

# Manual Production Systems

6.0



# Lighting on a new level: LED system lamps



The basic condition for high levels of efficiency and processing quality in production is correct lighting. Optimum lighting conditions prevent premature fatigue, improve concentration, and reduce the risk of errors.

Rexroth's LED system lamps offer you the optimum lighting you need (see page 42).

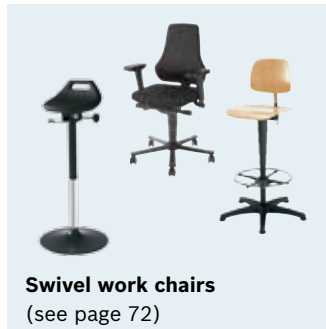
The glare-free light of the LED system lamps is due to the combination of a parabolic louver and diffuser foils. The consumption of an LED system lamp is 60% lower than that of a conventional workstation light with a fluorescent system lamp. The lifespan of LED system lamps is 60000 h.



**Workstations** (see page 14)



**Grab containers** (see page 64)



**Swivel work chairs**  
(see page 72)



**Flow rack systems**  
(see page 84)



**EcoShape** (see page 112)



**EcoFlow** (see page 128)



**Material shuttles  
and stations** (see page 140)



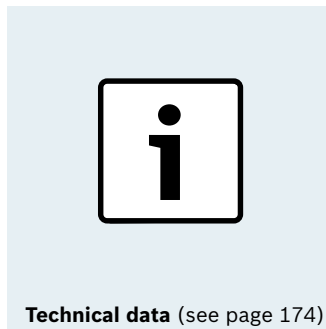
**Case lifters** (see page 150)



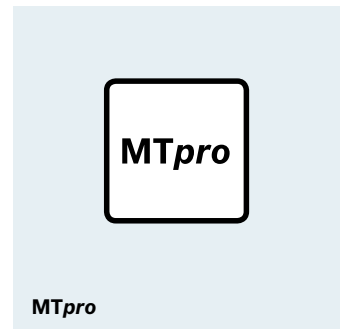
**Infoboards** (see page 156)



**Components** (see page 160)



**Technical data** (see page 174)



**MTpro**

# Symbols



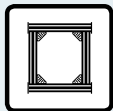
You can easily configure customized products using the *MTpro* software



Delivered as individual components (not pre-assembled)



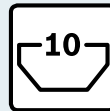
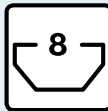
Delivered as components (pre-assembled)



Delivered assembled



Profile used in the frame



Width of profile slot; accessories suitable for attaching in profile slot



Conductive material version according to DIN EN 61 340-5-1, suitable for ESD-sensitive areas

Glider rail	L (mm)	No.	No.
	2000	10	<b>3 842 541 196</b>

Round tube D28L	L (mm)	No.
50 units	5600	<b>3 842 541 211</b>

Packing unit = minimum order quantity (here: 10 units)

Order: 1 x 3 842 541 196

Delivery: 10 x 3 842 541 196 (rounded up)

Order: 15 x 3 842 541 196

Delivery: 20 x 3 842 541 196 (rounded up)

Delivery unit = delivery quantity (here: 50 units)

Order: 1 x 3 842 541 211

Delivery: 50 x D28L round tube, L = 5600 mm

Order: 15 x 3 842 541 211

Delivery: 750 x D28L round tube, L = 5600 mm



**Ergonomics and lean production – the pillars of your success!**

Any company's economic success is built on top-quality products and services that result in the highest level of customer satisfaction. Given this fact, it is only logical that companies strive for continuous improvement across all levels of their operations.

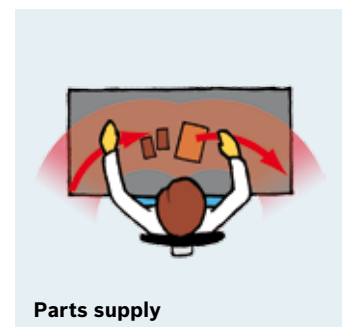
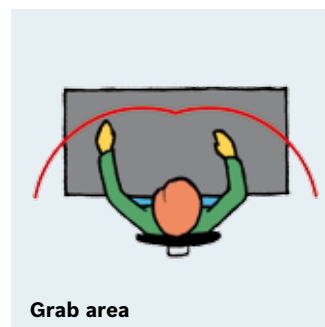
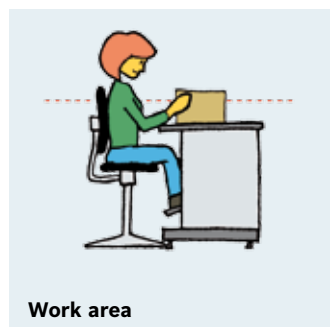
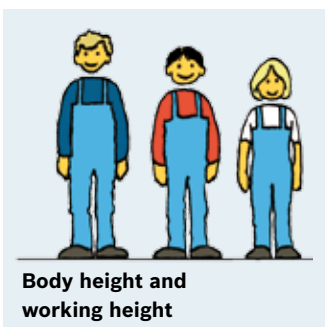
Comprehensive success relies not only on lean, waste-free processes, but also on ergonomically designed work systems that allow employees to do their jobs with no waste. Good ergonomics serves to support the value chain and reduce waste.

With MPS you have a production system that places equal importance on both lean production and ergonomics.

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# For motivated employees, higher productivity and better quality

Ergonomic workstation systems make work easier and keep workers healthier.



# The eight ground rules for workplace systems help you to layout and design ergonomic workstations and flow rack systems

The results: Increased motivation and satisfaction, higher performance, efficiency and work quality, as well as fewer absences due to illness. The bottom line: Ergonomics provide you with valuable benefits in the form of higher productivity, increased efficiency, and a decisive edge over the competition – thus ensuring lasting success for your company.

## Body height and working height

The optimum working height is based on the worker's body height and the type of activity to be performed. The average optimum working height for average requirements is 1125 mm for sit-down/stand-up workstations.

## Work area

The work area should always be between 800mm and 1500mm high. Working positions above heart height should be avoided, as should any work below 800 mm, as bending places an undue strain on the worker's body. Ideally, workers should perform dynamic activities with frequent shifts of exertion, such as switching between standing and sitting.

## Grab area

All containers, equipment, and operating elements must be easily accessible and located in the anatomical/physiological range of movement for the employee. Torso rotations and shoulder movements, particularly when under exertion should be avoided whenever possible.

## Parts supply

All grab distances should be as short as possible. Grab containers and parts containers placed in direct reach of the employee are therefore ideal.

## Vision areas

Unnecessary head and eye movements should be avoided. Maintaining objects at a uniform distance to the worker's eyes eliminates the need for refocusing. Avoid joining points that are not visible to the worker.

## Lighting

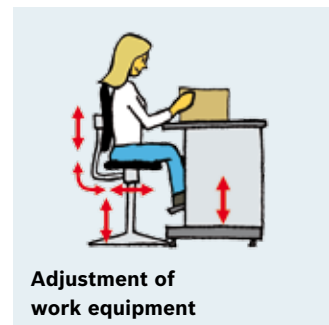
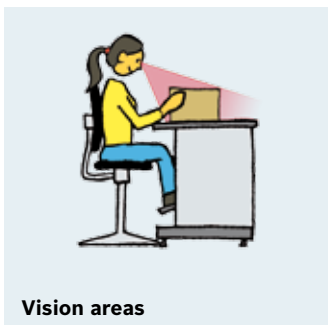
Optimum lighting conditions prevent premature fatigue, improve concentration, and reduce the risk of errors. High contrasts, glare, and reflections should be avoided.

## Adjustment of work equipment

Correct adjustment of the equipment serves to minimize required movements, thus reducing physical exertion and employee absences.

## Planning aids

Available planning aids include the Ergonomics Checklist (3 842 523 943) and the Planning Template (3 842 542 286/...287). You can then use *MTpro* (3 842 539 057) to do your technical designing.



# Lean production for greater productivity and shorter throughput times

Constantly growing cost pressure makes it necessary to permanently increase productivity in manufacturing. Central aspects involved are detecting and avoiding waste (muda).



Waste refers to all process steps that do not directly contribute to adding value. Waste must be avoided permanently. In order to achieve this, the causes of waste must be identified and eliminated.

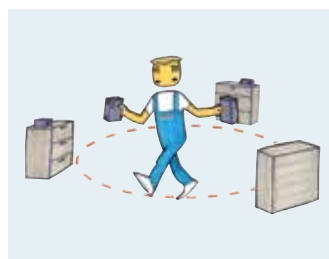
When analyzing processes, we need to distinguish between waste and added value. Next, we separate waste into two categories: avoidable waste and unavoidable waste. Waste reduction, once initiated, is a continuous improvement process (kaizen) that impacts all levels of the company.

## Overproduction

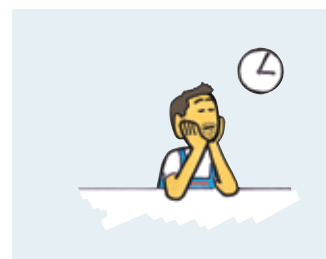
Overproduction occurs whenever more is produced than the customer ordered – or more than was planned. Overproduction requires additional warehousing and thus ties up capital.



**Overproduction**



**Superfluous movements**



**Waiting times**



**Transports**



# We differentiate between seven types of waste



## Superfluous movements

Superfluous movements occur whenever the worker needs to move materials or tools across large distances. Unnecessary paths cost valuable production time.

## Waiting times

Waiting times occur whenever the worker needs to wait for materials or for a process to end. During this time, the worker is tied up and does not contribute to adding value.

## Transports

Transports occur whenever a forklift or lifting truck/crane is used to transport materials through production. Transports change the position of the product, but not its value.

## Overprocessing

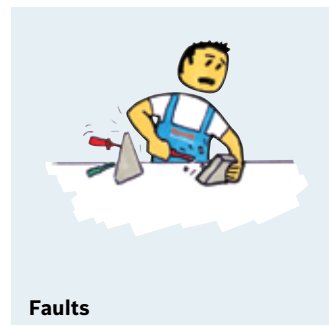
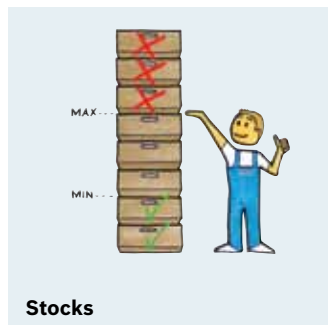
Overprocessing occurs whenever production exceeds the standard that the customer requires. More is invested in the process than is required to fulfill the function.

## Stocks

High stocks in production, as well as in the raw material and finished goods warehouses, result in costs of capital. The stocks provide a feeling of security, but they also make the product more expensive.

## Faults

If parts are defective, they are classified as faulty. Faults require reworking and sorting, which results in increased costs.



# MPS – a complete ESD-protected system

ESD is caused by electric charges that are generated by friction on various materials or by the influence of electric fields. Voltages of up to 10000 V can develop from electrostatic discharge.



# Protection of ESD-sensitive components



Damage to ESDs and their printed circuit boards result in high costs. Damage leads to an irreversible change in the device and a reduction in the ESDs service life. Dangerous component voltages have an effect on ESDs sensitivity.

The most effective way to reduce ESD is to simply avoid electric charges or to conduct carried charges safely. Rexroth's ESD program, with ergonomically designed components, will assist you in designing a production system that avoids electrostatic discharge. With suitable materials and connection technology, the components in the ESD program are either electrostatically conductive or deflective and create a fully protected system.

To ensure and maintain the ESD-conductive properties, we recommend checking conduction resistance at regular intervals after assembly.

Rexroth components fulfill the requirements for the protection of ESDs (DIN EN 61340-5-1). The individual national personal safety regulations must be observed during assembly and connection.



▲ **Defined grounding to an ESD-safe structure serves to make the entire system both safe and economical.**

# Plan assembly lines that are ergonomic, lean, fast, and safe with MTpro

Careful and comprehensive planning is the only way to cost-effectively integrate ergonomics into the production system.

Ergonomic workplace systems help to keep workers both healthy and productive.

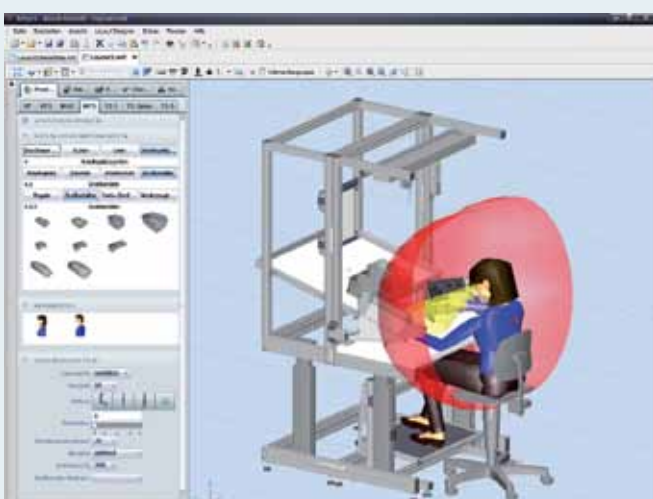
What's more, they create the foundation for implementing lean production concepts and for improving the economic efficiency of companies.

The Manual Production Systems combine these two aspects perfectly.

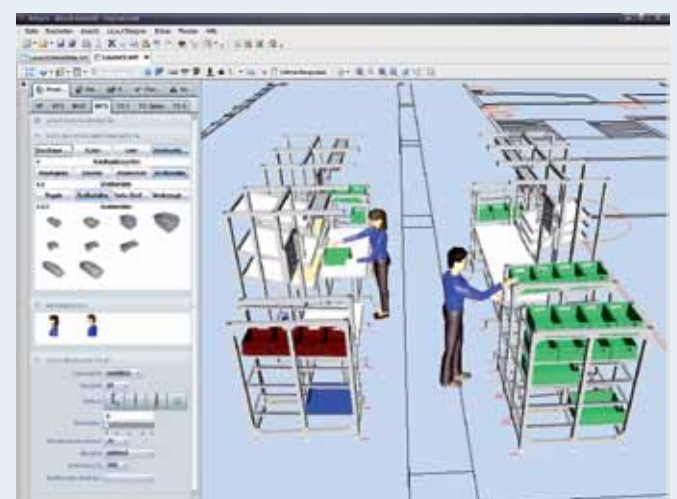
Post-installation attempts to improve the ergonomics of workplace systems are costly and subtract from any eco-

nomonic advantage. This makes it important to include ergonomic aspects early on in the concept phase right alongside lean production requirements. This is the only way to attain the desired cost savings.

On the other hand, as product life cycles and unit production numbers continue to shrink, so does the time left for planning. This is where MTpro can provide valuable support. This planning software is designed with ergonomics in mind and offers good visualization and a CAD interface.



**MTpro ManModels make it possible to integrate workstation ergonomics as early as the planning stage**



**Multiple workstations are linked to form a production line that follows lean production principles**

Users without CAD experience can use this software to design workstations, flow rack systems, manual roller sections and material shuttles. The user-friendly system allows users to create their designs by either using a guided parameter selection system for configurable products or by assembling various discrete components. A comprehensive set of rules covers the design logic, all product dimensions and the necessary information on accessories.

With its “ManModels”, *MTprocan* optimally adapt designs for individual workers – with the perfect reach zone, the right distance to equipment, and the ideal angle of vision. The entire reach zone – the work area within direct reach

of the seated worker, the large reach zone, and the extended one-hand zone at the periphery – should be easily accessible from the working position. This helps to prevent unhealthy posture

At the end of the design process, users can rapidly retrieve complete parts and order lists, price calculations and CAD data, all at the click of a mouse button.





## Ergonomic workstations for greater productivity

Workstation design must focus equally on the worker and on the product being manufactured – this is the only way to maximize productivity and profitability.

Incorrect posture at the workplace can result in a waste of up to 40% of an employee's potential output at work. The price paid for deficiencies in workplace design is measured in the high physical input needed to compensate for them. And such input is power and energy that would better be dedicated to the actual job at hand.

Add to this the fact that our society is steadily aging and it becomes clear that early investment in proper workplace equipment is essential for maintaining productivity and competitiveness over the long term. This is the only way to help prevent chronic maladies such as back pain from arising in the first place.

The first step is to examine the product and what is needed to assemble it and from there to define the work table dimensions and how material is to be supplied to the worker. Once this is done, the focus shifts to the worker and ergonomic design of the workstation begins. This will include looking at optimum tool positioning and information provision, but also at additional items such as footrests and proper lighting, key elements for an ergonomic, and hence efficient, workstation. In order to maintain a well-organized workstation and to securely stow small parts that are not always needed, the last step is to complement the 5S elements with storage cabinets.

Rexroth's height-adjustable workstations go a step beyond the competition by making the height of the material supply area and that of the working surface independently adjustable. The workstation height is determined by the work area, i.e. by the worker's body height and the product height, while the material supply height is primarily based on the height of the worker's body alone, since the idea is to find that worker's optimum grab height.

All workstations and workstation accessories are available as an ESD-conductive version.

Rexroth workstations are available as complete systems, as modules or as individual components. Variable dimensions and equipment features allow you to customize and adapt the workstations to your specific requirements.



- 18 Height-adjustable workstation
- 22 Workstation
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- 25 Table tops
- 26 Material shelves
- 28 Rubber profile, footrests
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- 50 Information provision
- 53 Cabinet systems
- 56 Accessories
- 61 Ergonomic mat
- 62 ESD accessories

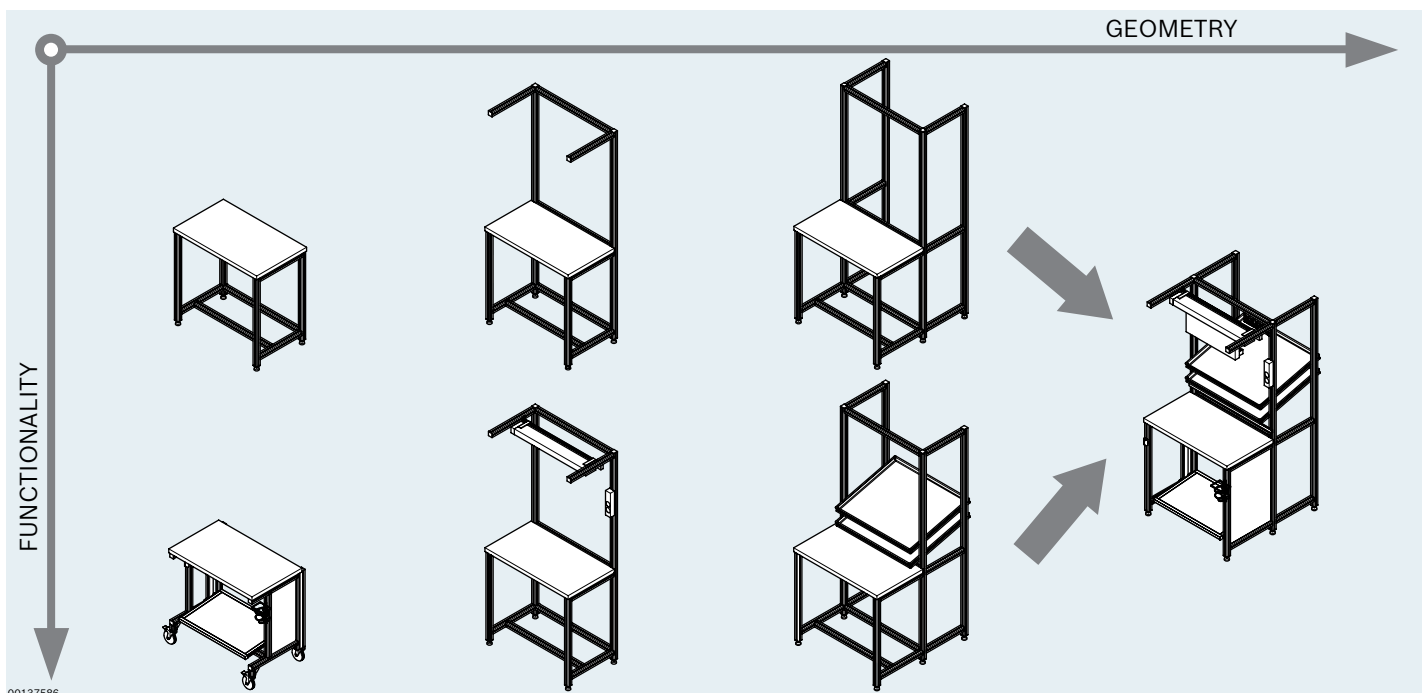
# Workstations

Workstation design must take account of the product itself, the process required for that product, and the actual human being doing the work. The design must give equal priority to the minimization of process waste and to providing employees with an ergonomic work environment.

This is why geometry and functionality are important in the layout of the workstation. The product being fabricated and the person doing the work are the benchmarks in defining the workstation height, width and depth as well as for positioning lighting and material supply equipment. Support accessories such as information boards are then added to ensure that the right information is available at the right place.

## Ergonomics

A basic facet of workstation design involves the encouragement of alternating, dynamic activity. Static activity inhibits blood circulation and oxygen supply to the muscles. Alternating physical exertion reduces stress on the employee and increases performance.



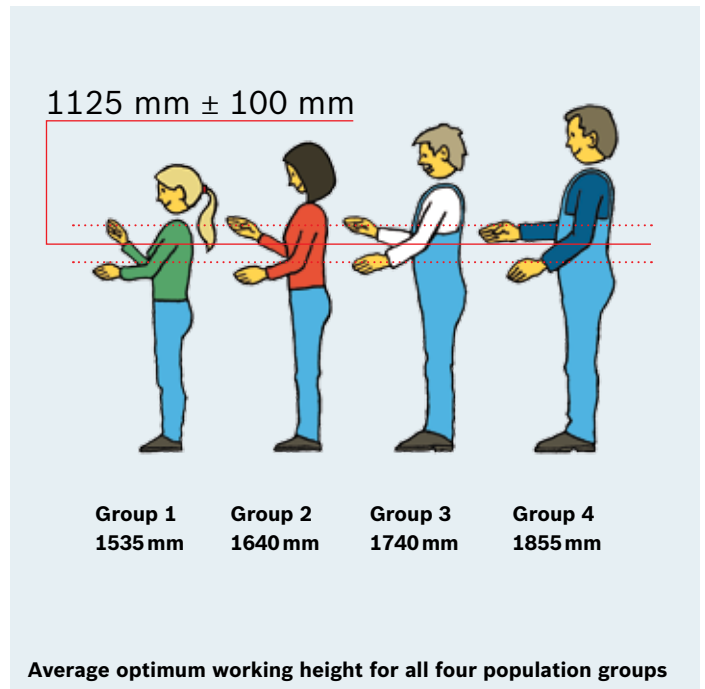


Alternating exertion is seen, for example, where combined stand-up/moving or sit-down/stand-up workstations are integrated into the workflow. Many workstations are used for multiple shifts. This means that these workstations need to be designed for employees of different height. The optimum working height is based on the body height range and the type of activity to be performed. If you take all body heights into consideration, the average optimum working height for average requirements is 1125 mm for sit-down/stand-up workstations. The ability to separately adjust the material feed height and the working height means that these workstations can be adapted to both different products and different workers. This is the key to creating an ergonomically optimized workplace. Information on further aspects of ergonomic workstation design, such as the optimum grab area or recommended working heights, is available in our Ergonomics brochure (3 842 523 943).

Work contents	Working heights			
	Group 1	Group 2	Group 3	Group 4
<b>High requirements for</b> Visual inspection Fine motor skills	1100	1200	1250	1350
<b>Medium requirements for</b> Visual inspection Fine motor skills	1000	1100	1150	1250
<b>Low requirements for</b> Visual inspection <b>High requirements for</b> Elbow-room	900	1000	1050	1150

**Average optimum working height = 1125**

**MTpro** For workstation design and planning, we recommend **MTpro!** See pages 12 and 13 for more information.



# Height-adjustable workstation



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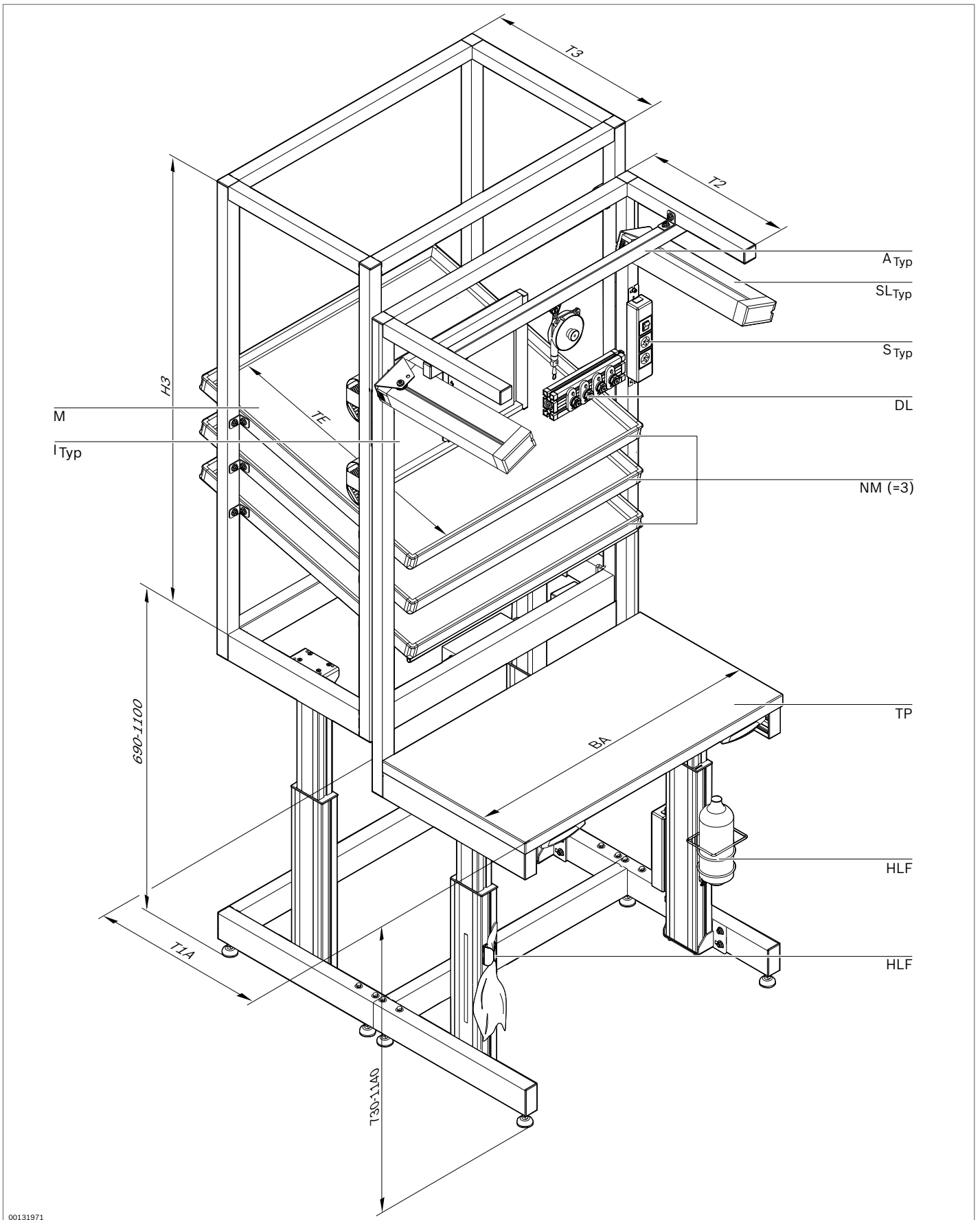


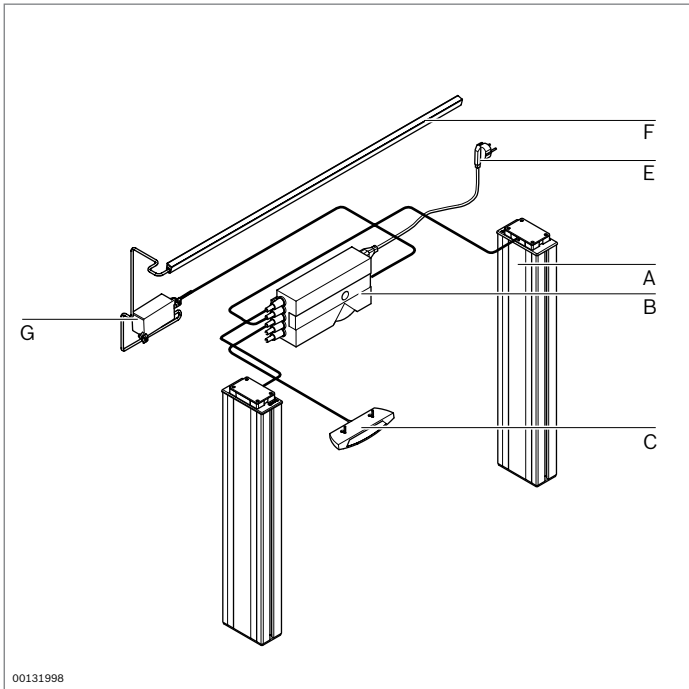
- ▶ Large number of adjustment options for high versatility
- ▶ Freely selectable geometry and functionality
- ▶ Independent adjustment of material feed and table top heights
- ▶ Available as ESD-conductive version
- ▶ Fully assembled or as a kit for self-assembly
- ▶ Allows for the addition of any desired modules, including cross ties and conveyor tracks as well as individual components

**For workstation design and planning, we recommend MTpro! See pages 12 and 13 for more information.**

See technical data (see page 176)

Height-adjustable workstation		3 842 998 350
A	Design	Disassembled, assembled
ESD	Conductivity	Yes, no
LV	Load version	Number of lifting modules
BA	Workstation width	640 ... 2000 mm
H3	Strut extension height	to 1500 mm
T1A	Workstation depth	to 1000 mm
T2	Bracket depth	to 800 mm
TP	Table top type	4 different table tops
T3	Accessory upright depth	to 800 mm
NM	Number of material shelves	0 ... 4
M	Material shelves material	3 different material shelves
TE	Material shelves depth	520 ... 1100 mm
E	Suspension profile	With, without
A <sub>typ</sub>	Type of hanger	With, without hanger. Selectable spring pulls
L	Country version	D, F, GB, CH, CZ
SL <sub>typ</sub>	Type of lamp	6 different lamps
S <sub>typ</sub>	Type of socket	4 different sockets
DL	Compressed air strip	With, without
I <sub>typ</sub>	Type of information board	7 different information boards
HLF	Cloth and bottle holder	With, without



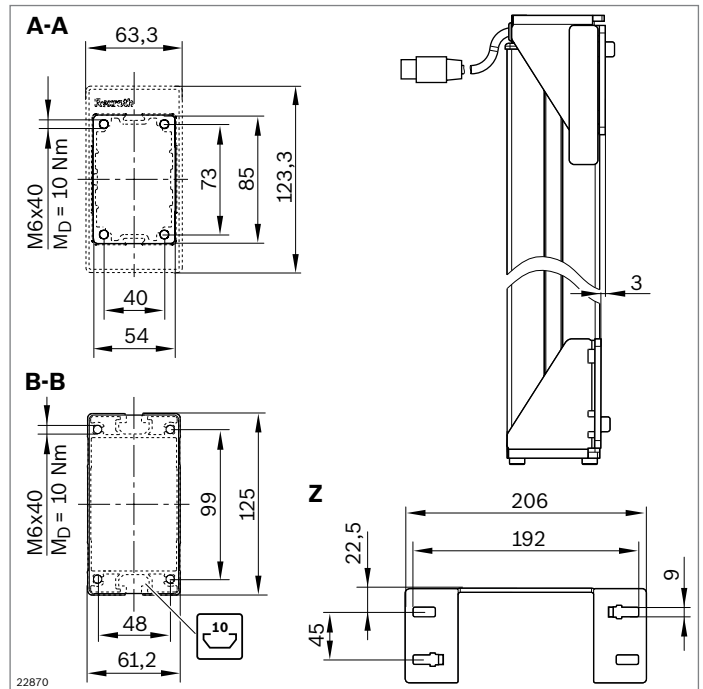
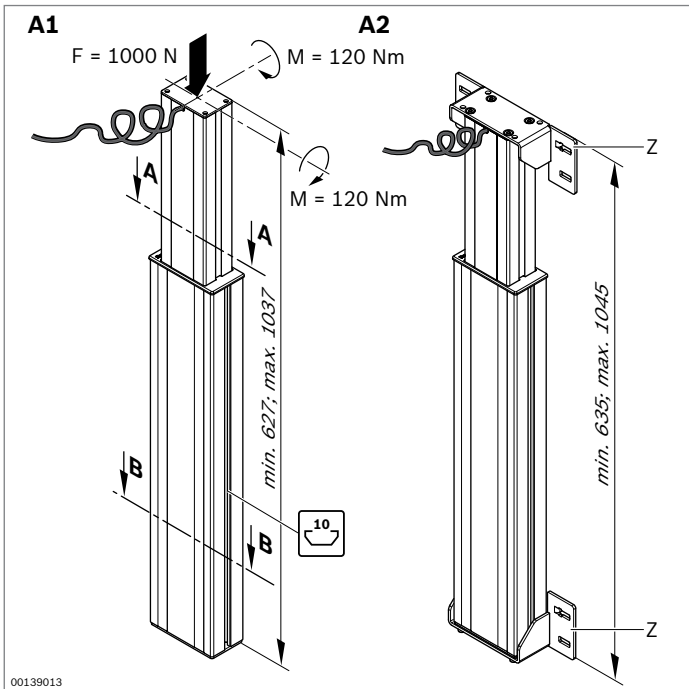


## Height-adjustable workstation components

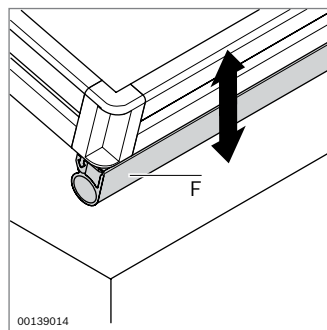
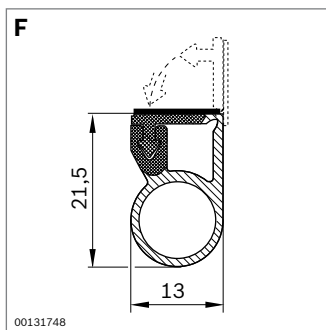
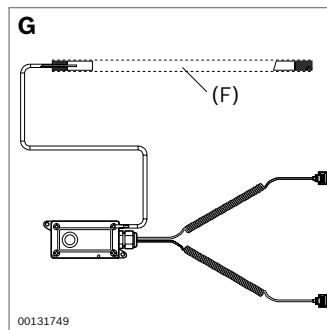
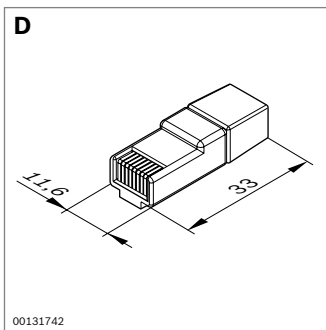
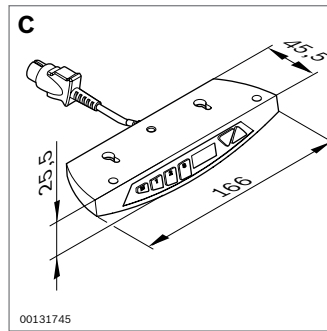
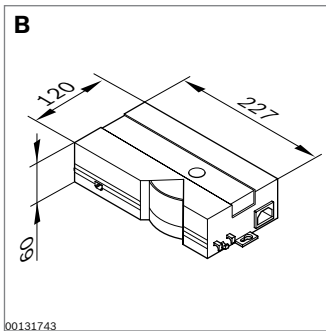
### Lifting module (A)

- ▶ Lifting module for stepless workstation height adjustment
- ▶ Connected via screw hole on face sides or using the integrated 10 mm slot
- ▶ Lifting force: max. 1000 N per lifting module; suitable for compressive forces only
- ▶ Lift: 410 mm
- ▶ Lifting velocity: 25 mm/s
- ▶ Cable length: 2000 mm

See technical data (see page 177)



	No.
<b>A1</b> Lift module	<b>3 842 540 116</b>
<b>A2</b> Lifting module with bracket (Z)	<b>3 842 542 211</b>



**Control (B)**

- ▶ Control for synchronization of 1, 2, 3 or 4 lifting modules in parallel operation
- ▶ Operating time: 10%

**Hand switch (C)**

- ▶ For operating the controller, with push button for height adjustment and 3 memory buttons to store the different positions, cable length 3 m

**Contact bridge (D)**

- ▶ For operating the controller without collision protection

**Mains cable (E) (not shown)**

- ▶ For connection to power mains

**Pressure wave control strip (F), pressure wave sensor (G)**

- ▶ A pressure wave control strip (F) can be connected to the control unit (B) to protect against mechanical collisions. Even if only slight pressure is applied to the pressure wave control strip, the pressure wave sensor (G) sends a signal to the control unit and the lifting modules move a few millimeters in the opposite direction. The pressure wave control strip has a self-adhesive rear side and can be individually shortened.

	L (m)	No.
<b>B</b> Control unit for 1 lifting module*		<b>3 842 540 048</b>
Control unit for 2 lifting modules*		<b>3 842 540 049</b>
Control unit for 3 lifting modules*		<b>3 842 540 050</b>
Control unit for 4 lifting modules*		<b>3 842 540 051</b>
<b>C</b> Hand switch with display		<b>3 842 540 120</b>
<b>D</b> Contact bridge		<b>3 842 540 047</b>
<b>E</b> Mains cable D	5	<b>3 842 540 195</b>
Mains cable CH	5	<b>3 842 540 197</b>
Mains cable GB	5	<b>3 842 540 199</b>
<b>F</b> Control strip	2	<b>3 842 540 129</b>
<b>G</b> Pressure wave sensor		<b>3 842 540 130</b>

\* EU; 230 VAC

# Workstation



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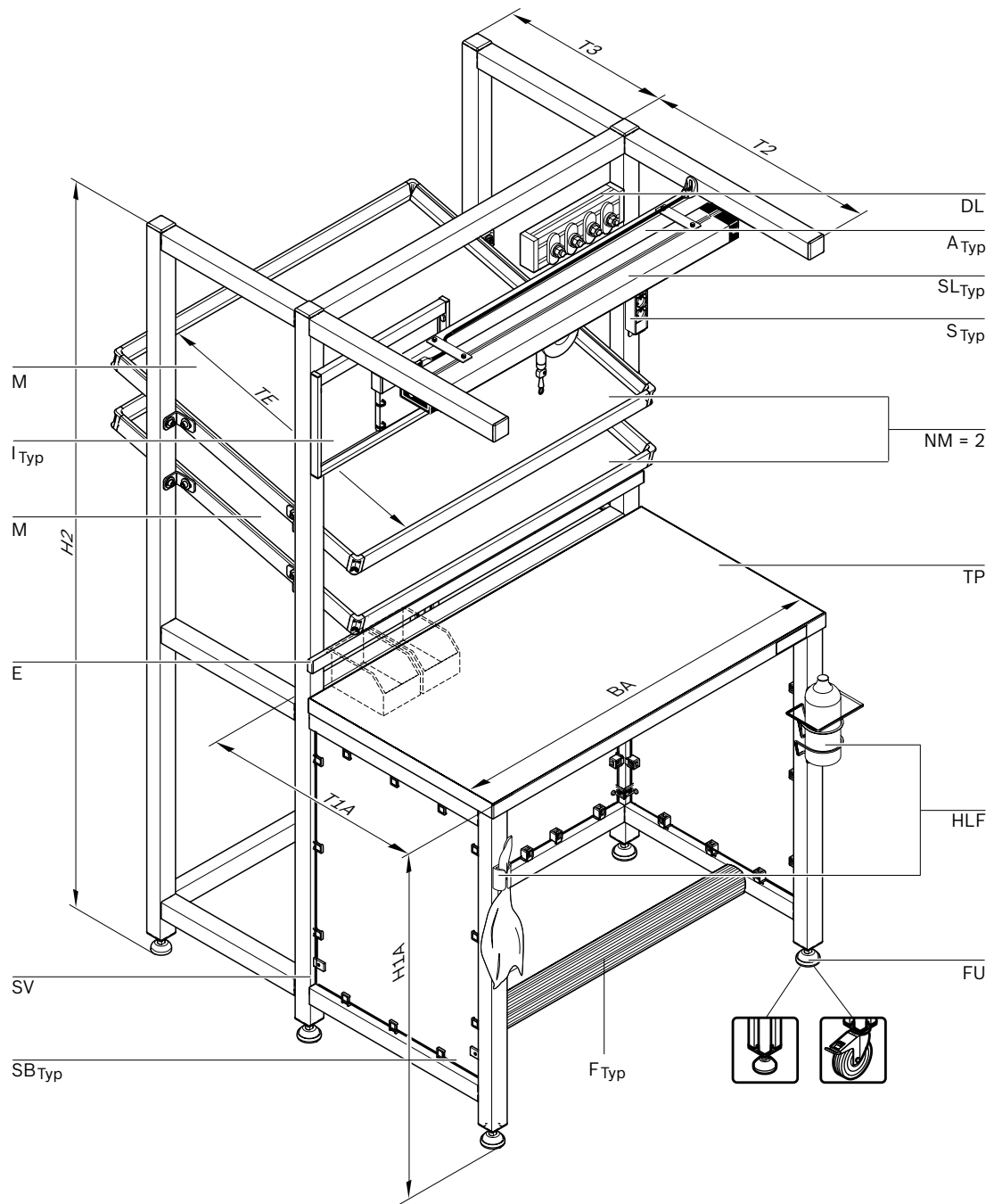


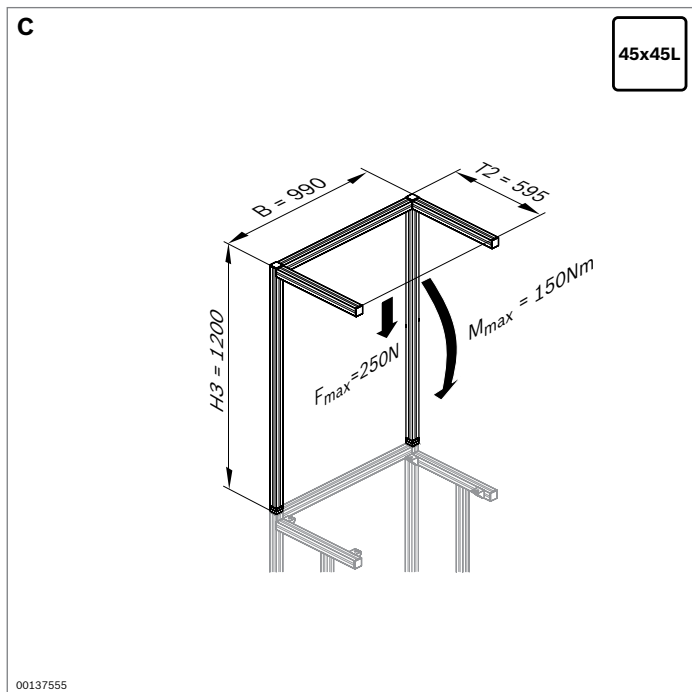
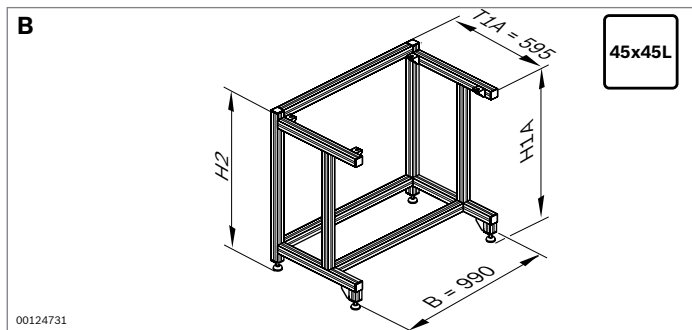
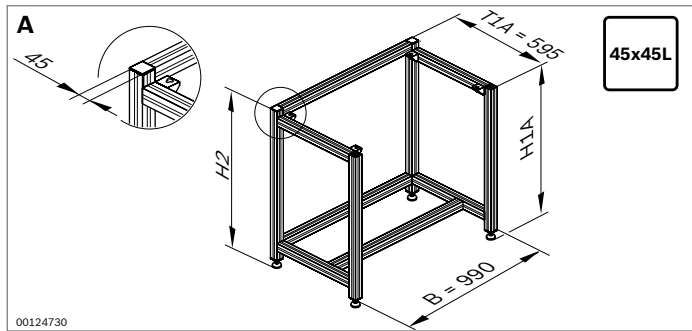
- ▶ Large number of adjustment options for high versatility
- ▶ Freely selectable geometry and functionality
- ▶ Available as ESD-conductive version
- ▶ Fully assembled or as a kit for self-assembly
- ▶ Allows for the addition of any desired modules, including cross ties and conveyor tracks as well as individual components

**For workstation design and planning, we recommend MTpro! See pages 12 and 13 for more information.**

See technical data (see page 176)

Workstation		3 842 998 110
A	Design	Disassembled, assembled
ESD	Conductivity	Yes, no
PK	Construction	Desk type, box type
P	Profile type	40L, 45L, 60L
FU	Foot type	Leveling foot, caster
BA	Workstation width	410 ... 2000 mm
H1A	Work surface height	410 ... 1500 mm
H2	Total workstation height	410 ... 2500 mm
T1A	Workstation depth	405 ... 1000 mm
T2	Bracket depth	to 800 mm
TP	Table top type	4 different table tops
SB <sub>typ</sub>	Side panel type	3 different side panels
T3	Accessory upright depth	to 800 mm
NM	Number of material shelves	0 ... 4
M	Material shelves material	3 different material shelves
TE	Material shelves depth	410 ... 1220 mm
SV	Reinforced strut extension	With, without
E	Suspension profile	With, without
A <sub>typ</sub>	Type of hanger	With, without hanger. Selectable spring pulls
L	Country version	D, F, GB, CH, USA/CDN, CZ
SL <sub>typ</sub>	Type of lamp	6 different lamps
S <sub>typ</sub>	Type of socket	4 different sockets
DL	Compressed air strip	With, without
I <sub>typ</sub>	Type of information board	7 different information boards
F <sub>typ</sub>	Type of footrest	Footrest selectable
HLF	Cloth and bottle holder	With, without





**Table frame (A, B)**



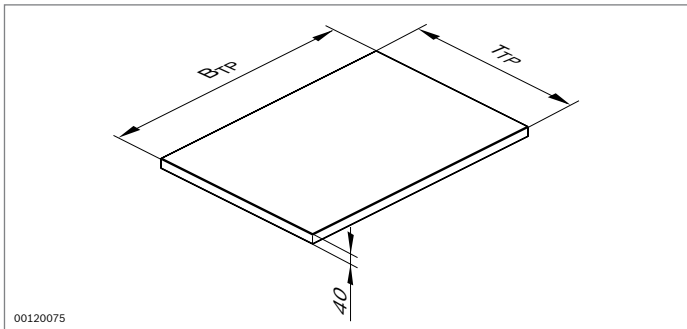
- ▶ Table frame of standard dimensions for box or desk type workstation construction
- ▶ Height-adjustable leveling feet to compensate for floor irregularities
- ▶ Suitable for the construction of ESD workstations
- ▶ Many extension options with accessories such as table tops and footrests
- ▶ Desk type construction for more legroom, especially when swiveling into/out of workstation while seated

**Strut extension (C)**

- ▶ Strut extension of standard size for attaching accessories to workstations
- ▶ Subsequent installation on a table frame is possible
- ▶ Fits all Rexroth table frames with 45x45L profile and 990 mm width
- ▶ Fastened by means of end connector on table frame
- ▶ Suitable for the construction of ESD workstations

	H1A (mm)	H2 (mm)	No.
<b>A</b> Table frame, box type	860	900	<b>3 842 537 251</b>
	960	1000	<b>3 842 537 252</b>
<b>B</b> Table frame, desk type	860	900	<b>3 842 537 249</b>
	960	1000	<b>3 842 537 250</b>
<b>C</b> Strut extension			<b>3 842 519 530</b>





**Table top**

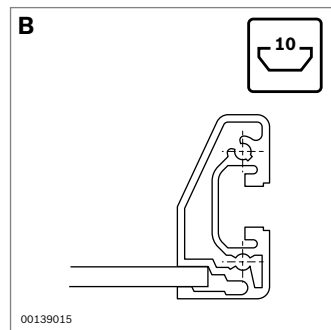
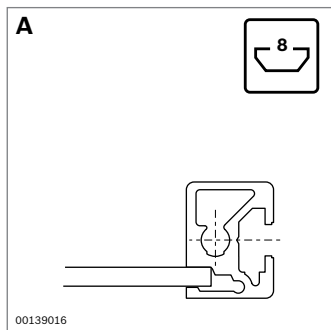
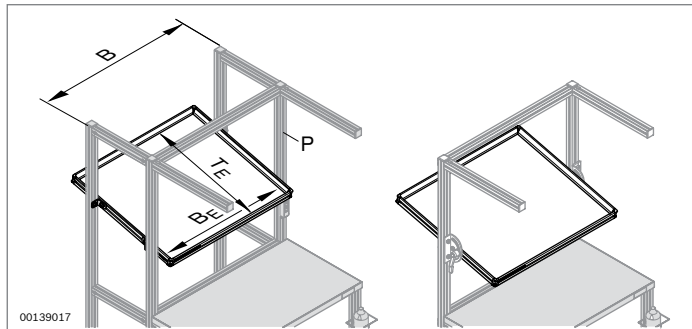


- ▶ Table top for use in constructing Economic and Basic type Rexroth workstations for various mechanical loads
- ▶ Can be configured with variable dimensions or with fixed standard dimensions
- ▶ The Economic table top is suited for normal levels of mechanical stress on the table top surface
- ▶ The Basic table top with hard laminate coating is suited for high levels of mechanical stress on the table top surface
  - High abrasion resistance
  - High impact resistance and scratch resistance
  - Resistant to organic solvents, weak acidic and caustic materials, gasoline and oil
  - Briefly resistant to temperatures up to 180 °C
- ▶ Available as ESD-conductive version. Safe conduction (without extra wiring) of charges through volume conductive base material,  $R_v = 1 \times 10^5 \dots 1 \times 10^7 \Omega$  DIN EN 61340-5-1

<b>Table top</b>		<b>3 842 998 250</b>
Type	Design	Economic, Economic ESD, Basic, Basic ESD
$B_{TP}$	Table top width	400 ... 2700 mm
$T_{TP}$	Table top depth	300 ... 2000 mm

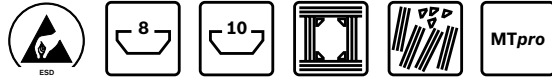
Material of Economic table top: Coated chipboard, 0.1 mm layer thickness; edging: ABS  
 Material of Basic table top: Coated chipboard, 0.8 mm layer thickness; edging: ABS  
 Scope of delivery: Incl. mounting material

	$B_{TP}$ (mm)	$T_{TP}$ (mm)	ESD	No.
<b>Table top Economic</b>	1000	555		<b>3 842 535 470</b>
	1200	555		<b>3 842 535 471</b>
	1400	555		<b>3 842 535 472</b>
	1000	705		<b>3 842 535 473</b>
	1200	705		<b>3 842 535 474</b>
	1400	705		<b>3 842 535 475</b>
<b>Table top Economic ESD</b>	1000	555	⚡	<b>3 842 535 476</b>
	1200	555	⚡	<b>3 842 535 477</b>
	1400	555	⚡	<b>3 842 535 478</b>
	1000	705	⚡	<b>3 842 535 479</b>
	1200	705	⚡	<b>3 842 535 480</b>
	1400	705	⚡	<b>3 842 535 481</b>
<b>Table top Basic</b>	1000	555		<b>3 842 535 489</b>
	1200	555		<b>3 842 535 490</b>
	1400	555		<b>3 842 535 491</b>
<b>Table top Basic ESD</b>	1000	555	⚡	<b>3 842 535 482</b>
	1200	555	⚡	<b>3 842 535 483</b>
	1400	555	⚡	<b>3 842 535 484</b>



$B_E =$	B - 45 - 80	(P= 40L)
$B_E =$	B - 45 - 90	(P= 45L)
$B_E =$	B - 45 - 120	(P= 60L)

## Material shelves



- ▶ Material shelves for ergonomic accessibility of containers (kanban), materials, measuring instruments and other aids at Rexroth workstations
- ▶ For implementing the 2-bin system
- ▶ Can be attached at any desired incline, height or offset
- ▶ Material shelf Economic (**A**) with frame profile 22.5x30
- ▶ Material shelf Basic (**B**) with frame profile 22.5x45 with docking aids for easy loading and removal of materials
- ▶ Surfaces
  - PP: light gray
  - SB: ESD conductive; black; recommended accessory: ESD mat insert
  - Aluminum: for heavy loads (material shelf Basic)
- ▶ Attachment fixed with brackets (included) or swiveling with swivel fastening
- ▶ Customized assembly possible from individual components (see “Components” chapter)

Scope of delivery: Scope of delivery: includes brackets for fastening on 10 mm slot

Accessories: Swivel fastening (see page 162, 163), ESD mat insert (see page 63)

Condition on delivery of material shelf with standard dimensions: fully assembled

Condition on delivery of material shelf, parameterizable: Disassembled, completely assembled

See technical data (see page 178)

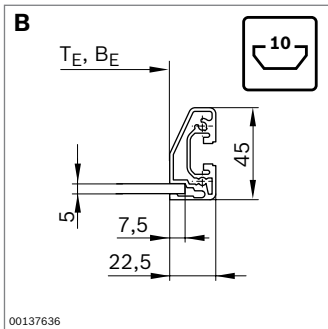
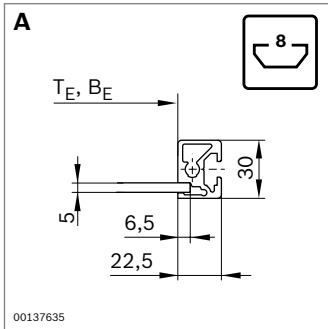


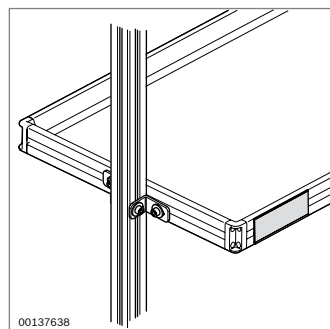
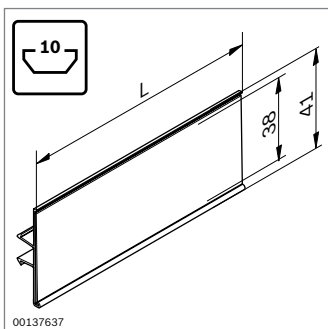
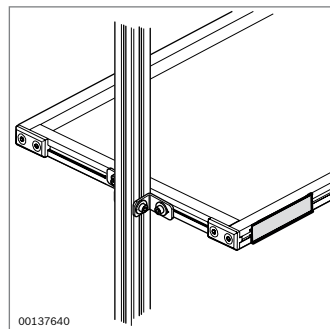
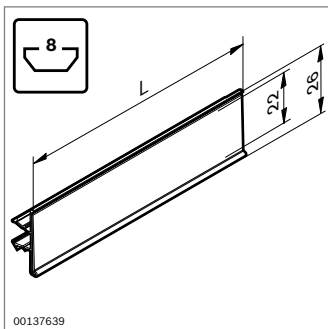
	Plate	B <sub>E</sub> (mm)	T <sub>E</sub> (mm)	ESD	No.
<b>A</b> Material shelf Economic	PP	610	410		<b>3 842 538 456</b>
		855	410		<b>3 842 538 457</b>
	SB	610	410	⚠	<b>3 842 538 458</b>
		855	410	⚠	<b>3 842 538 459</b>

<b>B</b> Material shelf Basic, surface PP		3 842 998 183
A	Design	Disassembled; assembled
B <sub>E</sub>	Material shelf width	200 ... 1000 mm
T <sub>E</sub>	Material shelf depth	310 ... 1000 mm

<b>B</b> Material shelf Basic, surface SB		⚠	3 842 998 184
A	Design		Disassembled; assembled
B <sub>E</sub>	Material shelf width		200 ... 1000 mm
T <sub>E</sub>	Material shelf depth		310 ... 1000 mm

<b>B</b> Material shelf Basic, surface aluminum		3 842 998 155
A	Design	Disassembled; assembled
B <sub>E</sub>	Material shelf width	200 ... 1480 mm
T <sub>E</sub>	Material shelf depth	310 ... 1220 mm

	Plate	B <sub>E</sub> (mm)	T <sub>E</sub> (mm)	ESD	No.
<b>B</b> Material shelf Basic	PP	610	410		<b>3 842 538 460</b>
	SB	610	410	⚠	<b>3 842 538 461</b>

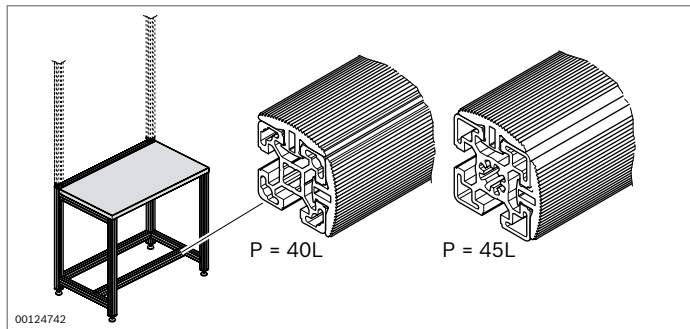


**Lettering clips**

- ▶ For labeling material shelves
- ▶ Suitable for labeling all profiles with 8 mm or 10 mm slot
- ▶ For clipping into the slot

Color: Light gray (7035); transparent

	L (mm)	⚠	No.
Clip N8	2000	20	<b>3 842 537 113</b>
	102	20	<b>3 842 537 650</b>
Clip N10	2000	20	<b>3 842 537 116</b>
	102	20	<b>3 842 537 651</b>



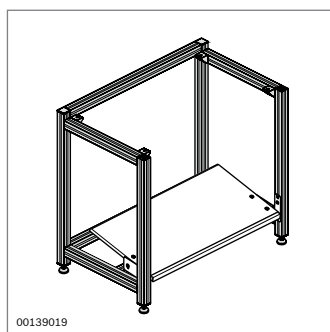
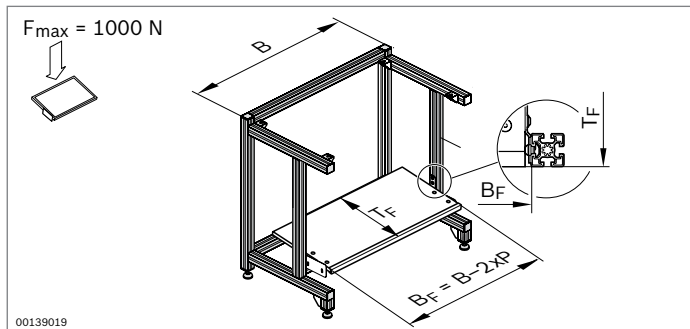
	L (mm)	ESD	No.
Rubber profile	2000	10	3 842 537 135
	30 ... 2000		3 842 994 979/L

### Rubber profile



- ▶ To avoid impact on hard edges such as when setting down impact-sensitive products
- ▶ As a footrest: Clip in from top and front on the cross strut of the workstation
- ▶ Very simple and inexpensive
- ▶ Suitable for the construction of ESD workstations

Material: EPDM; conduction resistance RA = 1x10<sup>3</sup> - 1x10<sup>9</sup> Ω



### Footrest Economic



- ▶ For 0-7° inclination
- ▶ For low-fatigue sitting at the workstation
- ▶ Attachment to the table frame for box or desk type
- ▶ Oil-resistant
- ▶ Aluminum U-profile on front edge to prevent premature wear of the footrest edge
- ▶ Suitable for the construction of ESD workstations

Material: Chipboard; hard-coated; conduction resistance RA = 1x10<sup>6</sup> Ω (DIN EN 61 340-5-1)

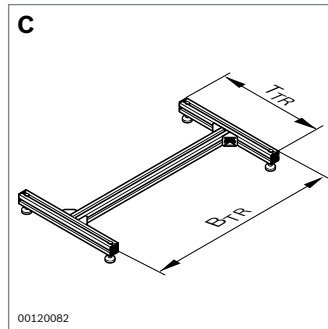
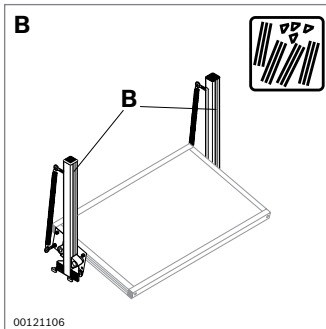
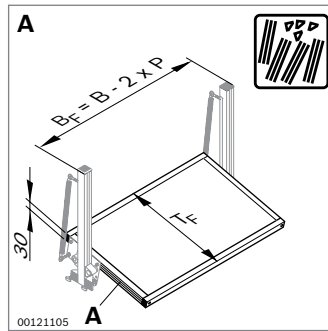
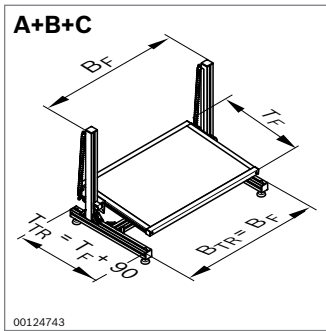
Scope of delivery: Includes fastening kit (10 mm slot)

ESD scope of delivery: Includes fastening kit and grounding cable (10 mm slot) (see page 62)

See technical data (see page 179)

Footrest Economic		3 842 998 256
ESD	Conductivity	Yes, no
B <sub>F</sub>	Footrest width	400 ... 1020 mm
T <sub>F</sub>	Footrest depth	300 ... 600 mm

	B <sub>F</sub> (mm)	T <sub>F</sub> (mm)	ESD	No.
Footrest Economic; assembled	900	400		3 842 538 771
	900	400		3 842 538 772



### Footrest Basic Support frame



#### Footrest Basic

- ▶ With fixed inclination of 5°
- ▶ For low-fatigue sitting at the workstation
- ▶ Easy height adjustment while seated (adjustment range: 250 mm)
- ▶ Installed on table frame using attachment kit
- ▶ Installed on free-standing support frame using attachment kit
- ▶ Oil-resistant
- ▶ Suitable for the construction of ESD workstations

Frame material: Aluminum; anodized

Rest material: Chipboard; hard-coated; conduction resistance  $RA = 1 \times 10^6 \Omega$  (DIN EN 61 340-5-1)

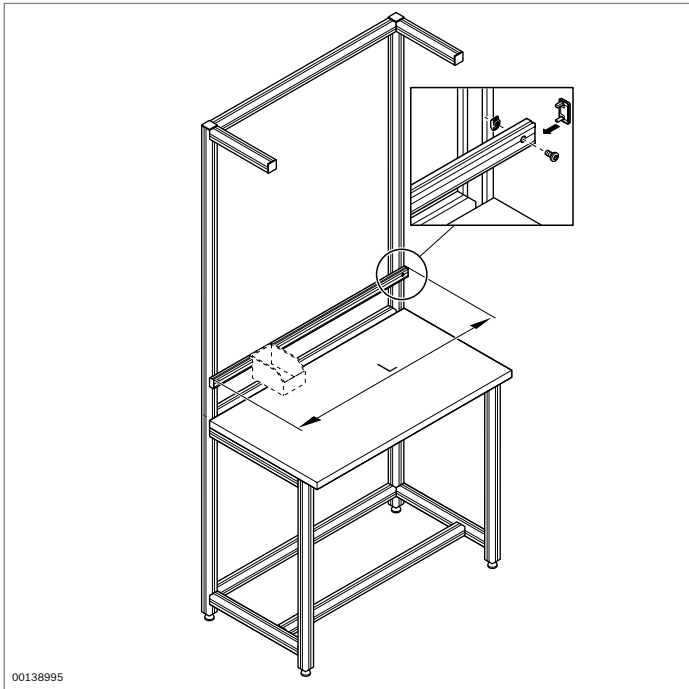
Scope of delivery: Includes fastening kit (10 mm slot)

ESD scope of delivery: Includes fastening kit and grounding cable (10 mm slot) (see page 62)

See technical data (see page 179)

A, B, C Footrest Basic		3 842 998 257
A	Design	Disassembled, assembled
ESD	Conductivity	Yes, no
$B_F$	Footrest width	400 ... 1020 mm
$T_F$	Footrest depth	300 ... 600 mm
$T_R$	Support frame	Yes, no

		$B_F$ (mm)	$T_F$ (mm)	$B_{TR}$ (mm)	$T_{TR}$ (mm)	ESD	No.
A	Footrest Basic	900	530				3 842 515 160
		900	530			⚡	3 842 538 098
B	Attachment kit						3 842 537 737
A+B	Footrest Basic + attachment kit	900	530				3 842 519 735
		900	530			⚡	3 842 538 409
C	Support frame			900	558		3 842 521 013

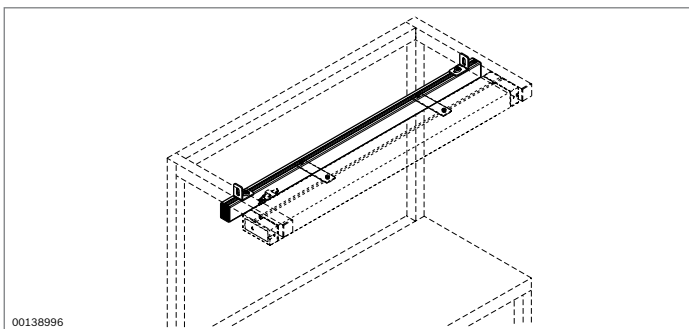
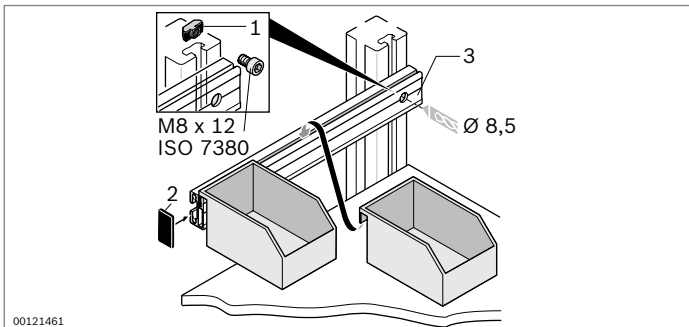


## Applications

### Suspension profile application

- ▶ To provide ready access to plastic grab containers and trays at the workstation or in the material shuttle
- ▶ Customized assembly from individual components (cf. “Components” chapter. see page 160)

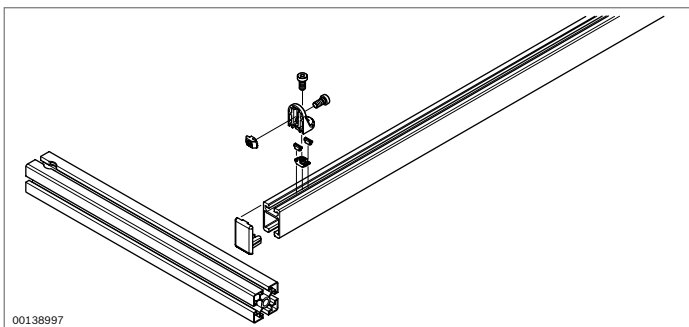
See technical data (see page 180)

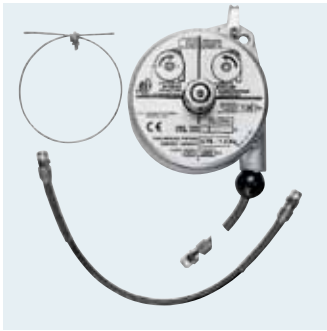


### Hanger application

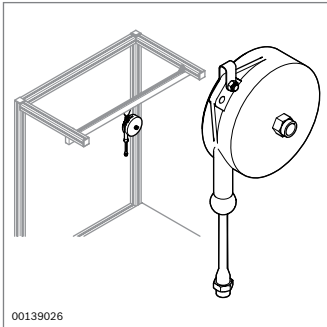
- ▶ For the ergonomic positioning of tools in combination with trolley or slide hanger and spring pull
- ▶ For hanging system lamps at the workstation
- ▶ Customized assembly from individual components (cf. “Components” chapter. see page 160)

See technical data (see page 181)

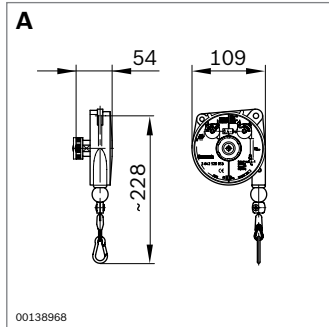




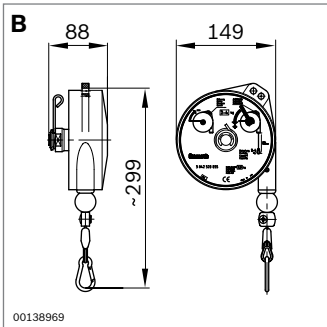
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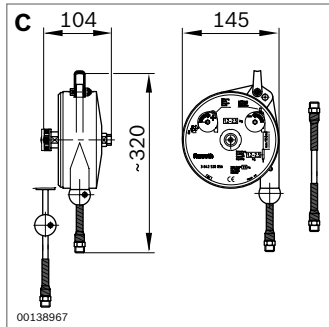
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00138969



00138967

## Spring pull

### Spring pull (A, B)

- ▶ Ergonomic positioning of tools, e.g. screwdrivers, to reduce uneven and high strain on workers
- ▶ The bearing load and cable length are adjustable
- ▶ Assembly at workstation with hanger and trolley or slide hanger

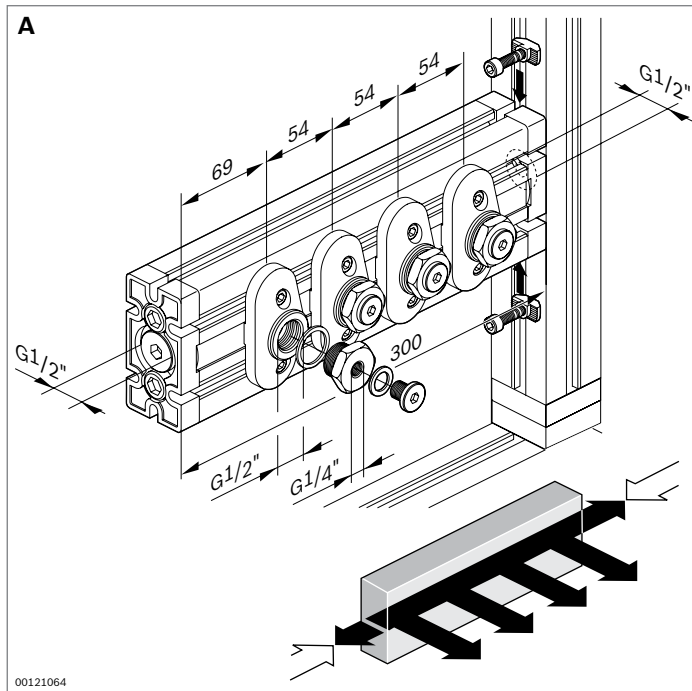
Scope of delivery: Includes safety wire

### Spring pull with retractable cable (C)

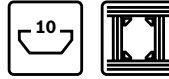
- ▶ Ergonomic positioning of air-powered tools, e.g. pneumatic screwdrivers, to reduce uneven and high strain on workers
- ▶ Compressed air supplied via air bar
- ▶ Compressed air connection for feed line and tool connection: G1/4"
- ▶ The bearing load and cable length are adjustable
- ▶ Assembly at workstation with hanger and trolley or slide hanger

Scope of delivery: Includes safety wire, connection tubing G1/4"

	Bearing load (kg)	System weight (kg)	Retractable cable (mm)	No.
A Spring pull	0.4 ... 1.0	0.6	1600	<b>3 842 520 053</b>
	1.0 ... 2.0	0.6	1600	<b>3 842 520 054</b>
B Spring pull	2.0 ... 4.0	2.0	2000	<b>3 842 520 055</b>
C Spring pull with retractable cable	1.2 ... 2.5	1.4	1350	<b>3 842 520 056</b>



### Air bar (A)

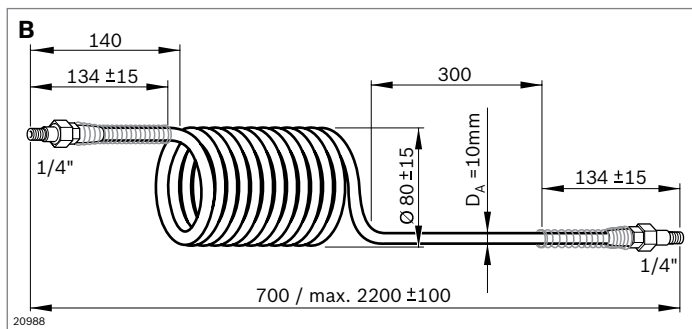


- ▶ Distributor and connection point at workstation for compressed air for up to 4 tools
- ▶ Max. 8 bar
- ▶ Compressed air connection for feed line: G1/2"
- ▶ Compressed air connection for discharge: G1/2" or G1/4" (reducing adapters)

Material of seals: NBR

Scope of delivery: Includes fastening elements for 10 mm slot

	No.
<b>A</b> Air bar	<b>3 842 352 088</b>



### Spiral hose (B)

- ▶ For connecting tools to the air bar
- ▶ Tubing connection with kink protection, rotatable with sealing ring; 1/4" external thread
- ▶ Max. extension length 2200 mm
- ▶ Operating pressure:  $P_{\max} = 8 \text{ bar}$  at 20 °C
- ▶ Requires de-oiled air

Tubing material: PU; blue

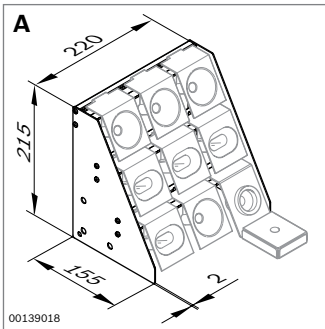
Connection material: Steel

	No.
<b>B</b> Spiral hose	<b>3 842 544 790</b>

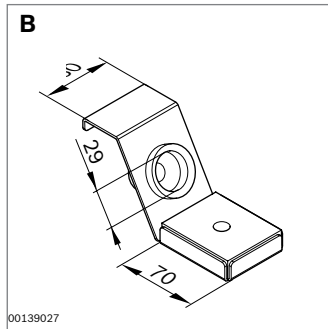




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00139027

### Tool shelf Tool holder



- ▶ For ergonomic and handy positioning of tools at the workstation
- ▶ Tool holder (**B**) is hung in the tool shelf (**A**).
- ▶ Tool shelf suitable for suspending tool holders (see page 33)
- ▶ Customized assembly of individual components: see “Components” chapter (see page 160)

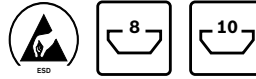
Material **B**: VA

	<b>ESD</b>	<b>No.</b>
<b>A</b> Tool shelf (without tool holder)	⚡	<b>3 842 514 519</b>
<b>B</b> Tool holder for soldering irons	⚡	<b>3 842 514 524</b>



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## Tool holders Container mount

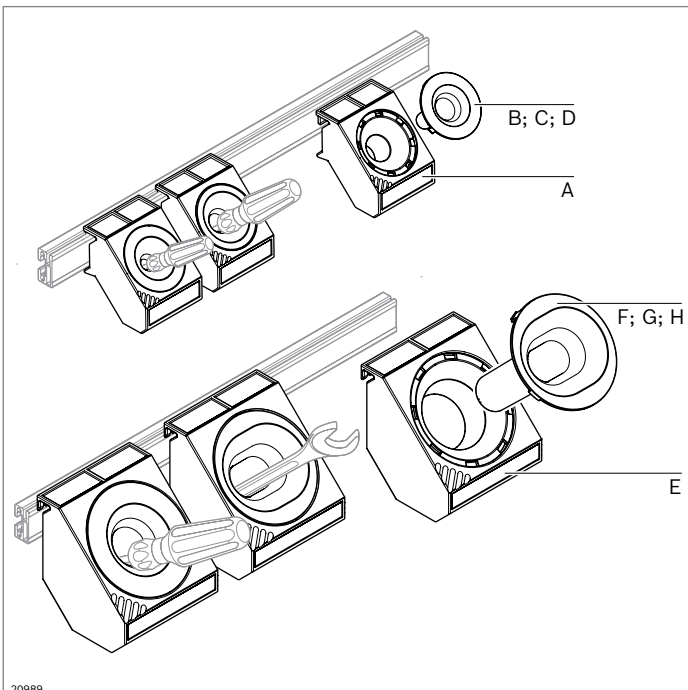


### Tool holders

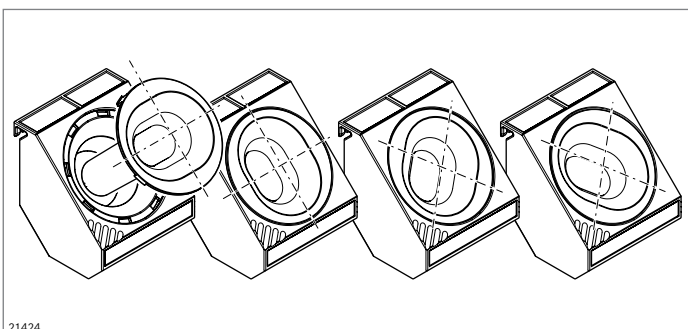
- ▶ For ergonomic and handy positioning of tools at the workstation
- ▶ Time savings of 10% to 20% based on MTM, achievable with
  - Defined place for fast retrieval
  - 45° docking aids in bucket-tray for easy, ergonomic depositing and removal of tools
  - 45° tilt of tool holder for easy picking
- ▶ Round and oval bucket-trays, open or closed base, for insertion in matching tool holders
- ▶ Four different positions possible for oval bucket-trays in tool holders for ergonomic picking and placing
- ▶ Tool holder to hang in a suspension profile or container mount
- ▶ Tool holder with space for adhesive label

Material: PA 6; black

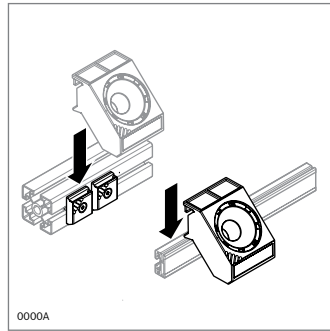
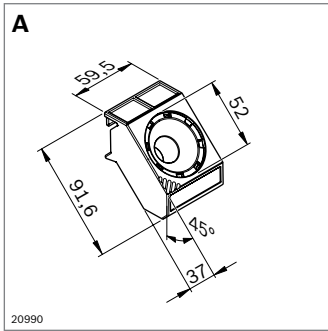
- ▶ Self-assembly elements for custom configurations of tool holder shelves: see “Components” chapter (see page 160)



20989

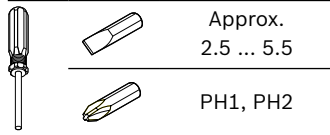
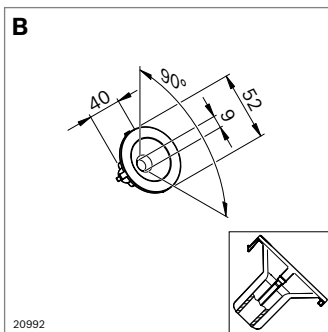


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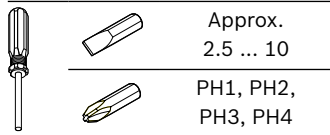
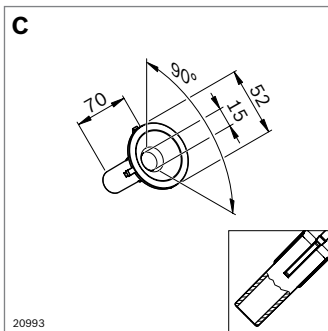


**Tool holder D52 for bucket-trays D52-9 and D52-15**

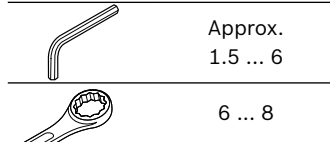
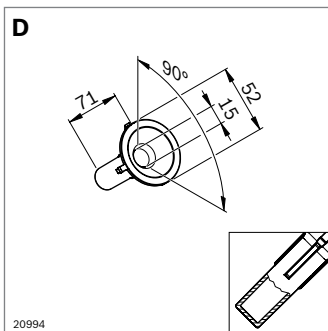
	ESD	No.
A Tool holder D52	⚡	3 842 544 832



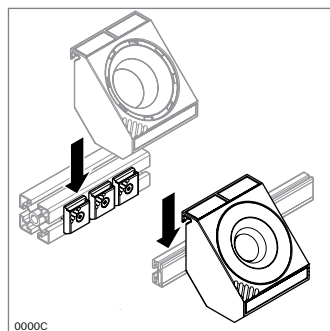
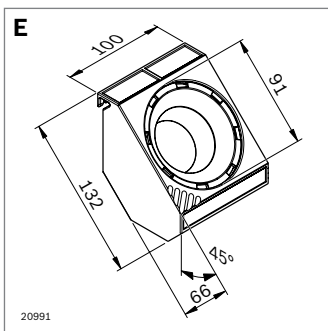
	ESD	No.
B Bucket-tray D52-9 (open base)	⚡	3 842 544 834



	ESD	No.
C Bucket-tray D52-15 (open base)	⚡	3 842 544 835

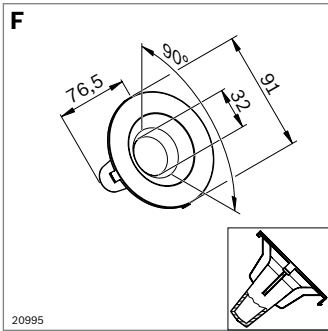


	ESD	No.
D Bucket-tray D52-15 (closed base)	⚡	3 842 544 836



**Tool holder D91 for bucket-trays D91-32, D91 Oval53 L100 and D91 Oval53 L136**

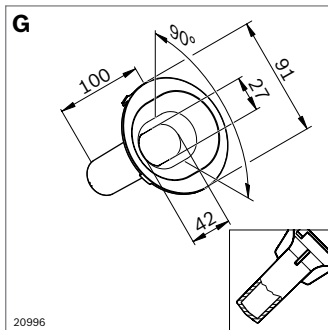
	ESD	No.
E Tool holder D91	⚡	3 842 544 833



20995

	Approx. 1.5 ... 5
	6 ... 9
	6 ... 9

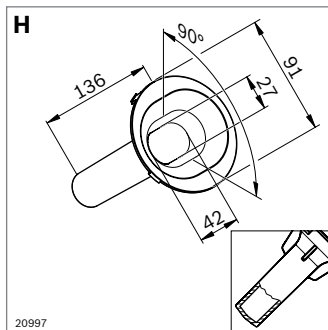
	ESD	No.
<b>F</b> Bucket-tray D91-32 (closed base)		<b>3 842 544 837</b>



20996

	Approx. 4 ... 5.5
	PH1, PH2
	Approx. 5 ... 10
	10 ... 19
	10 ... 19

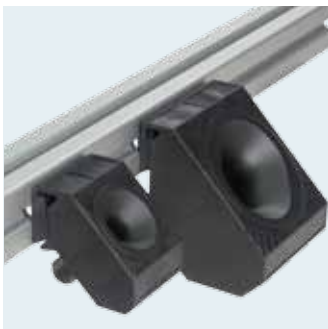
	ESD	No.
<b>G</b> Bucket-tray D91-oval53-L100 (closed base)		<b>3 842 546 744</b>



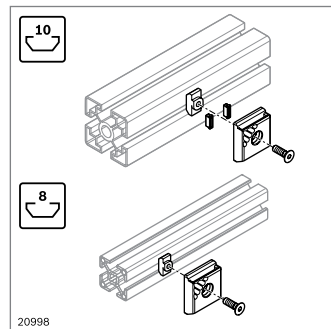
20997

	Approx. 4 ... 5.5
	PH1, PH2
	Approx. 5 ... 10
	10 ... 19
	10 ... 19

	ESD	No.
<b>H</b> Bucket-tray D91-oval53-L136 (closed base)		<b>3 842 546 745</b>



22034



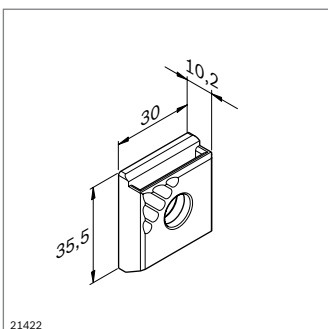
20998

**Container mount**

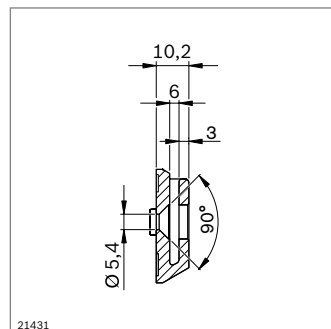
- ▶ Container mount to hang tool holders, grab containers, grab trays, and grab ledges
- ▶ Suitable for 8 mm and 10 mm slots

Material: PA 66; black

Scope of delivery: Includes fastening material for fastening in 8 mm and 10 mm slots

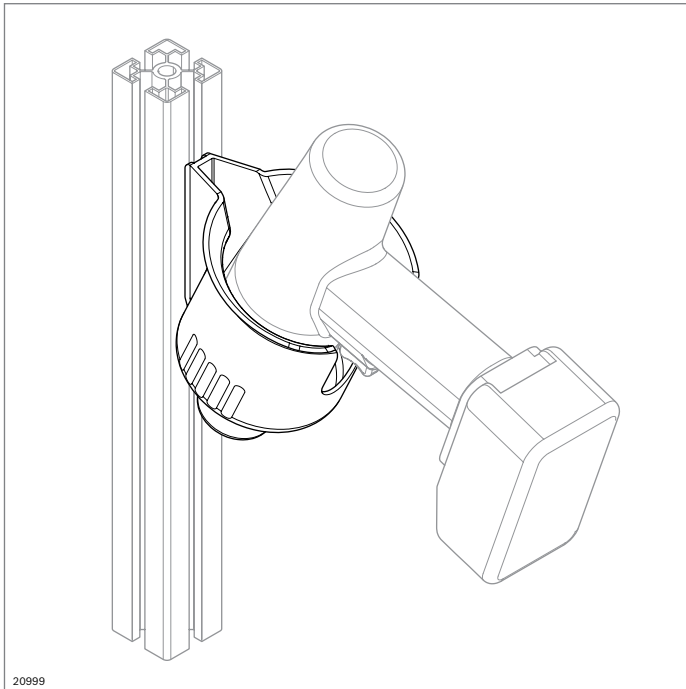


21422



21431

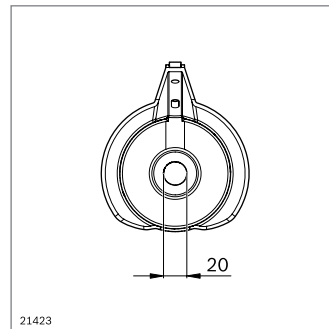
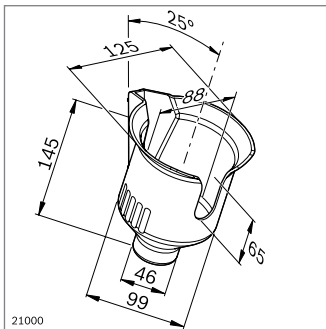
	ESD	No.
Container mount	10	<b>3 842 544 797</b>



## Tool holder D95



- ▶ Quiver-type tool holder for nutrunners up to 2 kg (the use of a spring pull is recommended for heavier nutrunners, see page 31)
- ▶ Time savings of 10% to 20% based on MTM, achievable with
  - Defined place for fast picking
  - 45° docking aids for easy, ergonomic depositing and removal
- ▶ Tool holder open at bottom. This makes it possible to hold nutrunners with long tool inserts. Dirt does not collect in the quiver
- ▶ Notched housing for clearly defined stowage
- ▶ Centering lugs for easy fastening in vertical 10 mm slot




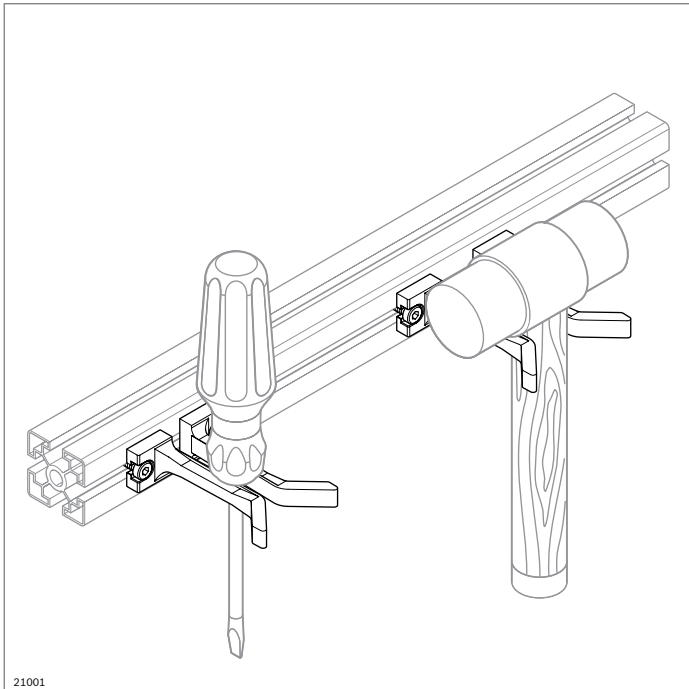
Material: PA 6; black

Scope of delivery: Includes fastening material for fastening in 10 mm slots

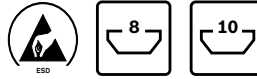
**ESD No.**

Tool holder D95

 **3 842 544 772**



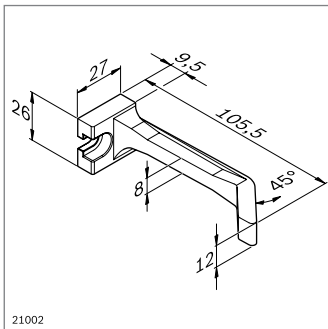
### Tool holder L105





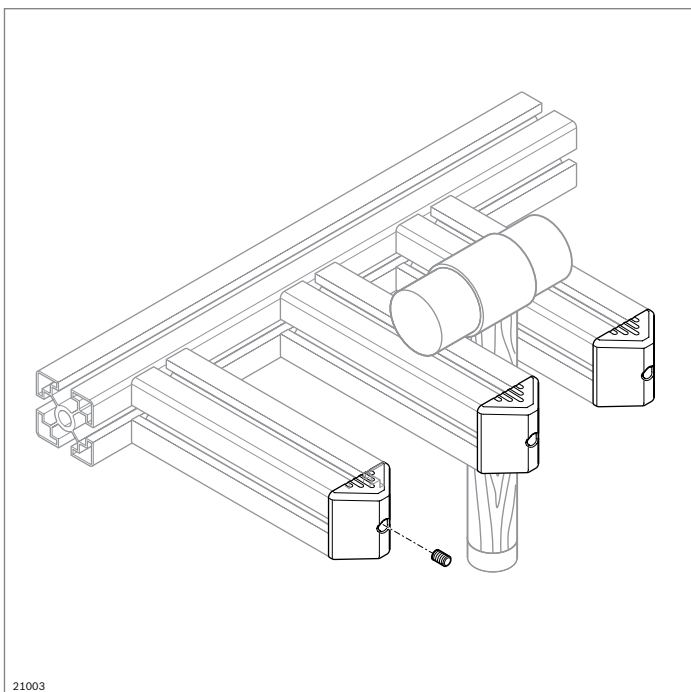
- ▶ For ergonomic and handy positioning of tools at the workstation
- ▶ Universal use possible, e.g. for screwdrivers, pliers, or hammers
- ▶ Mounting in 8 mm and 10 mm slots
- ▶ Time savings of 10% to 20% based on MTM, achievable with
  - Defined place for fast retrieval
  - 45° docking aids and tactile feedback for easy depositing

Material: PA 6; black

Scope of delivery: Includes fastening material for fastening in 8 mm or 10 mm slots



	 <b>ESD No.</b>
Tool holder L105	10  <b>3 842 544 768</b>

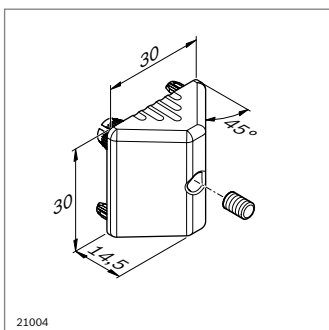



### Guide plate 30x30

- ▶ Guide plate 30x30 as cap for 30x30 profile
- ▶ For the construction of supply racks (minomi racks) for the simple suspension of tools and parts between 30x30 profiles
- ▶ Yellow coloring for faster recognition by workers
- ▶ Time savings of 10% to 20% based on MTM, achievable with
  - Defined place for fast retrieval
  - 45° docking aids for easy depositing

Material: PA 6; yellow (RAL 1003)

Scope of delivery: Includes headless setscrew for added stability



		No.
Guide plate 30x30	10	<b>3 842 544 770</b>

## Workstation lighting

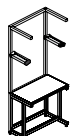
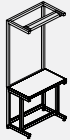
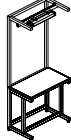

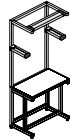
The right lighting, adapted to the activity at the workstation, is a basic prerequisite for high efficiency and processing quality. Optimum lighting prevents fatigue, improves concentration, and performance, and reduces the number of errors.

In addition to climate, noise, mechanical vibrations, and hazardous substances, lighting is another environmental factor that must be taken into consideration.

Important aspects for planning workstation lighting include:

- ▶ Avoiding strong contrasts
- ▶ Avoiding glare and reflection

DIN EN 12 464 or the table below contain the required mid-range lighting strengths.

<b>The right Rexroth system light for every task</b>						
<b>Calculation example for work top lighting</b>						
Rexroth SL 78 (rated lighting strength) 681 Lux (with a distance from the lamp to the table top of 1.25 m) + ambient lighting 300 Lux = lighting on the table top of 800 Lux						
						
Tasks	Required lighting strength (lux)	Rexroth SL 36 Duo / SL 15 LED Duo	Rexroth SL 72 / economic	Rexroth SL 20 / economic	Rexroth SL 78/SL 30 LED	Rexroth SL 78 + SL 36 Duo / SL 30 LED + SL 15 LED Duo
Rough and average machine and assembly tasks such as turning, milling, and planing	300	■ <sup>1)</sup>	■ <sup>1)</sup>	■ <sup>1)</sup>		
Fine machine tasks with permissible deviations	500	■ <sup>1)</sup>	■ <sup>1)</sup>	■ <sup>1)</sup>	■ <sup>1)</sup>	
Fine assembly tasks, e.g. telephones, winding medium-sized coils, marking, inspection, and measuring stations	750	■■■■ <sup>1)</sup>	■■■■ <sup>1)</sup>	■■■■ <sup>1)</sup>	■ <sup>1)</sup>	■ <sup>1)</sup>
Very fine assembly, e.g. measuring instruments, assembly of tools, gauges, and equipment, precision mechanics and micromechanics	1000				■■■■ <sup>1)</sup>	■ <sup>1)</sup>
Assembly, inspection, and adjustment of extremely small parts	1500					■■■■ <sup>1)</sup>

<sup>1)</sup> Distance between the table top and lamp: 1.25 m

■ Lamp lighting strength sufficient for task

■■■■ Lamp lighting strength + ambient light (300 lux) sufficient for task

See technical data (see page 183)



Rexroth's system lamp range provides glare and flicker-free light of the highest quality. You can operate the lamps as required for the job at hand either individually or in combination with one another.

This allows you to provide your workstations with uniform illumination of outstanding quality. The lamps can be switched on and off when plugged into a socket with a power switch.

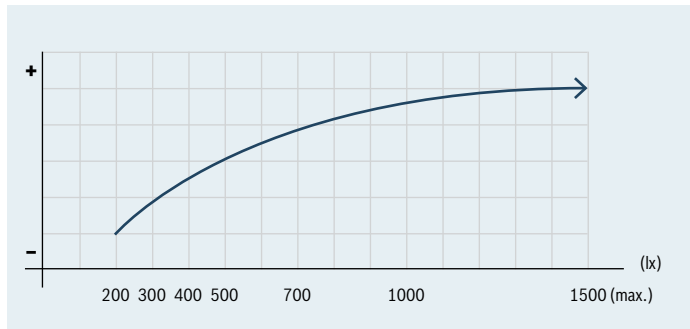
The lamps can be connected in series using the connection cables. The ready-to-use connection and mains cables allow you to install the lamps yourself without needing an electrician. The lamps are suitable for use at ESD workstations.

**Lighting on a new level: LED system lamps**

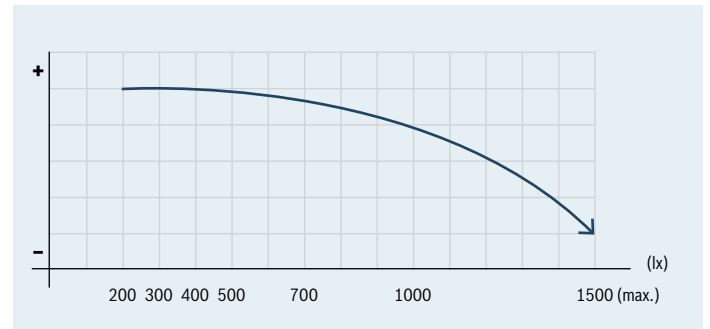
The design of the LED lamps sets itself apart by combining parabolic louvers and diffuser foil.

The use of LEDs as the illuminant makes possible low energy consumption, long life, and maintenance-free lamps. Staff members can adjust the lighting strength that they need to match their age using a controller. Using this controller, it is possible to dim the lighting strength.

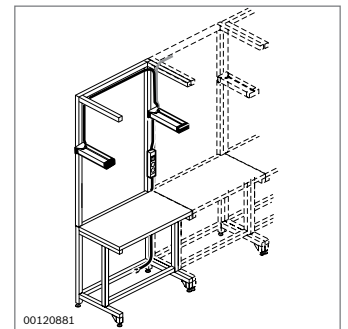
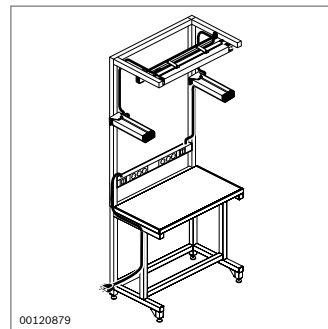
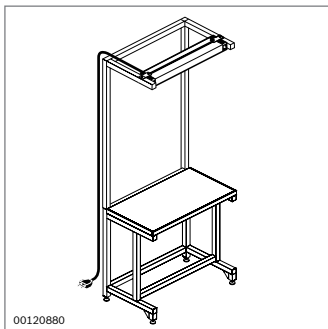
**Increased efficiency with Rexroth system lamps**



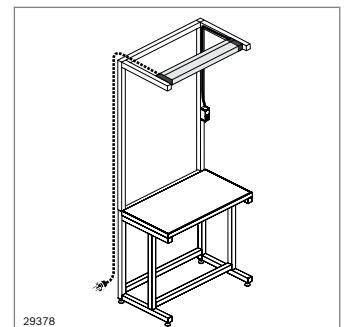
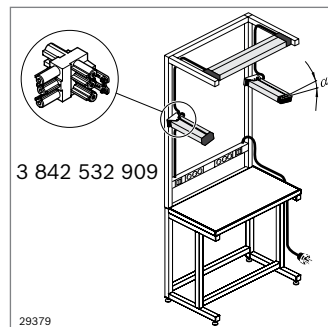
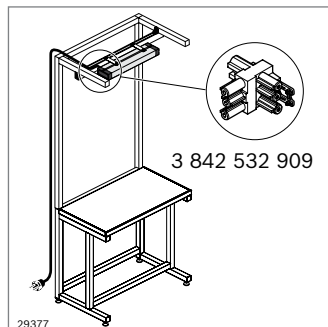
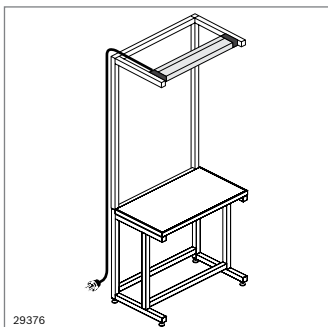
**Reduction of errors with Rexroth system lamps**

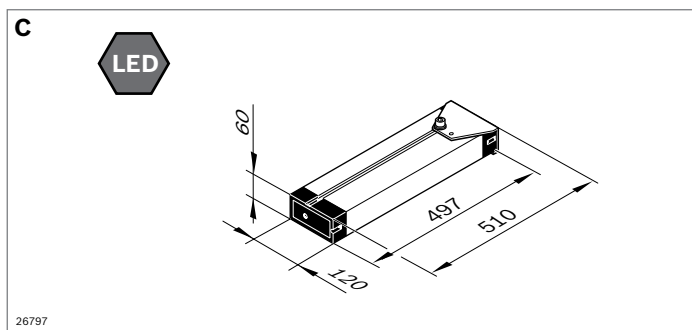
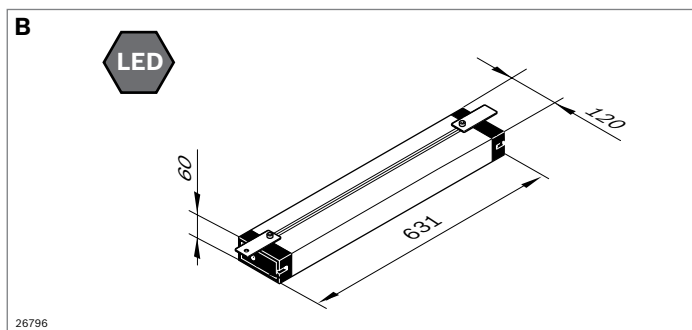
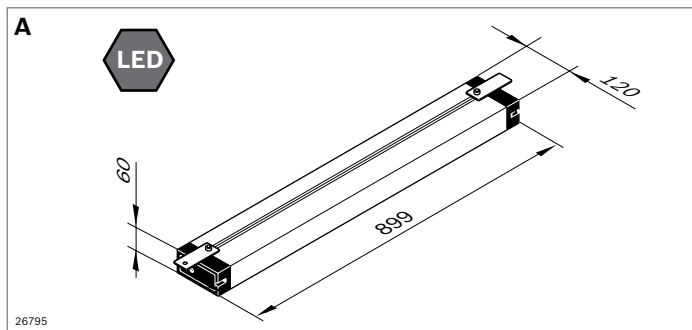


**Conventional lamps**



**LED lamps (Fig. 4 including controller)**





## LED system lamps



- ▶ Glare-free light thanks to the combination of a parabolic louver and diffuser foil
- ▶ 60% energy savings compared to conventional workstation lighting
- ▶ Color temperature: 5000 K
- ▶ With GST connecting socket (black = 230 V; blue = dimming)
- ▶ Service life: 60000 h
- ▶ Suitable for use at ESD workstations
- ▶ SL 30 LED: Attached to a strut extension (workstations with B = 990 mm) or to a hanger (workstations with B ≠ 990 mm)
- ▶ SL 20 LED: Mounting to a hanger
- ▶ SL 15 LED: Mounting to the vertical strut or the strut extension

Protection class: IP 20 (DIN EN IEC 60529)

Housing material: Aluminum, anodized

Scope of delivery: Includes fastening kit (10 mm slot)

Accessories, required: Mains cable or connecting cable (see page 48)

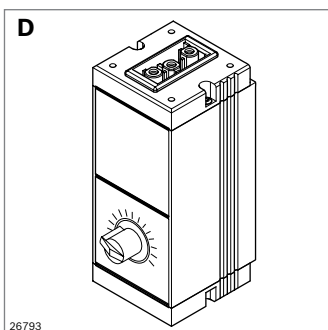
Accessories, optional:

Controller (**D**) (see page 43);

DIM (**E**) connecting cable (see page 43);

H distributor POWER (230 V) (**F**) (see page 43)

		Fluorescent tubes	Service life (h)	Voltage	Weight (kg)	No.
<b>A</b>	SL 30 LED	EU LED/30 W	60000	220-240 V/50 Hz; 60 Hz	3.2	<b>3 842 552 220</b>
<b>B</b>	SL 20 LED	EU LED/20 W	60000	220-240 V/50 Hz; 60 Hz	2.4	<b>3 842 552 222</b>
<b>C</b>	SL 15 LED	EU LED/15 W	60000	220-240 V/50 Hz; 60 Hz	2.0	<b>3 842 552 224</b>

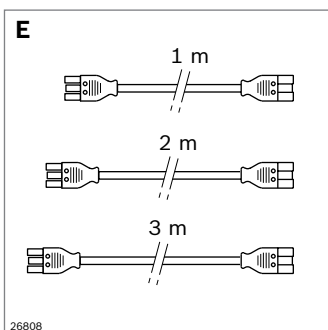


**Controller (D)**

- ▶ By turning the rotary button, you can dim the lighting strength of the LED system lamps

Accessories, required: DIM (E) connecting cable

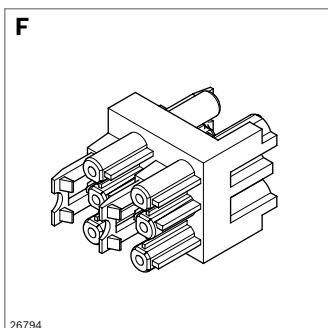
		No.
<b>D</b>	Controller	<b>3 842 552 226</b>



**DIM (E) connecting cable**

- ▶ For wiring the controller to the system lamps
- ▶ Safe Plug & Play installation available in different lengths
- ▶ Color of plug: blue
- ▶ Color of cable: black

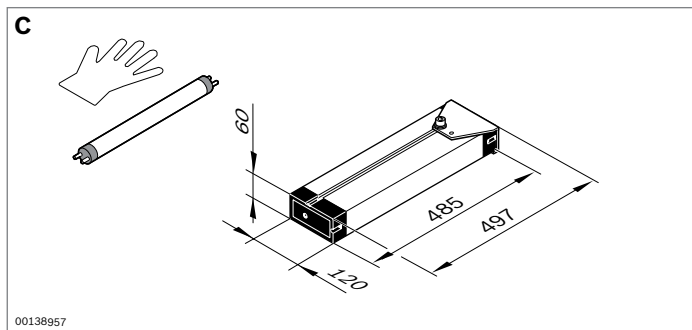
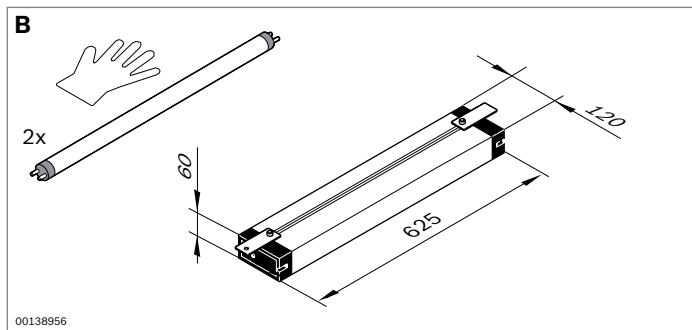
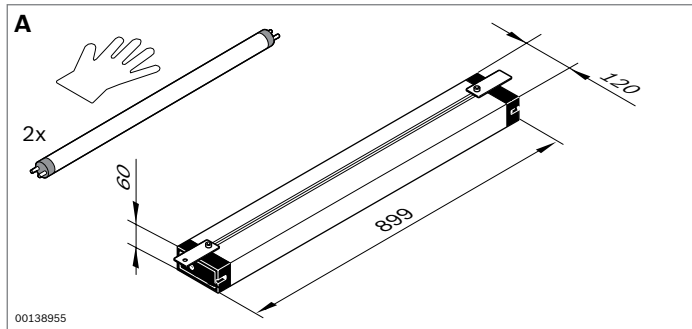
		L (m)		No.
<b>E</b>	Connection cable DIM	EU	1 1	<b>3 842 553 139</b>
		EU	2 1	<b>3 842 553 140</b>
		EU	3 1	<b>3 842 553 141</b>



**POWER H-distributor (230 V) (F)**

- ▶ For connecting up to three lamps to one mains connection
- ▶ Compatible with 40x40 or 45x45 cable duct (see MGE 13.0 Page 11-2)
- ▶ Color: black

		No.
<b>F</b>	POWER H-distributor (230 V)	<b>3 842 553 142</b>



## System lamps



### Electronic

- ▶ Glare-free light of the highest quality (quality class A according to DIN 5035-T2); color temperature: 4000 K
- ▶ With electronic lamp ballast for flicker-free light (> 25 kHz)
- ▶ With three GST outlet sockets for looping through the electrical current
- ▶ Very inexpensive to operate (low power consumption, long life)
- ▶ Low weight
- ▶ Suitable for use at ESD workstations
- ▶ SL 78 electronic: Attached to a strut extension (workstations with B = 990 mm) or to a hanger (workstations with B ≠ 990 mm)
- ▶ SL 48 electronic: Mounting to a hanger
- ▶ SL 36 electronic: Mounting to the vertical strut of the strut extension

Protection class: IP 20 (DIN EN IEC 60529)

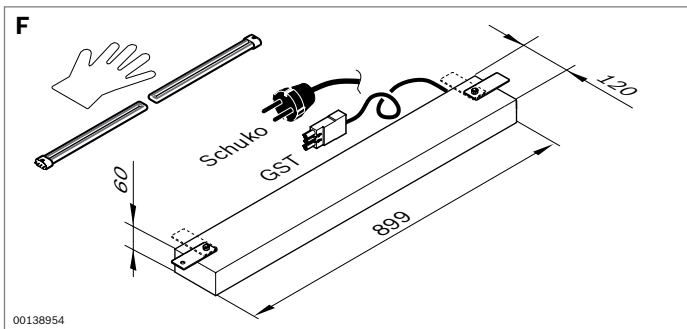
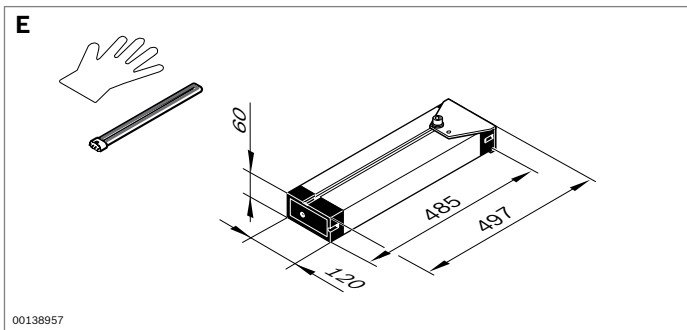
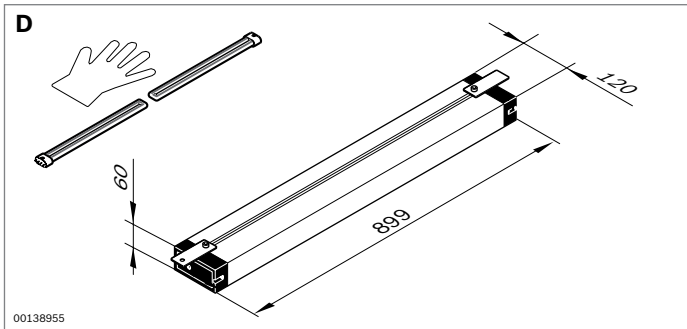
Housing material: Aluminum, anodized

Scope of delivery: Includes fluorescent tubes and insulating fastening kit (10 mm slot)

Required accessories: Mains cable or connecting cable, if necessary (see page 48 )

		Fluorescent tubes	Service life (h)	Voltage	Weight (kg)	No.
<b>A</b> SL 78 electronic	EU <sup>1)</sup>	2x T5-L 39 W	18000	220-240 V/ 50 Hz; 60 Hz	2.8	<b>3 842 537 343</b>
	USA/CDN <sup>2)</sup>	2x T5-L 39 W	18000	120-277 V/ 50 Hz; 60 Hz	2.8	<b>3 842 537 345</b>
<b>B</b> SL 48 electronic	EU <sup>1)</sup>	2x T5-L 24 W	18000	220-240 V/ 50 Hz; 60 Hz	2.3	<b>3 842 537 347</b>
	USA/CDN <sup>2)</sup>	2x T5-L 24 W	18000	120-277 V/ 50 Hz; 60 Hz	2.3	<b>3 842 537 349</b>
<b>C</b> SL 36 electronic	EU <sup>1)</sup>	1x TC-L 36 W	18000	220-240 V/ 50 Hz; 60 Hz	1.6	<b>3 842 516 713</b>
	USA/CDN <sup>2)</sup>	1x TC-L 36 W	18000	120-277 V/ 50 Hz; 60 Hz	1.6	<b>3 842 537 351</b>

<sup>1)</sup> Test marks of VDE, ENEC; <sup>2)</sup> Test marks of UL, CSA, FCC



**SL 36, SL 72**

- ▶ Glare-free light of the highest quality (quality class A according to DIN 5035-T2)
- ▶ With low-loss lamp ballast and starter
- ▶ With one (SL 36) or three (SL 72) GST outlet sockets for looping through the electrical current
- ▶ Suitable for use at ESD workstations
- ▶ SL 72: Attached to a strut extension (workstations with B = 990 mm) or to a hanger (workstations with B ≠ 990 mm)
- ▶ SL 36: Mounting to the vertical strut of the strut extension

Protection class: IP 20 (IEC 529)

Housing material: Aluminum, anodized

Scope of delivery: Includes fluorescent tubes and insulating fastening kit (10 mm slot)

Required accessories: Mains cable or connecting cable, if necessary (see page 48 )

**Economic**

- ▶ Glare-free light of the highest quality (quality class A according to DIN 5035-T2)
- ▶ Very inexpensive
- ▶ Suitable for use at ESD workstations
- ▶ With mains cable (4 m) with grounded or GST plug
- ▶ Attached to a strut extension (workstations with B = 990 mm) or to a hanger (workstations with B ≠ 990 mm)

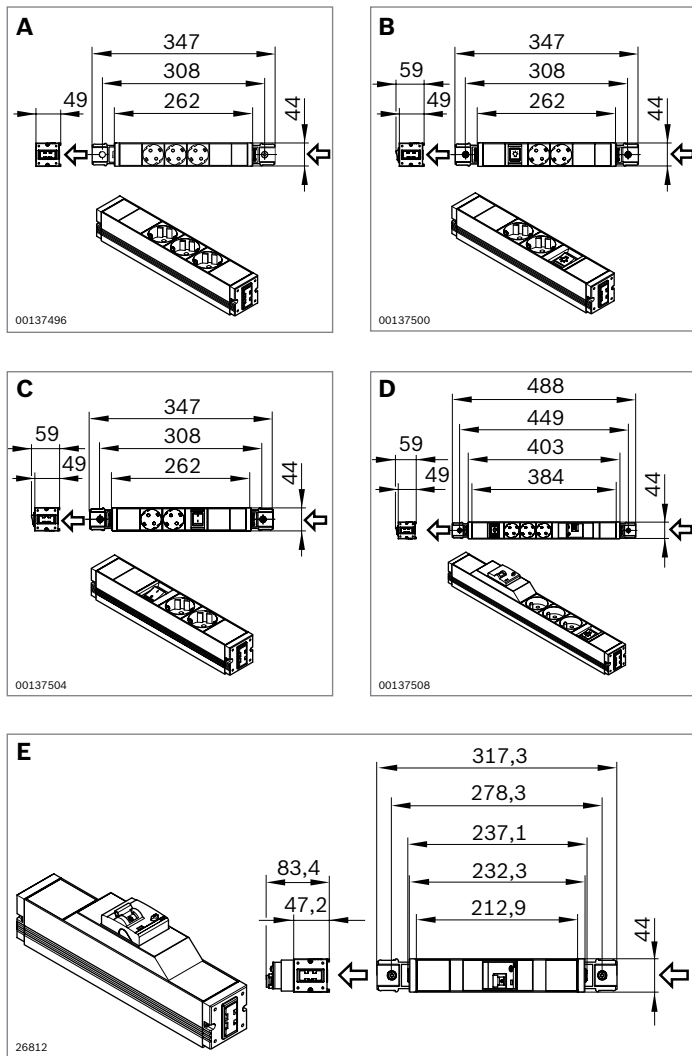
Protection class: IP 20 (IEC 529)

Housing material: Sheet steel; powder-coated, dusty gray, RAL 7037

Scope of delivery: Includes fluorescent tubes and insulating fastening kit (10 mm slot)

		Fluorescent tubes	Service life (h)	Voltage	Weight (kg)	No.
<b>D</b>	SL 72	EU <sup>1)</sup> 2x TC-L 36 W	8000	230 V/50 Hz	4.1	<b>3 842 514 653</b>
<b>E</b>	SL 36	EU <sup>1)</sup> 1x TC-L 36 W	8000	230 V/50 Hz	2.2	<b>3 842 516 712</b>
<b>F</b>	SL 72 economic, grounded	EU <sup>1)</sup> 2x TC-L 36 W	8000	230 V/50 Hz	4.3	<b>3 842 540 924</b>
		USA/CDN <sup>2)</sup> 2x TC-L 36 W	8000	120-277 V/ 50 Hz; 60 Hz	4.3	<b>3 842 540 033</b>
<b>F</b>	SL 72 economic, GST	EU <sup>1)</sup> 2x TC-L 36 W	8000	230 V/50 Hz	4.3	<b>3 842 540 925</b>
		USA/CDN <sup>2)</sup> 2x TC-L 36 W	8000	120-277 V/ 50 Hz; 60 Hz	4.3	<b>3 842 540 034</b>

<sup>1)</sup> Test marks of VDE, ENEC; <sup>2)</sup> Test marks of UL, CSA, FCC



### Socket strip

- ▶ Socket strip with two or three grounded plug sockets
- ▶ Socket inserts rotated 45° for space-saving arrangement with angled plugs
- ▶ With GST outlet socket including cap for looping through the electrical current
- ▶ When connecting several products in series, observe the maximum permissible current. See the Table below
- ▶ Intended for permanent installation
- ▶ Only permissible in combination with installation elements from Rexroth
- ▶ Versions with switchable inlet and/or outlet and residual current device
- ▶ Suitable for use at ESD workstations
- ▶ Tripping current of RCD: 30 mA

Protection class: IP 20 (DIN EN IEC 60529)

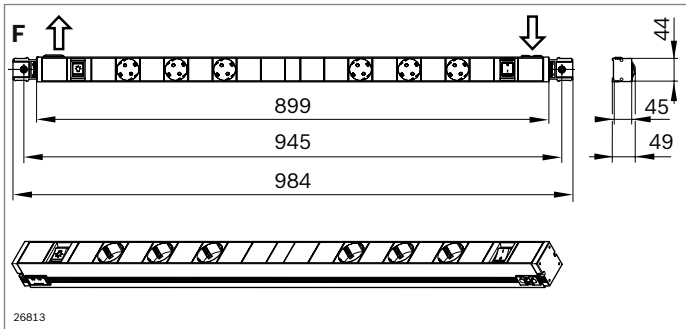
Material: Aluminum, anodized; insert: plastic, black

Scope of delivery: Includes insulating fastening kit (10 mm slot)

Required accessories: Mains cable or connecting cable, if necessary (see page 48 )

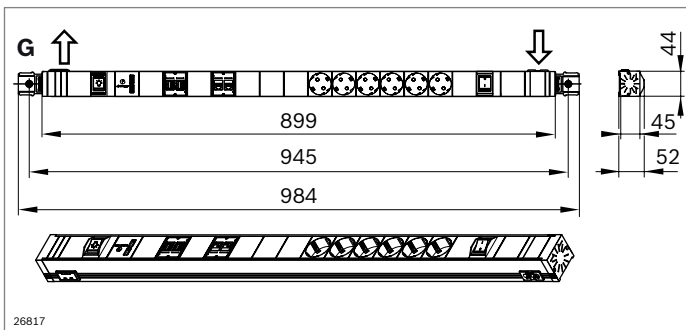
	Country	I (A)/U (V)	No.
<b>A</b> Socket strip 	D <sup>1)</sup>	Max. 16 A/230 V	<b>3 842 539 842</b>
	F <sup>1)</sup>	Max. 16 A/230 V	<b>3 842 539 852</b>
	GB <sup>1)</sup>	Max. 16 A/230 V	<b>3 842 539 862</b>
	USA/CDN <sup>2)</sup>	Max. 15 A/125 V	<b>3 842 539 880</b>
<b>B</b> Socket strip, switchable outlet 	D <sup>1)</sup>	Max. 16 A/230 V	<b>3 842 539 844</b>
	F <sup>1)</sup>	Max. 16 A/230 V	<b>3 842 539 854</b>
	GB <sup>1)</sup>	Max. 13 A/230 V	<b>3 842 539 864</b>
	CH <sup>1)</sup>	Max. 10 A/230 V	<b>3 842 539 872</b>
	USA/CDN <sup>2)</sup>	Max. 15 A/125 V	<b>3 842 539 882</b>
<b>C</b> Socket strip, switchable sockets, switchable outlet 	D <sup>1)</sup>	Max. 16 A/230 V	<b>3 842 539 846</b>
	F <sup>1)</sup>	Max. 16 A/230 V	<b>3 842 539 856</b>
	GB <sup>1)</sup>	Max. 13 A/230 V	<b>3 842 539 866</b>
<b>D</b> Socket strip, switchable outlet, residual current device $I_{\Delta n} = 30 \text{ mA}$	D <sup>1)</sup>	Max. 16 A/230 V	<b>3 842 542 060</b>
	F <sup>1)</sup>	Max. 16 A/230 V	<b>3 842 539 858</b>
<b>E</b> Ground fault circuit interrupter $I_{\Delta n} = 30 \text{ mA}$	EU	Max. 16 A/230 V	<b>3 842 552 214</b>

<sup>1)</sup> Test mark of VDE; <sup>2)</sup> Test marks of UL, CSA, FCC



### Power strip (F)

- ▶ Power strip with six grounded plug sockets for attachment to a strut extension (workstations with B = 990 mm)
- ▶ Suitable for use at ESD workstations



### Network strip (G)

- ▶ Network strip with six grounded plug sockets and USB 3.0 socket, LAN (RJ45) port and USB charger for attachment to a strut extension (workstations with B = 990 mm)
- ▶ Suitable for use at ESD workstations

Protection class: IP 20 (DIN EN IEC 60529)

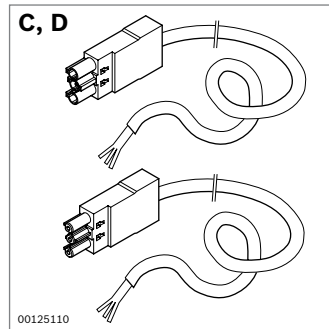
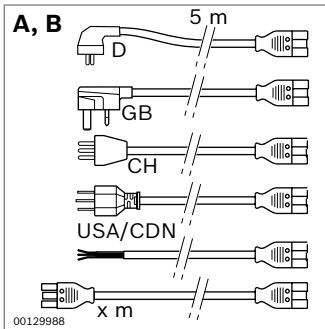
Material: Aluminum, anodized; insert: plastic, black

Scope of delivery: Includes insulating fastening kit (10 mm slot)

Required accessories: Mains cable or connecting cable, if necessary (see page 48 )

	Country	I (A)/U (V)	No.
<b>F</b> Power strips, switchable sockets, switchable outlet 	D <sup>1)</sup>	Max. 16 A/230 V	<b>3 842 539 850</b>
	F <sup>1)</sup>	Max. 16 A/230 V	<b>3 842 539 860</b>
	GB <sup>1)</sup>	Max. 13 A/230 V	<b>3 842 539 868</b>
	CH <sup>1)</sup>	Max. 10 A/230 V	<b>3 842 539 876</b>
	USA/CDN <sup>2)</sup>	Max. 15 A/125 V	<b>3 842 539 884</b>
<b>G</b> Network strip, switchable socket, switchable outlet 	D	Max. 16 A/230 V	<b>3 842 552 212</b>

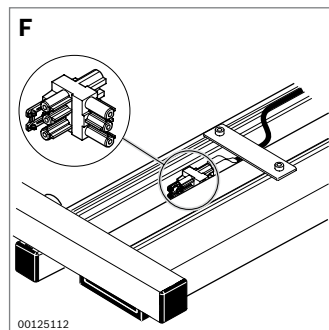
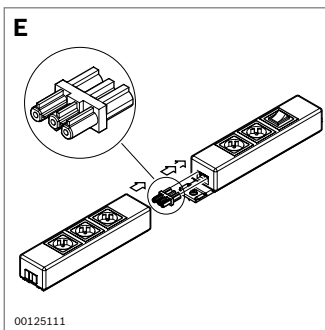
<sup>1)</sup> Test mark of VDE; <sup>2)</sup> Test marks of UL, CSA, FCC



**Mains cable (A)**

- ▶ For connecting system lamps, socket strips or power strips
- ▶ Ready-to-use mains cable: Available in various country versions; for simple, reliable plug-and-play installation with no specialist knowledge required
- ▶ Mains cable with one end open: For self-assembly; accessories: GST plug, GST socket

Color: Black



**Connection cable (B)**

- ▶ For cable connections between system lamps, socket strips or power strips
- ▶ Ready-made in various country versions and lengths
- ▶ For simple, reliable plug-and-play installation with no electrician needed

Color: Black

**GST plug, GST socket (C, D)**

- ▶ For cable self-assembly

Color: Black

	Country	L (m)		No.
<b>A</b> Mains cable	D/F <sup>1)</sup>	5		<b>3 842 517 045</b>
	GB <sup>1)</sup>	5		<b>3 842 522 585</b>
	CH <sup>1)</sup>	5		<b>3 842 523 910</b>
	USA/CDN <sup>2)</sup>	5		<b>3 842 537 323</b>
	Open end <sup>1)</sup>	5		<b>3 842 517 201</b>
<b>B</b> Connection cable	EU <sup>1)</sup>	4		<b>3 842 537 598</b>
		3		<b>3 842 527 207</b>
		2		<b>3 842 517 047</b>
		1.5		<b>3 842 537 123</b>
		1		<b>3 842 517 049</b>
	USA/CDN <sup>2)</sup>	0.5		<b>3 842 517 051</b>
		4		<b>3 842 537 599</b>
		3		<b>3 842 537 558</b>
		2		<b>3 842 537 560</b>
		1.5		<b>3 842 537 562</b>
<b>C</b> GST plug			10	<b>3 842 517 043</b>
	<b>D</b> GST socket		10	<b>3 842 517 044</b>
<b>E</b> Connecting plug		10	<b>3 842 517 055</b>	
<b>F</b> T-plug		10	<b>3 842 532 909</b>	

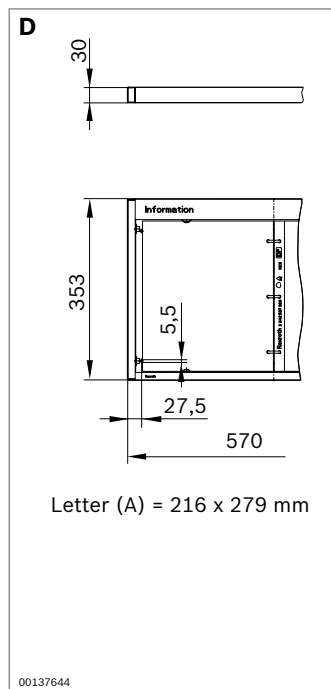
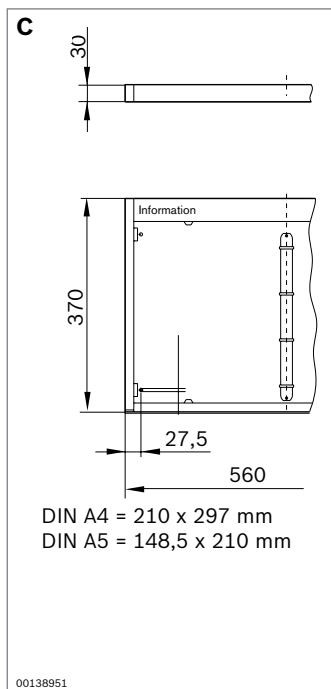
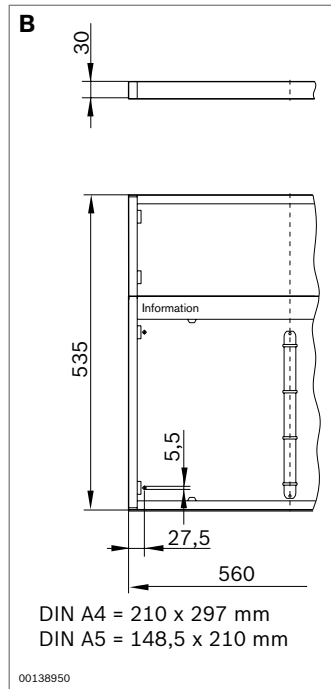
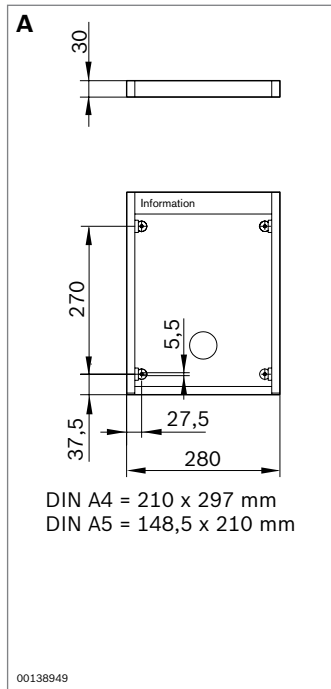
<sup>1)</sup> Test mark of VDE; <sup>2)</sup> Test marks of UL, CSA, FCC







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### Information boards



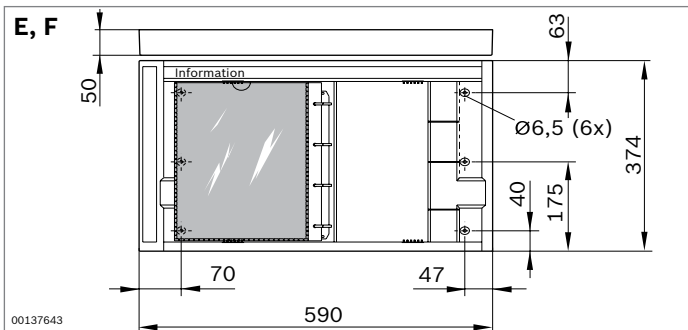
- ▶ For providing information at the workstation, in the material shuttle or on the supermarket shelf
- ▶ High stability
- ▶ Can be mounted horizontally or vertically
- ▶ Information board A4 (**A**): One-sided version
- ▶ Information board 2xA4 plus (**B**): Two-sided version with 4-ring mechanism, DIN A4; insert areas for notice boards
- ▶ Information board 2xA4 EU (**C**): Two-sided version with 4-ring mechanism, DIN A4
- ▶ Information board 2xA4 US (**D**): Two-sided version with 3-ring mechanism, Letter
- ▶ ESD version for use at ESD workstations

Frame profile material: Aluminum; anodized, natural  
 Material of back panel and board: Sheet steel; powder-coated, anthracite gray, RAL 7037 (ESD)  
 Scope of delivery: Includes fastening kit (10 mm slot); neutral colored, self-adhesive text holder; reinforced transparent plastic sleeve (**A**: 1; **B, C, D**: 2)  
 Accessories: Transparent plastic sleeve (see page 51)

	Country	ESD No.
<b>A</b> Information boards A4	EU	<b>3 842 502 151</b>
<b>B</b> Information boards 2xA4 plus	EU	<b>3 842 502 154</b>
<b>C</b> Information boards 2xA4	EU	<b>3 842 502 153</b>
		<b>3 842 537 870</b>
<b>D</b> Information boards 2xLetter	USA	<b>3 842 538 789</b>



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### Information boards ISO




- ▶ Inexpensive plastic version
- ▶ Can be mounted horizontally or vertically
- ▶ Information board 2xA4 EU (**E**): Two-sided version with 4-ring mechanism for 18 reinforced transparent plastic sleeves, DIN A4 format
- ▶ Information board 2xA4 US (**F**): Two-sided version with 3-ring mechanism for 18 reinforced transparent plastic sleeves, Letter format

Material: ABS; anthracite gray RAL 7016

Scope of delivery: Includes fastening kit, labels in several languages, one reinforced transparent plastic sleeve

Accessories: Transparent plastic sleeve (see page 51)

	Country	No.
<b>E</b> Information boards ISO 2xA4	EU	<b>3 842 517 163</b>
<b>F</b> Information boards ISO 2xLetter	USA	<b>3 842 517 164</b>

	Country		No.
Transparent plastic sleeve A4	EU	10	<b>3 842 539 838</b>
		10	<b>3 842 537 358</b>
Transparent plastic sleeve Letter	USA	10	<b>3 842 539 839</b>
		10	<b>3 842 537 360</b>

### Transparent plastic sleeve

- ▶ Transparent plastic sleeve fits information board and information board ISO
- ▶ Reinforced version
- ▶ DIN A4: With 4 holes for EU version
- ▶ Letter: With 3 holes for US version
- ▶ ESD version Permanently conductive. Surface resistivity <math>< 10^{10}</math> Ohm. ESD conductivity can be reduced due to UV rays, heat and chemicals. We therefore recommend a yearly check.

Material: PVC



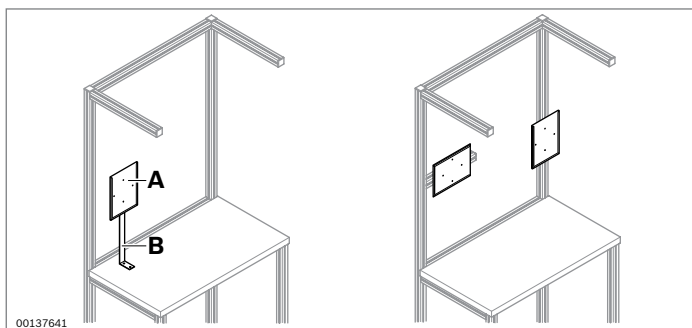
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## Slide-in holder

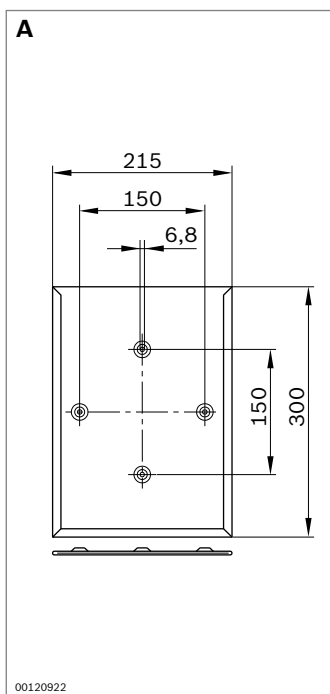
- ▶ For providing individual information sheets in DIN A4 format, e.g. work sequence cards
- ▶ Can be mounted horizontally or vertically
- ▶ Protective cover keeps information clean
- ▶ Holder for fixing to table top

Color: Light gray RAL 7035

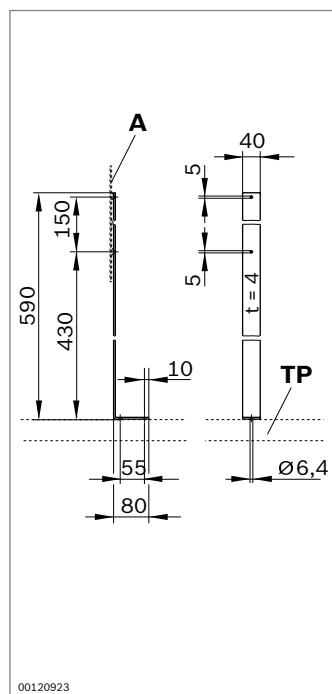
Required accessories: Screws



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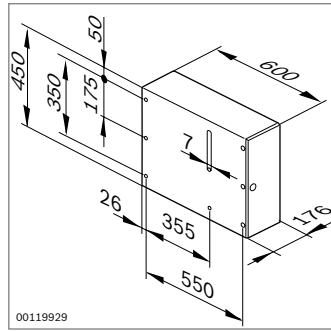


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	No.
<b>A</b> Slide-in holder	<b>1 845 410 015</b>
<b>B</b> Holder	<b>3 842 000 058</b>



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### Cabinet

- ▶ Installation on left or right side
- ▶ Lockable door
  - Pull-out tool tray
- ▶ Assembly on table frame (slot spacing 550 mm)

Material: Sheet steel; light gray RAL 7035

Scope of delivery: Includes key

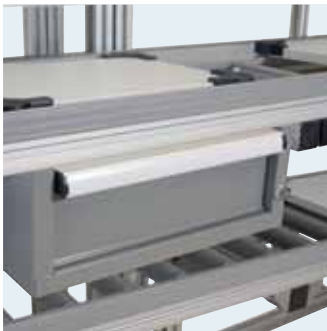
Required accessories:

M6 T-nuts (3 842 530 285, see page 62);

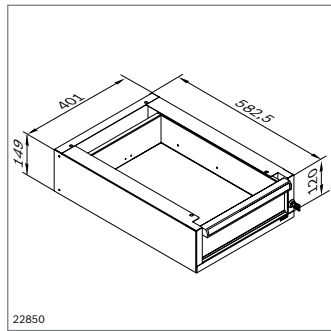
M6x14 DIN 912 screw

DIN 125 washer

	No.
Cabinet, left-side installation	<b>3 842 028 621</b>
Cabinet, right-side installation	<b>3 842 028 620</b>



23079



22850

### Base drawer



- ▶ Quiet, easy-closing drawer with ball bearing; automatic closing
- ▶ Lockable drawer
- ▶ Ergonomic aluminum handle bar with label field
- ▶ Permissible drawer load: 350 N
- ▶ ESD version
- ▶ Mounting (suspended):
  - On table frame
  - On table top

ESD material: Sheet steel; dusty gray RAL 7037

Scope of delivery: Includes drilling template, fastening kit, keys

	ESD No.
Base drawer	<b>3 842 546 533</b>



23076

## Drawer cabinets Containers



### Drawer cabinets (A, B)

- ▶ Easy-to-close drawers with soft-closing mechanism with ball bearing; automatic closing
- ▶ Ergonomic aluminum handle bar with label field
- ▶ Drawers can be locked centrally
- ▶ Permissible load
  - Per drawer: 350 N
  - Total per drawer cabinet: 850 N
- ▶ Available as ESD-conductive version
- ▶ Mounting (suspended):
  - On table frame
  - On table top

Material: Sheet steel; light gray RAL 7035

ESD material: Sheet steel; dusty gray RAL 7037

Scope of delivery: Includes drilling template, fastening kit, keys

### Containers (C, D)

- ▶ Easy-to-close drawers with soft-closing mechanism with ball bearing; automatic closing
- ▶ Ergonomic aluminum handle bar with label field
- ▶ Drawers can be locked centrally
- ▶ Permissible load
  - Per drawer: 350 N
  - Total per container: 1300 N
- ▶ Available as ESD-conductive version
- ▶ Fitted with casters, e.g. for setting up next to workstation

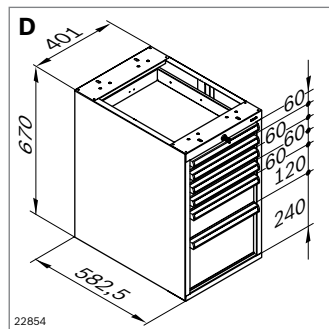
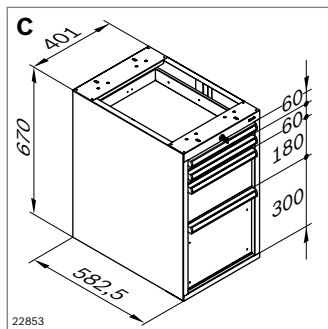
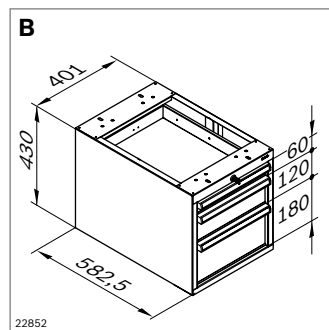
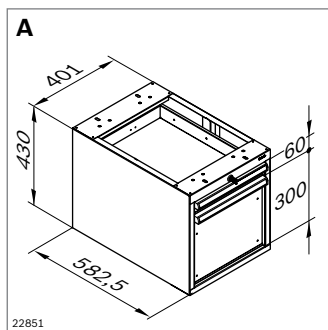
Material: Sheet steel; light gray RAL 7035

ESD material: Sheet steel; dusty gray RAL 7037

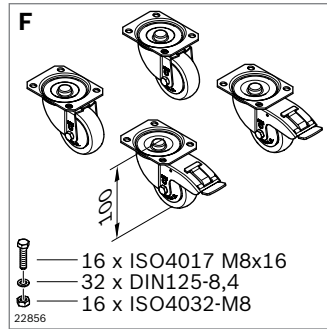
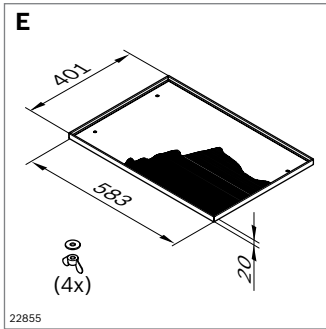
Scope of delivery: Includes drilling template, fastening kit, keys

Required accessories: Cover (E), casters (set) (F)

See technical data (see page 182)



	ESD No.
<b>A</b> Drawer cabinet, two drawers	<b>3 842 546 534</b>
	<b>3 842 546 538</b>
<b>B</b> Drawer cabinet, three drawers	<b>3 842 546 535</b>
	<b>3 842 546 539</b>
<b>C</b> Container, four drawers	<b>3 842 547 886</b>
	<b>3 842 546 540</b>
<b>D</b> Container, six drawers	<b>3 842 547 887</b>

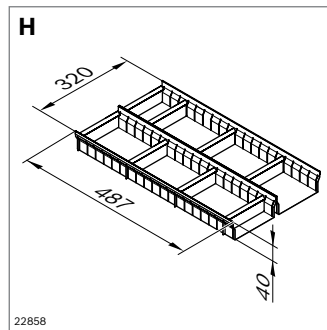
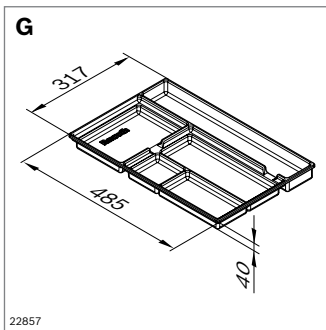


**Cover for container (E)**

Cover material: Sheet steel; powder-coated, RAL 7035 (light gray)  
 ESD cover material: Sheet steel; powder-coated, RAL 7037 (dusty gray)  
 Scope of delivery: Incl. mounting material

**Casters for container (F)**

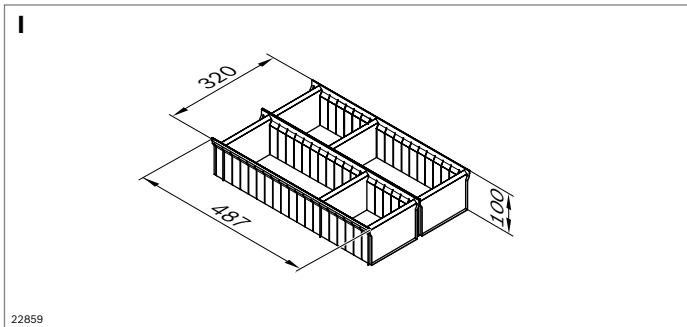
► Set of two caster wheels and two casters with stop



Housing material: Sheet steel; galvanized  
 Wheel body material: PP  
 Wheel running surface material Thermoplastic rubber  
 Scope of delivery: Incl. mounting material

**Drawer inserts (G, H, I)**

- Fixed arrangement (G)
- Variable arrangement (H, I), bending plate can be opened

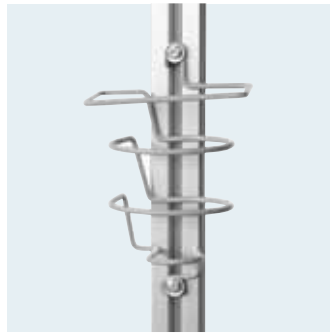


Material **G**: ABS; black  
 Material **H, I**: Sheet steel; galvanized

	h (mm)		ESD No.
<b>E</b> Cover for container			<b>3 842 546 542</b>
			<b>3 842 546 543</b>
<b>F</b> Casters for container (caster Ø: 80 mm)		Set	<b>3 842 547 885</b>
			<b>3 842 546 541</b>
<b>G</b> Drawer insert	40		<b>3 842 548 900</b>
<b>H</b> Drawer insert, variable arrangement	40		<b>3 842 546 546</b>
<b>I</b> Drawer insert, variable arrangement	100		<b>3 842 546 547</b>



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## Holder



### Cup holder (A)

Material: PA66; black

Required accessories: T-nuts, 10 mm slot, M5

### Bottle holder (B)

► Accommodates bottles and rectangular drink cartons

Material: Powder-coated steel wire; light gray RAL 7037

Scope of delivery: Includes fastening kit (10 mm slot)

### Cloth holder (C, D)

► For hanging cleaning cloths

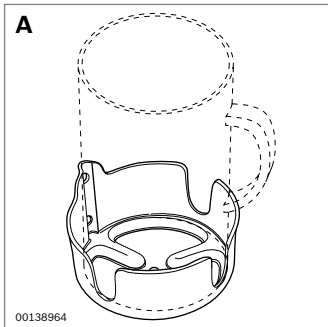
► Cloth holder D with clamp base for direct assembly on strut profile with 10 mm slot

Color: black

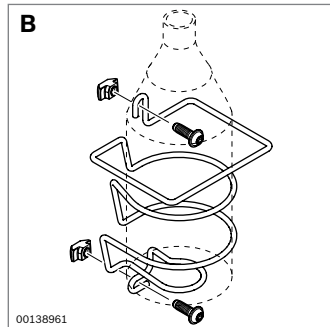
Required accessories (for C):

T-nuts, 10 mm slot, M5;

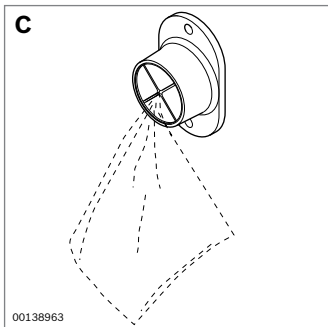
screws, DIN 7984-M5x12-8.8



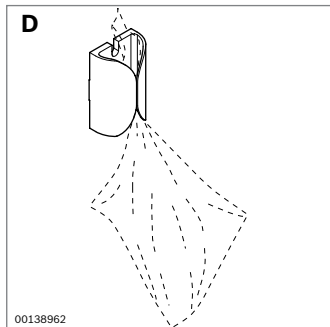
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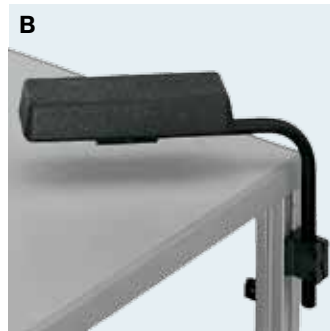
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	 ESD No.
<b>A</b> Cup holder	<b>3 842 513 722</b>
<b>B</b> Bottle holder	 <b>3 842 540 429</b>
<b>C</b> Cloth holder	<b>1 845 719 000</b>
<b>D</b> Cloth holder with clamp base	<b>3 842 530 306</b>
T-nut, 10 mm slot, M5	100 <b>3 842 530 283</b>





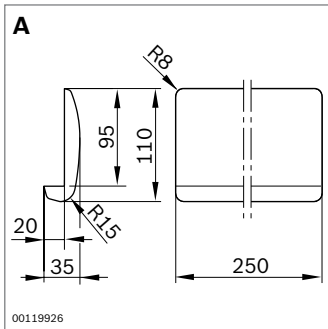
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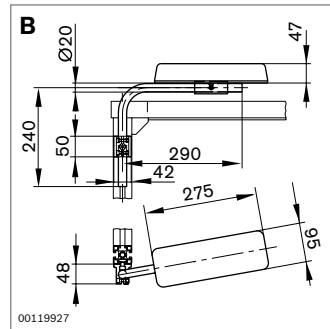
6820



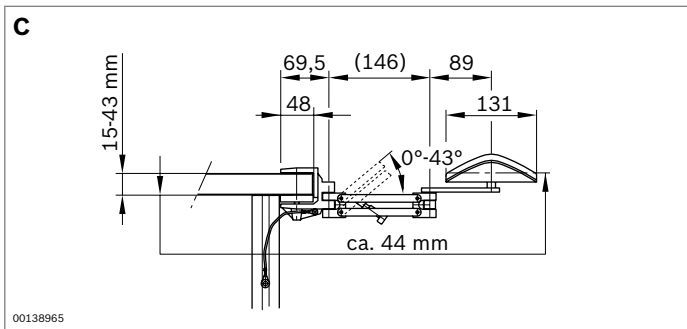
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## Armrest



### Armrest (A)

- ▶ Soft support pads protect wrists and arms
- ▶ ESD version Conductive. ESD conductivity can be reduced due to UV rays, heat, wear and chemicals. We therefore recommend a yearly check.

Material: Flexible PUR foam; black

Required accessories: Double-sided tape (copper tape for ESD version) for fixing to table top

### Adjustable armrest (B)

- ▶ Relieves arm strain during assembly work
- ▶ Fastened to table frame; suitable for all Rexroth box-type workstations

Pad material: Flexible PUR foam; black

Scope of delivery: Includes fastening kit (10 mm slot)

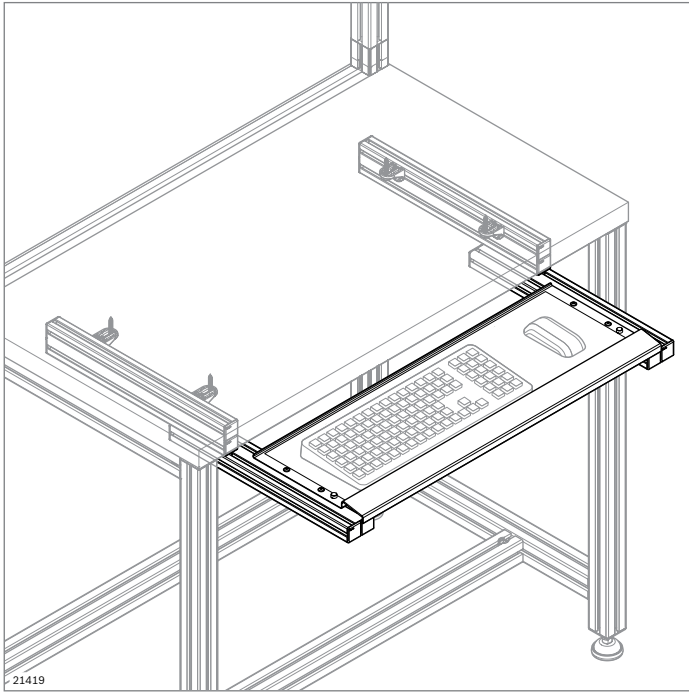
### Armrest with pad (C)

- ▶ Relieves arm strain during assembly work
- ▶ Hinges allow precisely controlled movements
- ▶ Clamp attachment to table top
- ▶ ESD version for use at ESD workstations

Pad material: Leather; white

ESD pad material: Leather; black

	ESD	No.
<b>A</b> Armrest		<b>3 842 191 186</b>
		<b>3 842 516 704</b>
<b>B</b> Adjustable armrest		<b>3 842 191 178</b>
<b>C</b> Armrest with pad		<b>3 842 515 493</b>
		<b>3 842 515 525</b>



## Keyboard shelf

- ▶ For secure, space-saving stowage of keyboards and computer mice at the workstation
- ▶ Suitable for optical and ball mice
- ▶ Keyboard shelf (separate) **(A)** for self-assembly of shelves
- ▶ Lining mat **(C)** for an extra non-slip surface

Material: Sheet steel, powder-coated; light gray (RAL 7035)  
Lining mat material: EPDM

### Pull-out keyboard shelf with rail **(B)**

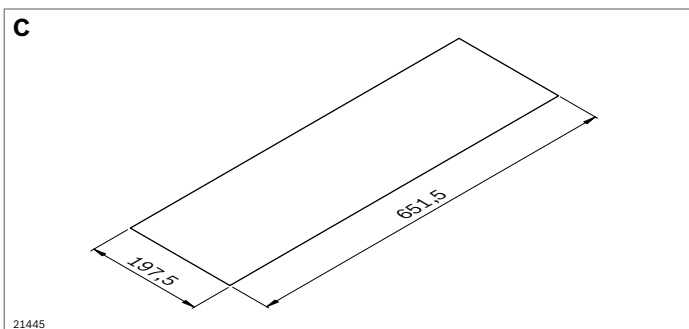
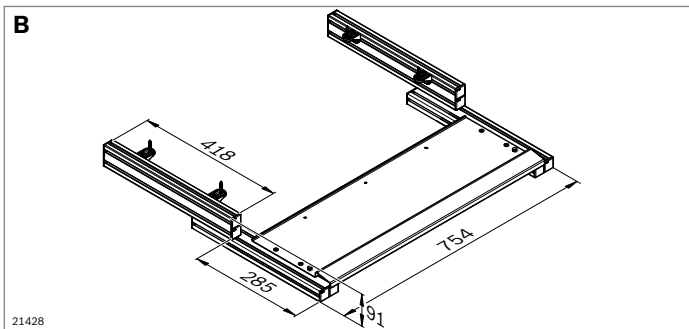
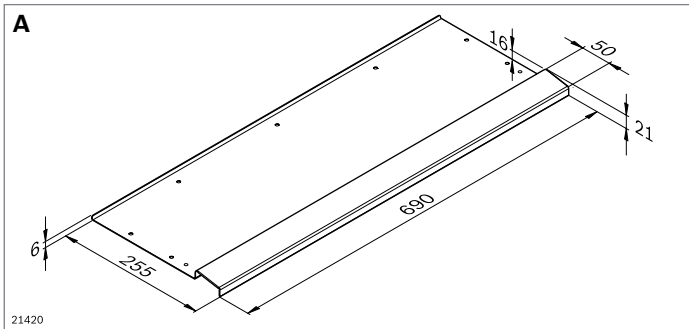
- ▶ Pull-out keyboard shelf with rail for installation underneath a table top
- ▶ Suitable for table frames with profiles:
  - 40x40: Width  $\geq$  926 mm; depth  $\geq$  518 mm
  - 45x45: Width  $\geq$  946 mm; depth  $\geq$  523 mm
  - 60x60: Width  $\geq$  1008 mm; depth  $\geq$  538 mm
- ▶ Lining mat **(C)** for an extra non-slip surface

Keyboard shelf material: Sheet steel, powder-coated; light gray (RAL 7035)

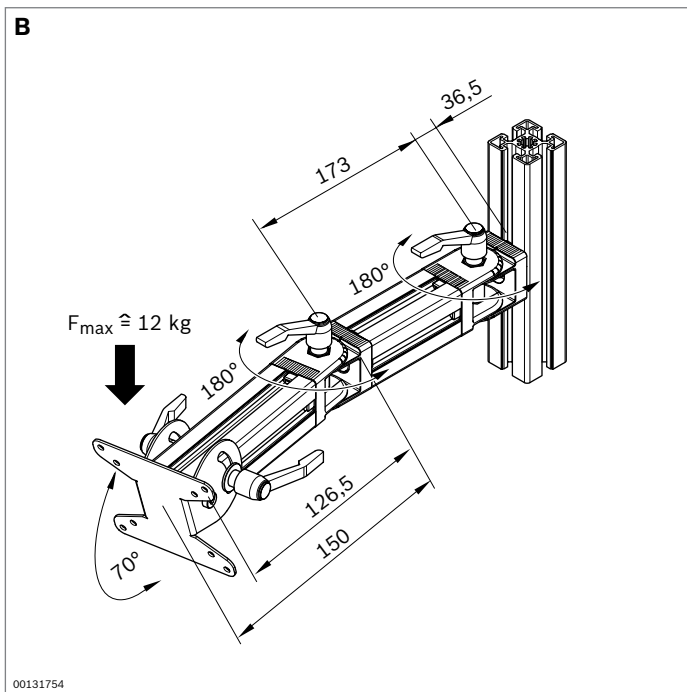
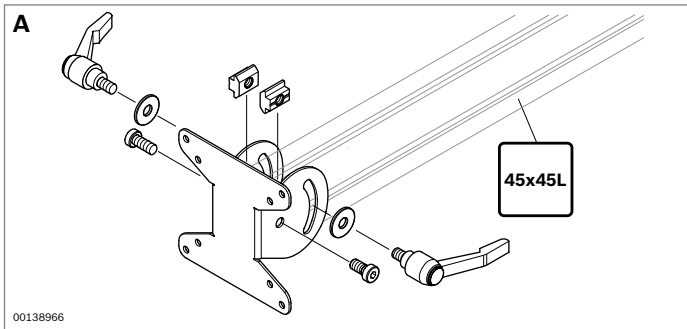
Pull-out rail material: Aluminum

Lining mat material: EPDM

Scope of delivery: Includes fastening material for mounting underneath the table top



	ESD	No.
<b>A</b> Keyboard shelf (separate)		<b>3 842 546 750</b>
<b>B</b> Pull-out keyboard shelf with rail		<b>3 842 544 793</b>
<b>C</b> Lining mat 651x197x2		<b>3 842 546 751</b>



### TFT monitor bracket

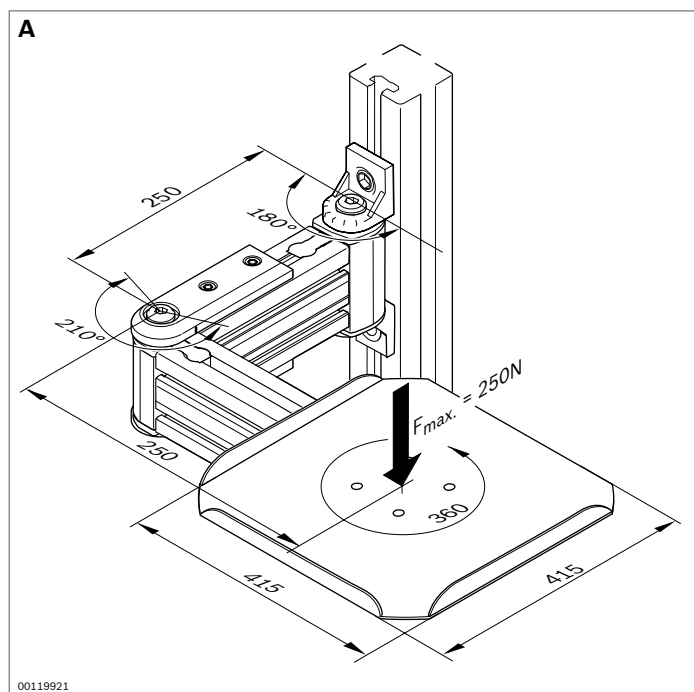


- ▶ TFT monitor bracket (**A**) with VESA hole pattern (75x75 mm and 100x100 mm) for mounting a TFT monitor on profile 45x45L
- ▶ Swivel range: 70°
- ▶ TFT monitor bracket with supporting arm (**B**) is swivelable and horizontally adjustable. Enables ergonomically optimum positioning of the screen.

Scope of delivery **A**: Includes fastening kit (10 mm slot)

Scope of delivery **B**: Includes supporting arm (profile 45x45L, DesignLINE joints); includes fastening material (10 mm slot)

	No.
<b>A</b> TFT monitor bracket	<b>3 842 539 840</b>
<b>B</b> TFT monitor bracket with supporting arm	<b>3 842 539 806</b>



## Supporting arm



- ▶ For space-saving positioning of a monitor or material container at the workstation
- ▶ Multiple hinges

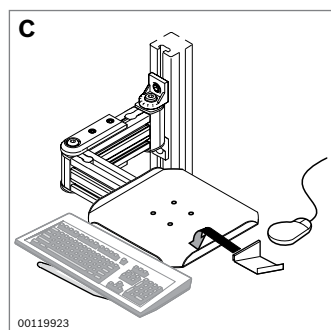
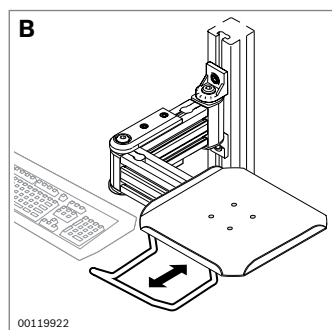
Scope of delivery: Includes fastening kit (10 mm slot)

## Keyboard shelf

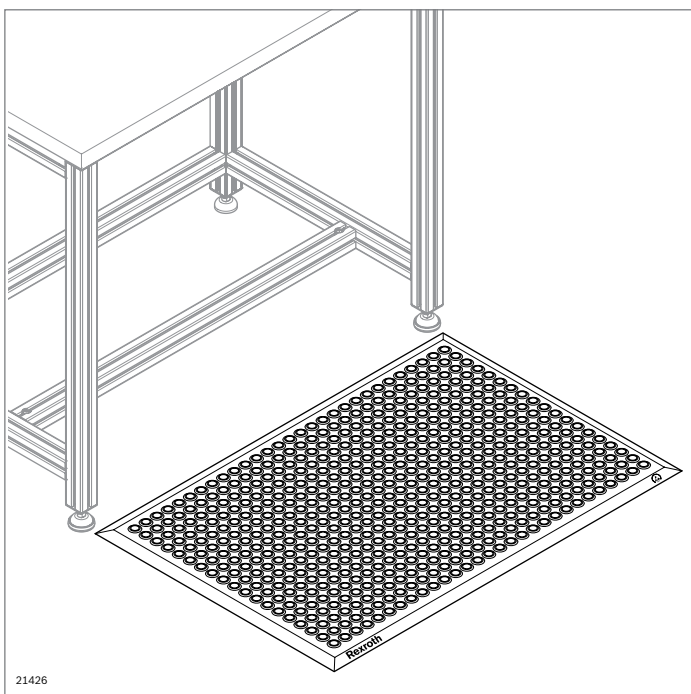
- ▶ Extendable
- ▶ Suspends on supporting arm

## Mouse holder

- ▶ Suspends on supporting arm



	<b>No.</b>
<b>A</b> Supporting arm	<b>3 842 521 970</b>
<b>B</b> Keyboard shelf	<b>3 842 522 305</b>
<b>C</b> Mouse holder	<b>3 842 522 130</b>

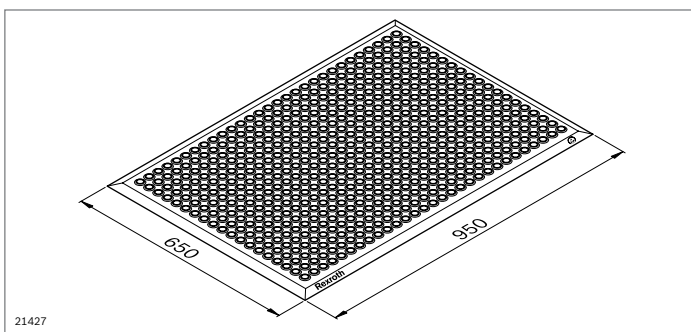



### Ergonomic mat

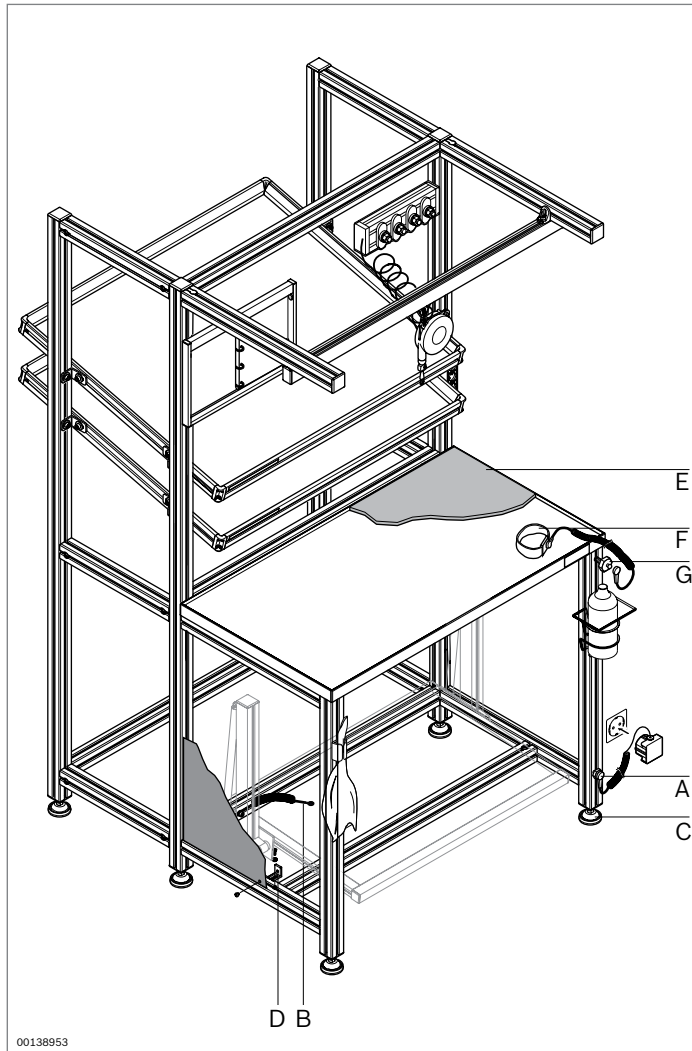


- ▶ Elastic ergonomic mat cushions employees' movements, reduces strain, and protects joints
- ▶ Improved circulation reduces fatigue
- ▶ Use at stand up/moving workstations and machines

Material: PUR (without CFCs), ESD



	ESD No.
Ergonomic mat	 3 842 544 789



## Components for ESD applications



### Set of grounding components (A)

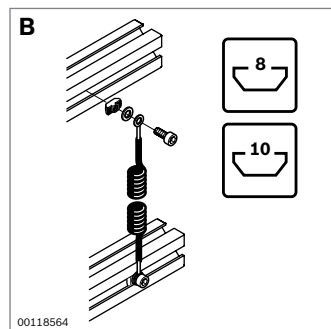
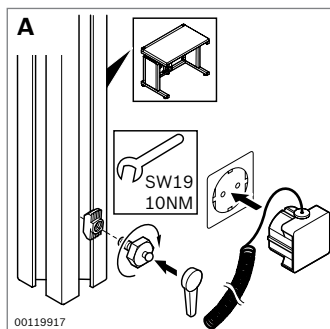
- For defined grounding of ESD workstations
- Conduction resistance  $R_A = 1 \times 10^6 \Omega$  (DIN EN 61 340-5-1)

Scope of delivery: Includes fastening kit (10 mm slot)

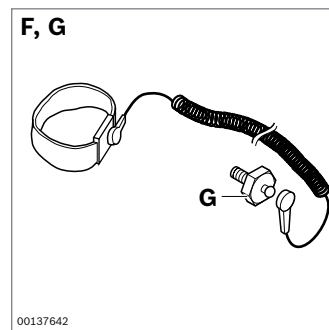
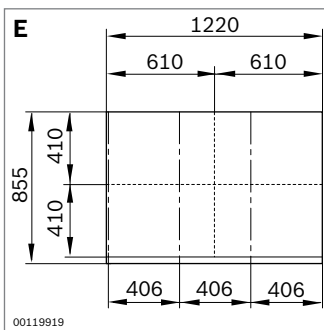
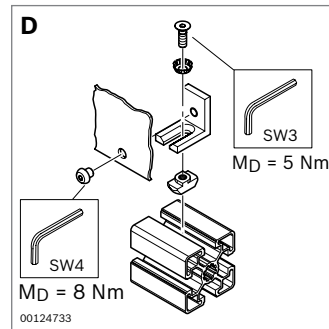
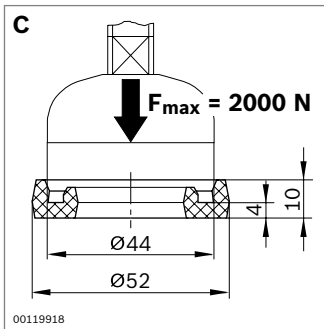
### Grounding cable (B)

- To create defined conductive paths between strut profiles to protect ESD-sensitive components

Scope of delivery: Includes fastening kit  
(10 mm slot/10 mm slot)  
(10 mm slot/8 mm slot)



	ESD	No.
<b>A</b> Set of grounding components		<b>3 842 522 087</b>
<b>B</b> Grounding cable		<b>3 842 519 465</b>
<b>C</b> Damping ring, insulating	20	<b>3 842 521 817</b>
<b>D</b> Potentialfix		<b>3 842 536 320</b>
<b>E</b> ESD mat insert (1220 mm x 855 mm)		<b>3 842 522 012</b>
<b>F</b> Wrist band		<b>3 842 516 908</b>
<b>G</b> Connection piece	10	<b>3 842 516 905</b>
T-nuts, 10 mm slot, M6	100	<b>3 842 530 285</b>



### Damping ring (C)

- Insulates frames from conductive floors, protects floors and prevents vibrations from being transmitted.

Material: PUR; resistant to oils and organic solvents

Color: natural

Shore hardness A: 70-80

### Potentialfix (D)

- For defined grounding of surface elements such as side panels.

### Conductive mat insert (E)

- To protect ESD-sensitive components
- To create a safe conductive connection, e.g. to ESD material shelves, we recommend using adhesive copper tape.
- Conduction resistance  $R_A = 1 \times 10^6 - 1 \times 10^9 \Omega$  according to DIN EN 61 340-5-1.

Material: Natural rubber

Thickness: 2 mm

### Wrist band (F)

- Wrist band (F) with connection piece (G) for defined grounding of people and protection of ESD-sensitive components

Required accessories: T-nuts, 10 mm slot, M6



## Shorter grab distances make for faster assembly

The ergonomic positioning of parts is the key to an efficient workstation.



Unnecessary movements add no value and are therefore wasteful. They consume valuable production time and place an additional strain on the worker. This is why all grab distances should be as short as possible.

Grab containers and parts containers placed in direct reach of the employee are ideal. The containers should be arranged to allow for a flowing, ascending arch sequence of motions based on the body's natural movement.

Moreover, two-handed grabbing and joining can cut assembly time by up to 50%. The ergonomic design of the grab containers based on MTM (Method of Time Measurement) serves to effectively pre-separate the parts: the grab ledges have ridges to enable quick and secure part picking.

### Vario grab containers

For space-saving and ergonomic supply of small parts such as nuts and screws. Vario grab containers are stackable. They are mounted on strut profiles or on a base placed directly on the work surface.

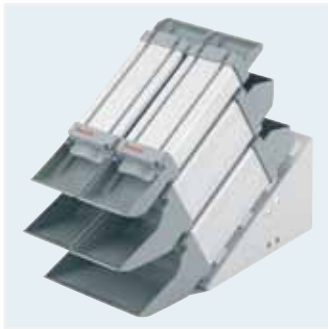
### Plastic grab containers

These plastic grab containers are sturdy and robust. The containers can be exchanged easily. This allows for very fast order picking, part replenishment and workstation conversions. When used in combination with the material shelves at the workstation or in the material shuttle, these grab containers are suited for implementing the two-bin system (kanban). An ESD-conductive version of the grab containers is also available.

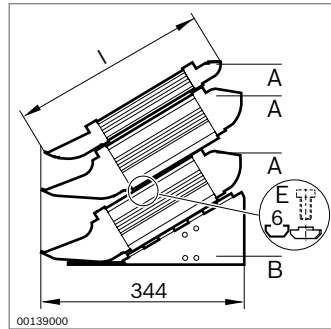
Lettering clips for content labeling are included as accessories. Container mounts and the grab container rack are also available for optimally positioning the plastic grab containers.



- 66 Vario grab containers
- 67 Grab containers
- 67 Grab ledge
- 68 Grab trays
- 68 Container mount
- 69 Lettering clip
- 69 Grab container rack application
- 70 Grab ledge



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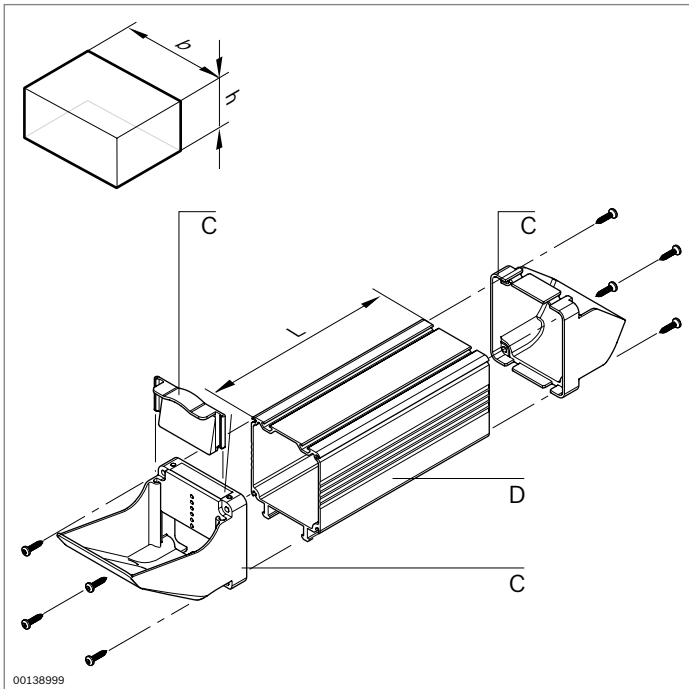
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## Vario grab containers



- ▶ Small parts such as nuts and screws placed within easy reach on the workstation
- ▶ Quick and secure grabbing due to ergonomic grab ledge design based on MTM (Method of Time Measurement)
- ▶ Ergonomic gripping conditions and modular construction for high economy
- ▶ Stable, compact stacking for reduced space requirements
- ▶ Low-wear surfaces
- ▶ Vario grab containers in 3 standard sizes (**A**)
- ▶ Assembly elements for custom configurations (aluminum material chute (**D**) + plastic grab ledge and refill end-pieces (**C**)) for varying volumes and quantities
- ▶ Grab container base (**B**) for ergonomically ideal arrangement of grab containers with short grab distances; mounted directly on work top or on strut profile
- ▶ For offsetting grab containers in a stack: M5 sliding block (6 mm groove) and DIN 7984 M5x6 screw

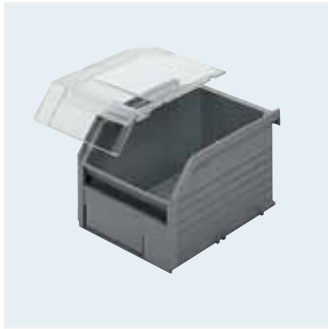
Grab ledge and refill end-piece material: ABS plastic;  
light gray RAL 7035

Material chute material: Aluminum, anodized

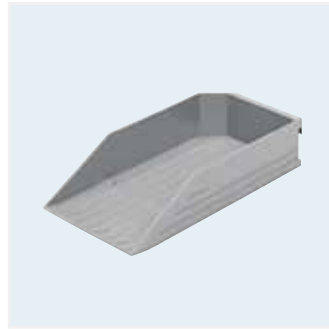


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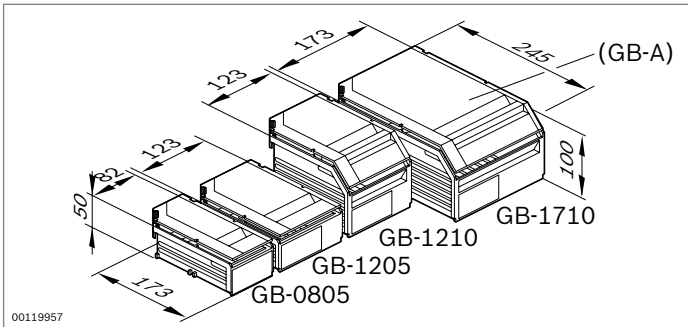
	w x h (mm)	w x h x l (mm)	L (mm)	Capacity (cm <sup>3</sup> )	Weight (kg)			No.
<b>A</b> Vario grab containers		90 x 45 x 333		500	2.5			<b>3 842 526 621</b>
		90 x 90 x 375		1300	5.0			<b>3 842 526 622</b>
		180 x 90 x 375		2900	10.0			<b>3 842 526 623</b>
<b>B</b> Grab container base		90 x 149 x 315						<b>3 842 526 660</b>
		180 x 149 x 315						<b>3 842 526 665</b>
<b>C</b> Grab ledge and refill end-piece	90 x 45							<b>3 842 526 626</b>
	90 x 90							<b>3 842 526 627</b>
	180 x 90							<b>3 842 526 628</b>
<b>D</b> Material chute	90 x 45		50 ... 3000					<b>3 842 993 071/L</b>
			3000		3		<b>3 842 526 671</b>	
	90 x 90		50 ... 3000					<b>3 842 993 072/L</b>
			3000		3		<b>3 842 526 672</b>	
	180 x 90		50 ... 3000					<b>3 842 993 073/L</b>
			3000		3		<b>3 842 526 673</b>	
<b>E</b> Sliding block, 6 mm groove, M5							100	<b>3 842 523 142</b>



00121491

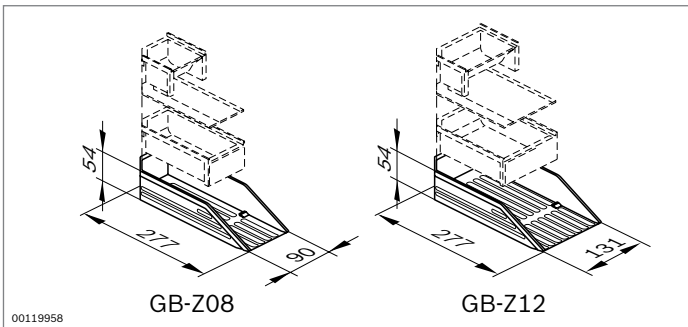


00120996



00119957

	ESD	No.
Cover GB-A0805		<b>3 842 344 756</b>
		<b>3 842 346 286</b>
Cover GB-A1205		<b>3 842 344 757</b>
		<b>3 842 346 287</b>
Cover GB-A1210		<b>3 842 344 758</b>
		<b>3 842 346 288</b>
Cover GB-A1710		<b>3 842 344 759</b>
		<b>3 842 346 289</b>



00119958

	ESD	No.
Grab ledge GB-Z08		<b>3 842 344 760</b>
		<b>3 842 346 290</b>
Grab ledge GB-Z12		<b>3 842 344 761</b>
		<b>3 842 346 291</b>

## Grab containers



- ▶ Positioning of small parts on the workstation or in the material shuttle
- ▶ Ergonomically designed surface for easy and secure grabbing
- ▶ Can be combined with grab ledge and cover

Standard material: ABS; light gray similar to RAL 7035  
ESD material: ABS; black

### Cover

- ▶ Protects parts in storage, during transport and at the workstation

Standard material: PC; transparent  
ESD material: ABS; black

	ESD	No.
Grab container GB-805		<b>3 842 344 750</b>
		<b>3 842 346 280</b>
Grab container GB-1205		<b>3 842 344 751</b>
		<b>3 842 346 281</b>
Grab container GB-1210		<b>3 842 344 752</b>
		<b>3 842 346 282</b>
Grab container GB-1710		<b>3 842 344 753</b>
		<b>3 842 346 283</b>

## Grab ledge

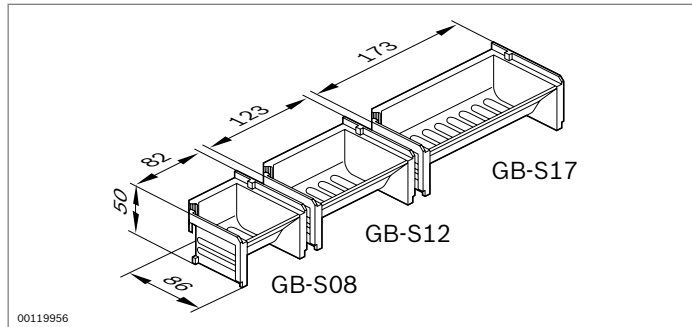


- ▶ Separation of mixed parts on ergonomically designed grab surface
- ▶ Ridged surface for easy and secure grabbing
- ▶ Time savings of up to 10%




Standard material: ABS; light gray similar to RAL 7035  
ESD material: ABS; black



00120994



00119956

	ESD No.
Grab trays GB-S08	<b>3 842 344 764</b>
	 <b>3 842 346 294</b>
Grab trays GB-S12	<b>3 842 344 765</b>
	 <b>3 842 346 295</b>
Grab trays GB-S17	<b>3 842 344 766</b>
	 <b>3 842 346 296</b>

## Grab trays

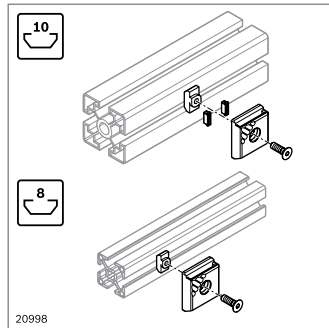


- ▶ Space-saving supply of small parts, e.g. underneath the material feed
- ▶ Integrated lip for easier removal of small parts
- ▶ Mounted on suspension profile (see page 168) or container mount

Color: Light gray similar to RAL 7035, black (ESD)



22032



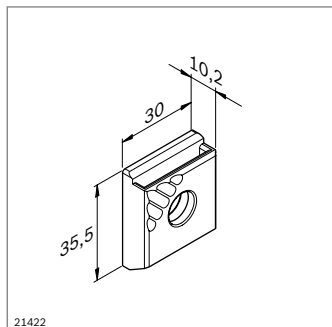
## Container mount



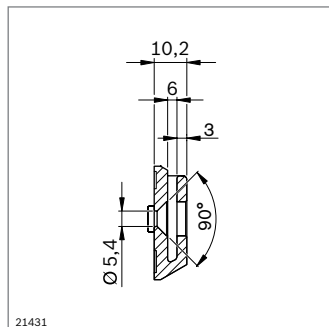
- ▶ Container mount to hang tool holders, grab containers, grab trays, and grab ledges
- ▶ Suitable for 8 mm and 10 mm slots

Material: PA 66; black


Scope of delivery: Includes fastening material for fastening in 8 mm and 10 mm slots



21422



21431

	ESD No.
Container mount	10  <b>3 842 544 797</b>




00121025

### Lettering clip



- ▶ Standardized labeling of grab containers
- ▶ Exchangeable labels (74 mm x 37 mm)

		No.
Lettering clips (incl. labels)	10	<b>3 842 536 127</b>



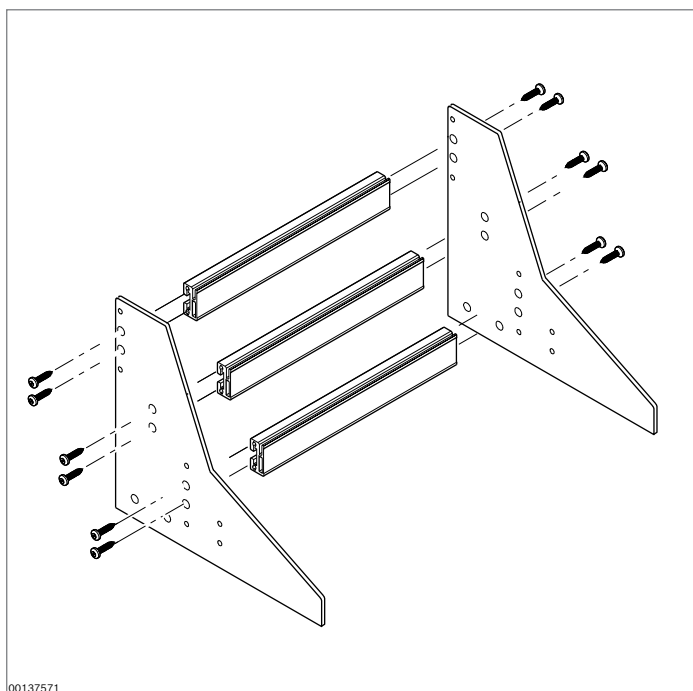
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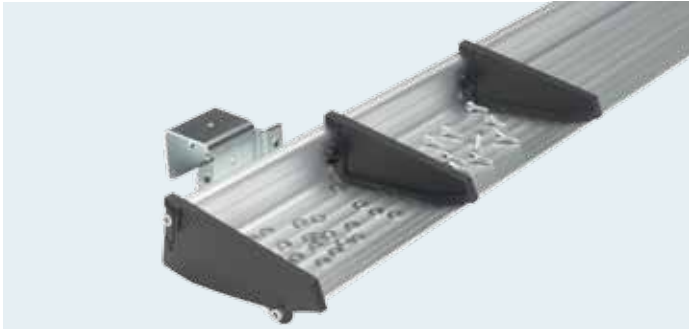
00121004

### Grab container rack application

- ▶ Easy-to-reach, ergonomic supply of materials in grab containers on the workstation
- ▶ Minimized grab distances by positioning materials in direct vicinity of worker
- ▶ Notches for adjusting the height and offset position of the grab containers
- ▶ Can be combined with a swiveling supporting arm (see page 60)
- ▶ Assembly elements for custom configurations of grab container rack in variable widths, see “Components” chapter (see page 160)



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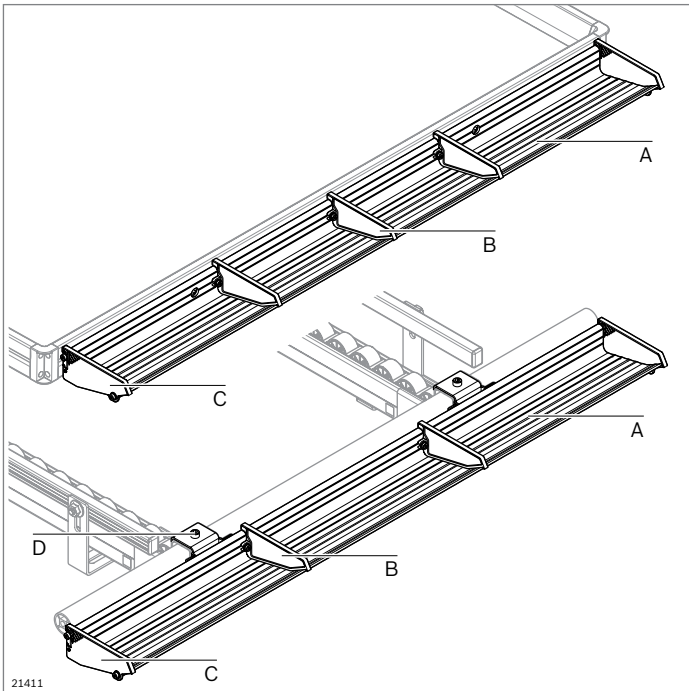


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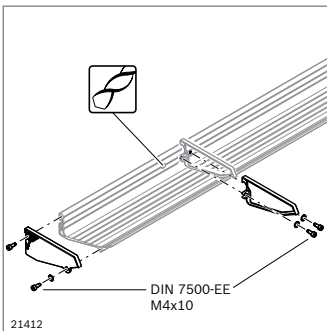
## Grab ledge



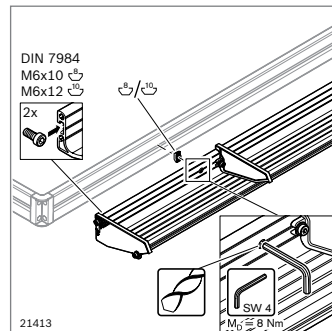
- ▶ Ergonomic, handy supply of small parts such as screws, nuts, and washers
- ▶ For fitting to material shelves or conveyor tracks to separate a mixed parts supply on an ergonomically designed picking surface
- ▶ Fast, secure picking
- ▶ Self-assembly elements for the individual assembly of grab ledges with different widths and partitions



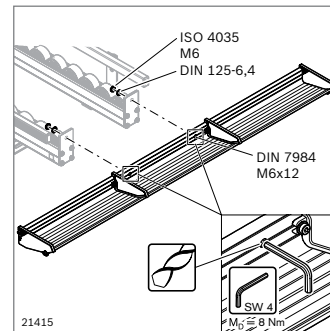
21411



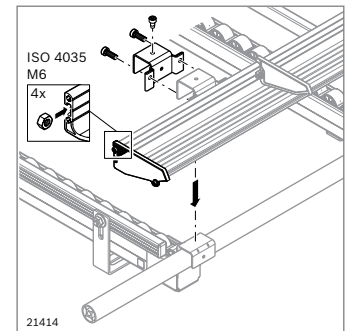
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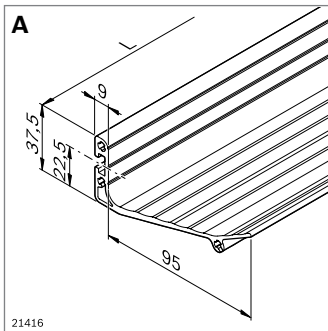
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21415



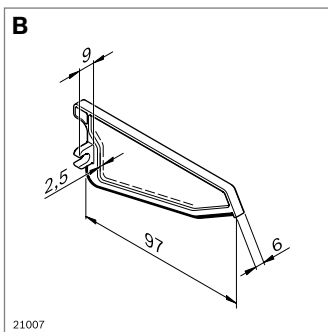
21414



- ▶ Grab ledge with grooved surface for ergonomic, fast, and secure picking

Material: Aluminum, anodized  
Aluminum; ESD-compatible surface (ESD)

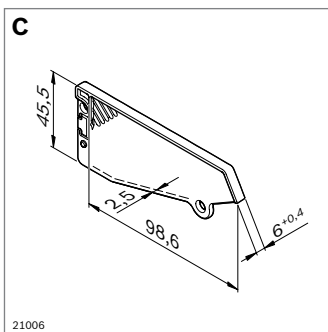
	L (mm)		ESD	No.
A Grab ledge	855	2		<b>3 842 544 774</b>
	855	2		<b>3 842 546 747</b>



- ▶ Separating wall for individual partitioning of the grab ledge
- ▶ Rubber lip for precise positioning on the grab ledge

Material: PA 66; black  
Scope of delivery: Incl. mounting material

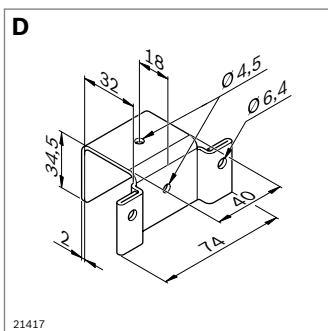
		ESD	No.
B Separating wall	10		<b>3 842 544 776</b>



- ▶ Cover plate as side stop for grab ledge

Material: PA 66; black  
Scope of delivery: Incl. mounting material

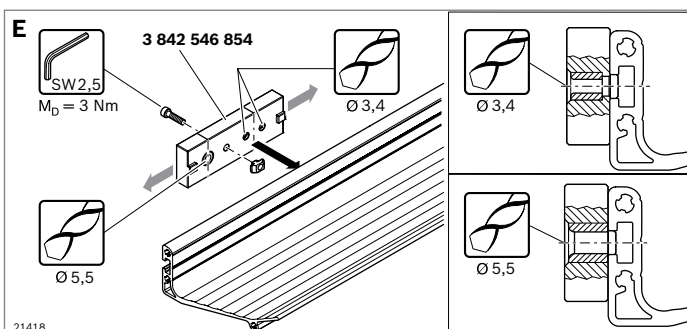
		ESD	No.
C Stop plate	4		<b>3 842 544 778</b>



- ▶ Terminal bracket to fasten the grab ledge to a rail holder with stop (xLean, Lean, and EcoFlow conveyor sections)

Material: Sheet steel; galvanized  
Scope of delivery: Incl. mounting material

		ESD	No.
D Terminal bracket	10		<b>3 842 544 780</b>



- ▶ Drilling template for mounting holes and through holes in the grab ledge

Scope of delivery: Incl. mounting material

	No.
E Drilling template	<b>3 842 546 854</b>



## Dynamic seating – ergonomic and functional

Ergonomic and healthy sitting on the job greatly enhances employee performance.



Regardless of whether you are working on a manual production line, in a clean room or at a final inspection workstation: poor posture when carrying out your activities often leads to muscle, back, and joint problems, as well as circulation issues. This makes ergonomic seating all the more important.

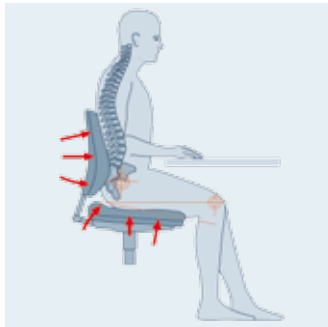
You can optimize the ergonomics of your workstations with functional swivel work chairs that are specifically adapted to the individual application. These chairs effectively cushion the physical strain caused by repetitive movements. They provide individual support for each employee to ensure a healthy posture throughout their shift. Increase your employees' well-being and productivity in the workplace and minimize sick days.

#### Main features of Rexroth swivel work chairs:

- ▶ The tapered backrest ensures optimal freedom of movement in the arm and shoulder area.
- ▶ The ergonomically designed seat provides optimum pelvic support. It has adjustable depth and tilt.
- ▶ All the adjustment options are easily accessible and can be made by simply pulling out the respective element.
- ▶ All swivel work chairs from Rexroth are equipped with a stable, five-arm star chair base. Low chairs are delivered with rollers and high models with sliders.
- ▶ The seat and backrest materials offer comfort, durability, and easy care.
- ▶ You also have the option to equip your chair with multi-adjusting armrests and a height-adjustable foot support or circular footrest.



For further information, visit:  
[www.boschrexroth.com/workchairs](http://www.boschrexroth.com/workchairs)



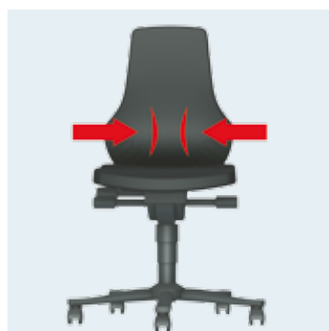
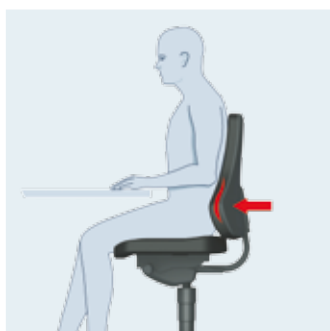
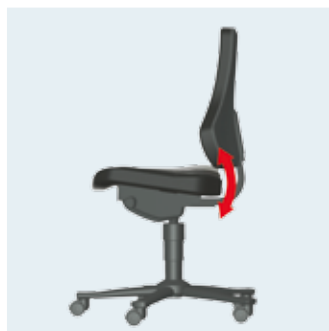
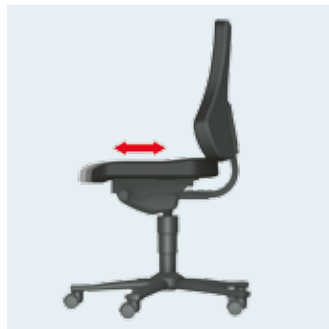
78 Swivel work chairs  
 83 Accessories

# Healthy seating – well-designed from the very start

## Settings as individual as users

A work chair doesn't need to reveal at first glance how much sophisticated technology and medical expertise it contains. But it does need to perform the impressive feat of providing optimum seating comfort for every employee – whether slender or athletic, tall or short, light or heavy, young or old, fit or frail.

A variety of sophisticated details come together so that users can adjust the work chairs to meet their individual needs – from the foot support to the seat with multiple adjustment options, a backrest with lumbar support, and synchronous technology with weight regulation. MPS swivel work chairs from Rexroth promote ergonomic workstation seating, increase efficiency, and reduce illness-related absences.



## Seat height and depth adjustment

- ▶ Adjustment of seat height to employee's height for good posture and circulation
- ▶ Setting an optimum seating position for a leg angle of 90 degrees
- ▶ Adjusting the chair to the leg length by changing the seat depth

## Backrest height and seat tilt adjustment

- ▶ Optimum support function provided by individual backrest adjustment for different user body types
- ▶ Adjustable seat angle – for optimum pelvic support
- ▶ Support of an active, upright seating and working posture

## Lumbar support

- ▶ Backrest with integrated lumbar support to relieve the extensor muscles in the lumbar region
- ▶ Upright seating for a relaxed posture

### **Dynamic seating – technology for the highest demands**

Seated postures can only be healthy and ergonomic when coupled with movement. A good work chair supports these dynamics through innovative movement mechanisms. One key factor is switching between the front, center, and rear seating positions. MPS swivel work chairs from Rexroth

are equipped with a special synchronous technology that enables these posture changes, without any sacrifices in terms of the stabilizing backrest function. This provides optimum support and relief to the torso during all dynamic movement sequences while seated.



### **Synchronous technology with permanent contact**

- ▶ Permanent contact between back and backrest for efficient back muscle support
- ▶ Adaptation to the movement sequences involved in posture changes through effective synchronized mechanisms
- ▶ Synchronized movement of backrest and seat for optimum interplay of the hip and knee joints



### **Weight regulation**

- ▶ Integrated weight regulation for individual adaptation to body weight
- ▶ Adjusting the resistance of the backrest via mechanical handles
- ▶ Effective cushioning of vertebral strain when switching between forward or reclining positions

# Product advantages



Seat height  
Backrest height  
Permanent contact backrest



Washable seat and backrest upholstery



Seat height  
Seat angle



Conductive materials according to  
DIN EN 61 340-5-1, suitable for  
ESD-sensitive areas



Seat height  
Seat depth  
Seat angle  
Backrest height



The product complies with the safety rules  
and ergonomic requirements for swivel work  
chairs used in production as defined in  
DIN 68877



Permanent contact backrest  
Synchronized backrest and seat movement  
Weight regulation for individual body weights



Suitable for cleanrooms according  
to DIN EN ISO 14 644-1

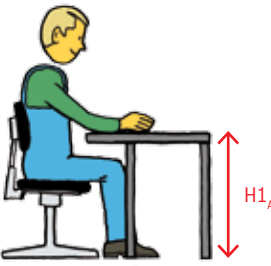

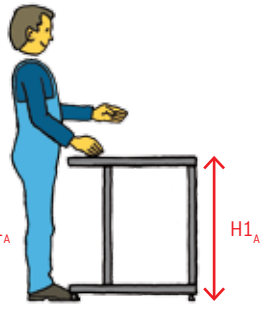





Height-adjustable foot support  
Seat height  
Backrest height



This product complies with the  
requirements of the German Equipment and  
Product Safety Act (GPSG)

## Ordering guide

Sit-down workstations	Sit-down/stand-up workstations	Stand up/moving workstations
 <p><math>H1_A = 720 \text{ mm}</math></p>	 <p>800 mm</p>	 <p>900 mm</p> <p>1070 mm</p>
 <p>Basic 3 842 546 760</p>		
 <p>Dynamic-PU 3 842 546 762    Dynamic synthetic leather 3 842 546 764    Dynamic textile 3 842 546 766    Dynamic ESD 3 842 546 768    Dynamic Clean 3 842 527 161</p>		
 <p>Stool 3 842 546 776    Basic 3 842 546 761    Dynamic-PU 3 842 546 763    Dynamic synthetic leather 3 842 546 765</p> <p>Dynamic textile 3 842 546 767    Dynamic ESD 3 842 546 769    Dynamic Clean 3 842 527 162</p>		



20418



20417

Basic	Design	Seat height (mm)	No.
Low	Castor	400 ... 560	<b>3 842 546 760</b>
High	Slider	560 ... 810	<b>3 842 546 761</b>

According to DIN 68 877, a work chair whose seat height is adjustable above 650 mm must be equipped with a circular footrest or foot support.

## Basic



- ▶ Adjustment options
  - Seat height
  - Backrest height
- ▶ Features
  - Extremely durable
  - Easy-to-clean surface
- ▶ Scope of application
  - Production

### Material:

Seat and backrest: Wood; glued, 7 layers, clear varnish

Star chair base: Plastic

Accessories: Circular footrest (see page 83)



20423

Stool	Design	Seat height (mm)	No.
	Rounded base	580 ... 860	<b>3 842 546 776</b>

## Stool



- ▶ Adjustment options
  - Seat height
  - Seat angle
- ▶ Features
  - Durable
  - Easy-to-clean surface
- ▶ Scope of application
  - Production
  - At standing workstations to reduce muscle strain

### Material:

Seat: PU foam; black

Rounded base: Steel



20413



20412

### Dynamic PU



- ▶ Adjustment options
  - Seat height
  - Seat angle
  - Seat depth
  - Backrest height
  - Synchronous technology (synchronized backrest and seat movement)
  - Weight regulation
- ▶ Features
  - Durable
  - Easy-to-clean surface
  - Resistant to slightly acidic and caustic materials
- ▶ Scope of application
  - Mechanical production

#### Material:

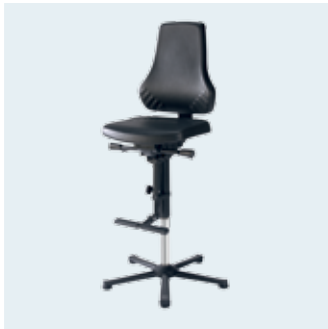
Seat and backrest: PU foam; black, full-surface weave with honeycomb effect

Star chair base: Steel

Accessories: Foot support, circular footrest, armrest (see page 83)

Dynamic PU	Design	Seat height (mm)	No.
Low	Castor	460 ... 610	<b>3 842 546 762</b>
High	Slider	580 ... 820	<b>3 842 546 763</b>

According to DIN 68 877, a work chair whose seat height is adjustable above 650 mm must be equipped with a circular footrest or foot support.



20420



20419

Dynamic synthetic leather	Design	Seat height (mm)	No.
Low	Castor	460 ... 610	<b>3 842 546 764</b>
High	Slider	580 ... 820	<b>3 842 546 765</b>

According to DIN 68 877, a work chair whose seat height is adjustable above 650 mm must be equipped with a circular footrest or foot support.

## Dynamic synthetic leather



- ▶ Adjustment options
  - Seat height
  - Seat angle
  - Seat depth
  - Backrest height
  - Synchronous technology (synchronized backrest and seat movement)
  - Weight regulation
- ▶ Features
  - Easy-to-clean surface
  - Comfort seating
- ▶ Scope of application
  - Food industry

Material:

Seat and backrest: Synthetic leather; black

Star chair base: Steel

Accessories: Foot support, circular footrest, armrest (see page 83)



20422



20421

Dynamic textile	Design	Seat height (mm)	No.
Low	Castor	460 ... 610	<b>3 842 546 766</b>
High	Slider	580 ... 820	<b>3 842 546 767</b>

According to DIN 68 877, a work chair whose seat height is adjustable above 650 mm must be equipped with a circular footrest or foot support.

## Dynamic textile



- ▶ Adjustment options
  - Seat height
  - Seat angle
  - Seat depth
  - Backrest height
  - Synchronous technology (synchronized backrest and seat movement)
  - Weight regulation
- ▶ Features
  - Soft, durable textile surface
  - Comfort seating
- ▶ Scope of application
  - Low-contamination environments
  - Inspection stations

Material:

Seat and backrest: Breathable material; black

Star chair base: Steel

Accessories: Foot support, circular footrest, armrest (see page 83)





20416



20415

### Dynamic-ESD



- ▶ Adjustment options
  - Seat height
  - Seat angle
  - Seat depth
  - Backrest height
  - Synchronous technology (synchronized backrest and seat movement)
  - Weight regulation
- ▶ Features
  - Highly conductive, breathable fabric
- ▶ Scope of application
  - Electrical and electronics production
  - Conduction resistance:  $10^6 \dots 10^8 \Omega$

**Material:**

Seat and backrest: Breathable cover with woven stainless steel fibers; black

Star chair base: Steel

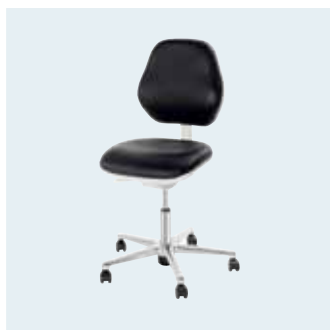
Accessories: Foot support, circular footrest, armrest (see page 83)

Dynamic-ESD	Design	Seat height (mm)	ESD	No.
Low	Castor	460 ... 610		<b>3 842 546 768</b>
High	Slider	580 ... 820		<b>3 842 546 769</b>

According to DIN 68 877, a work chair whose seat height is adjustable above 650 mm must be equipped with a circular footrest or foot support.



20411



20410

Dynamic-Clean	Design	Seat height (mm)	No.
Low	Castor	505 ... 645	<b>3 842 527 161</b>
High	Slider	655 ... 910	<b>3 842 527 162</b>

According to DIN 68 877, a work chair whose seat height is adjustable above 650 mm must be equipped with a circular footrest or foot support.

## Dynamic-Clean



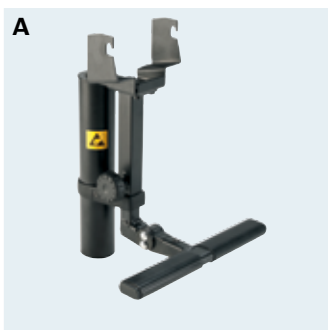
- ▶ Adjustment options
  - Seat height
  - Seat angle
  - Backrest height
  - Synchronous technology (synchronized backrest and seat movement)
  - Weight regulation
- ▶ Features
  - Soft, non-slip and electrically conductive leather
- ▶ Scope of application
  - Clean rooms (clean room class 4)
  - Electrical and electronics production
  - Conduction resistance:  $10^6 \Omega$

### Material:

Seat and backrest: Electrically conductive leather; anthracite gray

Star chair base: Aluminum

Scope of delivery of Dynamic-Clean high: Including height-adjustable foot support



20377



20382



20381

## Accessories



### Foot support (A)

- ▶ For Dynamic-PU, Dynamic synthetic leather, Dynamic textile and Dynamic-ESD swivel work chairs with a seat height above 650 mm. According to DIN 68 877, work chairs with a seat height above 650 mm must be equipped with a foot support.
- ▶ Retractable
- ▶ Adjustable height
- ▶ Non-slip surface

### Circular footrest (B)

- ▶ For all swivel work chairs
- ▶ For secure mounting and a low-fatigue, ergonomic sitting posture
- ▶ Adjustable height

### Armrests (C)

- ▶ For Dynamic-PU, Dynamic synthetic leather, and Dynamic-Textil

	ESD	No.
<b>A</b> Foot support		<b>3 842 546 772</b>
		<b>3 842 546 775</b>
<b>B</b> Circular footrest		<b>3 842 546 773</b>
<b>C</b> Armrests	Set	<b>3 842 546 774</b>



## Reduce your inventories with an efficient material supply system

A well-structured and clearly organized material supply system generates transparency to help you reduce your stocks.

Rexroth's flow rack systems offer users in commerce, trades and industry a wide range of important benefits:

- ▶ Various conveyor tracks employing various conveyor media are able to transport all containers and weight classes safely and reliably.
- ▶ Simple conversion, attachment and expansion options future-proof your system.
- ▶ Ingenious details such as color-coded rollers for long-range inventory visualization (kanban).
- ▶ The application of the FiFo principle reliably ensures that materials are used in the prescribed sequence.

XLean is the favorably priced alternative. The Lean system gives you the benefits of high flexibility and numerous combination options – colored rollers to code your stock or to help distinguish between good and reject parts. Slide rails are available as the conveyor medium for certain applications, such as when you have a steeper gradient.



For heavy loads or for moving blister packs or cardboard boxes, EcoFlow is your best choice.

The easiest way to order is to freely configure your flow rack system with your required dimensions and equipment. If you need even more flexibility, you can custom assemble your flow rack system from rack modules and individual components. All parts are designed to combine, so you can use the MTpro Layout Designer to put together your system any way you like.

The flow rack system and components are available as an ESD-conductive design suitable for use in electrostatic protected area (EPAs).

86	Flow rack systems
	XLean
	Lean
	EcoFlow
94	Conveyor tracks
	XLean
	Lean
106	Transport guide
108	Cross ties
110	Lettering clips

# Flow rack systems

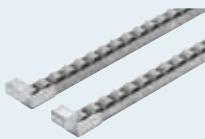
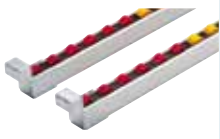










When designing your flow rack system, it is essential to know which materials will be supplied in what quantity and in which containers. The number of parts and containers, their type, their dimensions and their weight all need to be taken into account.

The load capacity of the flow racks depends on the selected parameters, the setup, the frame dimensions, and the shelves used and conveyor tracks used. The maximum load is 2000 kg.

Detailed information on permissible loads is available in the “Technical data” chapter and in *MTpro*.

The selected conveyor media and lateral guides determine how well your containers travel through the system. The available conveyor media are known as XLean, Lean and EcoFlow.

Besides the traditional form of material supply using material shelves, you can also combine rack components with workstations. The advantage of tracks over material shelves is that containers are supplied to users in a defined and

XLean	Lean	EcoFlow
		
 D28  D28SK	 D32  D32SK  GS  GS SK  RE45  RE45SK	
Cost-effective solution	Colored rollers for inventory visualization (kanban)	Heavy loads, for blister packs and cardboard boxes



precise manner. The containers cannot slip or get swapped because the tracks are adjusted to the particular container being transported.

The conveyor tracks can likewise be custom assembled from individual components or ordered as a complete unit.

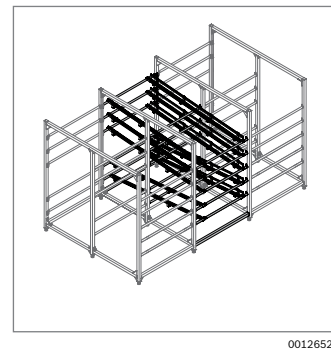
### Ergonomics

The container weight, the type of activity involved and the overall strain placed on the worker during a shift are the key factors in ergonomically designing a flow rack system. During configuration you need to consider the different body sizes of your workers so that as many of them as possible can use the system effectively. You can use the national average as a guide.

**Recommended working heights:**  
 A: Higher container weight, B: Lower container weight  
 C: Occasional handling

The tracks should be horizontally and vertically spaced to leave a sufficient grab area. We recommend leaving 200 mm both above the container height and between the tracks.

**MTpro** For workstation design and planning, we recommend **MTpro!** See pages 12 and 13 for more information.



◀ The flow racks can stand alone or be set up in combination with one another. Combining flow racks allows you to save both space and money.

◀ All flow rack systems are ESD-conductive and suitable for use in ESD-sensitive areas. All the connection elements are designed such that the anodized coating on the aluminum profiles is pierced to ensure ESD conductivity throughout the system without the need for risky additional wiring.

# Flow rack XLean



00127214



- ▶ Material supply in the supermarket or directly at the workstation
- ▶ Cost-effective solution with conveyor tracks consisting of steel profiles and plastic rollers
- ▶ Available as ESD-conductive version
- ▶ Version: Fully assembled or as a kit for self-assembly
- ▶ Allows for the addition of any desired modules, including cross ties and conveyor tracks as well as individual components

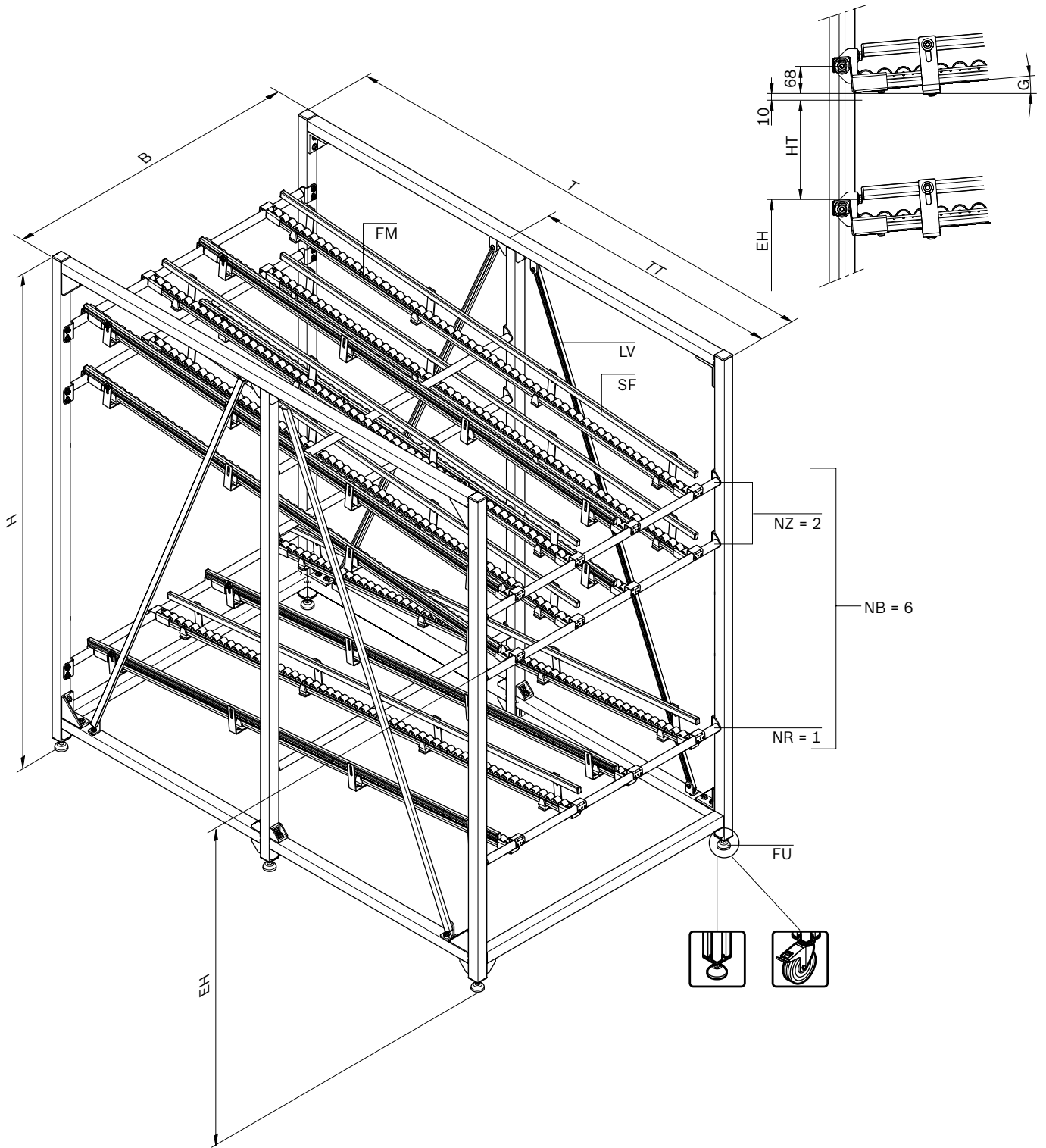


**For workstation design and planning, we recommend MTpro! See pages 12 and 13 for more information.**

See also the technical data (see page 185 ff.)

<b>Flow rack XLean</b>		<b>3 842 998 249</b>
Type	Number of side elements	0, 1, 2
ESD	Conductivity	Yes, no
FU	Foot type	Leveling foot, caster
A	Design	Disassembled, assembled
LV	Load version (maximum load)	400 kg, 2000 kg
B	Flow rack system width	400 ... 1500 mm
H	Flow rack system height	600 ... 2000 mm
T	Flow rack system depth	400 ... 6000 mm
EH	Removal height of the lower supply level	263 ... 1800 mm
HT	Transportation height (clearance for container removal)	80 ... 1200 mm
NZ	Number of supply levels	1 ... 8
NR	Number of return levels	0 ... 7
G	Gradient	0 ... 10% (recommended: 6%)
NB	Number of conveyor tracks	0 ... 64
FM	Conveyor medium	Rollers with Ø 28 mm with/without roller flange
SF	Lateral guide	With, without
PT	Cross tie type	Tubular cross tie, tubular cross tie with bracket, double tubular cross tie





# Flow rack Lean



00120898

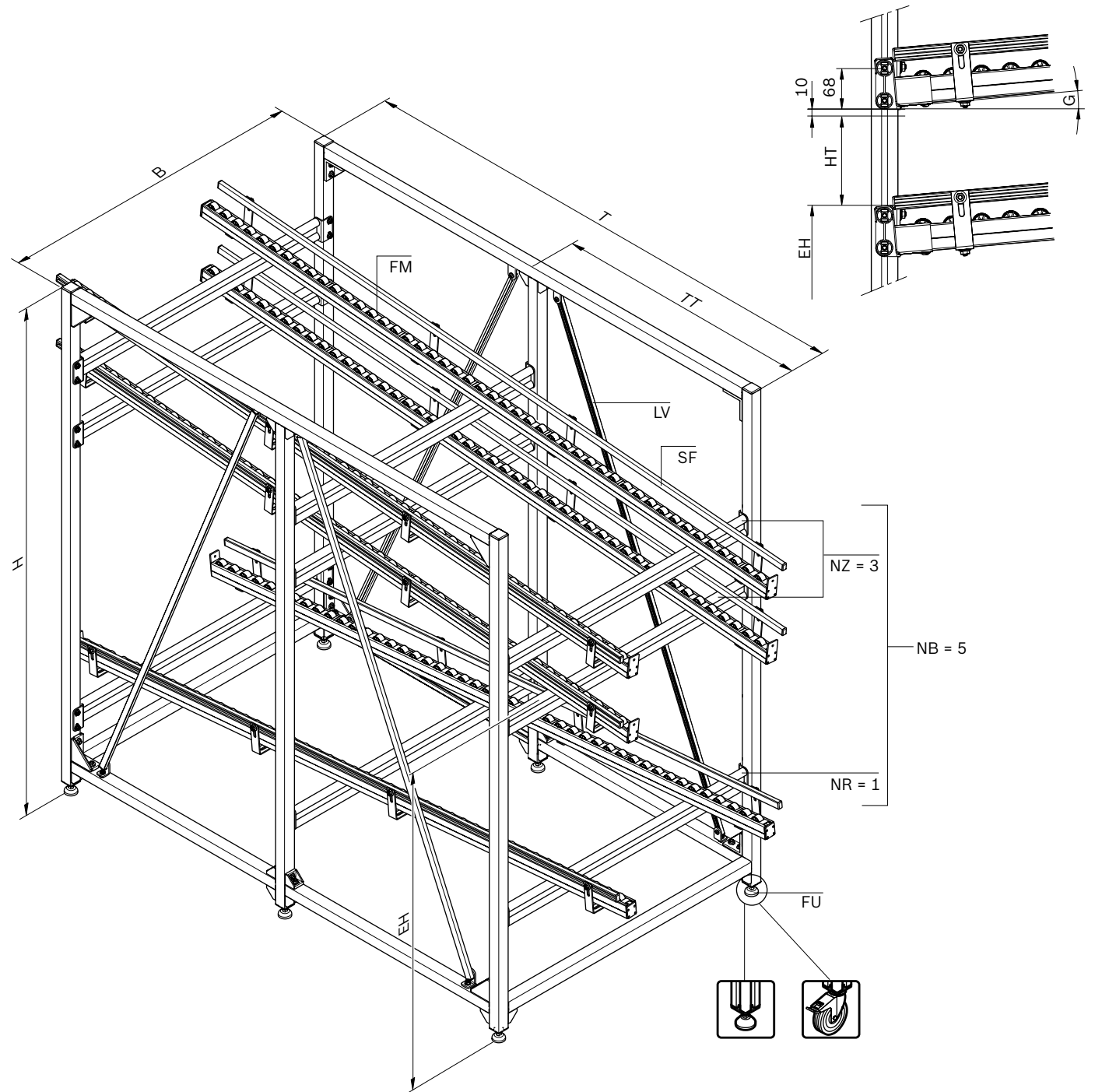


- ▶ Material supply in the supermarket or directly at the workstation
- ▶ Selection of various conveyor media – rollers, roller elements and slide rails – allows for maximum flexibility and diverse combination options
- ▶ Colored rollers provide visual indicators to identify inventories or good/reject parts
- ▶ Available as ESD-conductive version
- ▶ Version: Fully assembled or as a kit
- ▶ Allows for the addition of any desired modules, including cross ties and conveyor tracks as well as individual components

**For workstation design and planning, we recommend MTpro! See pages 12 and 13 for more information.**

See also the technical data (see page 185 ff.)

<b>Flow rack Lean</b>		<b>3 842 998 332</b>
Type	Number of side elements	0, 1, 2
ESD	Conductivity	Yes, no
FU	Foot type	Leveling foot, caster
A	Design	Disassembled, assembled
LV	Load version (maximum load)	400 kg, 2000 kg
B	Flow rack system width	400 ... 1500 mm
H	Flow rack system height	600 ... 2000 mm
T	Flow rack system depth	400 ... 6000 mm
TT	Division of flow rack depth (max. distance between cross ties)	1000, 1500
G	Gradient	0 ... 10% (recommended: 6%)
PT	Cross tie type	Tubular cross tie, tubular cross tie with bracket, profile cross tie, double tubular cross tie
UV	Front conveyor track projection	0, 50 ... 1000 mm
UH	Rear conveyor track projection	0, 50 ... 1000 mm
EH	Removal height of the lower supply level	263 ... 1800 mm
HT	Transportation height (clearance for container removal)	100 ... 1200 mm
NZ	Number of supply levels	1 ... 8
NR	Number of return levels	0 ... 7
NB	Number of conveyor tracks	0 ... 64
FM	Conveyor medium	Rollers with Ø 32 mm with/without roller flange, various spacing, slide rails with/without border, roller elements with/without border
F	Roller color	Black, red, yellow, green
SF	Lateral guide	With, without



# Flow rack EcoFlow



00127572

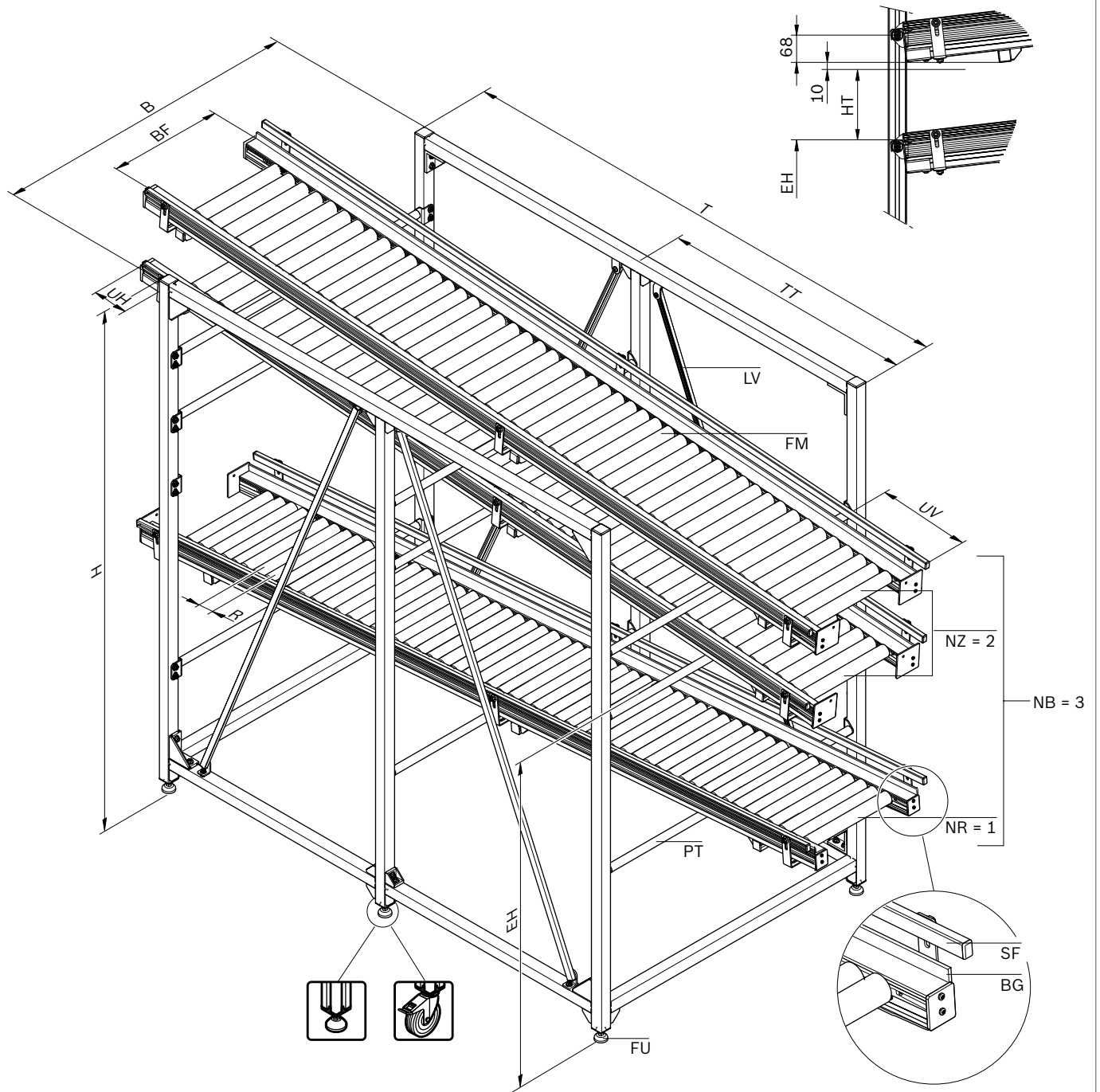


- ▶ Material supply in the supermarket or directly at the workstation
- ▶ For heavy loads
- ▶ Full-width rollers for the transport and supply of blister packs or cardboard boxes
- ▶ Available as ESD-conductive version
- ▶ Version: Fully assembled or as a kit for self-assembly
- ▶ Allows for the addition of any desired modules, including cross ties and conveyor tracks as well as individual components

**For workstation design and planning, we recommend MTpro! See pages 12 and 13 for more information.**

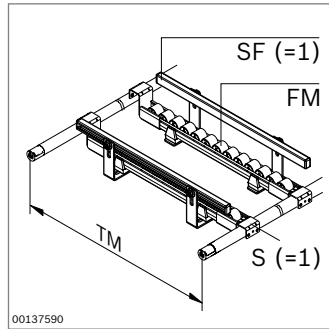
See also the technical data (see page 185 ff.)

<b>Flow rack EcoFlow</b>		<b>3 842 998 322</b>
Type	Number of side elements	0, 1, 2
ESD	Conductivity	Yes, no
FU	Foot type	Leveling foot, caster
A	Design	Disassembled, assembled
B	Flow rack system width	400 ... 1000 mm
H	Flow rack system height	600 ... 2000 mm
T	Flow rack system depth	400 ... 6000 mm
TT	Division of flow rack depth (max. distance between cross ties)	1000, 1500
G	Gradient	0...10% (recommended: 6%)
PT	Cross tie type	Tubular cross tie, tubular cross tie with bracket, profile cross tie, double tubular cross tie
UV	Front conveyor track projection	0, 50 ... 1000 mm
UH	Rear conveyor track projection	0, 50 ... 1000 mm
EH	Removal height of the lower supply level	263 ... 1800 mm
HT	Transportation height (clearance for container removal)	100 ... 1200 mm
NZ	Number of supply levels	1 ... 8
NR	Number of return levels	0 ... 7
NB	Number of conveyor tracks	0 ... 20
FM	Conveyor medium	Rollers in plastic, steel, stainless steel
SF	Lateral guide	With, without
R	Roller distance	50, 100 mm
BG	Slide rail border	Inside, outside
BF	Conveyor track width	200 ... 892 mm





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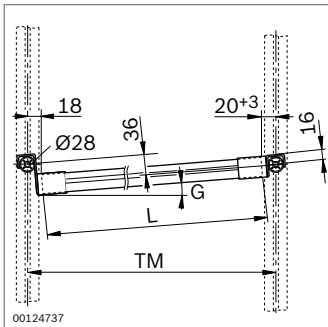
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### XLean conveyor tracks

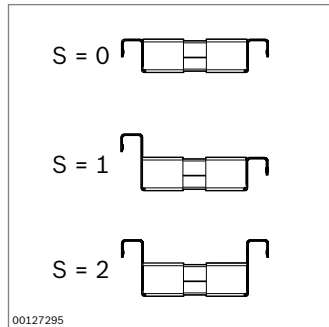


- ▶ Conveyor track made of steel profiles with plastic rollers and optional roller flange
- ▶ Rail holders for mounting to tubular cross tie
- ▶ Recommended gradient:  $G = 6\%$
- ▶ Available as ESD-conductive version

Scope of delivery: Conveyor track consisting of two conveyor sections (right/left) with rail holders



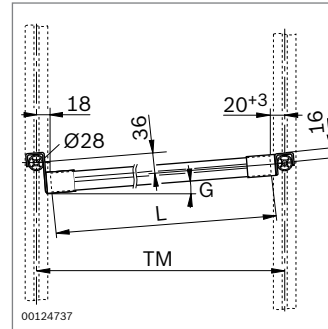
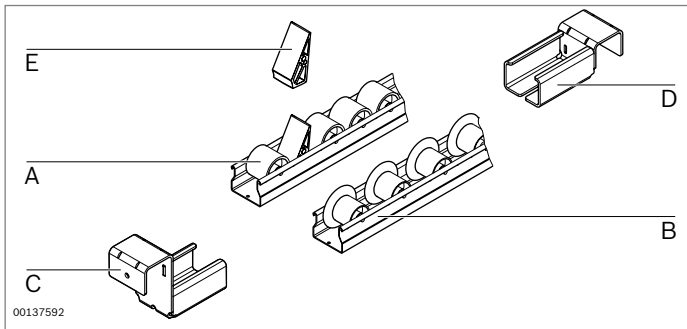
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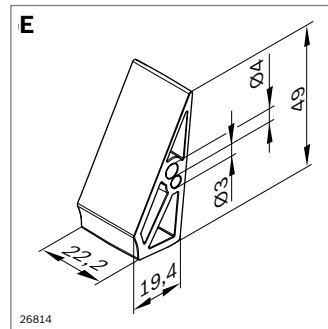
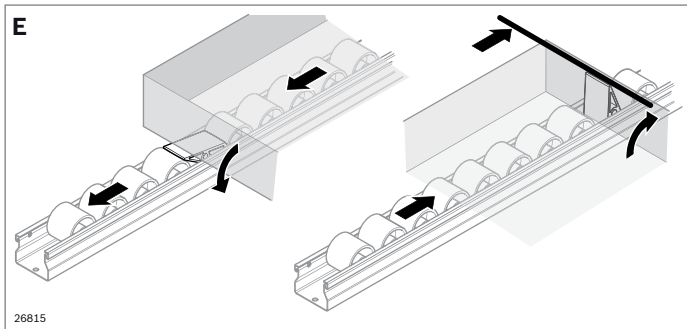
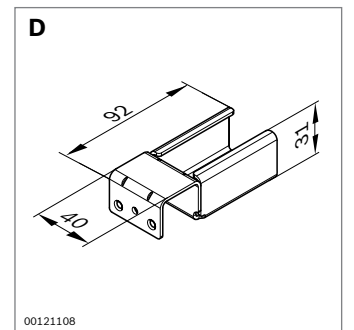
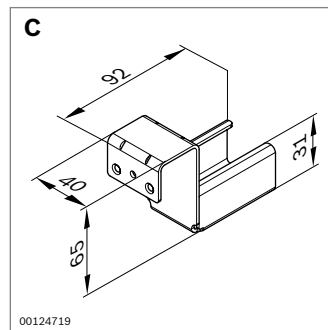
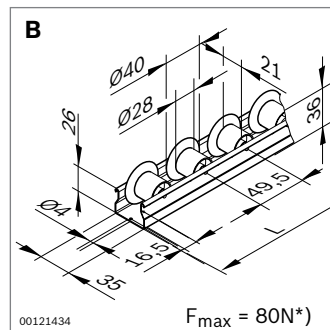
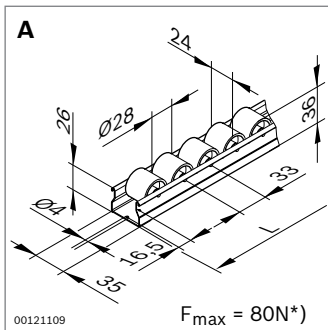
**For workstation design and planning, we recommend MTpro! See pages 12 and 13 for more information.**

<b>XLean conveyor tracks</b>		<b>3 842 998 196</b>
ESD	Conductivity	Yes, no
TM	Horizontal distance between tubular cross ties	355 ... 4500 mm
G	Gradient	0 ... 10% (recommended: 6%)
FM	Conveyor medium	Rollers with Ø 28 mm with/without roller flange
S	Rail holder design	With/without stop
SF	Lateral guide	With, without

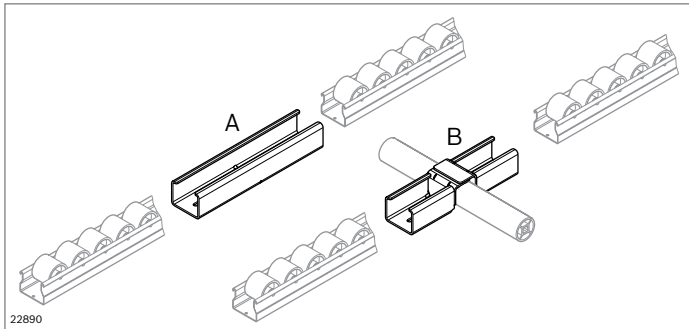


**XLean conveyor tracks – components**

TM (mm)	G (%)	L (mm)
1000	0	962.0
1000	6	961.7
1000	10	963.5

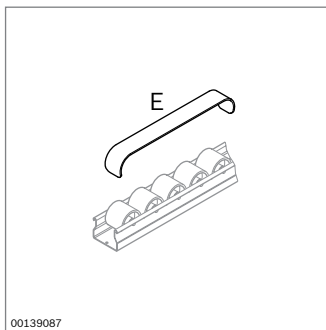
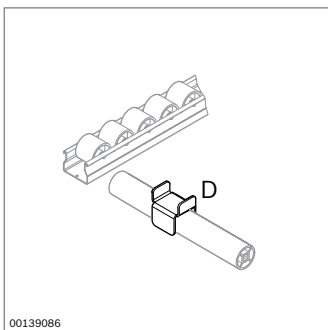
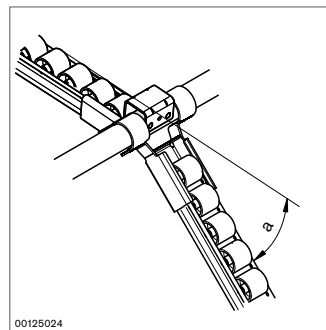
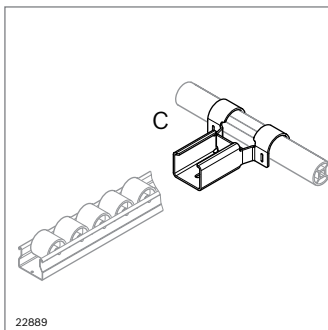



	L (mm)	ESD	No.
<b>A</b> Roller section D28	100 ... 4500		<b>3 842 993 321/L</b>
	4500	50	<b>3 842 537 776</b>
	100 ... 4500	⚠	<b>3 842 993 431/L</b>
	4500	50 ⚠	<b>3 842 537 778</b>
<b>B</b> Roller section D28SK	100 ... 4500		<b>3 842 993 322/L</b>
	4500	50	<b>3 842 537 777</b>
	100 ... 4500	⚠	<b>3 842 993 432/L</b>
	4500	50 ⚠	<b>3 842 537 779</b>
<b>C</b> Rail holder with stop		20	<b>3 842 538 372</b>
<b>D</b> Rail holder without stop		20	<b>3 842 537 687</b>
<b>E</b> Stopper XLean/Lean		10 ⚠	<b>3 842 552 151</b>



## XLean – accessories

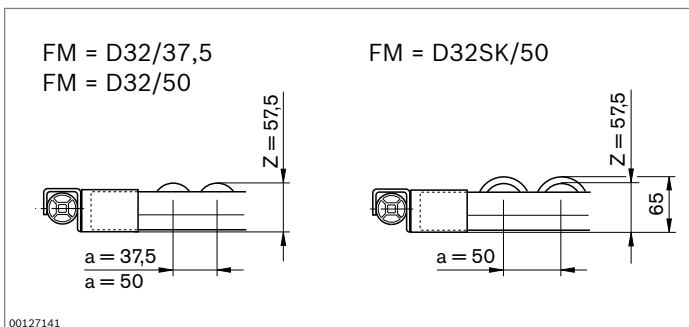
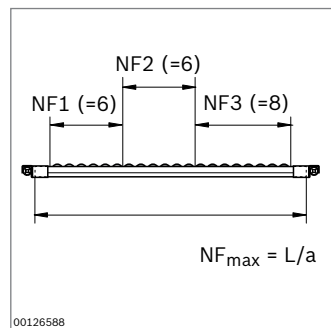
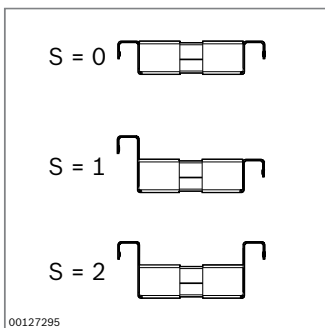
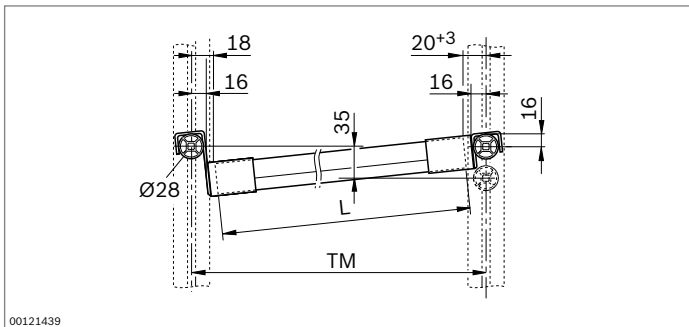
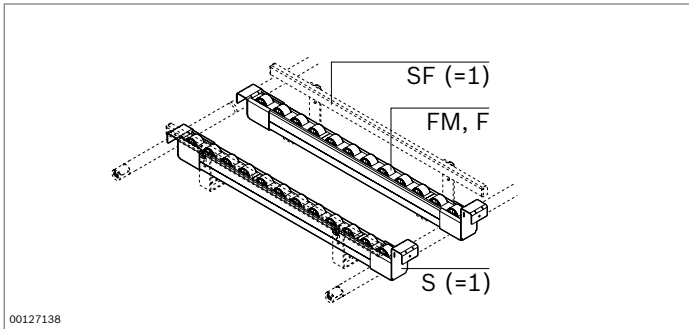
- ▶ **Section link (A)** for connecting two XLean roller sections together
- ▶ **Bridge (B)** for connecting two XLean roller sections and simultaneously securing them to the tubular cross tie. This increases the rigidity of the system
- ▶ **Flexible bridge (C)** for easy material supply in the flow rack system. The container is stopped by a rail holder with stop and is moved manually to the inclined position.
  - Maximum inclination ( $\alpha_{\max}$ ) compared to horizontal:
    - With tubular cross tie:  $\alpha_{\max} = 40^\circ$
    - With double tubular cross tie:  $\alpha_{\max} = 30^\circ$
- ▶ **Mount (D)** to secure the roller section to an additional tubular cross tie. The additional tubular cross tie increases the stability of the system.
- ▶ **Brake (E)** for bringing containers to a gentle stop



		No.
<b>A</b> Section link	20	<b>3 842 536 722</b>
<b>B</b> Bridge	20	<b>3 842 536 724</b>
<b>C</b> Flexible bridge	20	<b>3 842 537 911</b>
<b>D</b> Mount	20	<b>3 842 537 657</b>
<b>E</b> Brake	20	<b>3 842 532 871</b>







### Lean conveyor tracks with rail holder

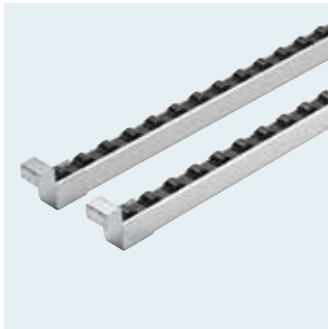


- ▶ Aluminum U-profile conveyor track
- ▶ Conveyor media to meet all requirements:
  - Rollers with or without roller flange. Four colors to visually identify inventories (kanban) or to differentiate between good and reject parts.
  - Roller elements with and without roller flange (RE45, RE45SK)
  - Slide rails with or without integrated lateral guide (GS, GSSK)
- ▶ Rail holders for suspending to tubular cross tie
- ▶ Available as ESD-conductive version (U-profile: bare aluminum)

Scope of delivery: Conveyor track consisting of two conveyor sections (right/left) with rail holders

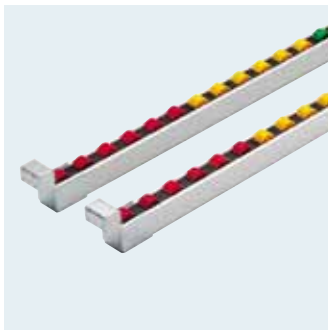
**MTpro**

**For workstation design and planning, we recommend MTpro! See pages 12 and 13 for more information.**



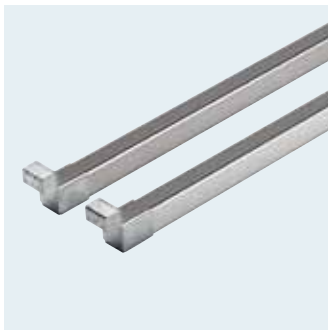
00121021

<b>Conveyor track with rail holder, single-color rollers</b>		<b>3 842 998 381</b>
ESD	Conductivity	Yes, no
TM	Horizontal distance between tubular cross ties	355 ... 6000 mm
G	Gradient	0 ... 10% (recommended: 6%)
FM	Conveyor medium	Rollers with Ø 32 mm with/without roller flange, various spacings
F	Roller color	Black, red, yellow, green
S	Rail holder design	With/without stop
SF	Lateral guide	With, without



00121018

<b>Conveyor track with rail holder, multi-color rollers</b>		<b>3 842 998 382</b>
ESD	Conductivity	Yes, no
TM	Horizontal distance between tubular cross ties	355 ... 6000 mm
G	Gradient	0 ... 10% (recommended: 6%)
FM	Conveyor medium	Rollers with Ø 32 mm with/without roller flange, various spacings
F1	Roller color	Black, red, yellow, green
NF1	Number of rollers in color 1	Max. 160
F2	Roller color	Black, red, yellow, green
NF2	Number of rollers in color 2	Max. 160
F3	Roller color	Black, red, yellow, green
NF3	Number of rollers in color 3	Max. 160
S	Rail holder design	With/without stop
SF	Lateral guide	With, without



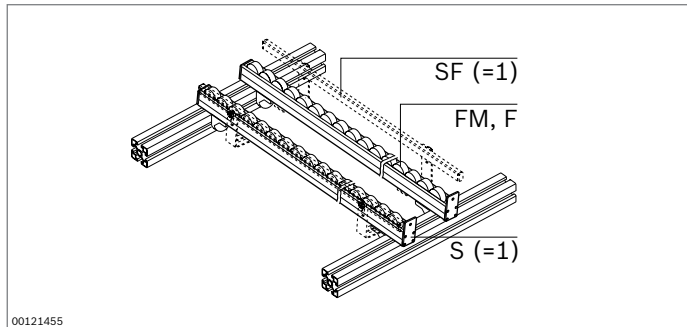
00121032

<b>Conveyor track with rail holder, slide rails</b>		<b>3 842 998 387</b>
ESD	Conductivity	Yes, no
TM	Horizontal distance between tubular cross ties	355 ... 6000 mm
G	Gradient	0 ... 10% (recommended: 6%)
FM	Conveyor medium	Slide rails with/without border
S	Rail holder design	With/without stop
SF	Lateral guide	With, without

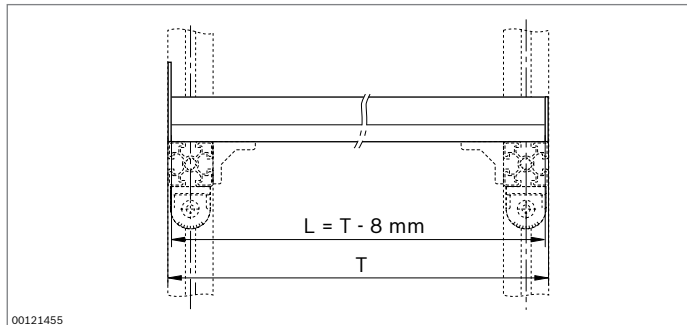


00121049

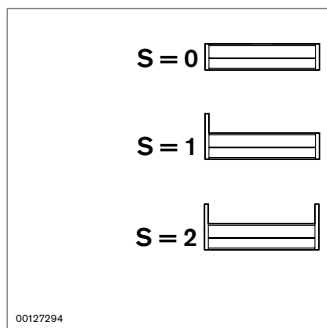
<b>Conveyor track with rail holder, roller elements</b>		<b>3 842 998 385</b>
ESD	Conductivity	Yes, no
TM	Horizontal distance between tubular cross ties	355 ... 6000 mm
G	Gradient	0 ... 10% (recommended: 6%)
FM	Conveyor medium	Roller element with/without border
S	Rail holder design	With/without stop
SF	Lateral guide	With, without



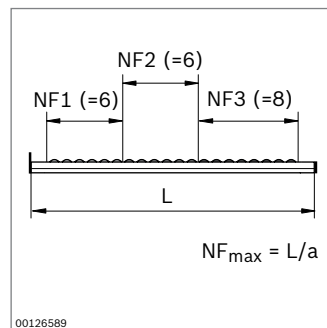
00121455



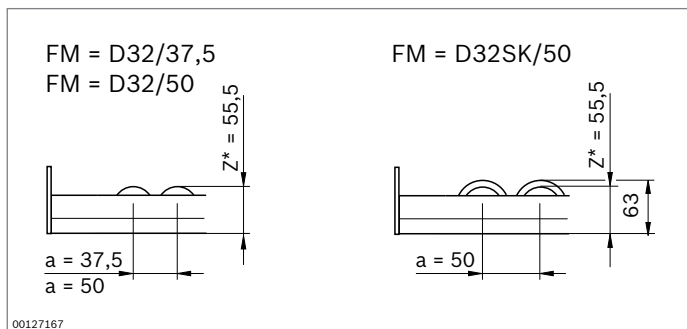
00121455



00127294



00126589



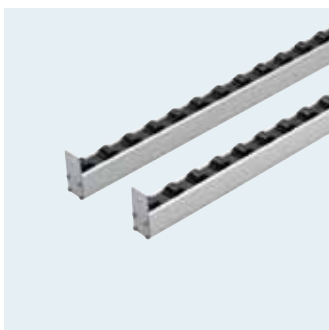
00127167

## Lean conveyor track with stop plates



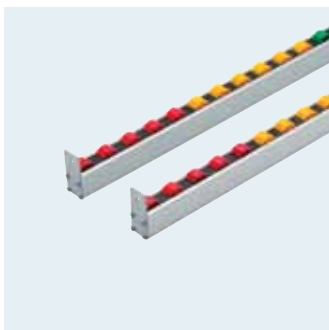
- ▶ Aluminum U-profile conveyor track
- ▶ Conveyor media to meet all requirements:
  - Rollers with or without roller flange. Four colors to visually identify inventories (kanban) or to differentiate between good and reject parts.
  - Roller elements with and without roller flange (RE45, RE45SK)
  - Slide rails with or without integrated lateral guide (GS, GSSK)
- ▶ Applications include the manual linking of workstations
- ▶ Available as ESD-conductive version (U-profile: bare aluminum)

Scope of delivery: Conveyor track consisting of two conveyor sections (right/left) with stop plates



00127297

<b>Conveyor track with stop plate, single-color rollers</b>		<b>3 842 998 383</b>
ESD	Conductivity	Yes, no
L	Conveyor track length	355 ... 6000 mm
FM	Conveyor medium	Rollers with Ø 32 mm with/without roller flange, various spacings
F	Roller color	Black, red, yellow, green
S	Stop plate design	With/without stop
SF	Lateral guide	With, without



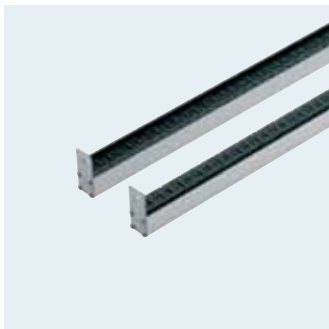
00127298

<b>Conveyor track with stop plate, multi-color rollers</b>		<b>3 842 998 384</b>
ESD	Conductivity	Yes, no
L	Conveyor track length	355 ... 6000 mm
FM	Conveyor medium	Rollers with Ø 32 mm with/without roller flange, various spacings
F1	Roller color	Black, red, yellow, green
NF1	Number of rollers in color 1	Max. 160
F1	Roller color	Black, red, yellow, green
NF2	Number of rollers in color 2	Max. 160
F1	Roller color	Black, red, yellow, green
NF3	Number of rollers in color 3	Max. 160
S	Stop plate design	With/without stop
SF	Lateral guide	With, without



00127299

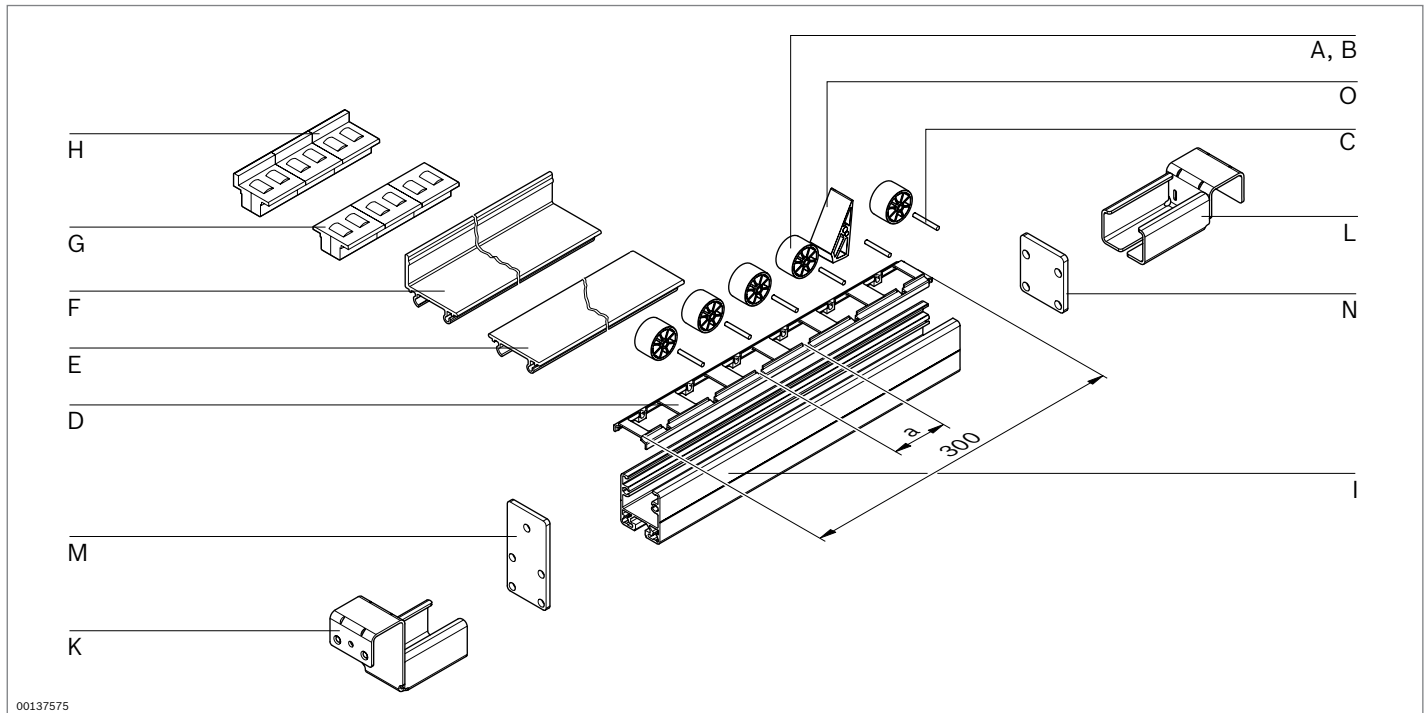
<b>Conveyor track with stop plate, slide rails</b>		<b>3 842 998 388</b>
ESD	Conductivity	Yes, no
L	Conveyor track length	355 ... 6000 mm
FM	Conveyor medium	Slide rails with/without border
S	Stop plate design	With/without stop
SF	Lateral guide	With, without



00127278

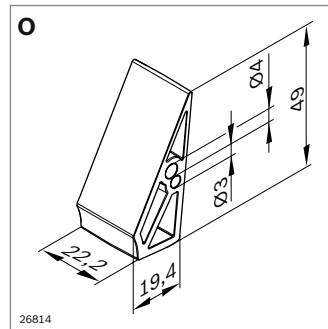
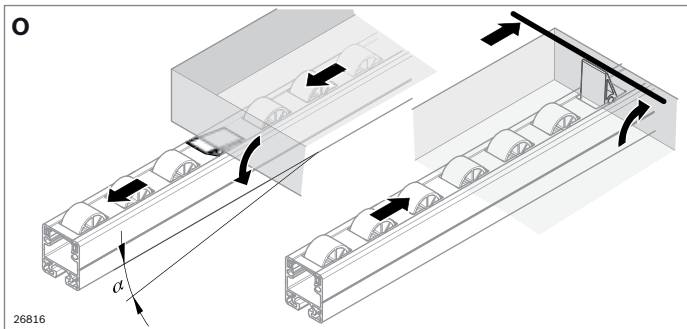
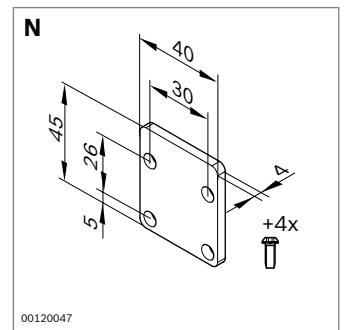
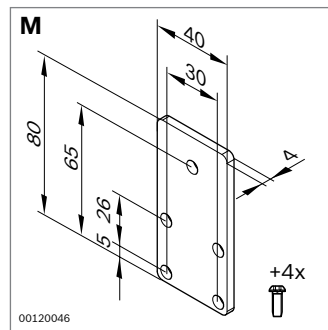
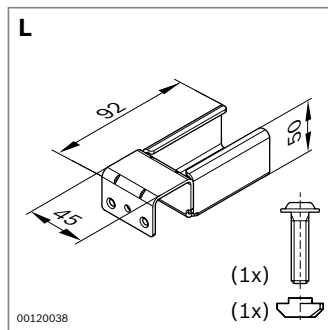
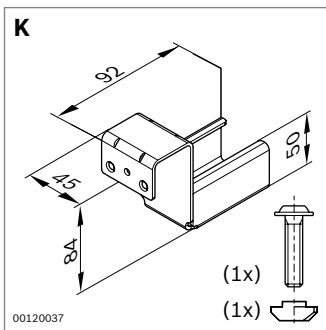
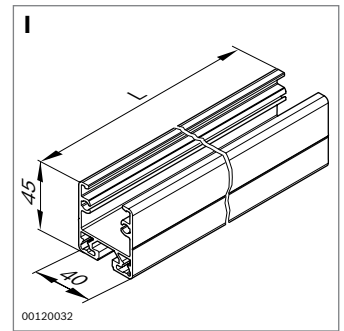
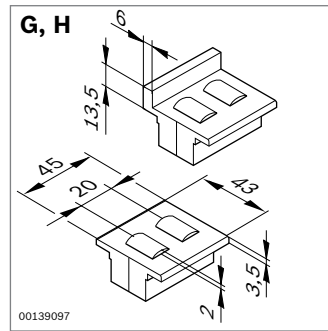
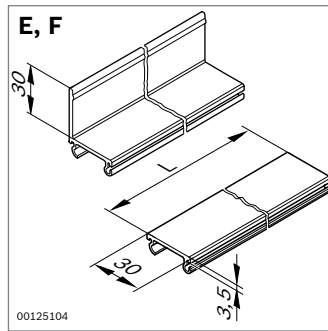
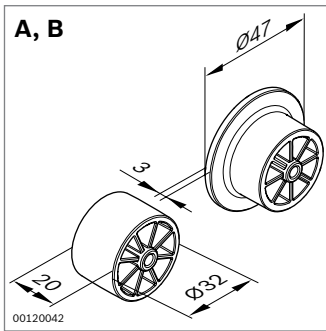
<b>Conveyor track with stop plate, roller elements</b>		<b>3 842 998 386</b>
ESD	Conductivity	Yes, no
L	Conveyor track length	355 ... 6000 mm
FM	Conveyor medium	Roller element with/without border
S	Stop plate design	With/without stop
SF	Lateral guide	With, without

## Lean conveyor tracks – components



00137575

	a (mm)	ESD No.	
<b>A</b> Roller D32, black	100	3 842 532 865	
	100	3 842 537 961	
	100	3 842 532 866	
	100	3 842 537 960	
	100	3 842 532 870	
	100	3 842 537 959	
	100	3 842 532 752	
<b>B</b> Roller D32SK, black	100	3 842 532 867	
	100	3 842 537 965	
	100	3 842 532 883	
	100	3 842 537 964	
	100	3 842 532 884	
	100	3 842 537 963	
Roller D32, green	100	3 842 532 880	
	100	3 842 537 962	
<b>C</b> Steel axis		100 3 842 532 862	
<b>D</b> Roller carrier D32/37.5		20 3 842 537 944	
		20  3 842 537 945	
	Roller carrier D32/50	50	20 3 842 532 887
			20  3 842 538 094
	Roller carrier D 32SK/50	50	20 3 842 532 886
		20  3 842 537 947	



	L (mm)			ESD	No.
<b>E</b> Glider rail	3000		20		<b>3 842 535 124</b>
	3000		20		<b>3 842 537 803</b>
<b>F</b> Slide rail, lateral guide	3000		20		<b>3 842 537 806</b>
	3000		20		<b>3 842 537 807</b>
<b>G</b> Roller elements RE45	45		100		<b>3 842 319 501</b>
	45		100		<b>3 842 538 064</b>
<b>H</b> Roller elements RE 45SK	45		100		<b>3 842 319 500</b>
	45		100		<b>3 842 538 065</b>
<b>I</b> U-profile	30 ... 6000				<b>3 842 993 316/L</b>
	30 ... 6000				<b>3 842 995 027/L</b>
	6070	20			<b>3 842 535 115</b>
	6070	20			<b>3 842 541 814</b>
<b>K</b> Rail holder with stop			20		<b>3 842 537 660</b>
<b>L</b> Rail holder without stop			20		<b>3 842 537 661</b>
<b>M</b> Stop plate 40x80, with stop			20		<b>3 842 535 121</b>
<b>N</b> Stop plate 40x45, without stop			20		<b>3 842 535 122</b>
<b>O</b> Stopper XLean/Lean			10		<b>3 842 552 151</b>

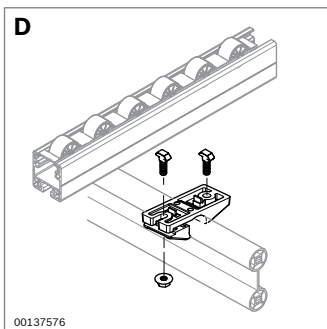
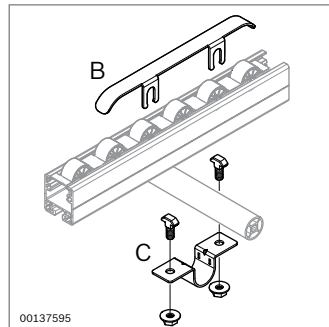
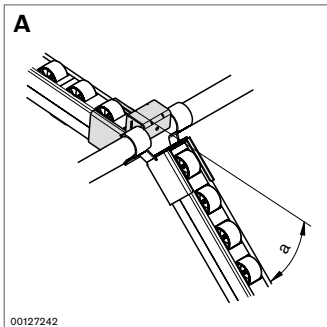


00129984

## Lean – accessories

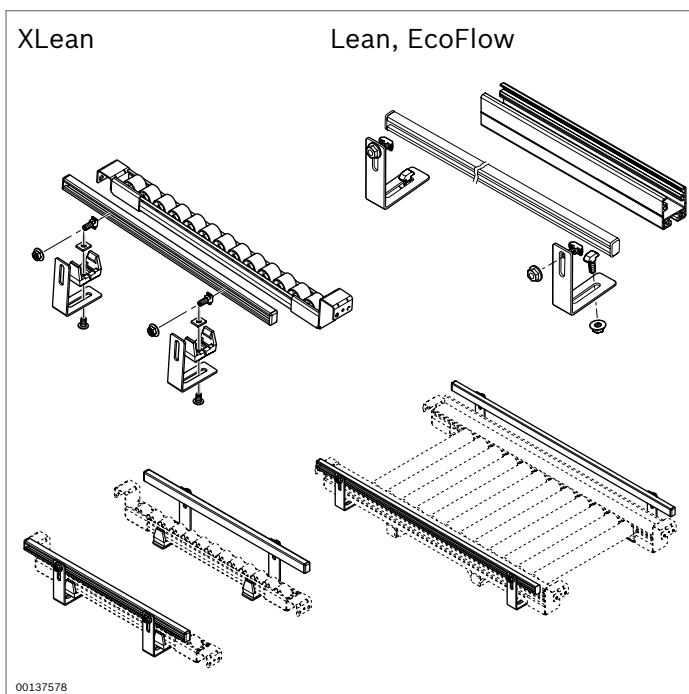


- ▶ **Flexible bridge (A)** for the ergonomic supply of containers in the flow rack system or at the workstation. The container is stopped at the flexible bridge and then manually moved to the ergonomic removal position. Maximum inclination ( $a_{\max}$ ) compared to horizontal:
  - With tubular cross tie:  $a_{\max} = 40^\circ$
  - With double tubular cross tie:  $a_{\max} = 30^\circ$
- ▶ **Brake (B)** for bringing containers to a gentle stop
- ▶ **Tube clip (C)** for fastening conveyor tracks onto the tubular cross tie. Increased stability
- ▶ **Holder for double tubular cross tie (D)** for connecting conveyor track and double tubular cross tie. Increased stability



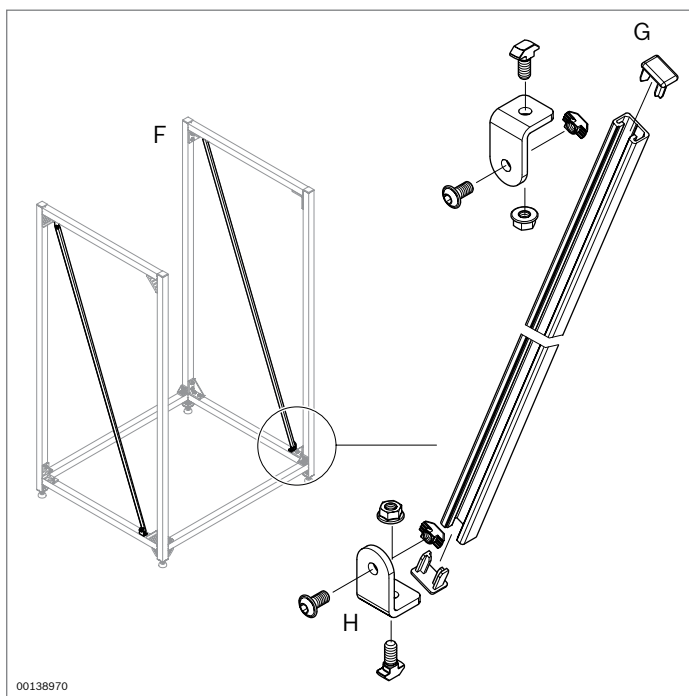
	ESD	No.
<b>A</b> Flexible bridge	20	<b>3 842 537 951</b>
<b>B</b> Brake D32/37.5	20	<b>3 842 537 948</b>
Brake D32/50, D32SK/50	20	<b>3 842 532 881</b>
<b>C</b> Tube clip D28	20	<b>3 842 535 364</b>
<b>D</b> Holder for double tubular cross tie	20	<b>3 842 537 720</b>





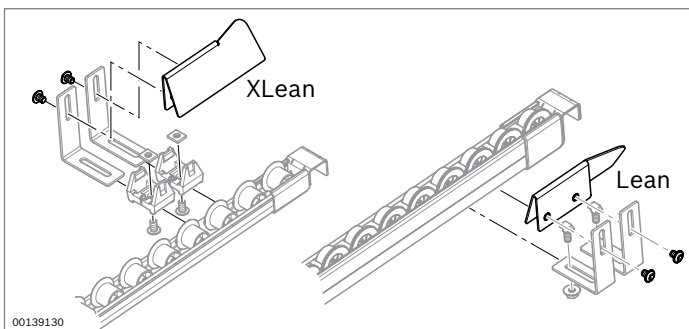
### Lateral guide application

- ▶ For retrofitting a lateral guide to the XLean, Lean and EcoFlow conveyor tracks
- ▶ Assembly elements, see “Components” chapter (see page 160)



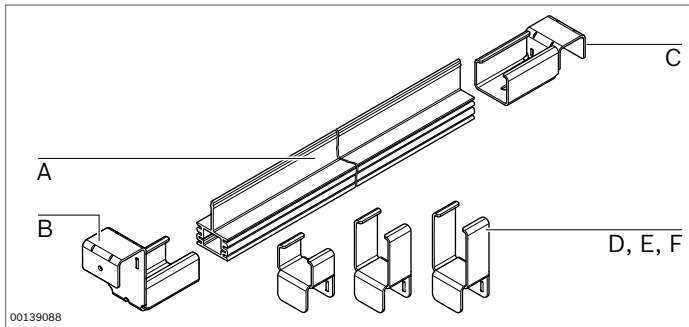
### Reinforcement application

- ▶ For constructing flow racks with increased stability
- ▶ Rack loads up to 2000 kg
- ▶ Assembly elements, see “Components” chapter (see page 160)



### Insertion aid application

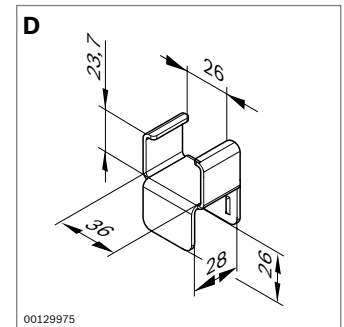
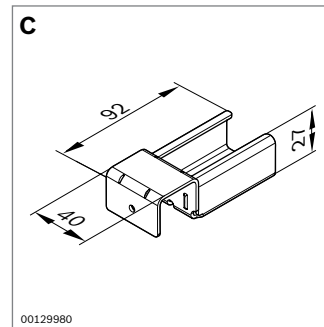
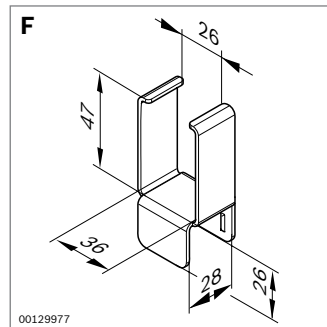
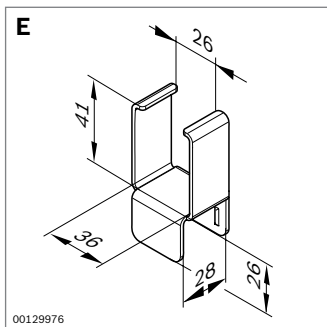
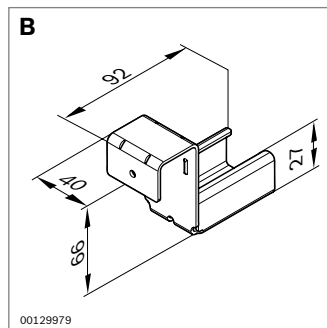
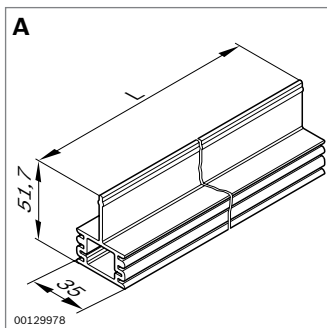
- ▶ Helps logisticians to insert material containers onto a conveyor track
- ▶ Quick and easy insertion
- ▶ Assembly elements, see “Components” chapter (see page 160)






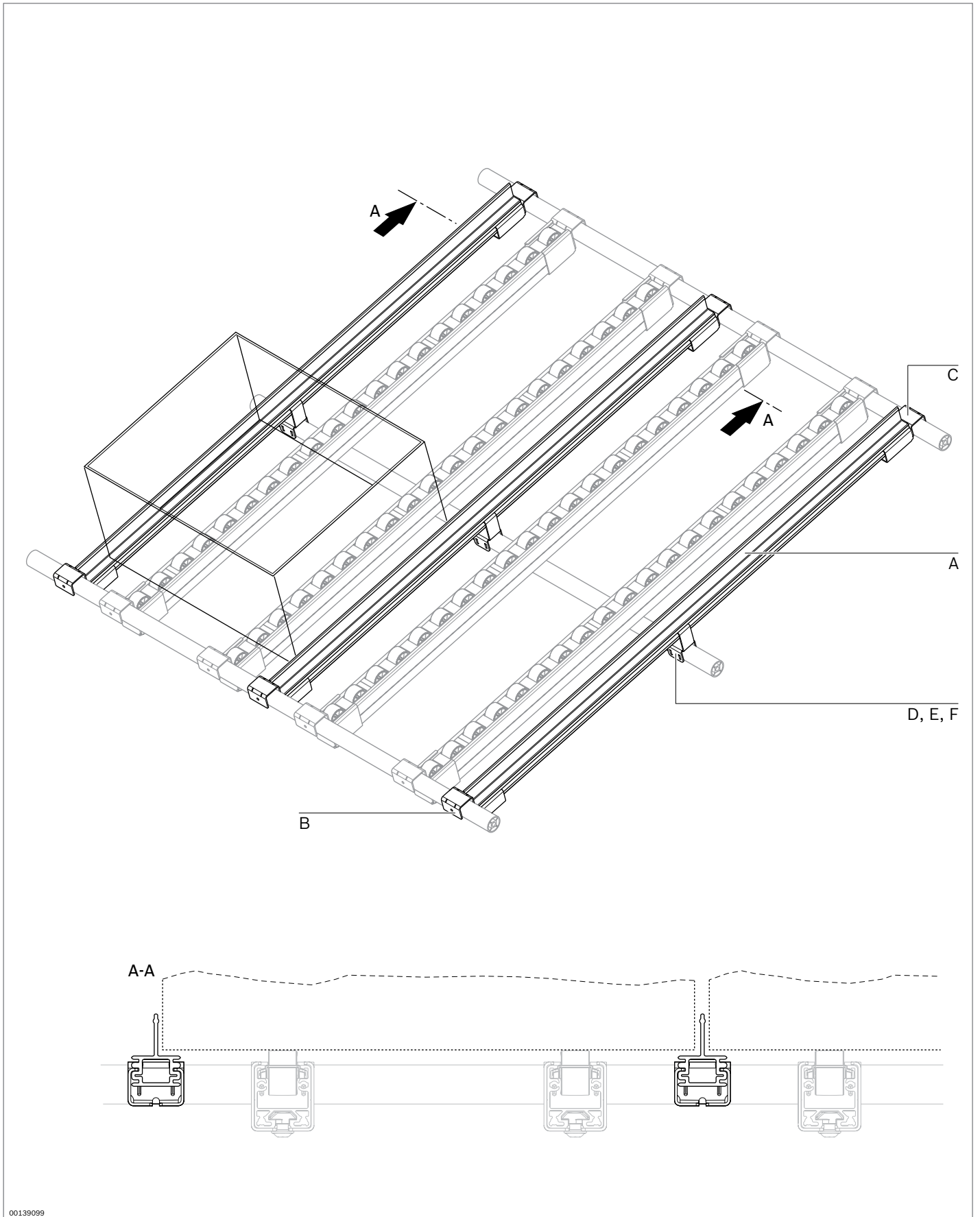
### Transport guide

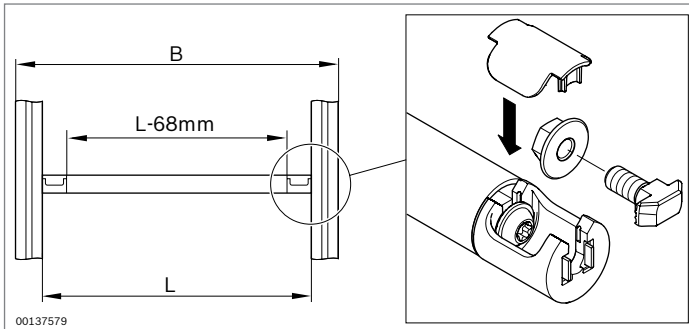


- ▶ Guide can be retrofitted onto Lean and XLean conveyor tracks
- ▶ Can be combined with all XLean and Lean conveyor media
- ▶ The T-shaped cross section allows both sides to be used as a lateral guide and a slide rail
- ▶ Use of both sides means lower space requirements
- ▶ Can be lowered underneath the conveyor track by turning the transport guide by 180°
- ▶ Mount for increased stability



	L (mm)		ESD No.
<b>A</b> Polymer profile	30 ... 3000		<b>3 842 993 615/L</b>
	3000	20	<b>3 842 538 108</b>
	30 ... 3000		<b>3 842 993 617/L</b>
	3000	20	 <b>3 842 538 107</b>
<b>B</b> Rail holder with stop		20	<b>3 842 538 051</b>
<b>C</b> Rail holder without stop		20	<b>3 842 538 050</b>
<b>D</b> XLean mount		20	<b>3 842 538 102</b>
<b>E</b> Mount Lean for RT, RTW, DRT		20	<b>3 842 538 052</b>
<b>F</b> Mount Lean for DRT with holder for double round tube		20	<b>3 842 538 130</b>





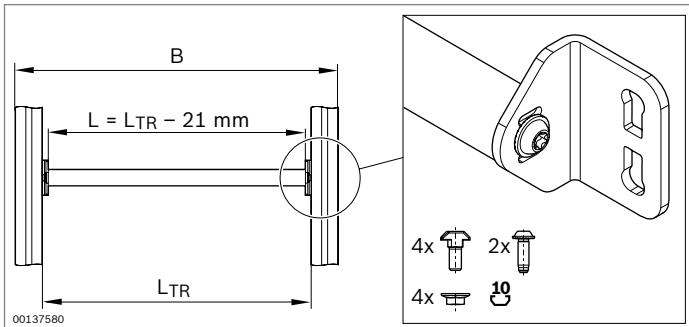
## Cross ties – components

### Tubular cross tie (RT)

- ▶ Space-saving, visually appealing design

### Tubular cross tie with bracket (RTW)

- ▶ Use of brackets makes for easy assembly
- ▶ Elongated hole for longitudinal compensation ( $\pm 3$  mm tolerance)

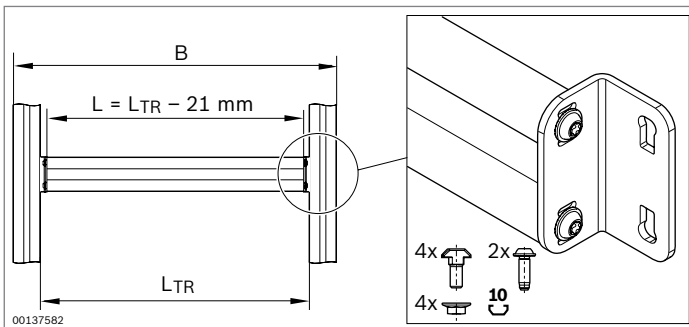
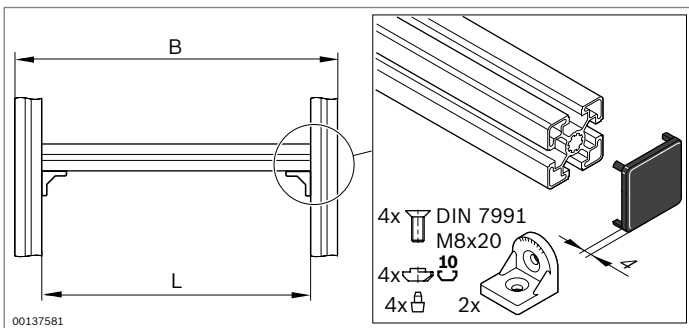


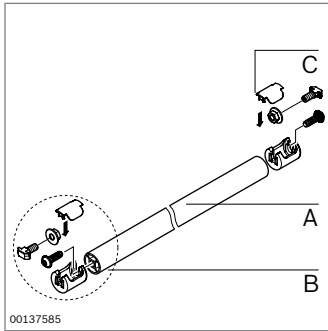
### Profile cross tie (PT)

- ▶ Designed for heavy loads
- ▶ Flexible usage thanks to integrated 10 mm slot

### Double tubular cross tie (DRT)

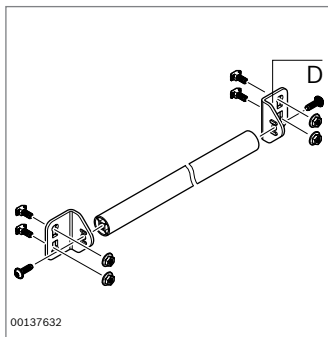
- ▶ Designed for heavy loads
- ▶ Use of brackets makes for easy assembly
- ▶ Elongated hole for longitudinal compensation ( $\pm 3$  mm tolerance)





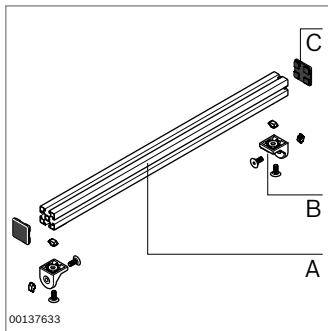
**Tubular cross tie**

	L (mm)			No.
<b>A</b> Round tube D28 (Ø 28)	30 ... 6000	1		<b>3 842 993 317/L</b>
	6070	20		<b>3 842 535 118</b>
<b>B</b> T-connector D28 with cap, with fastening parts			20	<b>3 842 532 879</b>
<b>C</b> Cap for T-connector D28			20	<b>3 842 532 878</b>
<b>D</b> Bracket 60x47x4, with fastening parts			20	<b>3 842 536 002</b>



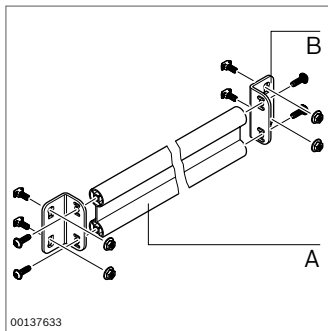
**Profile cross tie**

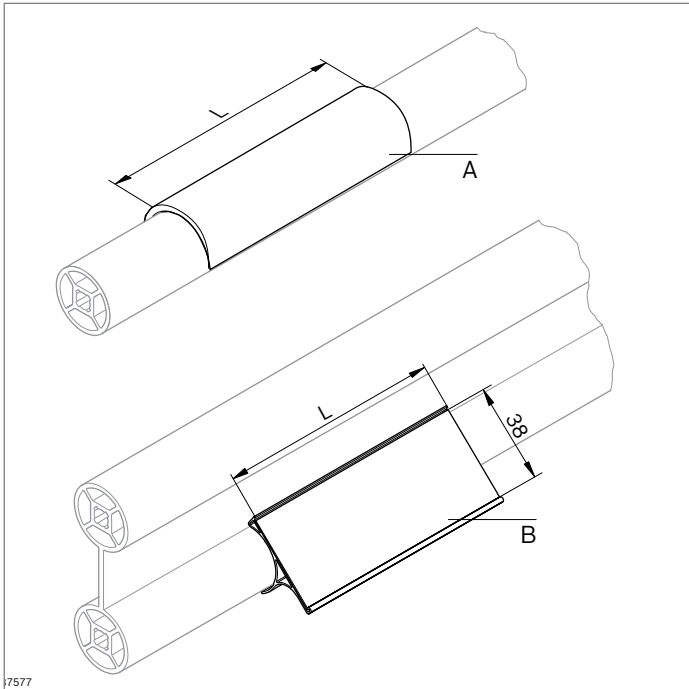
	L (mm)			ESD	No.
<b>A</b> Profile 45x45L	50 ... 5600	1			<b>3 842 993 737/L</b>
	5600	20			<b>3 842 511 702</b>
<b>B</b> Bracket 40x43, with fastening parts			100		<b>3 842 518 424</b>
<b>C</b> Cover cap			100		<b>3 842 502 674</b>
			20		<b>3 842 517 058</b>



**Double tubular cross tie**


	L (mm)			No.
<b>A</b> Strut profile D28x55	100 ... 6000	1		<b>3 842 993 489/L</b>
	6070	20		<b>3 842 537 477</b>
<b>B</b> Bracket 85x47x4, with fastening parts			20	<b>3 842 536 730</b>





### Lettering clip

- ▶ For labeling cross ties in flow rack systems, workstations and material shuttles
- ▶ Self-adhesive
- ▶ With flat writing surface for tubular and double tubular cross ties and for EcoShape
- ▶ With rounded writing surface for tubular and double tubular cross ties and for EcoShape
- ▶ Max. label height: 38 mm

	L (mm)		No.
<b>A</b> Lettering clip for tubular cross ties	2000	20	<b>3 842 535 136</b>
	102	20	<b>3 842 538 093</b>
<b>B</b> Lettering clip for double tubular cross ties	2000	20	<b>3 842 537 119</b>
	102	20	<b>3 842 537 652</b>





## EcoShape – The tubular framing system for new dimensions

With EcoShape, you can build custom structures that require very few components. Planning is easy, too, not just due to the new *MTpro* design software and the ability to make virtually any connection with just a few standard parts.



The 19 standard components are designed in accordance with the poka yoke principle, making them quick to assemble and prohibiting any faulty connections.

The assembly line can be improved and expanded at any time in line with the kaizen philosophy.

The system allows you to quickly and economically custom plan and build flow racks, material shuttles, workstations and any other frame systems to meet your specific needs.

- ▶ Two aluminum tubular profiles give your construction the required stability.
- ▶ With just five connectors, you can create any connection between two EcoShape profiles – parallel, perpendicular, or at any desired angle.
- ▶ All of the connectors establish a positive interlocking connection between the profiles for a secure fit.
- ▶ The connection elements allow for a length tolerance, greatly facilitating cut-to-size and assembly work.
- ▶ The new Variofix blocks let you securely attach surface elements quickly and inexpensively.
- ▶ The combination with Rexroth's modular aluminum framing system enables solutions for handling heavy loads.
- ▶ EcoShape can be combined with the range of components from the Manual Production Systems (MPS) line. You can use this versatility to expand system functionality, for example in the area of ergonomics.



- 118 Round tube
- 118 Components
- 119 Connector
- 122 Adapter

# EcoShape

EcoShape stands for versatility.  
With EcoShape, you are ready for any challenge.

- ▶ The ability to combine all components with one another gives you great flexibility with just a few components.
- ▶ The tubes and connectors will neither rust nor wear, making them ideal for long-term use and for reuse in new systems.
- ▶ For even greater stability, you can combine EcoShape with the modular aluminum framing system.

With the aid of just 19 EcoShape components, you can achieve continuous improvement (kaizen) and quickly and economically adapt existing systems to new demands on site.

All EcoShape systems are ESD-conductive and suitable for use in ESD-sensitive areas. All the connection elements are designed such that the anodized coating on the aluminum profiles is pierced to ensure ESD conductivity throughout the system without the need for risky additional wiring.

No further ESD elements are required – with EcoShape you have everything in a single package.

## Ergonomics

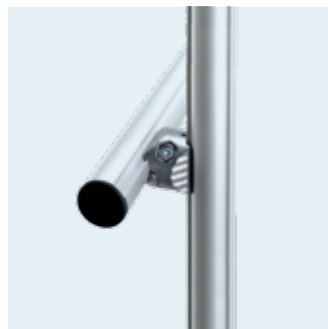
The combination of lean production and ergonomics results in an unbeatable strategy to help you achieve short production runs and reduced costs. EcoShape unites low investment expenditure with high flexibility and quality, including in the area of ergonomics. The ergonomic accessories found in the MPS program can also be used with all EcoShape workstations and flow rack systems.



00137064



00137052



00137051



00137056



For the design and planning of EcoShape tubular framing systems we recommend **MTpro!** See pages 12 and 13 for more information.



◀ **Aluminum is environmentally friendly and up to 99% recyclable. Aluminum profiles are reusable.**

## EcoShape



- ▶ All connectors can be combined with the EcoShape round tubes D28L and D28L, N10 and the D28 round tube (see “Flow rack systems”, see page 86).
- ▶ Integrated poka yoke system for easy and secure connector installation
  - Anti-torsion element for secure joints
  - Form-fit connection

- ▶ All connectors are suitable for use in building ESD-conductive systems.

Material: Diecast zinc

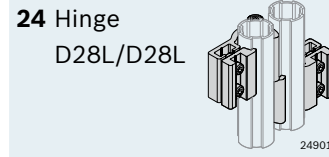
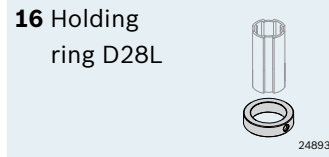
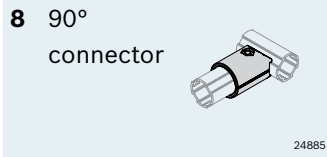
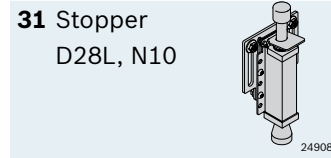
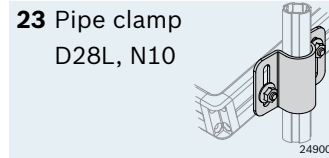
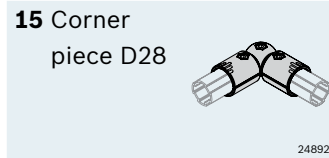
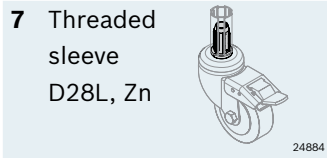
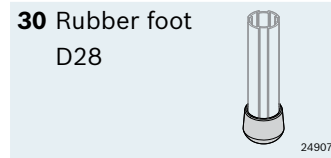
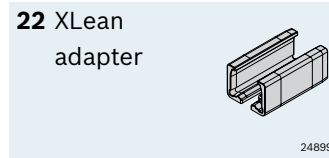
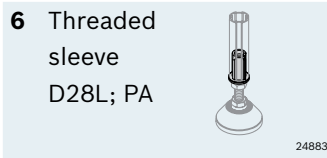
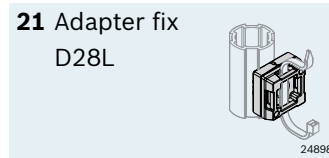
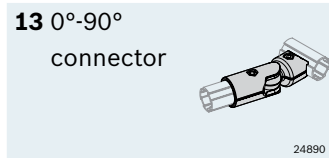
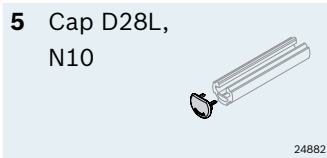
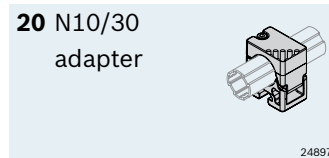
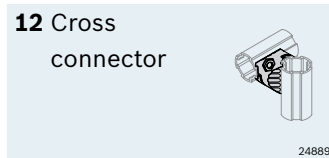
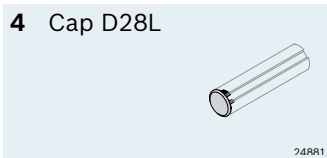
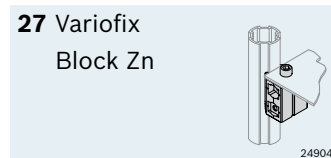
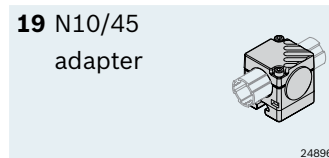
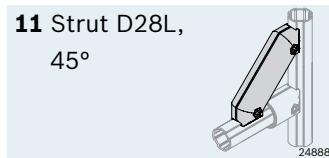
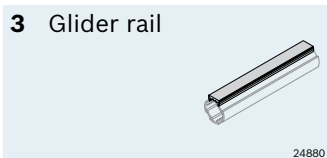
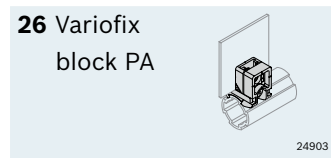
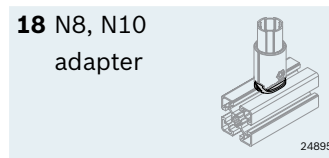
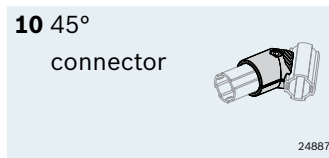
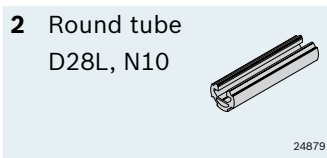
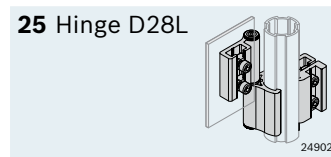
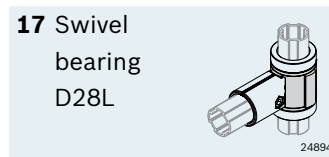
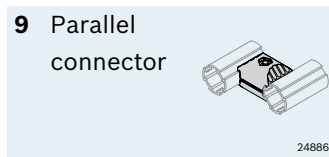
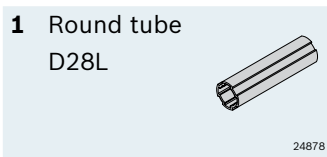
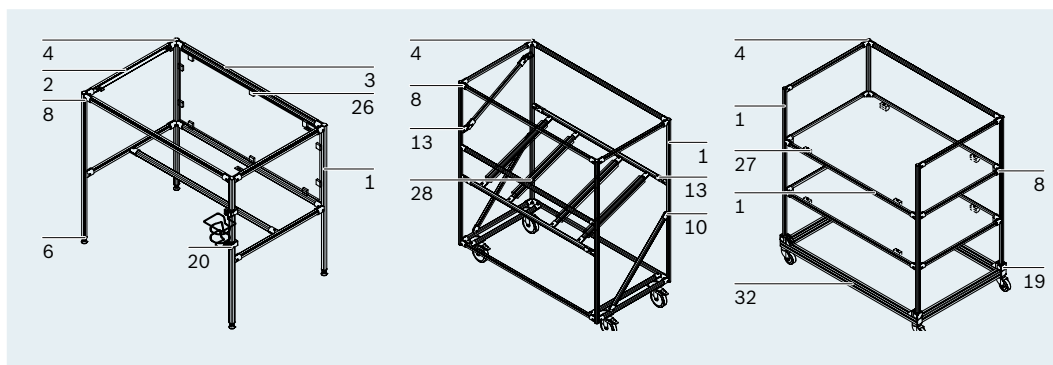
Scope of delivery: Incl. mounting material

See also the technical data (see page 191 ff.)



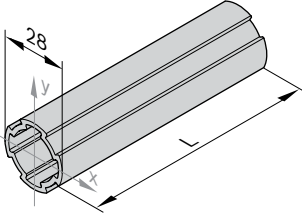
**31 components – a myriad of options**

The EcoShape system is characterized by its consistent simplicity and efficiency: Using just a few components, you can implement complete assembly lines as well as simple transport shuttles.






**1**

$A = 1,80 \text{ cm}^2$   
 $I_x = 1,33 \text{ cm}^4$   
 $I_y = 1,33 \text{ cm}^4$   
 $W_x = 0,95 \text{ cm}^3$   
 $W_y = 0,95 \text{ cm}^3$   
 $m = 0,48 \text{ kg/m}$



00134985

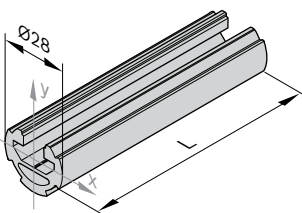

- ▶ Round tube D28L with 4 interfaces for attaching EcoShape connectors

Round tube D28L	L (mm)	No.
1 unit 	50 ... 5600	<b>3 842 996 191/L</b>
 50 units 	5600	<b>3 842 541 211</b>

Material: Aluminum, anodized




**2**

$A = 2,63 \text{ cm}^2$   
 $I_x = 1,17 \text{ cm}^4$   
 $I_y = 1,97 \text{ cm}^4$   
 $W_x = 0,84 \text{ cm}^3$   
 $W_y = 1,41 \text{ cm}^3$   
 $m = 0,71 \text{ kg/m}$

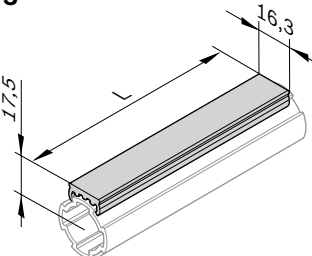
00134986

- ▶ Round tube D28L, N10 with 10 mm slot for mounting accessories from the modular aluminum framing system
- ▶ 3 interfaces for attaching EcoShape connectors

Round tube D28L, N10	L (mm)	No.
1 unit 	50 ... 5600	<b>3 842 996 192/L</b>
 20 units 	5600	<b>3 842 541 213</b>



Material: Aluminum, anodized

**3**



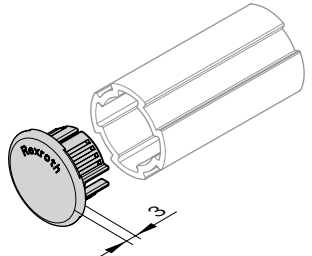
00134987

- ▶ Slide rail for creating a simple conveyor track or manual slide section by clipping slide rail onto a D28L round tube or D28L, N10

Glider rail	L (mm)	ESD		No.
	2000			<b>3 842 541 196</b>
	2000			<b>3 842 548 117</b>

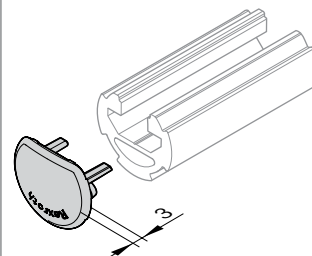
Material: PVC; gray  
ESD: PVC (conductive); black

**4**






24132

**5**

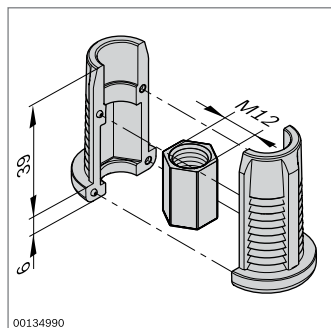
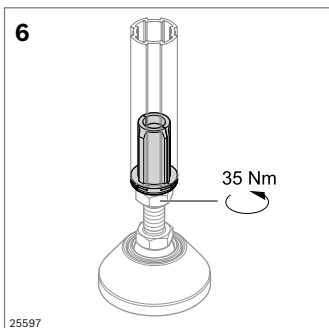


24133

- ▶ Cap for round tube D28L and D28L, N10

Cover cap	ESD		No.
<b>4 D28L</b>		20	<b>3 842 548 129</b>
<b>5 D28L, N10</b>		20	<b>3 842 548 130</b>

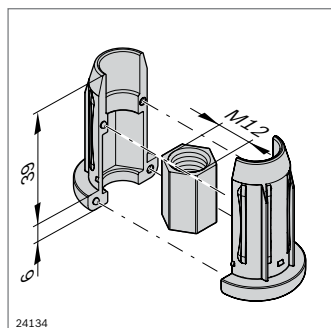
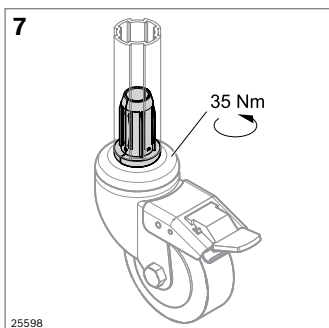
Material: PA66 (conductive); black



► Threaded sleeve for integrating a leveling foot or caster.  
For further information (see page 192)

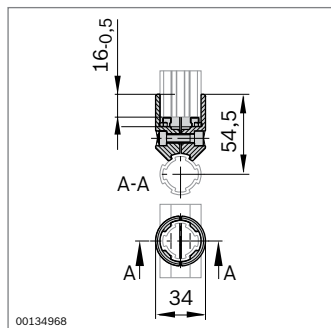
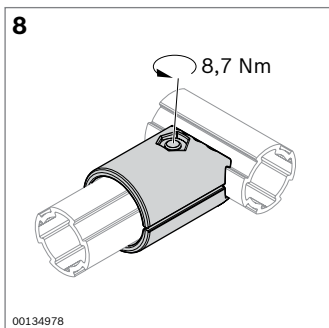
Threaded sleeve D28L; PA	ESD	No.
	20	<b>3 842 541 185</b>

Material: PA66 (conductive); black  
Hexagon nut: Aluminum



Threaded sleeve D28L; Zn	ESD	No.
	20	<b>3 842 548 119</b>

Material: Diecast zinc  
hexagon nut: Aluminum

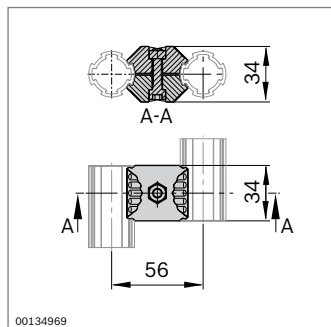
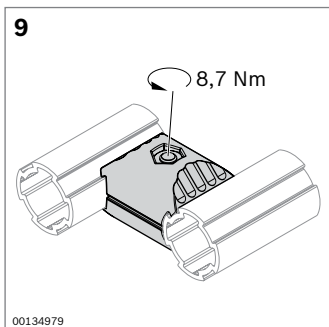


90° connector	ESD	No.	FS
	20	<b>3 842 541 173</b>	FS1

Material: Diecast zinc  
Scope of delivery: Incl. fastening material (FS)

**FS1**

- ISO 4762 M6x25
- ISO 4032 M6

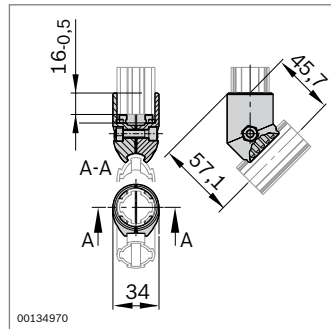
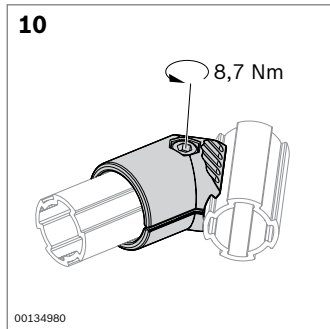


Parallel connector	ESD	No.	FS
	20	<b>3 842 541 183</b>	FS1

Material: Diecast zinc  
Scope of delivery: Incl. fastening material (FS)

**FS1**

- ISO 4762 M6x25
- ISO 4032 M6

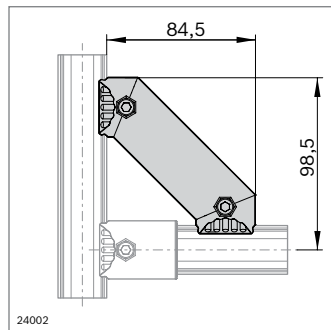
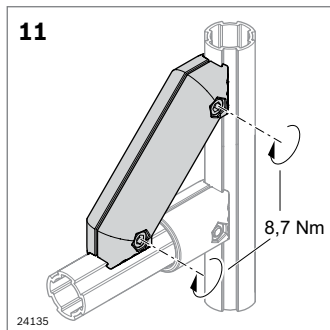


45° connector	ESD	No.	FS
		20	3 842 541 175 FS1

Material: Diecast zinc  
 Scope of delivery: Incl. fastening material (FS)

**FS1**

	ISO 4762 M6x25
	ISO 4032 M6

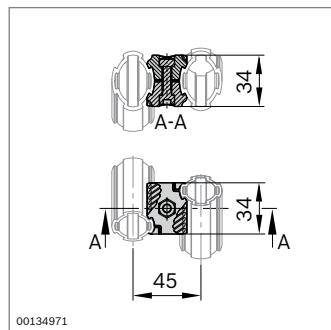
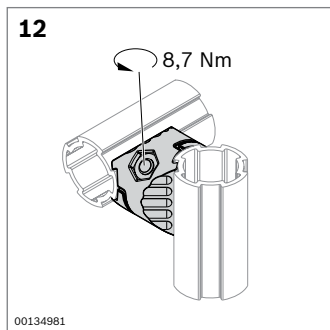


Strut D28L, 45°	ESD	No.	FS
		20	3 842 548 118 2xFS1

Material: Diecast zinc  
 Scope of delivery: Incl. fastening material (FS)

**FS1**

	ISO 4762 M6x25
	ISO 4032 M6

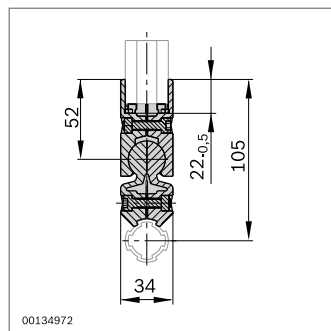
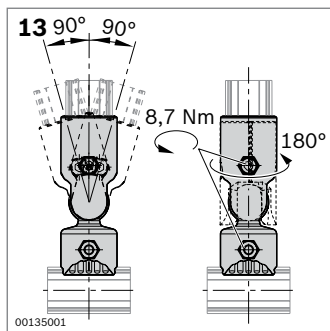


Cross connector	ESD	No.	FS
		20	3 842 541 181 FS1

Material: Diecast zinc  
 Scope of delivery: Incl. fastening material (FS)

**FS1**

	ISO 4762 M6x25
	ISO 4032 M6



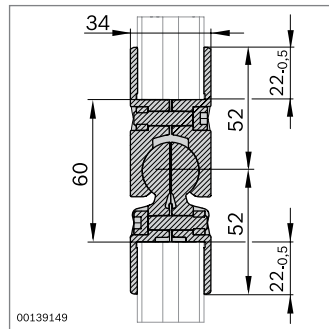
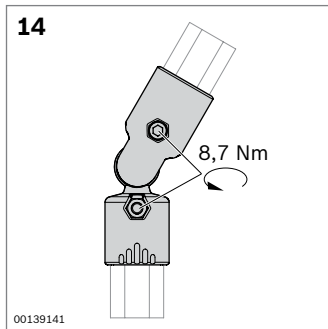
0°-90° connector	ESD	No.	FS
		20	3 842 541 178 2xFS1

Material: Diecast zinc  
 Scope of delivery: Incl. fastening material (FS)

**FS1**

	ISO 4762 M6x25
	ISO 4032 M6



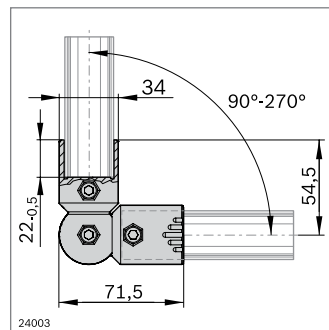
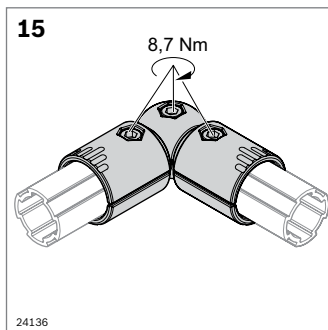


0°-90° D28 connector	ESD	No.	FS
	20	<b>3 842 543 480</b>	2xFS1

Material: Diecast zinc  
 Scope of delivery: Incl. fastening material (FS)

**FS1**

ISO 4762 M6x25
ISO 4032 M6



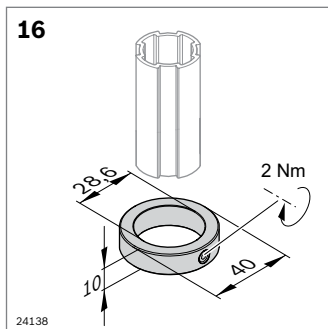
- ▶ Corner piece D28 for easy adjustment in a 15° louver
- ▶ Swivel range: 90°-270°

Corner piece D28	ESD	No.	FS
	20	<b>3 842 548 123</b>	3xFS1

Material: Diecast zinc  
 Scope of delivery: Incl. fastening material (FS)

**FS1**

ISO 4762 M6x25
ISO 4032 M6

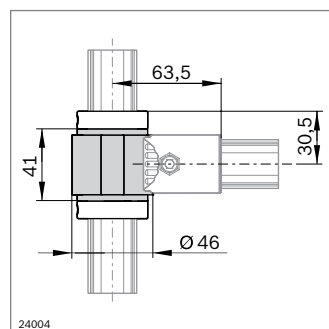
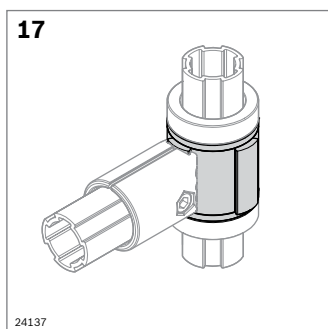


Holding ring D28L	ESD	No.	FS
	20	<b>3 842 548 122</b>	FS2

Material: Aluminum  
 Scope of delivery: Incl. fastening material (FS)

**FS2**

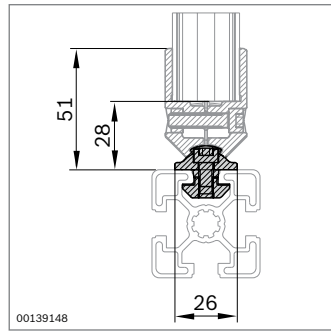
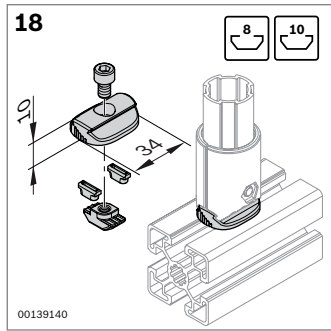
ISO 4026 M6x6
------------------



- ▶ For axial shifting along the D28L or D28L, N10 round tube; the holding ring defines the end position.
- ▶ Implementing swiveling applications

Swivel bearing D28L	No.
	<b>3 842 548 121</b>

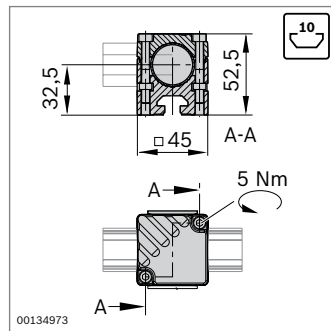
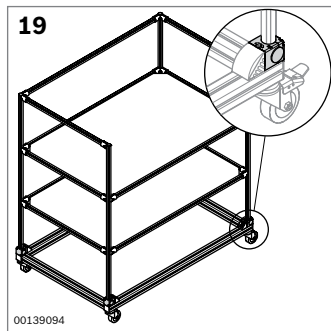
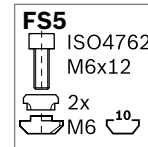
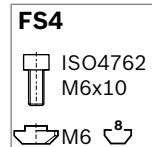
Material: Aluminum,  
 Socket: POM; black



► N8, N10 adapter for connecting an MGE strut profile (8 mm, 10 mm slots)

N8, N10 adapter	ESD	No.	FS
		20	3 842 543 272 FS4, FS5

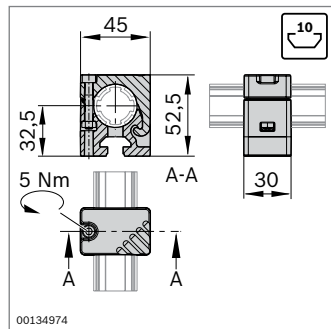
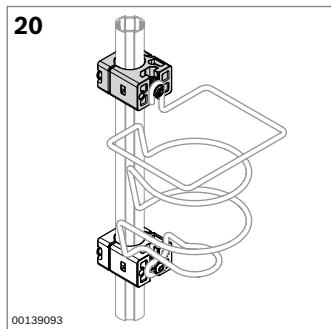
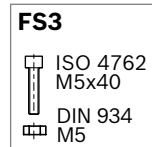
Material: Diecast zinc  
 Scope of delivery: Incl. fastening material (FS)



► N10/45 adapter for connecting D28L or D28L, N10 round tubes to profiles with a 10 mm slot

N10/45 adapter	ESD	No.	FS
		20	3 842 541 187 2xFS3

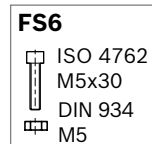
Material: Adapter: Diecast zinc  
 cap: PE  
 Scope of delivery: Incl. cap, fastening material (FS)

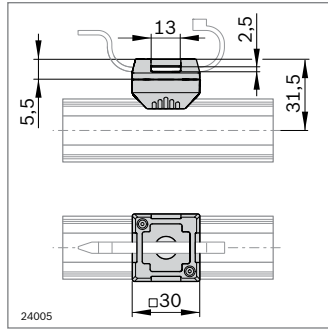
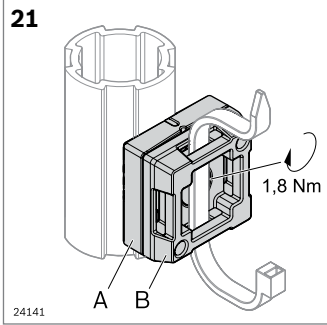


► N10/30 adapter for mounting light accessories such as a bottle holder to the D28L round tube

N10/30 adapter	ESD	No.	FS
		20	3 842 541 190 FS6

Material: Diecast zinc  
 Scope of delivery: Incl. fastening material (FS)

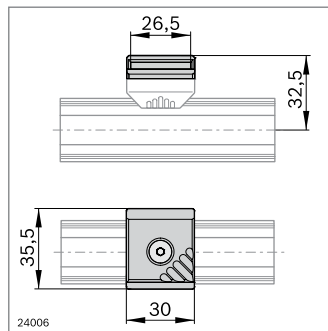
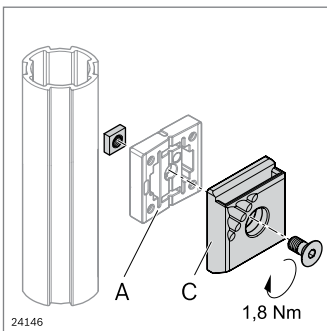
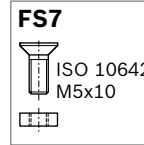




► For attaching cable ties

Adapter fix D28L	ESD	No.	FS
A + B		20 <b>3 842 548 120</b>	FS7

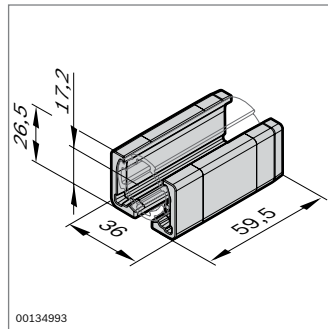
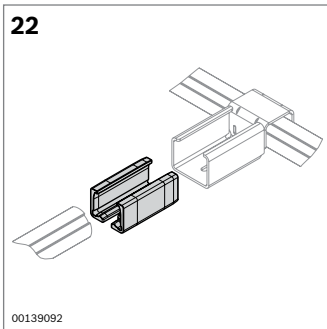
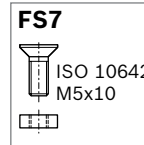
Material: PA66 (conductive); black  
 Scope of delivery: Incl. fastening material (FS)



► For attaching containers using the container mount

Container mount	ESD	No.	FS
C		10 <b>3 842 544 797</b>	FS7

Material: PA66 (conductive); black  
 Scope of delivery: Incl. fastening material (FS)

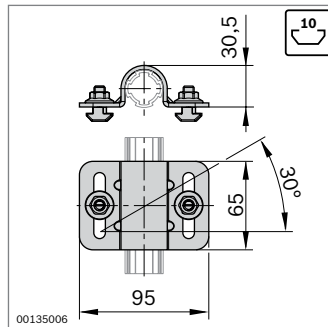
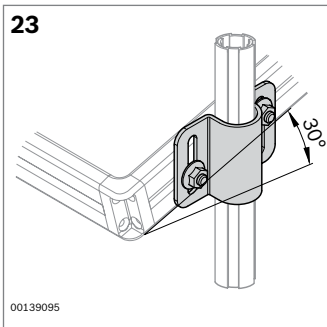


► XLean adapter for combination with XLean.

The XLean adapter connects the D28L round tube with the XLean rail holder (see page 17)

XLean adapter	ESD	No.
		20 <b>3 842 541 296</b>

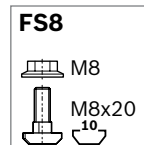
Material: PA66 (conductive); black

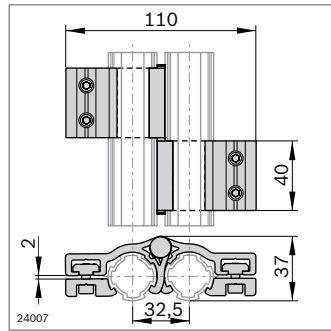
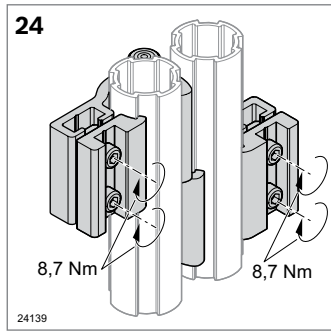


► D28L, N10 tube clip for fastening material shelves with a 10 mm slot to D28L round tube; inclinations up to 30 degrees are possible

Pipe clamp D28L, N10	ESD	No.	FS
		20 <b>3 842 541 193</b>	2xFS8

Material: Steel; galvanized  
 Scope of delivery: Incl. fastening material (FS)

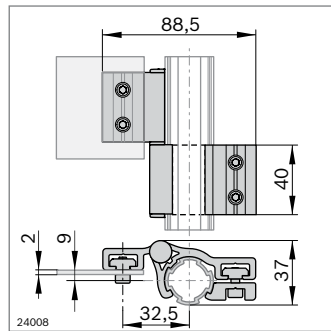
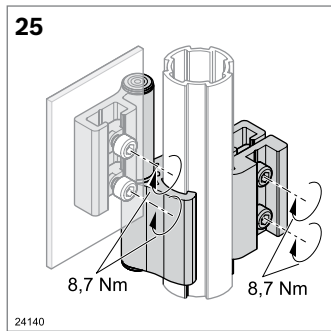
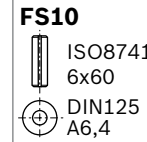
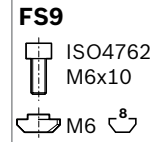




- ▶ Opening angle: 180°
- ▶ For mounting D28L round tube

Hinge D28L/D28L	ESD	No.	FS
		2	3 842 548 126 4xFS9, FS10

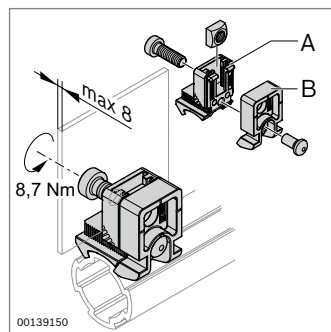
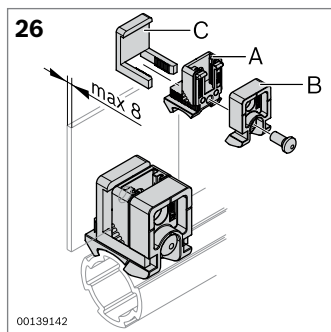
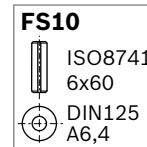
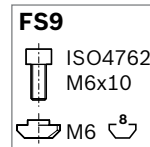
Material: Aluminum  
 Scope of delivery: Incl. fastening material (FS)



- ▶ Opening angle: 180°
- ▶ For mounting surface elements

Hinge D28L	ESD	No.	FS
		2	3 842 548 127 2xFS9, FS10

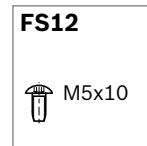
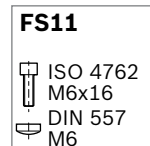
Material: Aluminum  
 Scope of delivery: Incl. fastening material (FS)



- ▶ Plastic Variofix block for fastening surface elements with a snap-in clip or screw
- ▶ Variofix remover for releasing the snap-in clip (see MGE 13.0, page 14-7)

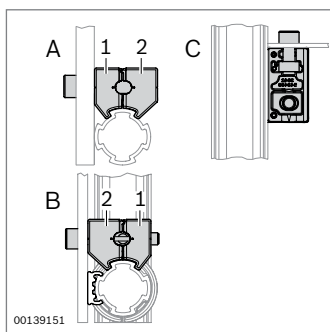
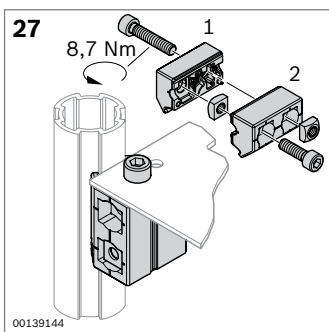
Variofix Block PA	No.	FS
A + B	20	3 842 543 311 FS11, FS12

Material: PA66 (conductive); black  
 Scope of delivery: Incl. fastening material (FS)



Snap-in clip	No.
C	10

Material: PA6; transparent



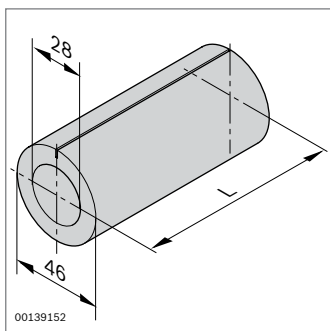
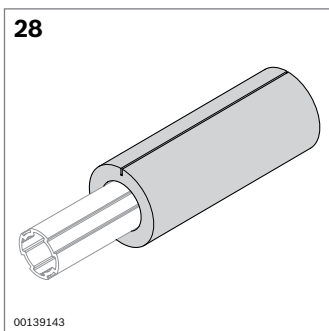
- ▶ Diecast zinc Variofix block for fastening surface elements
- ▶ Three arrangements possible (“A”, “B”, “C”)

Variofix Block Zn	ESD	No.	FS
	20	<b>3 842 543 494</b>	FS13

Material: Diecast zinc  
 Scope of delivery: Incl. fastening material (FS)

**FS13**

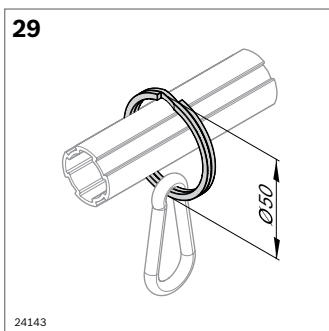
ISO 4762	M6x22
ISO 4762	M6x30
2x DIN 557	M6



- ▶ Impact protection for round tube D28 and D28L

Impact protection	L (mm)	No.
	2000 10	<b>3 842 544 637</b>

Material: PVC; gray



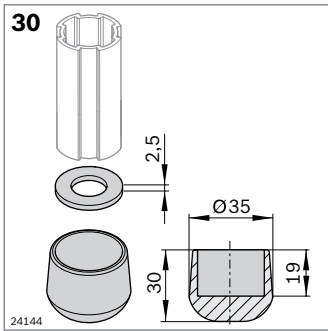
- ▶ For designing simple tool holders

Ring D50	No.
	<b>3 842 548 131</b>

Material: Steel; nickel-plated

Spring hook	No.
	<b>0 842 901 309</b>

Material: Steel, galvanized

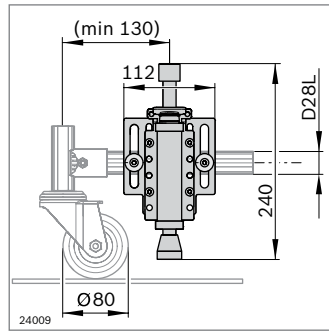
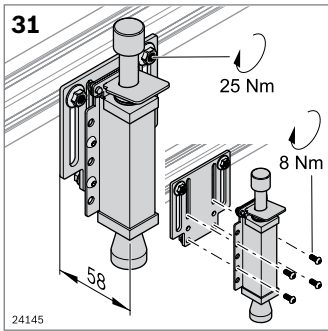
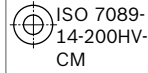


- ▶ Non-slip design of flow racks and stands

Rubber foot D28	ESD	No.	FS
		20	3 842 548 128 FS14

Material: NR/SBR (conductive); black

**FS14**



- ▶ To stop material shuttles ergonomically at just one point
- ▶ Universal attachment option to different round tubes and profile cross-sections
- ▶ Clamping path of stopper: 34 mm

Stopper D28L, N10	No.	FS
	3 842 548 132	4xFS15, 2xFS16

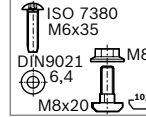
Material: Stopper: Stainless steel EPDM  
attachment plate: Aluminum

Scope of delivery: Incl. fastening material (FS)

**FS15**



**FS16**







## EcoFlow – Manual roller sections bring everything closer

Manual linkage of workstations with EcoFlow eases worker strain because products and workpiece pallets are conveyed on manual slide sections.



Assembly line operations are normally divided among multiple workstations. Besides making these workstations ergonomic, assembly line designers must also ensure that the various jobs and workstations are linked together in a way that maximizes efficiency and economy. Workers do not have to carry loads. At the same time, investment in such linkage need not be expensive, since the EcoFlow conveyor tracks work without any electric drive systems or controllers.

You can procure these conveyor tracks either fully assembled or as single components for self-assembly. A range of conveyor media allows you to adapt the conveyor tracks in an optimum way to your goods: Cardboard boxes and blister packs are

carried on plastic or steel full-width rollers, or you may choose to use slide sections. Its high level of stability also makes EcoFlow ideal for transporting heavy loads.

To complete your system, you may add accessories such as stop gates for positioning materials at the workstation, or ball rollers for creating branch-offs and curves. All EcoFlow components are designed for use in combination with the products in Rexroth's MPS and modular aluminum framing programs.

The system is fully ESD-compatible and may be used in ESD-sensitive areas.



- 132 Conveyor tracks
- 134 Conveyor track components
- 138 Stop gates and return stops
- 139 Accessories

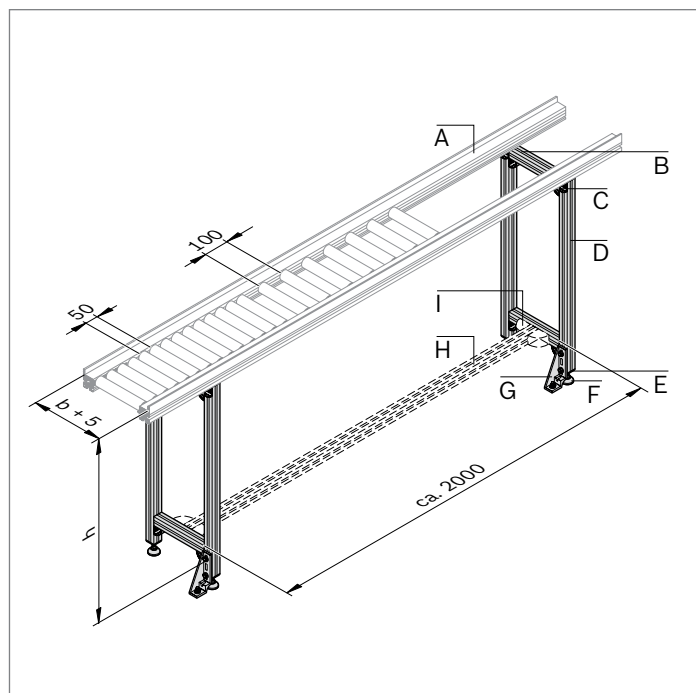
# EcoFlow application examples

Build frames for roller sections or manual slide sections using Rexroth strut profiles and connectors.



◀ EcoFlow can be combined with Rexroth's power-driven transfer systems. For more information, visit [www.boschrexroth.com](http://www.boschrexroth.com)

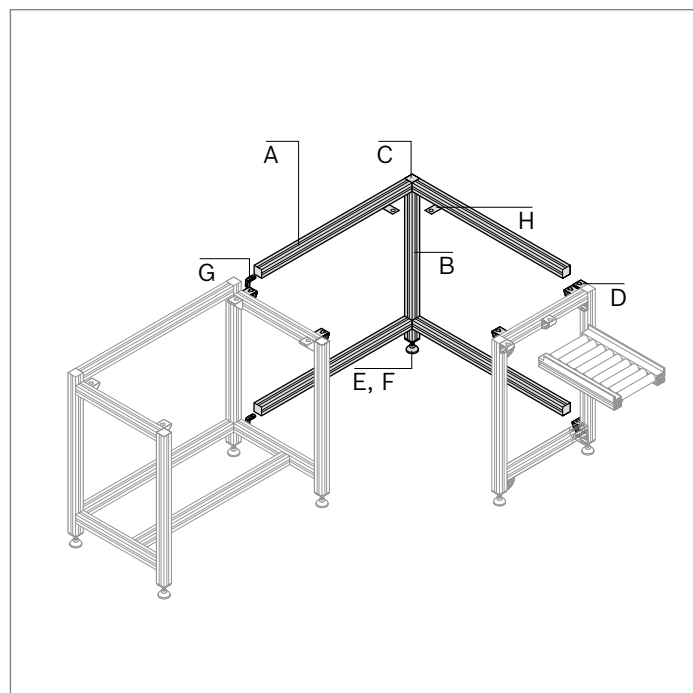
**Application 1: Manual slide section**



00137588

<b>Application 1</b>		<b>No.</b>
<b>A</b>	1 x EcoFlow conveyor track with stop plate	<b>3 842 998 278</b>
<b>B</b>	4 x Strut profile 45 x 45 L	<b>3 842 993 737</b>
<b>C</b>	12 x Bracket 45 x 45	<b>3 842 523 561</b>
<b>D</b>	4 x Strut profile 45 x 45 L	<b>3 842 993 737</b>
<b>E</b>	4 x Cap (with hole)	<b>3 842 523 442</b>
<b>F</b>	4 x Leveling foot	<b>3 842 352 061</b>
<b>G</b>	2 x Bracket 45 x 180	<b>3 842 523 583</b>
<b>H</b>	1 x Strut profile 45 x 45 L	<b>3 842 993 737</b>
<b>I</b>	4 x Bracket 45 x 45	<b>3 842 523 561</b>

**Application 2: Corner frame**



00137587

<b>Application 2</b>		<b>No.</b>
<b>A</b>	4 x Strut profile 45 x 45 L	<b>3 842 993 737</b>
<b>B</b>	1 x Strut profile 45 x 45 L	<b>3 842 993 737</b>
<b>C</b>	1 x Cover cap	<b>3 842 502 674</b>
<b>D</b>	6 x Bracket 45 / 45	<b>3 842 523 561</b>
<b>E</b>	1 x Cap (with hole)	<b>3 842 523 442</b>
<b>F</b>	1 x Leveling foot	<b>3 842 352 061</b>
<b>G</b>	6 x Internal angle piece	<b>3 842 535 571</b>
<b>H</b>	1 x Table top supports (set)	<b>3 842 521 677</b>

**MTpro** For simple and efficient planning we recommend using **MTpro!** See pages 12 and 13 for more information.

See also the technical data (see page 193)



00137604



00139096

**Conveyor track with rail holders 3 842 998 258**

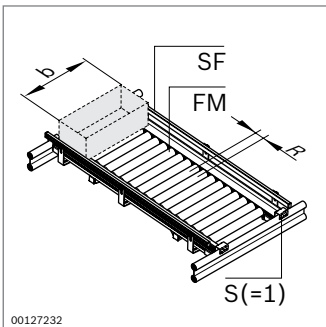
A	Design	Disassembled, assembled
ESD	Conductivity	Yes, no
TM	Horizontal distance between tubular cross ties	355 ... 6000 mm
G	Gradient	0 ... 10% (recommended: 6%)
FM	Conveyor medium	Rollers in plastic, steel, stainless steel
BF	Conveyor track width	200 ... 1000 mm
S	Rail holder design	With stop, without stop
SF	Lateral guide	With, without
R	Roller distance	50, 100 mm

**EcoFlow conveyor tracks**

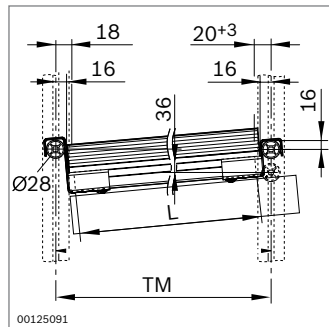


- ▶ For supplying materials to workstations and in flow rack systems
- ▶ For the manual linking of workstations
- ▶ Aluminum profile conveyor track
- ▶ Full-width rollers available in plastic, steel or stainless steel
- ▶ Recommended conveyor track width:  
BF = container width b + 5 mm
- ▶ Rail holders for suspending on tubular cross tie:  
Preferably used in flow rack systems or at workstations for supplying materials in the accessory upright
- ▶ Stop plates suitable for the manual linking of workstations
- ▶ Save money by choosing the larger roller distance R
- ▶ Available as ESD-conductive version

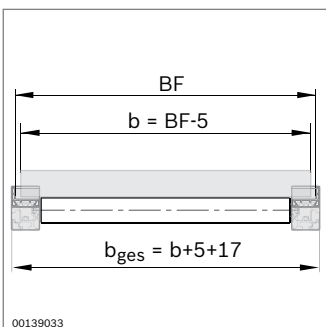
As-delivered state: Slide rail border mounted to the outside (BG=0)



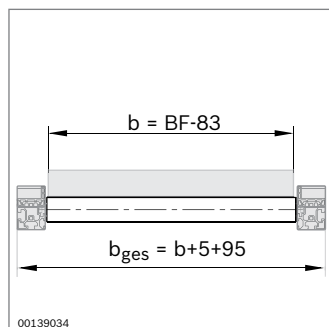
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00125091



00139033



00139034

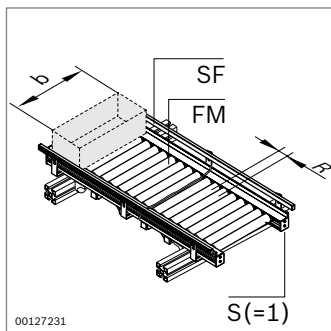


00139005

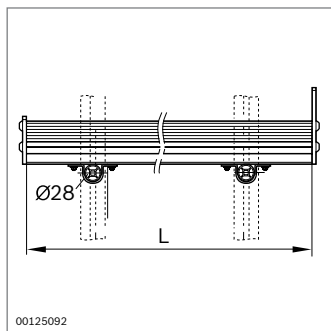


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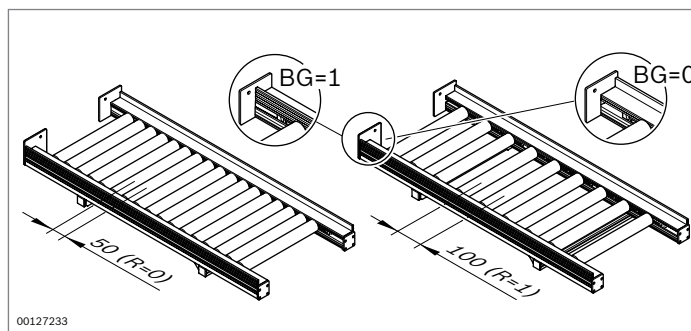
<b>Conveyor track with stop plates</b>		<b>3 842 998 278</b>
A	Design	Disassembled, assembled
ESD	Conductivity	Yes, no
L	Conveyor track length	355 ... 6000 mm
FM	Conveyor medium	Rollers in plastic, steel, stainless steel
BF	Conveyor track width	200 ... 1000 mm
S	Stop plate design	With stop, without stop
SF	Lateral guide	With, without
R	Roller distance	50, 100 mm
BG	Slide rail border	Inside, outside



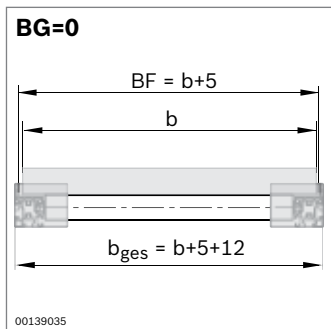
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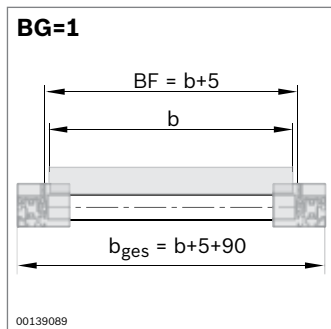
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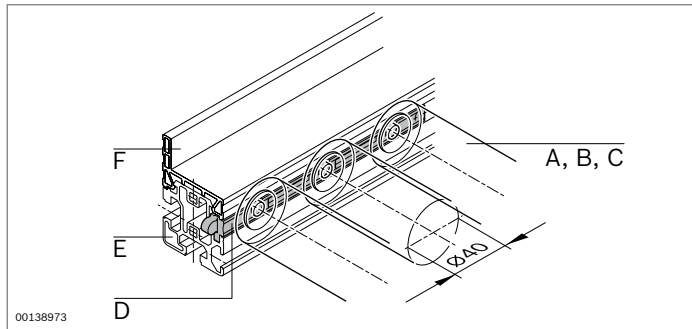
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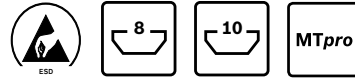
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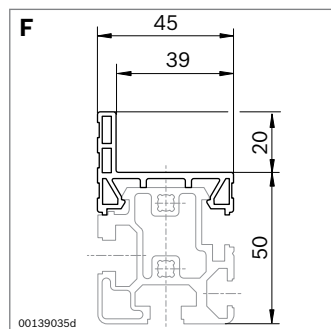
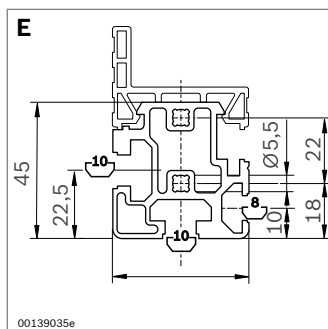
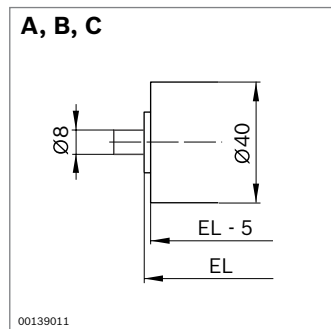
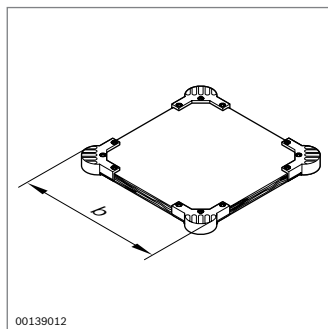
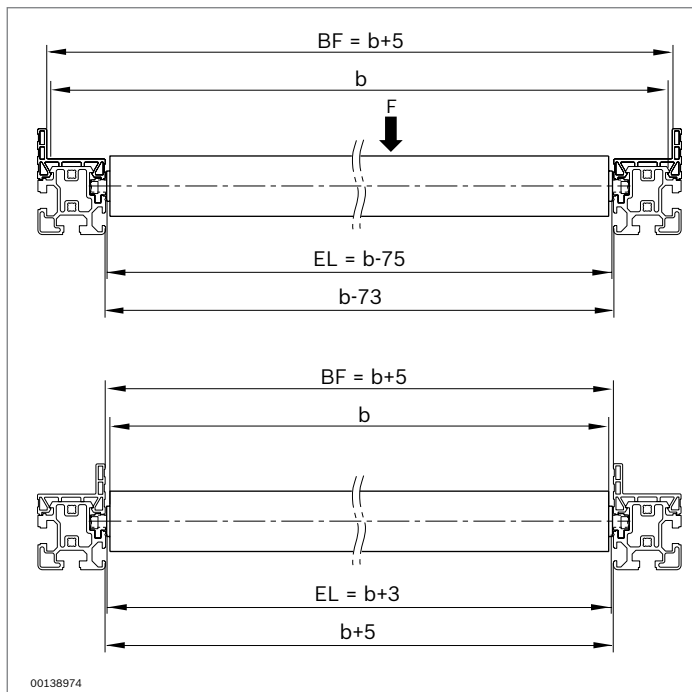
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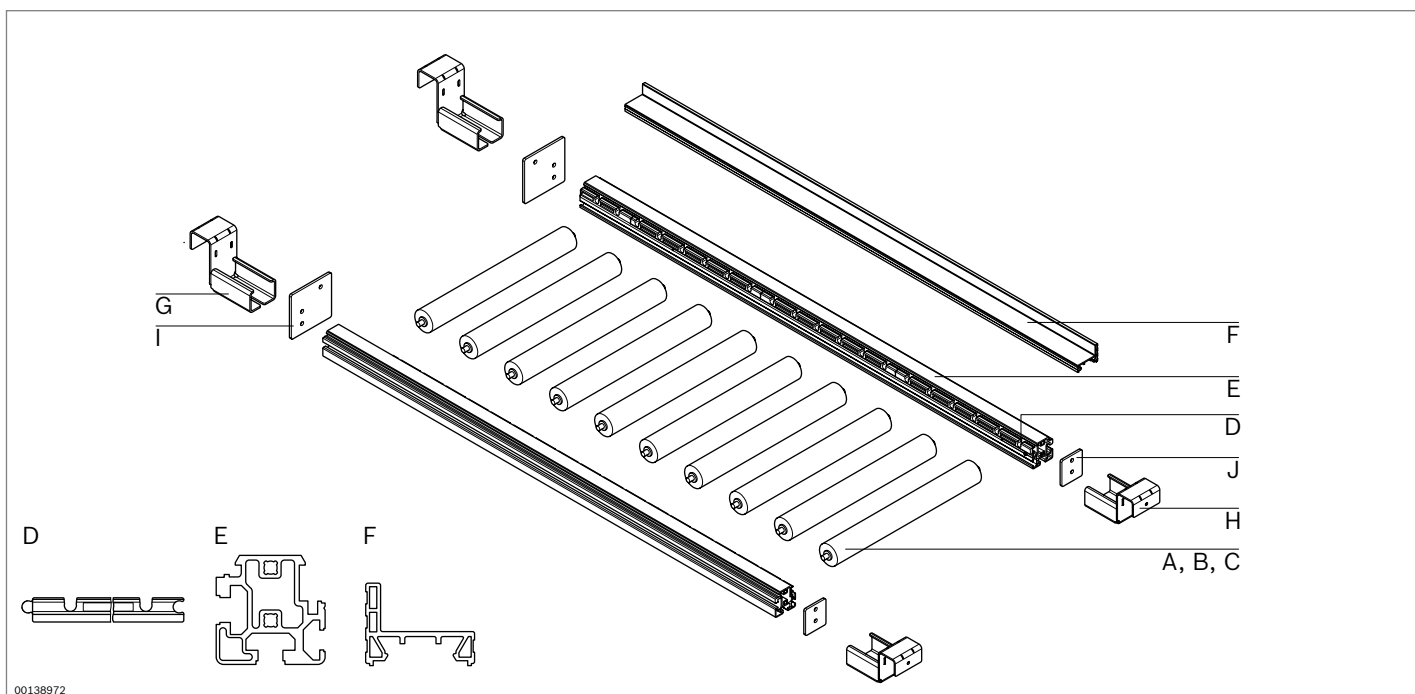


### EcoFlow conveyor track components

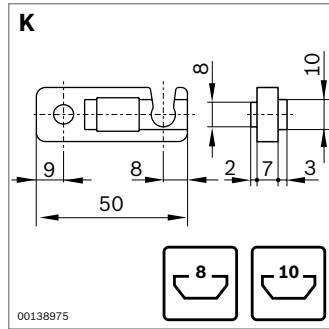
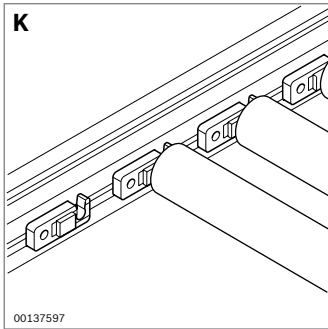


- ▶ Section profile with 10 mm groove on underside for mounting on strut profiles
- ▶ Guide profile for clipping to section profile with border on outside or inside. This allows for different conveyor track widths while using the same rollers. Available as ESD-conductive version
- ▶ Roller carrier with defined distances for a maximum of 5 rollers
- ▶ Full-width rollers available in plastic, steel or stainless steel
- ▶ Steel rollers suitable for use in building ESD-conductive conveyor tracks
- ▶ Rail holders for suspending on tubular cross tie: Preferably used in flow rack systems or at workstations for supplying materials in the accessory upright
- ▶ Stop plates suitable for conveyor tracks that are used to manually link workstations, for example





	F (N)	EL (mm)			ESD	No.
<b>A</b> EcoFlow roller – plastic	150	105 ... 605				<b>3 842 994 989/L</b>
		225				<b>3 842 525 740</b>
		325				<b>3 842 525 741</b>
		425				<b>3 842 525 742</b>
		525				<b>3 842 537 164</b>
<b>B</b> EcoFlow roller – galvanized steel	500	105 ... 1005				<b>3 842 994 988/L</b>
		225				<b>3 842 525 737</b>
		325				<b>3 842 525 738</b>
		425				<b>3 842 525 739</b>
		525				<b>3 842 537 163</b>
<b>C</b> EcoFlow roller – stainless steel	150	105 ... 1005				<b>3 842 995 008/L</b>
<b>D</b> EcoFlow roller carrier				10		<b>3 842 535 683</b>
<b>E</b> EcoFlow section profile		30 ... 6070	1			<b>3 842 993 029/L</b>
		6070	20			<b>3 842 537 321</b>
<b>F</b> Guide profile MV45		30 ... 3000		1		<b>3 842 993 511/L</b>
		3000		10		<b>3 842 525 443</b>
		30 ... 3000		1		<b>3 842 993 512/L</b>
		3000		10		<b>3 842 526 034</b>
<b>G</b> Rail holder with stop				20		<b>3 842 537 664</b>
<b>H</b> Rail holder without stop				20		<b>3 842 537 665</b>
<b>I</b> Stop plate with stop				20		<b>3 842 537 593</b>
<b>J</b> Stop plate without stop				20		<b>3 842 537 592</b>



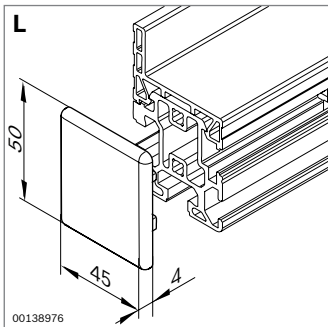
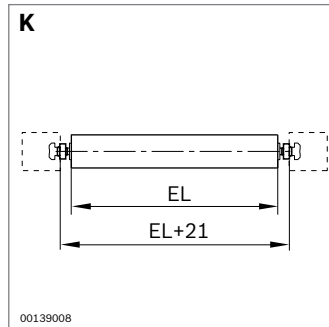
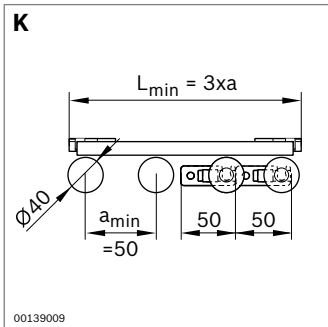
**Roller mount (K)**

- For fast and simple construction of conveyor tracks using strut profiles with 8 or 10 mm slot. Can also be used in the 10 mm slot of the EcoFlow section profile
- Suitable for retrofitting rollers without having to disassemble the frame. The roller distance is variable.

Scope of delivery: Includes fastening kit for 8 or 10 mm slot

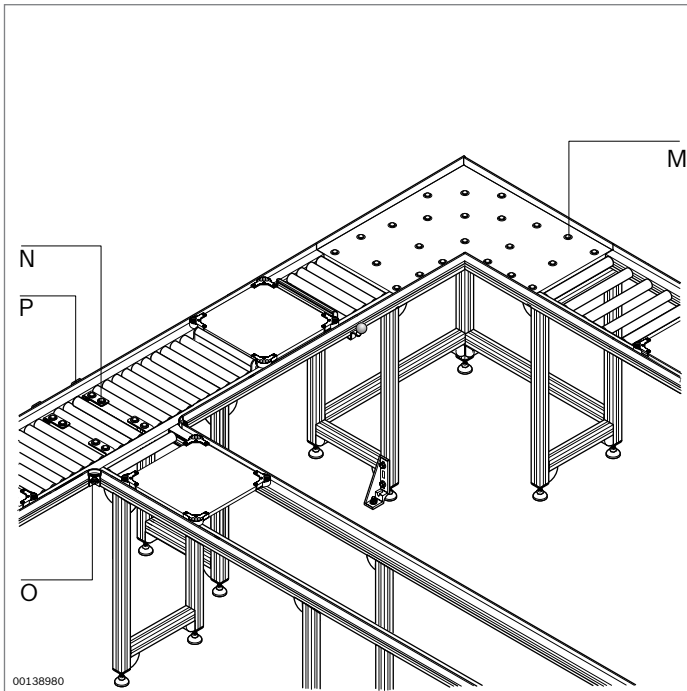
**Cap (L)**

- Cap for EcoFlow section profile with guide profile



		No.
<b>K</b> Roller mount, 8 mm slot	10	<b>3 842 535 667</b>
Roller mount, 10 mm slot	10	<b>3 842 535 668</b>
<b>L</b> Cover cap	20	<b>3 842 525 457</b>





**Ball roller (M)**

- For creating branch-offs or curves

Housing material: Steel; galvanized

Ball material: Stainless steel

**Transverse conveyor (N)**

- For connecting EcoFlow transfer sections

Angle material: Steel; galvanized

Ball material: Stainless steel

**Corner piece (O)**

- For fastening EcoFlow transfer sections at same level

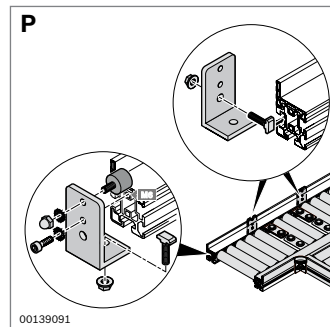
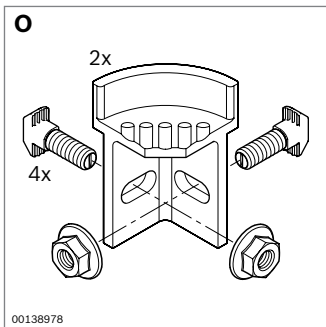
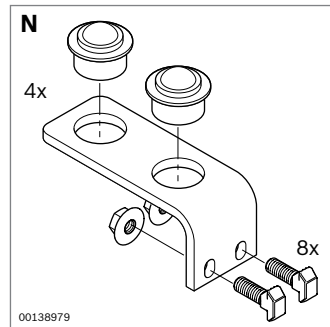
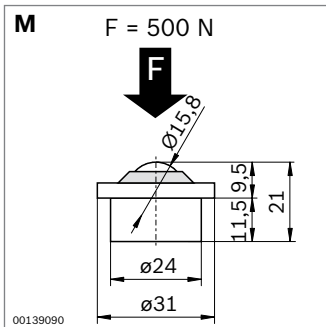
Material: PA; black, ESD-conductive

**Stop (P)**

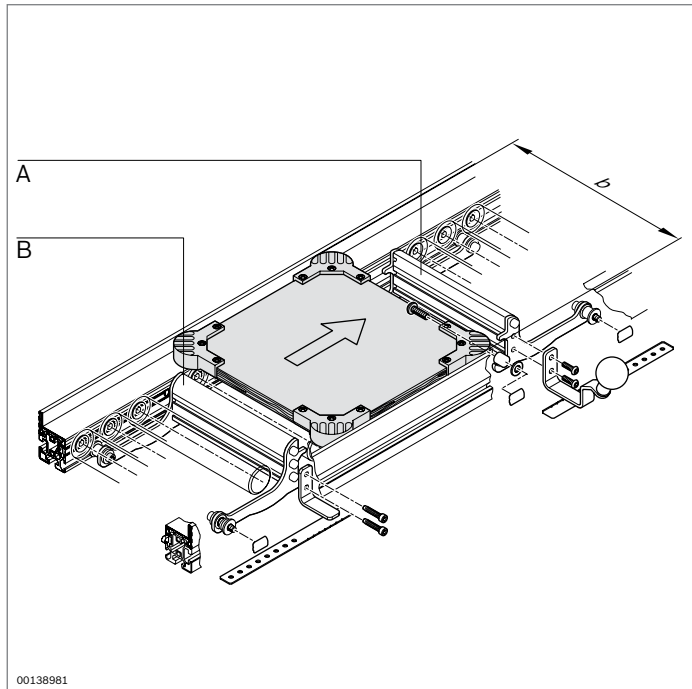
- For gently stopping the workpiece pallet. Fastened to EcoFlow section profiles or strut profiles with 10 mm slot

Material: Aluminum, anodized

Scope of delivery: Includes fastening kit for 10 mm slot



	ESD	No.
<b>M</b> Ball roller	20	<b>3 842 541 008</b>
<b>N</b> Transverse conveyor	Set	<b>3 842 536 055</b>
<b>O</b> Corner piece	Set	<b>3 842 536 056</b>
<b>P</b> Stop	Set	<b>3 842 536 057</b>

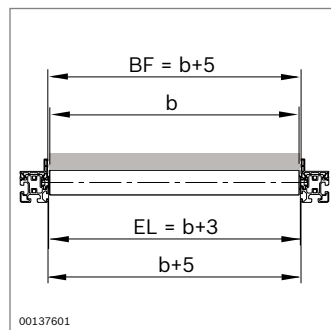
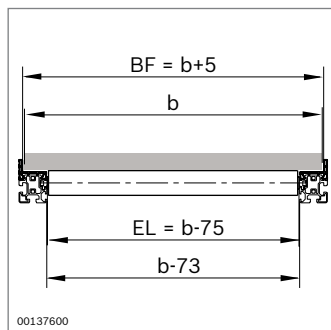


### EcoFlow stop gates and return stops

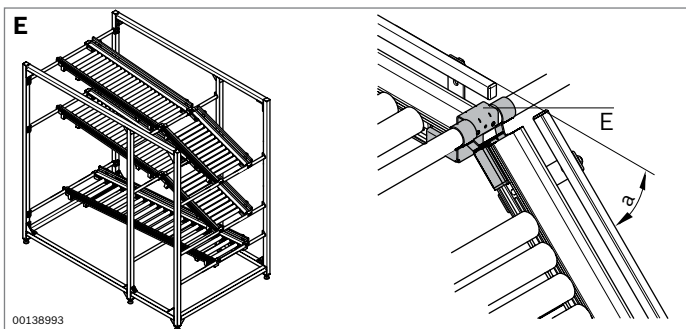
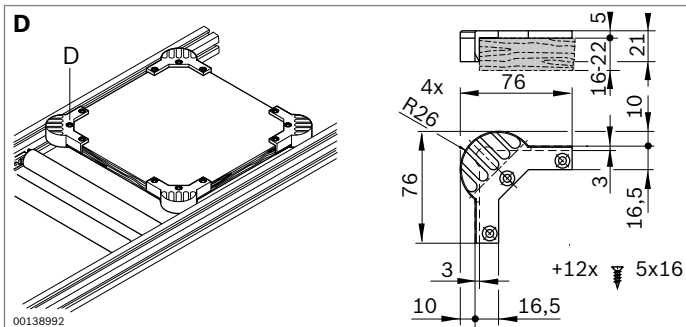
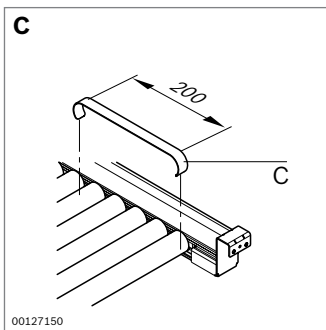
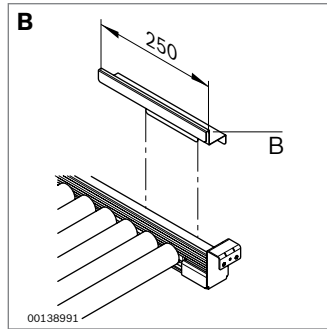
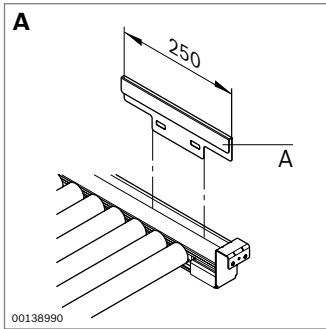


- ▶ Stop gate and return stop for positioning workpieces or containers
- ▶ When planning the system, remember to leave sufficient leg room. The stop gate and return stop require 45 mm more space below the bottom
- ▶ We recommend using a workpiece pallet with corner pieces (see page 139) to provide a defined stopping surface.

Scope of delivery: Includes fastening kit



	EL (mm)	No.
<b>A</b> Stop gate	105 ... 1005	<b>3 842 995 007/EL</b>
	225	<b>3 842 537 894</b>
	325	<b>3 842 537 895</b>
	425	<b>3 842 537 896</b>
	525	<b>3 842 537 897</b>
<b>B</b> Return flow block	105 ... 1005	<b>3 842 995 017/EL</b>
	225	<b>3 842 537 898</b>
	325	<b>3 842 537 899</b>
	425	<b>3 842 537 900</b>
	525	<b>3 842 537 901</b>



**EcoFlow accessories**

**Protective cover (A, B)**

- ▶ Protective cover to shield the EcoFlow guide profile when loading the conveyor track. Select cover for border outside (BG = 0) or border inside (BG = 1)

Material: Steel; galvanized

Scope of delivery: 2 protective covers; includes fastening kit

**Brake (C)**

- ▶ Brake for gently bringing containers to a stop

Material: Steel; galvanized

**Corner pieces (D)**

- ▶ Corner pieces for self-assembly of workpiece pallets
- ▶ For isolating parts from the pallet queue, well-defined guidance and stopping surfaces, good transition through curves and avoidance of edges where trapping may occur

Material: PA; ESD

Scope of delivery: 4 corner pieces including fastening kit

**Flexible bridge (E)**

- ▶ Flexible bridge for easy material supply in the flow rack system. The container is stopped by a rail holder with stop and is moved manually to the inclined position
  - $a_{max} = 40^\circ$  (tubular cross tie)
  - $a_{max} = 30^\circ$  (double tubular cross tie)

Material: Steel; galvanized

Scope of delivery: Includes fastening kit

	 ESD	No.
<b>A</b> Protective covers – slide rail outside (BG=0)	Set	<b>3 842 537 583</b>
<b>B</b> Protective covers – slide rail inside (BG=1)	Set	<b>3 842 537 584</b>
<b>C</b> Brake	20	<b>3 842 537 740</b>
<b>D</b> Corner pieces for workpiece pallets	Set 	<b>3 842 536 054</b>
<b>E</b> Flexible bridge	20	<b>3 842 537 950</b>



## Systematic Kanban supply in production

Standardized material supply in production using defined delivery routes creates clarity and a high degree of transparency.

A primary objective of lean production systems is to minimize inventories while simultaneously increasing transparency. This reduces tied up capital and expedites parts to workers by eliminating search times.

## Material shuttles

The use of material shuttles at workstations is particularly beneficial for workstations that deal with a high degree of variance; they are the alternative to fixed-installation material supply systems.

Prefabricated material shuttles can be replaced quickly and easily. This cuts the waste that occurs in the form of waiting and conversion times.

The Logistics material shuttle is used to link the supermarket with the workstation and to pick the materials needed at a workstation or for a work step.

You can order material shuttles as a complete system with variable dimensions and equipment or as a standard material shuttle. You can also procure individual components to assemble special constructions to meet your specific requirements.



## FiFo station

Complying with the FiFo principle makes possible easy traceability in the case of material faults or disturbances in the process.

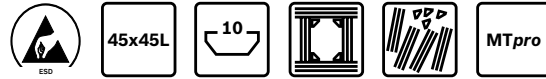
The FiFo station can be compared to a supermarket for floor rollers, material shuttles and commissioning shuttles. The supermarket's size can be adjusted easily and quickly to your individual needs through the modular construction of the rail system.

The FiFo station supports the 5S principles for material supply.

**For simple and efficient assembly line planning  
we recommend using MTpro!  
See pages 12 and 13 for more information.**

- 142 Workstation material shuttles
- 144 Material shuttle Logistics
- 148 FiFo station

# Workstation material shuttles



- ▶ Parts positioned within grab area of workstation
- ▶ Short conversion times with quick exchange of precommissioned material shuttles
- ▶ Can be equipped and sized to meet specific requirements
- ▶ Available as ESD-conductive version
- ▶ Version: Fully assembled or as a kit for self-assembly
- ▶ Optional information board for supplying information directly at location
- ▶ Adjustable material shelf height, offset, and tilt to ensure ergonomic grabbing
- ▶ Material shelves Basic (see pages 26163) including lettering clip; selection of various plates
- ▶ Steerable castors: Ball bearing, with locking mechanism locking device
- ▶ Can be used in combination with workstation (see page 22) or for supplying materials in conjunction with the manual linking system EcoFlow

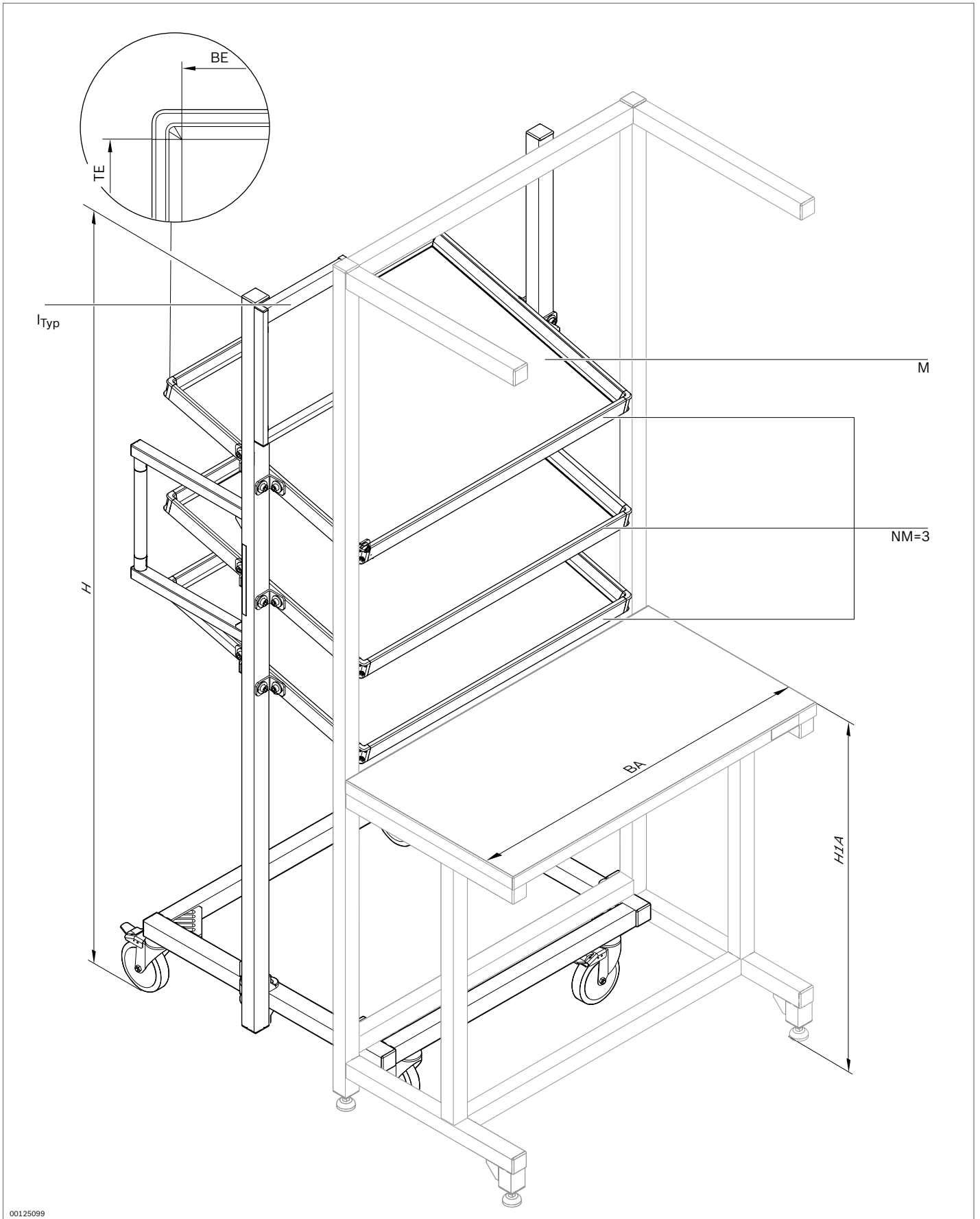
#### Accessories:

- ▶ Rubber profile to protect against heavy impacts when positioning the material shuttle (see page 28)
- ▶ Swivel fastening for tilting the material shelf (see page 162)

**MTpro** For workstation design and planning, we recommend **MTpro!** See pages 12 and 13 for more information.

See also the technical data (see page 194 ff.)

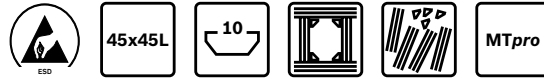
Workstation material shuttle		3 842 998 231
A	Design	Disassembled, assembled
ESD	Conductivity	Yes, no
H	Material shuttle height	600 ... 2200 mm
H1A	Work surface height	410 ... 1500 mm
NM	Number of material shelves (Basic)	0 ... 4
M	Material shelf material	3 different surface materials
BE	Material shelf width	250 ... 1480 mm
TE	Material shelf depth	410 ... 1220 mm
l <sub>typ</sub>	Information board	7 different information boards



# Material shuttle Logistics



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- ▶ C-parts supply on side of workstation
- ▶ Manual linking of two workstations or of supermarket shelves with workstations and production islands
- ▶ Can be equipped and sized to meet specific requirements
- ▶ Available as ESD-conductive version
- ▶ Version: Fully assembled or as a kit for self-assembly
- ▶ Optional information board for supplying information directly at location
- ▶ Adjustable material shelf height, offset, and tilt to ensure ergonomic grabbing
- ▶ Material shelves Basic (see pages 26, 163) including lettering clip; selection of various plates
- ▶ Steerable castors: Ball bearing, with locking mechanism locking device

#### Accessories:

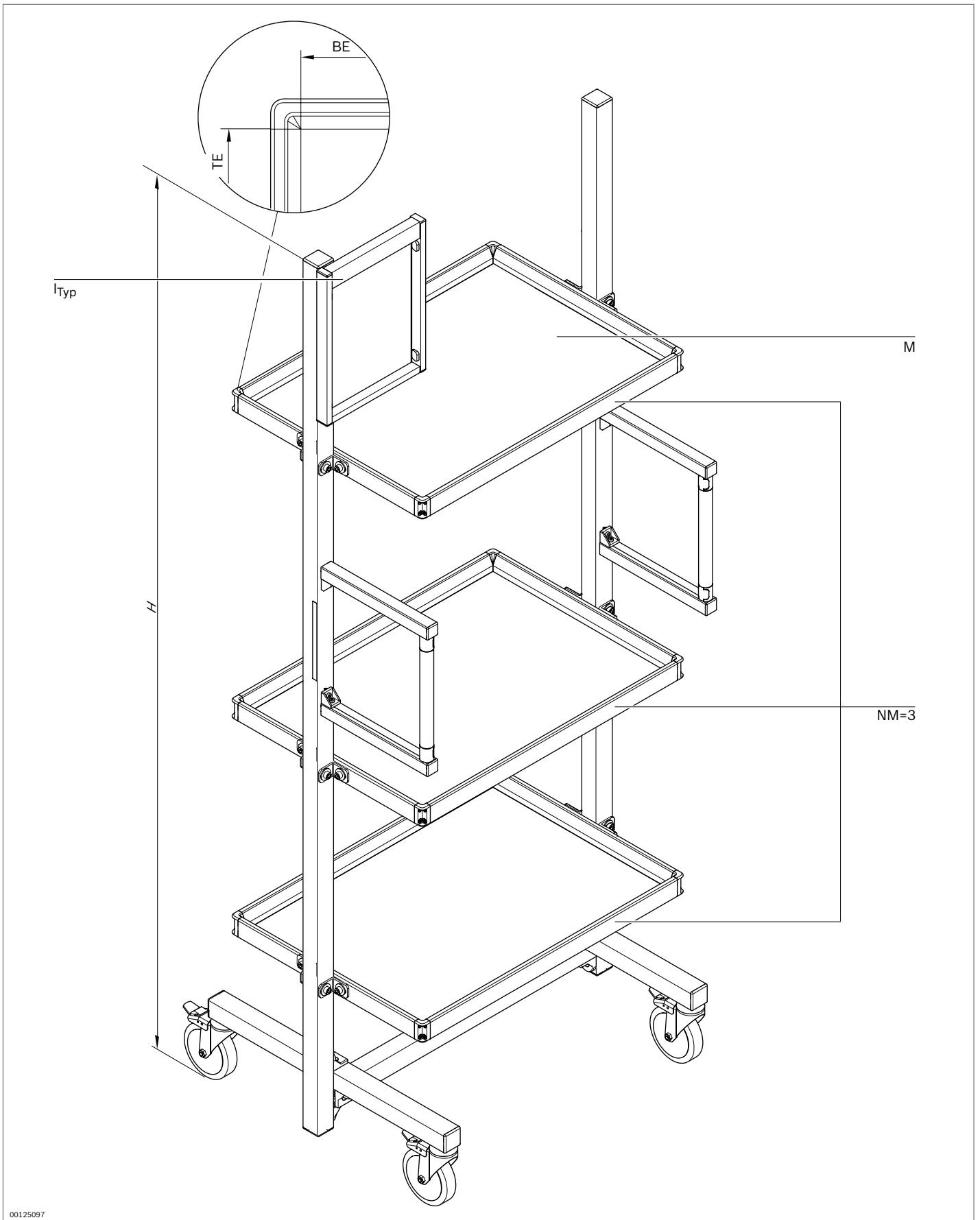
- ▶ Swivel fastening for tilting the material shelf (see page 163)

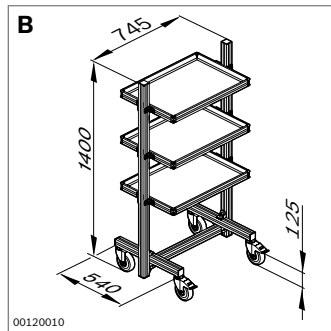
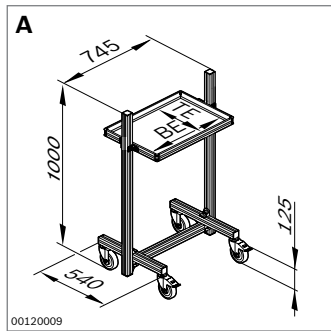
**MTpro** For workstation design and planning, we recommend **MTpro!** See pages 12 and 13 for more information.

See also the technical data (see page 194 ff.)

Material shuttle Logistics Basic		3 842 998 230
A	Design	Disassembled, assembled
ESD	Conductivity	Yes, no
H	Material shuttle height	600 ... 2200 mm
NM	Number of material shelves (Basic)	0 ... 4
M	Material shelf material	3 different surface materials
BE	Material shelf width	410 ... 1480 mm
TE	Material shelf depth	410 ... 1220 mm
l <sub>typ</sub>	Information board	7 different information boards







Accessories:

- ▶ Material shelf (see pages 26, 163)
- ▶ Lettering clip for material shelves (see pages 27, 163)
- ▶ Swivel fastening for tilting the material shelf (see page 163)

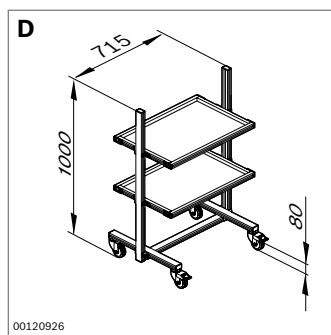
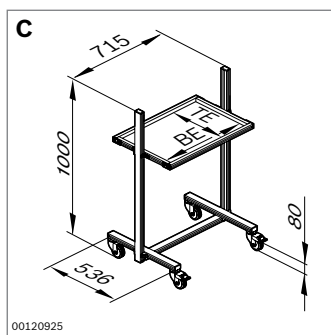
### Standard material shuttles Logistics



#### Material shuttle Logistics Basic

- ▶ For heavy-duty use in transport and material supply
- ▶ Adjustable material shelf height, offset, and tilt to ensure ergonomic grabbing
- ▶ Available as ESD-conductive version
- ▶ Material shelves Basic (see pages 26, 163), plate: PP, SB (ESD)
- ▶ Steerable castors: Ball bearing, with locking mechanism locking device

	H (mm)	BE (mm)	TE (mm)	ESD	No.
A Material shuttle Logistics Basic 1 shelf	1000	610	410		<b>3 842 515 483</b>
	1000	610	410	⚡	<b>3 842 515 484</b>
B Material shuttle Logistics Basic 3 shelves	1400	610	410		<b>3 842 508 181</b>
	1400	610	410	⚡	<b>3 842 508 182</b>



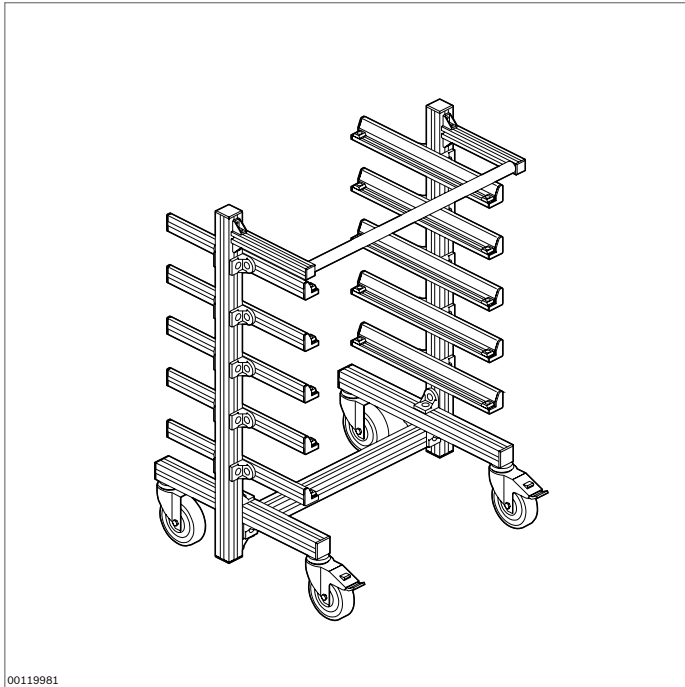
#### Material shuttle Logistics Economic

- ▶ For medium-duty applications
- ▶ Adjustable material shelf height, offset, and tilt to ensure ergonomic grabbing
- ▶ Available as ESD-conductive version
- ▶ Material shelves Economic (see pages 26, 162), plate: PP, SB (ESD)
- ▶ Steerable castors: Rubber tires, with locking mechanism

Accessories:

- ▶ Material shelf (see pages 26, 162)
- ▶ Lettering clip for material shelves (see pages 27, 162)
- ▶ Swivel fastening for tilting the material shelf (see page 162)

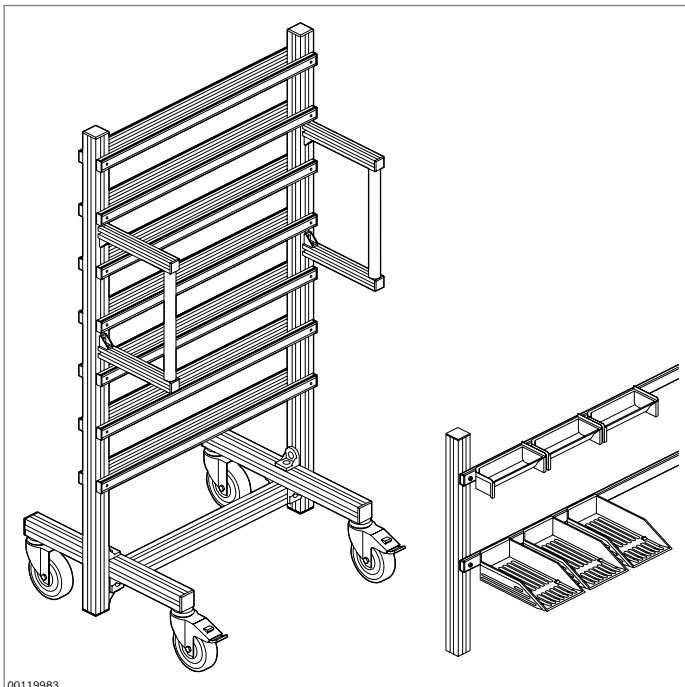
	H (mm)	BE (mm)	TE (mm)	ESD	No.
C Logistics Economic 1 shelf	1000	610	410		<b>3 842 515 481</b>
	1000	610	410	⚡	<b>3 842 518 120</b>
D Logistics Economic 2 shelves	1000	610	410		<b>3 842 515 482</b>
	1000	610	410	⚡	<b>3 842 518 121</b>



## Applications

### Material shuttle with angle profile

- ▶ To hold workpiece pallets and containers, including small parts containers



### Material shuttle with suspension profile

- ▶ To hold grab containers for commissioning, transport and supply of small parts

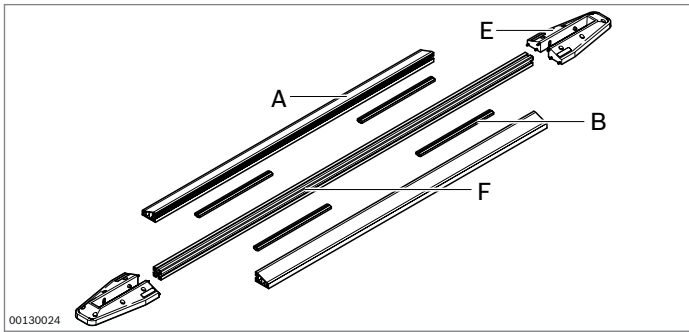
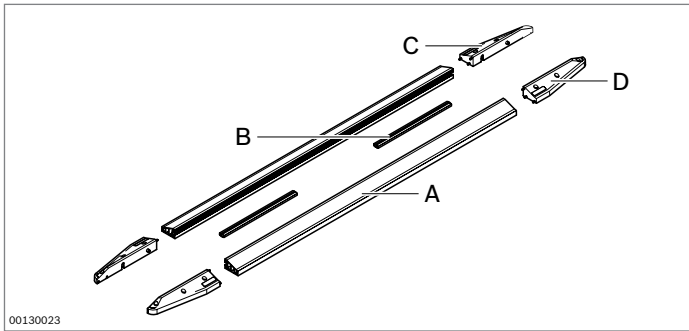
Further material shuttle variants can be custom-built to meet specific requirements. The individual components are described in the “Components” chapter (see page 160)

# FiFo station



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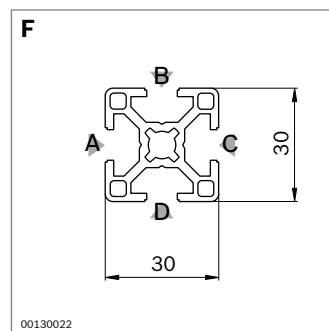
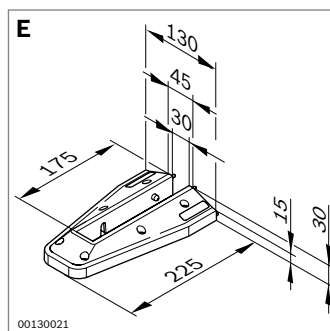
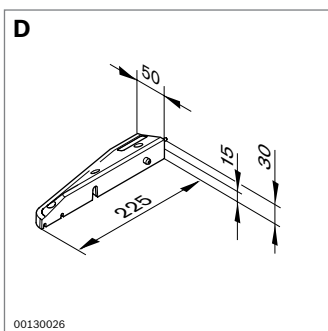
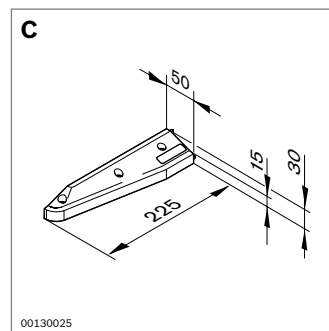
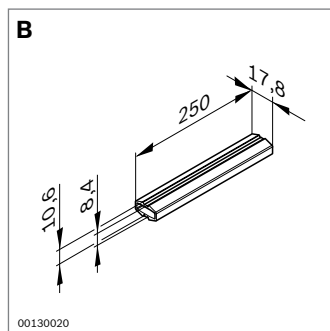
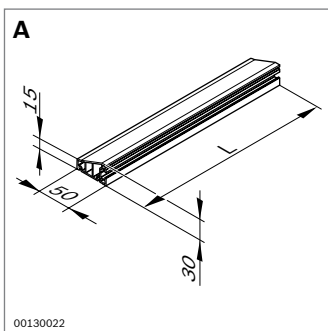
- ▶ Standardized delivery routes for clearly organized and highly transparent production operations
  - ▶ Clear visualization to help minimize inventories
  - ▶ Implementation of the kanban principle
  - ▶ Structured material supply system with efficient, well-defined processes to help find required materials fast
  - ▶ Easy tracing of faults and malfunctions through observation of the FiFo principle
  - ▶ Modular system lets you adapt the layout to your needs and to your space
- ▶ Flow rack systems can be integrated to save space. The flow rack is set up on the FiFo tracks, light parts are stored in the flow rack and heavy parts on floor rollers or material shuttles in the FiFo station.
  - ▶ Information supplied by attaching information boards
  - ▶ A transverse profile can be installed to set a height limit for materials



### Components

- ▶ Guide rail fastened to floor using adhesive strips, end caps may also be screwed in place (if required)
- ▶ Adapter for connecting two guide rails, or a guide rail with a 30x30 profile
- ▶ Large end caps for integrating a 30x30 profile for use in installing flow rack systems, information boards and height limits. Since the guide rails are flat-sided, setup can be done using a profile of width 45.
- ▶ Guide rail color: Yellow
- ▶ End cap color: Black

	L (mm)			No.
<b>A</b> Guide rail	1200		10	<b>3 842 540 012</b>
	2400		10	<b>3 842 539 894</b>
<b>B</b> Adapter			20	<b>3 842 539 898</b>
<b>C</b> Right end cap, small			10	<b>3 842 539 895</b>
<b>D</b> Left end cap, small			10	<b>3 842 539 896</b>
<b>E</b> End cap, large			10	<b>3 842 539 897</b>
<b>F</b> Profile 30x30	50 ... 5600	1		<b>3 842 993 703/L</b>
	5600	20		<b>3 842 509 178</b>





## Case lifters help to keep sick days down

Workstation designers are increasingly aware of the importance of ergonomics on the job.

Musculoskeletal disorders are among the primary causes for worker absences. In order to sustainably reduce times absent due to sickness and disability, it is important to minimize the strain placed on workers' bodies. Workers who continuously and repetitively lift and lower loads are especially prone to incorrect work posture that can lead to overexertion. Bending of the torso (below 800 mm) places a disproportionate strain on the human body.

The electric case lifter literally takes the load off employees' backs by doing the raising and lowering for them. It serves to bring workpieces into the correct grab area or to deliver finished products directly to floor rollers for further transport. In particular where heavy loads are involved, the case lifter is a great help in supplying materials to the workstation. It can also be positioned at the beginning or end of a conveyor track to feed or remove conveyed items.

Moreover, it slashes the time required for parts supply and removal by up to 68% (MTM – Method of Time Measurement). Employees can then concentrate their efforts on their value-adding assembly work.

Rexroth's new case lifter offers you many advantages, including the following:

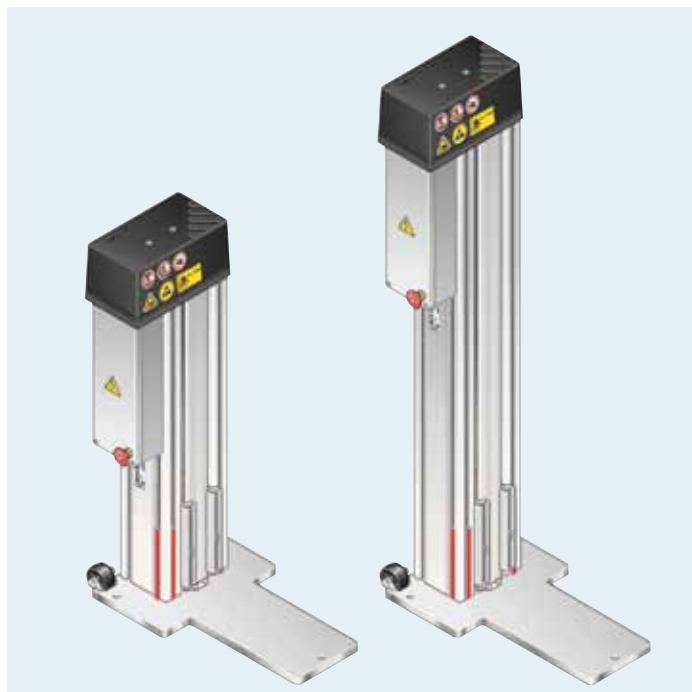
- ▶ Compared with manual mode, automatic mode further reduces waiting times
- ▶ In addition to stationary operation, rollers also allow for semi-mobile use
- ▶ Suitable for loads up to 220 kg
- ▶ Space-saving thanks to the compact, closed aluminum housing
- ▶ Suitable for use in ESD-sensitive areas
- ▶ The 10 mm slot enables simple mounting of components from the Basic Mechanic Elements modular system



152 Electric case lifter

154 Accessories

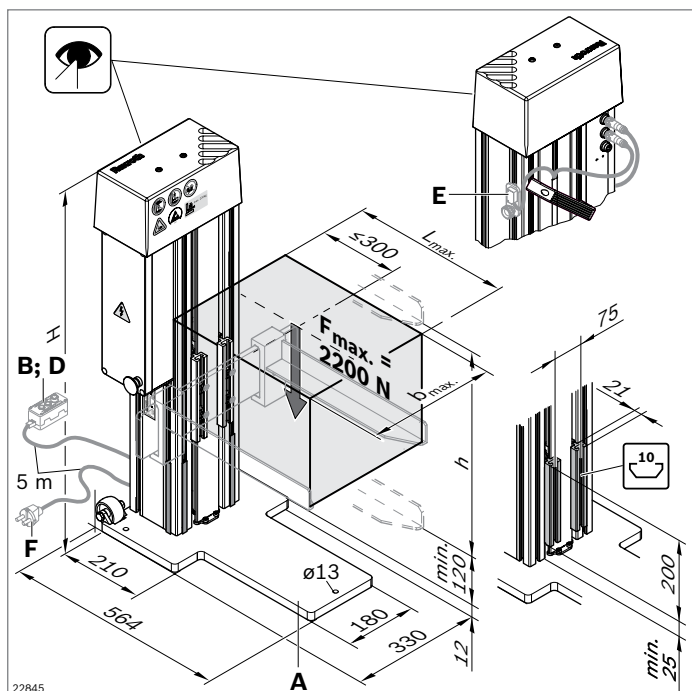
# Electric case lifter



- ▶ Ergonomic parts supply at the workstation
- ▶ Operating mode:
  - Manual: Lifting and lowering through hand switch actuation. Suitable for use with Basic and Comfort hand switches
  - Automatic: Automatic lifting and lowering. Suitable for use with Comfort hand switches in conjunction with Comfort sensor unit (retrofit possible)
- ▶ Low overall height allows e.g. for installation under transfer systems
- ▶ Rollers for semi-mobile use at various workstations
- ▶ ESD version for use in ESD-sensitive areas
- ▶ The 10 mm slot enables simple mounting of components from the Basic Mechanic Elements modular system
- ▶ Easy start-up without electrician; connection via mains cable (see page 153) or connecting cable (see page 48)

Accessories, required: Basic hand switch or Comfort hand switch + Comfort sensor unit; mains cable

Accessories, optional: Attachment plate, forks, suspension lug (see pages 154, 155)



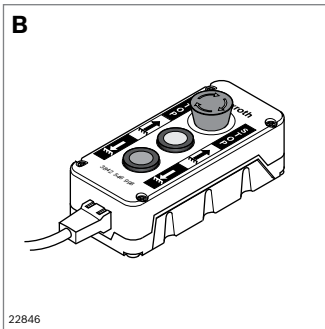
### Technical data

- ▶ Permissible load  $F_{max}$ : 2200 N
- ▶ Lifting velocity: 25 mm/s
- ▶ Operating time (OT): 20%
- ▶ Connection: 230 V~/max. 16 A
- ▶ Protection class: IP 40 IEC 529

Max. permitted load bearing surface		$b_{max}$ x $L_{max}$
Attachment plate B = 450 mm		400 mm x 600 mm
Attachment plate B = 650 mm		600 mm x 400 mm

		h (mm)	H (mm)	ESD	No.	
A	Electric case lifter	EU	500	890	⚡	3 842 546 991
			900	1290		3 842 546 992

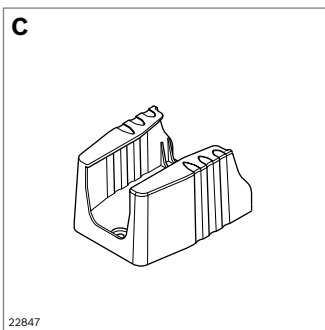




**Basic hand switch (B)**

- ▶ Push button for manual lifting and lowering
- ▶ With emergency switch
- ▶ Can be replaced with Comfort hand switch (D)

	No.
<b>B</b> Basic hand switch	<b>3 842 546 998</b>

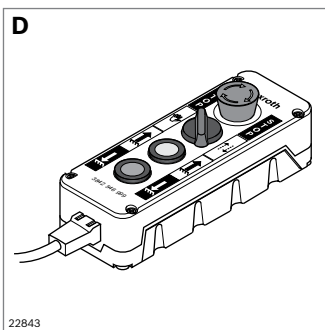


**Holder for hand switch (C)**

- ▶ To stow Basic and Comfort hand switches

Scope of delivery: Includes fastening kit for 10 mm slot

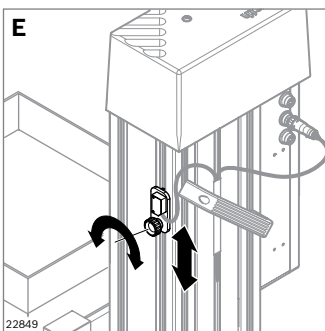
	No.
<b>C</b> Holder for hand switch	<b>3 842 548 038</b>



**Comfort hand switch (D)**

- ▶ For selection of “Manual” or “Automatic” mode
- ▶ Push button for manual lifting and lowering in “Manual” mode
- ▶ With emergency switch

	No.
<b>D</b> Comfort hand switch	<b>3 842 546 999</b>

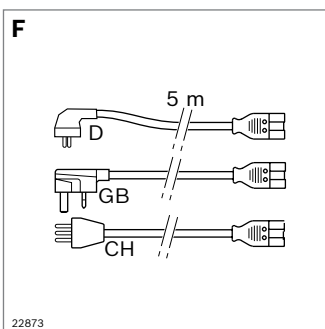


**Comfort sensor unit (E)**

- ▶ Works with the Comfort hand switch to control lifting and lowering in automatic mode

Scope of delivery: Includes fastening kit for 10 mm slot

	ESD	No.
<b>E</b> Comfort sensor unit		<b>3 842 547 200</b>



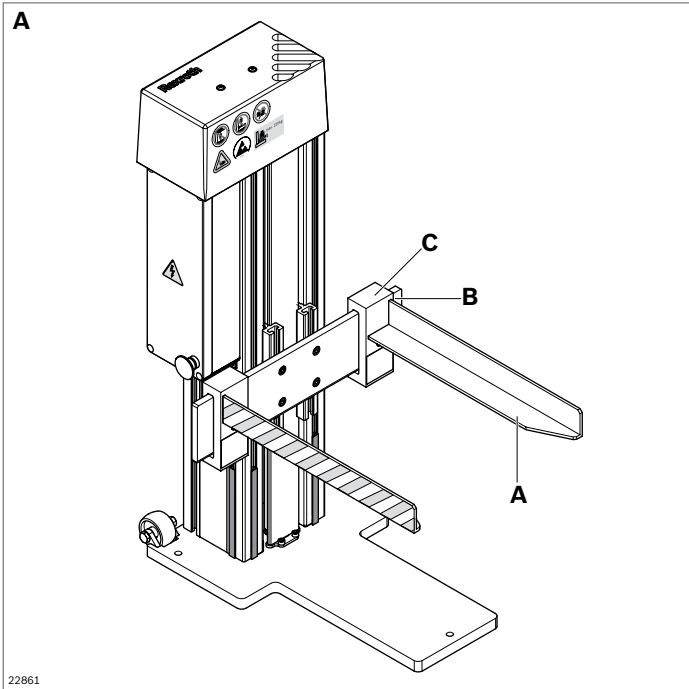
**Mains cable (F)**

- ▶ Ready-to-use; for easy and reliable plug-and-play start-up without needing an electrician

	Country	L (m)	No.
<b>F</b> Mains cable	D/F <sup>1)</sup>	5	<b>3 842 517 045</b>
	GB <sup>1)</sup>	5	<b>3 842 522 585</b>
	CH <sup>1)</sup>	5	<b>3 842 523 910</b>

<sup>1)</sup> Test mark of VDI

# Case lifter accessories



22861

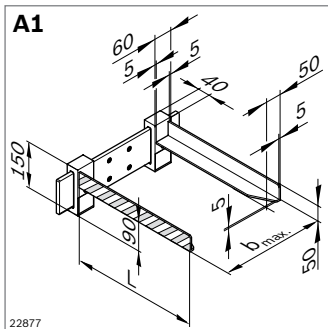
## Forks (A)

► For support of containers (**A1**) or floor rollers (**A2**)

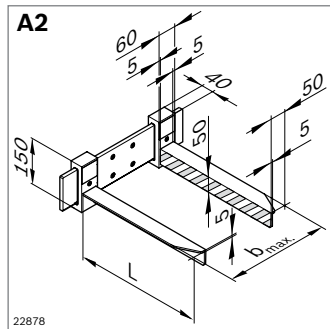
Material: Steel; painted black, with yellow safety mark on the side

Scope of delivery: Kit with two forks (left and right), incl. fastening material

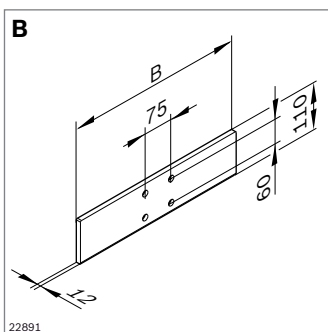
	L (mm)	ESD	No.
<b>A</b> Forks	400		<b>3 842 549 435</b>
	600		<b>3 842 549 442</b>



22877



22878



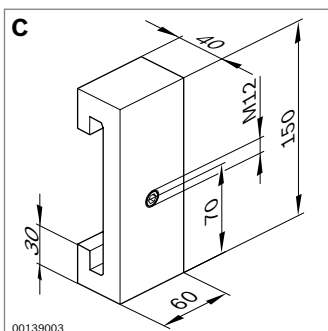
**Attachment plate (B)**

- ▶ For attaching forks or suspension straps
- ▶ Suitable for all case lifters

Material: Steel; galvanized

Scope of delivery: Includes fastening kit (with case lifter)

	<b>B (mm)</b>	<b>b<sub>max</sub> (mm)</b>	<b>ESD No.</b>
<b>B</b> Attachment plate	450	400	<b>3 842 549 427</b>
	650	600	<b>3 842 549 428</b>



**Suspension strap (C)**

- ▶ Suitable for attachment plate **B**
- ▶ For attaching individual supports

Material: Steel; preserved

Scope of delivery: Incl. mounting material

	<b>Set</b>	<b>ESD No.</b>
<b>C</b> Suspension strap	2	<b>3 842 549 449</b>



## Better employee information for increased transparency and quality

A key element of lean production is the visual on-site presentation of activities, goals and results.

Infoboards can be used to provide important information such as production figures and agreed goals, but also team overviews and job responsibilities within a department. Workers thus have access to information on-site and at any time.

The infoboards are fully suitable for industrial use due to their stable, robust construction.

There are three versions available:

- ▶ For pins with matted surface, can be used as a projection screen.
- ▶ Perforated plate for magnets and screws.
- ▶ Magnetic, writeable on both sides for board markers.

The boards are made up of modules. The base module is called the Infoboard Wall, which becomes the Infoboard Economic when the stand is added. The Infoboard Mobile has rollers so it can be pushed easily as well as a tilting surface for ergonomic writing.

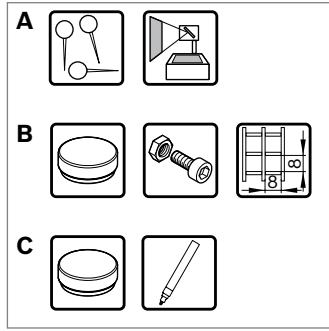
Multiple infoboards can be combined to set up CIP corners and discussion islands.



158 Infoboards  
159 Accessories

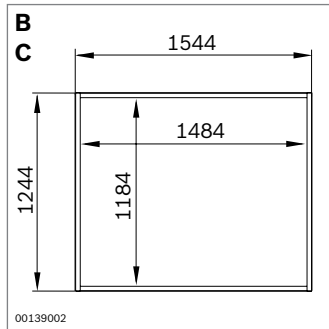
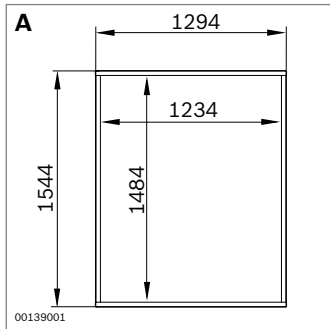


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### Infoboard Wall

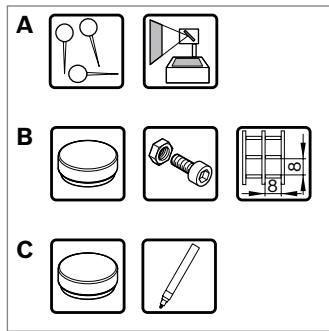
Accessories: Angle piece R for wall mounting (see page 159)



	<b>h x b (mm)</b>	<b>No.</b>
<b>A</b> Infoboard Wall – pin	1484 x 1234	<b>3 842 515 775</b>
<b>B</b> Infoboard Wall – magnet	1184 x 1484	<b>3 842 516 405</b>
<b>C</b> Infoboard Wall – magnet marker	1184 x 1484	<b>3 842 515 776</b>



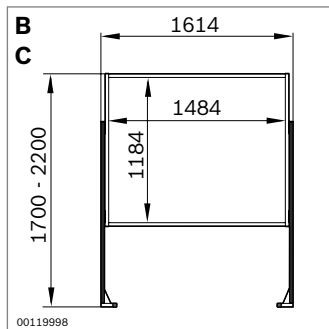
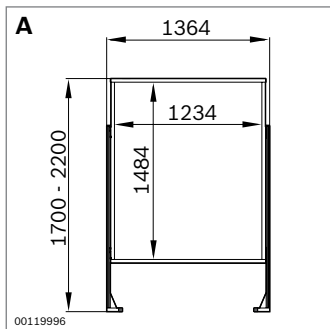
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### Infoboard Economic

► Can be retrofitted with rollers for mobile applications

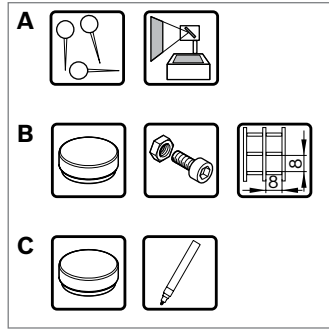
Accessories: Roller set (see page 159)



	<b>h x b (mm)</b>	<b>No.</b>
<b>A</b> Infoboard Economic – pin	1484 x 1234	<b>3 842 515 771</b>
<b>B</b> Infoboard Economic – magnet	1184 x 1484	<b>3 842 516 406</b>
<b>C</b> Infoboard Wall – magnet marker	1184 x 1484	<b>3 842 515 772</b>

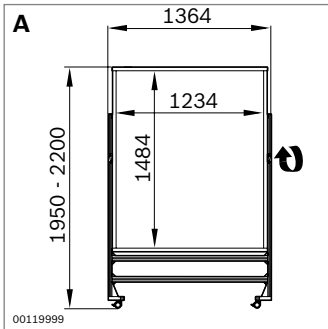


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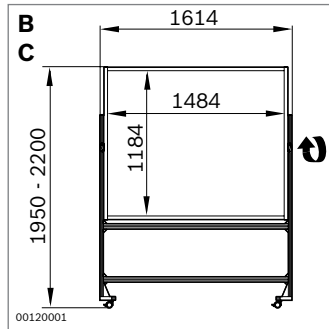


### Infoboard Mobile

- ▶ Tilting work surface for good ergonomic posture
- ▶ With locking rollers



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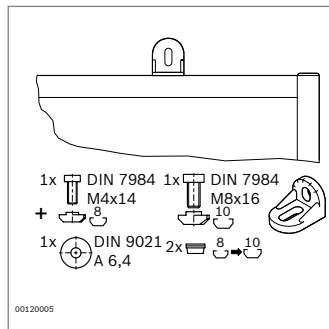


00120001

	h x b (mm)	No.
<b>A</b>	Infoboard Mobile – 1484 x 1234 pin	<b>3 842 515 773</b>
<b>B</b>	Infoboard Mobile – 1184 x 1484 magnet	<b>3 842 516 407</b>
<b>C</b>	Infoboard Mobile – 1184 x 1484 magnet marker	<b>3 842 515 774</b>



00121509



00120005

### Infoboard accessories



	ESD No.
Roller set for Infoboard Economic	Set <b>3 842 536 129</b>
Bracket for Infoboard Wall	<b>3 842 515 547</b>



## Continuous improvement and self-assembly of your systems

In addition to the systems and modules on offer, you can also choose to build your own system from individual components.



This chapter has been compiled to provide you with a summary of the components you will need for the different parts of your system.

The expansion and continuous improvement of existing systems is the key to long-term success. Employees experience and learn new things every day. And this knowledge should be quickly integrated into your assembly systems. Our MPS program is the modular system you need to achieve continuous improvement.

Again and again, new product variants or new customer demands compel you to rethink and revise your existing system. Make this job easier for yourself by using the Manual Production System and its components.

You will also find a short extract from other Rexroth offerings here including Basic Mechanic Elements.

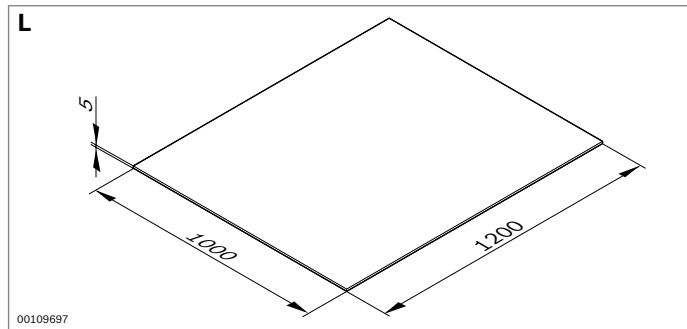
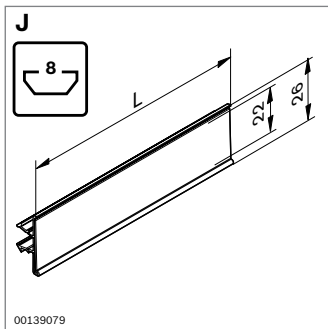
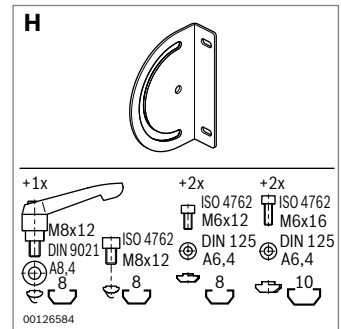
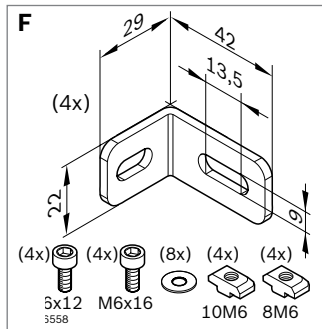
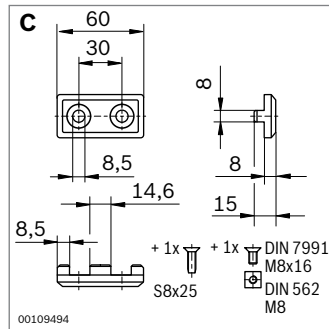
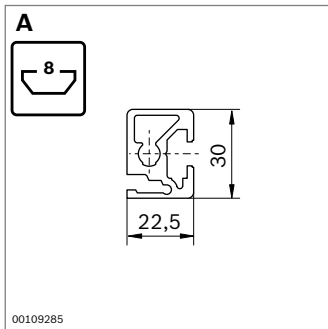
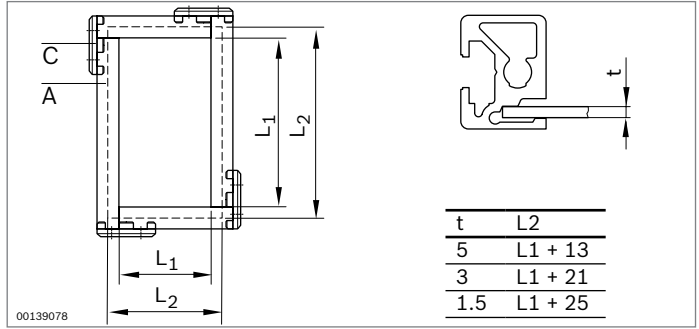
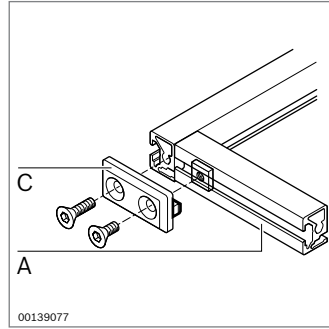
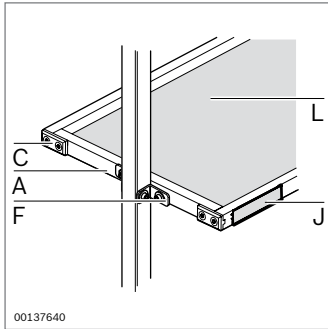
For simple and efficient planning and layout we recommend using *MTpro*.



162	Material shelves
164	Conveyor level
165	Accessory upright
166	Reinforcements, lateral guides
167	Hanger
168	Grab containers, tool shelves, suspension profiles
169	Supporting arms
171	Material shuttles
172	Consoles
	Foundation brackets
	Table top supports

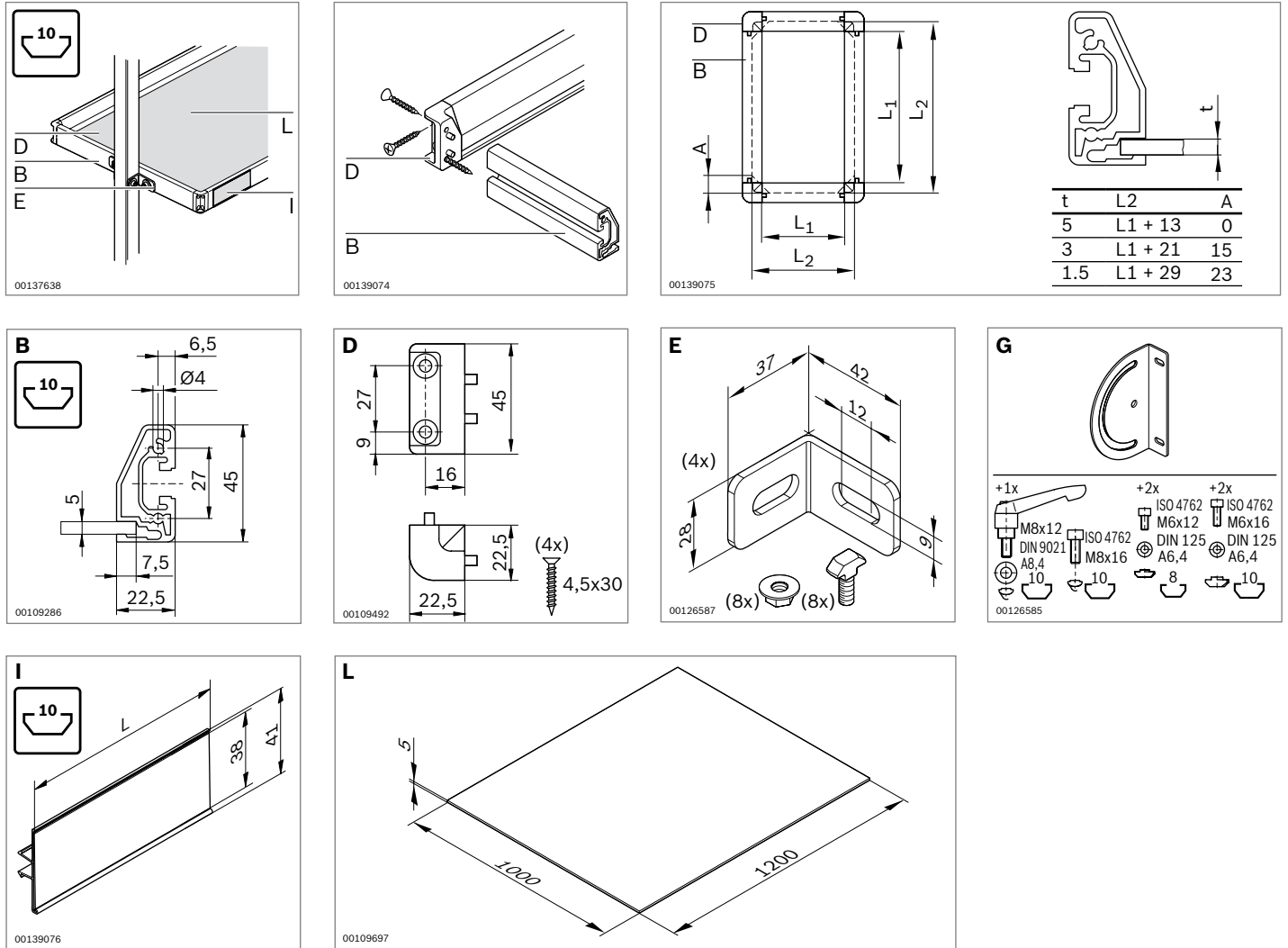
## Material shelf assembly elements

### Material shelf Economic



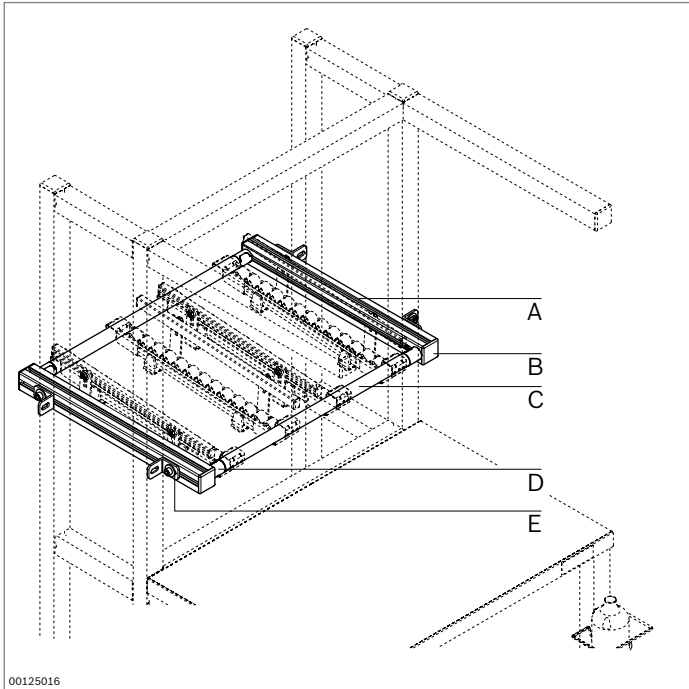
	L (mm)		ESD	No.
<b>A</b> Frame profile 22.5x30; material: Aluminum, anodized	30 ... 5600	1		<b>3 842 992 493/L</b>
	5600	20		<b>3 842 515 229</b>
<b>C</b> Corner piece 22.5x30; material: PA; black			20	<b>3 842 535 661</b>
<b>F</b> Bracket set M6, with fastening parts, 8 mm slot; material: Steel; galvanized			Set	<b>3 842 537 862</b>
<b>H</b> Swivel fastening with fastening parts, 8 mm slot; material: Steel; galvanized			Set	<b>3 842 538 275</b>
<b>J</b> Lettering clip, 8 mm slot; material: PVC	2000	20		<b>3 842 537 113</b>
	102	20		<b>3 842 537 650</b>
<b>L</b> Plate for frame profile; material: PP; gray, smooth on one side, grained on the other				<b>3 842 516 837</b>
				<b>3 842 516 838</b>

**Material shelf Basic**

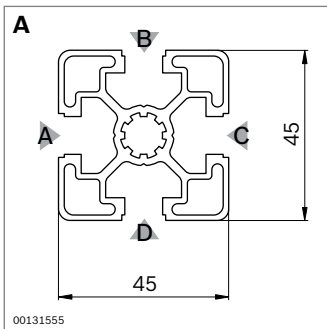


	L (mm)			ESD	No.
<b>B</b> Frame profile 22,5x45C; material: Aluminum, anodized	30 ... 5600	1			<b>3 842 992 411/L</b>
	5600	20			<b>3 842 508 102</b>
<b>D</b> Corner piece 22,5x45; material: Diecast zinc			20		<b>3 842 535 637</b>
<b>E</b> Bracket set M8, with fastening parts, 10 mm slot; material: Steel; galvanized			Set		<b>3 842 537 861</b>
<b>G</b> Swivel fastening with fastening parts, 10 mm slot; material: Steel; galvanized			Set		<b>3 842 538 276</b>
<b>I</b> Lettering clip, 10 mm slot; material: PVC	2000		20		<b>3 842 537 116</b>
	102		20		<b>3 842 537 651</b>
<b>L</b> Plate for frame profile; material: PP; gray, smooth on one side, grained on the other Plate for frame profile; material: SB; black, smooth on both sides					<b>3 842 516 837</b>
					<b>3 842 516 838</b>

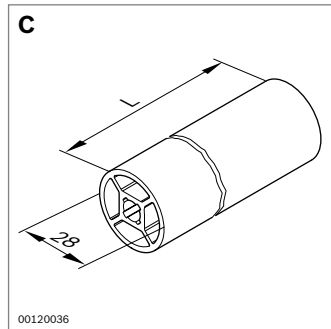
### Conveyor level assembly elements



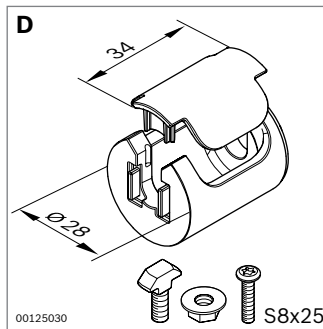
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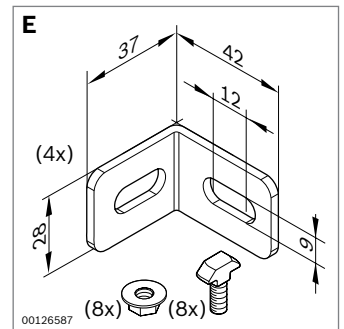
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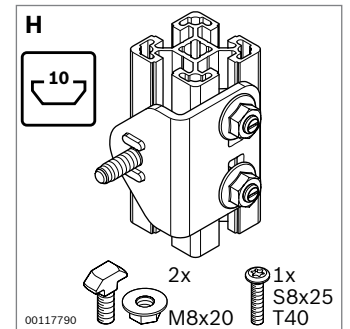
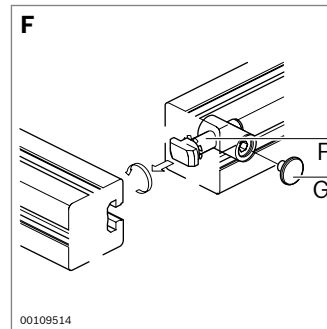
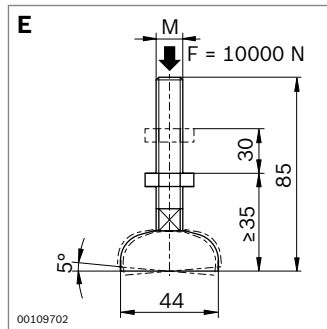
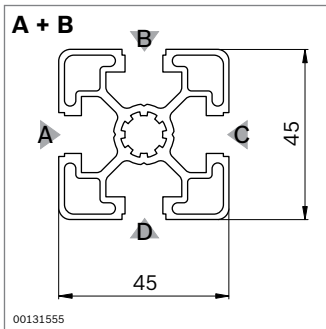
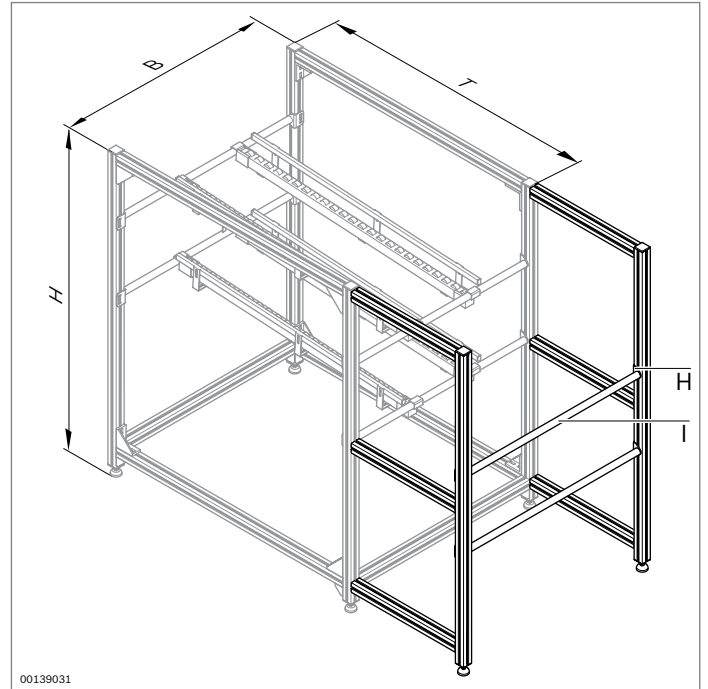
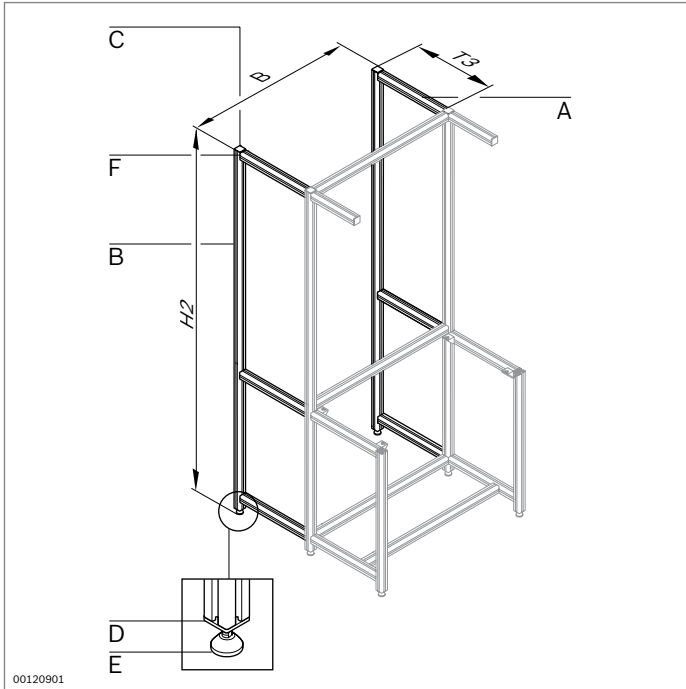
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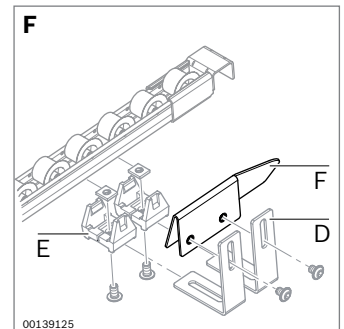
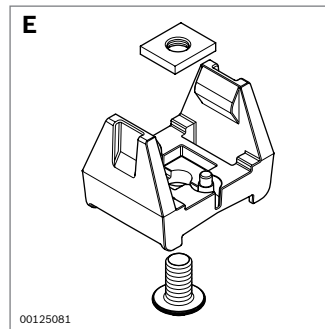
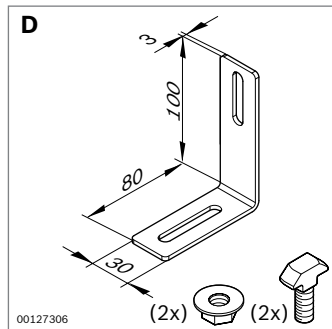
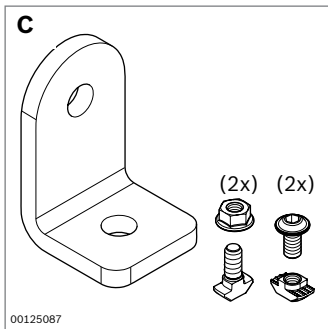
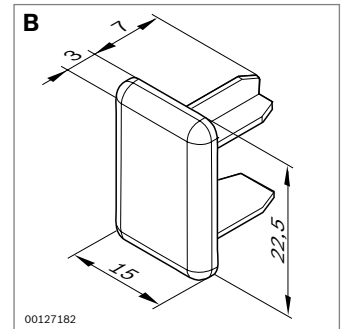
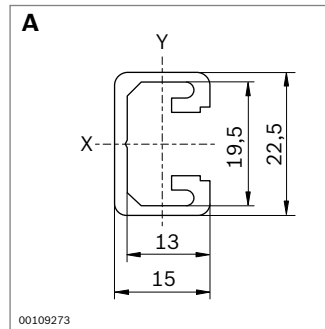
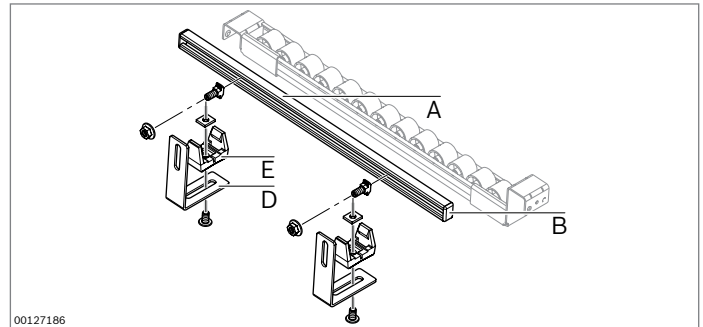
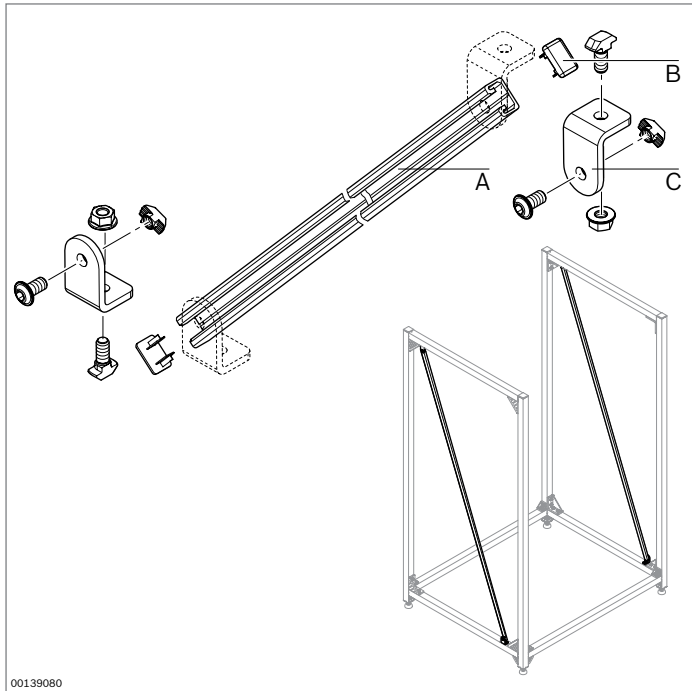
	L (mm)			No.
<b>A</b> Strut profile 45x45L; material: Aluminum, anodized	50 ... 5600	1		<b>3 842 993 737/L</b>
	5600	20		<b>3 842 511 702</b>
<b>B</b> Cap 45x45L; material: PA			100	<b>3 842 502 674</b>
<b>C</b> Round tube D28; material: Aluminum, anodized	30 ... 6000	1		<b>3 842 993 317/L</b>
	6070	20		<b>3 842 535 118</b>
<b>D</b> T-connector D28			20	<b>3 842 532 879</b>
<b>E</b> Bracket set M8, with fastening parts, 10 mm slot; material: Steel; galvanized			Set	<b>3 842 537 861</b>

### Accessory upright



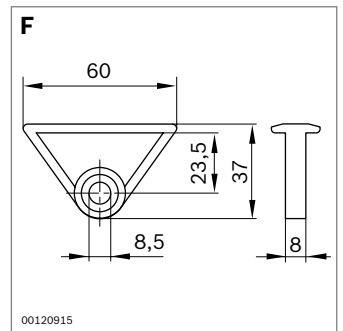
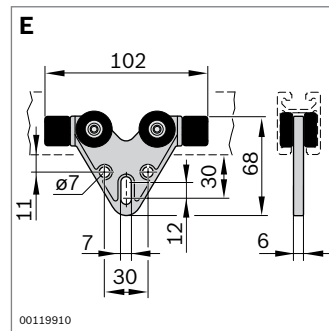
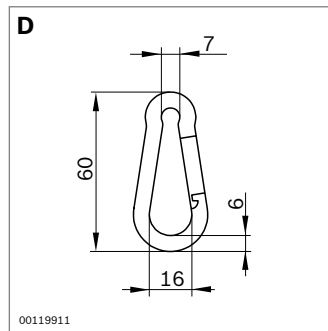
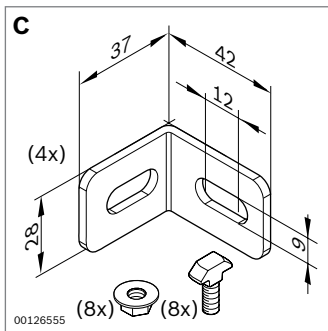
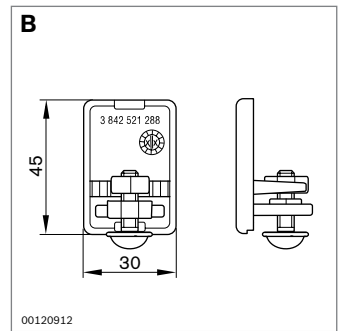
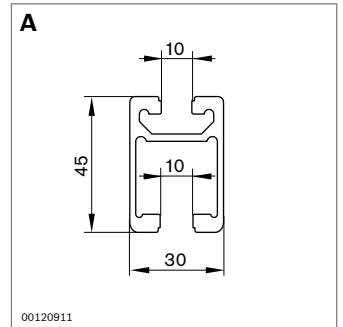
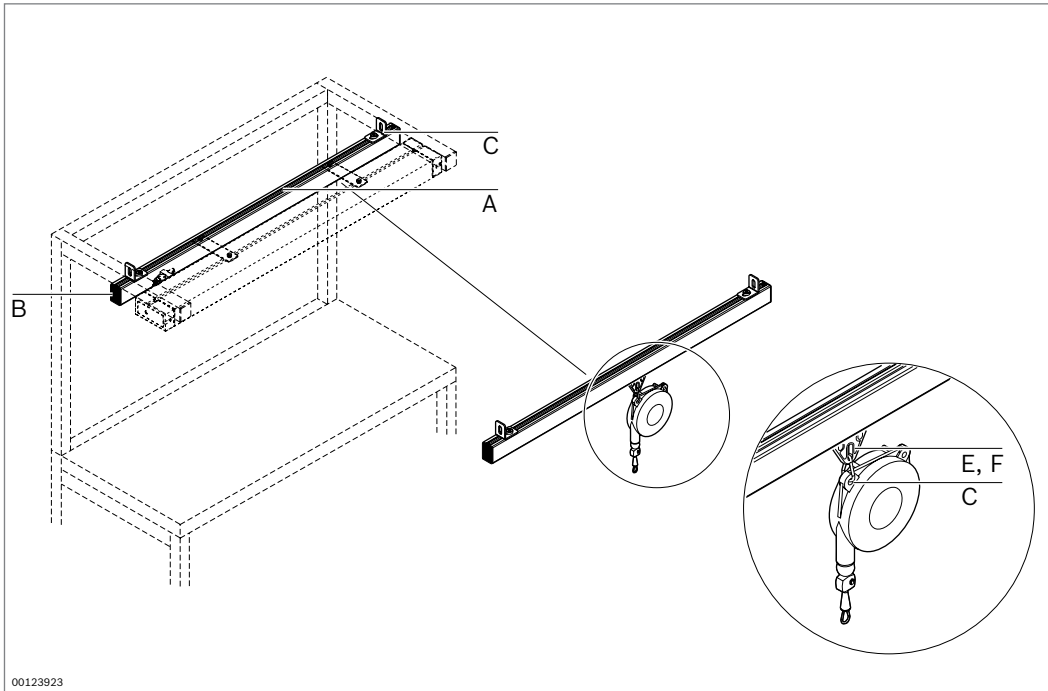
		L (mm)			No.
<b>A</b>	Strut profile 45x45L, profile finishing DB17 (through hole Ø 17) on both profile ends; material: Aluminum, anodized	50 ... 5600	1		<b>3 842 993 737/L/ B=DB17/DB17</b>
<b>B</b>	Strut profile 45x45L, profile machining M12 (thread in core) on one profile end; material: Aluminum, anodized	50 ... 5600	1		<b>3 842 993 737/L/ Z=M12/-</b>
<b>A, B</b>	Strut profile 45x45L; material: Aluminum, anodized	5600	20		<b>3 842 511 702</b>
<b>C</b>	Cap 45x45L; material: PA			100	<b>3 842 502 674</b>
<b>D</b>	Cap with hole 45x45L; material: PA			20	<b>3 842 523 442</b>
<b>E</b>	Leveling foot D44; material: Steel; galvanized			20	<b>3 842 352 061</b>
<b>F</b>	Quick connector, 10 mm slot, D17, 0°			10	<b>3 842 535 458</b>
<b>G</b>	Cap, quick connector; material: PA			100	<b>3 842 538 564</b>
<b>H</b>	Holding bracket with connection kit; material: Steel; galvanized			20	<b>3 842 536 002</b>
<b>I</b>	Round tube D28; material: Aluminum; anodized (see figure on page 164, "C")	30 ... 6000	1		<b>3 842 993 317/L</b>
		6070	20		<b>3 842 535 118</b>

### Reinforcement assembly element Lateral guide assembly element



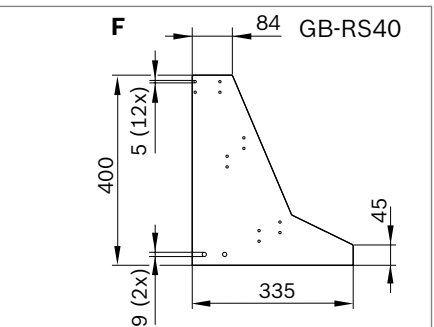
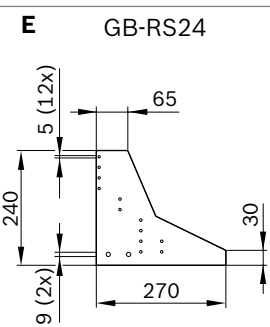
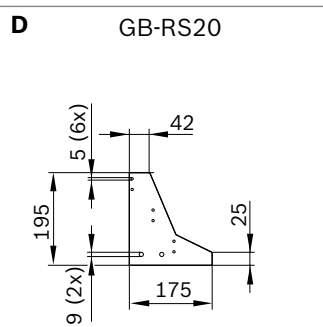
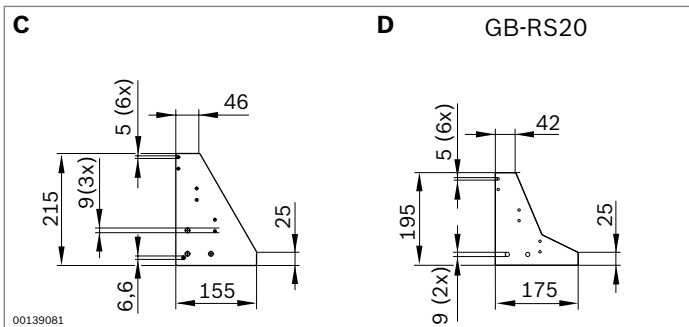
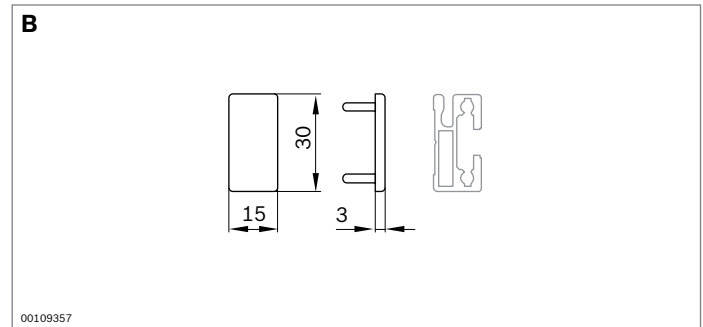
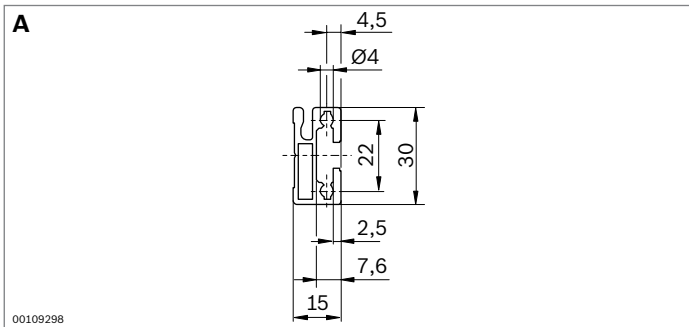
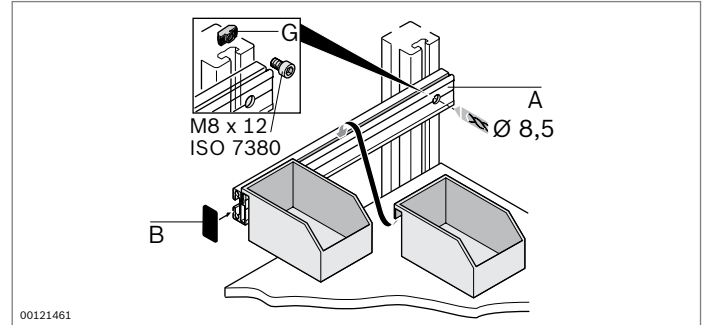
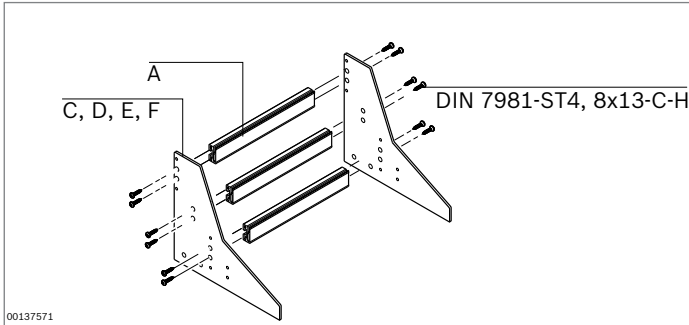
	L (mm)			ESD	No.
<b>A</b> Profile 15x22.5; material: Aluminum, anodized	50 ... 3000	1			<b>3 842 992 473/L</b>
	2000	10			<b>3 842 513 576</b>
<b>B</b> Cap 15x22.5; material: PA66			20		<b>3 842 537 594</b>
<b>C</b> Bracket set, with fastening parts, 10 mm slot; material: Steel; galvanized			20		<b>3 842 536 729</b>
<b>D</b> Bracket set, with fastening parts, 10 mm slot; material: Steel; galvanized			20		<b>3 842 535 125</b>
<b>E</b> Adapter for conveyor track XLean; material: PA			20		<b>3 842 537 022</b>
<b>F</b> Right and left guide plate including fastening screws			Set		<b>3 842 538 981</b>

### Hanger assembly elements



	L (mm)			No.
<b>A</b> Profile rail 30x45C; material: Aluminum, anodized	30 ... 6000	1		<b>3 842 992 946/L</b>
	5600	20		<b>3 842 523 598</b>
<b>B</b> End piece 30x45C			20	<b>3 842 521 513</b>
<b>C</b> Bracket set M8, with fastening parts, 10 mm slot; material: Steel; galvanized			Set	<b>3 842 537 861</b>
<b>D</b> Spring hook; material: Steel; galvanized				<b>0 842 901 309</b>
<b>E</b> Trolley for profile rail 30x45C				<b>3 842 521 510</b>
<b>F</b> Slide hanger for profiles with 10 mm slot; material: POM				<b>3 842 218 953</b>

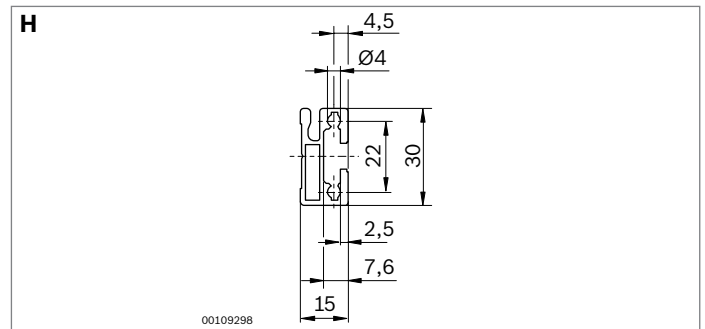
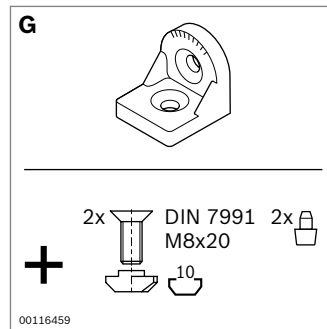
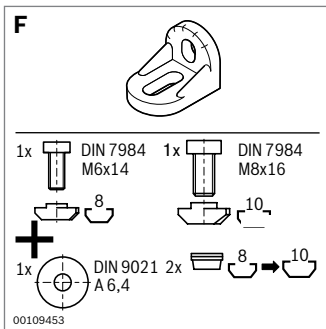
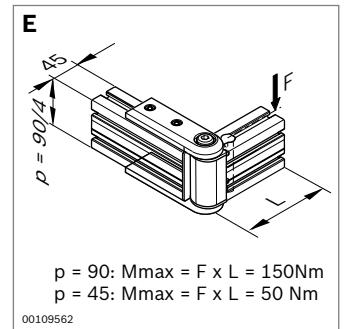
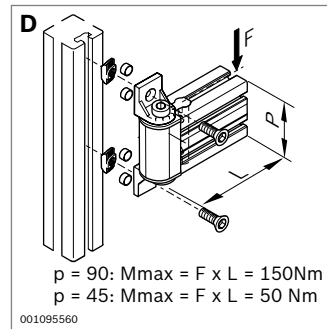
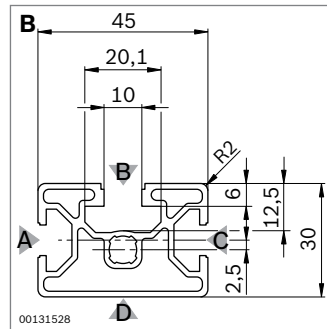
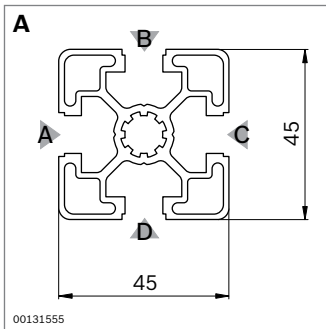
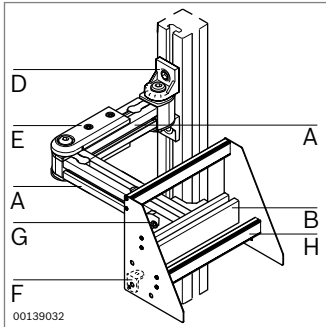
**Grab container assembly element**  
**Tool shelf assembly element**  
**Suspension profile**



	L (mm)			ESD	No.
<b>A</b> Suspension profile; material: Aluminum, anodized	30 ...3000	1			<b>3 842 993 411/L</b>
	3000	10			<b>3 842 537 679</b>
Suspension profile; material: Aluminum, chromated	30 ...3000	1			<b>3 842 993 359/L</b>
	3000	10			<b>3 842 537 681</b>
<b>B</b> Cap, suspension profile			20		<b>3 842 338 990</b>
<b>C</b> Side plate for tool shelf (2 each); material: Sheet aluminum			Set		<b>3 842 514 639</b>
<b>D</b> Side plate for grab container rack GB-RS24 (2 each); material: Sheet aluminum			Set		<b>3 842 517 399</b>
<b>E</b> Side plate for grab container rack GB-RS24 (2 each); material: Sheet aluminum			Set		<b>3 842 517 400</b>
<b>F</b> Side plate for grab container rack GB-RS40 (2 each); material: Sheet aluminum			Set		<b>3 842 517 401</b>
<b>G</b> T-nut, 10 mm slot, M8			100		<b>3 842 530 287</b>



### Supporting arm assembly elements

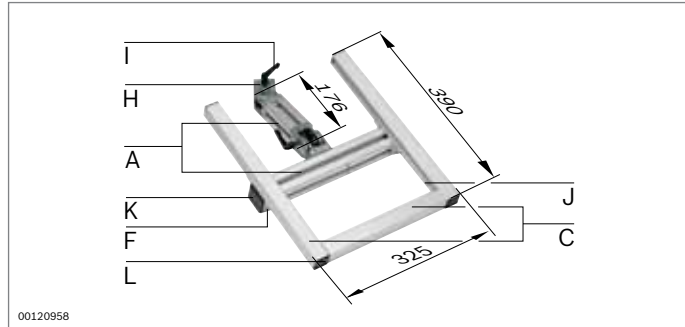


	L (mm)			ESD	No.
<b>A</b> Strut profile 45x45L, profile finishing DB17 (through hole Ø 17) on one profile end; material: Aluminum, anodized	50 ... 5600	1			<b>3 842 993 737/L/A=D17/-</b>
	5600	20			<b>3 842 511 702</b>
<b>B</b> Strut profile 30x45; material: Aluminum, anodized	50 ... 5600	1			<b>3 842 993 710/L</b>
	5600	18			<b>3 842 511 704</b>
<b>D</b> Swivel bearing 45x45 with fastening parts, 10 mm slot; material: Diecast zinc					<b>3 842 522 634</b>
<b>E</b> Supporting arm joint 45x45 with fastening parts, 10 mm slot; material: Diecast zinc					<b>3 842 521 263</b>
<b>F</b> Bracket R28x38 with fastening parts, 8 mm slot; material: Diecast zinc					<b>3 842 515 547</b>
<b>G</b> Bracket R35x38 with fastening parts, 10 mm slot; material: Die-cast aluminum					<b>3 842 532 274</b>
<b>H</b> Suspension profile; material: Aluminum, anodized	30 ... 3000	1			<b>3 842 993 411/L</b>
	3000	10			<b>3 842 537 679</b>
Suspension profile; material: Aluminum, chromated	30 ... 3000	1			<b>3 842 993 359/L</b>
	3000	10			<b>3 842 537 681</b>

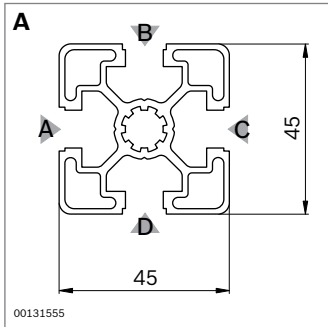
### Supporting arm assembly elements



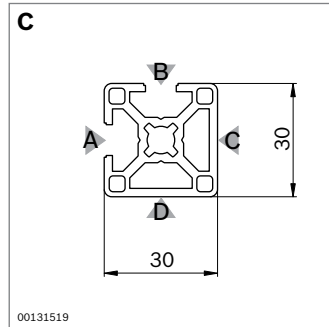
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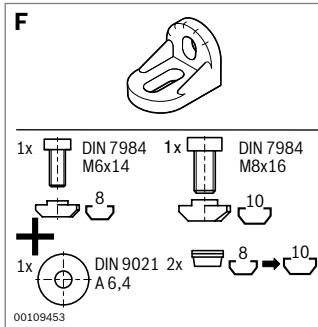
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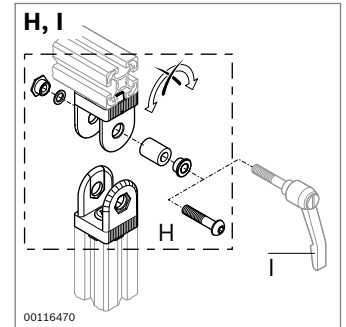
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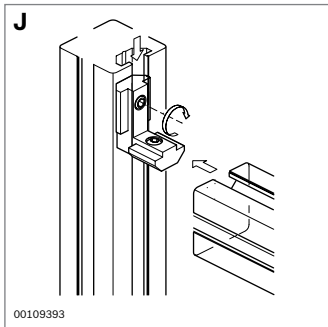
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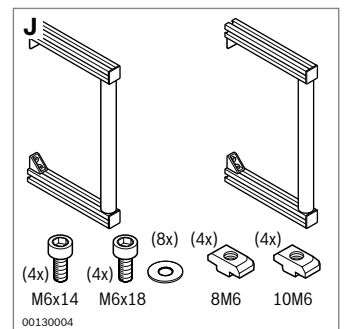
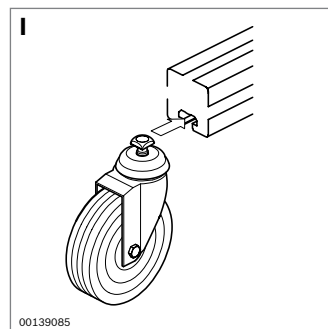
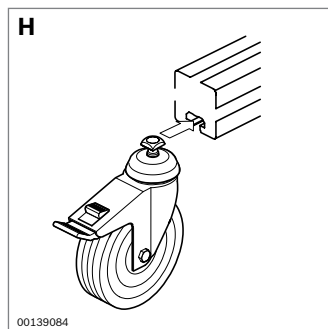
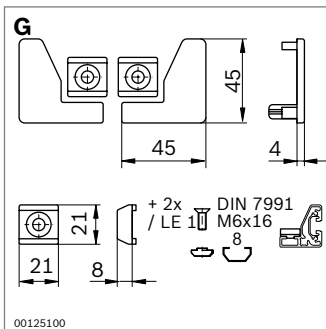
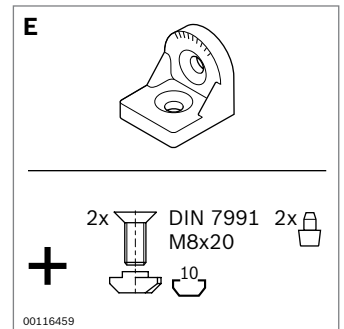
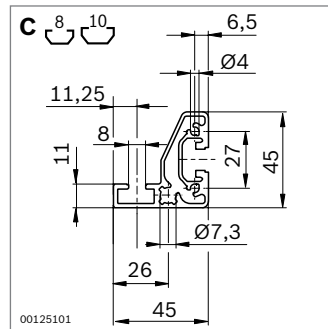
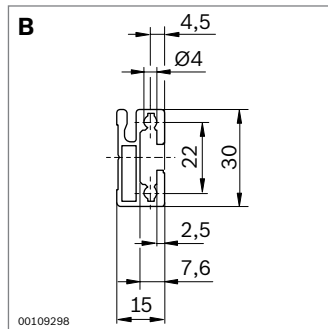
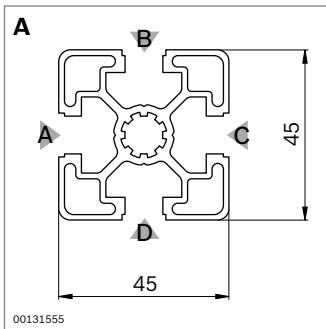
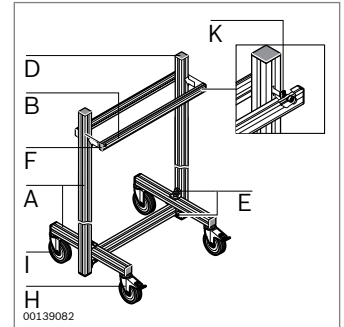
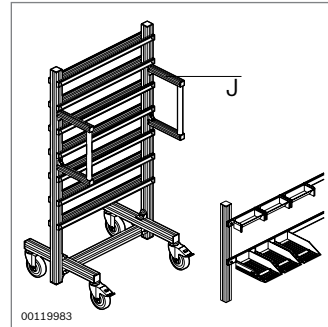
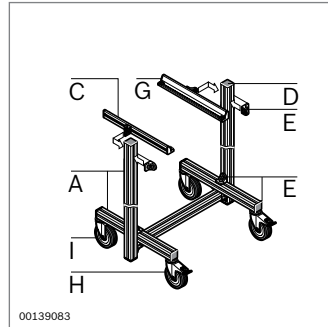
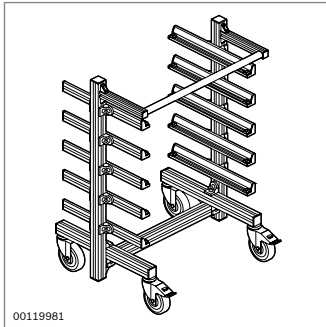
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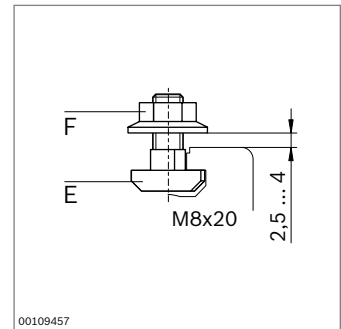
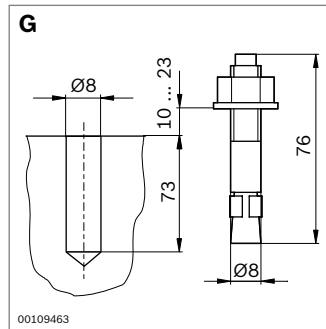
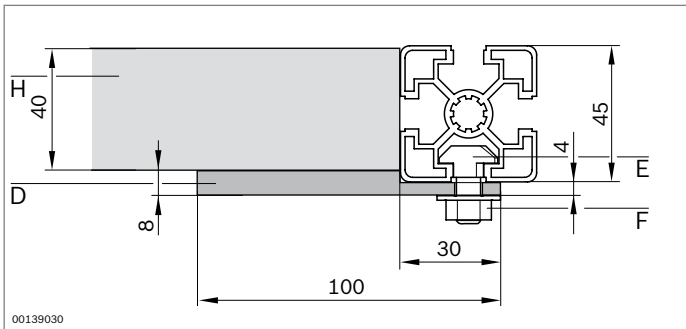
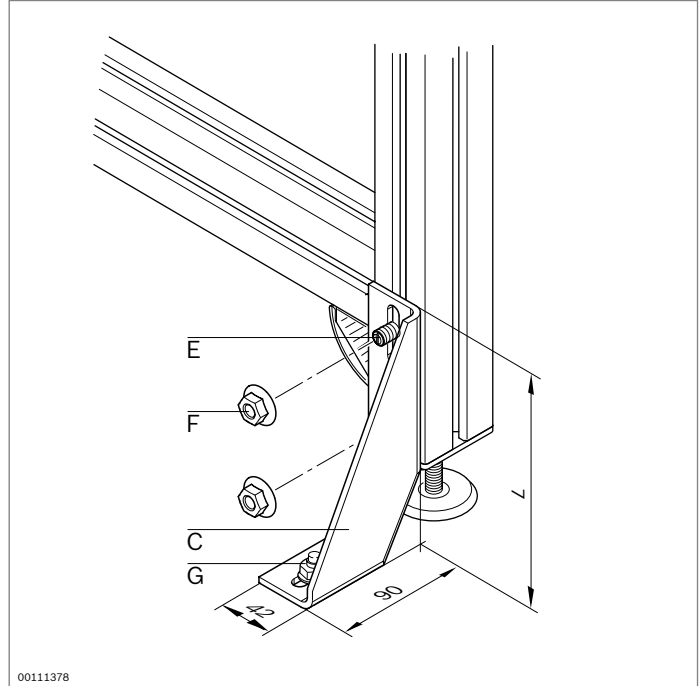
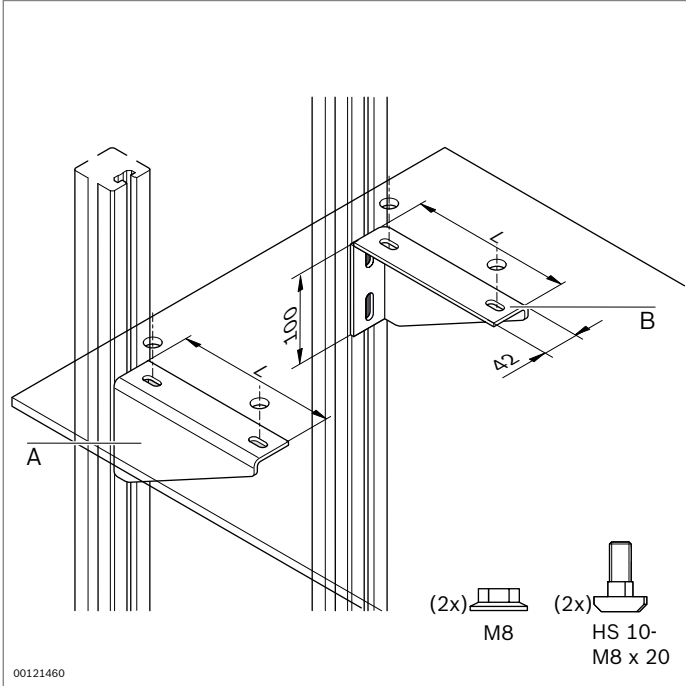
	L (mm)			No.
<b>A</b> Strut profile 45x45L; material: Aluminum, anodized	50 ... 5600	1		<b>3 842 993 737/L</b>
<b>C</b> 30x30 2NVS; material: Aluminum, anodized	50 ... 5600	1		<b>3 842 993 706/L</b>
	5600	20		<b>3 842 506 949</b>
<b>F</b> Bracket R28x38 with fastening parts, 8 mm slot; material: Diecast zinc				<b>3 842 515 547</b>
<b>H</b> Joint 45x45 with fastening parts, 10 mm slot; material: Diecast zinc				<b>3 842 538 687</b>
<b>I</b> Clamping lever				<b>3 842 538 607</b>
<b>J</b> Inner bracket, 8 mm slot; material: Steel; galvanized, transparent passivated			10	<b>3 842 535 577</b>
<b>K</b> Cap 45x45; material: PA			100	<b>3 842 502 674</b>
<b>L</b> Cap 30x30; material: PA			100	<b>3 842 501 232</b>

### Material shuttle assembly elements



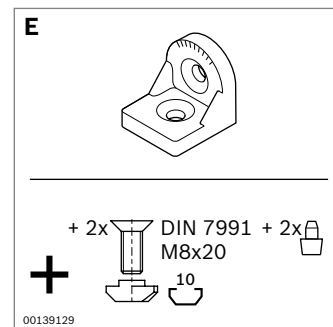
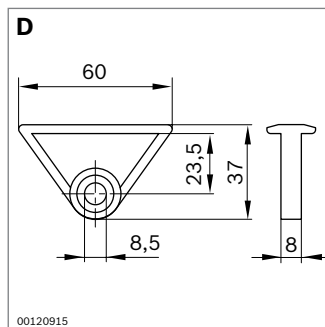
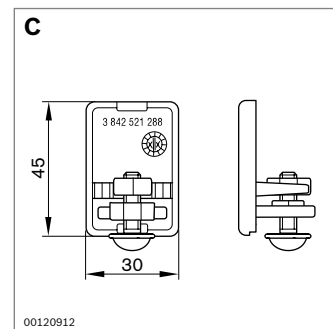
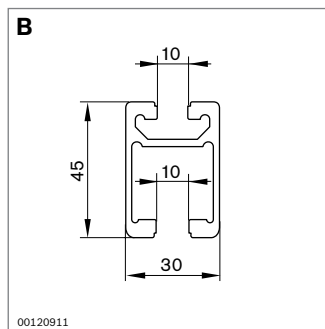
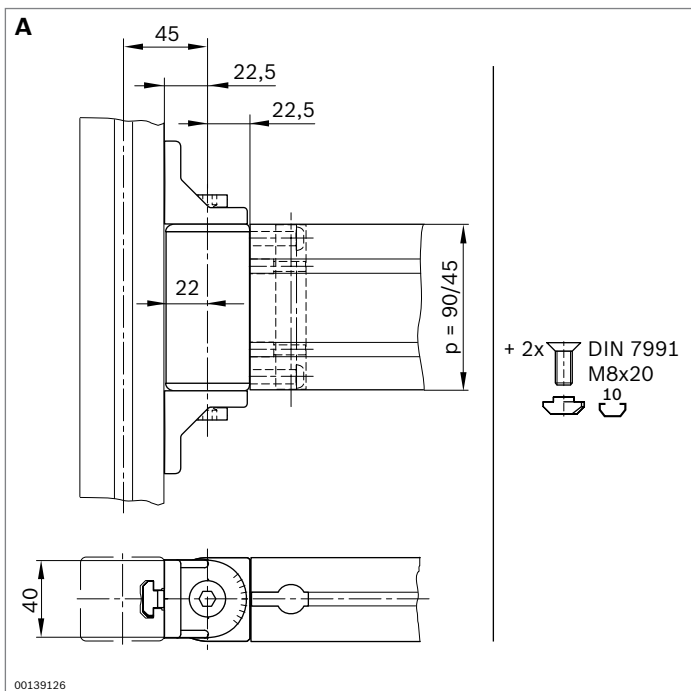
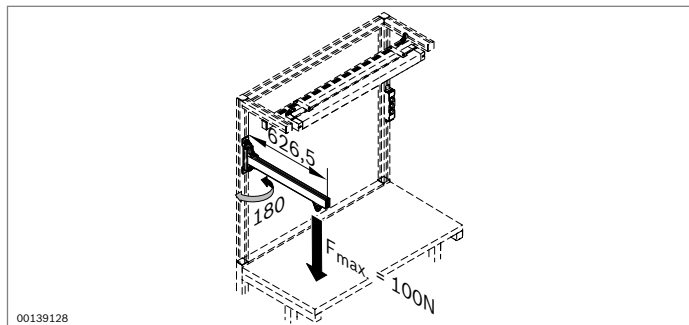
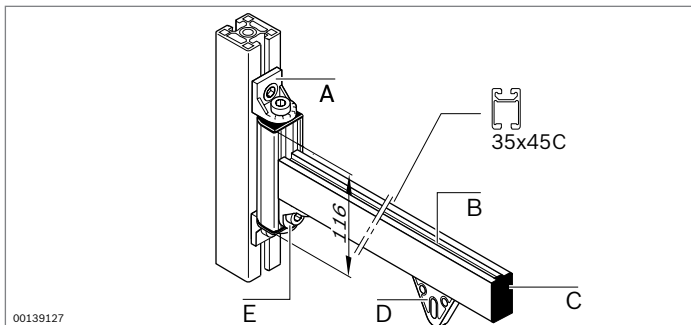
		L (mm)			ESD	No.	
<b>A</b>	Strut profile 45x45L; material: Aluminum, anodized	50 ... 5600	1			<b>3 842 993 737/L</b>	
		5600	20			<b>3 842 511 702</b>	
<b>B</b>	Suspension profile; material: Aluminum, anodized	30 ... 3000	1			<b>3 842 993 411/L</b>	
		3100	10			<b>3 842 537 679</b>	
		Suspension profile; material: Aluminum, chromated	30 ... 3000	1			<b>3 842 993 359/L</b>
			3100	10			<b>3 842 537 681</b>
<b>C</b>	Angle profile; material: Aluminum, anodized	30 ... 5600	1			<b>3 842 992 412/L</b>	
		6000	20			<b>3 842 508 104</b>	
<b>D</b>	Cap 45x45L; material: PA			100		<b>3 842 502 674</b>	
<b>E</b>	Bracket R40x43, incl. fastening parts, 10 mm slot; material: Diecast zinc					<b>3 842 518 424</b>	
<b>F</b>	Cap, suspension profile; material: PA			20		<b>3 842 338 990</b>	
<b>G</b>	Parts kit for angle profile - cap, stopper			20		<b>3 842 508 116</b>	
<b>H</b>	Caster D125 with lock					<b>3 842 541 228</b>	
<b>I</b>	Caster D125					<b>3 842 541 236</b>	
<b>J</b>	Handles HG-305			Set		<b>3 842 538 930</b>	
<b>K</b>	T-nut, 10 mm slot, M8			100		<b>3 842 530 287</b>	


**Supporting brackets**  
**Foundation brackets**  
**Table top supports**



	L (mm)		ESD	No.
<b>A</b> Left supporting bracket, with fastening material, 10 mm slot; material: Sheet steel; powder-coated, RAL 7037	255		⚠	<b>3 842 536 119</b>
	335		⚠	<b>3 842 536 121</b>
	415		⚠	<b>3 842 536 123</b>
	495		⚠	<b>3 842 536 125</b>
<b>B</b> Right supporting bracket, with fastening material, 10 mm slot; material: Sheet steel; powder-coated, RAL 7037	255		⚠	<b>3 842 536 120</b>
	335		⚠	<b>3 842 536 122</b>
	415		⚠	<b>3 842 536 124</b>
	495		⚠	<b>3 842 536 126</b>
<b>C</b> Foundation bracket; material: Sheet steel; galvanized	160	20	⚠	<b>3 842 146 815</b>
	210	20	⚠	<b>3 842 146 848</b>
<b>D</b> Table top support, with fastening material, 10 mm slot		2		<b>3 842 521 677</b>
<b>E</b> T-bolt M8x20		100		<b>3 842 528 715</b>
<b>F</b> Flange nut M8		100		<b>3 842 345 081</b>
<b>G</b> Floor dowel		100		<b>3 842 526 560</b>
<b>H</b> Table top				<b>3 842 998 250</b>

### Tool hanger 180° assembly elements



	L (mm)		No.
<b>A</b> Swivel bearing 40x90			<b>3 842 522 633</b>
<b>B</b> Profile rail 30x45C; material: Aluminum, anodized	30 ... 6000	1	<b>3 842 992 946</b>
	5600	20	<b>3 842 523 598</b>
<b>C</b> End piece 30x45C		20	<b>3 842 521 513</b>
<b>D</b> Slide hanger for profile with 10 mm slot, material: POM			<b>3 842 218 953</b>
<b>E</b> Bracket R35x38, with fastening parts			<b>3 842 532 274</b>

**Darstellung / Illustration**

- ESD = 2
- ESD = 0
- LV = 2
- A = 1
- B = 2000
- H = 2000
- PT = 01
- G = 10%
- FM = D28
- SF = 1
- NZ = 3
- NR = 2
- NB = 5
- HT = 250
- EH = 2000
- Fu

Parameter / parameters	Wertebereich / values	Bezeichnung / specification	wenn / if
<b>TYP</b>	0, 1, 2	Anzahl Seitenteile 0,1,2; Anzahl Seitenteile No of side frames 0,1,2; No of side frames	
<b>ESD</b>	0, 1	Ausführung 0=ohne, 1=mit leitfähiger Ausführung Version: 0=without, 1=with conductive design	
<b>LV</b>	1, 2	Ladversion 1=Standard 2=verstärkt Weight version 1=standard 2=reinforced	
<b>A</b>	0, 1	Ausführung 0=montiert 1=montiert Version: 0=assembled 1=assembled	
<b>T</b>	400mm - 6000mm	Tiefe des Regals (wenn T > 3000, dann A=0) Depth of shelf (if T > 3000, then A=0)	
<b>B</b>	400mm - 1500mm	Breite des Regals Width of shelf	
<b>H</b>	600mm - 2000mm	Höhe des Regals Height of shelf	
<b>PT</b>	RT, RTW, (ST), DRT	Traversentyp (ST im SAP nicht freigeschaltet) Type of traverse (ST not to activate at SAP)	
<b>G</b>	0% - 10%	Gefälle der Förderbahnen Incline of conveying channels	
<b>FM</b>	D28, D28SK	Fördermedium D28=ohne, D28SK= mit Spurkranz Conveying media D28=without, D28SK= with flange	NB=0
<b>SF</b>	0, 1	Seitenführung 0=nein, 1=ja Lateral guide: 0=no, 1=yes	NB=0
<b>NZ</b>	1 - 8	Anzahl der Zuführebenen Number of supplying planes	
<b>NR</b>	0 - 8	Anzahl der Rückführebenen Number of ruback planes	
<b>NB</b>	0 - 64	Gesamtzahl der Förderbahnen (wenn T > 4545, dann NB=0) Total number of conveying channels (if T > 4545, then NB=0)	
<b>HT</b>	100mm - 1200mm	Transporthöhe Clearance of channel	A=1
<b>EH</b>	263mm - 1800mm	Einbauhöhe der untersten Zuführung Level of the lowest supplying plane	A=1
<b>Fu</b>	GF, LR	Aufstellung 0=Ständerfuß 1=Einbaustelle Type of base 0=standed foot 1=in-caster	
<b>Montageparameter/assembly parameters:</b>			
<b>NZe</b>	überzählige Traversen separat verpacken	Anzahl der eingebauten Zuführebenen Number of assembled supplying planes	A=1
<b>NRo</b>	einzelne Traversen einzeln verpacken	Anzahl der eingebauten Rückführebenen Number of assembled ruback planes	A=1

**Typ = 0** **Typ = 1**

**Reuroth Bosch Group**  
Economic - KDW  
3842538281

# Technical data

Use these load specifications to configure your Manual Production Systems quickly and safely.



**Fraunhofer**  
TESTED<sup>®</sup>  
DEVICE  
ESD-Profile Assemblies  
Report No. BO 0506-328



We believe in safety first! The load limits given in this section have been empirically tested in our labs under realistic work conditions. All of our products are developed in compliance with legal regulations and accepted engineering practices. Our flow rack systems, for example, fulfill the requirements of the Guidelines for Storage Systems issued by the relevant employer liability insurer.

In addition, we commission independent institutes to carry out various tests. The ESD safety of our workstation system and our flow rack systems XLean, Lean and EcoFlow have all been analyzed by the Fraunhofer Institute for Manufacturing Engineering and Automation (IPA). The IPA certifi-

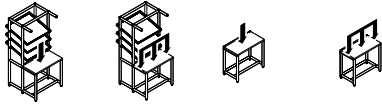
cates of compliance with the requirements of ESD standards DIN EN 61340-5-1 and DIN EN 61340-4-1 are available for inspection at any time.

More in-depth technical information is provided in the operating and assembly instructions included with each product. These instructions are also available in *MTpro* or as Internet downloads.



- 176 Workstations and workstation accessories
- 184 Grab containers
- 185 Flow rack systems
- 191 EcoShape
- 193 Manual linking (EcoFlow)
- 194 Material shuttles
- 196 Profiles

# Workstations and workstation accessories



BA (mm)	FU	F <sub>max</sub> (N)	F <sub>max</sub> (N)	F <sub>max</sub> (N)	F <sub>max</sub> (N)
≤ 1500	GF	2000	4000	2000	4000
	LR	2000	2400	2000	3000
> 1500	GF	1500	2000	1500	2000
	LR	1500	2000	1500	2000

	Point load	BA	Width
		FU	Foot type
	Distributed load	GF	Leveling foot
		LR	Steerable castor

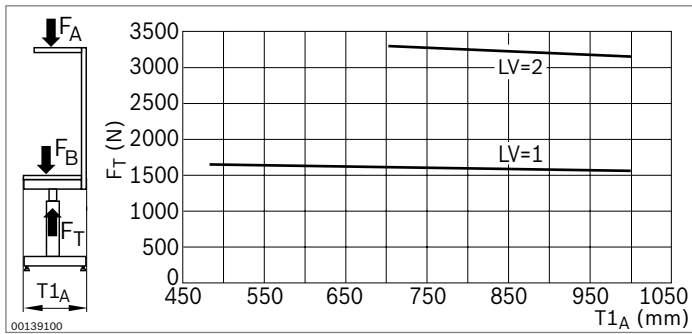
## Workstations

### Point and distributed loads for workstations

In configurable workstations, these values are dependent on the width (BA), foot design (FU) and workstation design. All values apply to desk and box types.

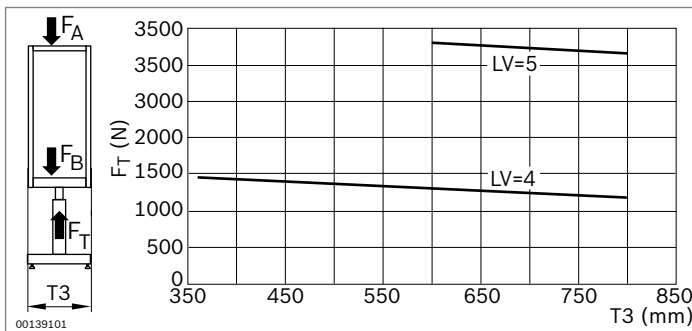
**3 842 998 110** (see page 22)

## Workstation module



Bearing load for height-adjustable workstation where BA = 1000 mm. The bearing load decreases as the width BA increases. Standard load version LV = 1; heavy load version LV = 2; H3 = 0

## Material supply module (accessory upright)



Bearing load for height adjustable material supply where BA = 1000 mm and H3 = 1200 mm. Standard load version LV = 4; heavy load version LV = 5

## Point and distributed loads for height-adjustable workstations

**3 842 998 350** (see page 18)

The load carrying capacity of the workstation and material supply (accessory upright) modules is dependent on the selected load version (LV) and the respective design.

**F<sub>B</sub>** = Max. load (uniformly distributed load)

**F<sub>T</sub>** = Max. bearing load of base frame

**F<sub>A</sub>** = System weight of fixtures

$$F_B = F_T - F_A$$

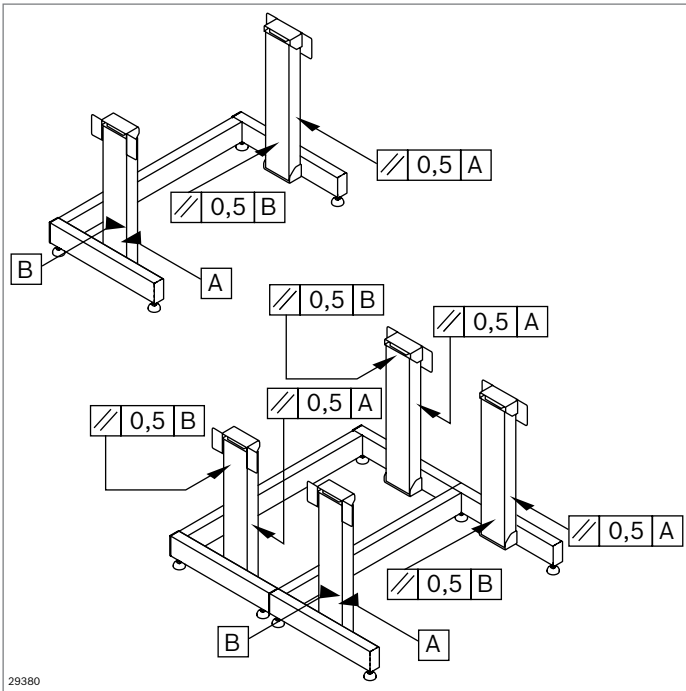
Load version type	Number of lift modules	
	Table	Accessory upright
LV=1	2	0
LV=2	4	0
LV=3	2	2
LV=4	4	2
LV=5	2	4
LV=6	4	4

The maximum load is calculated from the bearing load of the base frame minus the system weight of the fixtures (table top, brackets, material shelves, etc.)

In order to precisely determine the maximum load of your individual workstation system, please use *MTpro!*



**Parallelism**



**Height-adjustable workstation**

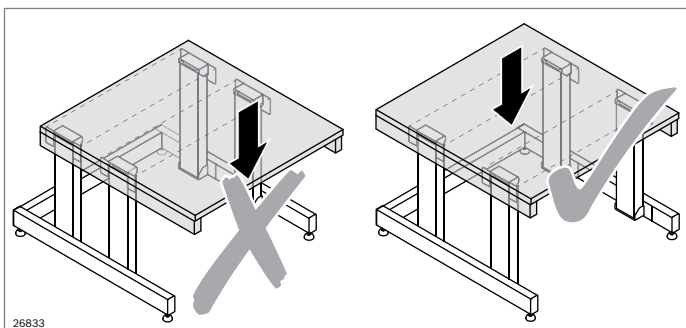
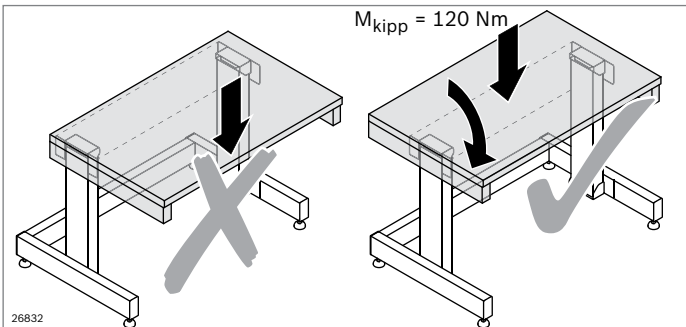
**Lift module**

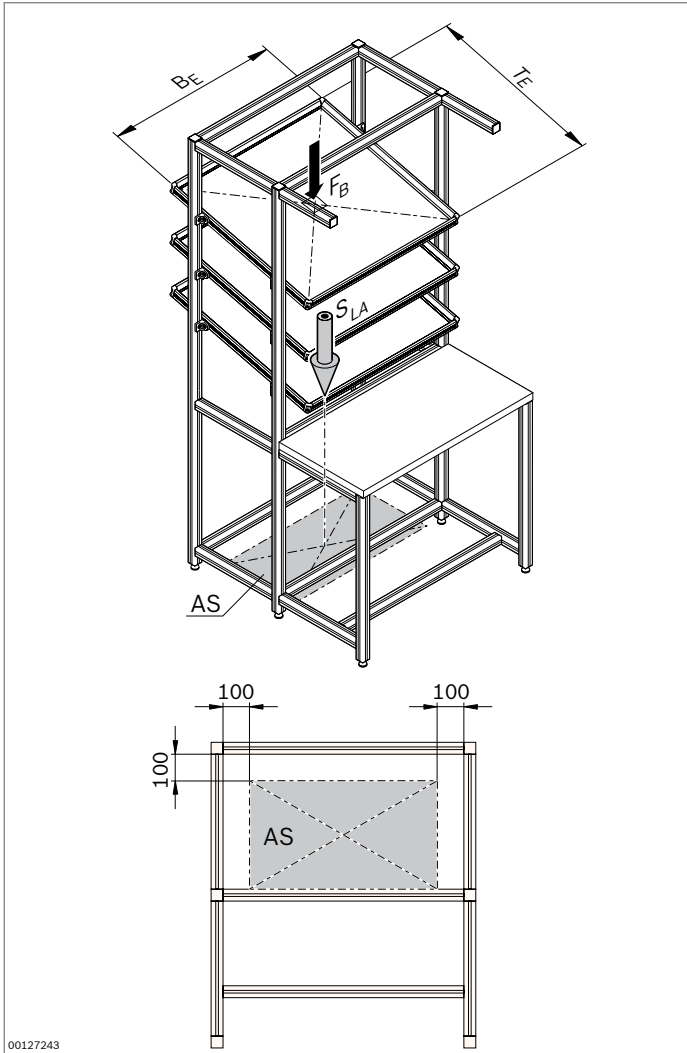
**3 842 540 116** (see page 20)

**Lifting module with bracket**

**3 842 542 211** (see page 20)

**Pitching torques**





**Material shelf Basic**

- $S_{LA}$  Gravity vector
- AS Permissible position of the line of action of the gravity vector  $S_{LA}$

**3 842 998 183** (see page 27)


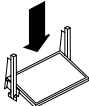
**3 842 998 184** (see page 27)

**3 842 998 155** (see page 27)

Max. material shelf loads

	$T_E$ (mm)	<b>1220</b>	<b>1220</b>	<b>840</b>	<b>765</b>	<b>1000</b>	<b>1000</b>	<b>840</b>	<b>765</b>
	$B_E$ (mm)	<b>1480</b>	<b>840</b>	<b>1480</b>	<b>840</b>	<b>1000</b>	<b>840</b>	<b>1000</b>	<b>840</b>
Plate: Aluminum	$F_B$ (N)	700	700	700	1000				
Plate: PP, SB	$F_B$ (N)					250	280	280	360

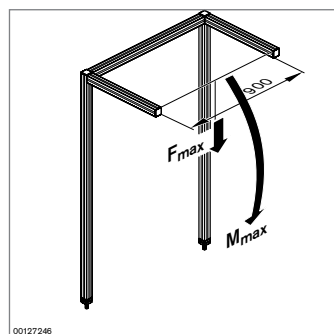
$F_B$  is a distributed load and may not occur as a point load.

	Economic	Basic
		
$F_{max}$ (N)	1000	1000

### Footrests

Maximum load of configurable footrests as well as standard footrests.

- 3 842 998 256** (see page 28)
- 3 842 538 771** (see page 28)
- 3 842 538 772** (see page 28)
- 3 842 998 257** (see page 29)
- 3 842 519 735** (see page 29)
- 3 842 538 409** (see page 29)
- 3 842 515 160** (see page 29)
- 3 842 538 098** (see page 29)

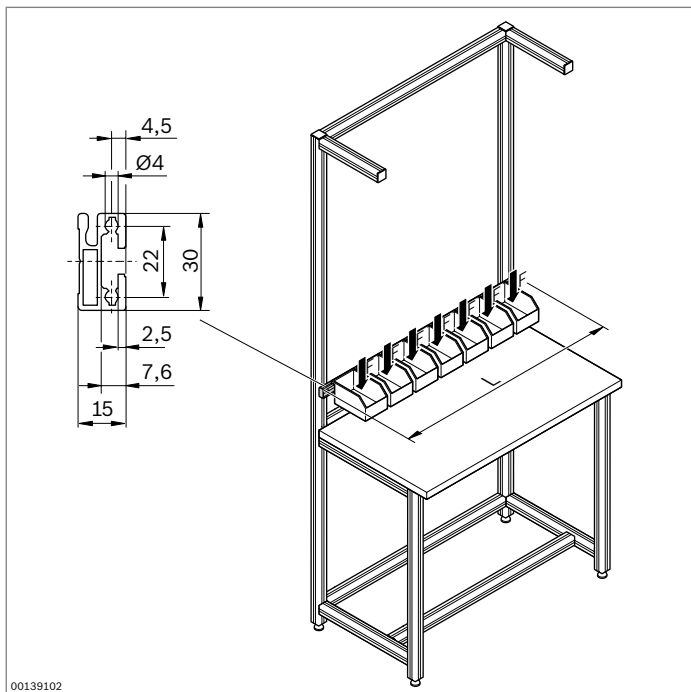


$F_{max}$ (N)	250
$M_{max}$ (Nm)	150

### Workstation accessories

**Standard strut extensions P = 45x45L**

- 3 842 519 530** (see page 24)

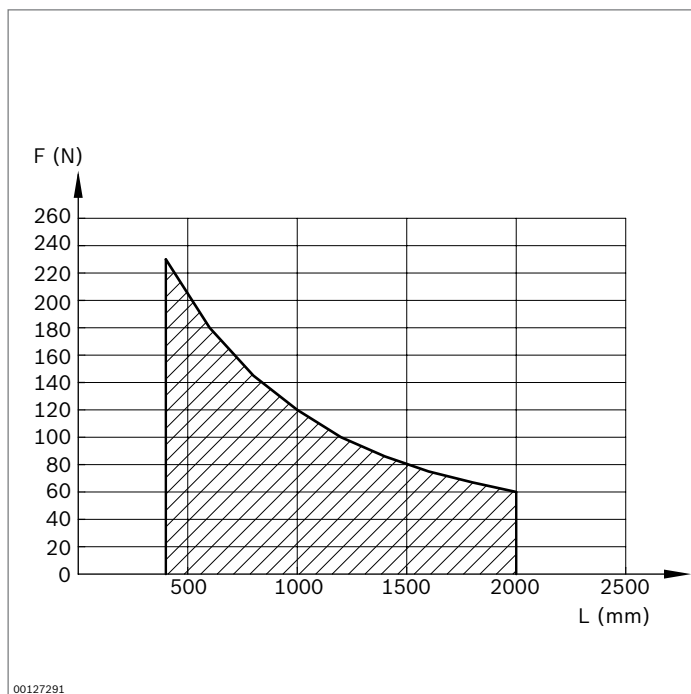
**Suspension profile 15x30**

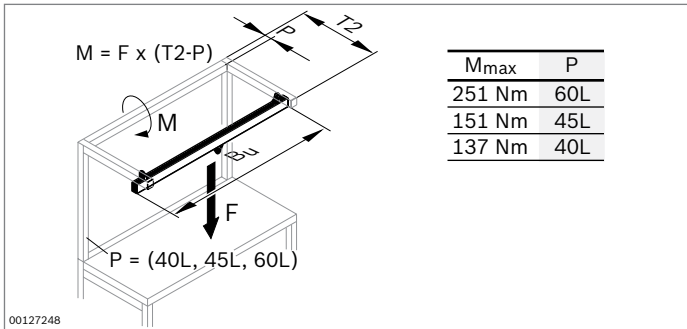
**3 842 993 411/L** (see page 168, 169, 171, 196)

**3 842 537 679** (see page 168, 169, 171, 196)

**3 842 993 359/L** (see page 168, 169, 171, 196)

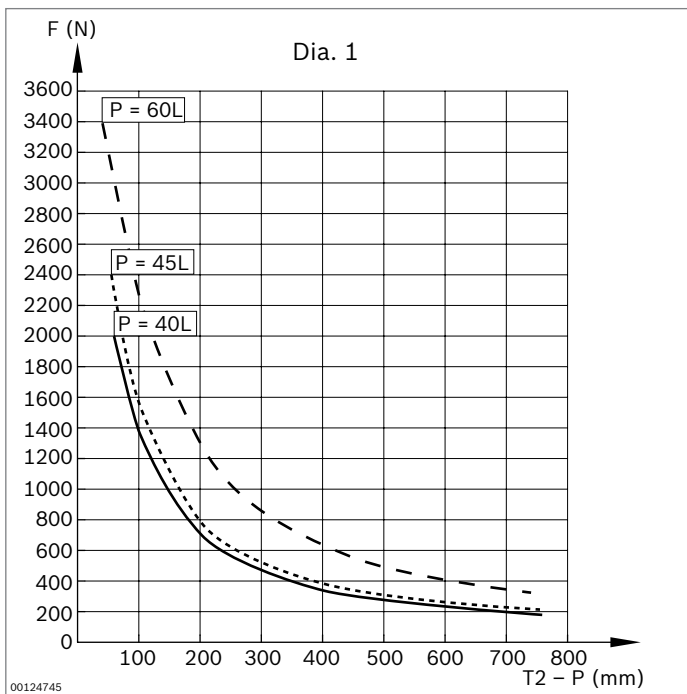
**3 842 537 681** (see page 168, 169, 171, 196)





**Workstation hanger**

Without accessory upright, with accessory upright, with reinforced strut extension (see page 167)



**Example for determining F<sub>max</sub>**

Determination of load for the strut extension:

- P = 45 mm
- T2 = 400 mm
- Dia. 1 → F = 380 N

Determination of load for hanger:

- B<sub>U</sub> = 1000 mm
- Dia. 2 → F = 580 N

The maximum permissible load F<sub>max</sub> is the lower of the two load values. F<sub>max</sub> = 380 N

Diagram 1: Permissible load for the strut extension

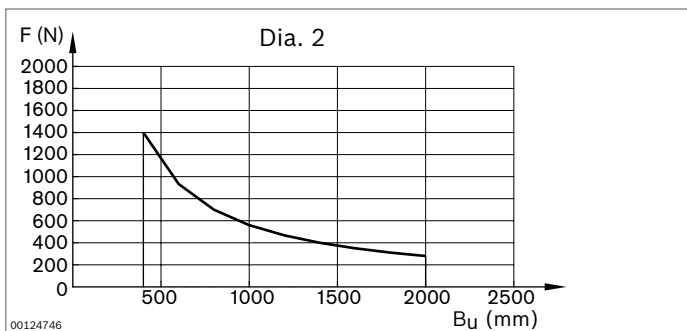
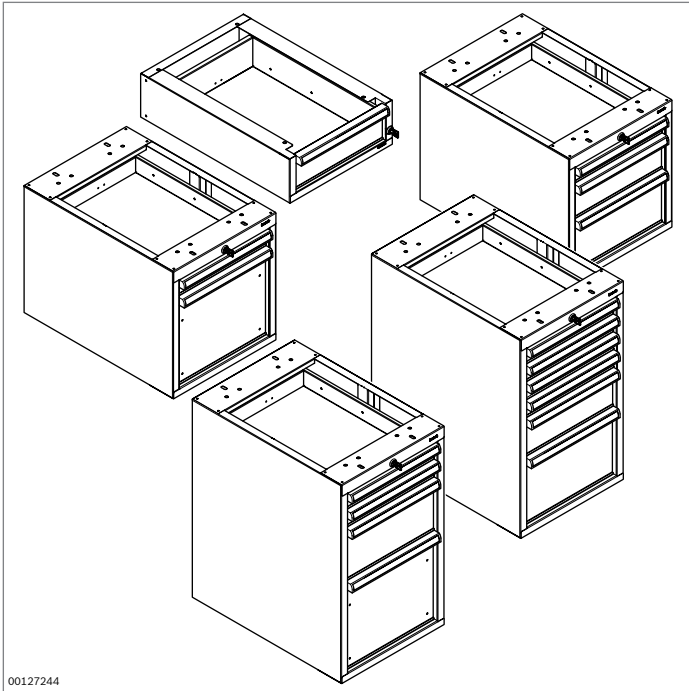


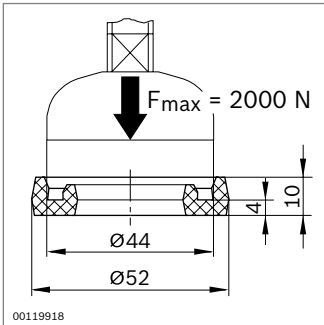
Diagram 2: Permissible load for the hanger



**Base drawer**  
**Drawer cabinets**  
**Containers**

- 3 842 546 533** (see page 53)
- 3 842 546 534** (see page 54)
- 3 842 546 535** (see page 54)
- 3 842 546 538** (see page 54)
- 3 842 546 539** (see page 54)
- 3 842 546 540** (see page 54)
- 3 842 547 886** (see page 54)
- 3 842 547 887** (see page 54)

Load per drawer: 350 N  
 Total load for cabinet: 800 N  
 Total load for container: 1300 N



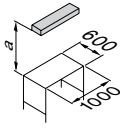
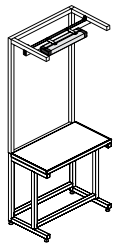
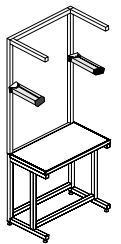

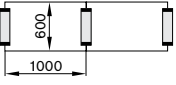
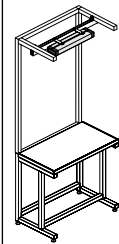
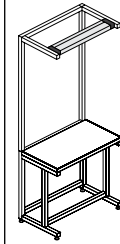
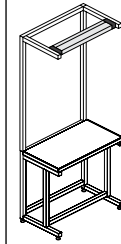
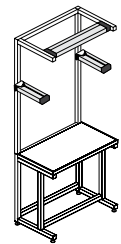
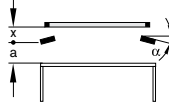

$F_{\max}$ (N)	2000
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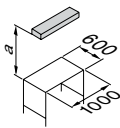
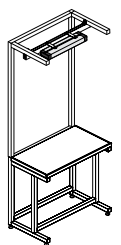
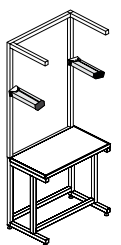

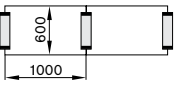
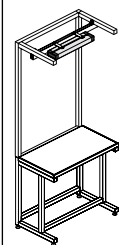
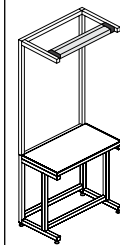
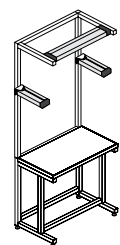
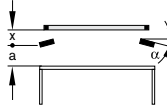

**Damping rings**

- 3 842 521 817** (see page 62)

### System lamps SL + SL LED

Lighting strength depending on arrangement

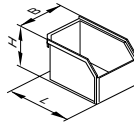
	SL 36	SL 36		SL 36	SL 48	SL 72	SL 78	SL Tri-Light		
										
a	$\bar{E}$	$\alpha$	$\bar{E}$	$\bar{E}$	$\bar{E}$	$\bar{E}$	$\bar{E}$	x	$\alpha$	$\bar{E}$
(m)	(lx)	(°)	(lx)	(lx)	(lx)	(lx)	(lx)	(m)	(°)	(lx)
0.75	599				887					
1.00	394	20	642	589	584	750	958	0.25	20	1158
								0.50	20	1020
1.25	272	15	470	471	398	523	681	0.25	15	845
1.50	196	15	353	385	281	380	501			
2.00						223	283			

	SL 15 LED	SL 15 LED Duo		SL 15 LED	SL 20 LED	SL 30 LED	SL LED Tri-Light		
									
a	$\bar{E}$	$\alpha$	$\bar{E}$	$\bar{E}$	$\bar{E}$	$\bar{E}$	x	$\alpha$	$\bar{E}$
(m)	(lx)	(°)	(lx)	(lx)	(lx)	(lx)	(m)	(°)	(lx)
0.75	733				899				
1.00	476	20	786	721	625	1061	0.25	20	1406
							0.50	20	1245
1.25	331	15	470	561	436	747	0.25	15	1021
1.50	242	15	394	446	319	550			
2.00						3300			

Mean value  $\bar{E}$  of the lighting strength on the working surface (new values, planning factor 0.8)

# Grab containers

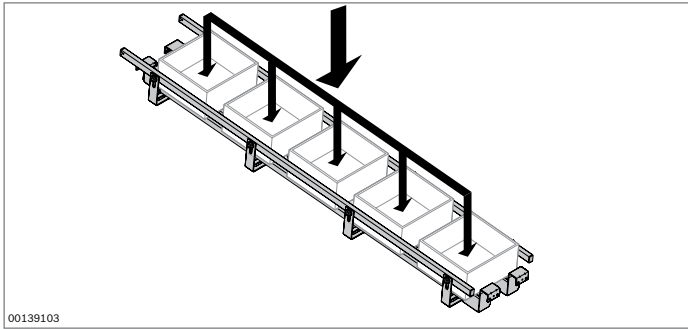
(see page 67, see page 68)



					Static load limit			
					Contain- er mount	Suspension profile		
					(kg)	(kg)		
					ESD	No.		
					(mm)	(cm <sup>3</sup> )		
					W x H x L			
<b>Cover GB-Axxxx</b> Material: PC Surface resistivity: $10^{15} \Omega/\text{sq}$ Specific volume resistance: $10^{16} \Omega/\text{cm}$ Min./max. ambient temperature: -40 °C / +115 °C Resistant to diluted acidic and caustic materials, alcohol (except for methanol), grease, oils, glycol, water <b>ESD version</b> Material: ABS-GF7 Surface resistivity: $10^4 \Omega/\text{sq} \dots 10^6 \Omega/\text{sq}$ Specific volume resistance: $10^4 \Omega/\text{cm} \dots 10^6 \Omega/\text{cm}$ Min./max. ambient temperature: -40 °C / +70 °C Resistant to diluted acidic and caustic materials, alcohol (except for methanol), grease, oils, glycol, water		GB-A0805	77 x 13 x 173	-	<b>3 842 344 756</b>	-	-	
						<b>3 842 346 286</b>	-	-
		GB-A1205	117 x 13 x 173	-	<b>3 842 344 757</b>	-	-	
						<b>3 842 346 287</b>	-	-
		GB-A1210	117 x 32 x 173	-	<b>3 842 344 758</b>	-	-	
						<b>3 842 346 288</b>	-	-
<b>Grab tray GB-Sxx</b> <b>Grab container GB-xxxx</b> <b>Grab ledge G-Zxx</b> Material: ABS Surface resistivity: $10^{14} \Omega/\text{sq}$ Specific volume resistance: $10^{14} \Omega/\text{cm}$ Min./max. ambient temperature: -40 °C / +70 °C Resistant to slightly acidic and caustic materials, Alcohols, greases, oils, water <b>ESD version</b> Material: ABS-CF Surface resistivity: $10^4 \Omega/\text{sq} \dots 10^6 \Omega/\text{sq}$ Specific volume resistance: $10^4 \Omega/\text{cm} \dots 10^6 \Omega/\text{cm}$ Min./max. ambient temperature: -40 °C / +70 °C Resistant to weak acidic and caustic materials, alcohols, grease, oils, water		GB-S08	82 x 50 x 86	150	<b>3 842 344 764</b>	11	17	
						<b>3 842 346 294</b>	6	10
		GB-S12	123 x 50 x 86	240	<b>3 842 344 765</b>	11	19	
						<b>3 842 346 295</b>	6	11
		GB-S17	173 x 50 x 86	360	<b>3 842 344 766</b>	11	21	
						<b>3 842 346 296</b>	6	12
		GB-0805	82 x 50 x 173	370	<b>3 842 344 750</b>	10	26	
						<b>3 842 346 280</b>	6	15
		GB-1205	123 x 50 x 173	600	<b>3 842 344 751</b>	10	26	
						<b>3 842 346 281</b>	6	15
		GB-1210	123 x 100 x 173	1370	<b>3 842 344 752</b>	10	26	
						<b>3 842 346 282</b>	6	15
GB-1710	173 x 100 x 245	3050	<b>3 842 344 753</b>	13	30			
				<b>3 842 346 283</b>	8	18		
<b>ESD version</b> Material: ABS-CF Surface resistivity: $10^4 \Omega/\text{sq} \dots 10^6 \Omega/\text{sq}$ Specific volume resistance: $10^4 \Omega/\text{cm} \dots 10^6 \Omega/\text{cm}$ Min./max. ambient temperature: -40 °C / +70 °C Resistant to weak acidic and caustic materials, alcohols, grease, oils, water		GB-Z08	90 x 54 x 277	690	<b>3 842 344 760</b>	10	30	
						<b>3 842 346 290</b>	6	18
		GB-Z12	131 x 54 x 277	1050	<b>3 842 344 761</b>	6	23	
				<b>3 842 346 291</b>	3	13		



# Flow rack systems



## Flow rack systems XLean, Lean, EcoFlow

### Max. load per track

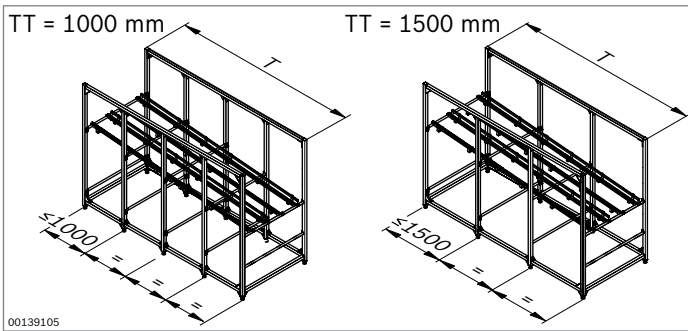
$$F_{\Sigma} = F_R + F_B + F_T$$

$F_{\Sigma}$  is a distributed load and may not occur as a point load.

$F_R$  = Weight of roller conveyors

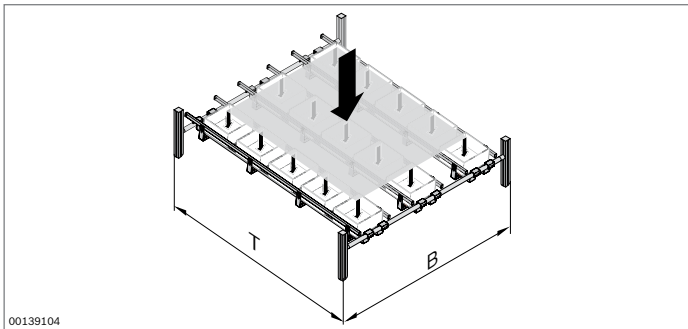
$F_B$  = Weight of containers

$F_T$  = Weight of stored parts



	TT = 1000 mm	TT = 1500 mm
	$F_{\Sigma \max}^1$	$F_{\Sigma \max}^1$
XLean	650 N/1000 mm	450 N/1000 mm
Lean	1300 N/1000 mm	900 N/1000 mm
EcoFlow	2100 N/1000 mm	1400 N/1000 mm

<sup>1)</sup> Max. permissible load  $F_{\Sigma \max}$  per 1000 mm of conveyor track



### Max. load per shelf

$$F_{\Sigma} = F_R + F_B + F_T$$

$F_{\Sigma}$  is a distributed load and may not occur as a point load.

$F_R$  = Weight of roller conveyors

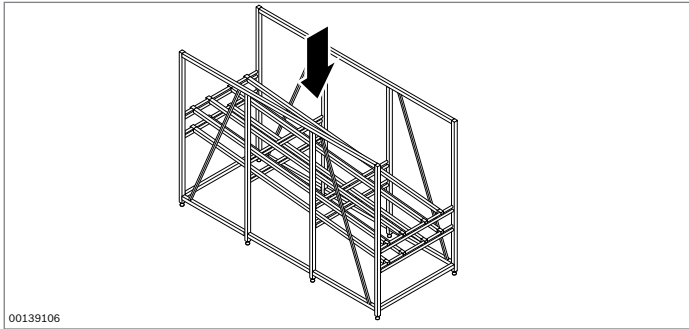
$F_B$  = Weight of containers

$F_T$  = Weight of stored parts

TT = 1000 mm	TT = 1500 mm	B ≤ 1000 mm			1000 < B ≤ 1500 mm		
		PT = RT PT = RTW	PT = DRT	PT = ST	PT = RT PT = RTW	PT = DRT	PT = ST
T (mm)	T (mm)	$F_{\Sigma \max}^1$	$F_{\Sigma \max}^1$	$F_{\Sigma \max}^1$	$F_{\Sigma \max}^1$	$F_{\Sigma \max}^1$	$F_{\Sigma \max}^1$
T ≤ 1000	T ≤ 1500	2000 N	12000 N	6000 N	1000 N	6000 N	3000 N
1000 < T ≤ 2000	1500 < T ≤ 3000	3000 N	18000 N	9000 N	1500 N	9000 N	4500 N
2000 < T ≤ 3000	3000 < T ≤ 4500	4000 N	20000 N <sup>2)</sup>	12000 N	2000 N	12000 N	6000 N
3000 < T ≤ 4000	4500 < T ≤ 6000	5000 N	20000 N <sup>2)</sup>	15000 N	2500 N	15000 N	7500 N
4000 < T ≤ 5000	-	6000 N	20000 N <sup>2)</sup>	18000 N	3000 N	18000 N	9000 N
5000 < T ≤ 6000	-	7000 N	20000 N <sup>2)</sup>	20000 N <sup>2)</sup>	3500 N	20000 N <sup>2)</sup>	10500 N

<sup>1)</sup> Max. permissible load  $F_{\Sigma \max}$  per shelf

<sup>2)</sup> Limited to  $F_{\Sigma} = 20000$  N per flow rack

**Max. load per flow rack**

$$F_{\Sigma} = F_R + F_B + F_T$$

$F_{\Sigma}$  is a distributed load and may not occur as a point load.

$F_R$  = Weight of roller conveyors

$F_B$  = Weight of containers





$F_T$  = Weight of stored parts

**3 842 998 249** (see page 88)





**3 842 998 332** (see page 90)

**3 842 998 322** (see page 92)

**Max. permissible load per flow rack**

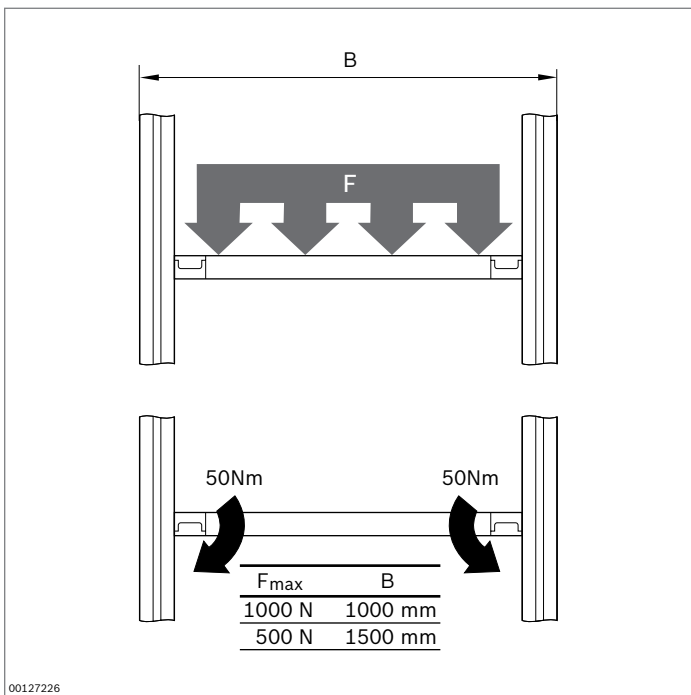
Standard load version (LV = 1)		Two side elements (Typ 2)		One side element (Typ 1)	
TT = 1000	TT = 1500				
T (mm)	T (mm)	FU = LR	FU = GF	FU = LR	FU = GF
		$F_{\Sigma \max}^{1)}$	$F_{\Sigma \max}^{1)}$	$F_{\Sigma \max}^{1)}$	$F_{\Sigma \max}^{1)}$
$T \leq 1000$	$T \leq 1500$	3600 N	4000 N	1800 N	2000 N
$1000 < T \leq 2000$	$1500 < T \leq 3000$	4000 N	4000 N	2000 N	2000 N
$2000 < T \leq 3000$	$3000 < T \leq 4500$	4000 N	4000 N	2000 N	2000 N
$3000 < T \leq 4000$	$4500 < T \leq 6000$	4000 N	4000 N	2000 N	2000 N
$4000 < T \leq 5000$	–	4000 N	4000 N	2000 N	2000 N
$5000 < T \leq 6000$	–	4000 N	4000 N	2000 N	2000 N

<sup>1)</sup> Max. permissible load  $F_{\Sigma \max}$  per flow rack; standard load version (LV = 1)

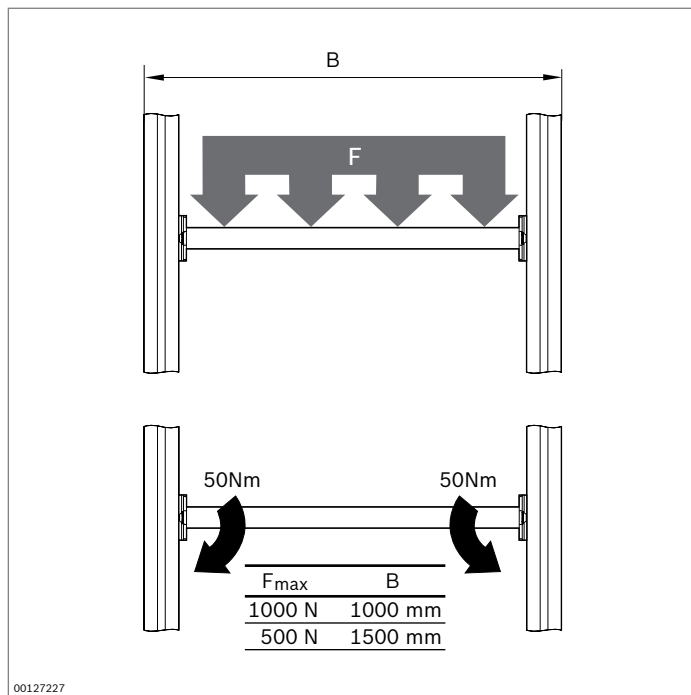
Reinforced load version (LV = 2)		Two side elements (Typ 2)		One side element (Typ 1)	
TT = 1000	TT = 1500				
T (mm)	T (mm)	FU = LR	FU = GF	FU = LR	FU = GF
		$F_{\Sigma \max}^{2)}$	$F_{\Sigma \max}^{2)}$	$F_{\Sigma \max}^{2)}$	$F_{\Sigma \max}^{2)}$
$T \leq 1000$	$T \leq 1500$	3600 N	20000 N	1800 N	10000 N
$1000 < T \leq 2000$	$1500 < T \leq 3000$	4000 N	20000 N	2000 N	10000 N
$2000 < T \leq 3000$	$3000 < T \leq 4500$	4000 N	20000 N	2000 N	10000 N
$3000 < T \leq 4000$	$4500 < T \leq 6000$	4800 N	20000 N	2400 N	10000 N
$4000 < T \leq 5000$	–	5600 N	20000 N	2800 N	10000 N
$5000 < T \leq 6000$	–	6400 N	20000 N	3200 N	10000 N

<sup>2)</sup> Max. permissible load  $F_{\Sigma \max}$  per flow rack; reinforced load version (LV = 2)

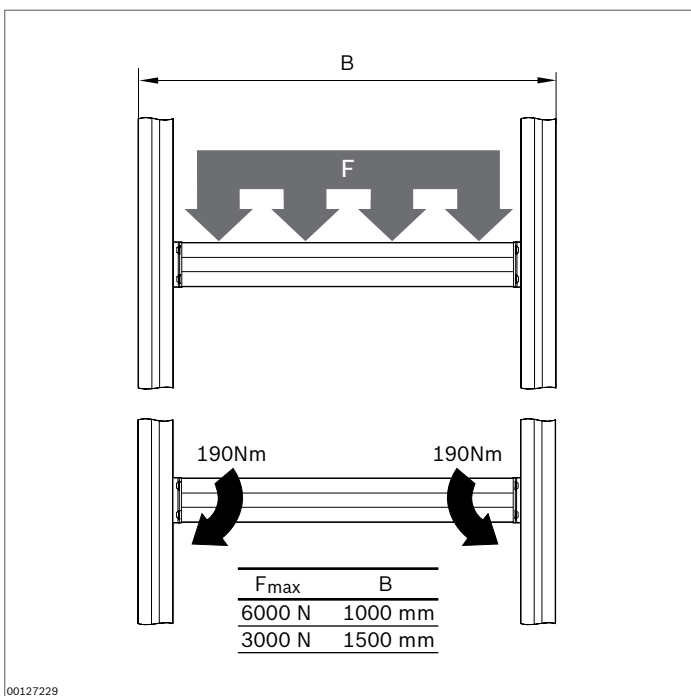
**Cross ties**



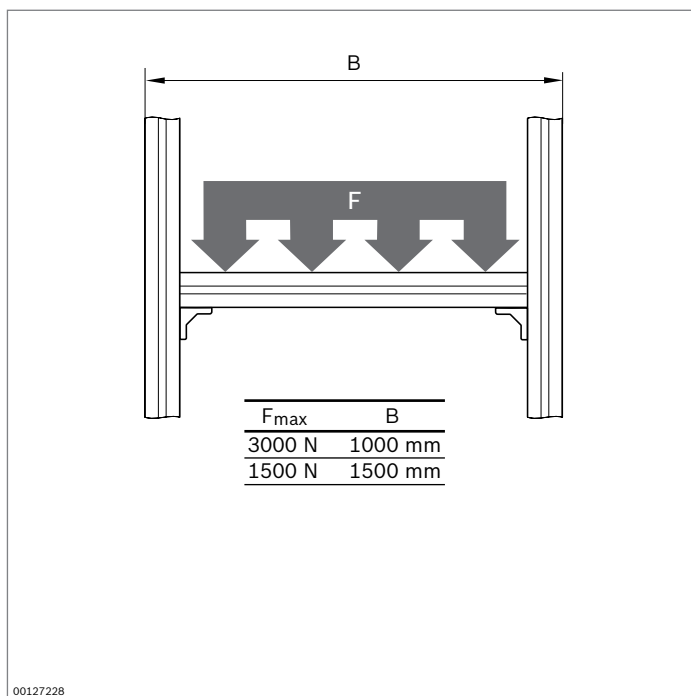
Tubular cross tie RT  
(see page 108)



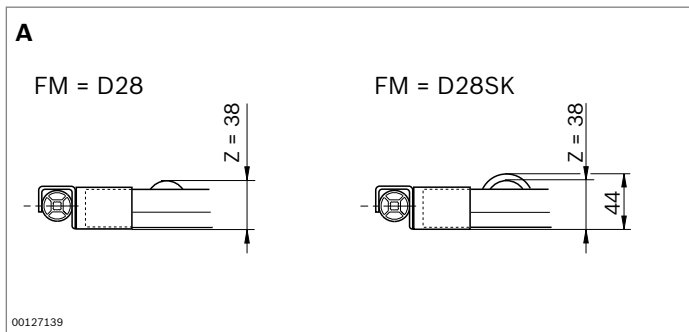
Tubular cross tie with bracket RTW  
(see page 108)



Double tubular cross tie with bracket DRT  
(see page 108)



Profile cross tie (PT)  
(see page 108)

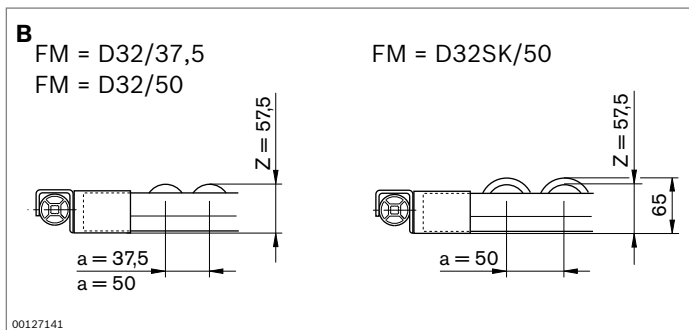


## Conveyor tracks

### Conveyor track XLean with rail holder (A)

- Rollers with  $\varnothing$  28 mm with and without roller flange.

**3 842 998 196** (see page 94)

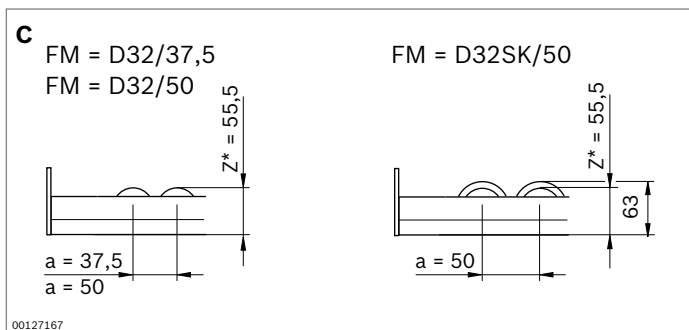


### Conveyor track Lean with rail holder (B)

- Rollers with  $\varnothing$  32 mm with and without roller flange.

**3 842 998 381** (see page 99)

**3 842 998 382** (see page 99)

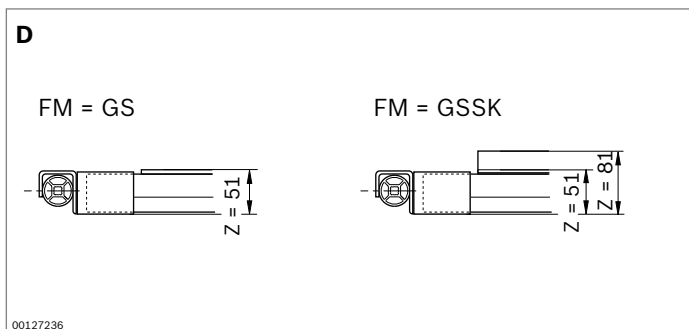


### Conveyor track Lean with stop plate (C)

- Rollers with  $\varnothing$  32 mm with and without roller flange.

**3 842 998 383** (see page 101)

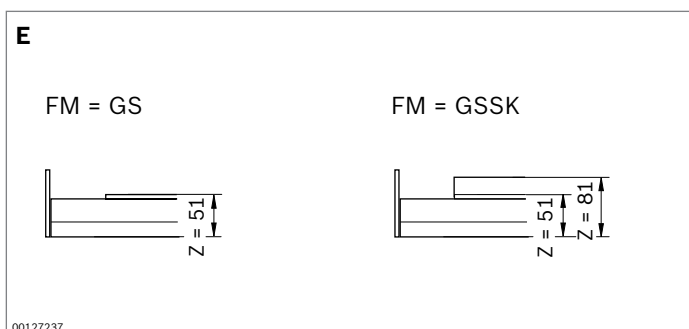
**3 842 998 384** (see page 101)



### Conveyor track Lean with rail holder (D)

- Slide rail with and without roller flange.

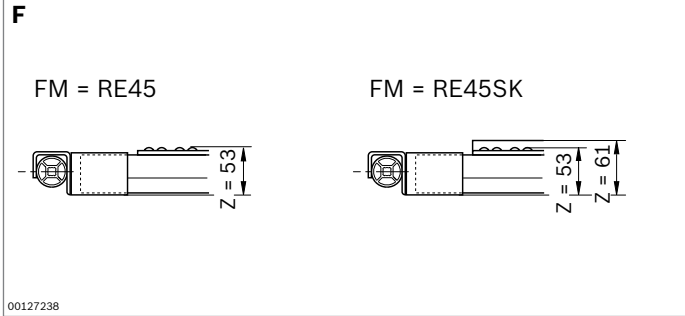
**3 842 998 387** (see page 99)



### Conveyor track Lean with stop plate (E)

- Slide rail with and without roller flange.

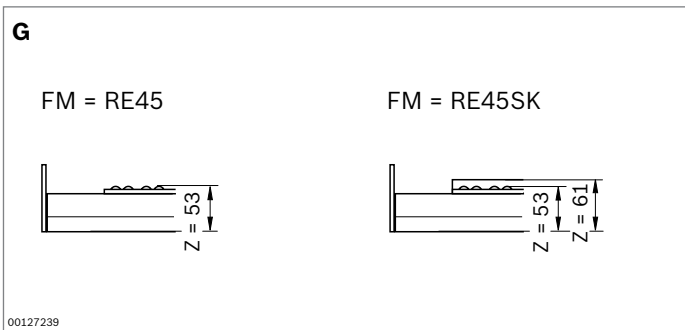
**3 842 998 388** (see page 101)



**Conveyor track Lean with rail holder (F)**

► Roller elements with and without roller flange.

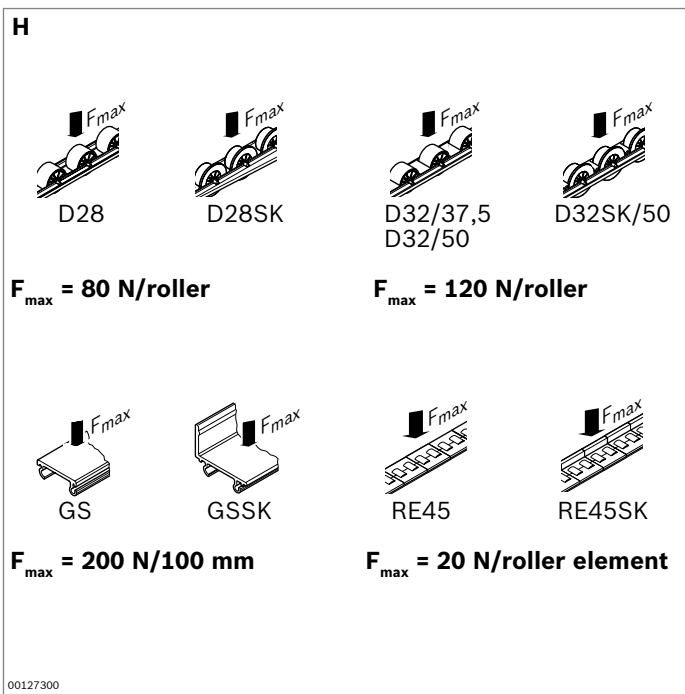
**3 842 998 385** (see page 102)



**Conveyor track Lean with stop plate (G)**

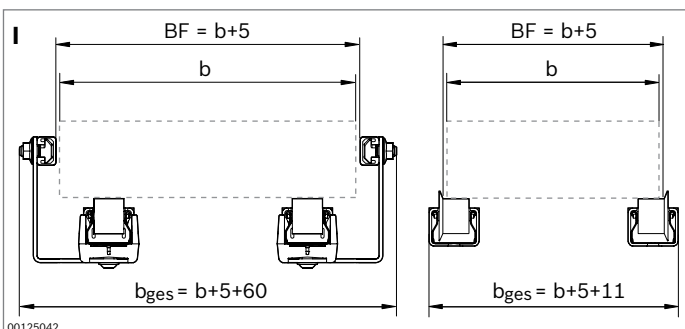
► Roller elements with and without roller flange.

**3 842 998 386** (see page 101)



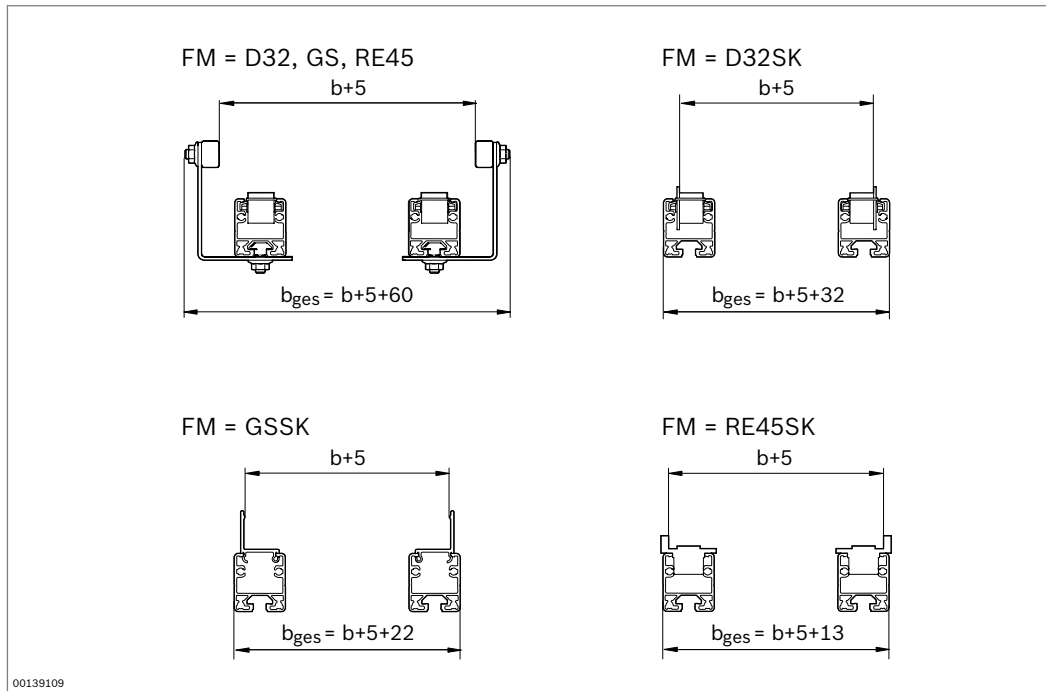
**Conveyor media (H)**

D28, D28SK (see page 95)  
 D32/37,5, D32/50, D32SK/50, GS, GSSK  
 (see page 98, 100, 102, 103)  
 RE45, RE45SK (see page 98, 100,103)

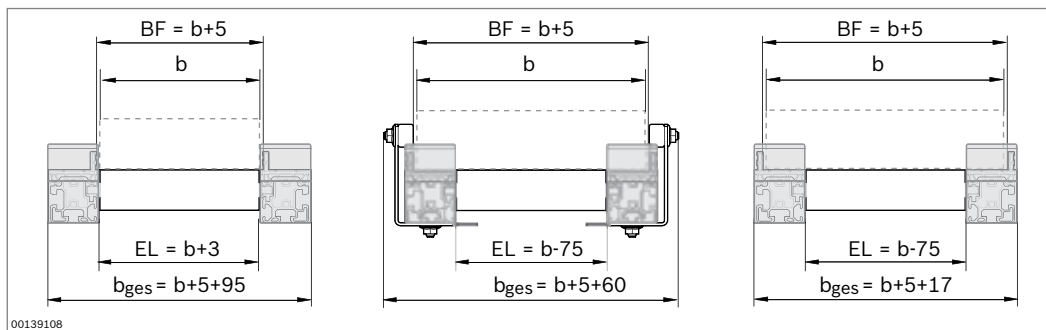


**Conveyor tracks with and without lateral guide (I)**

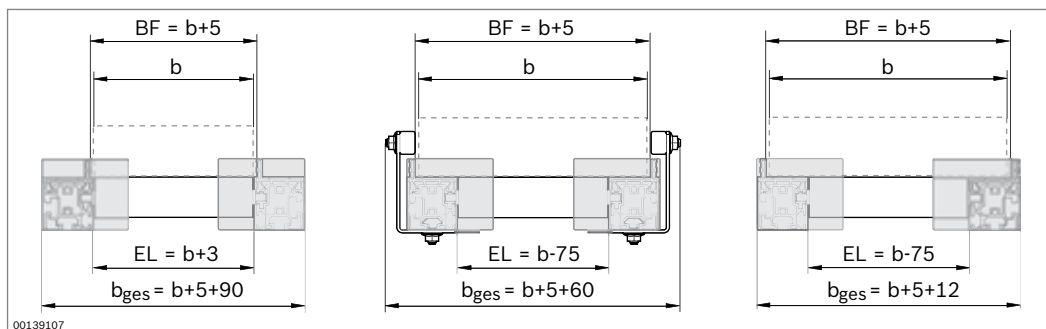
**Conveyor track XLean**



**Conveyor track Lean**



**Conveyor track EcoFlow with rail holder**



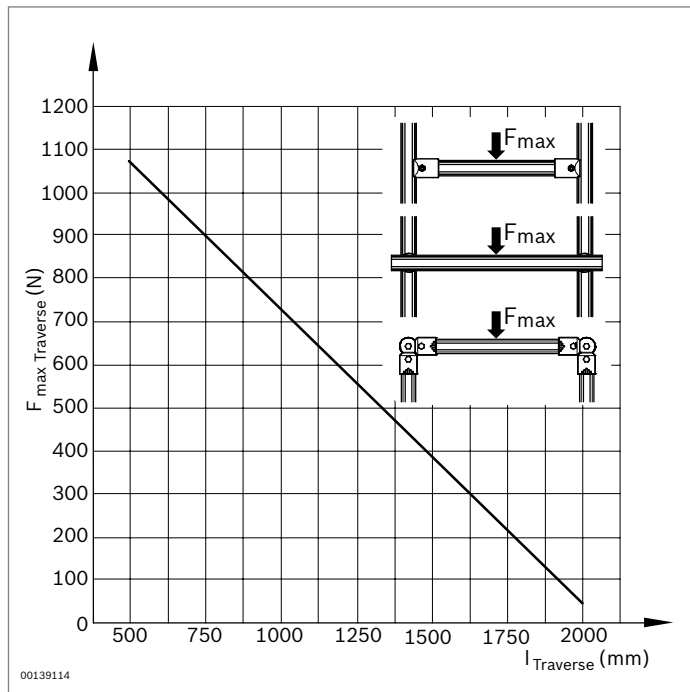
**Conveyor track EcoFlow with stop plate**

EL = Roller length

# EcoShape

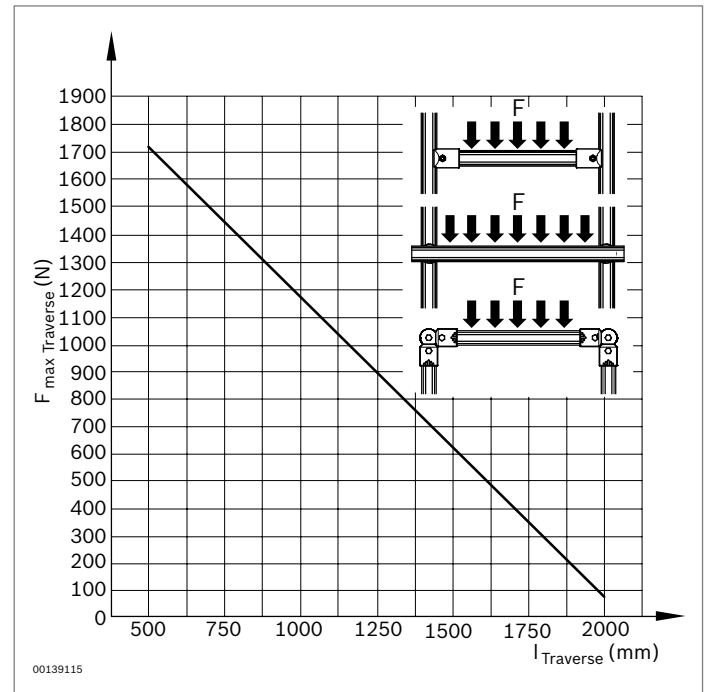
The stated tightening and loading limit values were determined as an example in (dry) trials. You must pay attention to safety factors and building

**Cross tie D28L – permissible point load in the center**  
 Connector: 90° connector, cross connector, corner piece



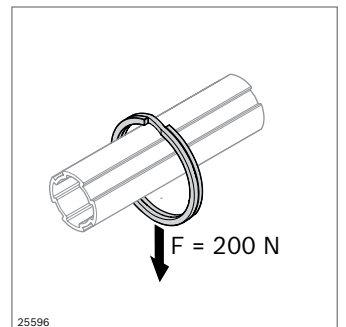
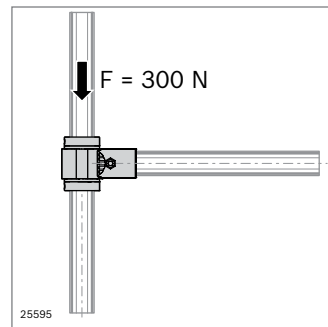
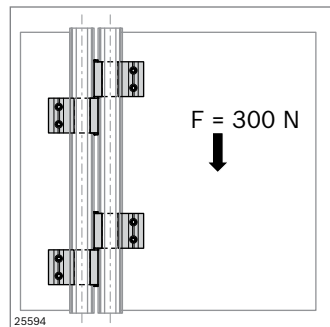
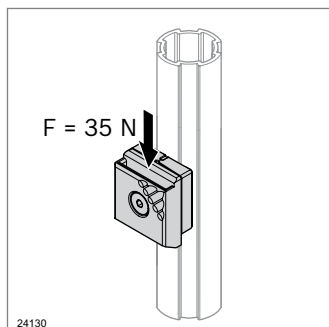
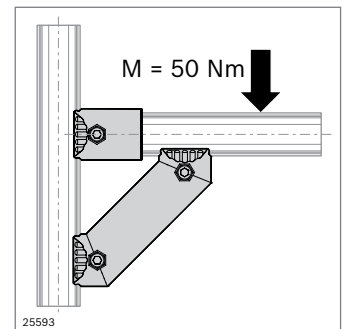
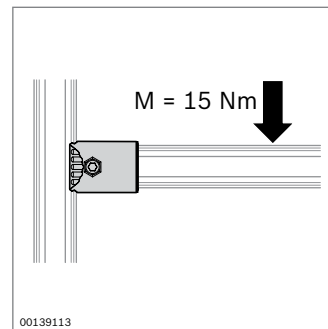
regulations that correspond to legal regulations and accepted engineering practices!

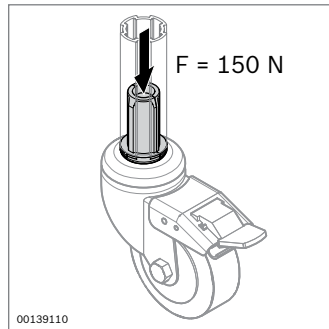
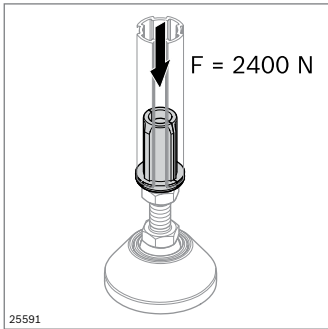
**Cross tie D28L – permissible section load**  
 Connector: 90° connector, cross connector, corner piece



## Connector

Permissible load values for connections

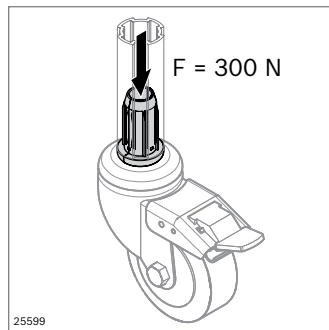
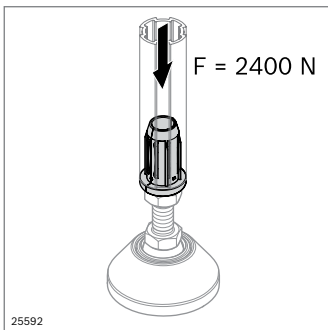




**Threaded sleeve D28L; PA**

Permissible bearing load

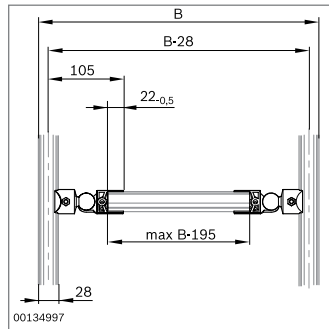
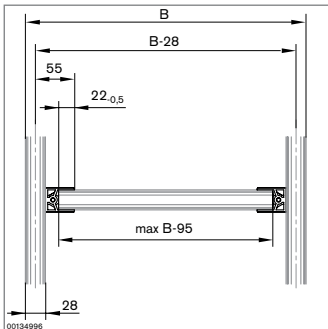
Material shuttle is approved for 60 kg



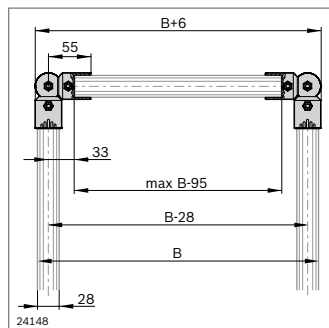
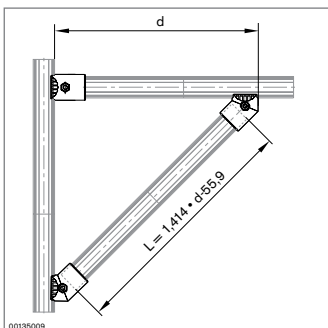
**Threaded sleeve D28L, Zn**

Permissible bearing load

Material shuttle is approved for 100 kg

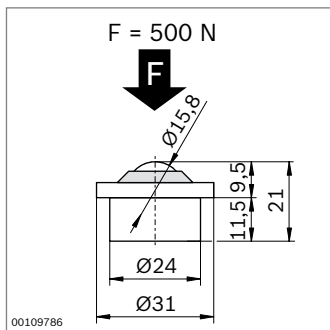


**Length calculation**





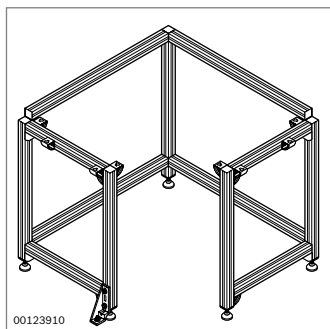
# Manual linking (EcoFlow)



$F_{max}$ (N)	500
---------------	-----

### EcoFlow ball roller

3 842 541 008 (see page 137)



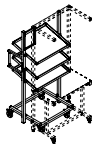

$F_{max}$ (N)	1000	1500

### Frame for corner table top

(See page 131)

- Point load
- Distributed load

# Material shuttles

Design	Max. total weight of workstation material shuttle	Max. total weight of material shuttle Logistics
		
Normal	4200 N	4200 N
ESD	4000 N	4000 N

## Workstation material shuttles

### Material shuttle Logistics

$$F_{\Sigma} = F_M + F_Z$$

$F_M$  = Material shuttle weight

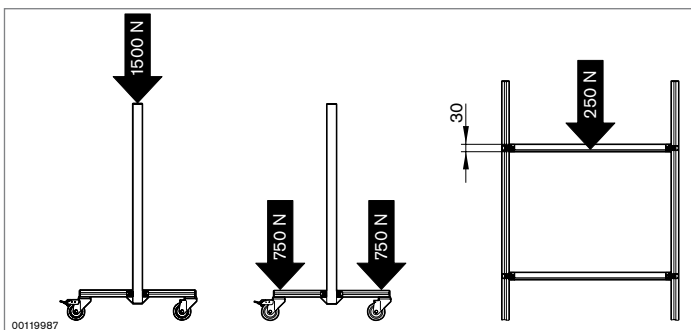
$F_Z$  = Load

**3 842 998 231** (see page 142)

**3 842 998 230** (see page 144)

	$T_E$ (mm)	<b>1220</b>	<b>1220</b>	<b>840</b>	<b>765</b>	<b>1000</b>	<b>1000</b>	<b>840</b>	<b>765</b>
	$B_E$ (mm)	<b>1480</b>	<b>840</b>	<b>1480</b>	<b>840</b>	<b>1000</b>	<b>840</b>	<b>1000</b>	<b>840</b>
Plate: Aluminum	$F_B$ (N)	700	700	700	1000				
Plate: PP, SB	$F_B$ (N)					250	280	280	360

$F_B$  is a distributed load and may not occur as a point load.



### Standard material shuttles

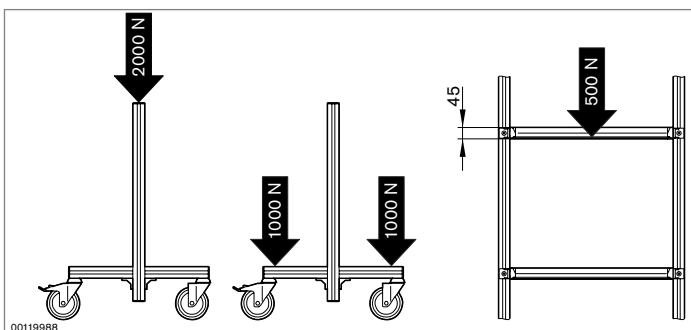
#### Material shuttle Logistics Economic

**3 842 515 481** (see page 146)

**3 842 518 120** (see page 146)

**3 842 515 482** (see page 146)

**3 842 518 121** (see page 146)



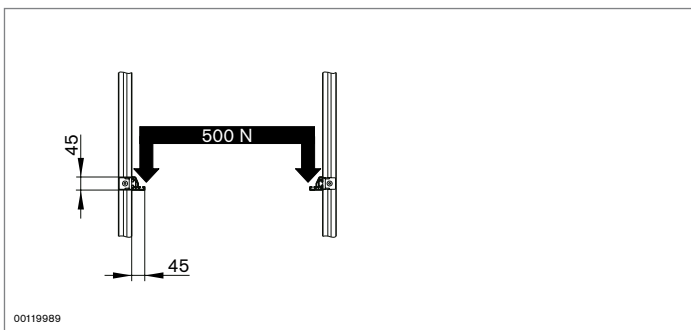
#### Material shuttle Logistics Basic

**3 842 515 483** (see page 146)

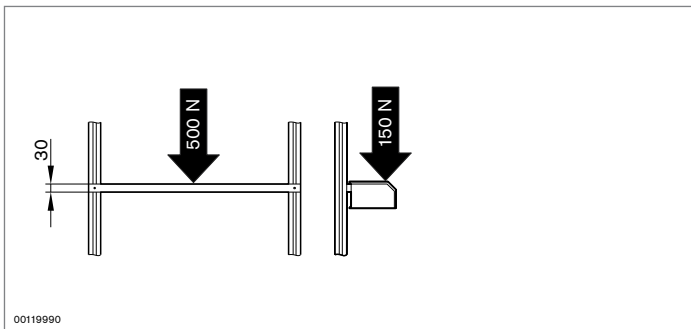
**3 842 515 484** (see page 146)

**3 842 508 181** (see page 146)

**3 842 508 182** (see page 146)



#### Material shuttle with angle profile (see page 147)



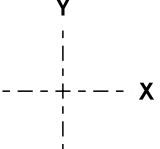



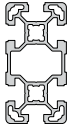
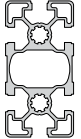
#### Material shuttle with suspension profile (see page 147)

## Profiles

		Frame profile 22.5x30	Frame profile 22.5x45	Suspension profile	Profile rail 30x45C	Profile 15x22.5
<b>Part no.</b>		<b>3 842 992 493/L</b> <b>3 842 515 229</b> (See page 162)	<b>3 842 992 411/L</b> <b>3 842 508 102</b> (See page 163)	<b>3 842 993 411/L</b> <b>3 842 537 679</b> <b>3 842 993 359/L</b> <b>3 842 537 681</b> (see pages 168, 169, 171, 196)	<b>3 842 992 946/L</b> <b>3 842 523 598</b> (See page 167)	<b>3 842 992 473/L</b> <b>3 842 513 576</b> (See page 166)
<b>Moment of inertia</b>	$I_x$ (cm <sup>4</sup> )	2.93	6.79	2.06	10.32	0.83
	$I_y$ (cm <sup>4</sup> )	1.62	1.67	0.48	5.60	0.34
<b>Section modulus</b>	$W_x$ (cm <sup>3</sup> )	1.90	2.81	1.36	4.23	0.74
	$W_y$ (cm <sup>3</sup> )	1.37	1.28	0.62	3.73	0.42
<b>Profile surface A</b>	(cm <sup>2</sup> )	3.13	3.44	2.03	4.38	1.25
<b>Mass</b>	(kg/m)	0.85	0.93	0.55	1.18	0.34

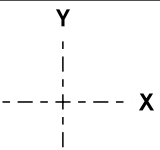

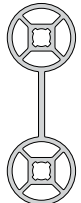


		U-profile	Section profile MV 45x45	Angle profile
<b>Part no.</b>		<b>3 842 993 316/L</b> <b>3 842 535 115</b> <b>3 842 995 027/L</b> <b>3 842 541 814</b> (See page 103)	<b>3 842 993 029/L</b> <b>3 842 537 321</b> (See page 135)	<b>3 842 992 412/L</b> <b>3 842 508 104</b> (See page 171)
<b>Moment of inertia</b>	$I_x$ (cm <sup>4</sup> )	8.32	11.87	8.99
	$I_y$ (cm <sup>4</sup> )	10.42	10.49	7.08
<b>Section modulus</b>	$W_x$ (cm <sup>3</sup> )	3.13	5.14	3.22
	$W_y$ (cm <sup>3</sup> )	5.17	4.50	2.37
<b>Profile surface A</b>	(cm <sup>2</sup> )	4.42	6.17	4.50
<b>Mass</b>	(kg/m)	1.19	1.67	1.22

## Profiles

		Strut profile 40x40L	Strut profile 45x45L	Strut profile 60x60L	Strut profile 40x80L	Strut profile 45x90L
						
<b>Part no.</b>		<b>3 842 993 724<sup>1)</sup></b> <b>3 842 993 120<sup>2)</sup></b>	<b>3 842 993 737<sup>1)</sup></b> <b>3 842 992 425<sup>2)</sup></b>	<b>3 842 993 670<sup>1)</sup></b> <b>3 842 992 443<sup>2)</sup></b>	<b>3 842 993 728<sup>1)</sup></b> <b>3 842 993 130<sup>2)</sup></b>	<b>3 842 993 662<sup>1)</sup></b> <b>3 842 992 432<sup>2)</sup></b>
<b>Moment of inertia</b>	$I_x$ (cm <sup>4</sup> )	9.0	14.0	32.4	63.4	81.9
	$I_y$ (cm <sup>4</sup> )	9.0	14.0	32.4	17.3	23.6
<b>Section modulus</b>	$W_x$ (cm <sup>3</sup> )	4.5	6.1	10.8	15.9	18.2
	$W_y$ (cm <sup>3</sup> )	4.5	6.1	10.8	8.7	10.5
<b>Profile surface A</b>	(cm <sup>2</sup> )	5.6	7.5	9.6	9.9	11.2
<b>Mass</b>	(kg/m)	1.5	2.0	2.6	2.7	3.1

<sup>1)</sup> See "Basic Mechanic Elements – Quick & Easy" catalog (3 842 540 238)

<sup>2)</sup> See "Basic Mechanic Elements" catalog (3 842 540 391)

		Strut profile D28	Strut profile D28x55	Round tube D28L	Round tube D28L, N10
					
<b>Part no.</b>		<b>3 842 993 317/L</b> <b>3 842 535 118</b> (See pages 109, 164, 165)	<b>3 842 993 489/L</b> <b>3 842 537 477</b> (See page 109)	<b>3 842 996 191/L</b> <b>3 842 541 211</b> (See page 118)	<b>3 842 996 192/L</b> <b>3 842 541 213</b> (See page 118)
<b>Moment of inertia</b>	$I_x$ (cm <sup>4</sup> )	1.53	3.23	1.33	1.01
	$I_y$ (cm <sup>4</sup> )	1.53	88.34	1.33	1.97
<b>Section modulus</b>	$W_x$ (cm <sup>3</sup> )	1.1	2.31	0.95	0.87
	$W_y$ (cm <sup>3</sup> )	1.1	32.12	0.95	1.41
<b>Profile surface A</b>	(cm <sup>2</sup> )	2.35	5.94	1.80	2.62
<b>Mass</b>	(kg/m)	0.68	1.6	0.48	0.71

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