

Lightweight and agile.

FRAME YOUR FACTORY with the EcoShape
tubular framing system from Bosch Rexroth.

THE ORIGINAL
BOSCH PROFILE

Only from

rexroth

A Bosch Company



Reduce weight by up to 30% compared to similar systems made from steel.

EcoShape combines unrivaled flexibility and versatility with very simple handling. The Poka-Yoke principle of the system ensures straightforward assembly. All components are reusable and recyclable and therefore make a valuable contribution to economic efficiency and sustainability.



www.boschrexroth.com/ecoshape

rexroth
A Bosch Company

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FRAME YOUR FACTORY

with the EcoShape tubular framing system from Bosch Rexroth

CHALLENGES

Manufacturing companies are coming under unprecedented pressure to make their production sustainable and future-oriented. Product life cycles are becoming ever shorter and increasingly uncertain.

To ensure sustainable and future-proof production, the first step is to minimize waste as a means of long-term cost reduction. This is achieved by maximizing the efficiency of production processes and subjecting them to ongoing development. At the same time, minimizing the use of materials helps to cut energy consumption and reduce greenhouse emissions.

The objective is clear: Lower investments and sustainable prevention of waste – in all elements of the process.

LEAN PRODUCTION

An important element of lean production is Karakuri, which is the Japanese word for "mechanism". In industrial production and logistics, Karakuri stands for mechanical (low cost) automation. A typical example of Low Cost Automation (LCA) is the use of gravity and leverage. These methods are used in the material feed, for example, to bring cases into the correct position by mechanical means.

Karakuri concepts are developed in collaboration with production associates, thereby making use of their process and workflow expertise.

Only a small number of very simple tools are required for construction and maintenance. The associates are able to maintain the systems themselves and can perform smaller repairs independently and without assistance.

The solutions are usually very simple and, most importantly, can be changed as necessary. Typical applications include:

- ▶ **Workstations**
- ▶ **Flow rack systems**
- ▶ **Material shuttles**



YOUR BENEFITS

Be it material shuttles, flow rack systems or workstations – with the EcoShape tubular framing system, users can plan robust shopfloor solutions both quickly and sustainably.

Poka-Yoke, Kaizen, Low Cost Automation (LCA), Lean Design: Based on the principles for continuous improvement and standardization, EcoShape from Bosch Rexroth provides customers with a modular construction kit for assembling ergonomic workstations and frames – for use in production and logistics.

The EcoShape construction kit allows Karakuri concepts to be developed and implemented directly on-site, with maximum speed and simplicity. The kit is compatible with the broad aluminum profile range from Bosch Rexroth.

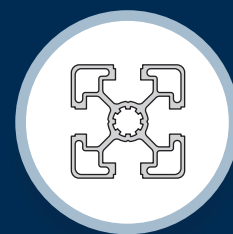
Sturdy and cost-effective



EcoShape provides budget-conscious users with an incredibly simple and quick alternative for building flow racks, material shuttles and workstations.

With the new generation, the stability of the tubular framing system has once again been significantly increased, especially with regard to dynamic load capacity and settlement behavior.

Individually expandable



Applications created with the innovative aluminum tubular framing system can not only be set up and rebuilt quickly – they can also be expanded as required.

Thanks to the integrated 10 mm slot, EcoShape is compatible with the Rexroth aluminum modular profile system.



Quick planning and implementation



With EcoShape, users can plan and create a wide range of applications in a short time and with few components.

The [MTpro](#) planning software also provides support with specific ideas and application models. The range of applications extends from material shuttles and flow racks to workstations and complete assembly islands.

More information and downloads for MTpro can be found here: www.boschrexroth.com/mtpro

Online



Further details, technical data, product specifications and CAD drawings are available online in the Rexroth Store.

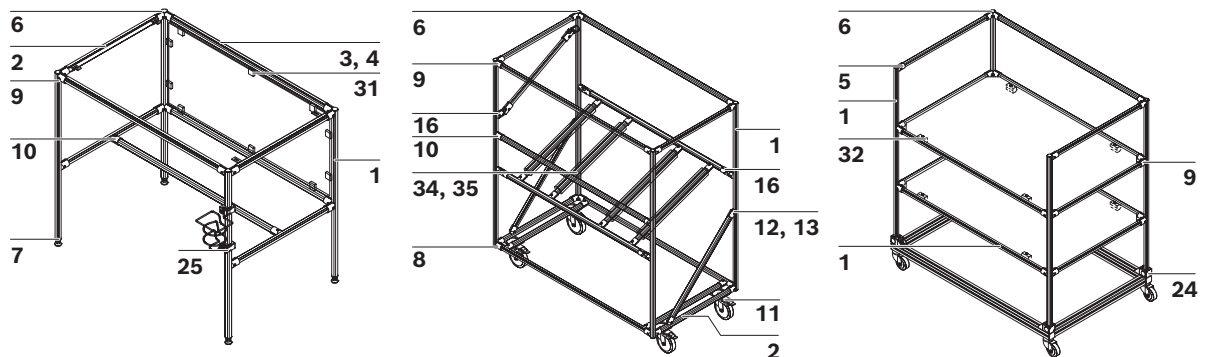
PRODUCT OVERVIEW

Secure connection based on Poka-Yoke principle





The connectors are developed according to the Poka-Yoke principle. Accidental mistakes during assembly are prevented by the design.

- ▶ Anti-torsion element for secure joints
- ▶ Form-fit connection
- ▶ High dynamic load capacity

All connectors are suitable for setting up ESD-conductive systems.

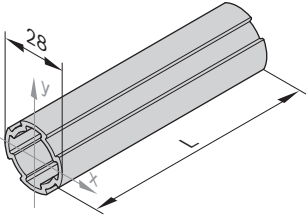


34648

1 Round tube D28L 	2 Round tube D28L, N10 	3 Slide rail D28L 	4 Slide rail D28L, SF 
5 Cover cap D28L 	6 Cover cap D28L, N10 	7 Threaded sleeve D28L, PA 	8 Threaded sleeve D28L, M12 
9 90° Connector D28L 	10 90° Connector D28L, inside 	11 Parallel connector D28L 	12 45° Connector D28L 
13 45° Connector D28L, inside 	14 Strut D28L, 45° 	15 Cross connector D28L 	16 0°-90° Connector D28L 
17 0°-90° Connector D28 	18 Corner bracket D28L 	19 90° Connector R25, inside 	20 Swivel bearing D28L 
21 Bushing 	22 Retaining ring D28L 	23 Adapter N8, N10 	24 Adapter N10/45 
25 Adapter N10/30 	26/1 Adapter mount D28L  26/2 Container mount 	27 Adapter XLean 	28 Tube clamp D28L, N10 
29 Hinge D28L/D28L 	30 Hinge D28L/- 	31 Variofix block PA 	32 Variofix block Zn 
33 Mounting bracket D28L 	34 Impact protection 	35 Impact protection D28L 	36 Ring D50 
37 Rubber foot D28 	38 Stopper D28L, N10 	39/40 Base plate EcoShape 	41 Tension wire 

1

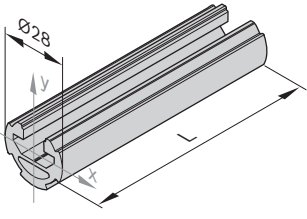
$A = 1,79 \text{ cm}^2$
 $I_x = 1,34 \text{ cm}^4$
 $I_y = 1,34 \text{ cm}^4$
 $W_x = 0,95 \text{ cm}^3$
 $W_y = 0,95 \text{ cm}^3$
 $m = 0,48 \text{ kg/m}$




36996

2

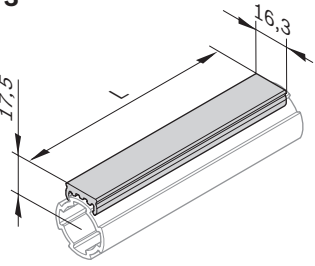
$A = 2,59 \text{ cm}^2$
 $I_x = 0,99 \text{ cm}^4$
 $I_y = 1,94 \text{ cm}^4$
 $W_x = 1,36 \text{ cm}^3$
 $W_y = 0,80 \text{ cm}^3$
 $m = 0,67 \text{ kg/m}$





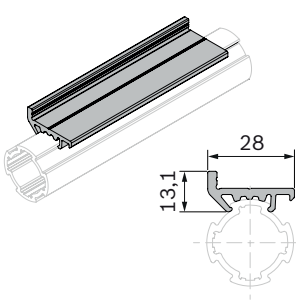
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3



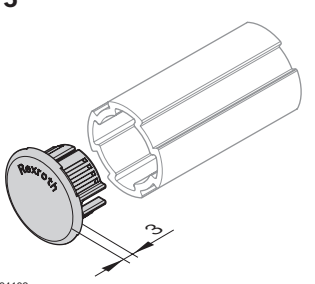
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4

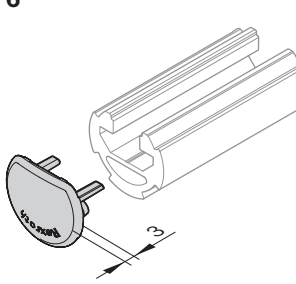
42483

5







24132

6







24133

Round tube D28L		L (mm)	No.
1 pc		50 ... 6070	3 842 994 291/L
 50 pcs		6070	3 842 567 384
1 pc		6070	3 842 567 386



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

Material: Aluminum, anodized

Round tube D28L, N10		L (mm)	No.
1 pc		50 ... 6070	3 842 994 292/L
 20 pcs		6070	3 842 567 385
1 pc		6070	3 842 567 387



- ▶ Round tube D28L, N10 with 10 mm slot for mounting accessories from the aluminum profile construction kit
- ▶ 3 interfaces for EcoShape connectors

Material: Aluminum, anodized

Slide rail D28L	L (mm)	ESD		No.
Signal gray	2000		10	3 842 554 750
Black	2000		10	3 842 548 117




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

Material: PVC

Slide rail D28L SF	L (mm)	ESD		No.
Signal gray	2000		10	3 842 567 346
Black	2000		10	3 842 567 347

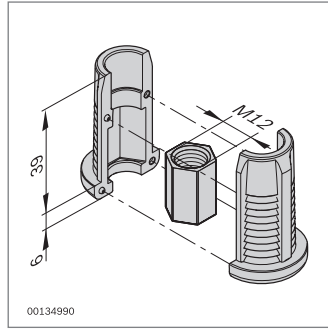
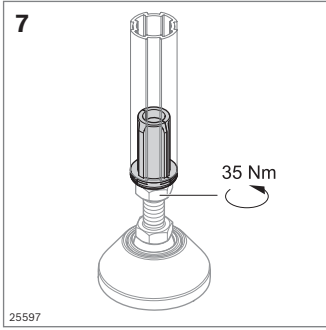
- ▶ Slide rail with lateral guide for creating a simple conveyor track or manual slide section by clipping the slide rail onto the round tube D28L or D28L, N10

Material: PVC

Cover cap		ESD		No.
5 D28L	Signal gray		20	3 842 554 752
	Black		20	3 842 548 129
6 D28L, N10	Signal gray		20	3 842 554 754
	Black		20	3 842 548 130

- ▶ Cover cap for round tube D28L and D28L, N10

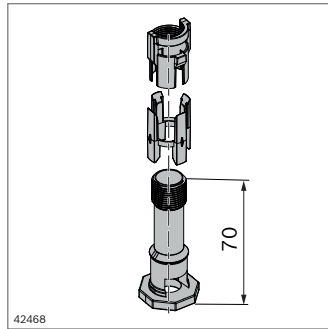
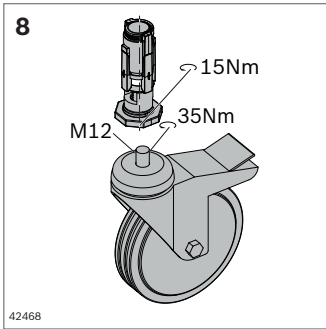
Material: PA6, PA66 (conductive)



Threaded sleeve D28L, PA	ESD	No.
Black	20	3 842 541 185

► Threaded sleeve for incorporating a leveling foot or castor wheel.

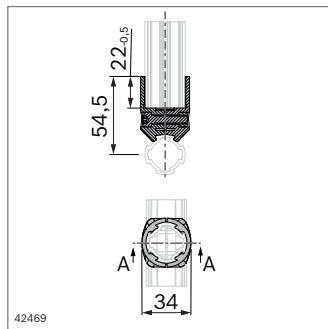
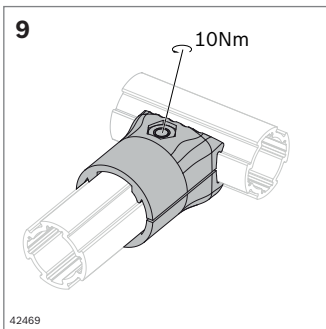
Material: PA66; aluminum hexagon nut



Threaded sleeve D28L, M12	ESD	No.
	20	3 842 567 349

► Threaded sleeve for incorporating a leveling foot or castor wheel for dynamic loads.

Material: Diecast aluminum



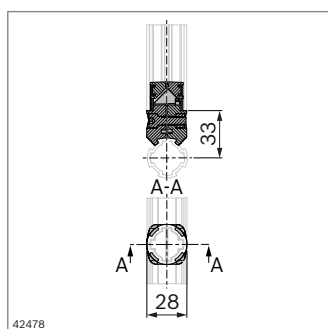
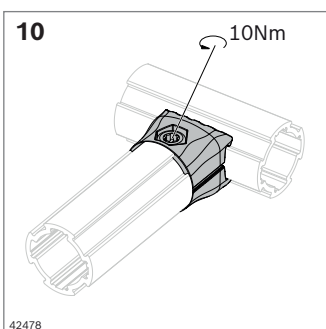
90° Connector D28L	ESD	No.	FS
	20	3 842 567 339	FS1

Material: Diecast aluminum

Scope of delivery: Incl. fastening material (FS)

FS1

ISO14579
M6x25
DIN EN
ISO7042
M6



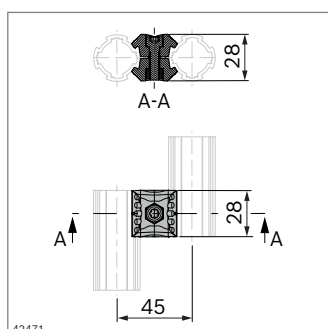
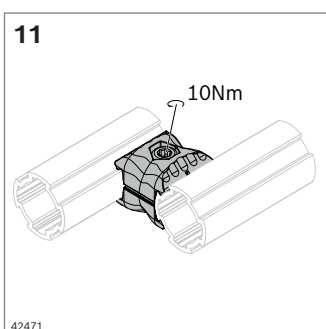
90° Connector D28L, inside	ESD	No.	FS
	20	3 842 567 341	FS2

Material: Diecast aluminum

Scope of delivery: Incl. fastening material (FS)

FS2

ISO14579
M6x20
DIN EN
ISO7042
M6



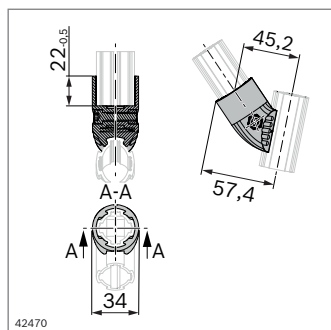
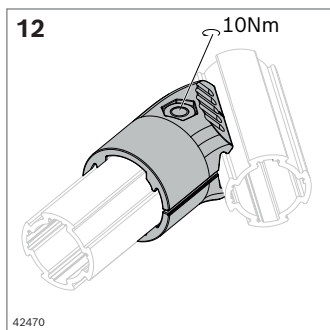
Parallel Connector D28L	ESD	No.	FS
	20	3 842 567 350	FS2

Material: Diecast aluminum

Scope of delivery: Incl. fastening material (FS)

FS2

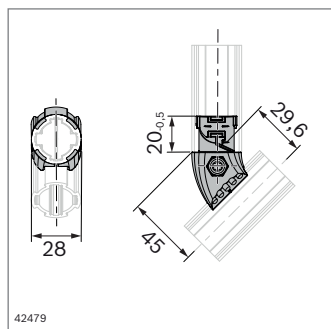
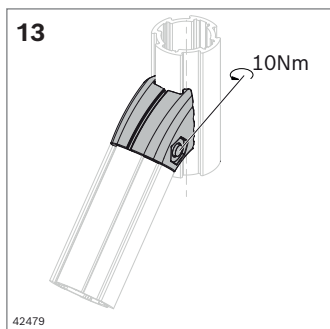
ISO14579
M6x25
DIN EN
ISO7042
M6



45° Connector D28L	ESD	No.	FS
	20	3 842 567 340	FS1

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

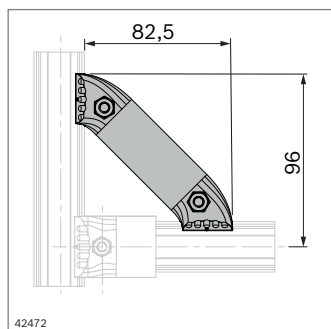
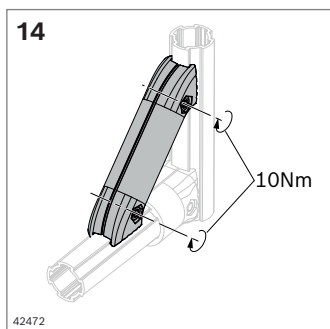
FS1
ISO14579 M6x25
DIN EN ISO7042 M6



45° Connector D28L, inside	ESD	No.	FS
	20	3 842 567 342	FS2

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

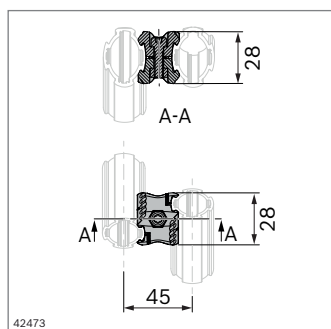
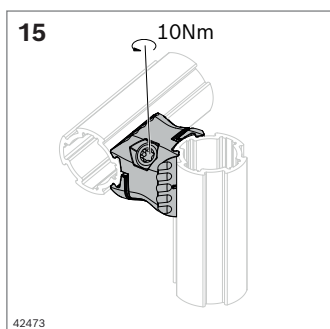
FS2
ISO14579 M6x20
DIN EN ISO7042 M6



Strut D28L, 45°	ESD	No.	FS
	20	3 842 567 351	2xFS2

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

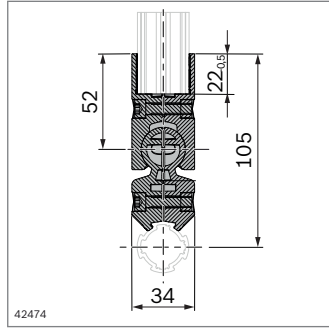
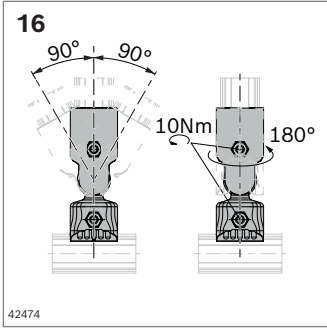
FS2
ISO14579 M6x20
DIN EN ISO7042 M6



Cross connector D28L	ESD	No.	FS
	20	3 842 567 352	FS2

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

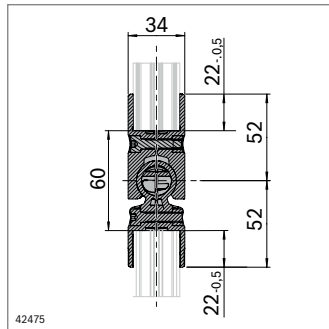
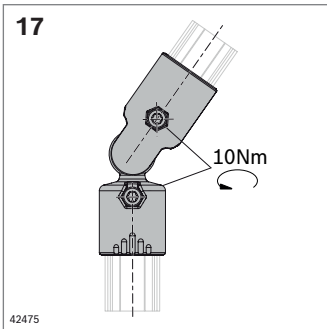
FS2
ISO14579 M6x20
DIN EN ISO7042 M6



0°-90° Connector D28L	ESD	No.	FS
	20	3 842 567 353	2xFS1

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

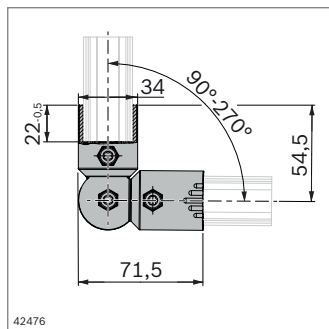
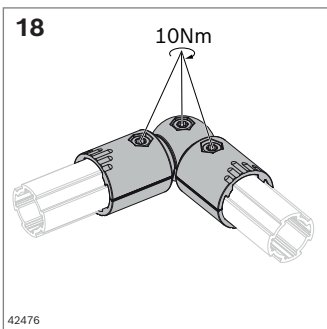
FS1
ISO14579 M6x25
DIN EN ISO7042 M6



0°-90° Connector D28	ESD	No.	FS
	20	3 842 543 480	2xFS1

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

FS1
ISO14579 M6x25
DIN EN ISO7042 M6

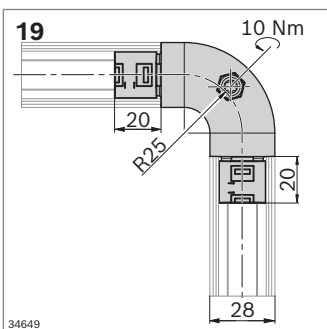


90°-270° Corner bracket D28L	ESD	No.	FS
	20	3 842 567 355	3xFS1

- ▶ Corner bracket D28L for easy adjustment within a 15° range
- ▶ Swivel range: 90°-270°

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

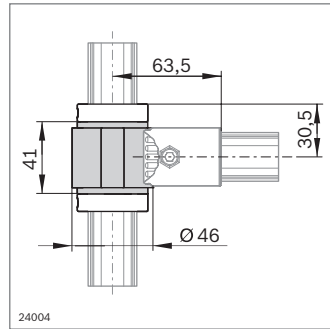
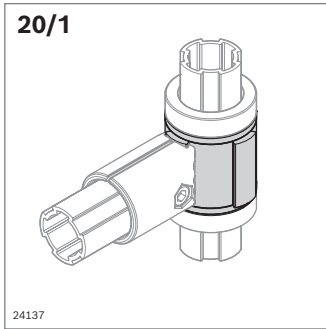
FS1
ISO14579 M6x25
DIN EN ISO7042 M6



90° Connector R25, inside	No.	FS
	20	3 842 567 381 FS2

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

FS2
ISO14579 M6x20
DIN EN ISO7042 M6



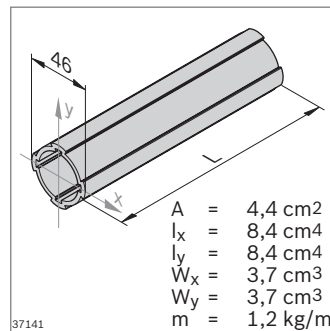
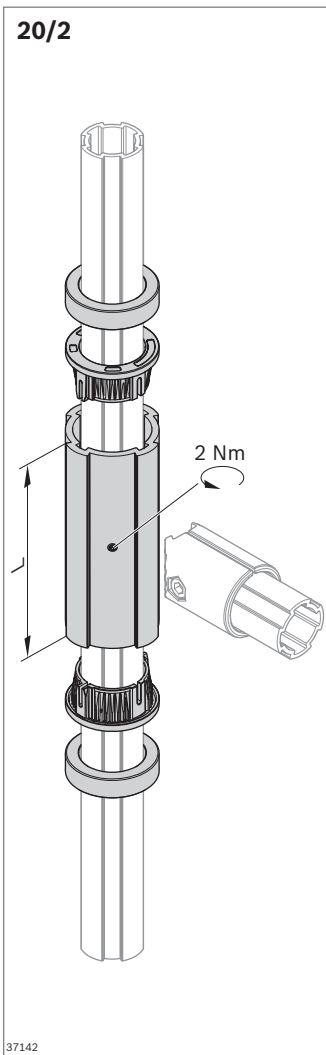
Swivel bearing D28L	L (mm)	ESD	No.
	34	20	3 842 548 121

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

Required accessories: Retaining ring D28L

Material: Aluminum swivel bearing

Scope of delivery: Swivel bearing D28L, L = 34 mm; bushing D28 (17), headless setscrew ISO 4026 M4x10

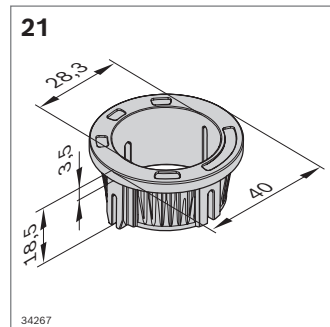


Swivel bearing D28L	L (mm)	ESD	No.
	1000	2	3 842 557 298

For self-assembly:

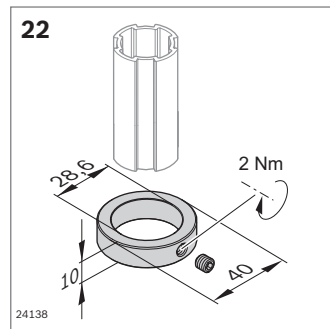
- Swivel bearing D28L with L = 1000 mm, can be cut to length

Material: Aluminum



Bushing D28	ESD	No.
Black	4	3 842 557 299

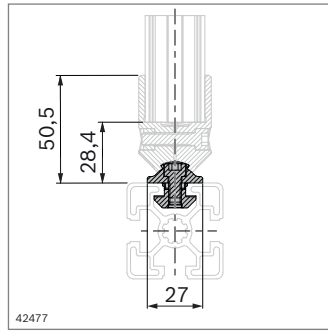
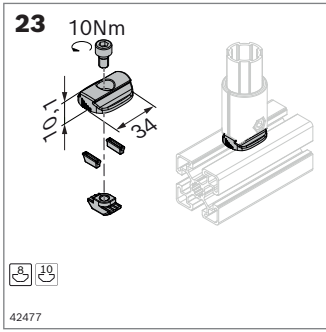
Material: POM



Retaining ring D28L	ESD	No.
	4	3 842 548 122

Material: Aluminum

Scope of delivery: Retaining ring incl. headless setscrew DIN 913 M6x6

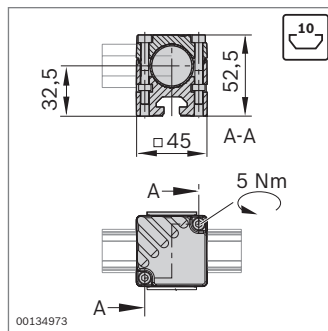
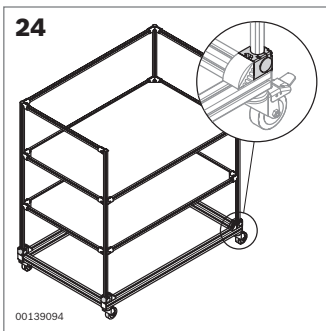
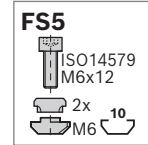
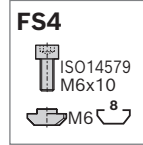


Adapter N8, N10	ESD	No.	FS
	20	3 842 567 354	FS4, FS5

► Adapter N8, N10 for connection to a Rexroth strut profile (8 mm slot, 10 mm slot)

Material: Diecast zinc

Scope of delivery: Incl. fastening material (FS)

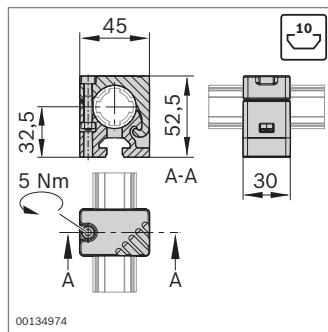
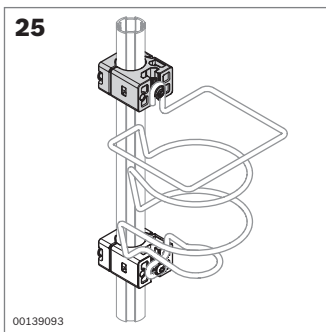
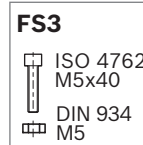


Adapter N10/45	ESD	No.	FS
	20	3 842 541 187	2xFS3

► Adapter N10/45 for connecting round tube D28L or D28L, N10 to a profile with 10 mm slot

Material: Diecast zinc adapter, PE cover cap

Scope of delivery: Incl. cover cap, fastening material (FS)

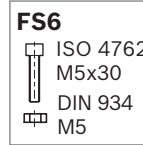


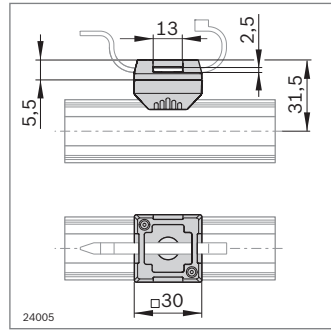
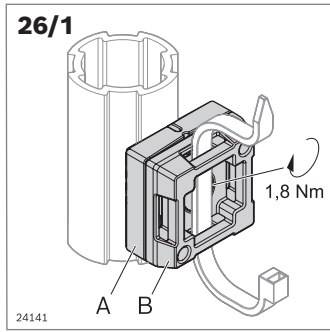
Adapter N10/30	ESD	No.	FS
	20	3 842 541 190	FS6

► Adapter N10/30 for fastening light accessories, such as a bottle holder to a round tube D28L

Material: Diecast zinc

Scope of delivery: Incl. fastening material (FS)



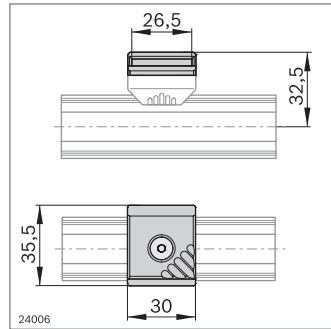
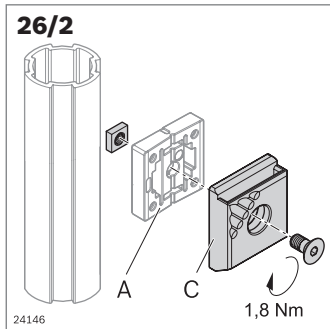
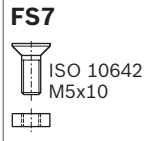


Adapter mount D28L	ESD	No.	FS
A + B; black	20	3 842 548 120	FS7

► For attaching cable ties

Material: PA66

Scope of delivery: Incl. fastening material (FS)

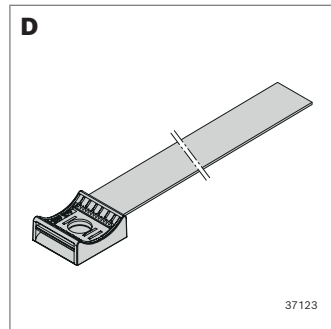
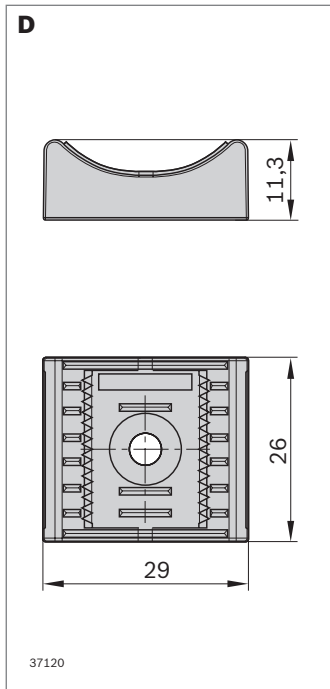
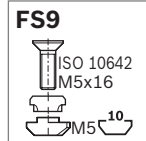
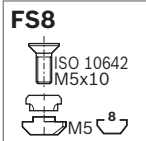


Container mount	ESD	No.	FS
C; black	10	3 842 544 797	FS8, FS9

► For attaching containers using the container mount

Material: PA66

Scope of delivery: Incl. fastening material (FS)

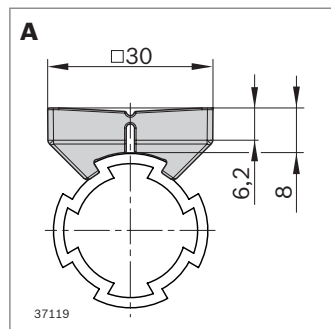
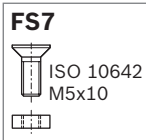


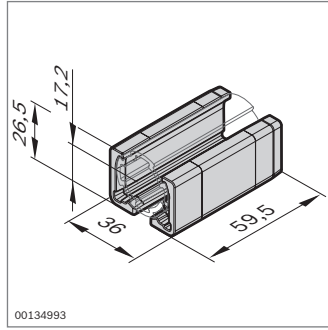
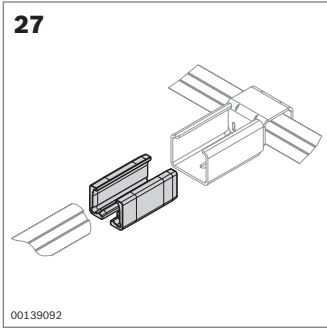
Cable bracket + adapter	ESD	No.	FS
D Loop flat cable bracket; black	10	3 842 559 380	
A Adapter D28L; black	10	3 842 562 115	FS7

- Loop flat cable bracket (D) for direct assembly on panel element or table top
- Can be mounted on adapter D28L (A) for attachment to EcoShape profiles
- Can be used with M4 and M5 screws
- Adapter for attaching loop flat cable holder to EcoShape profiles
- Adapter D28L (A) for fastening of container mount

Material: Cable bracket PP, UL certified; velcro strap PP, PPA (velour), UL certified; adapter PA; steel mounting kit, galvanized

Scope of delivery: Adapter incl. fastening material (FS)

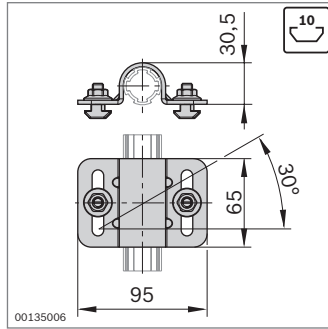
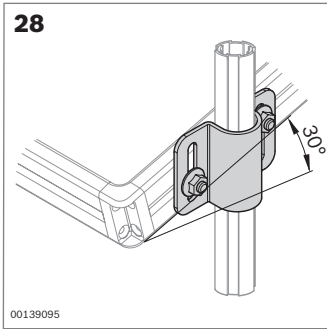




Adapter XLean	ESD	No.
Black	20	3 842 541 296

- ▶ Adapter XLean for combination with XLean. The adapter XLean connects the round tube D28L to the rail holder XLean

Material: PA66



Tube clamp D28L, N10	ESD	No.	FS
	20	3 842 541 193	2xFS10

- ▶ Tube clamp D28L, N10 for fastening material shelves with 10 mm slot to the round tube D28L Oblique positioning up to 30° possible

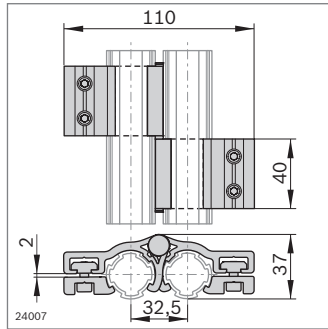
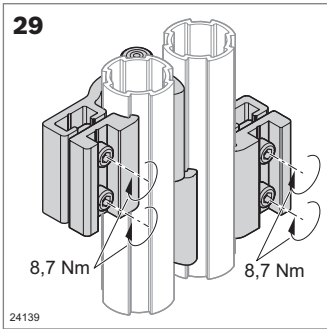
Material: Steel, galvanized

Scope of delivery: Incl. fastening material (FS)

FS10

M8

M8x20



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

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

Material: Aluminum

Scope of delivery: Incl. fastening material (FS)

FS11

ISO4762

M6x10

M6

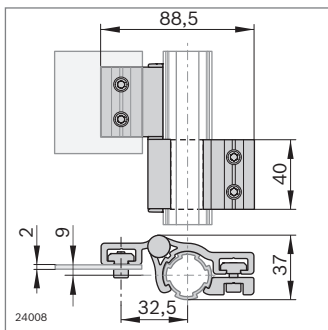
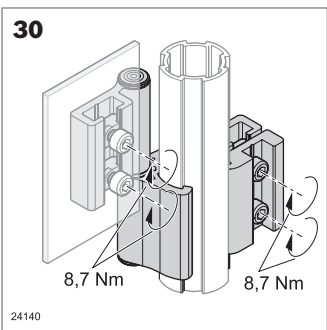
FS12

ISO8741

6x60

DIN125

A6,4



Hinge D28L/-	ESD	No.	FS
	2	3 842 548 127	2xFS11, FS12

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

Material: Aluminum

Scope of delivery: Incl. fastening material (FS)

FS11

ISO4762

M6x10

M6

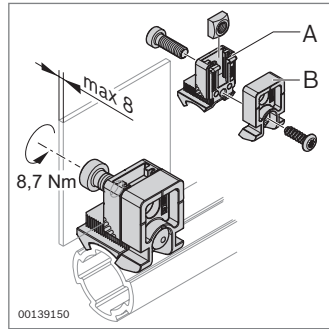
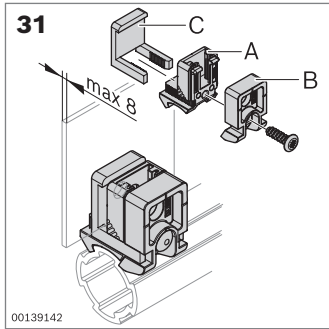
FS12

ISO8741

6x60

DIN125

A6,4



Variofix block PA	ESD	No.	FS
Black		20 3 842 543 311	FS13, FS14

- ▶ Plastic Variofix block for fastening panel elements with a snap-in clip or screw
- ▶ Variofix remover for releasing the snap-in clip

Material: PA66

Scope of delivery: Incl. fastening material (FS)

FS13

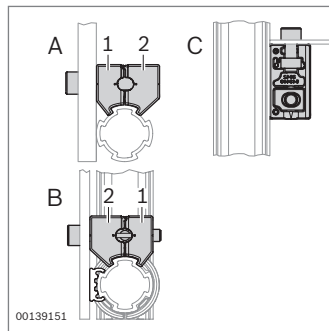
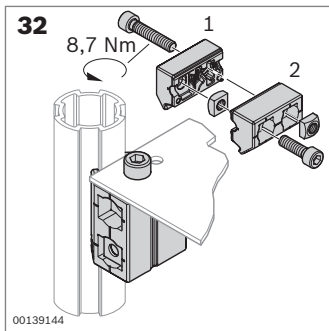
- ISO 4762
M6x16
- DIN 557
M6

FS14



Snap-in clip	ESD	No.
Transparent		10 3 842 184 738

Material: PA6



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

- ▶ Diecast zinc Variofix block for fastening panel elements
- ▶ Three arrangements possible ("A", "B", "C")

Material: Diecast zinc

Scope of delivery: Incl. fastening material (FS)

FS15

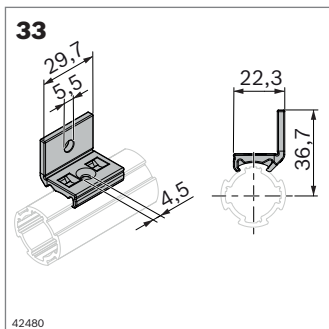
- ISO 4762
M6x22
- ISO 4762
M6x30
- DIN 557
2x M6

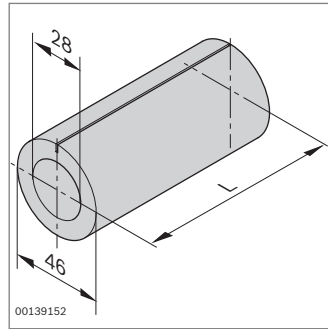
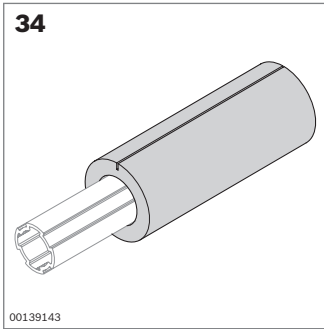
Mounting bracket D28L	ESD	No.	FS
Black	ESD	10 3 842 567 368	

- ▶ Diecast zinc mounting bracket D28L for fastening panel elements
- ▶ Recommended for ESD applications: Countersunk self-tapping screw ISO 15482-ST4, 2x13

Material: PA66

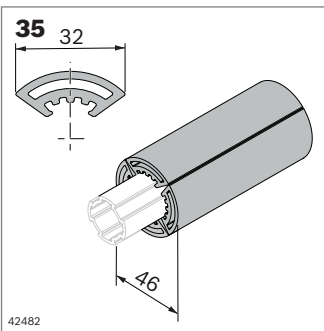
Scope of delivery: Incl. fastening material (FS)





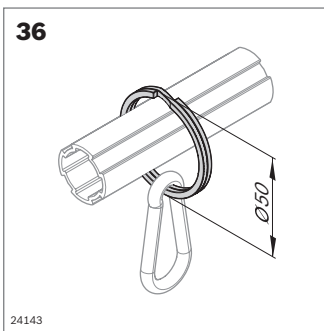
Impact protection	L (mm)		No.
Gray	2000	10	3 842 544 637

Material: PE-LD



Impact protection D28L	L (mm)		ESD	No.
Signal gray	2000	10		3 842 567 344
Black	2000	10	⚡	3 842 567 345

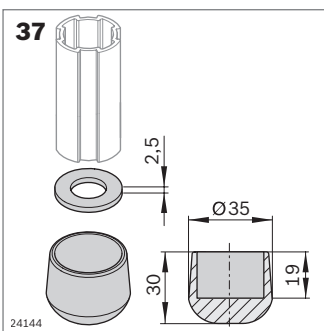
Material: TPV, TPE (conductive)



Ring + spring hook		No.
Ring D50	20	3 842 548 131
Spring hook	1	0 842 901 309

► For designing simple tool holders

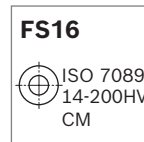
Material: Steel ring, nickel-plated; steel spring hook, galvanized

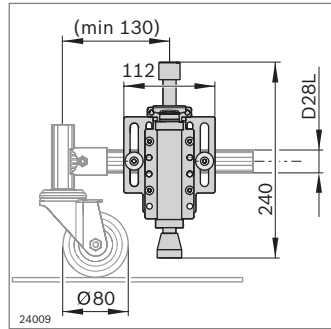
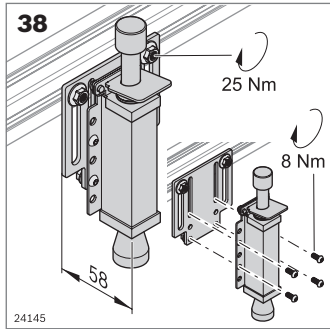


Rubber foot D28	ESD		No.	FS
Black	⚡	20	3 842 548 128	FS16

► Non-slip design of flow racks and stands

Material: NR/SBR



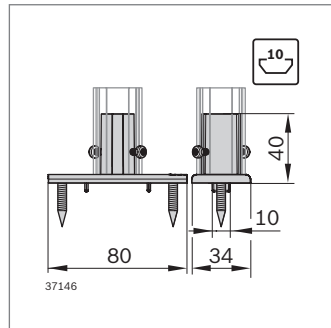
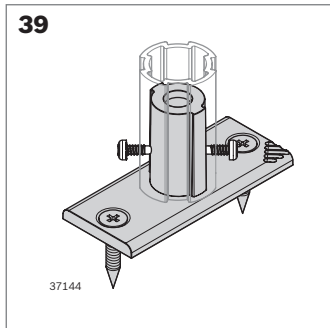
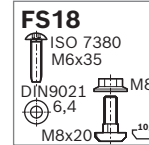
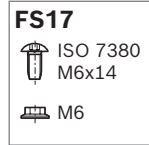


Stopper D28L, N10	No.	FS
	3 842 548 132	4xFS16, 2xFS18

- ▶ For stopping material shuttles ergonomically at just one point
- ▶ Universal attachment to different round tubes and profile cross-sections
- ▶ Stopper tension path: 34 mm

Material: Stainless steel stopper: EPDM; aluminum attachment plate

Scope of delivery: Incl. fastening material (FS)



Base plate D28L	ESD	No.	FS
	10	3 842 559 346	2xFS19

- ▶ Base plate for fastening frames directly onto walls, floors, table tops and strut profiles with 10 mm slot via EcoShape round tubes
- ▶ No additional connector required
- ▶ Centering lugs as anti-torsion elements (can be broken off)
- ▶ Reference load for profile installation: 15 Nm admissible in lengthwise and crosswise direction. Load values for installation on other surfaces dependent on material

Material: Diecast zinc

Scope of delivery: Incl. fastening material (FS)

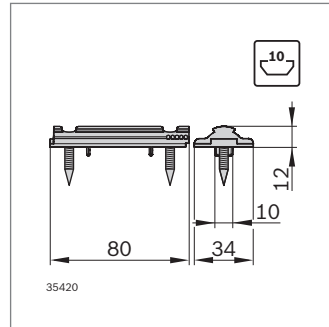
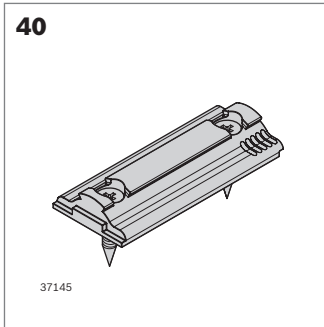
Recommended accessories for profile installation:

Countersunk screw ISO 10642 M5x16-8.8;

T-nut (**3 842 530 283**)

Optional accessories: Self-tapping screw (**3 842 552 267**)





Base plate EcoShape	ESD	No.	FS
	10	3 842 559 345	2xFS19

- ▶ Base plate for fastening frames onto walls, floors, table tops and strut profiles with 10 mm slot using EcoShape connectors
- ▶ Centering lugs as anti-torsion elements (can be broken off)
- ▶ Reference load for profile installation: 15 Nm admissible in lengthwise and crosswise direction. Load values for installation on other surfaces dependent on material

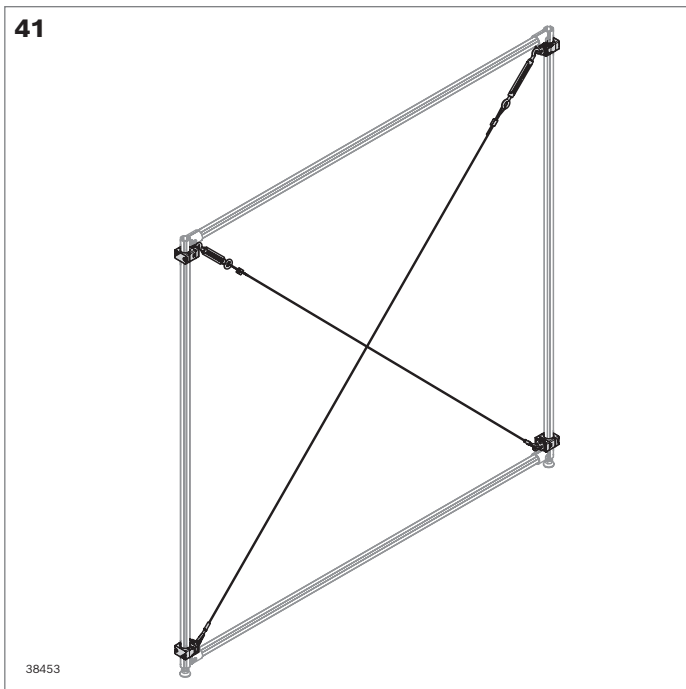
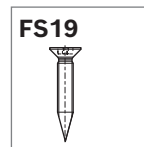
Material: Diecast zinc

Scope of delivery: Incl. fastening material (FS)

Recommended accessories for profile installation:

Countersunk screw ISO 10642 M5x16-8.8;

T-nut (**3 842 530 283**)

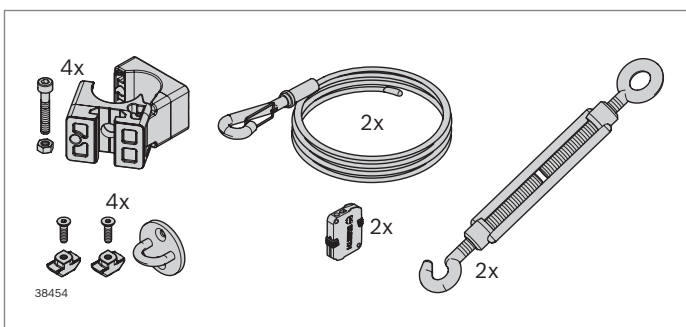


Tension wire	L (mm)	ESD	No.
	3000	2	3 842 562 083

- ▶ Reinforcement option for EcoShape applications
- ▶ Max. tensioning force 500 N

Material: Stainless steel eye, tension lock; steel wire, galvanized

Scope of delivery: Incl. fastening material for fastening to round tube D28L





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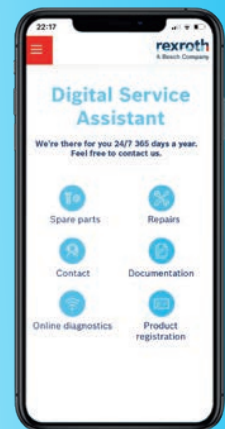
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- ▶ And much more besides

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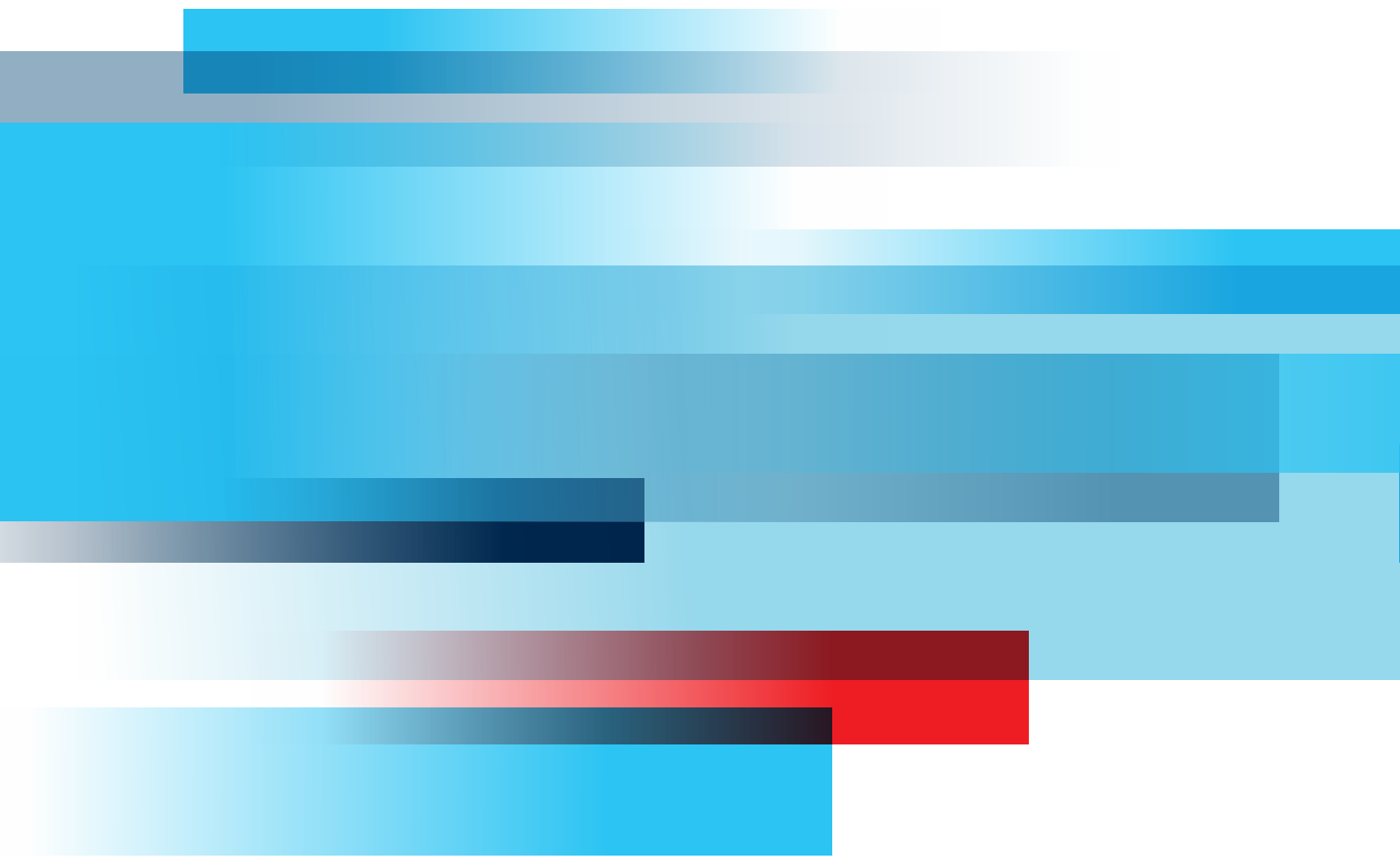
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