The Drive & Control Company

Rexroth
Bosch Group

Manual Production Systems

7.0









ActiveCockpit – processing and displaying manufacturing data in real time

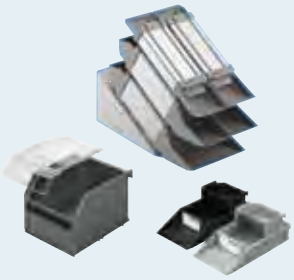


The continuous improvement of manufacturing processes requires users to be able to access data quickly and seamlessly. The ActiveCockpit software uses open interfaces to continuously record, process and filter manufacturing data from existing software landscapes and various data sources.

The relevant data is displayed in ActiveCockpit in real time, making it available to everyone at the plant involved in manufacturing (see page 158).



Workstations (see page 14)



Grab containers (see page 64)



Swivel work chairs (see page 74)



Flow rack systems (see page 86)



EcoShape (see page 114)



EcoFlow (see page 130)



Material shuttles and FiFo station (see page 142)



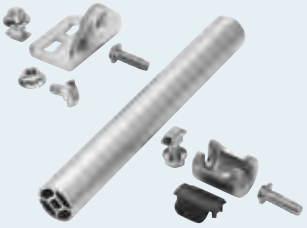
Case lifters (see page 152)



ActiveCockpit (see page 158)



Infoboards (see page 172)



Components (see page 176)

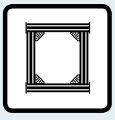
Technical data (see page 190)

Symbols

MT*pro* — You can easily configure customized products using the MT*pro* software

 Delivered as individual components (not pre-assembled)

 Delivered as components (pre-assembled)

 Delivered assembled

45 x 45 L — Profile used in the frame

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

 Conductive material version in accordance with DIN EN 61340-5-1, suitable for ESD-sensitive areas

Glider rail	**L** (mm)		**No.**
	2000	10	**3 842 541 196**

D28L round tube	**L** (mm)	**No.**
50 pcs	5600	**3 842 541 211**

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

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 items)

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, lean production and Industry 4.0 – 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.

The fusion of production IT and enterprise IT, the synchronization of processes, and machines that automatically make decisions in real time all allow for efficient and customized manufacturing.

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

6 Manual production systems

14 Workstations

64 Grab containers

74 Swivel work chairs

86 Flow rack systems

114 EcoShape tubular framing system

130 EcoFlow linking elements

142 Material shuttles and FiFo station

152 Case lifters

158 ActiveCockpit

172 Infoboards

176 Components

190 Technical data

214 Material number overview

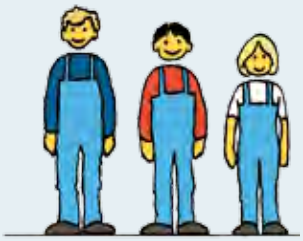
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For motivated employees, higher productivity and better quality

Ergonomic workstation systems make work easier and keep workers healthier.







Body height and working height



Work area



Grab area



Parts supply

The seven ground rules for workplace systems help you lay out and design ergonomic workstations and flow rack systems

The benefits of ergonomically designed workstations: increased motivation and satisfaction, higher performance, efficiency and work quality, as well as fewer absences due to illness. The bottom line: Ergonomics provides 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 800 mm and 1500 mm 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.

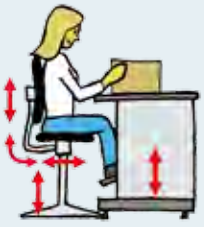
Planning aids
Available planning aids include the Ergonomics Checklist (3 842 523 943) the Fit4Ergonomics app and the Planning Template (3 842 542 286/...287). You can then use MT*pro* to do your technical designing.



Vision areas



Lighting



Adjustment of work equipment

For iOS **For Android**

Fit4Ergonomics

Lean production for greater productivity and shorter throughput times

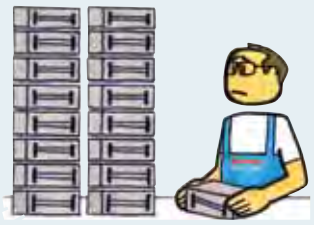
Constantly growing cost pressure makes it necessary to permanently increase productivity in manufacturing. One central aspect is the detection and avoidance of waste (Muda).



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

When analyzing processes, there is a difference between waste and added value. Next, waste is separated 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.

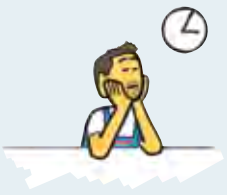
Overproduction
Overproduction occurs whenever more is produced than the customer ordered – or more than was planned. Overproduction requires additional storage and thus ties up capital.



Overproduction



Superfluous movements



Waiting times



Transports

The seven types of waste



Superfluous movements
Superfluous movements occur whenever a worker needs to travel considerable distance to pick up materials or tools. Unnecessary travel costs valuable production time.

Waiting times
Waiting times occur whenever a 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, cost money. The stocks provide a feeling of security, but they also make the product more expensive.

Faults
If parts are not in the proper condition, they are classified as faulty. Faults require reworking and sorting, which results in increased costs.



Overprocessing



Stocks



Faults

MPS – a complete, ESD-protected system

ESD is caused by electric charges that are generated by friction between various materials or by the influence of electric fields. These charges can generate up to 10,000 V.



Protection of ESD-sensitive components







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

Components sensitive to electrostatic discharge are known as ESDSs (electronic static discharge-sensitive devices). Damage to these components generates considerable cost. 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.

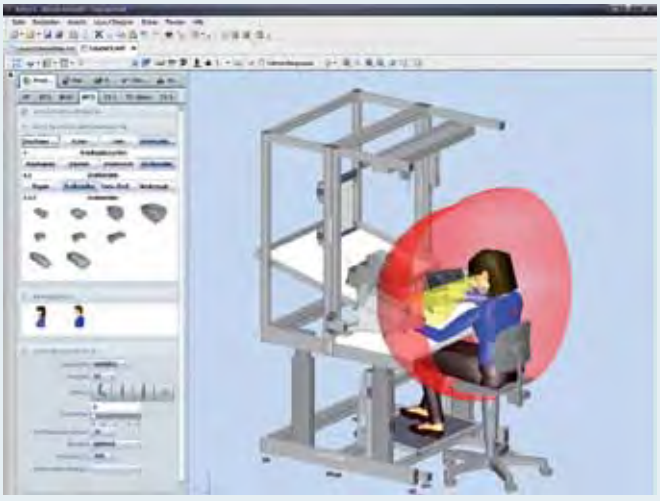
To ensure and maintain the ESD-conductive properties, we recommend checking conduction resistance at regular intervals after assembly.

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.

Plan assembly lines that are ergonomic, lean, fast, and safe with MT*pro*

Careful and comprehensive planning is the only way to cost-effectively integrate ergonomics and lean production 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. Adapting production systems to ergonomic and lean production requirements after the fact is cost-intensive. As product life cycles and unit production numbers continue to shrink, so does the time left for planning. This is where MT*pro* (3 842 539 057) can provide valuable support. This planning software is designed with both needs in mind and offers good visualization as well as a CAD interface.



MT*pro* 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 linking sections and material shuttles with a click of the mouse. 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.

The ManModel is yet another ergonomic highlight. With this feature, MT*pro* can optimize designs for human use. Based on the dimensions of the human body, the ideal grab area, the proper distance from work equipment, and the proper angle of vision can be easily visualized and the production systems then designed.

Users can then rapidly retrieve complete parts and order lists, price calculations and CAD data.





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 a person's potential performance. 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 conditions, 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 further than the competition by making the height of the material supply area and that of the working surface independently adjustable. The height of the workstation is determined by the worker's height and the product height, i.e., the work area. The height of the material supply area, on the other hand, is primarily determined by the worker's height, since their optimal grab area must be taken into account.

All workstations and workstation accessories are available in 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
24 Table frames
25 Table tops
26 Material shelves
28 Rubber profile, footrests
31 Tool and parts supply
41 Lighting
50 Information supply
53 Cabinet systems
56 Accessories
61 Ergonomic mat
62 ESD accessories

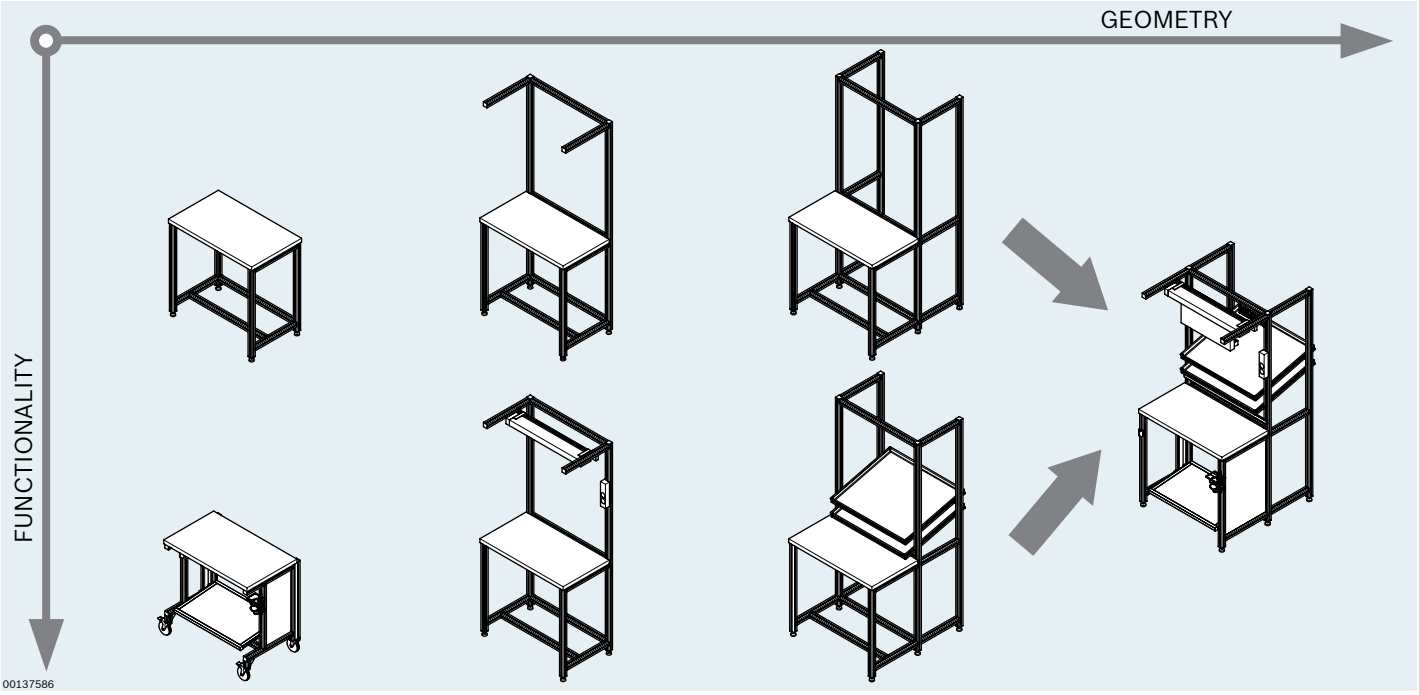
Workstations

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

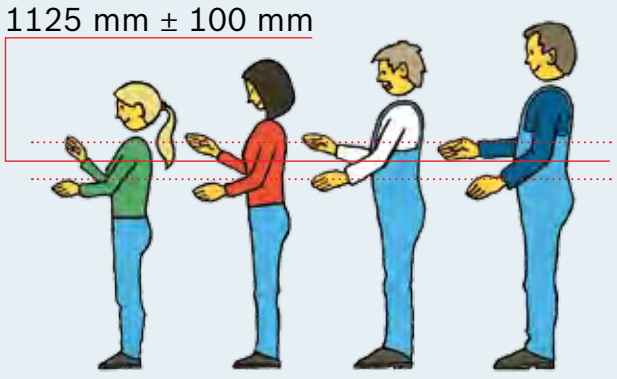


stand-up/moving or sit-down/stand-up workstations are integrated into the workflow. Many workstations are used for multiple shifts. This means that these workstations need to be designed for employees of different height. The optimum working height is based on the body height range and the type of activity 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 height-adjustable 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 optimal 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
High standards for Visual inspection Fine motor skills	1100	1200	1250	1350
Moderate standards for Visual inspection Fine motor skills	1000	1100	1150	1250
Low standards for Visual inspection **High standards for** Freedom of arm movement	900	1000	1050	1150
	Average optimal working height = 1125			

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





Group 1 1535 mm **Group 2 1640 mm** **Group 3 1740 mm** **Group 4 1855 mm**

Average optimal working height for all four population groups

Height-adjustable workstation



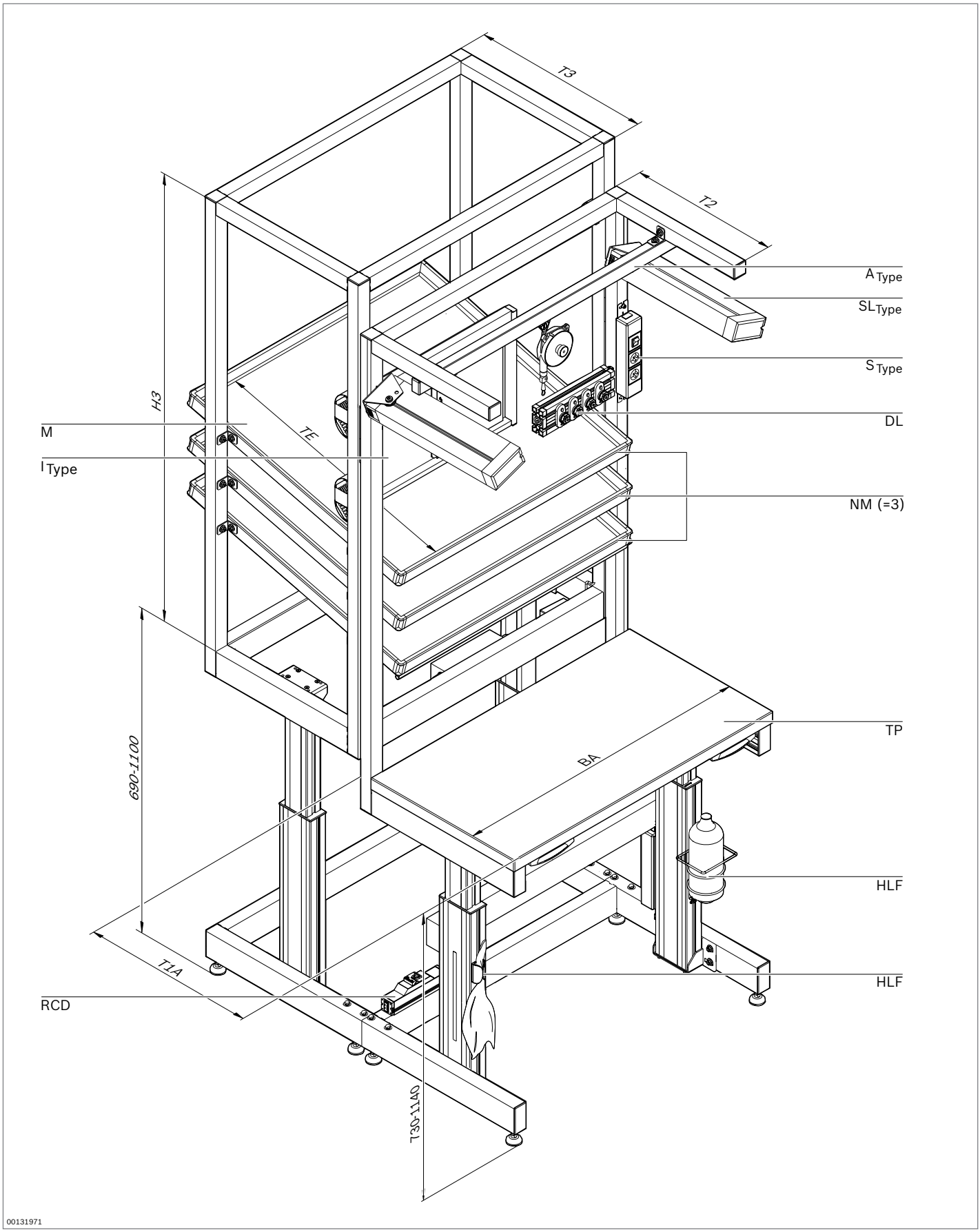
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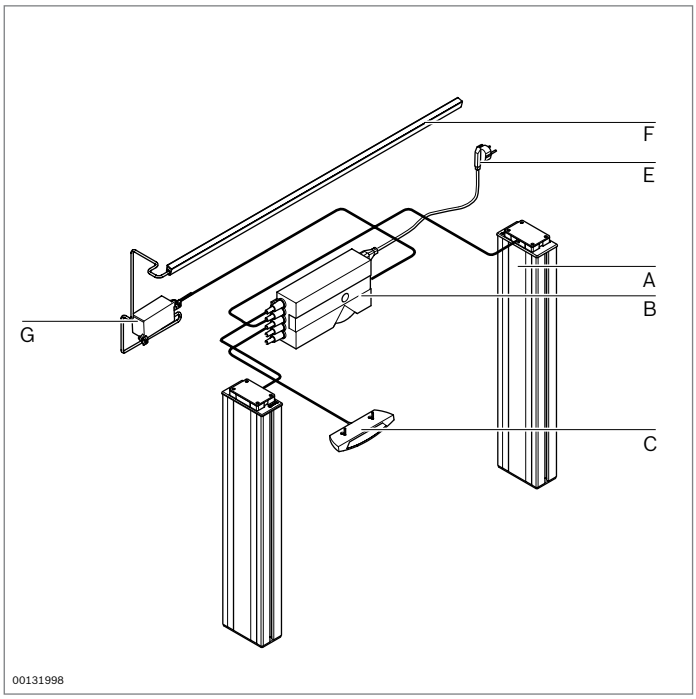
- Large number of adjustment options for high versatility
- Freely selectable geometry and functionality
- Independent adjustment of material feed and table top heights
- Available as ESD-conductive version
- Fully assembled or as a kit for self-assembly
- Allows for the addition of any desired modules,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

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

See technical data (page 192)

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


T3
T2
H3
TE
A Type
SL Type
S Type
DL
M
I Type
NM (=3)
TP
BA
690-1100
HLF
HLF
T1A
RCD
T3-1140
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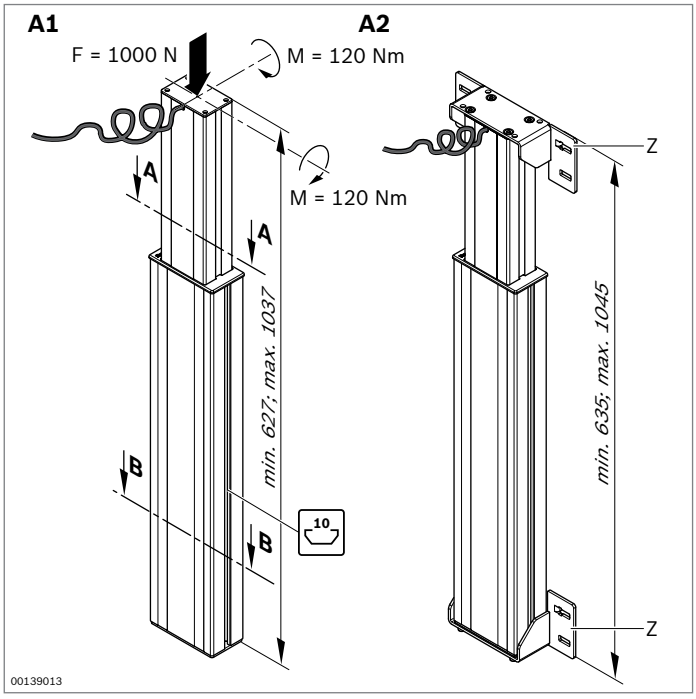


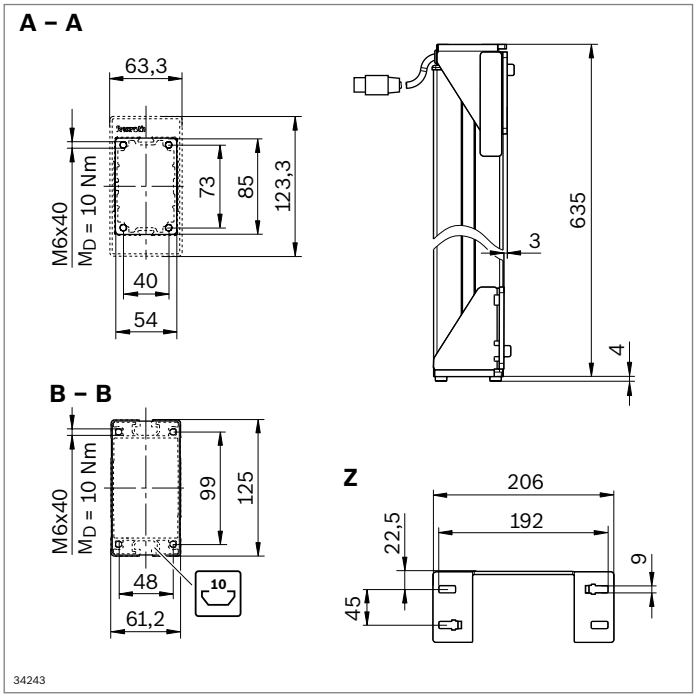
Height-adjustable workstation components

Lifting module (A)

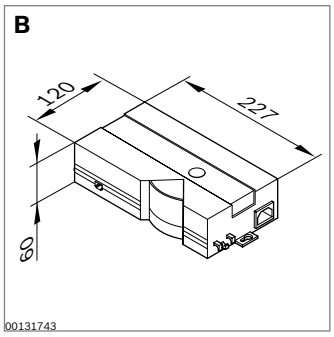
- Lifting module for continuous workstation height adjustment
- Connected via screw hole on face sides or using the integrated 10 mm slot
- Lifting force: max. 1000 N per lifting module; suitable for compressive forces only
- Lift: 410 mm
- Lifting velocity: 25 mm/s
- Cable length: 2000 mm

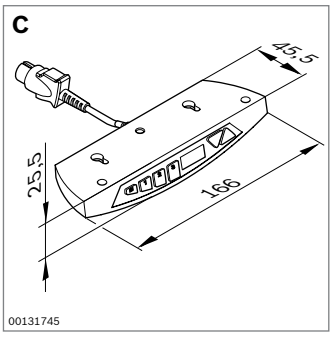
See technical data (page 193)

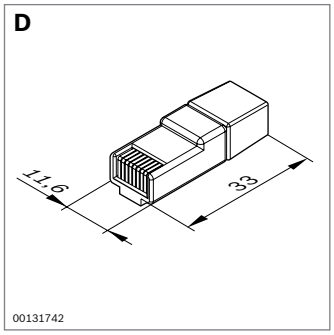


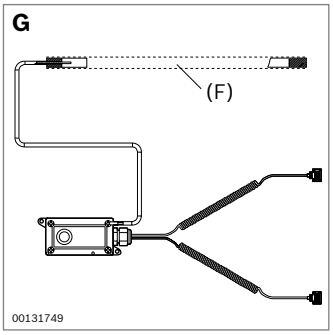


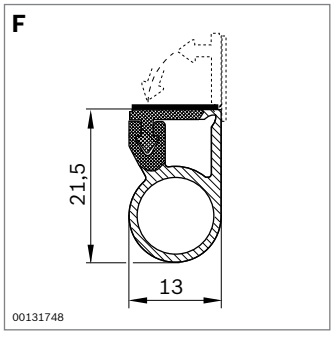
	No.
A1 Lifting module	**3 842 540 116**
A2 Lifting module with bracket (**Z**)	**3 842 542 211**

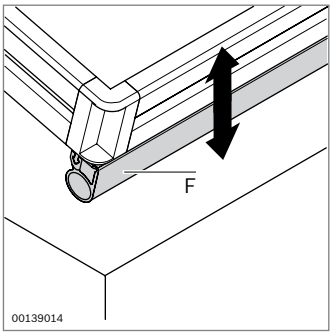












Control (B)

- Control for synchronization of 1, 2, 3 or 4 lift 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 lift 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	Control unit for 1 lift module*		**3 842 540 048**
	Control unit for 2 lift modules*		**3 842 540 049**
	Control unit for 3 lift modules*		**3 842 540 050**
	Control unit for 4 lift modules*		**3 842 540 051**
C	Hand switch with display		**3 842 540 120**
D	Contact bridge		**3 842 540 047**
E	Mains cable D	5	**3 842 540 195**
	Mains cable CH	5	**3 842 540 197**
	Mains cable GB	5	**3 842 540 199**
F	Control strip	2	**3 842 540 129**
G	Pressure wave sensor		**3 842 540 130**

* EU; 230 V AC

Workstation



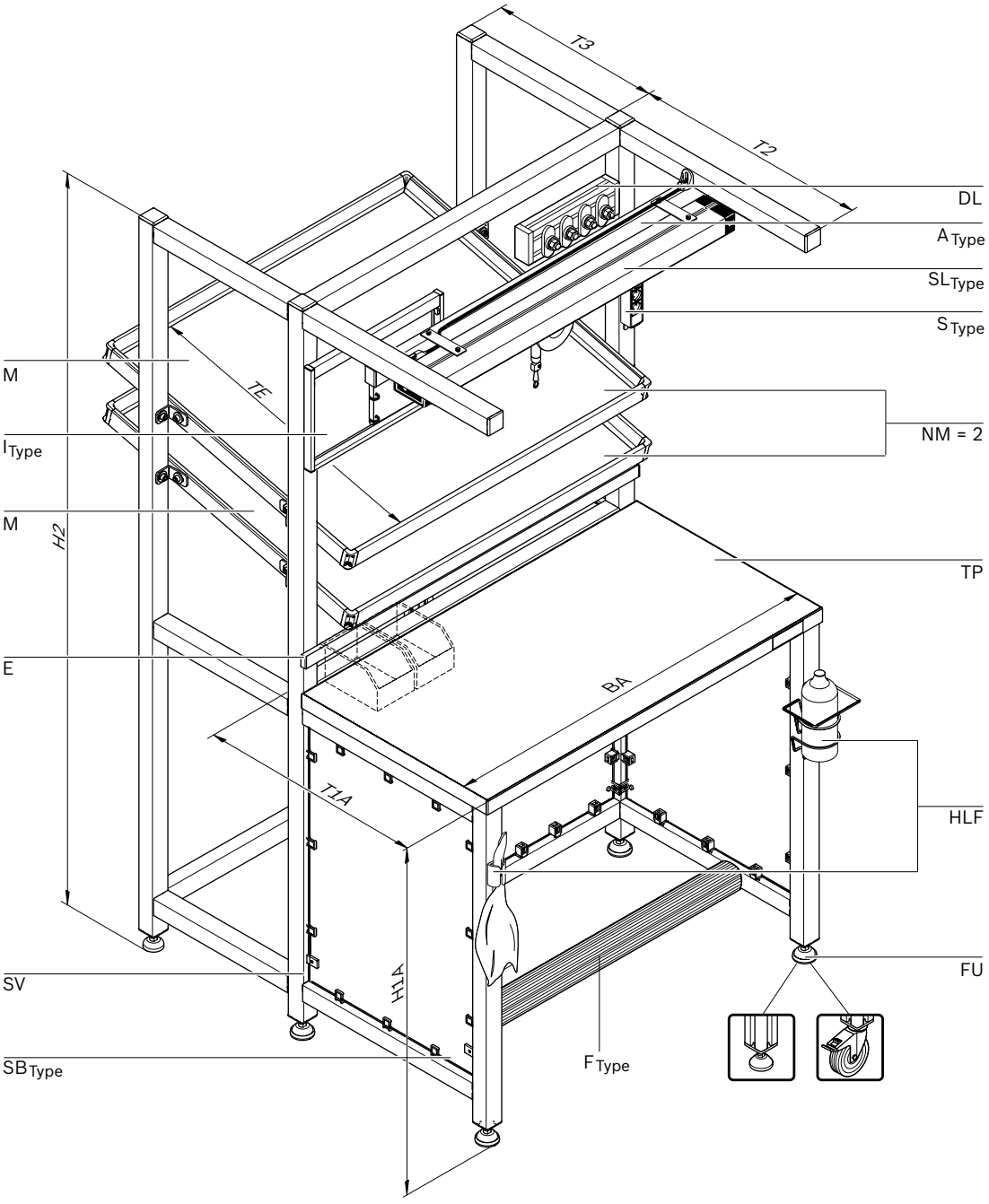
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- Large number of adjustment options for high versatility
- Freely selectable geometry and functionality
- Available as ESD-conductive version
- Fully assembled or as a kit for self-assembly
- Allows for the addition of any desired modules, including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

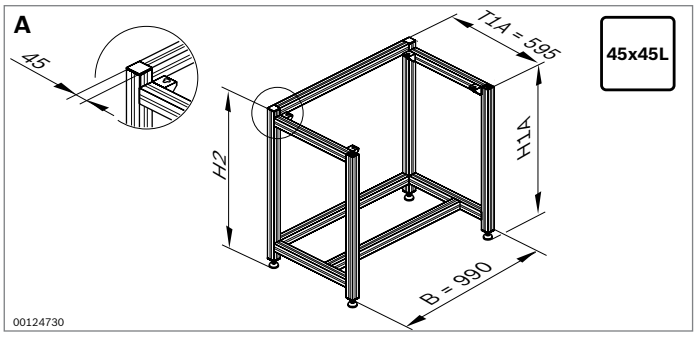
For workstation design and planning, we recommend MT*pro!* See pages 12 and 13 for more information.

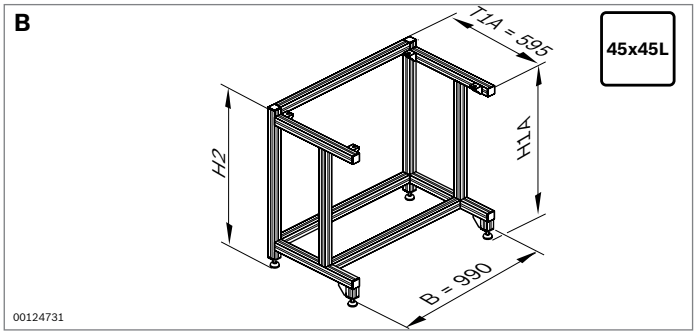
See technical data (page 192)

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, castor
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	Up to 800 mm
TP	Table top type	4 different table tops
SB_{typ}	Side panel type	3 different side panels
T3	Accessory upright depth	Up to 800 mm
NM	No. material shelves	0 ... 4
M	Material shelf material	3 different material shelves
TE	Material shelf depth	410 ... 1220 mm
SV	Reinforced strut extension	With, without
E	Suspension profile	With, without
A_{typ}	Type of hanger	With, without hanger Selectable spring pulls
L	Country version	D, F, GB, CH, USA/CDN, CZ
SL_{typ}	Type of lamp	6 different lamps
S_{typ}	Type of socket	4 different sockets
DL	Compressed air strip	With, without
I_{typ}	Type of information board	7 different information boards
F_{typ}	Type of footrest	Footrest selectable
HLF	Cloth and bottle holder	With, without


T3
T2
DL
A Type
SL Type
S Type
M
TE
I Type
NM = 2
M
H2
TP
E
BA
T1A
HLF
FU
SV
H1A
SB Type
F Type

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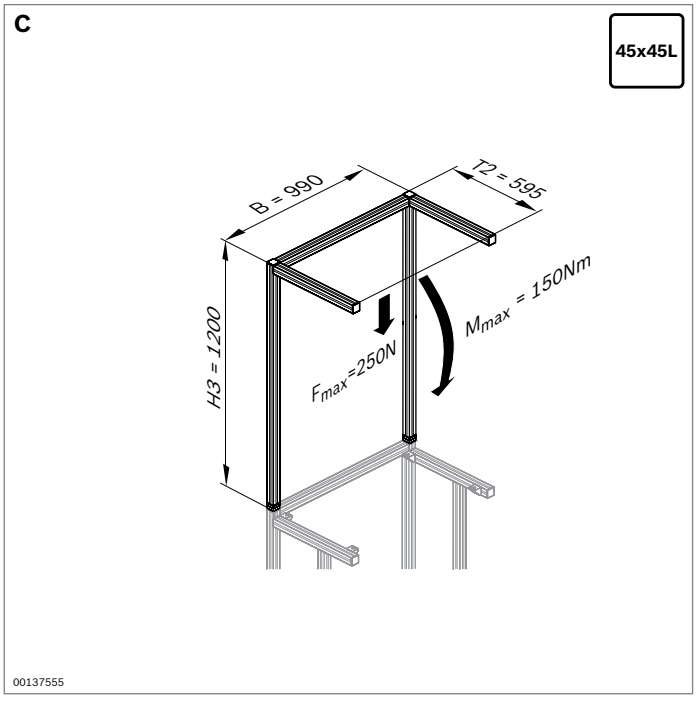


Table frame (A, B)



- 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.**
A Table frame, box type	860	900	**3 842 537 251**
	960	1000	**3 842 537 252**
B Table frame, desk type	860	900	**3 842 537 249**
	960	1000	**3 842 537 250**
C Strut extension			**3 842 519 530**

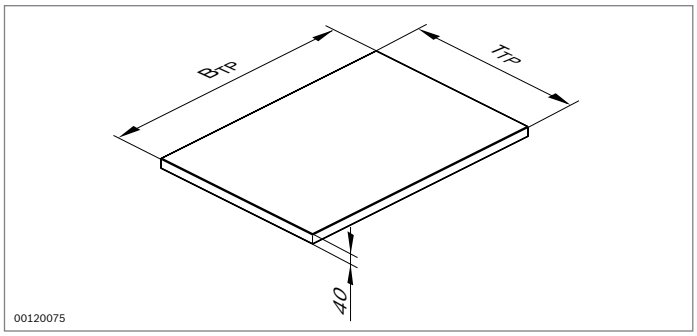


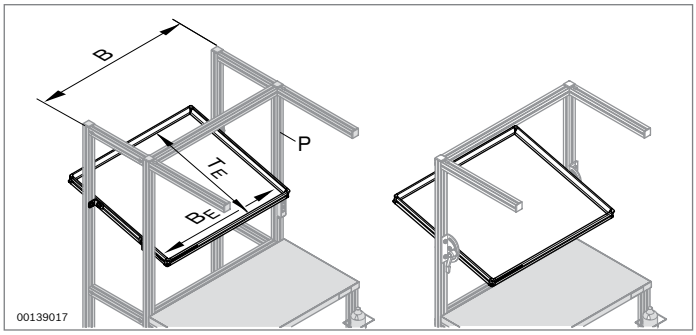
Table top		**3 842 998 250**
Type	Design	Economic, Economic ESD, Basic, Basic ESD
B_{TP}	Table top width	400 ... 2700 mm
T_{TP}	Table top depth	300 ... 2000 mm

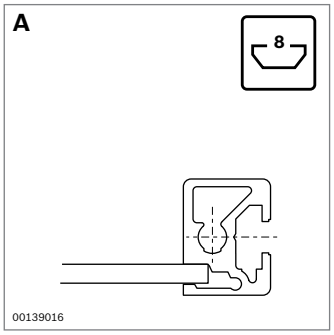
Material of Economic table top: Coated chipboard, 0.1 mm layer thickness; edging: ABS
Material of Basic table top: Coated chipboard, 0.8 mm layer thickness; edging: ABS
Scope of delivery: incl. fastening material

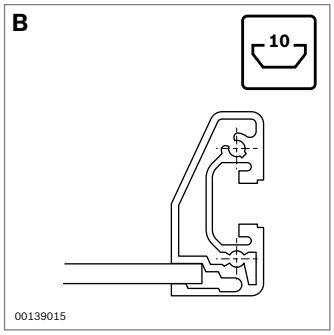
Table top

- 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 in ESD-conductive version. Safe conduction (without extra wiring) of charges through volume conductive base material $R_{gp}/R_{pp} = 10^4 ... 10^9\ \Omega$ (DIN EN 61340-5-1)

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

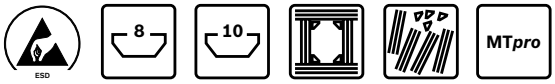






B_E =	B - 45 - 80	(P = 40L)
B_E =	B - 45 - 90	(P = 45L)
B_E =	B - 45 - 120	(P = 60L)

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
- Plates
  - 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: includes brackets for fastening on 10 mm slot
Accessories: Swivel fastening (see page 178, 179), 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 (page 194)

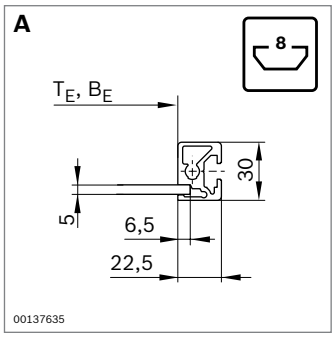
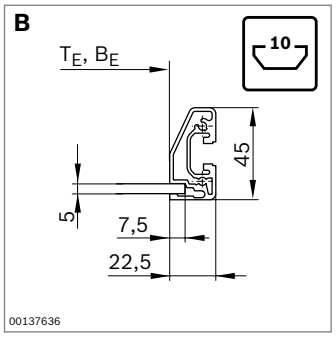


		Plate	B_E (mm)	T_E (mm)	ESD	No.
A	Material shelf Economic	PP	610	410		**3 842 538 456**
			855	410		**3 842 538 457**
		SB	610	410	⚠	**3 842 538 458**
			855	410	⚠	**3 842 538 459**

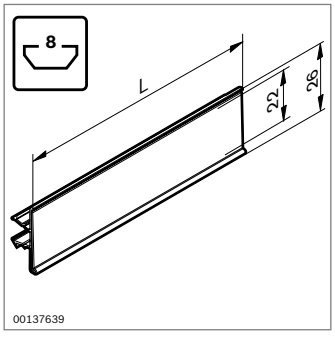


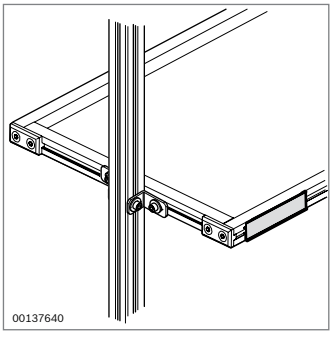
B	**Material shelf Basic, plate PP**	**3 842 998 183**
A	Design	Disassembled; assembled
B_E	Material shelf width	200 ... 1000 mm
T_E	Material shelf depth	310 ... 1000 mm

B	**Material shelf Basic, plate SB** ⚠	**3 842 998 184**
A	Design	Disassembled; assembled
B_E	Material shelf width	200 ... 1000 mm
T_E	Material shelf depth	310 ... 1000 mm

B	**Material shelf Basic, plate aluminum**	**3 842 998 155**
A	Design	Disassembled; assembled
B_E	Material shelf width	200 ... 1480 mm
T_E	Material shelf depth	310 ... 1220 mm

		Plate	B_E (mm)	T_E (mm)	ESD	No.
B	Material shelf Basic	PP	610	410		**3 842 538 460**
		SB	610	410	⚠	**3 842 538 461**

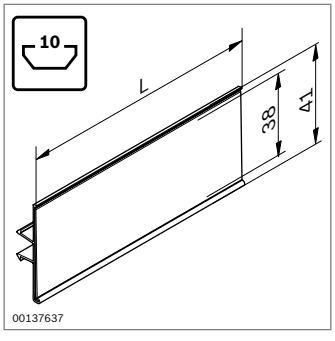


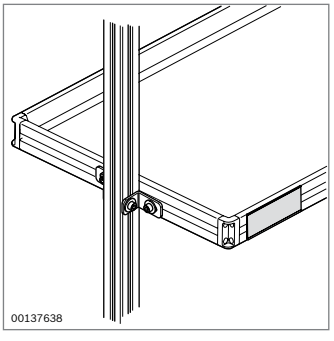


Lettering clips

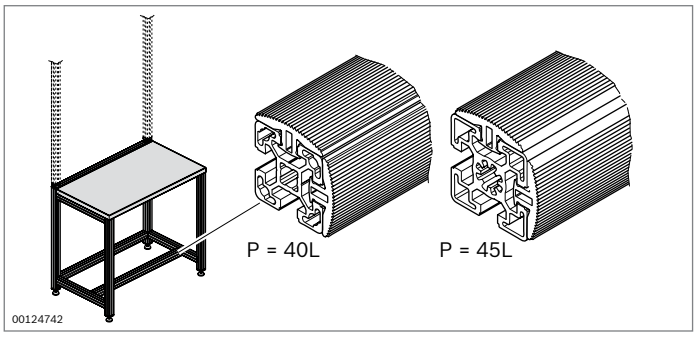
- For labeling material shelves
- Suitable for labeling all profiles with 8 mm or 10 mm slot
- For clipping into the slot

Color: Light gray (7035); transparent





	L (mm)		No.
Clip N8	2000	20	**3 842 537 113**
	102	20	**3 842 537 650**
Clip N10	2000	20	**3 842 537 116**
	102	20	**3 842 537 651**

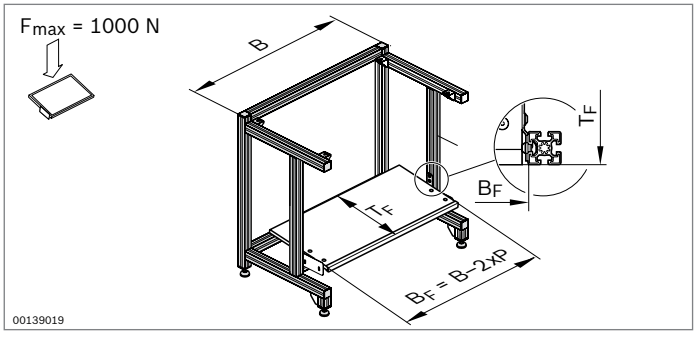


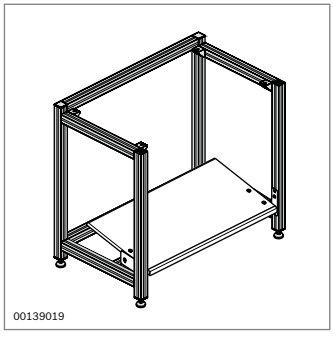
	L (mm)		ESD	No.
Rubber profile	2000	10		**3 842 537 135**
	30 ... 2000			**3 842 994 979/L**

Rubber profile

- To avoid hard abutting edges, for instance 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 R_{gp} < 1 x 10^9 Ω





Footrest Economic

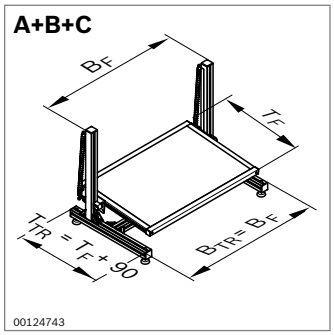
- For 0–7° inclination
- For low-fatigue sitting at the workstation
- Attachment to the table frame for box or desk type
- Oil-resistant
- Aluminum U-profile on front edge to prevent premature wear of the footrest edge
- Suitable for the construction of ESD workstations

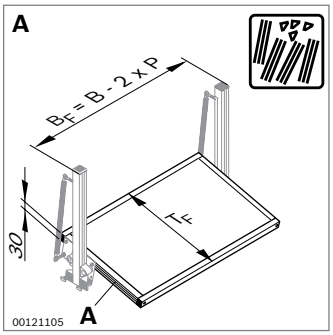
Material: Chipboard, hard-coated; conduction resistance R_{gp} < 1 x 10^9 Ω (DIN EN 61340-5-1)
Scope of delivery: includes fastening material (10 mm slot)
ESD scope of delivery: includes fastening material and grounding cable (10 mm slot) (see page 62)

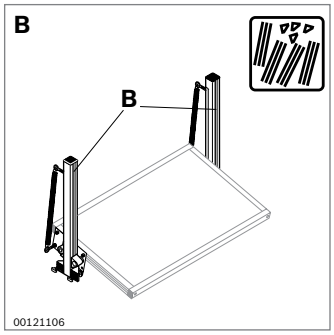
See technical data (page 195)

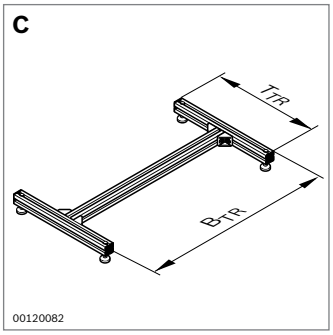
Footrest Economic		**3 842 998 256**
ESD	Conductivity	Yes, no
B_F	Footrest width	400 ... 1020 mm
T_F	Footrest depth	300 ... 600 mm

	B_F (mm)	T_F (mm)	ESD	No.
Footrest Economic; assembled	900	400		**3 842 538 771**
	900	400		**3 842 538 772**









Footrest Basic
Support frame

Footrest Basic

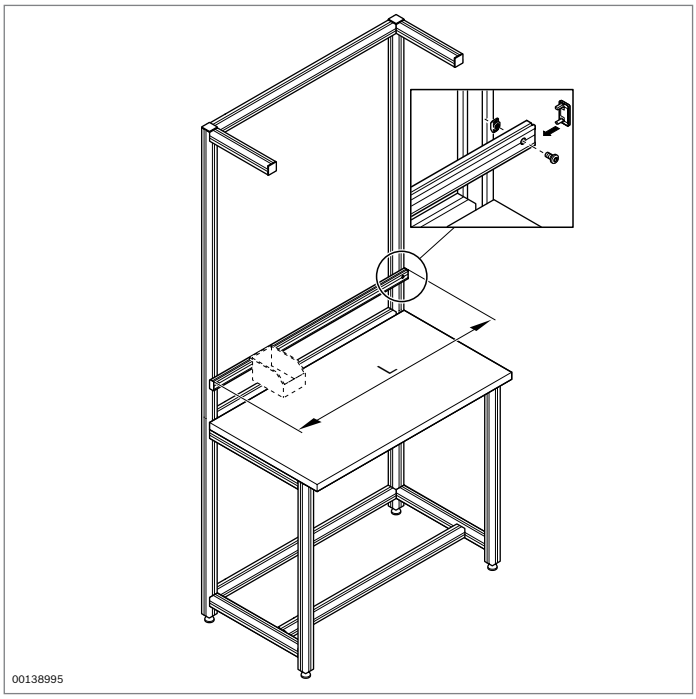
- With fixed inclination of 5°
- For low-fatigue sitting at the workstation
- Easy height adjustment while seated (adjustment range: 250 mm)
- Installed on table frame using attachment kit
- Installed on free-standing support frame using attachment kit
- Oil-resistant
- Suitable for the construction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

Frame material: Aluminum profile; anodized
Rest material: Chipboard, hard-coated; conduction resistance R_{gp} < 1 x 10^9 Ω (DIN EN 61340-5-1)
Scope of delivery: includes fastening material (10 mm slot)
ESD scope of delivery: includes fastening material and grounding cable (10 mm slot) (see page 62)

See technical data (page 195)

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	350 ... 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**

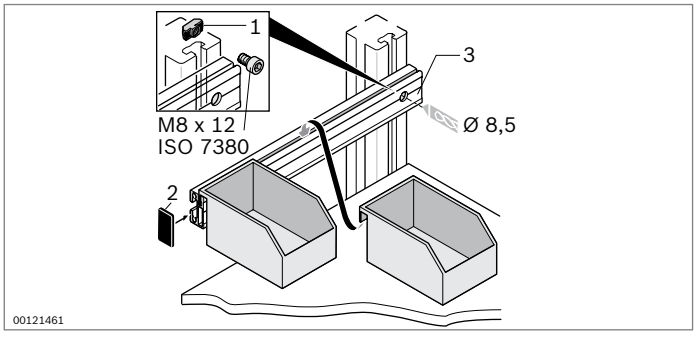


Applications

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 176)

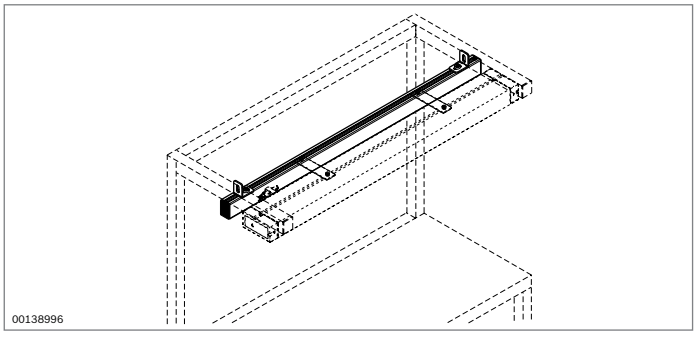
See technical data (page 196)

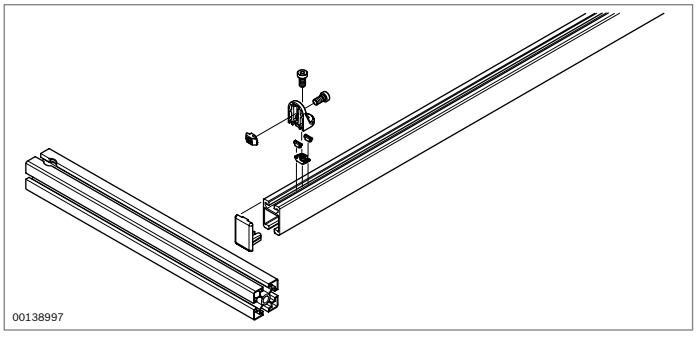


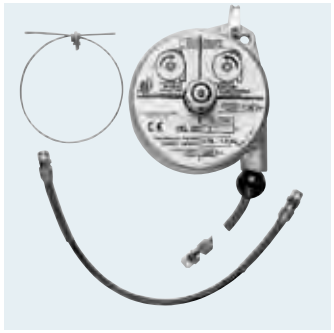
Hanger application

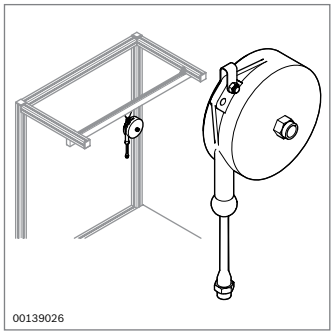
- For the ergonomic supply of tools in combination with trolley or slide hanger and spring pull
- For hanging system lamps at the workstation
- Customized assembly from individual components (cf. “Components” chapter. see page 176)

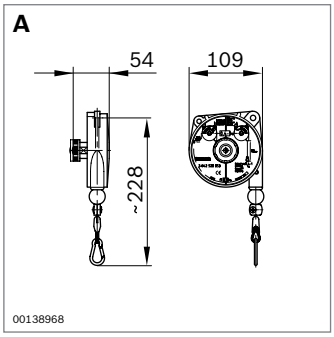
See technical data (page 197)



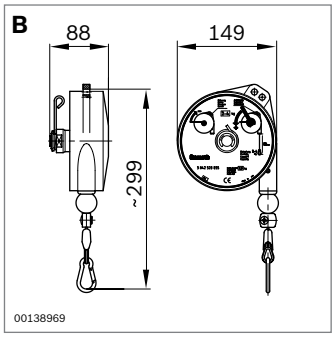



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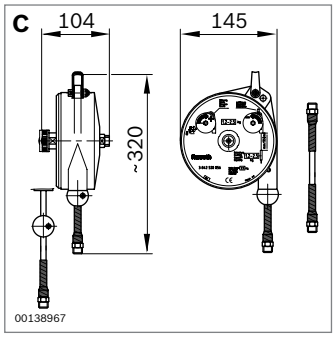

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00138968



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

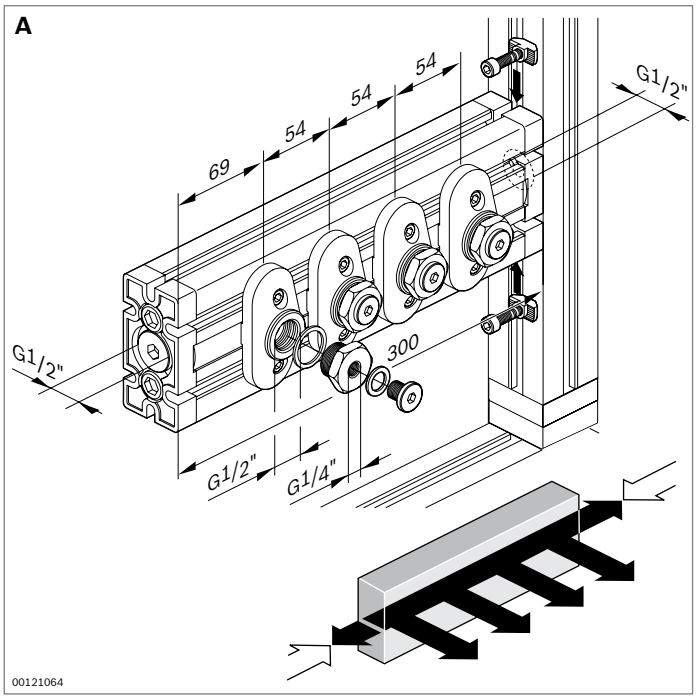
Scope of delivery: includes safety wire

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

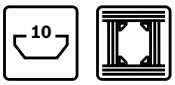
Scope of delivery: includes safety wire, connection tubing G1/4"

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



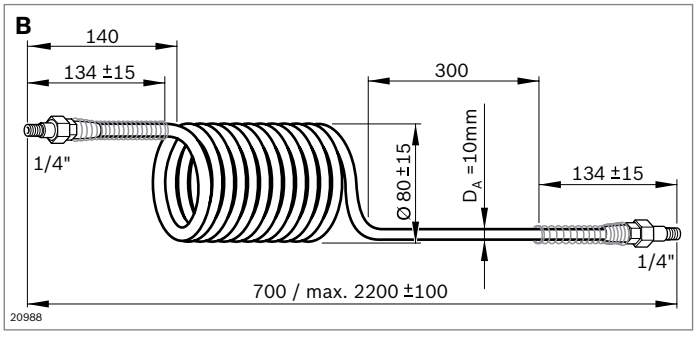
	No.
A Air bar	**3 842 352 088**

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 material for 10 mm slot



	No.
B Spiral hose	**3 842 544 790**

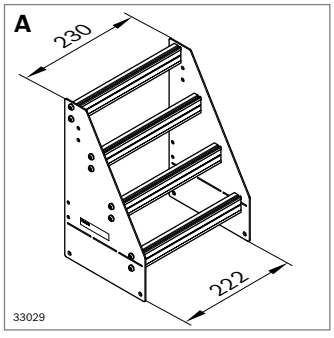
Spiral hose (B)

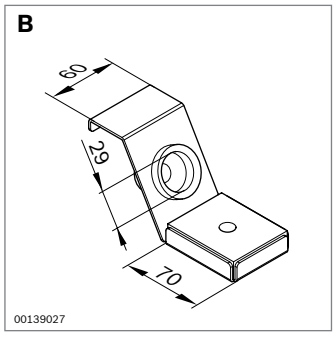
- For connecting tools to the air bar
- Hose connection with kink protection, rotatable with sealing ring; 1/4" external thread
- Max. extension length 2200 mm
- Operating pressure: P_{max} = 8 bar at 20 °C
- Requires de-oiled air

Hose material: PU; blue
Connection material: steel



34138





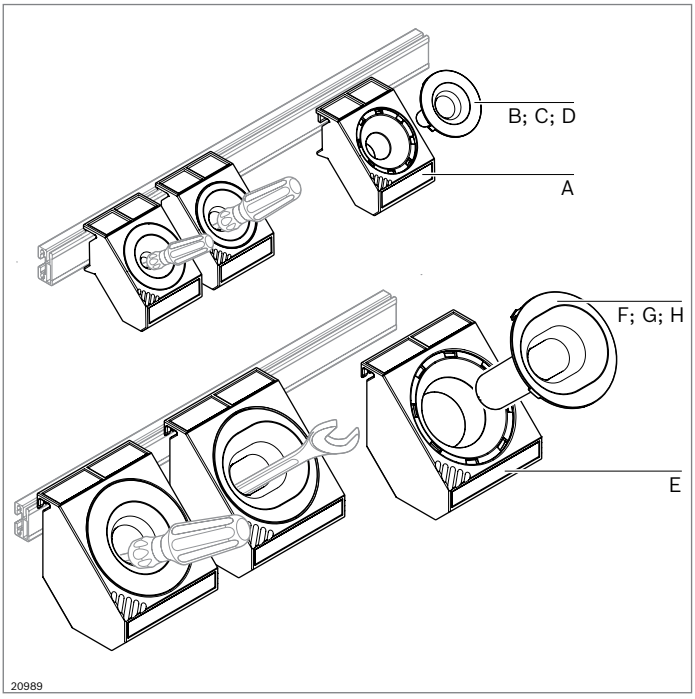
Tool shelf
Tool holder

- Tool shelf available with a fixed width of 230 mm
- For ergonomic and handy positioning of tools at the workstation
- Tool holders are hung in the tool shelf.
- Customized assembly of individual components: see “Components” section (page 176)

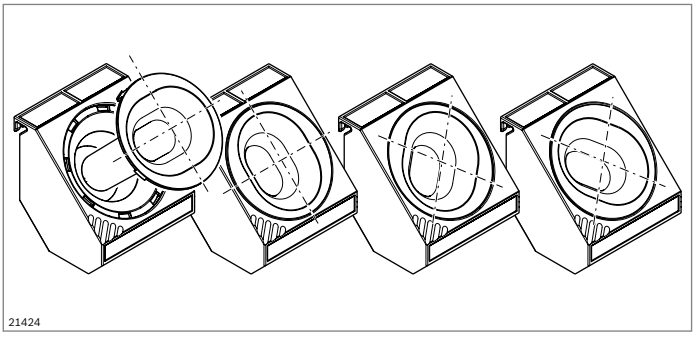
Material **B:** VA

	ESD	No.
A Tool shelf	ESD	**3 842 554 909**
B Tool holder for soldering irons	ESD	**3 842 514 524**


22378



20989


21424

Tool holders
Container mount

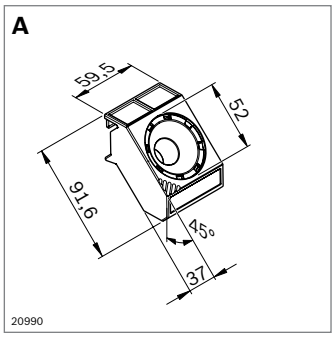


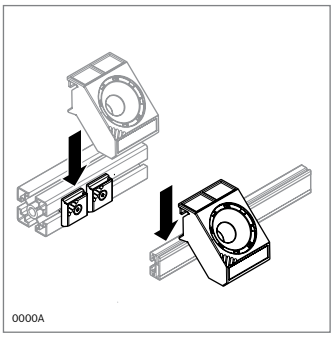
Tool holders

- 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

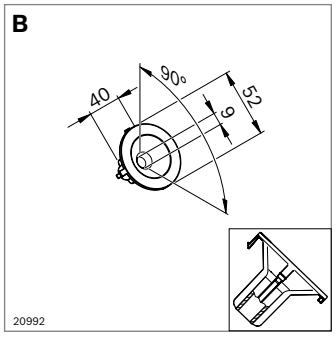
- Self-assembly elements for custom configurations of tool holder shelves: see “Components” section (page 176)

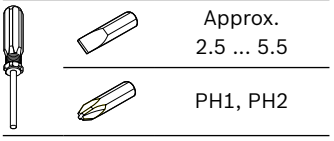




D52 tool holder for D52-9 and D52-15 bucket trays

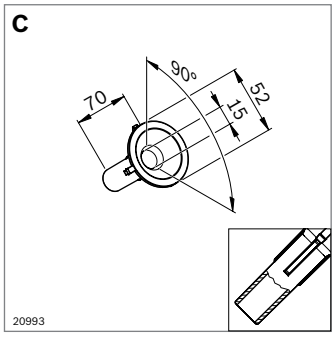
		ESD	No.
A	D52 tool holder	⚠	**3 842 544 832**

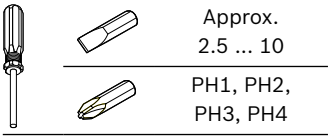




Approx. 2.5 ... 5.5	
PH1, PH2	

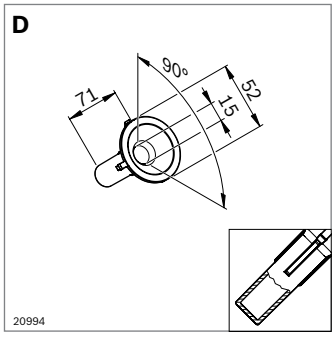
		ESD	No.
B	D52-9 bucket tray (without base)	⚠	**3 842 544 834**

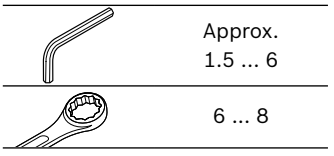




Approx. 2.5 ... 10	
PH1, PH2, PH3, PH4	

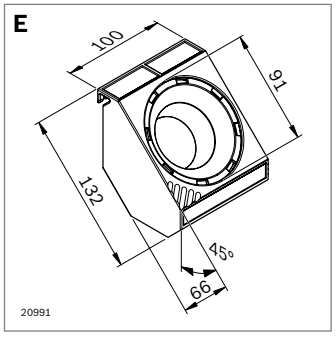
		ESD	No.
C	D52-15 bucket tray (without base)	⚠	**3 842 544 835**

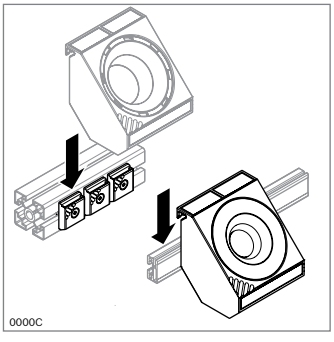




Approx. 1.5 ... 6	
6 ... 8	

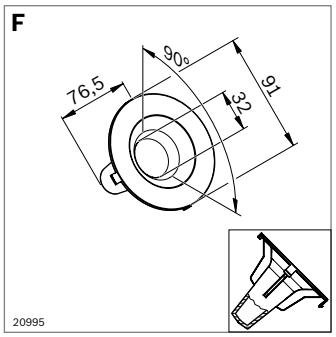
		ESD	No.
D	D52-15 bucket tray (with base)	⚠	**3 842 544 836**

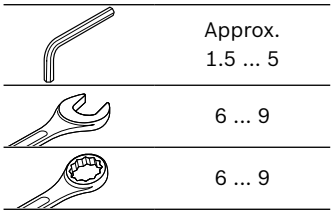




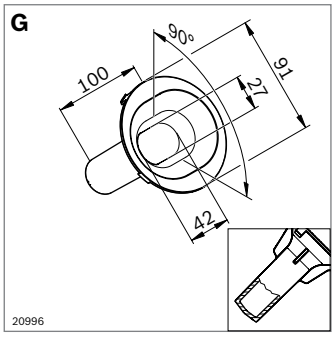
D91 tool holder for D91-32, D91 Oval53 L100 and D91 Oval53 L136 bucket trays

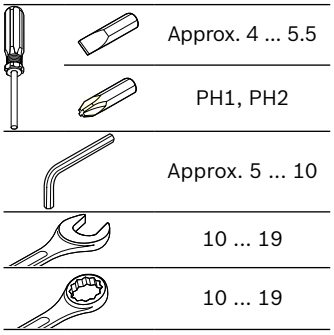
		ESD	No.
E	D91 tool holder	⚠	**3 842 544 833**



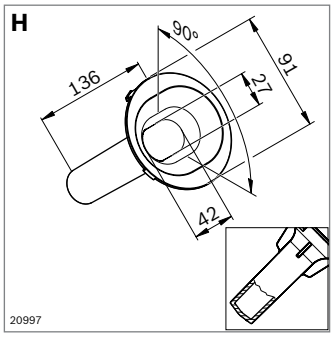


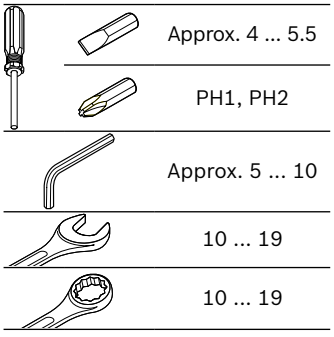
		ESD	No.
F	D91-32 bucket tray (with base)	⚠	**3 842 544 837**





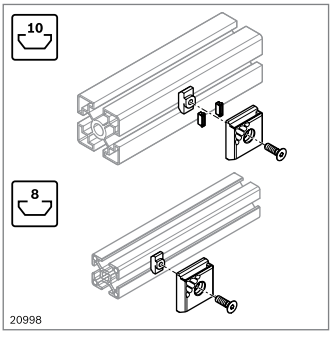
		ESD	No.
G	D91 Oval53 L100 bucket tray (with base)	⚠	**3 842 546 744**





		ESD	No.
H	D91 Oval53 L136 bucket tray (with base)	⚠	**3 842 546 745**



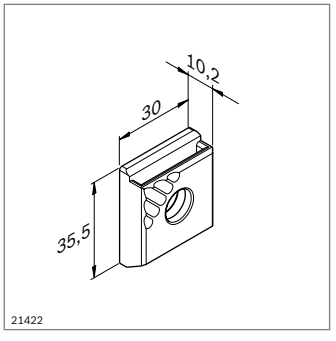


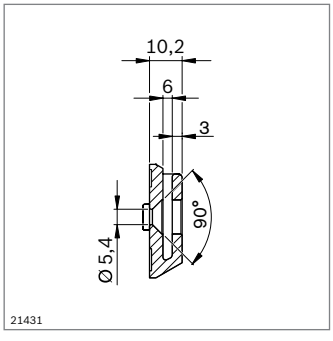
Container mount

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

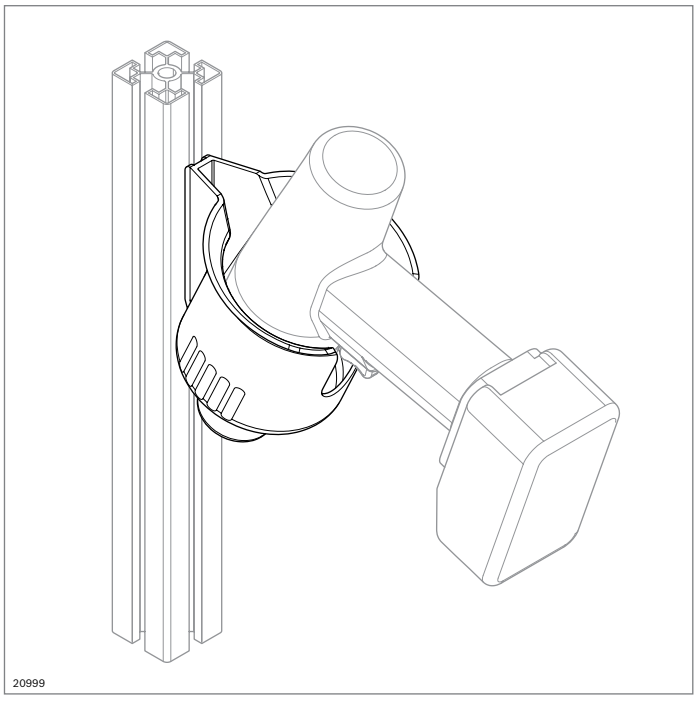
Material: PA 66; black

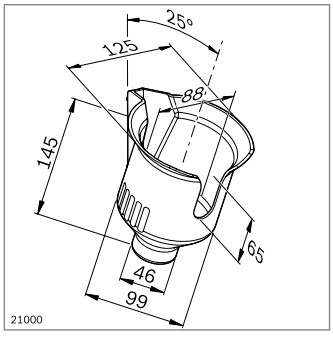
Scope of delivery: includes fastening material for fastening in 8 mm and 10 mm slots

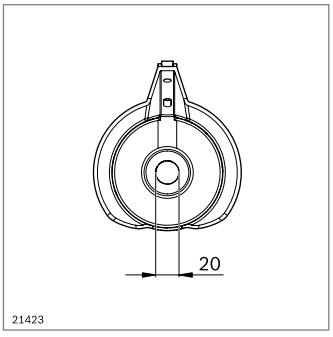




		ESD	No.
Container mount	10	⚠	**3 842 544 797**







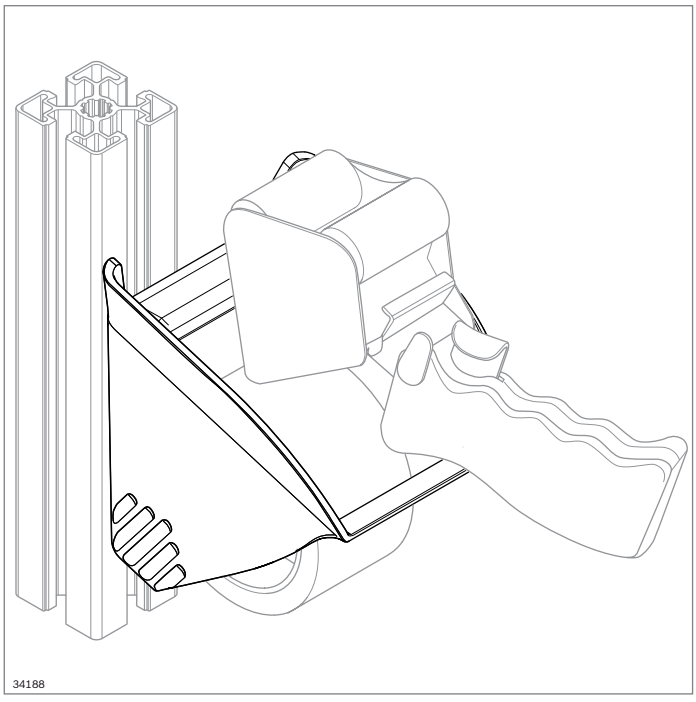
	ESD	No.
D95 tool holder	⚠	**3 842 544 772**

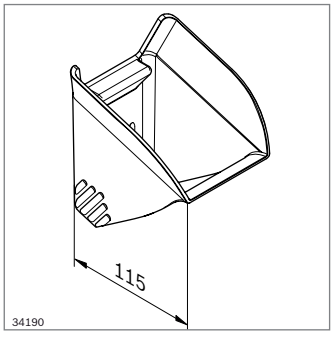
D95 tool holder

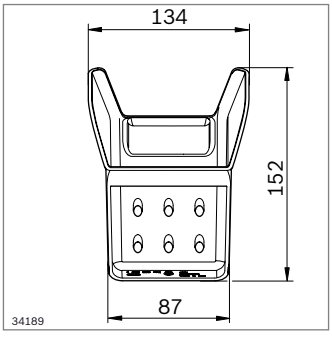


- Quiver-type tool holder for nut runners up to 2 kg (the use of a spring pull is recommended for heavier nut runners, see page 31)
- Time savings of 10% to 20% based on MTM, achievable with
  - Defined place for fast picking
  - 45° docking aids for easy, ergonomic depositing and removal
- Tool holder open at bottom. This makes it possible to hold nut runners 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.
50 mm tape tool holder	⍾	**3 842 555 673**

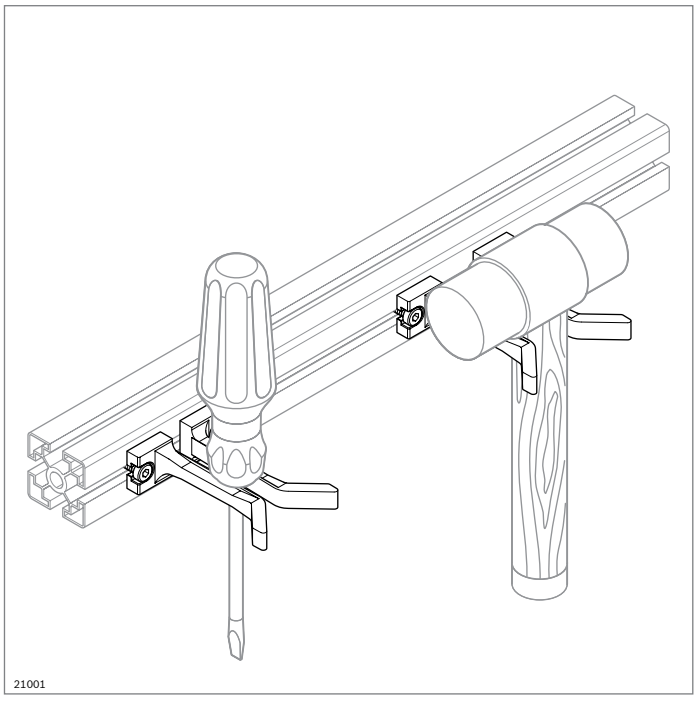
50 mm tape tool holder

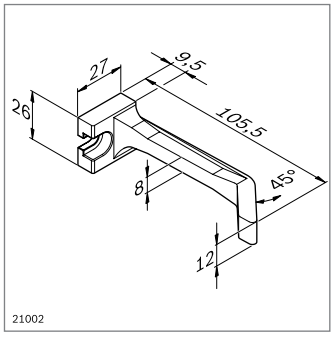


- Tool holder for tape dispenser with a width of 50 mm
- Time savings of 10% to 20% based on MTM, achievable with
  - Defined place for faster reaching and picking
  - Docking aids for easy, ergonomic depositing
- Supports 5S principles for order and cleanliness at the workstation via defined, fixed place

Material: PA 6; black

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





		ESD	No.
L105 tool holder	10		**3 842 544 768**

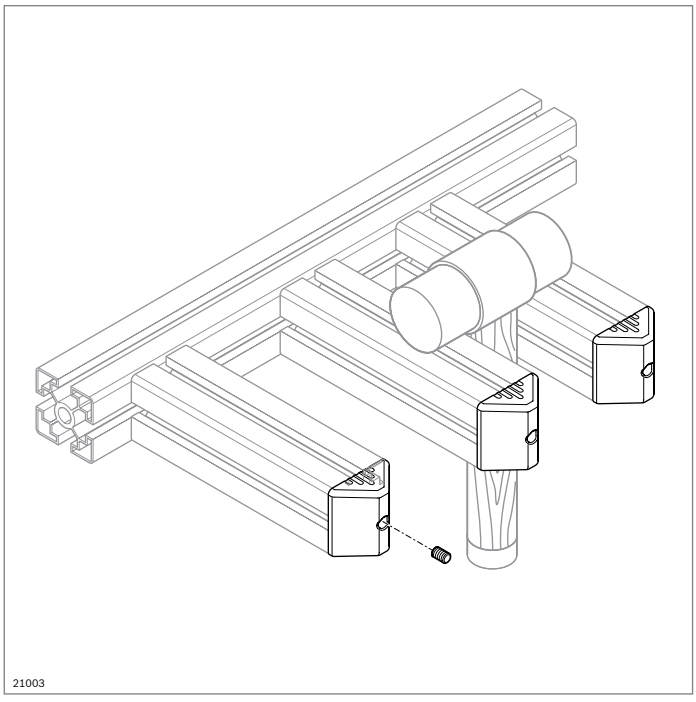
L105 tool holder

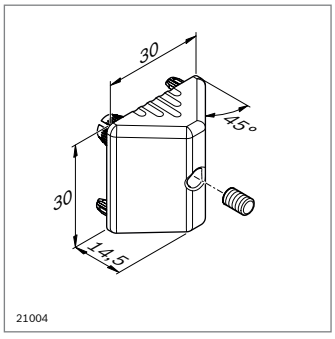


- For ergonomic and handy positioning of tools at the workstation
- Universal use possible, e.g., for screwdrivers, pliers, or hammers
- Mounting in 8 mm and 10 mm slots
- Time savings of 10% to 20% based on MTM, achievable with
  - Defined place for fast retrieval
  - 45° docking aids and tactile feedback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

Material: PA 6; black

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





30x30 guide plate

- 30x30 guide plate 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.
30x30 guide plate	10	**3 842 544 770**

Workstation lighting

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

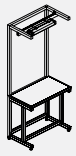
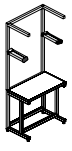
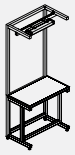
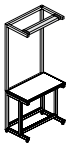
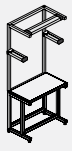
In addition to climate, noise, mechanical vibrations, and hazardous substances, lighting is another environmental factor that must be taken into consideration.

Important aspects for planning workstation lighting include:
- Avoiding strong contrasts
- Avoiding glare and reflection

DIN EN 12464 or the table below contain the required mid-range lighting strengths.

The right Rexroth system light for every task

Sample calculation for work top lighting
Rexroth SL 78 (nominal lighting strength) with 681 lux (with lamp–table top distance = 1.25 m)
+ 300 lux ambient light
= 800 lux work top lighting

Tasks	Required lighting strength (lux)	Rexroth SL 48	Rexroth SL 36 Duo/ SL 15 LED Duo	Rexroth SL 20 LED	Rexroth SL 78/ SL 30 LED	Rexroth SL 78 + SL 36 Duo/ SL 30 LED + SL 15 LED Duo
Rough and medium machine and assembly tasks such as turning, milling and planning	300	▬ [1]	▬ [1]	▬ [1]		
Fine machine tasks with permissible deviations	500	▮▮▮▮▮ [1]	▬ [1]	▬ [1]	▬ [1]	
Fine assembly tasks, e.g., telephones, winding medium-sized coils, marking, inspection and measuring stations	750		▮▮▮▮▮ [1]	▮▮▮▮▮ [1]	▬ [1]	▬ [1]
Very fine assembly, e.g., measuring instruments, assembly of tools, gages, and equipment, precision mechanics and micromechanics	1000				▮▮▮▮▮ [1]	▬ [1]
Assembly, inspection and adjustment of extremely small parts	1500					▮▮▮▮▮ [1]

[1] 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 (page 199)

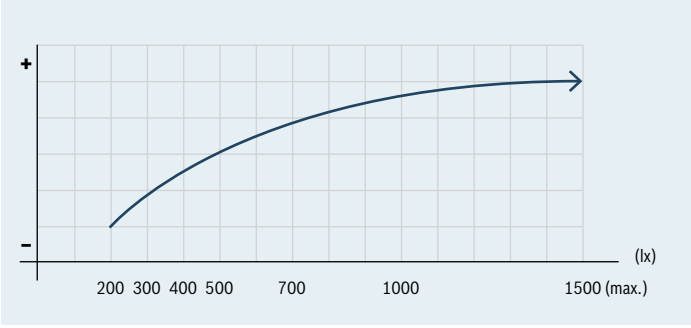
Rexroth's system lamp range provides glare and flicker-free light of the highest quality. You can operate the lamps as required for the job at hand either individually or in combination with one another.
This allows you to provide your workstations with uniform illumination of outstanding quality. The 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.

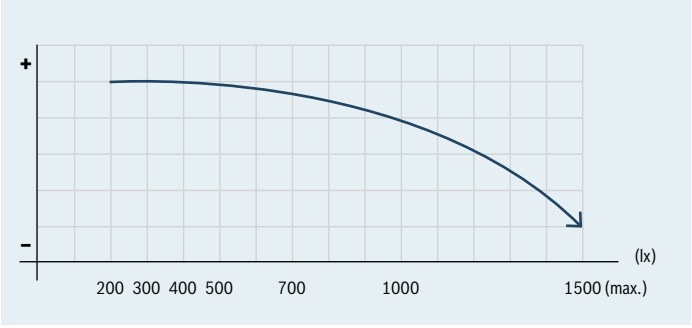
Lighting on a new level: LED system lamps

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

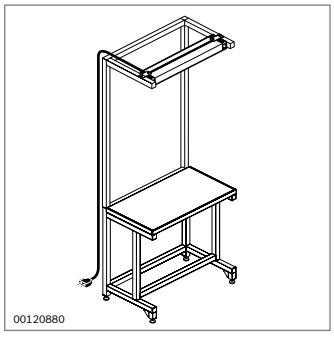
Increased efficiency with Rexroth system lamps

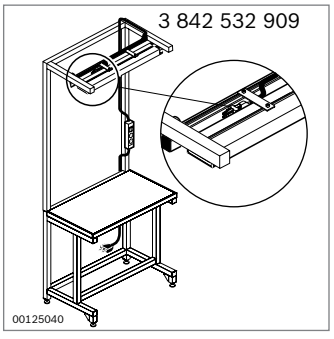


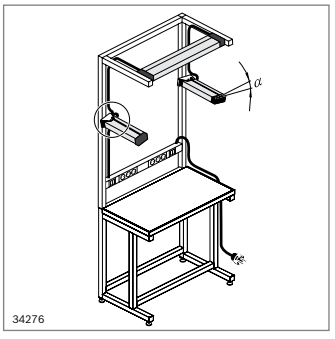
Reduction of errors with Rexroth system lamps

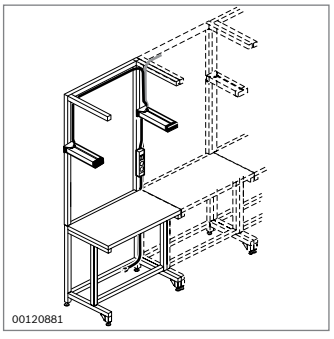


Fluorescent lamp with electronic lamp ballast

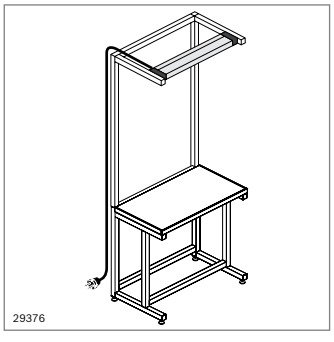




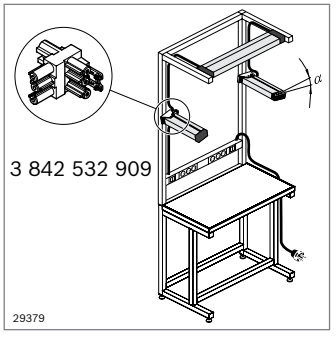


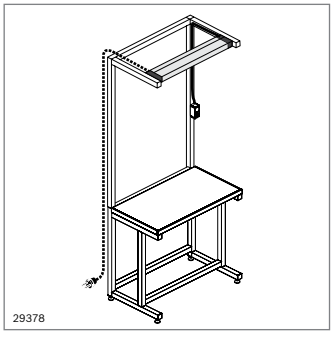


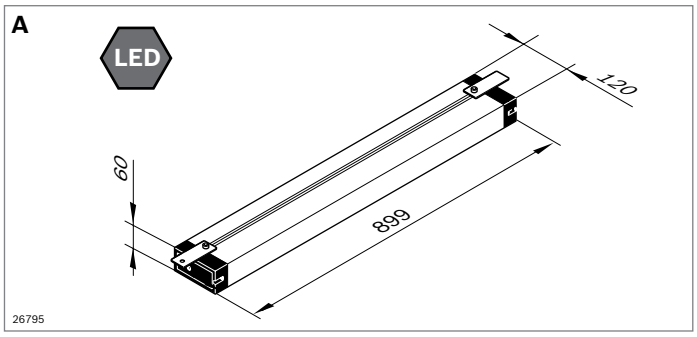
LED lamps (Fig. 4 including controller)

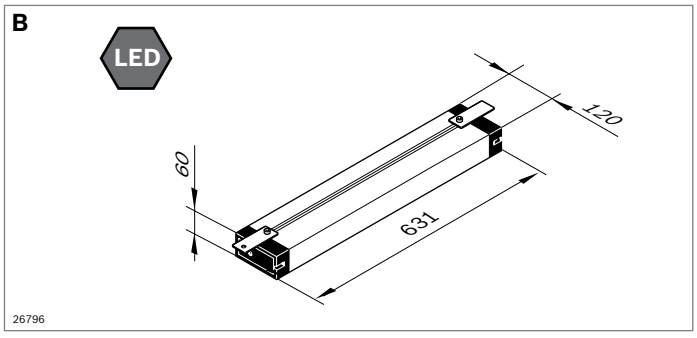


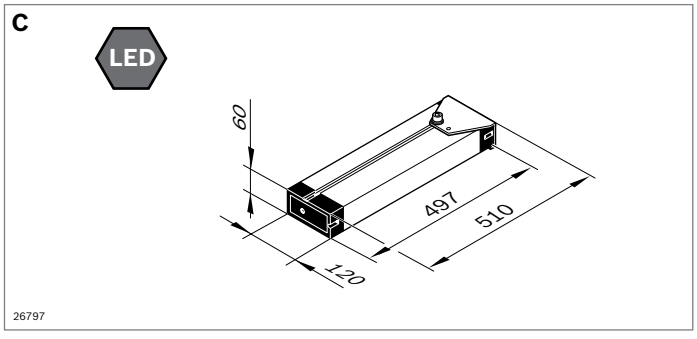












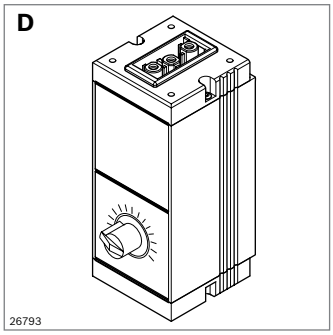
LED system lamps

- 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), 1–10 V interface
- Service life: EU: 60000 h, USA/CDN: 50000 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

IP rating: IP 20 (DIN EN IEC 60529)
Housing material: Aluminum; anodized
Scope of delivery: includes fastening material (10 mm slot)
Required accessories: mains cable or connecting cable (see page 48)
Recommended accessories:
controller (**D**) (see page 44);
DIM (**E**) connecting cable (see page 44);
POWER H-distributor (230 V) (**F**) (see page 44)

		Fluorescent tubes	**Service life** (h)	**Voltage** (V)**/ Frequency** (Hz)	**Weight** (kg)	**No.**
A LED 30	EU[1]	LED/30 W	60000	220–240 V/50 Hz; 60 Hz	3.2	**3 842 552 220**
	USA/CDN[2]	LED/30 W	50000	120–277 V/50 Hz; 60 Hz	3.2	**3 842 555 626**
B LED 20	EU[1]	LED/20 W	60000	220–240 V/50 Hz; 60 Hz	2.4	**3 842 552 222**
	USA/CDN[2]	LED/20 W	50000	120–277 V/50 Hz; 60 Hz	2.4	**3 842 555 627**
C LED 15	EU[1]	LED/15 W	60000	220–240 V/50 Hz; 60 Hz	2.0	**3 842 552 224**
	USA/CDN[2]	LED/15 W	50000	120–277 V/50 Hz; 60 Hz	2.0	**3 842 555 628**

[1] VDE and ENEC test marks; [2] UL, CSA and FCC test marks

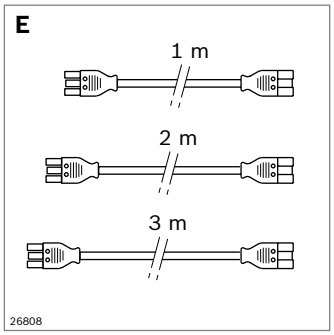


Controller (D)

- By turning the rotary button, you can dim the lighting strength of the LED system lamps
- Multi-lamp dimming with a single controller available on request

Required accessories: DIM connecting cable (**E**)

		No.
D	Controller	**3 842 552 226**

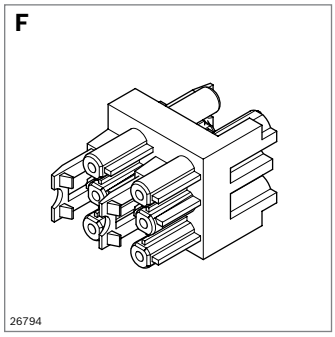


DIM connecting cable (E)

- For wiring the controller to the system lamps
- Secure plug-and-play installation available in different lengths

Plug color: blue
Cable color: black

			L (m)		No.
E	DIM connecting cable	EU	1	1	**3 842 553 139**
		EU	2	1	**3 842 553 140**
		EU	3	1	**3 842 553 141**

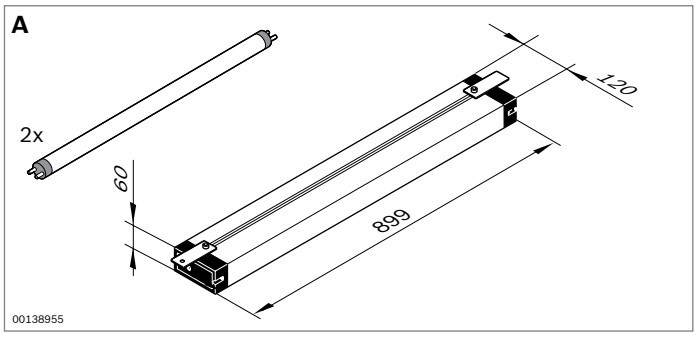


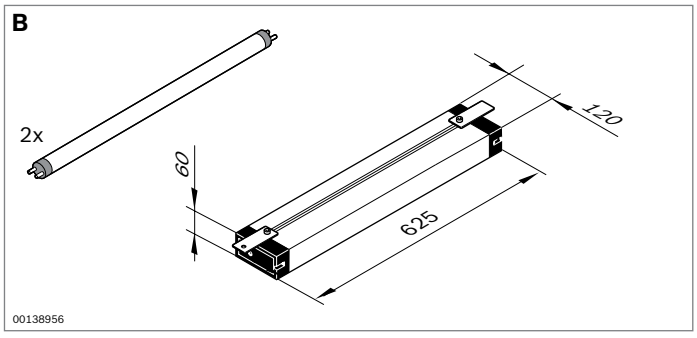
POWER H-distributor (230 V) (F)

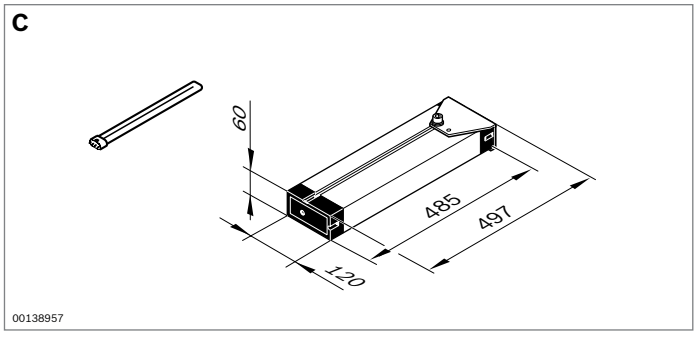
- For connecting up to three lamps to one mains connection
- Compatible with 40x40 or 45x45 cable duct (see MGE 13.2)

Color: Black

			No.
F	POWER H-distributor (230 V)	1	**3 842 553 142**







System lamps

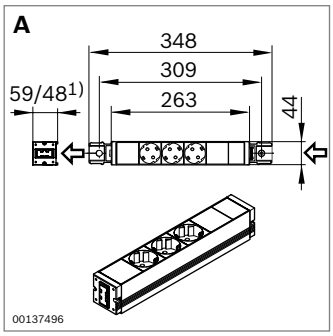
Electronic

- Glare-free light of the highest quality (Quality Class A under 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

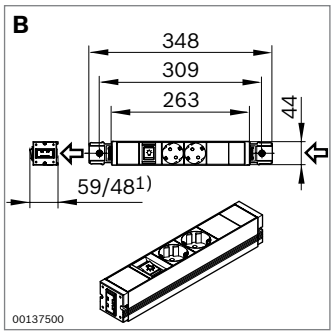
IP rating: IP 20 (DIN EN IEC 60529)
Housing material: Aluminum; anodized
Scope of delivery: includes fluorescent tubes and insulating fastening material (10 mm slot)
Required accessories: mains cable (see page 48) or, if necessary, connecting cable (see page 49)

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

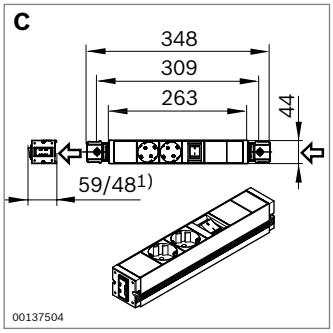
[1] VDE and ENEC test marks; [2] UL, CSA and FCC test marks



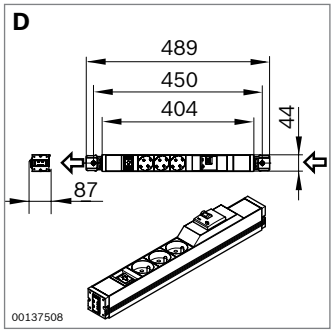
[1] Special country-specific dimensions

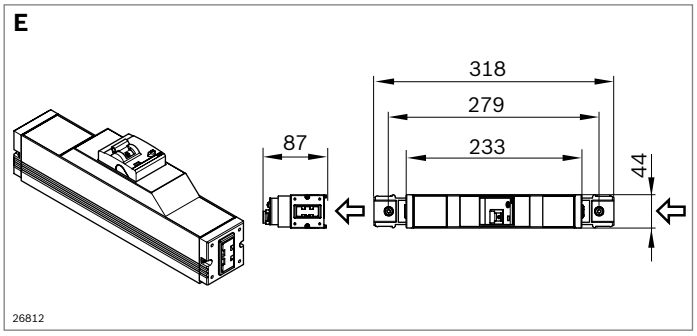


[1] Special country-specific dimensions



[1] Special country-specific dimensions





Socket strip

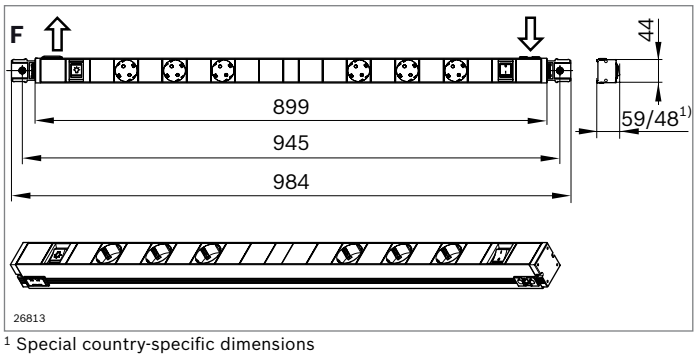
- Socket strip with two or three grounded plug sockets
- Socket insert for space-saving layout with angled plugs
- With GST outlet socket including cap for looping through the electrical current
- When connecting several products in series, observe the maximum permissible current. See the table below
- Intended for permanent installation
- Only permissible in combination with installation elements from Rexroth
- Versions with switchable input and/or output and RCD safety switch
- RCD module: $I_{\Delta n}$ = 30 mA

IP rating: IP 20 (DIN EN IEC 60529)
Material: Aluminum, anodized; insert: plastic, black

Scope of delivery: includes insulating fastening material (10 mm slot)
Required accessories: mains cable (see page 48) or, if necessary, connecting cable (see page 49)

		Country	**Current** (A)**/ voltage** (V)	**L x W x H** (mm)	**No.**
A	Socket strip	D	Max. 16 A/230 V	263x44x48	**3 842 539 842**
		F	Max. 16 A/230 V	263x44x48	**3 842 539 852**
		GB	Max. 13 A/230 V	263x44x48	**3 842 539 862**
		USA/CDN[1]	Max. 15 A/125 V	263x44x59	**3 842 539 880**
B	Socket strip, switchable output	D	Max. 16 A/230 V	263x44x48	**3 842 539 844**
		F	Max. 16 A/230 V	263x44x48	**3 842 539 854**
		GB	Max. 13 A/230 V	263x44x48	**3 842 539 864**
		CH	Max. 10 A/230 V	263 x 44 x 59	**3 842 539 872**
		USA/CDN[1]	Max. 15 A/125 V	263x44x59	**3 842 539 882**
C	Socket strip, switchable input	D	Max. 16 A/230 V	263x44x48	**3 842 539 846**
		F	Max. 16 A/230 V	263x44x48	**3 842 539 856**
		GB	Max. 13 A/230 V	263x44x48	**3 842 539 866**
D	Socket strip, switchable output, RCD	D	Max. 16 A/230 V	404x44x87	**3 842 542 060**
	$I_{\Delta n}$ = 30 mA	F	Max. 16 A/230 V	404x44x87	**3 842 539 858**
E	RCD	EU	Max. 16 A/230 V	233x44x87	**3 842 552 214**
	$I_{\Delta n}$ = 30 mA				

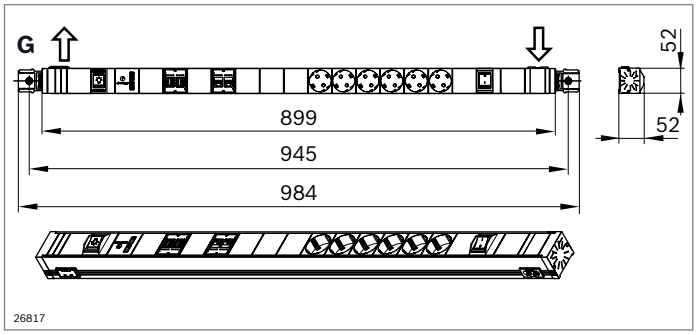
[1] UL and CSA test marks



[1] Special country-specific dimensions

Power strip (F)

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

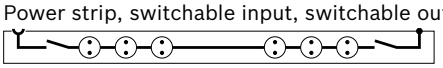
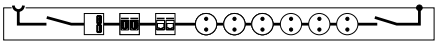


Network strip (G)

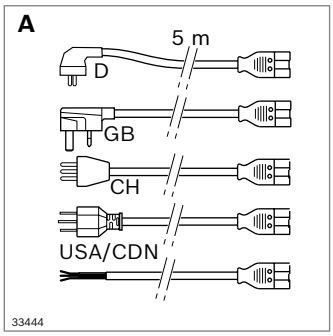
- Network strip with six grounded plug sockets and USB 3.0 socket, LAN (RJ45) port and USB charger for attachment to a strut extension (workstations with B = 990 mm)

IP rating: IP 20 (DIN EN IEC 60529)
Material: Aluminum, anodized; insert: plastic, black

Scope of delivery: includes insulating fastening material (10 mm slot)
Required accessories: mains cable (see page 48) or, if necessary, connecting cable (see page 49)

	Country	**Current** (A)**/ voltage** (V)	**L x B x H** (mm)	**No.**
F Power strip, switchable input, switchable output 	D	Max. 16 A/230 V	899x44x48	**3 842 539 850**
	F	Max. 16 A/230 V	899x44x48	**3 842 539 860**
	GB	Max. 13 A/230 V	899x44x48	**3 842 539 868**
	CH	Max. 10 A/230 V	899x44x59	**3 842 539 876**
	USA/CDN[1]	Max. 15 A/125 V	899x44x59	**3 842 539 884**
G Network strip, switchable input, switchable output 	D	Max. 16 A/230 V	899x52x52	**3 842 552 212**

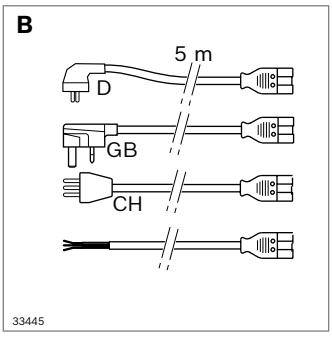
[1] UL and CSA test marks



Mains cable (A)

- Use in light industrial environments
- For connecting system lamps, socket strips or power strips
- Ready-to-use mains cable: in various country versions; for simple, secure plug-and-play installation
- Open-ended mains cable: for self-assembly; accessories: GST plug

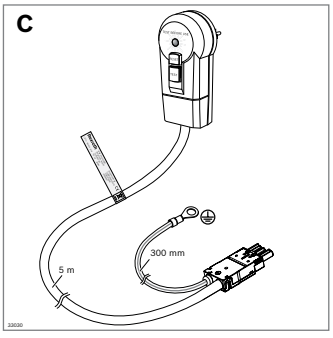
Connection cable material:
EU: PVC (H05VV-F); black
USA/CDN: PVC (SJTOW); black



HD mains cable (B)

- Use in moderate industrial environments
- For connecting system lamps, socket strips or power strips
- Ready-to-use mains cable: in various country versions; for simple, secure plug-and-play installation
- Open-ended mains cable: for self-assembly; accessories: GST plug

Connection cable material: PUR (H07BQ-F), orange



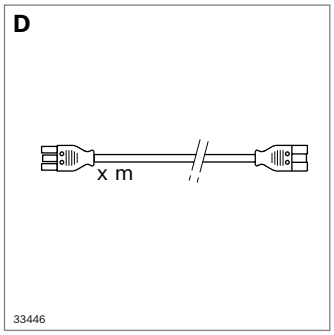
Mains cable with RCD module and PE connection (C)

- For secure connection of workstations directly from the socket
- Ready-to-use mains cable: for simple, secure plug-and-play installation
- RCD module: $I_{\Delta n}$ = 30 mA

IP rating: IP 20 (DIN EN IEC 60529)
Connection cable material: PUR (H07BQ-F); orange

	Country	**L** (m)	No.
A Mains cable	D/F	5	**3 842 517 045**
	GB	5	**3 842 522 585**
	CH	5	**3 842 523 910**
	USA/CDN[1]	5	**3 842 537 323**
	Open-ended	5	**3 842 517 201**
B HD mains cable	D/F	5	**3 842 554 183**
	GB	5	**3 842 555 603**
	CH	5	**3 842 555 605**
	Open-ended	5	**3 842 555 607**
C Mains cable with RCD module and PE connection	D/F	5	**3 842 555 600**

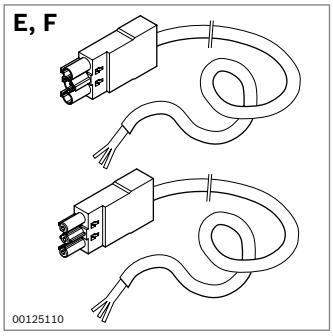
[1] UL and CSA test marks



Connection cable (D)

- For cable connections between system lamps, socket strips or power strips
- Ready-made in various country versions and lengths
- For simple and secure plug-and-play installation

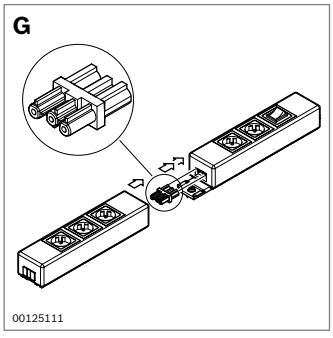
Color: Black



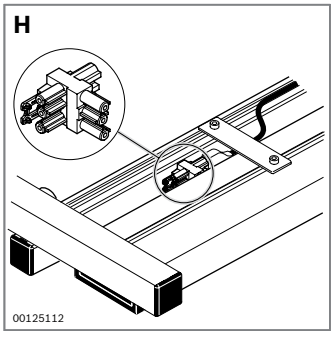
GST plug, GST socket (E, F)

- For cable self-assembly

Color: Black



Connecting plug (G)



T-plug (H)

Plug-and-socket lock (I)

- For extending connection cables to standard

GST socket locking piece (J)
GST plug locking piece (K)

	Country	L (m)		No.
D Connection cable	EU	4		**3 842 537 598**
		3		**3 842 527 207**
		2		**3 842 517 047**
		1.5		**3 842 537 123**
		1		**3 842 517 049**
		0.5		**3 842 517 051**
	USA/CDN[1]	4		**3 842 537 599**
		3		**3 842 537 558**
		2		**3 842 537 560**
		1.5		**3 842 537 562**
		1		**3 842 537 564**
		0.5		**3 842 537 566**
E GST plug			10	**3 842 517 043**
F GST socket			10	**3 842 517 044**
G Connecting plug			10	**3 842 517 055**
H T-plug			10	**3 842 532 909**
I Plug-and-socket lock				**3 842 554 181**
J GST socket locking piece				**3 842 555 621**
K GST plug locking piece				**3 842 555 622**

[1] UL and CSA test marks



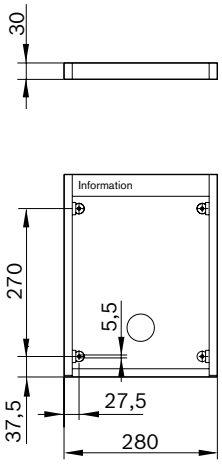
00121498

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
- A4 information board (**A**): One-sided version
- 2xA4 plus information board (**B**): Two-sided version with 4-ring mechanism, DIN A4; insert areas for notice boards
- 2xA4 EU information board (**C**): Two-sided version with 4-ring mechanism, DIN A4
- 2xA4 US information board (**D**): Two-sided version with 3-ring mechanism, Letter
- ESD version for use at ESD workstations

Frame profile material: aluminum; anodized, natural
Back panel and board material: sheet steel; powder-coated, RAL 7016 anthracite gray
powder-coated, RAL 7037 anthracite gray (ESD)
Scope of delivery: includes fastening material (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)

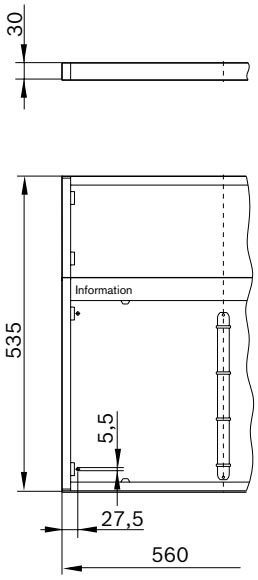
A



DIN A4 = 210 x 297 mm
DIN A5 = 148,5 x 210 mm

00138949

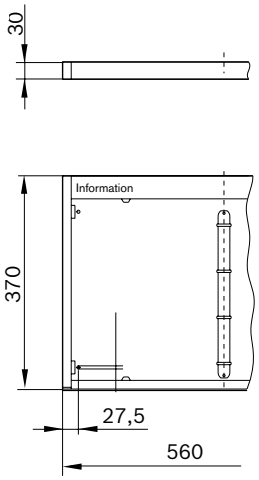
B



DIN A4 = 210 x 297 mm
DIN A5 = 148,5 x 210 mm

00138950

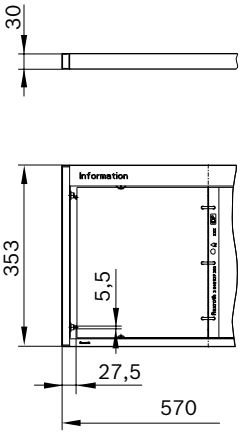
C



DIN A4 = 210 x 297 mm
DIN A5 = 148,5 x 210 mm

00138951

D



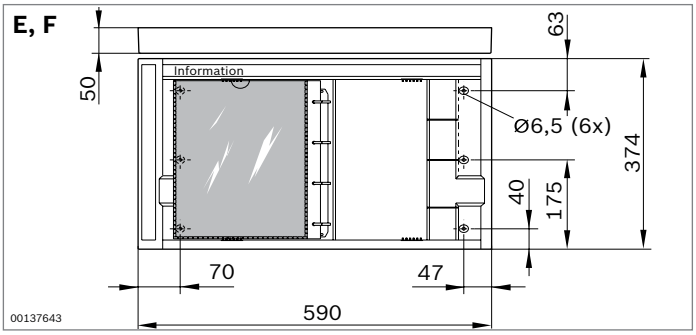
Letter (A) = 216 x 279 mm

00137644

	Country	ESD	No.
A A4 information boards	EU		**3 842 502 151**
B 2xA4 plus information boards	EU		**3 842 502 154**
C 2xA4 information boards	EU		**3 842 502 153**
		ESD	**3 842 537 870**
D 2xLetter information boards	USA	ESD	**3 842 538 789**



00121501



ISO information boards

10

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

Material: ABS; RAL 7016 anthracite gray
Scope of delivery: includes fastening material, labels in several languages, reinforced transparent plastic sleeve
Accessories: transparent plastic sleeve (see page 51)

		Country	No.
E	2xA4 ISO information boards	EU	**3 842 517 163**
F	2xLetter ISO information boards	USA	**3 842 517 164**

	Country		ESD	No.
A4 transparent plastic sleeve	EU	10		**3 842 539 838**
		10	⚠	**3 842 537 358**
Letter transparent plastic sleeve	USA	10		**3 842 539 839**
		10	⚠	**3 842 537 360**

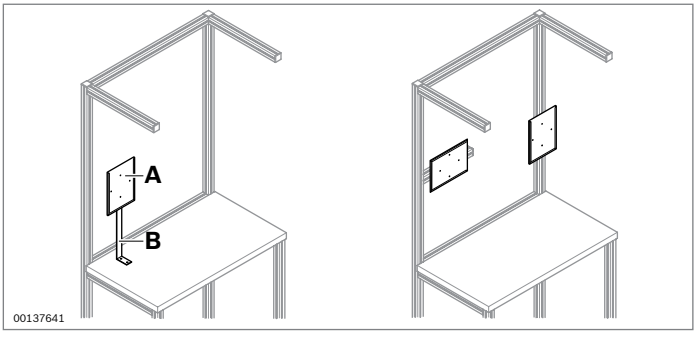
Transparent plastic sleeve

- Transparent plastic sleeve fits information board and ISO information board
- Reinforced version
- DIN A4: with 4 holes for EU version
- Letter: with 3 holes for US version
- ESD version: long-lasting conductivity Surface resistance R_{pp} = 10^4 ... 10^{11} Ω. ESD conductivity can be reduced by UV rays, heat and chemicals. A yearly check is recommended.

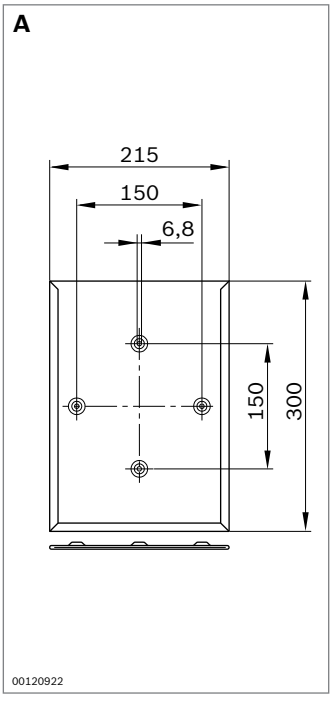
Material: PVC



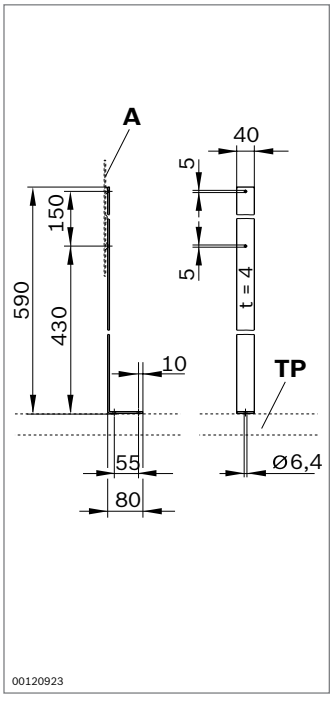
00120929



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00120922



00120923

Slide-in holder

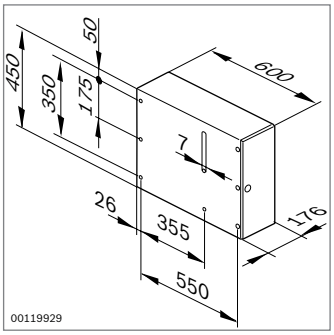
- For providing individual information sheets in DIN A4 format, e.g., work sequence cards
- Can be mounted horizontally or vertically
- Protective pane keeps information clean
- Holder for fixing to table top

Color: RAL 7035 light gray
Required accessories: bolts

	No.
A Slide-in holder	**1 845 410 015**
B Holder	**3 842 000 058**



00120929

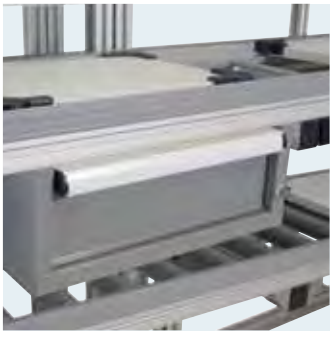


	No.
Cabinet, left-side installation	**3 842 028 621**
Cabinet, right-side installation	**3 842 028 620**

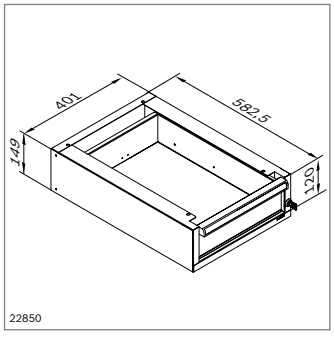
Cabinet

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

Material: sheet steel; RAL 7035 light gray
Scope of delivery: includes key
Required accessories:
M6 T-nut (3 842 530 285, see page 62);
M6x14 DIN 912 bolt;
DIN 125 washer



23079



	ESD	No.
Base drawer	ESD	**3 842 546 533**

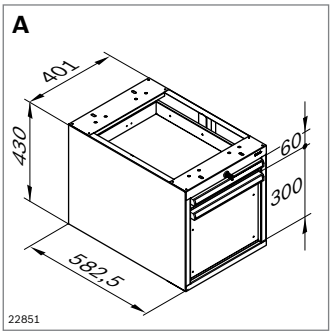
Base drawer

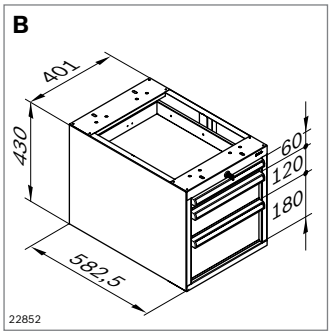
- Quiet, easy-closing drawer with ball bearing; automatic closing
- Lockable drawer
- Ergonomic aluminum handle bar with label field
- Permissible drawer load: 350 N
- ESD version
- Mounting (suspended):
  - on table frame
  - on table top

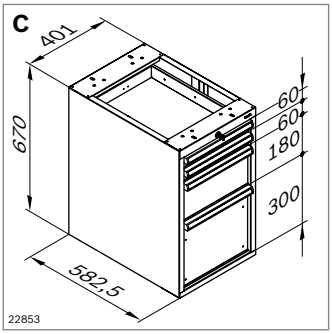
ESD material: sheet steel; RAL 7037 dusty gray
Scope of delivery: includes drilling template, fastening material, key

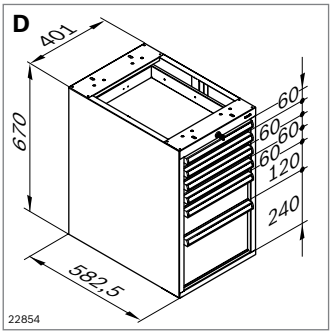


23076









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

Drawer cabinets Containers

ESD

Drawer cabinet (A, B)

- Soft-closing, easy-to-close drawers with ball bearing; automatic closing
- Ergonomic aluminum handle bar with label field
- All drawers can be locked at same time
- 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

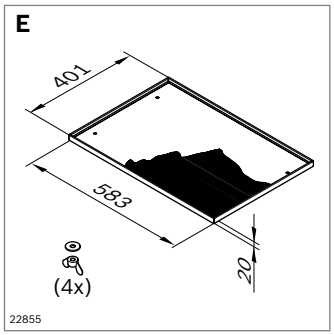
Material: sheet steel; RAL 7035 light gray
ESD material: sheet steel; RAL 7037 dusty gray
Scope of delivery: includes drilling template, fastening material, key

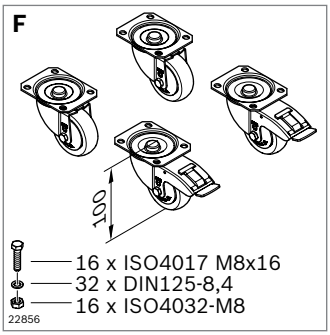
Containers (C, D)

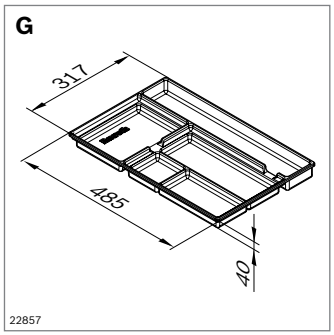
- Soft-closing, easy-to-close drawers with ball bearing; automatic closing
- Ergonomic aluminum handle bar with label field
- All drawers can be locked at same time
- Permissible load
  - Per drawer: 350 N
  - Total per container: 1300 N
- Available as ESD-conductive version
- Fitted with castors, e.g., for setting up next to workstation

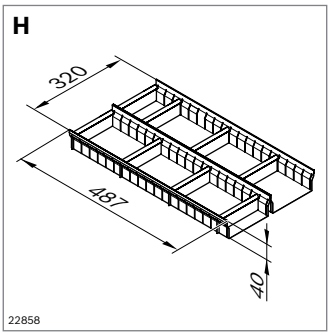
Material: sheet steel; RAL 7035 light gray
ESD material: sheet steel; RAL 7037 dusty gray
Scope of delivery: includes drilling template, fastening material, key
Required accessories: cover (**E**), castors (set) (**F**)

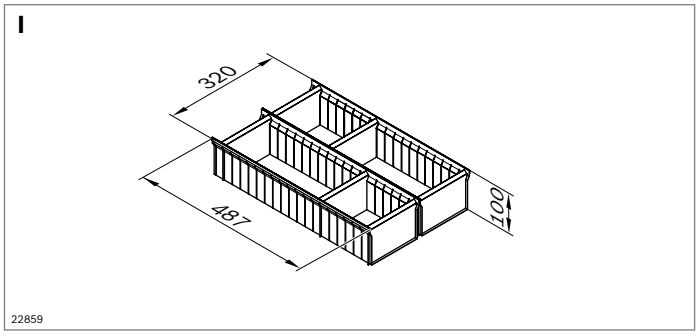
See technical data (page 198)











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: includes fastening material

Castors for container (F)
- Set of two castors and two castors with stop

Housing material: sheet steel; galvanized
Wheel body material: PP
Wheel running surface material Thermoplastic rubber
Scope of delivery: includes fastening material

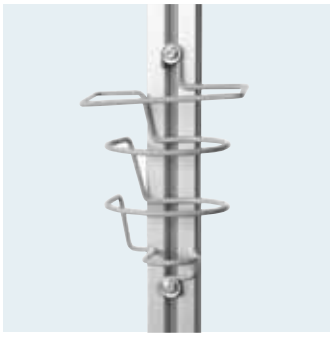
Drawer insert (G, H, I)
- Fixed arrangement (**G**)
- Variable arrangement (**H**, **I**), bending plate can be opened

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

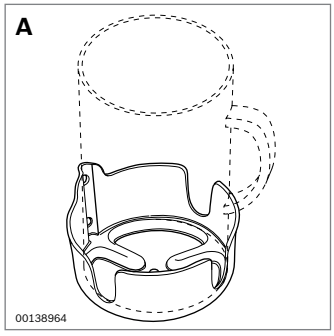
		h (mm)		ESD	No.
E	Cover for container				**3 842 546 542**
				ESD	**3 842 546 543**
F	Castors for container (castor diameter: 80 mm)		Set		**3 842 547 885**
				ESD	**3 842 546 541**
G	Drawer insert	40			**3 842 548 900**
H	Drawer insert, variable arrangement	40		ESD	**3 842 546 546**
I	Drawer insert, variable arrangement	100		ESD	**3 842 546 547**

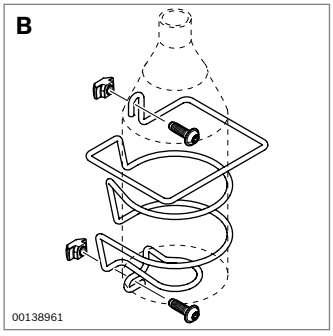


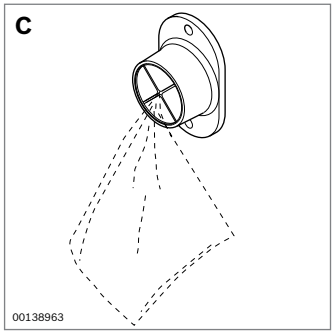
00120963

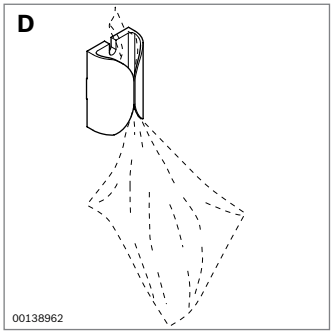


00120937









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

Holders



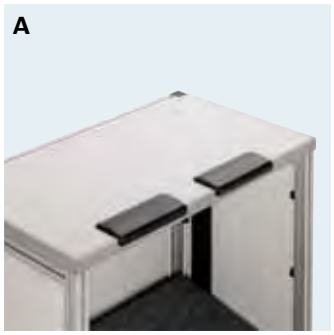
Cup holder (A)
Material: PA66; black
Required accessories: M5 T-nuts for 10 mm slot

Bottle holder (B)
- Accommodates bottles and rectangular drink cartons

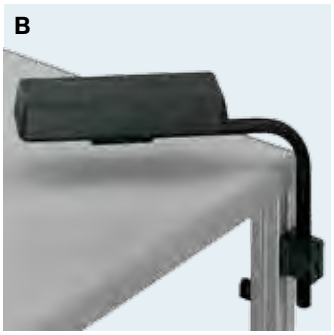
Material: steel wire; powder-coated; RAL 7037 light gray
Scope of delivery: includes fastening material (10 mm slot)

Cloth holder (C, D)
- For hanging cleaning cloths
- Cloth holder D with clamp base for direct assembly on strut profile with 10 mm slot

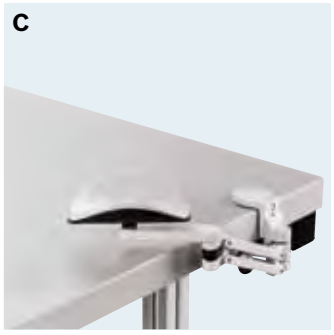
Color: black
Required accessories (for **C**):
M5 T-nuts for 10 mm slot;
M5x12 8.8 DIN 7984 bolts



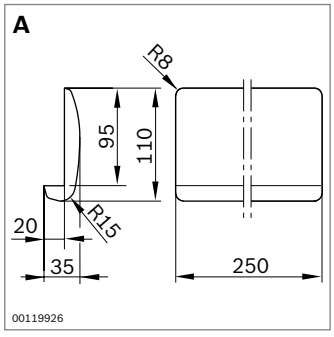
00120932



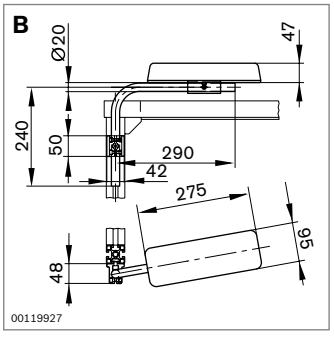
6820



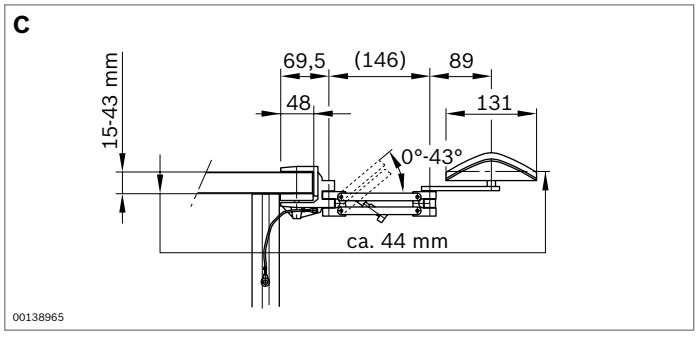
00120935



00119926



00119927



00138965

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

Armrest

ESD

Armrest (A)

- Soft support pads protect wrists and arms
- ESD version: Conductive. ESD conductivity can be reduced by UV rays, heat, wear and chemicals. A yearly check is recommended.

Material: flexible PUR foam; black
Required accessories: double-sided tape (copper tape for ESD version) for fixing to table top

Adjustable armrest (B)

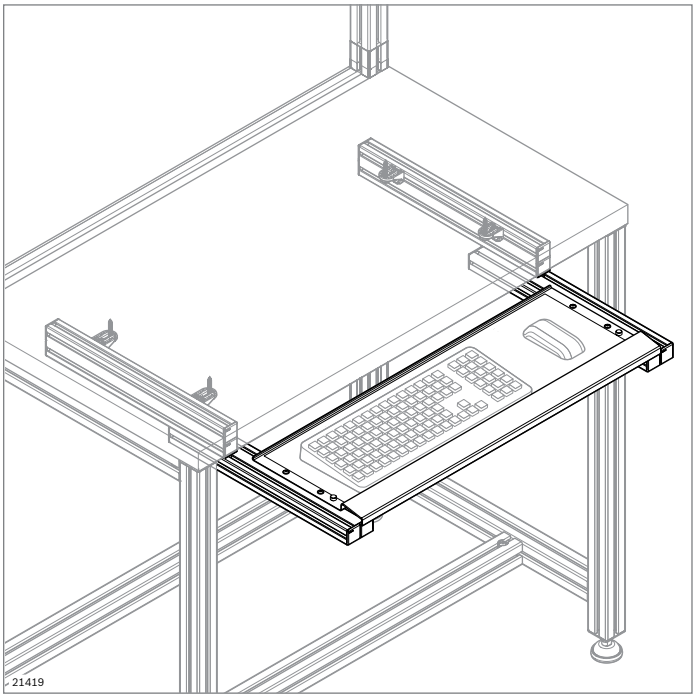
- Relieves arm strain during assembly work
- Fastened to table frame; suitable for all Rexroth box-type workstations

Pad material: flexible PUR foam; black
Scope of delivery: includes fastening material (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

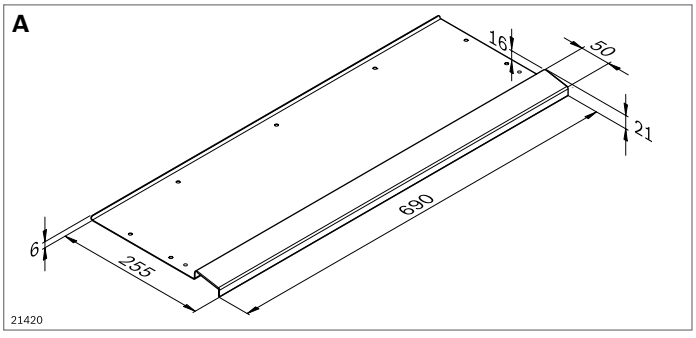
Pad material: leather; white
ESD pad material: leather; black



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
- Liner mat (**C**) for an extra non-slip surface

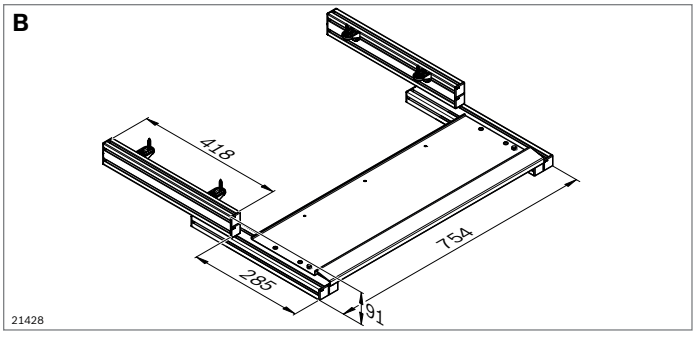
Material: sheet steel; powder-coated; RAL 7035 light gray
Liner mat material: EPDM

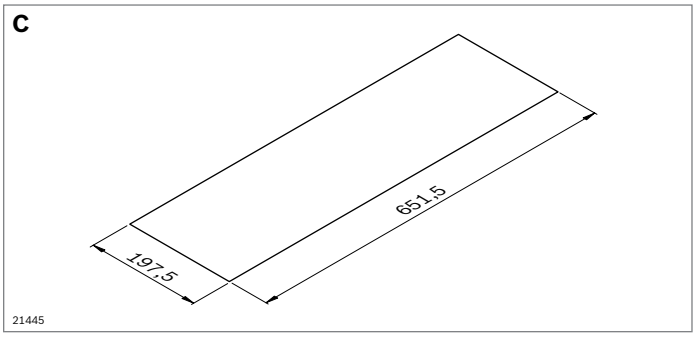


Pull-out keyboard shelf with rail (B)

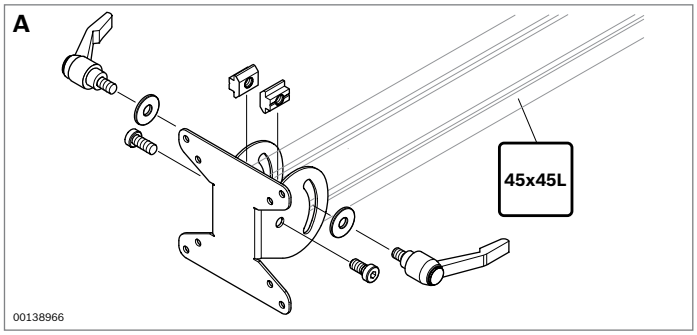
- Pull-out keyboard shelf with rail for installation underneath a table top
- Suitable for table frames with profiles:
  - 40x40: B ≥ 926 mm; T ≥ 518 mm
  - 45x45: B ≥ 946 mm; T ≥ 523 mm
  - 60x60: B ≥ 1008 mm; T ≥ 538 mm
- Liner mat (**C**) for an extra non-slip surface

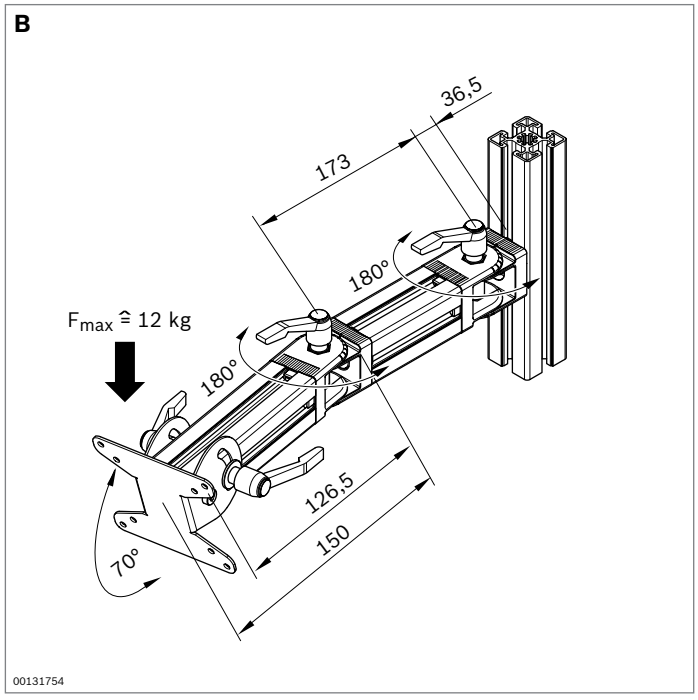
Keyboard shelf material: sheet steel; powder-coated; RAL 7035 light gray
Pull-out rail material: aluminum
Liner mat material: EPDM
Scope of delivery: includes fastening material for mounting underneath the table top





		ESD	No.
A	Keyboard shelf (separate)	⚠	**3 842 546 750**
B	Pull-out keyboard shelf with rail		**3 842 544 793**
C	651x197x2 liner mat	⚠	**3 842 546 751**





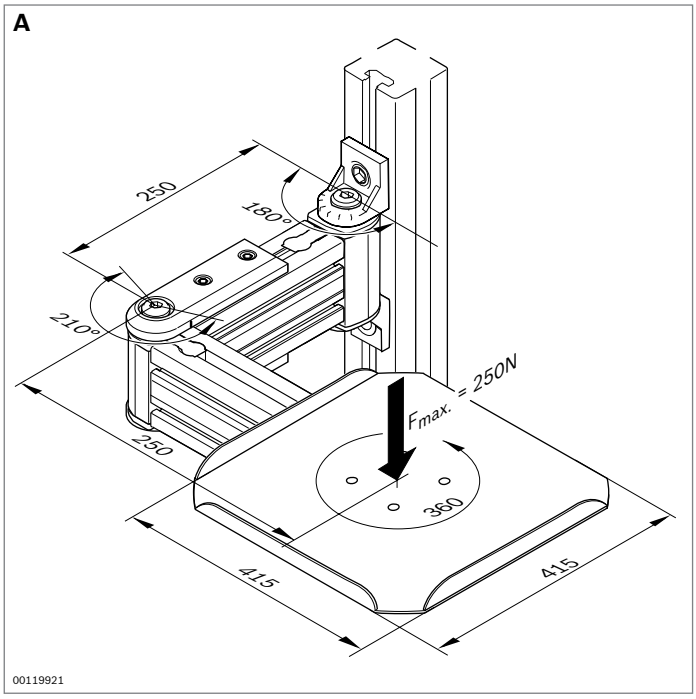
		No.
A	TFT monitor bracket	**3 842 539 840**
B	TFT monitor bracket with supporting arm	**3 842 539 806**

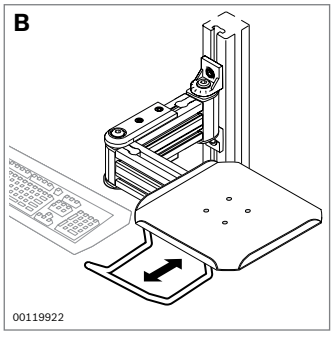
TFT monitor bracket

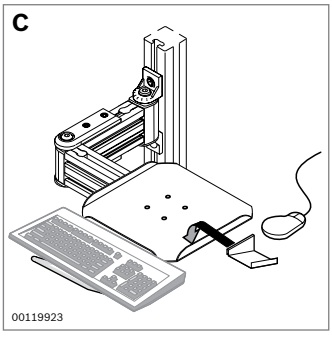


- TFT monitor bracket (**A**) with VESA hole pattern (75x75 mm and 100x100 mm) for mounting a TFT monitor on a 45x45L profile
- Swivel range: 70°
- TFT monitor bracket with supporting arm (**B**) can be swiveled and horizontally adjusted. Enables ergonomically ideal positioning of the screen.

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







		No.
A	Supporting arm	**3 842 521 970**
B	Keyboard shelf	**3 842 522 305**
C	Mouse holder	**3 842 522 130**

Supporting arm



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

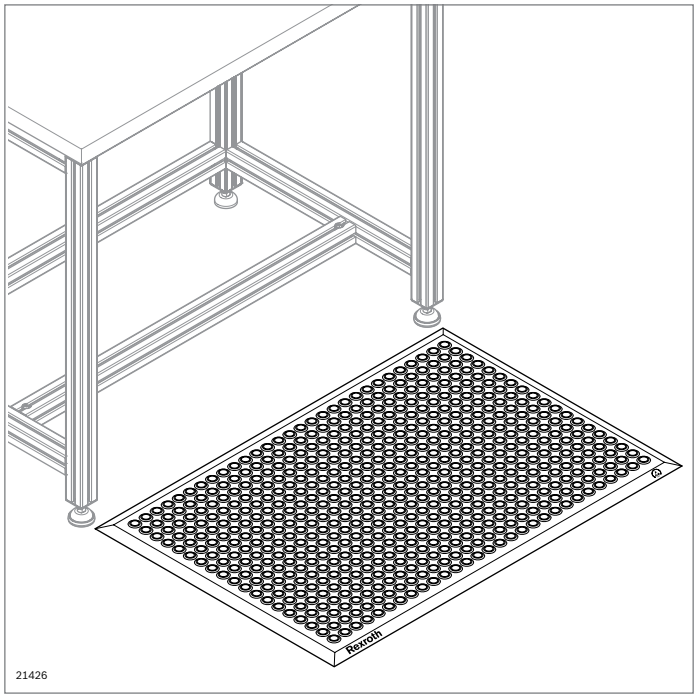
Scope of delivery: includes fastening material (10 mm slot)

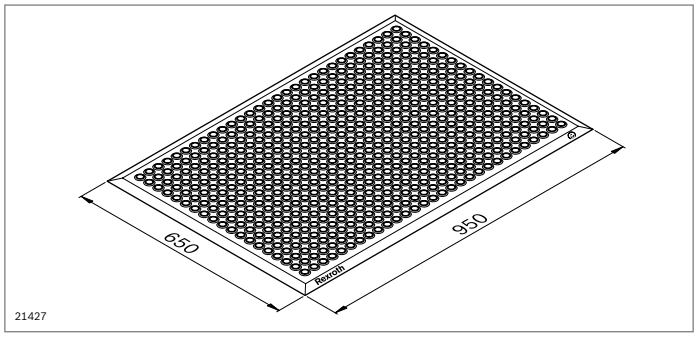
Keyboard shelf

- Extendable
- Suspends on supporting arm

Mouse holder

- Suspends on supporting arm





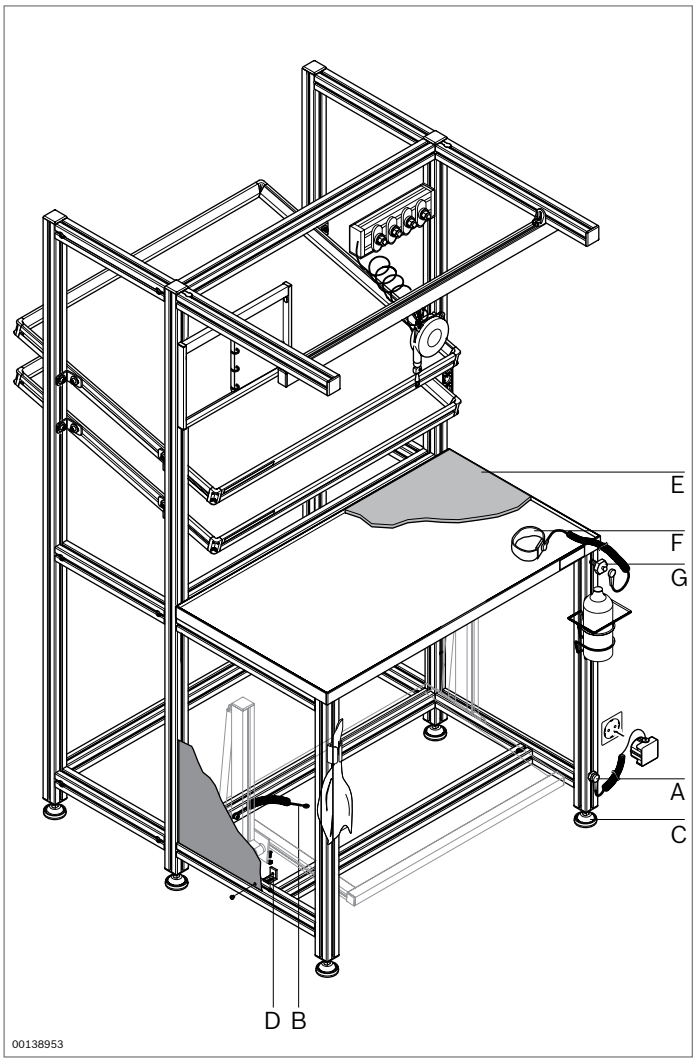
	ESD	No.
Ergonomic mat	ESD	**3 842 544 789**

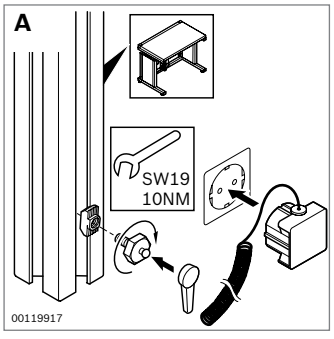
Ergonomic mat

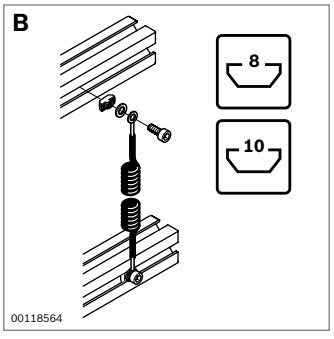
ESD

- 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
R_{gp} < 1 x 10^9 Ω (DIN EN 61340-5-1)







Components for ESD applications

Set of grounding components (A)

- For defined grounding of ESD workstations
- Conduction resistance R = 1 x 10^6 Ω (DIN EN 61340-5-1)

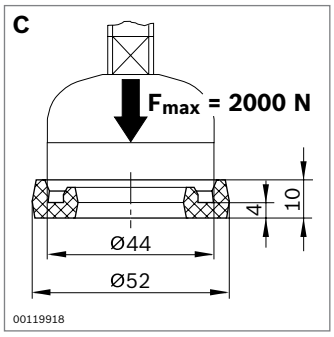
Scope of delivery: includes fastening material (10 mm slot)

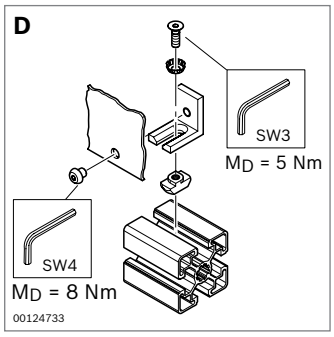
Grounding cable (B)

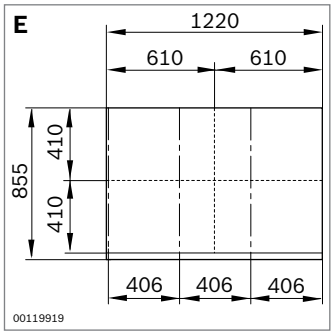
- To create defined conductive paths between strut profiles to protect ESD-sensitive components
- Total length 1200 mm

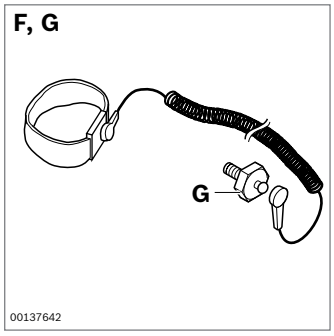
Scope of delivery: includes fastening material
(10 mm slot/10 mm slot)
(10 mm slot/8 mm slot)

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









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.
- Bleeder resistance R_{gp}/R_{pp} = 10^4 ... 10^9 Ω (DIN EN 61340-5-1)

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: M6 T-nuts for 10 mm slot



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.

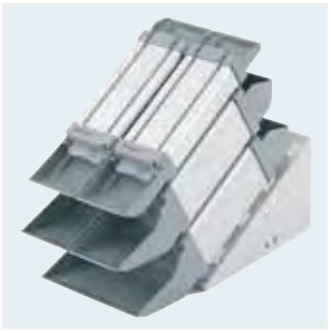
Plastic grab containers

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.

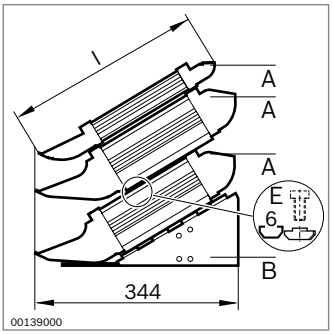
Lettering clips for content labeling are included as accessories. Container mounts and the grab container rack are also available for optimally positioning the plastic grab containers.



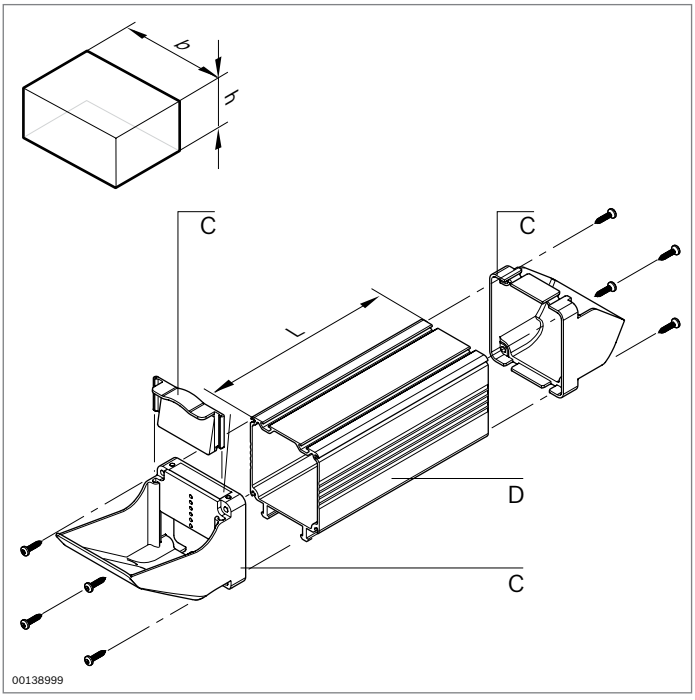
66 Vario grab containers
67 Hoppers
68 Grab containers
69 Grab trays
69 Container mount
70 Lettering clip
70 Grab container rack application
71 Grab ledge



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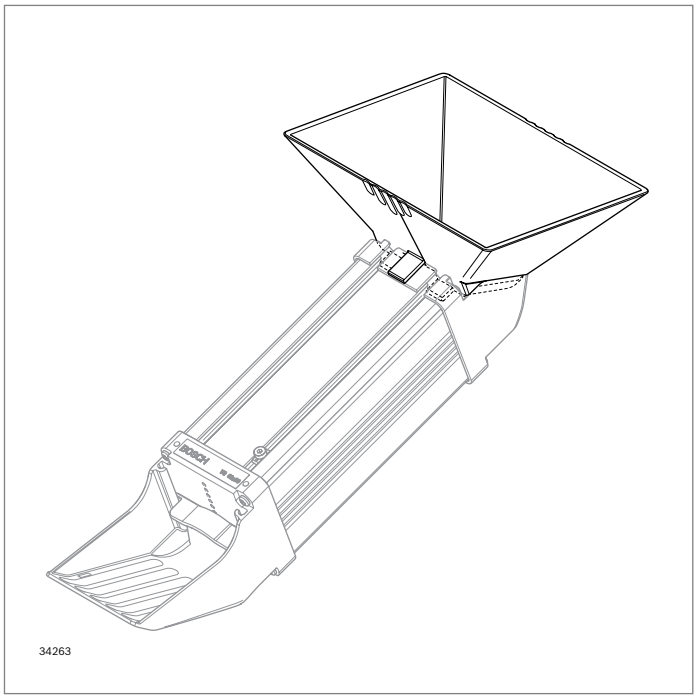
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Vario grab containers

- 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)
- Sturdy, compact stacking for reduced space requirements
- Vario grab containers in three 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 (similar to RAL 7035)
Material chute material: aluminum; anodized
Grab container base material: sheet steel; RAL 7035 light gray

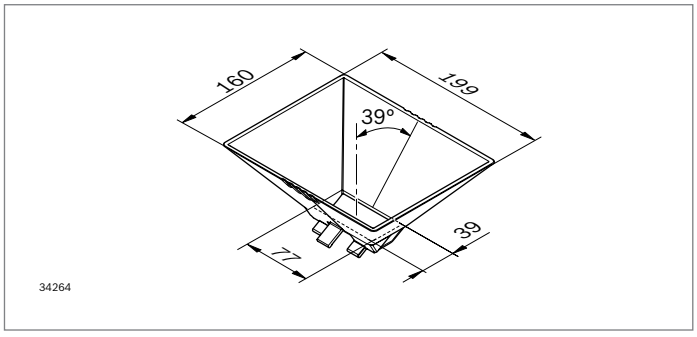
		b x h (mm)	**b x h x l** (mm)	**L** (mm)	**Capacity** (cm^3)	**Weight** (kg)			**No.**
A	Vario grab containers		90x45x333		500	2.5			**3 842 526 621**
			90x90x375		1300	5.0			**3 842 526 622**
			180x90x375		2900	10.0			**3 842 526 623**
B	Grab container base		90x149x315						**3 842 526 660**
			180x149x315						**3 842 526 665**
C	Grab ledge and refill end-piece	90x45							**3 842 526 626**
		90x90							**3 842 526 627**
		180x90							**3 842 526 628**
D	Material chute	90x45		50 ... 3000					**3 842 993 071/L**
				3000			3		**3 842 526 671**
		90x90		50 ... 3000					**3 842 993 072/L**
				3000			3		**3 842 526 672**
		180x90		50 ... 3000					**3 842 993 073/L**
				3000			3		**3 842 526 673**
E	M5 sliding block (6 mm groove)							100	**3 842 523 142**



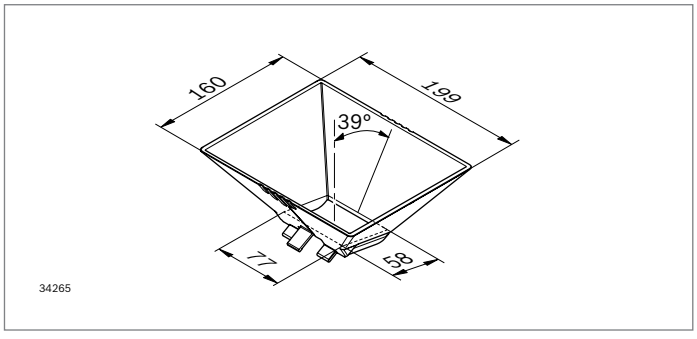
Hoppers

- Hopper for installing on Vario grab container
- Docking aids on the hopper make it easier to ergonomically fill the Vario grab container with small parts
- Available for sizes 90x45, 90x90 and 180x90
- Easy installation and removal

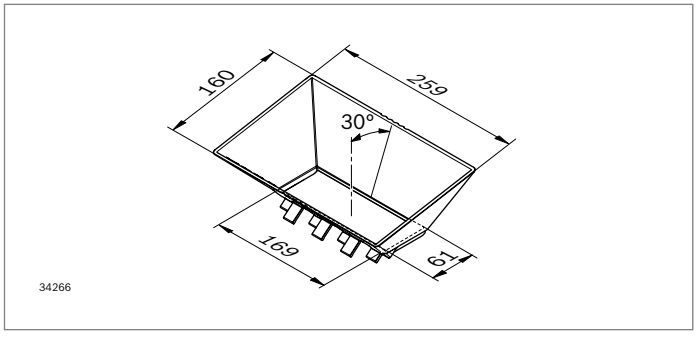
Material: ABS plastic; light gray (similar to RAL 7035)



		No.
90x45 hopper	1	**3 842 557 433**



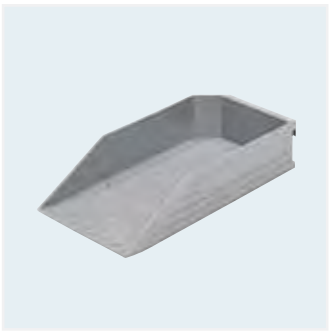
		No.
90x90 hopper	1	**3 842 557 434**



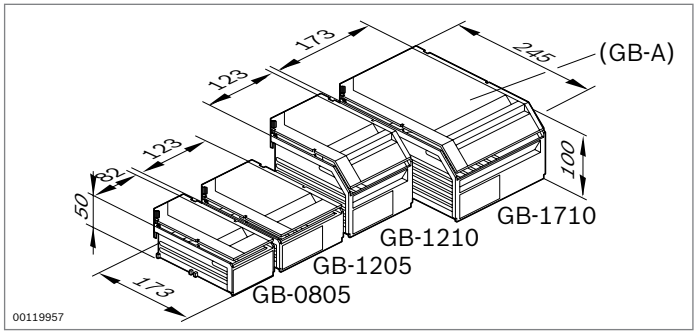
		No.
180x90 hopper	1	**3 842 557 435**



00121491



00120996



00119957

Grab containers

- Ready access to small parts at the workstation or in the material shuttle
- Ergonomically designed surface for easy and secure grabbing
- Can be combined with grab ledge and cover
- Red grab container for rejects and defective parts

Material: ABS plastic

Cover

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

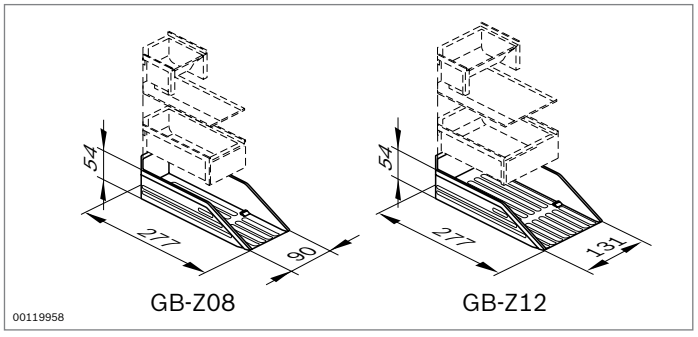
Standard material: PC plastic
ESD material: ABS plastic

Cover	Color	ESD	No.
GB-A0805	Transparent		**3 842 344 756**
	Black[1]		**3 842 346 286**
GB-A1205	Transparent		**3 842 344 757**
	Black[1]		**3 842 346 287**
GB-A1210	Transparent		**3 842 344 758**
	Black[1]		**3 842 346 288**
GB-A1710	Transparent		**3 842 344 759**
	Black[1]		**3 842 346 289**
GB-A1710	Red[2]		**3 842 557 478**

[1] R_{gp}/R_{pp} = 10^4 ... 10^9 Ω; [2])R_{gp}/R_{pp} = 10^8 ... 10^{12} Ω

Grab container	Color	ESD	No.
GB-805	Light gray		**3 842 344 750**
	Black[1]		**3 842 346 280**
GB-1205	Light gray		**3 842 344 751**
	Black[1]		**3 842 346 281**
GB-1210	Light gray		**3 842 344 752**
	Black[1]		**3 842 346 282**
GB-1710	Light gray		**3 842 344 753**
	Black[1]		**3 842 346 283**
GB-1710	Red[2]		**3 842 555 685**

[1] R_{gp}/R_{pp} = 10^4 ... 10^9 Ω; [2])R_{gp}/R_{pp} = 10^8 ... 10^{12} Ω



00119958

Grab ledge	Color	ESD	No.
GB-Z08	Light gray		**3 842 344 760**
	Black[1]		**3 842 346 290**
GB-Z12	Light gray		**3 842 344 761**
	Black[1]		**3 842 346 291**

[1] R_{gp}/R_{pp} = 10^4 ... 10^9 Ω

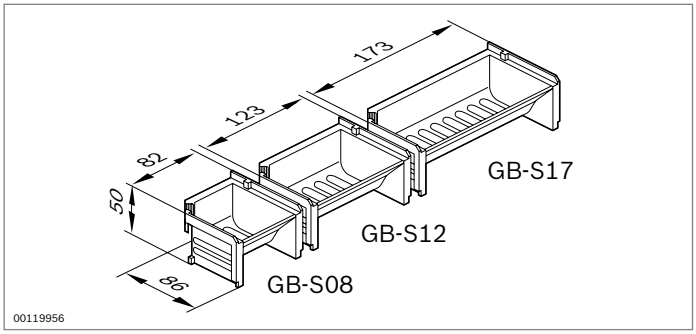
Grab ledges

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

Material: ABS plastic



00120994



00119956

Grab trays

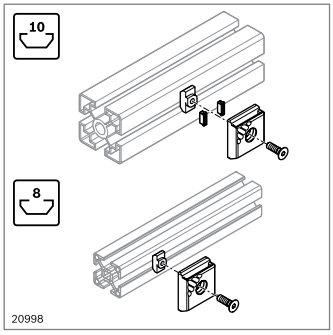
- Space-saving supply of small parts, e.g., underneath the material feed
- Integrated lip for easier removal of small parts
- Mounted on suspension profile (see page 184) or container mount

Material: ABS plastic

Grab tray	Color	ESD	No.
GB-S08	Light gray		**3 842 344 764**
	Black	ESD	**3 842 346 294**
GB-S12	Light gray		**3 842 344 765**
	Black	ESD	**3 842 346 295**
GB-S17	Light gray		**3 842 344 766**
	Black	ESD	**3 842 346 296**



22032

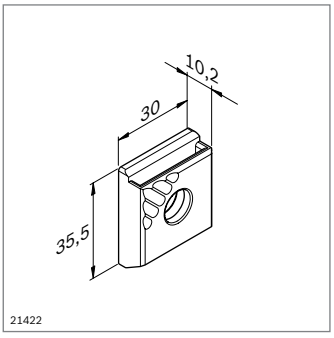


20998

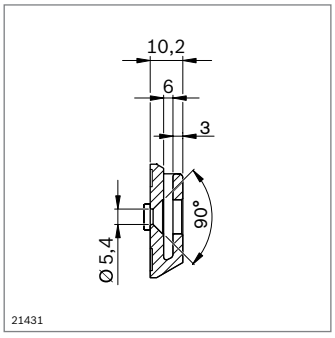
Container mount

- Container mount for mounting 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	ESD	**3 842 544 797**



00121025

Lettering clip

10

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

		No.
Lettering clips (incl. labels)	10	**3 842 536 127**



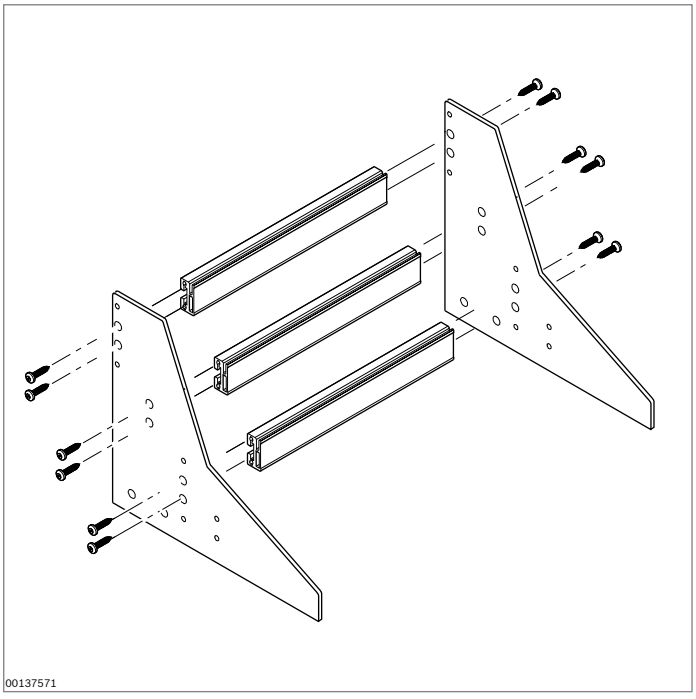
00121001



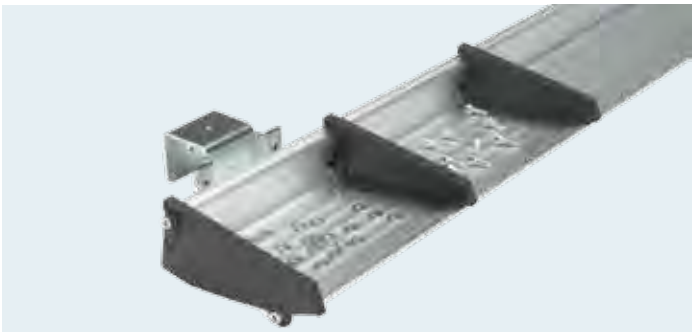
00121004

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” section (see page 176)



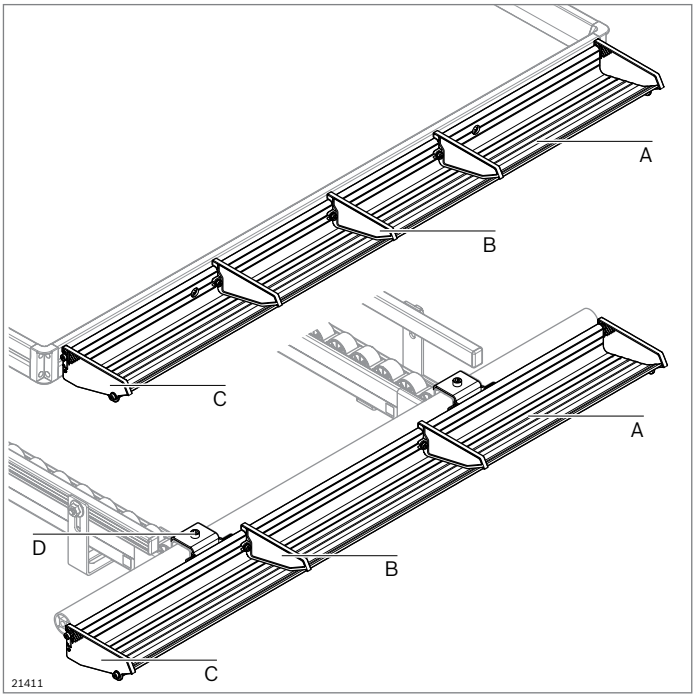
00137571

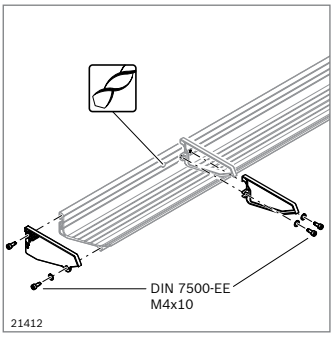


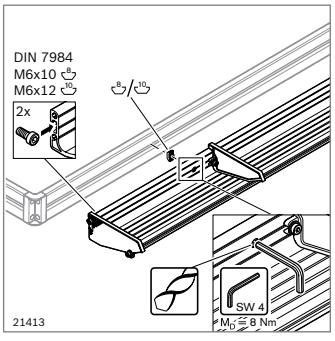
22036

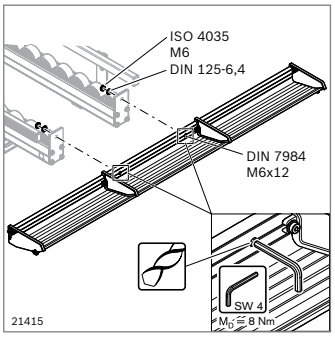
Grab ledge

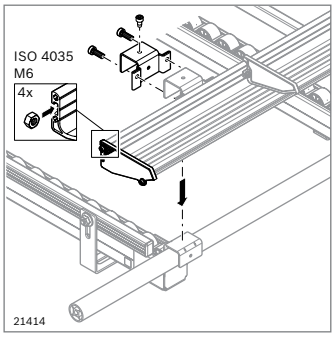
- Ergonomic, handy supply of small parts such as screws, nuts, and washers
- For fitting to material shelves or conveyor tracks to separate a mixed parts supply on an ergonomically designed picking surface
- Fast, secure picking
- Self-assembly elements for the individual assembly of grab ledges with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

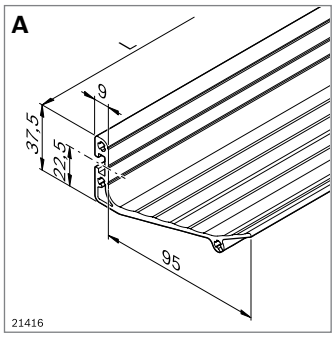








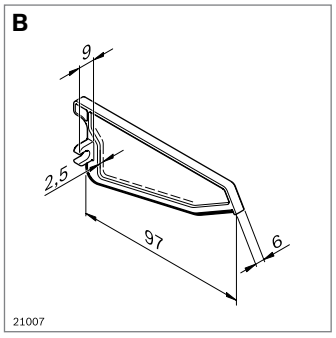




- Grab ledge with grooved surface for ergonomic, fast, and secure picking

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

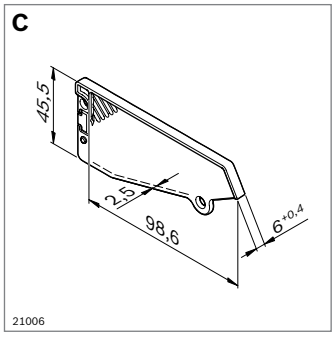
		L (mm)		ESD	No.
A	Grab ledge	855	2		**3 842 544 774**
		855	2		**3 842 546 747**



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

Material: PA 66; black
Scope of delivery: includes fastening material

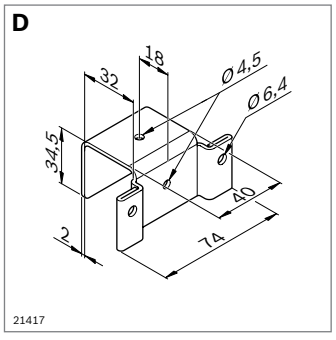
			ESD	No.
B	Partition wall	10		**3 842 544 776**



- Stop plate for end of grab ledge

Material: PA 66; black
Scope of delivery: includes fastening material

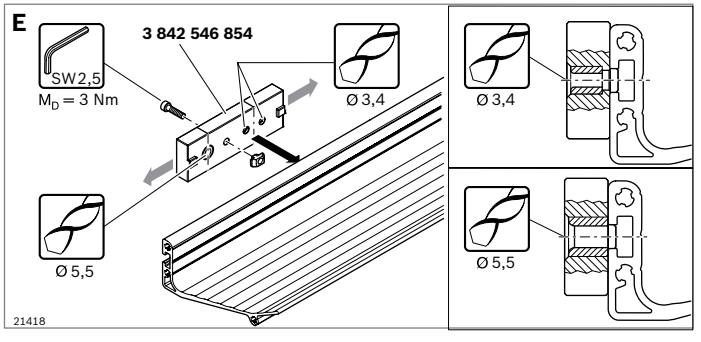
			ESD	No.
C	Stop plate	4		**3 842 544 778**



- 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: includes fastening material

			ESD	No.
D	Terminal bracket	2		**3 842 544 780**



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

Scope of delivery: includes fastening material

		No.
E	Drilling template	**3 842 546 854**



Dynamic sitting – ergonomic and functional

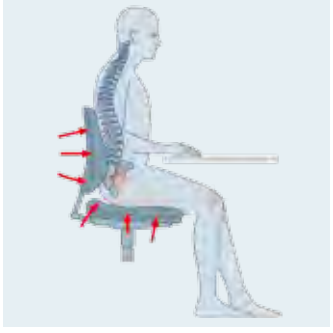
Ergonomic and healthy sitting on the job greatly enhances employee performance.

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:
https://www.boschrexroth.com/en/xc/products/product-groups/assembly-technology/manual-production-systems/workstation/swivel-work-chairs/index









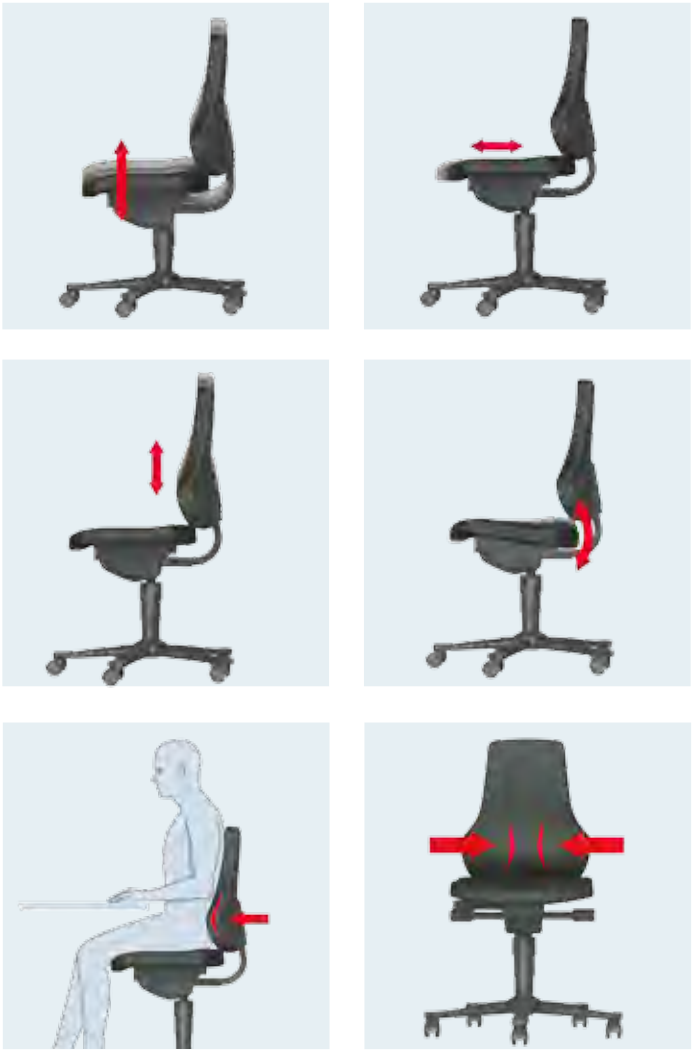


80 Swivel work chairs
85 Accessories

Healthy siting – 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.



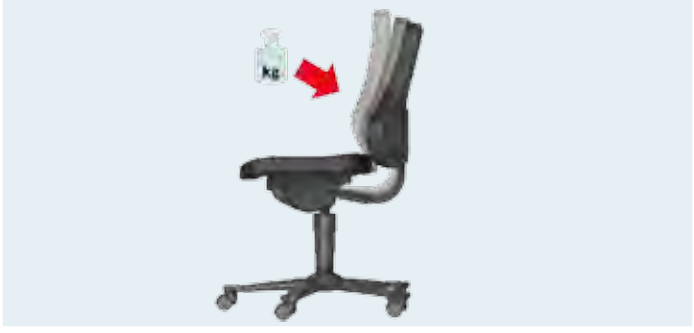
Seat height and depth adjustment
- Adjustment of seat height to employee's height for good posture and circulation
- Setting an optimal seating position for a leg angle of 90 degrees
- Adjusting the chair to the leg length by changing the seat depth

Backrest height and seat tilt adjustment
- Optimal 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 optimal 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



Seat height
Seat angle



Seat height
Seat depth
Seat angle
Backrest height



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



Height-adjustable foot support
Seat height
Backrest height



Washable seat and backrest upholstery



Conductive material version
in accordance with DIN EN 61340-5-1,
suitable for ESD-sensitive areas



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



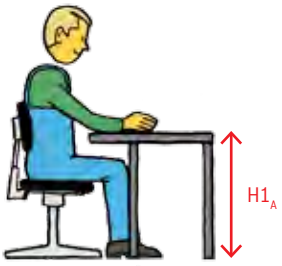
Suitable for cleanrooms in accordance with DIN EN ISO 14644-1

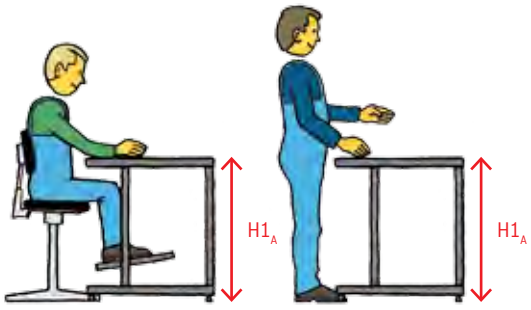


This product complies with the requirements of the German Equipment and Product Safety Act (GPSG)

Ordering guide

Sit-down workstations **Sit-down/stand-up workstations** **Stand up/moving workstations**





$H1_A$ = 720 mm | 800 mm | 900 mm | 1070 mm



Basic
3 842 546 760



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



Stool
3 842 546 776

Basic
3 842 546 761

Dynamic PU
3 842 546 763

Dynamic synthetic leather
3 842 546 765



Dynamic textile
3 842 546 767

Dynamic ESD
3 842 546 769

Dynamic clean
3 842 527 162



20418



20417

Basic	Version	Seat height (mm)	No.
Low	Castors	410 ... 570	**3 842 546 760**
High	Sliders	560 ... 810	**3 842 546 761**

According to DIN 68877, 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
Castors: soft PP; suitable for hard industrial flooring

Accessories: circular footrest (see page 85)



20423

Stool	Version	Seat height (mm)	No.
	Rounded base	580 ... 860	**3 842 546 776**

Stool

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

Material:
Seat: PU foam; black
Rounded base: steel



20413



20412

Dynamic PU	Version	Seat height (mm)	No.
Low	Castors	460 ... 610	**3 842 546 762**
High	Sliders	580 ... 820	**3 842 546 763**

According to DIN 68877, a work chair whose seat height is adjustable above 650 mm must be equipped with a circular footrest or foot support.

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
Castors: soft PP; suitable for hard industrial flooring

Accessories: Foot support, circular footrest, armrest (see page 85)



20420



20419

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
Castors: soft PP; suitable for hard industrial flooring
Accessories: Foot support, circular footrest, armrest (see page 85)

Dynamic synthetic leather	Version	Seat height (mm)	No.
Low	Castors	460 ... 610	**3 842 546 764**
High	Sliders	580 ... 820	**3 842 546 765**

According to DIN 68877, a work chair whose seat height is adjustable above 650 mm must be equipped with a circular footrest or foot support.



20422



20421

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
Castors: soft PP; suitable for hard industrial flooring
Accessories: Foot support, circular footrest, armrest (see page 85)

Dynamic textile	Version	Seat height (mm)	No.
Low	Castors	460 ... 610	**3 842 546 766**
High	Sliders	580 ... 820	**3 842 546 767**

According to DIN 68877, a work chair whose seat height is adjustable above 650 mm must be equipped with a circular footrest or foot support.



20416



20415

Dynamic ESD	Version	Seat height (mm)	ESD	No.
Low	Castors	460 ... 610		**3 842 546 768**
High	Sliders	580 ... 820		**3 842 546 769**

According to DIN 68877, a work chair whose seat height is adjustable above 650 mm must be equipped with a circular footrest or foot support.

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 ... 10^8 Ω

Material:
Seat and backrest: breathable cover with woven stainless steel fibers; black
Star chair base: steel
Castors: soft PP; suitable for hard industrial flooring
Accessories: Foot support, circular footrest, armrest
(see page 85)



20411



20410

Dynamic clean	Version	Seat height (mm)	No.
Low	Castors	510 ... 650	**3 842 527 161**
High	Sliders	650 ... 910	**3 842 527 162**

According to DIN 68877, a work chair whose seat height is adjustable above 650 mm must be equipped with a circular footrest or foot support.

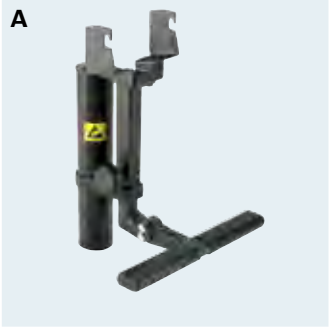
Dynamic clean



- 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
  - Cleanroom (ISO Class 4)
  - Electrical and electronics production
  - Conduction resistance: 10^6 Ω

Material:
Seat and backrest: electrically conductive leather; anthracite gray
Star chair base: aluminum
Scope of delivery for dynamic clean high: includes height-adjustable foot support

A



20377

B



20382

C



20381

			ESD	No.
A	Foot support			**3 842 546 772**
			⚠	**3 842 546 775**
B	Circular footrest			**3 842 546 773**
C	Armrests	Set		**3 842 557 271**
		Set	⚠	**3 842 557 272**

Accessories

DIN 68877

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 68877, 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, dynamic textile and dynamic ESD
- Setting options: height, width and projection angle

Scope of delivery: includes fastening material



Reduce your stocks 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 MT*pro* 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).



88 Flow rack systems
XLean
Lean
EcoFlow
96 Conveyor tracks
XLean
Lean
108 Transport guide
110 Cross ties
112 Lettering clips

Flow rack systems

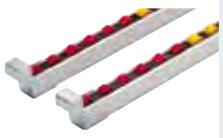
When designing your flow rack system, it is essential to know which materials will be supplied in what quantity and in which containers. The number of parts and containers, their type, their dimensions and their weight all need to be taken into account.

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 MT*pro*.

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
		
		
Cost-effective solution	Colored rollers for inventory visualization (Kanban)	Heavy loads, for blister packs and cardboard boxes



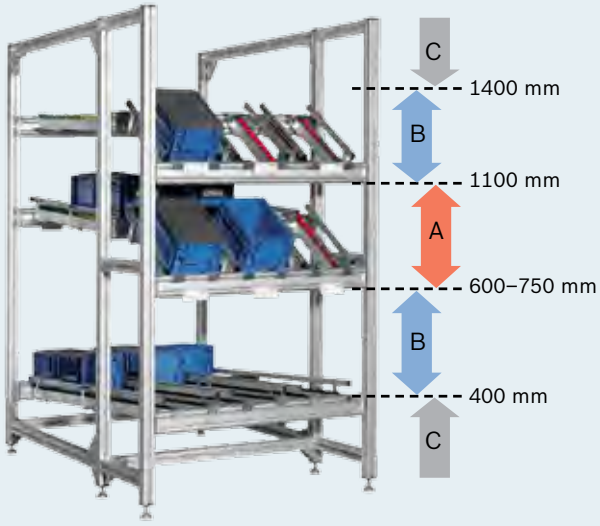
precise manner. The containers cannot slip or get swapped because the tracks are adjusted to the particular container being transported.

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

Ergonomics

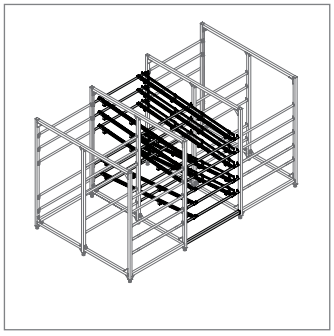
The container weight, the type of activity involved and the overall strain placed on the worker during a shift are the key factors in ergonomically designing a flow rack system. During configuration you need to consider the different body sizes of your workers so that as many of them as possible can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

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.



Recommended working heights:
A: higher container weight, B: lower container weight
C: occasional handling

For flow rack system design and planning, we recommend MT*pro*! See pages 12 and 13 for more information.



00126525

◀ **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.**

ESD

◀ **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.**

XLean flow rack



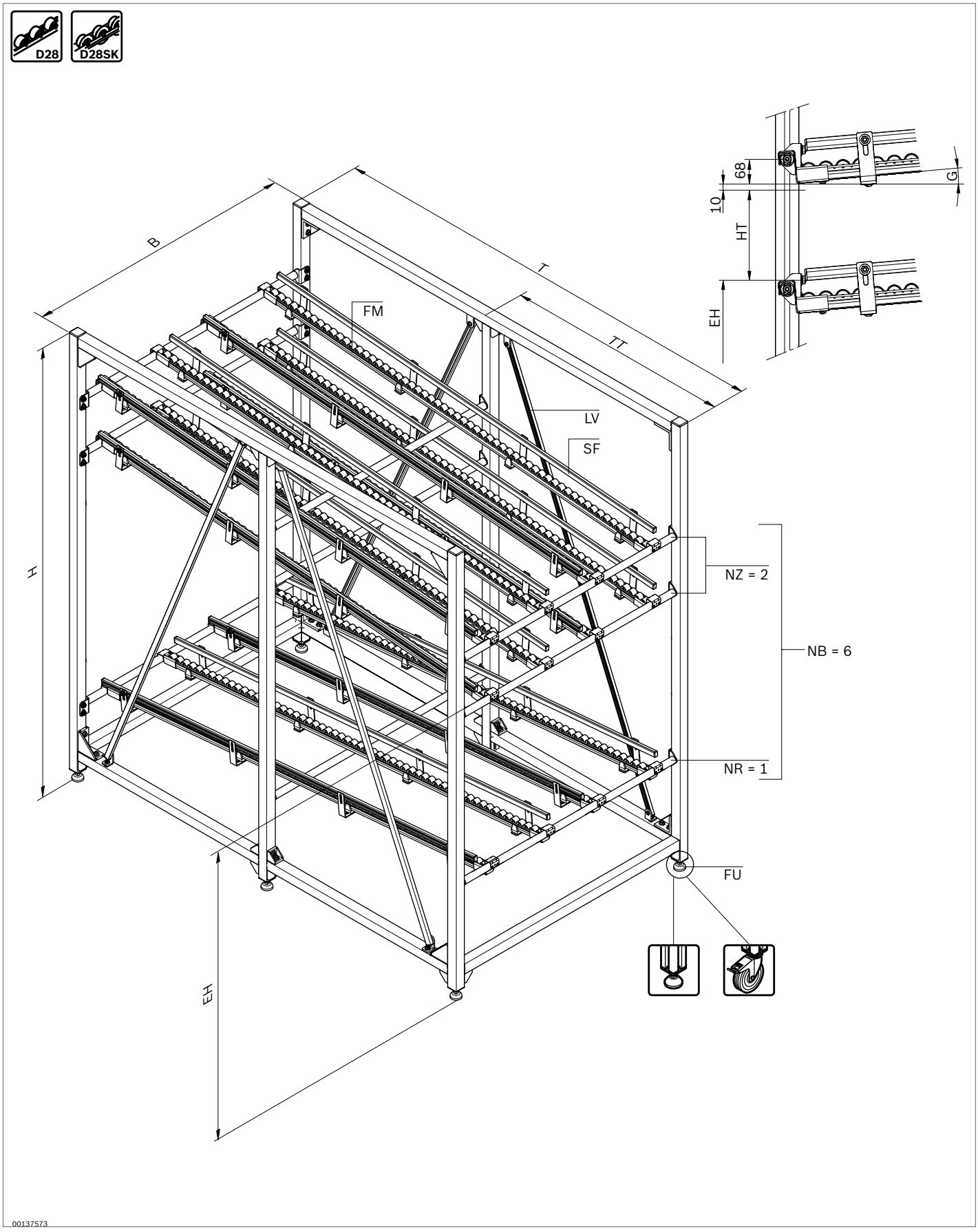
00127214

- 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 MT*pro*! See pages 12 and 13 for more information.

See also technical data (page 201 ff.)

XLean flow rack		**3 842 998 249**
Type	Number of side elements	0, 1, 2
ESD	Conductivity	Yes, no
FU	Foot type	Leveling foot, castor
A	Version	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 d = 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


D28
D28SK
B
T
TT
H
FM
LV
SF
NZ = 2
NB = 6
NR = 1
FU
EH
68
10
HT
G
EH
00137573

Lean flow rack



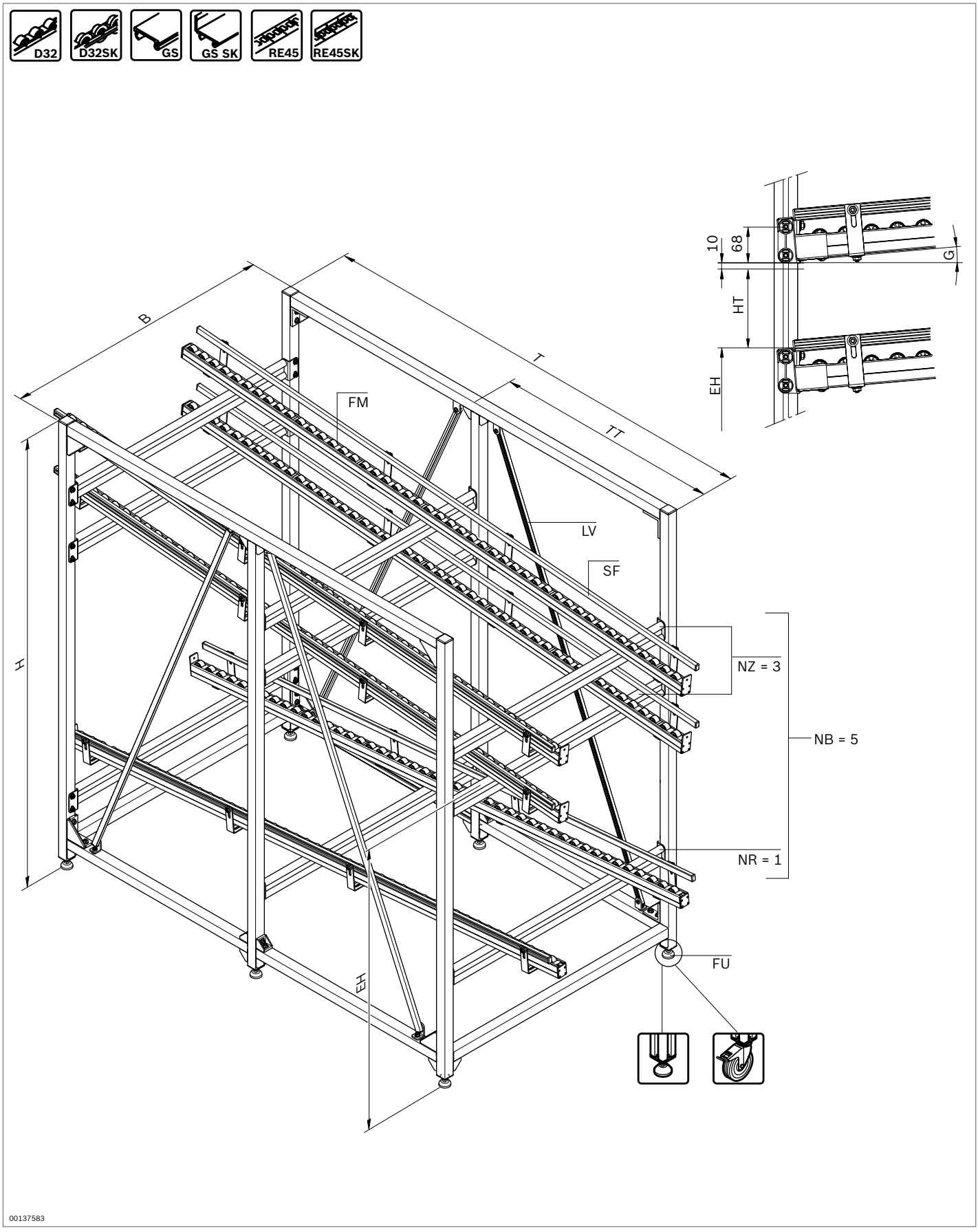
00120898

- Material supply in the supermarket or directly at the workstation
- Selection of various conveyor media allows for maximum flexibility and diverse combination options: rollers, roller elements and slide rails
- 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 MT*pro*! See pages 12 and 13 for more information.

See also technical data (page 201 ff.)

Lean flow rack		**3 842 998 332**
Type	Number of side elements	0, 1, 2
ESD	Conductivity	Yes, no
FU	Foot type	Leveling foot, castor
A	Version	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 d = 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


D32
D32SK
GS
GS SK
RE45
RE45SK
10
68
G
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NZ = 3
NB = 5
NR = 1
FU
EH
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EcoFlow flow rack



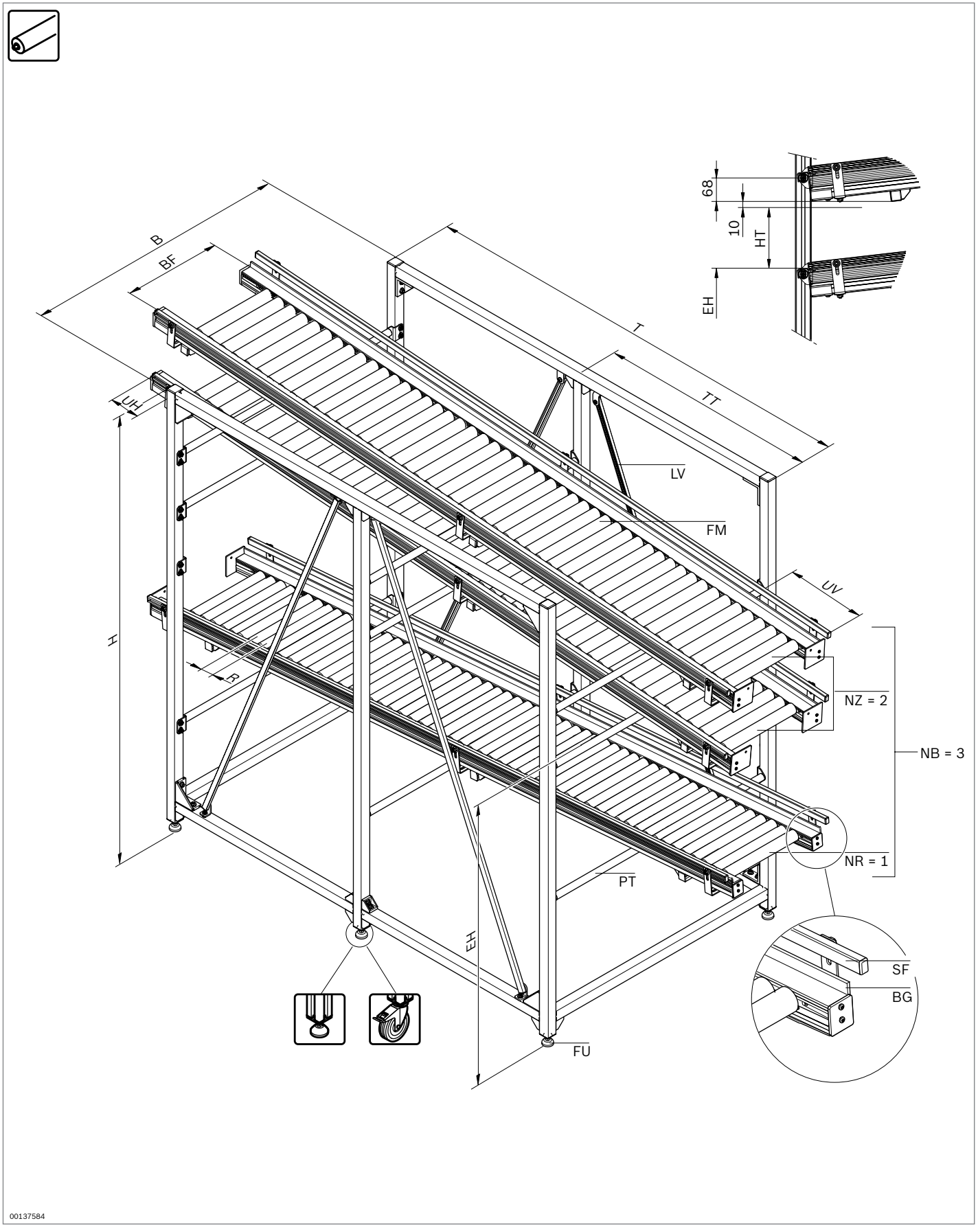
00127572

- 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 MT*pro*! See pages 12 and 13 for more information.

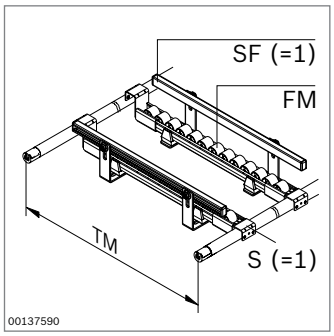
See also technical data (page 201 ff.)

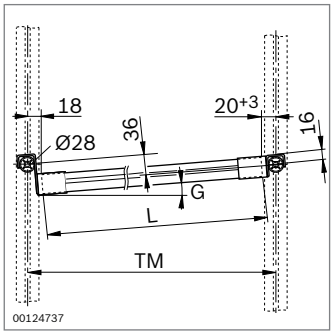
EcoFlow flow rack		**3 842 998 322**
Type	Number of side elements	0, 1, 2
ESD	Conductivity	Yes, no
FU	Foot type	Leveling foot, castor
A	Version	Disassembled, assembled
B	Flow rack system width	400 ... 1000 mm
H	Flow rack system height	600 ... 2000 mm
T	Flow rack system depth	400 ... 6000 mm
TT	Division 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

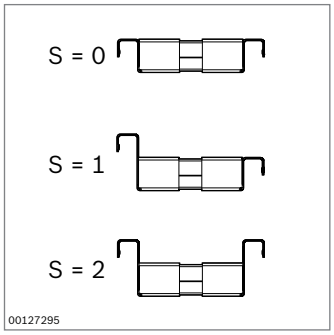

68
10
HT
EH
B
BF
T
TT
UH
LV
FM
UV
H
B
NZ = 2
NB = 3
NR = 1
PT
EH
SF
BG
FU
00137584



00121055







XLean conveyor tracks

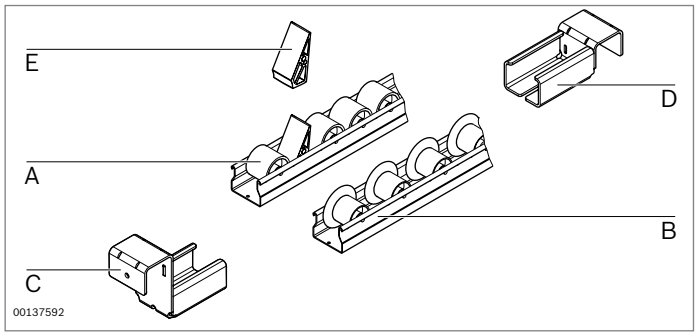


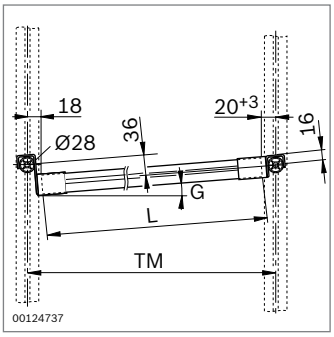
- Conveyor track made of steel profiles with plastic rollers and optional roller flange
- Rail holders for mounting to tubular cross tie
- Recommended gradient: G = 6%
- Available as ESD-conductive version

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

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

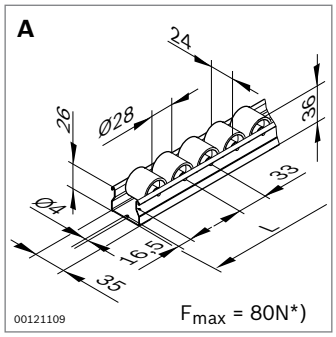
XLean conveyor tracks		**3 842 998 196**
ESD	Conductivity	Yes, no
TM	Horizontal distance between tubular cross ties	355 ... 4500 mm
G	Gradient	0 ... 10% (recommended: 6%)
FM	Conveyor medium	Rollers with d = 28 mm with/without roller flange
S	Rail holder design	With/without stop
SF	Lateral guide	With,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

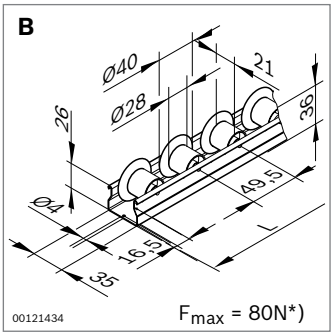


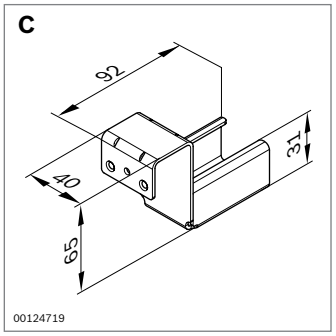


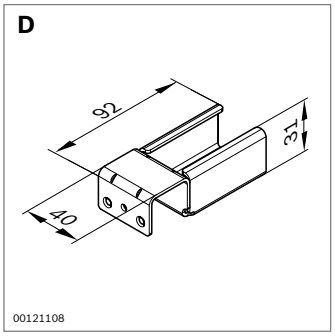
XLean conveyor tracks – components

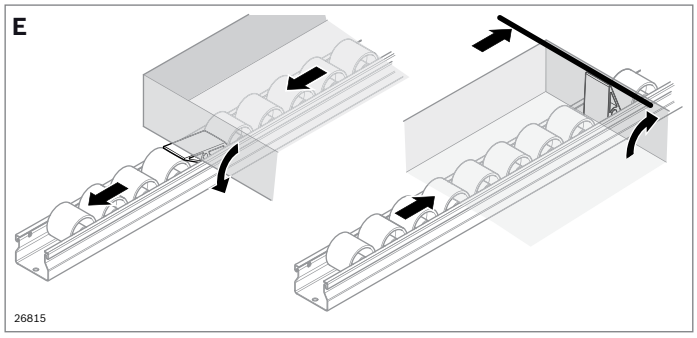
TM (mm)	**G** (%)	**L** (mm)
1000	0	962.0
1000	6	961.7
1000	10	963.5

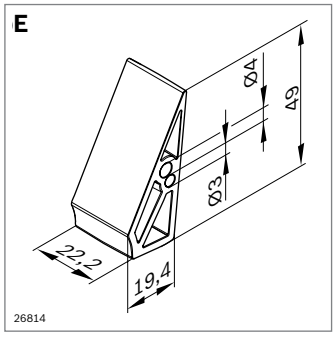




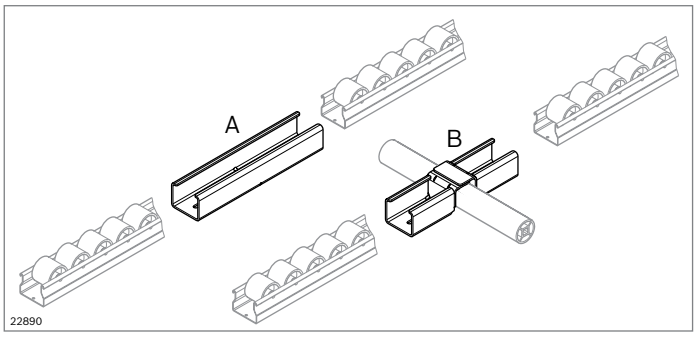


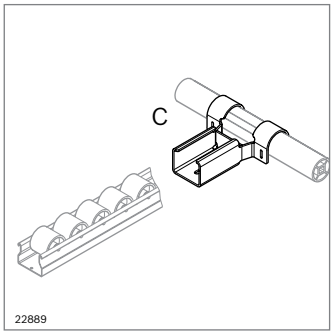


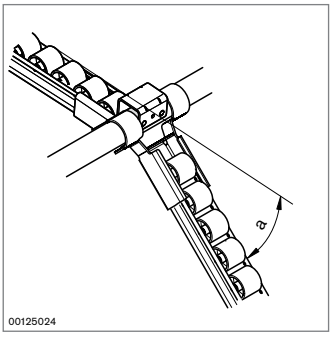


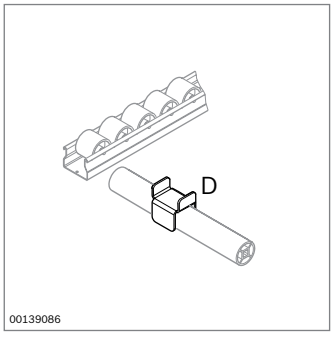


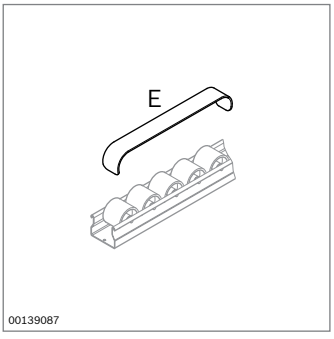
		L (mm)		ESD	No.
A	D28 roller section	100 ... 4500			**3 842 993 321/L**
		4500	50		**3 842 537 776**
		100 ... 4500		ESD	**3 842 993 431/L**
		4500	50	ESD	**3 842 537 778**
B	D28SK roller section	100 ... 4500			**3 842 993 322/L**
		4500	50		**3 842 537 777**
		100 ... 4500		ESD	**3 842 993 432/L**
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











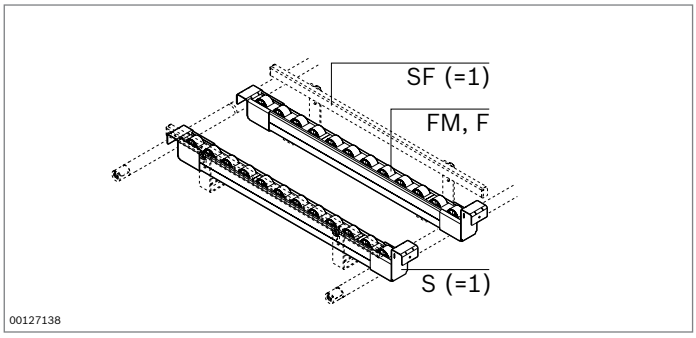
			No.
A	Section link	20	**3 842 536 722**
B	Bridge	20	**3 842 536 724**
C	Flexible bridge	20	**3 842 537 911**
D	Mount	20	**3 842 537 657**
E	Brake	20	**3 842 532 871**

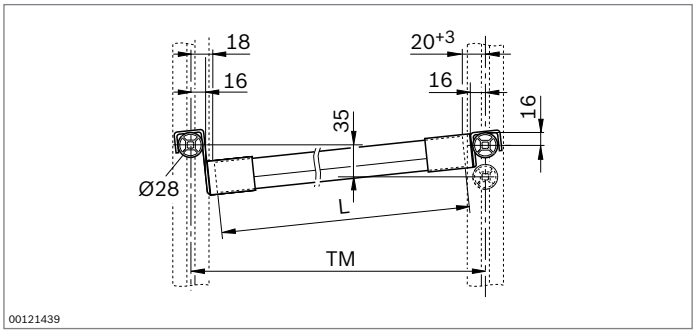
XLean – accessories

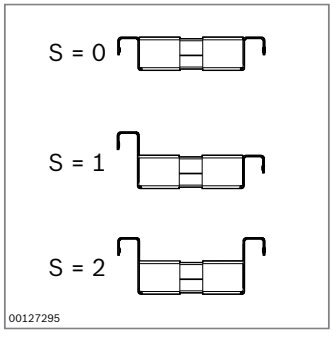
- **Section link (A)** for connecting two XLean roller sections together
- **Bridge (B)** for connecting two XLean roller sections and simultaneously securing them to the tubular cross tie. This increases the rigidity of the system
- **Flexible bridge (C)** for easy material supply in the flow rack system. The container is stopped by a rail holder with stop and is moved manually to the inclined position.
  Maximum inclination (a_{max}) compared to horizontal:
  – With tubular cross tie: a_{max} = 40°
  – With double tubular cross tie: a_{max} = 30°
- **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

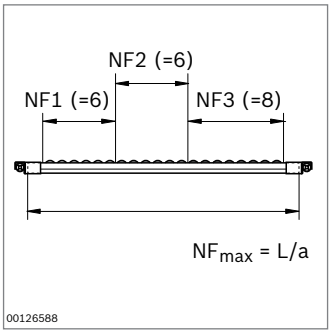


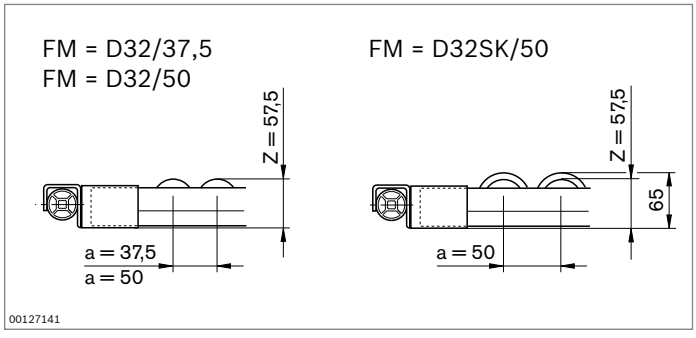












Lean conveyor tracks with rail holder



- 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: aluminum plain)

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

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



00121021

Conveyor track with rail holder, single-color rollers		**3 842 998 381**
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 d = 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



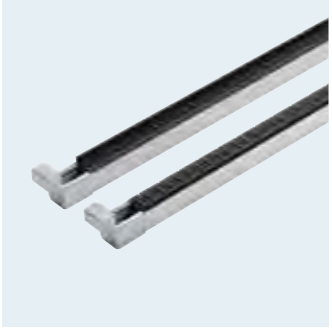
00121018

Conveyor track with rail holder, multi-color rollers		**3 842 998 382**
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 d = 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



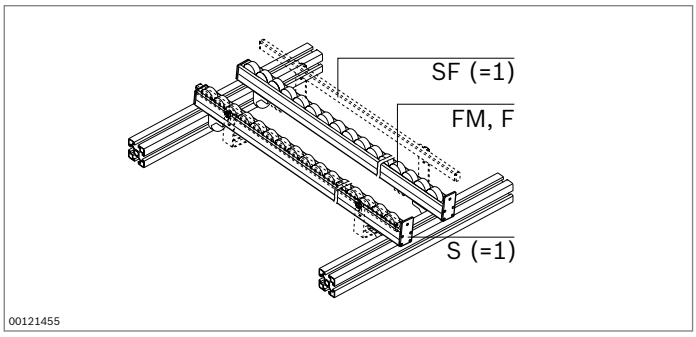
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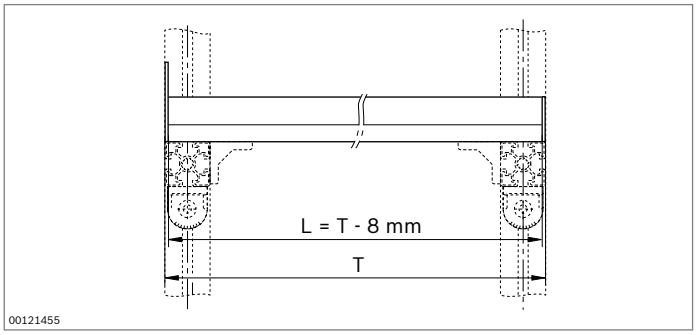
Conveyor track with rail holder, slide rails		**3 842 998 387**
ESD	Conductivity	Yes, no
TM	Horizontal distance between tubular cross ties	355 ... 6000 mm
G	Gradient	0 ... 10% (recommended: 6%)
FM	Conveyor medium	Slide rails with/without border
S	Rail holder design	With/without stop
SF	Lateral guide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

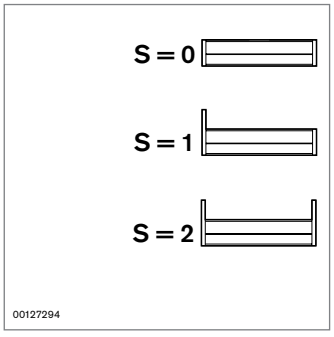


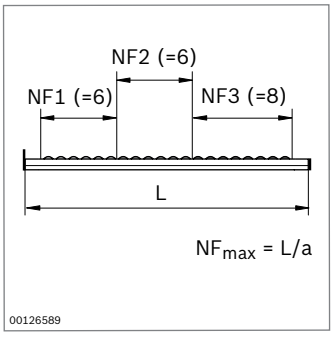
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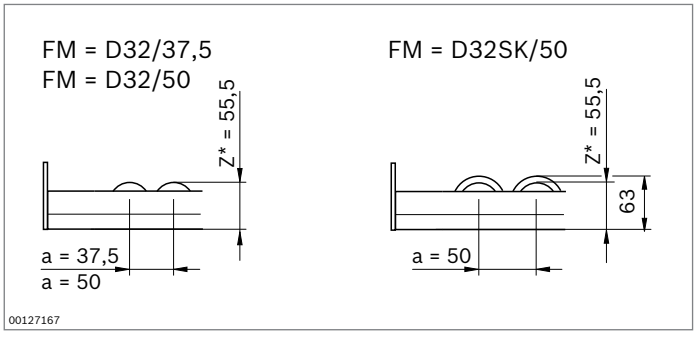
Conveyor track with rail holder, roller elements		**3 842 998 385**
ESD	Conductivity	Yes, no
TM	Horizontal distance between tubular cross ties	355 ... 6000 mm
G	Gradient	0 ... 10% (recommended: 6%)
FM	Conveyor medium	Roller element with/without border
S	Rail holder design	With/without stop
SF	Lateral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











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: aluminum plain)

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



00127297

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



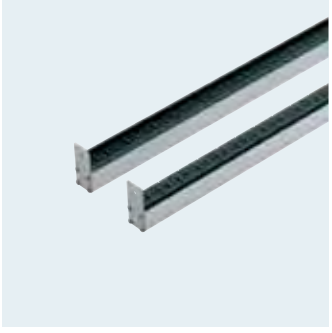
00127298

Conveyor track with stop plate, multi-color rollers		**3 842 998 384**
ESD	Conductivity	Yes, no
L	Conveyor track length	355 ... 6000 mm
FM	Conveyor medium	Rollers with d = 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 version	With/without stop
SF	Lateral guide	With, without



00127299

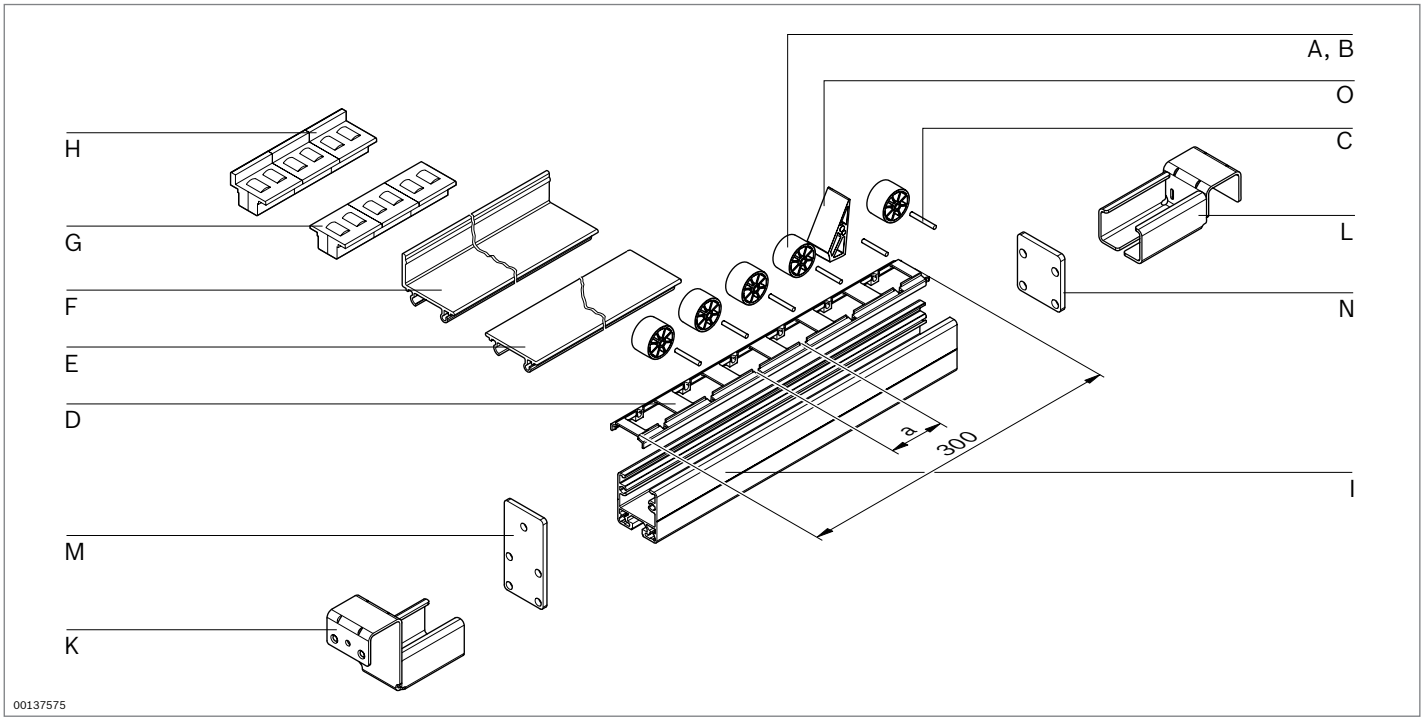
Conveyor track with stop plate, slide rails		**3 842 998 388**
ESD	Conductivity	Yes, no
L	Conveyor track length	355 ... 6000 mm
FM	Conveyor medium	Slide rails with/without border
S	Stop plate version	With/without stop
SF	Lateral guide	With, without



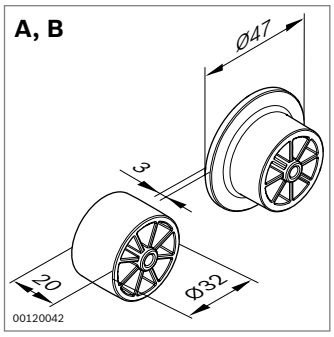
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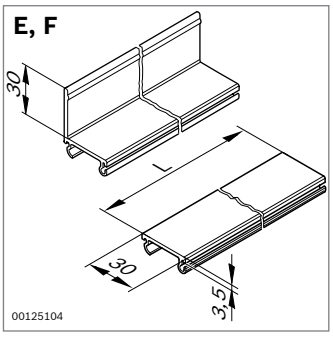
Conveyor track with stop plate, roller elements		**3 842 998 386**
ESD	Conductivity	Yes, no
L	Conveyor track length	355 ... 6000 mm
FM	Conveyor medium	Roller element with/without border
S	Stop plate version	With/without stop
SF	Lateral guide	With, without

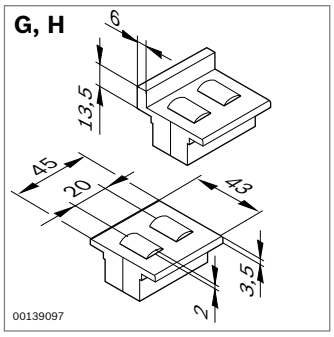
Lean conveyor tracks – components

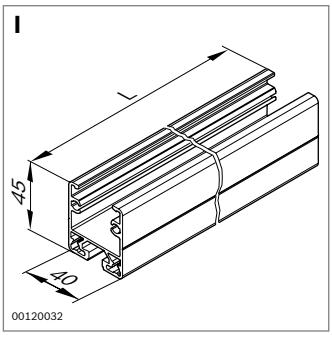


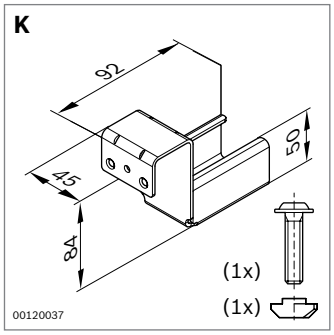
		a (mm)		ESD	**No.**
A	D32 roller, black		100		**3 842 532 865**
			100	ESD	**3 842 537 961**
	D32 roller, red		100		**3 842 532 866**
			100	ESD	**3 842 537 960**
	D32 roller, yellow		100		**3 842 532 870**
			100	ESD	**3 842 537 959**
	D32 roller, green		100		**3 842 532 752**
			100	ESD	**3 842 537 958**
B	D32SK roller, black		100		**3 842 532 867**
			100	ESD	**3 842 537 965**
	D32SK roller, red		100		**3 842 532 883**
			100	ESD	**3 842 537 964**
	D32SK roller, yellow		100		**3 842 532 884**
			100	ESD	**3 842 537 963**
	D32SK roller, green		100		**3 842 532 880**
			100	ESD	**3 842 537 962**
C	Steel axis		100		**3 842 532 862**
D	D32/37.5 roller carrier	37.5	20		**3 842 537 944**
			20	ESD	**3 842 537 945**
	D32/50 roller carrier	50	20		**3 842 532 887**
			20	ESD	**3 842 538 094**
	D32SK/50 roller carrier	50	20		**3 842 532 886**
			20	ESD	**3 842 537 947**

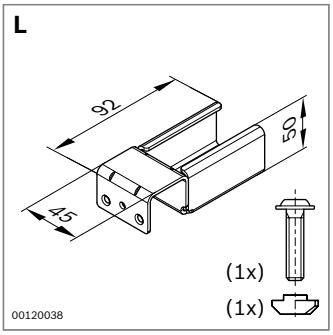


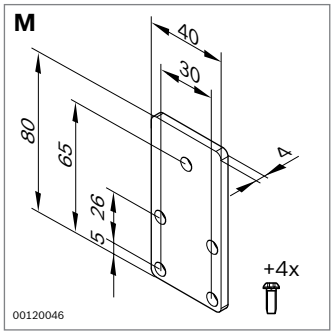


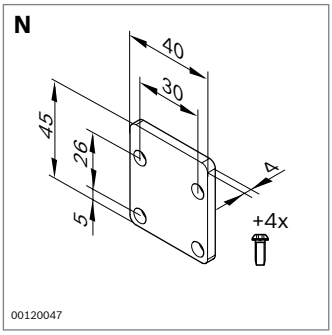


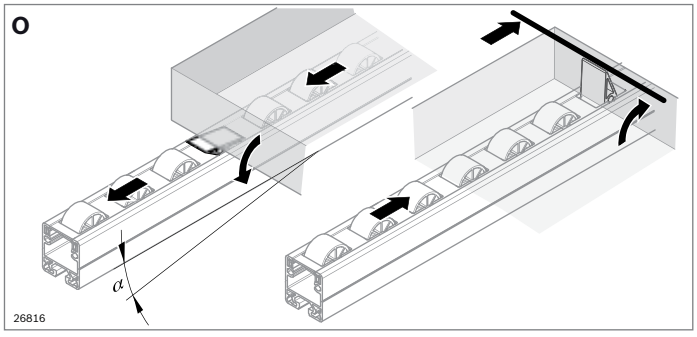


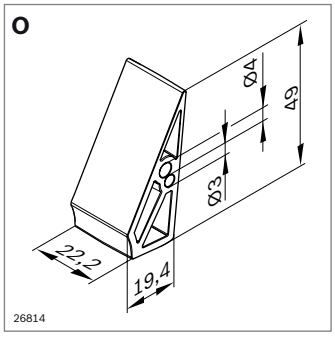








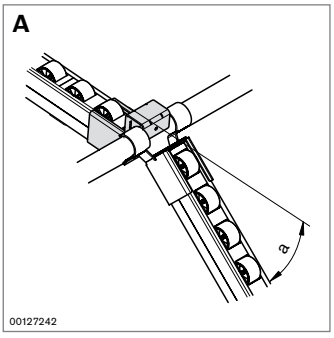


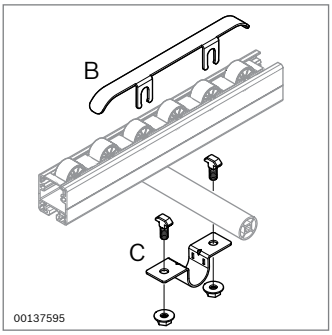


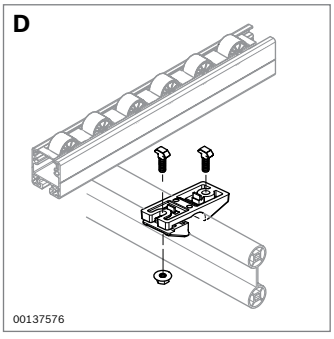
		L (mm)		ESD	No.
E	Glider rail	3000	20		**3 842 535 124**
		3000	20	⚠	**3 842 537 803**
F	Slide rail, lateral guide	3000	20		**3 842 537 806**
		3000	20	⚠	**3 842 537 807**
G	RE45 roller elements	45	100		**3 842 319 501**
		45	100	⚠	**3 842 538 064**
H	RE45SK roller elements	45	100		**3 842 319 500**
		45	100	⚠	**3 842 538 065**
I	U-profile	30 ... 6000			**3 842 993 316/L**
		30 ... 6000		⚠	**3 842 995 027/L**
		6070	20		**3 842 535 115**
		6070	20	⚠	**3 842 541 814**
K	Rail holder with stop		20		**3 842 537 660**
L	Rail holder without stop		20		**3 842 537 661**
M	40x80 stop plate with stop		20		**3 842 535 121**
N	40x45 stop plate without stop		20		**3 842 535 122**
O	XLean/Lean stopper		10	⚠	**3 842 552 151**



00129984





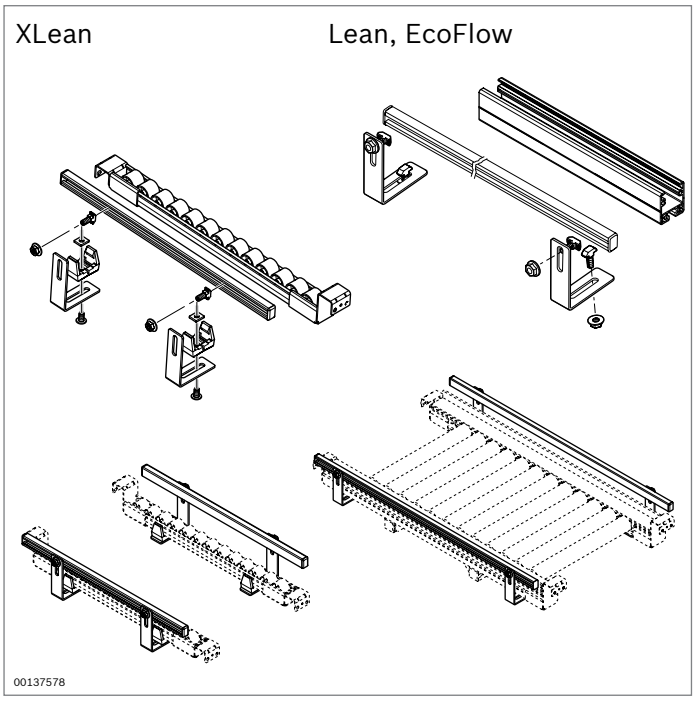


			ESD	No.
A	Flexible bridge	20		**3 842 537 951**
B	D32/37.5 brake	20	ESD	**3 842 537 948**
	D32/50, D32SK/50 brake	20	ESD	**3 842 532 881**
C	D28 tube clip	20		**3 842 535 364**
D	Holder for double tubular cross tie	20		**3 842 537 720**

Lean – accessories

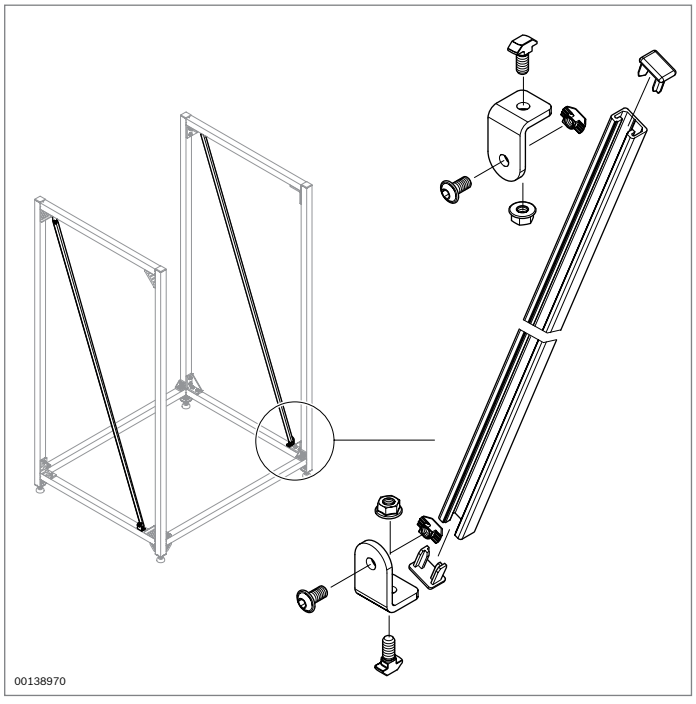
ESD

- **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°
  - With double tubular cross tie: a_{max} = 30°
- **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



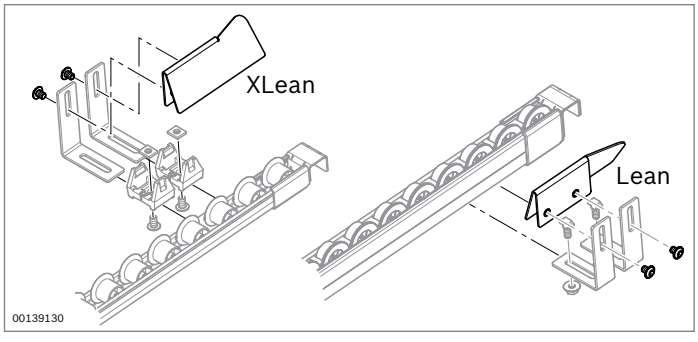
Lateral guide application

- For retrofitting a lateral guide to the XLean, Lean and EcoFlow conveyor tracks
- For assembly elements, see “Components” section (page 176)



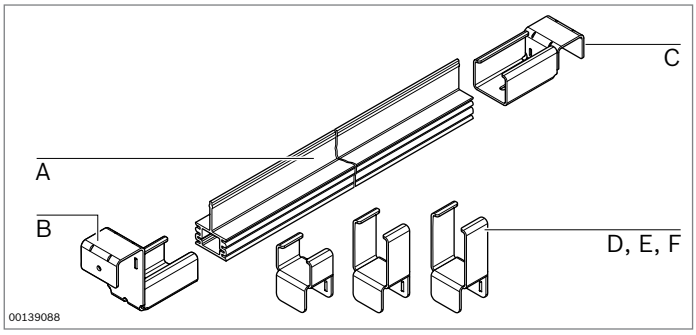
Reinforcement application

- For constructing flow racks with increased stability
- Rack loads up to 2000 kg
- For assembly elements, see “Components” section (page 176)



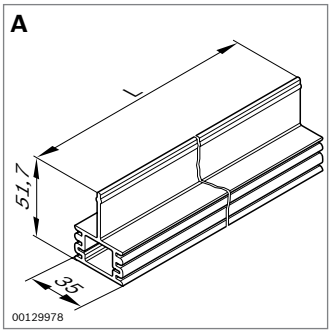
Insertion aid application

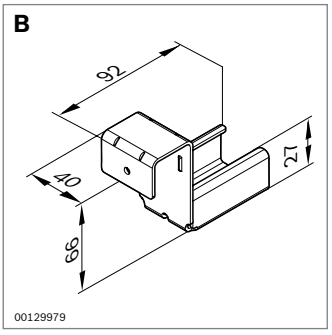
- Helps logisticians to insert material containers onto a conveyor track
- Quick and easy insertion
- For assembly elements, see “Components” section (page 176)

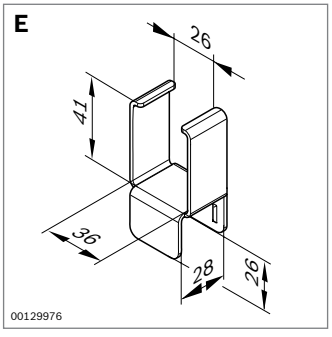


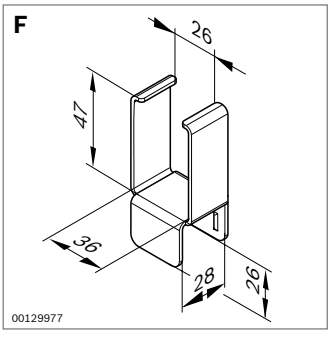
Transport guide

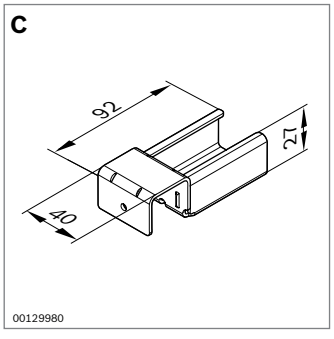
- Guide can be retrofitted onto XLean and Lean conveyor tracks
- Can be combined with all XLean and Lean conveyor media
- The T-shaped cross section allows both sides to be used as a lateral guide and a slide rail
- Use of both sides means lower space requirements
- Can be lowered underneath the conveyor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

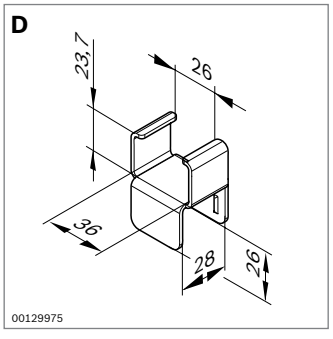




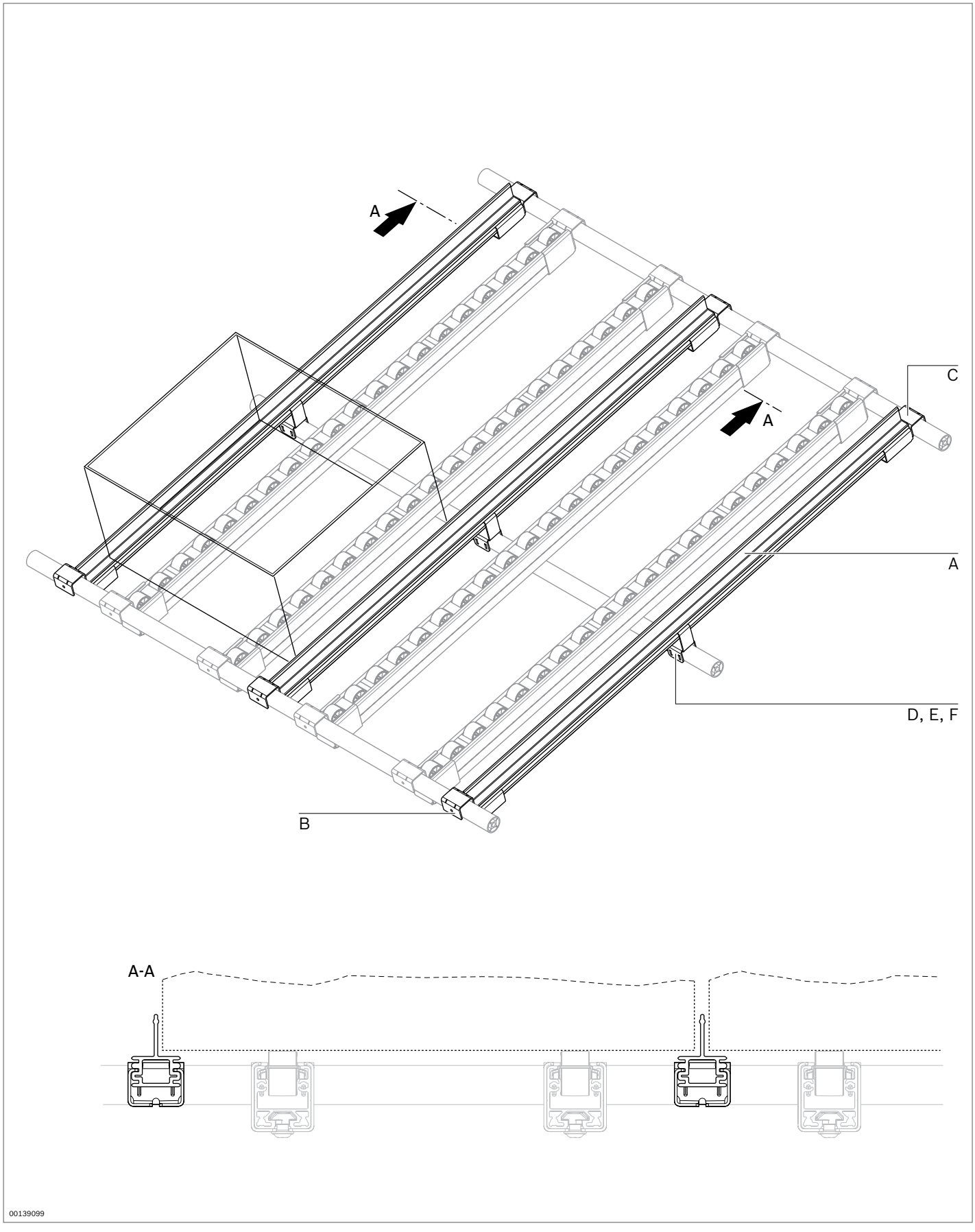


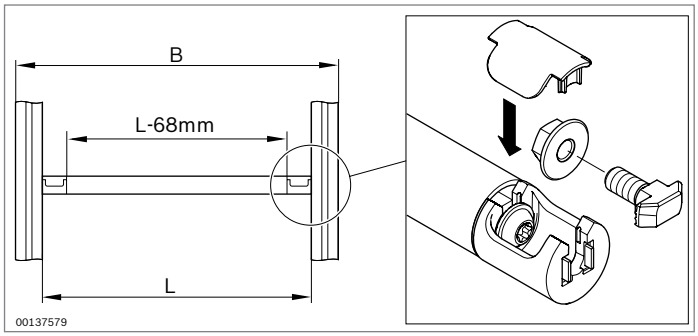


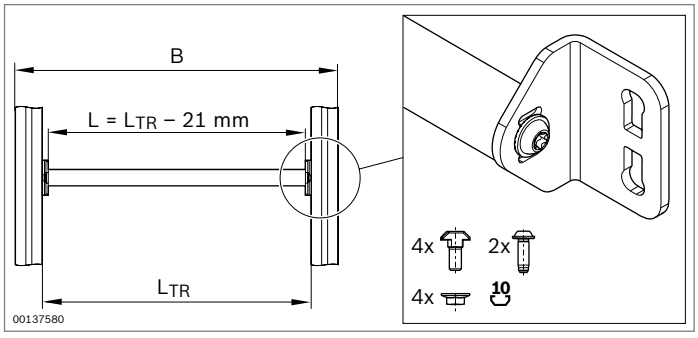


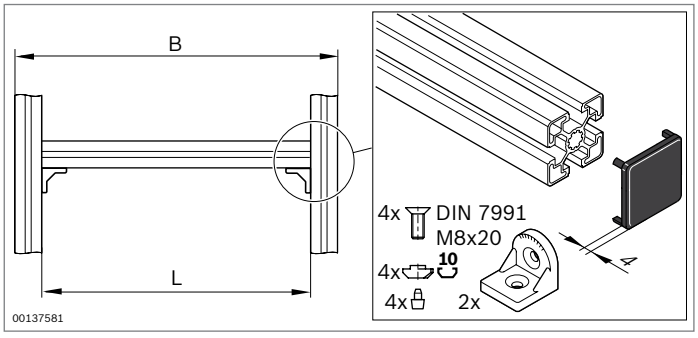


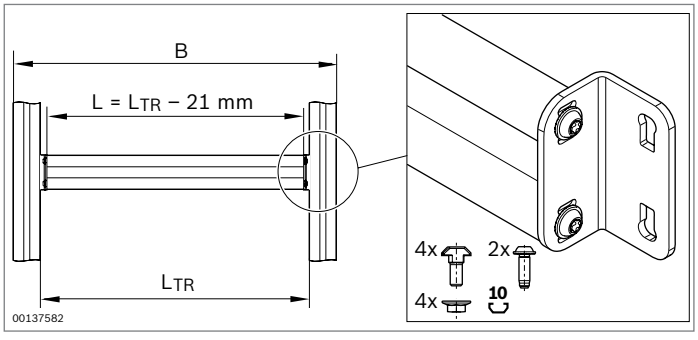
		L (mm)		ESD	No.
A	Polymer profile	30 ... 3000			**3 842 993 615/L**
		3000	20		**3 842 538 108**
		30 ... 3000		ESD	**3 842 993 617/L**
		3000	20	ESD	**3 842 538 107**
B	Rail holder with stop		20		**3 842 538 051**
C	Rail holder without stop		20		**3 842 538 050**
D	XLean mount		20		**3 842 538 102**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


A
A
C
A
D, E, F
B
A-A
00139099









Cross ties – components

Tubular cross tie (RT)

- Space-saving, visually appealing design

Tubular cross tie with bracket (RTW)

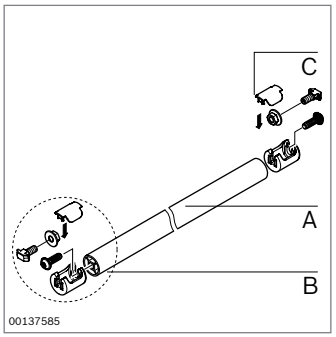
- Use of brackets makes for easy assembly
- Elongated hole for longitudinal compensation (± 3 mm tolerance)

Profile cross tie (ST)

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

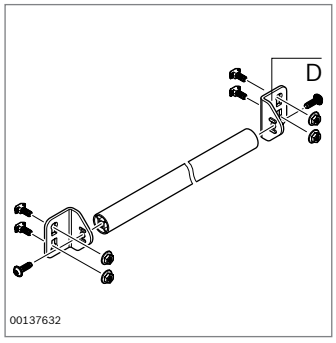
Double tubular cross tie (DRT)

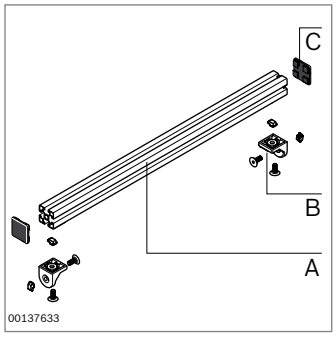
- Suitable for heavy loads
- Use of brackets makes for easy assembly
- Elongated hole for longitudinal compensation (± 3 mm tolerance)



Tubular cross tie (RT)

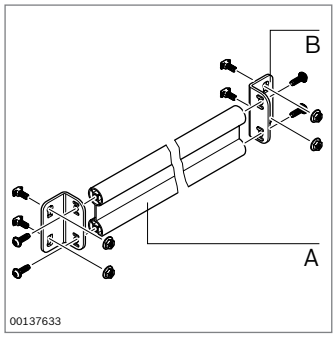
		L (mm)			ESD	No.
A	D28 round tube (d = 28)	30 ... 6000	1			**3 842 993 317/L**
		6070	20			**3 842 535 118**
B	D28 T-connector with cap, fastening material included			20		**3 842 532 879**
C	Cap for D28 T-connector			20		**3 842 532 878**
D	60x47x4 bracket, with fastening material			20		**3 842 536 002**





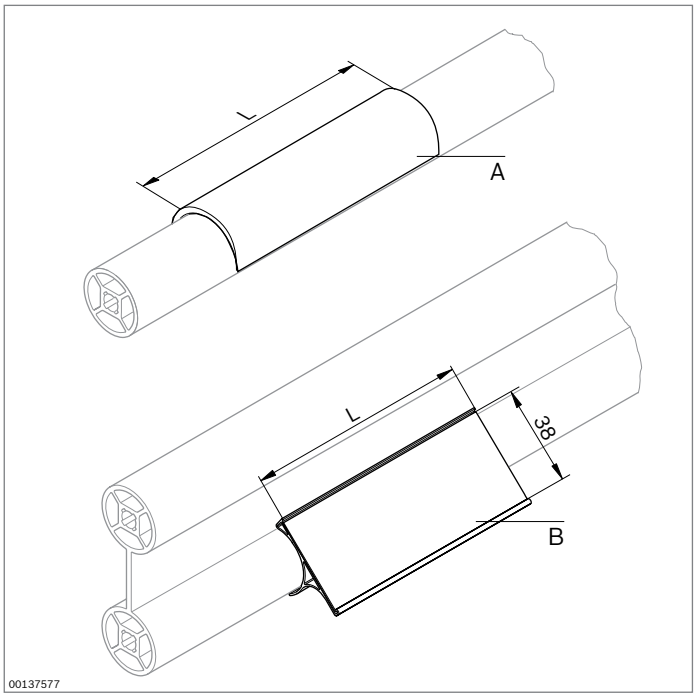
Profile cross tie (ST)

		L (mm)			ESD	No.
A	45x45L profile	50 ... 6000	1			**3 842 992 425/L**
		6070	20			**3 842 553 611**
B	40x43 bracket, with fastening material			100		**3 842 518 424**
C	45x45 cap; black			20		**3 842 548 753**
	45x45 cap; signal gray			100		**3 842 548 752**



Double tubular cross tie (DRT)

		L (mm)				No.
A	D28x55 strut profile	100 ... 6000	1			**3 842 993 489/L**
		6070	20			**3 842 537 477**
B	85x47x4 bracket, with fastening material			20		**3 842 536 730**



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.**
A Lettering clip for tubular cross ties	2000	20	**3 842 535 136**
	102	20	**3 842 538 093**
B Lettering clip for double tubular cross ties	2000	20	**3 842 537 119**
	102	20	**3 842 537 652**







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 MT*pro* 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 from just a few standard components.

- 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.



120 Round tubes
121 Connectors
124 Adapters

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 32 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.


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00137052


00137051


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MT*pro* **For designing and planning EcoShape tubular framing systems, we recommend MT*pro!***
See pages 12 and 13 for more information.

Eco Shape

ESD

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

EcoShape

- All connectors can be combined with the EcoShape D28L and D28L, N10 and D28 round tubes (see “Flow rack systems”, page 88).
- Integrated poka yoke system for easy and secure connector installation
  - Anti-torsion element for secure joints
  - Form-fit connection
- All connectors are suitable for setting up ESD-conductive systems.

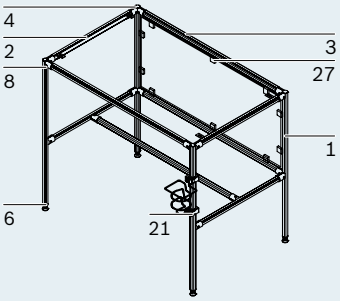
Material: diecast zinc
Scope of delivery: includes fastening material

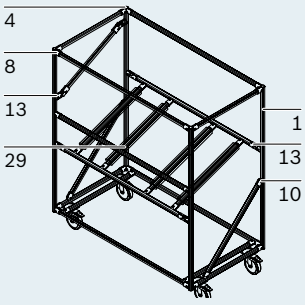
See also technical data (page 207 f.)

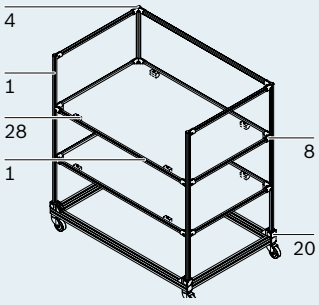


32 components – countless options

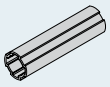
The EcoShape system is characterized by its consistent simplicity and efficiency: Using just a few components, you can build complete assembly lines as well as simple transport shuttles.



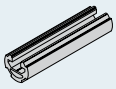




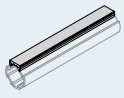
1 D28L round tube


24878

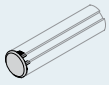
2 D28L, N10 round tube


24879

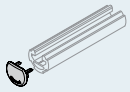
3 Glider rail


24880

4 D28L cap


24881

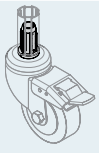
5 D28L, N10 cap


24882

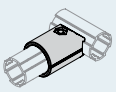
6 D28L threaded sleeve (PA)


24883

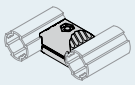
7 D28L threaded sleeve (Zn)


24884

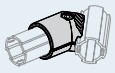
8 90° connector


24885

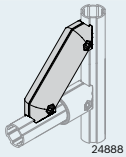
9 Parallel connector


24886

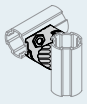
10 45° Connectors


24887

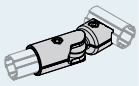
11 45° D28L strut


24888

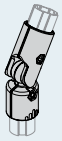
12 Cross connector


24889

13 0°–90° connector


24890

14 0°–90° D28 connector


24891

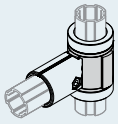
15 D28 corner bracket


24892

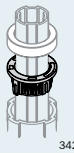
16 D28L retaining ring


24893

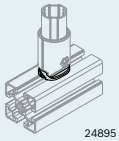
17 D28L swivel bearing


24894

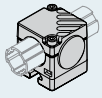
18 Bushing


34277

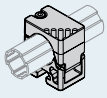
19 N8, N10 adapter


24895

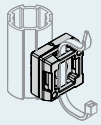
20 N10/45 adapter


24896

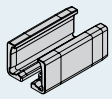
21 N10/30 adapter


24897

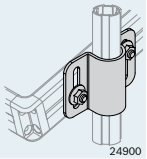
22 D28L adapter mount


24898

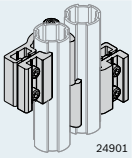
23 XLean adapter


24899

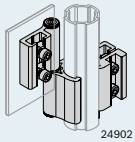
24 D28L, N10 tube clip


24900

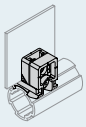
25 D28L/D28L hinge


24901

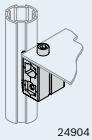
26 D28L/- hinge


24902

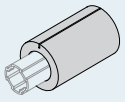
27 PA Variofix block


24903

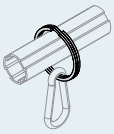
28 Variofix block (Zn)


24904

29 Impact protector


24905

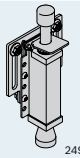
30 D50 ring


24906

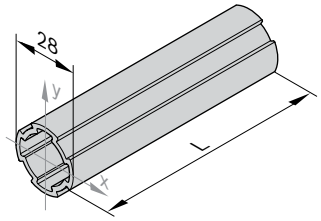
31 D28 rubber foot


24907

32 D28L, N10 stopper


24908

1
A = 1,80 cm²
I_x = 1,33 cm⁴
I_y = 1,33 cm⁴
W_x = 0,95 cm³
W_y = 0,95 cm³
m = 0,48 kg/m



00134985

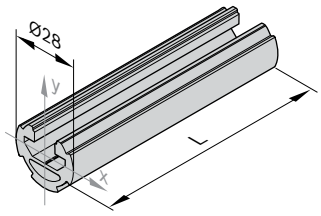
▶ D28L round tube with four interfaces for attaching EcoShape connectors

D28L round tube		L (mm)	No.
1 pc		50 ... 5600	**3 842 996 191/L**
50 pcs		5600	**3 842 541 211**

Material: Aluminum; anodized

2
A = 2,63 cm²
I_x = 1,17 cm⁴
I_y = 1,97 cm⁴
W_x = 0,84 cm³
W_y = 1,41 cm³
m = 0,71 kg/m

10



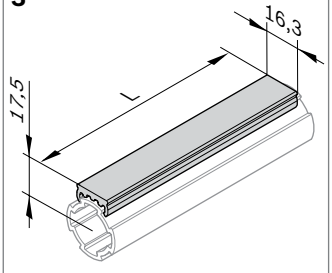
00134986

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

D28L, N10 round tube		L (mm)	No.
1 pc		50 ... 5600	**3 842 996 192/L**
20 pcs		5600	**3 842 541 213**

Material: Aluminum; anodized

3



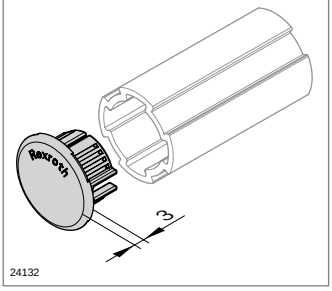
00134987

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

Slide rail	L (mm)	ESD		No.
	2000		10	**3 842 541 196**
	2000		10	**3 842 548 117**

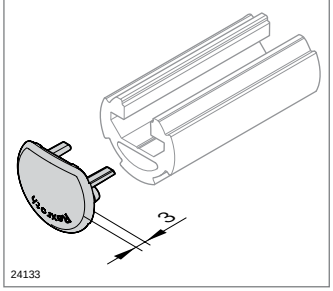
Material: PVC; gray
ESD: PVC (conductive); black

4



24132

5



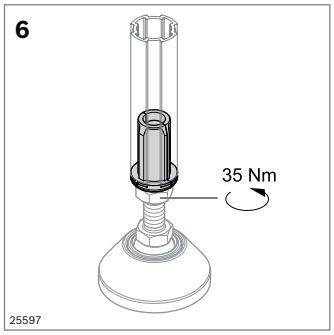
24133

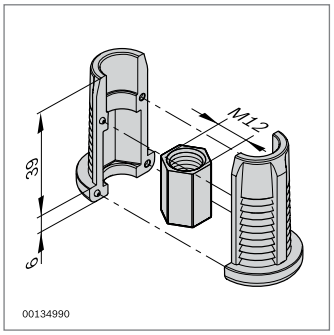
▶ Cap for D28L and D28L, N10 round tube

Cap	ESD		No.
4 D28L		20	**3 842 548 129**
5 D28L, N10		20	**3 842 548 130**

Material: PA66 (conductive); black

6



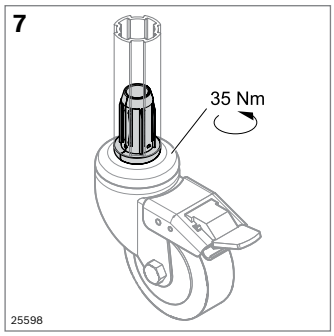


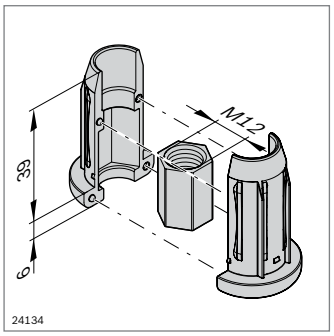
▶ Threaded sleeve for incorporating a leveling foot or castor. For further information (see page 208)

D28L threaded sleeve (PA)	ESD		No.
		20	**3 842 541 185**

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

7

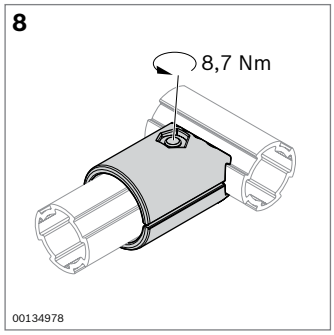


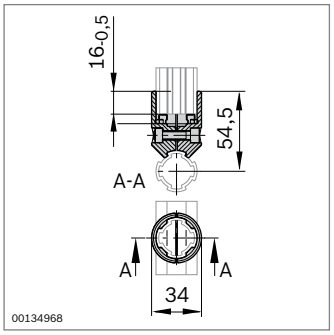


D28L threaded sleeve (Zn)	ESD		No.
		20	**3 842 548 119**

Material: diecast zinc
Hexagon nut: aluminum

8



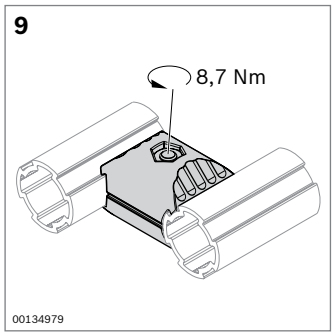


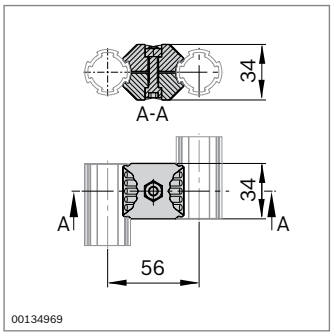
90° connector	ESD		No.	FS
		20	**3 842 541 173**	FS1

Material: diecast zinc
Scope of delivery: includes fastening material (FS)

FS1
ISO 4762 M6x25
ISO 10511 M6

9



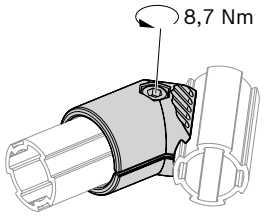


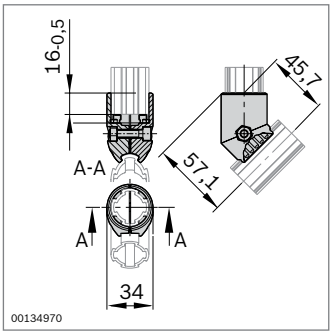
Parallel connector	ESD		No.	FS
		20	**3 842 541 183**	FS1

Material: diecast zinc
Scope of delivery: includes fastening material (FS)

FS1
ISO 4762 M6x25
ISO 10511 M6

10



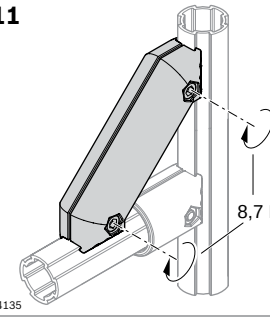


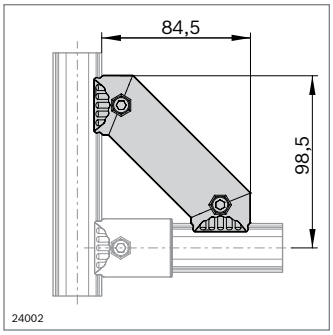
45° connector	ESD		No.	FS
	⚠	20	**3 842 541 175**	FS1

Material: diecast zinc
Scope of delivery: includes fastening material (FS)

FS1
ISO 4762 M6x25
ISO 10511 M6

11



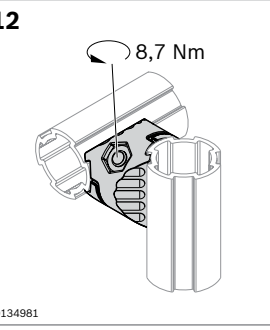


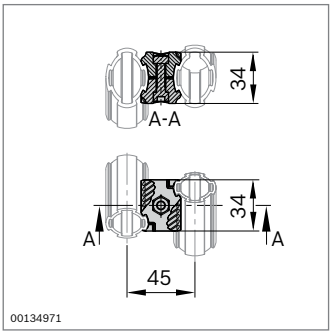
45° D28L strut	ESD		No.	FS
	⚠	20	**3 842 548 118**	2x FS1

Material: diecast zinc
Scope of delivery: includes fastening material (FS)

FS1
ISO 4762 M6x25
ISO 10511 M6

12



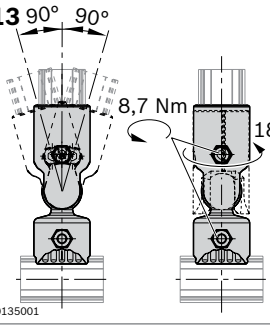


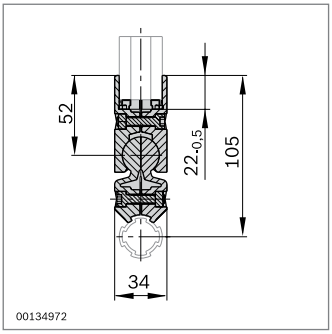
Cross connector	ESD		No.	FS
	⚠	20	**3 842 541 181**	FS1

Material: diecast zinc
Scope of delivery: includes fastening material (FS)

FS1
ISO 4762 M6x25
ISO 10511 M6

13



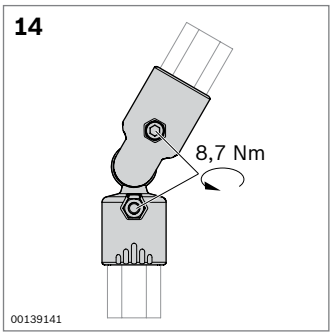


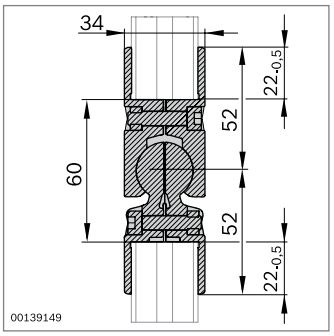
0°–90° connector	ESD		No.	FS
	⚠	20	**3 842 541 178**	2x FS1

Material: diecast zinc
Scope of delivery: includes fastening material (FS)

FS1
ISO 4762 M6x25
ISO 10511 M6

14



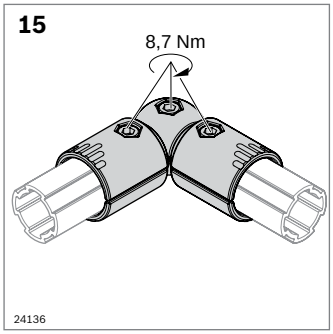


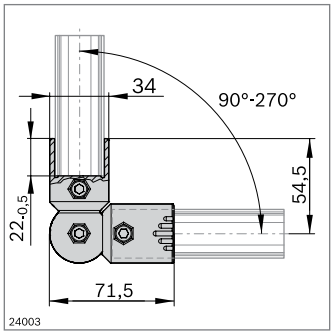
0°–90° D28 connector	ESD		No.	FS
	⚠	20	**3 842 543 480**	2x FS1

Material: diecast zinc
Scope of delivery: includes fastening material (FS)

FS1
ISO 4762 M6x25
ISO 10511 M6

15





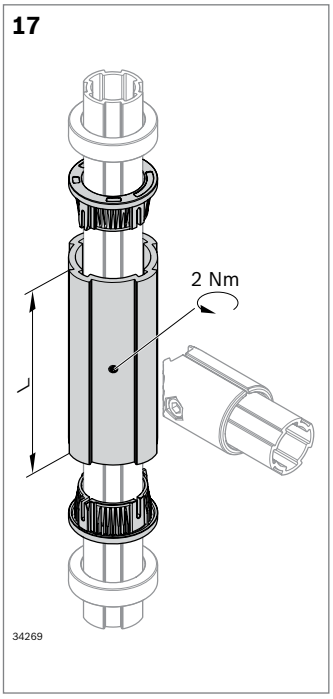
- D28 corner bracket for easy adjustment within a 15° range
- Swivel range: 90°–270°

D28 corner bracket	ESD		No.	FS
	⚠	20	**3 842 548 123**	3x FS1

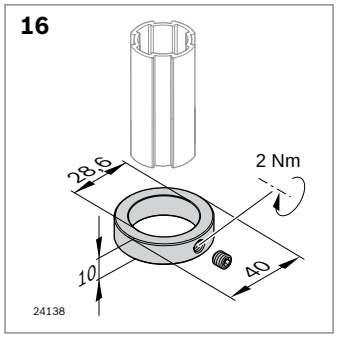
Material: diecast zinc
Scope of delivery: includes fastening material (FS)

FS1
ISO 4762 M6x25
ISO 10511 M6

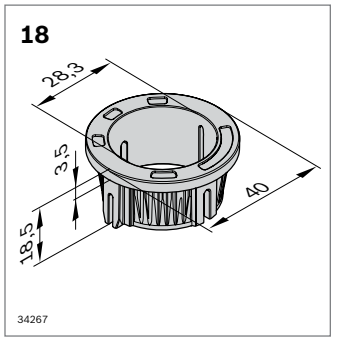
17



16



18



- For axial shifting along the D28L or D28L, N10 round tube. The retaining ring determines the end position
- Construction of swiveling applications
- Additional thread for flexible bracket adjustment

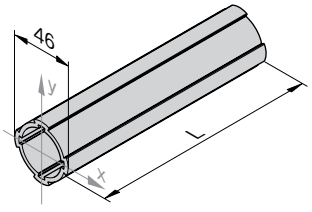
	L (mm)	ESD		No.	FS
D28L retaining ring		⚠	20	**3 842 548 122**	FS2
D28L swivel bearing	34		20	**3 842 548 121**	FS3

Material: Retaining ring: aluminum
Swivel bearing: aluminum
Scope of delivery: Retaining ring: includes fastening material (FS)
D28L swivel bearing, L = 34 mm D28 bushing (18): includes fastening material (FS)

FS2
ISO 4026 M6x6

FS3
ISO 4026 M4x10

A = 4,4 cm²
I_x = 8,4 cm⁴
I_y = 8,4 cm⁴
W_x = 3,7 cm³
W_y = 3,7 cm³
m = 1,2 kg/m

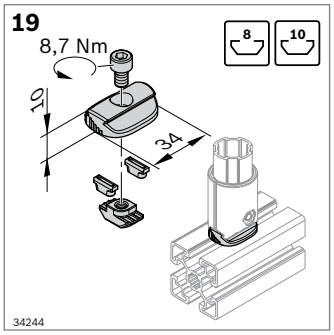


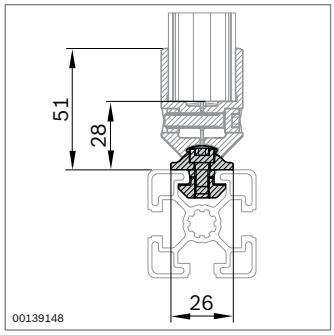
For self-assembly:

- D28L swivel bearing with L = 1000 mm that can be cut to length
- D28 bushing (**18**)

	L (mm)			No.
D28L swivel bearing	1000	2		**3 842 557 298**
D28 bushing			4	**3 842 557 299**

Material: Swivel bearing: aluminum
Bushing: POM; black





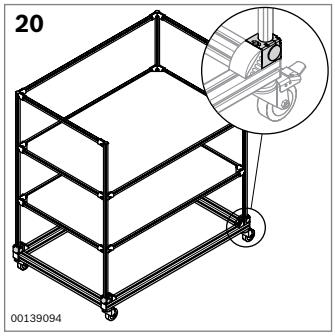
▶ N8, N10 adapter for connecting an MGE strut profile (8 mm, 10 mm slots)

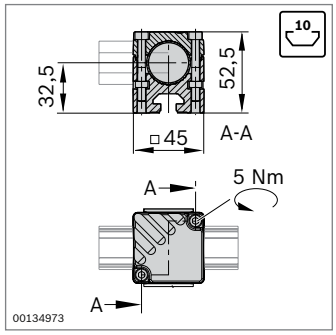
N8, N10 adapter	ESD		No.	FS
	ESD	20	**3 842 543 272**	FS4, FS5

Material: diecast zinc
Scope of delivery: includes fastening material (FS)

FS4
ISO4762 M6x10
M6 8

FS5
ISO4762 M6x12
2x M6 10



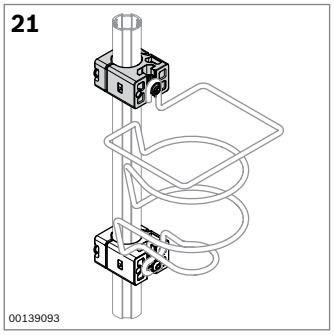


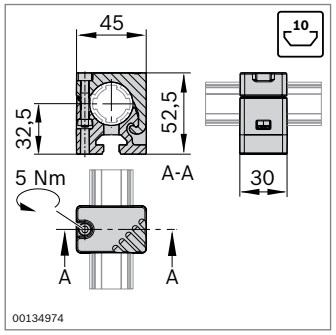
▶ N10/45 adapter for connecting D28L or D28L, N10 round tubes to profiles with a 10 mm slot

N10/45 adapter	ESD		No.	FS
	ESD	20	**3 842 541 187**	2x FS3

Material: Adapter: diecast zinc
Cap: PE
Scope of delivery: includes cap, fastening material (FS)

FS3
ISO 4762 M5x40
DIN 934 M5



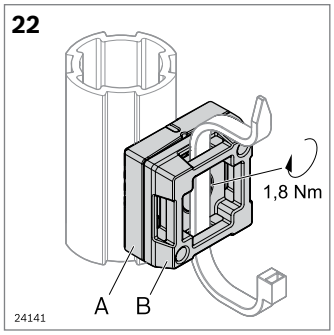


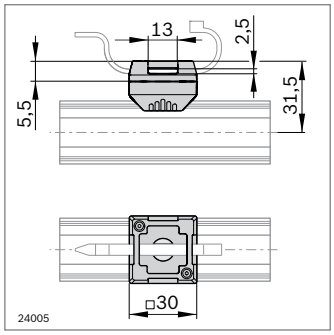
▶ N10/30 adapter for mounting light accessories such as a bottle holder to the D28L round tube

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

Material: diecast zinc
Scope of delivery: includes fastening material (FS)

FS6
ISO 4762 M5x30
DIN 934 M5



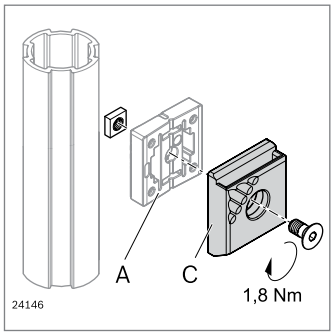


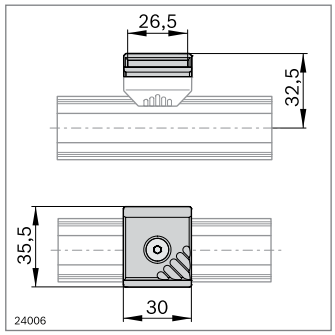
▶ For attaching cable fasteners

D28L adapter mount		No.	FS
A + B	20	**3 842 548 120**	FS7

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

FS7
ISO 10642
M5x10





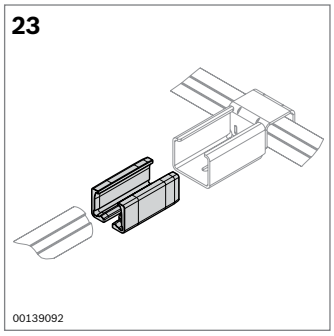
▶ For attaching containers using the container mount

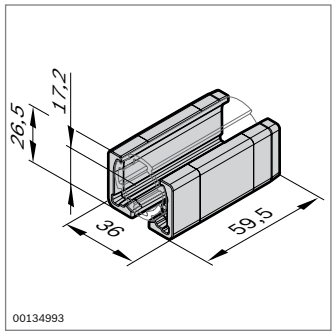
Container mount	ESD		No.	FS
C		10	**3 842 544 797**	FS8, FS9

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

FS8
ISO 10642
M5x10
M5 8

FS9
ISO 10642
M5x16
M5 10

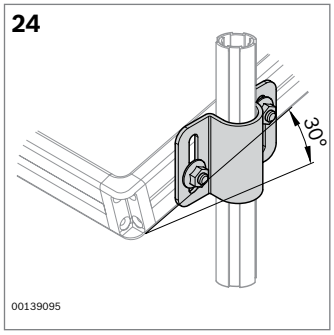


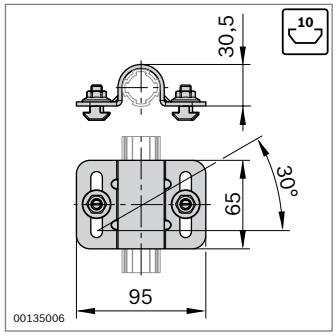


▶ XLean adapter for combination with XLean.
The XLean adapter connects the D28L round tube to the XLean rail holder (see page 97)

XLean adapter	ESD		No.
		20	**3 842 541 296**

Material: PA66 (conductive); black





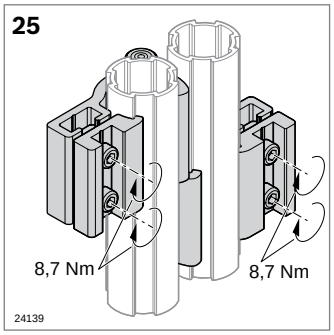
▶ D28L, N10 tube clip for fastening material shelves with a 10 mm slot to the D28L round tube; oblique positioning up to 30 degrees is possible

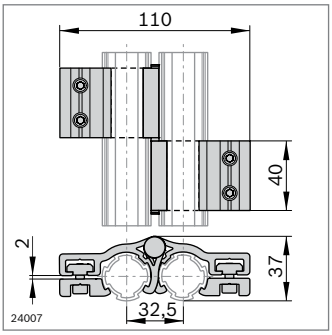
D28L, N10 tube clip	ESD		No.	FS
		20	**3 842 541 193**	2x FS10

Material: steel; galvanized
Scope of delivery: includes fastening material (FS)

FS10
M8
M8x20
10

25





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

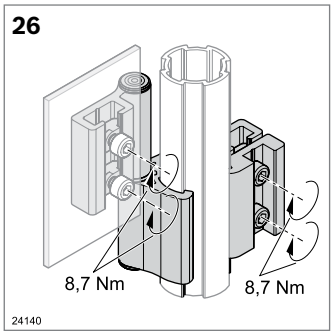
D28L/D28L hinge	ESD		No.	FS
		2	**3 842 548 126**	4xFS11, FS12

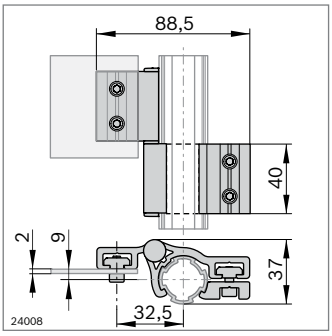
Material: aluminum
Scope of delivery: includes fastening material (FS)

FS11
ISO4762 M6x10
M6 8

FS12
ISO8741 6x60
DIN125 A6,4

26





- Opening angle: 180°
- For mounting surface elements

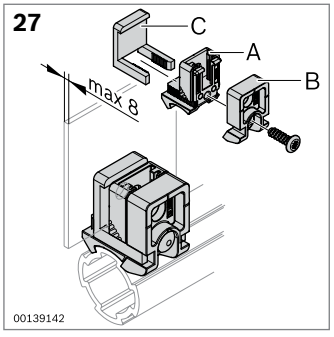
D28L/- hinge	ESD		No.	FS
		2	**3 842 548 127**	2x FS11, FS12

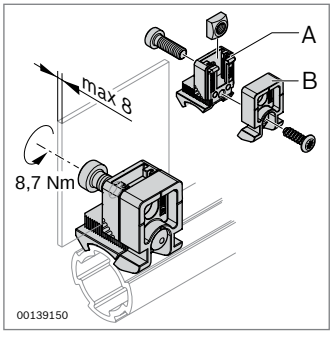
Material: aluminum
Scope of delivery: includes fastening material (FS)

FS11
ISO4762 M6x10
M6 8

FS12
ISO8741 6x60
DIN125 A6,4

27





- Plastic Variofix block for fastening surface elements with snap-in clips or a screw
- Variofix remover for releasing the snap-in clip (see MGE 13.2)

Variofix block (PA)		No.	FS
A + B	20	**3 842 543 311**	FS13, FS14

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

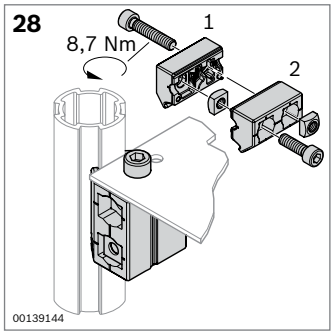
FS13
ISO 4762 M6x16
DIN 557 M6

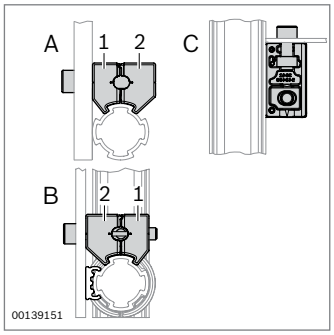
FS14

Snap-in clip		No.
C	10	**3 842 184 738**

Material: PA6; transparent

28





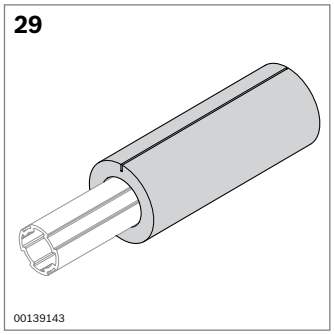
- Diecast zinc Variofix block for fastening surface elements
- Three arrangements possible (“A”, “B”, “C”)

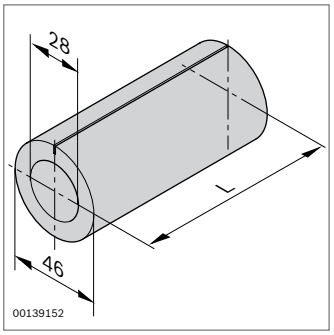
Variofix block (Zn)	ESD		No.	FS
		20	**3 842 543 494**	FS15

Material: diecast zinc
Scope of delivery includes fastening material (FS)

FS15
ISO 4762 M6x22
ISO 4762 M6x30
2x DIN 557 M6

29



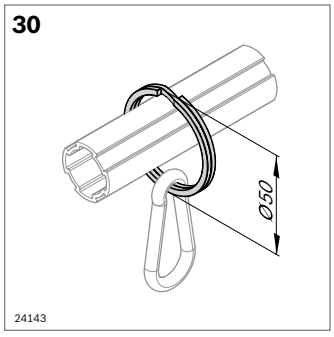


- Impact protector for D28 and D28L round tubes

Impact protector	L (mm)		No.
	2000	10	**3 842 544 637**

Material: PE-LD; gray

30



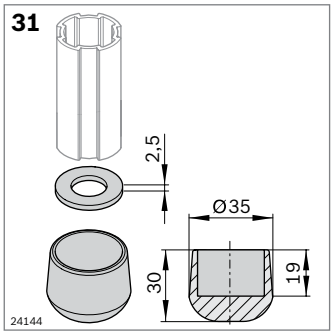
- For designing simple tool holders

D50 ring		No.
	20	**3 842 548 131**

Material: steel; nickel-plated

Spring hook		No.
	1	**0 842 901 309**

Material: steel; galvanized

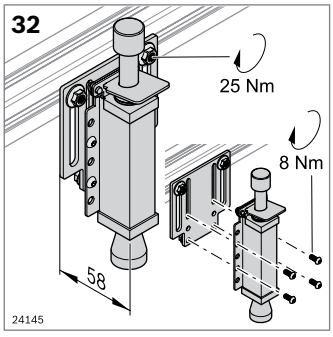


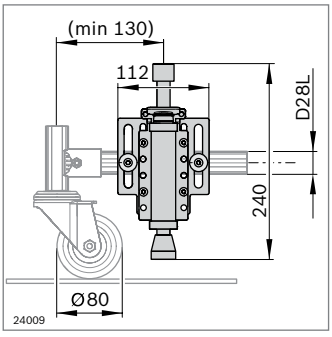
▶ Non-slip design of flow racks and stands

D28 rubber foot	ESD		No.	FS
		20	**3 842 548 128**	FS16
Material:	NR/SBR (conductive); black			

FS16

ISO 7089-14-200HV-CM





▶ To stop material shuttles ergonomically at just one point
▶ All-purpose option for attachment to different round tubes and profile cross-sections
▶ Clamping travel stopper: 34 mm

D28L, N10 stopper	No.	FS
	3 842 548 132	4x FS17, 2x FS18
Material:	Stopper: stainless steel; EPDM Attachment plate: aluminum	
Scope of delivery:	includes fastening material (FS)	

FS17

ISO 7380 M6x14

M6

FS18

ISO 7380 M6x35

DIN9021 6,4

M8

M8x20

10







EcoFlow – manual linking elements 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 ideal 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.



134 Conveyor tracks
136 Conveyor track components
140 Stop gates and return stops
141 Accessories

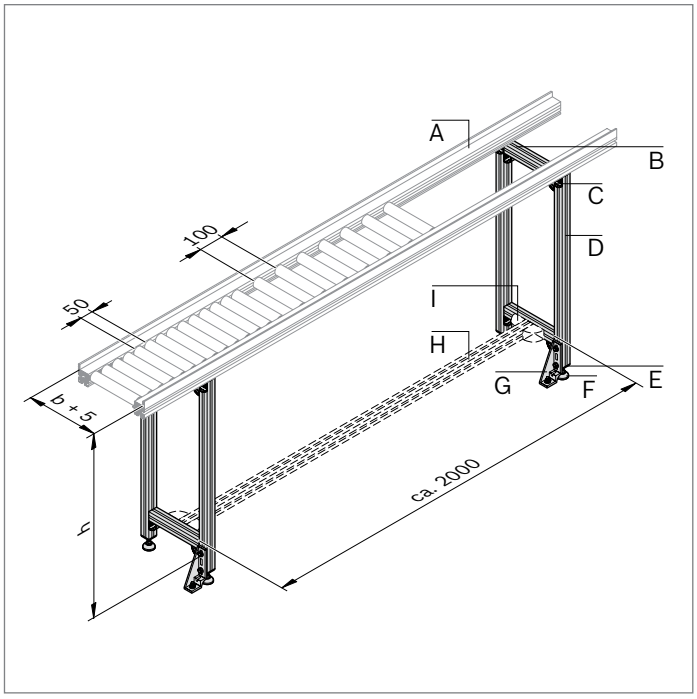
EcoFlow application examples

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



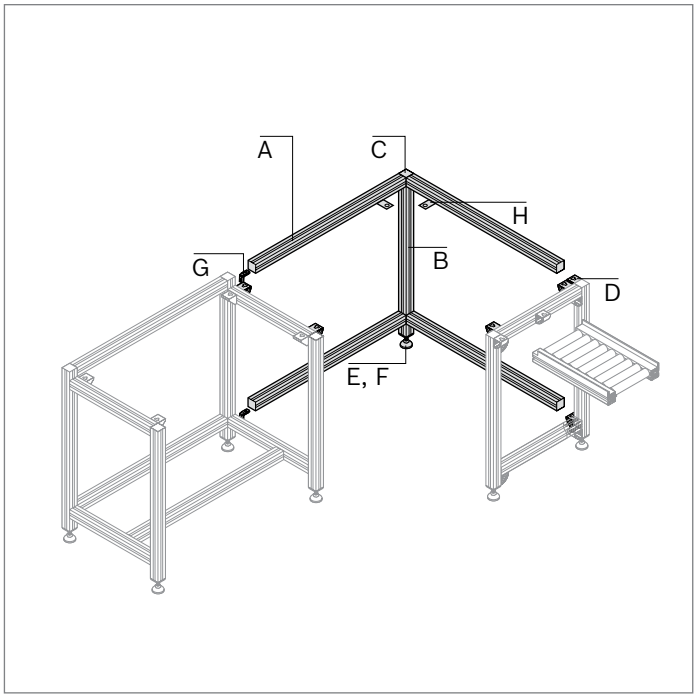
◀ **EcoFlow can be combined with Rexroth's power-driven transfer systems.**
For more information, visit www.boschrexroth.com

Application 1: manual slide section



00137588

Application 2: corner frame



00137587

Application 1			No.
A	1 x	EcoFlow conveyor track with stop plate	**3 842 998 278**
B	4 x	45x45 strut profile	**3 842 993 737**
C	12 x	45x45 bracket	**3 842 523 561**
D	4 x	45x45L strut profile	**3 842 993 737**
E	4 x	45x5 cap (with hole)	**3 842 548 797**
F	4 x	Leveling foot	**3 842 352 061**
G	2 x	45x180 bracket	**3 842 523 583**
H	1 x	45x45L strut profile	**3 842 993 737**
I	4 x	45x45 bracket	**3 842 523 561**

Application 2			No.
A	4 x	45x45L strut profile	**3 842 993 737**
B	1 x	45x45L strut profile	**3 842 993 737**
C	1 x	45x45 cap	**3 842 548 753**
D	6 x	45x45 bracket	**3 842 523 561**
E	1 x	45x45 cap (with hole)	**3 842 548 797**
F	1 x	Leveling foot	**3 842 352 061**
G	6 x	Inner bracket	**3 842 535 571**
H	1 x	Table top supports (set)	**3 842 521 677**

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

See also technical data (page 209)



00137604



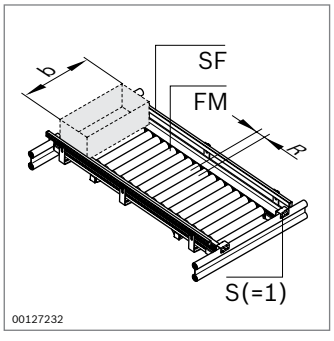
00139096

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

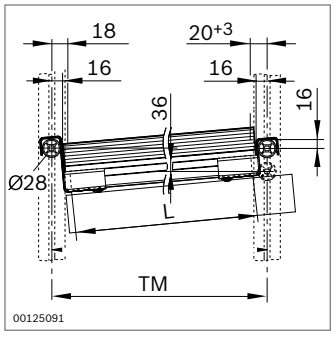
EcoFlow conveyor track

- 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
- Steel conveyor medium available in ESD-conductive version.

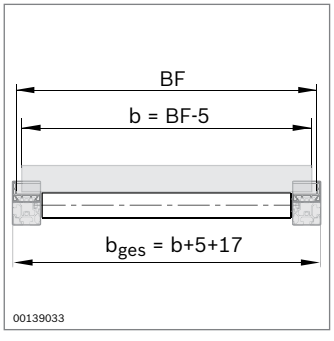
Condition on delivery: slide rail border mounted to the outside (BG=0)



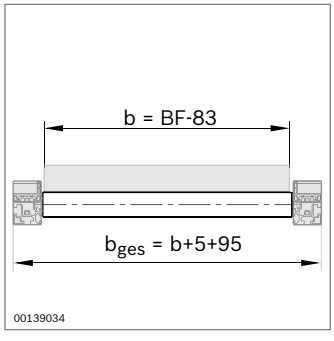
00127232



00125091



00139033



00139034

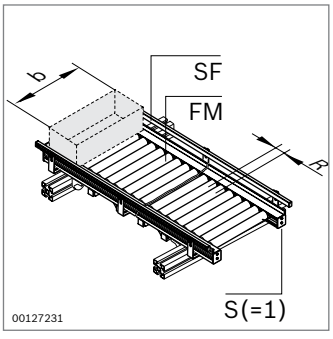


00139005

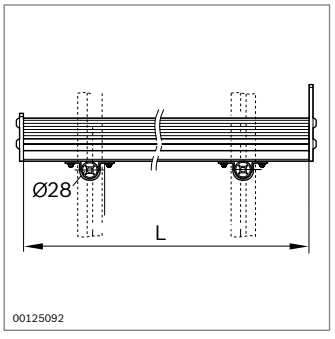


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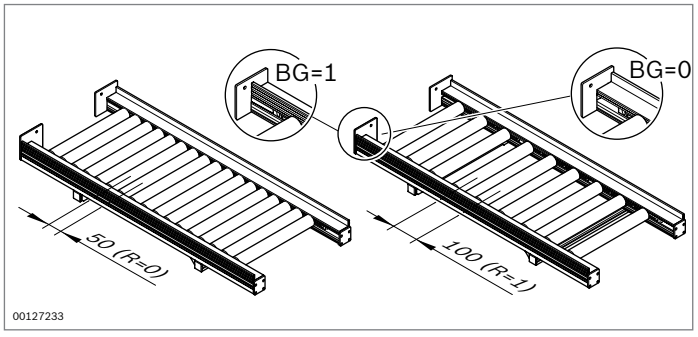
Conveyor track with stop plates		**3 842 998 278**
A	Version	Disassembled, assembled
ESD	Conductivity	Yes, no
L	Conveyor track length	355 ... 6000 mm
FM	Conveyor medium	Rollers in plastic, steel, stainless steel
BF	Conveyor track width	200 ... 1000 mm
S	Stop plate version	With stop, without stop
SF	Lateral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



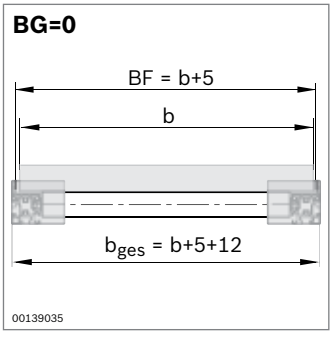
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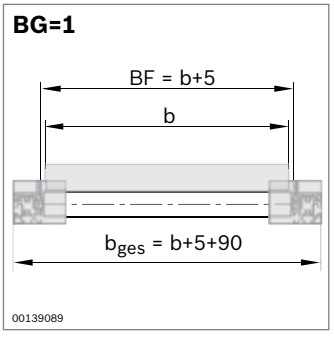
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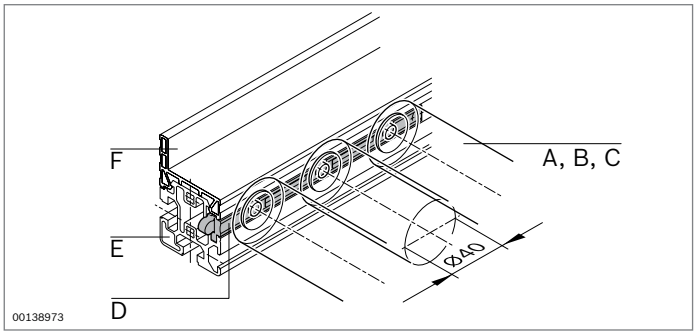
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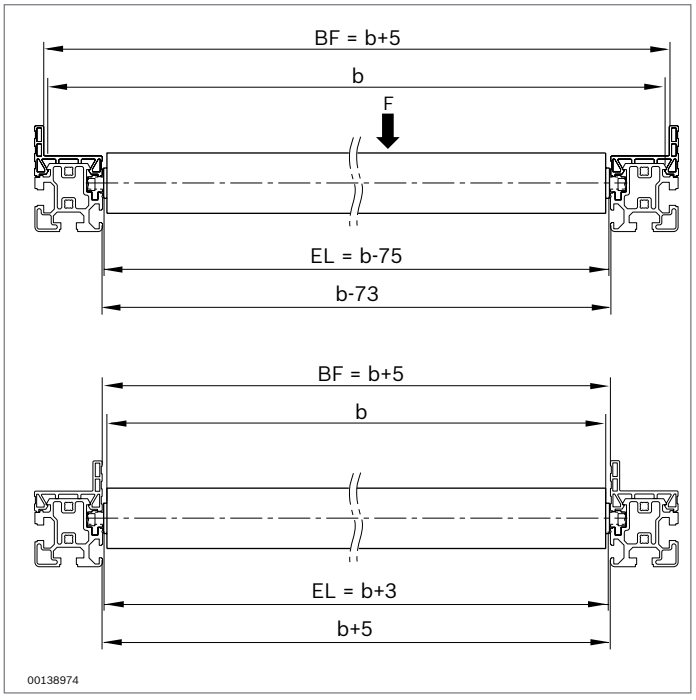


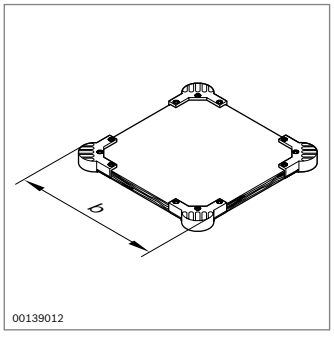
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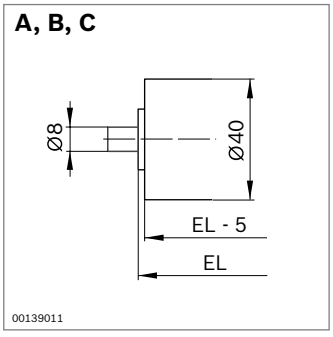


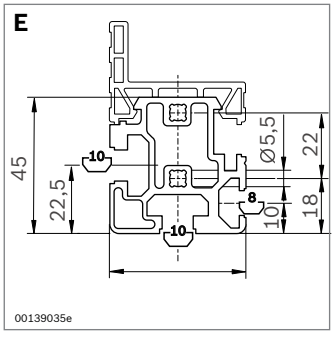
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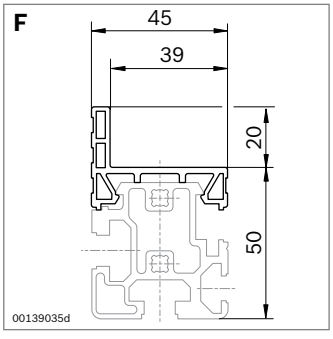




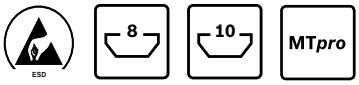




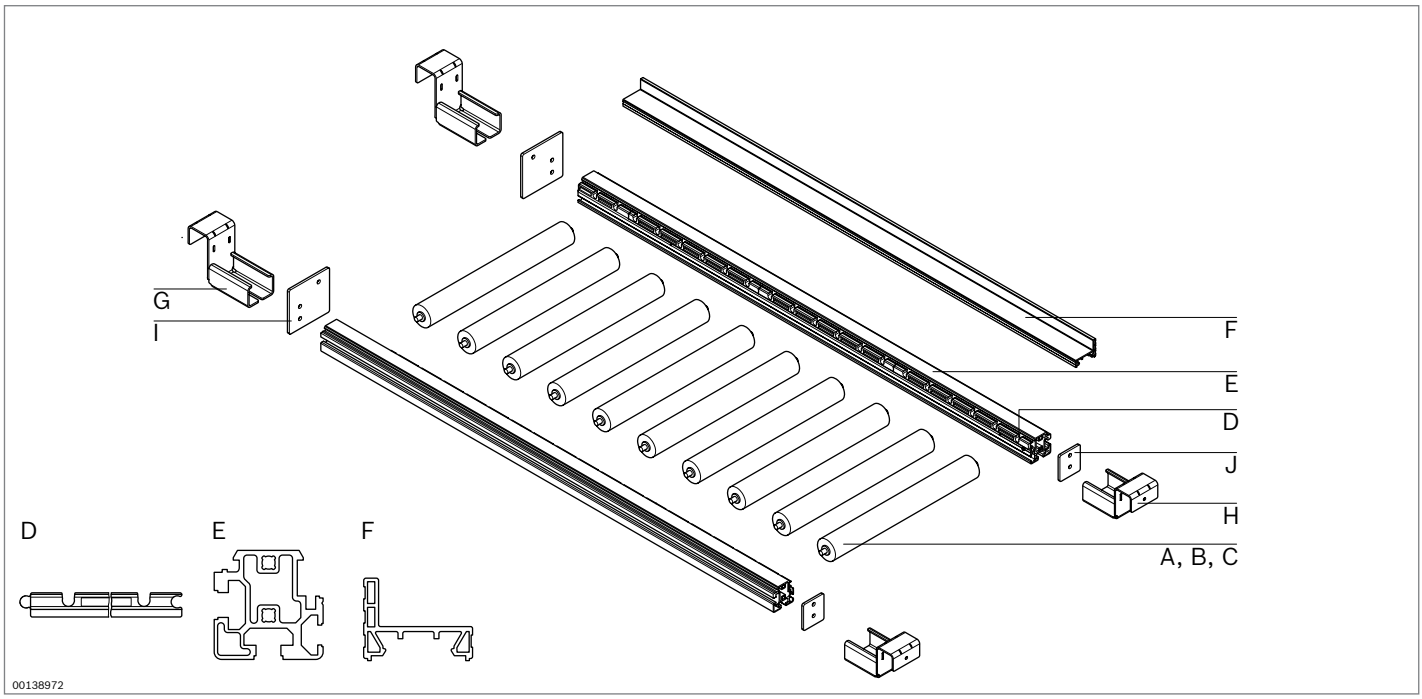




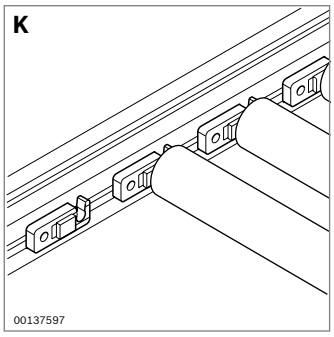
EcoFlow conveyor track components

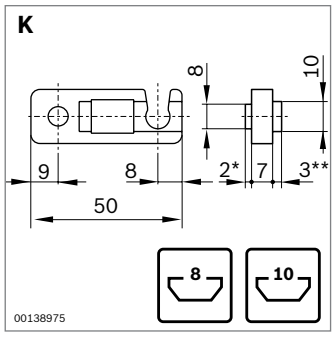


- Section profile with 10 mm groove on underside for mounting on strut profiles
- Guide profile for clipping to section profile with border on outside or inside. This allows for different conveyor track widths while using the same rollers. Available as ESD-conductive version
- Roller carrier with defined 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

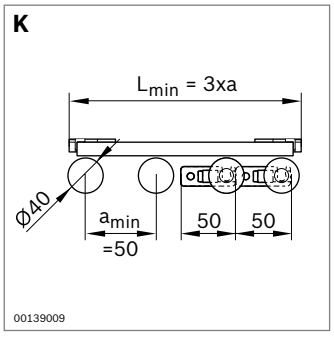


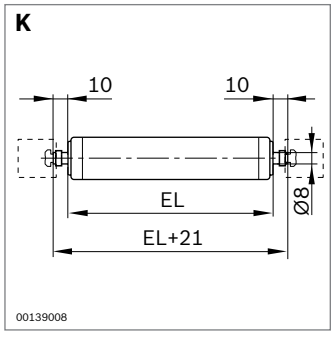
		F (N)	**EL** (mm)			**ESD**	**No.**
A	EcoFlow roller – plastic	150	105 ... 605				**3 842 994 989/L**
			225				**3 842 525 740**
			325				**3 842 525 741**
			425				**3 842 525 742**
			525				**3 842 537 164**
B	EcoFlow roller – steel, galvanized	500	105 ... 1005			ESD	**3 842 994 988/L**
			225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

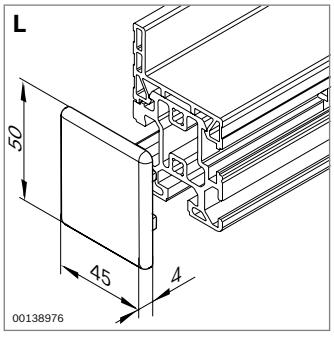




* 8 mm slot
** 10 mm slot







				No.
K	Roller mount, 8 mm slot	10		**3 842 535 667**
	Roller mount, 10 mm slot	10		**3 842 535 668**
L	Cap	20		**3 842 525 457**

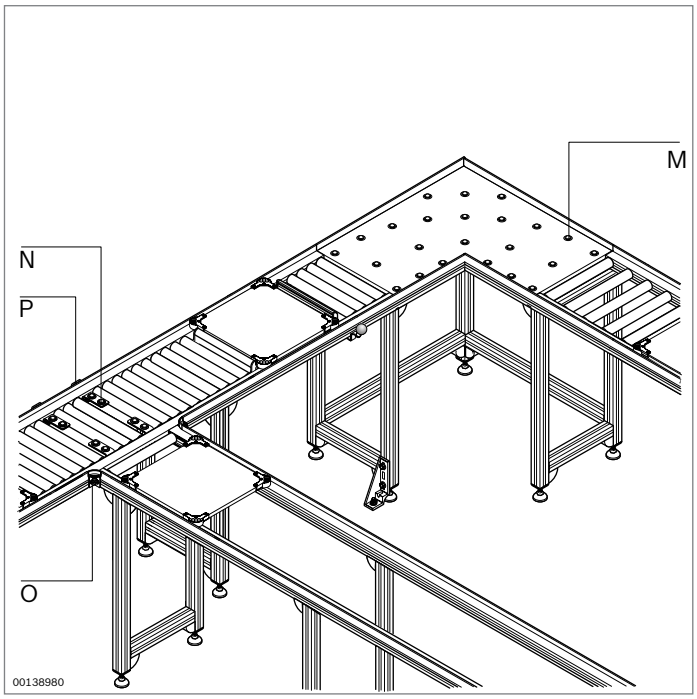
Roller mount (K)

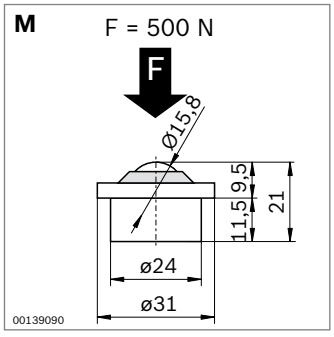
- For fast and simple construction of conveyor tracks using strut profiles with 8 or 10 mm slot. Can also be used in the 10 mm slot of the EcoFlow section profile
- Suitable for retrofitting rollers without having to disassemble the frame. The roller distance is variable.

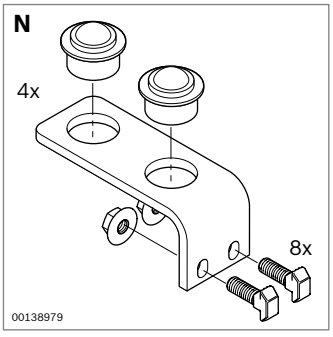
Scope of delivery: includes fastening material for 8 or 10 mm slot

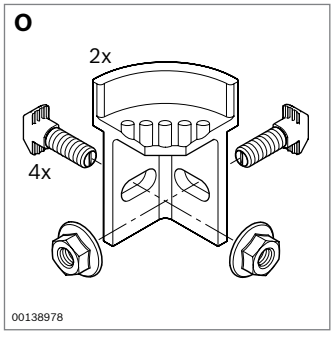
Cap (L)

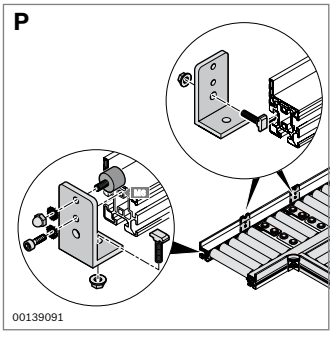
- Cap for EcoFlow section profile with guide profile











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

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)

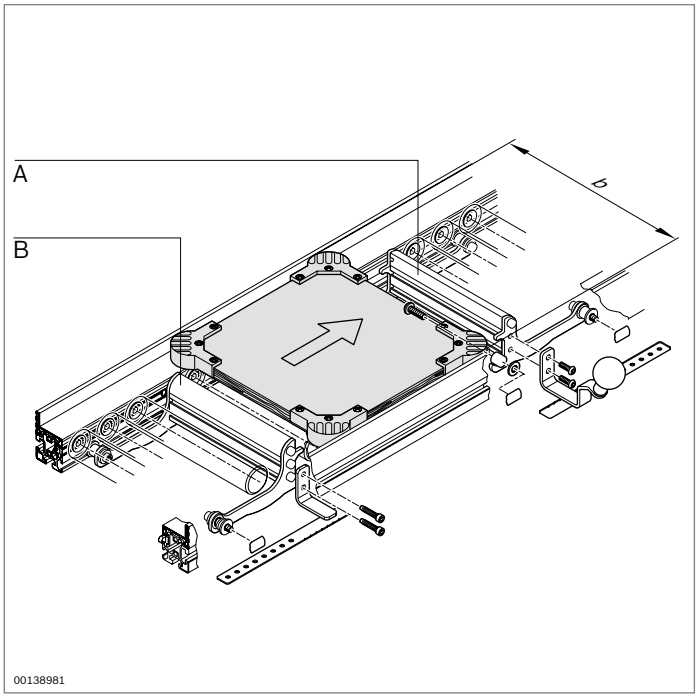
- For fastening EcoFlow transfer sections at same level

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

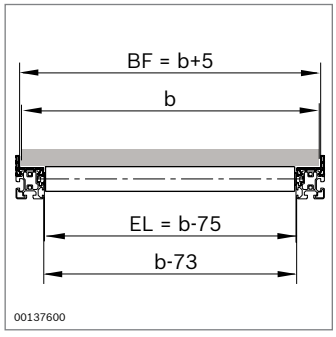
Material: aluminum; anodized
Scope of delivery: includes fastening material for 10 mm slot

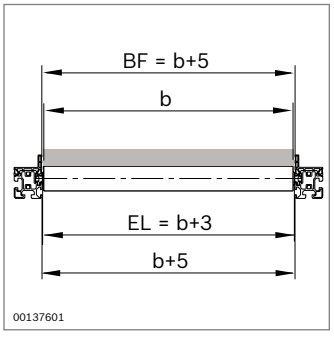


EcoFlow stop gates and return stops

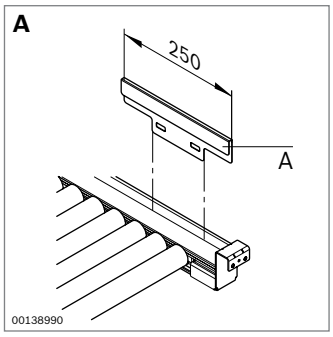
- Stop gate and return stop for positioning workpiece pallets or containers
- At the planning stage remember to leave sufficient leg room. The stop gate and return stop extend downwards by an additional 45 mm
- We recommend using a workpiece pallet with corner pieces (see page 141) to provide a defined stopping surface.

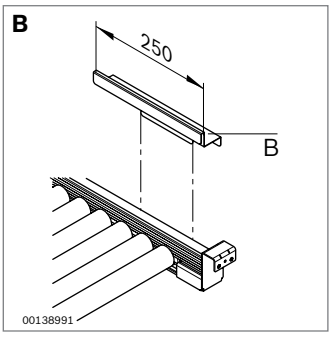
Scope of delivery: includes fastening material

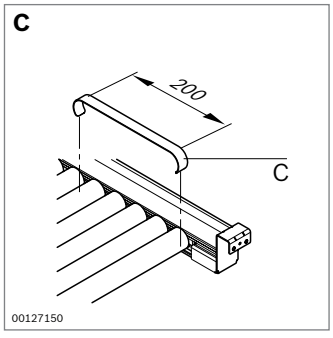


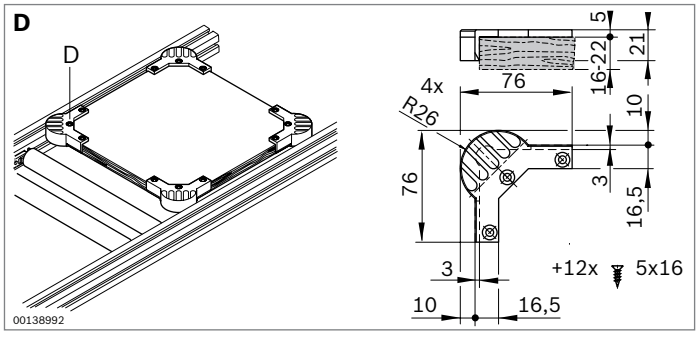


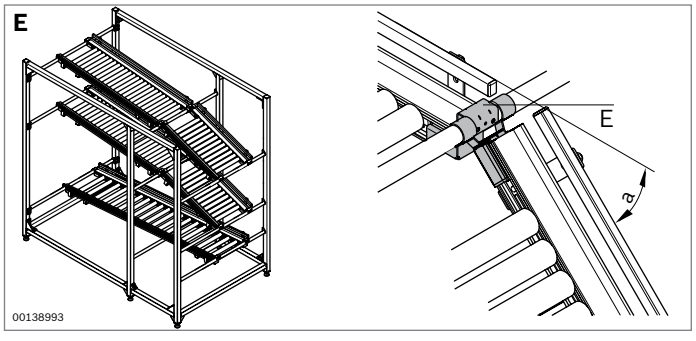
	EL (mm)	**No.**
A Stop gate	105 ... 1005	**3 842 995 007/EL**
	225	**3 842 537 894**
	325	**3 842 537 895**
	425	**3 842 537 896**
	525	**3 842 537 897**
B Return stop	105 ... 1005	**3 842 995 017/EL**
	225	**3 842 537 898**
	325	**3 842 537 899**
	425	**3 842 537 900**
	525	**3 842 537 901**











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 material

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; includes fastening material

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° (tubular cross tie)
  - a_{max} = 30° (double tubular cross tie)

Material: steel; galvanized
Scope of delivery: includes fastening material

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



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.

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

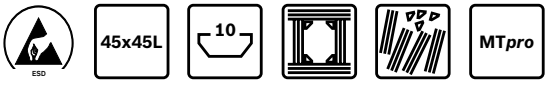


144 Workstation material shuttles
146 Logistics material shuttles
150 FiFo station

Workstation material shuttle



00137599



- Parts positioned within grab area of workstation
- Short conversion times with quick exchange of pre-picked 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
- Basic material shelves (see pages 26, 179) includes lettering clip; various plates available
- Castors: ball bearing, with locking mechanism
- Can be used in combination with workstation (see page 22) or for supplying materials in conjunction with the manual linking system EcoFlow

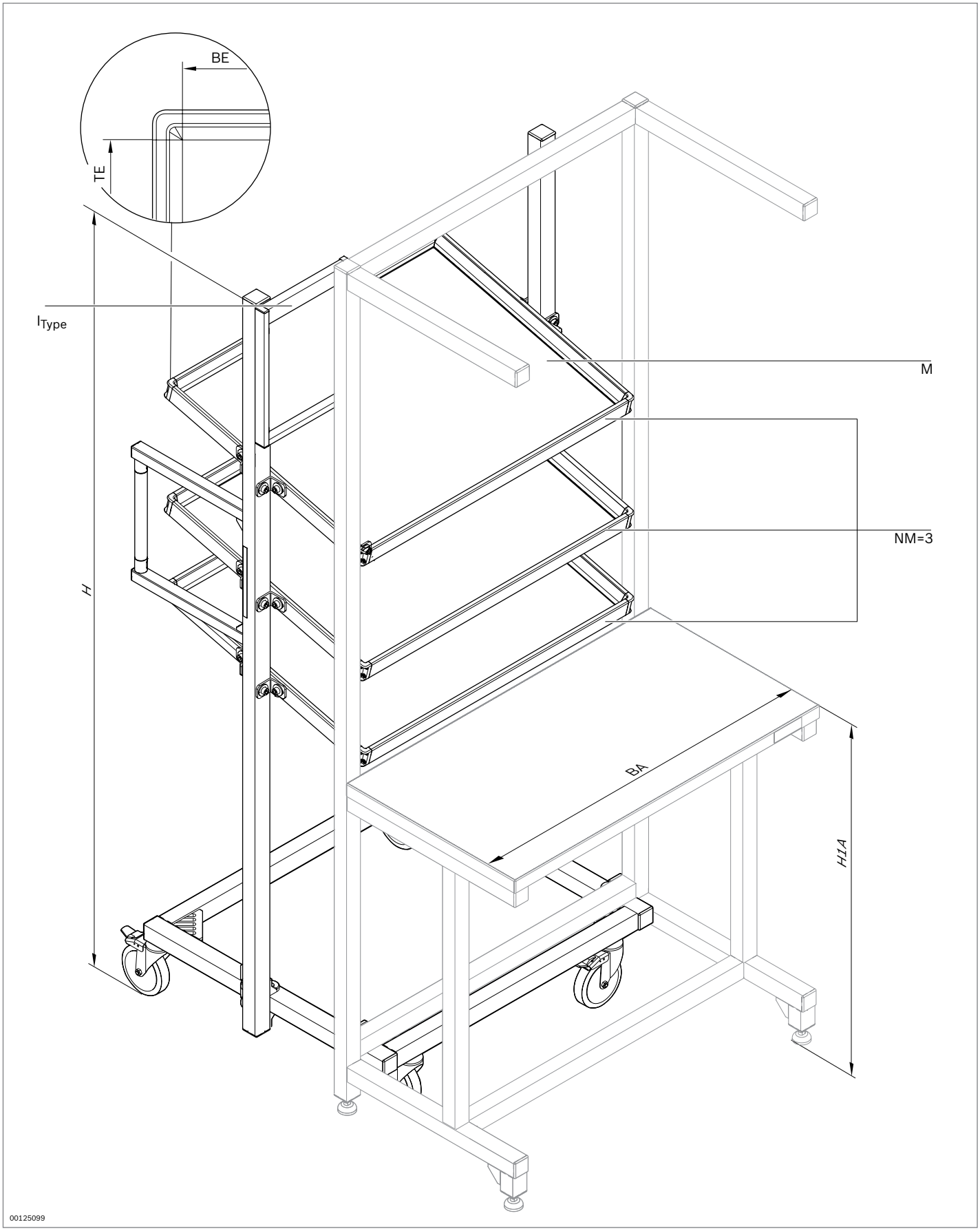
Accessories:

- Rubber profile to protect against heavy impacts when positioning the material shuttle (see page 28)
- Swivel fastening for tilting the material shelf (see page 178)

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

See also technical data (page 210 ff.)

Workstation material shuttle		**3 842 998 231**
A	Version	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
I_{typ}	Information board	7 different information boards


BE
TE
l_{Type}
M
NM=3
H
BA
HTA
00125099

Logistics material shuttle



00137598

- 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
- Basic material shelves (see pages 26, 179) includes lettering clip; various plates available
- Castors: ball bearing, with locking mechanism

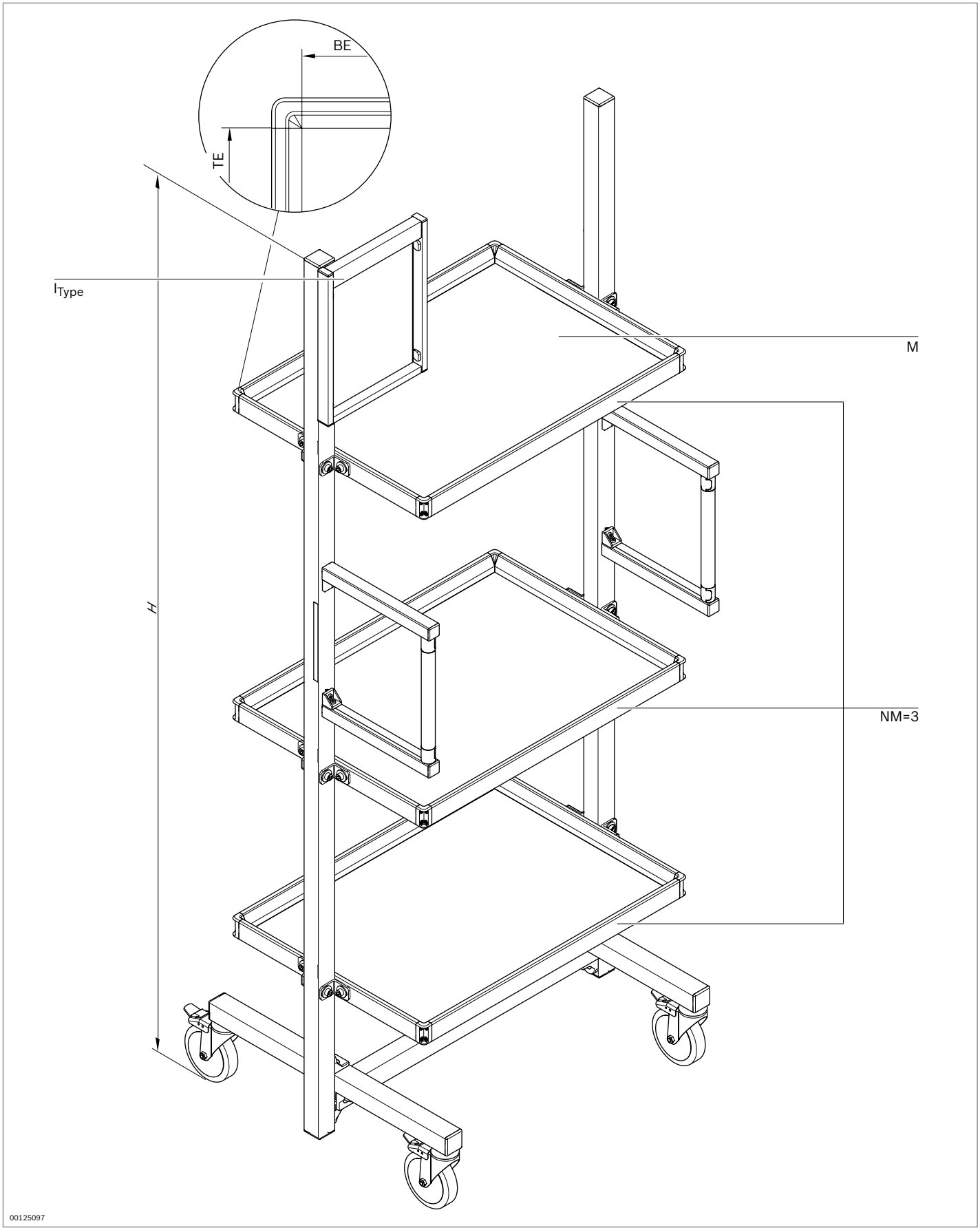
Accessories:

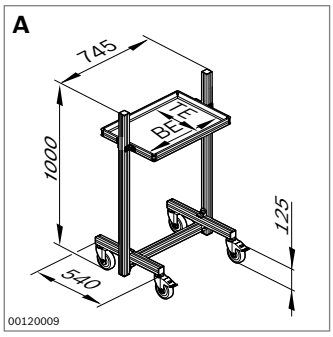
- Swivel fastening for tilting the material shelf (see page 179)

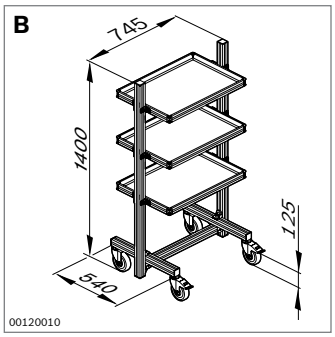
For workstation design and planning, we recommend MT*pro!* See pages 12 and 13 for more information.

See also technical data (page 210 f.)

Basic logistics material shuttle		**3 842 998 230**
A	Version	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
I_{typ}	Information board	7 different information boards


BE
TE
l_{Type}
H
M
NM=3
00125097





Accessories:

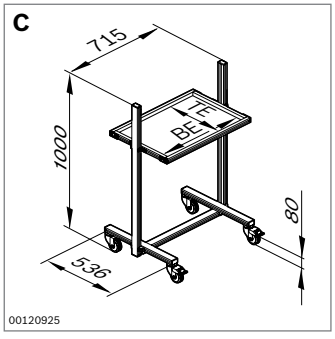
- Material shelf (see pages 26, 179)
- Lettering clip for material shelves (see pages 27, 179)
- Swivel fastening for tilting the material shelf (see page 179)

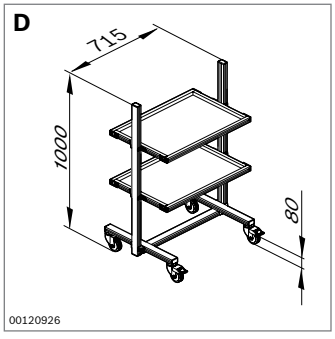
Standard logistics material shuttle

Basic logistics material shuttle

- 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
- Basic material shelves Basic (see pages 26, 179), plate: PP, SB (ESD)
- Castors: ball bearing, with locking mechanism

		H (mm)	**BE** (mm)	**TE** (mm)	**ESD**	**No.**
A	Basic logistics material shuttle (1 shelf)	1000	610	410		**3 842 515 483**
		1000	610	410	ESD	**3 842 515 484**
B	Basic logistics material shuttle (3 shelves)	1400	610	410		**3 842 508 181**
		1400	610	410	ESD	**3 842 508 182**





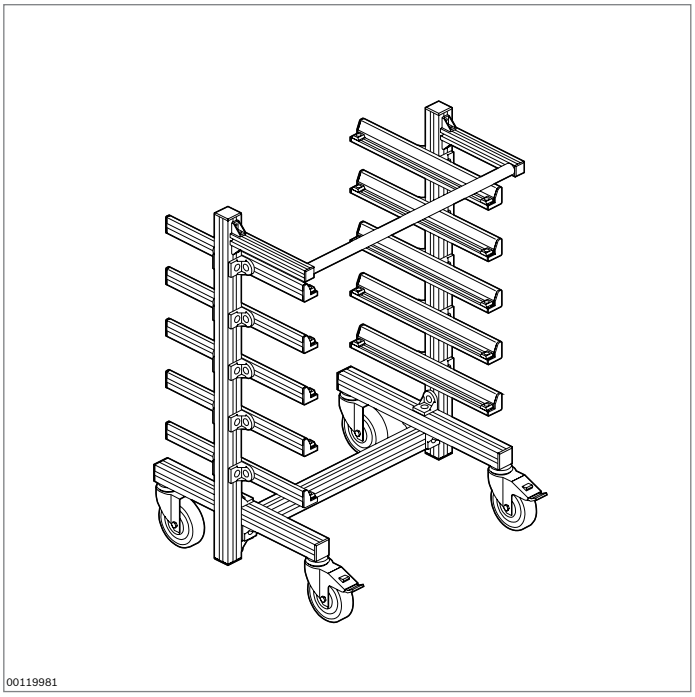
Economic logistics material shuttle

- For medium-duty applications
- Adjustable material shelf height, offset, and tilt to ensure ergonomic grabbing
- Available as ESD-conductive version
- Economic material shelves (see pages 26, 178), plate: PP, SB (ESD)
- Castors: rubber tires, with locking mechanism

Accessories:

- Material shelf (see pages 26, 178)
- Lettering clip for material shelves (see pages 27, 178)
- Swivel fastening for tilting the material shelf (see page 178)

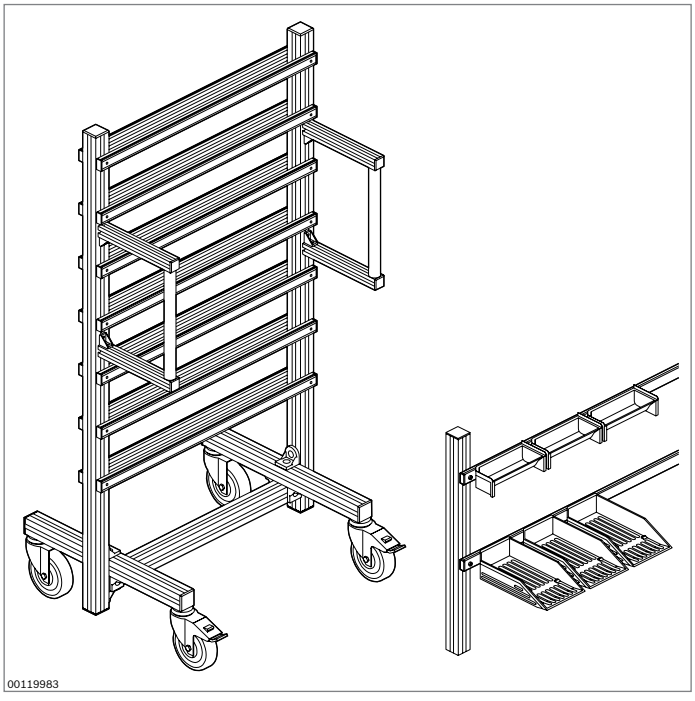
		H (mm)	**BE** (mm)	**TE** (mm)	**ESD**	**No.**
C	Economic logistics material shuttle (1 shelf)	1000	610	410		**3 842 515 481**
		1000	610	410	ESD	**3 842 518 120**
D	Economic logistics material shuttle (2 shelves)	1000	610	410		**3 842 515 482**
		1000	610	410	ESD	**3 842 518 121**



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

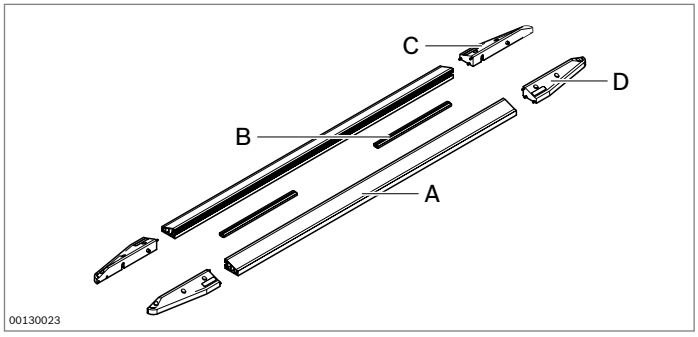
Further material shuttle variants can be custom-built to meet specific requirements. The individual components are described in the “Components” section (see page 176).

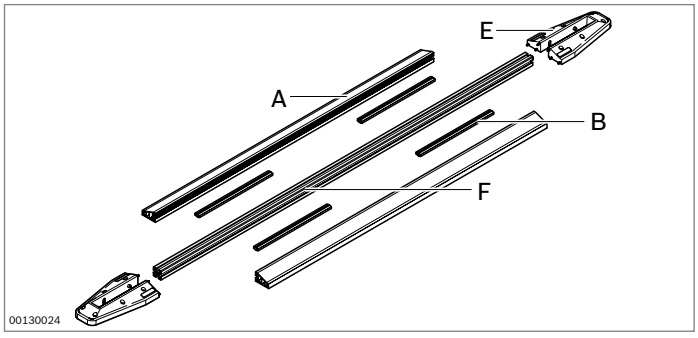
FiFo station



00137599

- 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





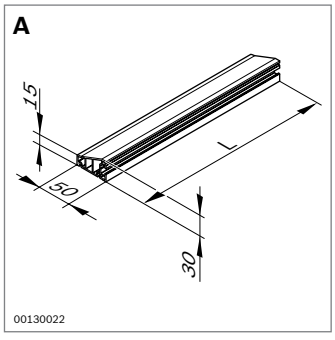
Components

- 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.

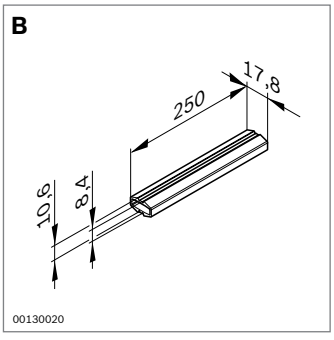
Guide rail color: yellow
End cap color: black

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

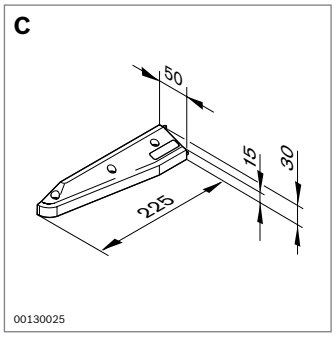
A



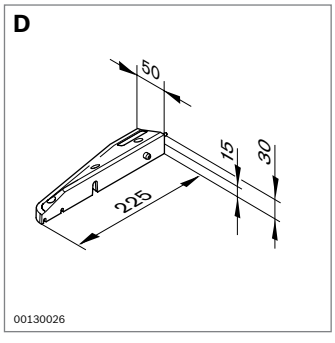
B



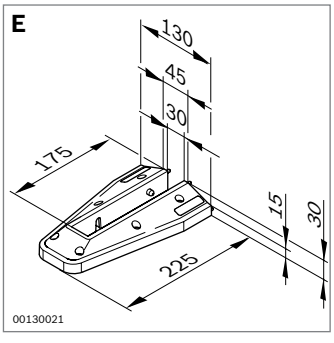
C



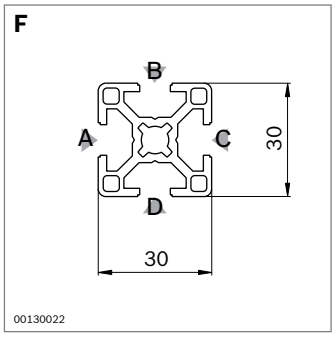
D



E



F





Case lifters help 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







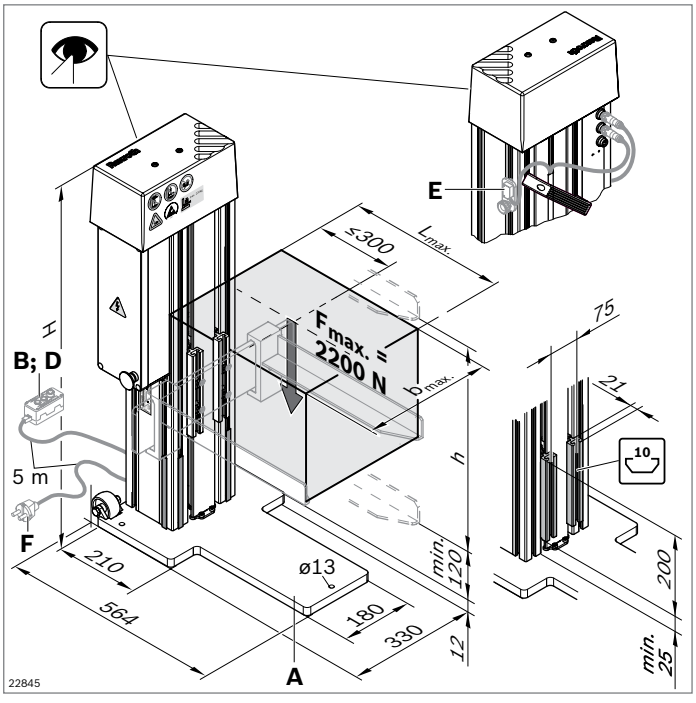




154 Electric case lifter
156 Accessories

Electric case lifters





- 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)
- 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 setup without electrician; connection via HD mains cable (see page 155) or connecting cable (see page 49)

Required accessories: Basic hand switch or Comfort hand switch + Comfort sensor unit; mains cable
Recommended accessories: attachment plate, forks, suspension lug (see pages 156, 157)

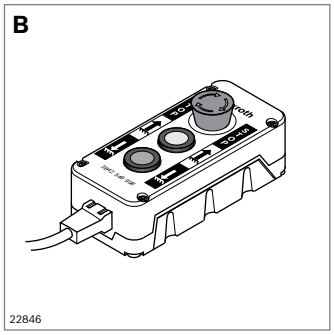
Technical data

- Permissible load F_{max}: 2200 N
- Lifting velocity: 25 mm/s
- Operating time (OT): 20%
- Connection: ~230 V/max. 16 A
- IP rating: 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[1]	900	1300	⚠	**3 842 546 992**
		USA/ CDN	1300	1700	⚠	**3 842 555 641**

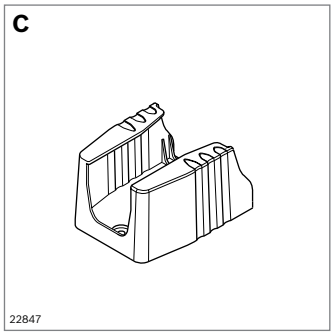
[1] TÜV, UL and CSA test marks



Basic hand switch (B)

- Push button for manual lifting and lowering
- With emergency stop
- Can be replaced with Comfort hand switch (**D**)
- Not suitable for oily environments, solution on request

		No.
B	Basic hand switch	**3 842 546 998**

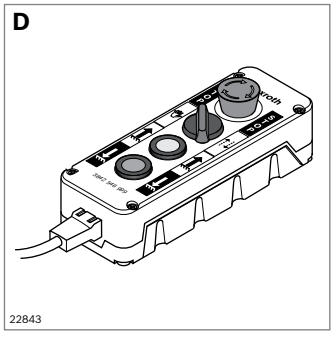


Holder for hand switch (C)

- To stow Basic and Comfort hand switches

Scope of delivery: includes fastening material for 10 mm slot

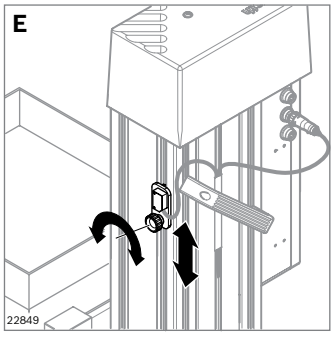
		No.
C	Holder for hand switch	**3 842 548 038**



Comfort hand switch (D)

- For selection of “Manual” or “Automatic” mode
- Push button for manual lifting and lowering in “Manual” mode
- With emergency stop
- Not suitable for oily environments, solution on request

		No.
D	Comfort hand switch	**3 842 546 999**

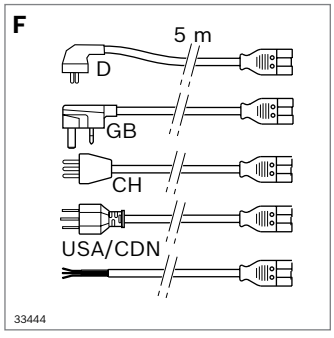


Comfort sensor unit (E)

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

Scope of delivery: includes fastening material for 10 mm slot

		ESD	No.
E	Comfort sensor unit		**3 842 547 200**



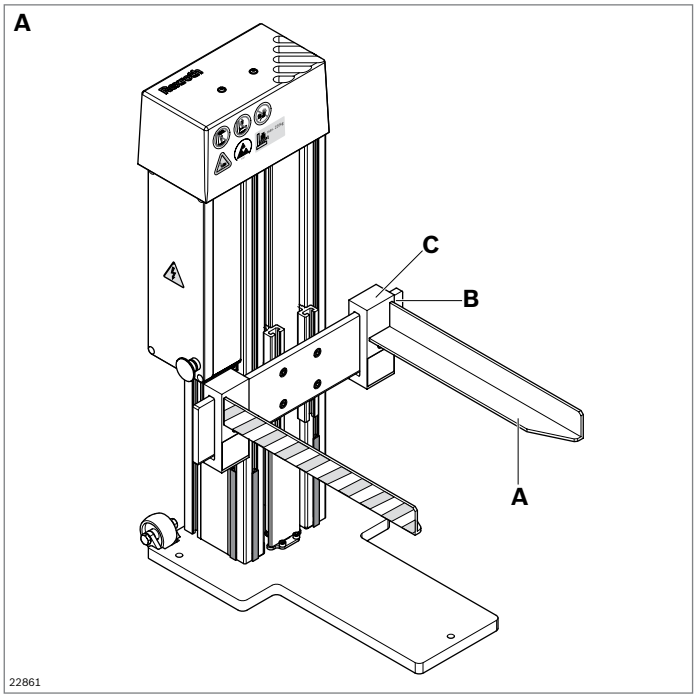
Mains cable (F)

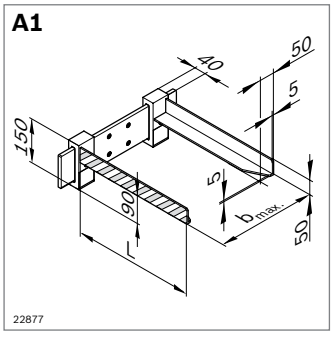
- Ready-to-use; for simple, secure plug-and-play installation

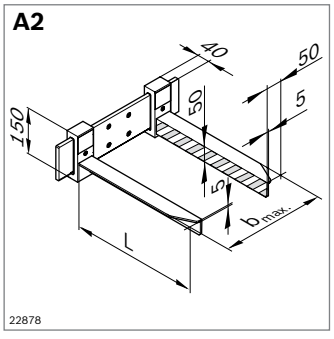
		Country	L (m)	No.
F	HD mains cable	D/F	5	**3 842 554 183**
		GB	5	**3 842 555 603**
		CH	5	**3 842 555 605**
		Open-ended	5	**3 842 555 607**
	Mains cable	USA/CDN[1]	5	**3 842 537 323**

[1] UL and CSA test marks

Case lifter accessories





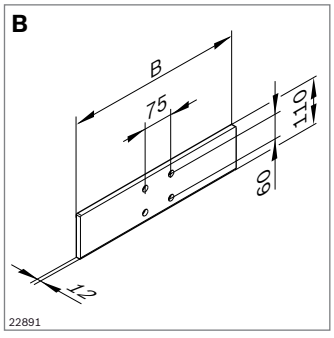


Forks (A)

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

Material: steel; powder-coated; black, with yellow safety mark on the side
Scope of delivery: kit with two forks (left and right), including fastening material

		L (mm)	**ESD**	**No.**
A	Forks	400		**3 842 549 435**
		600		**3 842 549 442**



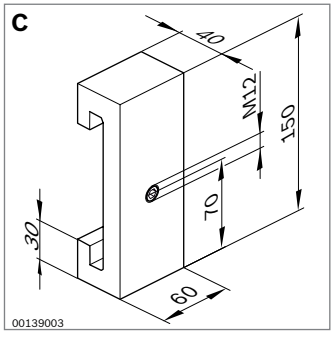
Attachment plate (B)

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

Material: steel; galvanized

Scope of delivery: includes fastening material (with case lifter)

		B (mm)	**b_{max}** (mm)	**ESD**	**No.**
B	Attachment plate	450	400		**3 842 549 427**
		650	600		**3 842 549 428**



Suspension strap (C)

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

Material: steel; preserved

Scope of delivery: includes fastening material

		Set	**ESD**	**No.**
C	Suspension strap	2		**3 842 549 449**



More transparency with ActiveCockpit for optimized production

Lean production made easy:
Even in its basic version, the ActiveCockpit software offers a broad range of options for improving and making manufacturing processes more efficient.
All relevant data is processed with transparency and user-friendliness – ideal conditions for rapidly identifying and exploiting optimization potential.

Industry 4.0: production and IT growing together
Industry 4.0 is the next major step for manufacturing plants. The dialog between man, machine and product plays an ever-increasing role in technical implementation. The fusion of production IT and enterprise IT, the synchronization of processes, and machines that automatically make decisions in real time all allow for efficient and customized manufacturing.
As the leading supplier of Industry 4.0 solutions, Bosch Rexroth is using its own application experience in production – including for the interactive touchscreens used for the ActiveCockpit industrial software. As a trendsetting platform for production, this solution brings all the relevant data directly to the line.

More work flow efficiency by consolidating information
A look at a typical manufacturing process shows how many different sources of data workers have to take into account: They look up information on stocks and pending orders on the computer during production planning. Statuses and quality information are manually documented on various boards. Everyone writes down deadlines. For line management and the various machines, users have to have mastered the user interfaces and manually start processes.

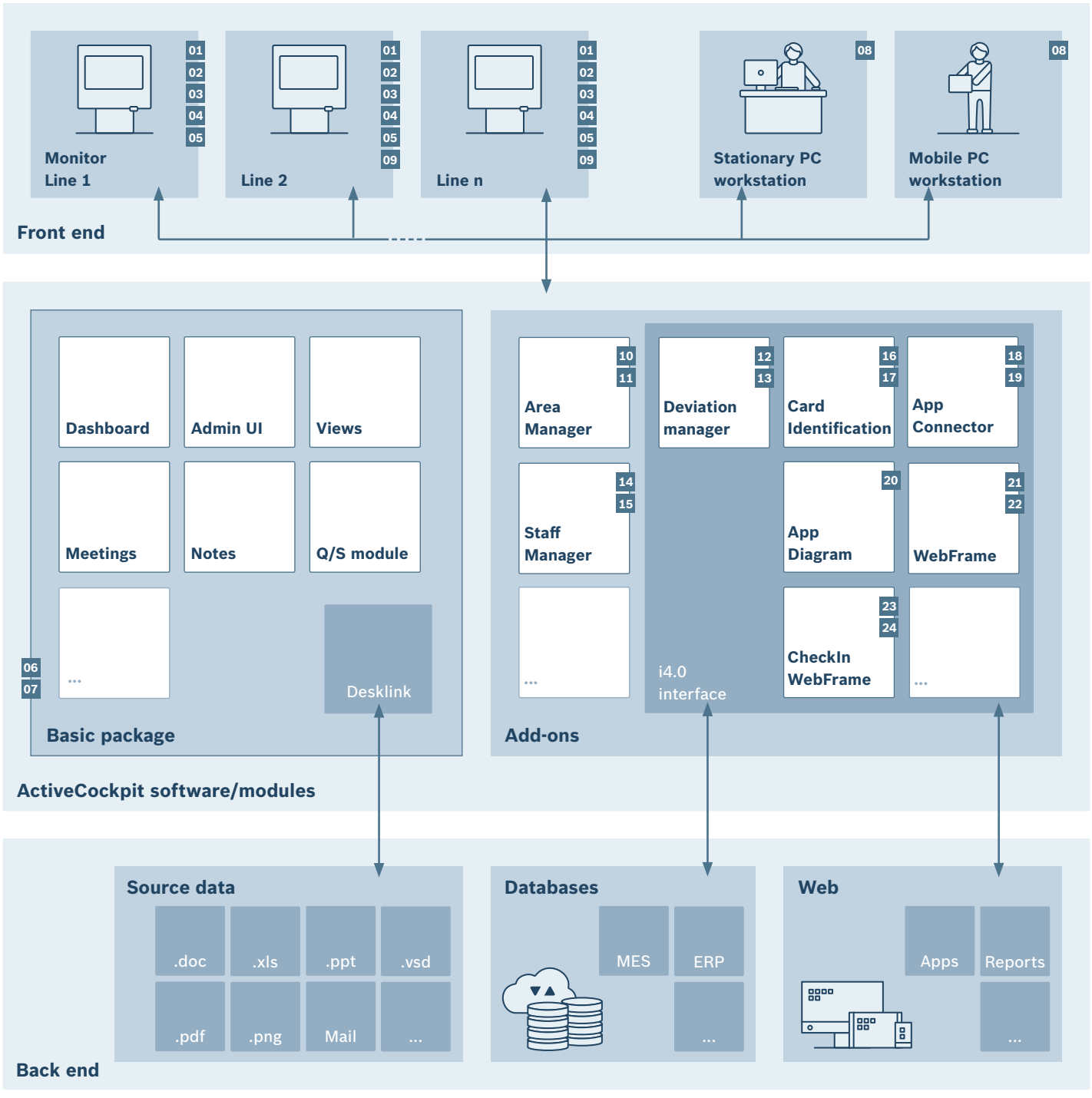
The ActiveCockpit software uses open interfaces to continuously record, process and filter manufacturing data from existing software landscapes and various data sources.
Current quality and production figures are displayed on the touchscreen in real time and can be analyzed directly on site. This gives everyone involved at the plant the most up-to-date information to serve as the basis for improvements and new standards. Deviations from specified production parameters are displayed in the key figures and immediately initiate the improvement process.

Transparent and user-friendly
With this system, all relevant manufacturing data can be shown at any time – from availability to production times, to production numbers. This not only saves time and money, it also increases productivity and competitiveness. ActiveCockpit is fully interactive: whiteboard, escalation, e-mail, explorer and up-to-mobile functions help decisions be made more efficiently.



162 Software
164 Extensions
168 Hardware

ActiveCockpit – system architecture and functions



ActiveCockpit: hardware and software

Hardware				Recommended ActiveCockpit accessories
	Monitor	01	3842 557 139	Prowise 65" ultra-HD LCD touchscreen
	Base	02	3842 554 209	Electrically height-adjustable base
	Frame	03	3842 558 278	White frame for monitor
	Card reader	04	3842 558 271	Reader for scanning cards
	Card	05	3842 558 272	Registration cards for employee identification
Software	**Basic package**			Desklink, meetings, admin UI
		06	3842 558 253	License for 1st year, including 10 concurrent users, 1 device license
		07	3842 558 276	License for another year, including 10 concurrent users, 1 device license
		08	3842 557 110	Yearly license for another 10 concurrent users
		09	3842 557 111	Yearly license for another device
Add-ons	**Area Manager**			Sub-area/area creation, with separate dashboard
	Optional			Administration, user groups and app
		10	3842 558 266	License for 1st year
		11	3844 558 267	License for additional year
	Deviation Manager			Incident tracking and management with an MES connection
	Optional	12	3842 558 260	License for 1st year (per area)
		13	3843 558 261	License for another year (per area)
	Staff Manager			Capacity balancing in the plant
	Optional	14	3842 558 258	License for 1st year (per area)
		15	3844 558 259	License for another year (per area)
	Card Identification			Login to ActiveCockpit by ID card (card reader required)
	Optional	16	3842 558 273	License for 1st year (per card reader)
		17	3843 558 274	License for another year (per card reader)
	App Connector			Software developer kit: use of ActiveCockpit features for
	Optional			internal web applications via interfaces
		18	3842 558 264	License for 1st year (per area)
		19	3843 558 265	License for another year (per area)
	App Diagram			Display of live data
	Project	20		Requires prior use case clarification
	WebFrame			Connection of external web pages/applications
	Optional	21	3842 558 254	License for 1st year (per area)
		22	3843 558 255	License for another year (per area)
	CheckIn WebFrame			Deeplink with preview function
	Optional	23	3842 558 262	License for 1st year (per area)
		24	3843 558 263	License for another year (per area)

ActiveCockpit – software
Basic package and licenses



Server and database requirements
- Operating system: Windows 2012 (or later)
- CPU: min. dual-core (quad-core recommended)
- Memory: min. 8 GB (16 GB recommended)
- Hard drive: 2 GB for ActiveCockpit + > 50 GB for data
- Network connection: Gigabit LAN
- Software: Microsoft Office 2007 (or later)

Client requirements
- Operating system: Windows 7 (or later)
- Memory: > 4 GB
- CPU: min. Intel Core i5 3rd Gen
- Software: Microsoft Office 2007 (or later)
- Network: tethered Gigabit LAN
- Graphics card: Ultra HD-capable, e.g.,: ATI Radeon 7850 or NVIDIA Geforce GTX 760
- Cable: 4K-capable HDMI cable

ActiveCockpit basic package

- Interactive communications platform for the manufacturing industry
- Processing and display of manufacturing data in real time
- Extension of web-based basic software package with applications
- Digitalization of shop-floor data via Desklink
- Structured and documented team meetings
- Customer-oriented configuration thanks to intuitive web application
- Automatic minuting function saves time
- Space-saving

Features:
- Web-based ActiveCockpit software on annual lease
- Licenses can be purchased for additional users

Basic package contains the following:
- Modules: Dashboard, Views, Meetings, Notes, Whiteboard, Q-and-S, Desklink
- 10x concurrent user license
- 1x device license
- 1x administrator rights

ActiveCockpit basic package	No.
1-year lease	**3 842 558 253**
Lease for another 12 months	**3 842 558 276**

ActiveCockpit licenses	No.
10 concurrent users	**3 842 557 110**
1 device	**3 842 557 111**

Description of ActiveCockpit basic package functions

Desklink

- Fast digitization of data from different file formats, e.g., Excel, Word, PowerPoint
- Data is updated automatically
- Interactive widget status change

Dashboard

- All relevant data digitally available on site
- Information from different file formats can be displayed, e.g., Excel, Powerpoint, video
- Accessible to all employees

Views

- Fast compilation of data and documents, e.g., for improvement meetings
- Individual assignment of user authorizations, including read, edit, delete
- Information can be displayed and used across departments, documents are updated via Desklink
- Filter and display relevant information without editing the original file

Meetings

- Operator can assign individual names for each plant
- Documentation of meetings with freely selectable components and individually definable structure
- Automatic minuting with all relevant information and attachments to the discussed topics

Notes and whiteboard functionality

- Note function for communicating with colleagues or for escalating during the meeting
- Annotation function via touchscreen for marking, commenting directly in ActiveCockpit
- Display and transmit relevant information. In case of malfunctions, a photo can be taken via tablet and forwarded to ActiveCockpit for evaluation

Q-and-S module

- Entry and management of quality and safety deviations
- Display of the current status in the form of a Q for quality or an S for safety
- Overview of quality and safety status for all months by year
- Values can be transferred back to ERP/MES systems via Industry 4.0 interface

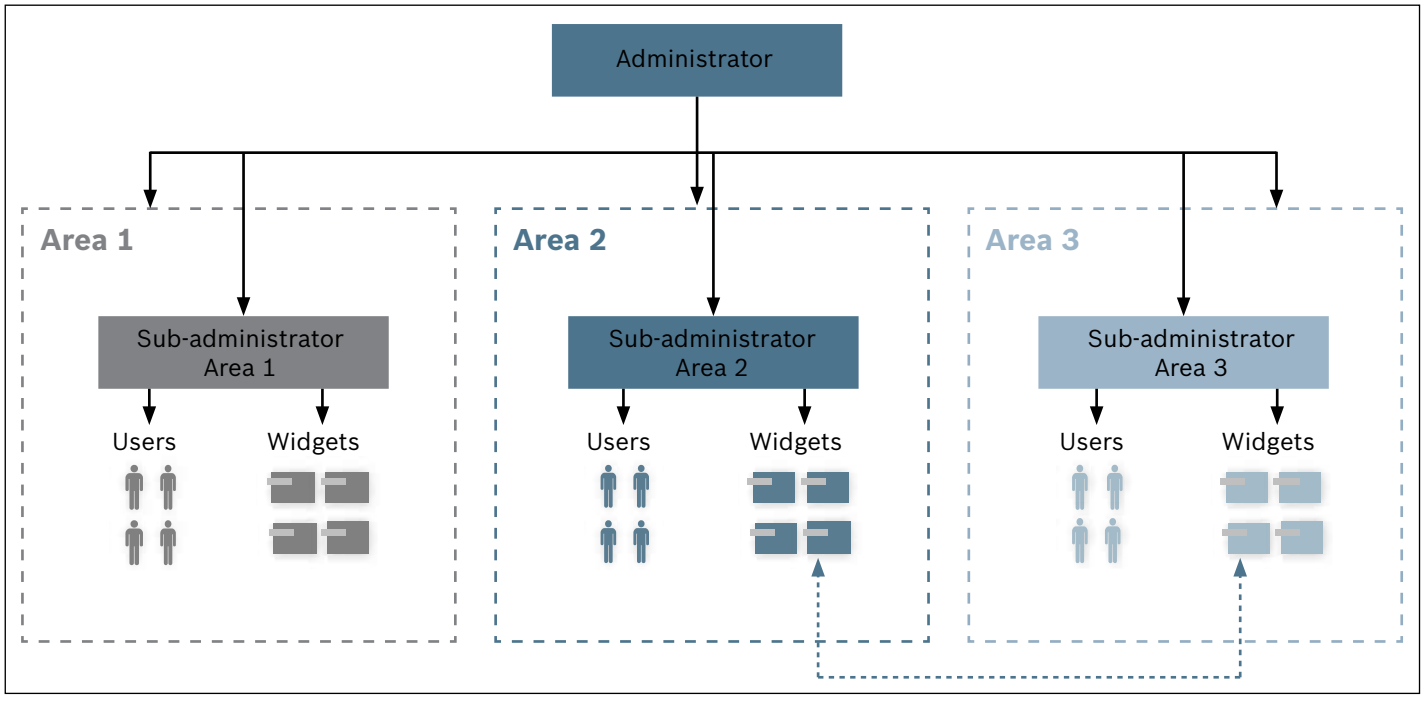
Data security:

- All data including e-mail dispatch are transmitted encrypted
- All user inputs are checked for correctness and malicious code
- Application uses defensive programming methods that review all entries in advance
- A defined role and authorization concept controls access to the system and prevents errors during data entry
- All passwords are stored encrypted in the database to prevent disclosure in case database is compromised.
- Indirect database queries eliminate potential attacks (SQL injections)

ActiveCockpit – application software

Area Manager

- Hierarchical user and content management
- Reduced need for central administrators
- Decentralized user and content management “on site”
- Organizational separation promotes clarity and better delineates responsibilities
- Releasing widgets between areas facilitates inter-hierarchical work with content
- Separate dashboards for every area can be configured individually



Area Manager	No.
1-year lease	**3 842 558 266**
Lease for another 12 months	**3 842 558 267**





Deviation Manager

- Data import from MES via a web service for easy processing
- Deviation classification and tracking
- Classified deviations displayed clearly (status, priority, revisit) for employees
- Close remedied incidents or set to revisit
- Select between “Moderator” and “My Incidents” UIs

Deviation Manager	No.
1-year lease per area	**3 842 558 260**
Lease for another year (per area)	**3 842 558 261**





Staff Manager

- Quicker reconciliation and exchange of personnel capacity
- Intuitive and visual ticket system for date tracking
- Hierarchical access to plant areas via work areas and the activities included in them.
- Export of requirements for staffing with external capacity/for processing in external systems
- Intuitive configuration in admin UI

Staff Manager	No.
1-year lease per area	**3 842 558 258**
Lease for another year (per area)	**3 842 558 259**



Card Identification

- App for easy system login via employee ID

Required accessories: Card reader (see page 170)
Recommended accessories: Registration cards

Card Identification	No.
1-year lease (per card reader)	**3 842 558 273**
Lease for another year (per card reader)	**3 842 558 274**



App Connector

- For integrating in-house applications into ActiveCockpit
- Individual functionality expansion for adding customer apps to the ActiveCockpit platform

App Connector	No.
1-year lease	**3 842 558 264**
Lease for another 12 months	**3 842 558 265**



WebFrame

- Customer-specific web applications integrated as widgets
- Third-party web applications embedded via URL

WebFrame	No.
1-year lease per area	**3 842 558 254**
Lease for another year (per area)	**3 842 558 255**



CheckIn WebFrame

- Image display with caption
- Display refreshed regularly
- Clicking on the report opens the web application
- User rights automatically given to third-party web applications
- User-friendly admin UI for configuring links and authorizations

Requirements

- Target application must provide a web service for authentication
- Target application must run in the same domain or sub-domain as ActiveCockpit
- Target application must provide static links to images as well as the proper Deeplink

CheckIn WebFrame	No.
1-year lease per area	**3 842 558 262**
Lease for another year (per area)	**3 842 558 263**

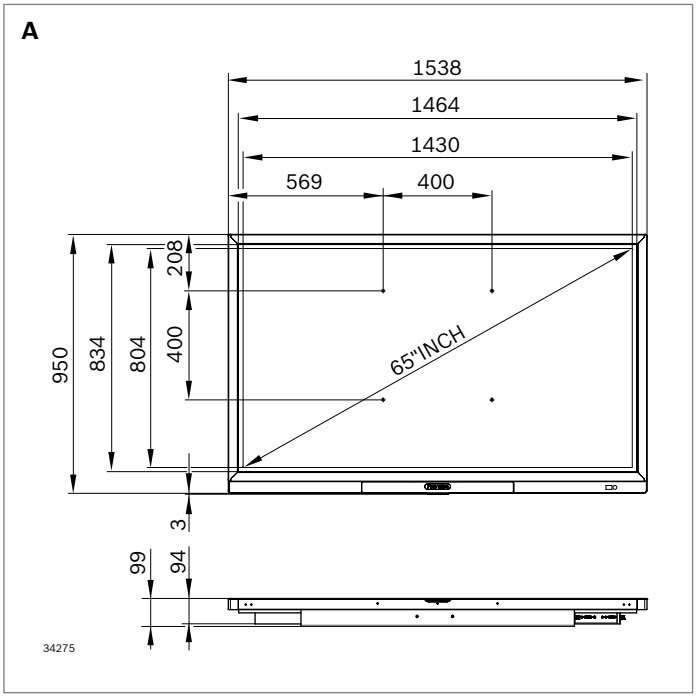
ActiveCockpit –
extensions for customers

Bosch Rexroth offers its clients project-specific services that go far beyond just engineering services. Supported services include:

- Start-up, training
- App Diagram
  - Live data visualization (e.g., KPIs) directly from back end systems
  - Tables and diagrams made quick and easy
  - Different data sources from which to choose
  - Freely configurable pull (periodic) or push (immediately upon signal from source system) refresh rate
  - Process optimization apps, such as Process Quality Manager or Production Performance Manager

ActiveCockpit – hardware





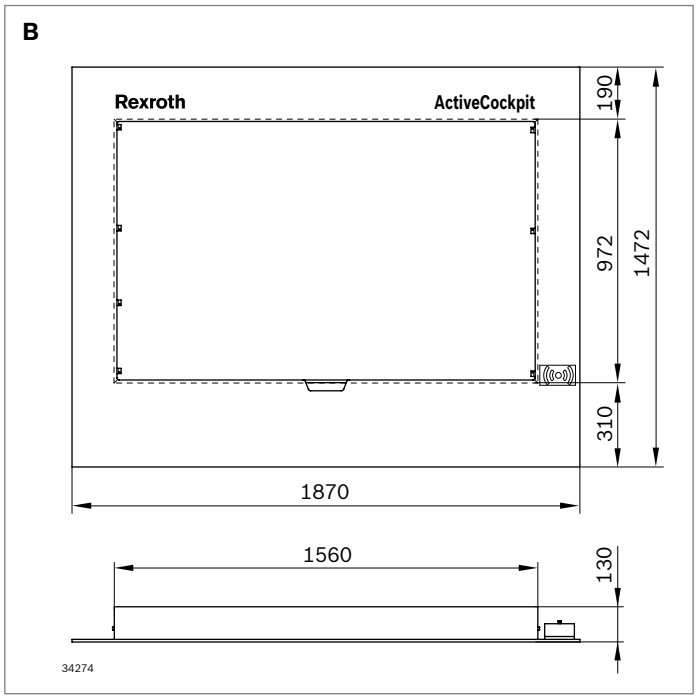
Monitor (A)

- Touchscreen monitor as I/O device for the ActiveCockpit software
- HDMI and USB connection
- 65" ultra HD LED
- Resolution: 3840x2160
  Refresh rate: 60 Hz
- Glass panel: 4 mm, Moh 7
- Touch module: IR module
- Angle of vision: 178°
- Power consumption: 248 W
- CE/FCC/IC/RCM

Requirements:

- Personal computer (not included)
- Network: tethered Gigabit LAN
- Graphics card: Ultra HD-capable, e.g.,: ATI Radeon 7850 or NVIDIA Geforce GTX 760
- Cable: 4K-capable HDMI cable

65" ultra HD touchscreen AC monitor	**Country**	**Voltage** (V)/ **frequency** (Hz)	**No.**
	EU	100–240 V/50; 60 Hz	**3 842 557 139**

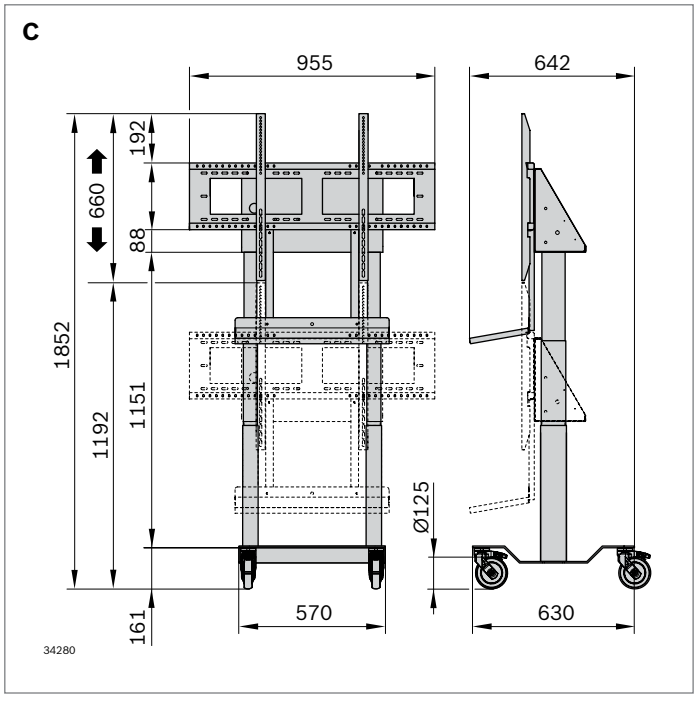


Frame (B)

- Frame for 65" ultra HD touchscreen AC monitor
- Includes label
- Card reader mount required

Material: polycarbonate; white
Scope of delivery: includes fastening material for 3 842 557 139

Frame	**Thickness** (mm)	**No.**
	10	**3 842 558 278**



Base (C)

- Electrically height-adjustable
- Mobile
- Lift: 660 mm from 1192 mm to 1852 mm
- Floor dimensions: 570x630 mm
- Roller diameter: 125 mm
- Operating time: 10%

Material: steel
Lift color: RAL 9006
Base plate color: RAL 9005

Base	**Country**	**Voltage** (V)/ **current** (A)	**No.**
	EU	100–240 V/16 A	**3 842 554 209**



Card reader

RFID card reader for logging into board with registration card

- Increases security when logging onto a 65" touchscreen
- 3-LED status indicator
- USB 2.0 connection
- Cable length: 2 m
- Dimensions: 112x54x27 mm
- Can be mounted on white frame (see page 169)
- IP 40
- Compatible with existing plant IDs (have validated by your Rexroth consultant)

Required accessories: Card Identification app

Card reader	No.
	3 842 558 271



Card

- Registration card for employee identification

Required accessories: Card reader

Card	No.
	3 842 558 272



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, can be written on both sides for board markers.

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

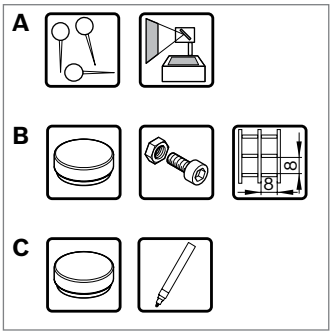
Multiple infoboards can be combined to set up CIP corners and discussion islands.

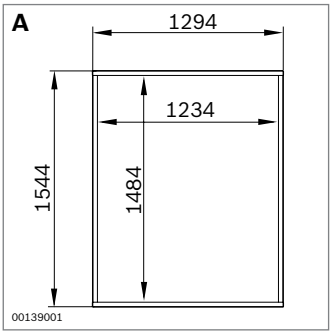


174 Infoboards
175 Accessories

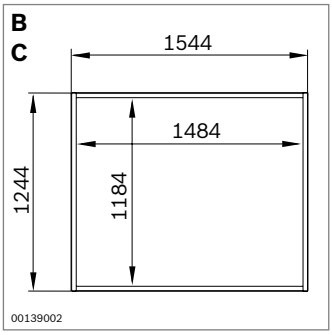


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00139002

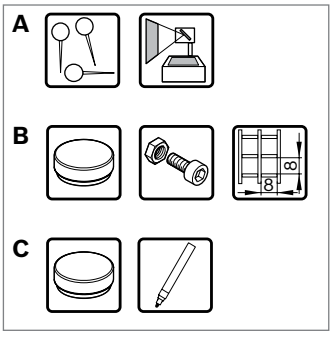
Wall infoboard

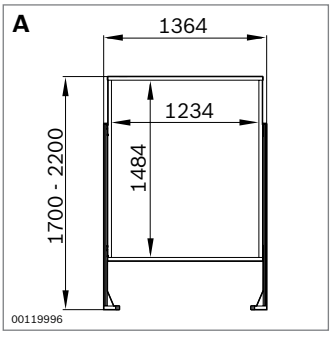
Accessories: bracket for wall mounting (see page 175)

		h x b (mm)	No.
A	Wall infoboard – pin	1484x1234	**3 842 515 775**
B	Wall infoboard – magnet	1184x1484	**3 842 516 405**
C	Wall infoboard – magnet marker	1184x1484	**3 842 515 776**

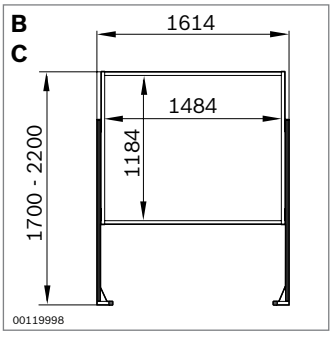


00127193





00119996



00119998

Economic infoboard

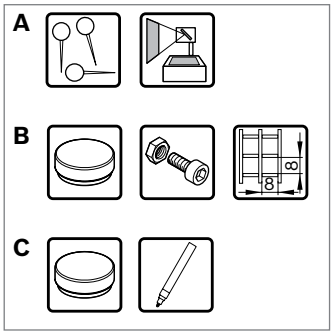
▶ Can be retrofitted with rollers for mobile applications

Accessories: roller set (see page 175)

		h x b (mm)	No.
A	Economic infoboard – pin	1484x1234	**3 842 515 771**
B	Economic infoboard – magnet	1184x1484	**3 842 516 406**
C	Economic infoboard – magnet marker	1184x1484	**3 842 515 772**

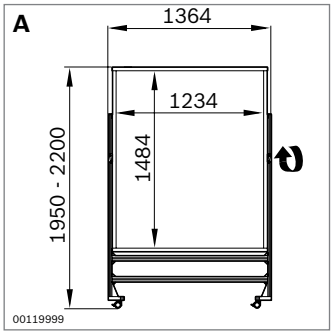


00120888

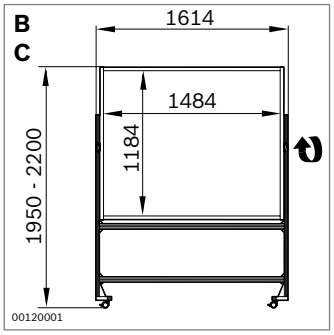


Mobile infoboard

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



00119999

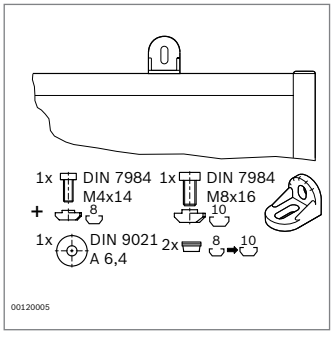


00120001

		h x b (mm)	No.
A	Mobile infoboard – pin	1484x1234	**3 842 515 773**
B	Mobile infoboard – magnet	1184x1484	**3 842 516 407**
C	Mobile infoboard – magnet marker	1184x1484	**3 842 515 774**



00121509



00120005

Infoboard accessories

		ESD	No.
Roller set for Economic infoboard	Set		**3 842 536 129**
Bracket for Wall infoboard			**3 842 515 547**



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.

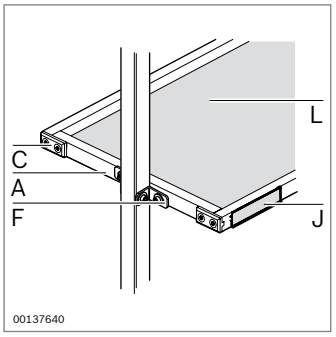
For simple and efficient planning and layout we recommend using MT*pro*.

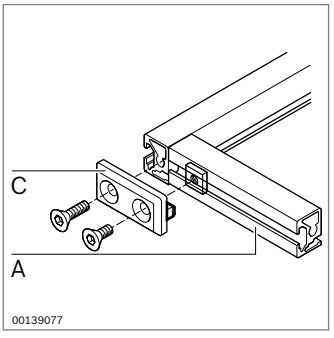


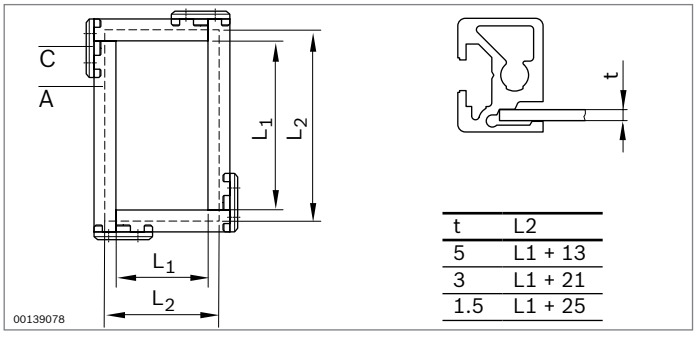
178 Material shelves
180 Conveyor level
181 Accessory upright
182 Reinforcements, lateral guides
183 Hanger
184 Grab containers, tool shelves, suspension profiles
185 Supporting arms
187 Material shuttles
188 Consoles, foundation brackets, table top supports

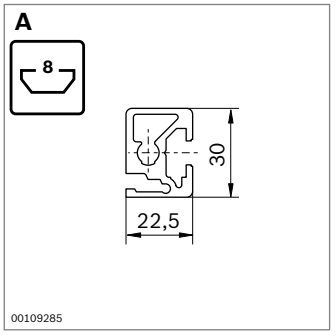
Material shelf assembly elements

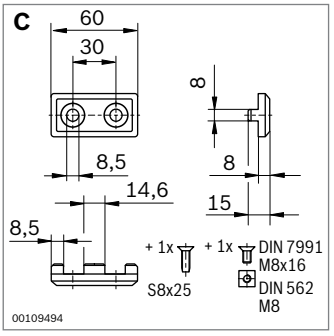
Material shelf Economic

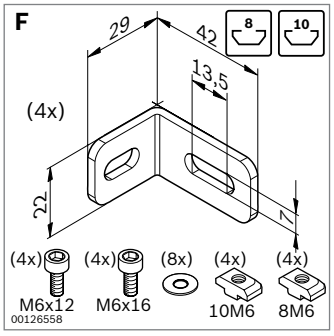


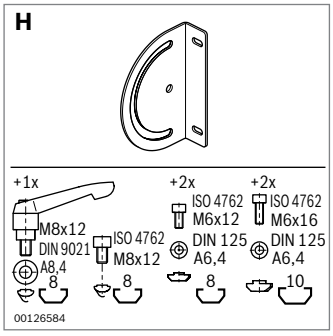


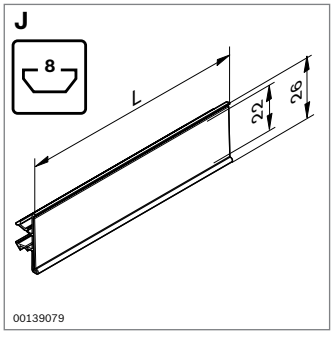


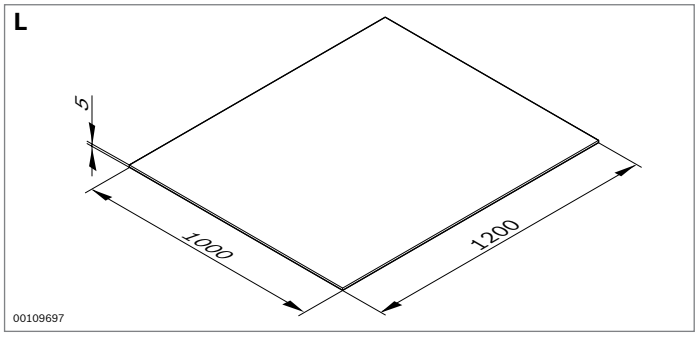






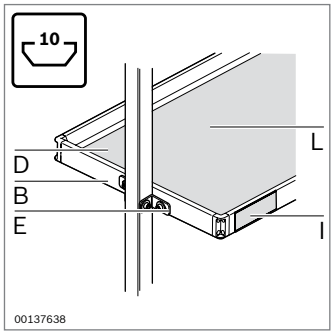


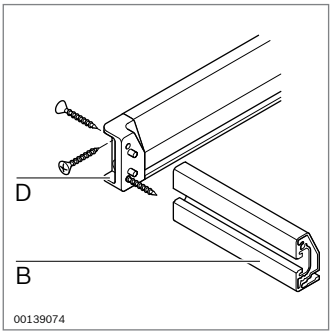


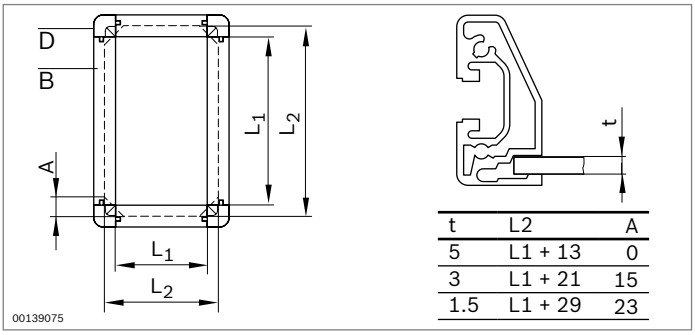


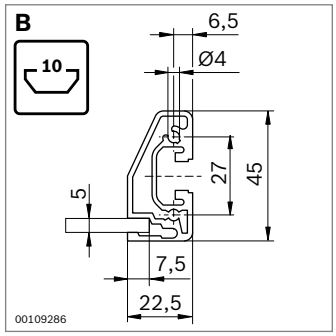
		L (mm)			ESD	No.
A	22.5x30 frame profile; material: aluminum; anodized	30 ... 5600	1			**3 842 992 493/L**
		5600	20			**3 842 515 229**
C	22.5x30 corner piece; material: PA; black			20	⚠	**3 842 554 709**
	22.5x30 corner piece; material: PA; gray			20		**3 842 554 708**
F	M6 bracket set, incl. fastening material for 8/10 mm slot; material: steel; galvanized			Set		**3 842 537 862**
H	Swivel fastening, incl. fastening material for 8 mm slot; material: steel; galvanized			Set		**3 842 538 275**
J	Lettering clip for 8 mm slot; material: PVC	2000		20		**3 842 537 113**
		102		20		**3 842 537 650**
L	Plate for frame profile; material: PP; gray, smooth on one side, textured on the other					**3 842 516 837**
	Plate for frame profile; material: SB; black, smooth on both sides				⚠	**3 842 516 838**

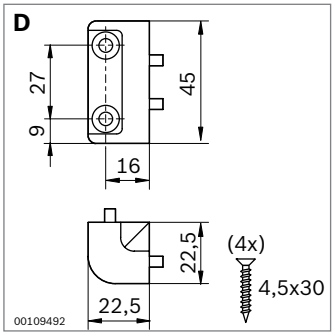
Basic material shelf

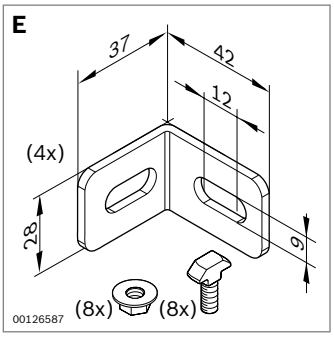


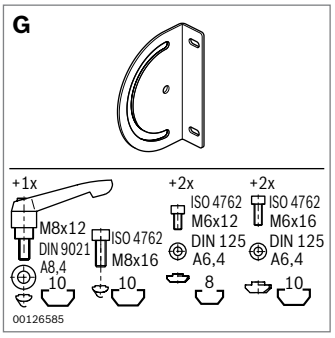


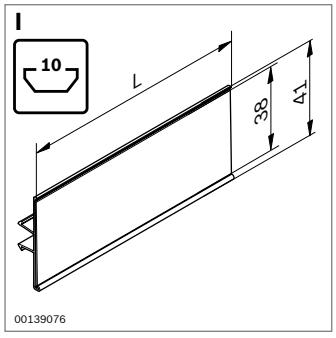


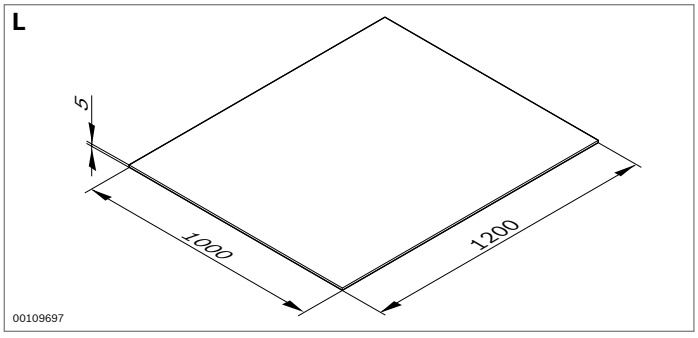






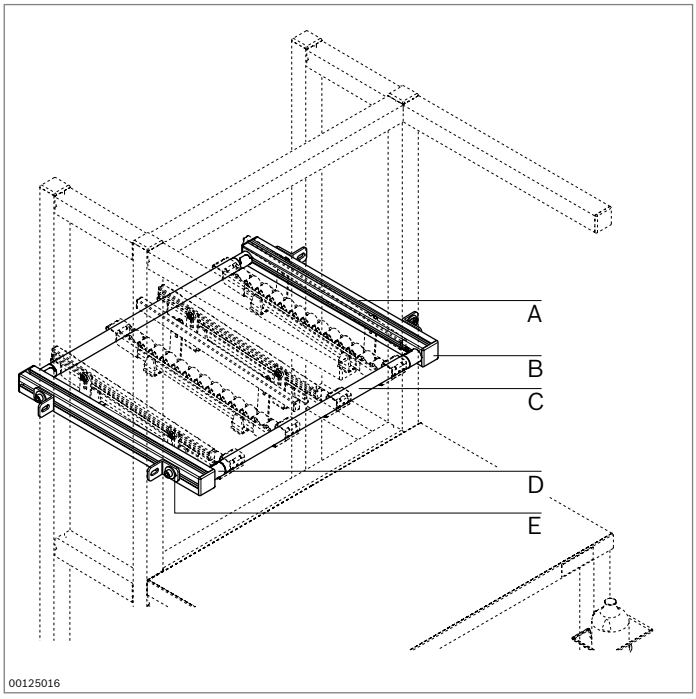


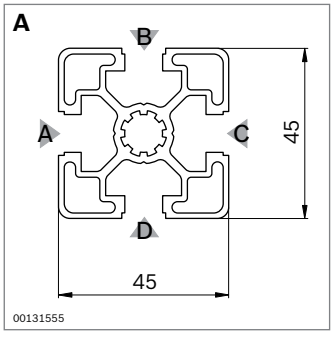


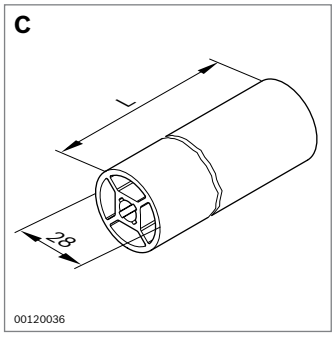


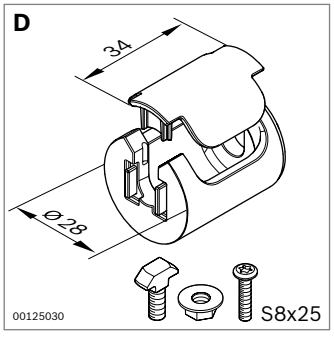
		L (mm)			ESD	No.
B	22.5x45C frame profile; material: aluminum; anodized	30 ... 5600	1			**3 842 992 411/L**
		5600	20			**3 842 508 102**
D	22.5x45 corner piece; material: diecast zinc			20	⚠	**3 842 535 637**
E	M6 bracket set, incl. fastening material for 10 mm slot; material: steel; galvanized			Set		**3 842 537 861**
G	Swivel fastening, incl. fastening material for 10 mm slot; material: steel; galvanized			Set		**3 842 538 276**
I	Lettering clip for 10 mm slot; material: PVC	2000		20		**3 842 537 116**
		102		20		**3 842 537 651**
L	Plate for frame profile; material: PP; gray, smooth on one side, textured on the other					**3 842 516 837**
	Plate for frame profile; material: SB; black, smooth on both sides				⚠	**3 842 516 838**

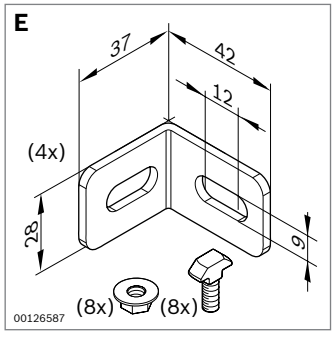
Conveyor level assembly elements





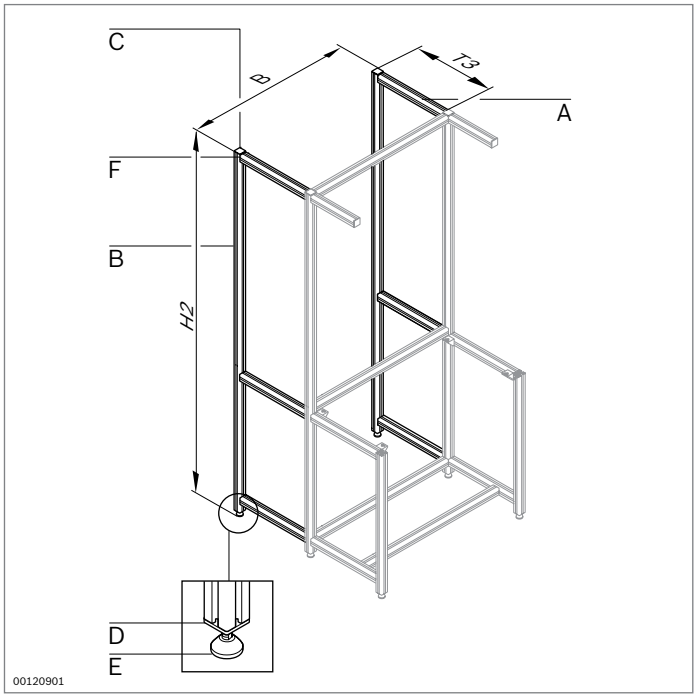


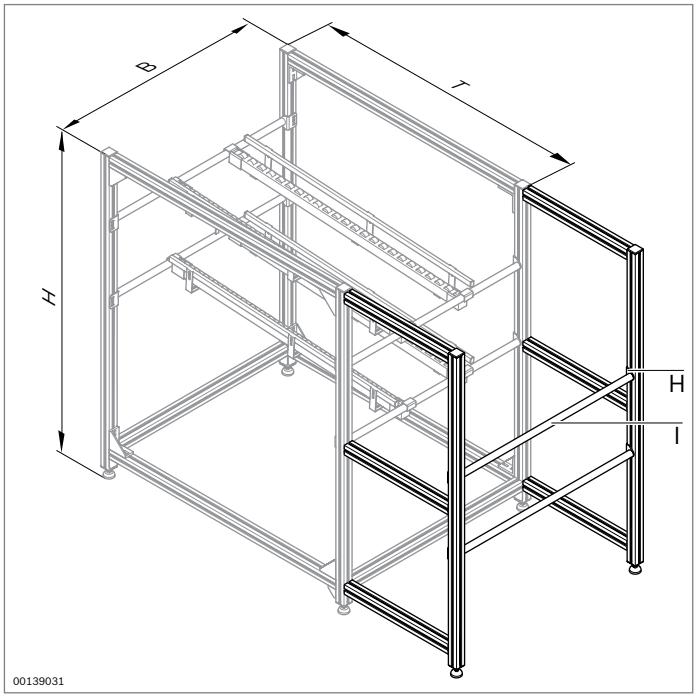


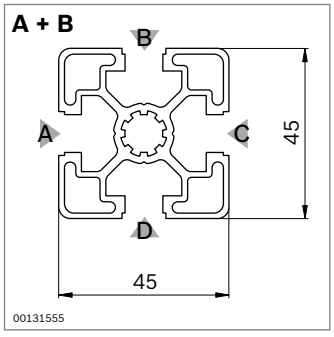


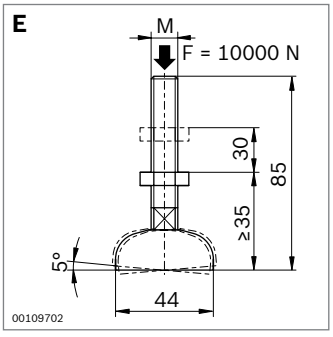
		L (mm)			ESD	No.
A	45x45L strut profile; material: aluminum; anodized	50 ... 6000	1			**3 842 993 737/L**
		6070	20			**3 842 553 611**
B	45x45L cap; material: PP; black			20	⚠	**3 842 548 753**
	45x45L cap; material: PP, signal gray			100		**3 842 548 752**
C	D28 round tube; material: aluminum; anodized	30 ... 6000	1			**3 842 993 317/L**
		6070	20			**3 842 535 118**
D	D28 T-connector			20	⚠	**3 842 532 879**
E	M8 bracket set, incl. fastening material for 10 mm slot; material: steel; galvanized			Set		**3 842 537 861**

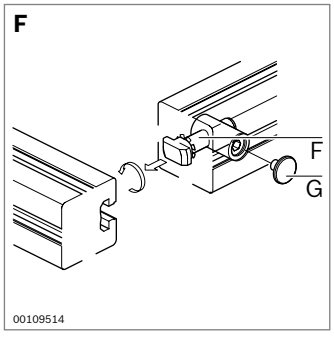
Accessory upright

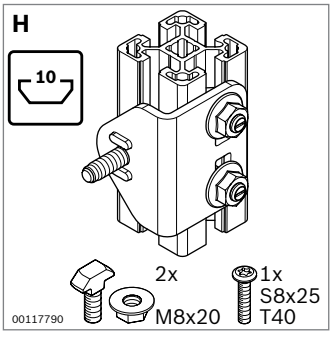






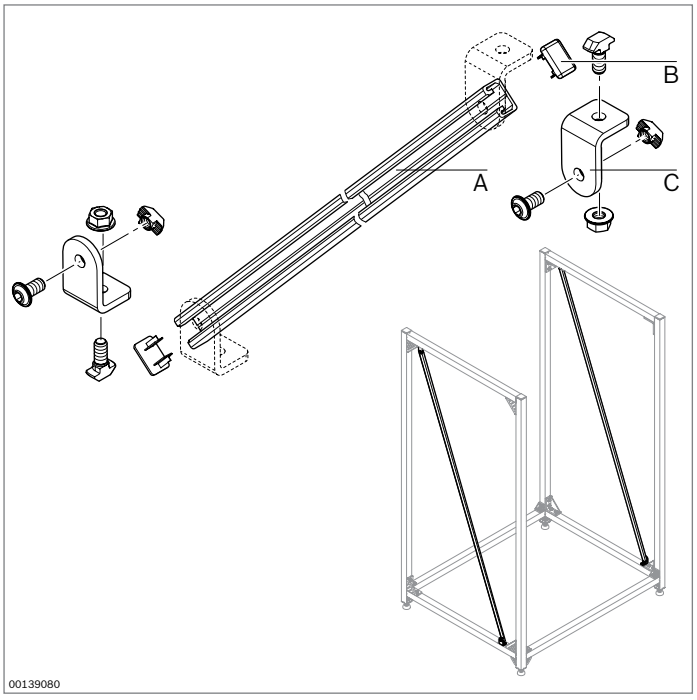


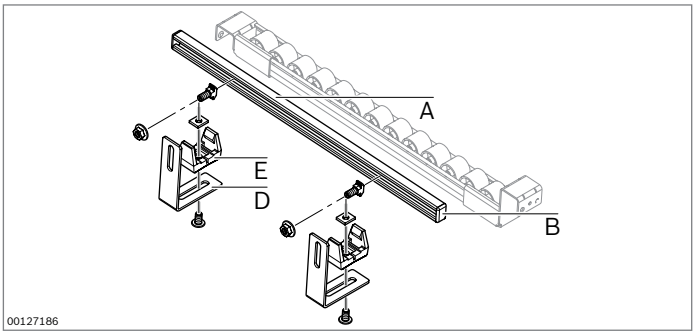


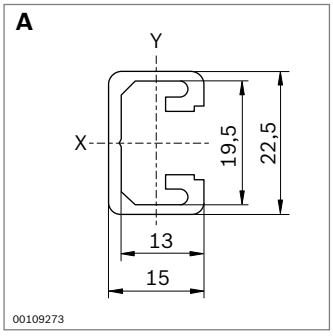


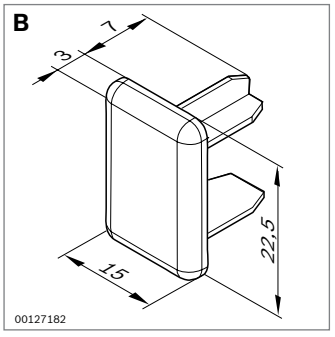
		L (mm)			ESD	No.
A	45x45L strut profile, DB17 profile machining (through hole d = 17) on both profile ends; material: aluminum; anodized	50 ... 6000	1			**3 842 993 737/L/ B=DB17/DB17**
B	45x45L strut profile, M12 profile machining (thread in core) on one profile end; material: aluminum; anodized	50 ... 6000	1			**3 842 993 737/L/ Z=M12/-**
A, B	45x45L strut profile; material: aluminum; anodized	6070	20			**3 842 553 611**
C	45x45L cap; material: PP; black			20	⚠	**3 842 548 753**
	45x45L cap; material: PP, signal gray			100		**3 842 548 752**
D	45x45L cap with hole; material: PP; black			20	⚠	**3 842 548 797**
	45x45L cap with hole; material: PP, signal gray			20		**3 842 548 796**
E	D44 leveling foot; material: steel; galvanized			20		**3 842 352 061**
F	D17 quick connector for 10 mm slot (0°)			10		**3 842 535 458**
G	Quick connector cap; material: PA			100		**3 842 538 564**
H	Holding bracket with connection kit; material: steel; galvanized			20		**3 842 536 002**
I	D28 round tube; material: aluminum; anodized (see Figure “C” on page 180)	30 ... 6000	1			**3 842 993 317/L**
		6070	20			**3 842 535 118**

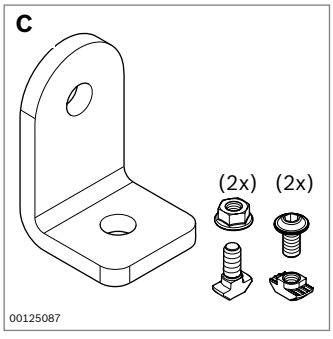
Reinforcement assembly element
Lateral guide assembly element

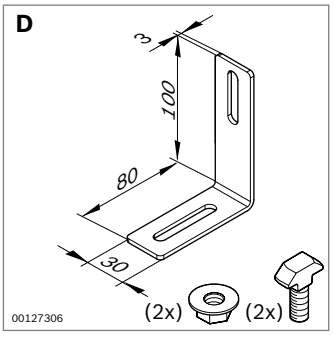


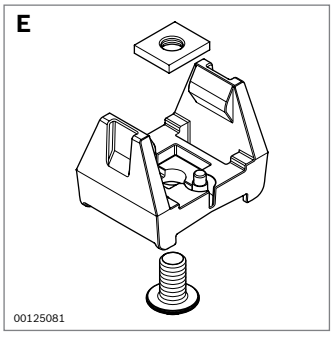


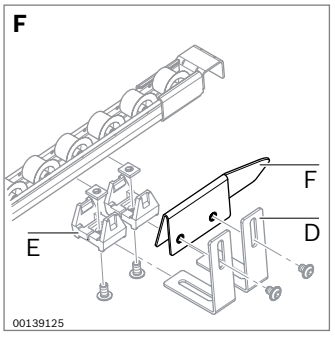






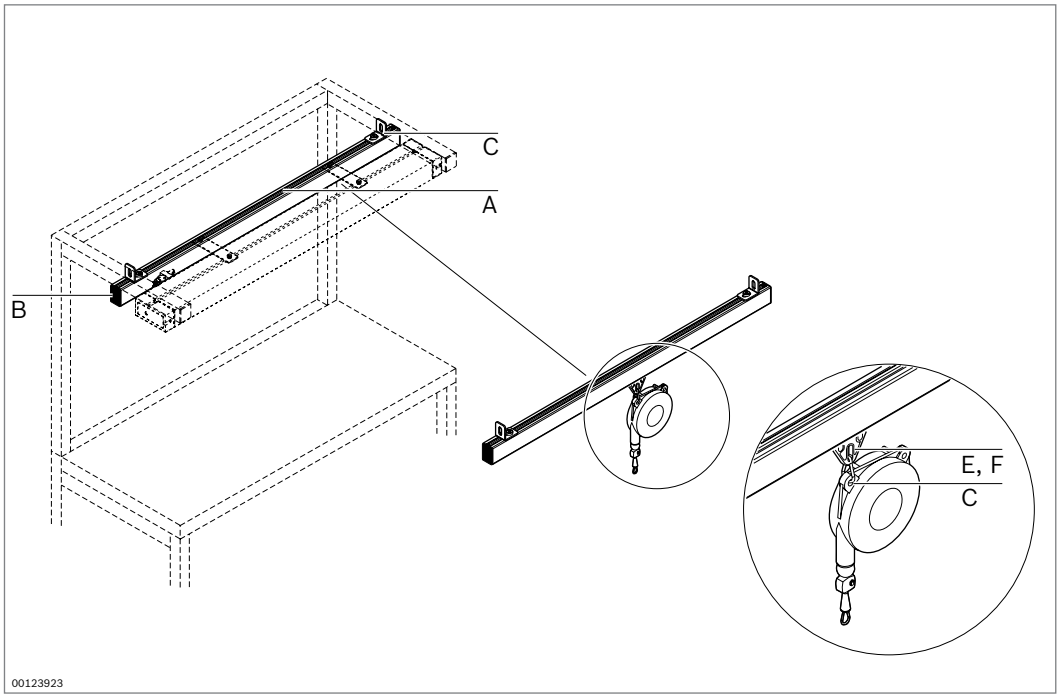


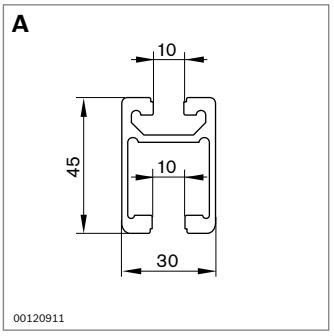


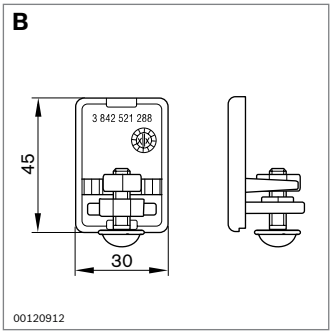


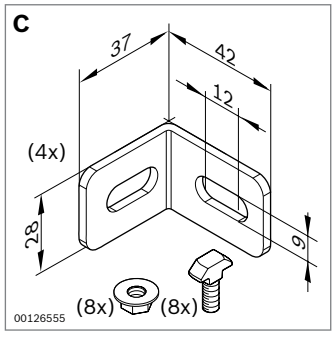
		L (mm)			ESD	No.
A	15x22.5 profile; material: aluminum; anodized	50 ... 3000	1			**3 842 992 473/L**
		2000	10			**3 842 513 576**
B	15x22.5 cap; material: PP; black			20	⚠	**3 842 548 817**
	15x22.5 cap; material: PP, signal gray			20		**3 842 548 816**
C	Bracket set, incl. fastening material for 10 mm slot; material: steel; galvanized			20		**3 842 536 729**
D	Bracket set, incl. fastening material for 10 mm slot; material: steel; galvanized			20		**3 842 535 125**
E	Adapter for XLean conveyor track; material: PA			20	⚠	**3 842 537 022**
F	Right and left guide plate, incl. fastening material			Set		**3 842 538 981**

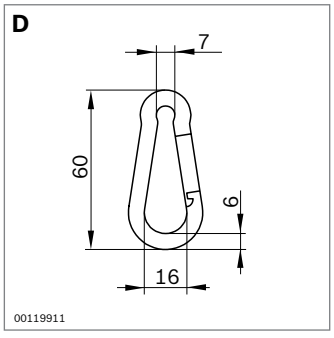
Hanger assembly elements

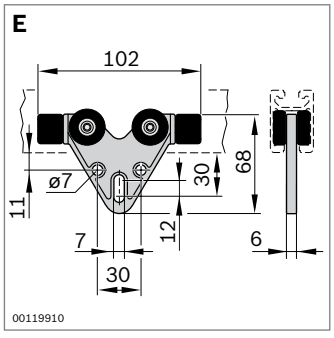


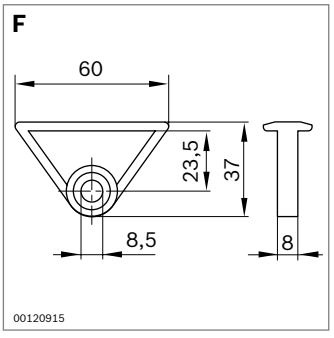






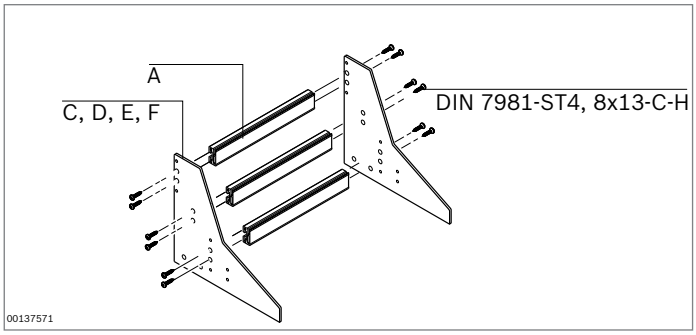


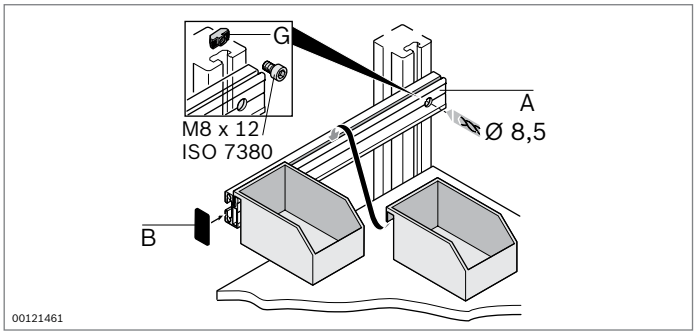


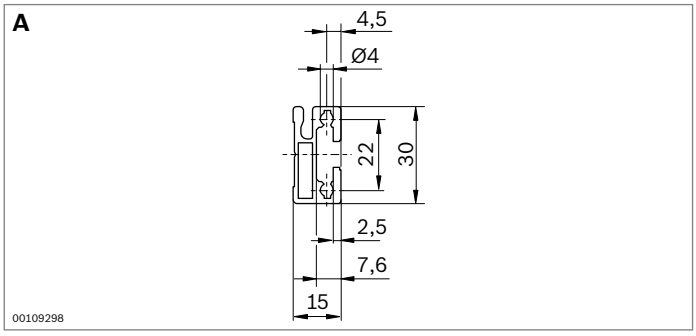


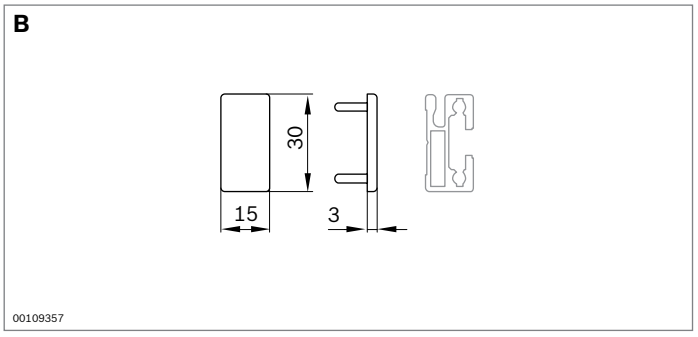
		L (mm)				No.
A	30x45C profile rail; material: aluminum; anodized	50 ... 5600	1			**3 842 992 946/L**
		5600	20			**3 842 523 598**
B	30x45C end piece; material: PA; black			20		**3 842 554 711**
	30x45C end piece; material: PA; signal gray			20		**3 842 554 710**
C	M8 bracket set, incl. fastening material for 10 mm slot; material: steel; galvanized			Set		**3 842 537 861**
D	Spring hook; material: steel; galvanized					**0 842 901 309**
E	Trolley for 30x45C profile rail					**3 842 521 510**
F	Slide hanger for profiles with 10 mm slot; material: POM					**3 842 218 953**

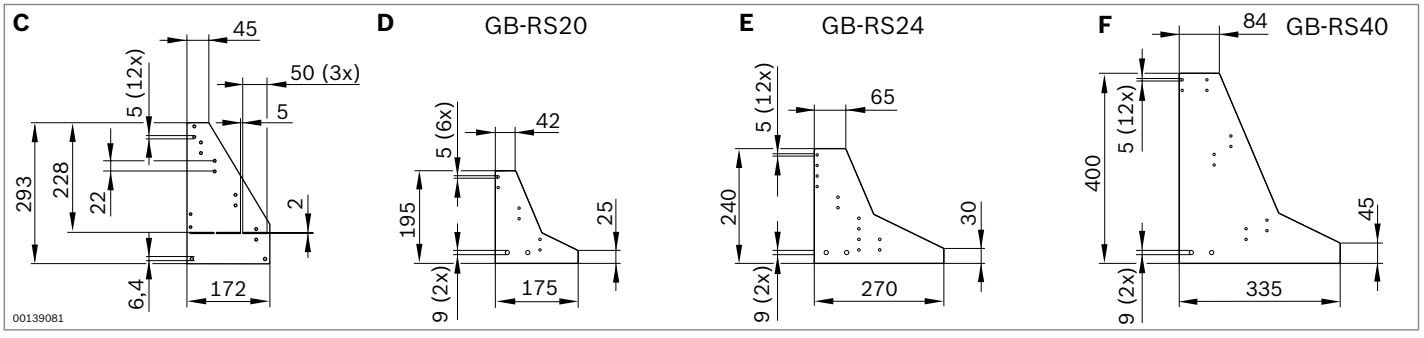
Grab container assembly elements
Tool shelf assembly elements
Suspension profiles





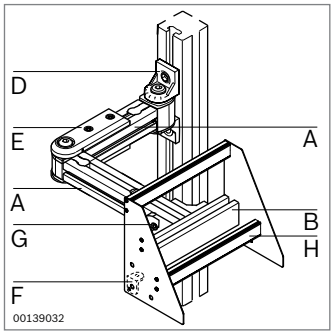


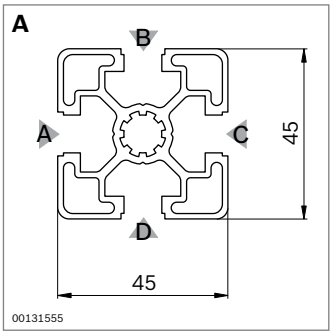


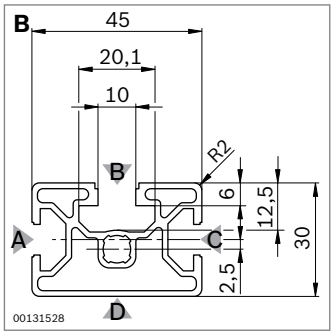


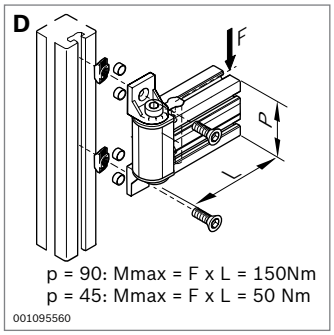
		L (mm)			ESD	No.
A	Suspension profile; material: aluminum; anodized	30 ... 3000	1			**3 842 993 411/L**
		3000	10			**3 842 537 679**
	Suspension profile; material: aluminum; natural	30 ... 3000	1		⚠	**3 842 993 063/L**
		3000	10		⚠	**3 842 554 157**
B	15x30 suspension profile cap; material: PP; black			20	⚠	**3 842 551 583**
	15x30 suspension profile cap; material: PP, signal gray			20		**3 842 551 582**
C	Side plate for tool shelf (2 pcs); material: sheet aluminum			Set	⚠	**3 842 553 996**
D	Side plate for GB-RS20 grab container rack (2 pcs); material: sheet aluminum			Set	⚠	**3 842 517 399**
E	Side plate for GB-RS24 grab container rack (2 pcs); material: sheet aluminum			Set	⚠	**3 842 517 400**
F	Side plate for GB-RS40 grab container rack (2 pcs); material: sheet aluminum			Set	⚠	**3 842 517 401**
G	M8 T-nut for 10 mm slot			100		**3 842 530 287**

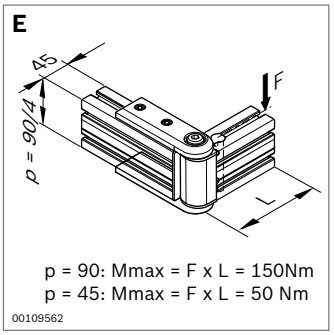
Supporting arm assembly elements

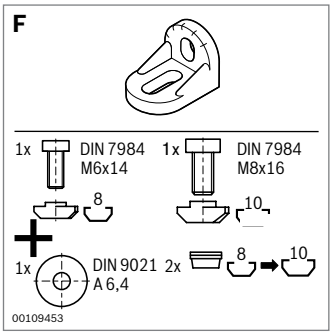


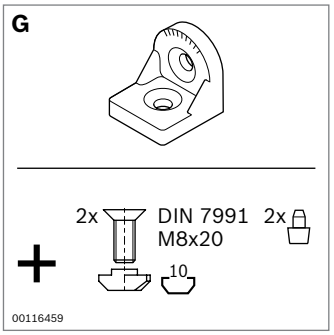


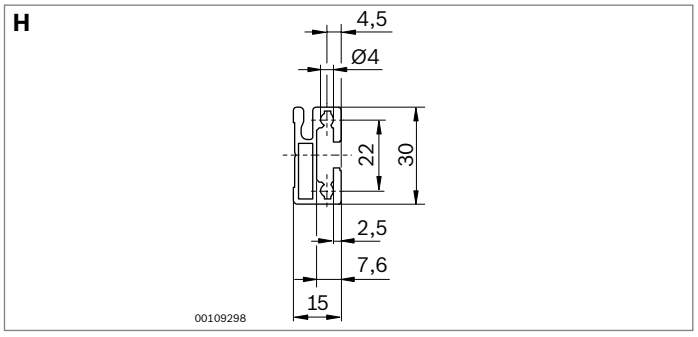


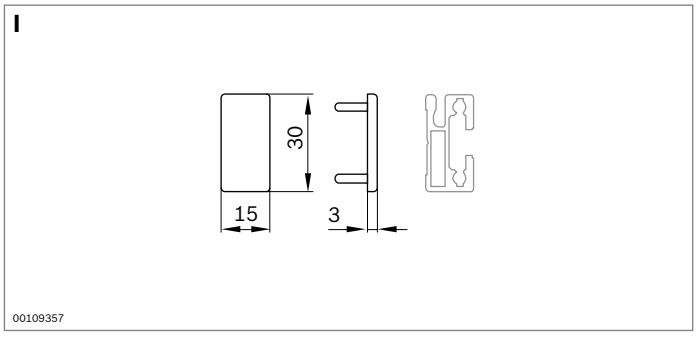








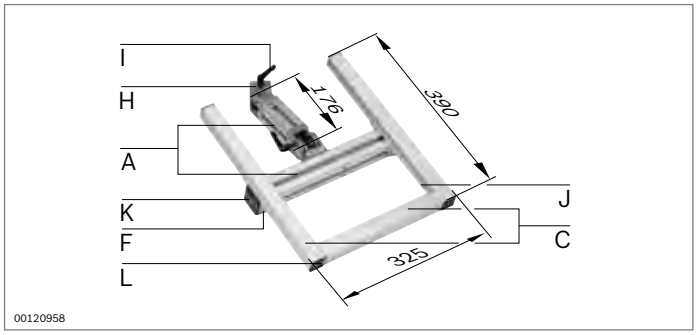


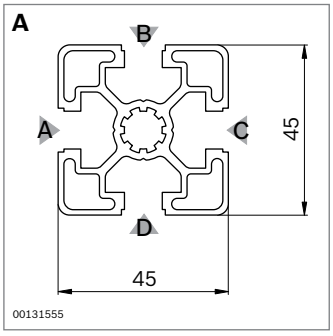


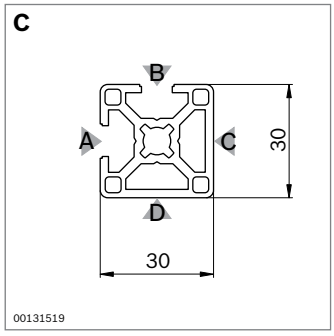
		L (mm)			ESD	No.
A	45x45L strut profile, DB17 profile machining (through hole d = 17) on one profile end; material: aluminum; anodized	50 ... 6000	1			**3 842 993 737/L/ A=D17/-**
		6070	20			**3 842 553 611**
B	30x45 strut profile; material: aluminum; anodized	50 ... 5600	1			**3 842 993 710/L**
		5600	18			**3 842 511 704**
D	45x45 swivel bearing, incl. fastening material for 10 mm slot; material: diecast zinc					**3 842 522 634**
E	45x45 supporting arm joint, incl. fastening material for 10 mm slot; material: diecast zinc					**3 842 521 263**
F	R28x38 bracket, incl. fastening material for 8 mm slot; material: diecast zinc					**3 842 515 547**
G	R35x38 bracket, incl. fastening material for 10 mm slot; material: diecast aluminum					**3 842 532 274**
H	Suspension profile; material: aluminum; anodized	30 ... 3000	1			**3 842 993 411/L**
		3000	10			**3 842 537 679**
	Suspension profile; material: aluminum; natural	30 ... 3000	1		⚠	**3 842 993 063/L**
		3000	10		⚠	**3 842 554 157**
I	15x30 suspension profile cap; material: PP; black			20	⚠	**3 842 551 583**
	15x30 suspension profile cap; material: PP, signal gray			20		**3 842 551 582**

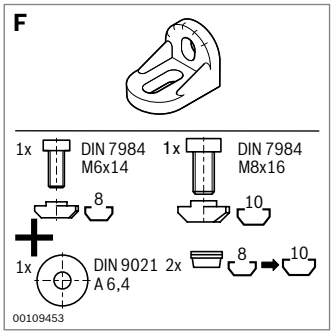
Supporting arm assembly elements

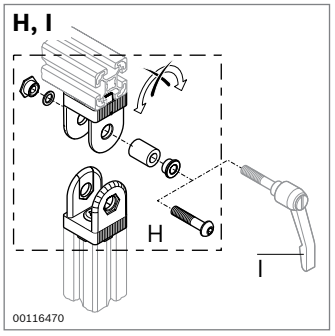

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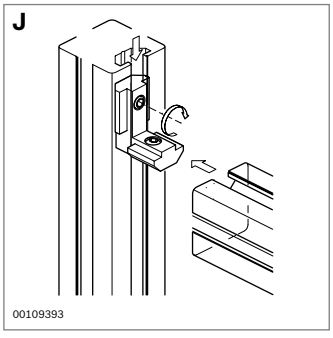






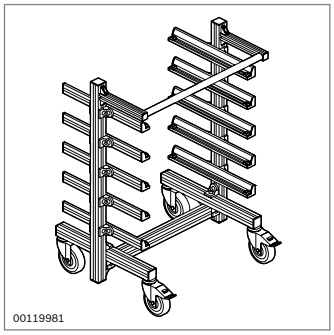


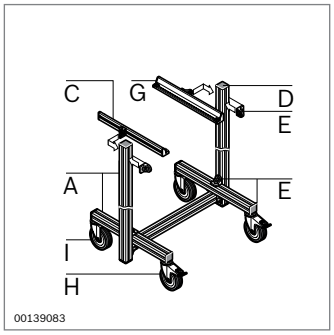


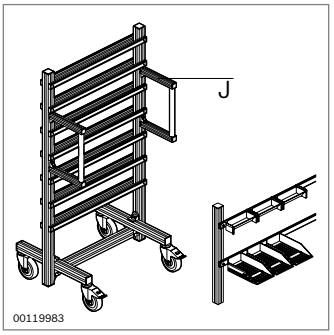


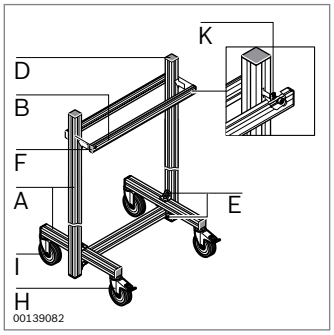
		L (mm)			ESD	No.
A	45x45L strut profile; material: aluminum; anodized	50 ... 6000	1			**3 842 993 737/L**
C	30x30 2NVS; material: aluminum; anodized	50 ... 5600	1			**3 842 993 706/L**
		5600	20			**3 842 506 949**
F	R28x38 bracket, incl. fastening material for 8 mm slot; material: diecast zinc					**3 842 515 547**
H	45x45 joint, incl. fastening material for 10 mm slot; material: diecast zinc					**3 842 538 687**
I	Clamping lever					**3 842 538 607**
J	Inner bracket for 8 mm slot; material: steel; galvanized, transparent passivated			10		**3 842 535 577**
K	45x45 cap; material: PP; black			20	⚠	**3 842 548 753**
	45x45 cap; material: PP, signal gray			100		**3 842 548 752**
L	30x30 cap; material: PP; black			20	⚠	**3 842 548 745**
	30x30 cap; material: PP, signal gray			100		**3 842 548 744**

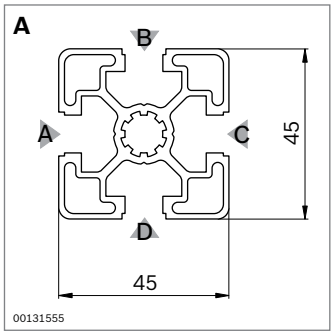
Material shuttle assembly elements

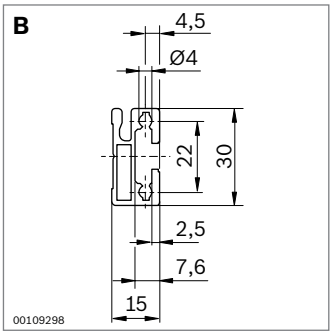


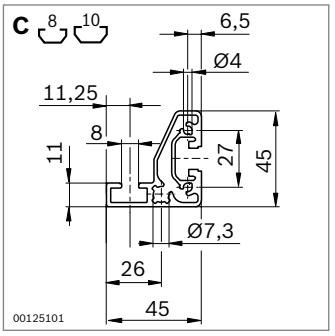


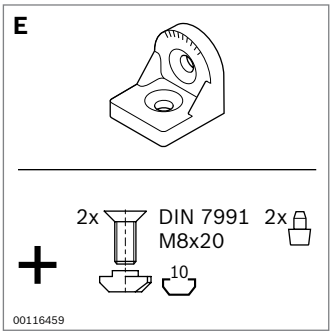


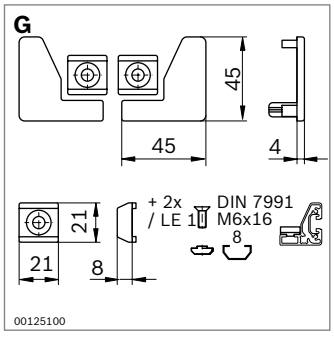


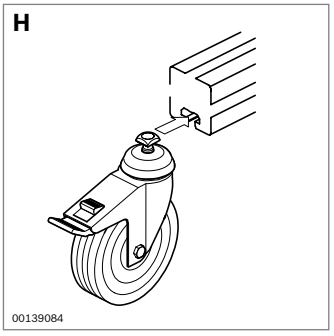


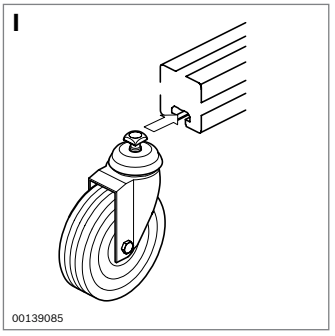


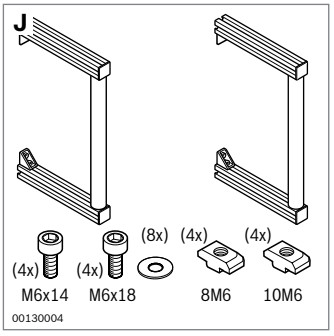






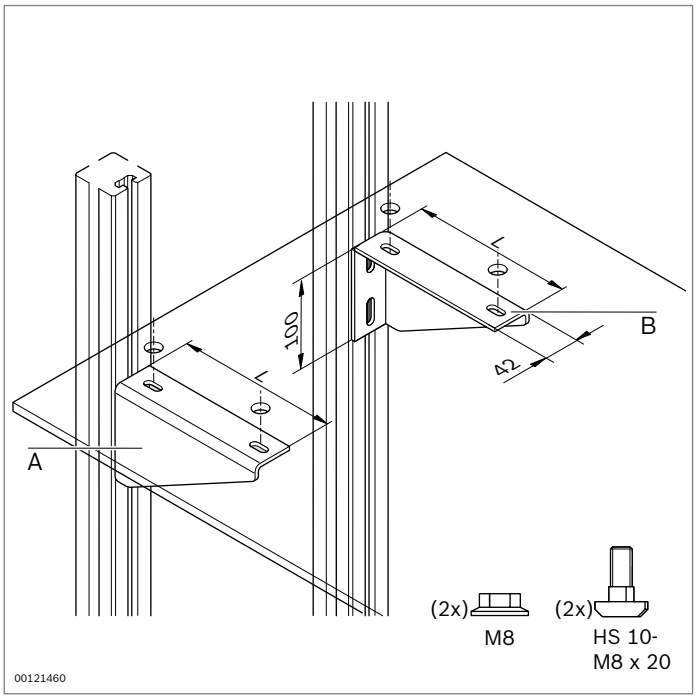


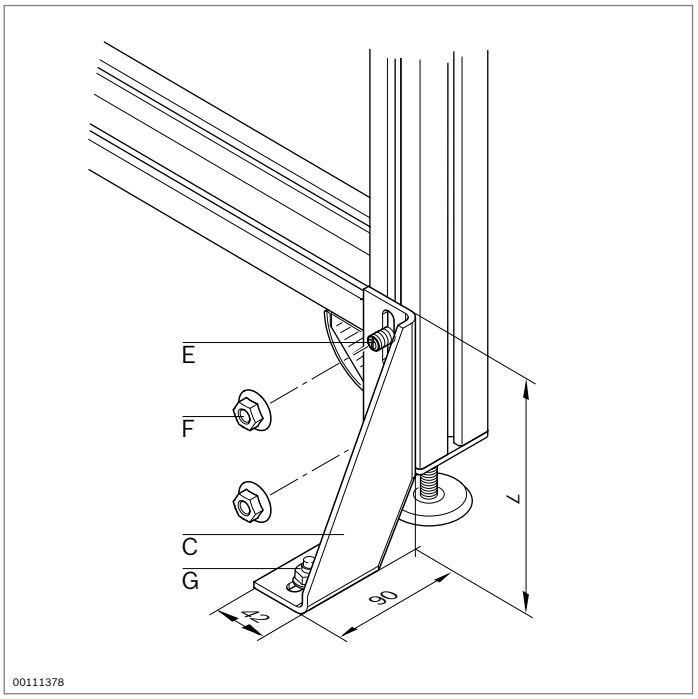


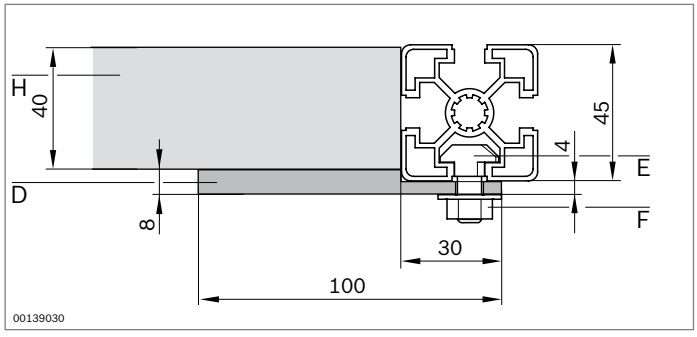


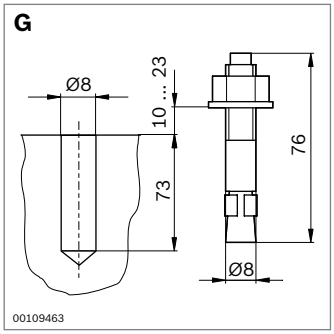
		L (mm)			ESD	No.
A	45x45L strut profile; material: aluminum; anodized	50 ... 6000	1			**3 842 993 737/L**
		6070	20			**3 842 553 611**
B	Suspension profile; material: aluminum; anodized	30 ... 3000	1			**3 842 993 411/L**
		3100	10			**3 842 537 679**
	Suspension profile; material: aluminum; natural	30 ... 3000	1		⚠	**3 842 993 063/L**
		3000	10		⚠	**3 842 554 157**
C	Angle profile; material: aluminum; anodized	30 ... 5600	1			**3 842 992 412/L**
		6000	20			**3 842 508 104**
D	45x45L cap; material: PP; black			20	⚠	**3 842 548 753**
E	R40x43 bracket, incl. fastening material for 10 mm slot; material: diecast zinc					**3 842 518 424**
F	15x30 suspension profile cap; material: PP; black			20	⚠	**3 842 551 583**
G	Parts kit for angle profile: cap, stopper			20		**3 842 554 491**
H	D125 castor with lock					**3 842 541 228**
I	D125 castor					**3 842 541 236**
J	HG-305 handles			Set	⚠	**3 842 538 930**
K	M8 T-nut for 10 mm slot			100		**3 842 530 287**

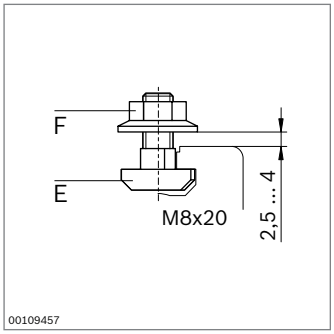
Supporting brackets
Foundation brackets
Table top supports





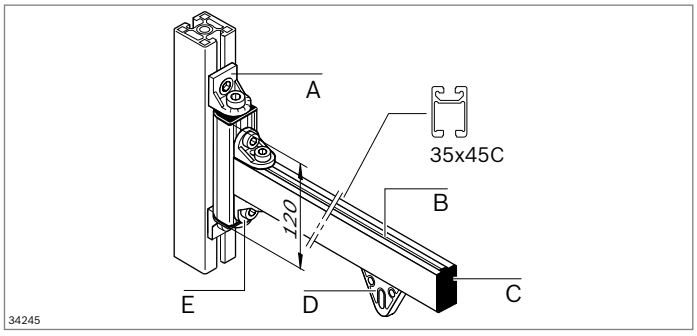


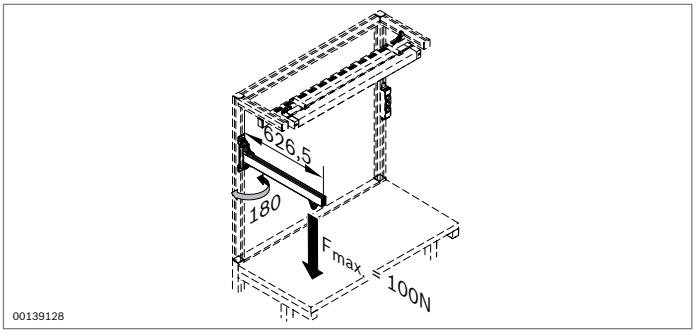


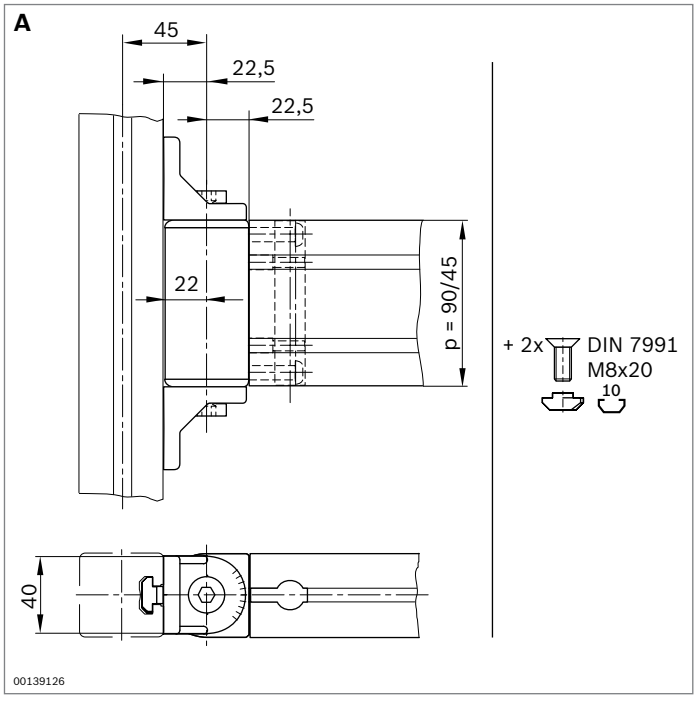


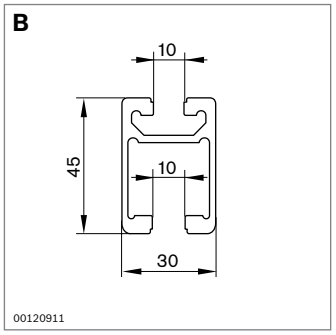
		L (mm)			ESD	No.
A	Left supporting bracket, with fastening material for 10 mm slot; material: sheet steel; powder-coated, RAL 7037	255				**3 842 536 119**
		335				**3 842 536 121**
		415				**3 842 536 123**
		495				**3 842 536 125**
B	Right supporting bracket, with fastening material for 10 mm slot;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

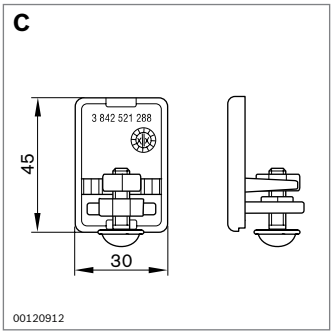
180° tool hanger assembly elements

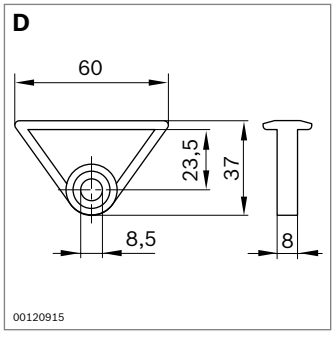


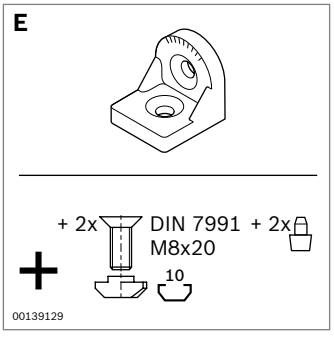




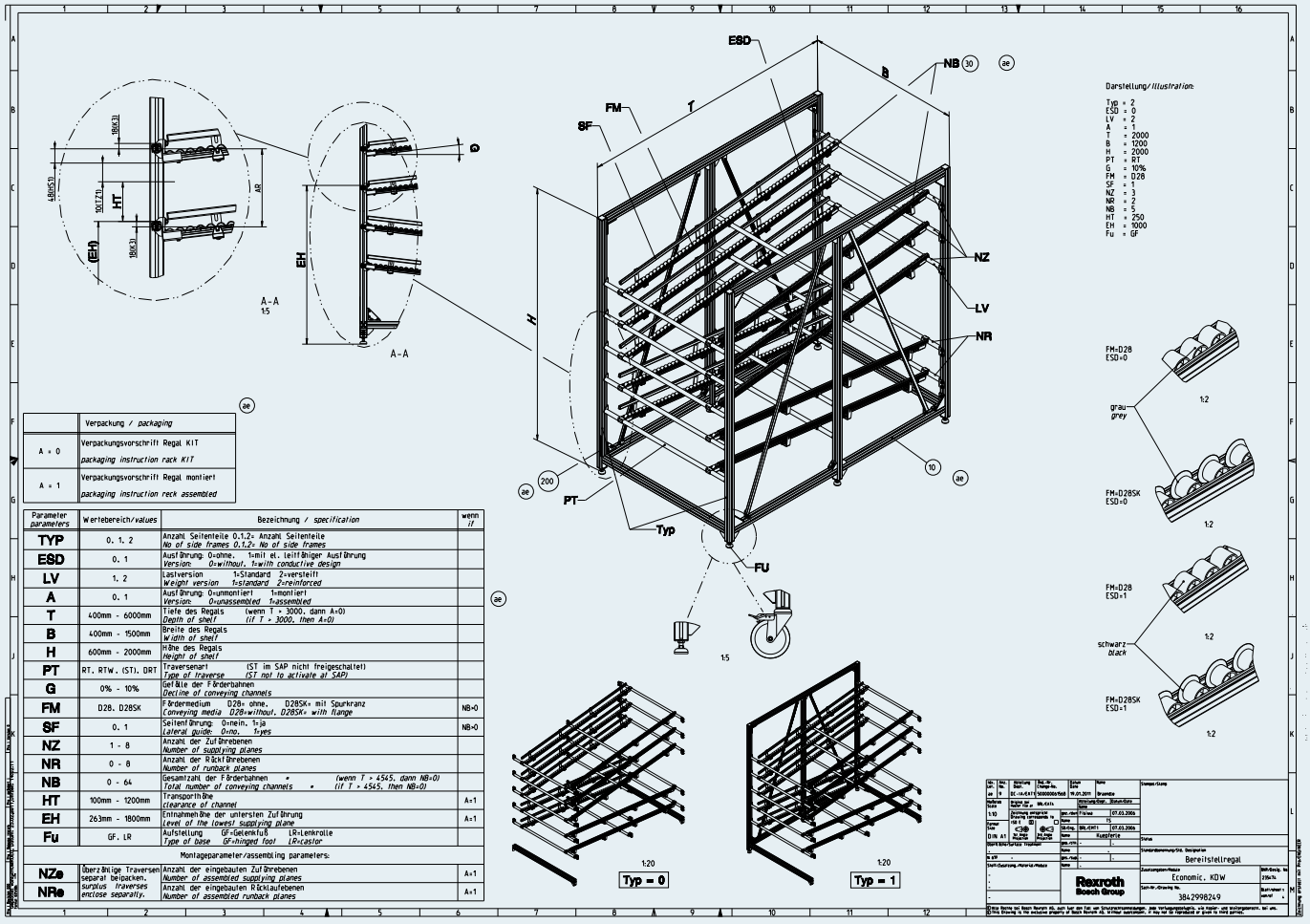








		L (mm)			ESD	No.
A	40x90 swivel bearing					**3 842 522 633**
B	30x45C profile rail; material: aluminum; anodized	50 ... 5600	1			**3 842 992 946**
		5600	20			**3 842 523 598**
C	30x45C end piece; material: PA; black			20	⚠	**3 842 554 711**
	30x45C end piece; material: PA; signal gray			20		**3 842 554 710**
D	Slide hanger for profile with 10 mm slot; material: POM					**3 842 218 953**
E	R35x38 bracket, incl. fastening material for 10 mm slot; material: diecast aluminum					**3 842 532 274**



	Verpackung / *packaging*
A = 0	Verpackungsvorschrift Regal KIT *packaging instruction rack KIT*
A = 1	Verpackungsvorschrift Regal montiert *packaging instruction reck assembled*

Parameter *parameters*	Wertebereich/*values*	Bezeichnung / *specification*	wenn *if*
TYP	0, 1, 2	Anzahl Seitenteile 0,1,2= Anzahl Seitenteile *No of side frames 0,1,2= No of side frames*	
ESD	0, 1	Ausführung: 0=ohne, 1=mit el. leitfähiger Ausführung *Version 0=without, 1=with conductive design*	
LV	1, 2	Lastversion 1=Standard 2=versteift *Weight version 1=standard 2=reinforced*	
A	0, 1	Ausführung: 0=unmontiert 1=montiert *Version 0=unassembled 1=assembled*	
T	400mm - 6000mm	Tiefe des Regals (wenn T > 3000, dann A=0) *Depth of shelf (if T > 3000, then A=0)*	
B	400mm - 1500mm	Breite des Regals *Width of shelf*	
H	600mm - 2000mm	Höhe des Regals *Height of shelf*	
PT	RT, RTW, (ST), DRT	Traversenart (ST im SAP nicht freigeschaltet) *Type of traverse (ST not to activate at SAP)*	
G	0% - 10%	Gefälle der Förderbahnen *Decline of conveying channels*	
FM	D28, D28SK	Fördermedium D28= ohne, D28SK= mit Spurkranz *Conveying media D28=without, D28SK= with flange*	NB=0
SF	0, 1	Seitenführung: 0=nein, 1=ja *Lateral guide: 0=no, 1=yes*	NB=0
NZ	1 - 8	Anzahl der Zuführebenen *Number of supplying planes*	
NR	0 - 8	Anzahl der Rückführebenen *Number of runback planes*	
NB	0 - 64	Gesamtzahl der Förderbahnen = (wenn T > 4545, dann NB=0) *Total number of conveying channels = (if T > 4545, then NB=0)*	
HT	100mm - 1200mm	Transporthöhe *clearance of channel*	A=1
EH	263mm - 1800mm	Entnahmehöhe der untersten Zuführung *Level of the lowest supplying plane*	A=1
Fu	GF, LR	Aufstellung GF=Gelenkfuß LR=Lenkrolle *Type of base GF=hinged foot LR=castor*	
		Montageparameter/assembling parameters:	
NZe	Überzählige Traversen separat beipacken. *surplus traverses enclose separatly.*	Anzahl der eingebauten Zuführebenen *Number of assembled supplying planes*	A=1
NRe		Anzahl der eingebauten Rücklaufebenen *Number of assembled runback planes*	A=1

Technical data

Use these load specifications to configure your manual production systems quickly and safely.

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 XLean, Lean and EcoFlow flow rack systems have all been analyzed by the Fraunhofer Institute for Manufacturing Engineering and Automation (IPA). The IPA certificates 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 MT*pro* or as Internet downloads.

192 Workstations and workstation accessories
200 Grab containers
201 Flow rack systems
207 EcoShape
209 Manual linking system (EcoFlow)
210 Material shuttles
212 Profiles

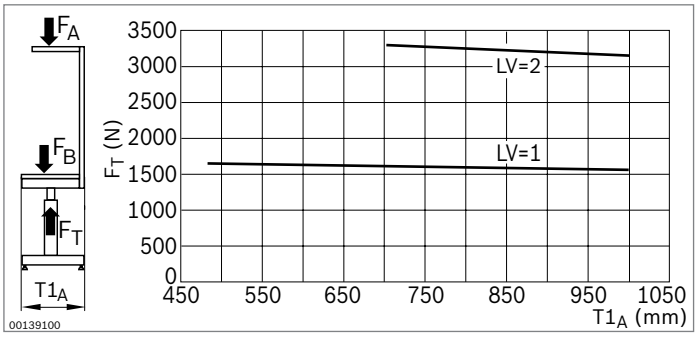
Workstations and workstation accessories

BA (mm)	**FU**	F_{max} (N)	F_{max} (N)	F_{max} (N)	F_{max} (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
	Distributed load

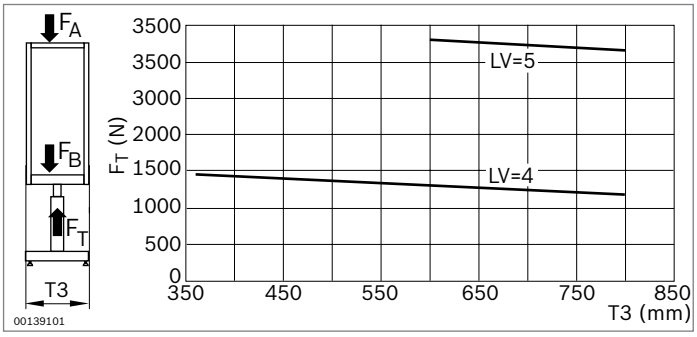
BA	Width
FU	Foot type
GF	Leveling foot
LR	Castor

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

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)

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_B = Max. load (uniformly distributed load)
F_T = Max. bearing load of base frame
F_A = System weight of fixtures

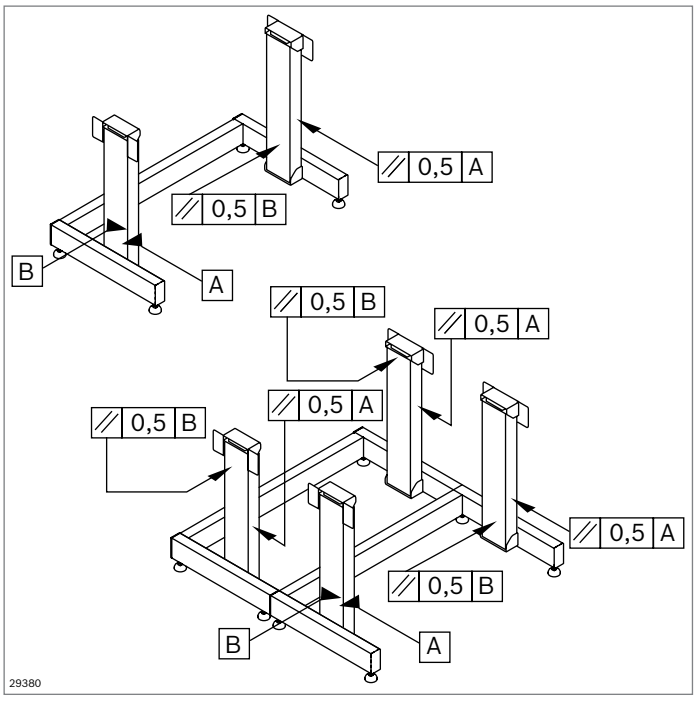
$F_B = F_T - F_A$

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

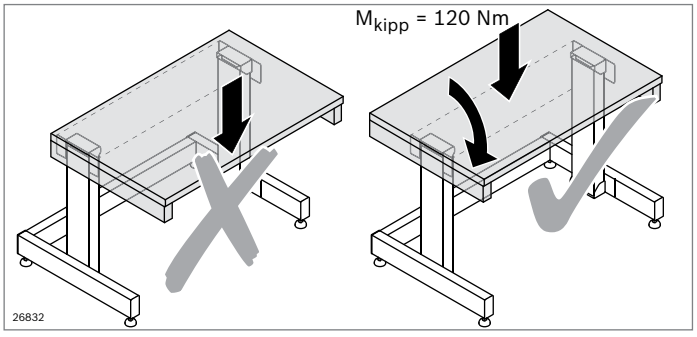
The maximum load is calculated from the bearing load of the base frame minus the system weight of the fixtures (table top, brackets, material shelves, etc.).

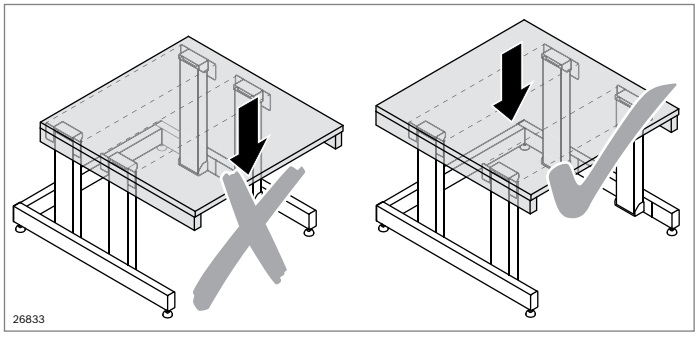
In order to precisely determine the maximum load of your individual workstation system, please use MT*pro*!

Parallelism



Tilting moments

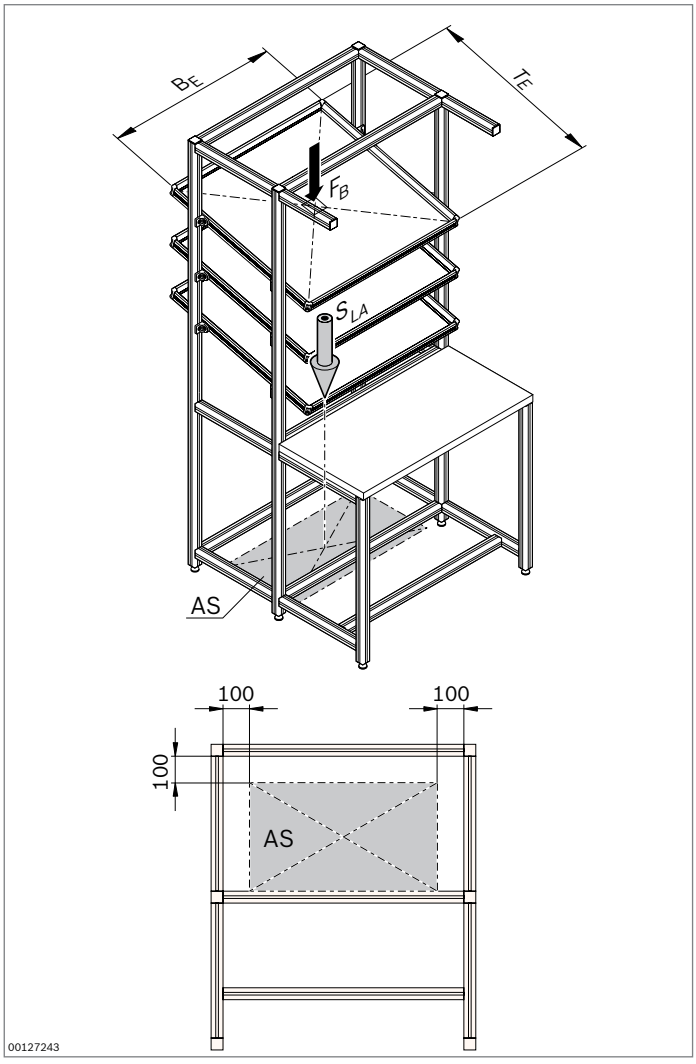




Height-adjustable workstation

Lifting module
3 842 540 116 (see page 20)

Lifting module with bracket
3 842 542 211 (see page 20)



Basic material shelf

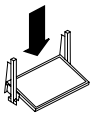
S_{LA}	Gravity vector
AS	Permissible position of the line of action of the gravity vector S_{LA}

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)	1220	1220	840	765	1000	1000	840	765
	B_E (mm)	1480	840	1480	840	1000	840	1000	840
Plate: aluminum	F_B (N)	700	700	700	1000				
Plate: PP, SB	F_B (N)					250	280	280	360

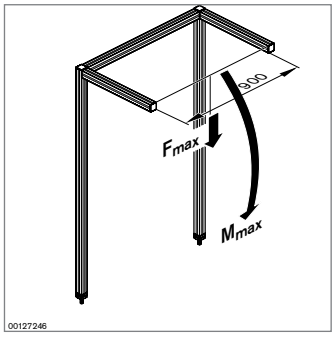
F_B is a distributed load and may not occur as a point load.

	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)

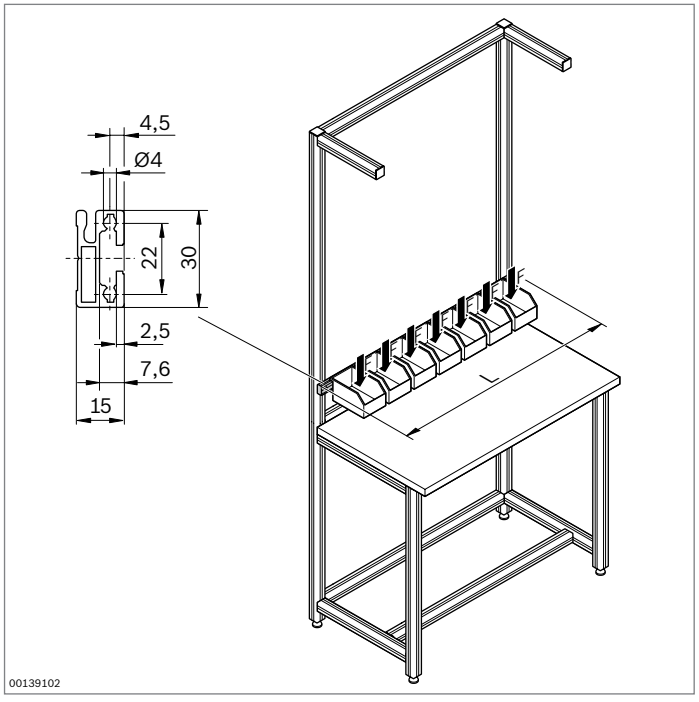


F_{max} (N)	250
M_{max} (Nm)	150

Workstation accessories

Standard strut extension P = 45x45L

3 842 519 530 (see page 24)



15x30 suspension profile

3 842 993 411/L (see page 184, 185, 187, 212)
3 842 537 679 (see page 184, 185, 187, 212)
3 842 993 063/L (see page 184, 185, 187, 212)
3 842 554 157 (see page 184, 185, 187, 212)

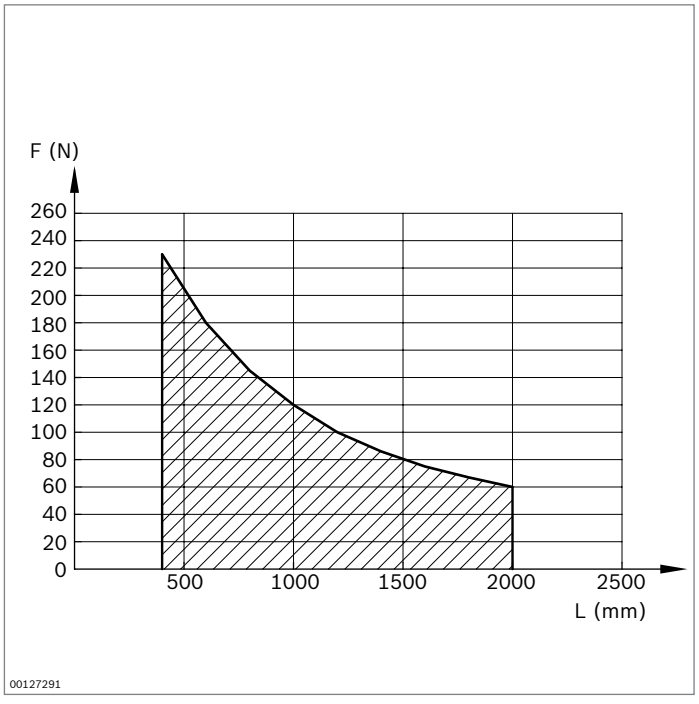
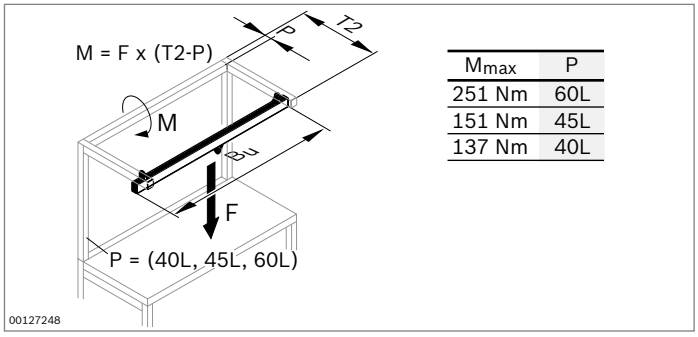


Diagram 1: Permissible load for the suspension profile



M_{max}	P
251 Nm	60L
151 Nm	45L
137 Nm	40L

Workstation hanger

Without accessory upright, with accessory upright, with reinforced strut extension (see page 183)

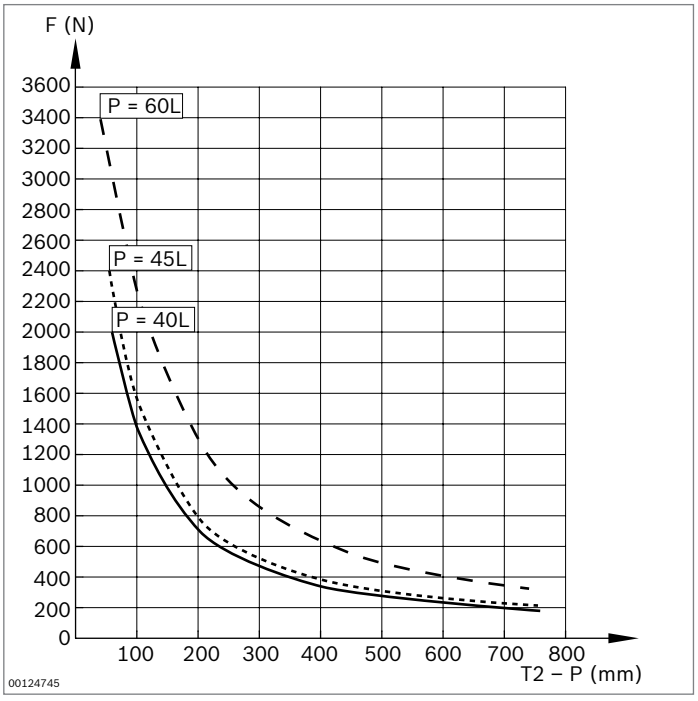


Diagram 2: Permissible load for the strut extension

Example for determining F_{max}

Determination of load for the strut extension:
P = 45 mm
T2 = 400 mm
Diag. 2 → F = 380 N

Determination of load for hanger:
B_U = 1000 mm
Diag. 3 → F = 580 N

The maximum permissible load F_{max} is the lower of the two load values. F_{max} = 380 N

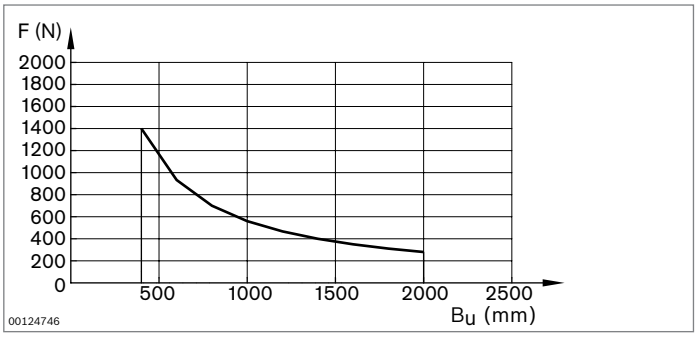
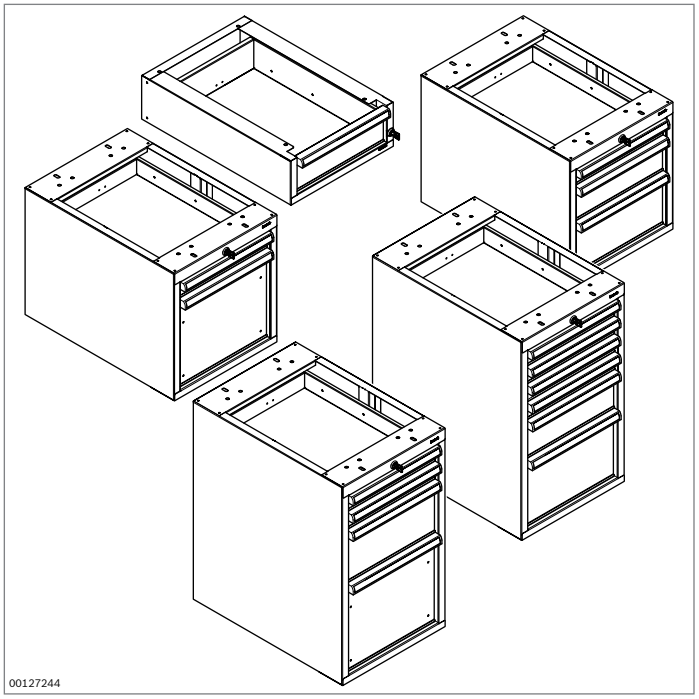


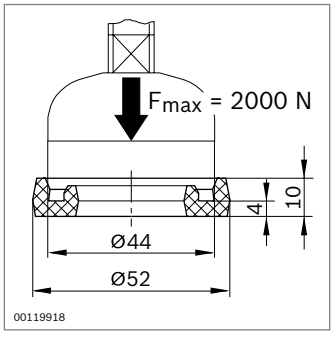
Diagram 3: Permissible load for the hanger



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



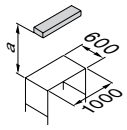
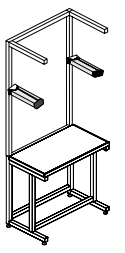
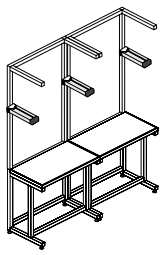
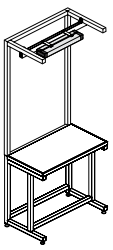
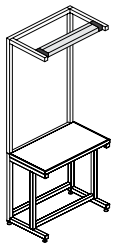
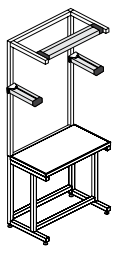
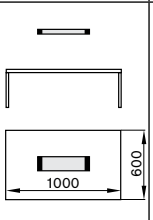
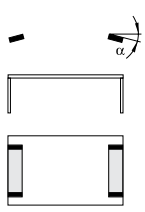
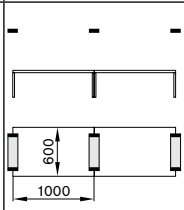
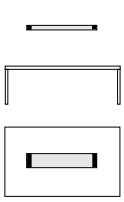
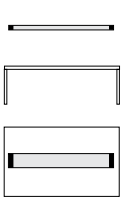
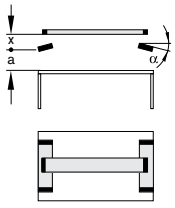
F_{max} (N)	2000

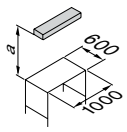
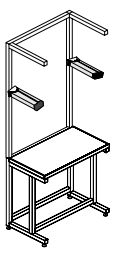
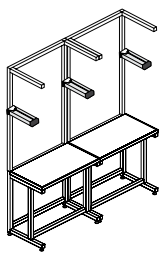
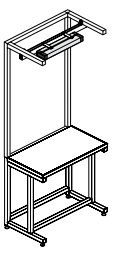
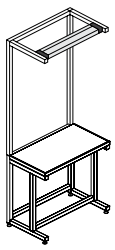
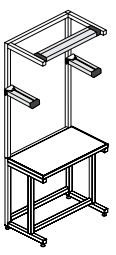
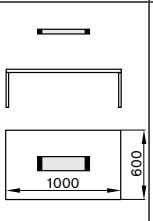
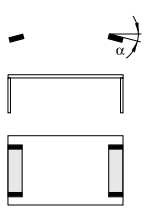
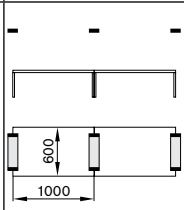
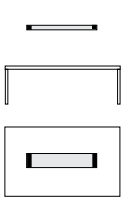
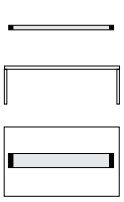
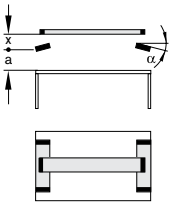
Damping rings

3 842 521 817 (see page 62 f.)

SL + SL LED system lamps

Lighting strength depending on arrangement

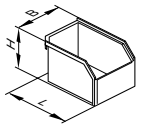
	SL 36	SL 36		SL 36	SL 48	SL 78	SL Tri-Light		
									
									
a	**$\bar{E}$**	**α**	**$\bar{E}$**	**$\bar{E}$**	**$\bar{E}$**	**$\bar{E}$**	**x**	**α**	**$\bar{E}$**
(m)	(lx)	(°)	(lx)	(lx)	(lx)	(lx)	(m)	(°)	(lx)
0.75	599				887				
1.00	394	20	642	589	584	958	0.25	20	1158
							0.50	20	1020
1.25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

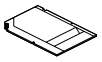
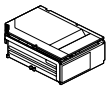
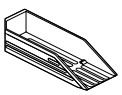
	SL 15 LED	SL 15 LED Duo		SL 15 LED	SL 20 LED	SL 30 LED	SL LED Tri-Light		
									
									
a	**$\bar{E}$**	**α**	**$\bar{E}$**	**$\bar{E}$**	**$\bar{E}$**	**$\bar{E}$**	**x**	**α**	**$\bar{E}$**
(m)	(lx)	(°)	(lx)	(lx)	(lx)	(lx)	(m)	(°)	(lx)
0.75	733				899				
1.00	476	20	786	721	625	1061	0.25	20	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 $\bar{E}$ of the lighting strength on the working surface (new values, planning factor 0.8)

Grab containers

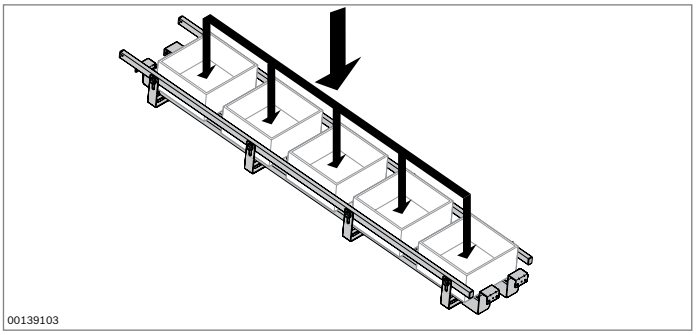
(see page 68, see page 69)

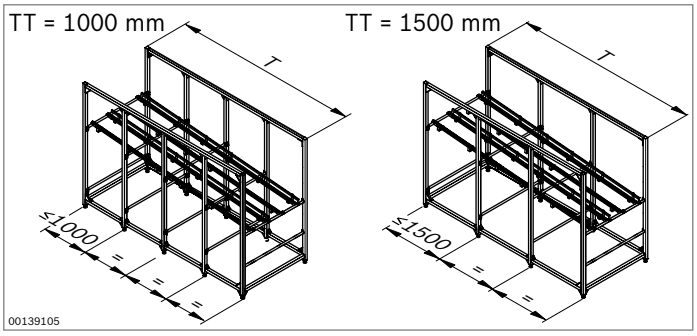


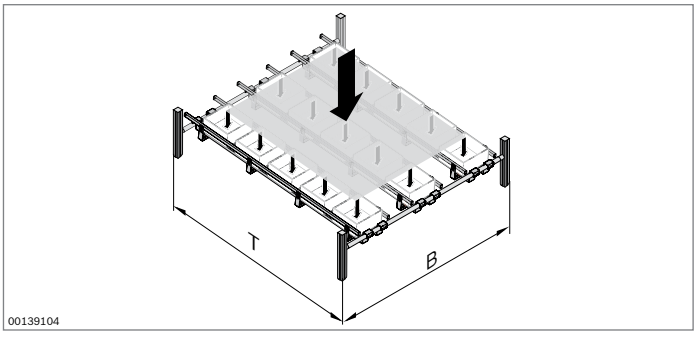
							Static load limit	
			B x H x L (mm)	(cm³)	ESD	No.	Container mount (kg)	Suspension profile (kg)
GB-Axxxx cover Material: PC plastic Min./max. ambient temperature: -40 °C/115 °C Resistant to diluted acidic and caustic materials, alcohol (except for methanol), grease, oils, glycol, water **ESD version** Material: ABS-CF 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	77x13x173	–		**3 842 344 756**	–	–
					⚠	**3 842 346 286**	–	–
		GB-A1205	117x13x173	–		**3 842 344 757**	–	–
					⚠	**3 842 346 287**	–	–
		GB-A1210	117x32x173	–		**3 842 344 758**	–	–
					⚠	**3 842 346 288**	–	–
		GB-A1710	167x32x245	–		**3 842 344 759**	–	–
					⚠	**3 842 346 289**	–	–
						3 842 557 478[1]	–	–
GB-Sxx grab tray **GB-xxxx grab container** **G-Zxx grab ledge** Material: ABS plastic Min./max. ambient temperature: -40 °C/70 °C Resistant to mildly acidic and caustic materials, alcohols, greases, oils, water		GB-S08	82x50x86	150		**3 842 344 764**	11	17
					⚠	**3 842 346 294**	6	10
		GB-S12	123x50x86	240		**3 842 344 765**	11	19
					⚠	**3 842 346 295**	6	11
		GB-S17	173x50x86	360		**3 842 344 766**	11	21
					⚠	**3 842 346 296**	6	12
ESD version Material: ABS-CF Min./max. ambient temperature: -40 °C/70 °C Resistant to diluted acidic and caustic materials, alcohol (except for methanol), grease, oils, glycol, water		GB-0805	82x50x173	370		**3 842 344 750**	10	26
					⚠	**3 842 346 280**	6	15
		GB-1205	123x50x173	600		**3 842 344 751**	10	26
					⚠	**3 842 346 281**	6	15
		GB-1210	123x100x173	1370		**3 842 344 752**	10	26
					⚠	**3 842 346 282**	6	15
		GB-1710	173x100x245	3050		**3 842 344 753**	13	30
					⚠	**3 842 346 283**	8	18
						3 842 555 685[1]	8	18
		GB-Z08	90x54x277	690		**3 842 344 760**	10	30
					⚠	**3 842 346 290**	6	18
		GB-Z12	131x54x277	1050		**3 842 344 761**	6	23
					⚠	**3 842 346 291**	3	13

[1] Red version

Flow rack systems







XLean, Lean, EcoFlow flow rack systems

Max. load per track

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

F_{Σ} is a distributed load and may not occur as a point load.
F_R = Weight of roller tracks
F_B = Weight of containers
F_T = Weight of stored parts

	TT = 1000 mm $F_{\Sigma max}$ [1]	TT = 1500 mm $F_{\Sigma max}$ [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

[1] Max. permissible load $F_{\Sigma max}$ per 1000 mm of conveyor track

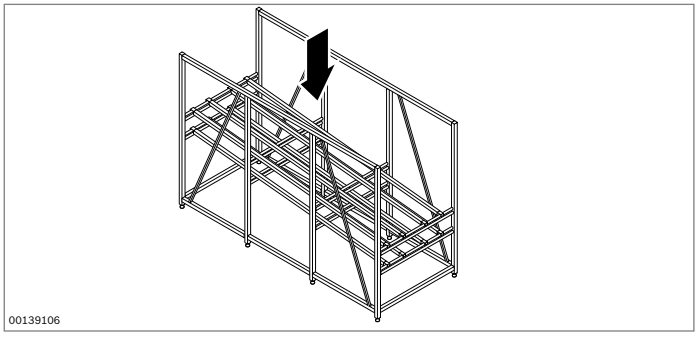
Max. load per shelf

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

F_{Σ} is a distributed load and may not occur as a point load.
F_R = Weight of roller tracks
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[2]	12000 N	2000 N	12000 N	6000 N
3000 < T ≤ 4000	4500 < T ≤ 6000	5000 N	20000 N[2]	15000 N	2500 N	15000 N	7500 N
4000 < T ≤ 5000	–	6000 N	20000 N[2]	18000 N	3000 N	18000 N	9000 N
5000 < T ≤ 6000	–	7000 N	20000 N[2]	20000 N[2]	3500 N	20000 N[2]	10500 N

[1] Max. permissible load $F_{\Sigma max}$ per shelf
[2] Limited to F_{Σ} = 20000 N per flow rack



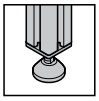
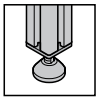
Max. load per flow rack

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

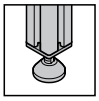
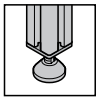
F_{Σ} is a distributed load and may not occur as a point load.
F_R = Weight of roller tracks
F_B = Weight of containers
F_T = Weight of stored parts

3 842 998 249 (see page 90)
3 842 998 332 (see page 92)
3 842 998 322 (see page 94)

Max. permissible load per flow rack

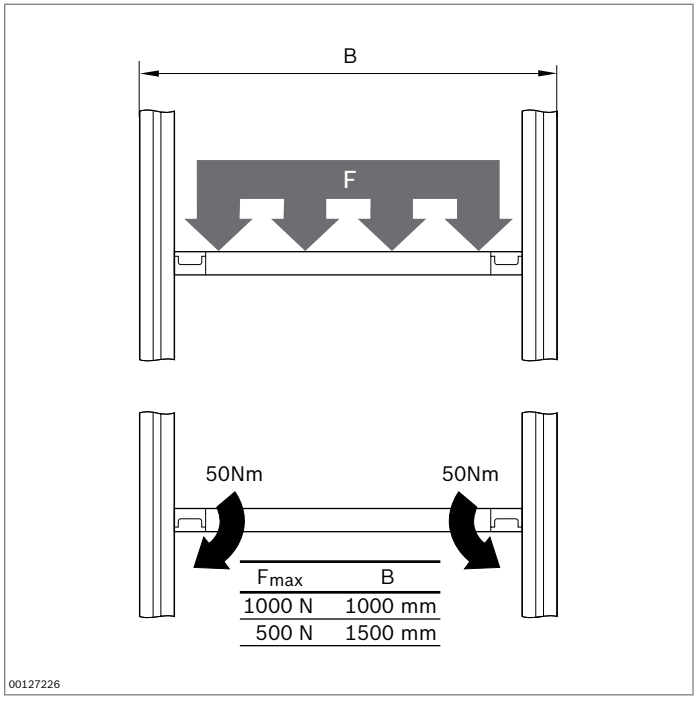
Standard load version (LV = 1)		**Two side elements (Type 2)**		**One side element (Type 1)**	
					
TT = 1000	**TT = 1500**	**FU = LR**	**FU = GF**	**FU = LR**	**FU = GF**
T (mm)	**T** (mm)	$F_{\Sigma max}$ [1]	$F_{\Sigma max}$ [1]	$F_{\Sigma max}$ [1]	$F_{\Sigma max}$ [1]
T ≤ 1000	T ≤ 1500	3600 N	4000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

[1] Max. permissible load $F_{\Sigma max}$ per flow rack; standard load version (LV = 1)

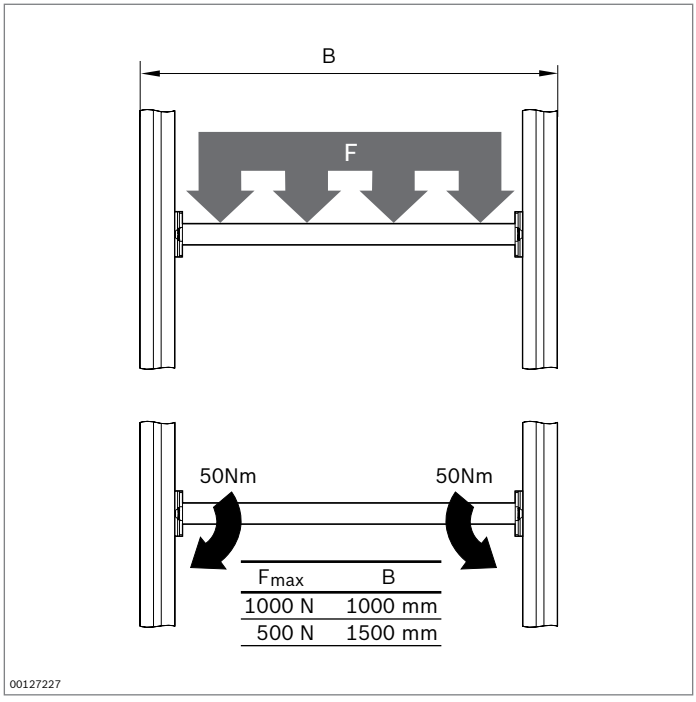
Reinforced load version (LV = 2)		**Two side elements (Type 2)**		**One side element (Type 1)**	
					
TT = 1000	**TT = 1500**	**FU = LR**	**FU = GF**	**FU = LR**	**FU = GF**
T (mm)	**T** (mm)	$F_{\Sigma max}$ [2)]	$F_{\Sigma max}$ [2)]	$F_{\Sigma max}$ [2)]	$F_{\Sigma max}$ [2)]
T ≤ 1000	T ≤ 1500	3600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

[2] Max. permissible load $F_{\Sigma max}$ per flow rack; reinforced load version (LV = 2)

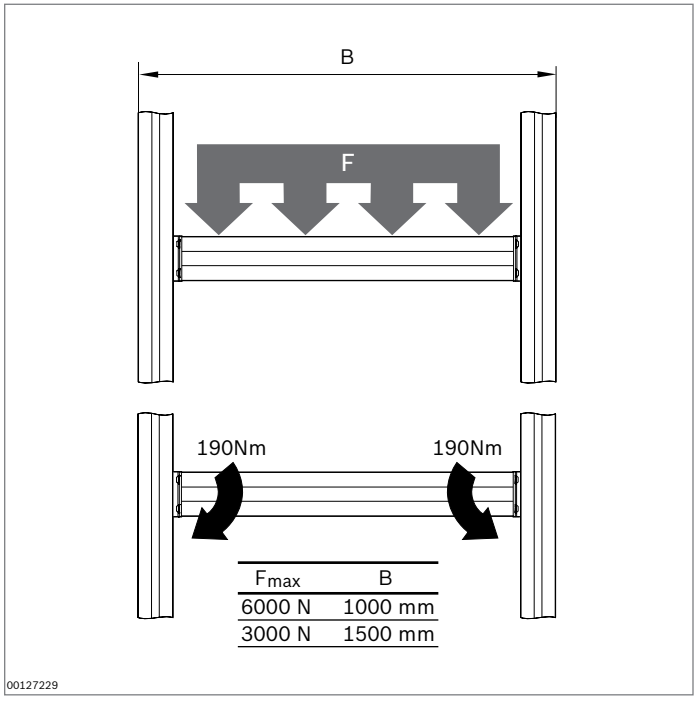
Cross ties



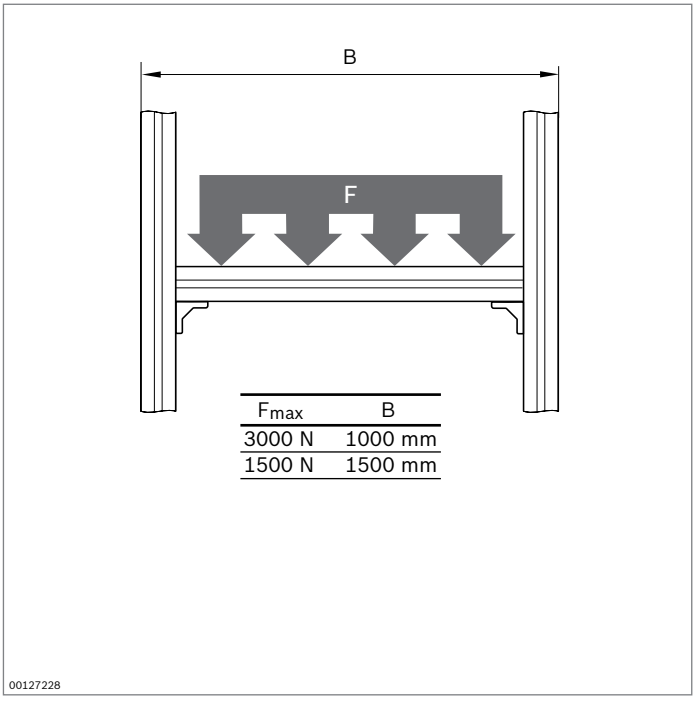
RT tubular cross tie
(see page 110)



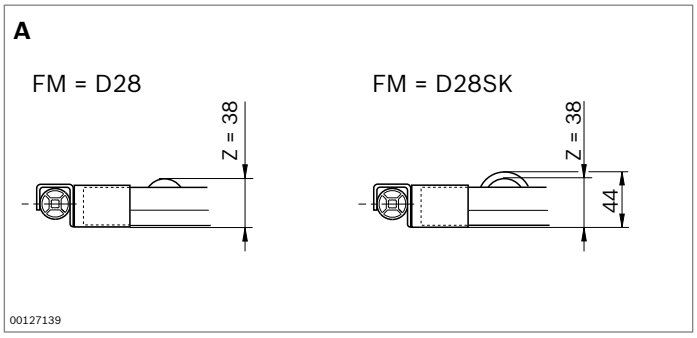
Tubular cross tie with RTW bracket
(see page 110)



Double tubular cross tie with DRT bracket
(see page 110)



ST profile cross tie
(see page 110)

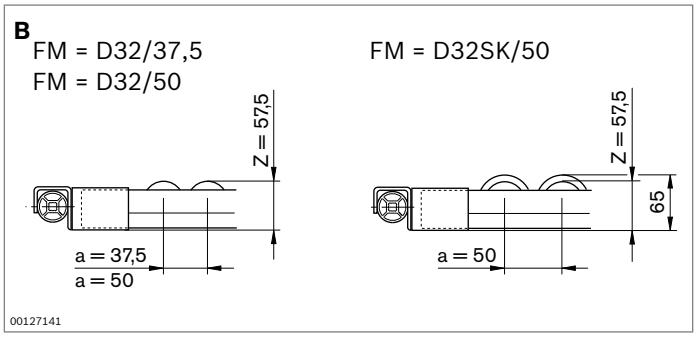


Conveyor tracks

XLean conveyor track with rail holder (A)

▶ Rollers with ø = 28 mm with and without roller flange.

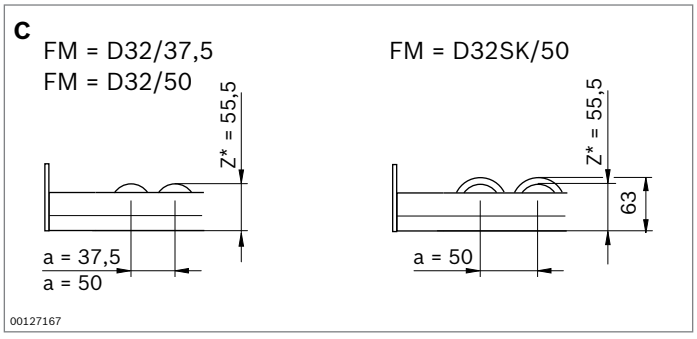
3 842 998 196 (see page 96)



Lean conveyor track with rail holder (B)

▶ Rollers with ø = 32 mm with and without roller flange.

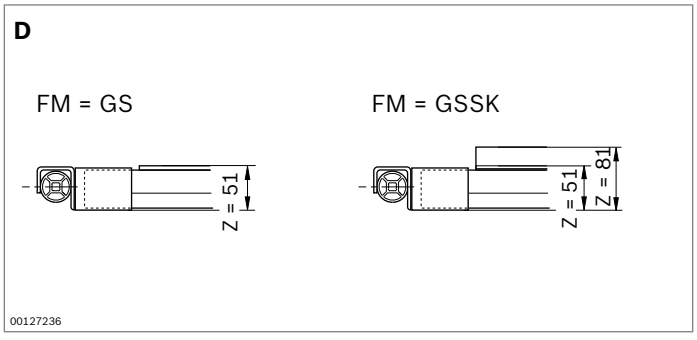
3 842 998 381 (see page 101)
3 842 998 382 (see page 101)



Lean conveyor track with stop plate (C)

▶ Rollers with ø = 32 mm with and without roller flange.

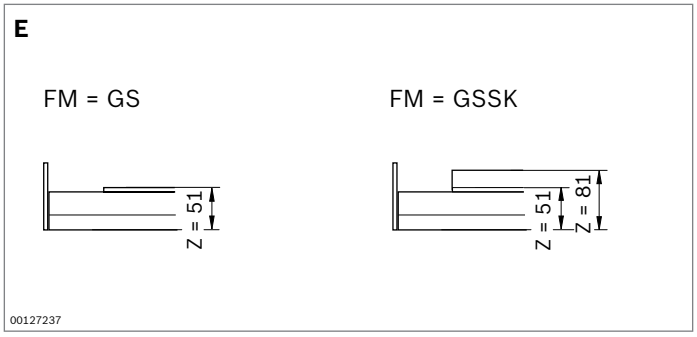
3 842 998 383 (see page 103)
3 842 998 384 (see page 103)



Lean conveyor track with rail holder (D)

▶ Slide rail with and without roller flange.

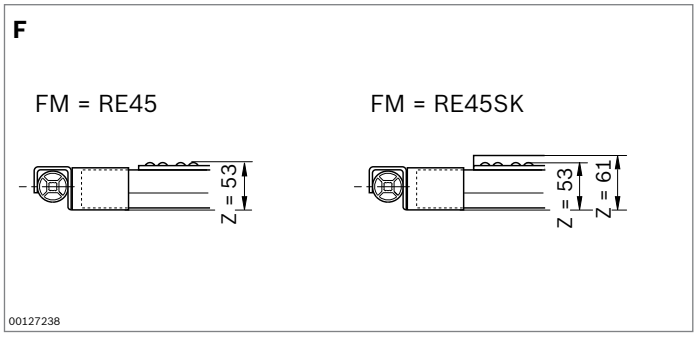
3 842 998 387 (see page 101)



Lean conveyor track with stop plate (E)

▶ Slide rail with and without roller flange.

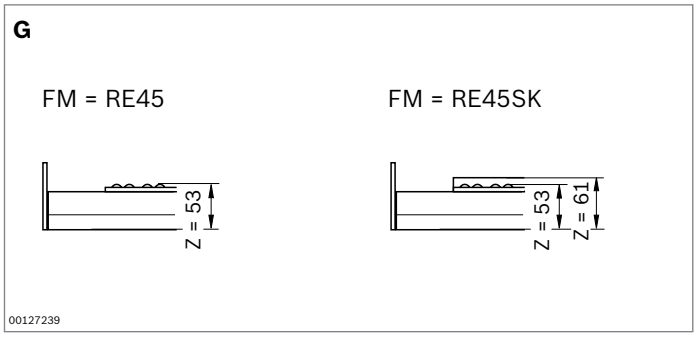
3 842 998 388 (see page 103)



Lean conveyor track with rail holder (F)

- Roller elements with and without roller flange.

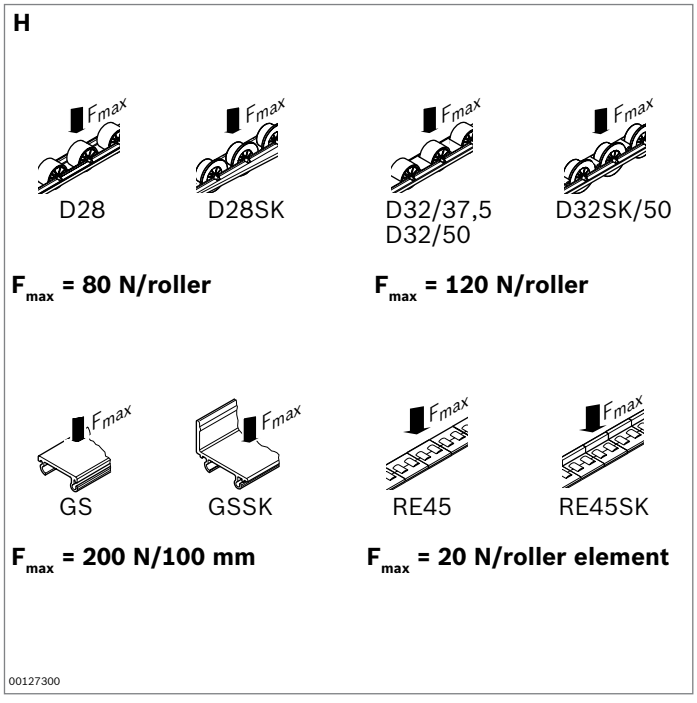
3 842 998 385 (see page 101)



Lean conveyor track with stop plate (G)

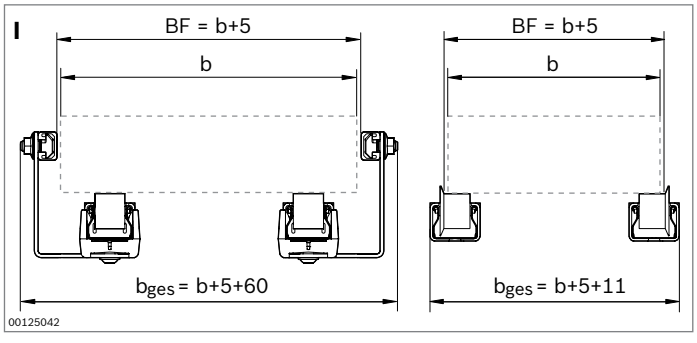
- Roller elements with and without roller flange.

3 842 998 386 (see page 103)



Conveyor media (H)

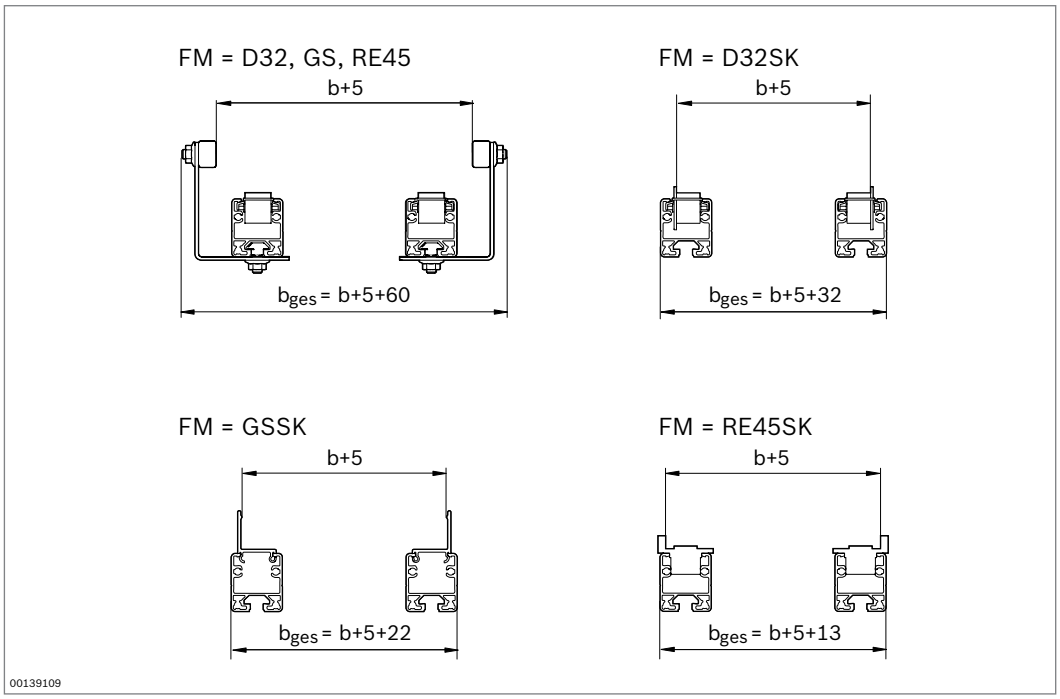
D28, D28SK (see page 97)
D32/37,5, D32/50, D32SK/50, GS, GSSK (see page 100, 102, 104, 105)
RE45, RE45SK (see page 100, 102, 105)



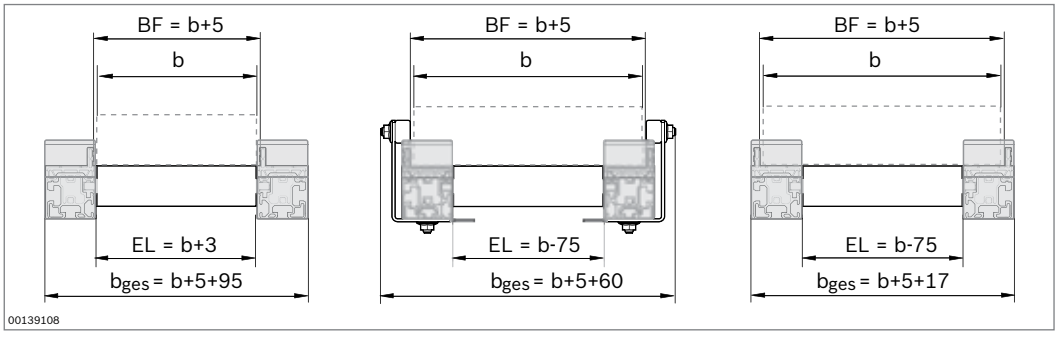
Conveyor tracks with and without lateral guide (I)

XLean conveyor track

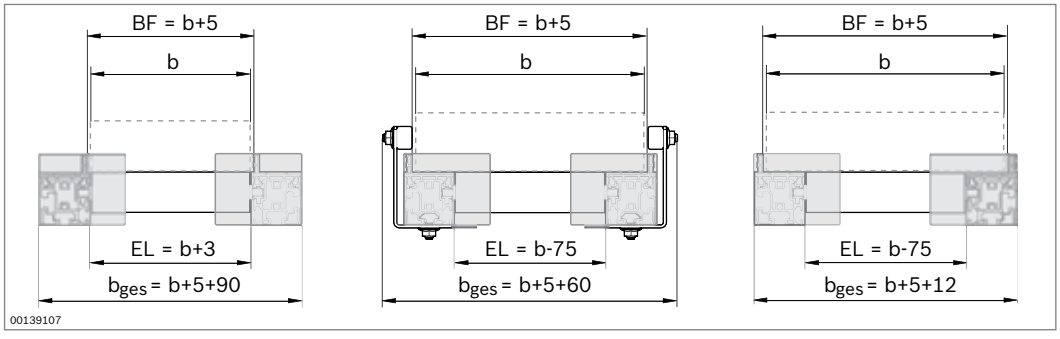
Lean conveyor track



EcoFlow conveyor track with rail holder



EcoFlow conveyor track with stop plate

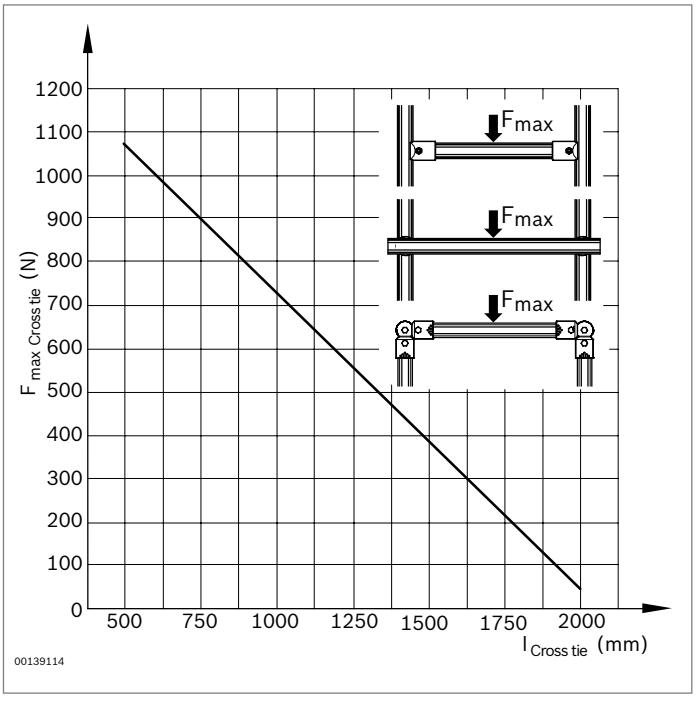


EL = Roller length

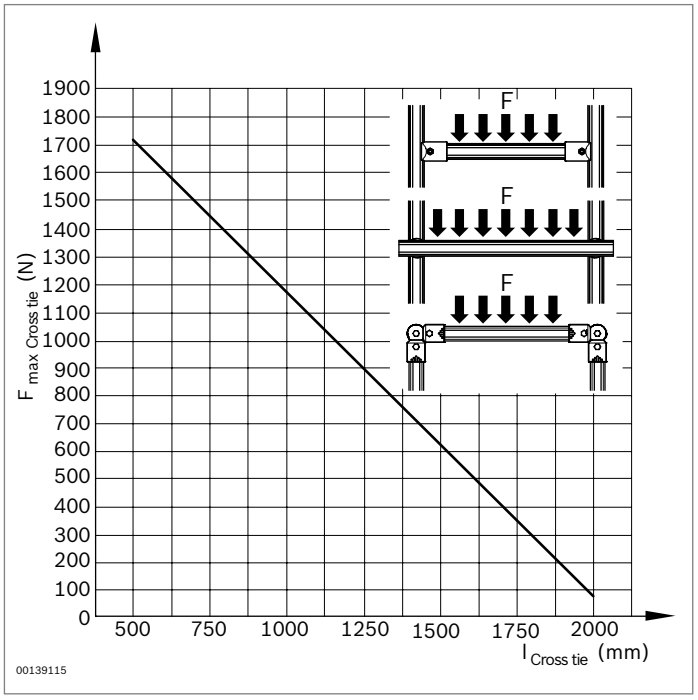
EcoShape

The specified tightening and loading limit values were determined as an example in (dry) trials.
Safety factors and building regulations in accordance with the law and accepted engineering practices must be observed.

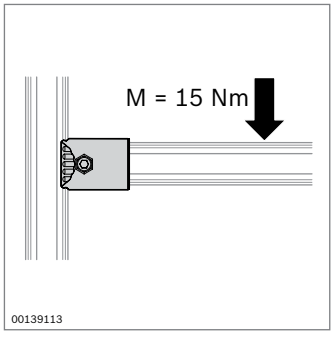
Cross tie D28L – permissible point load in the center
Connector: 90° connector, cross connector, corner piece

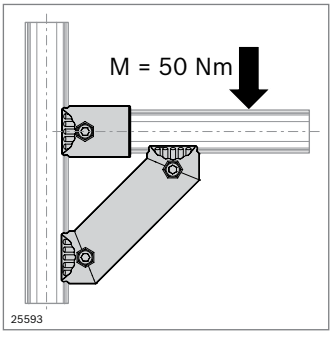


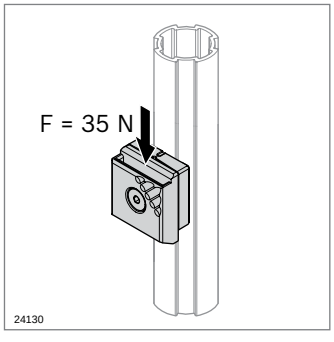
Cross tie D28L – permissible section load
Connector: 90° connector, cross connector, corner piece

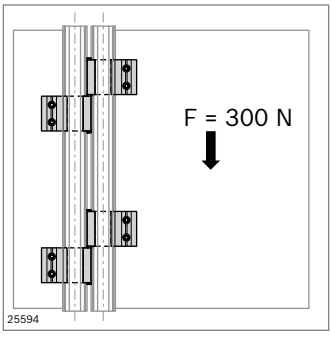


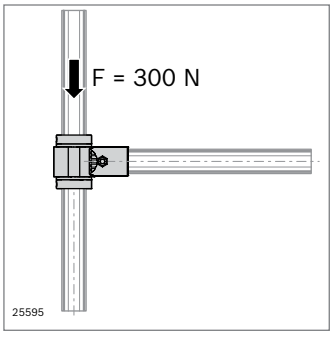
Connector
Static load limit values of the connection (beginning of plastic deformation)

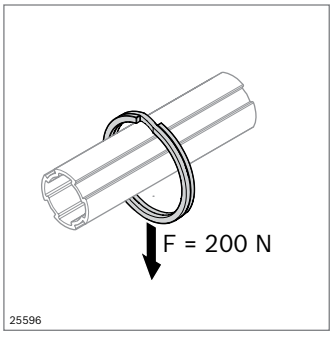


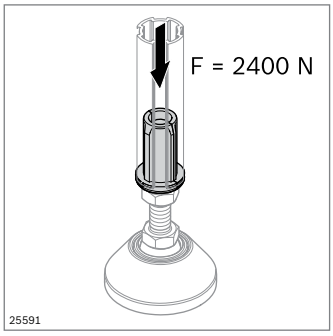


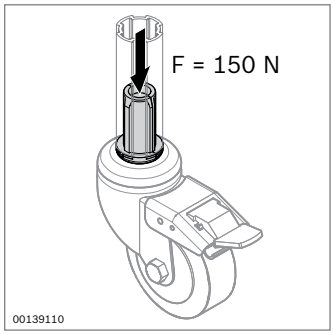






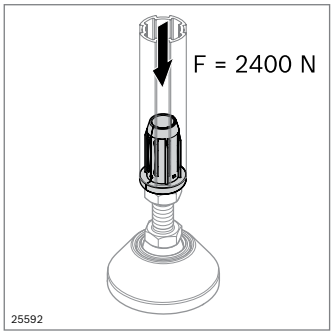


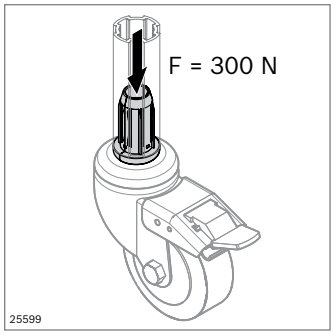




D28L threaded sleeve (PA)
Permissible bearing load

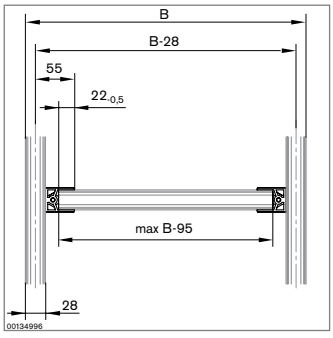
Material shuttle is approved for 60 kg

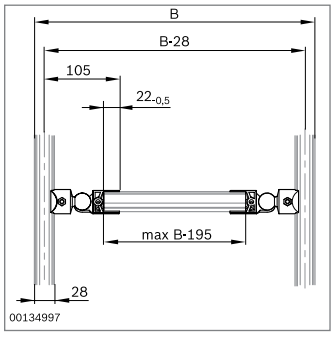




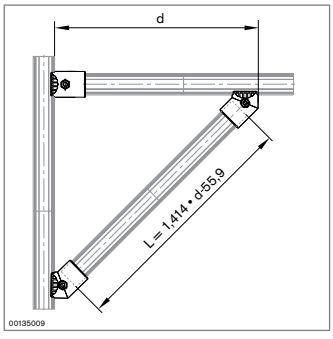
D28L threaded sleeve (Zn)
Permissible bearing load

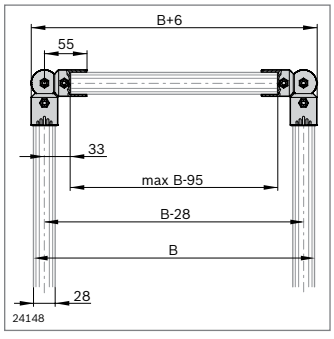
Material shuttle is approved for 100 kg



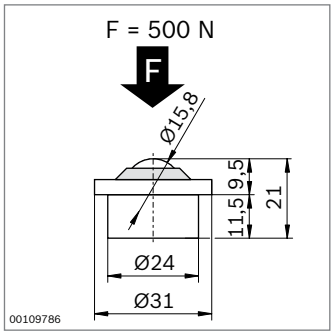


Length calculation





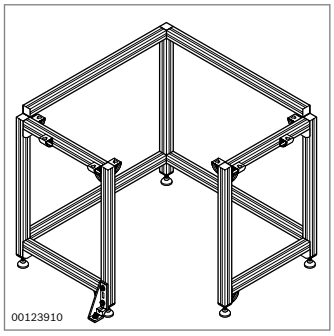
Manual linking system (EcoFlow)



F_{max} (N)	500

EcoFlow ball roller

3 842 541 008 (see page 139)



		
F_{max} (N)	1000	1500

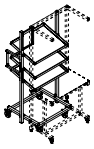
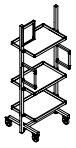
 Point load

 Distributed load

Frame for corner table top

(see page 133)

Material shuttles

Version	Max. total weight of workstation material shuttle	Max. total weight of logistics material shuttle
		
Normal	4200 N	4200 N
ESD	4000 N	4000 N

Workstation material shuttle
Logistics material shuttle

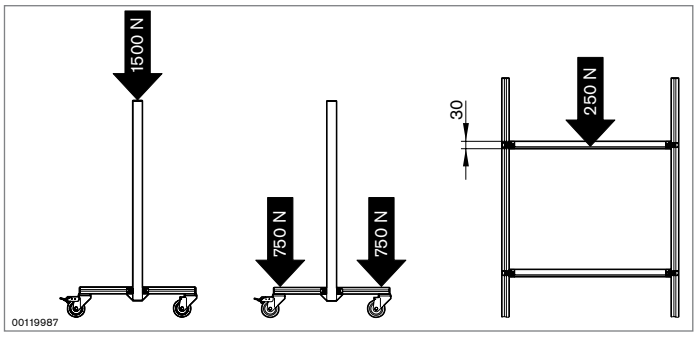
$F_{\Sigma} = F_M + F_Z$

F_M = Material shuttle weight
F_Z = Load

3 842 998 231 (see page 144)
3 842 998 230 (see page 146)

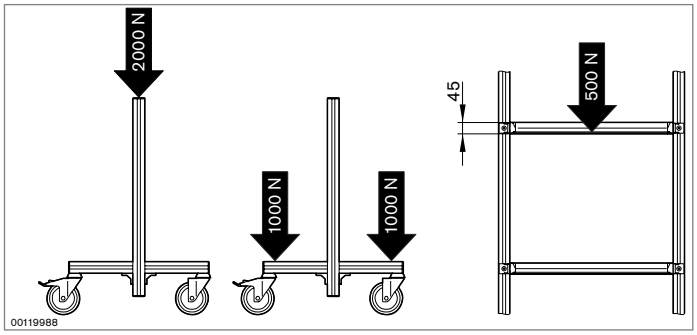
	T_E (mm)	**1220**	**1220**	**840**	**765**	**1000**	**1000**	**840**	**765**
	B_E (mm)	**1480**	**840**	**1480**	**840**	**1000**	**840**	**1000**	**840**
Plate: aluminum	F_B (N)	700	700	700	1000				
Plate: PP, SB	F_B (N)					250	280	280	360

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

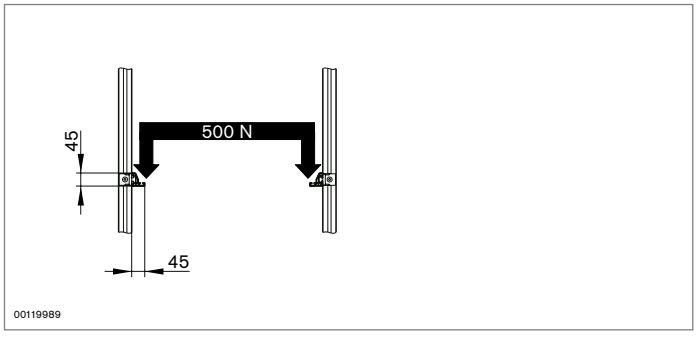


Standard material shuttles

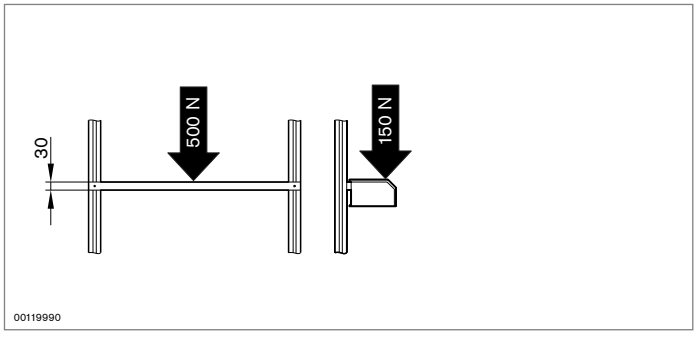
Economic logistics material shuttle
3 842 515 481 (see page 148)
3 842 518 120 (see page 148)
3 842 515 482 (see page 148)
3 842 518 121 (see page 148)



Basic logistics material shuttle
3 842 515 483 (see page 148)
3 842 515 484 (see page 148)
3 842 508 181 (see page 148)
3 842 508 182 (see page 148)

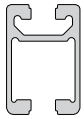


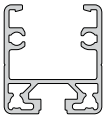
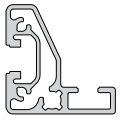
Material shuttle with angle profile
(see page 149)



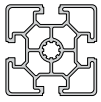
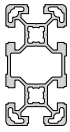
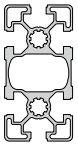
Material shuttle with suspension profile
(see page 149)

Profiles

		Frame profile 22.5x30	Frame profile 22.5x45	Suspension profile	Profile rail 30x45C	Profile 15x22.5
Y / X						
Material number		**3 842 992 493/L** **3 842 515 229** (see page 178)	**3 842 992 411/L** **3 842 508 102** (see page 179)	**3 842 993 411/L** **3 842 537 679** **3 842 554 157** **3 842 993 063/L** (see page 184, 185, 187, 196)	**3 842 992 946/L** **3 842 523 598** (see page 183)	**3 842 992 473/L** **3 842 513 576** (see page 182)
Moment of inertia	I_x (cm^4)	1.7	6.7	2.0	10.3	0.8
	I_y (cm^4)	3.0	1.7	0.5	5.6	0.3
Moment of resistance	W_x (cm^3)	1.5	2.8	2.7	4.2	0.9
	W_y (cm^3)	2.0	1.3	0.3	3.7	0.6
Profile surface A	(cm^2)	3.2	3.4	2.0	4.4	1.3
Mass	(kg/m)	0.9	0.9	0.6	1.2	0.3

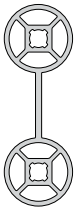
		U-profile	Section profile 45x45 MV	Angle profile
Y / X				
Part no.		**3 842 993 316/L** **3 842 535 115** **3 842 995 027/L** **3 842 541 814** (see page 105)	**3 842 993 029/L** **3 842 537 321** (see page 137)	**3 842 992 412/L** **3 842 508 104** (see page 187)
Moment of inertia	I_x (cm^4)	10.4	11.8	8.8
	I_y (cm^4)	8.3	10.5	6.9
Moment of resistance	W_x (cm^3)	4.6	5.3	3.2
	W_y (cm^3)	4.1	4.7	2.3
Profile surface A	(cm^2)	4.4	6.2	4.5
Mass	(kg/m)	1.2	1.7	1.2

Profiles

		Strut profile 40x40L	Strut profile 45x45L	Strut profile 60x60L	Strut profile 40x80L	Strut profile 45x90L
Y X						
Material number		**3 842 993 724**[1] **3 842 993 120**[2]	**3 842 993 737**[1] **3 842 992 425**[2]	**3 842 993 670**[1] **3 842 992 443**[2]	**3 842 993 728**[1] **3 842 993 130**[2]	**3 842 993 662**[1] **3 842 992 432**[2]
Moment of inertia	I_x (cm⁴)	9.1	11.7	32.4	63.4	82.0
	I_y (cm⁴)	9.1	11.7	32.4	17.3	23.6
Moment of resistance	W_x (cm³)	4.5	5.2	10.8	15.9	18.2
	W_y (cm³)	4.5	5.2	10.8	8.7	10.5
Profile surface A	(cm²)	5.6	6.0	9.6	9.9	11.3
Mass	(kg/m)	1.5	1.6	2.6	2.7	3.0

[1] See “Basic Mechanic Elements – Quick & Easy” catalog (3 842 540 238)

[2] See “Basic Mechanic Elements” catalog (3 842 540 391)

		Strut profile D28	Strut profile D28x55	Round tube D28L	Round tube D28L, N10	Swivel bearing D28L
Y X						
Material number		**3 842 993 317/L** **3 842 535 118** (see page 111, 180, 181)	**3 842 993 489/L** **3 842 537 477** (see page 111)	**3 842 996 191/L** **3 842 541 211** (see page 120)	**3 842 996 192/L** **3 842 541 213** (see page 120)	**3 842 548 121** **3 842 557 298** (see page 123)
Moment of inertia	I_x (cm⁴)	1.5	3.2	1.3	1.2	8.4
	I_y (cm⁴)	1.5	88.3	1.3	2.0	8.4
Moment of resistance	W_x (cm³)	1.1	2.3	1.0	0.8	3.7
	W_y (cm³)	1.1	23.1	1.0	1.4	3.7
Profile surface A	(cm²)	2.4	5.9	1.8	2.6	4.4
Mass	(kg/m)	0.7	1.6	0.5	0.7	1.2

Material number overview

0 842 901 309	127, 183	3 842 502 154	50	3 842 517 201	48	3 842 526 622	66
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3 842 146 815	188	3 842 509 178	151	3 842 518 424	111, 187	3 842 526 665	66
3 842 146 848	188	3 842 511 704	185	3 842 519 465	62	3 842 526 671	66
3 842 184 738	126	3 842 513 576	182, 212	3 842 519 530	24, 195	3 842 526 672	66
3 842 191 178	57	3 842 513 722	56	3 842 519 735	29, 195	3 842 526 673	66
3 842 191 186	57	3 842 514 524	33	3 842 520 053	31	3 842 527 161	79, 84
3 842 218 953	183, 189	3 842 515 160	29, 195	3 842 520 054	31	3 842 527 162	79, 84
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3 842 344 751	68, 200	3 842 515 483	148, 211	3 842 521 263	185	3 842 530 285	53, 62
3 842 344 752	68, 200	3 842 515 484	148, 211	3 842 521 510	183	3 842 530 287	184, 187
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3 842 344 756	68, 200	3 842 515 525	57	3 842 521 817	62, 198	3 842 532 274	185, 189
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3 842 344 758	68, 200		186	3 842 522 012	62	3 842 532 862	104
3 842 344 759	68, 200	3 842 515 771	174	3 842 522 087	62	3 842 532 865	104
3 842 344 760	68, 200	3 842 515 772	174	3 842 522 130	60	3 842 532 866	104
3 842 344 761	68, 200	3 842 515 773	175	3 842 522 305	60	3 842 532 867	104
3 842 344 764	69, 200	3 842 515 774	175	3 842 522 585	48	3 842 532 870	104
3 842 344 765	69, 200	3 842 515 775	174	3 842 522 633	189	3 842 532 871	98
3 842 344 766	69, 200	3 842 515 776	174	3 842 522 634	185	3 842 532 878	111
3 842 345 081	188	3 842 516 405	174	3 842 523 142	66	3 842 532 879	111, 180
3 842 346 280	68, 200	3 842 516 406	174	3 842 523 561	133	3 842 532 880	104
3 842 346 281	68, 200	3 842 516 407	175	3 842 523 583	133	3 842 532 881	106
3 842 346 282	68, 200	3 842 516 704	57	3 842 523 598	183, 189,	3 842 532 883	104
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3 842 346 287	68, 200	3 842 516 838	178, 179	3 842 523 943	7, 17	3 842 532 887	104
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3 842 346 291	68, 200	3 842 517 044	49	3 842 525 738	137		181, 213
3 842 346 294	69, 200	3 842 517 045	48	3 842 525 739	137	3 842 535 121	105
3 842 346 295	69, 200	3 842 517 047	49	3 842 525 740	137	3 842 535 122	105
3 842 346 296	69, 200	3 842 517 049	49	3 842 525 741	137	3 842 535 124	105
3 842 352 061	133, 181	3 842 517 051	49	3 842 525 742	137	3 842 535 125	182
3 842 352 088	32	3 842 517 055	49	3 842 526 034	137	3 842 535 136	112
3 842 502 151	50	3 842 517 163	51	3 842 526 560	188	3 842 535 364	106
3 842 502 153	50	3 842 517 164	51	3 842 526 621	66	3 842 535 458	181

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3 842 535 471	25	3 842 537 116	27, 179	3 842 537 776	97	3 842 538 130	108
3 842 535 472	25	3 842 537 119	112	3 842 537 777	97	3 842 538 275	178
3 842 535 473	25	3 842 537 123	49	3 842 537 778	97	3 842 538 276	179
3 842 535 474	25	3 842 537 135	28	3 842 537 779	97	3 842 538 372	97
3 842 535 475	25	3 842 537 163	137	3 842 537 803	105	3 842 538 409	29, 195
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3 842 535 477	25	3 842 537 249	24	3 842 537 807	105	3 842 538 457	27
3 842 535 478	25	3 842 537 250	24	3 842 537 861	179, 180,	3 842 538 458	27
3 842 535 479	25	3 842 537 251	24		183	3 842 538 459	27
3 842 535 480	25	3 842 537 252	24	3 842 537 862	178	3 842 538 460	27
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3 842 535 484	25	3 842 537 345	45	3 842 537 896	140	3 842 538 687	186
3 842 535 489	25	3 842 537 347	45	3 842 537 897	140	3 842 538 771	28, 195
3 842 535 490	25	3 842 537 349	45	3 842 537 898	140	3 842 538 772	28, 195
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3 842 536 054	141	3 842 537 566	49	3 842 537 950	141	3 842 539 842	46
3 842 536 055	139	3 842 537 583	141	3 842 537 951	106	3 842 539 844	46
3 842 536 056	139	3 842 537 584	141	3 842 537 958	104	3 842 539 846	46
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3 842 536 120	188	3 842 537 598	49	3 842 537 961	104	3 842 539 854	46
3 842 536 121	188	3 842 537 599	49	3 842 537 962	104	3 842 539 856	46
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3 842 536 125	188	3 842 537 657	98	3 842 538 050	108	3 842 539 864	46
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