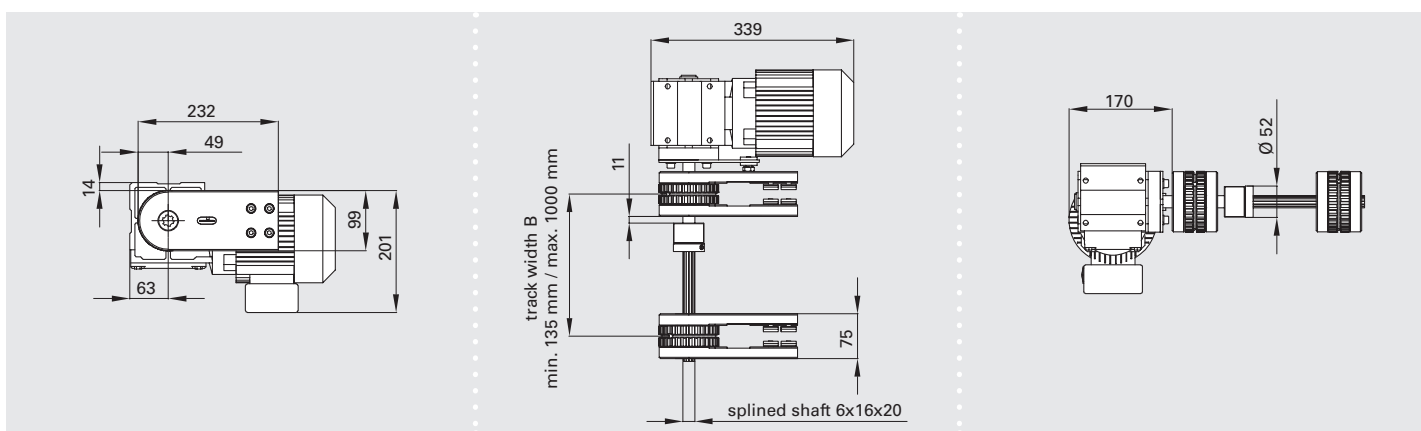
Max. torque: 60 Nm

Scope of Delivery

- 1 C8T Splined Shaft Clamping Ring
- 1 C8T Connection Hub
- 1 Expanding Coupling LIN 5246
- 3 screws IBM M05x016



Adjustable Drive Dimensions



Order Code

Description	Order Code	Weight
Connection Hub Kit	COP4501	0.550 kg

COL8500

Splined Shaft



Application

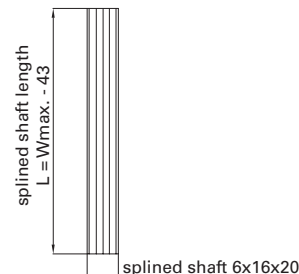
For connecting adjustable timing belt conveyors

Technical Data

Max. torque: 60 Nm

Scope of Delivery

- 1 Splined Shaft, DIN-ISO 14 - 6x16x20



Order Code

Description	Order Code ¹	Weight
Splined Shaft, cut to length	COL8500SNN	1.930 kg/m
Splined Shaft, stock length 2000 mm	COL8500NNN	1.930 kg/m

1) Please complete the order by adding the length parameters for cut to length orders.
Drawing dimensions in mm

PAN__S4_

Weld Mesh

**Application**

Used for Safety Fencing

Fastening:

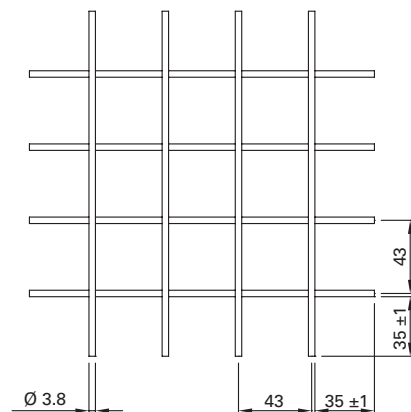
- Weld Mesh Clip SSP4520
- Safety Fence Mesh Retainer SSP4515

Technical Data

Material: galvanized steel

Design tip:

Standard widths and lengths offer an outstanding price/performance ratio and quick delivery.



Order Code

Description	Order Code ¹	Weight
Weld Mesh, 40x40, galvanized, 461x1966 mm	PAN0461S4N	3.952 kg
Weld Mesh, 40x40, galvanized, 719x1966 mm	PAN0719S4N	6.163 kg
Weld Mesh, 40x40, galvanized, 977x1966 mm	PAN0977S4N	8.375 kg
Weld Mesh, 40x40, galvanized, 1450x1966 mm	PAN1450S4N	12.429 kg
Weld Mesh, 40x40x4 mm	PANS4S	4.360 kg/m ²

PAN_N

Panels

**Application**

Used for Safety Fencing

Fastening:

- Clamping Device PIN4521
- Cover/Insert Extrusion
CAL4500, CAL4504, CAL4510
- Panel Profile CAL4515, CAL4517,
- Corner Piece CAN4501, CAN4503

Technical Data

Material: Polycarbonate glass or expanded PVC sheets, gray

Order Code

Description	Order Code ¹	Weight/m ²
Polycarbonate Sheet, clear, 4 mm	PANP4N	4.800 kg
Polycarbonate Sheet, clear, 5 mm	PANP5N	6.000 kg
Polycarbonate Sheet, clear, 6 mm	PANP6N	7.200 kg
Polycarbonate Sheet, brown tinted, 4 mm	PANQ4N	4.800 kg
Polycarbonate Sheet, brown tinted, 5 mm	PANQ5N	6.000 kg
Polycarbonate Sheet, brown tinted, 6 mm	PANQ6N	7.200 kg
Expanded PVC Panel, gray similar to RAL 7004	PANG5N	3.250 kg

1) Please complete the order by adding the length and width parameters for cut orders.
Drawing dimensions in mm

SSP4520

Weld Mesh Clip

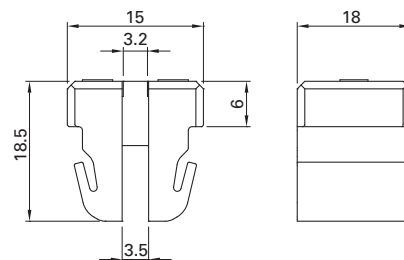
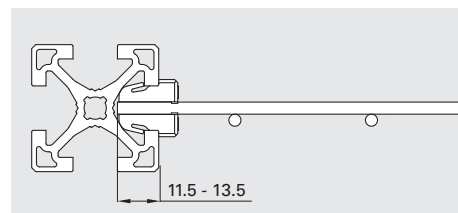
**Application**

For form-located integration of Weld Mesh panels into an extrusion frame

Technical Data

Material: PA6 V0

Color: RAL 7004 (signal gray)

**Assembly****Order Code**

Description	Order Code	Weight
Weld Mesh Clip	SSP4520	0.005 kg

SSP4515

Mesh Retainer

**Application**

For form-located integration of Weld Mesh panels into an extrusion frame

- Electrically conductive connection between weld mesh panels and extrusion frame
- can be used with non-standard spacing

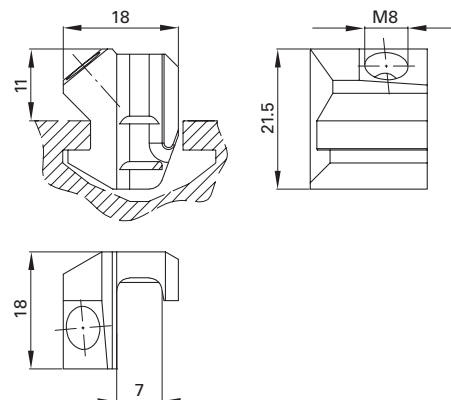
Technical Data

Material: steel

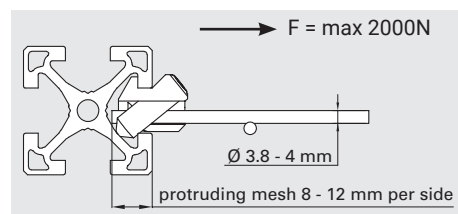
Scope of Delivery

1 Mesh Retainer SSP4514

1 Set Screw GST M08x025 (waxed)



Transfer resistance per conductive connection: <math>< 0,4 \Omega</math>

Assembly**Order Code**

Description	Order Code	Weight
Mesh Retainer Kit	SSP4515	0.025 kg

Drawing dimensions in mm



PIN4521



PIN4520



PIN4522

Application

- For attaching panels to extrusions, usable with 40 mm and 50 mm series extrusions
- As standard, panels do not need to be drilled
 - High retention force

Technical Data

Material: PA6, black, galvanized steel
 Load: up to 250 N, perpendicular to slot
 Centerline: 1 - 10 mm
 Protection against inadvertent movement of panels through pre-tensioning of clamps

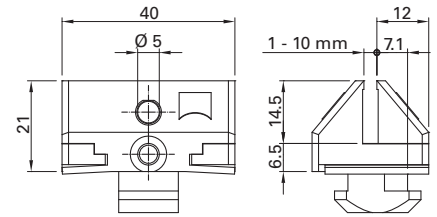
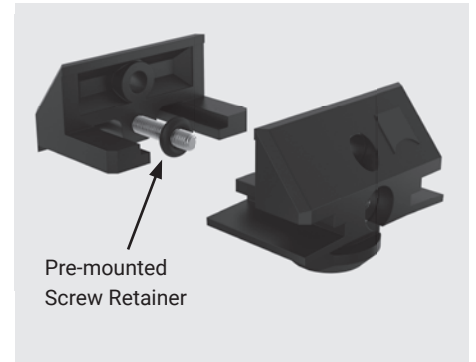
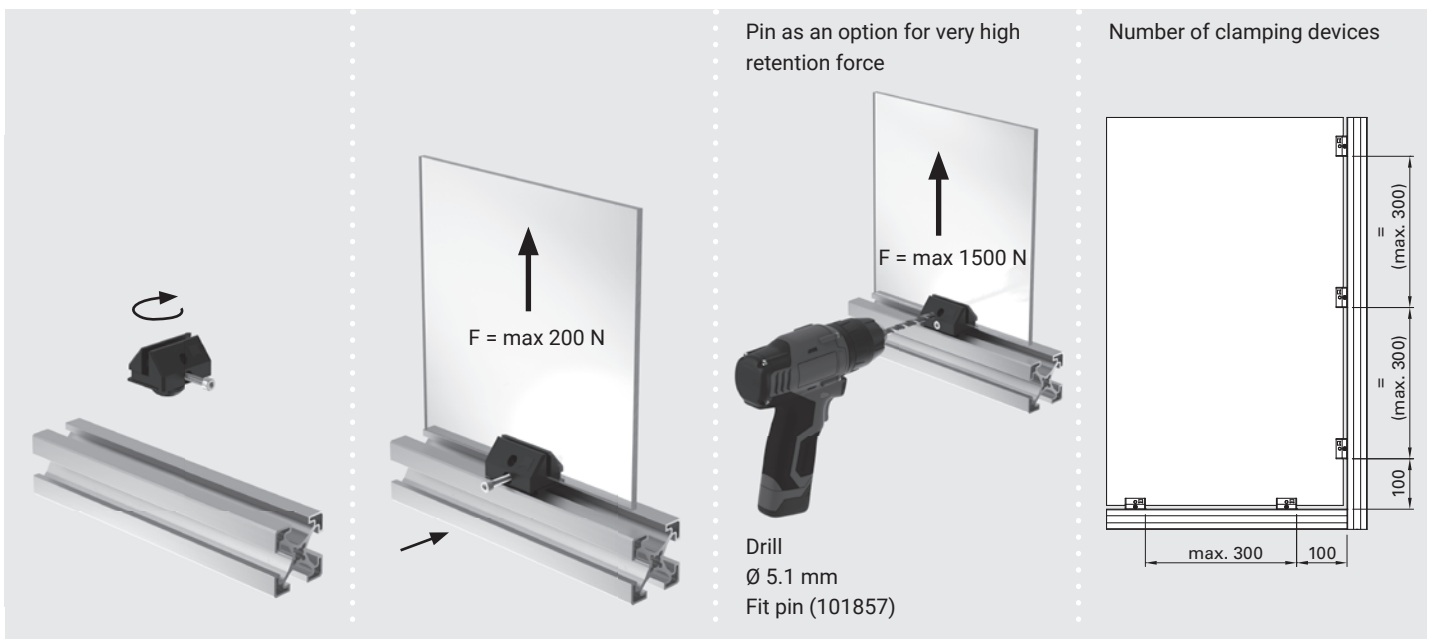
Retention Force

Without pin: 200 N
 With pin (101857): 1500 N
 (Polycarbonate glass)

Scope of Delivery

1 Clamping Device base part
 1 Clamping Device sliding part
 1 Screw IBS M04x25
 1 Screw Retainer

Panel size =
 inside width minus 15 mm

**Screw Retainer****Assembly****Order Code**

Description	Order Code	Weight
Clamping Device Kit	PIN4521	0.021 kg
Clamping Device base part, incl. insert nut	PIN4520	0,010 kg
Clamping Device sliding part, pre-assembled	PIN4522	0,011 kg
Pin	101857	0.002 kg

Drawing dimensions in mm

**Application**

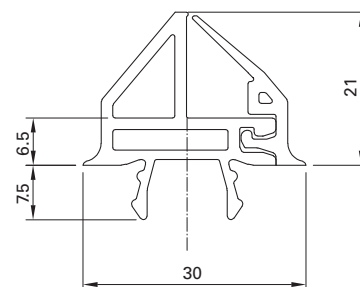
For fastening of panels between 1 - 3 mm and 3.1 - 6 mm thick, also suitable for later installation

- Adequate protection against dust, water spray and noise
- Appealing design

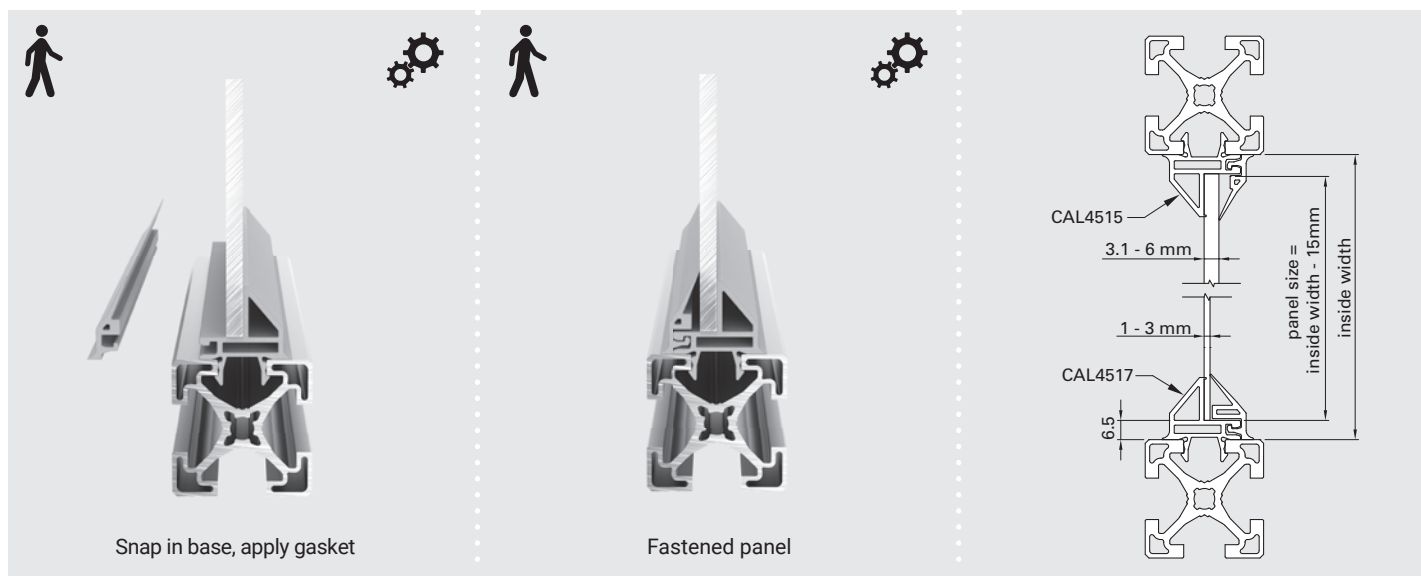
Technical Data

Material: impact-resistant PVC with soft lip, RAL 7004 (signal gray), UV-resistant, silicone-free

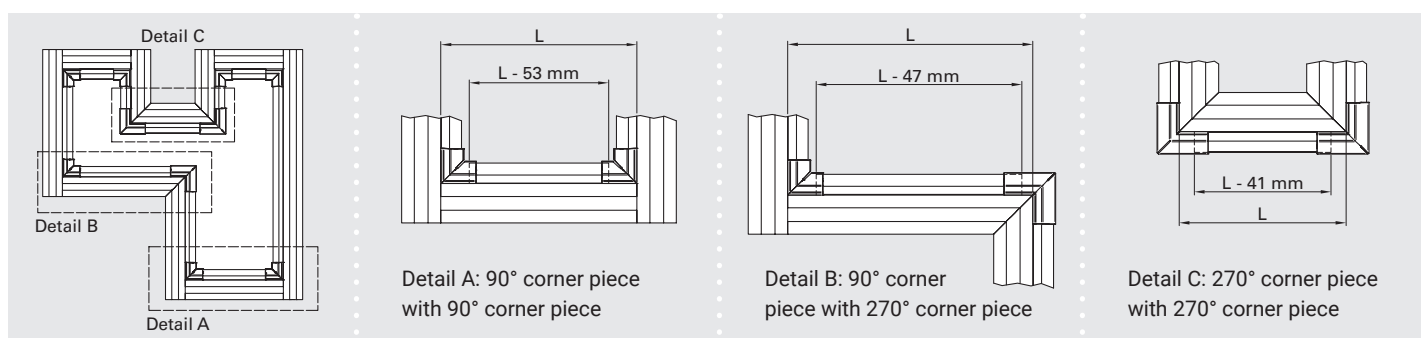
Temperature range: -10°C to +60°C



Assembly



Length Calculation



Order Code

Description	Order Code ¹	Weight/Meter
Panel Profile 3.1 – 6 mm, cut to length	CAL4515SNN	0.280 kg
Panel Profile 3.1 – 6 mm, stock length 3000 mm	CAL4515NNN	0.280 kg
Panel Profile 3.1 – 6 mm, 25 pcs., stock length 3000 mm	CAL4515PAC	0.280 kg
Panel Profile 1 – 3 mm, cut to length	CAL4517SNN	0.280 kg
Panel Profile 1 – 3 mm, stock length 3000 mm	CAL4517NNN	0.280 kg
Panel Profile 1 – 3 mm, 25 pcs., stock length 3000 mm	CAL4517PAC	0.280 kg

1) Please complete the order by adding the length parameters for cut to length orders.
Drawing dimensions in mm

CAN4501

90° Corner Piece



CAN4501

Application

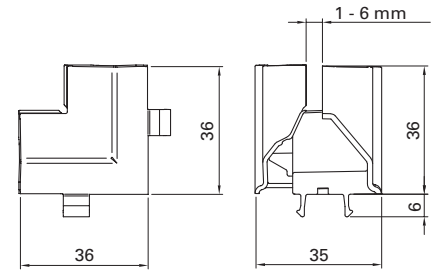
Used as 90° corner trim for Panel Profiles CAL4515 and CAL4517

Technical Data

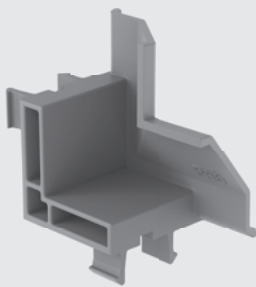
Material: POM, UV-resistant, silicone-free
Color: RAL 7004 (signal gray)
Temperature Range: -10 °C to +60 °C

Scope of Delivery

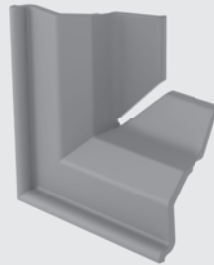
1 90° Corner Piece base part
1 90° Corner Piece top part



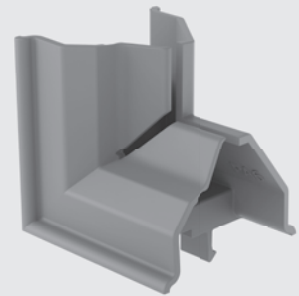
Parts



90° Corner Piece base part (101419)

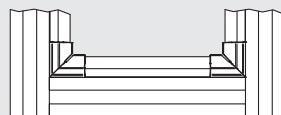
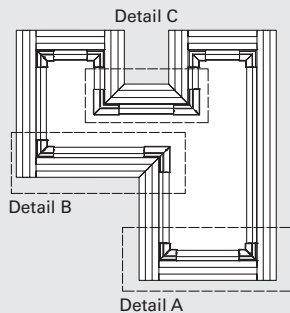


90° Corner Piece top part (101420)

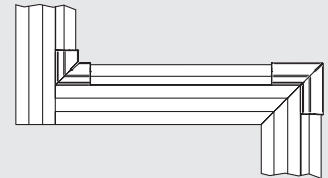


90° Corner Piece Kit (CAN4501)

Assembly



Detail A: 90° Corner Piece with 90° Corner Piece



Detail B: 90° Corner Piece with 270° Corner Piece

Order Code

Description	Order Code	Weight
90° Corner Piece Kit	CAN4501	0.010 kg
90° Corner Piece base part	101419	0,006 kg
90° Corner Piece top part	101420	0,004 kg

Drawing dimensions in mm

CAN4503

270° Corner Piece



CAN4503

Application

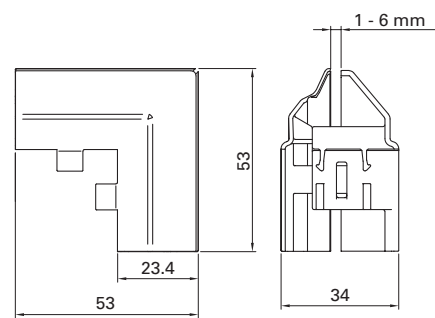
Used as 270° corner trim for Panel Profiles CAL4515 and CAL4517

Technical Data

Material: PA6, UV-resistant, silicone-free
Color: RAL 7004 (signal gray)
Temperature Range: -10 °C to +60 °C

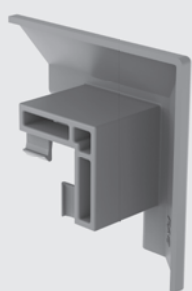
Scope of Delivery

1 270° Corner Piece base part
1 270° Corner Piece top part

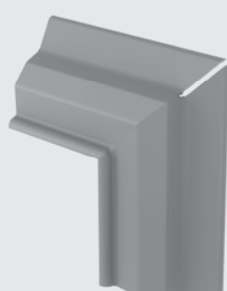


A 45° miter cut of the extrusion is necessary if the 270° Corner Piece is to be used.

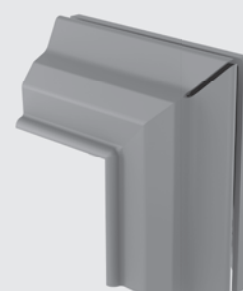
Parts



270° Corner Piece base part (101421)

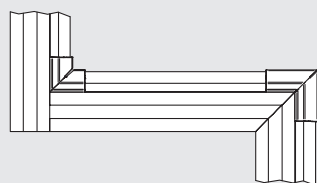
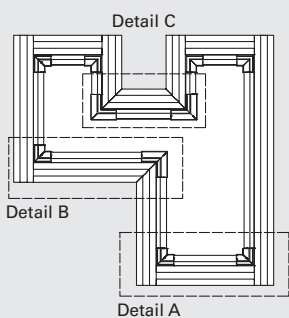


270° Corner Piece top part (101422)

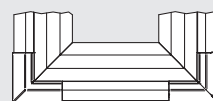


270° Corner Piece Kit (CAN4503)

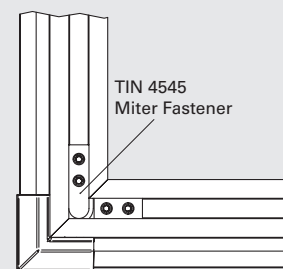
Assembly



Detail B: 90° Corner Piece with 270° Corner Piece



Detail C: 270° Corner Piece with 270° Corner Piece



45° miter cut

Order Code

Description	Order Code	Weight
270° Corner Piece Kit	CAN4503	0.012 kg
270° Corner Piece base part	101421	0,008 kg
270° Corner Piece top part	101422	0,004 kg

Drawing dimensions in mm

TIN4511

Safety Fence Fastener

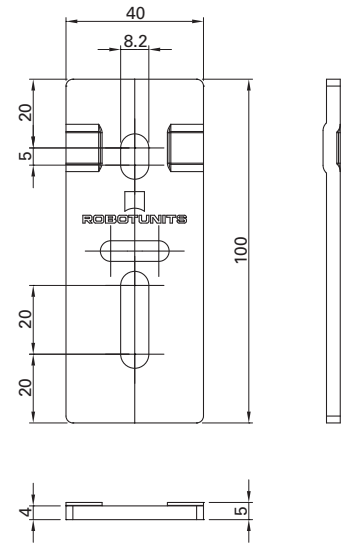
**Application**

For variable fastening options of safety fence components

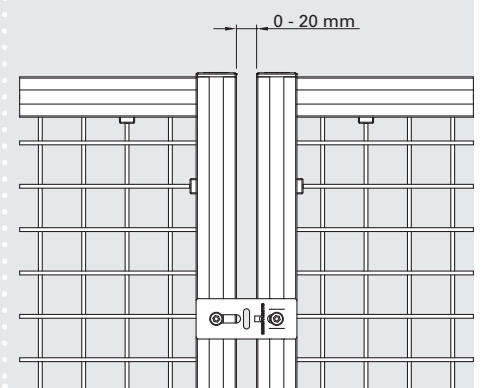
- 90° connections of extrusions and as end cap
- Strong connection between panels

Technical Data

Material: galvanized steel

**Assembly**

Sturdy connection between panels

**Order Code**

Description	Scope of Delivery			Order Code	Weight
	TIN4510	TIN4508	IBS M08x016NIKO		
Safety Fence Fastener Kit	1	2	2	TIN4511	0.150 kg

Drawing dimensions in mm

TIN4521

90° Safety Fence Fastener

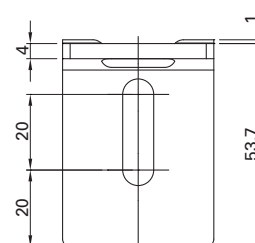
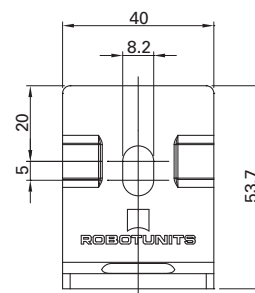
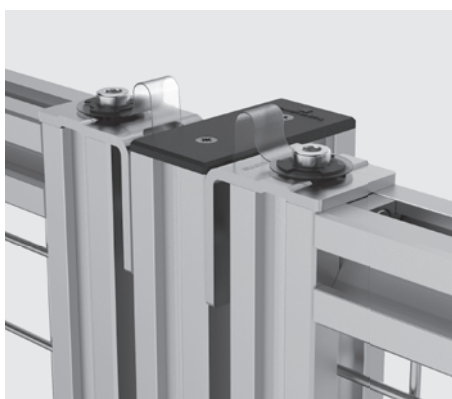
**Application**

For variable fastening options of safety fence components

- 90° connections of extrusions and as end cap
- Strong connection between panels
- Adjustable corner brackets from 0° to 180°

Technical Data

Material: galvanized steel

Assembly**Order Code**

Description	Scope of Delivery			Order Code	Weight
	TIN4520	TIN4508	IBS M08x016NIKO		
90° Safety Fence Fastener Kit	1	2	2	TIN4521	0.150 kg

Drawing dimensions in mm



TIN4561

Tilt Plate 80

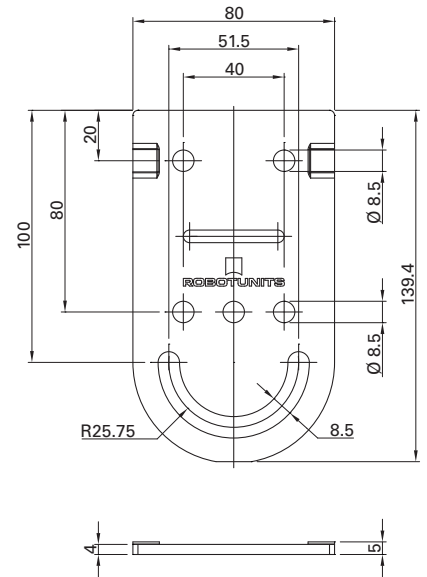
**Application**

Variable connection of modular components

- Sturdy connection of conveyor and stand
- Infinitely adjustable incline

Technical Data

Material: galvanized steel



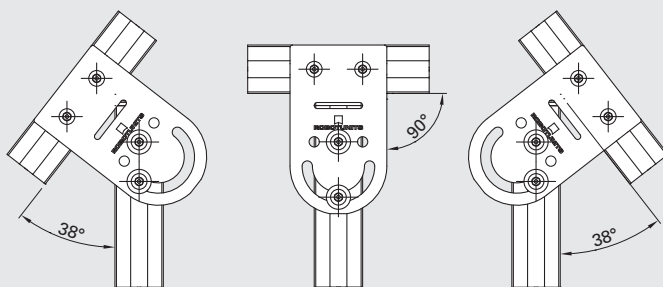
Application

Connection of conveyor and stand

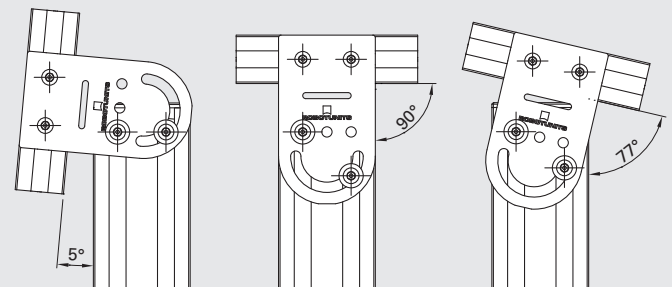


Possible inclination settings

40 mm series



80 mm series



Order Code

Description	Scope of Delivery				Order Code	Weight
	TIN4530	TIN4508	IBS M08x016NIKO	BLS M008S02		
Tilt Plate 80 Kit	1	4	4	2	TIN4561	0.370 kg

Drawing dimensions in mm

TIN4571

Tilt Plate 80 Bent

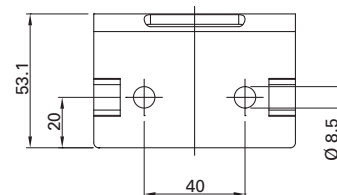
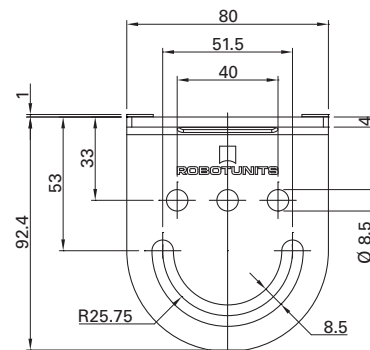
**Application**

Variable connection of modular components

- Workplace applications e.g. for shelves
- Infinitely adjustable incline (Bracket as with TIN 4531)

Technical Data

Material: galvanized steel



Application

Workstation



Order Code

Description	Scope of Delivery				Order Code	Weight
	TIN 4540	TIN 4508	IBS M08x016NIKO	BLS M008S02		
Tilt Plate 80 Bent Kit	1	4	4	2	TIN4571	0.370 kg

Drawing dimensions in mm

SSP4900

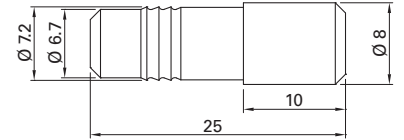
Bolt

**Application**

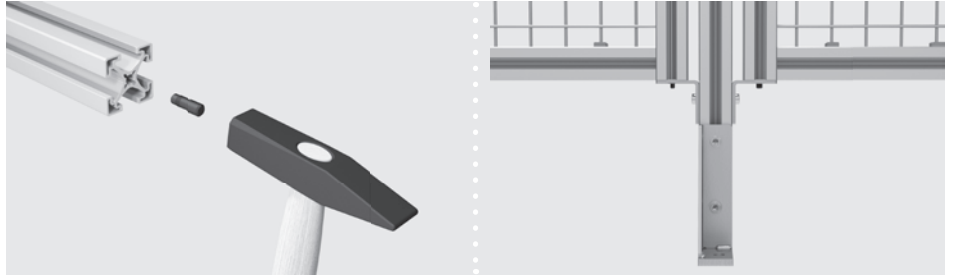
For mounting Allround Panels

Technical Data

Material: nitrated steel



Function



Order Code

Description	Order Code	Weight
Bolt	SSP4900	0.010 kg

SSP5500

Screw Retainer

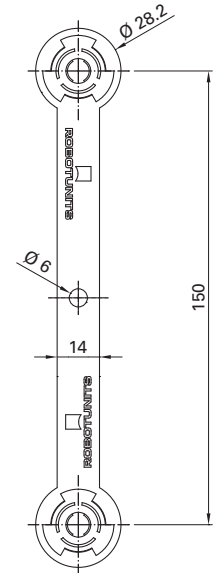
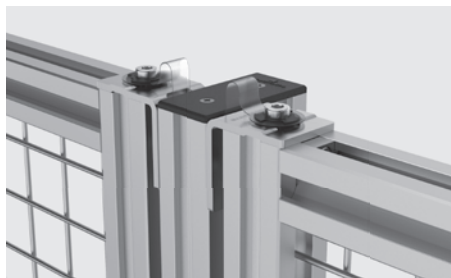
**Application**

For securing M8 retaining screws
(e.g. for Allround Panel)

Technical Data

Material: PVC and PA

Application



Order Code

Description	Order Code	Weight
Screw Retainer	SSP5500	0.001 kg

Drawing dimensions in mm

DOR4501

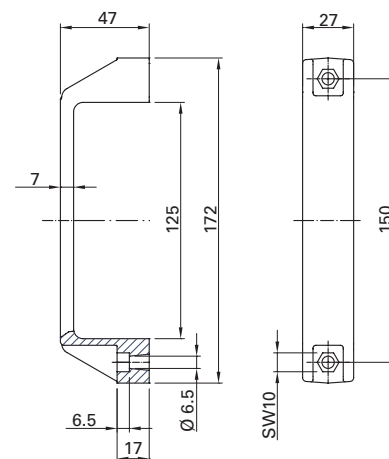
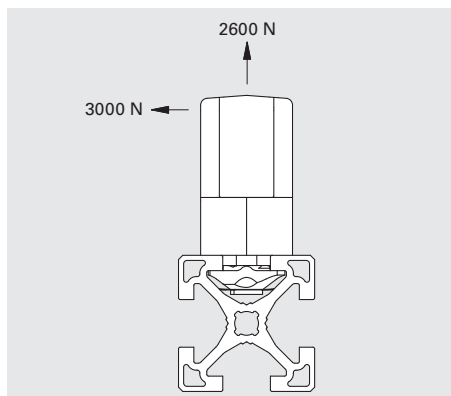
Handle

**Application**

For use with doors, panels, carts etc.

Technical Data

Material: PA/GF composite, galvanized steel

Retention Force**Order Code**

Description	Scope of Delivery			Order Code	Weight
	DOR4500	TIN4506	IBS M06x020		
Handle Kit	1	2	2	DOR4501	0.100 kg

DOR4541

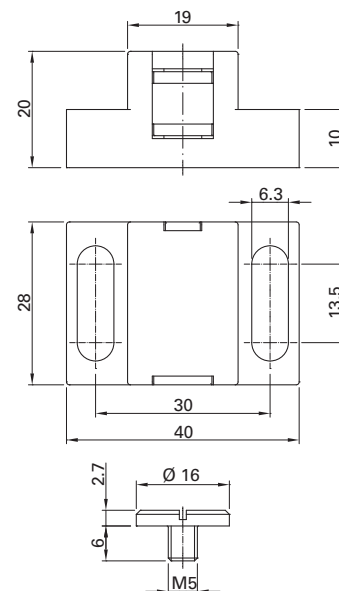
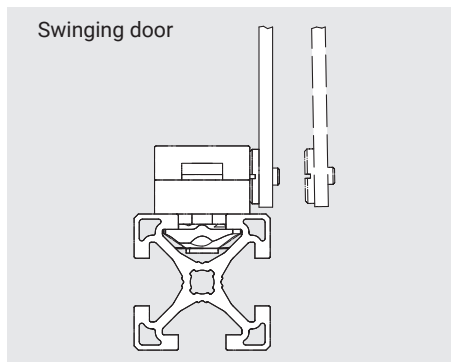
Magnet Holder

**Application**

Closing device for frameless doors

Technical Data

Material: POM composite, black, galvanized steel

Application

Retention Force: front 20 N, back 8 N

Order Code

Description	Scope of Delivery				Order Code	Weight
	DOR4540	TIN4506	IBS M06x020	BLS M006		
Magnet Holder Kit	1	2	2	2	DOR4541	0.075 kg

DOR4551

Door Latch



TIN4506

DOR4550

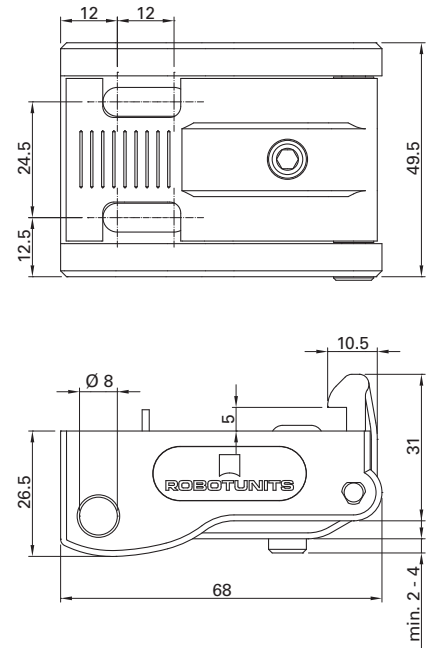
Application

To latch door panels directly to door posts. Door can only be opened by pushing the door latch. Suitable for 40 mm and 50 mm series extrusions.

Technical Data

Material: PA6 30 GF, black, galvanized steel

For extra security.



Application



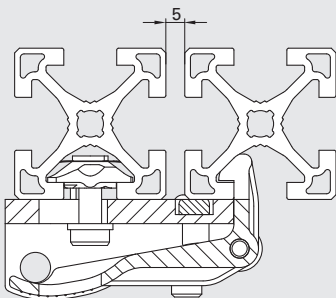
Secure: Push latch to open door.



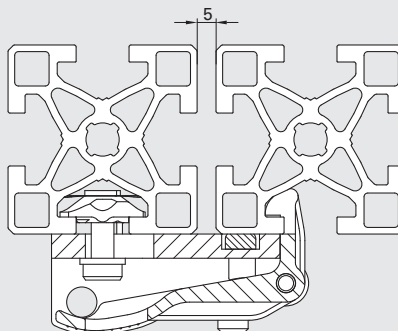
Door latch can be **secured with a padlock against inadvertent opening**. Lock bolt diameter: 7 mm



Door latch can be **secured with a padlock against inadvertent closing**. Lock bolt diameter: 7 mm



Application: door latch in 40 mm series



Application: door latch in 50 mm series



Adjustable pre-tension for optimal retention force. Set screw must always protrude by at least 2 mm.

Order Code

Description	Scope of Delivery		Order Code	Weight
	Door Latch Kit	DOR4550 1		

Drawing dimensions in mm

DOR4553

Door Catch



DOR4552

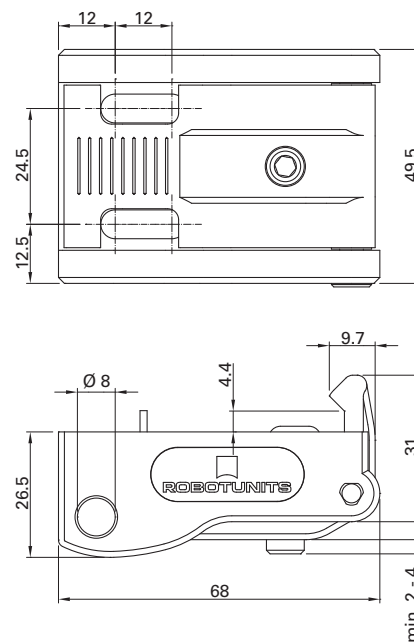
TIN4506

Application

To latch door panels directly to door posts. Door can be opened by pulling door handle. Suitable for 40 mm and 50 mm series extrusions.

Technical Data

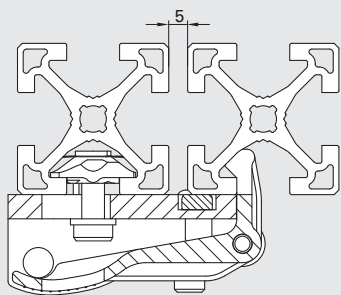
Material: PA6 30 GF, black, galvanized steel



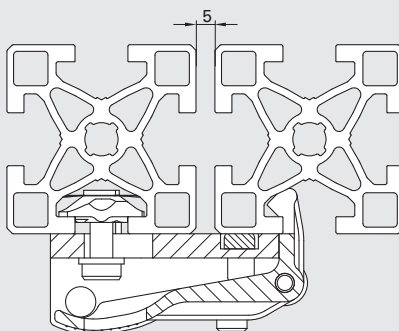
Application



Pull to release and open.



Application of door latch in 40 mm series



Application of door latch in 50 mm series



Adjustable pre-tension for optimal retention force. Set screw must always protrude by at least 2 mm.

Order Code

Description	Scope of Delivery		Order Code	Weight
	DOR4552	TIN4506		
Door Catch Kit	1	2	DOR4553	0.100 kg

Drawing dimensions in mm

DOR4555

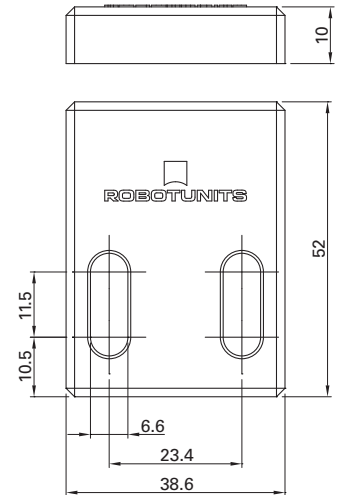
Door Stop

**Application**

Used as a fixed door stop

Technical Data

Material: PA6 30 GK, galvanized steel



Order Code

Description	Scope of Delivery				Order Code	Weight
	DOR4554	TIN4506	IBS M06x020	BLS M006		
Door Stop Kit	1	2	2	2	DOR4555	0.020 kg

DOR4557

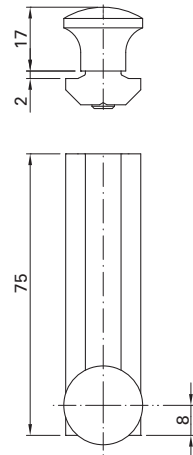
Safety Slide

**Application**

Prevents inadvertent closing of doors.
Suitable for 40 mm and 50 mm series extrusions.

Technical Data

Material: galvanized steel; Duroplast



Application



Order Code

Description	Scope of Delivery			Order Code	Weight
	Base Part	TIN4508	GST M08x012 SPI		
Safety Slide Kit	1	1	1	DOR4557	0.090 kg

Drawing dimensions in mm

DOR4511

Hinge

**Application**

For hinged structures. Inserts allow for use with 40 mm and 50 mm series extrusions.

Technical Data

Material: GD-Zn black, coated, galvanized steel

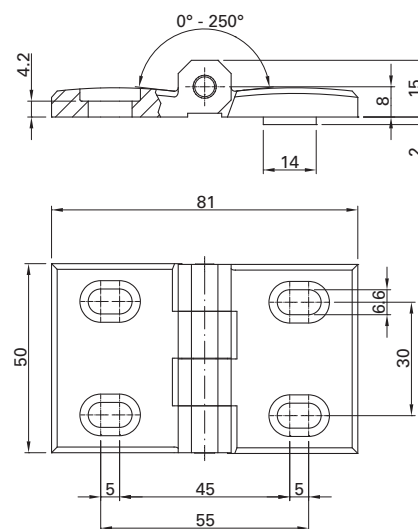
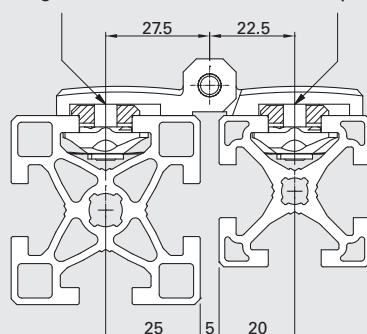
Tightening torque

IBS M06x016NIKO = 9 Nm

Assembly

Use with 50 mm series facing outwards

Use with 40 mm series turned towards pivot

**Order Code**

Description	Scope of Delivery			Order Code	Weight
	DOR4510	TIN4506	IBS M06x016NIKO		
Hinge Kit	1	4	4	DOR4511	0.222 kg

Drawing dimensions in mm



DOL4034

Sliding Door Track

**Application**

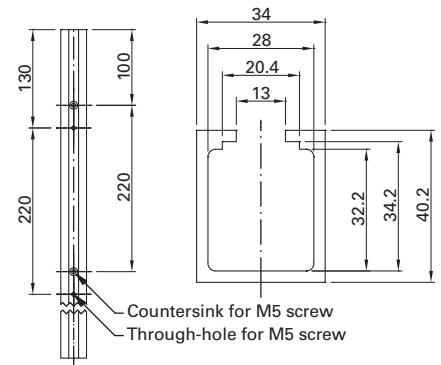
For sliding doors

Technical Data

Material: clear anodized aluminum

Hole spacing = 220 mm

Max. load = 80 kg per sliding door



Order Code

Description	Order Code ¹	Weight/Meter
Sliding Door Track, cut to length	DOL4034SNN	0.996 kg
Sliding Door Track, stock length 6050 mm	DOL4034NNN	0.996 kg

DOR4031

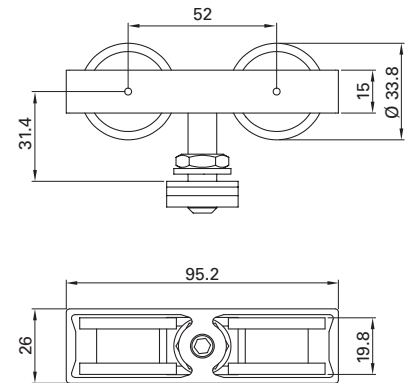
Roller

**Application**

Sliding Door

Technical Data

Material: clear anodized aluminum, PA6 white, galvanized steel



Order Code

Description	Scope of Delivery					Order Code	Weight
	DOR4030	TIN6010	SKM M10FLA	GST M10x050	BLS M010		
Roller Kit	1	1	1	1	1	DOR4031	0.140 kg

1) Please complete the order by adding the length parameters for cut to length orders.
Drawing dimensions in mm

DOR4032

Sliding Door Stop



Application

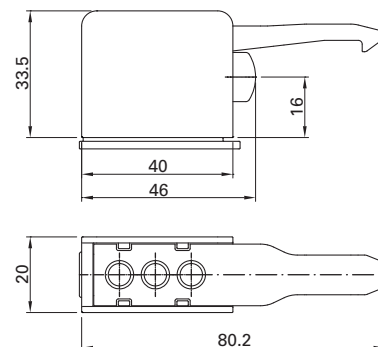
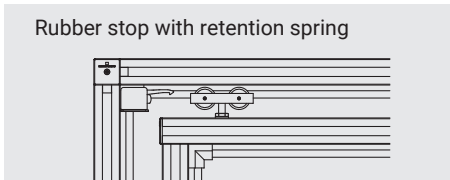
Mechanical stop and retainer for sliding door

Technical Data

Material: aluminum, galvanized steel, rubber

Application

Rubber stop with retention spring



Order Code

Description Sliding Door Stop	Order Code	Weight
	DOR4032	0.126 kg

DOR4571

Centering Guide

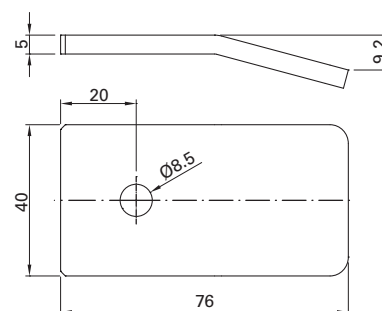


Application

For sliding doors

Technical Data

Material: powder-coated steel



Order Code

Description Centering Guide Kit	Scope of Delivery			Order Code	Weight
	DOR4570	TIN4508	IBS M08x016NIKO	DOR4571	0.100 kg
	1	1	1		

DOR4573

Slider

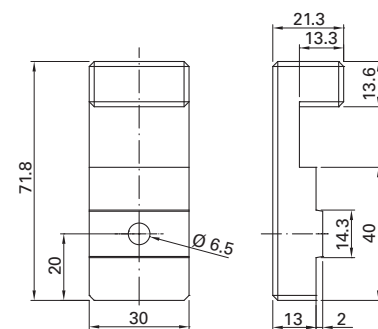


Application

For sliding doors

Technical Data

Material: black POM composite



Order Code

Description Slider Kit	Scope of Delivery				Order Code	Weight
	DOR4572	TIN4506	IBS M06x025	BLS M006	DOR4573	0.060 kg
	1	1	1	1		



Door Support Castor Kit, rigid



Door Support Castor Kit, swivel

Application

Rolling support for panels, doors

Technical Data

Material: clear anodized aluminum, galvanized steel, rubber

Scope of Delivery

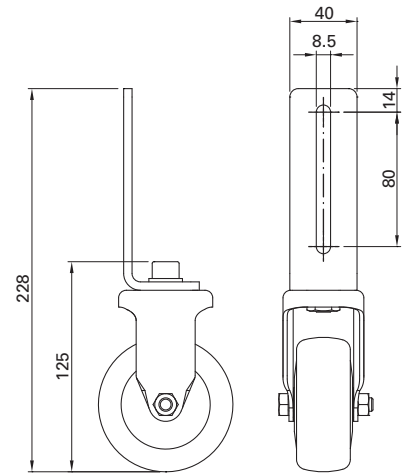
Door Support Castor Kit, rigid DOR4565:

- 1 Rigid Castor with Bolt Hole Fitting CAS2082
- 1 Bracket for Support Castor
- 1 Screw IBS M10x020
- 2 Washers BLS M010
- 1 Hexagon Nut SKM M10
- 2 Screws IBS M08x016NIKO
- 2 Drop-in Nuts TIN4508
- 2 Washers BLS M008

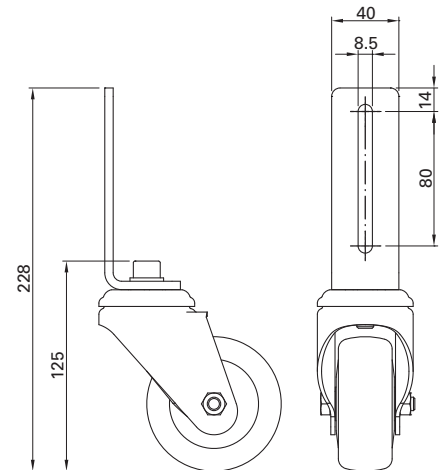
Door Support Castor Kit, swivel DOR4567:

- 1 Swivel Castor with Bolt Hole Fitting CAS2080
- 1 Bracket for Support Castor
- 1 Screw IBS M10x030
- 2 Washers BLS M010
- 1 Hexagon Nut SKM M10
- 2 Screws IBS M08x016NIKO
- 2 Drop-in Nuts TIN4508
- 2 Washers BLS M008

Door Support Castor Kit, rigid



Door Support Castor Kit, swivel

**Order Code**

Description	Order Code	Weight
Door Support Castor Kit, rigid	DOR4565	0.510 kg
Door Support Castor Kit, swivel	DOR4567	0.680 kg

Drawing dimensions in mm

DOR4561

Floor Catch

**Application**

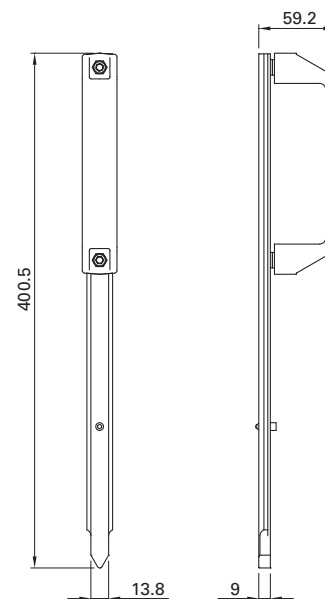
For double door

Technical Data

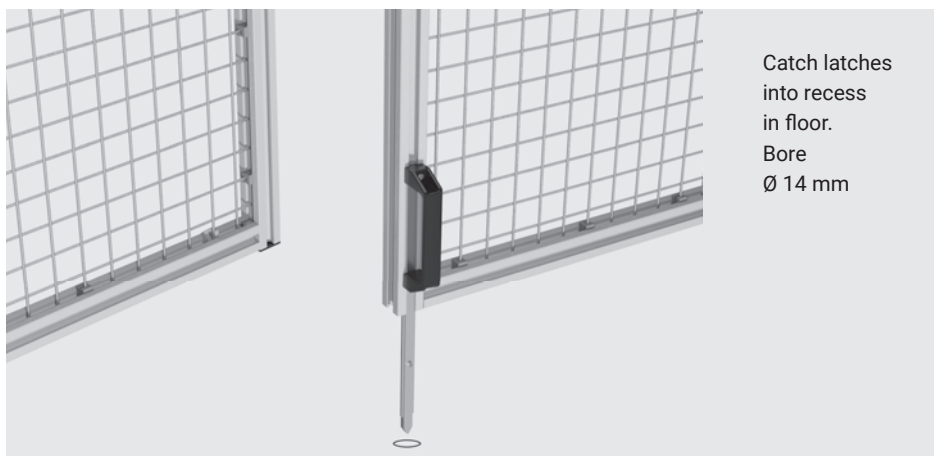
Material: galvanized steel, PA/GF composite

Scope of Delivery

- 1 Floor Catch Base Part
- 1 Handle DOR4500
- 2 Screws M06x020
- 4 Washers BLS M006
- 1 Spring-Loaded Pressure Part with Band and Hexagon Socket-Head GST M06x015FED



Application



Order Code

Description	Order Code	Weight
Floor Catch Kit	DOR4561	0.545 kg

Drawing dimensions in mm

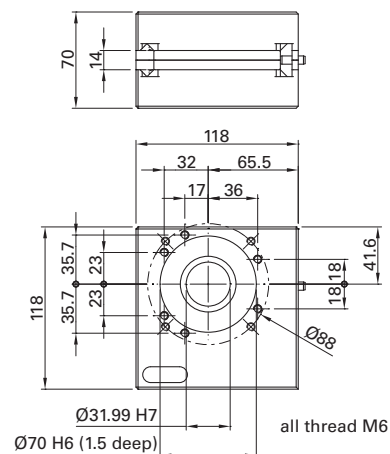
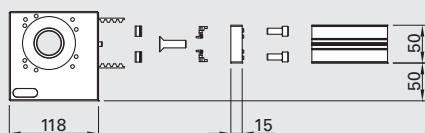
**Application**

Drive and idler pulley for Linear Motion Unit, suitable for 50 mm series extrusions.

Technical Data

Material: black anodized aluminum, steel
 Max. drive torque: 60 Nm
 Carriage stroke per revolution: 200 mm
 Pitch circle diameter: 63.66 mm

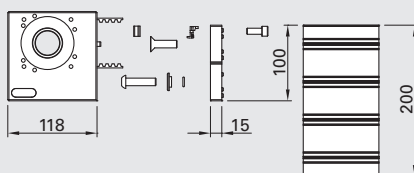
Flange plates for motor connection are available upon request.

**Application****Connection Option LIN5451**

For connecting to extrusions:
 50x50, 50x100 flat, 50x200 flat

Scope of Delivery

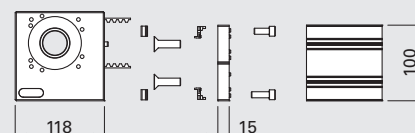
- 1 Timing Belt Pulley LIN5400
- 1 Fastener 50x50 FAS5050
- 2 Centering Inserts FAS5052
- 2 Drop-in Nuts TIN4508
- 2 Screws IBS M08x020
- 1 screw IBS M10x035

**Connection Option LIN5421**

For connecting to extrusions:
 50x200 upright

Scope of Delivery

- 1 Timing Belt Pulley LIN5400
- 1 Fastener 50x50 FAS5050
- 1 Fastener 50x50 FAS5050, modified
- 1 FAS5052 centering insert
- 1 Drop-in Nut TIN4508
- 1 screw IBS M08x020
- 1 screw IBS M10x035
- 1 TIN plate for Special Fastener 50 with O-ring and screw LKS M10x040

**Connection Option LIN5411**

For connecting to extrusions:
 50x100 upright, 100x100

Scope of Delivery

- 1 Timing Belt Pulley LIN5400
- 1 Fastener 50x50 FAS5050
- 1 Fastener 50x50 FAS5050, modified
- 2 Centering Inserts FAS5052
- 2 Drop-in Nuts TIN4508
- 2 Screws IBS M08x020
- 2 Screws SKS M10x035

Order Code

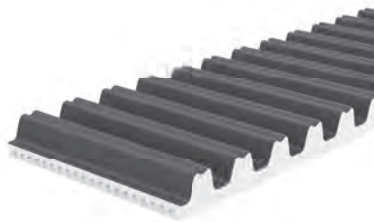
Description	Order Code	Weight
Timing Belt Pulley	LIN5400	1.660 kg
Timing Belt Pulley with Fastening Kit 100	LIN5411	1.950 kg
Timing Belt Pulley with Fastening Kit 200	LIN5421	2.000 kg
Timing Belt Pulley with Fastening Kit 50	LIN5451	2.050 kg

1) Please complete the order by adding the length parameters for cut to length orders.

Drawing dimensions in mm

LIL3008

Timing Belt



Timing Belt Length Calculation

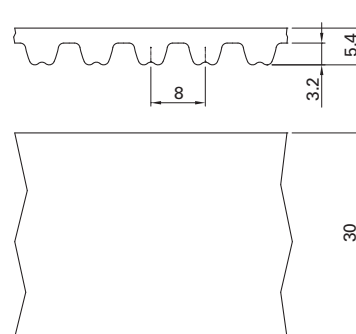
TL (Total Length), SL (Stroke Length),
L (Timing Belt Length):
 $L = 2 \times TL - 136$ or $L = 2 \times SL + 944$

Application

Power transmission from drive to carriage.

Technical Data/Scope of Delivery

Material: PU timing belt, white,
PAZ coating on toothed side,
Max. tensile load: 2000 N
Recommended pre-tension of timing belt:
0.1 % = approx. 500 N pre-tension
Timing Belt designation: RPU-8M-30-PAZ

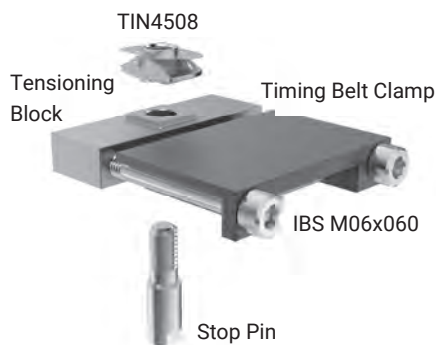


Order Code

Description	Order Code ¹	Weight/Meter
Timing Belt RPU-8M-30-PAZ, cut to length	LIL3008	0.155 kg

LIN3221

Timing Belt Clamp



Application

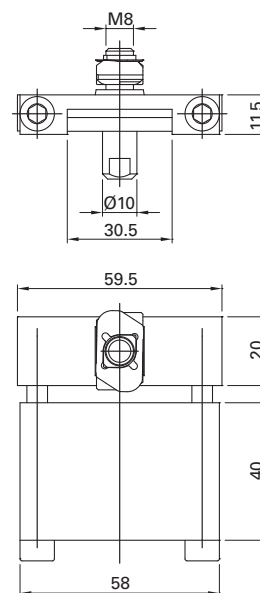
For attaching and tensioning the timing belt

Technical Data

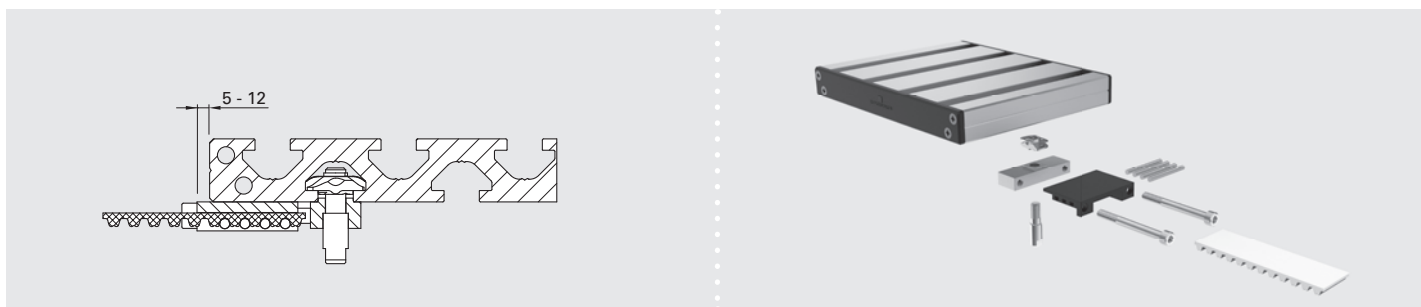
Material: black anodized aluminum, stainless steel, galvanized steel
Max. tensile load: 2000 N

Scope of Delivery

- 1 Tensioning Block
- 1 Timing Belt Clamp
- 1 Stop Pin
- 4 Timing Belt Pins
- 2 Screws IBS M06x060
- 1 Drop-in Nut TIN 4508



Application



Order Code

Description	Order Code	Weight
Timing Belt Clamp Kit	LIN3221	0.205 kg

LIN500_

Single Idler

**Application**

Roller device for Linear Motion Units, integrated felt wipers for cleaning and lubrication.

Technical Data

Material: clear or black anodized aluminum, black, tempered steel or galvanized steel, black PA6 composite, pressed felt

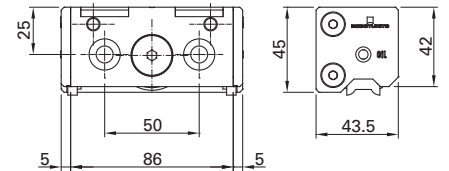
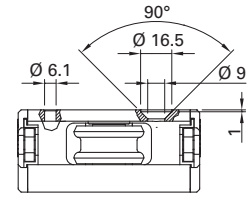
Bearing load capacity per single idler

Radial: max. 1500 N

Axial: max. 750 N

The carriage is adjusted using the eccentric idlers and an eccentric Eccentric Key LIN9990.

Assembly instructions: page 195



Order Code

Description	Scope of Delivery				Order Code	Weight
	LIN5000	LIN5002	Grooved pin	SKS M08x055		
Single Idler Kit, concentric	1		2	2	LIN5001	0.375 kg
Single Idler Kit, eccentric		1	2	2	LIN5003	0.375 kg

LIN501_

Double Idler

**Application**

Roller device for Linear Motion Units, integrated felt wipers for cleaning and lubrication.

Technical Data

Material: clear or black anodized aluminum, black, tempered steel or galvanized steel, black PA6 composite, pressed felt

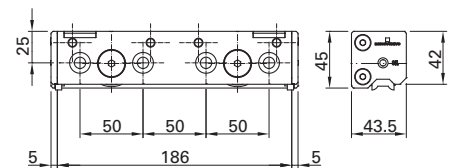
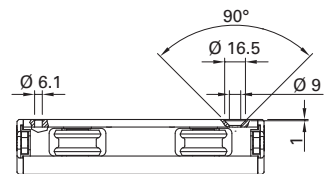
Bearing load capacity per double idler

Radial: max. 3000 N

Axial: max. 1500 N

The carriage is adjusted using the eccentric idlers and an eccentric Eccentric Key LIN9990.

Assembly instructions: page 195



Order Code

Description	Scope of Delivery				Order Code	Weight
	LIN5010	LIN5012	Grooved pin	SKS M08x055		
Double Idler Kit, concentric	1		4	4	LIN5011	0.755 kg
Double Idler Kit, eccentric		1	4	4	LIN5013	0.755 kg

LIN9990

Eccentric Key

**Application**

For adjusting and tightening the eccentric bolt of the Idlers

Technical Data

Material: galvanized steel



Order Code

Description	Order Code	Weight
Eccentric Key	LIN9990	0.177 kg

LIL5000

Guiderail

**Application**

Guide rollers can be added later to any 50 mm series extrusions

Technical Data

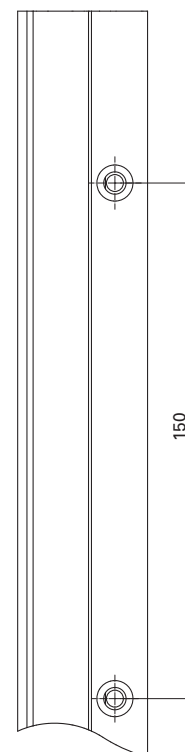
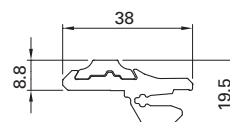
Material: tempered, brushed steel
HRC 58 +3, clear anodized aluminum

Scope of Delivery

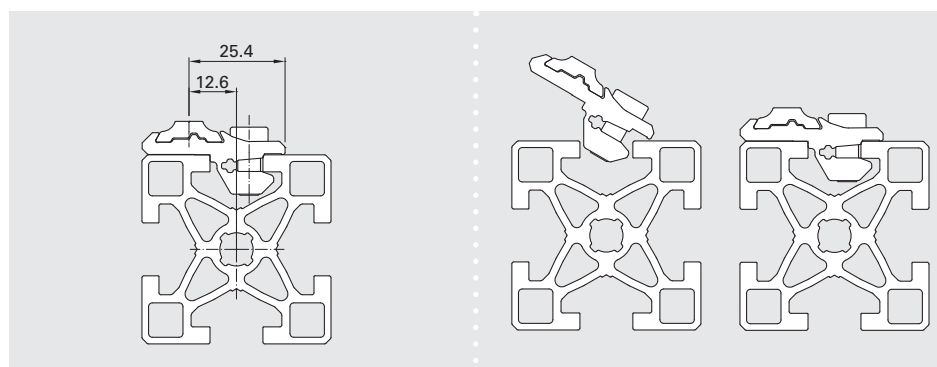
Guiderail, Rolled Steel
and Aluminum
screw IBS M06x012 NIKO

Tightening torque

IBS M06x012NIKO = 12 Nm



Assembly



Order Code

Description	Order Code ¹	Weight/Meter
Guiderail, cut to length	LIL5000SNN	1.105 kg
Guiderail, stock length 6050 mm	LIL5000NNN	1.105 kg

1) Please complete the order by adding the length parameters for cut to length orders.

Drawing dimensions in mm

LIN1501 / LIN2001

Carriage Plate

**Application**

- Carriage Plate for mounting components
- Assembled with Double Idlers

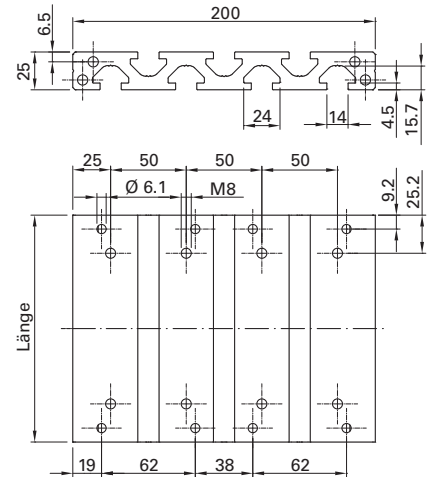
Technical Data

Material: clear anodized aluminum, PA6 black

Scope of Delivery

- 1 Carriage Plate
- 2 End Caps CAP2521

Carriage plate 50 (length 150) = LIL 5010
 Carriage plate 100 (length 200) = LIL 1010
 Assembly instructions: page 195



Order Code

Description	Order Code	Weight
Carriage Plate 50 Kit	LIN1501	1.150 kg
Carriage Plate 100 Kit	LIN2001	1.530 kg

LIN5191

Limit Stop

GST M08x012 SPI



LIN5190

TIN4508

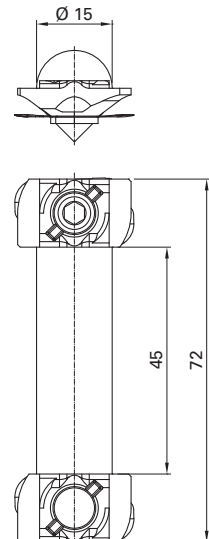
Application

Mechanical end stop, prevents pulley damage

Technical Data/Scope of Delivery

Material: galvanized steel, rubber

Used in combination with LIN3221 timing belt clamp.



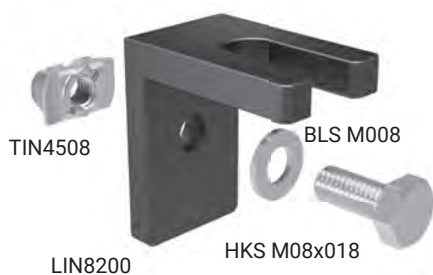
Order Code

Description	Scope of Delivery			Order Code	Weight
	LIN5190	TIN4508	GST M08x012 SPI		
Limit Stop Kit	1	2	1	LIN5191	0.036 kg

Drawing dimensions in mm

LIN8201

Proximity Switch Bracket

**Application**

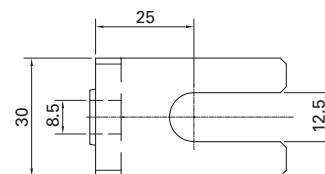
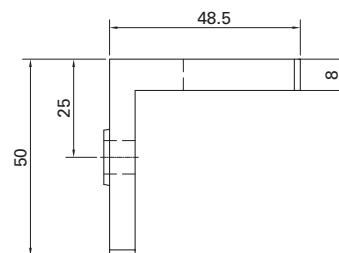
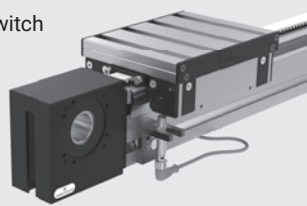
Used for mounting proximity switch; the idler is the switching surface.

Technical Data

Material: black anodized aluminum, galvanized steel

Application

Bracket and proximity switch

**Order Code**

Description	Scope of Delivery				Order Code	Weight
	LIN8200	TIN4508	HKS M08x018	BLS M008		
Proximity Switch Bracket Kit	1	1	1	1	LIN8201	0.175 kg

LIN8310

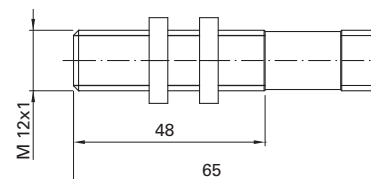
Proximity Switch

**Application**

Inductive proximity switch for monitoring the travel limit mounted with Proximity Switch Bracket LIN8201

Technical Data

Switching distance: 4 mm, 24V DC, PNP N/O contact, outer thread M12x1
Material: galvanized steel

**Order Code**

Description	Order Code	Weight

LIN8312

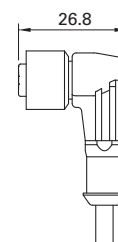
Angle Plug With Cable

**Application**

Used with Proximity Switch LIN8310 to monitor travel limit

Technical Data

Cable length: 5 m
Head A connection type: socket, M12 4-pin, angled with LED
Head B connection type: loose cable end

**Order Code**

Description	Order Code	Weight

LIN5241

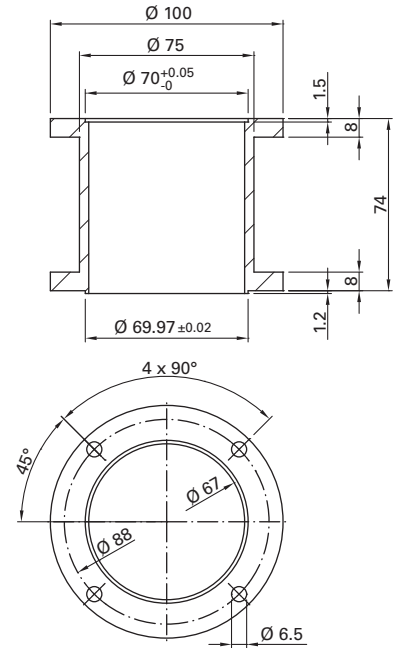
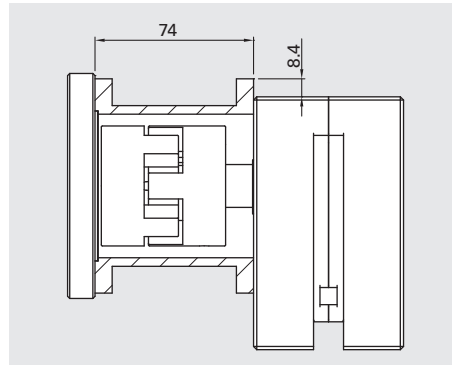
Motor Flange

**Application**

To attach motor to Timing Belt Pulley

Technical Data

Material: clear anodized aluminum, galvanized steel

Assembly**Order Code**

Description	Scope of Delivery			Order Code	Weight
	LIN5240	IBS M06x20	BLS M006		
Motor Flange Kit	1	8	8	LIN5241	0.390 kg

LIN523_

Coupling

**Application**

To connect motor to drive shaft

Technical Data

Material: cast aluminum

Transferable torque: 60 Nm

Tightening torque: 15 Nm

Scope of Delivery

LIN5236:

2 Coupling Halves with $\varnothing 20$

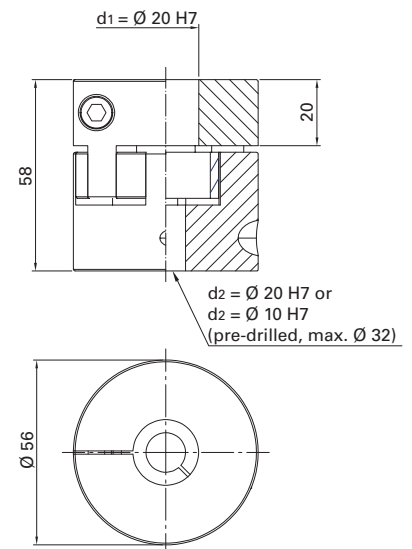
1 Coupling Star

LIN5237:

1 Coupling Half, $\varnothing 10$ pre-drilled

1 Coupling Half with $\varnothing 20$

1 Coupling Star

**Order Code**

Description	Order Code	Weight
Coupling $d_1 = 20$ mm, $d_2 = 10$ mm, pre-drilled	LIN5237	0.360 kg

Drawing dimensions in mm

LIN52__

Driveshaft/Encoder Shaft

LIN5253



Application

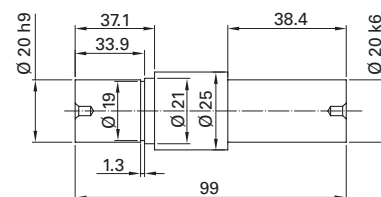
To connect Coupling to Timing Belt Pulley

Technical Data

Material: stainless steel

Other diameters and lengths possible upon request.

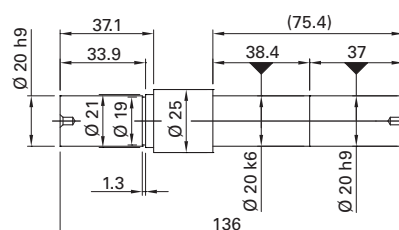
LIN5253



LIN5255



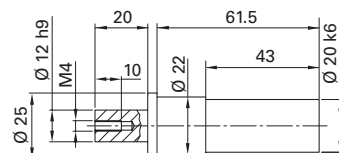
LIN5255



LIN5248

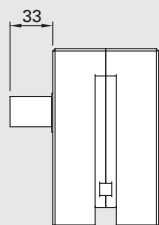


LIN5248

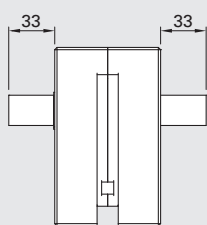


Dimensions

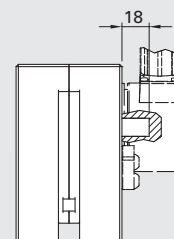
LIN5253



LIN5255



LIN5248



Order Code

Description	Scope of Delivery					Order Code	Weight
	LIN5252	LIN5254	LIN5248	BLS M020	SIR 020x1.2		
Single Driveshaft Kit	1	-	-	1	1	LIN5253	0.300 kg
Double Driveshaft Kit	-	1	-	1	1	LIN5255	0.400 kg
Encoder Shaft	-	-	1	-	-	LIN5248	0.190 kg

Drawing dimensions in mm

LIN5246

Expanding Coupling

**Application**

To connect motor or drive shaft
(diameter = 20 mm) with Timing Belt
Pulley

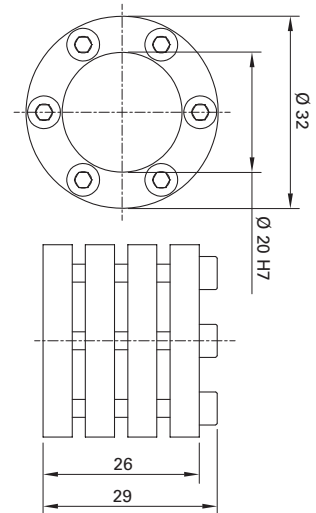
Technical Data

Material: tempered steel

Transmittable torque: 60 Nm

Tightening torque per screw: 2 Nm

Shaft tolerance: k6



Order Code

Description	Order Code	Weight
Expanding Coupling	LIN5246	0.070 kg

LIN750_

Encoder

**Application**

For fitting to C8T timing belt pulley or LIN
timing belt pulley

Technical Data

Material: aluminum housing

Speed: max 4000 rpm

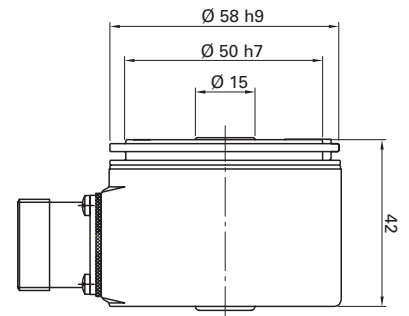
Increments: 2000 increments/rev.

Power requirement: 60 mA (10 VDC)
30 mA (24 VDC)

Supply voltage: 10 to 30 VDC

IP rating: IP64

Output: push/pull



Assembly

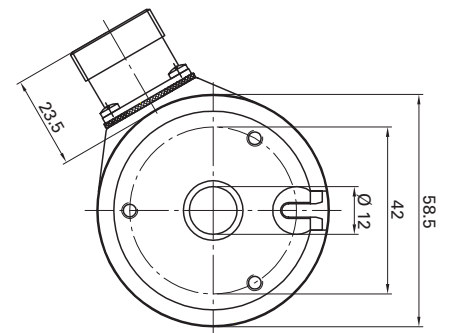
**Scope of Delivery**

Encoder Kit LIN7501

- 1 Encoder LIN7500
including round connector
- 1 Encoder Shaft LIN5248
- 1 Expanding Coupling LIN5246
- 1 Torque Arm
- 2 Screws IBS M06x016 NIKO
- 1 Clamping Pin SPS 4x12

Encoder LIN7500

- 1 Encoder LIN7500
including round connector



Order Code

Description	Order Code	Weight
Encoder Kit for Linear Motion Unit	LIN7501	0.660 kg
Encoder including round connector	LIN7500	0.335 kg

Drawing dimensions in mm

COL52_0

Connection Shaft With Couplings



Application

Shaft for connecting 2 belt conveyors or two linear motion units.

Technical Data

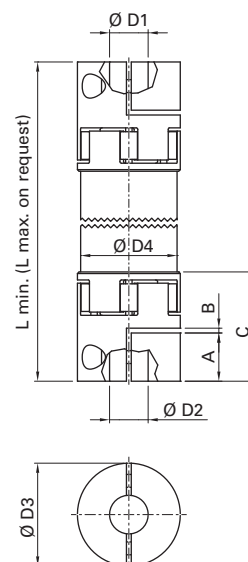
Material: aluminum, elastomer star

COL5220 / COL5230

M nom. 12 Nm
 M max. 25 Nm
 Tightening torque: 4 Nm (COL5220)
 Tightening torque: 13 Nm (COL5230)

COL5240 / COL5250

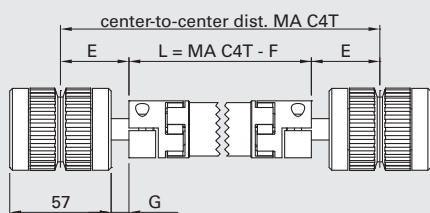
M nom. 60 Nm
 M max. 120 Nm
 Tightening torque: 15 Nm (COL5240)
 Tightening torque: 32 Nm (COL5250)



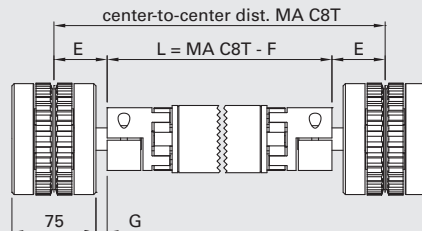
Dimensions

	D1	D2	D3	D4	A	B	C	L min.	E	F	G
COL5220 (C4T)	12	12	32	30	15	1.5	34	99	38.5	77	10
COL5230 (C4T - US Version)	12	12	46	35	17.5	0.8	49.8	142	38.5	77	10
COL5240 (C8T)	20	20	56	60	30	2	63	177	47.5	95	10
COL5250 (C8T - US Version)	20	20	73	60	23	1	63.5	196	54.5	109	17
COL5240 (LIL)	20	20	56	60	30	2	63	177	38	76	3
COL5250 (LIL - US Version)	20	20	73	60	23	1	63.5	196	45	90	10

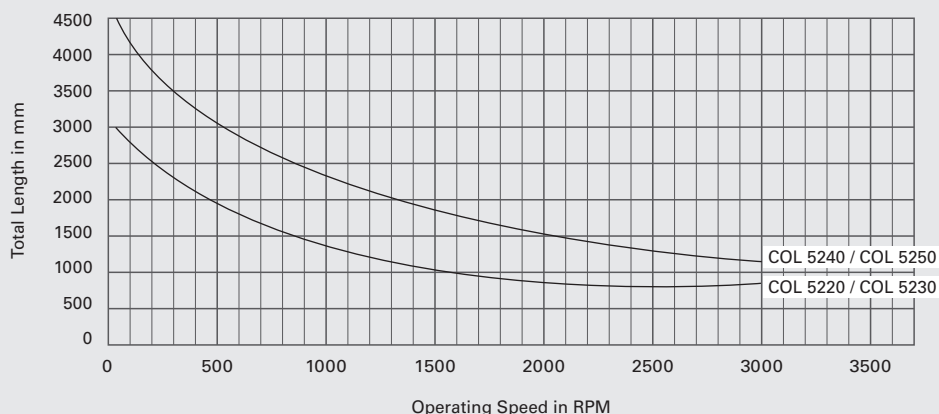
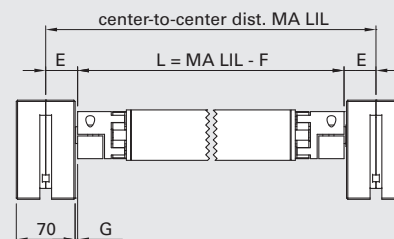
COL5220 / COL5230 (C4T)



COL5240 / COL5250 (C8T)



COL5240 / COL5250 (LIL)



Order Code

Description	Order Code ¹
Connection Shaft with Couplings VWZ-30/d = 12 mm	COL5220SNN
Connection Shaft With Couplings EDC25 / d = 12 mm	COL5230SNN (US Version)
Connection Shaft With Couplings VWZ-60 / d = 20 mm	COL5240SNN
Connection Shaft With Couplings EDC80 / d = 20 mm	COL5250SNN (US Version)

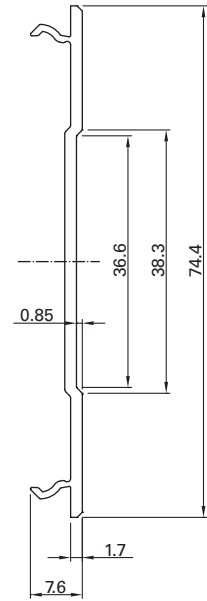
1) Please complete the order by adding the length parameters for cut to length orders. Drawing dimensions in mm

**Application**

Cable duct cover for the extrusion
PIL 4012

Technical Data

Material: ABS, gray RAL 7004
Stock length: 3000 mm
Temperature range: -30° to 95°



Order Code

Description	Order Code ¹	Weight/Meter
Cover Extrusion for PIL4012, cut to length	CAL4012SNN	0.145 kg
Cover Extrusion for PIL4012, stock length 3050 mm	CAL4012NNN	0.145 kg

1) Please complete the order by adding the length parameters for cut to length orders.
Drawing dimensions in mm

CAP_____

End Cap



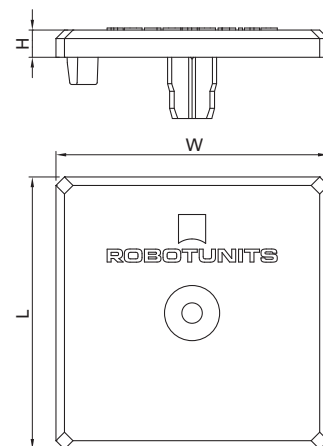
Application

Used for covering the ends of extrusions

- Self-centering
- Retained through expanding anchor
- Reusable

Technical Data

Material: black ABS V0 composite



Order Code

Description	Dimension			Scope of Delivery		Order Code	Weight
	L	W	H	CAP	BKS 4x13		
End Cap 16x40 Kit	16	40	5	1	2	CAP1641	0.002 kg
End Cap 40x40 Kit	40	40	4	1	1	CAP4041	0.005 kg
End Cap 40x80 Kit	40	80	4	1	2	CAP4081	0.009 kg
End Cap 40x120 Kit	40	120	4	1	3	CAP4013	0.019 kg
End Cap 80x80 Kit (2 x CAP 4081)	80	80	4	2	4	CAP8081	0.018 kg
End Cap 50x50 Kit	50	50	5	1	1	CAP5051	0.010 kg
End Cap 50x100 Kit	50	100	5	1	2	CAP5011	0.019 kg
End Cap 50x200 Kit (2 x CAP 5011)	50	200	5	2	4	CAP5021	0.038 kg
End Cap 100x100 Kit (2 x CAP 5011)	100	100	5	2	4	CAP1011	0.038 kg
End Cap 100x200 Kit (4 x CAP 5011)	100	200	5	4	8	CAP1021	0.076 kg
End Cap 25x200 Kit	25	200	5	1	4	CAP2521	0.022 kg

PIN4530

Cable Block

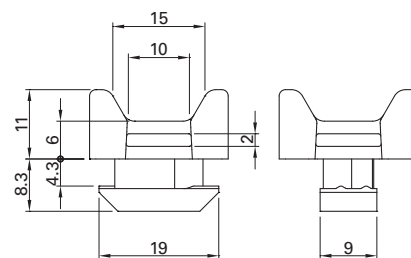


Application

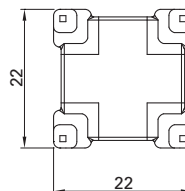
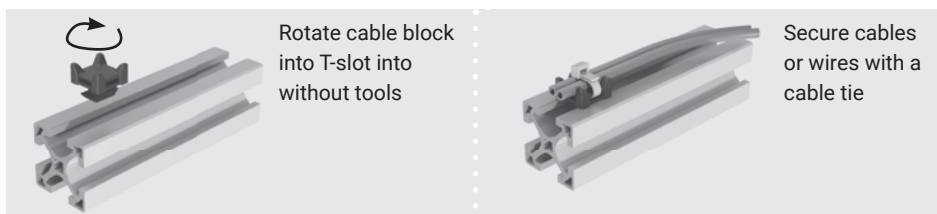
To secure cables, hoses, and lines to extrusions using cable ties in x/y direction from the T-slot

Technical Data

Material: PA composite fiberglass-reinforced, black



Assembly



Order Code

Description	Order Code	Weight
Cable Block	PIN4530	0.005 kg
Cable Block, pack of 50 pcs.	PIN4530PAC	0.240 kg

PIN4590

Plastic Hook



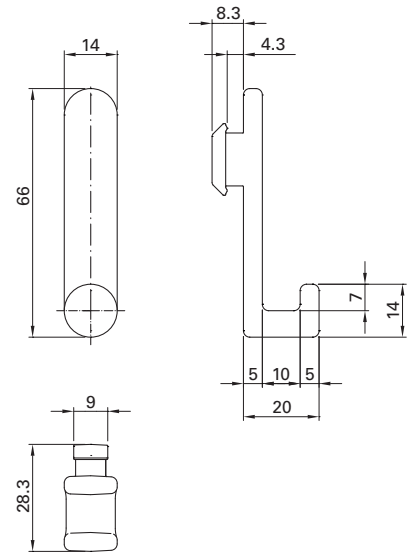
Application

For hanging items and objects along the T-slot

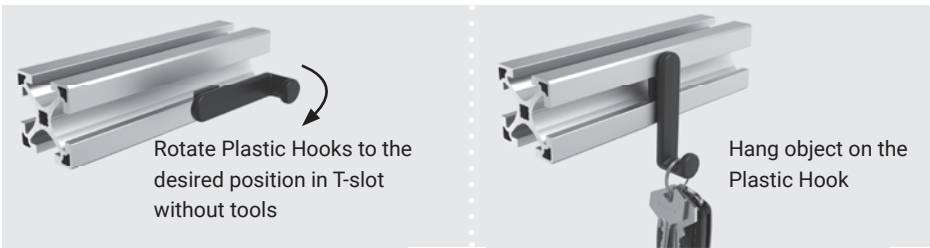
Technical Data

Material: PA composite fiberglass-reinforced, black

Load capacity: max. 10 kg



Function



Rotate Plastic Hooks to the desired position in T-slot without tools

Hang object on the Plastic Hook

Order Code

Description	Order Code	Weight
Plastic Hook	PIN4590	0.010 kg

TIN4501

Fine-Tuning And Fixing Element

Base Part with GST M08x021 SPI GST M08x040



Spring

Application

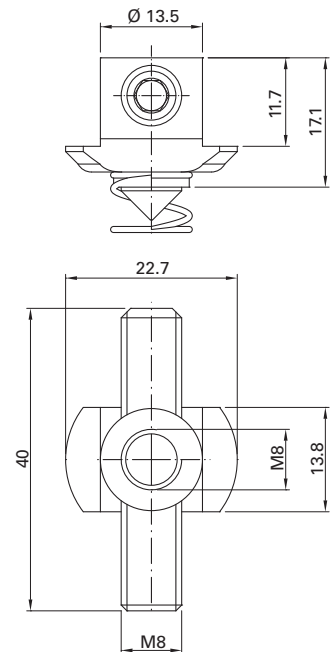
Used for securing and fine tuning component positions. Post insertion possible, can be used with 40 mm and 50 mm series extrusions, e.g.:

- Conveyor Belt Tracking
- Fine adjustment of cross bars
- Securing connections

Technical Data

Material: galvanized steel

TIN4501 can also be used for electrical grounding.



Order Code

Description	Scope of Delivery				Order Code	Weight
	Base Part	Spring	GST M08x012 SPI	GST M08x040		
Fine-Tuning and Fixing Element	1	1	1	-	TIN4500	0.016 kg
Fine-Tuning and Fixing Element Kit	1	1	1	1	TIN4501	0.028 kg

LIN404_ / LIN505_

Linear Slider

Application

Manual device for clamping / adjusting a slide on the extrusion

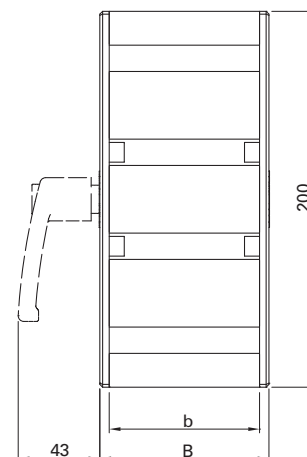
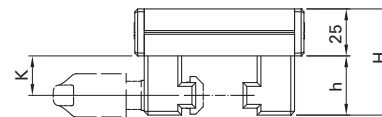
Technical Data

Material: clear anodized aluminum
POM-C black, ABS V0 black, galvanized steel

Scope of Delivery

Completely pre-assembled, consisting of:

- 1 Extrusion 25 x 200 PIL 2520
- 2 Sliding guide blocks 40 or 50
- 2 End Caps CAP2521
- 4 Cylinder screws with hexagon socket IBSM08X035 or 040
- 4 Drop-in Nuts TIN4508
- 4 Set screws with socket head and tip GST-M10X020SPI
- 1 Clamping lever (for LIN4041/5051)
- 1 Washer BLS M008 (for LIN4041/5051)
- 1 T-Nut TIN6008 (for LIN4041/5051)



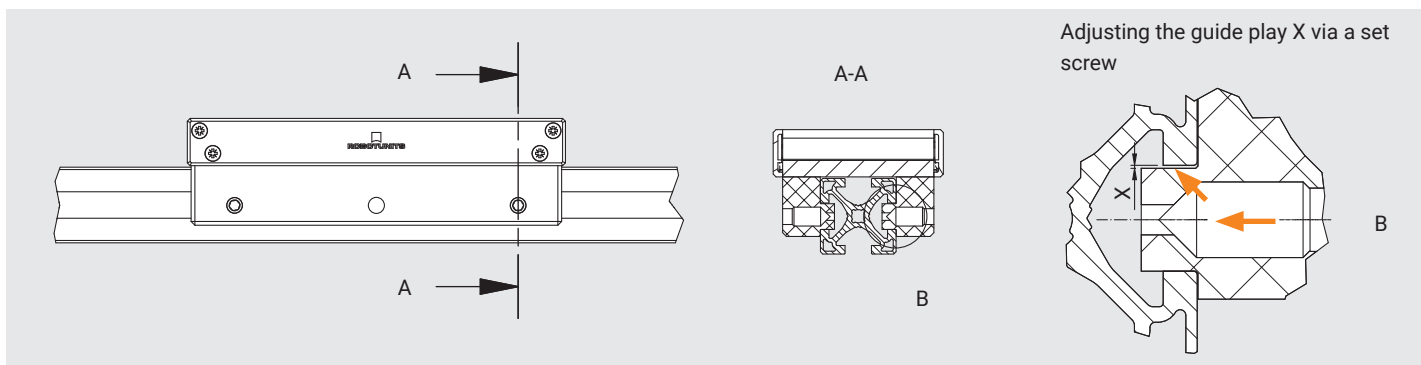
Linear Slider 40



Linear Slider 40 with clamping lever

The Linear Slider is not suitable for cantilevered loads and is NOT a replacement for a Linear Motion Unit.

Assembly



Order Code

Description	b	B	h	H	K	Order Code	
						Order Code	Weight
Linear Slider 40	80	90	31.5	56.5	21	LIN4040	1.170 kg
Linear Slider 40 with Clamping Lever	80	90	31.5	56.5	21	LIN4041	1.245 kg
Linear Slider 50	90	100	36.5	61.5	26	LIN5050	1.245 kg
Linear Slider 50 with Clamping Lever	90	100	36.5	61.5	26	LIN5051	1.400 kg

Drawing dimensions in mm

**Application**

For covering T-slots and fastening
4 - 8 mm thick panels

- Dust protection
- Splash guard
- Cable routing
- Cover extrusion for LED lighting with CAL4508

Technical Data

Material: impact-resistant PVC with soft lip

Stock length: 2000 mm

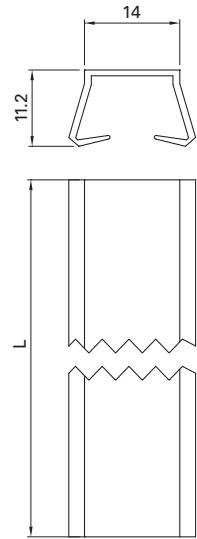
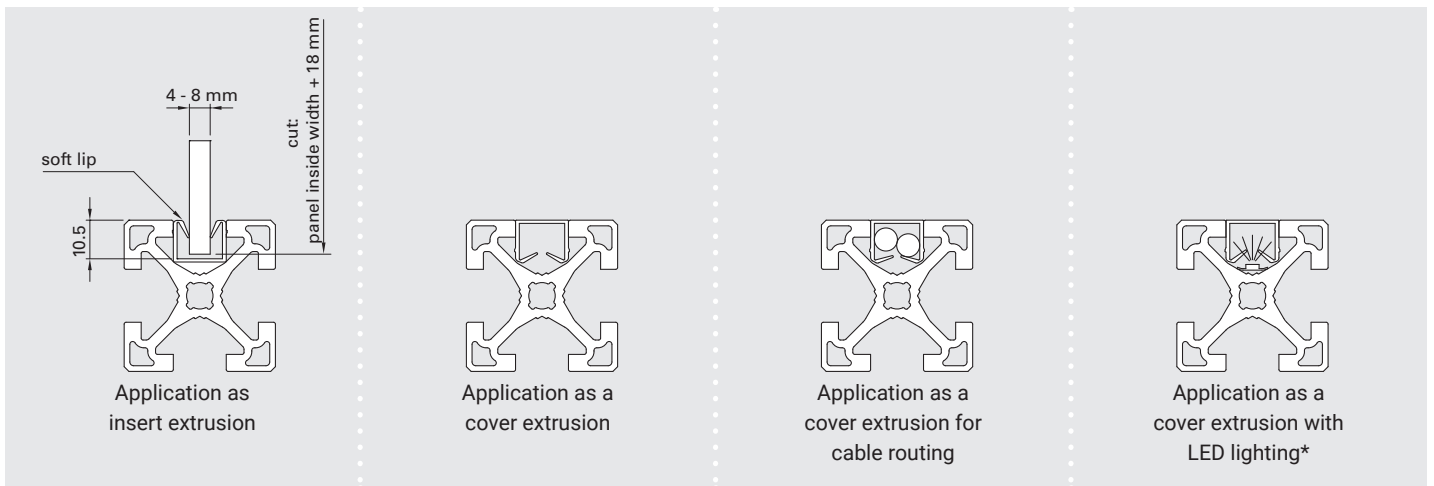
LED lighting with CAL4508*

Max. power of the LED: 20 W/m

Light intensity 1 m below the extrusion with a luminous flux of 2000 lm/m: 850 Lux

yellow: RAL 1021

gray: RAL 7004

**Application****Order Code**

Description	Order Code ¹	Weight/Meter
Cover/Insert Extrusion, black, cut to length	CAL4500SNN	0.050 kg
Cover/Insert Extrusion, black, stock length 2000 mm	CAL4500NNN	0.050 kg
Cover/Insert Extrusion, black, 160 pcs., stock length 2000 mm	CAL4500PAC	0.050 kg
Cover/Insert Extrusion, yellow, cut to length	CAL4504SNN	0.050 kg
Cover/Insert Extrusion, yellow, stock length 2000 mm	CAL4504NNN	0.050 kg
Cover/Insert Extrusion, yellow, 160 pcs., stock length 2000 mm	CAL4504PAC	0.050 kg
Cover/Insert Extrusion, gray, cut to length	CAL4510SNN	0.050 kg
Cover/Insert Extrusion, gray, stock length 2000 mm	CAL4510NNN	0.050 kg
Cover/Insert Extrusion, gray, 160 pcs., stock length 2000 mm	CAL4510PAC	0.050 kg

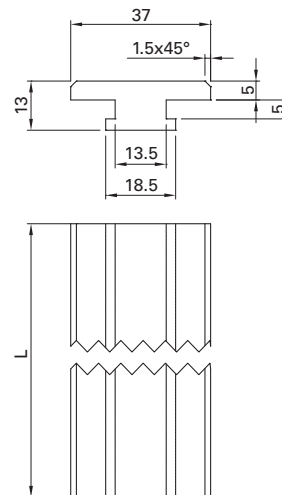
1) Please complete the order by adding the length parameters for cut to length orders.
Drawing dimensions in mm

CAL4540 T-Slot Sliding Rail



Application
Simple linear guidance in the T-slot

Technical Data
Material: PAS-PE3 composite, black
Stock length: 2000 mm
Temperature range:
-10° to 70° continuous,
90° to 100° short-term



Order Code

Description	Order Code ¹	Weight/Meter
T-Slot Sliding Rail, cut to length	CAL4540SNN	0.222 kg
T-Slot Sliding Rail, stock length 2000 mm	CAL4540NNN	0.222 kg

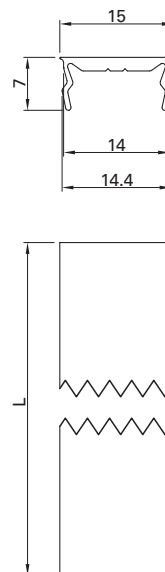
CAL4545 Aluminum Cover Extrusion



Application
Used for covering T-slots:
• Dust protection
• Splash guard
• Cable routing

Technical Data
Material: anodized aluminum

stock length: 2050 mm
(usable length 2000 mm)



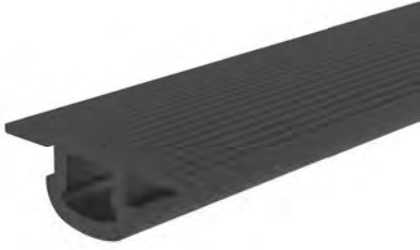
Order Code

Description	Order Code ¹	Weight/Meter
Aluminum Cover Extrusion, cut to length	CAL4545SNN	0.043 kg
Aluminum Cover Extrusion, stock length 2050 mm	CAL4545NNN	0.043 kg

1) Please complete the order by adding the length parameters for cut to length orders.
Drawing dimensions in mm

CAL4560

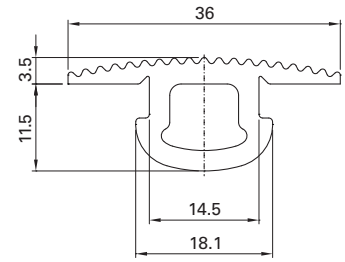
Anti-Slip Profile

**Application**

Anti-slip protection for steps
(ladders, stairs, etc.)

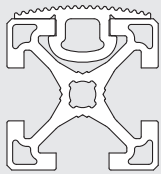
Technical Data

Material: NBR 80 Shore A
Temperature range:
-30° to 100° continuous,
-50° to 120° short-term



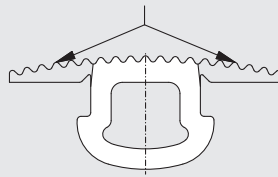
Application

Function of Anti-Slip Profile



Rework

Cut away this part of the profile



Modification for use as door gasket,
bumper, etc.

Useful for many purposes!

The non-slip extrusion can also be used as
a sealing extrusion or a buffer extrusion by
cutting the side rubber lips.

Order Code

Description	Order Code ¹	Weight/Meter
Anti-Slip Profile, cut to length	CAL4560SNN	0.213 kg
Anti-Slip Profile, roll, length 20 meters	CAL4560PAC	0.213 kg

1) Please complete the order by adding the length parameters for cut to length orders.
Drawing dimensions in mm

CAL4565

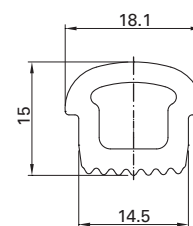
Gasket

**Application**

- Door gasket
- Stops/buffers (drawers, doors)
- Travel stops

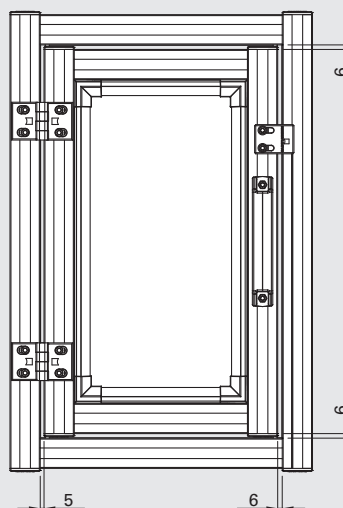
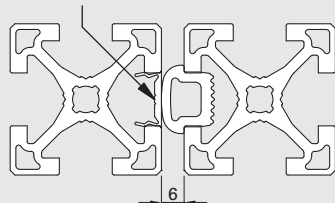
Technical Data

Material: NBR 80 Shore A
 Temperature range:
 -30° to 100° continuous,
 -50° to 120° short-term



Function

Aluminum Cover Extrusion CAL 4545



Order Code

Description
 Gasket, cut to length

Order Code¹

CAL4565SNN

Weight/Meter
 0.160 kg



1) Please complete the order by adding the length parameters for cut to length orders.
 Drawing dimensions in mm

BAP205_

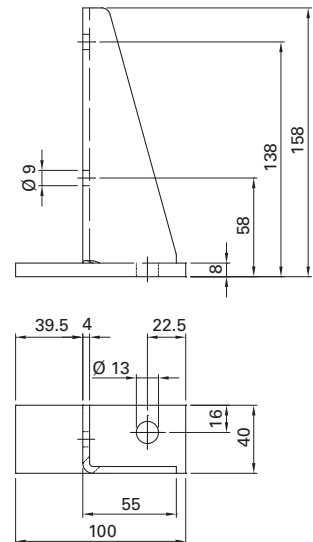
Safety Fence Floor Bracket

**Application**

Floor mount of stands and safety fence panels built with 40 mm series extrusions

Technical Data

Material: steel, gray powder coating
Height adjustment - 20 / + 5 mm



Assembly



Order Code

Description	Scope of Delivery					Order Code	Weight
	BAP2050	TIN4508	IBS M08x016NIKO	HKS M08x040	BLS M008		
Safety Fence Floor Bracket	1	-	-	-	-	BAP2050	0.568 kg
Safety Fence Floor Bracket Kit	1	2	2	1	2	BAP2051	0.638 kg

BAP2900

Anchor Bolt

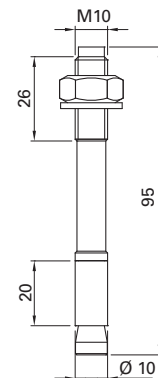
**Application**

For anchoring structures to the floor

Technical Data

Material: galvanized steel

Permitted tensile load: 6.7 kN
(concrete hardness class C20/25)
Minimum anchor depth: 60 mm

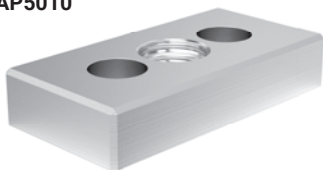


Order Code

Description	Order Code	Weight
Anchor Bolt	BAP2900	0.055 kg

BAP_0__

Base And Transport Plate

BAP4080
BAP5010

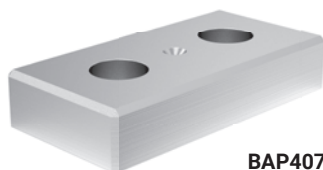
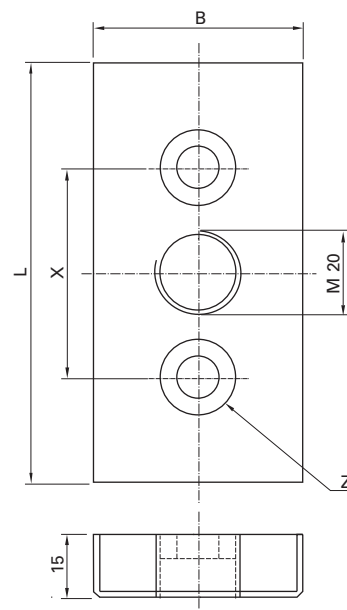
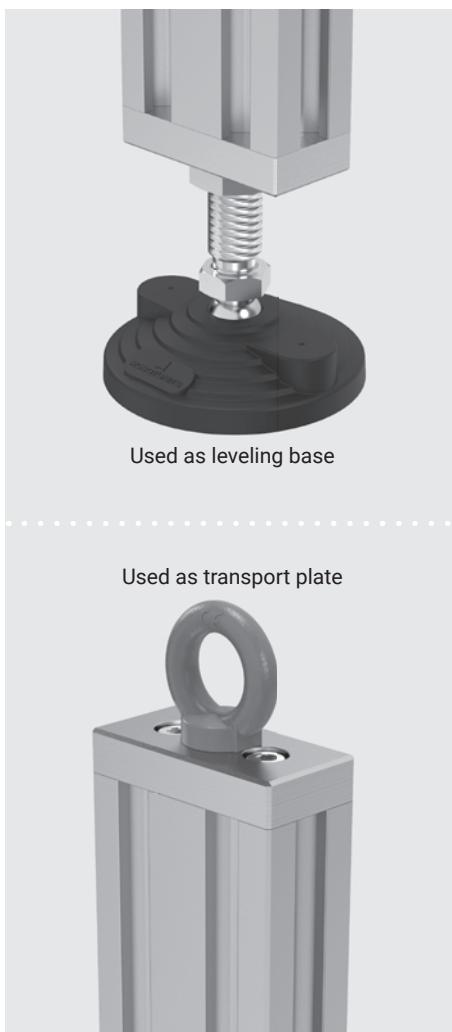
Application

Used for attaching leveling bases or other transportation devices.

Technical Data

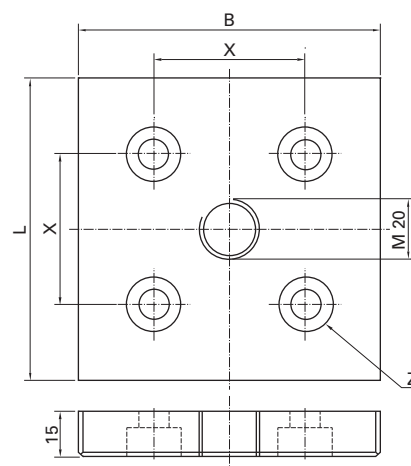
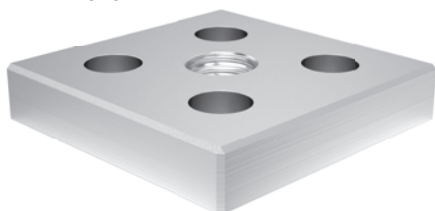
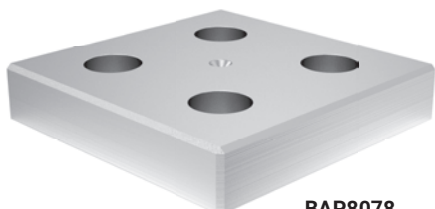
Material: galvanized steel

Application

BAP4078
BAP5008

Used as leveling base

Used as transport plate

BAP8080
BAP1010BAP8078
BAP1008

Order Code

Description	L	W	X	Z ¹	Order Code	
					Order Code	Weight
Base and Transport Plate 40x80, without thread	80	40	40	IBS M08x020	BAP4078	0.343 kg
Base and Transport Plate 40x80, M20 thread	80	40	40	IBS M08x020	BAP4080	0.312 kg
Base and Transport Plate 80x80, without thread	80	80	40	IBS M08x020	BAP8078	0.682 kg
Base and Transport Plate 80x80, M20 thread	80	80	40	IBS M08x020	BAP8080	0.655 kg
Base and Transport Plate 50x100, without thread	100	50	50	IBS M10x030	BAP5008	0.533 kg
Base and Transport Plate 50x100, M20 thread	100	50	50	IBS M10x030	BAP5010	0.503 kg
Base and Transport Plate 100x100, without thread	100	100	50	IBS M10x030	BAP1008	1.049 kg
Base and Transport Plate 100x100, M20 thread	100	100	50	IBS M10x030	BAP1010	1.018 kg

1) Not included in the scope of delivery
Drawing dimensions in mm

BAS___

Leveling Base M8/M10

**Application**

Pivoting, height adjustable floor bracket for stands, frames and enclosures

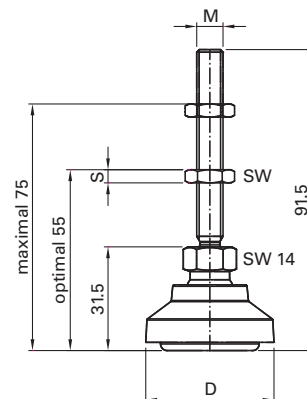
- Continuous height adjustment (+/- 20 mm)
- Vibration damping
- Ball joint

Technical Data

Material: galvanized steel;
PA 6 composite; rubbe

BAS4008: max. load 350 kg

BAS5010: max. load 450 kg



Order Code

Description	M	D	S	SW	Scope of Delivery			Order Code	Weight
					BAS4008	BAS5010	BAP4500		
Leveling Base M8	8	39	4	13	1	-	-	BAS4008	0.062 kg
Leveling Base M8 with Mounting Plate	8	39	4	13	1	-	1	BAS4108	0.092 kg
Leveling Base M10	10	49	6	17	-	1	-	BAS5010	0.082 kg
Leveling Base M10 with Mounting Plate	10	49	6	17	-	1	1	BAS5011	0.112 kg

BAS1___

Leveling Base M20

BAS1020

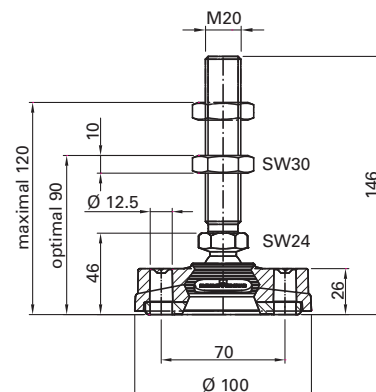
**Application**

Pivoting, height adjustable floor bracket for stands, frames and enclosures

- Continuous height adjustment (+/- 30mm)
- Vibration damping
- Ball joint

Technical Data

BAS1020
Material: galvanized steel;
PA 6 composite; rubbe
• Pivot range +/- 20°

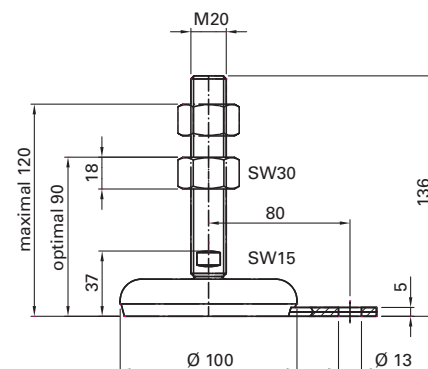


BAS1120



BAS1120
Material: galvanized steel; rubbe
• Pivot range +/- 6°

max. load 950 kg



Order Code

Description	Order Code	Weight
Leveling Base M20	BAS1020	0.479 kg
Leveling Base M20 with Mounting Plate	BAS1120	0.715 kg

Drawing dimensions in mm

BAP4500

Floor Mounting Plate



Application

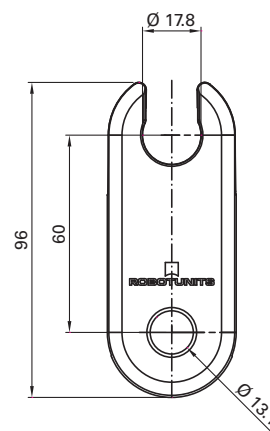
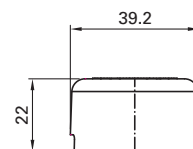
Fixing Leveling Base to the floor

Technical Data

Material: PA 6

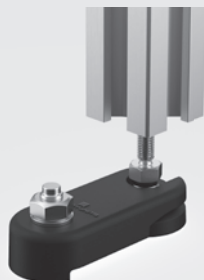
Tightening torque

Anchor Bolt BAP 2900 = 12 Nm
(not included in the scope of delivery)



Application

BAP4108



BAP5011



Order Code

Description	Order Code	Weight
Floor Mounting Plate	BAP4500	0.030 kg

Drawing dimensions in mm



CAS0080

**Application**

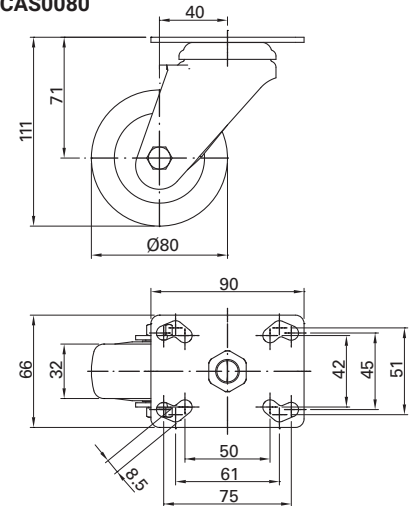
Transport carts of all types

Technical Data

Material: galvanized steel, rubber

Safe working load: 100 kg

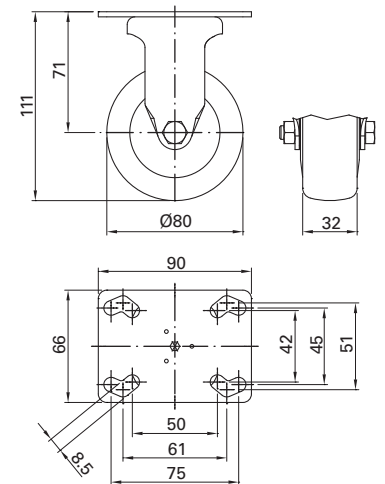
CAS0080



CAS0082



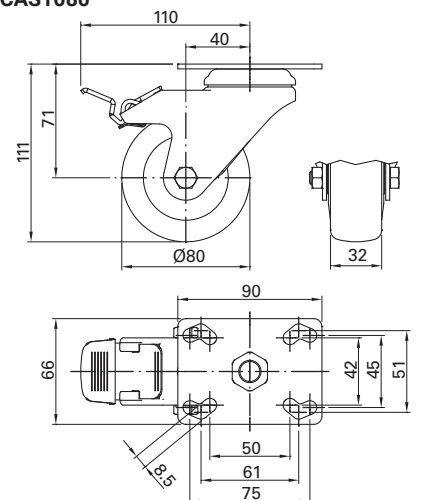
CAS0082



CAS1080



CAS1080

**Order Code**

Description	Order Code	Weight
Swivel Castor with Plate, 80 mm	CAS0080	0.604 kg
Rigid Castor with Plate, 80 mm	CAS0082	0.462 kg
Swivel Castor with Plate and Brake, 80 mm	CAS1080	0.716 kg

CAS2080

**Application**

Transport carts of all types

Technical Data

Material: galvanized steel, rubber

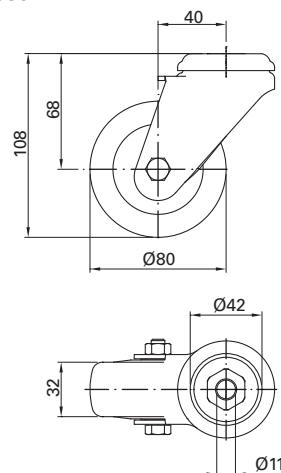
Fastening material for end-to-end assembly on the extrusion (not included in the scope of delivery);

PIL 4040: BLSM008S04, IBSM08x035

PIL 5050: BLSM010, IBSM10x040

Safe working load: 100 kg

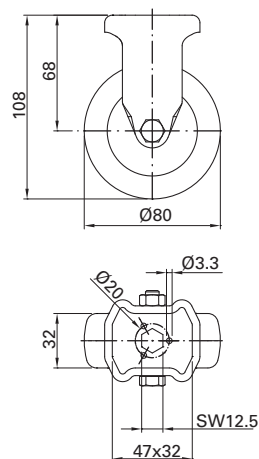
CAS2080



CAS2082



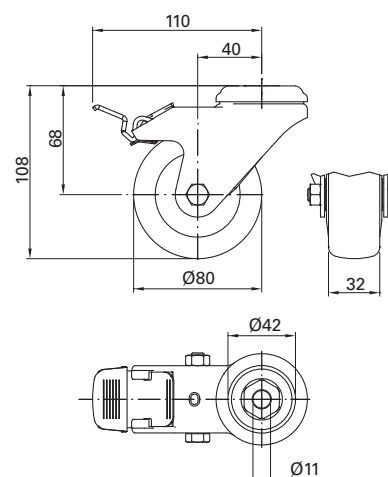
CAS2082



CAS3080



CAS3080



Order Code

Description	Order Code	Weight
Swivel Castor with Bolt Hole Fitting, 80 mm	CAS2080	0.489 kg
Rigid Castor with Bolt Hole Fitting, 80 mm	CAS2082	0.317 kg
Swivel Castor with Bolt Hole Fitting and Brake, 80 mm	CAS3080	0.597 kg

1006__

Allen Key For Hex Socket Head Cap Screws



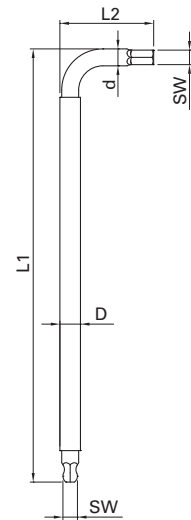
Application

Allen Key with ball head for manual tightening the hex socket head cap screws for 40 and 50 mm series fasteners.

A plastic sleeve prevents damage to the edges of the T-slot.

Technical Data

Material: high-quality, plastic-coated tool steel



Application

Allen Key For Hex Socket Head Cap Screws, size 5 mm, for 40 mm series fasteners (FAS4041, FAS4081)



Allen Key For Hex Socket Head Cap Screws, size 6mm, for 50 mm series fasteners and corner brackets (e.g. FAS5051, GUS4501, etc.)



Order Code

Description	SW	d	D	L1	L2	Order Code	Weight
						Allen Key for Hex Socket Head Cap Screws, 5 mm	5
Allen Key for Hex Socket Head Cap Screws, 6 mm	6	7	8.5	180	40	100660	0.060 kg

Drawing dimensions in mm

10069_

1/4" Hex Bit With Ball End



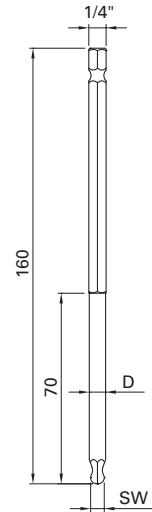
Application

1/4" Hex Bit with ball head for impact driver to tighten the hex socket head cap screws for 40 and 50 mm series fasteners.

Cylindrical end prevents damage to the edges of the T-slot.

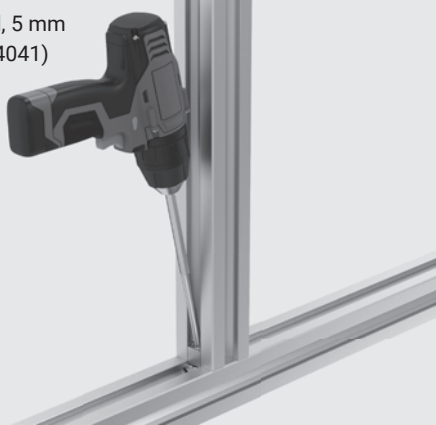
Technical Data

Material: high-quality, tool steel

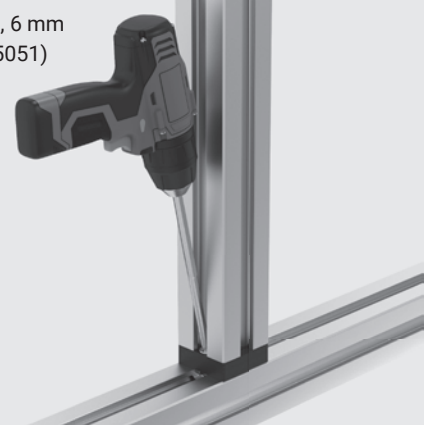


Application

1/4" Hex Bit With Ball End, 5 mm for fasteners 40x40 (FAS4041)



1/4" Hex Bit With Ball End, 6 mm for fasteners 50x50 (FAS5051)

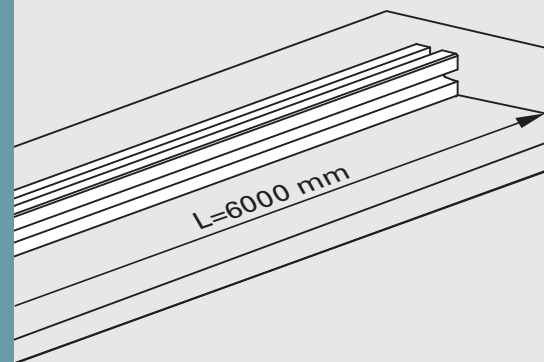
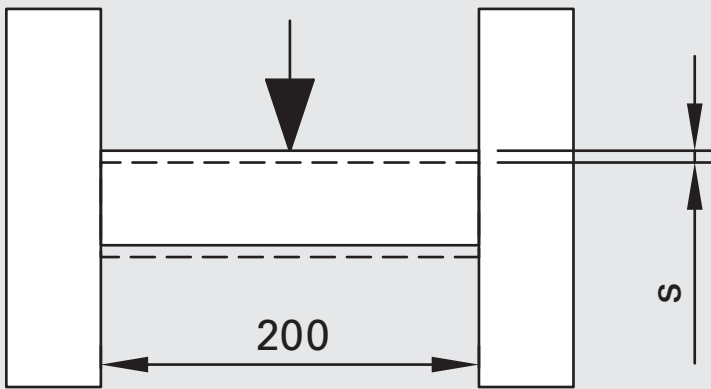
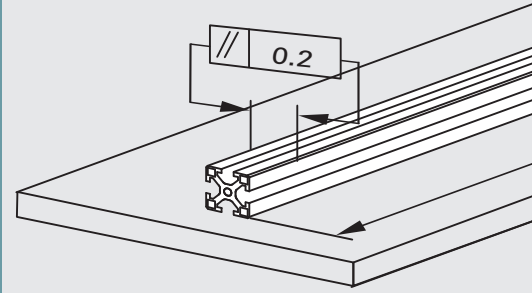


Order Code

Description	SW	D	Order Code		Weight
			100691	100692	
1/4" Hex Bit with Ball End, 5x160	5	6	100691		0.040 kg
1/4" Hex Bit with Ball End, 6x160	6	6.7	100692		0.060 kg

Drawing dimensions in mm





Technical appendix

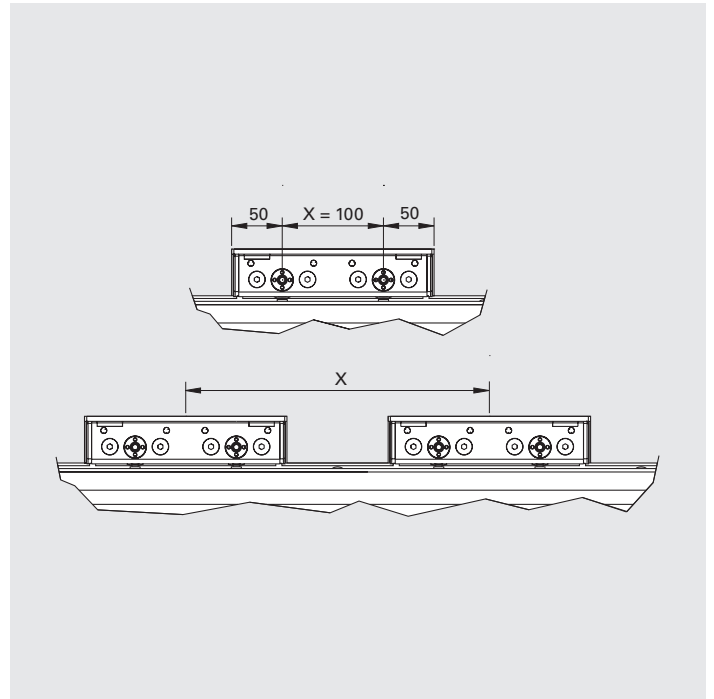
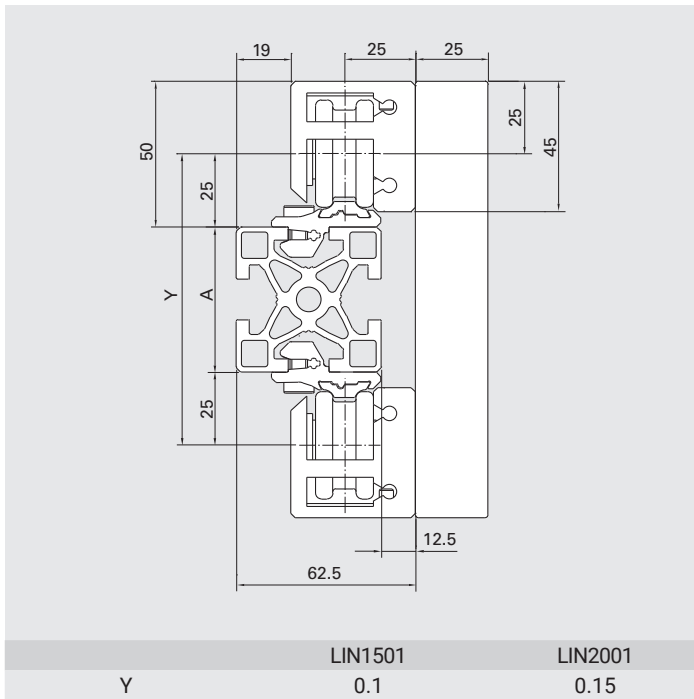
Linear Motion System Description Key.....	Page 194
Linear Motion System Dimension	Page 194
Linear Motion System Carriage Combination Examples	Page 194
Linear Motion System Load Capacity	Page 195
Linear Motion System Assembly Tips	Page 195
Linear Motion System Calculations.....	Page 196
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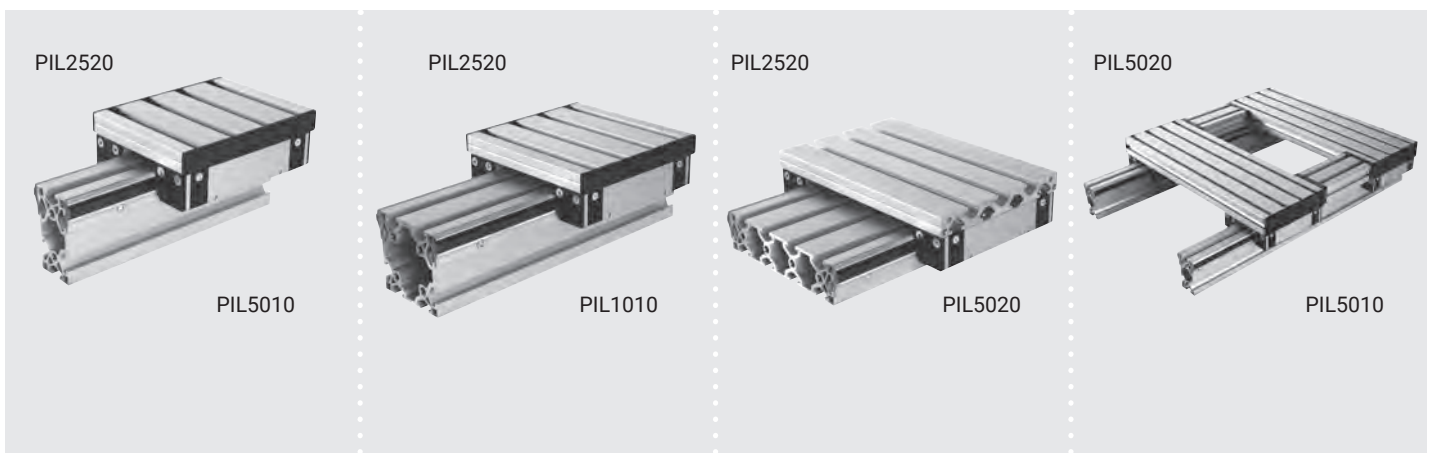
Linear Motion System Description Key

$F_{(x,y,z) \max.}$	[N]	maximum rated external static load
$F_{(x,y,z)}$	[N]	actual external static load
F_R	[N]	maximum rated load / roller - radial (max. 1500 N)
F_A	[N]	Maximum rated load / roller - axial (max. 750 N)
$M_{(x,y,z) \max.}$	[Nm]	maximum rated static torque load
$a_{\max.}$	[m/s ²]	maximum rated acceleration
X	[m]	distance between rollers in direction of motion
Y	[m]	distance between rollers perpendicular to direction of motion
A	[m]	extrusion width between rollers
g	[m/s ²]	gravitational acceleration (approx. 9.81 m/s ²)
m_1	[kg]	mass of carriage and lever
m_2	[kg]	mass of mounted parts
$F_{a \text{ req.}}$	[N]	required drive power
$M_{d \text{ hor req.}}$	[Nm]	required drive torque in horizontal direction
$M_{d \text{ ver req.}}$	[Nm]	required drive torque in vertical direction
L_1	[m]	distance of center of gravity of carriage plate and lever
L2	[m]	distance of center of gravity of mounted parts and/or distance of forces F (x,y,z)

Linear Motion System Dimensions

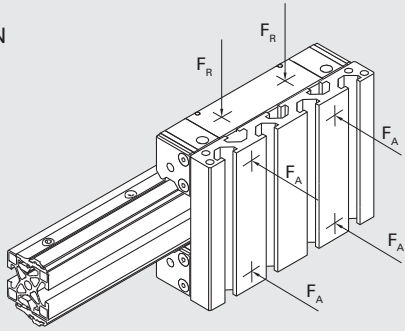


Linear Motion System Carriage Combination Examples



Linear Motion System Load Capacity

$F_R < 1500\text{ N}$
 $F_A < 750\text{ N}$



Technical Data

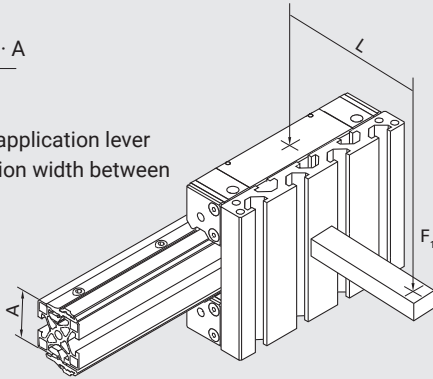
Acceleration: $a_{max.} < 15\text{m/s}^2$
 Max. drive torque: 60 Nm
 Forces: F_R [N] permissible load / roller - radial (max. 1500 N)
 F_A [N] permissible load / roller - axial (max. 750 N)

Maintenance:

Lubrication: In order to ensure maximum service life of the guiderail make sure that it is sufficiently lubricated.
 Check the scraper and lubrication devices on a regular basis and re-lubricate as needed.

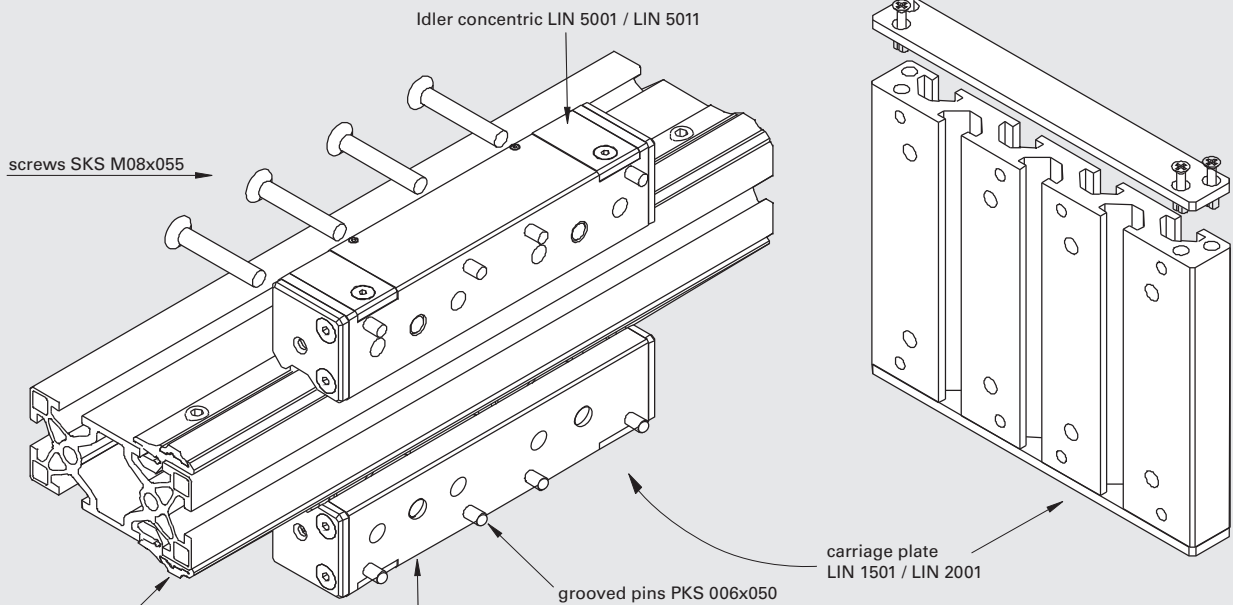
$$F_1 \leq \frac{2 \cdot F_A \cdot A}{L}$$

L = Force application lever
 A = extrusion width between rollers



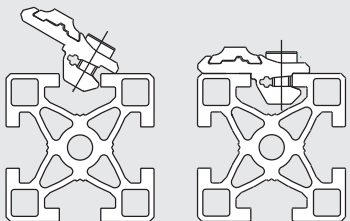
Load: Load data is valid for one type of load and one direction of load.
 "Static design" refers to weight and operation forces. "Dynamic design" refers to weight and acceleration forces.

Linear Motion System Assembly Tips



installation of guide rail
 LIL 5000 SNN

Idler eccentric LIN 5003 / LIN 5013



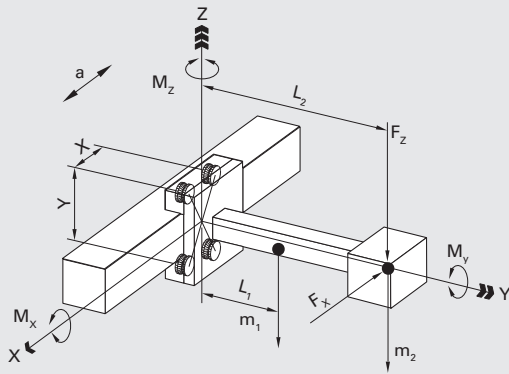
insert

press to right-hand side
 and tighten



Linear Motion System Calculations

Application A (horizontal)



Static design:

$$M_{x \max.} = 2 \cdot F_A \cdot A$$

$$F_{z \max.} = \frac{M_{x \max.} - g(m_1 \cdot L_1 + m_2 \cdot L_2)}{L_2}$$

$$M_{z \max.} = 2 \cdot F_A \cdot X$$

$$F_{x \max.} = \frac{M_{z \max.}}{L_2}$$

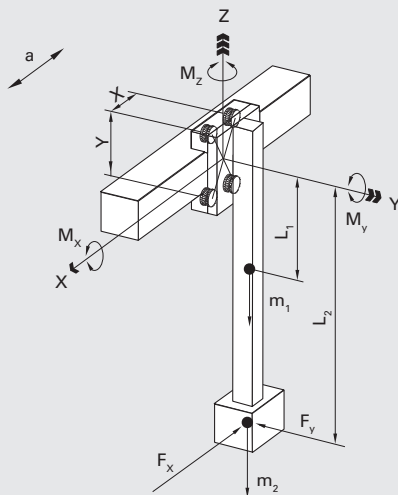
Dynamic design:

$$a_{\max.} = \frac{F_A \cdot X}{(m_1 \cdot L_1 + m_2 \cdot L_2) \cdot 4} - \frac{g \cdot X}{9 \cdot Y}$$

$$F_{a \text{ req.}} = (m_1 + m_2) \cdot a_{\max.} + 10N$$

$$M_{d \text{ hor req.}} = F_{a \text{ req.}} \cdot 0.035 \text{ m} \cdot 1.8$$

Application B (horizontal)



Static design:

$$M_{x \max.} = 2 \cdot F_A \cdot A$$

$$F_{y \max.} = \frac{M_{x \max.}}{L_2}$$

$$M_{y \max.} = (F_R - \frac{(m_1 + m_2) \cdot g}{2}) \cdot (\sqrt{x^2 + y^2} - 0.036)$$

$$F_{x \max.} = \frac{M_{y \max.}}{L_2}$$

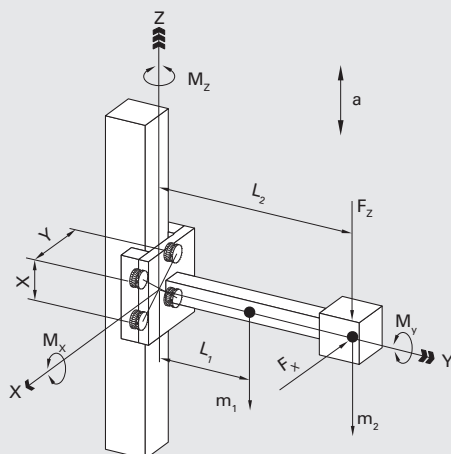
Dynamic design:

$$a_{\max.} = \frac{(F_R - \frac{(m_1 + m_2) \cdot g}{2}) \cdot (\sqrt{x^2 + y^2} - 0.036)}{(m_1 \cdot L_1 + m_2 \cdot L_2) \cdot 2}$$

$$F_{a \text{ req.}} = (m_1 + m_2) \cdot a_{\max.} + 10N$$

$$M_{d \text{ hor req.}} = F_{a \text{ req.}} \cdot 0.035 \text{ m} \cdot 1.8$$

Application C (vertical)



Static design:

$$M_{x \max.} = 2 \cdot F_A \cdot X$$

$$F_{z \max.} = \frac{M_{x \max.} - g \cdot (m_1 \cdot L_1 + m_2 \cdot L_2)}{L_2}$$

$$M_{z \max.} = 2 \cdot F_A \cdot Y$$

$$F_{x \max.} = \frac{M_{z \max.}}{L_2}$$

Dynamic design:

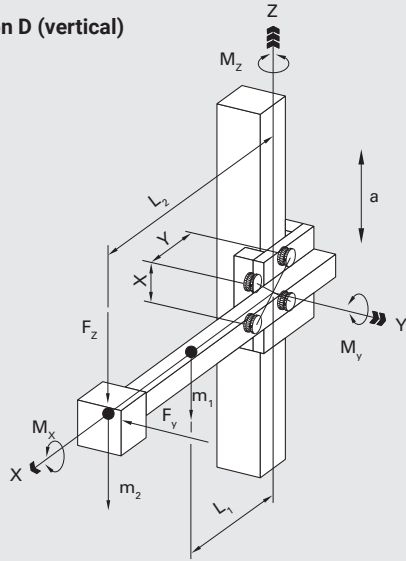
$$a_{\max.} = \frac{2 \cdot F_A \cdot X}{(m_1 \cdot L_1 + m_2 \cdot L_2) \cdot 2} - g$$

$$F_{a \text{ req.}} = (m_1 + m_2) \cdot (a_{\max.} + g) + 10N$$

$$M_{d \text{ ver req.}} = F_{a \text{ req.}} \cdot 0.035 \text{ m} \cdot 1.8$$

Linear Motion System Calculations

Application D (vertical)



Static design:

$$M_{Y \max} = FR \cdot (\sqrt{x^2 + y^2} - 0.036)$$

$$F_{Z \max} = \frac{M_{Y \max} - g(m_1 \cdot L_1 + m_2 \cdot L_2)}{L_2}$$

$$M_{Z \max} = 2 \cdot F_A \cdot Y$$

$$F_{Y \max} = \frac{M_{Z \max}}{L_2}$$

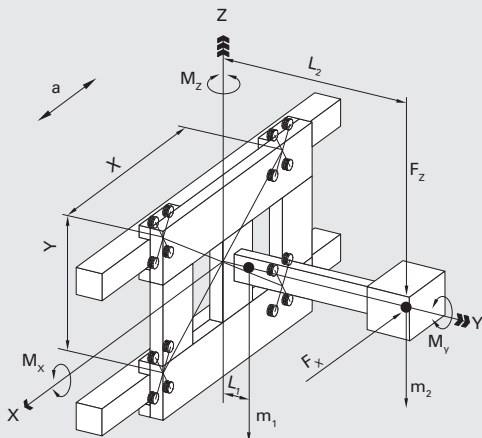
Dynamic design:

$$a_{\max} = \frac{F_R \cdot (\sqrt{x^2 + y^2} - 0.036)}{(m_1 \cdot L_1 + m_2 \cdot L_2) \cdot 2} - g$$

$$F_{a \text{ req.}} = (m_1 + m_2) \cdot (a_{\max} + g) + 10N$$

$$M_{d \text{ ver req.}} = F_{a \text{ req.}} \cdot 0.035 \text{ m} \cdot 1.8$$

Application E (horizontal)



Static design:

$$M_{X \max} = 8 \cdot F_A \cdot (y - 0.15)$$

$$F_{Z \max} = \frac{M_{X \max} - g(m_1 \cdot L_1 + m_2 \cdot L_2)}{L_2}$$

$$M_{Z \max} = 4 \cdot F_A \cdot X$$

$$F_{X \max} = \frac{M_{Z \max}}{L_2}$$

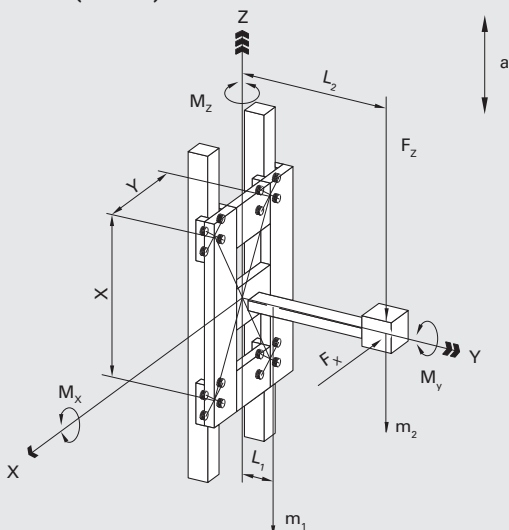
Dynamic design:

$$a_{\max} = \frac{4 \cdot F_A \cdot X}{(m_1 \cdot L_1 + m_2 \cdot L_2) \cdot 2}$$

$$F_{a \text{ req.}} = (m_1 + m_2) \cdot a_{\max} + 40N$$

$$M_{d \text{ hor req.}} = F_{a \text{ req.}} \cdot 0.035 \text{ m} \cdot 1.8$$

Application F (vertical)



Static design:

$$M_{X \max} = 4 \cdot F_A \cdot X$$

$$F_{Z \max} = \frac{M_{X \max} - g(m_1 \cdot L_1 + m_2 \cdot L_2)}{L_2}$$

$$M_{Z \max} = 4 \cdot F_A \cdot Y$$

$$F_{X \max} = \frac{M_{Z \max}}{L_2}$$

Dynamic design:

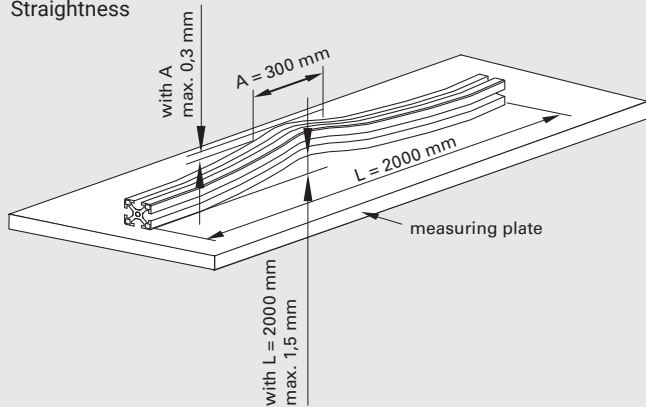
$$a_{\max} = \frac{4 \cdot F_A \cdot X}{(m_1 \cdot L_1 + m_2 \cdot L_2) \cdot 2} - g$$

$$F_{a \text{ req.}} = (m_1 + m_2) \cdot (a_{\max} + g) + 40N$$

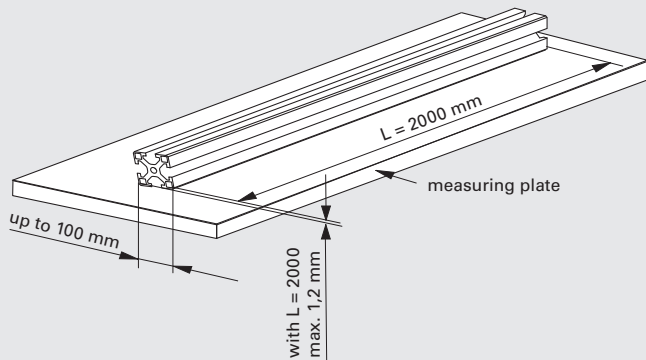
$$M_{d \text{ ver req.}} = F_{a \text{ req.}} \cdot 0.035 \text{ m} \cdot 1.8$$

Extrusion Tolerances

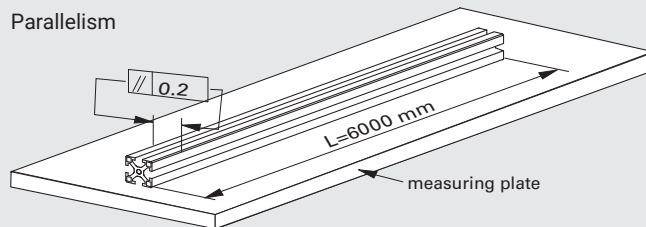
Straightness



Torsion



Parallelism



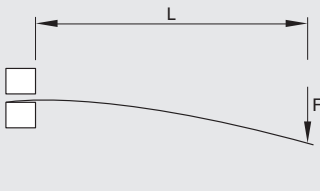
Technical data – extrusions:

Material description:	EN AW-6063 - T66
Minimum tensile strength R_m (in direction of pressure):	245 N/mm ²
Yield strength R_p (in direction of pressure):	200 N/mm ²
Modulus of elasticity E:	70000 N/mm ²
Shear Modulus G:	26000 N/mm ²
Coefficient of linear expansion:	$\alpha = 23 \cdot 10^{-6} 1/K$
Brinell hardness:	approx. 70 HB
Breaking elongation A5:	12%
Material density:	2.7 kg/dm ³
Cutting data:	
Length tolerance (up to 6000 mm):	±0.2 mm
Rectangular accuracy:	up to 50 mm ±0.05 mm up to 100 mm ±0.1 mm up to 200 mm ±0.2 mm
Tolerances for precision extrusions:	DIN EN 12020-2
Groove tolerance:	14 +0.25 / -0 mm

E	[N/mm ²]	Modulus of elasticity
F	[N]	Load
F_G	[N]	Net weight
f	[mm]	Deflection
L	[mm]	Length
I	[cm ⁴]	Moment of inertia (see extrusion data sheets)
W	[cm ³]	Section modulus (see extrusion data sheets)
$\sigma_{max.}$	[N/mm ²]	Permissible bending stress (recommendation 70 N/mm ²)
M_t	[Nmm]	Torque
I_t	[cm ⁴]	Torsional moment of area
G	[26000 N/mm ²]	Shear Modulus
φ	[°]	Rotation angle

Deflection Calculations

Load case example 1



Deflection by force F

$$f = \frac{F \cdot L^3}{3 \cdot E \cdot I \cdot 10^4} \text{ [mm]}$$

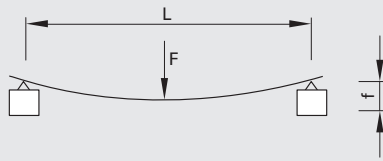
Deflection under own weight

$$f = \frac{F_G \cdot L^3}{8 \cdot E \cdot I \cdot 10^4} \text{ [mm]}$$

Bending stress σ max.

$$\sigma = \frac{F \cdot L}{W \cdot 10^3} \text{ [N/mm}^2\text{]}$$

Load case example 2



$$f = \frac{F \cdot L^3}{48 \cdot E \cdot I \cdot 10^4} \text{ [mm]}$$

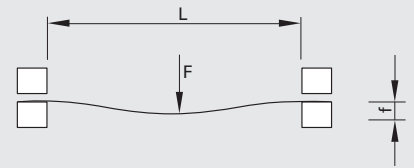
Deflection under own weight

$$f = \frac{5 \cdot F_G \cdot L^3}{384 \cdot E \cdot I \cdot 10^4} \text{ [mm]}$$

Bending stress σ max.

$$\sigma = \frac{F \cdot L}{4 \cdot W \cdot 10^3} \text{ [N/mm}^2\text{]}$$

Load case example 3



$$f = \frac{F \cdot L^3}{192 \cdot E \cdot I \cdot 10^4} \text{ [mm]}$$

Deflection under own weight

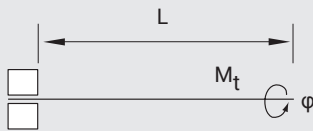
$$f = \frac{F_G \cdot L^3}{384 \cdot E \cdot I \cdot 10^4} \text{ [mm]}$$

Bending stress σ max.

$$\sigma = \frac{F \cdot L}{8 \cdot W \cdot 10^3} \text{ [N/mm}^2\text{]}$$

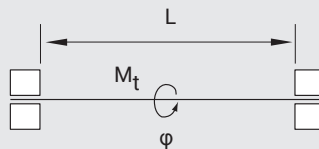
Torsion Calculations

Load case example 1



$$\Phi = \frac{180^\circ \cdot M_t \cdot L}{\pi \cdot G \cdot I_t \cdot 10^4} \text{ [mm]}$$

Load case example 2



$$\Phi = \frac{180^\circ \cdot M_t \cdot L}{\pi \cdot 4 \cdot G \cdot I_t \cdot 10^4} \text{ [mm]}$$

Checking the shear stress

The critical factor for failure of an extrusion subject to torsional load is in practice not so much the exceeding of the maximum approved torsional load applied to the extrusion, but rather elastic deformation (torsion). This deformation will affect the functioning of any parts to be assembled onto the extrusion, and so a more torsion-resistant extrusion must be selected, well before the approved maximum values for the torsional load have been reached.

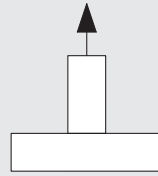
Standard Screw Drawing

Code	Screw designation	ISO standard	DIN standard
IBS M_x__	Socket-head cap screw	ISO 4762	DIN 912
IBS M_x__NIKO	Socket-head cap screw with flat head		DIN 6912
SKS M_x__	Socket-head countersunk screw	ISO 10642	DIN 7991
LKS M_x__	Button head cap screw with socket head	ISO 7380	
HKS M_x__	Hexagon head screw	ISO 4017	DIN 933
SKM M__	Hexagonal nut	ISO 4032	DIN 934
SKM M__FLA	Hexagonal nut, flat form	ISO 4035	DIN 936
BLS M__	Washer	ISO 7089	DIN 125
BLS M__S__	Washer		DIN 7349
GST M_x__	Set screw with socket head and conical cup	ISO 4026	DIN 913
GST M_x__SPI	Set screw with socket head and tip	ISO 4027	DIN 914
GST M_x__FED	Spring-loaded pressure part with band and hexagonal socket head		
BKS_x__	Countersunk flat head tapping screw	ISO 7050	DIN 7982
PAF_x_x__	Key	ISO 773	DIN 6885
PKS_x_x__	Grooved pin	ISO 8745	DIN 1472
SIR_x__	Circlip		DIN 471
SPS_x__	Clamping pin, lightweight	ISO 13337	DIN 7346

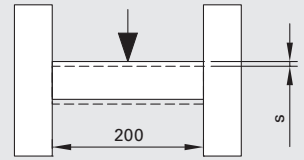
Fastener Loads

Static Test
Basic values only

A safety factor of 3
is recommended.



Maximum force
(Breaking force)



Maximum force
(Deflection force)

Deflection force
at $s = 1 \text{ mm}$

Fastener configuration	Fastener model	Maximum force (Breaking force)	Maximum force (Deflection force)	Deflection force at $s = 1 \text{ mm}$
Fastener with 2 drop-in nuts and bolts	PIL4040	21 kN	12 kN	5.5 kN
	PIL4080 (upright)			
Fastener with 4 drop-in nuts and bolts	PIL4080 (flat)	43 kN	21 kN	11.5 kN
	PIL8080			
Fastener with 2 drop-in nuts and bolts	PIL5050	40 kN	10 kN	6 kN
	PIL5010 (upright)			
	PIL5020 (upright)			
Fastener with 4 drop-in nuts and bolts	PIL5010 (flat)	76 kN	19 kN	9.5 kN
	PIL1010			
	PIL1020 (upright)	64 kN	12 kN	8 kN
Fastener with 8 drop-in nuts and bolts	PIL5020 (flat)	150 kN	35 kN	15 kN
	PIL1020 (flat)	110 kN		

Safety Distances for Safety Systems

General safety distances

Safety distances relative to human size must be taken into consideration when securing dangerous areas. These safety distances are based on the reach of a person (14 years or older) in the direction of the dangerous area with their own body parts and without the use of objects, then a safety margin is added.

Opening width e	Safety clearance		
	Slot	Square	Circle
$e \leq 4$	≥ 2	≥ 2	≥ 2
$4 < e \leq 6$	≥ 10	≥ 5	≥ 5
$6 < e \leq 8$	≥ 20	≥ 15	≥ 5
$8 < e \leq 10$	≥ 80	≥ 25	≥ 20
$10 < e \leq 12$	≥ 100	≥ 80	≥ 80
$12 < e \leq 20$	≥ 120	≥ 120	≥ 120
$20 < e \leq 30$	$\geq 850^*$	≥ 120	≥ 120
$30 < e \leq 40$	≥ 850	≥ 200	≥ 120
$40 < e \leq 120$	≥ 850	≥ 850	≥ 850

* If the length of the slit-shaped opening ≤ 65 mm, the thumb acts as a limit and the safety distance can be reduced to 200 mm.

Reaching around edges

When reaching around arbitrary edges, the safety distances are as follows:

for the hand from the base to the tips of the fingers at least 130 mm

for the hand from the wrist to the tips of the fingers at least 230 mm

for the arm from the elbow to the tips of the fingers at least 550 mm

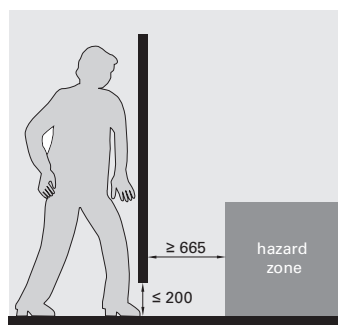
for the arm from the shoulder to the tips of the fingers at least 850 mm

Entry into dangerous areas with the lower limbs

Acc to DIN EN ISO 13857, for a ground clearance ≤ 200 mm, the foot safety distance must be ≥ 665 mm. This strictly assumes a standing position without any additional assistance.

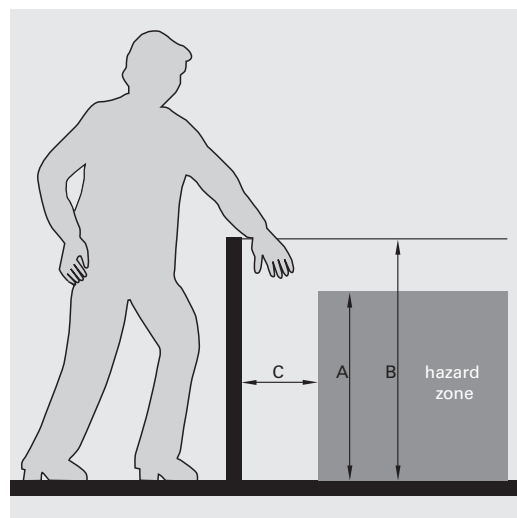
According to DIN EN ISO 13857, slotted openings > 180 mm and square or round openings > 240 mm permit entry for the entire body.

If there is a risk of slipping or abuse, the specified value may be unsuitable. Additional measures may be necessary to restrict access.



Reaching over edges on work or safety equipment

When reaching over edges on equipment or safety mechanisms, the required safety distance is satisfied if the height of the dangerous area in mm (A) and the height of the protective structure in mm (B) are no less than the corresponding value in the table below for horizontal distance from the dangerous area in mm (C). This assumes that the protective structure has a height of over 1000 mm. The area between the safety structure and the dangerous area may not be entered.



Height of danger area in mm (A)	Height of protective structure in mm (B)							
	2400	2200	2000	1800	1600	1400	1200	1000
	Horizontal distance from danger area in mm (C)							
2400	300	400	600	700	800	900	1000	1100
	100	100	100	100	100	100	100	100
2200	300	400	600	800	900	1000	1200	1300
		250	350	400	500	500	600	600
2000	-	400	600	800	900	1100	1300	1400
	-	-	350	500	600	700	900	1100
1800	-	-	600	800	900	1100	1400	1500
	-	-	-	600	900	900	1000	1100
1600	-	-	500	800	900	1100	1400	1500
	-	-	-	500	900	900	1000	1300
1400	-	-	-	800	900	1100	1400	1500
	-	-	-	100	800	900	1000	1300
1200	-	-	-	700	900	1100	1400	1500
	-	-	-	-	500	900	1000	1400
1000	-	-	-	-	800	1000	1400	1500
	-	-	-	-	300	900	1000	1400
800	-	-	-	-	600	900	1300	1500
	-	-	-	-	-	600	900	1300
600	-	-	-	-	-	800	1300	1400
	-	-	-	-	-	-	500	1200
400	-	-	-	-	-	400	1200	1400
	-	-	-	-	-	-	300	1200
	Values for high risk				Values for low risk			

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