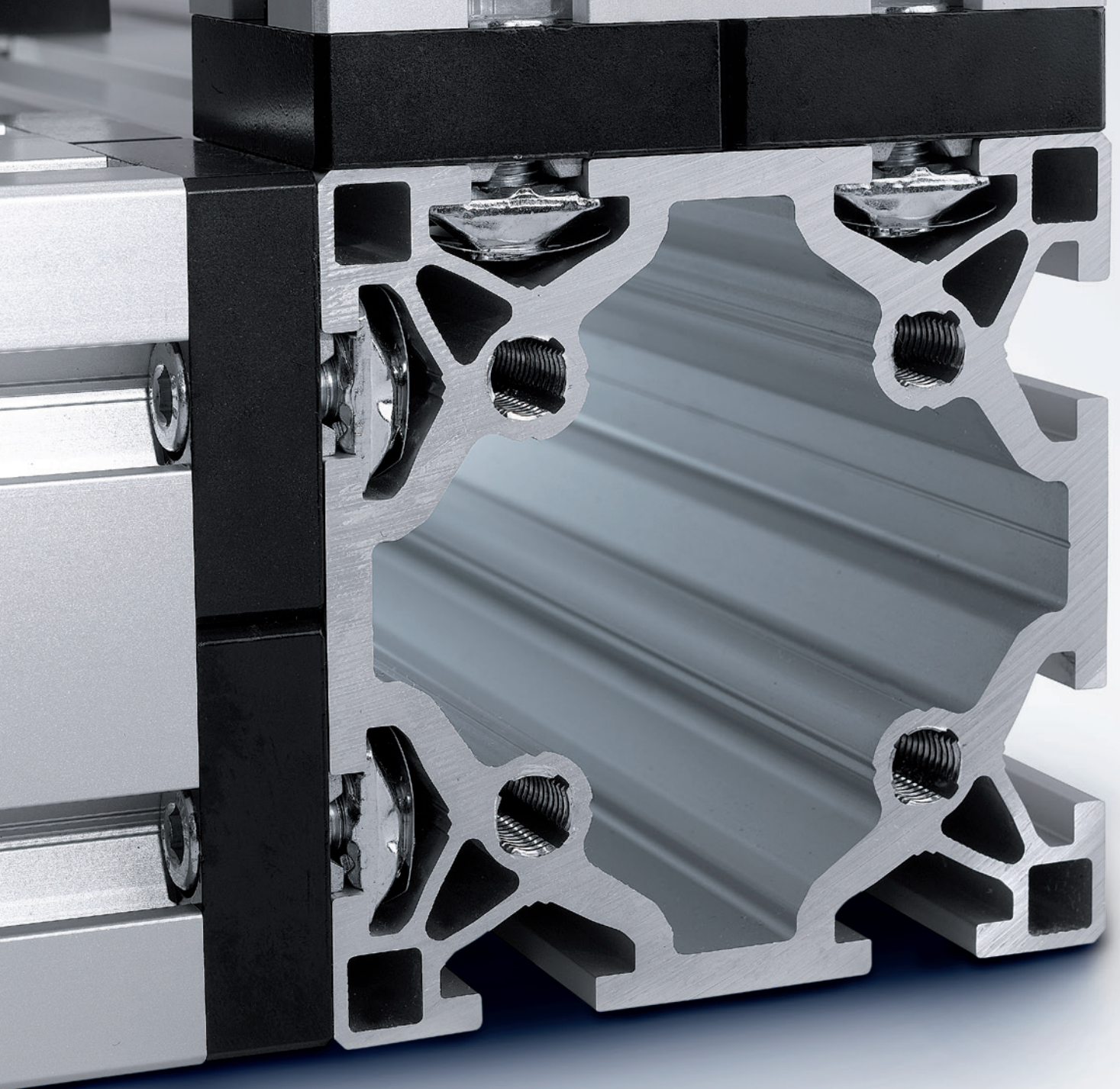




THE SMART

***EXTRUSION AND
FASTENING TECHNOLOGY***



The key elements of the Modular Automation System are the unique Extrusion and Fastening Technologies. Extrusions, available in 40 and 50 mm size series, are fully compatible due to a common 14 mm slot size. This opens up a wide range of possibilities in automation. In combination with a strong Fastening Technology, the system is unique in its stability and rigidity as well as in its enormous potential for time savings – from design to assembly.



One slot size fits all

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



Maximum stability

- Aluminum extrusion connections are absolutely play-free, form-fitting and centrally aligned by worldwide unique fastening technology
- one single fastener yields up to 4 tons of tensile strength
- tubular honeycomb structure for outstanding torsion and load resistance
- maximum stability for all your applications



No half measures, only double the impact

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



Any hole drilled is one hole too many

- all connections made without drilling or milling - no time spent for machining or set-up
- maximum wall thickness in key areas
- unlimited re-usability
- if holes are required, an integrated location groove guarantees precise and straight drilling



Stability increases with every turn

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



Inserting the drop-in nut

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



Anything is possible - even post assembly

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



Save time, cut cost

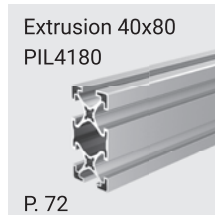
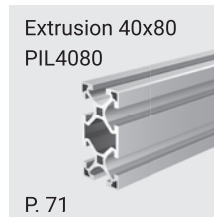
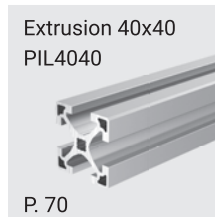
- assembly in record time due to use of screws in standard lengths
- simple and quick selection of Extrusion and Fastening Technology
- no measuring of boreholes and no detailed drawings necessary
- length of the extrusion is the only measurement needed
- labeled and tapped extrusions allow immediate assembly



The Smart Extrusion Technology

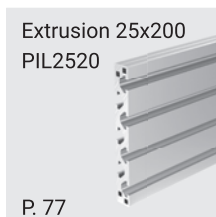
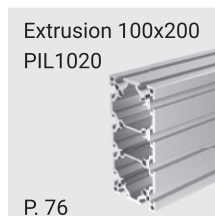
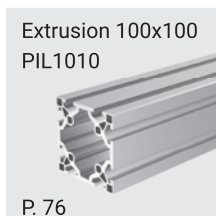
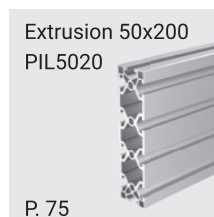
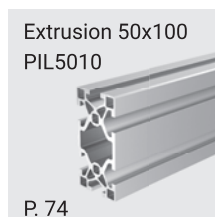
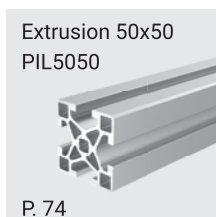
Extrusion, 40 mm Series

Page 70



Extrusion, 50 mm Series

Page 74



The Strong Fastening Technology

Fastening Technology, 40 mm Series

Page 78



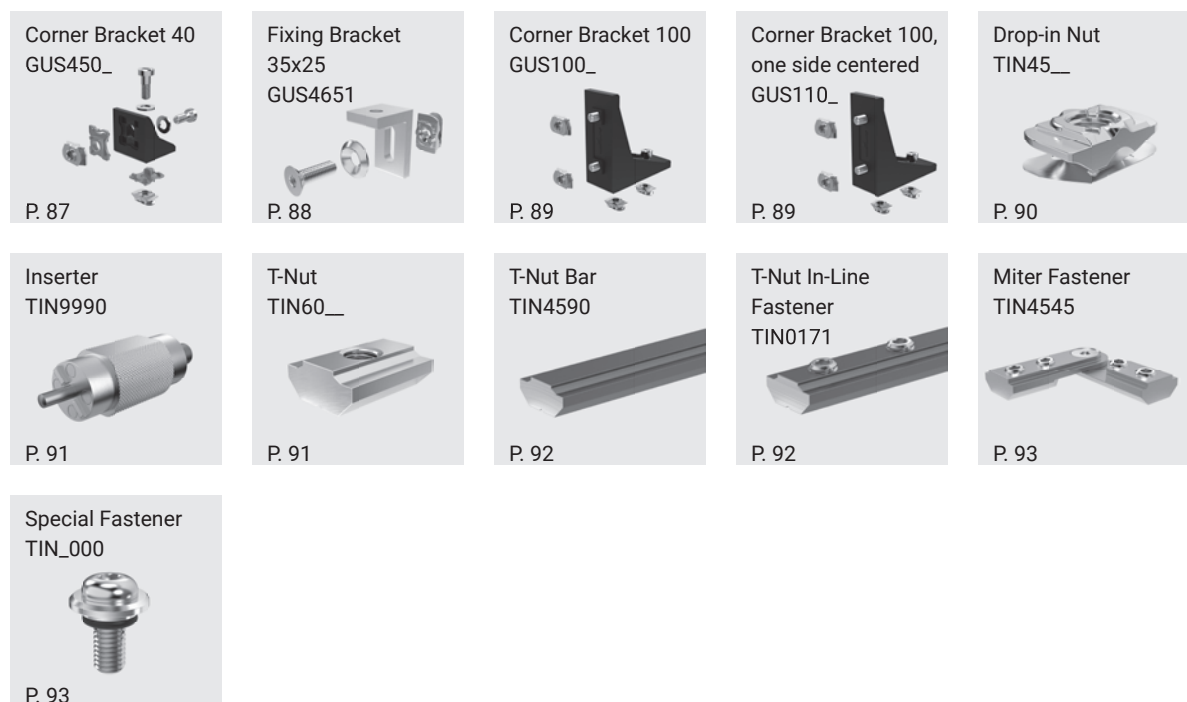
Fastening Technology, 50 mm Series

Page 82



Fastening Technology, 40 mm and 50 mm Series

Page 87



PIL1640

Extrusion 16x40

**Application**

- Universally applicable, e.g. for:
- Signs, shelves, racks (smooth surfaces)
 - Material handling equipment
 - Workstations

Technical data

Material: EN AW-6063-T66 satin anodized aluminum

Section modulus W_x : 2.9 cm³

Section modulus W_y : 1.0 cm³

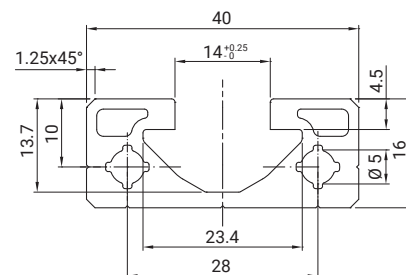
Geometrical moments of inertia:

against x I_x : 5.8 cm⁴

against y I_y : 0.8 cm⁴

against torsion I_t : 0.6 cm⁴

Cross sectional area A: 323.6 mm²



Tolerances and deflection
see pages 198 to 199

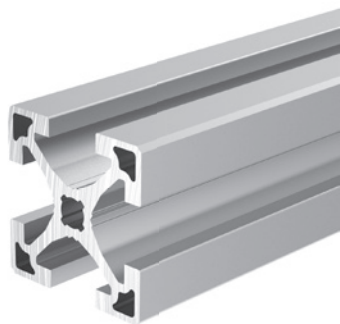
Usable extrusion length: 6000 mm

Order code

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

PIL4040

Extrusion 40x40

**Application**

- Universally applicable, e.g. for:
- Assembly cells
 - Lightweight machine frames
 - Workstations
 - Table frames
 - Infeed and outfeed conveyors
 - Belt conveyors
 - Trolleys
 - Posts
 - Signs, shelves, racks
 - Material handling equipment

Technical data

Material: EN AW-6063-T66 satin anodized aluminum

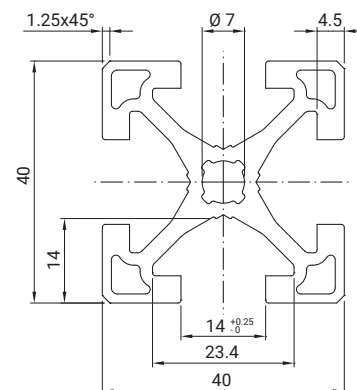
Section modulus W_x / W_y : 4.3 cm³

Geometrical moments of inertia:

against x + y I_x / I_y : 8.6 cm⁴

against torsion I_t : 0.7 cm⁴

Cross sectional area A: 554.6 mm²



Tolerances and deflection
see pages 198 to 199

Usable extrusion length: 6000 mm

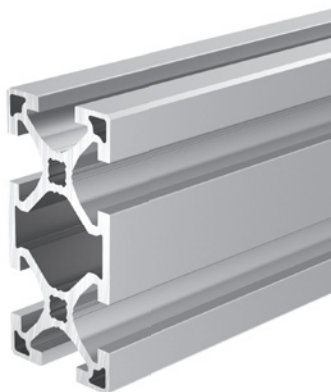
Order code

Order code	Item	Description	Weight/Meter
PIL4040SNN	Extrusion 40x40, cut to length	M8x50 thread on both ends	1.530 kg
PIL4040NNN	Extrusion 40x40, unit	1 unit, length 6050 mm	1.530 kg
PIL4040PAC	Extrusion 40x40, pack	Pack of 80 units, length 6050 mm	1.530 kg

Drawings: dimensions in mm

PIL4080

Extrusion 40x80



Tolerances and deflection
see pages 198 to 199

Application

Universally applicable, e.g. for:

- Base extrusion
- Assembly cells
- Base frames
- Material conveyors
- Shelves
- Conveyor Belts
- In- and out-feed conveyors

Technical data

Material: EN AW-6063-T66 satin anodized aluminum

Section modulus W_x : 15.4 cm³

Section modulus W_y : 8.4 cm³

Geometrical moments of inertia:

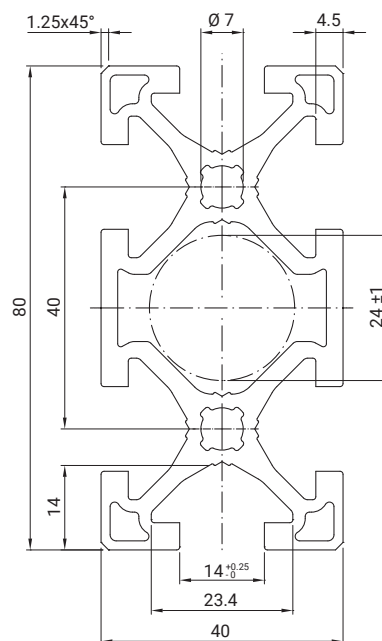
against x I_x : 61.6 cm⁴

against y I_y : 16.8 cm⁴

against torsion I_t : 9.3 cm⁴

Cross sectional area A: 1013.2 mm²

Usable extrusion length: 6000 mm

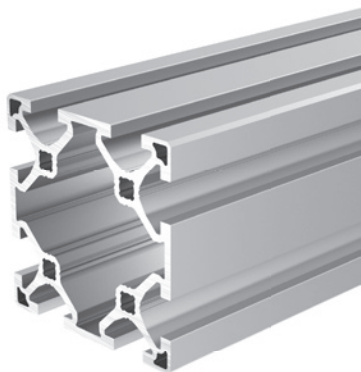


Order code

Order code	Item	Description	Weight/Meter
PIL4080SNN	Extrusion 40x80, cut to length	M8x50 thread on both ends	2.780 kg
PIL4080NNN	Extrusion 40x80, unit	1 unit, length 6050 mm	2.780 kg
PIL4080PAC	Extrusion 40x80, pack	Pack of 40 units, length 6050 mm	2.780 kg

PIL8080

Extrusion 80x80



Tolerances and deflection
see pages 198 to 199

Application

Universally applicable, e.g. for:

- Trolleys
- Table frames
- Shelves
- Machine frames
- Belt conveyors
- Foundations

Technical data

Material: EN AW-6063-T66 satin anodized aluminum

Section modulus W_x / W_y : 28.0 cm³

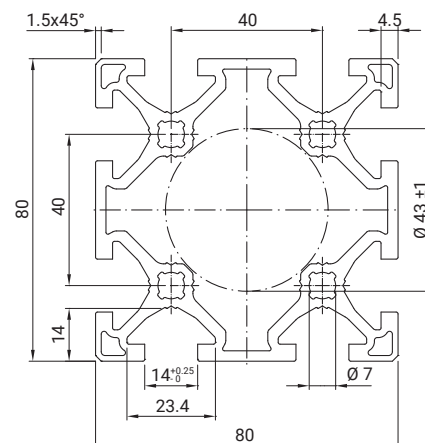
Geometrical moments of inertia:

against x + y I_x / I_y : 112.0 cm⁴

against torsion I_t : 59.5 cm⁴

Cross sectional area A: 1547.0 mm²

Usable extrusion length: 6000 mm



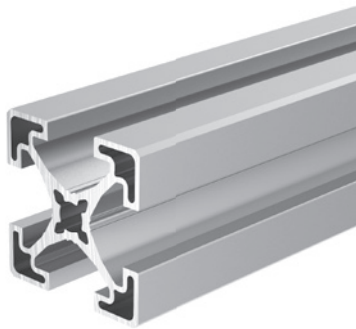
Order code

Order code	Item	Description	Weight/Meter
PIL8080SNN	Extrusion 80x80, cut to length	M8x50 thread on both ends	4.280 kg
PIL8080NNN	Extrusion 80x80, unit	1 unit, length 6050 mm	4.280 kg
PIL8080PAC	Extrusion 80x80, pack	Pack of 25 units, length 6050 mm	4.280 kg

Drawings: dimensions in mm

PIL4140

Extrusion 40x40 Lean Line



Tolerances and deflection
see pages 198 to 199

Application

Universally applicable, e.g. for:

- Safety fences
- Lightweight structures
- Signs, shelves and racks

Technical data

Material: EN AW-6063-T66 satin anodized aluminum

Section modulus W_x / W_y : 3.3 cm³

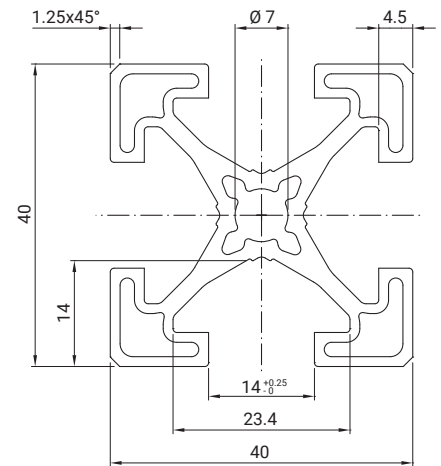
Geometrical moments of inertia:

against x + y I_x / I_y : 6.5 cm⁴

against torsion I_t : 0.6 cm⁴

Cross sectional area A: 431.0 mm²

Usable extrusion length: 6000 mm

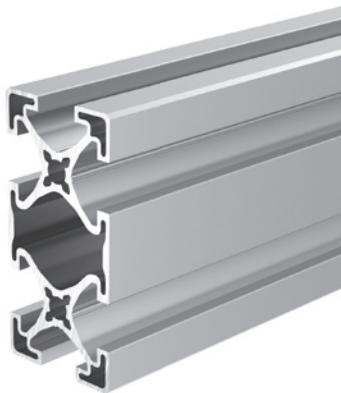


Order code

Order code	Item	Description	Weight/Meter
PIL4140SNN	Extrusion 40x40 Lean Line, cut to length	M8x50 thread on both ends	1.160 kg
PIL4140NNN	Extrusion 40x40 Lean Line, unit	1 unit, length 6050 mm	1.160 kg
PIL4140PAC	Extrusion 40x40 Lean Line, pack	Pack of 80 units, length 6050 mm	1.160 kg

PIL4180

Extrusion 40x80 Lean Line



Tolerances and deflection
see pages 198 to 199

Application

Universally applicable, e.g. for:

- Safety fence
- Lightweight structures
- Signs, shelves and racks

Technical data

Material: EN AW-6063-T66 satin anodized aluminum

Section modulus W_x : 11.9 cm³

Section modulus W_y : 6.4 cm³

Geometrical moments of inertia:

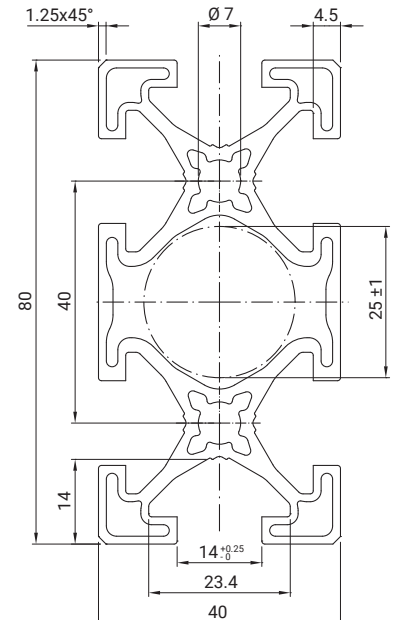
against x I_x : 47.4 cm⁴

against y I_y : 12.8 cm⁴

against torsion I_t : 5.9 cm⁴

Cross sectional area A: 790.8 mm²

Usable extrusion length: 6000 mm



Order code

Order code	Item	Description	Weight/Meter
PIL4180SNN	Extrusion 40x80 Lean Line, cut to length	M8x50 thread on both ends	2.140 kg
PIL4180NNN	Extrusion 40x80 Lean Line, unit	1 unit, length 6050 mm	2.140 kg
PIL4180PAC	Extrusion 40x80 Lean Line, pack	Pack of 40 units, length 6050 mm	2.140 kg

Drawings: dimensions in mm

PIL4012

Extrusion 40x120



Tolerances and deflection
see pages 198 to 199

Cover Extrusion for PIL4012
See page 176

Order code

Order code	Item	Description	Weight/Meter
PIL4012SNN	Extrusion 40x120, cut to length	M6 or M8 thread on both ends	3.050 kg
PIL4012NNN	Extrusion 40x120, unit	1 unit, length 6050 mm	3.050 kg
PIL4012PAC	Extrusion 40x120, pack	Pack of 24 units, length 6050 mm	3.050 kg

Drawings: dimensions in mm

Application

- Universally applicable, e.g. for:
- Roller conveyors
 - Cable ducts
 - Workstations
 - In- and out-feed conveyors

Technical data

Material: Aluminum satin anodized

Section modulus W_x : 27.6 cm³

Section modulus W_y : 6.8 cm³

Geometrical moments of inertia:

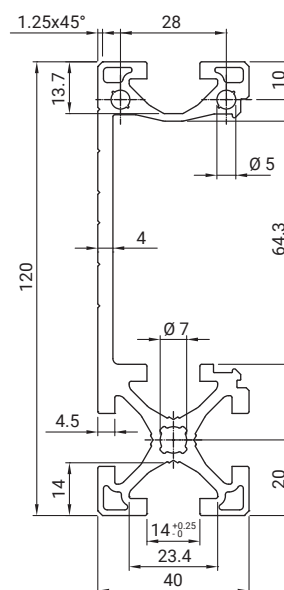
against x I_x : 182.2 cm⁴

against y I_y : 19.3 cm⁴

against torsion I_t : 1.2 cm⁴

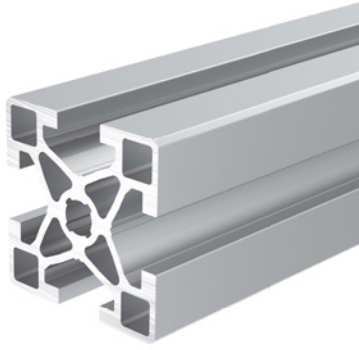
Cross sectional area A: 1108.8 mm²

Usable extrusion length: 6000 mm



PIL5050

Extrusion 50x50



Tolerances and deflection
see pages 198 to 199

Application

Preferably in mechanical engineering, e.g.:

- Safety guards
- Table frames
- Axes for linear motion systems
- Assembly cells
- Workstations

Technical data

Material: EN AW-6063-T66 satin anodized aluminum

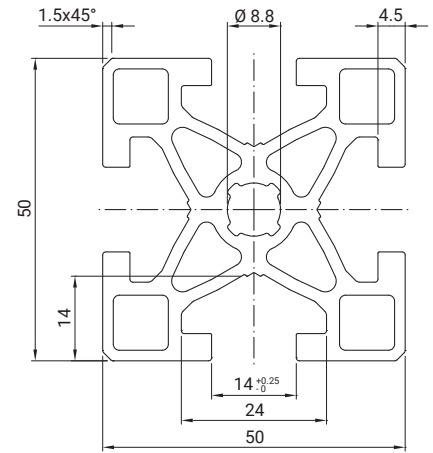
Section modulus W_x / W_y : 8.0 cm³

Geometrical moments of inertia:

against x + y I_x / I_y : 20.0 cm⁴

against torsion I_t : 4.8 cm⁴

Cross sectional area A: 857.5 mm²



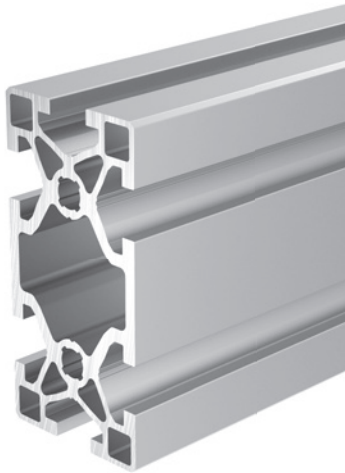
Usable extrusion length: 6000 mm

Order code

Order code	Item	Description	Weight/Meter
PIL5050SNN	Extrusion 50x50, cut to length	M10x50 thread on both ends	2.350 kg
PIL5050NNN	Extrusion 50x50, unit	1 unit, length 6050 mm	2.350 kg
PIL5050PAC	Extrusion 50x50, pack	Pack of 64 units, length 6050 mm	2.350 kg

PIL5010

Extrusion 50x100



Tolerances and deflection
see pages 198 to 199

Application

Preferably in mechanical engineering, e.g.:

- Machine frames
- Solid table frames
- Shelves and racks
- Axes for linear systems
- Assembly cells

Technical data

Material: EN AW-6063-T66 satin anodized aluminum

Section modulus W_x : 29.7 cm³

Section modulus W_y : 16.6 cm³

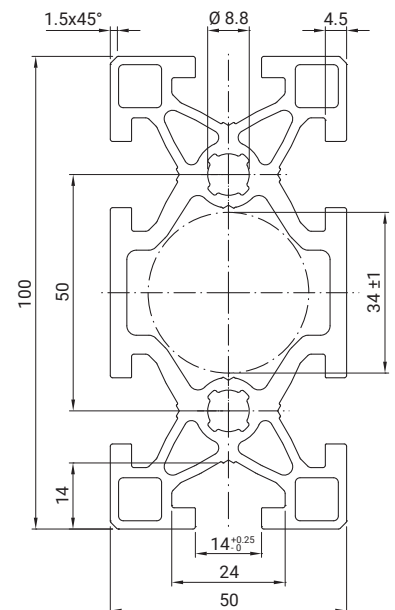
Geometrical moments of inertia:

against x I_x : 148.5 cm⁴

against y I_y : 41.4 cm⁴

against torsion I_t : 37.0 cm⁴

Cross sectional area A: 1559.3 mm²



Usable extrusion length: 6000 mm

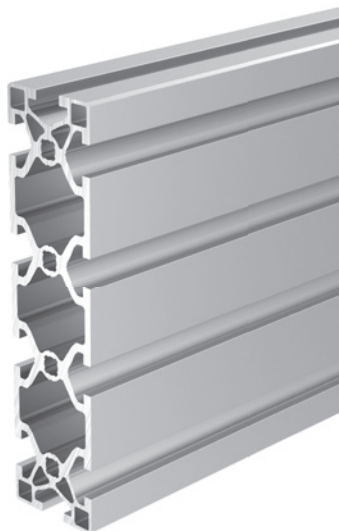
Order code

Order code	Item	Description	Weight/Meter
PIL5010SNN	Extrusion 50x100, cut to length	M10x50 thread on both ends	4.290 kg
PIL5010NNN	Extrusion 50x100, unit	1 unit, length 6050 mm	4.290 kg
PIL5010PAC	Extrusion 50x100, pack	Pack of 32 units, length 6050 mm	4.290 kg

Drawings: dimensions in mm

PIL5020

Extrusion 50x200



Tolerances and deflection
see pages 198 to 199

Application

Preferably in mechanical engineering for heavy-duty structures, e.g.:

- Machine frames
- Gantries
- Axes for linear motion systems
- Cranes
- Robot frame structures

Technical data

Material: EN AW-6063-T66 satin anodized aluminum

Section modulus W_x : 107.8 cm³

Section modulus W_y : 33.6 cm³

Geometrical moments of inertia:

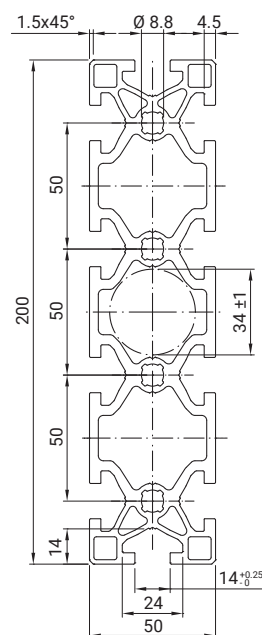
against x I_x : 1077.8 cm⁴

against y I_y : 84.1 cm⁴

against torsion I_t : 107.0 cm⁴

Cross sectional area A: 2962.8 mm²

Usable extrusion length: 6000 mm



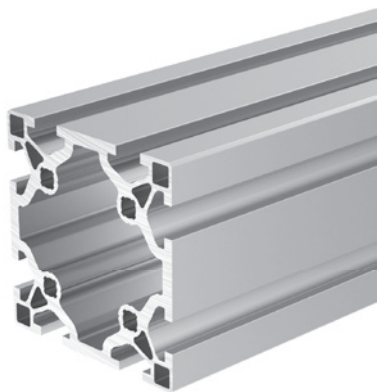
Order code

Order code	Item	Description	Weight/Meter
PIL5020SNN	Extrusion 50x200, cut to length	M10x50 thread on both ends	8.150 kg
PIL5020NNN	Extrusion 50x200, unit	1 unit, length 6050 mm	8.150 kg
PIL5020PAC	Extrusion 50x200, pack	Pack of 16 units, length 6050 mm	8.150 kg

Drawings: dimensions in mm

PIL1010

Extrusion 100x100

**Application**

Preferably in mechanical engineering for heavy-duty structures, e.g.

- Machine frames
- Gantries
- Axes for linear motion systems
- Cranes
- Robot frame structures

Technical data

Material: EN AW-6063-T66 satin anodized aluminum

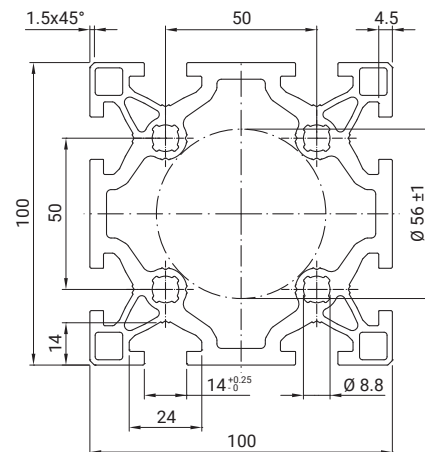
Section modulus W_x / W_y : 61.1 cm³

Geometrical moments of inertia:

against x + y I_x / I_y : 305.6 cm⁴

against torsion I_t : 256.0 cm⁴

Cross sectional area A: 2714.4 mm²



Tolerances and deflection
see pages 198 to 199

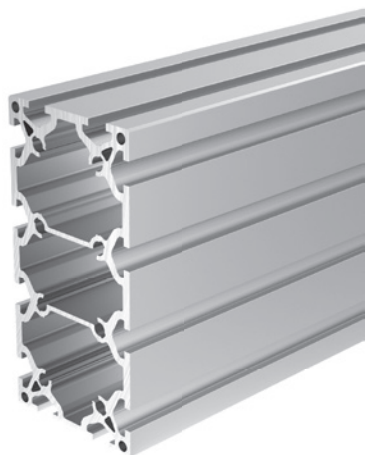
Usable extrusion length: 6000 mm

Order code

Order code	Item	Description	Weight/Meter
PIL1010SNN	Extrusion 100x100, cut to length	M10x50 thread on both ends	7.480 kg
PIL1010NNN	Extrusion 100x100, unit	1 unit, length 6050 mm	7.480 kg
PIL1010PAC	Extrusion 100x100, pack	Pack of 16 units, length 6050 mm	7.480 kg

PIL1020

Extrusion 100x200

**Application**

Preferably in mechanical engineering for heavy-duty structures, e.g.

- Machine frames
- Gantries
- Axes for linear motion systems
- Cranes
- Assembly cells

Technical data

Material: EN AW-6063-T66 satin anodized aluminum

Section modulus W_x : 220.2 cm³

Section modulus W_y : 132.9 cm³

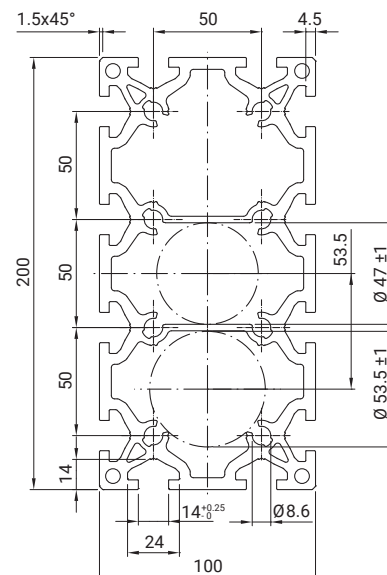
Geometrical moments of inertia:

against x I_x : 2202.2 cm⁴

against y I_y : 664.4 cm⁴

against torsion I_t : 794.0 cm⁴

Cross sectional area A: 5128.7 mm²



Tolerances and deflection
see pages 198 to 199

Usable extrusion length: 6000 mm

Order code

Order code	Item	Description	Weight/Meter
PIL1020SNN	Extrusion 100x200, cut to length	M10x50 thread on both ends	13.700 kg
PIL1020NNN	Extrusion 100x200, unit	1 unit, length 6050 mm	13.700 kg
PIL1020PAC	Extrusion 100x200, pack	Pack of 8 units, length 6050 mm	13.700 kg

Drawings: dimensions in mm

PIL2520

Extrusion 25x200

**Application**

Particularly suitable as:

- Carriage plate for a Linear Motion Unit
- Mounting plate for sliding carriage
- Upright as support profile

Technical data

Material: EN AW-6063-T66 satin anodized aluminum

Section modulus W_x : 102.8 cm³

Section modulus W_y : 14.1 cm³

Geometrical moments of inertia:

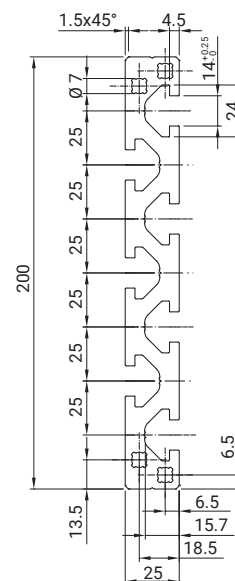
against x I_x : 1027.9 cm⁴

against y I_y : 17.6 cm⁴

against torsion I_t : 9.8 cm⁴

Cross sectional area A: 2891.7 mm²

Usable extrusion length: 6000 mm



Tolerances and deflection
see pages 198 to 199

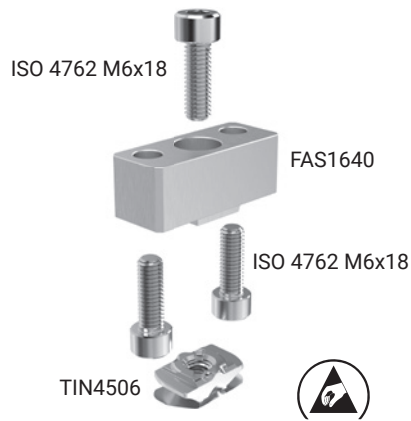
Order code

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

Drawings: dimensions in mm

FAS1641

Fastener 16x40

**Application**

90° fastener for extrusion PIL1640

Technical data

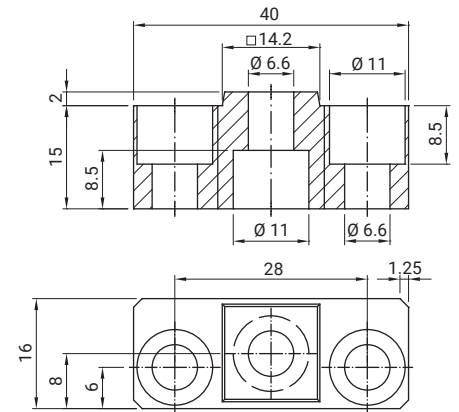
Material: clear anodized aluminum and galvanized steel

Tightening torque

Cap screw ISO 4762 M6x18: 10 Nm

Kit includes:

- 1 Fastener FAS1640
- 1 Drop-in Nut TIN4506
- 3 Cap screws ISO 4762 M6x18



Order code

Order code	Item	Description	Weight
FAS1641	Fastener 16x40, kit		0.045 kg

FAS404_

Fastener 40x40

**Application**

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

Technical data

Material: galvanized die-cast zinc and galvanized steel

Load index

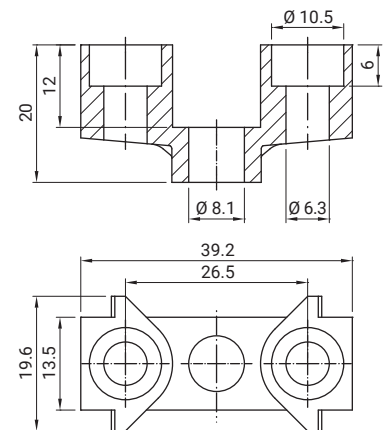
See page 200

Tightening torque

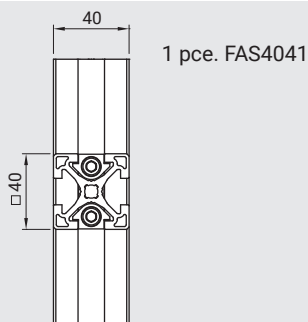
Cap screw ISO 4762 M6x18: 10 Nm
Button-head screw ISO 7380 M8x25: 12 Nm

Kit includes:

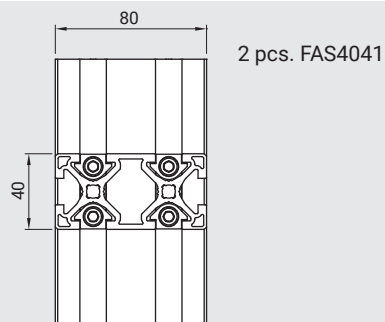
- 1 Fastener FAS4040
- 2 Drop-in Nuts TIN4506
- 2 Cap screws ISO 4762 M6x18
- 1 Button-head screw ISO 7380 M8x25



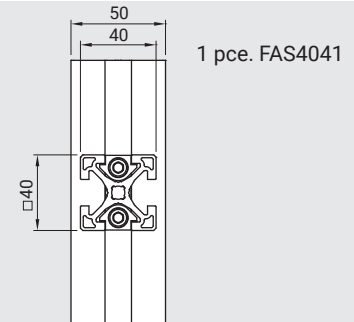
Transfer resistance per conductive connection: < 0.4 Ω



1 pce. FAS4041



2 pcs. FAS4041



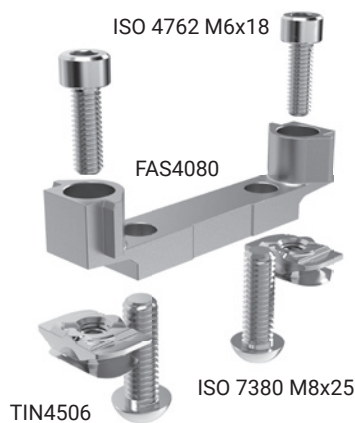
1 pce. FAS4041

Order code

Order code	Item	Description	Weight
FAS4040PAC0100	Fastener 40x40, pack	Pack of 100 pcs.	2.900 kg
FAS4041	Fastener 40x40, kit		0.076 kg
FAS4041CPPAC0100	Fastener 40x40, kit, pack	Pack of 100 pcs., packed by type	7.500 kg

FAS408_

Fastener 40x80



Transfer resistance per conductive connection: $< 0.4 \Omega$

Application

90° fastener on 40 mm series for extrusions:

- PIL4080, longitudinal
- PIL8080

Technical data

Material: galvanized die-cast zinc and galvanized steel

Load index

See page 200

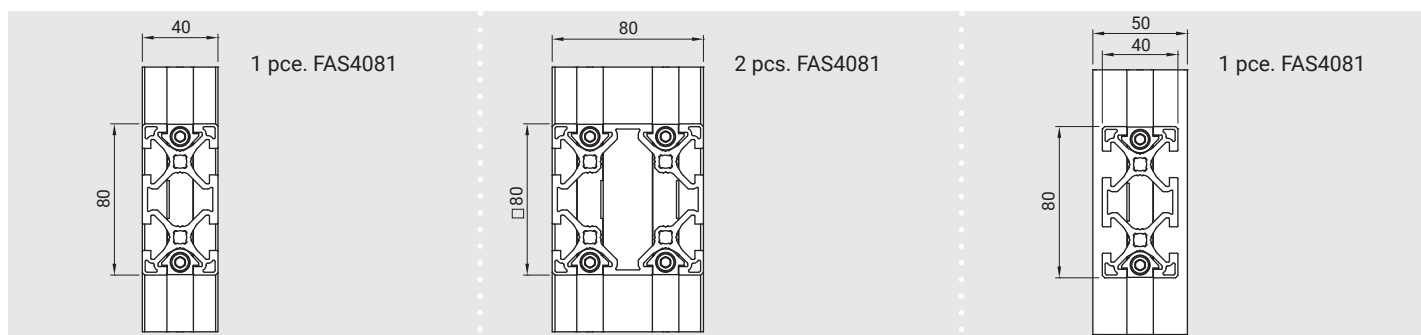
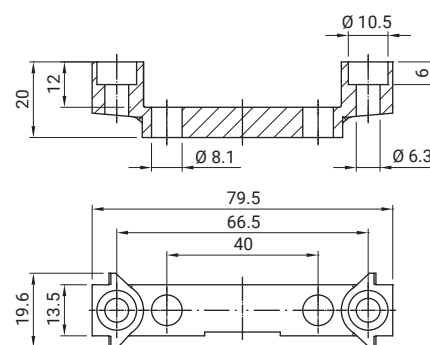
Tightening torque

Cap screw ISO 4762 M6x18: 10 Nm

Button-head screw ISO 7380 M8x25: 12 Nm

Kit includes:

- 1 Fastener FAS4080
- 2 Drop-in Nuts TIN4506
- 2 Cap screws ISO 4762 M6x18
- 2 Button-head screws ISO 7380 M8x25



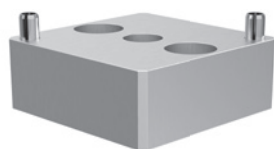
Order code

Order code	Item	Description	Weight
FAS4080PAC0100	Fastener 40x80, pack	Pack of 100 pcs.	5.400 kg
FAS4081	Fastener 40x80, kit		0.115 kg
FAS4081CPPAC0100	Fastener 40x40, kit, pack	Pack of 100 pcs., packed by type	11.400 kg

Drawings: dimensions in mm

FAS4049

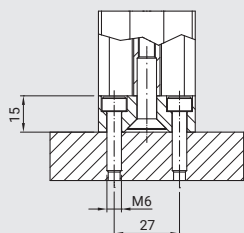
Surface Fastener 40x40



FAS4048



ISO 10642 M8x30



e.g. for attaching to steel plates

Application

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

Technical data

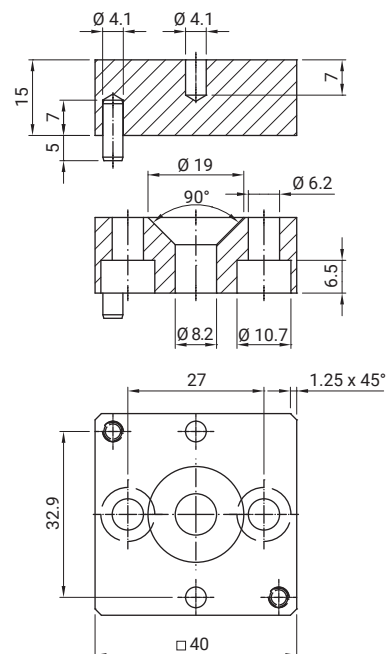
Material: clear anodized aluminum and galvanized steel

Tightening torque

Countersunk screw ISO 10642 M8x30: 15 Nm

Kit includes:

1 Fastener FAS4048
1 Countersunk screw ISO 10642 M8x30

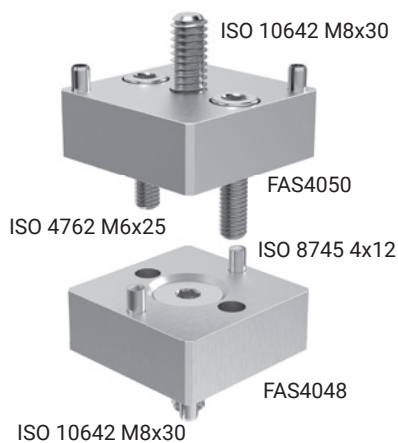


Order code

Order code	Item	Description	Weight
FAS4049	Surface Fastener 40x40, kit		0.070 kg

FAS4051

End-to-End Fastener 40x40



ISO 10642 M8x30

FAS4050

ISO 4762 M6x25

ISO 8745 4x12

FAS4048

ISO 10642 M8x30

Application

End-to-end connections of 40 mm series extrusions for extrusion PIL4040

Technical data

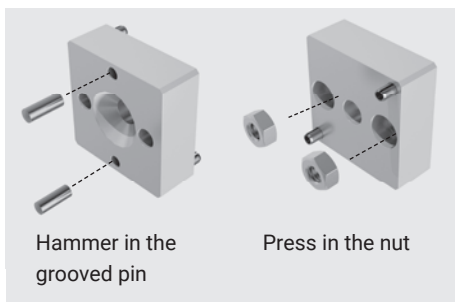
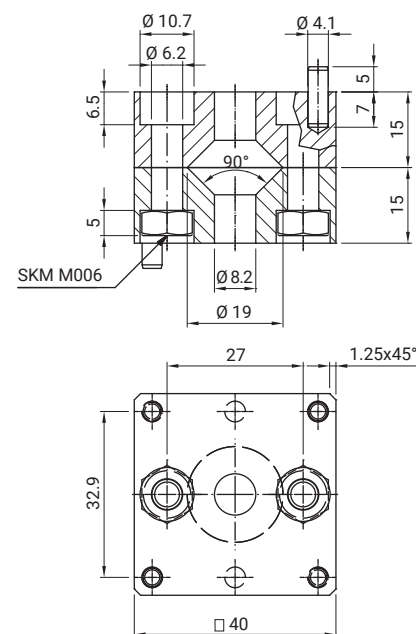
Material: clear anodized aluminum and galvanized steel

Tightening torque

Countersunk screws ISO 10642 M8x30: 15 Nm
Cap screw ISO 4762 M6x25: 10 Nm

Kit includes:

1 Fastener FAS4048
1 Fastener FAS4050
2 Countersunk screws ISO 10642 M8x30
2 Cap screws ISO 4762 M6x25
2 Grooved pins ISO 8745 4x12



Order code

Order code	Item	Description	Weight
FAS4051	End-To-End Fastener 40x40, kit		0.160 kg

Drawings: dimensions in mm

GUS454_

Angle Fastener 45°

**Application**

For rigid 45° bracing, e.g. for:

- Safety guards
- Frames

Technical data

Material: zinc die-cast alloy or galvanized steel

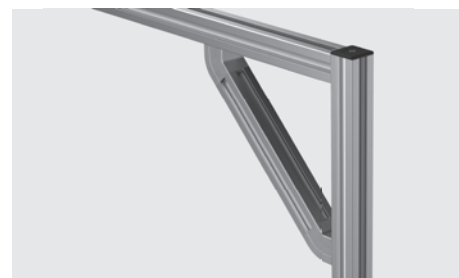
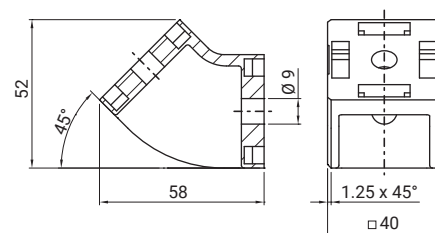
Tightening torque

ISO 4762 M8X25: 26 Nm

DIN 6912 M8x20: 20 Nm

Kit includes:

- 1 Fastener GUS4540
- 1 Drop-in Nut TIN4508
- 1 Cap screw ISO 4762 M8x25
- 1 Cap screw DIN 6912 M8x20
- 2 Washers ISO 7089 M8

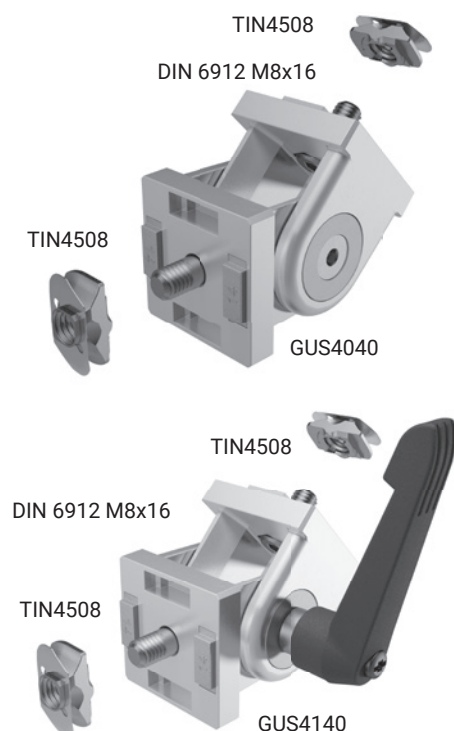


Order code

Order code	Item	Description	Weight
GUS4540	Angle Fastener 45°		0.224 kg
GUS4541	Angle Fastener 45°, kit		0.262 kg

GUS4_4_

Elbow Joint 40

**Application**

For variable angle connections, e.g.:

- Safety guards
- Frames
- Swing arms

Technical data

Material: zinc die-cast alloy or galvanized steel

Pivoting range: +/- 90°

Tightening torque

DIN 6912 M8x16: 20 Nm

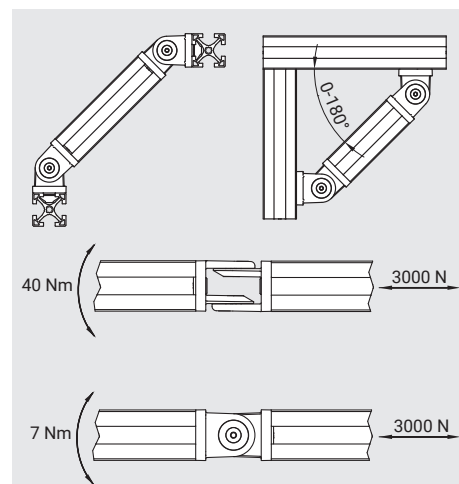
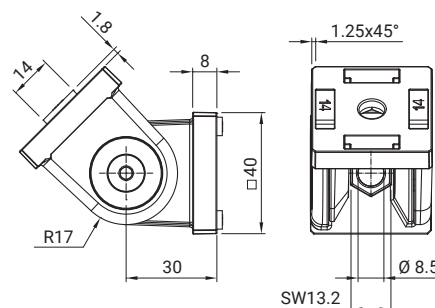
Clamp screw: 8 Nm

GUS4041 kit includes:

- 1 Base Part GUS4040
- 2 Drop-in Nuts TIN4508
- 2 Cap screws DIN 6912 M8x16

GUS4141 kit includes:

- 1 Base Part GUS4140
- 2 Drop-in Nuts TIN4508
- 2 Cap screws DIN 6912 M8x16



Order code

Order code	Item	Description	Weight
GUS4040	Elbow Joint 40		0.132 kg
GUS4041	Elbow Joint 40, kit		0.179 kg
GUS4141	Elbow Joint 40 with Clamping Lever, kit		0.251 kg

ISO 4762 M8x20



FAS5050

FAS5052



ISO 10642 M10x35

TIN4508

**Application**

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

- PIL5050
- PIL5010
- PIL5020

Technical data

Material: black EPD coated die-cast zinc, galvanized steel

Load index

See page 200

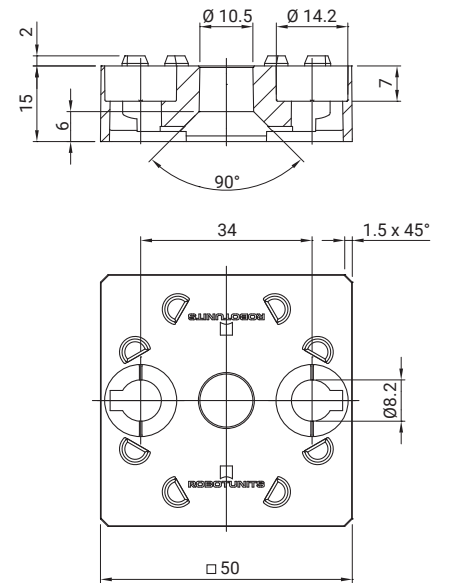
Tightening torque

ISO 4762 M8x20: 26 Nm

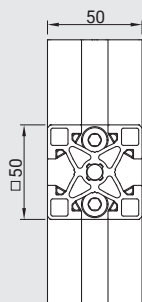
ISO 10642 M10x35: 40 Nm

Kit includes:

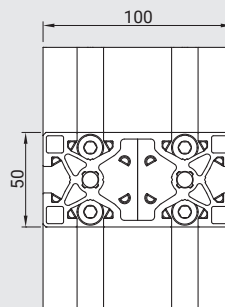
- 1 Fastener FAS5050
- 2 Centering Inserts FAS5052
- 2 Drop-in Nuts TIN4508
- 1 Cap screw ISO 4762 M8x20
- 1 Countersunk screw ISO 10642 M10x35



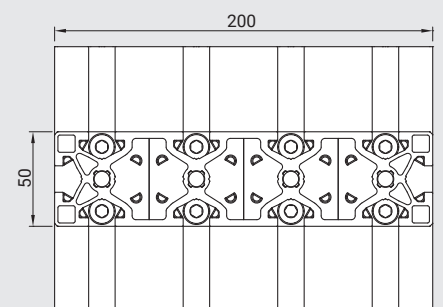
Transfer resistance per conductive connection: < 0.4 Ω

Assembly

1 pce. FAS5051



2 pcs. FAS5051



4 pcs. FAS5051

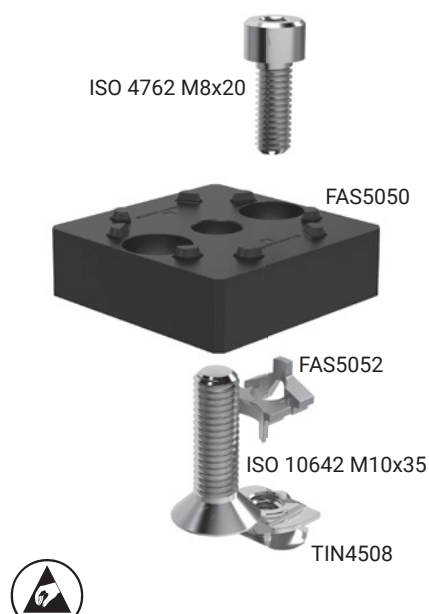
Order code

Order code	Item	Description	Weight
FAS5050PAC0100	Fastener 50x50, pack	Pack of 100 pcs.	14.400 kg
FAS5051	Fastener 50x50, kit		0.219 kg
FAS5051CPPAC0100	Fastener 50x50, kit, pack	Pack of 100 pcs., packed by type	21.800 kg
FAS5052	Centering Insert for Fastener 50x50		0.004 kg

Drawings: dimensions in mm

FAS5055

Fastener 50x50 Single-Sided

**Application**

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

- PIL5010
- PIL1010
- PIL5020

Technical data

Material: black EPD coated die-cast zinc, galvanized steel

Load index

See page 200

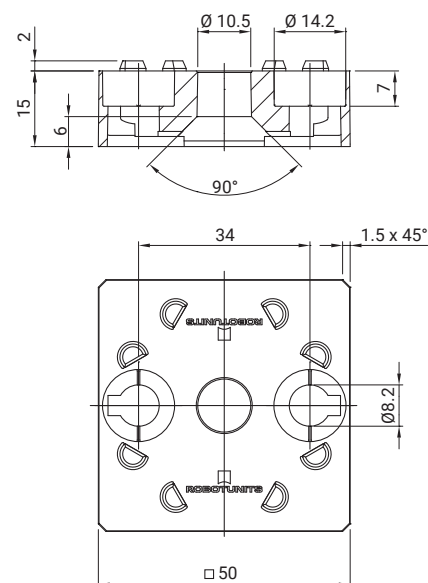
Tightening torque

ISO 4762 M8x20: 26 Nm

ISO 10642 M10x35: 40 Nm

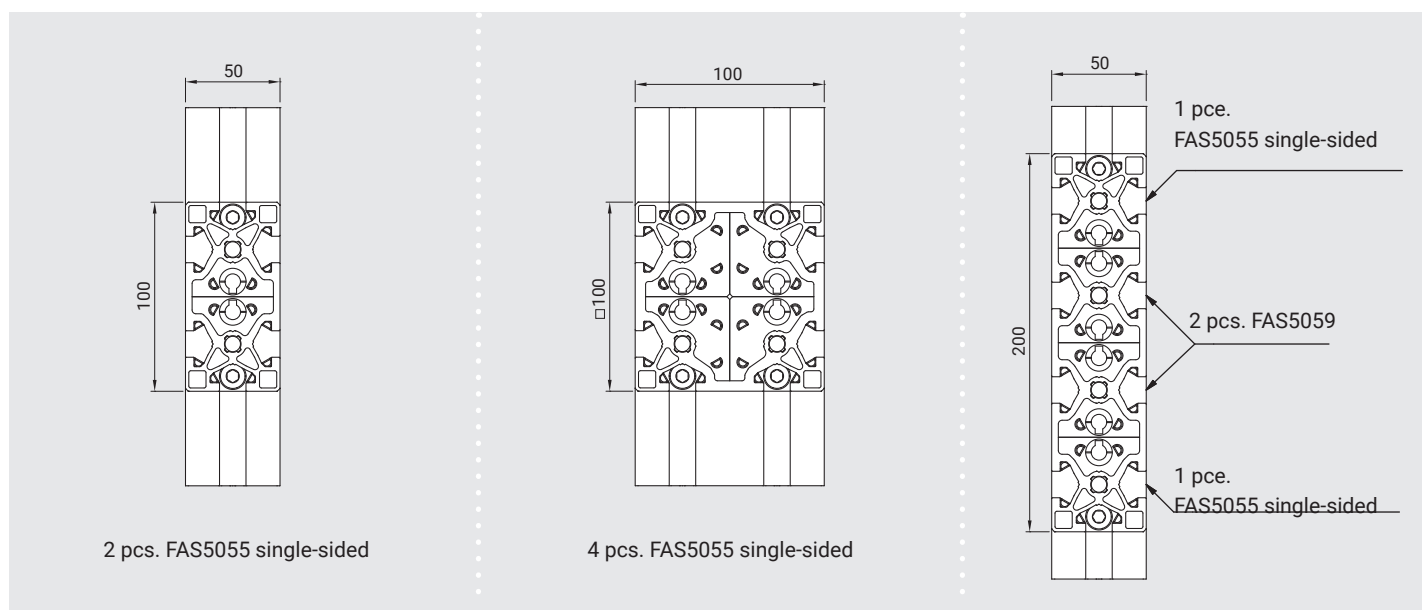
Kit includes:

- 1 Fastener FAS5050
- 1 Centering Insert FAS5052
- 1 Drop-in Nut TIN4508
- 1 Cap screw ISO 4762 M8x20
- 1 Countersunk screw ISO 10642 M10x35



Transfer resistance per conductive connection: < 0.4 Ω

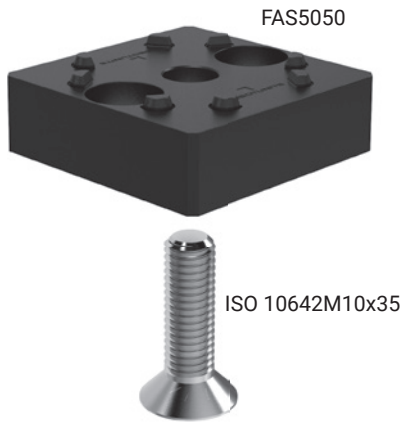
Assembly



Order code

Order code	Item	Description	Weight
FAS5055	Fastener 50x50 Single-Sided, kit		0.193 kg
FAS5055CPPAC0100	Fastener 50x50 Single-Sided, kit, pack	Pack of 100 pcs., packed by type	19.300 kg

Drawings: dimensions in mm

**Application**

Attachment to non-Robotunits surfaces. 90° connections of heavy-duty structures in the 50 mm series for extrusions:

- PIL5050
- PIL5010
- PIL1010
- PIL5020

Technical data

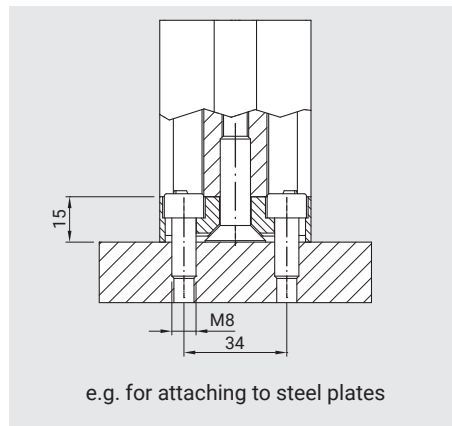
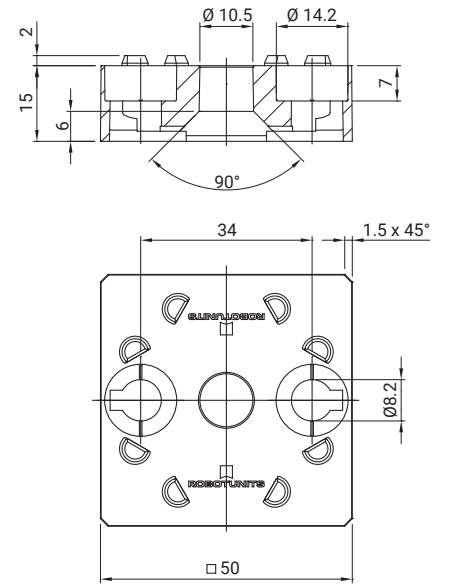
Material: black EPD coated die-cast zinc, galvanized steel

Tightening torque

ISO 10642 M10x35: 40 Nm

Kit includes:

- 1 Fastener FAS5050
- 1 Countersunk screw ISO 10642 M10x35

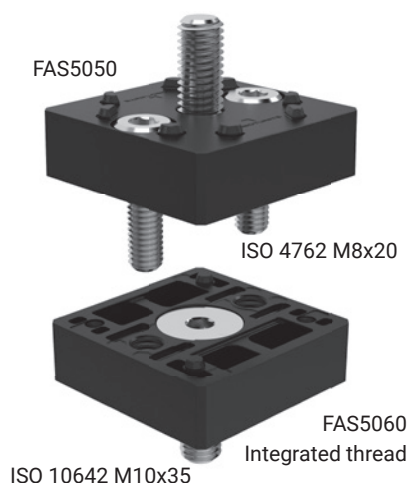
**Order code**

Order code	Item	Description	Weight
FAS5059	Surface Fastener 50x50, kit		0.168 kg

Drawings: dimensions in mm

FAS5061

End-to-End Fastener 50x50

**Application**

End-to-end connections of 50 mm series for extrusions:

- PIL5050
- PIL5010
- PIL1010
- PIL5020

Technical data

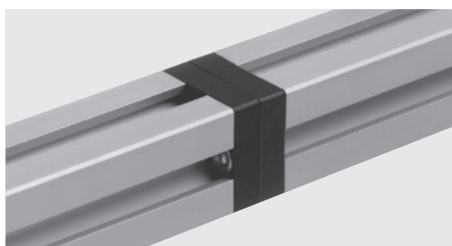
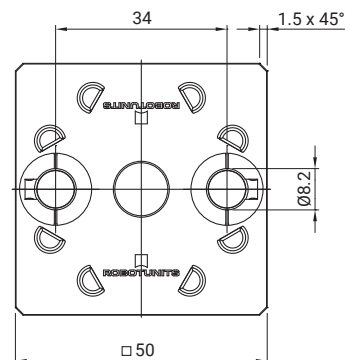
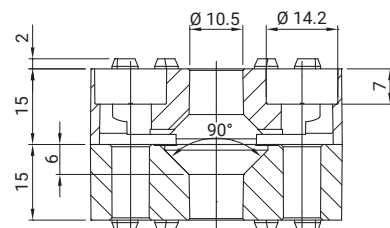
Material: black EPD coated die-cast zinc, galvanized steel

Tightening torque

ISO 4762 M8x20: 26 Nm
ISO 10642 M10x35: 40 Nm

Kit includes:

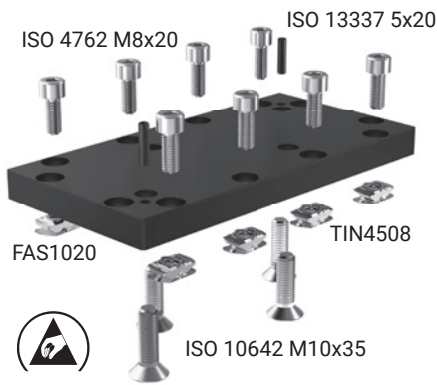
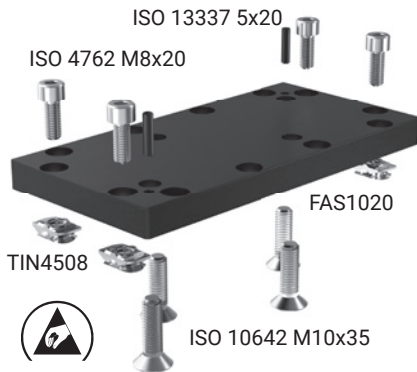
- 1 Fastener FAS5050
- 1 Fastener FAS5060
- 2 Cap screws ISO 4762 M8x20
- 2 Countersunk screws ISO 10642 M10x35



Order code

Order code	Item	Description	Weight
FAS5061	End-To-End Fastener 50x50, kit		0.374 kg

Drawings: dimensions in mm

FAS1021 kit**FAS1025 kit****Application**

90° connections of heavy-duty structures in the 50 mm series for PIL1020 extrusion

Technical data

Material: black anodized aluminum and galvanized steel

Tightening torque

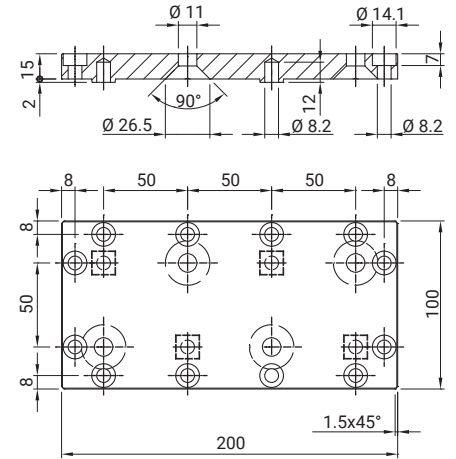
ISO 4762 M8x20: 26 Nm
ISO 10642 M10x35: 40 Nm

FAS1021 kit includes:

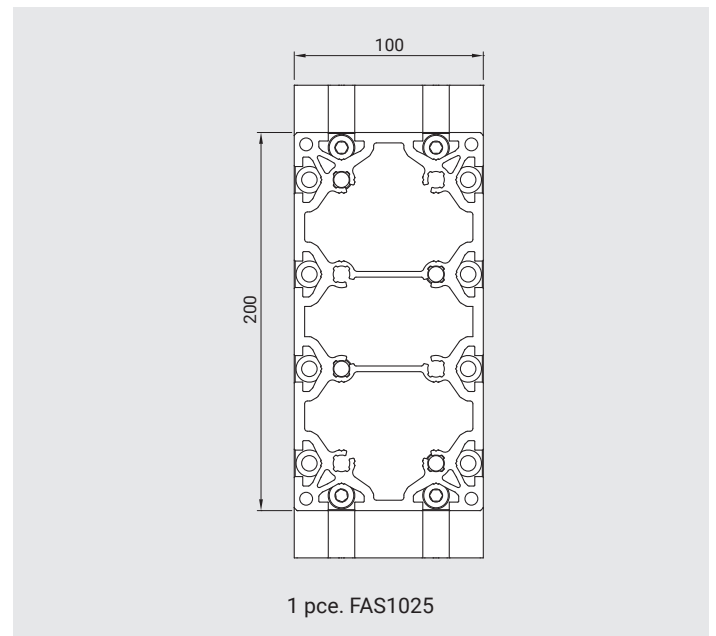
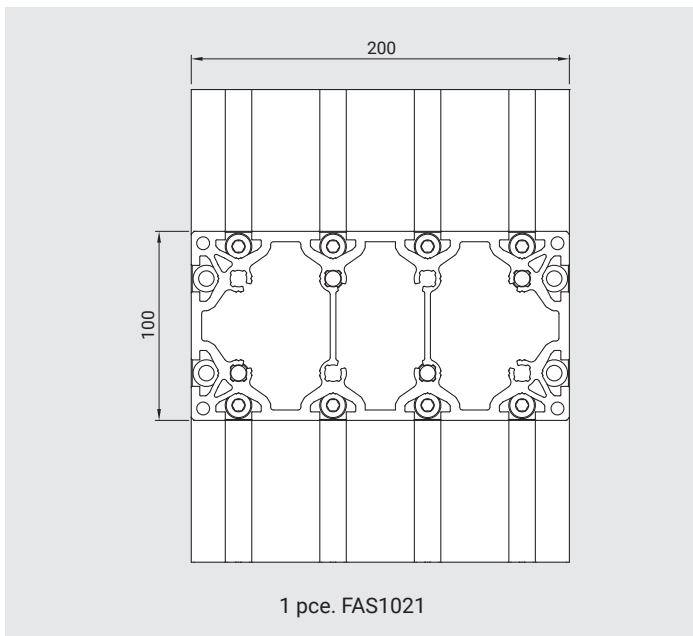
1 Fastener FAS1020
8 Drop-in Nuts TIN4508
8 Cap screws ISO 4762 M8x20
4 Countersunk screws ISO 10642 M10x35
2 Clamping pins ISO 13337 5x20

FAS1025 kit includes:

1 Fastener FAS1020
4 Drop-in Nuts TIN4508
4 Cap screws ISO 4762 M8x20
4 Countersunk screws ISO 10642 M10x35
2 Clamping pins ISO 13337 5x20



Transfer resistance per conductive connection: < 0.4 Ω

Cross fastener**In-Line Fastener****Order code**

Order code	Item	Description	Weight
FAS1021	Cross Fastener 100x200, kit		1.000 kg
FAS1025	In-Line Fastener 100x200, kit		0.920 kg

Drawings: dimensions in mm

GUS450_

Corner Bracket 40/50

**Application**

For 90° connections and as reinforcement in combination with Robotunits fasteners, both 40 mm and 50 mm series extrusions, e.g.:

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

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

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

Technical data

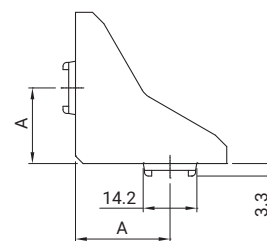
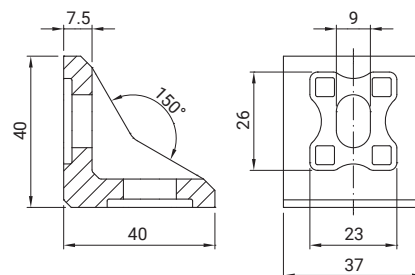
Material: black EPD coated die-cast zinc, galvanized steel

Tightening torque

DIN 6912 M8x20: 20 Nm

Kit includes:

- 1 Corner Bracket GUS4500
- 2 Centering Inserts GUS4502
- 2 Drop-in Nuts TIN4508
- 2 Cap screws DIN 6912 M8x20
- 2 Washers ISO 7089 M8

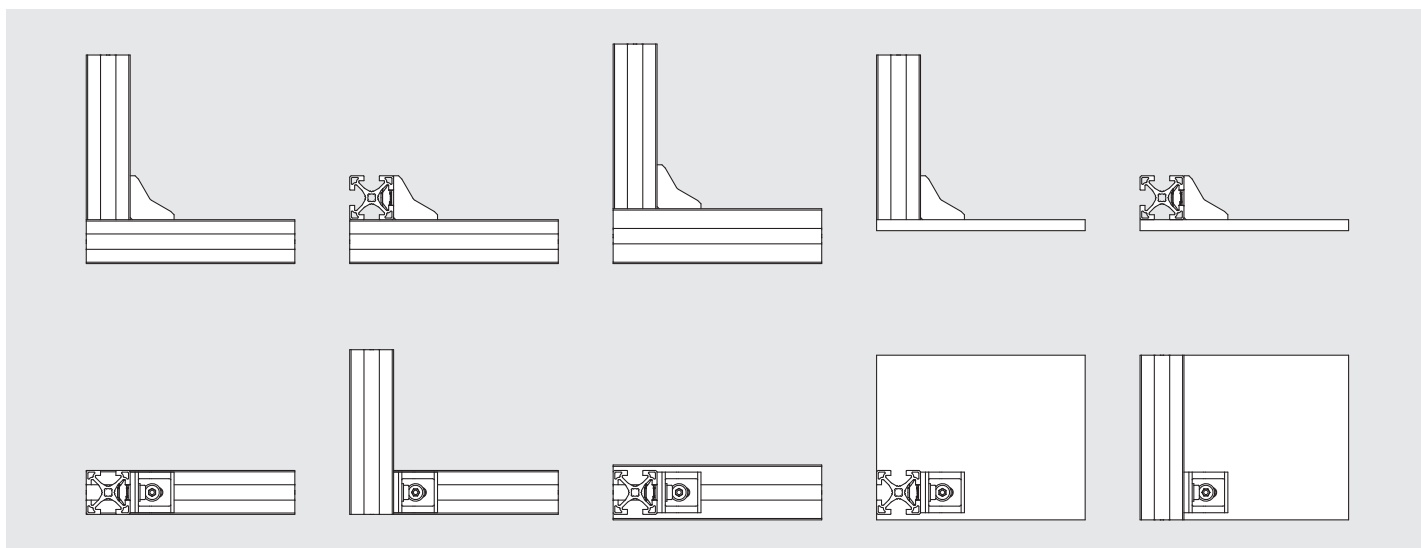


A in 40 mm series: 20

A in 50 mm series: 25

The Corner Bracket can be used in either the 40 or the 50 mm series. To adjust to one series or the other simply turn the centering insert (GUS4052).

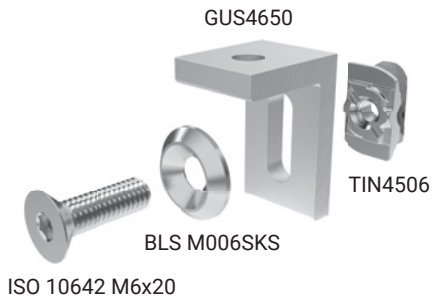
Applications



Order code

Order code	Item	Description	Weight
GUS4500PAC0100	Corner Bracket 40/50, pack	Pack of 100 pcs.	12.400 kg
GUS4501	Corner Bracket 40/50, kit		0.186 kg
GUS4501CPPAC0100	Corner Bracket 40/50, kit, pack	Pack of 100 pcs., packed by type	18.200 kg
GUS4502	Centering Insert for Corner Bracket 40/50		0.013 kg

Drawings: dimensions in mm

**Application**

For 90° connection and as reinforcement when combining Robotunits extrusion technology with non-Robotunits components. Particularly suitable for fixing table tops and similar surface elements.

Technical data

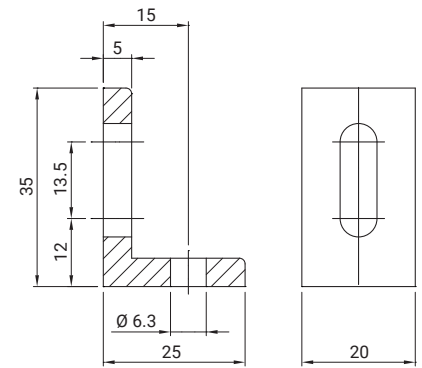
Material: clear anodized aluminum and galvanized steel

Tightening torque

ISO 10642 M6x20: 9 Nm

Kit includes:

- 1 Fastener GUS4650
- 1 Drop-in Nut TIN4506
- 1 Countersunk screw ISO 10642 M6x20
- 1 Washer BLS M006SKS



Applications

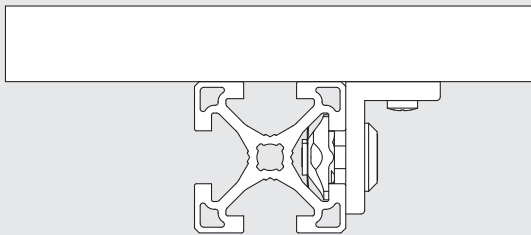
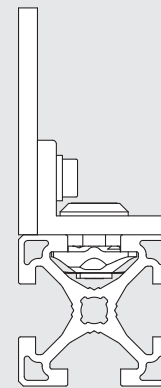


Table top attachment



Panel attachment

Order code

Order code	Item	Description	Weight
GUS4651	Fixing Bracket 35x25, kit		0.030 kg

Drawings: dimensions in mm

GUS100_

Corner Bracket 100

**Application**

90° connections and reinforcement in combination with Robotunits fasteners. The GUS1000 can also be used with 40 mm series extrusions parallel to T-slot centerline.

Technical data

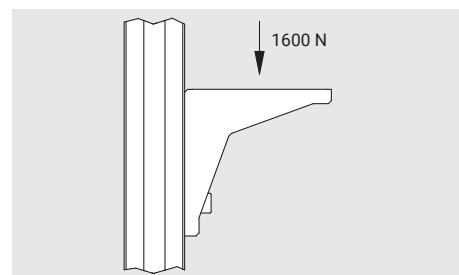
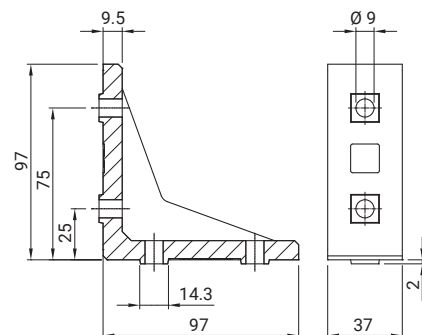
Material: black EPD coated die-cast zinc, galvanized steel

Tightening torque

ISO 4762 M8x20: 26 Nm

Kit includes:

- 1 Fastener GUS1000
- 4 Drop-in Nuts TIN4508
- 4 Cap screws ISO 4762 M8x20

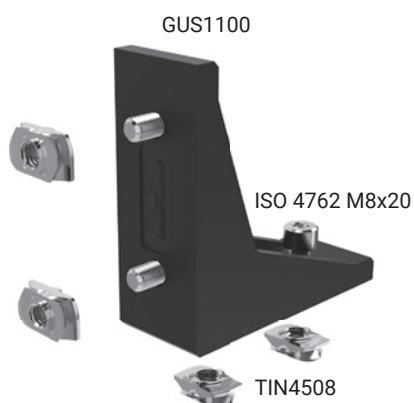


Order code

Order code	Item	Description	Weight
GUS1000PAC0025	Corner Bracket 100, pack	Pack of 25 pcs.	12.950 kg
GUS1001	Corner Bracket 100, kit		0.606 kg
GUS1001CPPAC0025	Corner Bracket 100, kit, pack	Pack of 25 pcs., packed by type	15.150 kg

GUS110_

Corner Bracket 100, one side centered

**Application**

90° connections and reinforcement in combination with Robotunits fasteners and non-Robotunits surfaces. The GUS1100 can also be used with 40 mm series extrusions parallel to T-slot centerline.

Technical data

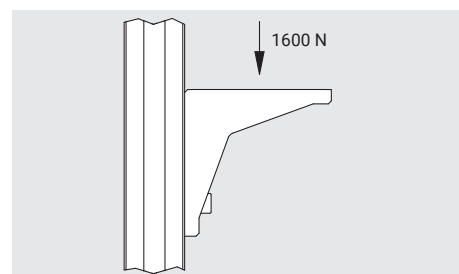
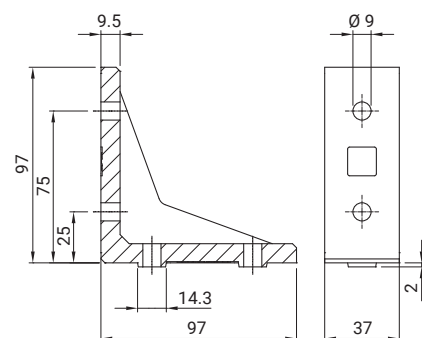
Material: black EPD coated die-cast zinc, galvanized steel

Tightening torque

ISO 4762 M8x20: 26 Nm

Kit includes:

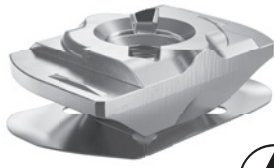
- 1 Fastener GUS1100
- 4 Drop-in Nuts TIN4508
- 4 Cap screws ISO 4762 M8x20



Order code

Order code	Item	Description	Weight
GUS1100PAC0025	Corner Bracket 100, one side centered, pack	Pack of 25 pcs.	12.850 kg
GUS1101	Corner Bracket 100, one side centered, kit		0.602 kg
GUS1101CPPAC0025	Corner Bracket 100, one side centered, kit, pack	Pack of 25 pcs., packed by type	15.050 kg

Drawings: dimensions in mm

**Application**

40 and 50 mm series extrusions:

- conductive
- self-centering
- slip protection (leaf springs)
- anti-twist safeguard

Technical data

Material: Galvanized steel

Pull-out values F

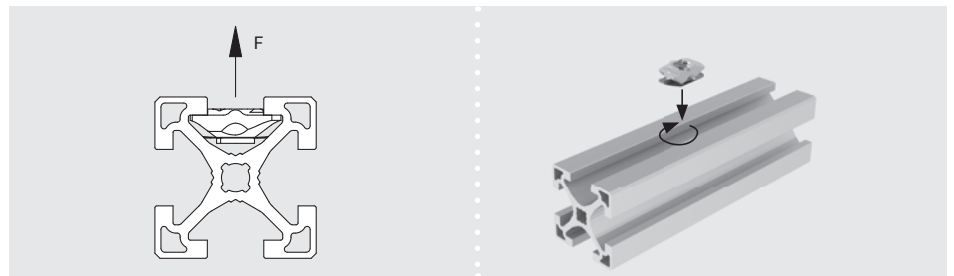
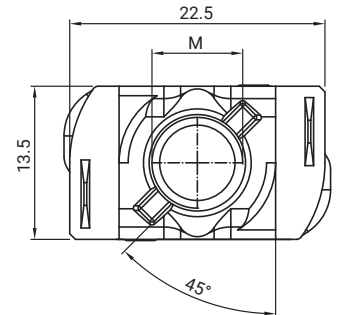
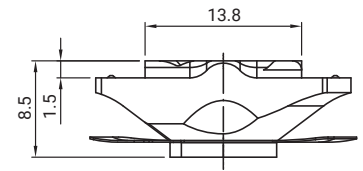
Based on screw quality 8.8

TIN4504: 1500N

TIN4505: 3000N

TIN4506: 4500N

TIN4508: 6000N

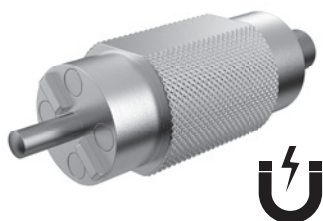
**Order code**

Order code	Item	Description	Weight
TIN4504	Drop-in Nut M4		0.010 kg
TIN4504PAC0100	Drop-in Nut M4, pack	Pack of 100 pcs.	1.000 kg
TIN4504PAC1000	Drop-in Nut M4, pack	Pack of 1000 pcs.	10.000 kg
TIN4505	Drop-in Nut M5		0.010 kg
TIN4505PAC0100	Drop-in Nut M5, pack	Pack of 100 pcs.	1.000 kg
TIN4505PAC1000	Drop-in Nut M5, pack	Pack of 1000 pcs.	10.000 kg
TIN4506	Drop-in Nut M6		0.010 kg
TIN4506PAC0100	Drop-in Nut M6, pack	Pack of 100 pcs.	1.000 kg
TIN4506PAC1000	Drop-in Nut M6, pack	Pack of 1000 pcs.	10.000 kg
TIN4508	Drop-in Nut M8		0.010 kg
TIN4508PAC0100	Drop-in Nut M8, pack	Pack of 100 pcs.	1.000 kg
TIN4508PAC1000	Drop-in Nut M8, pack	Pack of 1000 pcs.	10.000 kg

Drawings: dimensions in mm

TIN9990

Inserter



New, with built-in magnet

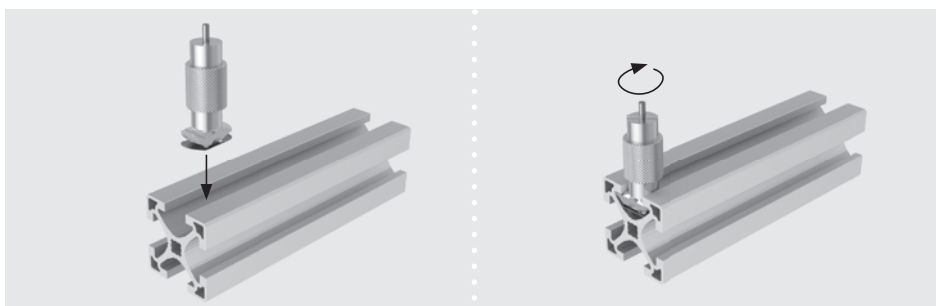
Application

Assembly tool for inserting Drop-in Nuts into T-slots

Technical data

Material: Galvanized steel

Assembly

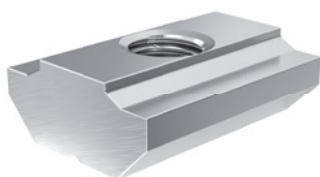


Order code

Order code	Item	Description	Weight
TIN9990	Inserter		0.045 kg

TIN60__

T-Nut

**Application**

For 40 mm series and 50 mm series extrusions:

- Self-centering

Technical data

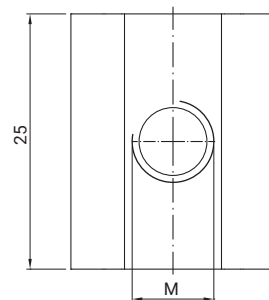
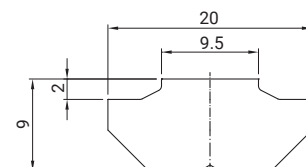
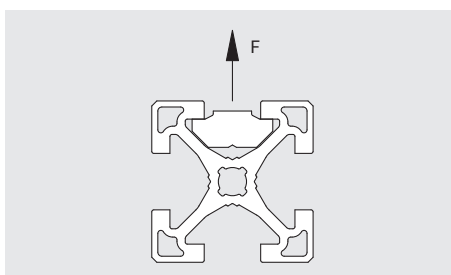
Material: Galvanized steel

Pull-out values F

Based on screw quality 8.8

TIN6008: 7500N

TIN6010: 7500N



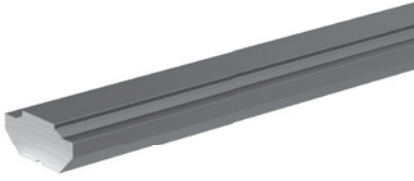
Order code

Order code	Item	Description	Weight
TIN6008	T-Nut M8		0.027 kg
TIN6010	T-Nut M10		0.025 kg

Drawings: dimensions in mm

TIN4590

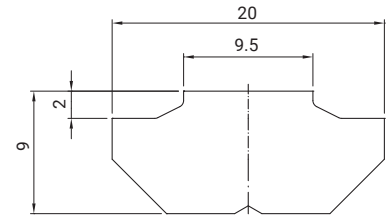
T-Nut Bar

**Application**

Specific machining applications with 40 mm and 50 mm series extrusions

Technical data

Material: untreated steel
Stock length: 3030 mm

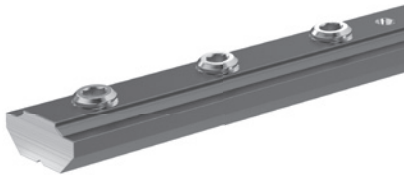


Order code

Order code	Item	Description	Weight
TIN4590SNN	T-Nut Bar, cut to length		1.125 kg/m
TIN4590NNN	T-Nut Bar, unit	1 unit, length 3030 mm	3.375 kg

TIN0171

T-Nut In-Line Fastener

**Application**

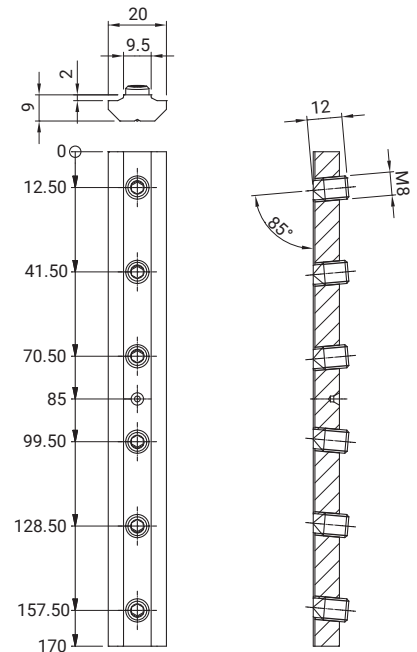
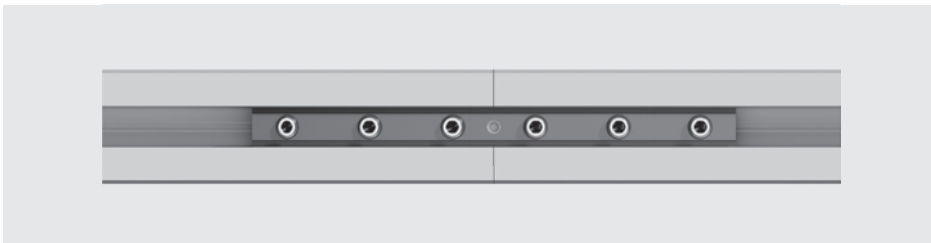
End-to-end connections of 40 mm and 50 mm series extrusions

Technical data

Material: Galvanized steel

Scope of delivery

1 Base Part
6 Set screws ISO 4027 M8x12



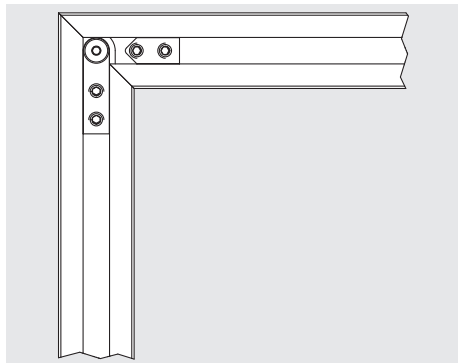
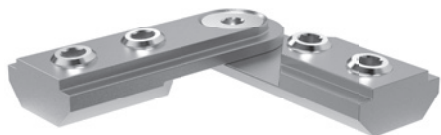
Order code

Order code	Item	Description	Weight
TIN0171	T-Nut In-Line Fastener		0.196 kg

Drawings: dimensions in mm

TIN4545

Miter Fastener



Application

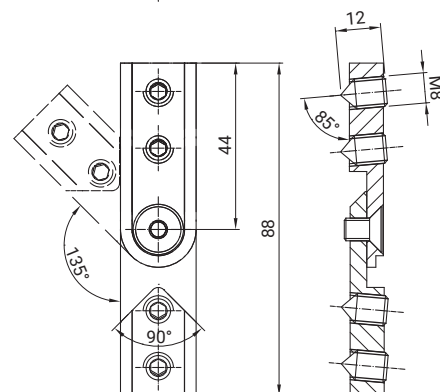
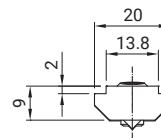
Fasteners for extrusions with miter cuts

Technical data

Material: Galvanized steel

Scope of delivery

- 1 Base Part, countersunk
- 1 Base Part, threaded
- 4 Set screws ISO 4027 M8x12SPI
- 1 Countersunk screw ISO 10642 M6x10



Order code

Order code	Item	Description	Weight
TIN4545	Miter Fastener		0.098 kg

TIN_000

Special Fastener



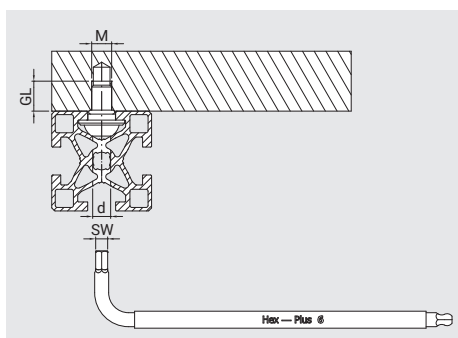
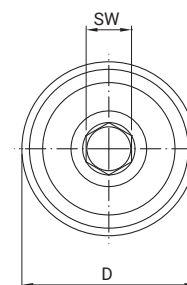
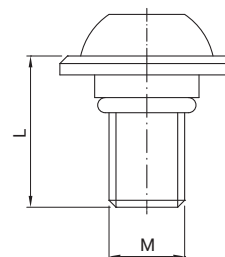
Application

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

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

Technical data

Material: galvanized steel, NBR



Description	GL	SW	M	d	D	L
Special Fastener 40	15	5	M8	7	20	20
Special Fastener 50	15	6	M10	9	23	20

Order code

Order code	Item	Description	Weight
TIN4000	Special Fastener 40		0.016 kg
TIN5000	Special Fastener 50		0.032 kg

Drawings: dimensions in mm