

# The Strong Fastening Technology

A few years ago connecting without drilling, milling or welding was almost unthinkable. It is obvious that if you can eliminate machining or welding from the process you also lower your cost by preventing time-consuming adjustments and post processing of your designs.

The Robotunits Fastening Technology is unique worldwide, not only because of its stability and rigidity, but also in its enormous potential for time savings – from design to assembly.



## Every hole drilled is one hole too many

- all connections made without drilling or milling
- maximum wall thickness at key points prevents crimping
- no time needed for processing or alignment tasks
- unlimited reusability



## More space for your ideas

- 15-mm standard fastener height provides more space for additions
- quick and easy design
- no dimensioning of boreholes
- no part drawings required



## Maximum stability

- worldwide unique play-free, accurate and centrally aligned fastening technology
- single fastener provides up to 4.1 t (8,800lbs.) of tensile strength
- strength comparable to a welded connection
- maximum stability and strength for the entire production line



## One fastener, double value

- two-sided fastener provides equal strength on both sides of the connection
- twice the strength for the price of one
- no additional connectors needed
- completely assembled with standard length screws and a single Allen key



## Stability increases with every rotation

- every turn positions centering inserts tighter into slot
- absolutely play-free, accurate and centrally aligned connection
- no loosening of bolts through vibration



## Inserting the drop-in nut

- simply insert the drop-in nut into the wide slot
- spring assembly protects drop-in-nut against unintended movement
- no time wasted aligning bolts; just slide to stop position
- quick and easy assembly



## Everything is possible – even post assembly

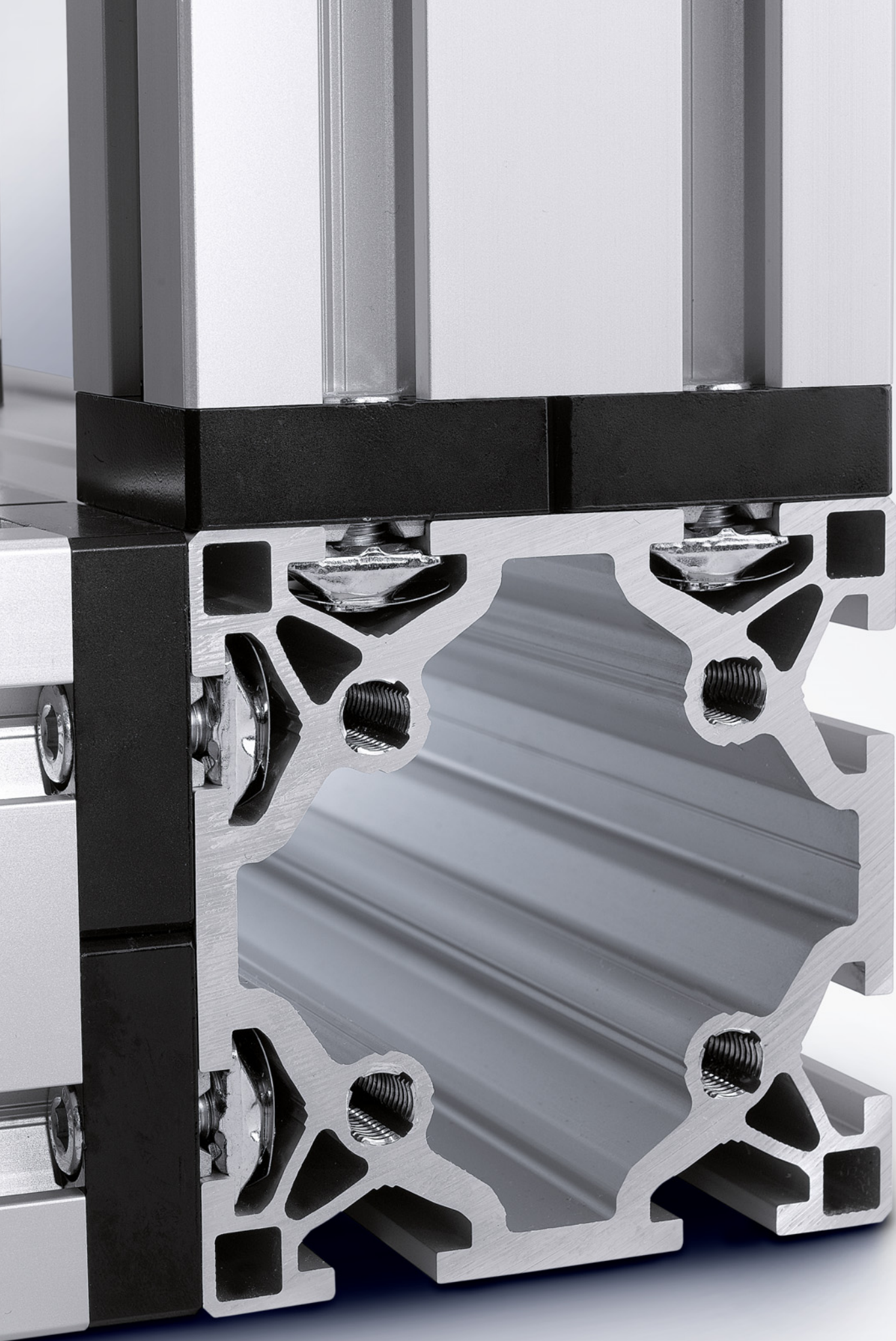
- simple post-assembly integration of struts without dismantling the frame
- easy repositioning of struts at any time
- no cutting of existing structures
- no surface treatment required

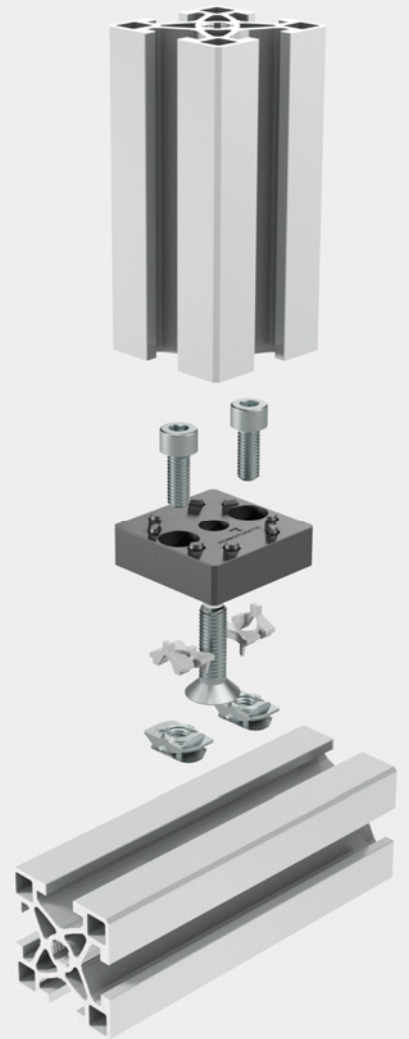
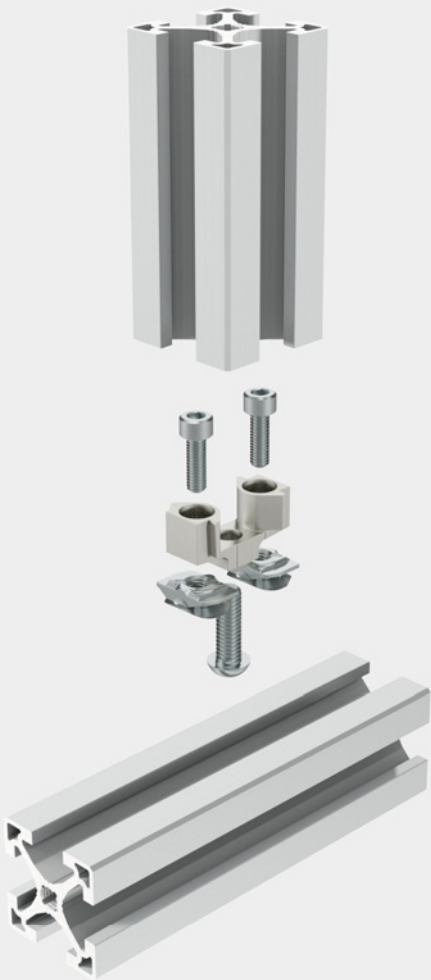


## Save time, cut cost

- minimum assembly time required
- easy and quick selection of Fastening Technology
- no measuring of boreholes
- no dimensioning of boreholes
- length of the extrusion is the only measurement needed for the design
- two-sided connection with one fastener







# The Strong Fastening Technology

## Fastening Technology 40 mm Series

Page 104



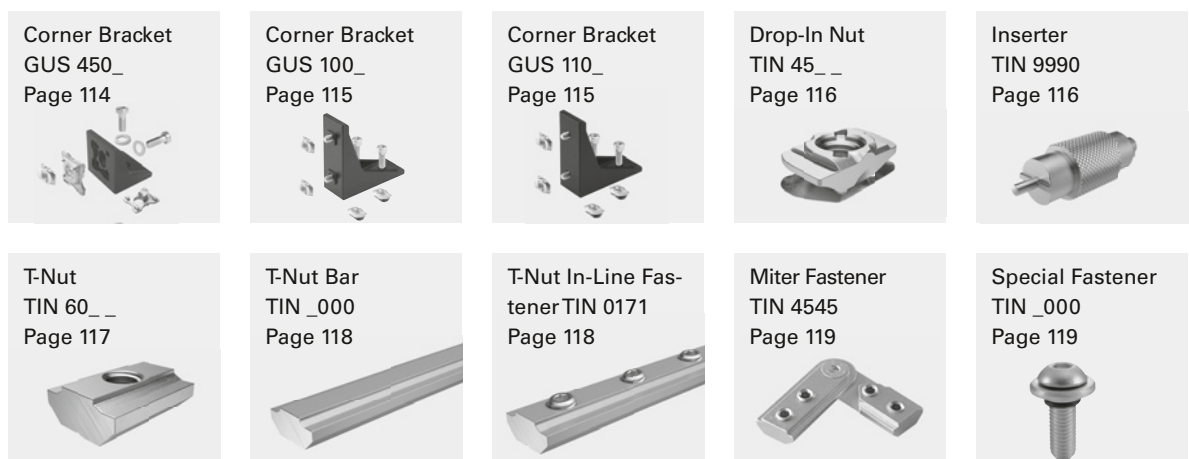
## Fastening Technology 50 mm Series

Page 108



## Fastening Technology 40 mm and 50 mm Series

Page 114



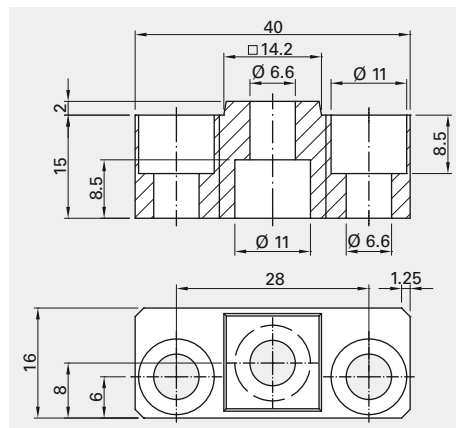
# FAS 1641

# Fastener



**Application**  
90° fastener for extrusion PIL 1640

**Technical Data**  
Material: clear anodized aluminum, galvanized steel

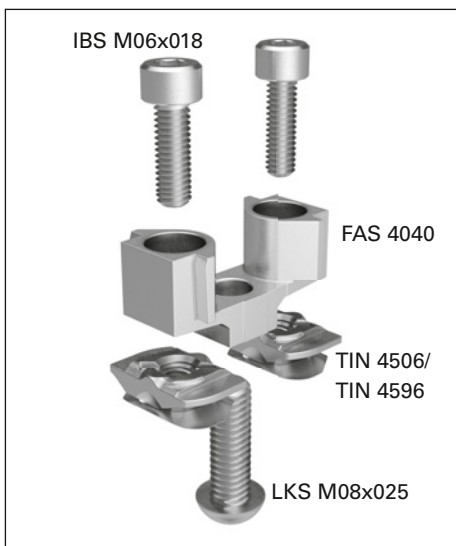


## Order Code

Description Fastener Kit, 16x40	Scope of Delivery			Order Code FAS 1641	Weight 0.045 kg
	FAS 1640 1	TIN 4506 1	IBS M06x018 3		

# FAS 404\_

# Fastener

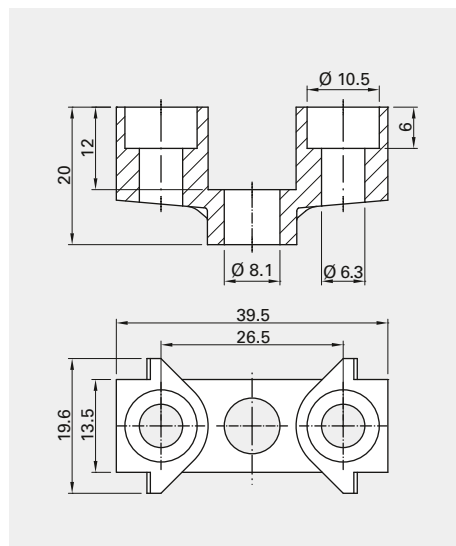


**Application**  
90° fastener on 40 mm series for extrusion PIL 4040 and PIL 4080 lateral

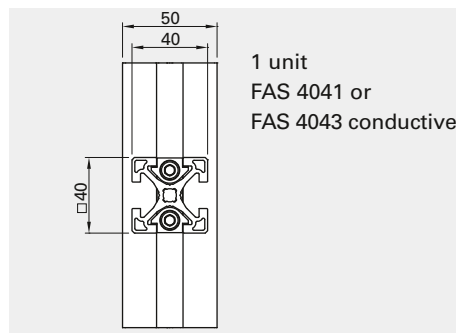
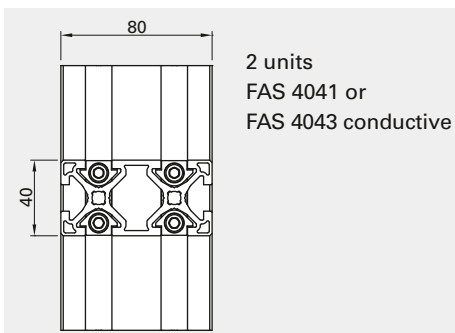
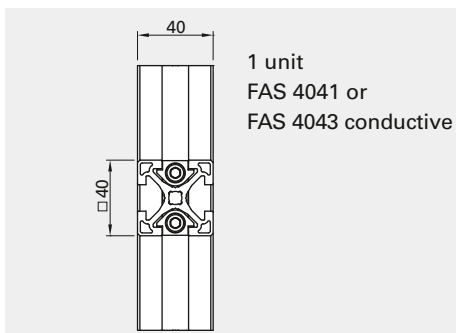
**Technical Data**  
Material: galvanized GD-Zn, galvanized steel

**Load index**  
See page 185

**Optional**  
40x40 fastener kit for conductive structures



Transfer resistance per conductive connection: 0.4 m

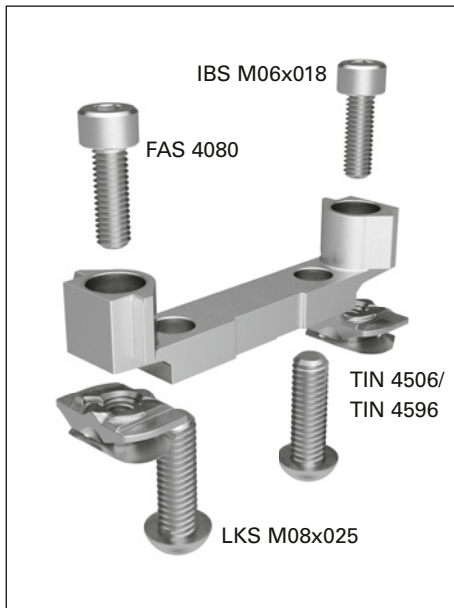


## Order Code

Description	Scope of Delivery					Order Code	Weight
	FAS 4040	TIN 4506	TIN 4596	IBS M06x018	LKS M08x025		
Fastener Kit, 40x40	1	2	-	2	1	FAS 4041 <sup>(1)</sup>	0.068 kg
Fastener Kit, 40x40	1	2	-	2	1	FAS 4041CP <sup>(2)</sup>	0.068 kg
Fastener Kit, 40x40, conductive	1	-	2	2	1	FAS 4043 <sup>(1)</sup>	0.068 kg
Fastener Kit, 40x40, conductive	1	-	2	2	1	FAS 4043CP <sup>(2)</sup>	0.068 kg

## FAS 408\_

## Fastener

**Application**

90° fastener on 40 mm series for extrusion

- PIL 4080, longitudinal
- PIL 8080

**Technical Data**

Material: galvanized GD-Zn, galvanized steel

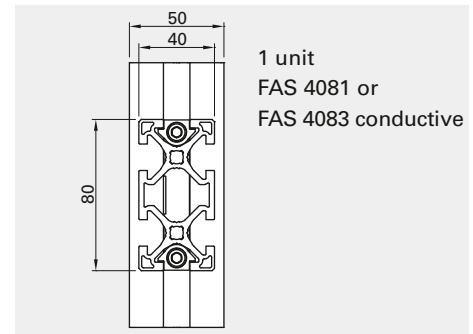
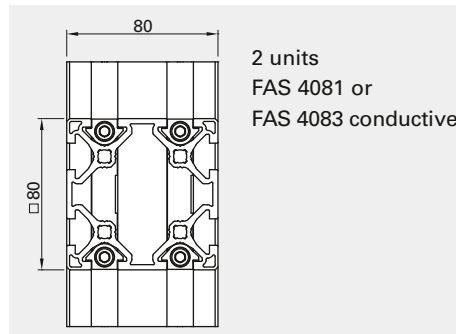
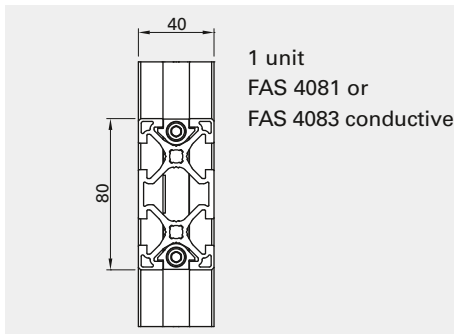
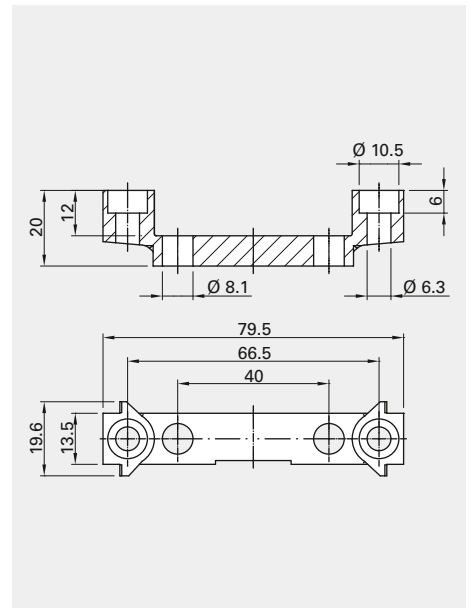
**Load index**

See page 185

**Optional**

40x80 fastener kit for conductive structures

Transfer resistance per conductive connection: 0.4 m



## Order Code

Description	Scope of Delivery					Order Code	Weight
	FAS 4080	TIN 4506	TIN 4596	IBS M06x018	LKS M08x025		
Fastener Kit, 40x80	1	2	-	2	2	FAS 4081 <sup>1)</sup>	0.103 kg
Fastener Kit, 40x80	1	2	-	2	2	FAS 4081CP <sup>2)</sup>	0.103 kg
Fastener Kit, 40x80, conductive	1	-	2	2	2	FAS 4083 <sup>1)</sup>	0.103 kg
Fastener Kit, 40x80, conductive	1	-	2	2	2	FAS 4083CP <sup>2)</sup>	0.103 kg

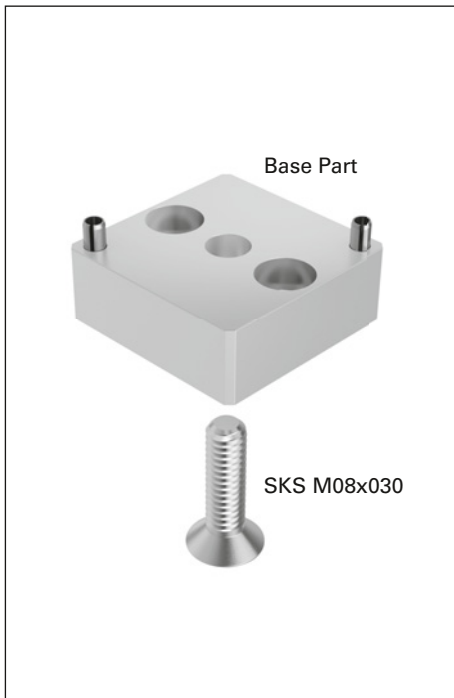
1) Packaged in Kit

2) Packaged by type, available for an order quantity of 100 or more

Diagram dimensions in mm

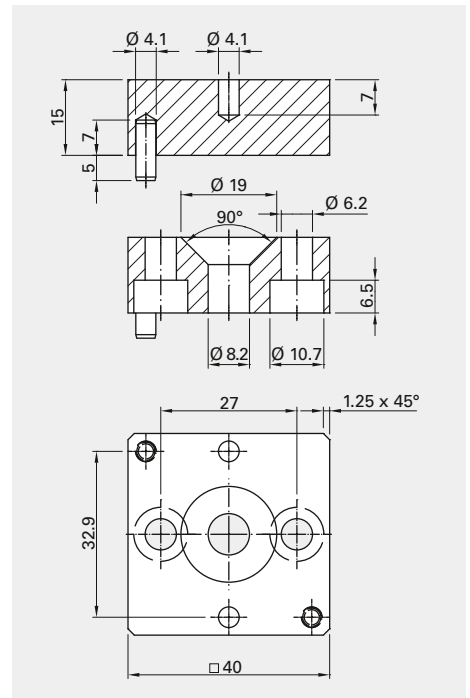
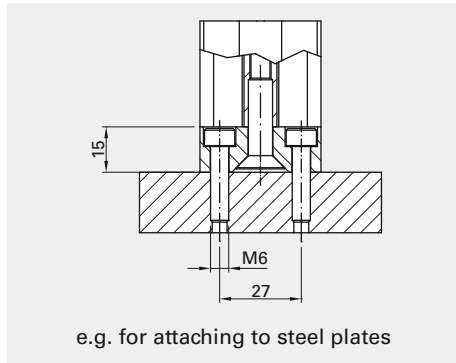
# FAS 4049

# Surface Fastener



**Application**  
Used for connections to non-Robotunits surfaces on 40 mm series for extrusion PIL 4040

**Technical Data**  
Material: clear anodized aluminum, galvanized steel

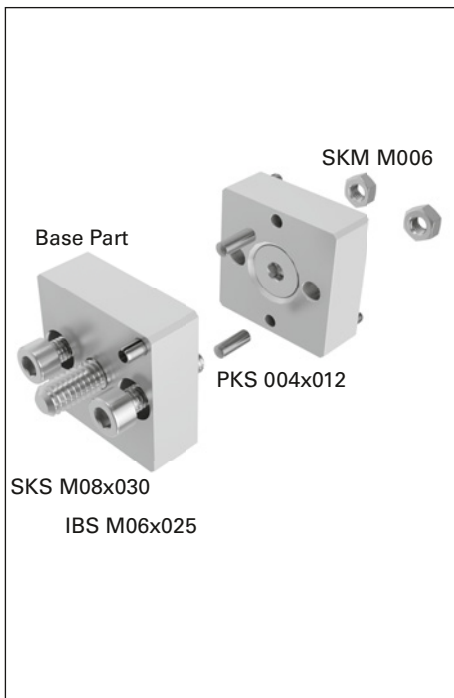


## Order Code

Description Surface Fastener Kit, 40x40	Scope of Delivery		Order Code FAS 4049	Weight 0.070 kg
	Base Part 1	SKS M08x030 1		

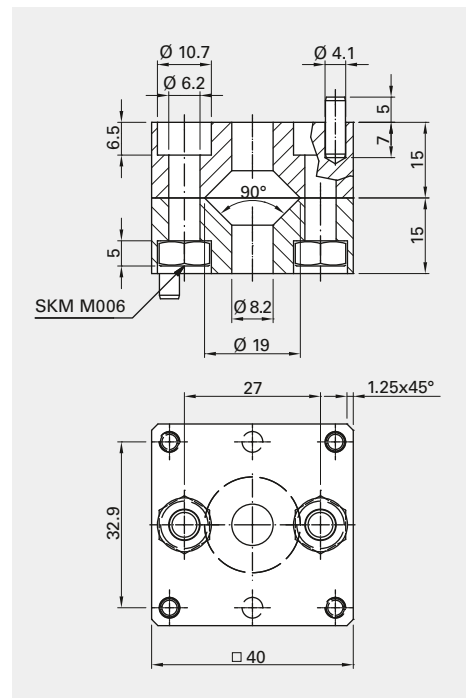
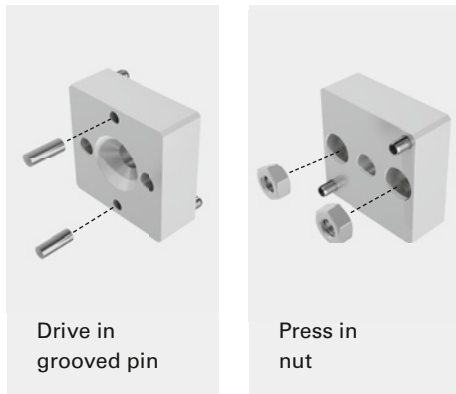
# FAS 4051

# End-to-End Fastener



**Application**  
Used for end-to-end connections of 40 mm series for extrusion PIL 4040

**Technical Data**  
Material: clear anodized aluminum, galvanized steel



## Order Code

Description End-to-End Fastener Kit, 40x40	Scope of Delivery					Order Code FAS 4051	Weight 0.160 kg
	Base Part 2	SKS M08x030 2	SKM M006 2	IBS M06x025 2	PKS 004x012 2		

# GUS 4\_41

# Elbow Joint

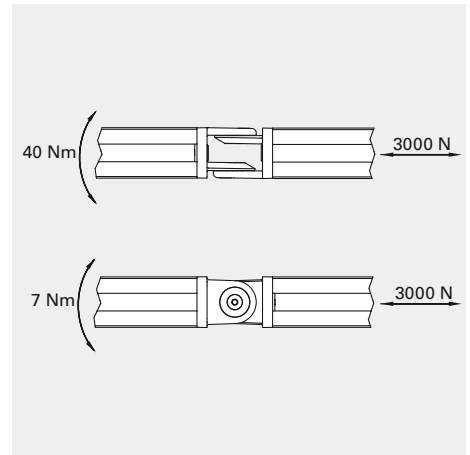
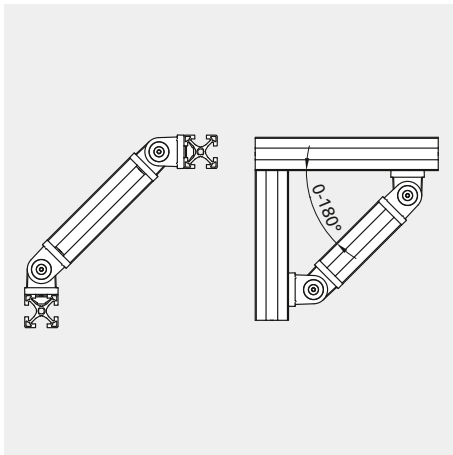
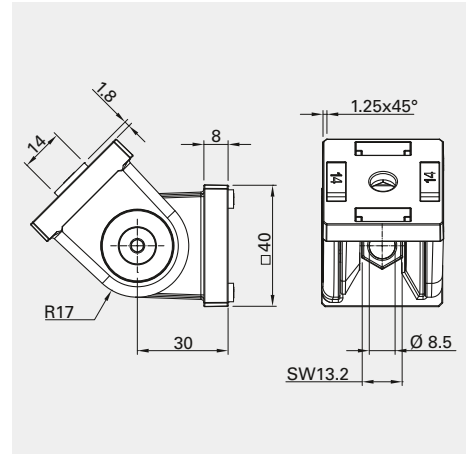


**Application**  
 For variable angle connections, e.g.:

- Guardings
- Frames
- Swing arms

**Technical Data**  
 Material: zinc diecast or galvanized steel  
 Pivoting range: +/- 90°

**Torque on clamping screw for optimum hold: 8 Nm**

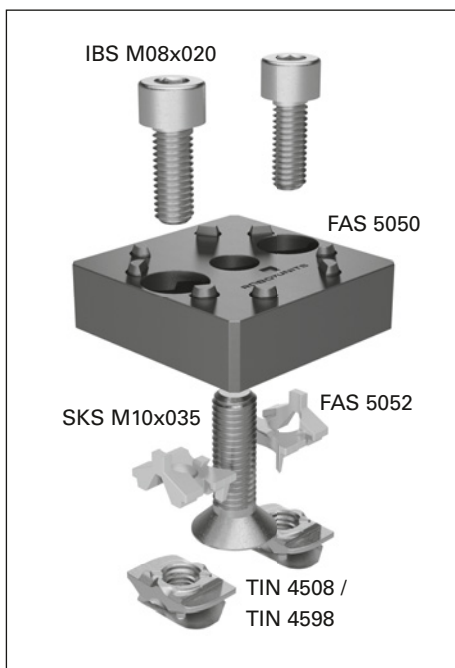


## Order Code

Description	Scope of Delivery				Order Code	Weight
	GUS 4040	GUS 4140	TIN 4508	IBS M08x016NIKO		
Elbow Joint Kit	1	-	2	2	GUS 4041	0.135 kg
Elbow Joint Kit with Clamp	-	1	2	2	GUS 4141	0.205 kg

Diagram dimensions in mm



**Application**

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

- PIL 5050
- PIL 5010
- PIL 5020

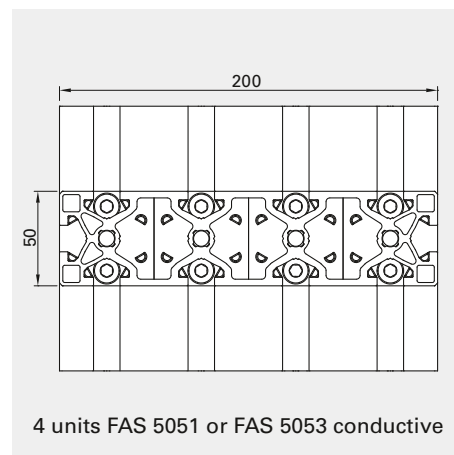
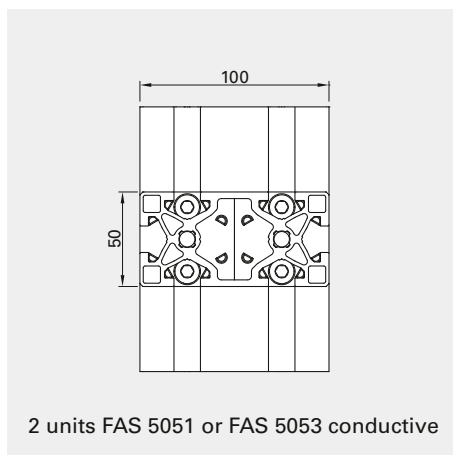
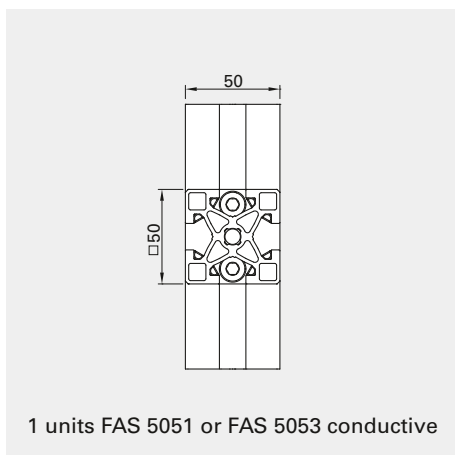
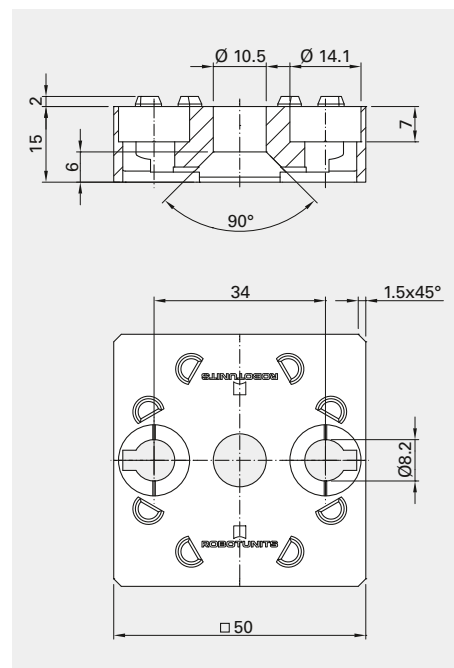
**Technical Data**

Material: GD-Zn black KTL coated, galvanized steel

**Load index**

See page 185

Transfer resistance per conductive connection: 0.4 m

**Order Code**

Description	Scope of Delivery						Order Code	Weight
	FAS 5050	FAS 5052	TIN 4508	TIN 4598	IBS M08x020	SKS M10x035		
Fastener Kit, 50x50	1	2	2	-	2	1	FAS 5051 <sup>1)</sup>	0.223 kg
Fastener Kit, 50x50	1	2	2	-	2	1	FAS 5051CP <sup>2)</sup>	0.223 kg
Fastener Kit, 50x50, conductive	1	2	-	2	2	1	FAS 5053 <sup>1)</sup>	0.223 kg
Fastener Kit, 50x50, conductive	1	2	-	2	2	1	FAS 5053CP <sup>2)</sup>	0.223 kg
Fastener, 50x50	100	-	-	-	-	-	FAS 5050 PAC 0100	14.40 kg

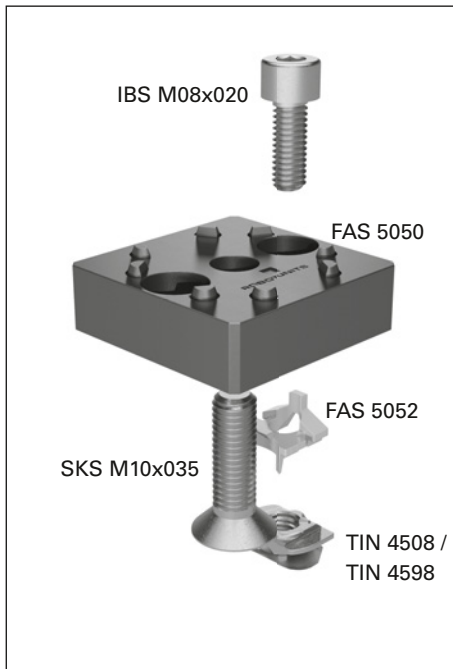
1) Packaged in Kit

2) Packaged by type, available for an order quantity of 100 or more

Diagram dimensions in mm

## FAS 505\_

## Single-Sided Fastener

**Application**

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

- PIL 5010
- PIL 1010
- PIL 5020

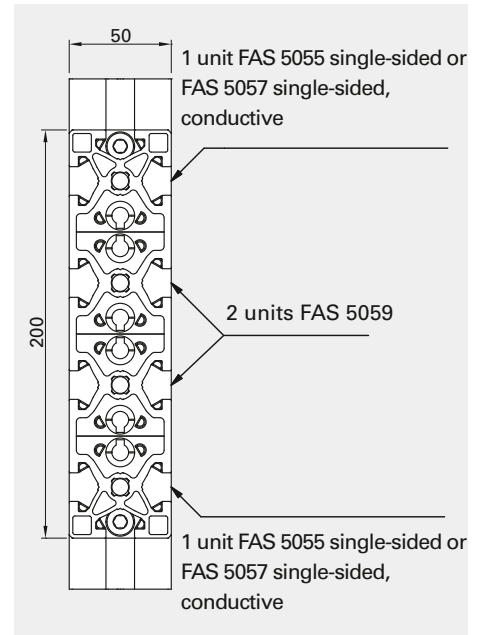
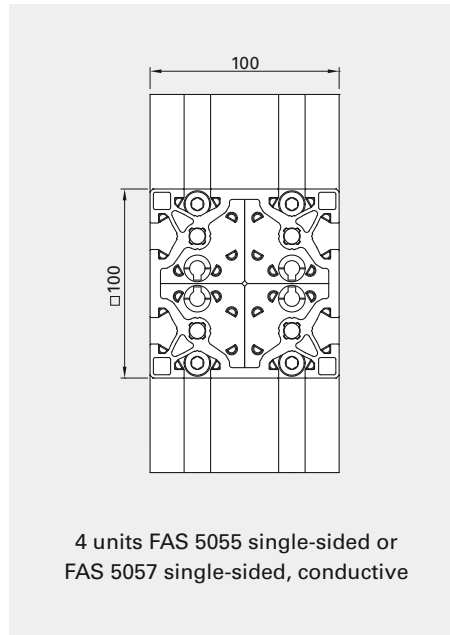
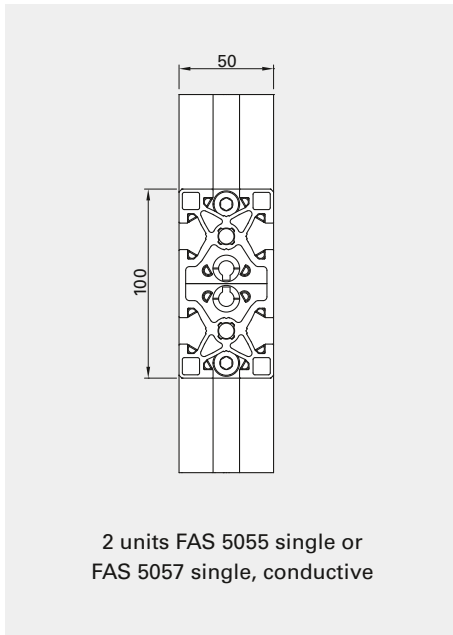
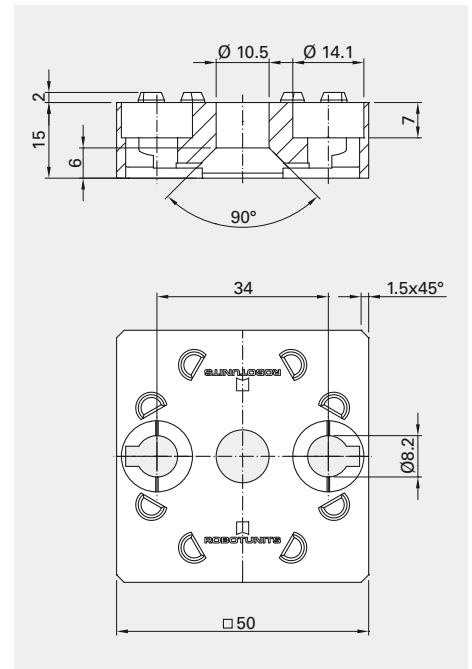
**Technical Data**

Material: GD-Zn black KTL coated, galvanized steel

**Load index**

See page 185

Transfer resistance per conductive connection: 0.4 m



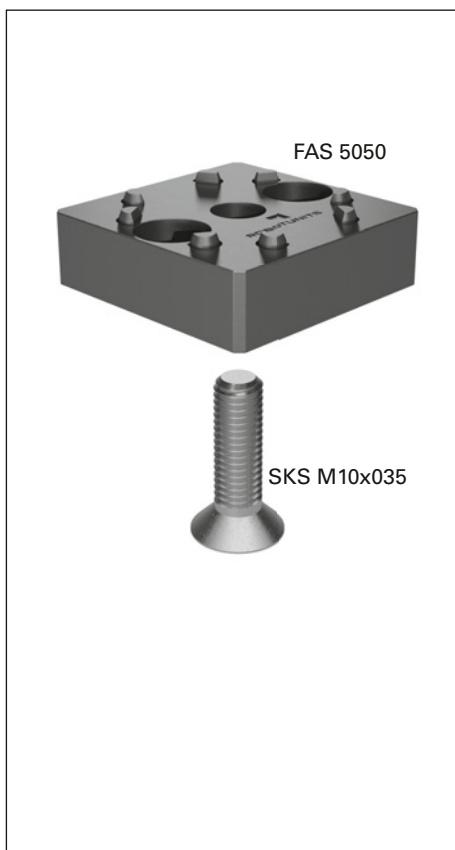
## Order Code

Description	Scope of Delivery						Order Code	Weight
	FAS 5050	FAS 5052	TIN 4508	TIN 4598	IBS M08x020	SKS M10x035		
Fastener Kit, 50x50, single-sided	1	1	1	-	1	1	FAS 5055 <sup>1)</sup>	0.185 kg
Fastener Kit, 50x50, single-sided	1	1	1	-	1	1	FAS 5055CP <sup>2)</sup>	0.185 kg
Fastener Kit, 50x50, single-sided, conduc.	1	1	-	1	1	1	FAS 5057 <sup>1)</sup>	0.185 kg
Fastener Kit, 50x50, single-sided, conduc.	1	1	-	1	1	1	FAS 5057CP <sup>2)</sup>	0.185 kg
Fastener, 50x50	100	-	-	-	-	-	FAS 5050 PAC 0100	14.40 kg

1) Packaged in Kit

2) Packaged by type, available for an order quantity of 100 or more

Diagram dimensions in mm

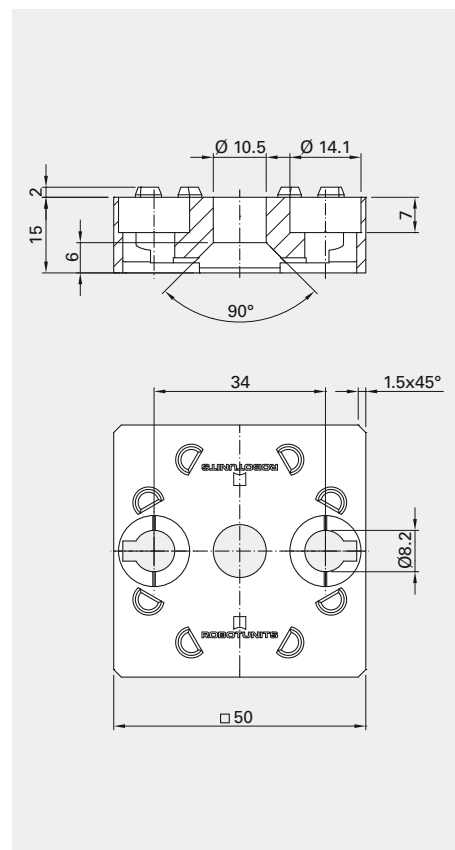
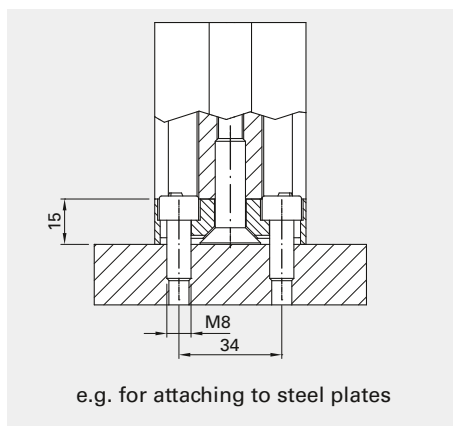
**Application**

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

- PIL 5050
- PIL 5010
- PIL 1010
- PIL 5020

**Technical Data**

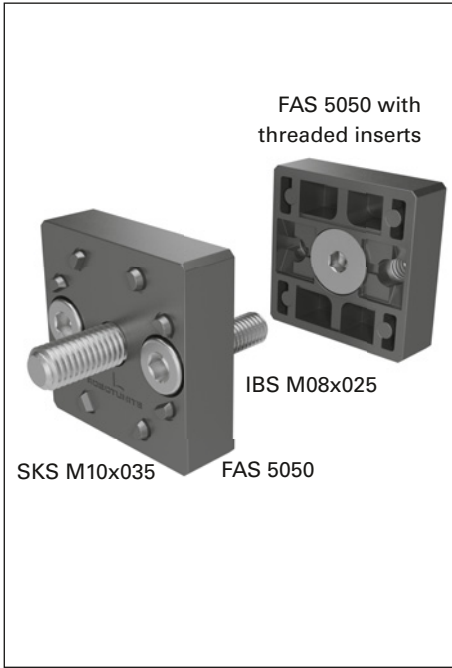
Material: GD-Zn black KTL coated, galvanized steel

**Order Code**

Description	Scope of Delivery		Order Code	Weight
	FAS 5050	SKS M10x035		
Surface Fastener Kit, 50x50	1	1	FAS 5059	0.168 kg

# FAS 5061

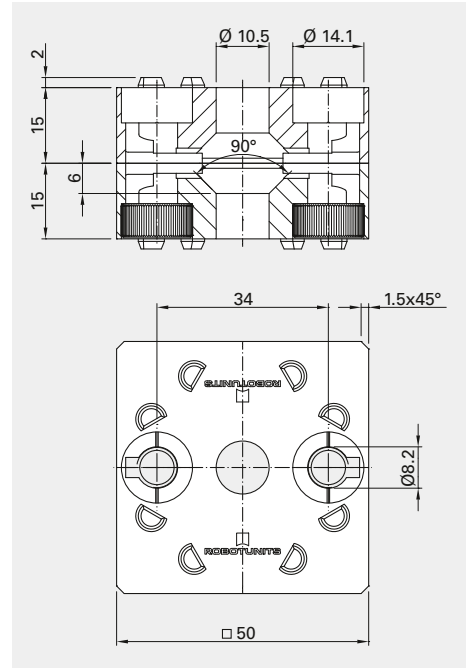
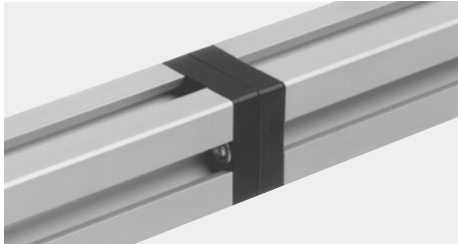
# End-to-End Fastener



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

- PIL 5050
- PIL 5010
- PIL 1010
- PIL 5020

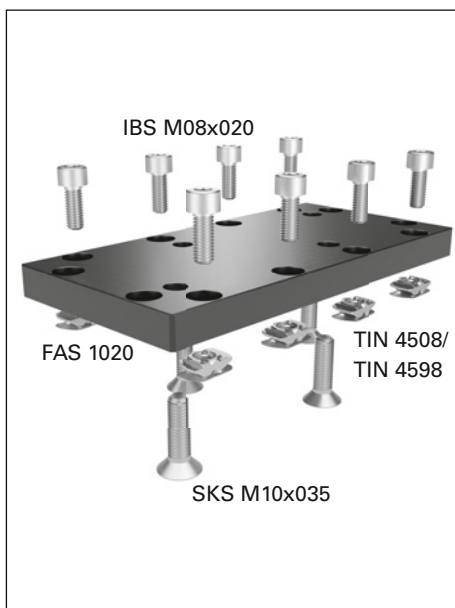
**Technical Data**  
 Material: GD-Zn black KTL coated, galvanized steel



## Order Code

Description	Scope of Delivery				Order Code	Weight
	FAS 5050	Threaded insert	IBS M08x025	SKS M10x035		
End-to-End Fastener Kit, 50x50	2	2	2	2	FAS 5061	0.374 kg



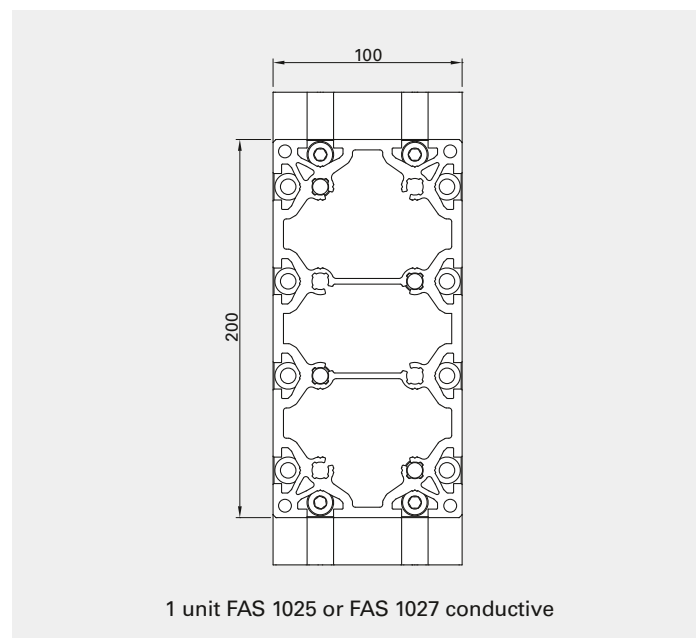
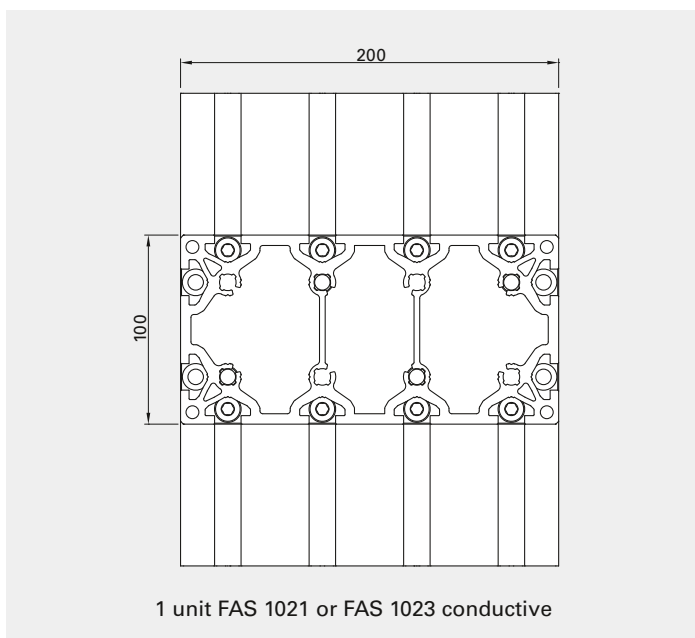
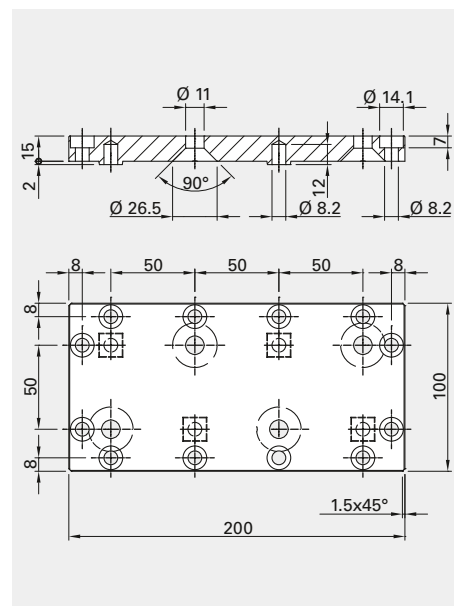
**Application**

Used for 90° connections of heavy-duty structures of PIL 1020

**Technical Data**

Material: black anodized aluminum, galvanized steel

Transfer resistance per conductive connection: 0.4 m

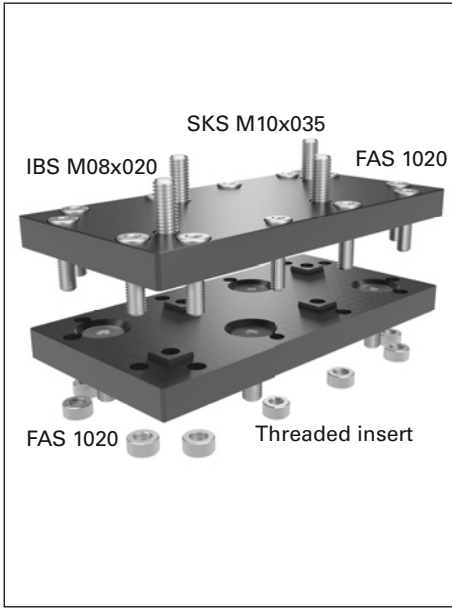
**Order Code**

Description	Scope of Delivery					Order Code	Weight
	FAS 1020	TIN 4508	TIN 4598	IBS M08x020	SKS M10x035		
Cross Fastener Kit, 100x200	1	8	-	8	4	FAS 1021	1.000 kg
Cross Fastener Kit, 100x200, conductive	1	-	8	8	4	FAS 1023	1.000 kg
In-Line fastener Kit, 100x200	1	4	-	4	4	FAS 1025	0.920 kg
In-Line Fastener Kit, 100x200, conductive	1	-	4	4	4	FAS 1027	0.920 kg

Diagram dimensions in mm

# FAS 1031

# End-to-End Fastener



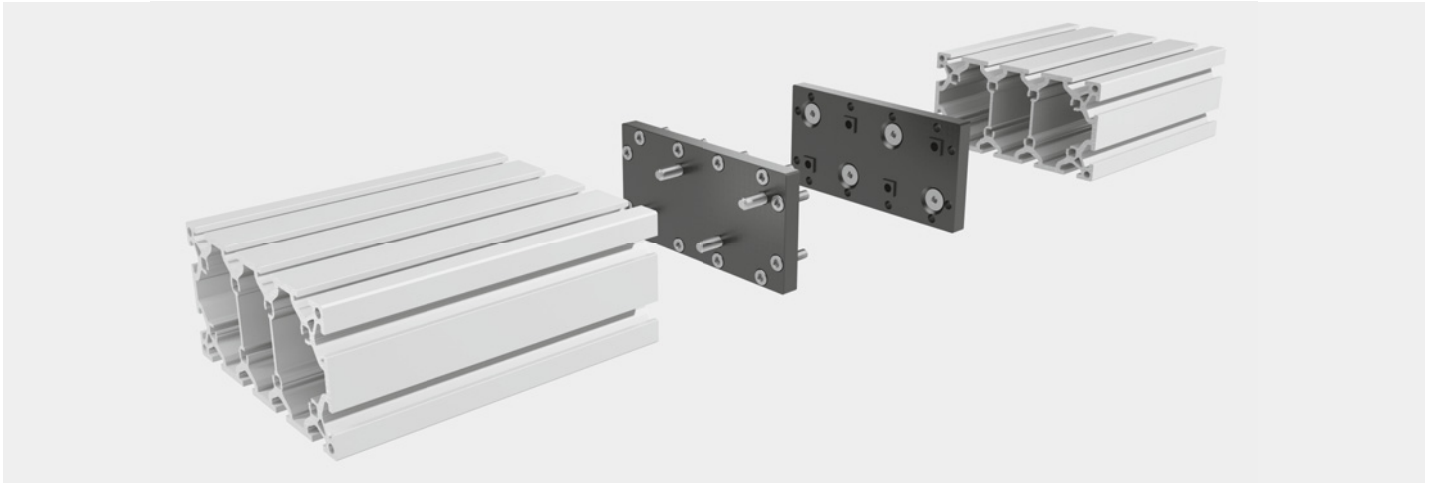
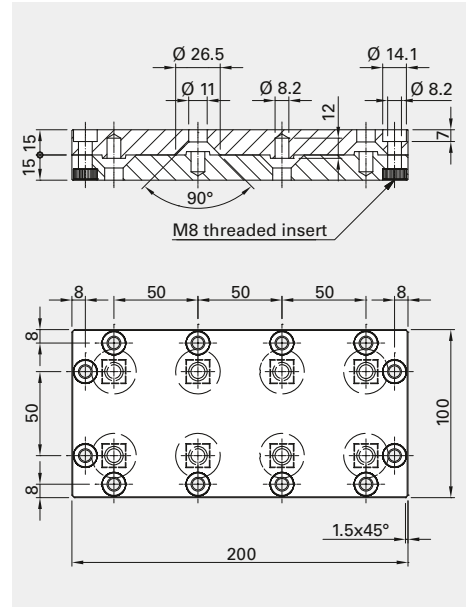
**Application**

Used for end-to-end connections of 50 mm series for extrusions PIL 1020

**Technical Data**

Material: black anodized aluminum, galvanized steel

Transfer resistance per conductive connection: 0.4 m



## Order Code

Description	Scope of Delivery				Order Code	Weight
	FAS 1020	Threaded insert	IBS M08x025	SKS M10x035		
End-to-End Fastener Kit 100x200	2	12	12	8	FAS 1031	1.945 kg

Diagram dimensions in mm

**Application**

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

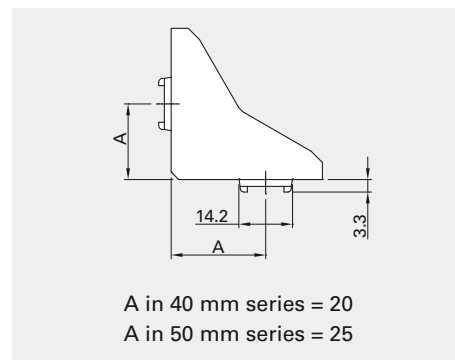
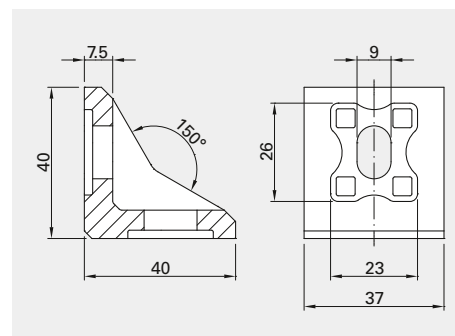
- 40/40 series combination
- 50/50 series combination
- 40/50 series combination

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

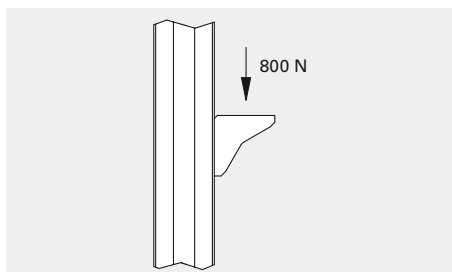
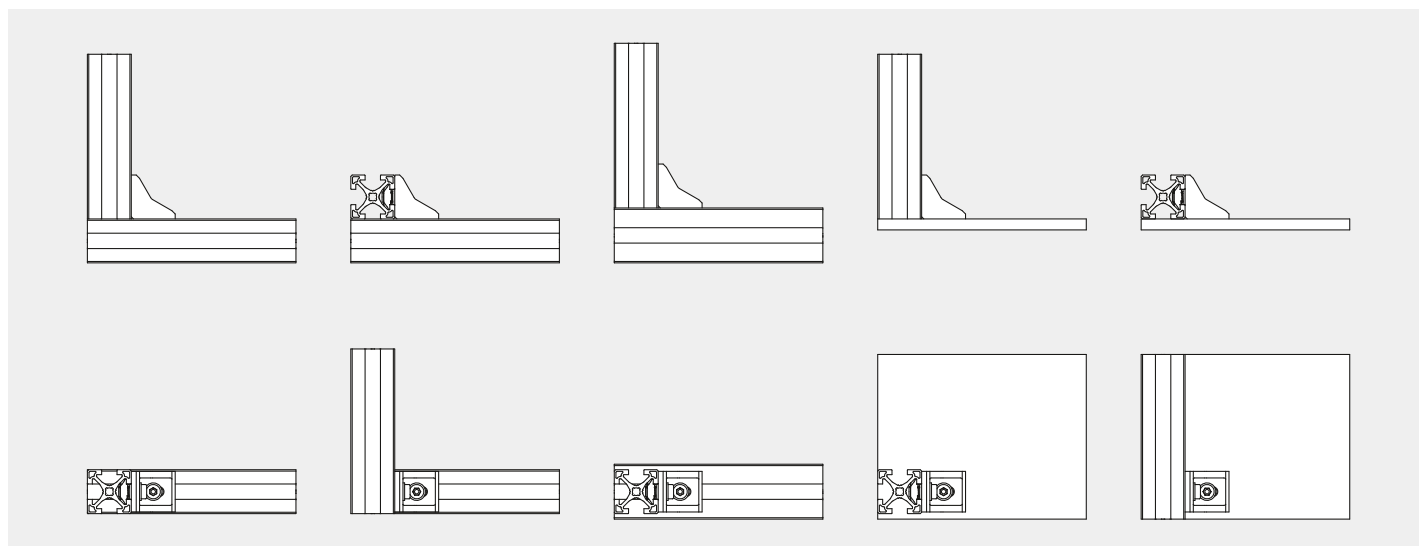
- Mounting of table tops
- Fastening to non-Robotunits extrusions
- Fastening to walls

**Technical Data**

Material: GD-Zn black KTL coated, galvanized steel



By turning the centering insert (GUS 4502), the angle bracket can be used in either the 40 mm or the 50 mm series.

**Application Examples****Order Code**

Description	Scope of Delivery					Order Code	Weight
	GUS 4500	GUS 4502	TIN 4508	IBS M08x020NIKO	BLS M008		
Corner Bracket 40/50 Kit	1	2	2	2	2	GUS 4501 <sup>1)</sup>	0.180 kg
Corner Bracket 40/50 Kit	1	2	2	2	2	GUS 4501CP <sup>2)</sup>	0.180 kg
Corner Bracket 40/50	80	-	-	-	-	GUS 4500 PAC 0080	9.920 kg

1) Packaged in Kit

2) Packaged by type, available for an order quantity of 100 or more

Diagram dimensions in mm

## GUS 100\_

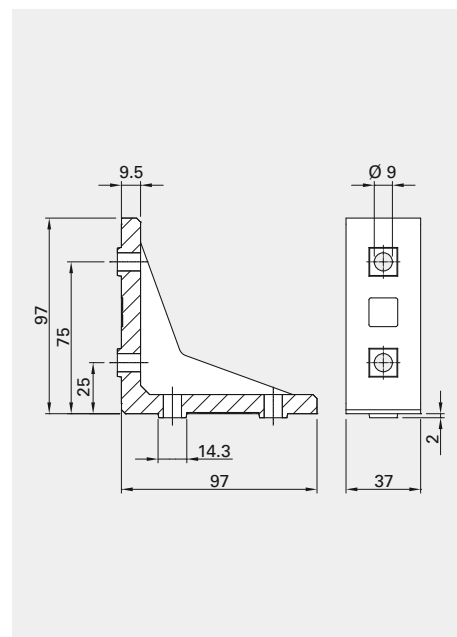
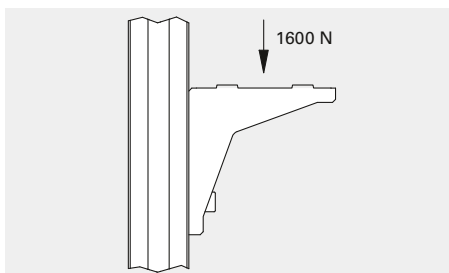
## Corner Bracket

**Application**

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

**Technical Data**

Material: GD-Zn black KTL coated, galvanized steel



## Order Code

Description	Scope of Delivery			Order Code		Weight
	GUS 1000	TIN 4508	IBS M08x020			
Corner Bracket 100 Kit	1	4	4	GUS 1001 <sup>1)</sup>	0.615 kg	
Corner Bracket 100 Kit	1	4	4	GUS 1001CP <sup>2)</sup>	0.615 kg	
Corner Bracket 100	16	-	-	GUS 1000 PAC 0016	9.500 kg	

## GUS 110\_

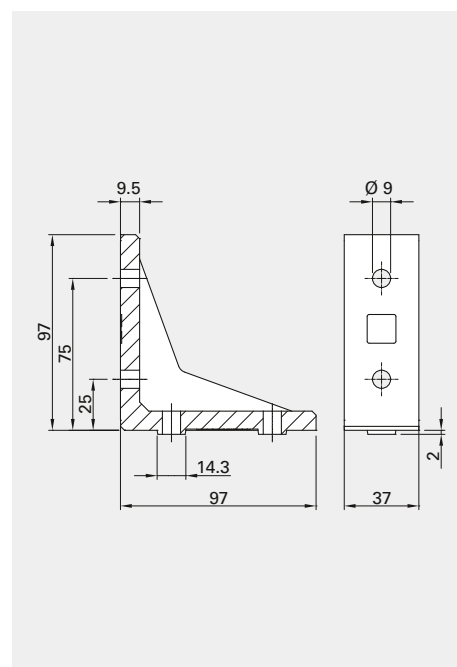
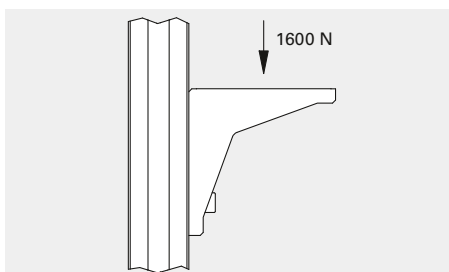
## Corner Bracket

**Application**

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

**Technical Data**

Material: GD-Zn black KTL coated, galvanized steel



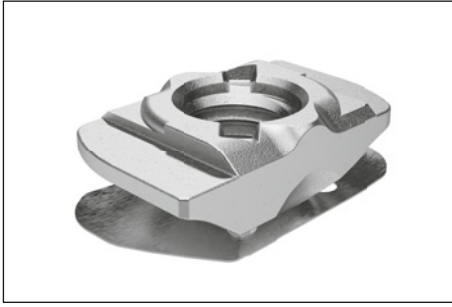
## Order Code

Description	Scope of Delivery			Order Code		Weight
	GUS 1100	TIN 4508	IBS M08x020			
Corner Bracket 100 Kit, one side centered	1	4	4	GUS 1101 <sup>1)</sup>	0.615 kg	
Corner Bracket 100 Kit, one side centered	1	4	4	GUS 1101CP <sup>2)</sup>	0.615 kg	
Corner Bracket 100, one side centered	16	-	-	GUS 1100 PAC 0016	9.500 kg	



## TIN 45\_ \_

## Drop-in Nut

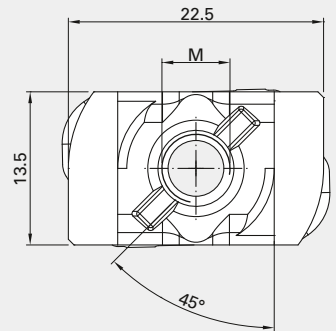
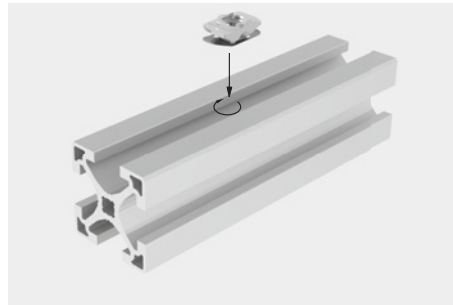
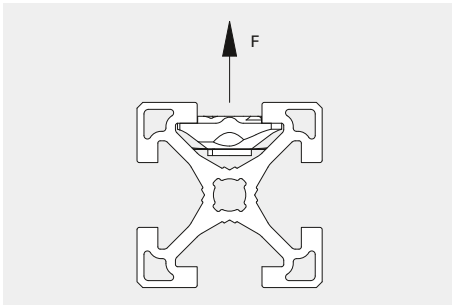
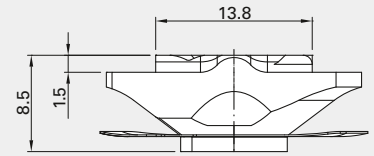
**Application**

Used for 40 mm and 50 mm series extrusions

- Self-centering
- Slip protection (leaf spring)
- Anti-twist safeguard

**Technical Data**

Material: galvanized steel



## Order Code

Description	F <sup>1)</sup>	Order Code	Weight
Drop-in Nut M4	1500 N	TIN 4504	0.010 kg
Drop-in Nut M4, conductive	1500 N	TIN 4594	0.010 kg
Drop-in Nut M5	3000 N	TIN 4505	0.010 kg
Drop-in Nut M5, conductive	3000 N	TIN 4595	0.010 kg
Drop-in Nut M6	4500 N	TIN 4506	0.010 kg
Drop-in Nut M6, conductive	4500 N	TIN 4596	0.010 kg
Drop-in Nut M8	6000 N	TIN 4508	0.010 kg
Drop-in Nut M8, conductive	6000 N	TIN 4598	0.010 kg



## TIN 9990

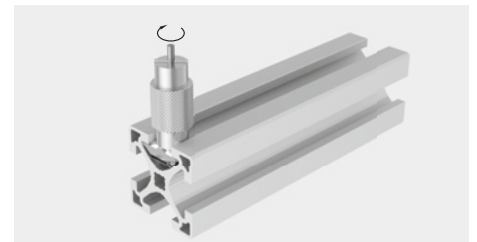
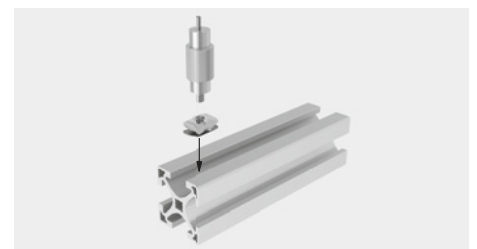
## Inserter

**Application**

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

**Technical Data**

Material: galvanized steel



## Order Code

Description	Order Code	Weight
Inserter	TIN 9990	0.045 kg

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

TIN 60\_ \_

## T-Nut

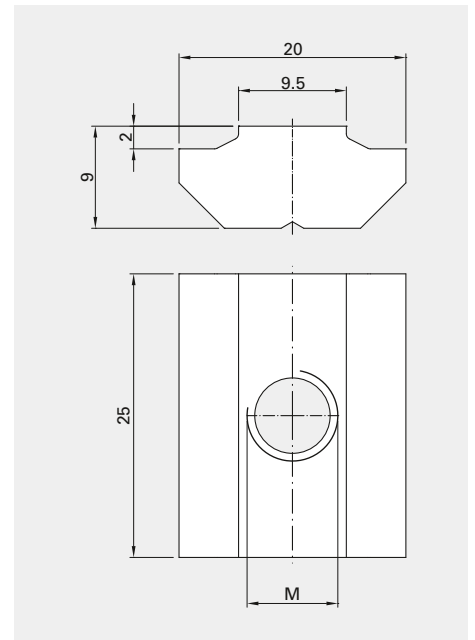
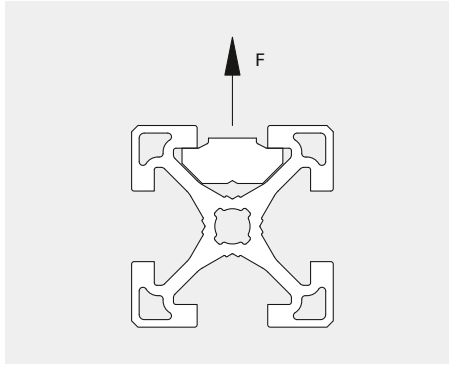
**Application**

For 40 mm series and 50 mm series extrusions

- Self-centering

**Technical Data**

Material: galvanized steel



## Order Code

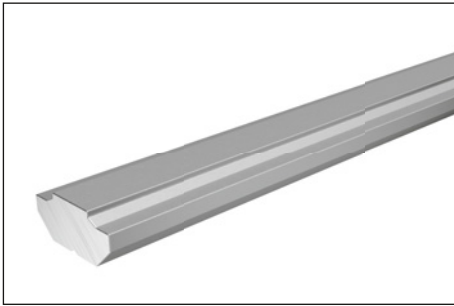
Description	F <sup>1)</sup>	Order Code	Weight
T-Nut M8	7500 N	TIN 6008	0.027 kg
T-Nut M10	7500 N	TIN 6010	0.025 kg

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



## TIN\_000

## T-Nut Bar

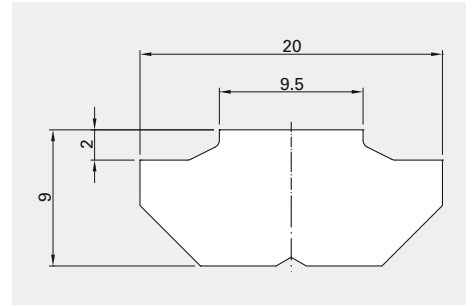


### Application

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

### Technical Data

Material: untreated steel  
Stock length: 1000 or 3030 mm

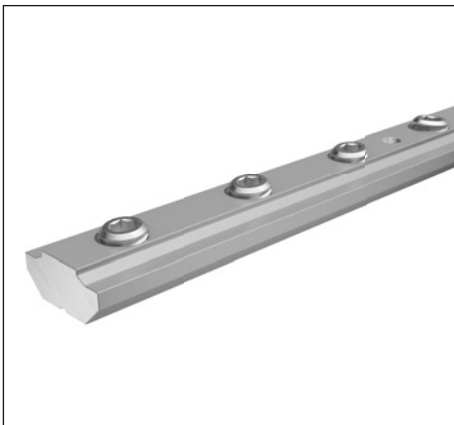


## Order Code

Description	Order Code		Weight
	T-Nut Bar, stock length: 1000 mm	TIN 1000	
T-Nut Bar, stock length: 3030 mm	TIN 3000	3.375 kg	

## TIN 0171

## T-Nut In-Line Fastener

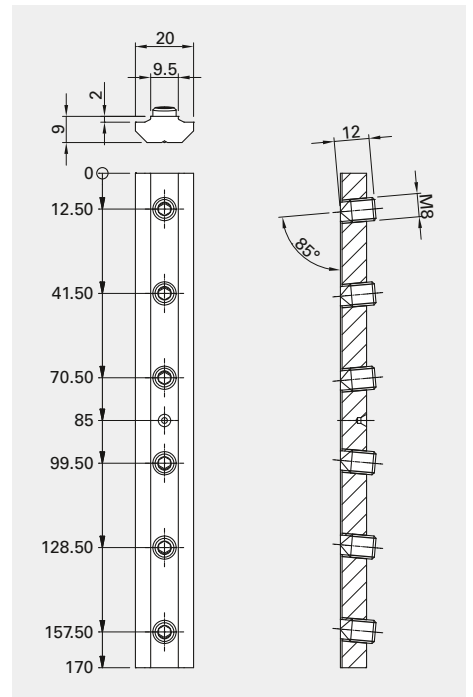


### Application

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

### Technical Data

Material: galvanized steel



## Order Code

Description	Scope of Delivery		Order Code	Weight
	T-Nut In-Line Fastener	Base Part		
	1	6		

Diagram dimensions in mm

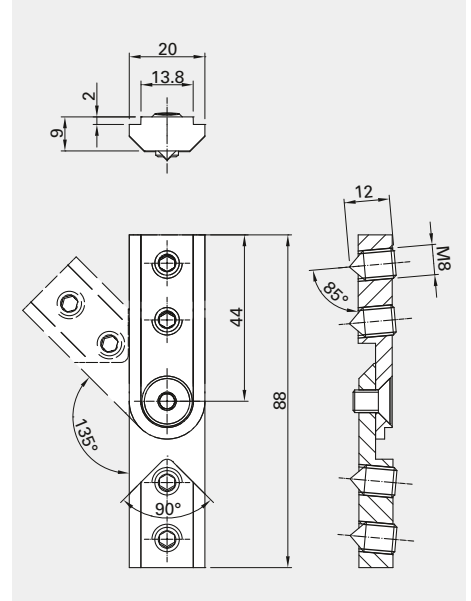
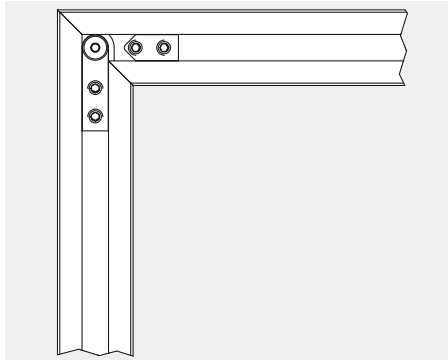
TIN 4545

Miter Fastener



**Application**  
Fasteners for extrusions with miter cuts

**Technical Data**  
Material: galvanized steel



Order Code

Description	Scope of Delivery				Order Code	Weight
	Base Part countersink	Base Part thread	GST M08x012 SPI	SKS M06x010		
Miter Fastener	1	1	4	1	TIN 4545	0.098 kg

TIN\_000

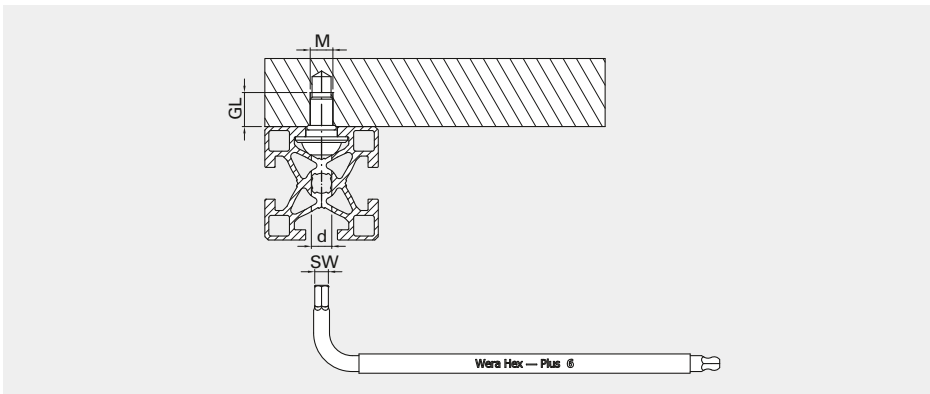
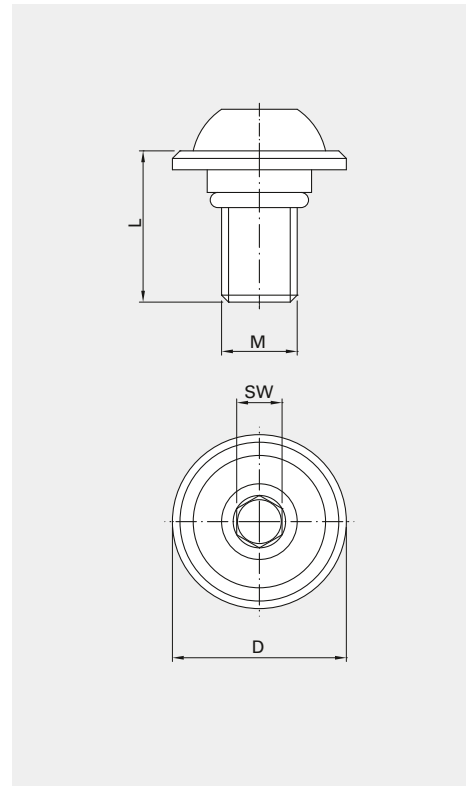
Special Fastener



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

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

**Technical Data**  
Material: galvanized steel, NBR



Order Code

Description	GL	SW	M	d	D	L	Order Code	
							Order Code	Weight
Special Fastener 40	15	5	M08	7	20	20	TIN 4000	0.016 kg
Special Fastener 50	15	6	M10	9	23	20	TIN 5000	0.032 kg