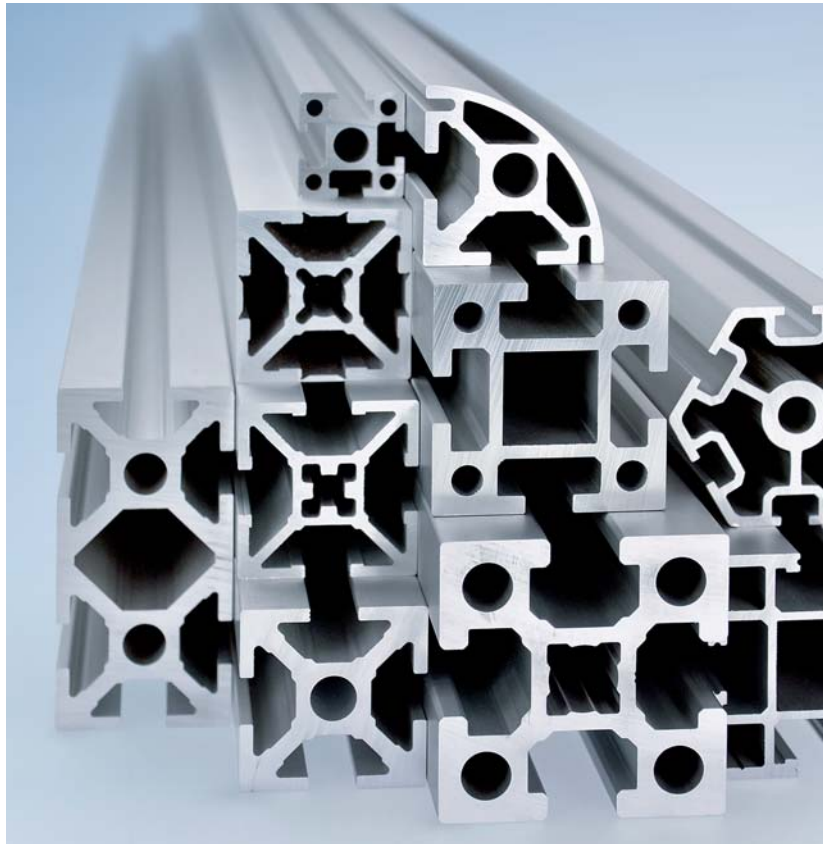




Profile Technology



Profile System. Guarding.
Industrial Workstations. Platforms.

One Construction Kit. Countless Possibilities.



Profile Technology



» Components, modules and solutions for factory automation. «

Conveyor Technology



Maschinenbau Kitz, the parent company of the mk Technology Group, was founded in 1966 in Troisdorf, near Bonn, Germany. mk is one of the leading suppliers of components, modules and systems for factory automation.

Its portfolio of profile technology includes workstation set-ups, guarding and custom-designed machine frames and platforms, in addition to the aluminium profile system on which these are based.

System Solutions



In terms of conveyor technology, mk offers an extensive range of standardised conveyor types, supplemented with linear technology for precision handling applications.

Furthermore, mk is at hand to assist its customers with system solutions, from project planning and design to the commissioning of complete transfer systems.

Our services round off the product portfolio and include repairs, maintenance and a spare parts supply service.

Services



With our dense production, sales and service network consisting of subsidiaries, sales partners and external service providers, we guarantee our customers fast access to our expert advice and outstanding products.

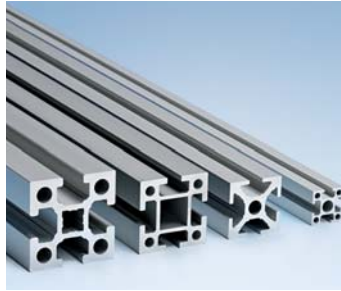
Overview of Sections



Notes

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Explanation of symbols
Shop and CAD data

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Profiles

Choosing a profile
Profile machining
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2



Connecting Elements

Choosing a connection
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Plate fasteners
Internal fasteners
Corner block joints
Profile clamps
Nuts/T-nuts
Standard parts

3



Covers/ Wear Strips

End caps
Closure strips
Cover profiles
Wear strips
Brush strips

4



Floor Elements

Levelling feet
Plates for levelling feet
Floor plates
Base plates
Support brackets
Fixed and swivel casters

5



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Guarding

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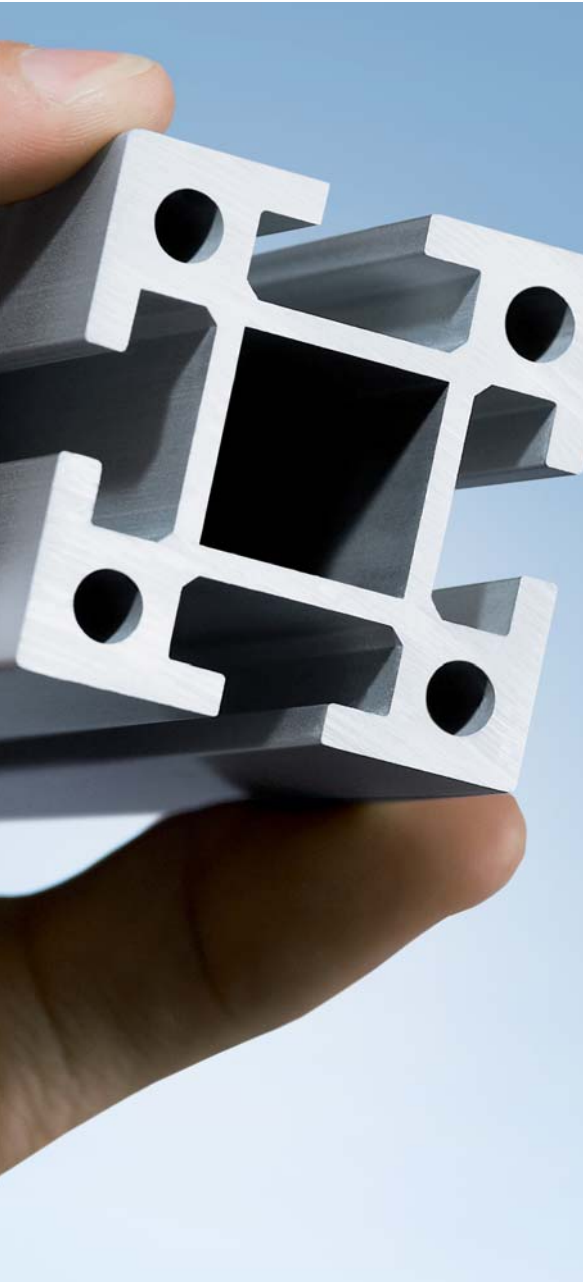
Application Examples

11

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Benefits of mk Profile Technology

1



» mk profile technology offers maximum flexibility and reliability. «

Our profile technology consists of the proven, versatile mk profile system as the common base technology as well as the workshop and industrial applications that are based on this system.

Profile System

The modular mk profile system has the right profile, the right connection technology and the right accessories for every application. The system's flexible modular design provides virtually endless possibilities for custom-designed structures and solutions.

Guarding

Our guarding range is based on the mk profile system and offers functional machine housings, enclosures and protective fences. Their flexible, modular design ensures that systems, machines and production areas can be secured effectively and economically.

Workstation Set-Ups

Industrial workstations built from mk's profile system offer maximum ergonomics and functionality to optimise your employees' productivity. These workstations can be expanded into complete assembly lines including workstation inter-linking to ensure optimised process flows.

Machine Frames and Platforms

Frames for machines and other systems are custom-manufactured and optimised for the customer's particular requirements and loads. Platforms with stairs offer safe access to various levels, whether mobile or stationary, to allow employees to maintain or work on machines and systems.

Benefits of mk Profile Technology

- Comprehensive profile system for maximum flexibility in all industries and applications
- No welding, abrasive grinding or painting necessary, unlike steel structures
- Sturdy profiles that combine high load capacity with attractive design
- Profiles and components can be reused
- 1 mm edge radius for virtually gap-free connections between profiles
- Sturdy and diverse connection technology with standard screws
- Online profile system shop with free CAD data
- Machine housings, enclosures and protective fences for effective and highly functional guarding of machines and systems
- Ergonomic industrial workstations built from mk profiles can be interlinked into assembly lines for maximum productivity
- Stairs and platforms for safe access to machines or production areas
- High degree of standardisation for short planning, design and assembly times
- Degree of assembly can be selected, from individual pieces, to assemblies, to custom-built frames and complete applications
- Expert on-site consulting by mk sales engineers

Profile System



Guarding



Industrial Workstations



Stairs and Platforms



Explanation of Symbols

1

Profile Series

These symbols indicate the profile series in which a connecting element or accessory component can be used. Connecting elements and accessory components without a series symbol can be used in all profile series.

 Series 25

 Series 40

 Series 40, limited compatibility with Series 50

 Series 50, limited compatibility with Series 40

 Series 50


 Series 60



Slot Widths

These symbols indicate the slot width of the profile or profile series in millimetres.



Screws

 These symbols indicate the screws to be used (thread x length in mm). If screws compliant with a specific standard are required, this is also indicated.



Cross References

The cross reference symbol with a corresponding page number refers you to complimentary products or information that can be found elsewhere in the catalogue.



Curved Profiles

This symbol identifies select profiles that are also available in a curved variant. The number indicates the minimum possible inner radius in millimetres. The profiles can only be bent along the narrow side of the profile (horizontal bending axis).



ESD (Electrostatic Discharge)

Items labelled with the ESD symbol have a discharging or conductive design and are therefore suitable for used in ESD-sensitive areas or for creating ESD protection zones. These products guarantee a resistance to earth from the contact point of $< 10^{11}$ ohms. Common items include nuts/T-nuts, which have a conductive design with $< 10^2$ ohms.

Item Number and Name

When placing an order, please always provide the item number and the product name. Our profiles can be ordered in one of our stock lengths or cut to a custom length. The last four digits indicate the desired length in mm.

Name
Profile mk 2040.01

Item number

54.01.

Length in mm (4 digits)

Profile ID number



www.aluprofil.shop

24/7 Online Shop*

All products in our proven profile system are available to you after a one-time registration.

- Accessible from a computer, tablet or smartphone
- Products clearly organised into categories
- Images and product descriptions help you make your selection
- Search by name or item number
- Direct access to CAD data

CAD Data

Reduce your planning and design time by using our CAD parts library.

- Online in our shop or from the Cadenas Part Community
- Free access to CAD data
- Native and neutral CAD formats for easy processing
- 3D models or 2D CAD drawings
- Can be imported directly into customers' CAD programs

*Only for commercial customers in Germany and Austria

Section 2 Profiles

2



Choosing a Profile

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Profile Machining

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Overview of Profiles with Properties

Construction Profiles

	Area A [mm ²]	Mass m [kg/m]	Moments I _x I _y [cm ⁴]	
Series 40 Profiles				
mk 2040.31 (extra light duty) 54.31.	561	1.50	9.69	9.69
mk 2040.40 (light duty) 54.40.	606	1.64	10.50	10.50

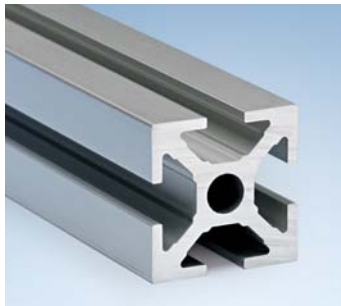
Overview of Profiles with Properties

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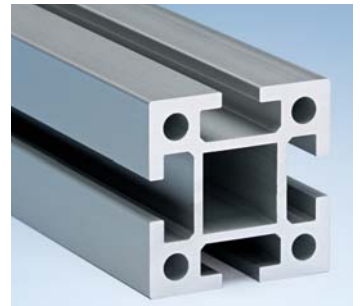
Series 25 Profiles

Basic profiles	38
Series 25/40 adapter profiles	42
Profiles for fastening panelling	44



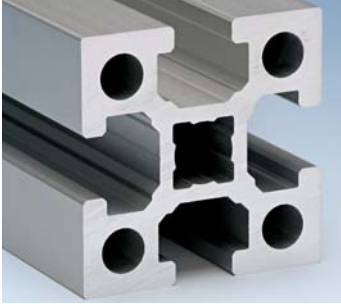
Series 40 Profiles

Basic profiles	46
Cleanroom profiles	52
Profiles for fastening panelling	55



Series 50 Profiles

Basic profiles	58
Cleanroom profiles	62
Profiles for telescoping	63



Series 60 Profiles

Basic profiles

64



Foamed combined profiles 67



Application Profiles

The application profiles are included in the profile overview, and some are addressed in more detail in various sections for specific topics; see the cross references in the profile overview.

Choosing a Profile










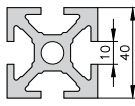
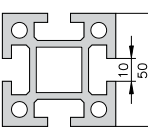
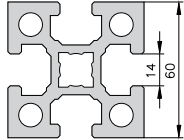
2

Features of mk Aluminium Profiles

With a large selection of profiles, divided into four series with grid dimensions of 25, 40, 50 and 60 mm, we have the perfect profile for any application and for all load-capacity and design requirements. Our profiles are made from a high-quality aluminium alloy with an extremely durable anodised coating and employ connection technology designed to ensure maximum stability – for sturdiness and dependability that is never in doubt, and without

compromising on design. They can be used to construct anything from light-duty fixtures, structures and frames to load-bearing structures for machine construction applications. In addition to construction profiles, our portfolio also includes application profiles for a range of different purposes, e.g. for guarding and workstation set-ups and for conveyor frames and side rails for use in conveyor technology.

Overview of Profile Series

				
	Series 25	Series 40	Series 50	Series 60
Slot width				
Designs	Normal	Normal, light duty, extra light duty	Normal, light duty	Normal
Material	EN AW 6063 T66 AlMgSi 0.5 F25	EN AW 6063 T66 AlMgSi 0.5 F25	EN AW 6005A T6 AlMgSi 0.7 F27*	EN AW 6005A T6 AlMgSi 0.7 F27*
Applications	Light-duty frames, showcases, cabinets, test set-ups, measurement and test units, electronics housings	Moderate to light-duty machine frames, guarding, industrial workstations, exhibit construction, work platforms	Machine frames, load-bearing structures	Machine frames under very high loads, gantries
Grid dimensions	 25 x 25 mm	 40 x 40 mm	 50 x 50 mm	 60 x 60 mm
Maximum dimensions	25 x 150 mm or 50 x 50 mm	160 x 160 mm	50 x 200 mm or 100 x 100 mm	120 x 240 mm
Standard fasteners	M5	M8	M8	M12

*May differ in certain cases

Deflection Calculator

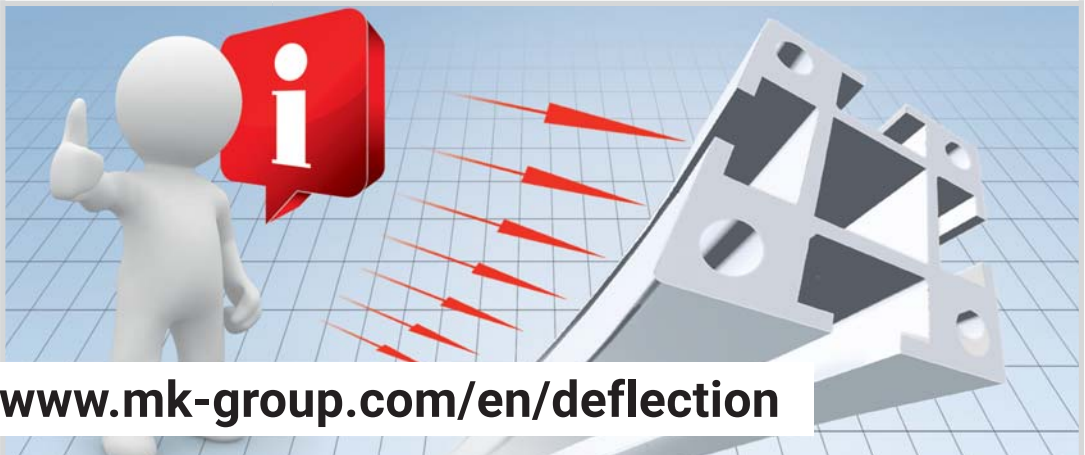
Will your profile structure withstand the loads it is meant to support? Find out quickly and conveniently using our online tool for calculating the deflection of mk profiles as a function of load. The following formulas are used for the calculation.

$$\sigma_b = \frac{M_{bmax}}{W_{x,y}}$$

$$S = \frac{R_{p0.2}}{\sigma_b}$$

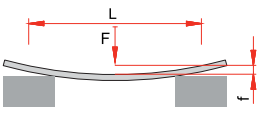
$R_{p0.2} = 200 \text{ N/mm}^2$ (AlMgSi 0.5 F25)

$R_{p0.2} = 215 \text{ N/mm}^2$ (AlMgSi 0.7 F27)



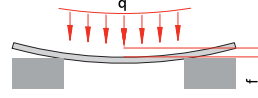
www.mk-group.com/en/deflection

Load scenario 1 (profile on two supports, flexible joints)



$$M_{bmax} = \frac{F \cdot L}{4}$$

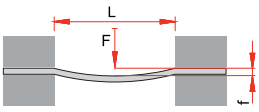
$$f = \frac{F \cdot L^3}{48 \cdot E \cdot I_{x,y}}$$



$$M_{bmax} = \frac{q \cdot L^2}{8}$$

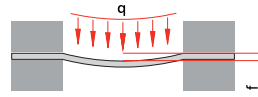
$$f = \frac{5}{384} \cdot \frac{q \cdot L^4}{E \cdot I_{x,y}}$$

Load scenario 2 (profile on two supports, clamped at both ends)



$$M_{bmax} = \frac{F \cdot L}{8}$$

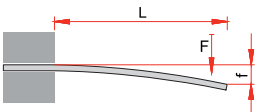
$$f = \frac{F \cdot L^3}{192 \cdot E \cdot I_{x,y}}$$



$$M_{bmax} = \frac{q \cdot L^2}{12}$$

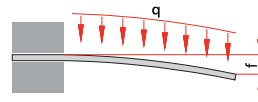
$$f = \frac{q \cdot L^4}{384 \cdot E \cdot I_{x,y}}$$

Load scenario 3 (profile clamped at one end)



$$M_{bmax} = F \cdot L$$

$$f = \frac{F \cdot L^3}{3 \cdot E \cdot I_{x,y}}$$



$$M_{bmax} = \frac{q \cdot L^2}{2}$$

$$f = \frac{q \cdot L^4}{8 \cdot E \cdot I_{x,y}}$$

Choosing a Profile

2

Standards and Basic Information

The profiles are made from extruded aluminium and are available in a standard length of 5100 mm. They can also be cut to length. Lengths in excess of the standard length are available on request. All construction profiles are pretreated with the E6 chemical process, which removes grooves and scratches in the surface. The profiles are anodised

with a coating that is approx. 10 µm thick and with colour C0 (natural colour). The coating is resistant to acids and bases (alkali bases up to pH 9.5 and acids up to pH 4). The values shown in the table below are the highest permissible deviations as specified in the standard.

Materials of mk Profiles

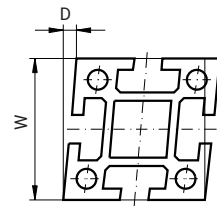
According to DIN EN 755-2

mk generally uses two different materials for its profile technology. AlMgSi 0.5 F25 is used for Series 25 and 40, and AlMgSi 0.7 F27 is primarily used for Series 50 and 60, which exhibits 7% higher strength.

Material name according to DIN EN 573-3			EN AW 6063 T66	EN AW 6005A T6
Material abbreviation according to DIN 1725-1			AlMg0.7Si	AlSiMg(A)
Material number			AlMgSi 0.5 F25	AlMgSi 0.7 F27
Density	ρ	g/cm ³	2.7	2.7
Elastic modulus	E	N/mm ²	70,000	70,000
Tensile strength	Rm	N/mm ²	245	270
0.2% offset yield stress	Rp0.2	N/mm ²	200	215
Elongation at break	A5	%	8	8
Brinell hardness	HB		80	85
Coefficient of thermal expansion (up to 20° C/up to 293° K) (20°–100°C/293°–373°K)	α	1/K	21.8*10 ⁻⁶ 23.2*10 ⁻⁶	21.8*10 ⁻⁶ 23.2*10 ⁻⁶
Thermal conductivity	λ	W/(m*K)	200–220	180–220
Electrical conductivity (20° C/293° K)	κ	m/(Ω *mm ²)	28–34	26–32

Squareness Tolerance*

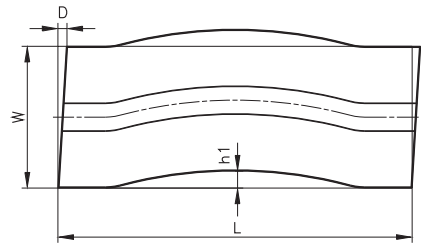
Width W (mm) range		Squareness tolerance for cross section D (mm)
over	up to	
–	40	0.20
40	60	0.30
60	90	0.40
90	120	0.45
120	150	0.55
150	180	0.65
180	210	0.70



Profiles may exhibit web marks. Tolerances for flatness and contour deviations available on request.

Straightness Tolerance*

The straightness tolerance h_1 must not exceed the values in the table for a given length; the deviation must also not exceed 0.3 mm over a distance of 300 mm.



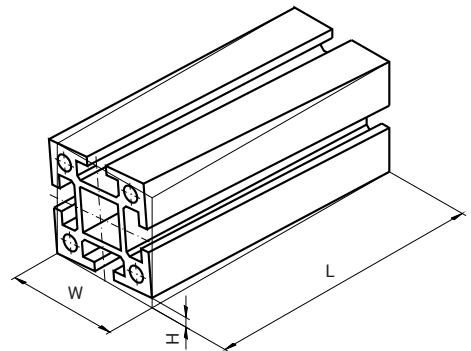
Length L	up to 1000	up to 2000	up to 3000	up to 4000	up to 5000	up to 6000	over 6000
Tolerance h_1	0.7	1.3	1.8	2.2	2.6	3	3.5

Tolerances for Cut Profiles*

Length L	up to 500	up to 1000	up to 2000	up to 6000
Tolerance	± 0.5	± 0.8	± 1.2	± 2.0
Width W	up to 50	up to 100	up to 200	up to 300
Angular tolerance D	0.2 mm	0.4 mm	0.8 mm	1.2 mm

If the length tolerances above are insufficient, optional machining of the profile face is also available.

Twisting



Width W		Twisting tolerance H for lengths L							As agreed
over	up to	up to 1000	over 1000 up to 2000	over 2000 up to 3000	over 3000 up to 4000	over 4000 up to 5000	over 5000 up to 6000	over 6000	
—	25	1.0	1.5	1.5	2.0	2.0	2.0	As agreed	
25	50	1.0	1.2	1.5	1.8	2.0	2.0		
50	75	1.0	1.2	1.2	1.5	2.0	2.0		
75	100	1.0	1.2	1.5	2.0	2.2	2.5		
100	125	1.0	1.5	1.8	2.2	2.5	3.0		
125	150	1.2	1.5	1.8	2.2	2.5	3.0		
150	200	1.5	1.8	2.2	2.6	3.0	3.5		
200	300	1.8	2.5	3.0	3.5	4.0	4.5		

* According to DIN 171615 or DIN EN 12020



Profile Machining

Overview of End Machining

To achieve positive-locked connections, the ends of profiles often need to be machined. For example, bores may have to be drilled for tension plugs, or profiles may need to be mitre-cut. Below are diagrams showing the various end machining options.

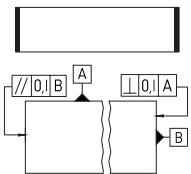
The subsequent section presents the most common end machining option for each profile, along with the item number. Other end machining options are possible and can be delivered on request.

Note

Our online shop and our CAD library let you conveniently select and order end machining options as well as the corresponding CAD data (www.aluprofil.shop).

End Machining Legend

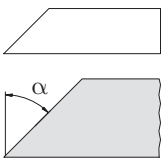
Facing



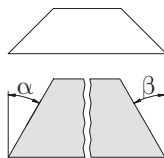
The profile face can also be machined to provide a more exact right angle.

Mitre Cutting

One end



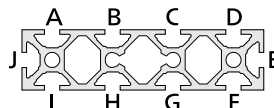
Both ends



For non-square cross sections, mitre cuts are made on the long side as standard. For mitre cuts on both ends, the cuts are always in opposing directions, as shown here. Other mitre cuts according to a drawing are available on request.

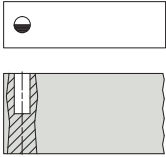
For lateral bores, you have to indicate the positions of the bores, i.e. the particular slots:

Example for mk 2040.06 profile

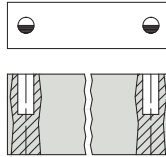


Lateral bores to the profile centre

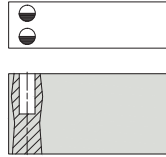
One end



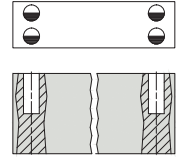
Both ends



2 x on one end

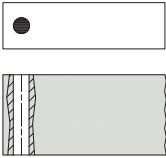


2 x on both ends

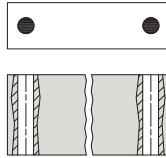


Lateral through bores

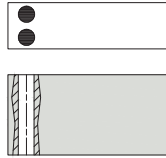
One end



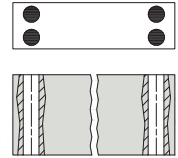
Both ends



2 x on one end

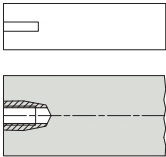


2 x on both ends

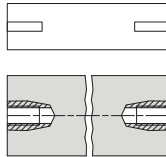


Threads on the face

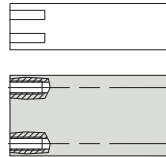
One end



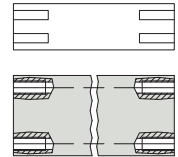
Both ends



2 x or 4 x on one end

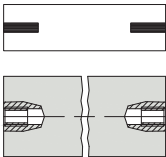


2 x or 4 x on both ends

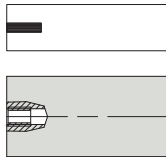


Threaded inserts on the face

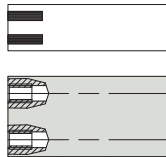
One end



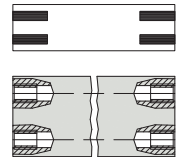
Both ends



2 x or 4 x on one end

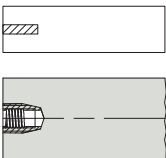


2 x or 4 x on both ends

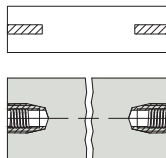


HELICOIL on the face

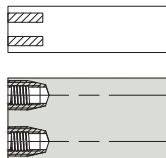
One end



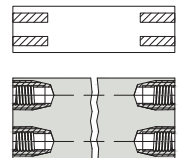
Both ends



2 x or 4 x on one end



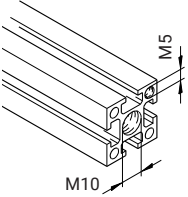
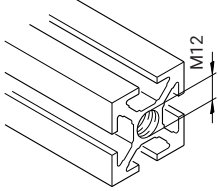
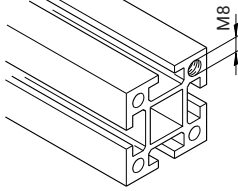
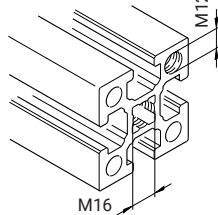
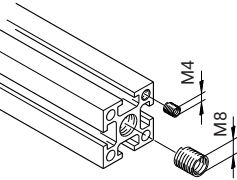
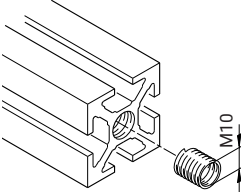
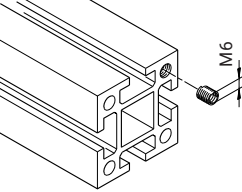
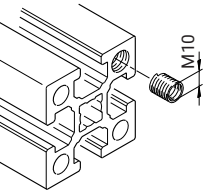
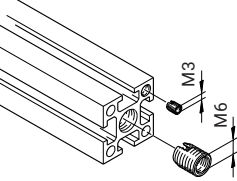
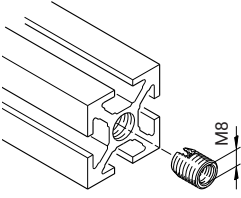
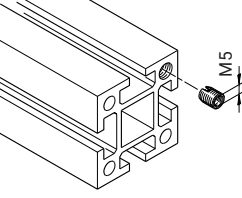
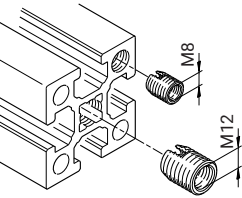
2 x or 4 x on both ends



Profile Machining

2

End Machining on the Face

Series 25	Series 40	Series 50	Series 60
 <p>M5 or M10 thread</p>	 <p>M12 thread M8 for extra light duty</p>	 <p>M8 thread</p>	 <p>M12 or M16 thread Reduced load capacity with M16 thread</p>
 <p>M4 HELICOIL K112030104</p> <p>M8 HELICOIL K112030109</p>	 <p>M10 HELICOIL K112030110</p>	 <p>M6 HELICOIL K112030106</p>	 <p>M10 HELICOIL K112030110</p>
 <p>M3 threaded insert K112030002</p> <p>M6 threaded insert K112030006</p>	 <p>M8 threaded insert K112030008</p>	 <p>M5 threaded insert K112030005</p>	 <p>M8 threaded insert K112030008</p> <p>M12 threaded insert K112030010</p>

End Machining on the Face

Below is an overview of the taps and installation tools needed for end machining, as well as the necessary threaded inserts and HELICOILs. The machining can be done with a hand-held drill. The installation tools are meant to be used by hand.

2

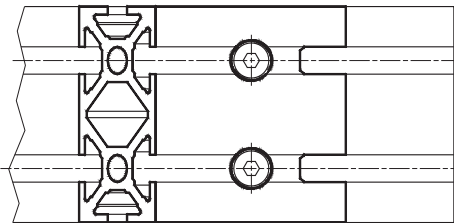
Threaded insert/ HELICOIL		Series	Bore channel ø [mm]	Tool		Thread depth [mm]
M5 thread		25	4.2	M5 tap	K903060005	15
M10 thread		25	8.5	M10 tap	K903060010	30
M3 threaded insert	K112030002	25	4.2	M5x0.5 mm tap, installation tool	K903060105 K902010004	10
M6 threaded insert	K112030006	25	8.5	M9x1 mm tap, installation tool	K903060109 K902010010	15
M4 HELICOIL	K112030104	25	4.2	M4 HELICOIL tap, installation tool	K903060204 K902010204	10
M8 HELICOIL	K112030109	25	8.5	M8 HELICOIL tap, installation tool	K903060208 K902010208	15
M8 thread		40 extra light duty	7.4	M8 forming tap	K903070008	20
M12 thread		40	10.0	M12 tap	K903060012	35
M8 threaded insert	K112030008	40	10.0	M12x1.5 mm tap, installation tool	K903060113 K902010012	20
M10 HELICOIL	K112030110	40	10.0	M10 HELICOIL tap, installation tool	K903060210 K902010210	20
M8 thread		50	7.0	M8 tap	K903060008	25
M5 threaded insert	K112030005	50	7.0	M8x1 mm tap, installation tool	K903060108 K902010008	15
M6 HELICOIL	K112030106	50	7.0	M6 HELICOIL tap, installation tool	K903060206 K902010206	15
M12 thread		60	10.5	M12 tap	K903060012	35
M16 thread		60	14.5	M16 tap	K903060016	45
M8 threaded insert	K112030008	60	10.5	M12x1.5 mm tap, installation tool	K903060113 K902010012	20
M12 threaded insert	K112030010	60	14.5	M16x1.5 mm tap, installation tool	K903060116 K902010016	25
M10 HELICOIL	K112030110	60	10.5	M10 HELICOIL tap, installation tool	K903060210 K902010210	20

Profile Machining

End Machining for Angle Braces

Angle braces are a simple option for lending higher stability to a profile structure under heavy loads. The angle braces are installed using cylinder head screws and nuts, making them suitable for later installation into existing systems. End machining includes the 45° mitre cuts on both ends and the bores for inserting the cylinder head screws. You can choose between angle brace 1, built from the mk 2040.01 profile (40 x 40 mm), and angle brace 2, built from the mk 2040.02 profile (40 x 80 mm), in stock lengths of 200, 300, 400 and 500 mm.

Material: anodised aluminium



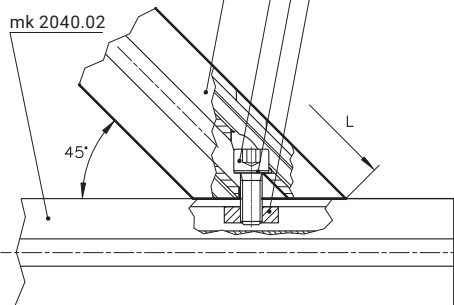
Nut 1 M8, galvanised steel, 34.01.0001

Ribbed washer ø 8.4, galvanised steel, K111010017

Cylinder head screw M8x20, DIN 912, D0912820

mk 2040.02, 5402CA*

mk 2040.02

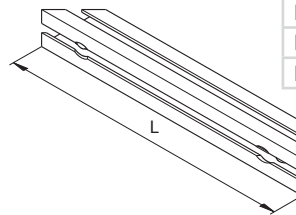


M8x20

Angle brace 01
(profile mk 2040.01)

5401CC

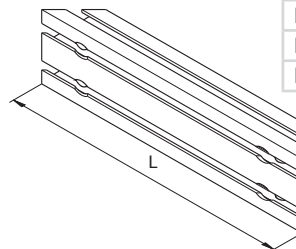
L = 200	5401CC0200
L = 300	5401CC0300
L = 400	5401CC0400
L = 500	5401CC0500

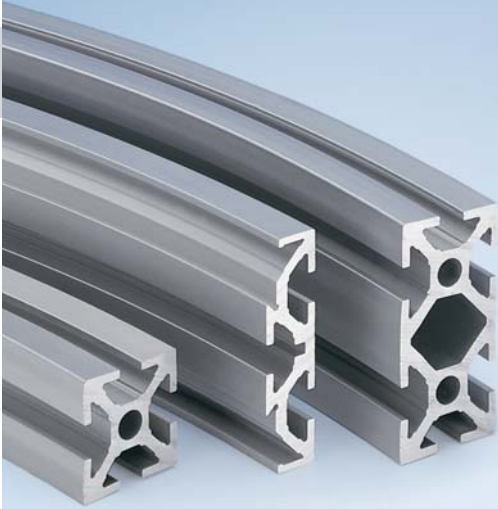


Angle brace 02
(mk 2040.02)

5402CA

L = 200	5402CA0200
L = 300	5402CA0300
L = 400	5402CA0400
L = 500	5402CA0500



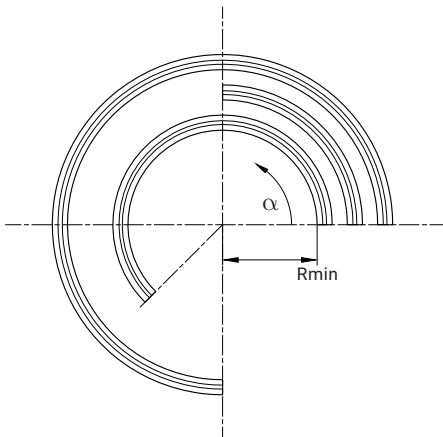


Curved Profiles

Selected profiles are also available in a curved variant. Profiles with this curved option are labelled with the corresponding symbol. The number indicates the minimum inner radius in millimetres. The profiles can only be bent along the narrow side of the profile (horizontal bending axis).

Information required for ordering (example for mk 2040.01 profile)











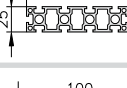

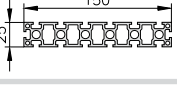
- Profile ID number: 54.01.
- Inner radius R: 250 mm
- Angle α : 180°









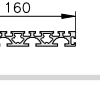


Overview of Profiles with Properties

Construction Profiles

2


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				I _x [cm ⁴]	I _y [cm ⁴]	I _t [cm ⁴]	W _x [cm ³]	W _y [cm ³]	W _p [cm ³]	
Series 25 Profiles										
mk 25.01 25.01.		279	0.75	1.73	1.73	0.40	1.38	1.38	0.38	38
mk 25.31 25.31.		284	0.77	1.73	1.62	0.46	1.42	1.29	0.32	44
mk 25.35 25.35.		275	0.75	1.71	1.68	—	1.38	1.34	—	44
mk 25.37 25.37.		267	0.73	1.32	1.28	—	1.14	1.12	—	45
mk 25.38 25.38.		290	0.79	1.52	1.48	—	1.27	1.25	—	45
mk 25.02 25.02.		501	1.35	12.20	3.30	2.20	4.87	2.64	1.25	39
mk 25.32 25.32.		475	1.29	3.22	12.00	—	2.60	4.81	—	45
mk 25.36 25.36.		462	1.25	3.12	11.90	—	2.58	4.81	—	45
mk 25.39 25.39.		407	1.10	2.05	9.44	—	1.81	3.77	—	45
mk 25.03 25.03.		945	2.55	87.00	6.44	6.53	17.40	5.15	3.03	39
mk 25.22 25.22.		837	2.26	64.30	5.84	—	12.90	4.67	—	40
mk 25.04 25.04.		1390	3.75	280.00	9.58	11.00	37.30	7.66	4.64	39

6	Area A [mm ²]	Mass m [kg/m]	Moments of inertia			Section moduli			Page	
			I _x [cm ⁴]	I _y [cm ⁴]	I _t [cm ⁴]	W _x [cm ³]	W _y [cm ³]	W _p [cm ³]		
Series 25 Profiles										
mk 2025.05 25.05.		816	2.21	22.30	22.30	11.90	8.90	8.90	3.91	39
mk 2025.25 25.25.		482	1.30	9.99	9.99	—	3.76	3.76	—	45
mk 2025.18 25.18.		376	1.02	3.72	5.06	—	1.77	2.14	—	45
mk 2025.20 25.20.		783	2.12	15.50	15.50	8.62	6.20	5.45	2.13	41
mk 2025.21 25.21.		1100	2.98	43.60	43.60	27.20	12.50	12.50	5.00	41
Series 25/40 Adapter Profiles										
mk 2025.41 25.41.		377	1.02	6.20	1.49	—	3.10	1.39	—	42
mk 2025.42 25.42.		717	1.94	42.50	2.97	—	10.60	2.88	—	42
mk 2025.43 25.43.		1060	2.86	136.00	4.44	—	22.70	4.37	—	43
mk 2025.44 25.44.		1400	3.77	315.00	5.90	—	39.30	5.86	—	43

Overview of Profiles with Properties

Construction Profiles

2

		Area A [mm ²]	Mass m [kg/m]	Moments of inertia			Section moduli			Page
				I _x [cm ⁴]	I _y [cm ⁴]	I _t [cm ⁴]	W _x [cm ³]	W _y [cm ³]	W _p [cm ³]	
Series 40 Profiles										
mk 2040.31 (extra light duty) 54.31.		561	1.50	9.69	9.69	0.66	4.84	4.84	0.53	46
mk 2040.40 (light duty) 54.40.		606	1.64	10.50	10.50	0.79	5.26	5.26	0.57	47
mk 2040.01 54.01.		742	2.00	12.10	12.10	1.17	6.06	6.06	0.98	47
mk 2040.92 54.92.		623	1.68	11.00	10.60	1.83	5.40	5.28	0.74	52
mk 2040.93 54.93.		634	1.72	11.00	11.00	2.91	5.40	5.40	1.28	52
mk 2040.94 54.94.		634	1.72	11.40	10.50	3.86	5.73	5.28	1.19	52
mk 2040.95 54.95.		647	1.75	11.00	11.40	6.04	5.41	5.74	1.40	53
mk 2040.96 54.96.		659	1.78	11.50	11.50	—	5.74	5.74	—	53
mk 2040.110 54.110.		535	1.44	7.41	7.68	—	3.15	3.21	—	53
mk 2040.16 54.16.		463	1.25	5.28	6.22	—	2.87	3.11	—	53
mk 2040.21 54.21.		685	1.84	11.00	10.20	2.60	5.42	5.10	1.28	55
mk 2040.11 54.11.		696	1.88	11.10	11.10	3.36	5.50	5.50	1.35	55

	Area A [mm ²]	Mass m [kg/m]	Moments of inertia			Section moduli			Page	
			I _x [cm ⁴]	I _y [cm ⁴]	I _t [cm ⁴]	W _x [cm ³]	W _y [cm ³]	W _p [cm ³]		
Series 40 Profiles										
mk 2040.14 54.14. 	604	1.62	8.30	8.30	—	4.75	4.75	—	56	
mk 2040.15 54.15. 	561	1.51	7.85	7.85	—	4.54	4.54	—	56	
mk 2040.52 (extra light duty) 54.52. 	988	2.67	64.10	17.50	—	16.00	8.76	—	48	
mk 2040.41 (light duty) 54.41. 	1160	2.85	68.90	18.70	6.65	17.20	9.33	2.70	48	
mk 2040.02 54.02. 	1340	3.62	83.30	22.60	12.60	20.80	11.30	5.16	49	
mk 2040.100 54.100. 	1090	2.94	19.70	70.80	12.90	9.63	17.70	2.61	53	
mk 2040.101 54.101. 	1100	2.97	19.70	72.70	14.10	9.64	18.00	2.66	53	
mk 2040.104 54.104. 	1140	3.07	20.60	75.50	30.60	18.80	10.30	3.26	53	
mk 2040.22 54.22. 	1270	3.43	21.50	75.50	18.80	10.70	18.90	3.37	56	
mk 2040.12 54.12. 	1270	3.43	21.40	77.90	22.00	10.90	19.90	2.59	56	
mk 2040.05 54.05. 	1740	4.69	257.00	31.60	19.70	43.70	15.80	6.24	50	
mk 2040.06 54.06. 	2320	6.26	576.00	41.40	37.50	72.00	20.70	11.20	50	


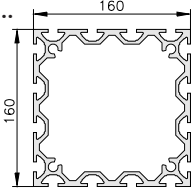
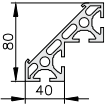
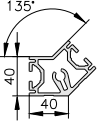
Overview of Profiles with Properties

Construction Profiles

2



	Area A [mm ²]	Mass m [kg/m]	Moments of inertia			Section moduli			Page	
			I _x [cm ⁴]	I _y [cm ⁴]	I _t [cm ⁴]	W _x [cm ³]	W _y [cm ³]	W _p [cm ³]		
Series 40 Profiles										
mk 2040.45 (light duty) 54.45.		1760	4.75	127.90	128.00	53.70	31.90	31.90	9.88	49
mk 2040.03 54.03.		2060	5.57	150.00	150.00	88.70	37.40	37.40	12.30	49
mk 2040.73 54.73.		2110	5.72	150.00	150.00	80.50	37.10	37.40	12.30	50
mk 2040.109 54.109.		1860	5.04	138.00	138.00	145.00	34.50	34.50	7.47	53
mk 2040.46 54.46.		2020	5.44	145.00	146.00	79.40	35.60	36.40	9.27	57
mk 2040.13 54.13.		1970	5.32	142.00	142.00	—	36.00	36.00	—	57
mk 2040.07 54.07.		2580	6.96	441.00	208.00	146.00	73.40	52.10	18.20	50
mk 2040.08 54.08.		3500	9.46	949.00	272.00	321.00	119.00	68.00	29.00	51
mk 2040.10 54.10.		3060	8.26	585.00	585.00	312.00	97.50	97.50	31.80	51

	Area A [mm ²]	Mass m [kg/m]	Moments of inertia			Section moduli			Page
			I _x [cm ⁴]	I _y [cm ⁴]	I _t [cm ⁴]	W _x [cm ³]	W _y [cm ³]	W _p [cm ³]	
Series 40 Profiles									
mk 2040.09 54.09. 	4220	11.40	—	—	—	—	—	—	51
mk 2040.04 54.04. 	1340	3.61	71.80	71.80	6.51	18.80	18.80	3.00	57
mk 2040.19 54.19. 	943	2.54	22.10	30.50	—	6.64	8.10	—	57


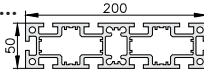
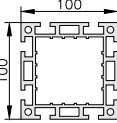
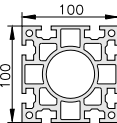
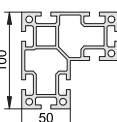
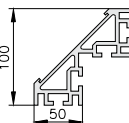
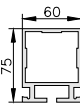

Overview of Profiles with Properties

Construction Profiles

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	Area A [mm ²]	Mass m [kg/m]	Moments of inertia			Section moduli			Page	
			I _x [cm ⁴]	I _y [cm ⁴]	I _t [cm ⁴]	W _x [cm ³]	W _y [cm ³]	W _p [cm ³]		
Series 50 Profiles										
mk 2001 51.01.		542	1.49	14.30	2.67	—	5.70	1.82	—	59
mk 2030 51.30.		394	1.06	3.12	4.45	—	2.08	2.96	—	59
mk 2002 (extra light duty) 51.02.		693	1.75	19.60	19.60	—	7.83	7.83	—	59
mk 2014 (light duty) 51.14.		760	1.98	21.20	21.20	2.96	8.51	8.51	1.91	59
mk 2000 51.00.		1080	2.85	29.90	29.90	5.23	12.00	12.00	2.85	59
mk 2019 51.19.		1100	3.00	30.60	30.00	—	12.10	11.90	—	62
mk 2018 51.18.		1110	3.00	30.60	30.60	—	12.10	12.10	—	62
mk 2017 51.17.		1120	3.03	30.60	31.30	16.10	12.10	12.50	2.70	62
mk 2003 51.03.		762	2.00	14.00	14.00	—	6.49	6.49	—	59
mk 2023 51.23.		1400	3.78	89.30	39.60	—	23.80	15.80	—	60
mk 2004 51.04.		1810	4.87	200.00	55.40	24.40	40.00	22.10	6.39	60
mk 2006 51.06.		2600	7.00	597.00	80.50	49.20	79.70	32.10	13.20	61


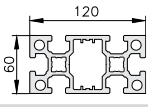
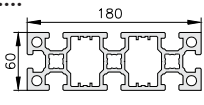
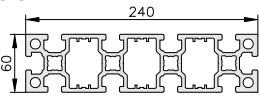
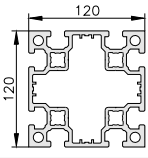
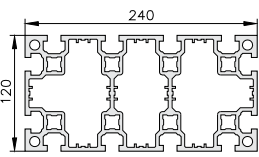
	Area A [mm ²]	Mass m [kg/m]	Moments of inertia			Section moduli			Page
			I _x [cm ⁴]	I _y [cm ⁴]	I _t [cm ⁴]	W _x [cm ³]	W _y [cm ³]	W _p [cm ³]	
Series 50 Profiles									
mk 2008 51.08. 	3370	9.09	1300.00	107.00	72.70	130.00	42.70	17.50	61
mk 2005 (light duty) 51.05. 	2650	7.00	335.00	335.00	153.00	67.00	67.00	18.10	60
mk 2011 51.11. 	3670	9.70	383.00	383.00	226.00	76.70	76.70	26.50	61
mk 2009 51.09. 	2320	6.27	239.00	239.00	—	42.00	42.00	—	60
mk 2072 51.72. 	1710	4.62	152.00	152.00	—	28.70	28.70	—	61
mk 2031 51.31. 	1120	2.85	79.20	55.60	—	23.20	18.50	—	63
mk 2033 51.33. 	554	1.50	5.22	27.70	—	4.94	9.24	—	63


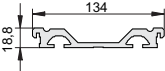
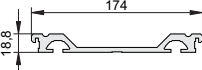
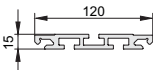
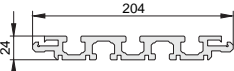
Overview of Profiles with Properties

Construction Profiles

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
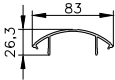
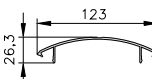
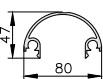
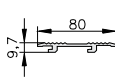
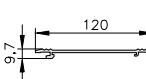
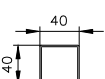
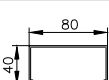


	Area A [mm ²]	Mass m [kg/m]	Moments of inertia			Section moduli			Page
			I _x [cm ⁴]	I _y [cm ⁴]	I _t [cm ⁴]	W _x [cm ³]	W _y [cm ³]	W _p [cm ³]	
Series 60 Profiles									
mk 2060.01 60.01. 	1600	4.31	60.20	60.20	7.18	20.00	20.00	3.05	65
mk 2060.02 60.02. 	2580	6.95	404.00	103.00	50.20	67.30	34.50	9.13	65
mk 2060.03 60.03. 	3540	9.57	1210.00	147.00	70.70	134.00	48.90	22.30	65
mk 2060.04 60.04. 	4520	12.20	2660.00	190.00	155.00	221.00	63.30	25.60	65
mk 2060.05 60.05. 	3800	10.30	660.00	660.00	225.00	110.00	110.00	31.90	66
mk 2060.07 60.07. 	6700	18.10	4090.00	1180.00	591.00	340.00	169.00	58.30	66












	Area A [mm ²]	Mass m [kg/m]	Moments of inertia			Section moduli			Page
			I _x [cm ⁴]	I _y [cm ⁴]	I _t [cm ⁴]	W _x [cm ³]	W _y [cm ³]	W _p [cm ³]	
Connection Profiles for Foamed Combined Profiles									
mk 2040.72 54.72. 	1140	3.09	—	—	—	—	—	—	68
mk 2040.90 54.90. 	1340	3.64	—	—	—	—	—	—	69
mk 2067 51.67. 	935	2.48	112.00	2.25	—	18.6	2.80	—	70
mk 2060.41 60.41. 	2240	6.04	718.00	12.70	—	70.40	10.20	—	71

Overview of Profiles with Properties

Application Profiles

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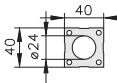
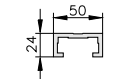
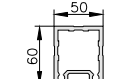
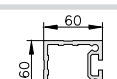
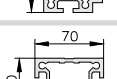
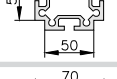
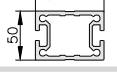
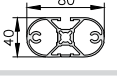
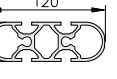
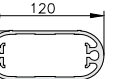
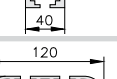
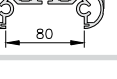
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Cover Profiles									
mk 2040.43 54.43. 	151	0.41	—	—	—	—	—	—	186
mk 2040.42 54.42. 	251	0.68	—	—	—	—	—	—	186
mk 2040.44 54.44. 	316	0.85	—	—	—	—	—	—	186
mk 2040.32 54.32. 	464	1.26	—	—	—	—	—	—	186
mk 2040.67 54.67. 	289	0.78	—	—	—	—	—	—	187
mk 2040.85 54.85. 	344	0.93	—	—	—	—	—	—	187
mk 2040.50 54.50. 	189	0.51	—	—	—	—	—	—	194
mk 2040.51 54.51. 	249	0.67	—	—	—	—	—	—	194
mk 2050 51.50. 	158	0.43	—	—	—	—	—	—	194
mk 2051 51.51. 	203	0.56	—	—	—	—	—	—	194





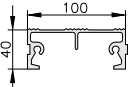
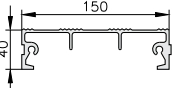
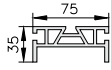
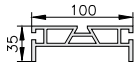
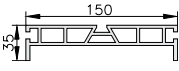

	Area A [mm ²]	Mass m [kg/m]	Moments of inertia			Section moduli			Page
			I _x [cm ⁴]	I _y [cm ⁴]	I _t [cm ⁴]	W _x [cm ³]	W _y [cm ³]	W _p [cm ³]	
Closure Strips									
mk 2225 52.25. 	29	0.08	–	–	–	–	–	–	146
mk 2060.30 60.30. 	55	0.15	–	–	–	–	–	–	146
Profiles for Panelling									
mk 2206 52.06. 	52	0.14	–	–	–	–	–	–	238
mk 2207 52.07. 	102	0.28	–	–	–	–	–	–	238
mk 2203 52.03. 	130	0.37	–	–	–	–	–	–	238
mk 2210 52.10. 	93	0.25	–	–	–	–	–	–	238
mk 2211 52.11. 	174	0.47	–	–	–	–	–	–	238
mk 2214 52.14. 	91	0.25	–	–	–	–	–	–	238
mk 2215 52.15. 	174	0.47	–	–	–	–	–	–	238
mk 2040.60 54.60. 	120	0.32	–	–	–	–	–	–	243
mk 2220 52.20. 	119	0.32	–	–	–	–	–	–	246

Overview of Profiles with Properties

Application Profiles

2

	Area A [mm ²]	Mass m [kg/m]	Moments of inertia			Section moduli			Page	
			I _x [cm ⁴]	I _y [cm ⁴]	I _t [cm ⁴]	W _x [cm ³]	W _y [cm ³]	W _p [cm ³]		
Profiles for Industrial Workstations										
mk 2040.36 54.36.		1050	2.83	17.50	17.50	27.20	8.75	8.75	8.02	306
mk 2040.37 54.37.		426	1.17	2.74	14.60	—	1.09	9.73	—	307
mk 2040.38 54.38.		933	2.52	43.10	32.40	26.00	13.60	13.00	3.65	307
mk 2040.39 54.39.		1110	3.00	49.90	49.90	28.60	16.30	16.30	4.18	307
mk 2040.74 54.74.		1300	3.50	74.30	56.40	32.80	21.20	18.70	4.83	307
mk 2040.75 54.75.		1120	3.01	68.40	38.60	30.80	27.30	11.00	4.04	307
mk 2040.23 54.23.		785	2.12	42.60	12.00	—	10.70	5.90	—	308
mk 2040.34 54.34.		1310	3.56	140.00	24.10	28.30	23.50	12.00	4.67	308
mk 2040.30 54.30.		1590	4.29	234.00	67.10	—	39.10	21.30	—	308
mk 2040.33 54.33.		1170	3.15	162.00	14.00	—	27.30	9.66	—	308
mk 2040.70 54.70.		1310	3.53	—	—	—	—	—	—	309
mk 2040.35 54.35.		593	1.60	19.20	3.16	—	6.40	2.50	—	308

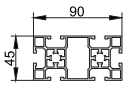
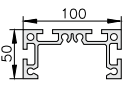
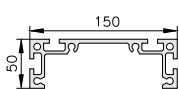
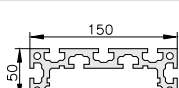
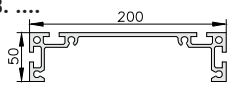
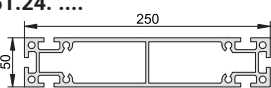
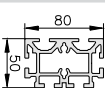
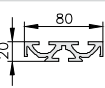
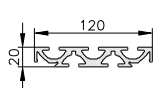
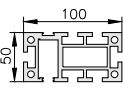
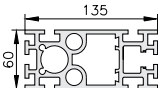
	Area A [mm ²]	Mass m [kg/m]	Moments of inertia			Section moduli			Page	
			I _x [cm ⁴]	I _y [cm ⁴]	I _t [cm ⁴]	W _x [cm ³]	W _y [cm ³]	W _p [cm ³]		
Profiles for Sliding Doors and Windows										
mk 2240 52.40.		173	0.47	–	–	–	–	–	–	229
mk 2241 52.41.		248	0.67	–	–	–	–	–	–	229
mk 2245 52.45.		569	1.54	14.40	12.70	–	4.86	6.33	–	218/ 294
mk 2244 52.44.		321	0.87	–	–	–	–	–	–	271
Profiles for Stairs and Platforms										
mk 2040.68 54.68.		878	2.37	–	14.2	–	–	8.71	–	317
mk 2040.69 54.69.		1063	2.87	–	16.8	–	–	11.74	–	317
Profiles for Conveyor Technology*										
mk 2075 51.75.		830	2.24	49.60	6.81	–	13.20	5.34	–	CT
mk 2100 51.76.		980	2.65	103.00	8.00	–	20.60	6.49	–	CT
mk 2150 51.77.		1370	3.70	607.00	10.50	–	40.90	8.97	–	CT
mk 2045.41 45.41.		563	1.52	11.20	11.20	–	5.00	5.00	–	CT

* See conveyor technology catalogue (CT)

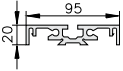
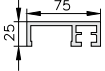
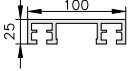
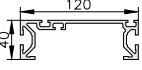
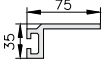
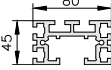
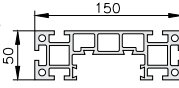



Overview of Profiles with Properties

Application Profiles

2

	Area A [mm ²]	Mass m [kg/m]	Moments of inertia			Section moduli			Page	
			I _x [cm ⁴]	I _y [cm ⁴]	I _t [cm ⁴]	W _x [cm ³]	W _y [cm ³]	W _p [cm ³]		
Profiles for Conveyor Technology*										
mk 2045.42 45.42. 	956	2.58	79.20	19.80	—	17.60	8.80	—	CT	
mk 2026 51.26. 	1310	3.56	172.00	32.80	—	34.50	10.30	—	CT	
mk 2027 51.27. 	1520	4.10	476.00	37.40	—	63.50	11.00	—	CT	
mk 2007 51.07. 	2381	6.42	622.00	48.70	5.07	83.00	27.40	4.02	CT	
mk 2028 51.28. 	1710	4.64	969.00	40.90	—	96.90	11.50	—	CT	
mk 2024 51.24. 	3140	8.48	2210.00	121.00	—	177.00	48.70	—	CT	
mk 2251 52.51. 	1340	3.62	81.80	35.80	—	20.40	13.30	—	CT	
mk 2040.80 54.80. 	679	1.83	2.40	36.30	—	2.76	9.06	—	CT	
mk 2040.86 54.86. 	1074	2.90	122.00	4.12	—	20.3	4.47	—	CT	
mk 2010 51.10. 	1800	4.87	193.00	51.40	10.60	38.30	19.90	4.89	CT	
mk 2012 51.12. 	2840	7.67	502.00	118.00	68.40	71.90	39.40	10.20	CT	

* See conveyor technology catalogue (CT)

	Area A [mm ²]	Mass m [kg/m]	Moments of inertia			Section moduli			Page	
			I _x [cm ⁴]	I _y [cm ⁴]	I _t [cm ⁴]	W _x [cm ³]	W _y [cm ³]	W _p [cm ³]		
Profiles for Conveyor Technology*										
mk 2254 52.54.		767	2.08	56.60	2.88	—	11.90	2.44	—	CT
mk 2065 51.65.		627	1.68	39.80	4.23	—	11.70	4.63	—	CT
mk 2066 51.66.		877	2.36	98.70	6.15	—	19.70	6.40	—	CT
mk 2255 52.55.		906	2.45	182.00	16.50	—	29.00	6.27	—	CT
mk 2086 51.86.		616	1.64	—	—	—	—	—	—	CT
mk 2060 51.60.		1245	3.24	88.10	25.80	—	22.00	12.50	—	CT
mk 2061 51.61.		2280	6.17	595.00	57.60	25.90	79.30	26.30	8.76	CT
mk 2238 52.38.		148	0.40	—	—	—	—	—	—	CT
mk 2239 52.39.		138	0.37	—	—	—	—	—	—	CT
mk 2260 52.60.		428	1.16	1.75	7.5	—	1.36	3.54	—	CT

* See conveyor technology catalogue (CT)



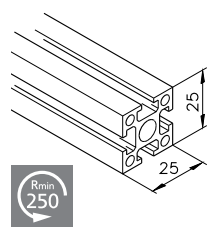
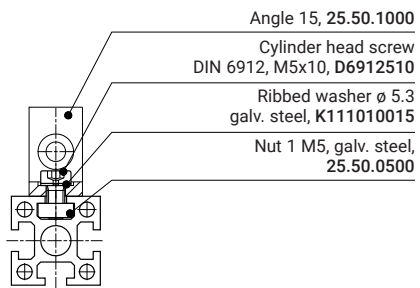
Series 25 Profiles

Basic Profiles

Series 25 profiles are based on a grid dimension of 25 x 25 mm. They are generally used for light-duty frames, cabinets, test set-ups, measurement and test units, as well as electronics housings. The slot width of 6 mm and slot depth of 6.5 mm are designed for use with DIN M5 screws. However, M4 and M6 screws can also be used. The profile's bore channels are designed for tapping threads or for inserting a threaded insert or HELICOIL.

Material: Anodised aluminium

Example of fastening with an angle

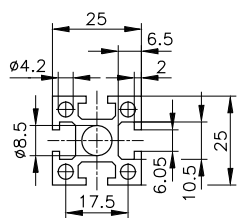


Profile mk 2025.01

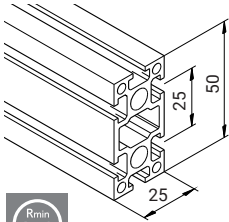
0.75 kg/m

Stock length	25.01.5100
Cut	25.01.

Standard profile dimensions for the example of mk 2025.01



End machining	Item no.
α	2501AE....
α and β	2501AF....
ø 5.8	2501BA....
ø 5.8	2501BB....
M10	2501AA....
M10	2501AB....
4 x M5	2501AD....
M6	B25.01.002....
M8	B25.01.011....



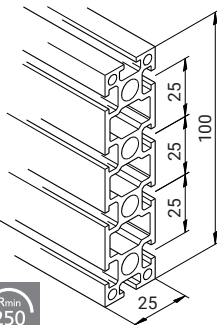
Profile mk 2025.02

1.35 kg/m

Stock length	25.02.5100
Cut	25.02.

End machining**Item no.**

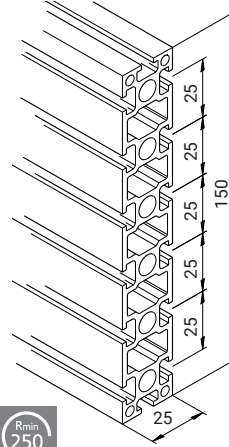
	α and β	2502AF...
	\varnothing 5.8	2502BA....
	\varnothing 5.8	2502BB....
	M10	2502AC....
	M10	2502AD....
	M6	B25.02.002....
	M8	B25.02.011....



Profile mk 2025.03

2.55 kg/m

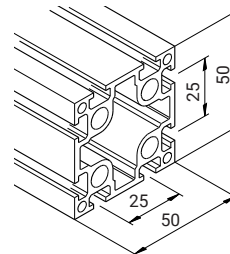
Stock length	25.03.5100
Cut	25.03.



Profile mk 2025.04

3.75 kg/m

Stock length	25.04.5100
Cut	25.04.



Profile mk 2025.05

2.21 kg/m

Stock length	25.05.5100
Cut	25.05.

End machining**Item no.**

	α and β	2505AF...
	4 x M6	B25.05.002....



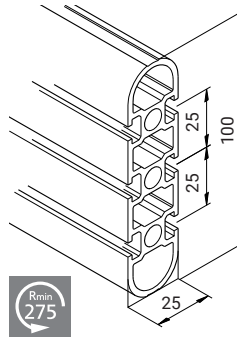
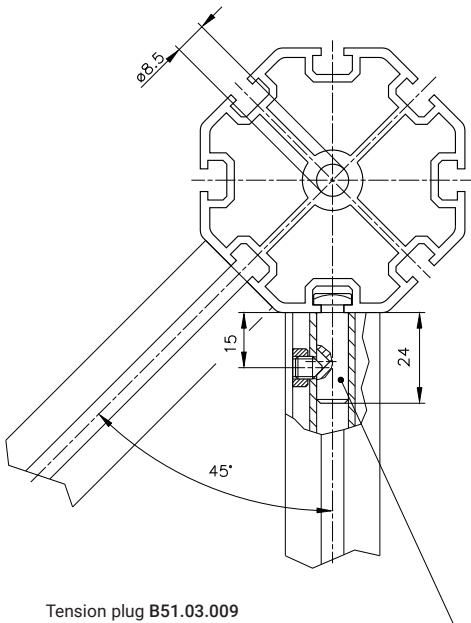
Series 25 Profiles

Basic Profiles

Typical applications include trade fair construction, variable partitions, frames or applications where the profiles need to be 45° or 60° apart.

Material: Anodised aluminium

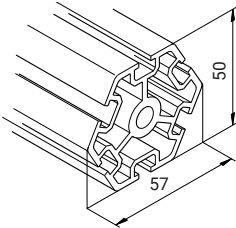
Example of fastening with a tension plug



Profile mk 2025.22

2.26 kg/m

Stock length	25.22.5100
Cut	25.22.

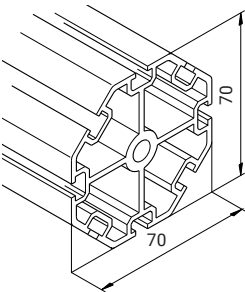


Profile mk 2025.20

2.12 kg/m

Stock length	25.20.5100
Cut	25.20.

End machining	Item no.
M10	2520AB....
M6	B25.20.002....
M8	B25.20.011....

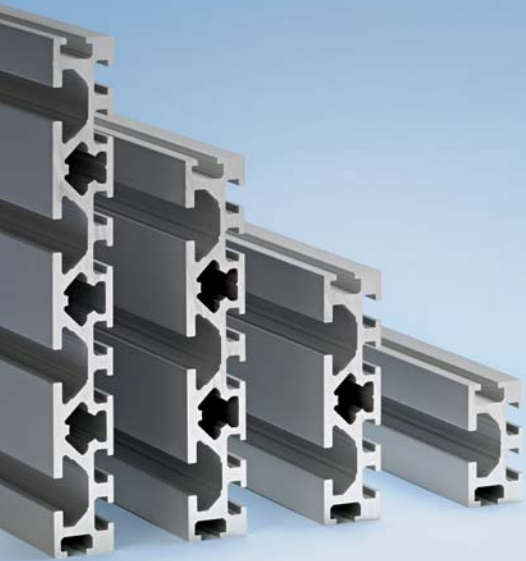


Profile mk 2025.21

2.98 kg/m

Stock length	25.21.5100
Cut	25.21.

End machining	Item no.
M10	2521AB....
M6	B25.21.002....
M8	B25.21.011....



Series 25 Profiles

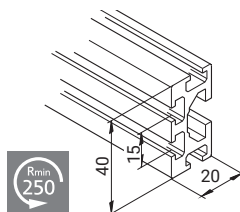
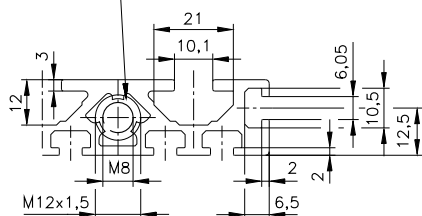
Series 25/40 Adapter Profiles

One side of the profile has a slot width of 6 mm for Series 25 and the other has a slot width of 10 mm for Series 40. Applications include base plates for laboratory benches or test set-ups as well as general structures that combine Series 25 and 40 profiles.

Material: Anodised aluminium

Standard dimensions with threaded insert

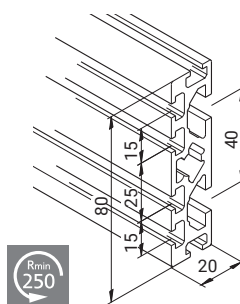
Threaded insert M8
K112030008



Profile mk 2025.41

1.02 kg/m

Stock length	25.41.5100
Cut	25.41.



Profile mk 2025.42

1.94 kg/m

Stock length	25.42.5100
Cut	25.42.

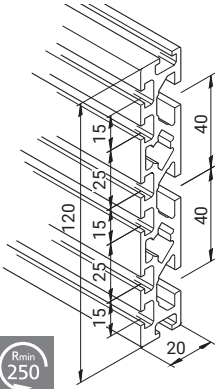
End machining

Item no.



M8

B25.42.002....



Profile mk 2025.43

2.86 kg/m

Stock length	25.43.5100
Cut	25.43.

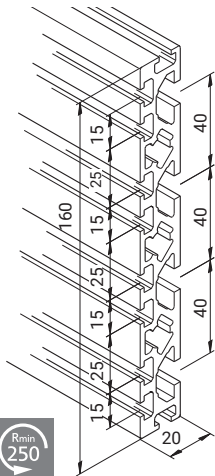
End machining

Item no.



2 x M8

B25.43.002....



Profile mk 2025.44

3.77 kg/m

Stock length	25.44.6200
Cut	25.44.

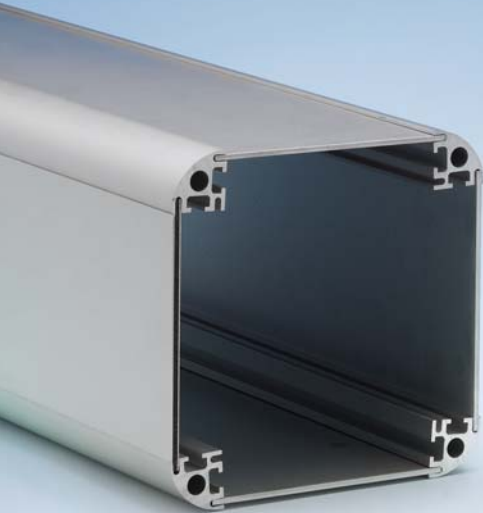
End machining

Item no.



3 x M8

B25.44.002....



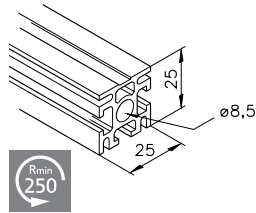
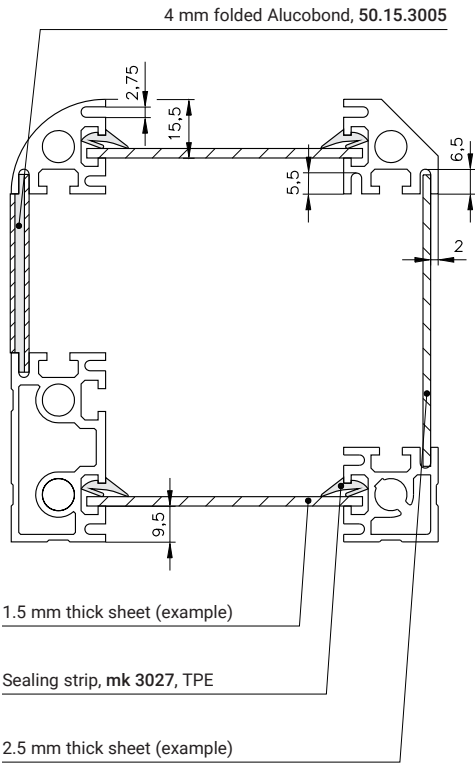
Series 25 Profiles

Profiles for Fastening Panelling

mk Series 25 profiles with closed slots have, in addition to the system slot, a second, smaller slot for attaching panelling.

Material: Anodised aluminium

Example of fastening with panelling



Profile mk 2025.31

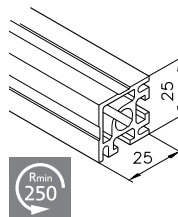
0.77 kg/m

Stock length	25.31.5100
Cut	25.31.

End machining

Item no.

ø 5.8	2531BA....
ø 5.8	2531BB....
M6	B25.31.002....



Profile mk 2025.35

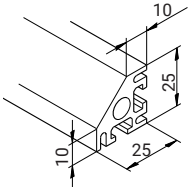
0.75 kg/m

Stock length	25.35.5100
Cut	25.35.

End machining

Item no.

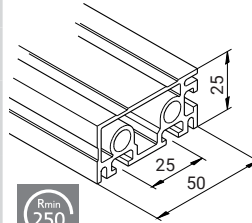
ø 5.8	2535BB....
M6	B25.35.002....



Profile mk 2025.38

0.79 kg/m

Stock length	25.38.5100
Cut	25.38.



Profile mk 2025.36

1.25 kg/m

Stock length	25.36.5100
Cut	25.36.



End machining

Item no.

∅ 5.8

2538BB...

M6

B25.38.002....

End machining

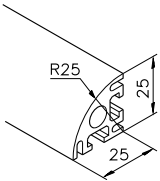
Item no.

∅ 5.8

2536BB...

M6

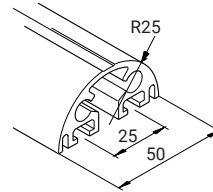
B25.36.002....



Profile mk 2025.37

0.73 kg/m

Stock length	25.37.5100
Cut	25.37.



Profile mk 2025.39

1.1 kg/m

Stock length	25.39.5100
Cut	25.39.

End machining

Item no.

∅ 5.8

2537BB...

M6

B25.37.002....

End machining

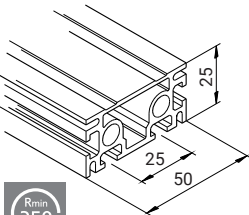
Item no.

∅ 5.8

2539BB...

M6

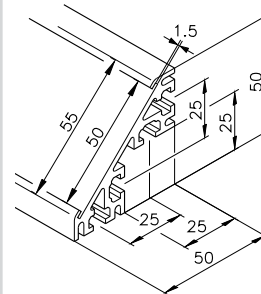
B25.39.002....



Profile mk 2025.32

1.29 kg/m

Stock length	25.32.5100
Cut	25.32.



Profile mk 2025.25

1.30 kg/m

Stock length	25.25.5100
Cut	25.25.

End machining

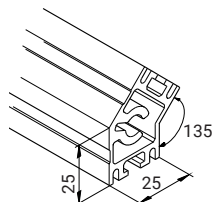
Item no.

∅ 5.8

2532BB...

M6

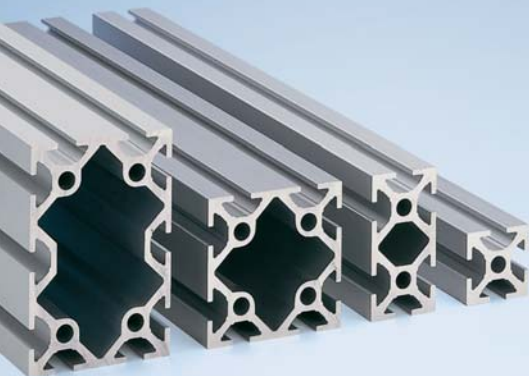
B25.32.004....



Profile mk 2025.18

1.02 kg/m

Stock length	25.18.5100
Cut	25.18.



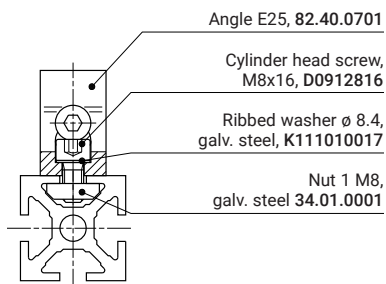
Series 40 Profiles

Basic Profiles

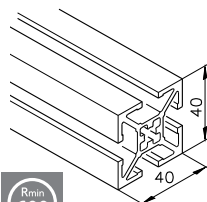
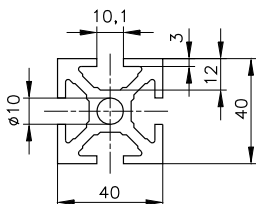
Series 40 profiles are based on a grid dimension of 40 x 40 mm. They are generally used for moderate to light-duty machine frames, guarding, assembly work stations, exhibit construction and work platforms. The slot width of 10 mm and slot depth of 12 mm are designed for use with DIN M8 screws. However, M4, M5 and M6 screws can also be used. The profile's bore channels are designed for tapping threads or for inserting a threaded insert or HELICOIL.

Material: Anodised aluminium

Example of fastening with an angle



Standard profile dimensions for the example of mk 2040.01

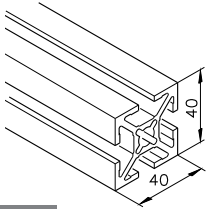


Profile mk 2040.31
(extra light duty)

1.50 kg/m

Stock length	54.31.5100
Cut	54.31.

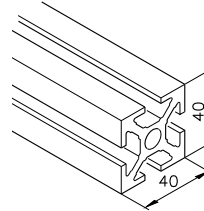
End machining		Item no.
	α and β	5431AF...
	\varnothing 10	5431BV...
	\varnothing 10	5431BW...
	M8	5431AA....
	M8	5431AB....



Profile mk 2040.40
(light duty)

1.64 kg/m

Stock length	54.40.5100
Cut	54.40.



Profile mk 2040.01

2.00 kg/m

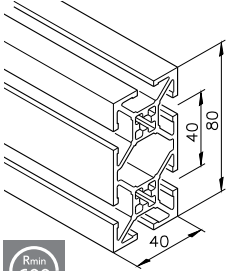
Stock length	54.01.5100
Stock length	54.01.6100
Cut	54.01.



End machining	Item no.	End machining	Item no.
	5440AI....		5401AI....
α and β	5440AC....	α	5401AE....
$\varnothing 10$	5440BA....	α and β	5401AF....
$\varnothing 10$	5440BB....	$\varnothing 10$	5401BA....
$\varnothing 10$	5440BV....	$\varnothing 10$	5401BB....
$\varnothing 10$	5440BW....	$\varnothing 10$	5401BV....
$\varnothing 14$	5440BY....	$\varnothing 10$	5401BW....
$\varnothing 14$	5440BZ....	$\varnothing 14$	5401BY....
M12	5440AA....	$\varnothing 14$	5401BZ....
M12	5440AB....	M12	5401AA....
M8	B54.40.002....	M12	5401AB....
M8	B54.40.001....	M8	B54.01.003....
M10	B54.40.004....	M8	B54.01.002....
		M10	B54.01.001....

Series 40 Profiles

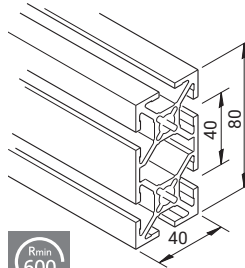
2



Profile mk 2040.52
(extra light duty)

2.67 kg/m

Stock length	54.52.5100
Cut	54.52.



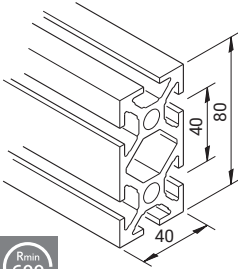
Profile mk 2040.41
(light duty)

2.85 kg/m

Stock length	54.41.5100
Cut	54.41.



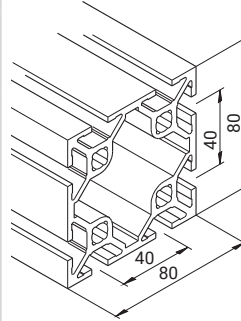
End machining	Item no.	End machining	Item no.
α and β	5452AH....		5441Al....
$\varnothing 10$	5452BV....	α and β	5441AH....
$\varnothing 10$	5452BW....	$\varnothing 10$	5441BA....
M8	5452AA....	$\varnothing 10$	5441BB....
M8	5452AB....	$\varnothing 10$	5441BV....
		$\varnothing 10$	5441BW....
		$\varnothing 14$	5441BY....
		$\varnothing 14$	5441BZ....
		M12	5441AC....
		M12	5441AB....
		M8	B54.41.002....
		M8	B54.41.001....



Profile mk 2040.02

3.62 kg/m

Stock length	54.02.5100
Stock length	54.02.6100
Cut	54.02.



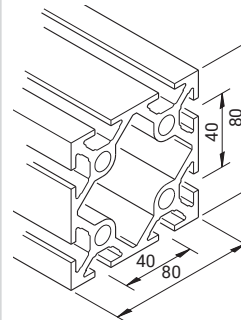
Profile mk 2040.45
(light duty)

4.75 kg/m

Stock length	54.45.5100
Cut	54.45.

End machining	Item no.
	5402AI....
α and β	5402AH....
ø 10	5402BA....
ø 10	5402BB....
ø 10	5402BV....
ø 10	5402BW....
ø 14	5402BY....
ø 14	5402BZ....
M12	5402AA....
M12	5402AB....
M8	B54.02.002....
M8	B54.02.001....

End machining	Item no.
α and β	5445AF....
ø 14	5445BY....
ø 14	5445BZ....
4 x M12	5445AA....
4 x M12	5445AB....
4 x M8	B54.45.002....
4 x M8	B54.45.001....



Profile mk 2040.03

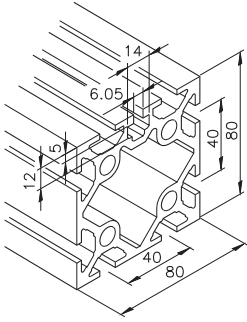
5.57 kg/m

Stock length	54.03.5100
Stock length	54.03.6100
Cut	54.03.

End machining	Item no.
α and β	5403AF....
ø 14	5403BY....
ø 14	5403BZ....
4 x M12	5403AA....
4 x M12	5403AB....
4 x M8	B54.03.002....
4 x M8	B54.03.001....

Series 40 Profiles

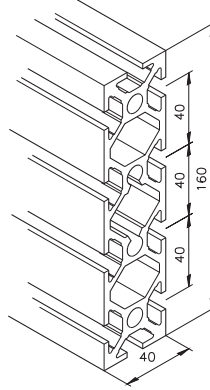
2



Profile mk 2040.73

5.72 kg/m

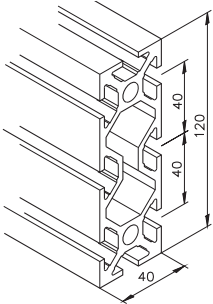
Stock length	54.73.5100
Cut	54.73.



Profile mk 2040.06

6.26 kg/m

Stock length	54.06.5100
Cut	54.06.

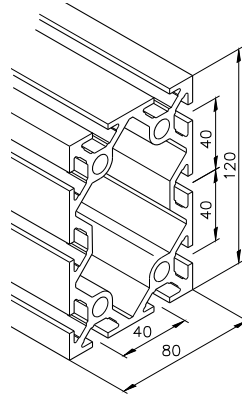


Profile mk 2040.05

4.69 kg/m

Stock length	54.05.5100
Cut	54.05.

End machining	Item no.
α	5406AC....
ø 10	5406BB....
ø 14	5406BY....
ø 14	5406BZ....
M8	B54.06.001....



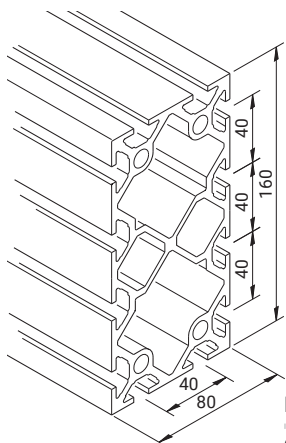
Profile mk 2040.07

6.96 kg/m

Stock length	54.07.5100
Stock length	54.07.7500
Cut	54.07.

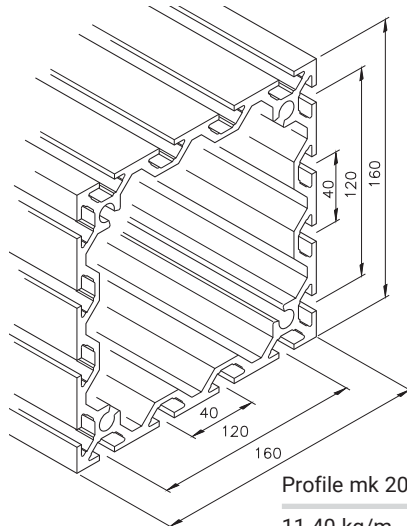
End machining	Item no.
α	5405AG....
ø 10	5405BB....
ø 10	5405BV....
ø 14	5405BY....
ø 14	5405BZ....
M8	B54.05.001....

End machining	Item no.
ø 14	5406BY....
ø 14	5406BZ....
4 x M8	B54.07.001....



Profile mk 2040.08

9.46 kg/m

Stock length **54.08.5100**Stock length **54.08.6100**Cut **54.08.**

Profile mk 2040.09

11.40 kg/m

Stock length **54.09.5100**Cut **54.09.****End machining****Item no.**

∅ 14

5408BY....

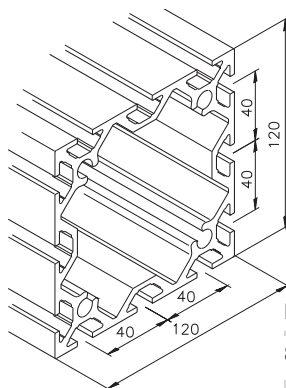
∅ 14

5408BZ....

4 x M8

B54.08.001....**End machining****Item no.**

4 x M8

B54.09.001....

Profile mk 2040.10

8.26 kg/m

Stock length **54.10.5100**Cut **54.10.****End machining****Item no.**

4 x M8

B54.10.001....



Series 40 Profiles

Cleanroom Profiles

mk cleanroom profiles feature a smooth and closed surface that prevents dirt from accumulating. This makes the profiles ideally suited for environments that place stringent requirements on cleanliness or design. The typical mk edge radius of only 1 mm ensures smooth connections between profiles without any gaps or spaces. The profiles' slots can be opened if necessary.

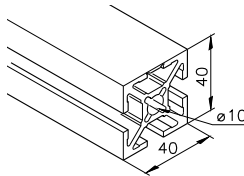
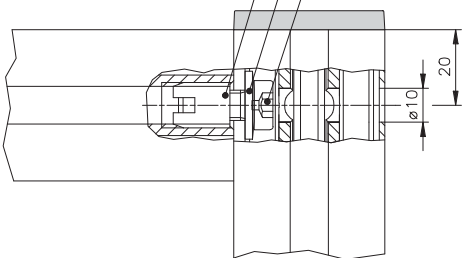
Material: Anodised aluminium

Fastening example

Cylinder head screw DIN 6912, M8x20, stainless steel, D6912820A2

Waster \varnothing 8.4, stainless steel D67968.4A2

M8 threaded insert, stainless steel K112030020



Profile mk 2040.92

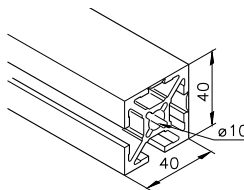
1.68 kg/m

Stock length	54.92.5100
Cut	54.92.

End machining

Item no.

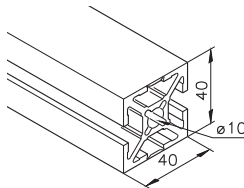
\varnothing 14	5492BY...
\varnothing 14	5492BZ....



Profile mk 2040.93

1.72 kg/m

Stock length	54.93.5100
Cut	54.93.



Profile mk 2040.94

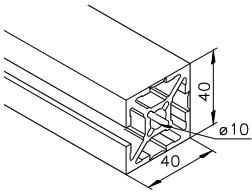
1.72 kg/m

Stock length	54.94.5100
Cut	54.94.

End machining

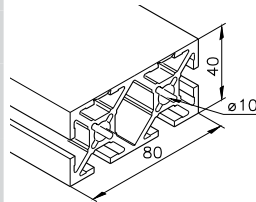
Item no.

\varnothing 14	5494BY...
\varnothing 14	5494BZ....



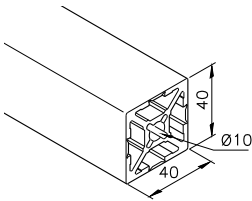
Profile mk 2040.95

1.75 kg/m

Stock length **54.95.5100**Cut **54.95.**

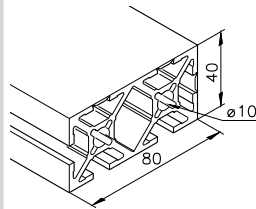
Profile mk 2040.100

2.94 kg/m

Stock length **54.100.5100**Cut **54.100.****End machining****Item no.**
 $\varnothing 14$ **54100BY....**
 $\varnothing 14$ **54100BZ....**


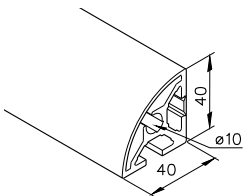
Profile mk 2040.96

1.78 kg/m

Stock length **54.96.5100**Cut **54.96.**

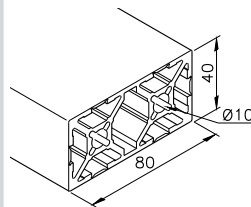
Profile mk 2040.101

2.97 kg/m

Stock length **54.101.5100**Cut **54.101.**

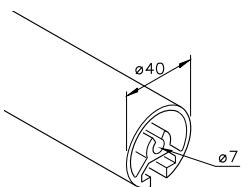
Profile mk 2040.110

1.44 kg/m

Stock length **54.110.5100**Cut **54.110.**

Profile mk 2040.104

3.07 kg/m

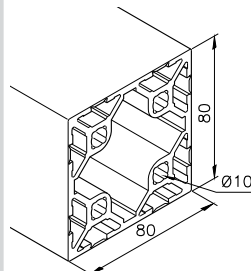
Stock length **54.104.5100**Cut **54.104.**

Profile mk 2040.16

1.25 kg/m

Stock length **54.16.5100**Cut **54.16.**

M8 thread possible



Profile mk 2040.109

5.04 kg/m

Stock length **54.109.5100**Cut **54.109.****End machining****Item no.**

M8

5416AB....

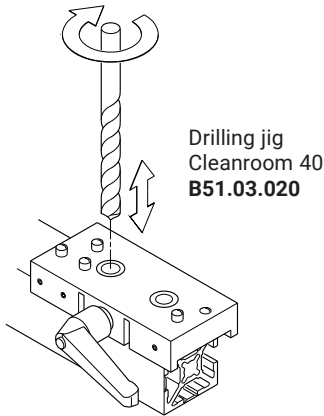


Series 40 Profiles


Cleanroom Profiles – Machining

The slot in a cleanroom profile can be manually opened, either partially or completely, without any complicated procedures. A parting tool is used to open the profile at the desired location. This can be done without significant exertion. If you want to open the profile only partway, use the drilling jig to drill a bore at the end of the desired section.

Drilling

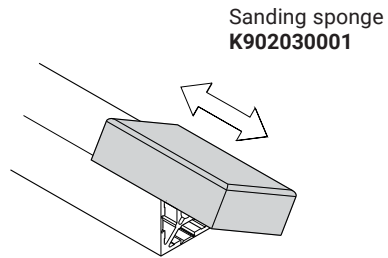


Drilling jig
Cleanroom 40
B51.03.020

 For drilling jigs, see page 329

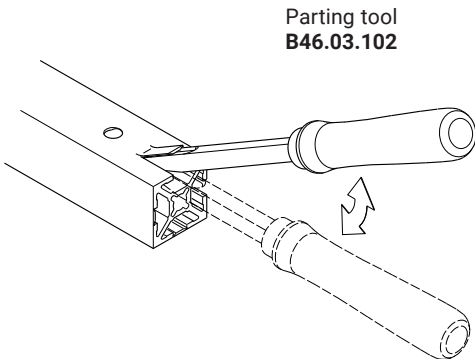
Deburring

A sanding sponge can be used to easily and manually deburr the profiles during assembly.



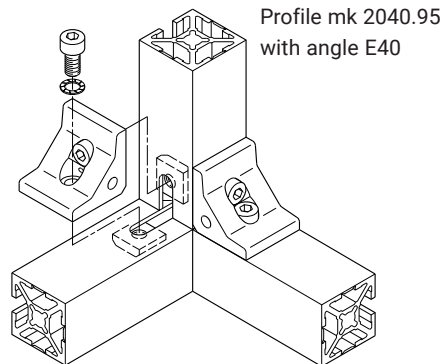
Sanding sponge
K902030001

Parting

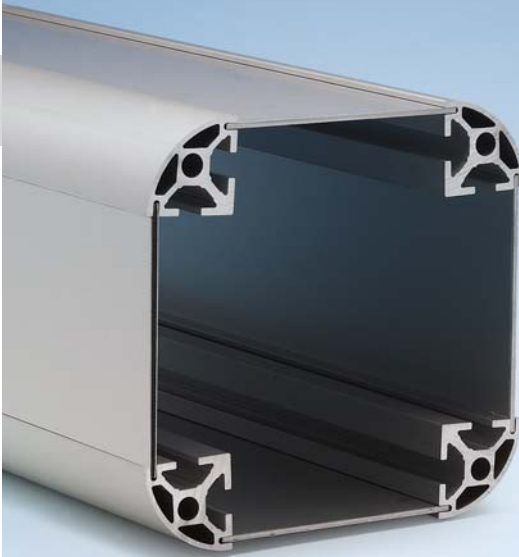


Parting tool
B46.03.102

Profile with angle



Profile mk 2040.95
with angle E40

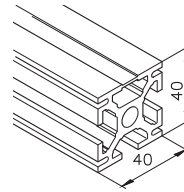
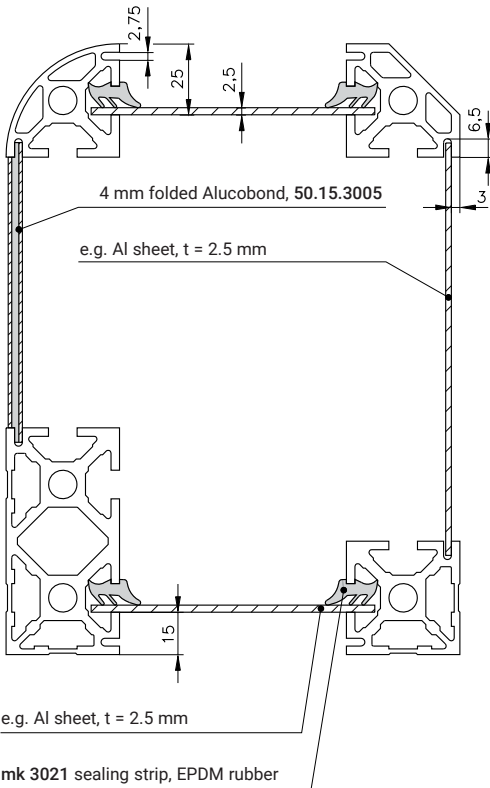


Profiles for Fastening Panelling

mk Series 40 profiles with closed slots on one or both sides have, in addition to the system slot, a second, smaller 2.75 mm slot for attaching panelling. This allows the main slot to remain free, for example for attaching angles.

Material: Anodised aluminium

Example of fastening with panelling



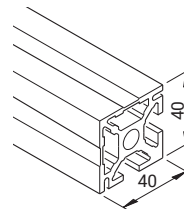
Profile mk 2040.21

1.84 kg/m

Stock length	54.21.5100
Cut	54.21.

End machining

End machining	Item no.
	5421Al....
	5421BB....
	5421BW....
	5421BY....
	5421BZ....
	5421AA....
	B54.21.001....



Profile mk 2040.11

1.88 kg/m

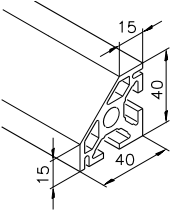
Stock length	54.11.5100
Cut	54.11.

End machining

End machining	Item no.
	5411Al....
	5411BB....
	5411BW....
	5411AA....
	B54.11.001....

Series 40 Profiles

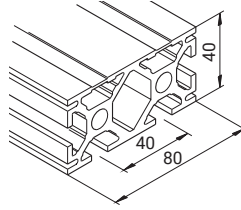
2



Profile mk 2040.14

1.62 kg/m

Stock length	54.14.5100
Cut	54.14.



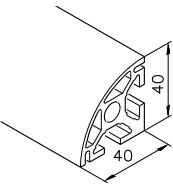
Profile mk 2040.22

3.43 kg/m

Stock length	54.22.5100
Cut	54.22.

End machining	Item no.
$\varnothing 10$	5414BB....
$\varnothing 10$	5414BW....
M12	5414AA....
M8	B54.14.001....

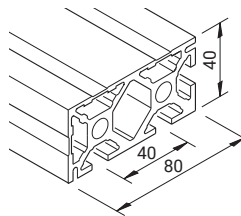
End machining	Item no.
$\varnothing 14$	5422BY....
$\varnothing 14$	5422BZ....



Profile mk 2040.15

1.51 kg/m

Stock length	54.15.5100
Cut	54.15.



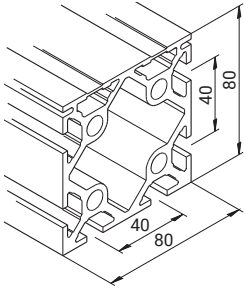
Profile mk 2040.12

3.43 kg/m

Stock length	54.12.5100
Cut	54.12.

End machining	Item no.
$\varnothing 10$	5415BB....
$\varnothing 10$	5415BW....
M12	5415AA....
M8	B54.15.001....

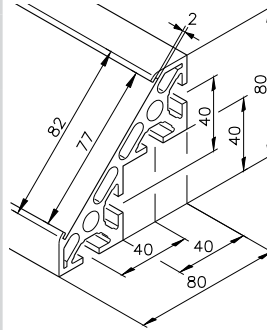
End machining	Item no.
M8	B54.12.001....



Profile mk 2040.46

5.44 kg/m

Stock length	54.46.5100
Cut	54.46.

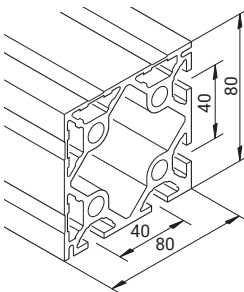


Profile mk 2040.04

3.61 kg/m

Stock length	54.04.5100
Cut	54.04.

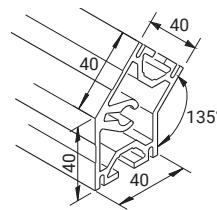
End machining	Item no.
ø 14	5446BY....
ø 14	5446BZ....
4 x M8	B54.46.002....



Profile mk 2040.13

5.32 kg/m

Stock length	54.13.5100
Cut	54.13.



Profile mk 2040.19

2.54 kg/m

Stock length	54.19.5100
Cut	54.19.

For corner blocks, see page 122

End machining	Item no.
4 x M8	B54.13.001....

End machining	Item no.
M8	B54.19.002....
M8	B54.19.001....

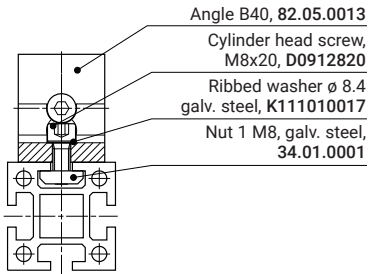
Series 50 Profiles

Basic Profiles

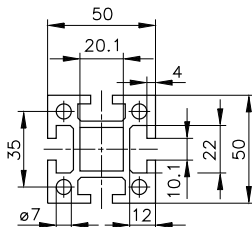
Series 50 profiles are based on a grid dimension of 50 x 50 mm. They are generally used for heavy-duty machine frames, frames with high static loads and load-bearing structures. The slot width of 10 mm and slot depth of 12 mm are designed for use with DIN M8 screws. However, M4, M5 and M6 screws can also be used. The profile's bore channels are designed for tapping threads or for inserting a threaded insert or HELICOIL.

Material: Anodised aluminium

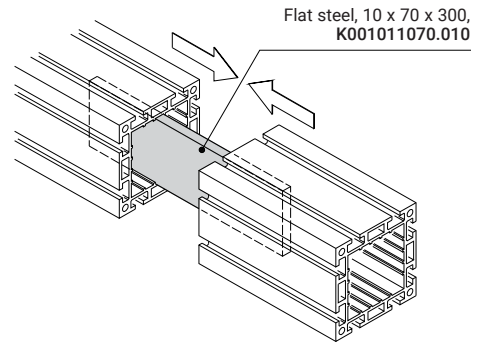
Example of fastening with an angle



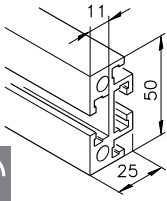
Standard profile dimensions for the example of mk 2000



Example of fastening with flat steel

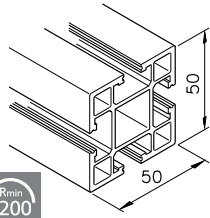


A flat steel plate can be inserted to join two profiles at their faces. Screw connections are used to fasten the profiles. The steel plate should extend into each profile a distance of at least twice its width.



Profile mk 2001
1.59 kg/m

Stock length	51.01.5100
Cut	51.01.

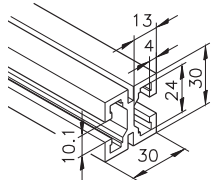


Profile mk 2014
(light duty)
1.98 kg/m

Stock length	51.14.5100
Cut	51.14.

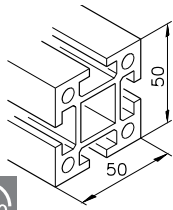
End machining **Item no.**

M8	5101AA....
----	-------------------



Profile mk 2030
1.06 kg/m

Stock length	51.30.5100
Cut	51.30.



Profile mk 2000
2.85 kg/m

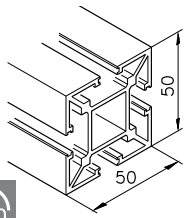
Stock length	51.00.5100
Stock length	51.00.6100
Cut	51.00.

End machining **Item no.**

α and β	5100AF....
ø 10	5100BG....
ø 14	5100BY....
ø 14	5100BZ....
4 x M8	5100AC....
4 x M8	5100AD....

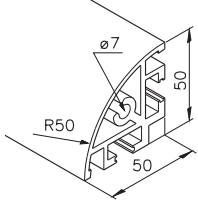
End machining **Item no.**

α	5114AE....
α and β	5114AF....
ø 10	5114BG....
ø 14	5114BY....
ø 14	5114BZ....
4 x M8	B51.14.022....
4 x M8	B51.14.021....



Profile mk 2002
(extra light duty)
1.75 kg/m

Stock length	51.02.5100
Cut	51.02.



Profile mk 2003
2.00 kg/m

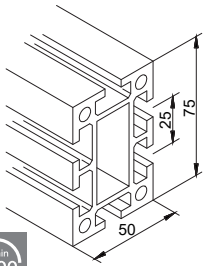
Stock length	51.03.5100
Cut	51.03.

End machining **Item no.**

M8	5103AA....
----	-------------------

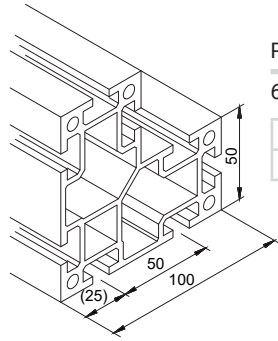
Series 50 Profiles

2



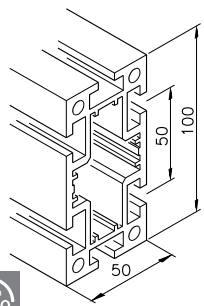
Profile mk 2023
3.78 kg/m

Stock length	51.23.5100
Cut	51.23.



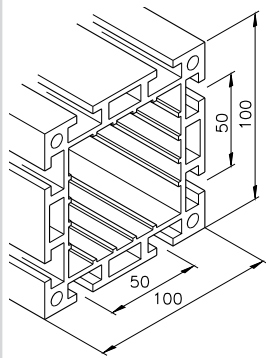
Profile mk 2009
6.27 kg/m

Stock length	51.09.5100
Cut	51.09.



Profile mk 2004
4.87 kg/m

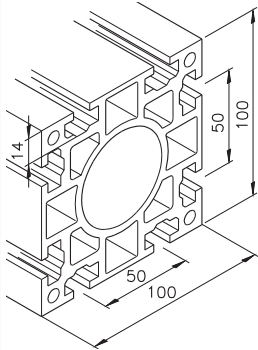
Stock length	51.04.5100
Stock length	51.04.6100
Cut	51.04.



Profile mk 2005
(light duty)
7.00 kg/m

Stock length	51.05.5100
Stock length	51.05.6100
Cut	51.05.

End machining	Item no.	End machining	Item no.
	5104AI....		5105AI....
ø 14	5104BY....	ø 14	5105BY....
ø 14	5104BZ....	ø 14	5105BZ....
4 x M8	5104AA....	4 x M8	5105AB....
4 x M8	5104AC....	4 x M8	5105AA....



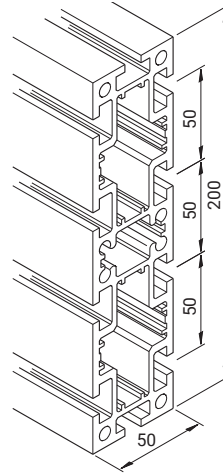
Profile mk 2011

9.70 kg/m

Stock length **51.11.5100**

Stock length **51.11.6100**

Cut **51.11.**



Profile mk 2008

9.09 kg/m

Stock length **51.08.5100**

Stock length **51.08.6100**

Cut **51.08.**

End machining

Item no.

• ◻ ∅ 14

5111BY....

• • ∅ 14

5111BZ....

▨ ◻ 4 x M8

5111AA....

▨ ▨ 4 x M8

5111AB....

End machining

Item no.

• ◻ ∅ 14

5108BY....

• • ∅ 14

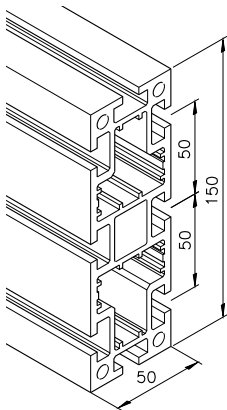
5108BZ....

▨ ◻ 4 x M8

5108AA....

▨ ▨ 4 x M8

5108AB....

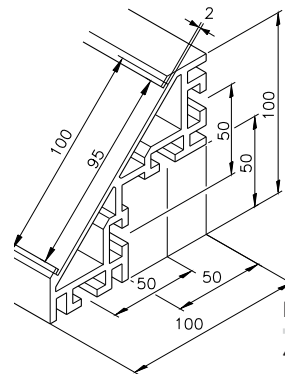


Profile mk 2006

7.00 kg/m

Stock length **51.06.5100**

Cut **51.06.**



Profile mk 2072

4.62 kg/m

Stock length **51.72.5100**

Cut **51.72.**

End machining

Item no.

• ◻ ∅ 14

5106BY....

• • ∅ 14

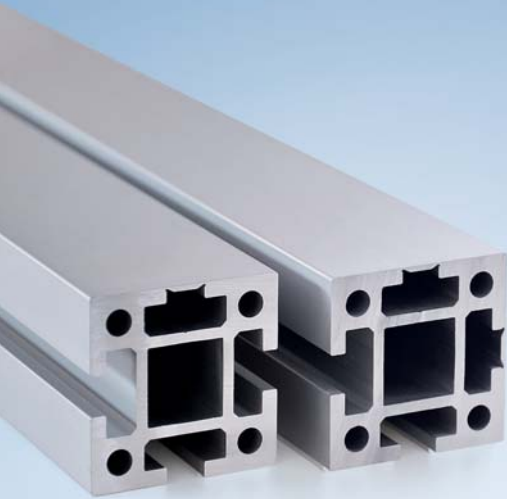
5106BZ....

▨ ◻ 4 x M8

5106AA....

▨ ▨ 4 x M8

5106AB....



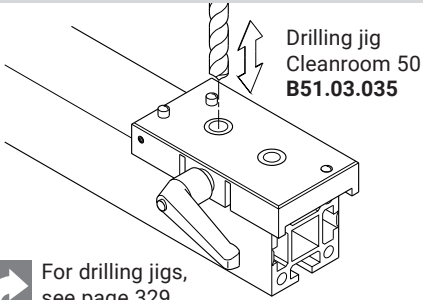
Series 50 Profiles

Cleanroom Profiles

mk cleanroom profiles feature a completely smooth surface on their closed sides. This makes them ideally suited for environments with stringent cleanliness requirements. The typical mk edge radius of only 1 mm ensures smooth connections between profiles without any gaps. The profiles' slots can be opened without complicated machining so that all connecting elements in the standard mk product range can be used.

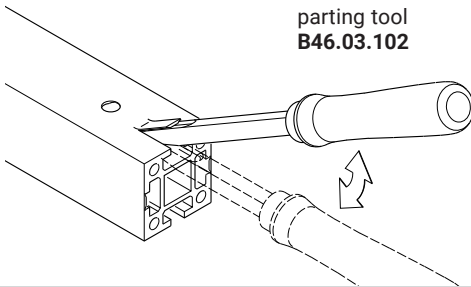
Material: Anodised aluminium

Drilling



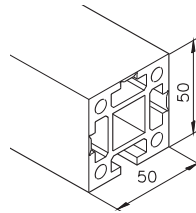
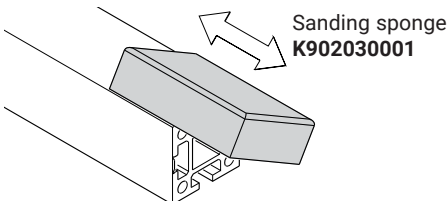
For drilling jigs, see page 329

Parting



Deburring

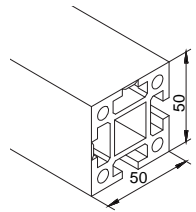
A sanding sponge can be used to easily and manually deburr the profiles during assembly.



Profile mk 2017

3.03 kg/m

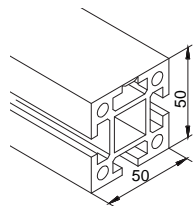
Stock length	51.17.5100
Cut	51.17.



Profile mk 2018

3.00 kg/m

Stock length	51.18.5100
Cut	51.18.



Profile mk 2019

3.00 kg/m

Stock length	51.19.5100
Cut	51.19.



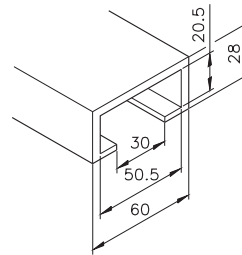
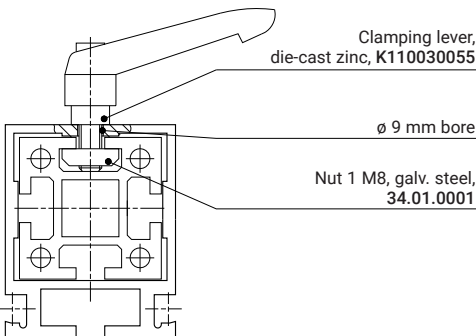
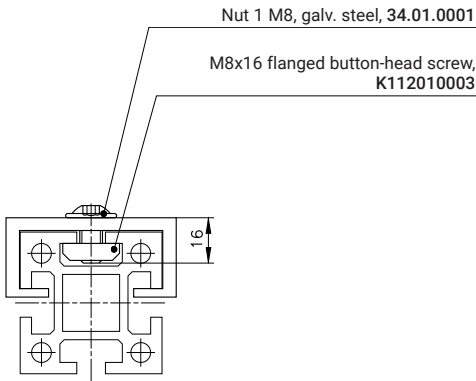
Profiles for Telescoping

These profiles can be combined with the mk 2000 basic profile (50 x 50 mm) to allow for quick and easy height adjustment with a screw or clamping lever, for example in a support frame.

Material: Anodised aluminium



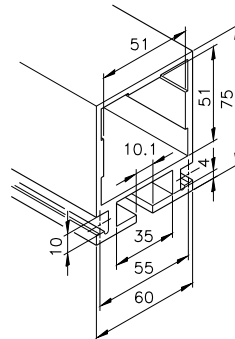
for series 40 telescoping profiles, see page 306



Profile mk 2033

1.50 kg/m

Stock length	51.33.5100
Cut	51.33.



Profile mk 2031

2.85 kg/m

Stock length	51.31.5100
Cut	51.31.



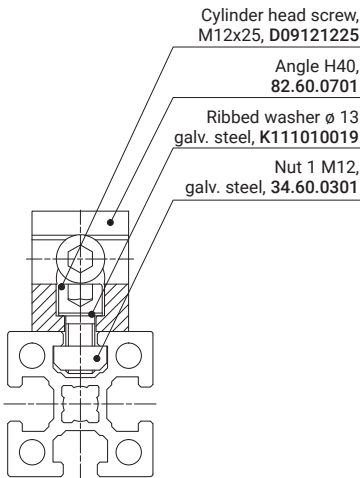
Series 60 Profiles

Basic Profiles

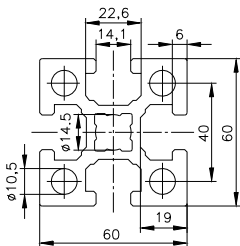
Series 60 profiles are based on a grid dimension of 60 x 60 mm. They are generally used for large gantries and machine frames subject to the heaviest loads, applications which are usually reserved for steel constructions. The slot width of 14 mm and slot depth of 19 mm are designed for use with DIN M12 screws. However, M6, M8 and M10 screws can also be used. The profile's bore channels are designed for tapping threads or for inserting a threaded insert or HELICOIL.

Material: Anodised aluminium

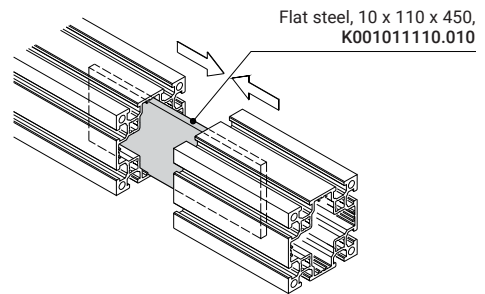
Example of fastening with an angle



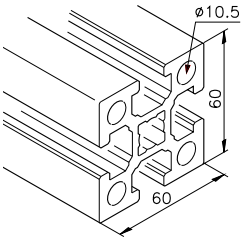
Standard profile dimensions for the example of mk 2060.01



Example of fastening with flat steel



A flat steel plate can be inserted to join two profiles at their faces. Screw connections are used to fasten the profiles. The steel plate should extend into each profile a distance of at least twice its width.

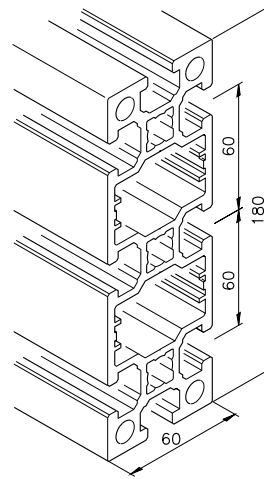


Profile mk 2060.01

4.31 kg/m

Stock length	60.01.5100
Cut	60.01.

End machining	Item no.
α and β	6001AF...
4 x M12	6001AA....
4 x M12	6001AB....
M12	B60.01.606....

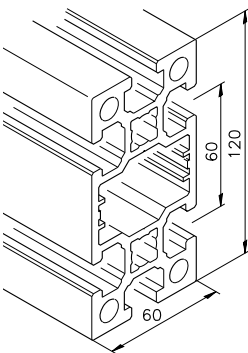


Profile mk 2060.03

9.57 kg/m

Stock length	60.03.5100
Cut	60.03.

End machining	Item no.
4 x M12	6003AB....

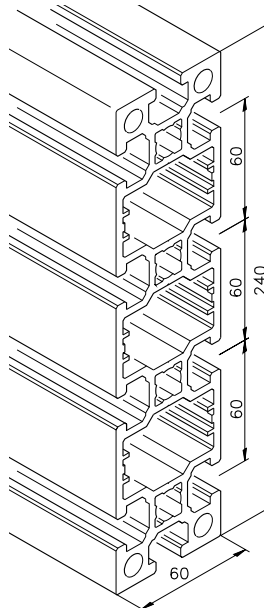


Profile mk 2060.02

6.95 kg/m

Stock length	60.02.5100
Cut	60.02.

End machining	Item no.
4 x M12	6002AA....
4 x M12	6002AB....
4 x M8	B60.02.601....



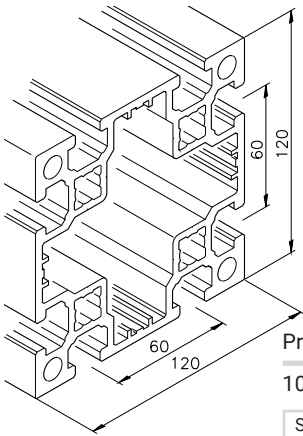
Profile mk 2060.04

12.20 kg/m

Stock length	60.04.5100
Cut	60.04.

Series 60 Profiles

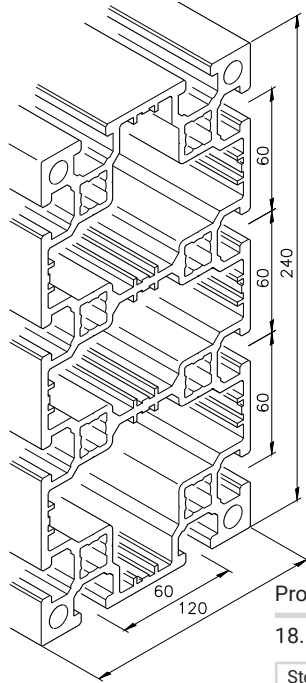
2



Profile mk 2060.05

10.30 kg/m

Stock length	60.05.5100
Cut	60.05.



Profile mk 2060.07

18.10 kg/m

Stock length	60.07.5100
Cut	60.07.

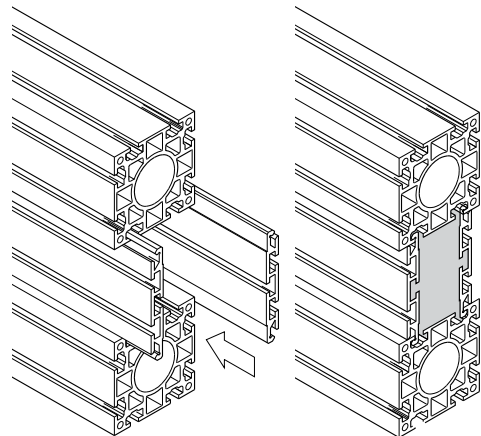
End machining		Item no.
	4 x M12	6005AA....
	4 x M12	6005AB....
	4 x M12	B60.05.605....



Foamed Combined Profiles

Foamed combined profiles are combinations of Series 40, 50 or 60 profiles and special connection profiles that are filled with foam. Filling the hollow spaces between the profiles with foam permanently binds the profiles together. This results in beams that are custom-tailored to the particular application and that can withstand even dynamic loads.

They are frequently used as columns and beams for gantries and machine frames with high loads, span widths and vibrations and as beams for long, heavy linear axes.



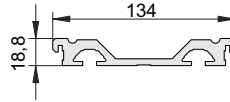
The 300 x 100 mm foamed profile shown here is built from mk 2011 and mk 2067 profiles and exhibits similar deflection to an IPE 220 steel T-beam with dimensions of 220 x 110 mm.

The properties of the combined profiles shown below are available on request.

Foamed Combined Profiles

Series 40

... with mk 2040.72 connection profile



2

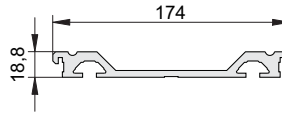
B54.72.001	
Design 1	Design 2

B54.72.002				
Design 1	Design 2	Design 3	Design 4	Design 5

B54.72.003				
Design 1	Design 2	Design 3	Design 4	Design 5

Series 40

... with mk 2040.90 connection profile



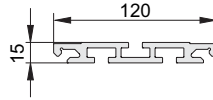
B54.90.001	
Design 1	Design 2
<p>Technical drawing of B54.90.001 Design 1. The drawing shows a cross-section of the profile with a height of 240 and a width of 80. The profile has a complex, lattice-like internal structure.</p>	<p>Technical drawing of B54.90.001 Design 2. The drawing shows a cross-section of the profile with a height of 320 and a width of 80. The profile has a complex, lattice-like internal structure.</p>

B54.90.002				
Design 1	Design 2	Design 3	Design 4	Design 5
<p>Technical drawing of B54.90.002 Design 1. The drawing shows a cross-section of the profile with a height of 240 and a width of 80. The profile has a complex, lattice-like internal structure.</p>	<p>Technical drawing of B54.90.002 Design 2. The drawing shows a cross-section of the profile with a height of 280 and a width of 80. The profile has a complex, lattice-like internal structure.</p>	<p>Technical drawing of B54.90.002 Design 3. The drawing shows a cross-section of the profile with a height of 320 and a width of 80. The profile has a complex, lattice-like internal structure.</p>	<p>Technical drawing of B54.90.002 Design 4. The drawing shows a cross-section of the profile with a height of 320 and a width of 120. The profile has a complex, lattice-like internal structure.</p>	<p>Technical drawing of B54.90.002 Design 5. The drawing shows a cross-section of the profile with a height of 320 and a width of 160. The profile has a complex, lattice-like internal structure.</p>

Foamed Combined Profiles

Series 50

... with mk 2067 connection profile



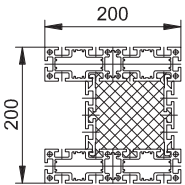
2

B51.67.002

Design 1	Design 2	Design 3	Design 4	Design 5

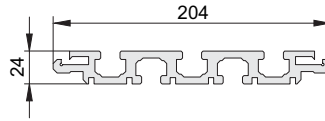
B51.67.003

Design 1



Series 60

... with mk 2060.41 connection profile



2

B60.41.002

Design 1	Design 2	Design 3	Design 4

B60.41.003

Design 1	Design 2	Design 3

B60.41.004

Design 1	Design 2	Design 3

Section 3 Connecting Elements

3



Choosing a Connection

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Selection matrix for connecting elements	75



Angle Fasteners

90° angles	76
90° angle brackets	87
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Adjustable angle brackets	92



Plate Fasteners

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Internal Fasteners

Tension plugs and screw connections	104
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Clamping jaws	111
Bolt fasteners	112
Hinge tension plugs	113
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Corner Block Joints

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Profile Clamps

128



Nuts/T-nuts

Nuts	130
Countersunk nuts	132
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Standard Parts

Cylinder head screws	137
Countersunk head screws	137
Flanged button-head screws	138
Hexagon head screws	138
Threaded pins	139
Hexagon nuts	139
Ribbed washers	139
Tension washers	139

Choosing a Connection

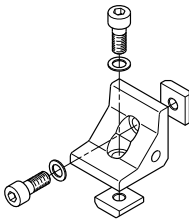
3

Features of mk Connection Technology

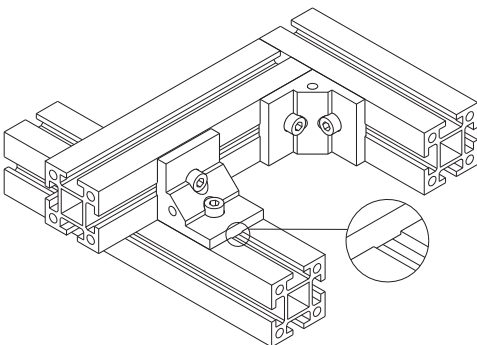
The mk profile system offers a wide range of connection options and gives you ultimate flexibility in designing your structure. You can select from a variety of different connectors, each with their own special features and advantages, for example angle fasteners, internal fasteners, plate fasteners, corner

blocks, truss blocks and clamped connections. With the mk profile system, you can create connections at any angle. All connecting elements use standard screws. Whatever your requirements, we always have the perfect connection technology.

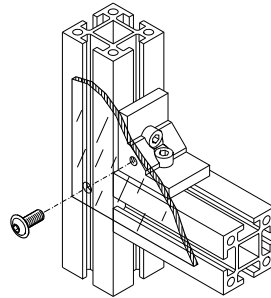
The connection used most frequently at mk is the solid angle fastener. It is a simple and extremely sturdy screw connection that can be used without profile machining. For each angle we also offer a complete assembly kit (item numbers beginning with T) that contains the necessary fastening accessories (screws, ribbed washers, nuts/T-nuts) in the appropriate quantities.



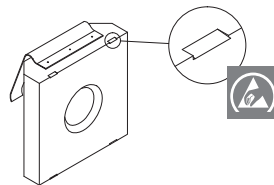
Angles can also be mounted or removed later and allow profiles from various series or other components to be connected to each other. Angles with a key prevent undesired twisting and provide a perfectly aligned connection.



Threads for inserting panelling elements can be tapped into the angle's lateral bores.



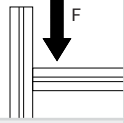
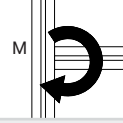

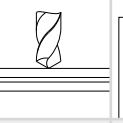
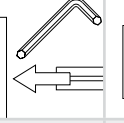
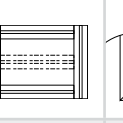
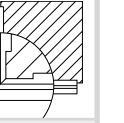
To create a conductive connection using angles, simply use the nuts/T-nuts labelled with the ESD symbol. It may be possible to adapt nuts not labelled for ESD use; please contact us.



In addition to angle fasteners, we also offer a range of other connectors. The matrix below will give you a brief overview of which connectors are suitable for your requirements. If you need exact data about load capacity, we are happy to provide these on request.

Selection Matrix for Connecting Elements

++ Recommended **+ Suitable** **o Not suitable**

	High load capacity 	High torque capacity 	High twisting moment 	Little machining required 	Little assembly work required 	Later mounting in frames 	Internal slots remain free 
Angles (one side)	+	+	+	++	++	++	o
Angles (two sides)	++	++	++	++	++	++	o
Plates	+	+	+	++	++	++	++
Tension plugs	+	o	o	+	++	o	++
Cleanroom fasteners	+	o	o	+	++	o	++
Clamping jaws	+	o	o	+	+	++	o
Anchor fasteners	+	o	o	++	+	o	o
Bolt fasteners	++	+	+	+	+	++	o
Corner blocks	+	o	o	+	+	o	o
Clamps	+	o	o	++	+	o	o

Angle Fasteners

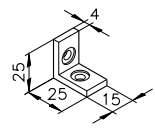
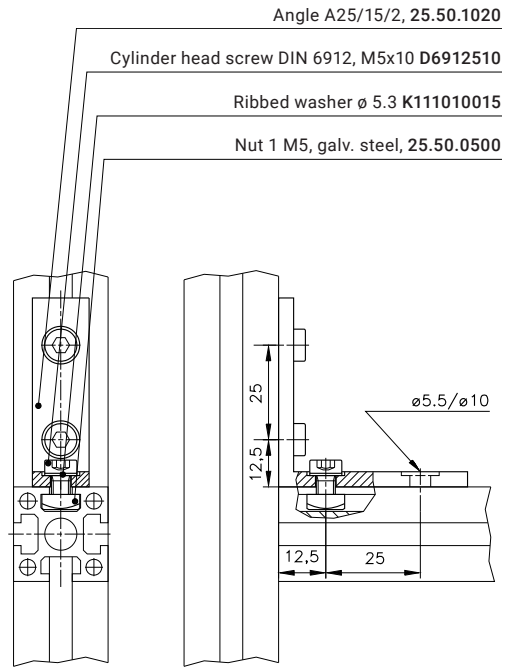
90° Angles

The angle fastener is a simple and extremely sturdy screw connection that can be used without profile machining. Angles with a key prevent undesired twisting and provide a perfectly aligned connection.

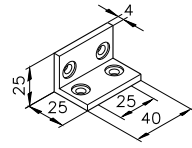
Material: Tumbled aluminium

25 | 40 | 50 | 60 | **M5x10** | DIN 6912

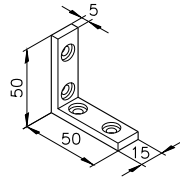
Fastening example



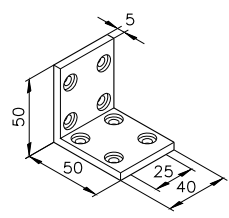
Angle 15
25.50.1000
T25.50.1000*



Angle 40
25.50.1001
T25.50.1001*



Angle A25/15/2
25.50.1020
T25.50.1020*



Angle A25/40/2
25.50.1021
T25.50.1021*

*With fastening accessories



90° Angles

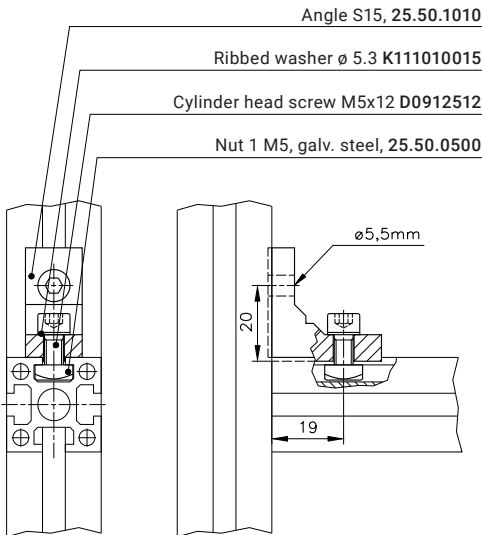
The assembly kit for each angle (item numbers beginning with T) contains the necessary fastening accessories (screws, ribbed washers, nuts/T-nuts).

Material: Tumbled aluminium

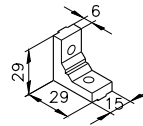
25 40 50 60

M5x12

Fastening example

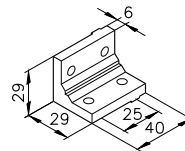


Angle (with key)



Angle S15
25.50.1010

T25.50.1010*



Angle S40
25.50.1012

T25.50.1012*

*With fastening accessories



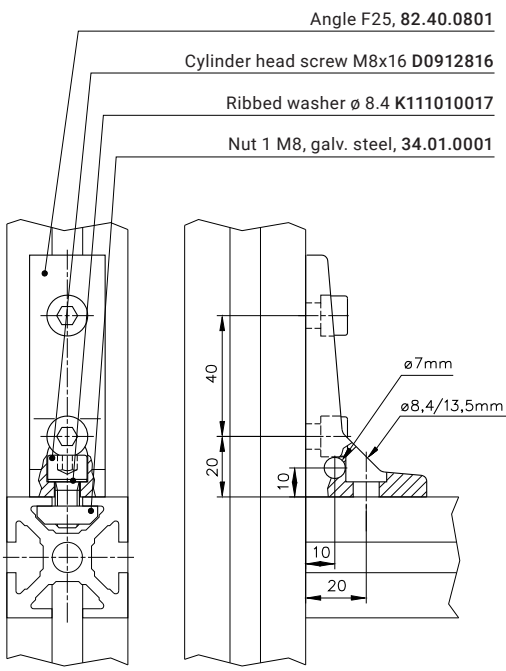
Angle Fasteners

90° Angles

Material: Tumbled aluminium

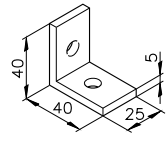
25 40 50 60 M8x16

Fastening example



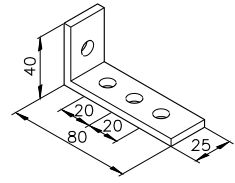
Threads for inserting panelling elements can be tapped into the angle's lateral bores.

Angle P



Angle P1
82.00.0023

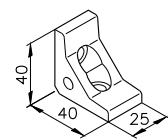
T82.00.0023*



Angle P3
82.00.0024

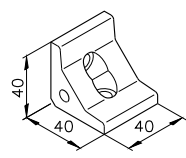
T82.00.0024*

Angle E



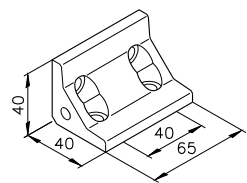
Angle E25
82.40.0701

T82.40.0701*



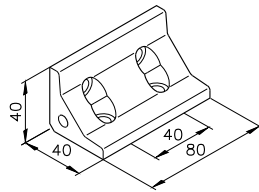
Angle E40
82.40.0702

T82.40.0702*



Angle E65
82.40.0704

T82.40.0704*



Angle E80
82.40.0703

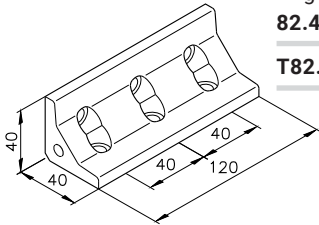
T82.40.0703*

*With fastening accessories

25 | 40 | 50 | 60

M8x16

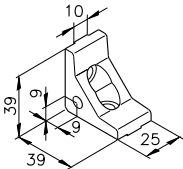
Angle E



Angle E120
82.40.0705

T82.40.0705*

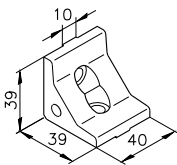
Angle Es (with key)



25 | 40 | 50 | 60

Angle E25s
82.40.0741

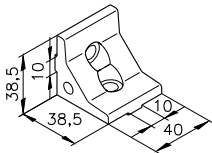
T82.40.0741*



25 | 40 | 50 | 60

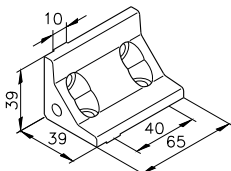
Angle E40s
82.40.0742

T82.40.0742*



Angle E40s3
82.40.0747

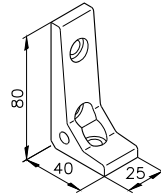
T82.40.0747*



Angle E65s
82.40.0744

T82.40.0744*

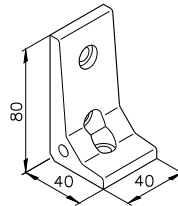
Angle F



25 | 40 | 50 | 60

Angle F25
82.40.0801

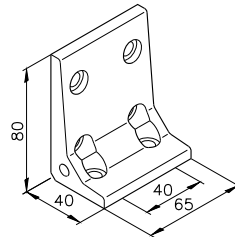
T82.40.0801*



25 | 40 | 50 | 60

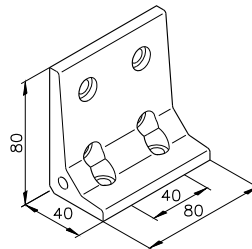
Angle F40
82.40.0802

T82.40.0802*



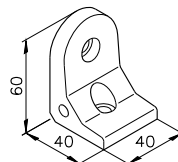
Angle F65
82.40.0804

T82.40.0804*



Angle F80
82.40.0803

T82.40.0803*



Angle F40/R
82.40.0805

T82.40.0805*

for attaching partitions
to posts

*With fastening accessories

Angle Fasteners

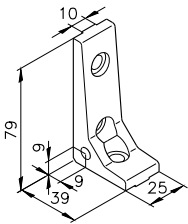
3

90° Angles

Material: Tumbled aluminium

25 40 50 60 M8x16

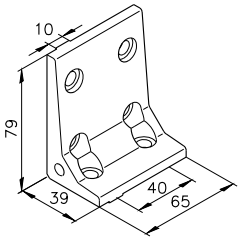
Angle Fs (with key)



25 40 50 60

Angle F25s
82.40.0841

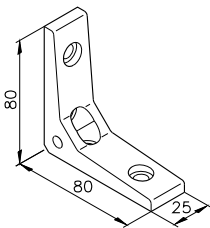
T82.40.0841*



Angle F65s
82.40.0844

T82.40.0844*

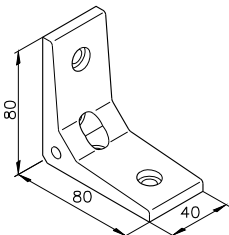
Angle G



25 40 50 60

Angle G25
82.40.0901

T82.40.0901*

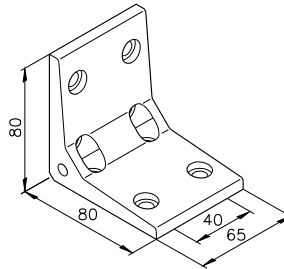


25 40 50 60

Angle G40
82.40.0902

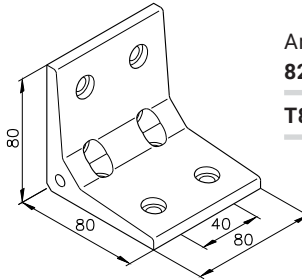
T82.40.0902*

Angle G



Angle G65
82.40.0904

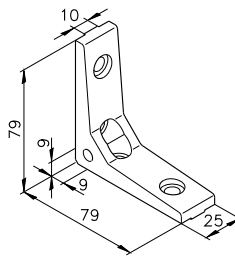
T82.40.0904*



Angle G80
82.40.0903

T82.40.0903*

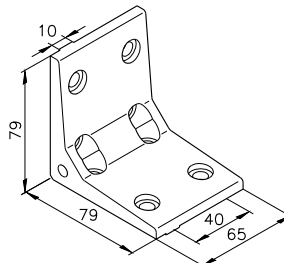
Angle Gs (with key)



25 40 50 60

Angle G25s
82.40.0941

T82.40.0941*



Angle G65s
82.40.0942

T82.40.0942*



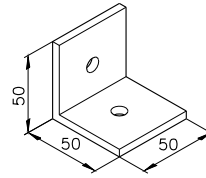
90° angle

Material: Tumbled aluminium

25 | 40 | 50 | 60

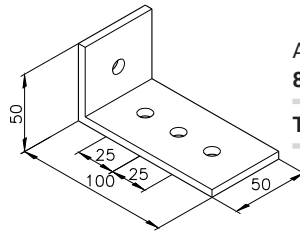
Angle A

M8x16



Angle A1
82.02.0001

T82.02.0001*



Angle A3
82.03.0001

T82.03.0001*

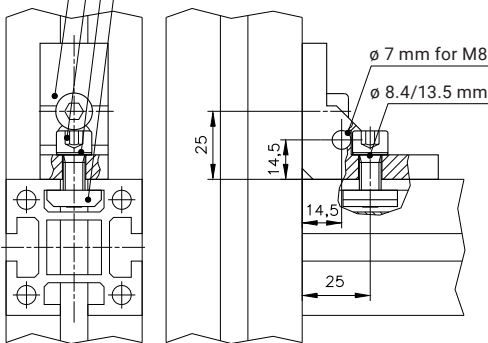
Fastening example

Angle B25, 82.05.0003

Cylinder head screw M8x20, D0912820

Ribbed washer \varnothing 8.4 K111010017

Nut 1 M8, galv. steel, 34.01.0001



Threads for inserting panelling elements can be tapped into the angle's lateral bores.

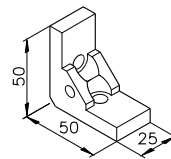
Angle B

M8x20

25 | 40 | 50 | 60

Angle B25
82.05.0003

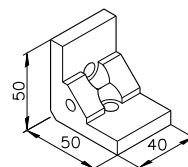
T82.05.0003*



25 | 40 | 50 | 60

Angle B40
82.05.0013

T82.05.0013*



*With fastening accessories

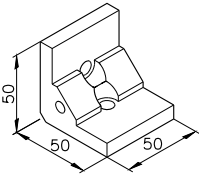
Angle Fasteners

90° angle

Material: Tumbled aluminium

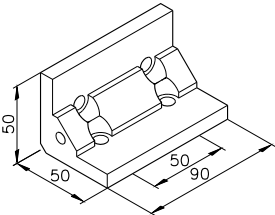
25 40 50 60 M8x20

Angle B



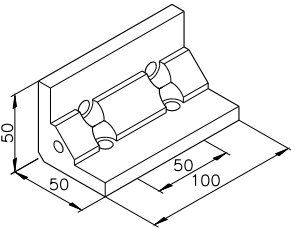
Angle B50
82.05.0004

T82.05.0004*



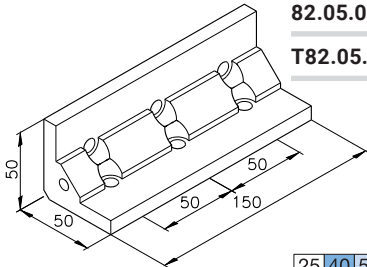
Angle B90
82.05.0022

T82.05.0022*



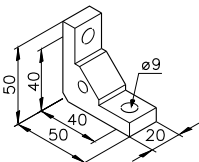
Angle B100
82.05.0006

T82.05.0006*



Angle B150
82.05.0012

T82.05.0012*



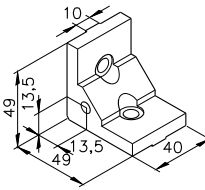
25 40 50 60
Angle B20/40
82.05.0026

T82.05.0026*

for attaching partitions
to posts

Angle Bs (with key)

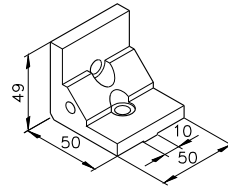
M8x20



25 40 50 60

Angle B40s2
82.05.0055

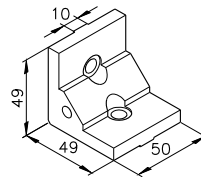
T82.05.0055*



25 40 50 60

Angle B50s1
82.05.0051

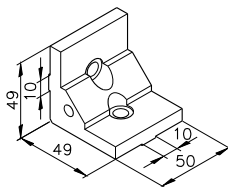
T82.05.0051*



25 40 50 60

Angle B50s2
82.05.0052

T82.05.0052*

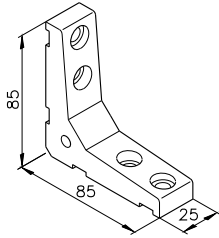


Angle B50s3
82.05.0053

T82.05.0053*

Angle C

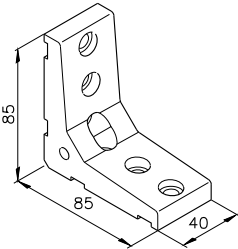
M8x20



25 40 50 60

Angle C25
82.06.0001

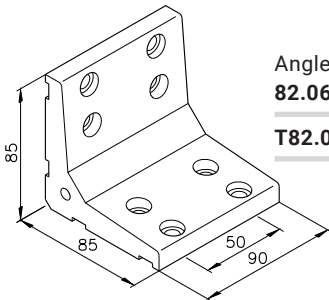
T82.06.0001*



25 40 50 60

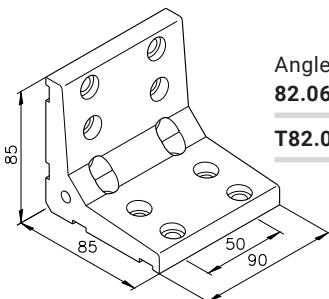
Angle C40/3
82.06.0014

T82.06.0014



Angle C90
82.06.0003

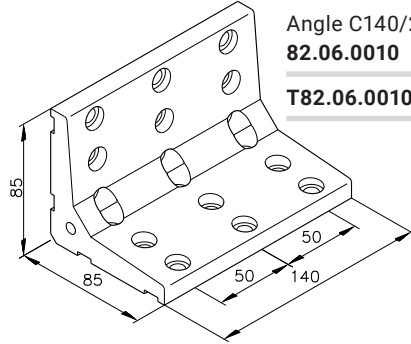
T82.06.0003*



Angle C90/2
82.06.0009

T82.06.0009*

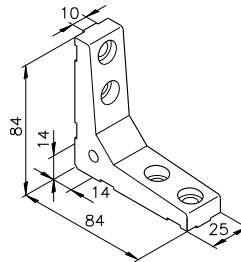
Angle C



Angle C140/2
82.06.0010

T82.06.0010*

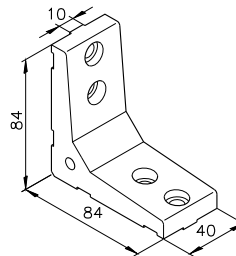
Angle Cs (with key)



25 40 50 60

Angle C25s
82.06.0040

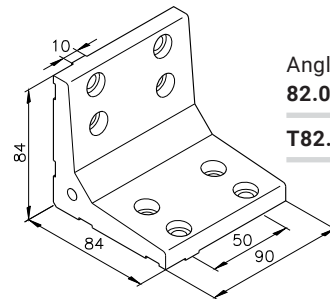
T82.06.0040*



25 40 50 60

Angle C40s
82.06.0041

T82.06.0041*



Angle C90s
82.06.0042

T82.06.0042*

*With fastening accessories

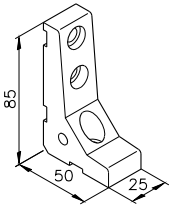
Angle Fasteners

90° angle

Material: Tumbled aluminium

25 40 50 60 M8x20

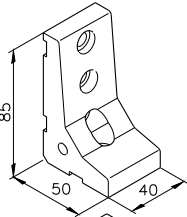
Angle D



25 40 50 60

Angle D25
82.07.0001

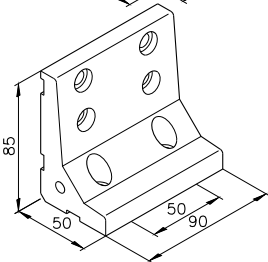
T82.07.0001*



25 40 50 60

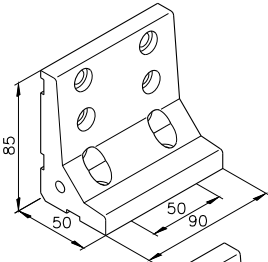
Angle D40/3
82.07.0013

T82.07.0013*



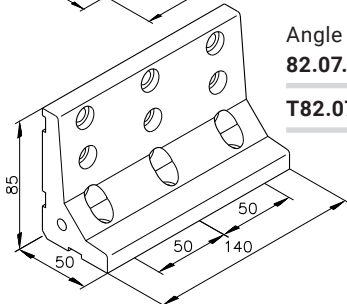
Angle D90
82.07.0003

T82.07.0003*



Angle D90/2
82.07.0009

T82.07.0009*

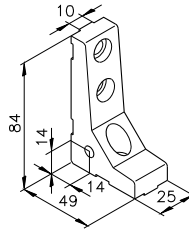


Angle D140/2
82.07.0010

T82.07.0010*

Angle Ds (with key)

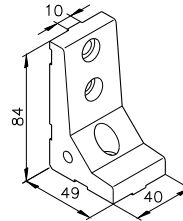
M8x20



25 40 50 60

Angle D25s
82.07.0040

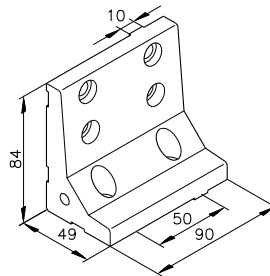
T82.07.0040*



25 40 50 60

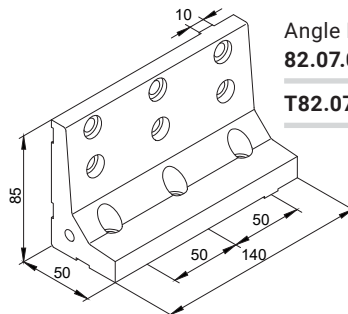
Angle D40s
82.07.0041

T82.07.0041*



Angle D90s
82.07.0042

T82.07.0042*



Angle D140s
82.07.0043

T82.07.0043*

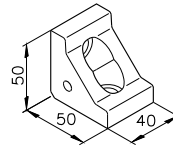


90° angle

Material: Tumbled aluminium

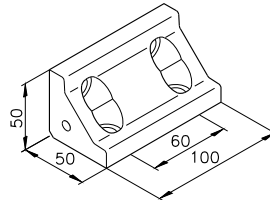
25 40 50 60 M12x25

Angle H



Angle H40
82.60.0701

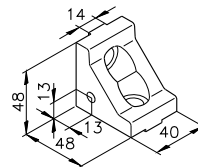
T82.60.0701*



Angle H100
82.60.0702

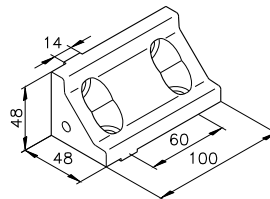
T82.60.0702*

Angle Hs (with key)



Angle H40s
82.60.0741

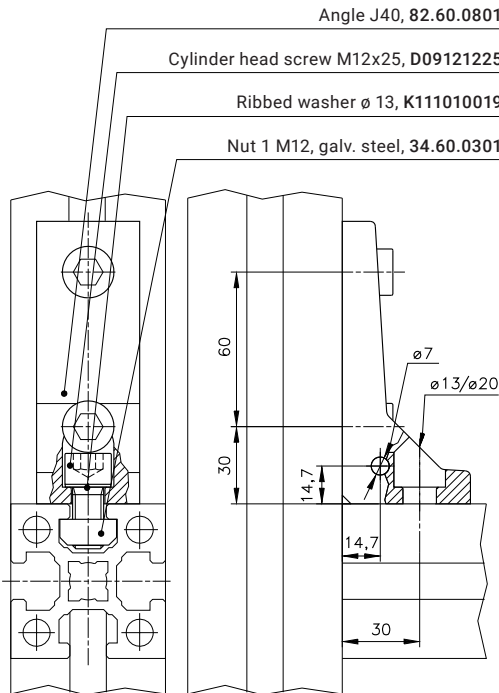
T82.60.0741*



Angle H100s
82.60.0742

T82.60.0742*

Fastening example



Threads for inserting panelling elements can be tapped into the angle's lateral bores.

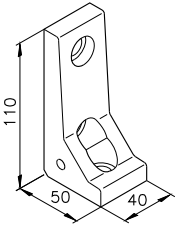
Angle Fasteners

90° angle

Material: Tumbled aluminium

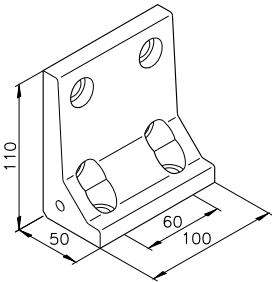
25 40 50 60 M12x25

Angle J



Angle J40
82.60.0801

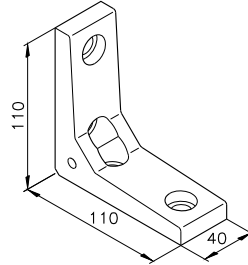
T82.60.0801*



Angle J100
82.60.0802

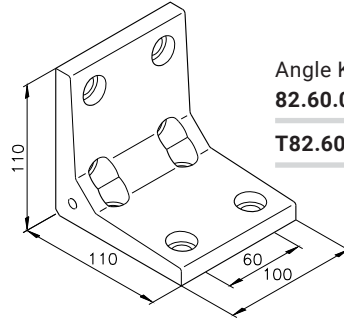
T82.60.0802*

Angle K



Angle K40
82.60.0901

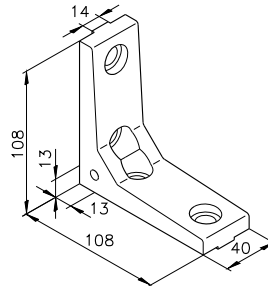
T82.60.0901*



Angle K100
82.60.0902

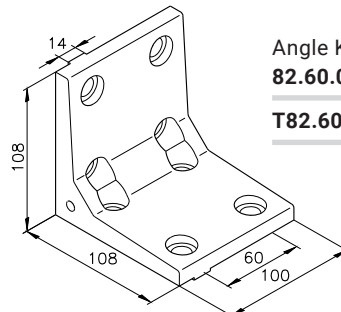
T82.60.0902*

Angle Ks (with key)



Angle K40s
82.60.0941

T82.60.0941*



Angle K100s
82.60.0942

T82.60.0942*



90° Angle Brackets

mk angle brackets are an excellent addition to mk's range of angles, designed for structures subject to high static loads and for connecting heavy, third-party components.

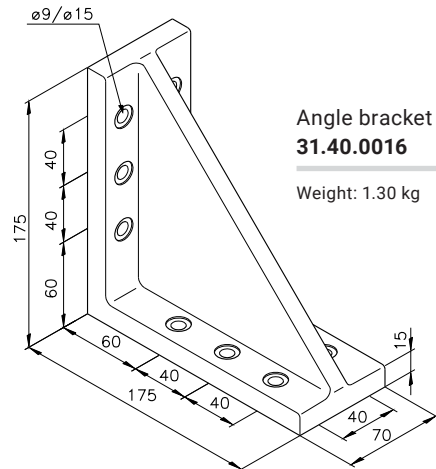
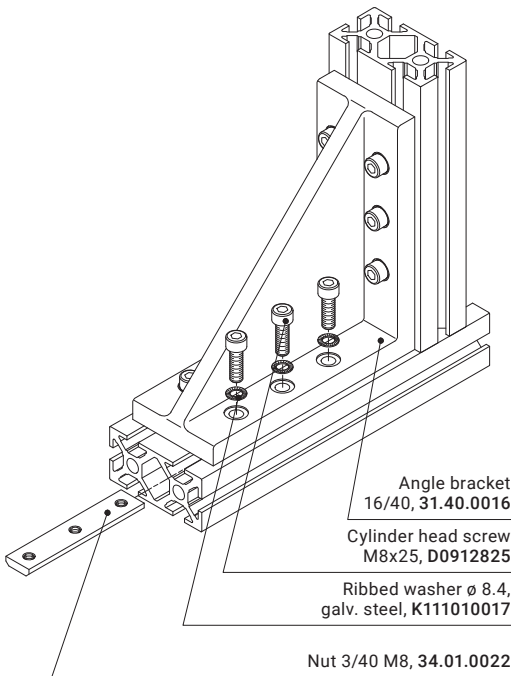
Material: Die-cast aluminium, milled at right angles

25 40 50 60

M8x25

3

Fastening example



Angle bracket 16/40
31.40.0016

Weight: 1.30 kg

Angle Fasteners

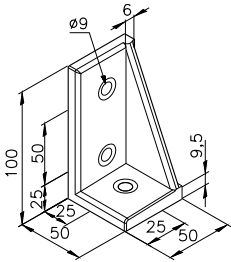
90° Angle Brackets

Material: Die-cast aluminium, milled at right angles

25 40 50 60

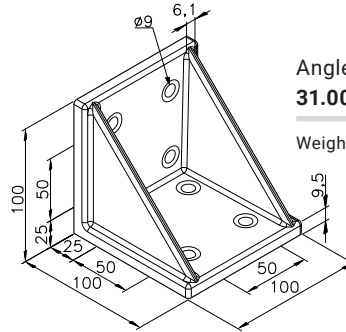
M8x20

3



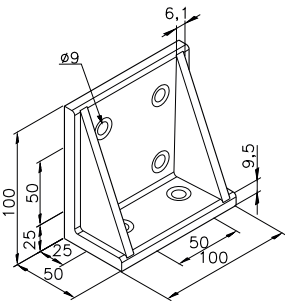
Angle bracket 1
31.00.0001

Weight: 0.25 kg



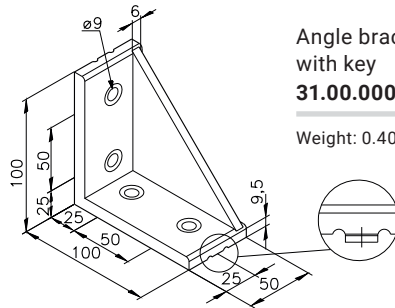
Angle bracket 5
31.00.0005

Weight: 0.70 kg



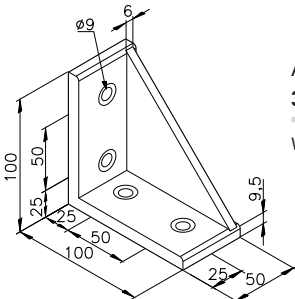
Angle bracket 2
31.00.0002

Weight: 0.50 kg



Angle bracket 7
with key
31.00.0007

Weight: 0.40 kg

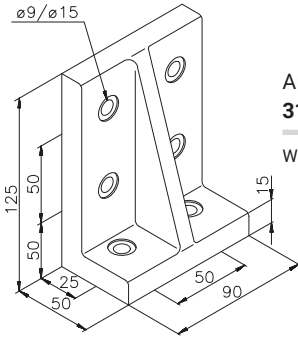


Angle bracket 4
31.00.0004

Weight: 0.35 kg

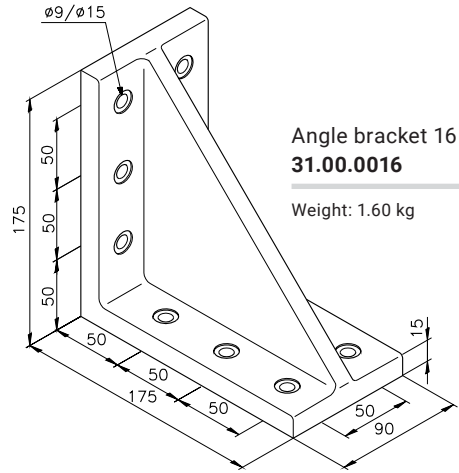
25 40 50 60

M8x25



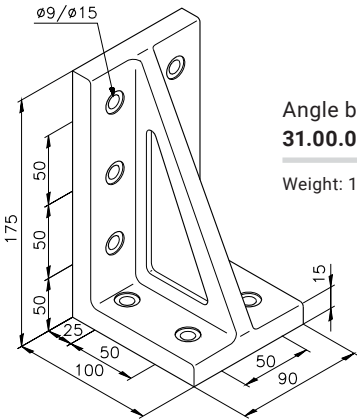
Angle bracket 14
31.00.0014

Weight: 0.70 kg



Angle bracket 16
31.00.0016

Weight: 1.60 kg



Angle bracket 15
31.00.0015

Weight: 1.20 kg

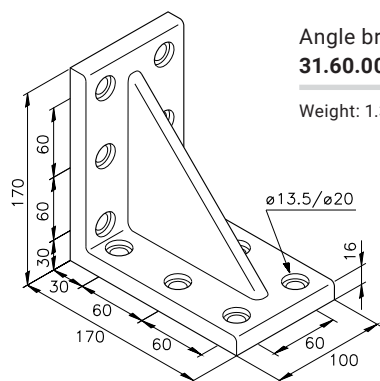
Angle Fasteners

90° Angle Brackets

Material: Die-cast aluminium, milled at right angles

25 | 40 | 50 | **60** | M12x30

3



Angle bracket 60/1
31.60.0001

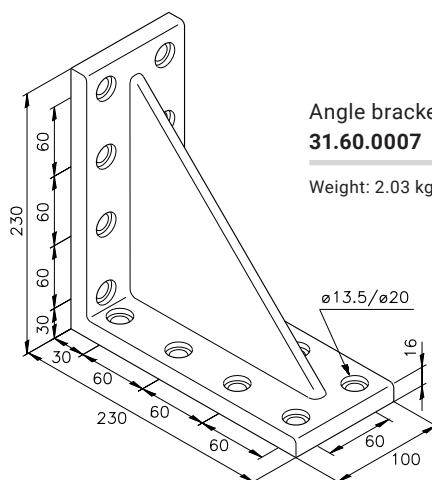
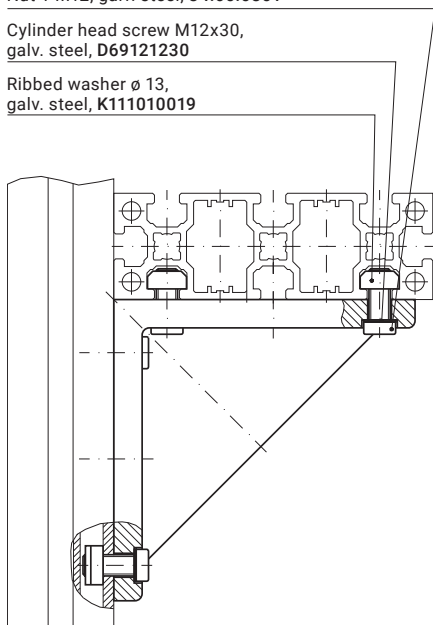
Weight: 1.38 kg

Fastening example

Nut 1 M12, galv. steel, **34.60.0301**

Cylinder head screw M12x30,
galv. steel, **D69121230**

Ribbed washer $\varnothing 13$,
galv. steel, **K111010019**



Angle bracket 60/7
31.60.0007

Weight: 2.03 kg



30/45/60° Angles

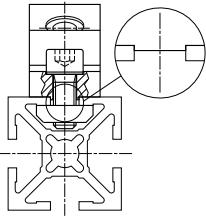
The L (30°), M (45°) and N (60°) angles are ideal for reinforcing corners. In rectangular frame structures, you must always combine two M angles or one L angle and one N angle. This will make the profiles line up automatically.

Material: Tumbled aluminium

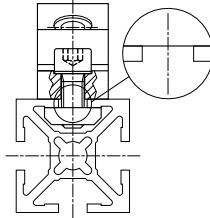
25 40 50 60 M8x20

Angle with and without key

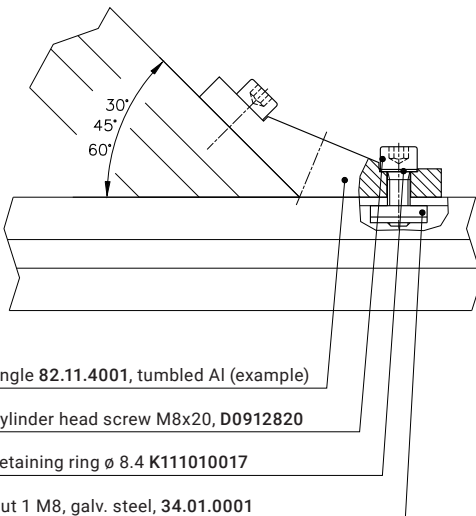
Angle M25s



Angle M25



Fastening example

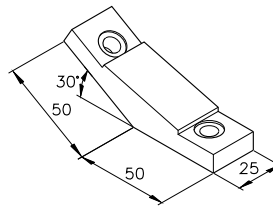


Angle 82.11.4001, tumbled Al (example)

Cylinder head screw M8x20, D0912820

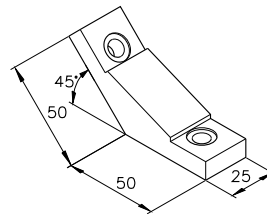
Retaining ring ø 8.4 K111010017

Nut 1 M8, galv. steel, 34.01.0001



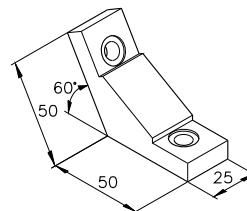
Angle L25
82.10.4001

Angle L25s
 (with key)
82.10.4041



Angle M25
82.11.4001

Angle M25s
 (with key)
82.11.4041



Angle N25
82.12.4001

Angle N25s
 (with key)
82.12.4041



Angle Fasteners

Adjustable Angle Brackets

Adjustable angle brackets make it possible to connect mk profiles at continuously variable angles. The assembly kit with fastening accessories also includes screws, ribbed washers and nuts/T-nuts.

Material: Tumbled aluminium

25 | 40 | 50 | 60 M6x16

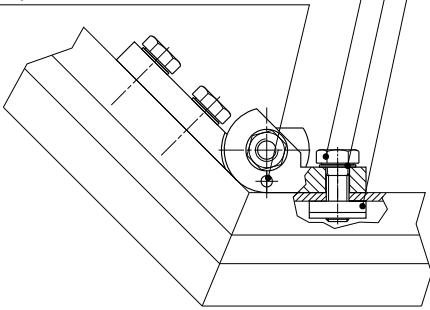
Series 40 fastening example

Nut 1 M8, galv. steel, 34.01.0001

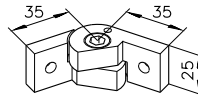
Ribbed washer \varnothing 8.4, galv. steel, K111010017

Hexagon head screw M8x20, D0933820

*Dowel pin 4 x 24, D1481424



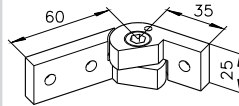
*If needed, the adjustable angle brackets can be easily dowelled. The dowel pin is included with delivery.



Adjustable angle bracket A25/1

B46.00.035

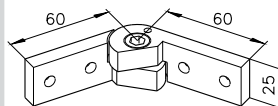
B46.00.025*



Adjustable angle bracket A25/2

B46.00.036

B46.00.026*



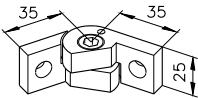
Adjustable angle bracket A25/3

B46.00.034

B46.00.024*

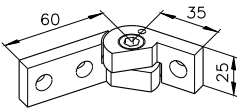
25 40 50 60

M8x20



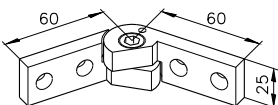
Adjustable angle
 bracket B25
B46.00.033

B46.00.021*



Adjustable angle
 bracket C25
B46.00.037

B46.00.027*



Adjustable angle
 bracket D25
B46.00.032

B46.00.020*

*With fastening accessories



Plate Fasteners

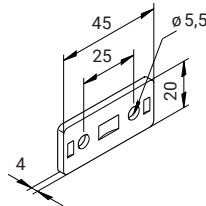
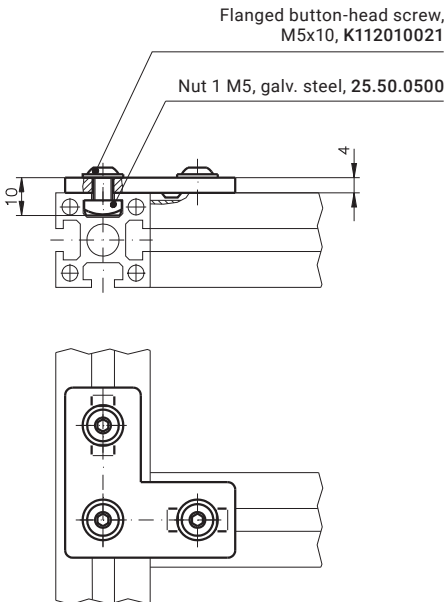
Plate Fasteners

Depending on your installation situation, you can choose among straight plates, T-plates or angle plates. The plates have a pressed indentation to ensure that they do not twist in the slot. The assembly kit (item numbers beginning with T) contains the necessary fastening accessories (screws, nuts/T-nuts).

Material: Tumbled aluminium

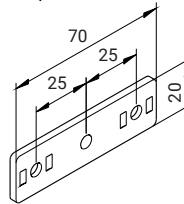
25 **40** **50** **60** **M5x10** Flanged button-head screw

Fastening example



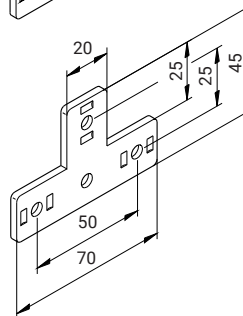
Straight plate 01
25.50.3000

T25.50.3000*



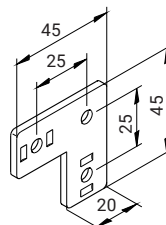
Straight plate 02
25.50.3001

T25.50.3001*



T-plate 01
25.50.3006

T25.50.3006*



Angle plate 01
25.50.3002

T25.50.3002*



Plate Fasteners

Plate fasteners are also used to connect guard partitions. The inner slots remain unobstructed and can thus be used to attach panelling. Straight plate 05, shown here, can be used to connect two guard partitions without a gap.

Material: Tumbled aluminium

25 40 50 60

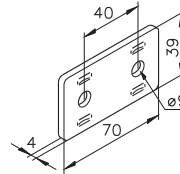
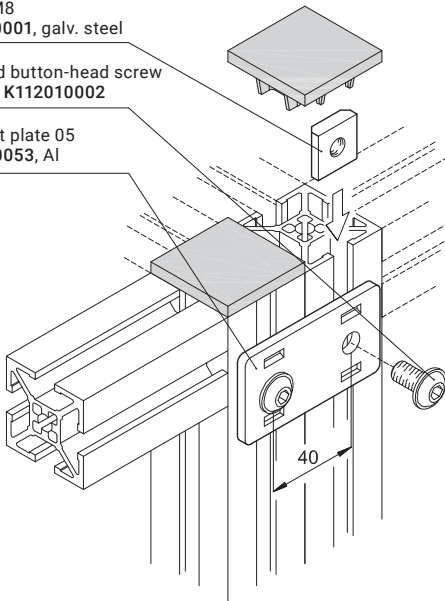
M8x12 Flanged button-head screw

Fastening example

Nut 1 M8
 34.01.0001, galv. steel

Flanged button-head screw
 M8x12, K112010002

Straight plate 05
 50.05.0053, Al



Straight plate 05
50.05.0053

T50.05.0053*

*With fastening accessories

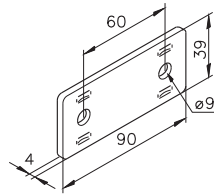


Plate Fasteners

Plate Fasteners

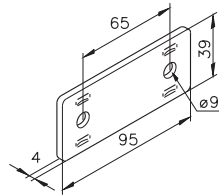
Material: Tumbled aluminium

25 40 50 60 **M8x12** Flanged button-head screw



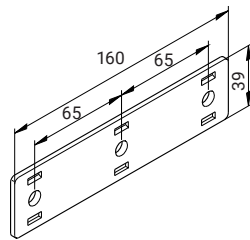
Straight plate 04
50.05.0077

T50.05.0077*



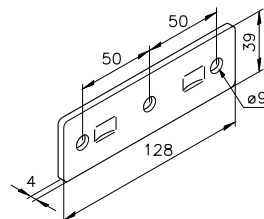
Straight plate 03
50.05.0052

T50.05.0052*



Straight plate 09
50.05.0070

T50.05.0070*

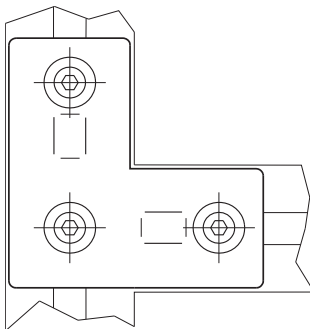
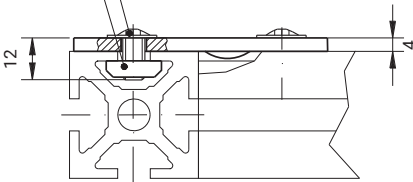


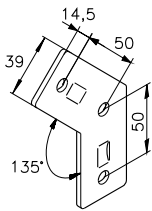
Straight plate 07
50.05.0047

T50.05.0047*

Fastening example

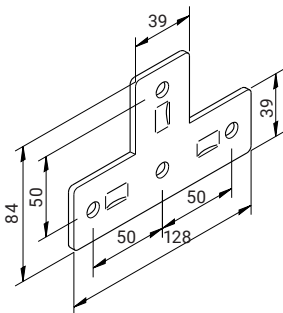
Nut 1 M8, galv. steel, 34.01.0001
Flanged button-head screw M8x12,
K112010002





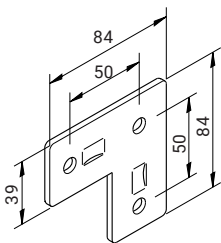
Angle plate 13
50.05.0051

T50.05.0051*



T-plate 03
50.05.0046

T50.05.0046*



Angle plate 03
50.05.0045

T50.05.0045*

*With fastening accessories



Plate Fasteners

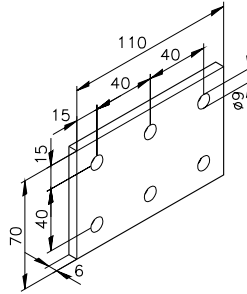
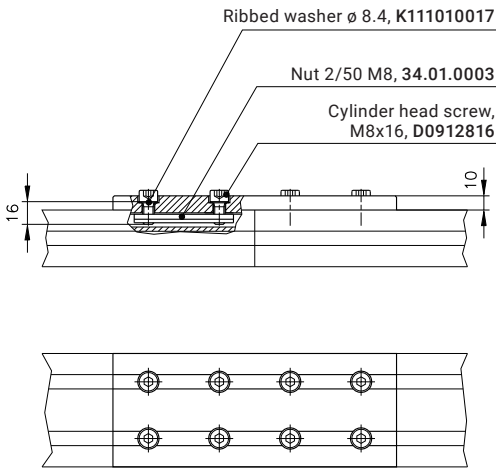
Heavy-Duty Plate Fasteners

The heavy-duty plate fasteners have a plate thickness of 6 mm and are designed for higher loads. Plates with a key ensure that profile paths are exactly aligned and that the connections do not twist in the slot.

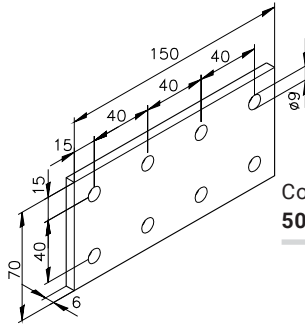
Material: Tumbled aluminium

25 40 50 60 M8x16

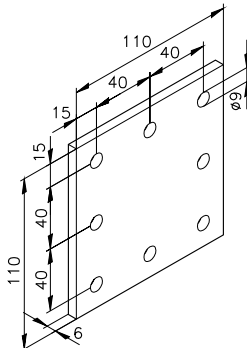
Fastening example



Connection plate 40/2
50.05.0060



Connection plate 40/3
50.05.0061



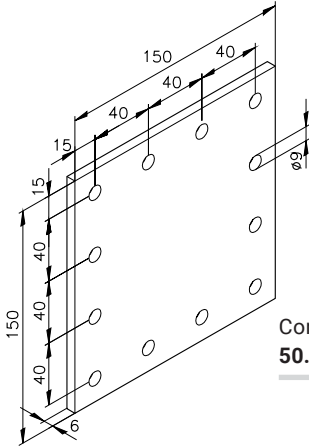
Connection plate 40/4
50.05.0062

Heavy-Duty Plate Fasteners

... with Key

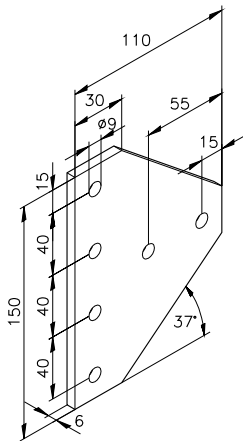
Material: Anodised aluminium

25 40 50 60 M8x16

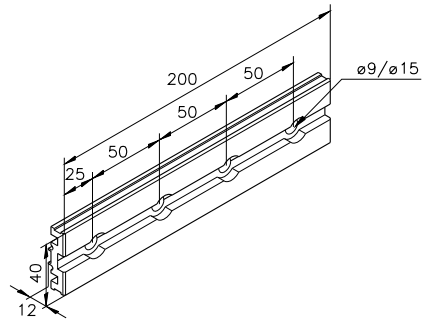


Connection plate 40/6
50.05.0064

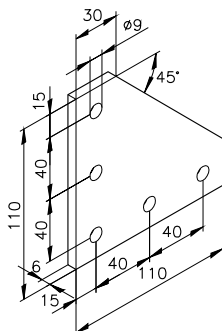
Connection profile 3855
3855BF0200



Connection plate 40/7
50.05.0065



Connection profile 3856
3856BD0200



Connection plate 40/8
50.05.0066

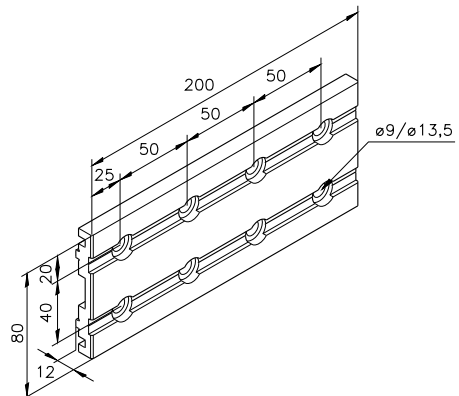


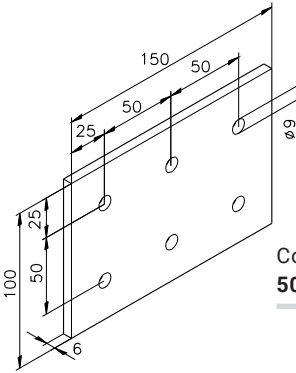


Plate Fasteners

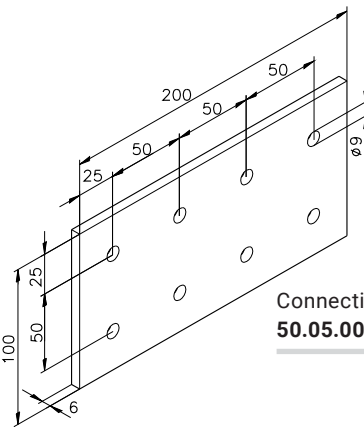
Heavy-Duty Plate Fasteners

Material: Tumbled aluminium

25 40 50 60 M8x16

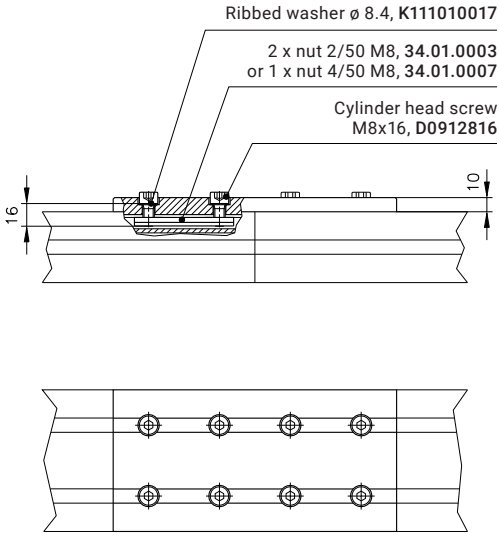


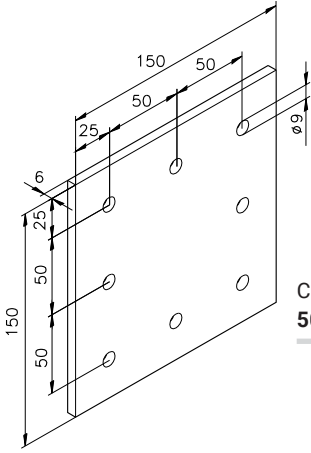
Connection plate 16
50.05.0016



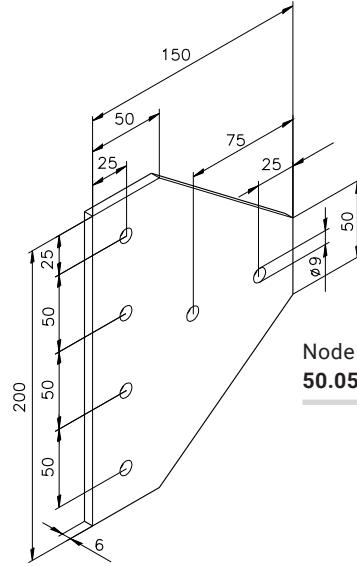
Connection plate 17
50.05.0017

Fastening example

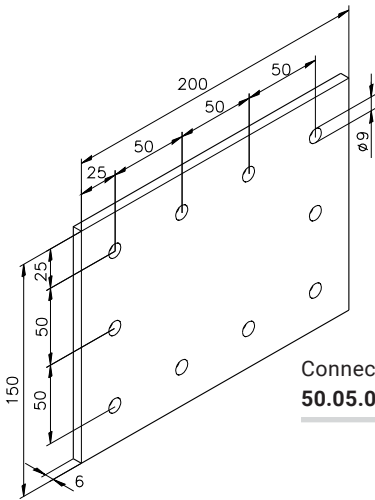




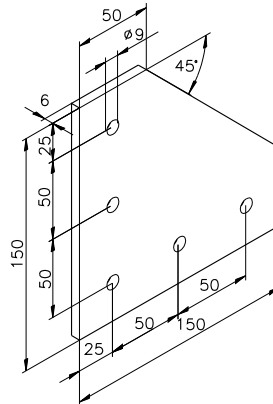
Connection plate 13
50.05.0013



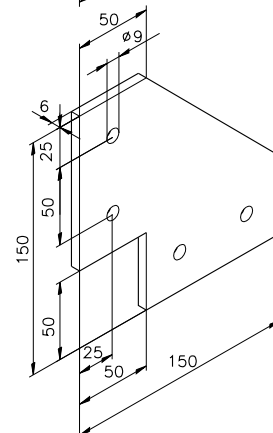
Node plate 12
50.05.0012



Connection plate 18
50.05.0018



Node plate 10
50.05.0010



Node plate 11
50.05.0011

Plate Fasteners

Heavy-Duty Plate Fasteners

... with Key

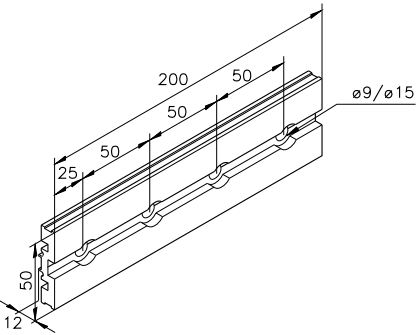
Material: Anodised aluminium

3

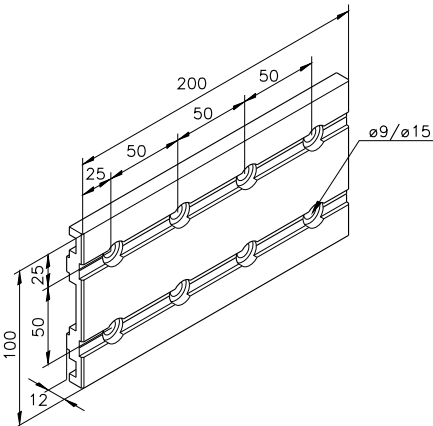
25 40 50 60

M8x16

Connection profile 3860
3860BD0200



Connection profile 3861
3861BD0200

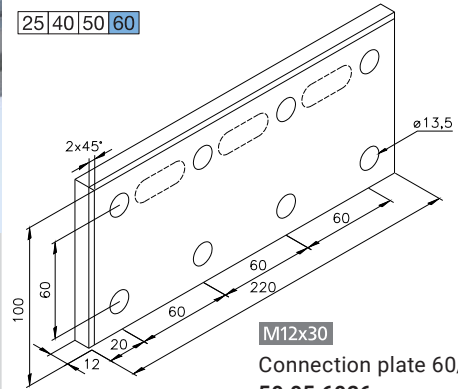




Heavy-Duty Plate Fasteners

Material: Tumbled aluminium

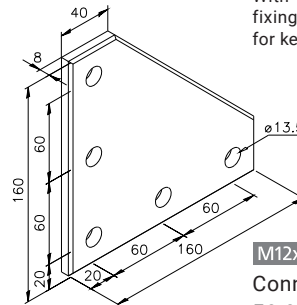
25 | 40 | 50 | 60



M12x30

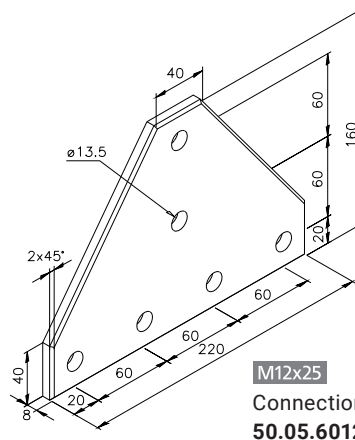
Connection plate 60/26
50.05.6026

With 14 mm key slots for fixing plate in profile slot, for keys D6885A14940



M12x25

Connection plate 60/10
50.05.6010



M12x25

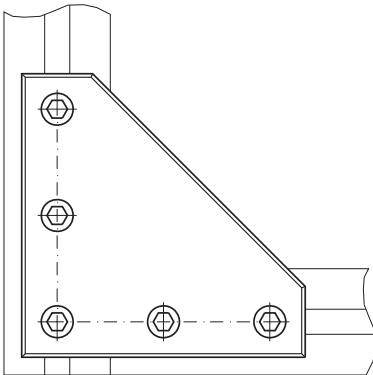
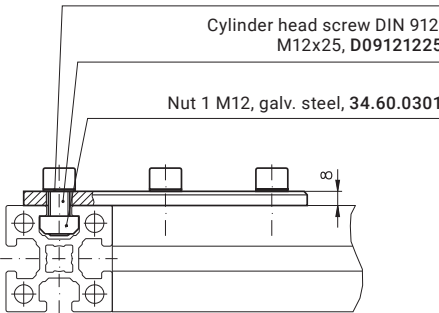
Connection plate 60/12
50.05.6012

Fastening example

Ribbed washer ϕ 13, galv. steel, K111010019

Cylinder head screw DIN 912, M12x25, D09121225

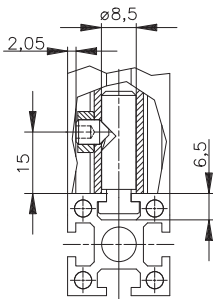
Nut 1 M12, galv. steel, 34.60.0301





Tools starting on page 324
End machining starting on page 16

Fastening example



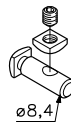
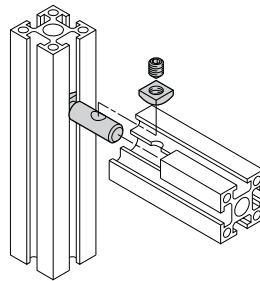
Internal Fasteners

Tension plugs

Tension plugs are an alternative to angles when the slots must be left free for inserting panelling or when structures are to be created without visible connecting elements. Tension plugs are therefore often used with protective panels or in light-duty frame construction.

Material: Galvanised steel

25 | 40 | 50 | 60




Tension plug
B51.03.009

End machining BA, BB
(\varnothing 5.8 mm bore to centre, 15 mm distance)



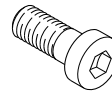
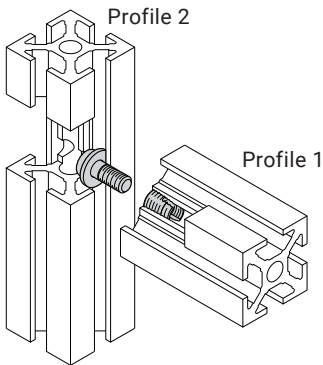
Screw Connections

Screw connections allow users to create profile structures using only standard parts. The connection requires an M8 thread in profile 1 (extra light duty profile) or an M8 threaded insert. In profile 2, a \varnothing 10 mm bore is required at the spot of the connection to tighten the screw with an Allen key. For a seamless closure with an end cap, the bore should be 15 mm from the edge.

 Tools starting on page 324
 End machining starting on page 16

25 | 40 | 50 | 60

Fastening example

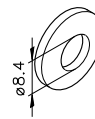


Cylinder head screw
 M8x20
D6912820

DIN 6912, 8.8 galv. steel

D6912820A2

DIN 6912, 4.6 stainless steel

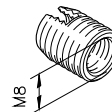


Tension washer
D67968

Galv. steel

D67968A2

Stainless steel



M8 threaded insert
K112030008

Galv. steel

(\varnothing 10 mm through-bore)



Internal Fasteners

Screw Connections

... for Cleanrooms

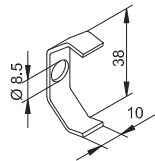
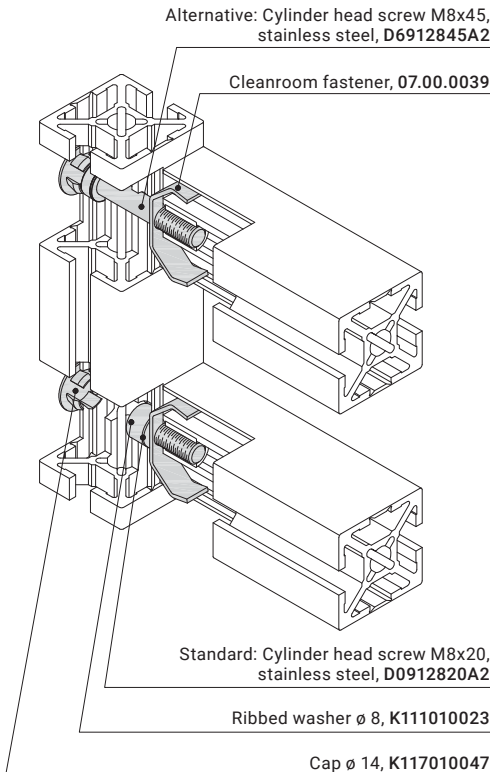
mk's cleanroom fastener is a hidden fastener that securely connects Series 40 cleanroom profiles while also preventing twisting. The connector is clipped into the face of a profile equipped with a threaded insert. When the profiles are screwed together, the connector is pulled into the closed slot and displaces the removable material covering the slot. This produces a particularly close fit.

25 | 40 | 50 | 60



Tools starting on page 324
End machining starting on page 16

Fastening example



Cleanroom fastener
with silver cap
B51.03.100.SI

with black cap
B51.03.100.SW

Including screw,
ribbed washer and cap



Tension Plugs

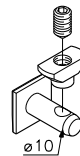
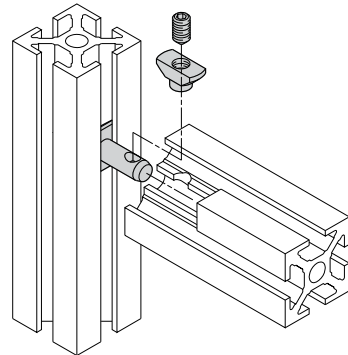
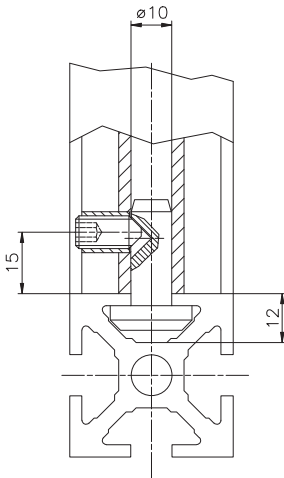
Tension plugs are an alternative to angles when structures need to have hidden connecting elements and unobstructed slots. As an alternative to the tension plugs listed below, you can also use tension plugs with a thrust part; see the following page. The plugs with thrust parts are more versatile and have additional benefits, but they have a smaller contact surface in the slot than the connectors shown here.



Tools starting on page 324
 End machining starting on page 16

25 40 50 60

Fastening example



Tension plug
B51.03.004

Galv. steel

B51.03.030

Stainless steel

End machining BA, BB
 ($\varnothing 10$ mm bore to centre, 15 mm distance)

Internal Fasteners

Tension Plugs

... with Thrust Part

Tension plugs with a thrust part are ideally suited for frame structures containing panelling, since all slots remain free. The tension plugs also allow profiles to be retrofitted onto existing structures, even if the faces of the profiles are already sealed. The connector is fastened in the slot using the thrust part (ball with spring), which eases mounting in a vertical position and provides an additional mounting option.

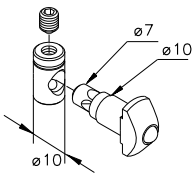
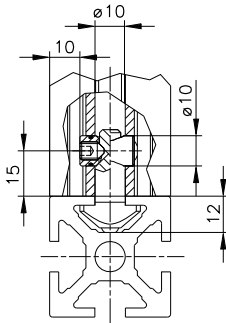
Material: Galvanised steel

25 40 50 60



Tools starting on page 324
End machining starting on page 16

Fastening example

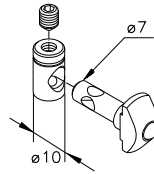
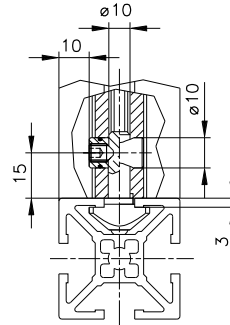


**Tension plug
B51.03.040**

for series 40 profiles,
light duty and normal

End machining BV, BW
(ø 10 mm through-bore, 15 mm distance)

Fastening example



**Tension plug
B51.03.041**

for series 40 profiles,
extra light duty

End machining BV, BW
(ø 10 mm through-bore, 15 mm distance)



Tension Plugs

A tension plug is also available for Series 50 structures that require hidden connecting elements and unobstructed slots.

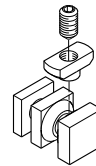
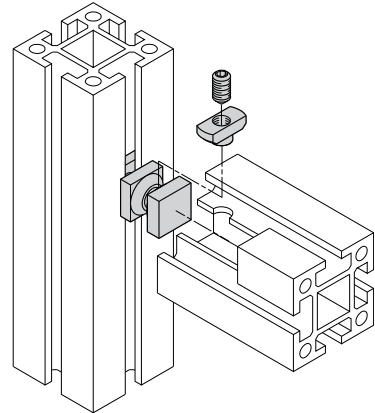
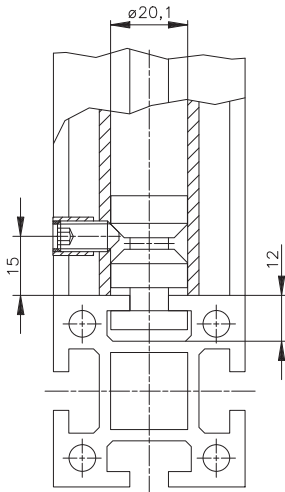
Material: Galvanised steel

3

➔ Tools starting on page 324
 End machining starting on page 16

25 | 40 | 50 | 60

Fastening example



Tension plug
B51.03.006

End machining BF, BG
 (\varnothing 10 mm bore to centre, 15 mm distance)

Internal Fasteners

Anchor Fasteners

Anchor fasteners are an innovative type of hidden connector that can be used without profile machining. They are slid into the $\varnothing 10$ mm bore channel of a Series 40 profile and clamped using a screw. The side anchors are used to fasten the connector to the other profile while also preventing twisting.

Material: Galvanised steel

25 | 40 | 50 | 60

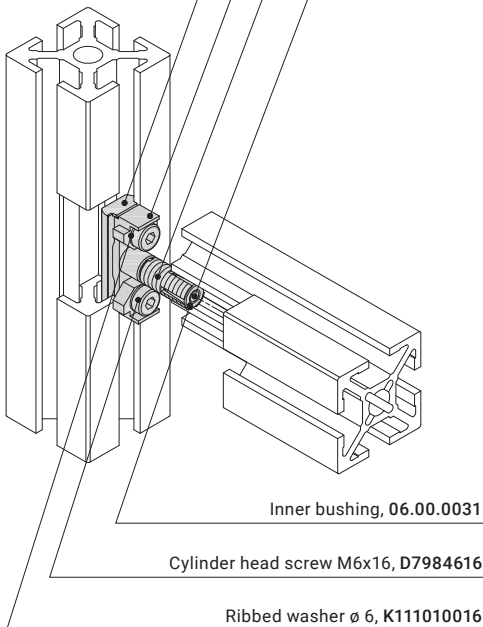
Fastening example

Cylinder head screw M5x35, D0912535

Outer bushing, 06.00.0030

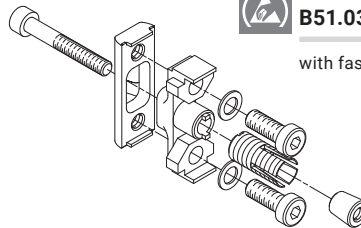
Anchor clamp,
die-cast steel, 79.00.0050

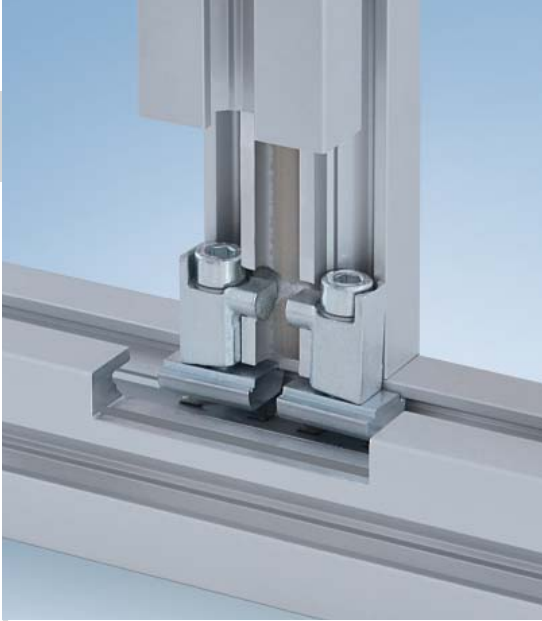
Swivel-in nut 2 M6 ESD,
for anchor, 34.16.0636



Anchor fastener
B51.03.050

with fastening accessories





Clamping Jaws

Clamping jaws are a versatile and hidden connection for Series 40 and Series 50 profiles. The screw can be easily tightened in the slot and they are suitable for later mounting in existing structures, making them appropriate for a wide range of applications. They can be used in profiles with two, four, eight or even "n" slots. The connection requires standard end machining with a \varnothing 10 mm bore that is 15 mm from the edge for Series 40 and 14 mm from the edge for Series 50.

Material: Galvanised steel

25 40 50 60 M6x25

Tools starting on page 324
 End machining starting on page 16

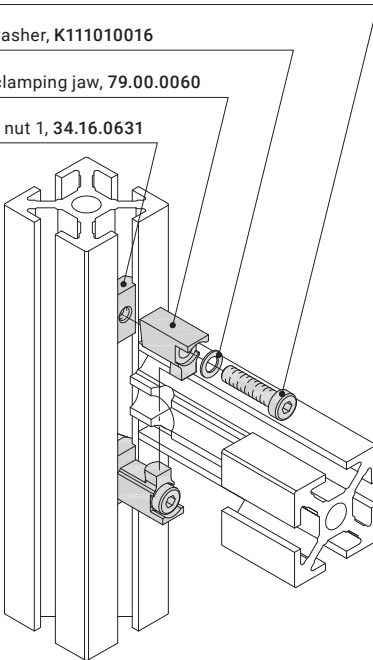
Fastening example

Cylinder head screw M6x25, D7984625

Ribbed washer, K111010016

Slanted clamping jaw, 79.00.0060

Swivel-in nut 1, 34.16.0631

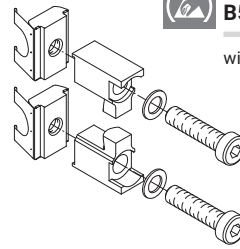


Series 40 end machining BV, BW (15 mm distance)
 Series 50 end machining BF, BG (14 mm distance)
 (\varnothing 10 mm through-bore)



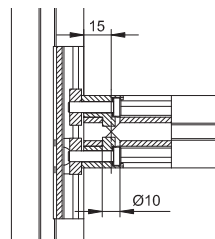
Clamping jaw
B51.03.060

with fastening accessories

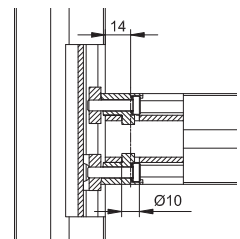


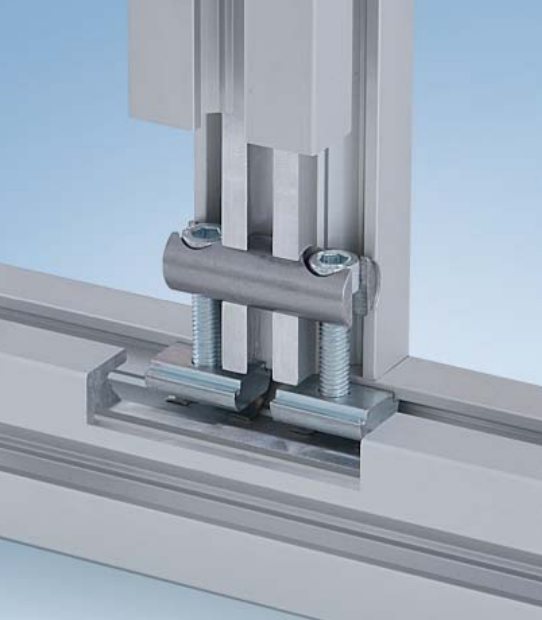
Dimensional sketch

Series 40



Series 50





Internal Fasteners

Bolt Fasteners

Bolt fasteners are compact and highly stable connectors. They are ideal for applications where you need a sturdy connection but want to avoid the obstructing edge produced by an angle. In order to use the bolt fastener, end machining is required to provide a $\varnothing 14$ mm bore at a distance of 20 mm from the edge. Different variants allow you to use the connectors in Series 40 and Series 50 profiles.

Material: Galvanised steel

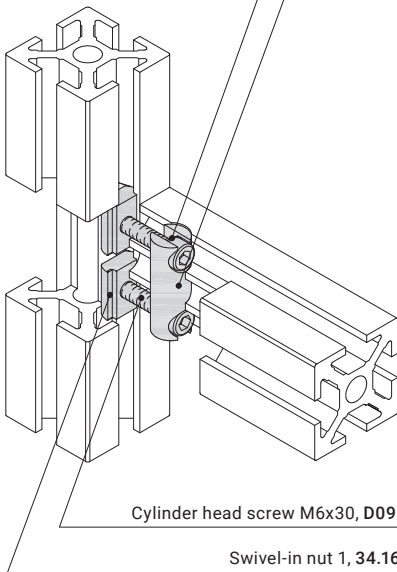


End machining starting on page 16

Fastening example

Bolt fastener, 05.03.0019

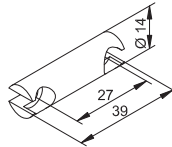
Ribbed washer $\varnothing 8$, K111010023



Cylinder head screw M6x30, D0912630

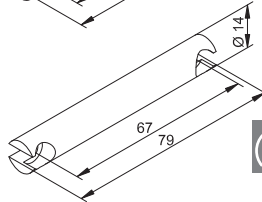
Swivel-in nut 1, 34.16.0631

25 40 50 60



Bolt fastener 40
B51.03.070SI*

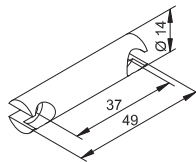
B51.03.070SW*



Bolt fastener 80
B51.03.071SI*

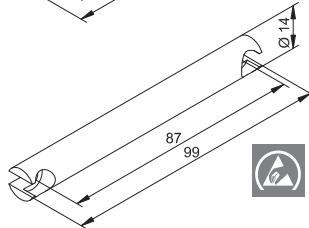
B51.03.071SW*

25 40 50 60



Bolt fastener 50
B51.03.073SI*

B51.03.073SW*



Bolt fastener 100
B51.03.074SI*

B51.03.074SW*

End machining BY, BZ
($\varnothing 14$ mm through-bore, 20 mm distance)


*With fastening accessories and cap (SI = silver, SW = black)



Hinge Tension Plugs

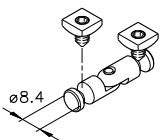
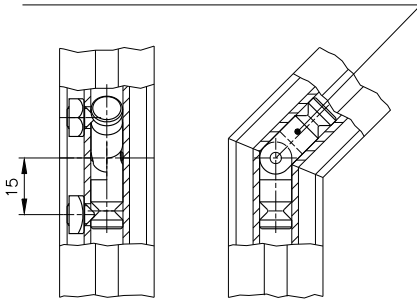
Hinge tension plugs allow you to connect mitre-cut profiles. Profiles can be connected at all angles within $\pm 90^\circ$.

Material: Galvanised steel

 Tools starting on page 324
 End machining starting on page 16

Fastening example

Series 25 hinge tension plug,
 galv. steel, B51.03.010



25 | 40 | 50 | 60



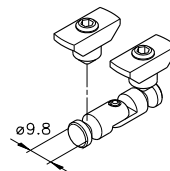
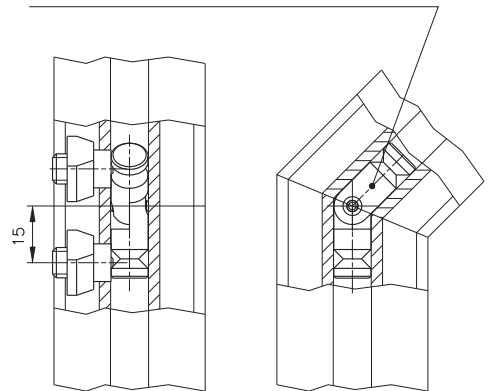
Hinge tension plug
B51.03.010

$\pm 90^\circ$

(\varnothing 5.8 mm bore to centre, 15 mm distance)

Fastening example

Series 40 hinge tension plug,
 galv. steel, B51.03.011



25 | 40 | 50 | 60



Hinge tension plug
B51.03.011

$\pm 90^\circ$

(\varnothing 10 mm bore to centre, 15 mm distance)

Internal Fasteners

Longitudinal Tension Plugs

Longitudinal tension plugs create a gap-free connection between the faces of Series 40 profiles. In contrast to plate fasteners, all slots on the profiles remain free.

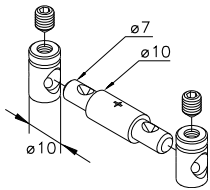
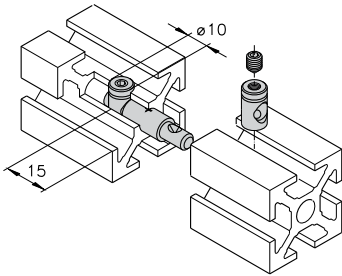
Material: Galvanised steel

25 | 40 | 50 | 60



Tools starting on page 324
End machining starting on page 16

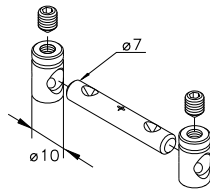
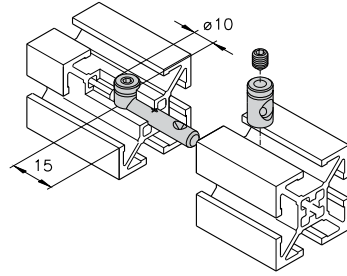
Fastening example



Longitudinal tension plug
B51.03.043

for series 40 profiles,
light duty and normal

Fastening example



Longitudinal tension plug
B51.03.044

for series 40 profiles,
extra light duty

(ø 10 mm through-bore)



Parallel Connectors

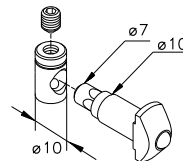
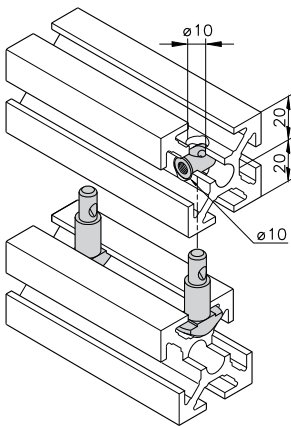
Parallel tension plugs create a gap-free paraxial connection between two profiles. The connector is fastened in the slot using the thrust part (ball with spring), which eases mounting in a vertical position. To be able to use the parallel connector, you have to drill an additional bore that is 90° to the through-bore; see the fastening example. A second connector ensures protection against twisting. Generally, a tension plug should be set at least every 1,000 mm.

Material: Galvanised steel

➔ Tools starting on page 324
 End machining starting on page 16

25 | 40 | 50 | 60

Fastening example



Parallel tension plug
B51.03.042

(ø 10 mm through-bore)



Internal Fasteners

Parallel Connectors

... Paraxial or Angled

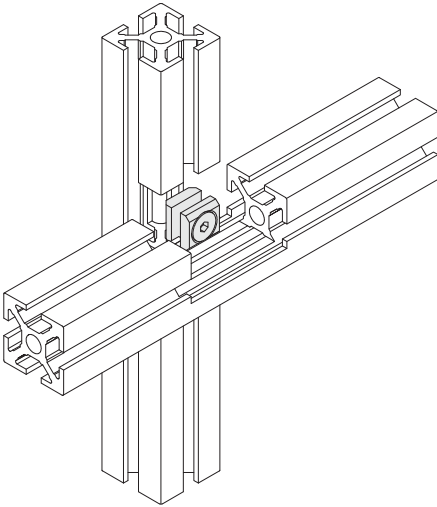
Parallel connectors made from a countersunk nut, screws and a standard nut can be used to create a gap-free connection between two profiles, either paraxial or at an angle of your choosing (single parallel connector only). In the profile to which you are connecting, one or two $\varnothing 10$ mm bores are required at the spot of the connection to tighten the screw with an Allen key.

Material: Galvanised steel

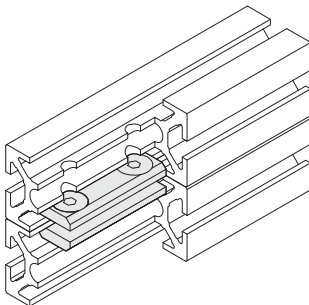


Tools starting on page 324

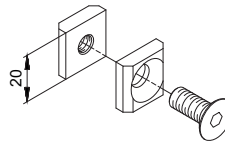
Fastening example for B51.03.055



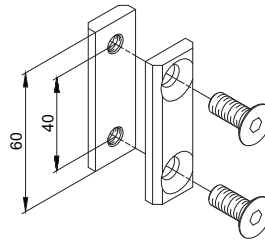
Fastening example for B51.03.056



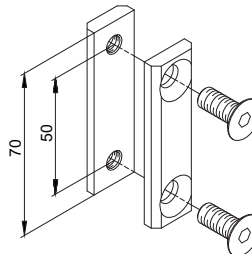
25 | 40 | 50 | 60 | M8x20



Parallel connector, single M8
B51.03.055*



Parallel connector 2/40 double M8
B51.03.056*



Parallel connector 2/50 double M8
B51.03.057*

($\varnothing 10$ mm through-bore)

*With fastening accessories



Parallel Clamping Connectors

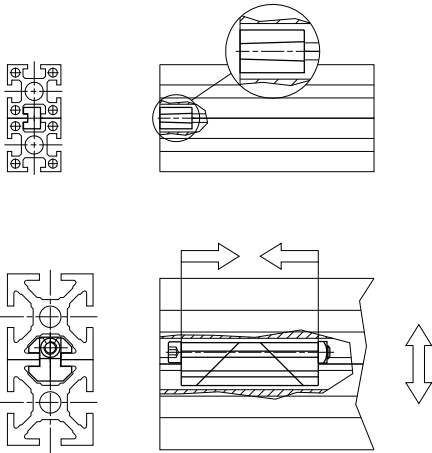
... without Machining

Parallel clamping connectors without machining are used to create gap-free, paraxial connections between two profiles without having to drill holes in the profile. When using parallel clamping connectors, you can disconnect the profiles at any time.

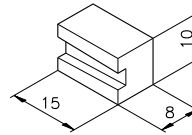
Material: Tumbled aluminium

3

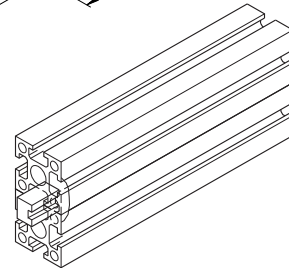
Fastening example



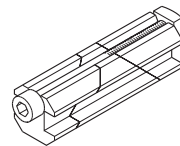
The tension causes the individual components of the connector to move against the slant, resulting in a clamping of the profile. 40/50 parallel connectors connect Series 40 profiles to Series 50 profiles.



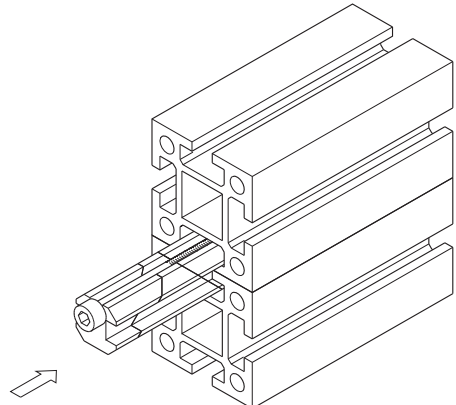
25 40 50 60
 Parallel clamp
 Series 25 **25.50.3330**



25 40 50 60
 Parallel clamping
 connector
 Series 40 **B51.03.017**



Series 50 **B51.03.016**
 Series 40/50 **B51.03.018**





Corner Block Joints

Corner Blocks

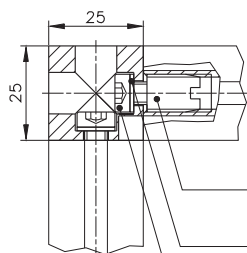
Corner blocks connect profile faces at corner joints. They produce smooth, aesthetically pleasing structures. The profile slots remain unobstructed on all sides. Open corner blocks are fastened using standard screws, while closed corner blocks are fastened with the included internal fastener.

Material: Tumbled aluminium



Tools starting on page 324
End machining starting on page 16

Fastening example with open corner blocks

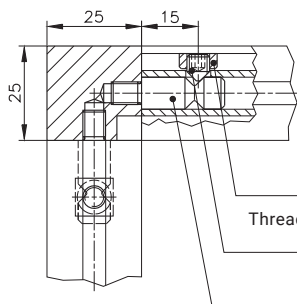


Threaded insert M6,
9S20K, K112030006

Ribbed washer \varnothing 6,
galv. steel, K111010016

Cylinder head screw M6x16,
DIN 6912, D6912616

Fastening example for closed corner blocks

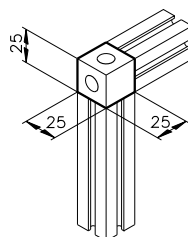


Nut 1 M6, galv. steel,
25.50.0512

Threaded pin M6x8, DIN 914,
galv. steel, D091468

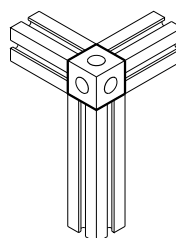
Tension plug,
galv. steel, 25.50.3321

25 | 40 | 50 | 60 | M6x16



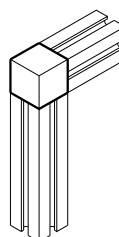
Corner block 25
25.50.3300

Connects 2 x mk 2025.01
profiles (example)



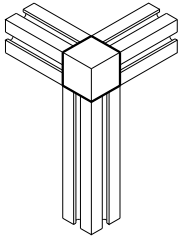
Corner block 26
25.50.3301

Connects 3 x mk 2025.01
profiles (example)



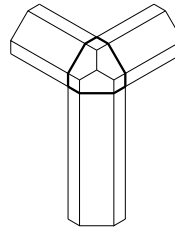
Corner block 30
B46.05.001*

Connects 2 x mk 2025.01
profiles (example)



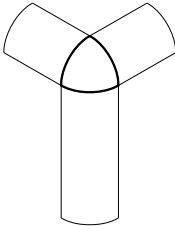
Corner block 31
B46.05.002*

Connects 3 x mk 2025.01 profiles (example)



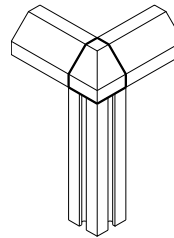
Corner block 35
B46.05.006*

Connects 3 x mk 2025.38 profiles (example)



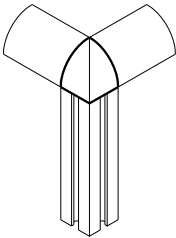
Corner block 32
B46.05.003*

Connects 3 x mk 2025.37 profiles (example)



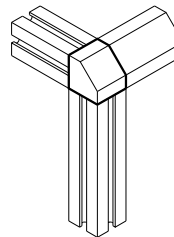
Corner block 36
B46.05.007*

Connects
 1 x mk 2025.01 profile
 2 x mk 2025.38 profiles (examples)



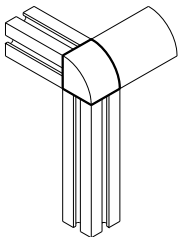
Corner block 33
B46.05.004*

Connects
 1 x mk 2025.01 profile
 2 x mk 2025.37 profiles (examples)



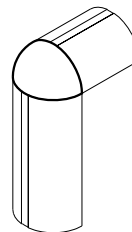
Corner block 37
B46.05.008*

Connects
 2 x mk 2025.01 profiles
 1 x mk 2025.38 profile (examples)



Corner block 34
B46.05.005*

Connects
 2 x mk 2025.01 profiles
 1 x mk 2025.37 profile (examples)



Corner block 38
B46.05.009*

Connects 2 x mk 2025.39 profiles (example)

(ø 10 mm bore to centre, 15 mm distance)

(ø 10 mm bore to centre, 15 mm distance)

*With fastening accessories

Corner Block Joints

Corner Blocks

Corner blocks connect profile faces at corner joints. They produce smooth, aesthetically pleasing structures. The profile slots remain unobstructed on all sides. Open corner blocks are fastened using standard screws, while closed corner blocks are fastened with the included internal fastener.

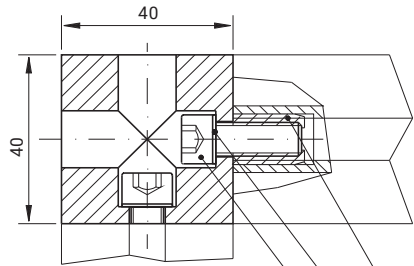
Material: Tumbled aluminium

25 40 50 60 M8x20



Tools starting on page 324
End machining starting on page 16

Fastening example with open corner blocks

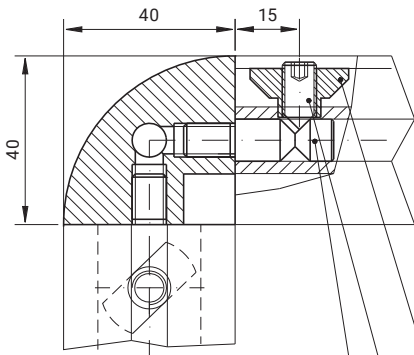


Cylinder head screw M8x20, DIN 912, D0912820

Ribbed washer \varnothing 8.4, galv. steel, K111010017

Threaded insert M8, 9S20K, K112030008

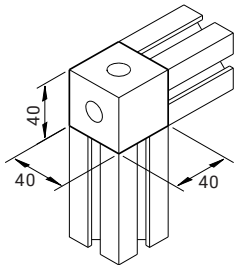
Fastening example for closed corner blocks



Tension plug, galv. steel, 05.03.0004

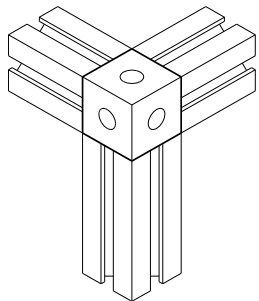
Threaded pin M8x16, DIN 914, galv. steel, D0914816

T-slot nut M8, galv. steel, 34.06.0003



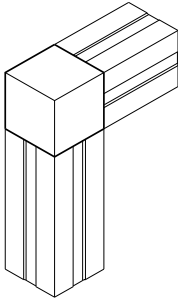
Corner block 6
79.01.0006

Connects 2 x mk 2040.01 profiles (example)



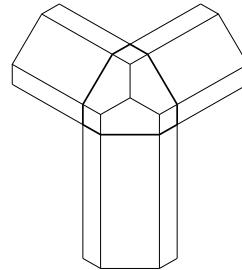
Corner block 5
79.01.0005

Connects 3 x mk 2040.01 profiles (example)



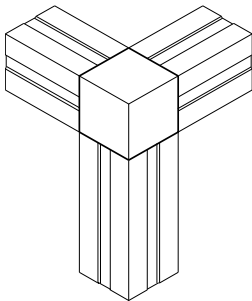
Corner block 40
B46.05.041*

Connects 2 x mk 2040.11 profiles (example)



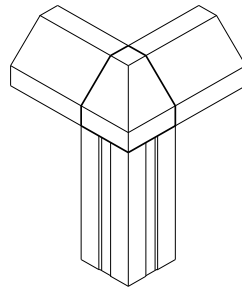
Corner block 43
B46.05.044*

Connects 3 x mk 2040.14 profiles



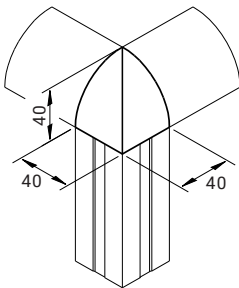
Corner block 39
B46.05.040*

Connects 3 x mk 2040.11 profiles



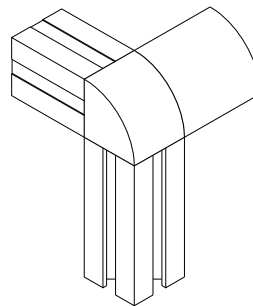
Corner block 44
B46.05.045*

Connects
 2 x mk 2040.14 profiles
 1 x mk 2040.01 profile (example)



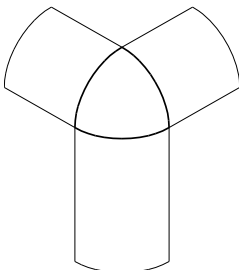
Corner block 42
B46.05.043*

Connects
 2 x mk 2040.15 profiles
 1 x mk 2040.01 profile (example)



Corner block 46
B46.05.039*

Connects
 2 x mk 2040.11 profiles
 1 x mk 2040.15 profile (example)



Corner block 41
B46.05.042*

Connects 3 x mk 2040.15 profiles

(ø 10 mm bore to centre, 15 mm distance)

(ø 10 mm bore to centre, 15 mm distance)

*With fastening accessories



Corner Block Joints

Corner Blocks

Corner block 48 below can be connected to mk 2040.19 profiles to create aesthetically pleasing connections at 45° or 135° angles, allowing you to build even complex structures.

Material: Tumbled aluminium



Tools starting on page 324
End machining starting on page 16

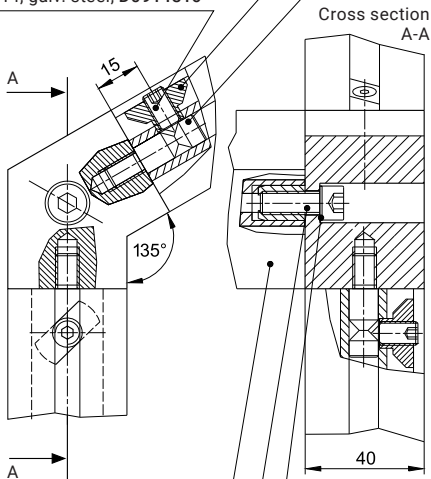
25 40 50 60 M8x20

Fastening example

Tension plug, galv. steel, 05.03.0004

T-slot nut M8, galv. steel, 34.06.0003

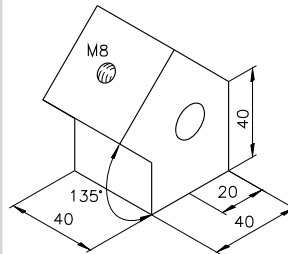
Threaded pin M8x16,
DIN 914, galv. steel, D0914816



Profile 54.19.
with 1 x M8 end machining

Cylinder head screw M8x20,
DIN 912, D0912820

Ribbed washer \varnothing 8.4, K111010017



Corner block 48
B46.05.048*

for mk 2040.19 profiles

(\varnothing 10 mm bore to centre, 15 mm distance)




Corner Blocks

Corner blocks connect profile faces at corner joints. They produce smooth, aesthetically pleasing structures. The profile slots remain unobstructed on all sides. To connect mk 2000 profiles, holder 5 is also inserted in the profile and screwed in place; see the fastening example on page 124.

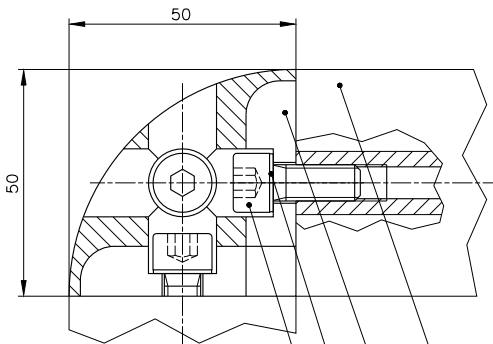
Material: Tumbled aluminium

3

 Tools starting on page 324
 End machining starting on page 16

25 40 50 60 M8x20

Fastening example for mk 2003 profiles

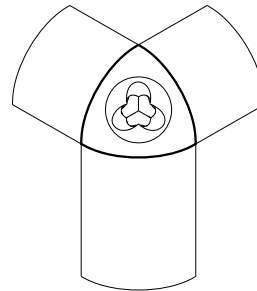


Cylinder head screw M8x20,
 DIN 912, D0912820

Ribbed washer \varnothing 8.4,
 galv. steel, K111010017

Corner block 2, tumbled Al, 79.01.0002

5103AA.

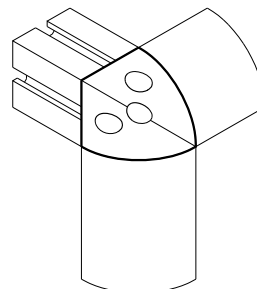


Corner block 1
79.01.0001

Connects 3 x mk 2003
 profiles

B51.03.003

with cap



Corner block 2
79.01.0002

Connects
 1 x mk 2000 profile
 2 x mk 2003 profiles
 (example)



Corner Block Joints

Corner Blocks

Corner blocks connect profile faces at corner joints. They produce smooth, aesthetically pleasing structures. The profile slots remain unobstructed on all sides. To connect mk 2000 profiles, holder 5 is also inserted in the profile and screwed in place; see the fastening example.

Material: Tumbled aluminium

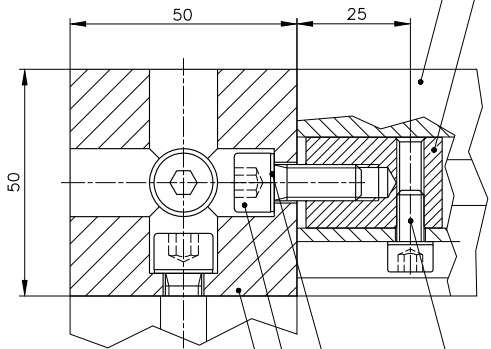


Tools starting on page 324
End machining starting on page 16

Fastening example for mk 2000 profiles

Holder 5, 79.00.0001

5100Bl.



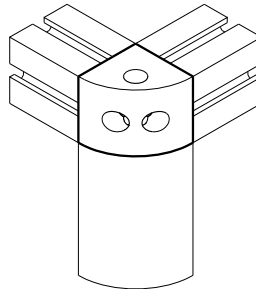
Corner block 4, tumbled Al, 79.01.0004

Cylinder head screw M8x20, DIN 912, D0912820

Ribbed washer \varnothing 8.4, galv. steel, K111010017

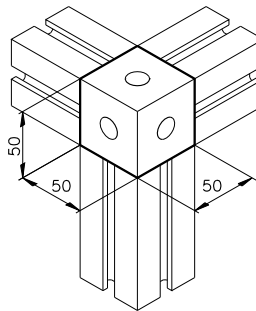
Cylinder head screw M6x12, DIN 912, D0912612

25 | 40 | 50 | 60 | M8x20



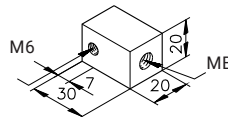
Corner block 3
79.01.0003

Connects
2 x mk 2000 profiles
1 x mk 2003 profile
(example)



Corner block 4
79.01.0004

Connects 3 x mk 2000 profiles (example)



Holder 5
79.00.0001



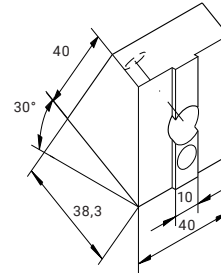
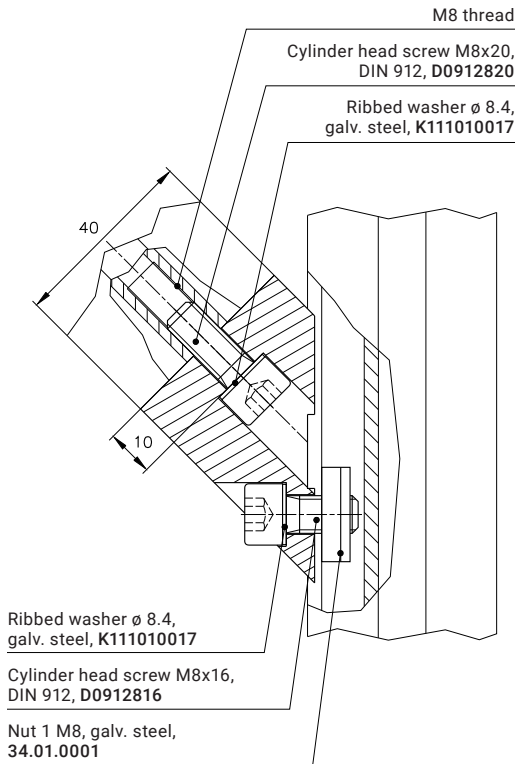
Truss Blocks

Truss blocks were specially developed to reinforce frames, frame structures, substructures, platforms, etc. and eliminate the need to mitre-cut the connection profiles. A rectangular connection requires two 45° truss blocks or one 30° and one 60° truss block. Various profiles can be used, for example the mk 2040.01.

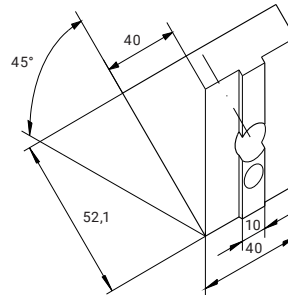
Material: Tumbled aluminium

25 40 50 60

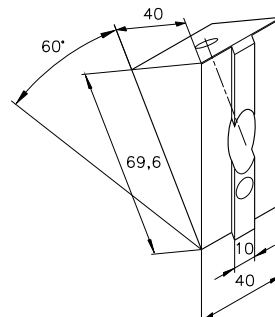
Fastening example



30° block
79.01.0062



45° block
79.01.0066



60° block
79.01.0068



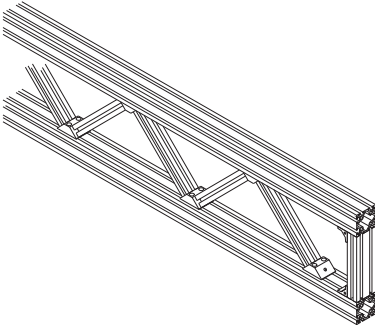
Corner Block Joints

Truss Blocks

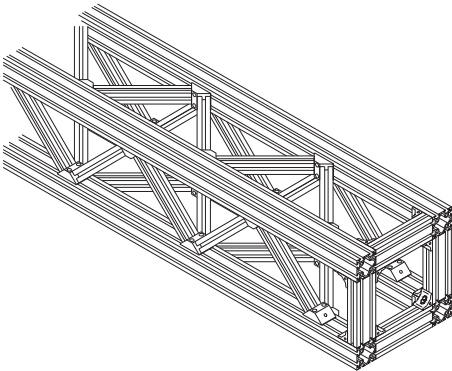
The truss blocks shown below allow you to create beam structures of any height and with combinations of different profiles. This allows large distances to be overcome and heavy loads to be carried. They can be used to build linear axis gantries, as well as for exhibit construction, etc. Describe your application to us and we'll supply you with the right truss along with the corresponding calculation.

Material: Tumbled aluminium

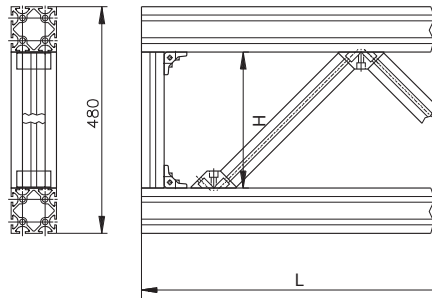
Truss beam



Box truss



Example:



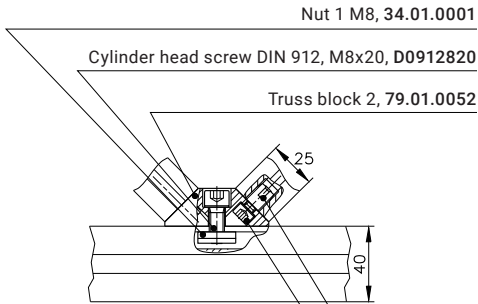
Top and bottom profiles mk 2040.03
 Strut profiles mk 2040.01

Ix 16,794.00 cm⁴
 Iy 643.00 cm⁴
 Wx 705.00 cm³
 Wy 87.00 cm³

Strut length = $\sqrt{2} \cdot (H - 31.7)$ for strut 40
 = $\sqrt{2} \cdot (H - 22.3)$ for strut 25

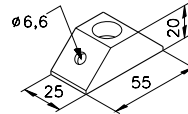
Number of struts $\approx \frac{L}{H}$

Fastening example 79.01.0052



Cylinder head screw DIN 912,
 M6x16, D0912616

Threaded insert M6, K112030006

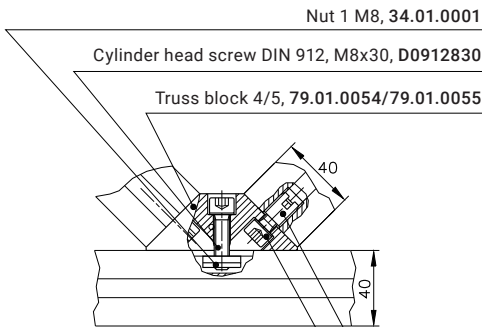


25 40 50 60

Truss block 2
79.01.0052

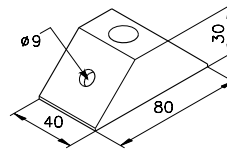
for 2 x mk 2025.01

Fastening example 79.01.0055



Cylinder head screw DIN 912,
 M8x20, D0912820

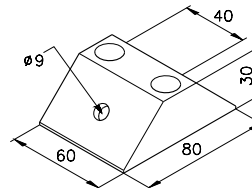
Threaded insert M8, K112030008



25 40 50 60

Truss block 4
79.01.0054

for 2 x mk 2040.01



25 40 50 60

Truss block 5
79.01.0055

for 2 x mk 2040.01

Profile Clamps

mk clamps without a key can be used to connect profiles quickly, securely and at any angle. Clamps with a key ensure that the profiles remain rectangularly aligned. Arranging two clamps in opposite positions prevents the profiles from twisting.

Material: Tumbled aluminium

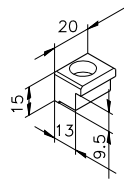
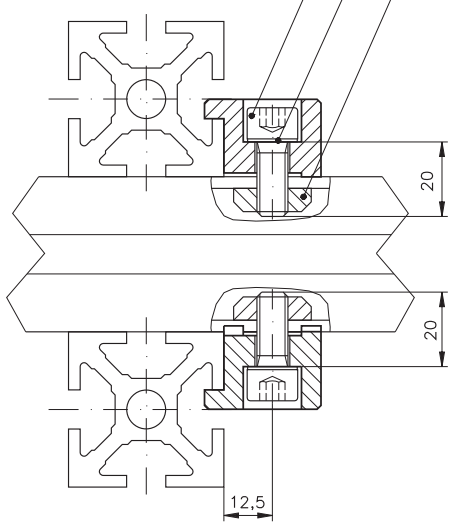
25 **40** **50** **60** **M5x12**

Fastening example

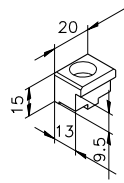
Nut 1 M8, galv. steel, 34.01.0001

Ribbed washer ø 8.4, galv. steel, K111010017

Cylinder head screw DIN 912, M8x20, D0912820

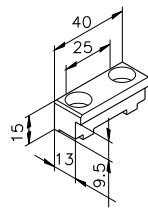


Clamp 25/0
25.50.7000



Clamp 25/1
25.50.7001

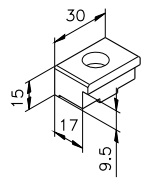
6 mm key width



Clamp 25/2
25.50.7002

6 mm key width

Adapter clamp for adapting Series 25 profiles to Series 40/50 profiles



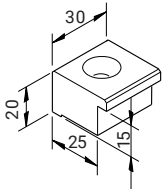
25 **40** **50** **60** **M6x16**

Clamp 40/25
30.00.0048

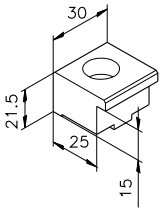
10 mm key width

25 40 50 60

M8x20

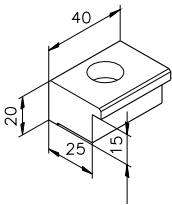


Clamp 5/30
30.00.0033

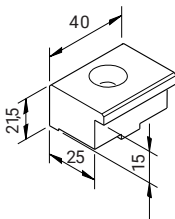


Clamp 6/30
30.00.0035

10 mm key width

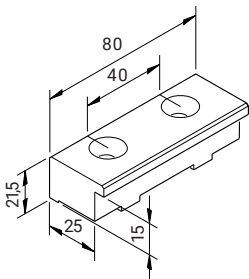


Clamp 5/40
30.00.0034



Clamp 6/40
30.00.0036

10 mm key width

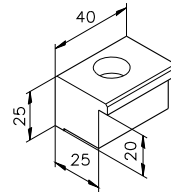


Clamp 7/80
30.00.0037

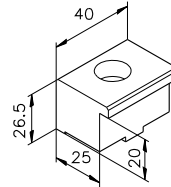
10 mm key width

25 40 50 60

M8x25



Clamp 1/40
30.00.0027



Clamp 2/40
30.00.0029

10 mm key width

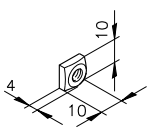
Nuts/T-nuts

Nuts

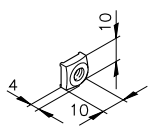
Nuts are mk's preferred mounting element for use with angles, plates and accessory components on the slot side. They can withstand heavy loads and are resistant to extraction. The variant with an additional spring sheet lets you fix the nuts in the profile slot so they can no longer move. This makes it significantly easier to install angles and accessory components in vertical slots. The ESD variant also ensures that the connection is conductive.


Material: Galvanised steel

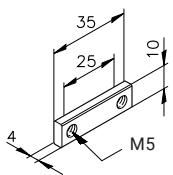
25 40 50 60



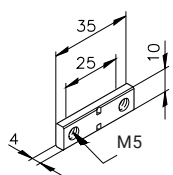
Nut 1 (Series 25)	
M4	25.50.0540
M5	25.50.0500
M6	25.50.0512




	Nut 1 ESD (Series 25)
M5	25.50.0508
M6	25.50.0518

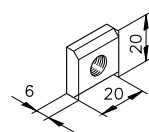


Nut 2/25 (Series 25)	
M5	25.50.0504
M6	25.50.0513




	Nut 2/25 ESD (Series 25)
M5	25.50.0505

25 40 50 60



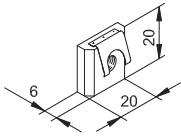
Nut 1	
M4	34.08.0001
M5	34.12.0001
M6	34.02.0008
M8	34.01.0001

	Nut 1 ESD
M4	34.08.0018
M5	34.12.0018
M6	34.02.0018
M8	34.01.0018

Nut 1 VA	
M4	34.08.0004
M5	34.12.0004
M6	34.02.0012
M8	34.01.0024

Stainless steel

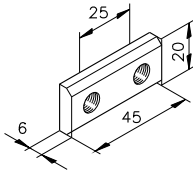
25 40 50 60



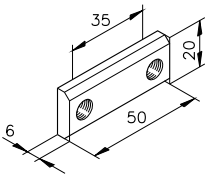
Nut 1
 with spring sheet
 M6 **34.02.0051**
 M8 **34.01.0051**



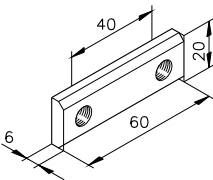
Nut 1 ESD
 with spring sheet
 M6 **34.02.0050**
 M8 **34.01.0050**



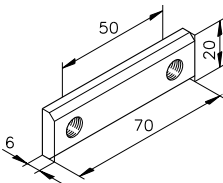
Nut 2/25
 M6 **34.02.0010**
 M8 **34.01.0002**



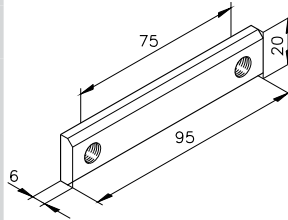
Nut 2/35
 M8 **34.01.0011**



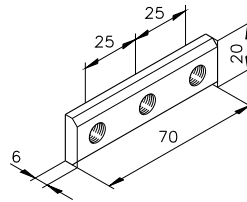
Nut 2/40
 M8 **34.01.0019**



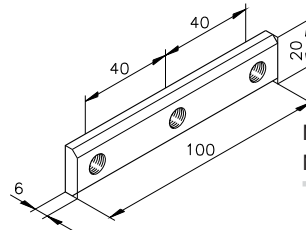
Nut 2/50
 M8 **34.01.0003**



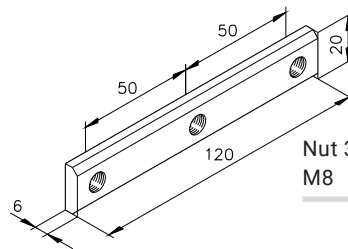
Nut 2/75
 M8 **34.01.0005**



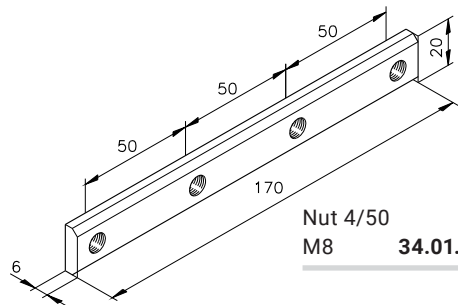
Nut 3/25
 M8 **34.01.0004**



Nut 3/40
 M8 **34.01.0022**



Nut 3/50
 M8 **34.01.0006**



Nut 4/50
 M8 **34.01.0007**

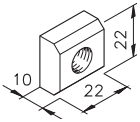
Nuts/T-nuts

3

Nuts

Material: Galvanised steel

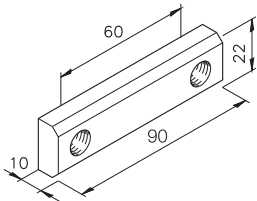
25 40 50 60



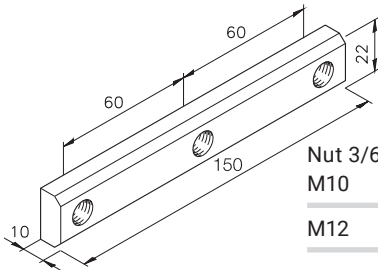
Nut 1 (Series 60)	
M8	34.60.0101
M10	34.60.0201
M12	34.60.0301

Nut 1 VA (Series 60)	
M12	34.60.0321

Stainless steel



Nut 2/60	
M10	34.60.0203
M12	34.60.0303

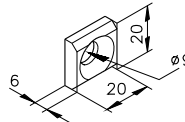


Nut 3/60	
M10	34.60.0205
M12	34.60.0305

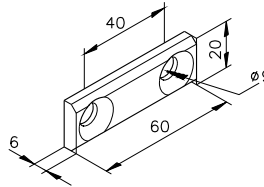
Countersunk nuts

Material: Galvanised steel

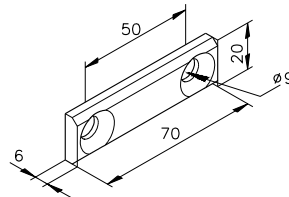
25 40 50 60



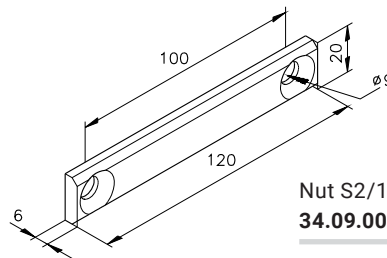
Nut S1	
34.09.0001	



Nut S2/40	
34.09.0007	



Nut S2/50	
34.09.0002	



Nut S2/100	
34.09.0006	



T-slot Nuts

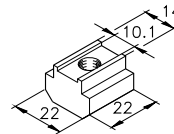
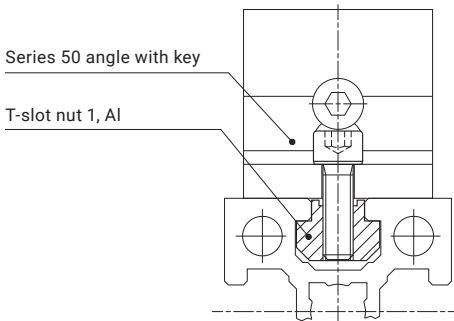
T-slot nut 1 allows you to connect Series 40/50 angles with a key to profiles from Series 60. Its geometry results in a precisely aligned connection that resists twisting in the Series 60 14 mm slot; see also the fastening example.

Material: Tumbled aluminium

3

25 | 40 | 50 | 60

Fastening example



T-slot nut 1	
M6	34.60.2001
M8	34.60.2101

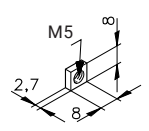


Nuts/T-nuts

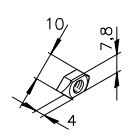
Nuts for Later Mounting

Nuts for later mounting can be installed in the profile slot even if the profile's face is already sealed. In addition, they can be used for profiles with closed slots that are only open where the connection is located.

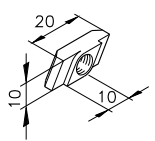
Material: Galvanised steel



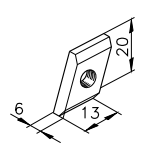
25 40 50 60
Nut
M5 D05625



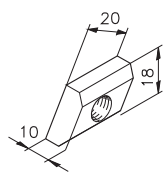
25 40 50 60
Swivel-in nut 1 (Series 25)
M4 25.50.0541
M5 25.50.0501



25 40 50 60
T-nut
M4 34.07.0004
M5 34.07.0003
M6 34.07.0002
M8 34.06.0002



25 40 50 60
Slot nut
M6 34.04.0003
M8 34.03.0002
Stainless steel

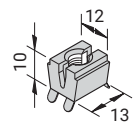


25 40 50 60
Slot nut
M8 34.60.1101
M10 34.60.1201
M12 34.60.1301

Clip

The insulating plastic clip serves to attach light, small parts such as nameplates, signs, holders for cable ties, etc.

Material: Plastic, galvanised steel threaded insert



25 40 50 60
Clip
M4 K111020006
M5 K111020007
M6 K111020008

25 40 50 60
Clip
M4 34.14.0006
M5 34.14.0007
M6 34.14.0008



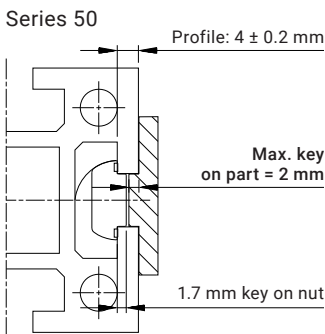
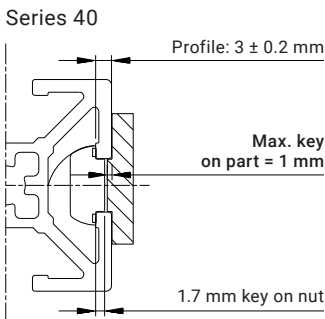
Nuts for Later Mounting

Swivel-in nuts with a spring sheet can be installed in the profile slot even if the profile's face is already sealed. The spring sheet fixes the nut in place, making it much easier to install attachment parts in a vertical position. The ESD function ensures that the connection is conductive.

Attention: Note the maximum key height on the part to be attached; see the fastening example.

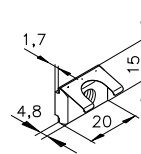
Material: Galvanised steel

Fastening example



The key height of the attached part, e.g. for an angle, may not exceed 1 mm for Series 40 and 2 mm for Series 50, otherwise there will be no traction between the profile and nut.

25 40 50 60



Swivel-in nut 1
ESD with spring sheet
M4 **34.16.0431**

M5 **34.16.0531**

M6 **34.16.0631**

M8 **34.16.0831**

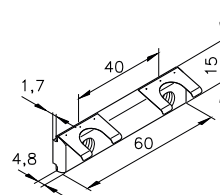


Swivel-in nut 1
ESD with spring sheet
M5 **34.16.0537**

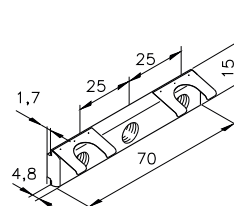
M6 **34.16.0637**

M8 **34.16.0837**

Stainless steel



Swivel-in nut 2/40
ESD with spring sheet
M8 **34.16.0834**



Swivel-in nut 3/25
ESD with spring sheet
M8 **34.16.0835**



Nuts/T-nuts

Nut Fixture

... with Retaining Plugs

If nuts with a spring sheet are not available, retaining plugs can also be used to fix standard nuts. This makes mounting attachment parts much easier. The retaining plug is pressed into the nut's thread and then slid into the profile slot from the face. Unlike the nut with spring sheet, this type of attachment can only be used once because tightening the screws displaces the plastic on the retaining plug.

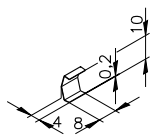
Material: PE plastic

Nut Fixture

... with a Spring Clip

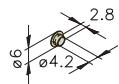
Series 25 nuts also offer the option of fixing them with a spring clip. Together with the nut, the clip is inserted into the profile slot from the face and fixes the nut in the desired position.

Material: Spring steel



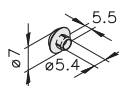
25 40 50 60

Spring clip
for M5/M6 nut
07.13.0003



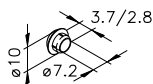
25 40 50 60

Retaining plug, green, M5
mk 2553



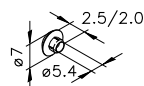
25 40 50 60

Retaining plug, white, M6
mk 2554



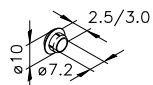
25 40 50 60

Retaining plug, red, M8
mk 2555



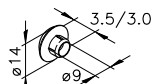
25 40 50 60

Retaining plug, yellow, M6
mk 2556



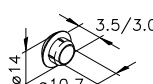
25 40 50 60

Retaining plug, blue, M8
mk 2557



25 40 50 60

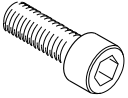
Retaining plug, orange, M10
mk 2559



25 40 50 60

Retaining plug, purple, M12
mk 2560

Cylinder Head Screws

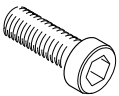


DIN EN ISO 4762 / DIN 912
8.8 galvanised steel

M4x10	D0912410
M5x8	D091258
M5x10	D0912510
M5x12	D0912512
M5x16	D0912516
M6x10	D0912610
M6x12	D0912612
M6x16	D0912616
M6x20	D0912620
M8x12	D0912812
M8x16	D0912816
M8x20	D0912820
M8x25	D0912825
M8x30	D0912830
M8x35	D0912835
M8x40	D0912840
M12x20	D09121220
M12x25	D09121225

DIN EN ISO 4762
A2-70 stainless steel

M8x16	D0912816A2
M8x20	D0912820A2



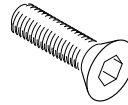
DIN 6912
8.8 galvanised steel

M5x8	D691258
M5x10	D6912510
M5x12	D6912512
M5x20	D6912520
M6x16	D6912616
M6x20	D6912620
M8x16	D6912816
M8x20	D6912820
M8x25	D6912825
M8x30	D6912830
M10x25	D69121025
M12x30	D69121230

DIN 6912
A2-70 stainless steel

M8x16	D6912816A2
M8x20	D6912820A2

Countersunk Head Screws



DIN EN ISO 10642
8.8 galvanised steel

M4x6	D799146
M4x10	D7991410
M4x12	D7991412
M4x16	D7991416
M5x8	D799158
M5x10	D7991510
M5x12	D7991512
M5x16	D7991516
M5x25	D7991525
M6x10	D7991610
M6x12	D7991612
M6x16	D7991616
M6x20	D7991620
M8x12	D7991812
M8x16	D7991816
M8x20	D7991820
M8x25	D7991825
M8x30	D7991830

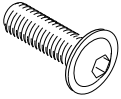
DIN EN ISO 10642
A2-70 stainless steel

M4x10	D7991410A2
M4x16	D7991416A2
M4x35	D7991435A2
M5x8	D799158A2
M5x10	D7991510A2
M6x12	D7991612A2
M6x16	D7991616A2
M8x16	D7991816A2
M8x20	D7991820A2
M8x35	D7991835A2

Standard Parts

3

Flanged Button-Head Screws



10.9 black, galvanised steel	
M5x8	K112010028
M5x10	K112010021
M5x12	K112010022
M6x8	K112010010
M6x10	K112010011
M6x12	K112010012
M6x16	K112010013
M8x12	K112010002
M8x16	K112010003
M8x20	K112010004

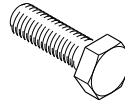
A2 stainless steel	
M8x12	K112010102
M8x16	K112010103
M8x20	K112010104



Captive, 10.9 black, galvanised steel	
M8x16	71.01.0019

Captive A2 stainless steel	
M8x16	71.01.0019A2

Hexagon Head Screws



DIN EN ISO 4017 8.8 galvanised steel	
M6x8	D093368
M6x16	D0933616
M6x20	D0933620
M6x25	D0933625
M6x30	D0933630
M6x35	D0933635
M8x12	D0933812
M8x16	D0933816
M8x20	D0933820
M8x25	D0933825
M8x30	D0933830
M8x35	D0933835
M8x40	D0933840
M10x20	D09331020
M10x25	D09331025
M10x30	D09331030
M12x30	D09331230

DIN EN ISO 4017 A2-70 stainless steel	
M8x16	D0933816A2
M8x20	D0933820A2
M8x25	D0933825A2

Threaded Pins



DIN EN ISO 4027
 45H galvanized steel

M4x6	D091446
M4x8	D091448
M4x10	D0914410
M5x6	D091456
M5x8	D091458
M5x10	D0914510
M6x6	D091466
M6x8	D091468
M6x10	D0914610
M8x10	D0914810
M8x12	D0914812
M8x16	D0914816
M8x20	D0914820

DIN EN ISO 4027
 A1 stainless steel

M6x6	D091466A2
M6x8	D091468A2
M6x10	D0914610A2
M8x10	D0914810A2
M8x16	D0914816A2

Hexagon Nuts



DIN EN ISO 4032
 8 galvanized steel

M5	D09345
M6	D09346
M8	D09348
M10	D093410
M12	D093412

DIN EN ISO 4032
 A2-70 stainless steel

M5	D09345A2
M6	D09346A2
M8	D09348A2

Ribbed Washers



Galvanised steel

ø 4.3	K111010014
ø 5.3	K111010015
ø 6.4	K111010016
ø 8.4	K111010017
ø 10.5	K111010018
ø 13	K111010019

Stainless steel

ø 4.3	K111010020
ø 5.3	K111010021
ø 6.4	K111010022
ø 8.4	K111010023
ø 10.5	K111010024
ø 13	K111010025



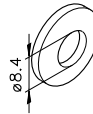
Galvanised steel

ø 7	K111010046
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Stainless steel

ø 7	K111010046A2
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Tension Washers



Galvanised steel

ø 8.4	D67968
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Stainless steel

ø 8.4	D67968A2
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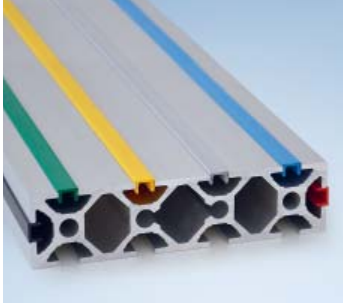
Section 4 Covers/Wear Strips

4



End caps

142



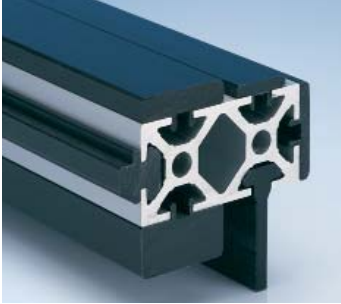
Closure strips

146



Cover profiles

147



Wear Strips

Brush strips

152

Wear strips	148
Wear strips for door stops	150
Wear strips for sliding elements	151



End Caps

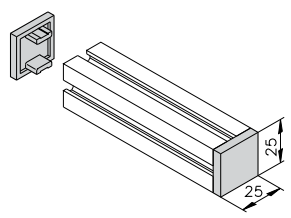
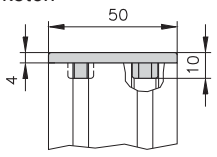
End Caps

End caps made from high-quality plastic provide dependable closure of profile faces. They protect against sharp cut surfaces and provide for a clean closure and high-quality look. The end caps are fastened to the profile simply by placing them on the end.

Material: Plastic

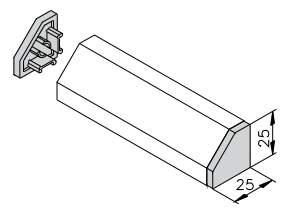
25 | 40 | 50 | 60

Dimensional sketch



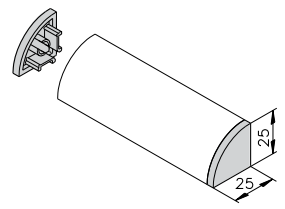
End cap for
mk 2025.01
25.50.8000

Black



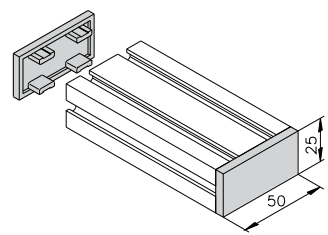
End cap for
mk 2025.38
25.50.8005

Black



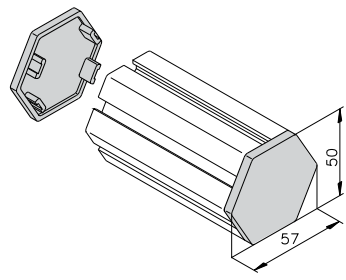
End cap for
mk 2025.37
25.50.8004

Black



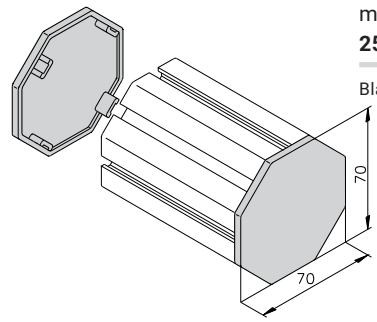
End cap for
mk 2025.02
25.50.8001

Black



End cap for
mk 2025.20
25.50.8002

Black



End caps for
mk 2025.21
25.50.8003

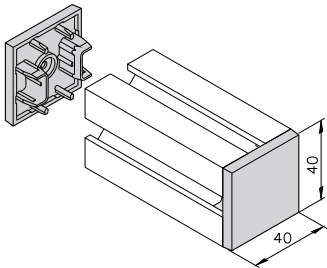
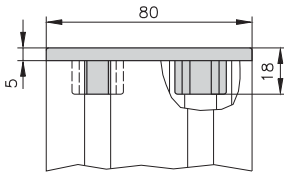
Black

End Caps

Material: Plastic

25 | 40 | 50 | 60

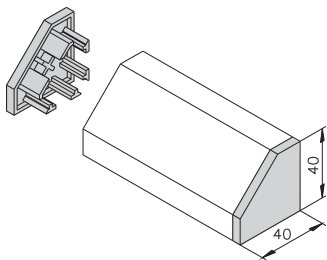
Dimensional sketch



End cap for
40 x 40 profiles
mk 2507

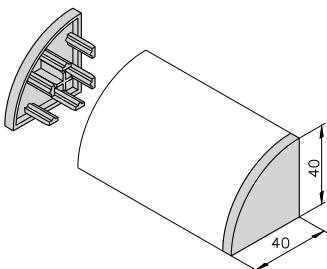
Black
mk 2507SI*

Silver grey



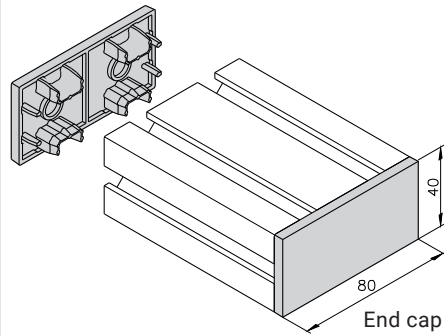
End cap for
mk 2040.14
mk 2523

Black



End cap for
mk 2040.15
mk 2524

Black

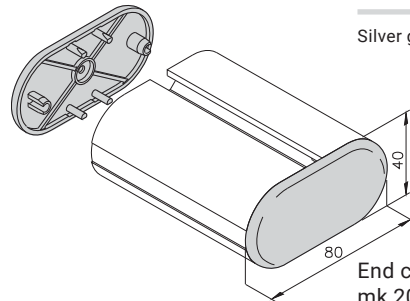


End cap for
40 x 80 profiles
mk 2508

Black

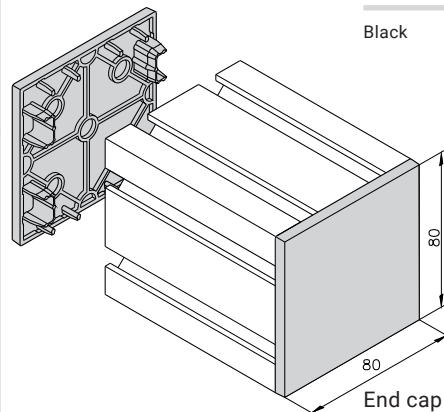
mk 2508SI*

Silver grey



End cap for
mk 2040.23
mk 2529

Black



End cap for
80 x 80 profiles
mk 2502

Black

mk 2502SI*

Silver grey

*Not suitable for cleanroom applications

End Caps

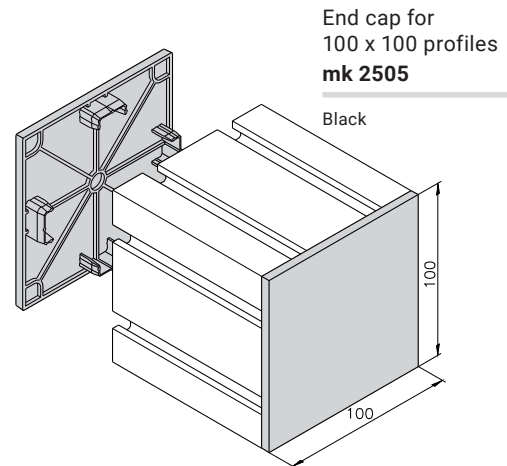
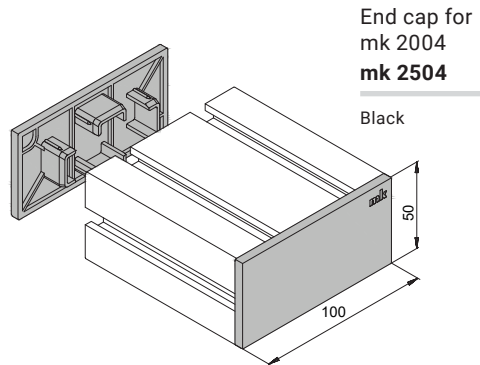
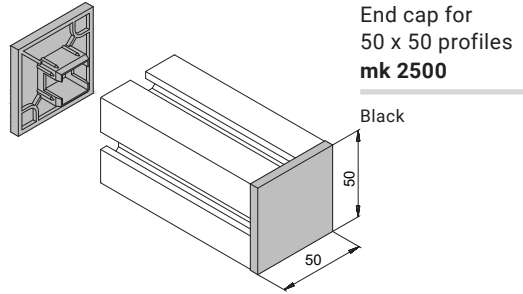
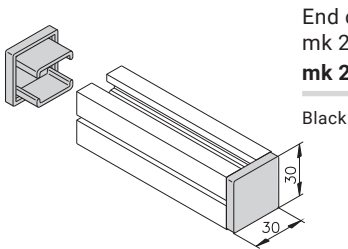
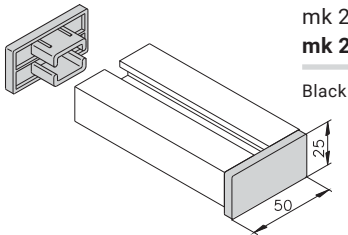
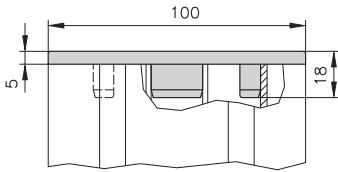
End Caps

Material: Plastic

25 | 40 | 50 | 60

4

Dimensional sketch

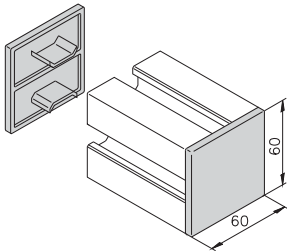
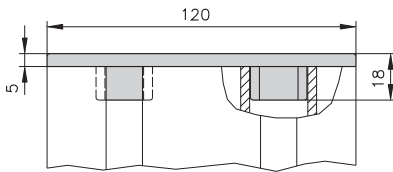


End Caps

Material: Plastic

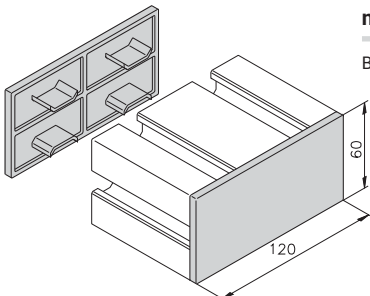
25 | 40 | 50 | **60**

Dimensional sketch



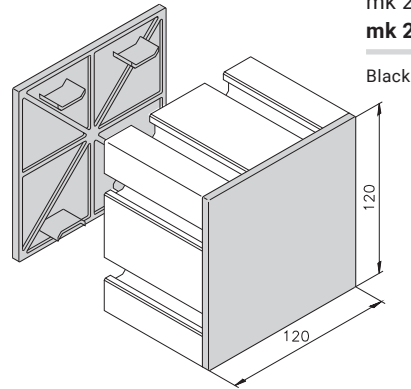
End cap for
 mk 2060.01
mk 2561

Black



End cap for
 mk 2060.02
mk 2562

Black

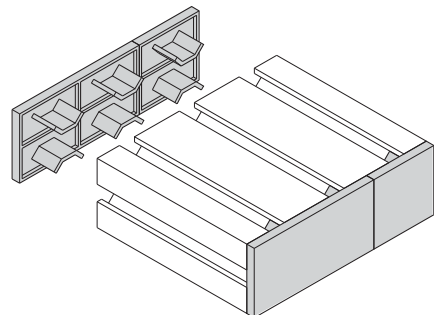


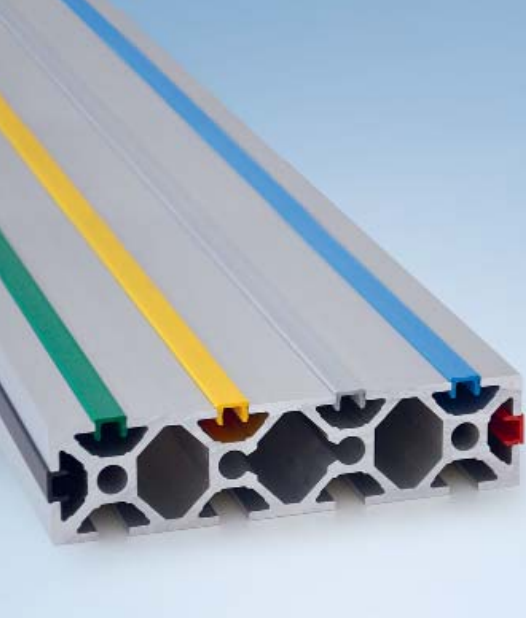
End cap for
 mk 2060.05
mk 2563

Black

Note:

For larger profiles, multiple end caps can be used to cover the profile. For the mk 2040.05 profile, for example, you can use mk 2507 and mk 2508 end caps.





Closure Strips

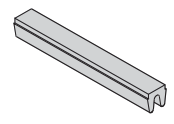
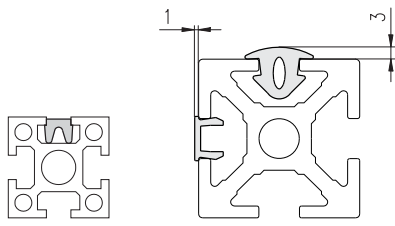
Closure Strips

Closure strips prevent dirt from getting in the slots and provide for a high-quality look. Multi-coloured variants can be used to provide visual highlights and/or draw attention to the supply lines that might be located beneath it. Aluminium closure strips provide seamless closure of the slot but cannot be removed undamaged once they are hammered in.

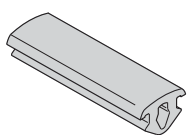
Information required for ordering

- Item number
- Length in mm

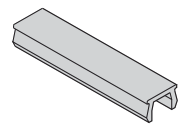
Fastening example



25 40 50 60
 Closure strip
mk 3026 black
 PVC-P plastic (soft)

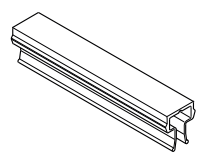


25 40 50 60
 Closure strip
mk 3010 black
 PVC-P plastic (soft)



25 40 50 60
 Closure strip
mk 3012 black
mk 3013 grey
mk 3014 blue
mk 3015 yellow
mk 3016 green
mk 3017 red
mk 3019* silver grey

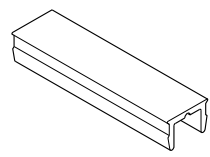
PVC-U plastic (hard),
 2000 mm stock length



25 40 50 60
 Profile **mk 2225**
 0.08 kg/m

Stock length	52.25.2000
Cut	52.25.

Anodised aluminium



25 40 50 60
 Profile **mk 2060.30**
 0.14 kg/m

Stock length	60.30.2000
Cut	60.30.

Anodised aluminium

*Not suitable for cleanroom applications

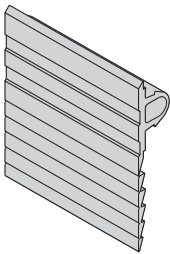
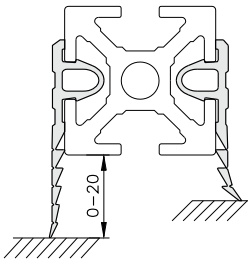


Cover Profiles

Cover profiles close the profile slot while also serving as a stop for sliding doors or as a non-slip support. The mk 3025 and mk 3011 cover profiles close gaps while also having a damping and sealing effect. The mk 3030 cover profile closes openings up to 20 mm wide between objects. The height of the profile can be adapted to the local conditions by simply separating the longitudinal segments.

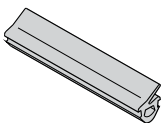
4

Fastening example



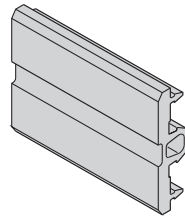
25 40 50 60
 Cover profile
mk 3030 black

EPDM rubber



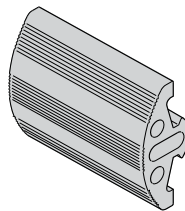
25 40 50 60
 Cover profile
mk 3025 black

TPE rubber



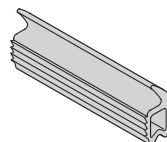
25 40 50 60
 Cover profile
mk 3032 black

EPDM rubber,
 for profiles to which
 panelling is attached



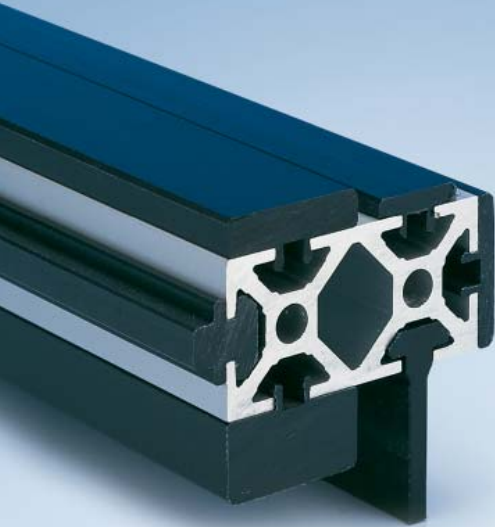
25 40 50 60
 Cover profile
mk 3035 black
mk 3036 grey

PVC-P plastic (soft)



25 40 50 60
 Cover profile
mk 3011 black

EPDM rubber



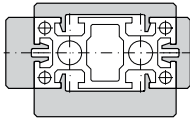
Wear Strips

Wear Strips

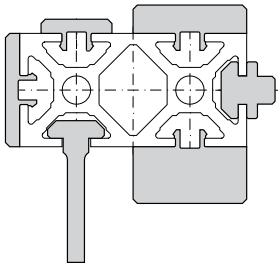
Wear and guide strips are low-wear plastic strips. They ensure low friction in a wide range of applications and protect the profile surface from abrasion. mk wear strips are available for all profile series in a stock length of 2000 mm. ESD (antistatic) designs and designs for high temperatures up to 60° are also available on request.

Material: PE-1000 black

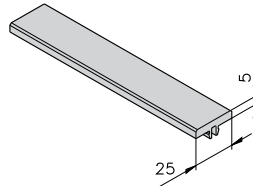
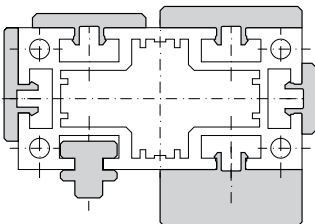
Series 25 fastening example



Series 40 fastening example

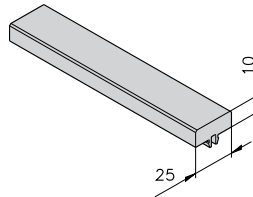


Series 50 fastening example



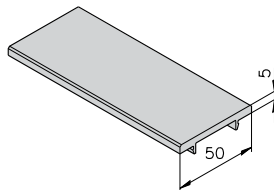
25 40 50 60

Wear strip
mk 1025.71
25.71.2000



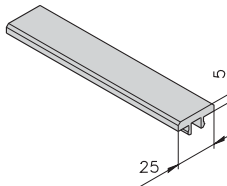
25 40 50 60

Wear strip
mk 1025.72
25.72.2000



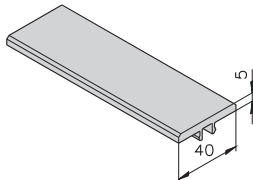
25 40 **50** 60

Wear strip
mk 1025.73
25.73.2000



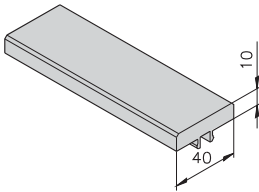
25 **40** 50 60

Wear strip
mk 1000
22.00.2000



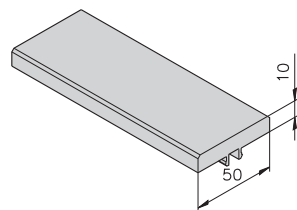
25 40 **50** 60

Wear strip
mk 1040.01
21.01.2000



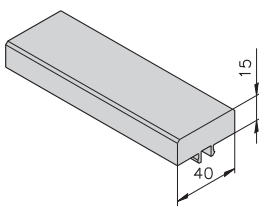
25 40 50 60

Wear strip
 mk 1040.02
21.02.2000



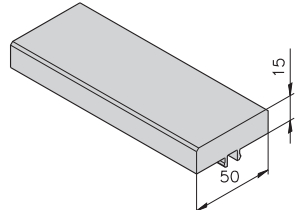
25 40 50 60

Wear strip
 mk 1070
22.70.2000



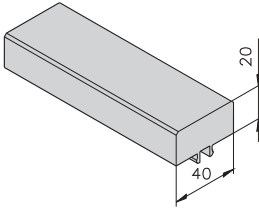
25 40 50 60

Wear strip
 mk 1040.03
21.03.2000



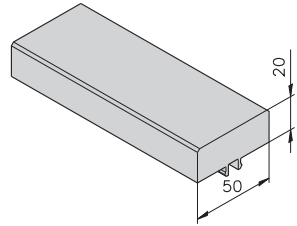
25 40 50 60

Wear strip
 mk 1071
22.71.2000



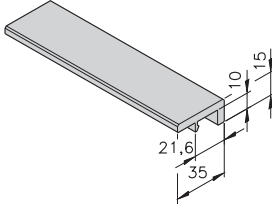
25 40 50 60

Wear strip
 mk 1040.04
21.04.2000



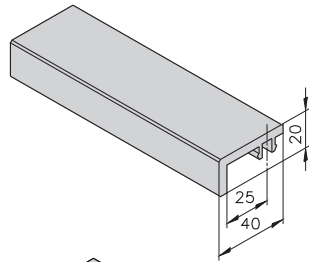
25 40 50 60

Wear strip
 mk 1072
22.72.2000



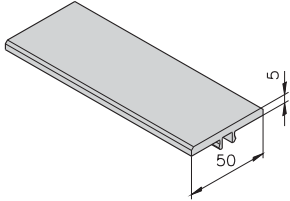
25 40 50 60

Wear strip
 mk 1040.05
21.05.2000



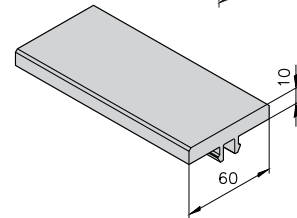
25 40 50 60

Wear strip
 mk 1008
22.08.2000



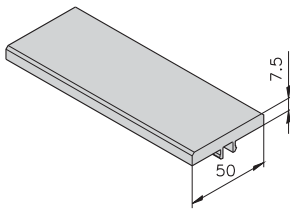
25 40 50 60

Wear strip
 mk 1001
22.01.2000



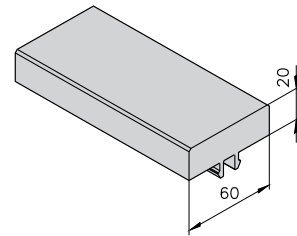
25 40 50 60

Wear strip
 mk 1060.62
21.62.2000



25 40 50 60

Wear strip
 mk 1017
22.17.2000



25 40 50 60

Wear strip
 mk 1060.64
21.64.2000



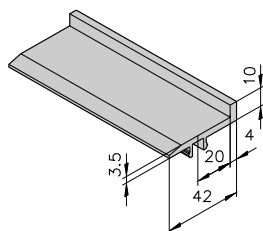
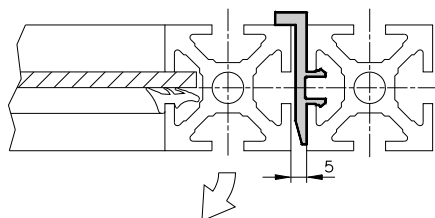
Wear Strips

Wear Strips for Door Stops

The mk 1090, mk 1091 and mk 1092 wear strips act as a gentle stop for doors.

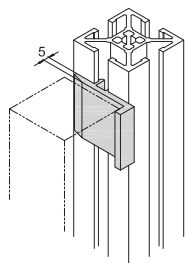
Material: PE-1000 black

Fastening example

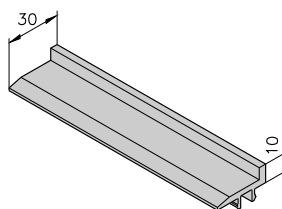


25 40 50 60

Wear strip
mk 1090
22.90.2000

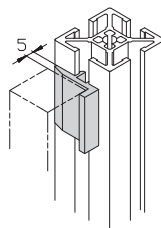


Stop for
swing doors
(for 5 mm door gap)
22.90.0035

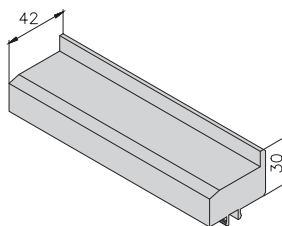


25 40 50 60

Wear strip
mk 1091
22.91.2000

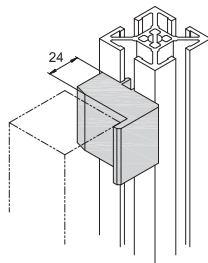


Stop for sheet
metal doors
(for 5 mm door gap)
22.91.0035



25 40 50 60

Wear strip
mk 1092
22.92.2000



Stop for
swing doors
(for 24 mm door gap)
22.92.0035

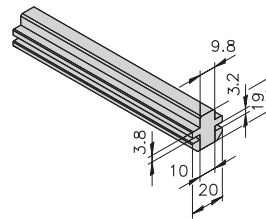
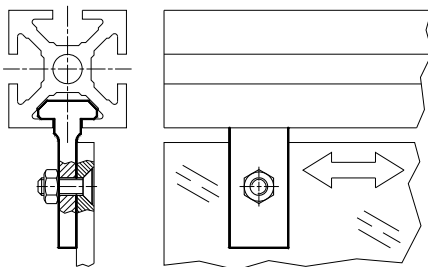
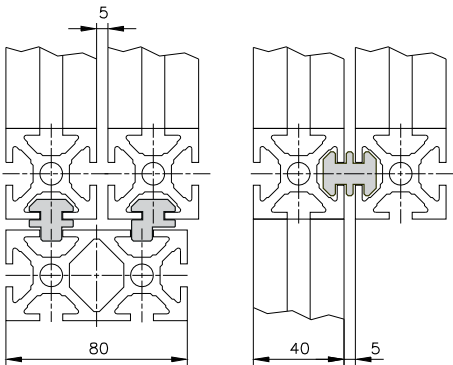


Wear Strips for Sliding Elements

These wear strips serve as low-wear guides for sliding elements such as custom-designed, manual carriages, sliding doors, lifting doors and lifts.

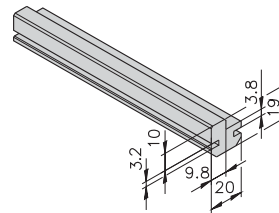
Material: PE-1000 black

Fastening examples



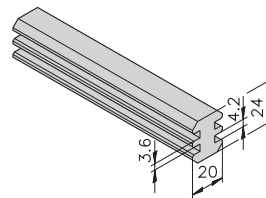
25 40 50 60

Wear strip
 mk 1026
22.26.2000



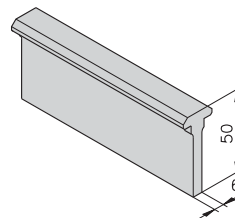
25 40 50 60

Wear strip
 mk 1027
22.27.2000



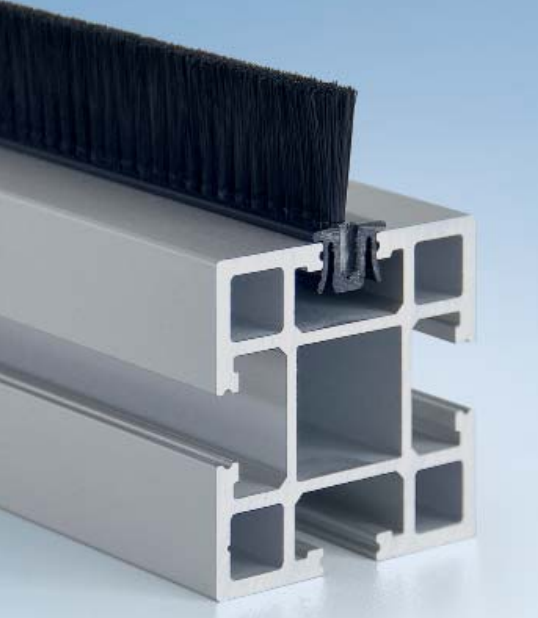
25 40 50 60

Wear strip
 mk 1021
22.21.2000



25 40 50 60

Wear strip
 mk 1009
22.09.2000



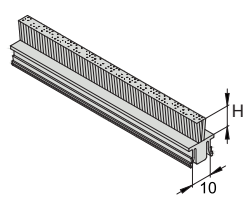
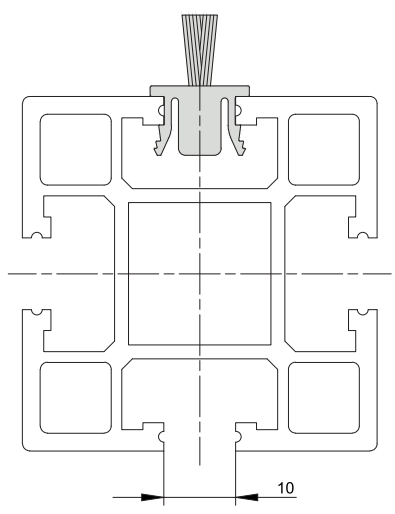
Brush Strips

Brush Strips

Brush strips provide an ideal solution for creating secure seals on machine housings, flaps, apertures or for guiding and carrying processes in conveyor technology. Their flexible fibres allow them to be used to reliably fasten fragile parts in charge carriers and countless other possible solutions. The brush strips can be integrated into new structures simply by sliding them in, or into existing structures by clipping them in once the structure is already built. The brush strips have a stock length of 1000 mm.

Material: PA6 plastic

Fastening example



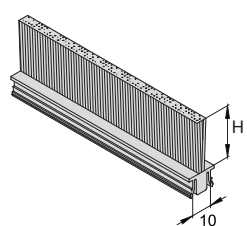
25 40 50 60

Brush strip
H = 10 mm
K115030010

H = 15 mm
K115030015

H = 20 mm
K115030020

ø 0.15 mm bristles



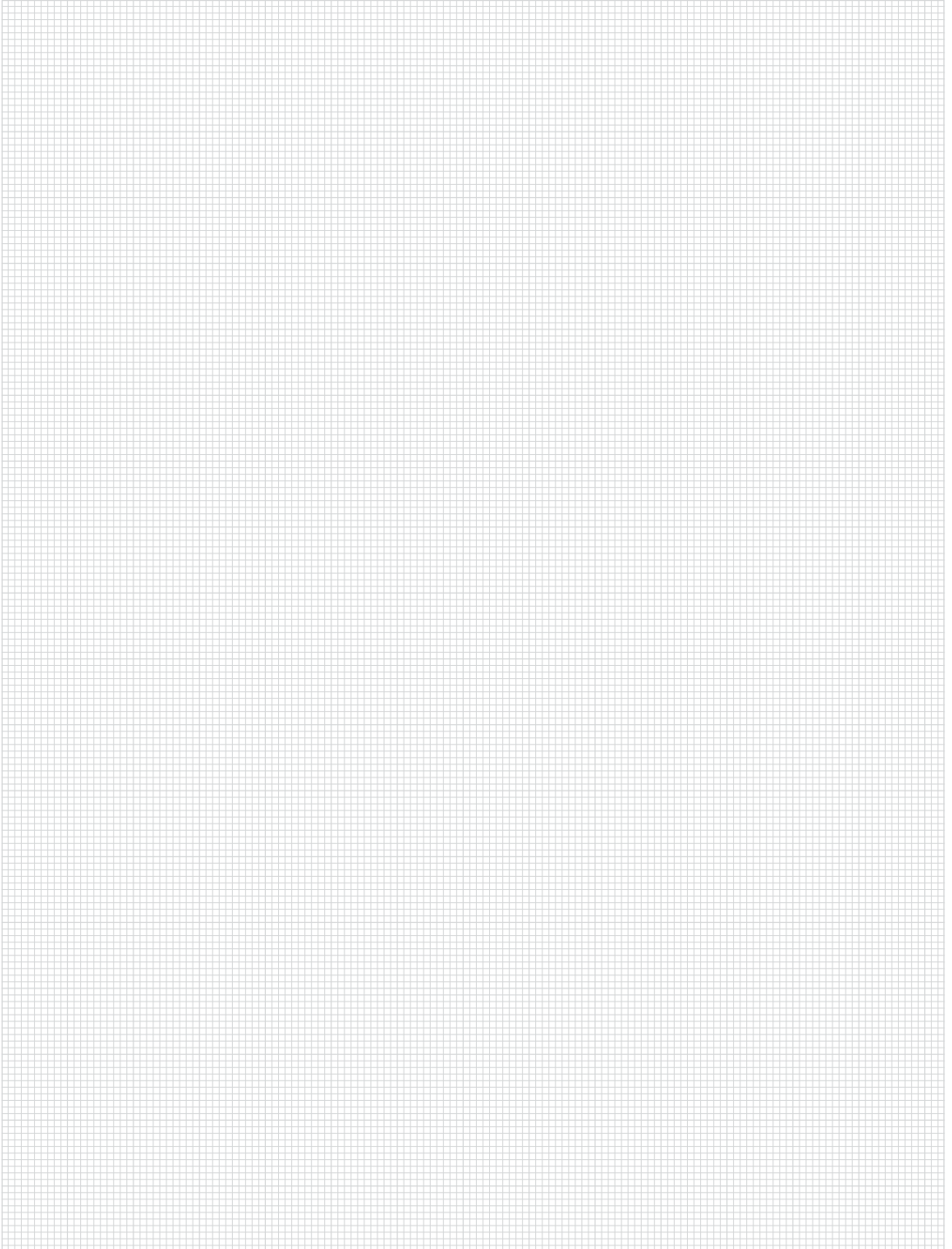
25 40 50 60

Brush strip
H = 25 mm
K115030025

H = 30 mm
K115030030

ø 0.2 mm bristles

Note: Brush strips can accumulate static charge.



Section 5 Floor Elements

5



Levelling Feet

Floor levelling screws	156
Levelling feet	157
Levelling feet with mounting bores	160
Stainless steel levelling feet	161



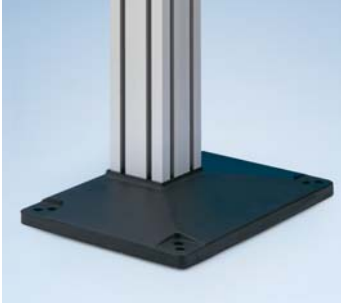
Plates for Levelling Feet

Holders for levelling feet	164
Foot plates	167



Floor plates

170



Base Plates

Base plates	174
Heavy-duty base plates	176



Support Brackets

Support brackets	178
Retaining angles	180



Fixed and Swivel Casters

Fixed and swivel casters, type A	182
Fixed and swivel casters, type B	183

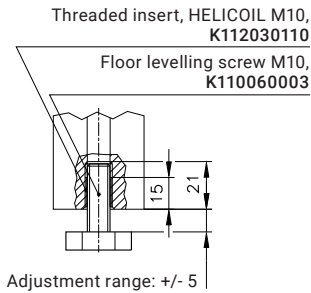
Levelling Feet

Floor Levelling Screws

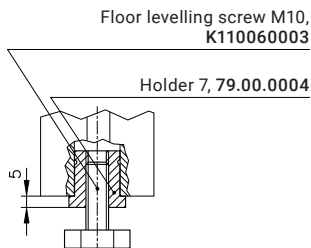
Floor levelling screws are the simplest method of compensating for uneven surfaces, and are suitable for applications where complex functions are not required. They have an adjustment range of 10 mm. For Series 40 profiles, they are screwed into a threaded insert in the centre of the profile. For Series 50 profiles, e.g. the mk 2000, they are threaded into holder 7, which is inserted into the centre of the profile.

Material: Galvanised steel spindle,
PE plastic foot base

Series 40 fastening example



Series 50 fastening example

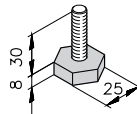


25 40 50 60

Floor levelling
screw M8
K110060004

Floor levelling
screw M10
K110060003

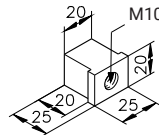
1,000 N load capacity



25 40 50 60

Holder 7
79.00.0004

for mk 2000 profile
Tumbled aluminium





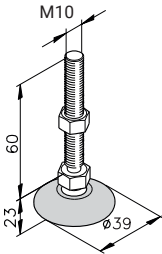
Levelling Feet

Levelling feet serve to stabilize machine frames, belt conveyors, industrial workstations, etc. They are always fastened to the profile using the appropriate plate for levelling feet. All levelling feet have an adjustment range to compensate for height differences. Variants with a ball joint have a swivel range of about $\pm 20^\circ$, allowing them to compensate for slanted surfaces.

5

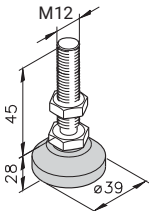
25 40 50 60

Material: Galvanised steel spindle,
 PA plastic foot base



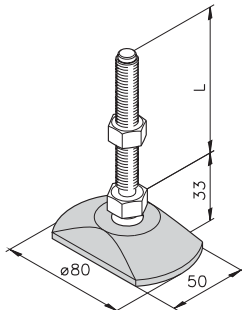
Levelling foot $\varnothing 45$ M10
B67.02.057

Adjustment range = 40 mm
 750 N load capacity
 with ball joint



Levelling foot $\varnothing 39$ M12
B67.02.076

Adjustment range = 20 mm
 1,000 N load capacity



Levelling foot $\varnothing 80$ M12
B67.02.077

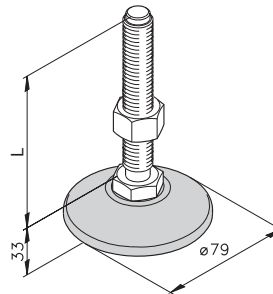
Spindle length L = 50 mm
 Adjustment range = 15 mm

Levelling foot $\varnothing 80$ M12
B67.02.027

Spindle length L = 75 mm
 Adjustment range = 40 mm

Levelling foot $\varnothing 80$ M16
B67.02.028

Spindle length L = 85 mm
 Adjustment range = 45 mm
 1,000 N load capacity
 with ball joint



Levelling foot $\varnothing 79$ M12
B67.02.075

Spindle length L = 50 mm
 Adjustment range = 15 mm

Levelling foot $\varnothing 79$ M12
B67.02.001

Spindle length L = 75 mm
 Adjustment range = 40 mm

Levelling foot $\varnothing 79$ M16
B67.02.002

Spindle length L = 85 mm
 Adjustment range = 45 mm

Glass fibre reinforced
 foot base,

1,500 N load capacity,
 with ball joint



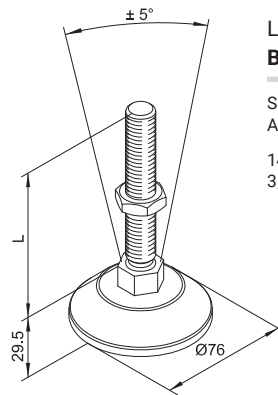
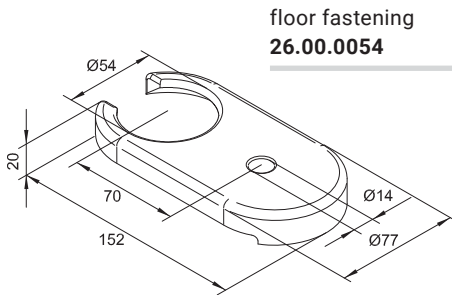
Levelling Feet

Levelling Foot

A floor fastener can be used to fix "levelling foot $\varnothing 76$ M16" in place to prevent it from sliding or lifting off the floor. With this levelling foot, the spindle is screwed in from underneath.

25 40 50 60

Material: Galvanised steel spindle,
die-cast zinc foot base





Levelling Feet

... with Ball Joints

Levelling feet with an anti-slip plate prevent the foot from slipping and provide a slight damping effect. The anti-slip plates are made from a thermoplastic elastomer and can be attached or removed later as needed. They are resistant to oil and water up to 60°.

25 40 50 60

Material: Galvanised steel spindle,
 die-cast zinc foot base

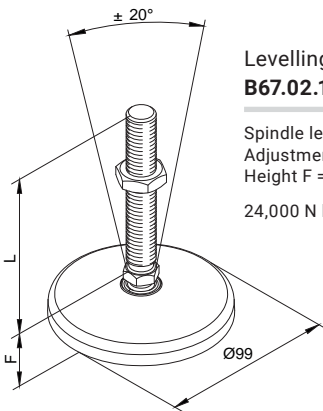
5

Levelling foot \varnothing 99 M16 **B67.02.141**

Spindle length $L = 100$ mm
 Adjustment range = 70 mm
 Height $F = 29.5$ mm
 14,500 N load capacity

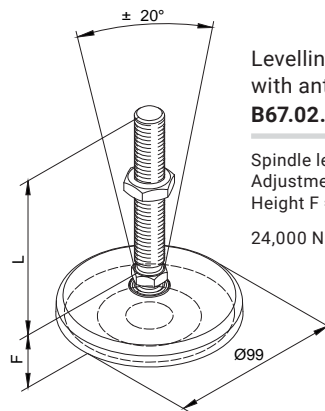
Levelling foot \varnothing 99 M16 with anti-slip plate **B67.02.142**

Spindle length $L = 100$ mm
 Adjustment range = 70 mm
 Height $F = 29.5$ mm
 14,500 N load capacity



Levelling foot \varnothing 99 M20 **B67.02.144**

Spindle length $L = 125$ mm
 Adjustment range = 90 mm
 Height $F = 32.5$ mm
 24,000 N load capacity



Levelling foot \varnothing 99 M20 with anti-slip plate **B67.02.145**

Spindle length $L = 125$ mm
 Adjustment range = 90 mm
 Height $F = 32.5$ mm
 24,000 N load capacity



Levelling Feet

Levelling Feet with Mounting Bores

... with Ball Joints

Levelling feet serve to stabilize machine frames, belt conveyors, industrial workstations, etc. Levelling feet with mounting bores in their foot base can be anchored to the floor. Because of the ball joint, they can withstand a maximum tensile load of 200 N.

25 40 50 60

Material: Galvanised steel spindle, die-cast zinc foot base

Levelling foot \varnothing 99 M16 B67.02.143

with \varnothing 9 mm bore
Spindle length L = 100 mm
Adjustment range = 70 mm
Height F = 29.5 mm

14,500 N load capacity

Levelling foot \varnothing 119 M20 B67.02.147

with \varnothing 9 mm bore
Spindle length L = 100 mm
Adjustment range = 65 mm

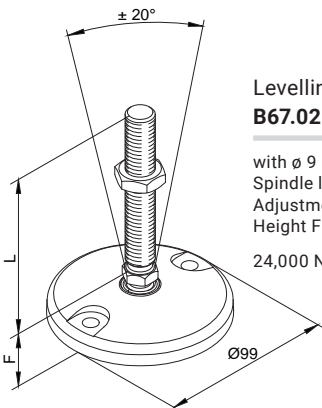
Levelling foot \varnothing 119 M20 B67.02.148

with \varnothing 9 mm bore
Spindle length L = 125 mm
Adjustment range = 90 mm

Levelling foot \varnothing 119 M20 B67.02.149

with \varnothing 9 mm bore
Spindle length L = 150 mm
Adjustment range = 115 mm

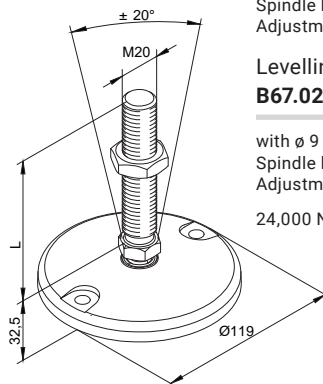
24,000 N load capacity



Levelling foot \varnothing 99 M20 B67.02.146

with \varnothing 9 mm bore
Spindle length L = 125 mm
Adjustment range = 90 mm
Height F = 32.5 mm

24,000 N load capacity



Stainless Steel Levelling Feet

... with Ball Joints

With stainless steel levelling feet, either the foot base or the entire levelling foot including the spindle and nut are made from stainless steel, making them ideal for use in cleanrooms and for meeting FDA requirements.



Material: Stainless steel foot base;
galvanised steel spindle and hexagon nut

25 40 50 60

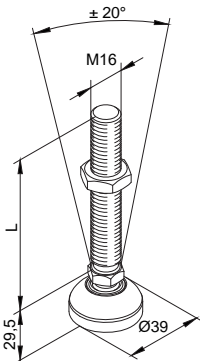
Material: Entirely stainless steel

Levelling foot \varnothing 39 M16 **B67.02.129**

Spindle length L = 100 mm
 Adjustment range = 70 mm

B67.02.130

Spindle length = 200 mm
 Adjustment range = 170 mm
 14,500 N load capacity

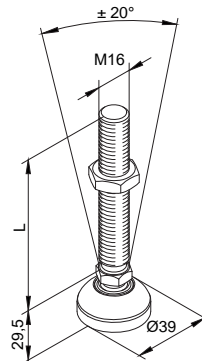


Levelling foot \varnothing 39 M16 **B67.02.135**

Spindle length L = 100 mm
 Adjustment range = 70 mm

B67.02.136

Spindle length = 200 mm
 Adjustment range = 170 mm
 14,500 N load capacity



Levelling Feet

Stainless Steel Levelling Feet

The levelling feet shown here are made entirely from stainless steel and are therefore ideal for use in cleanrooms or for meeting FDA requirements in food production applications. The foot's domed shape also ensures that liquids will run off. The height adjustment and swivel range allows the levelling foot to compensate for height differences and uneven surfaces. In addition, they can be anchored to the floor.

25 40 50 60

Material: Stainless steel foot base, spindle and hexagon nut

Levelling foot \varnothing 110 M16 B67.02.080

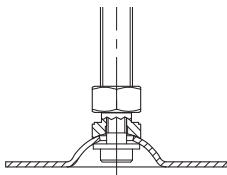
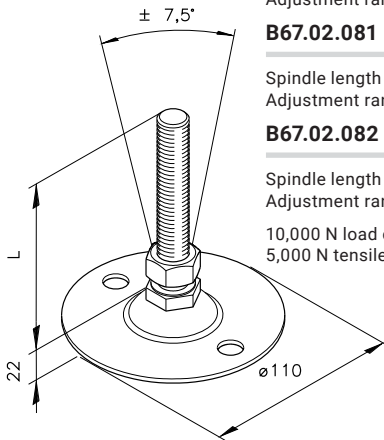
Spindle length L = 50 mm
Adjustment range = 16 mm

B67.02.081

Spindle length L = 100 mm
Adjustment range = 66 mm

B67.02.082

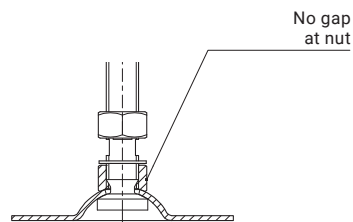
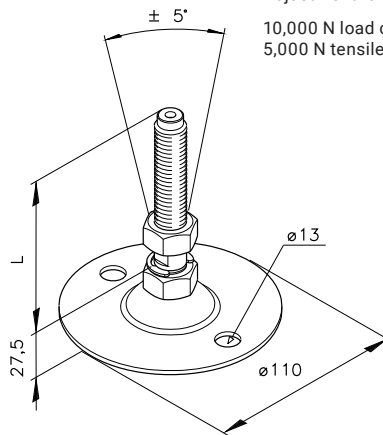
Spindle length L = 150 mm
Adjustment range = 116 mm
10,000 N load capacity
5,000 N tensile strength



Levelling foot \varnothing 110 M16 B67.02.087

Spindle length L = 90 mm
Adjustment range = 40 mm

10,000 N load capacity
5,000 N tensile strength





Stainless Steel Levelling Feet

The levelling feet shown here rest atop a vulcanised rubber base that is permanently attached to the stainless steel foot base and that provides anti-slip, damping and sealing effects. The sanitary design has a thread sleeve that is completely covered by the adjusting sleeve.

5

25 | 40 | 50 | 60

Material: Stainless steel foot base, spindle and hexagon nut, NBR plastic damper

Levelling foot \varnothing 80 M16 **B67.02.090**

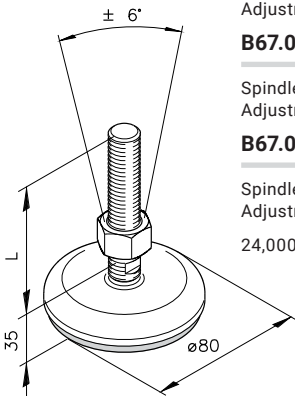
Spindle length L = 75 mm
 Adjustment range = 45 mm

B67.02.091

Spindle length L = 100 mm
 Adjustment range = 70 mm

B67.02.092

Spindle length L = 150 mm
 Adjustment range = 120 mm
 24,000 N load capacity

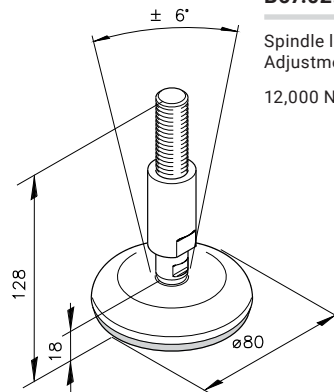


Sanitary design

Levelling foot \varnothing 80 M16 **B67.02.097**

Spindle length L = 128 mm
 Adjustment range = 32 mm

12,000 N load capacity





Plates for Levelling Feet

Holders for Levelling Feet

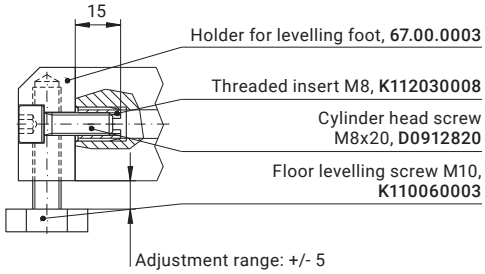
... for Horizontal Profiles

Holders for levelling feet are primarily used for securely attaching levelling feet, but they can also be used for fixed and swivel casters and for lifting devices. Holders are available for all standard profiles and levelling foot threads.

1,000 N load capacity

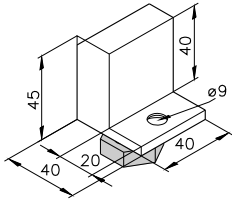
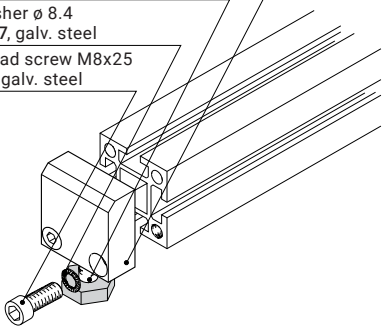
Material: Tumbled aluminium

Fastening example



Holder for levelling foot M10 67.00.0002, Al

- Floor levelling screw M10 K110060003, plastic/steel
- Ribbed washer \varnothing 8.4 K111010017, galv. steel
- Cylinder head screw M8x25 D0912825, galv. steel

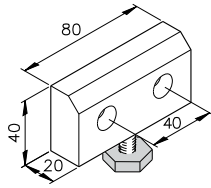


M8x16 DIN 7991

25 | 40 | 50 | 60

Holder for levelling foot M10 67.00.0010

without floor levelling screw for 40 x 40 profile

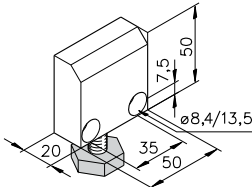


M8x20

25 | 40 | 50 | 60

Holder for levelling foot M10 67.00.0003

without floor levelling screw for 40 x 80 profile



M8x20

25 | 40 | 50 | 60

Holder for levelling foot M10 67.00.0002

without floor levelling screw for mk 2000 profile



Holders for Levelling Feet

... for Horizontal Profiles

Levelling foot angles act as holders for levelling feet, fixed/swivel casters and lifting devices. They can be attached quickly and without profile machining, and they provide additional stability.

Material: Galvanised steel

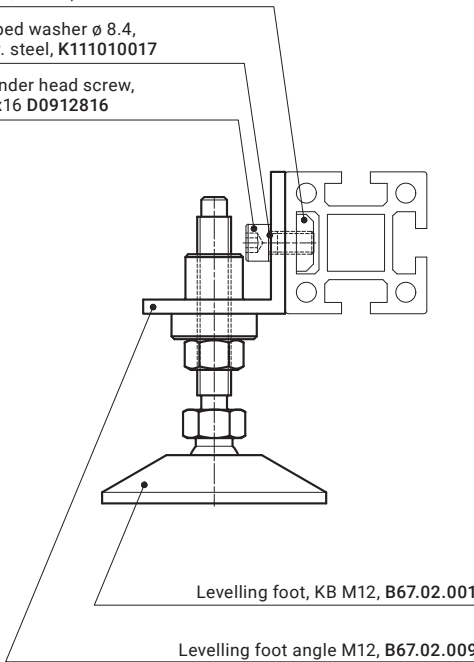
5

Fastening example

Nut 2/25 M8, 34.01.0002

Ribbed washer \varnothing 8.4, galv. steel, K111010017

Cylinder head screw, M8x16 D0912816



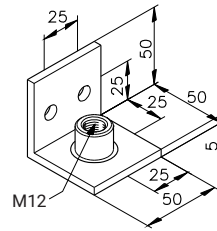
M8x16

25 | 40 | 50 | 60

Levelling foot angle M12
B67.02.009

Levelling foot angle M16
B67.02.010

1,500 N load capacity



Plates for Levelling Feet

Holders for Levelling Feet

... for Horizontal Profiles

The following foot plates act as holders for levelling feet, fixed/swivel casters and lifting devices. They can be attached quickly and without profile machining. Foot plate F M16 can also be anchored directly to the floor.

Material: Tumbled aluminium

25 | 40 | 50 | 60 | M8x16

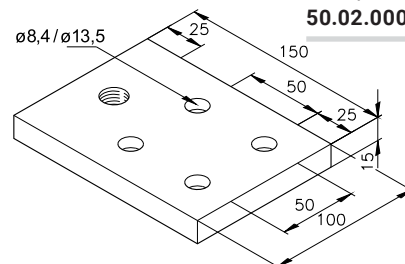
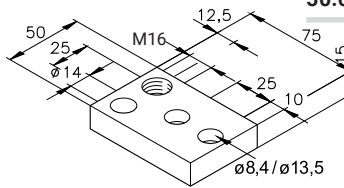
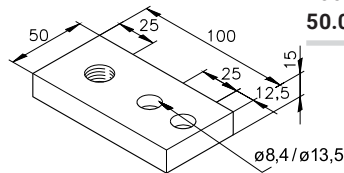
Foot plate D M12
50.02.0010

Foot plate D M16
50.02.0011

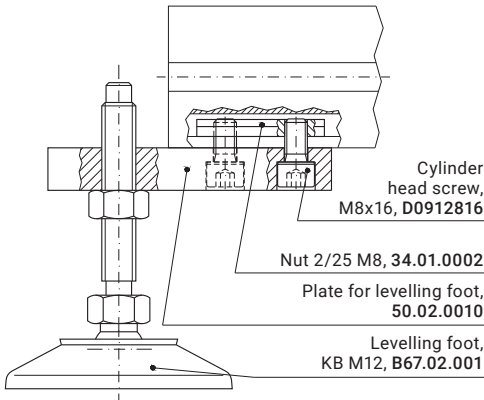
Foot plate F M16
50.02.0018

Foot plate G M16
50.02.0007

Foot plate G M20
50.02.0008



Fastening example





Foot plates

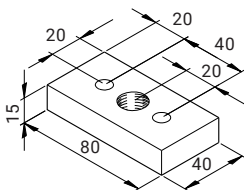
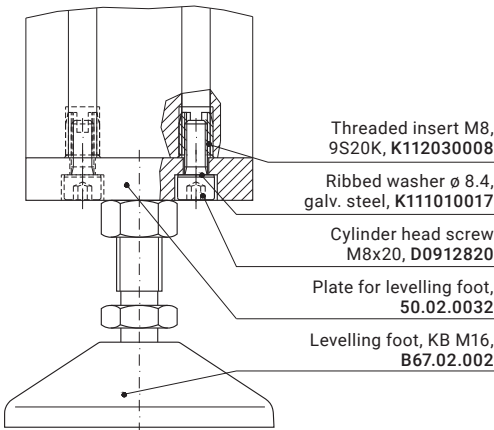
... for Vertical Profiles

Foot plates act as holders for levelling feet, fixed/swivel casters and lifting devices. They are fastened to the face of a vertical profile.

Material: Tumbled aluminium

25 40 50 60 M8x20

Fastening example

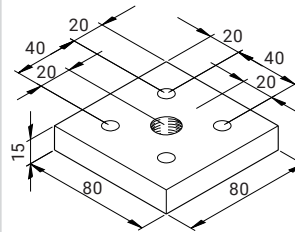


Foot plate I M10
50.02.0041

Foot plate I M12
50.02.0035

Foot plate I M16
50.02.0030

for mk 2040.02,
mk 2040.41,
mk 2040.52 profiles
6,000 N load capacity



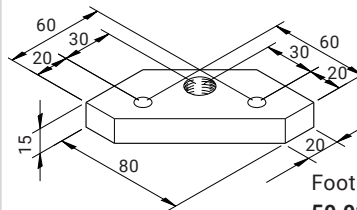
Foot plate J M10
50.02.0042

Foot plate J M12
50.02.0067

Foot plate J M16
50.02.0032

Foot plate J M20
50.02.0050

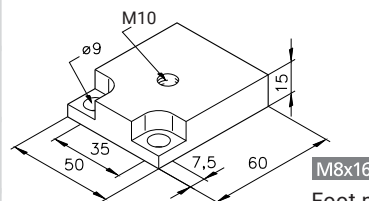
for mk 2040.03,
mk 2040.45 profile



Foot plate K M10
50.02.0043

Foot plate K M16
50.02.0040

for mk 2040.04 profile



M8x16

Foot plate M10
50.02.0068

for mk 2040.38 profile



Plates for Levelling Feet

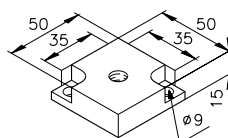
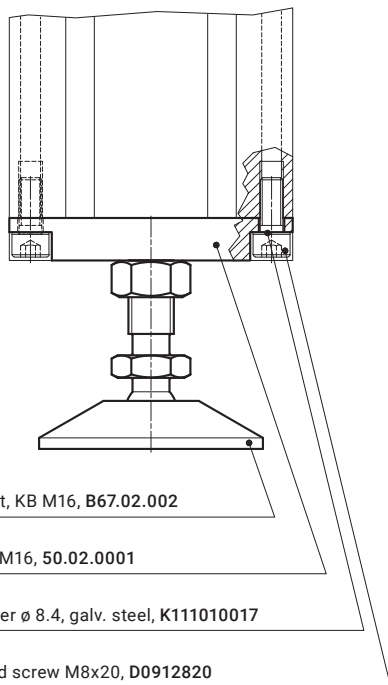
Foot plates

... for Vertical Profiles

Foot plates act as holders for levelling feet, fixed/swivel casters and lifting devices. They are fastened to the face of a vertical profile.

25 40 50 60 M8x20

Fastening example

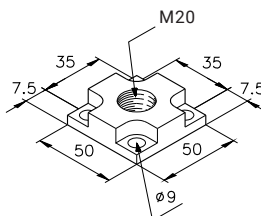


Foot plate A M10
50.09.0013

Foot plate A M12
50.09.0044

Foot plate A M16
50.09.0045

for mk 2000 profile
Tumbled aluminium



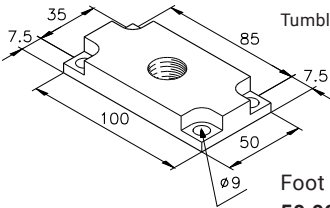
Foot plate 1 M20
50.09.0037

for mk 2000 profile
Galvanised steel

Foot plate B M16
50.02.0003

Foot plate B M20
50.02.0004

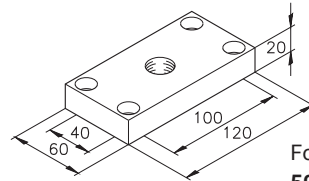
Tumbled aluminium



Foot plate 3 M20
50.09.0038

for mk 2004 profile
 Galvanised steel

25 | 40 | 50 | 60 | M8x30



Foot plate 60/4 M16
50.02.6004

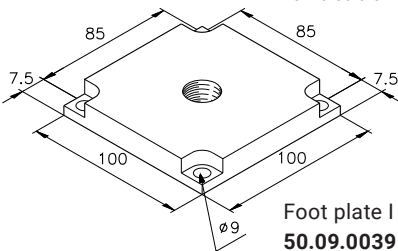
Foot plate 60/5 M20
50.02.6005

for mk 2060.02 profile
 Tumbled aluminium

Foot plate C M16
50.02.0001

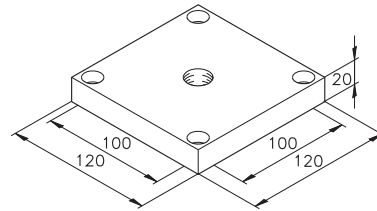
Foot plate C M20
50.02.0002

Tumbled aluminium



Foot plate I M20
50.09.0039

for mk 2005,
 mk 2011 profile
 Galvanised steel



Foot plate 60/8 M16
50.02.6008

Foot plate 60/9 M20
50.02.6009

for mk 2060.05 profile
 Tumbled aluminium



Floor Plates

Floor Plates

Floor plates, whether referred to as base plates or just plates, are used to fasten stands, protective panels, industrial workstations, machine frames, platforms and much more to the floor. They are installed on the face of a vertical profile and anchored to the floor with a fastener, for example a segment anchor. They can also be used as flanging on other profiles.

Material: Tumbled aluminium

25 | 40 | 50 | 60 | M8x20

Fastening example

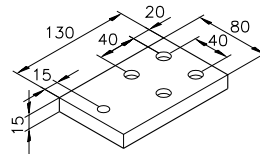
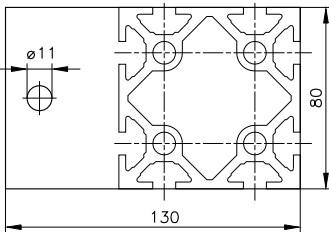
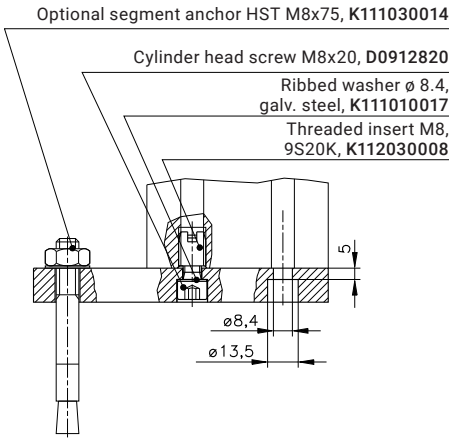


Plate 40/17
50.03.0025

for 80 x 80 profiles

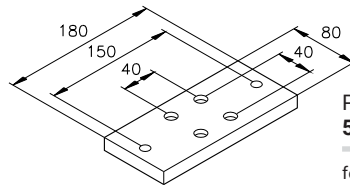


Plate 40/18
50.03.0026

for 80 x 80 profiles

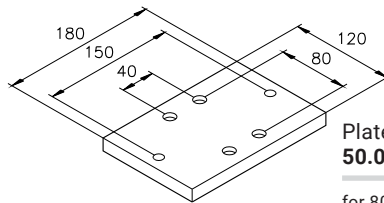


Plate 40/20
50.03.0028

for 80 x 120 profiles



Floor Plates

Material: Tumbled aluminium

25 40 50 60 M8x20

5

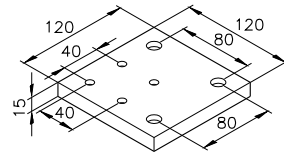
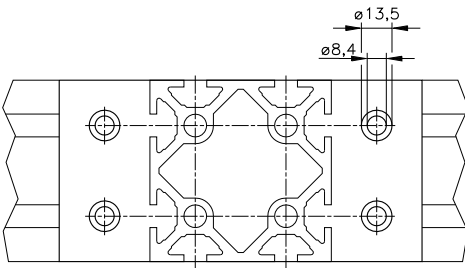
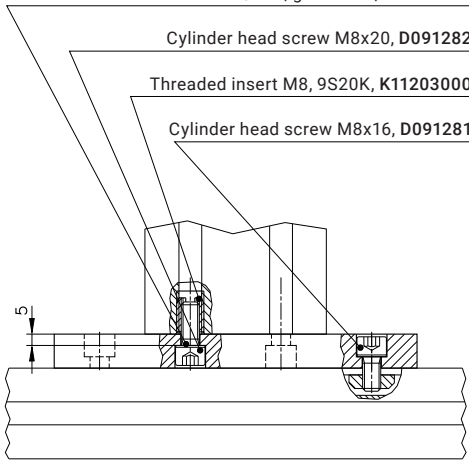
Fastening example

Ribbed washer \varnothing 8.4, galv. steel, K111010017

Cylinder head screw M8x20, D0912820

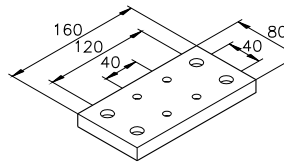
Threaded insert M8, 9S20K, K112030008

Cylinder head screw M8x16, D0912816



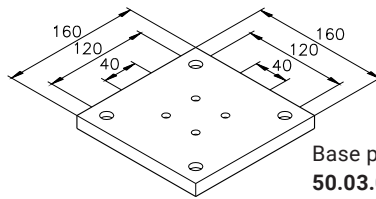
Base plate 40/1
50.03.0009

for 80 x 80 profiles



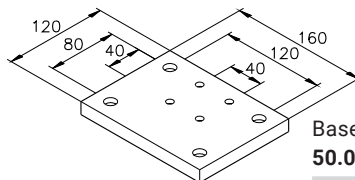
Base plate 40/2
50.03.0010

for 80 x 80 profiles



Base plate 40/3
50.03.0011

for 80 x 80 profiles



Base plate 40/4
50.03.0012

for 80 x 80 profiles

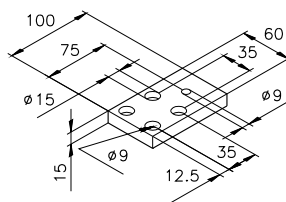


Floor Plates

Floor Plates

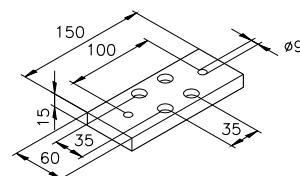
Material: Tumbled aluminium

25 | 40 | **50** | 60 | M8x20



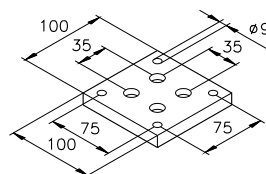
Base plate 1
50.03.0001

for mk 2000, mk 2017,
mk 2018 and
mk 2019 profile



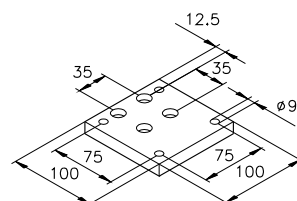
Base plate 2
50.03.0002

for mk 2000, mk 2017,
mk 2018 and
mk 2019 profile



Base plate 4
50.03.0003

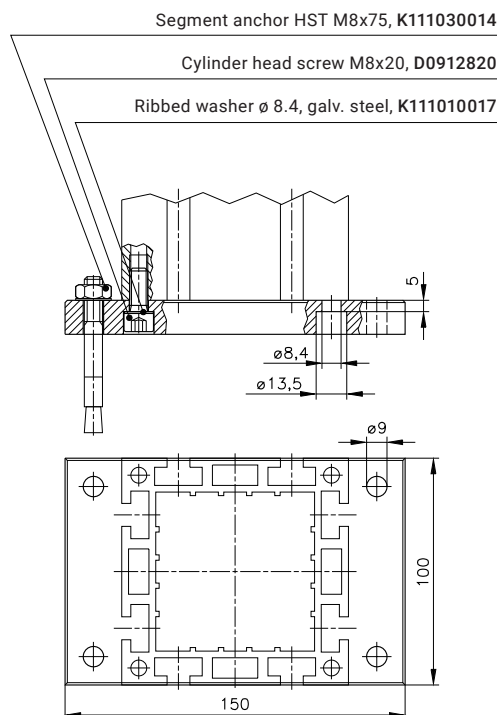
for mk 2000, mk 2017,
mk 2018 and
mk 2019 profile



Base plate 4a
50.03.0004

for mk 2000, mk 2017,
mk 2018 and
mk 2019 profile

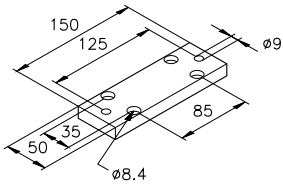
Fastening example



Floor Plates

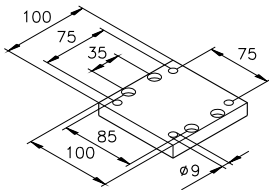
Material: Tumbled aluminium

25 | 40 | 50 | **60** | M8x20



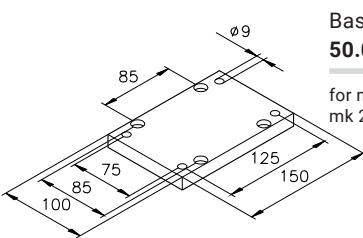
Base plate 5
50.03.0005

for mk 2004 profile



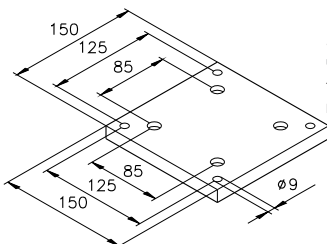
Base plate 6
50.03.0006

for mk 2004 profile



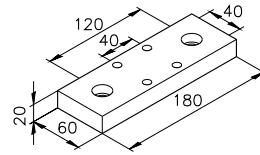
Base plate 7
50.03.0007

for mk 2005 and
 mk 2011 profile



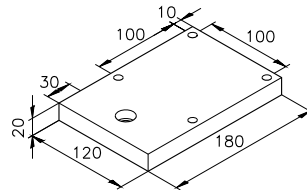
Base plate 8
50.03.0008

for mk 2005 and
 mk 2011 profile



Base plate 60/2
50.03.6002

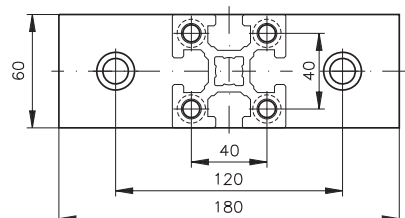
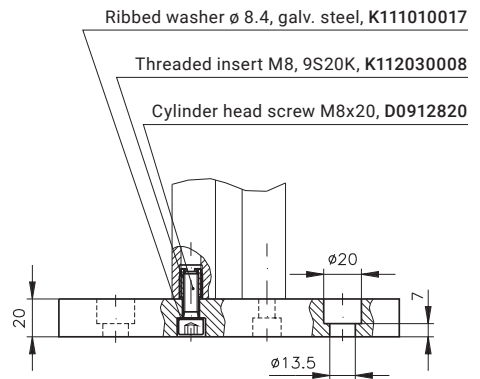
for mk 2060.01 profile



Base plate 60/8
50.03.6008

for mk 2060.05 profile

Fastening example





Base Plates

Base Plates

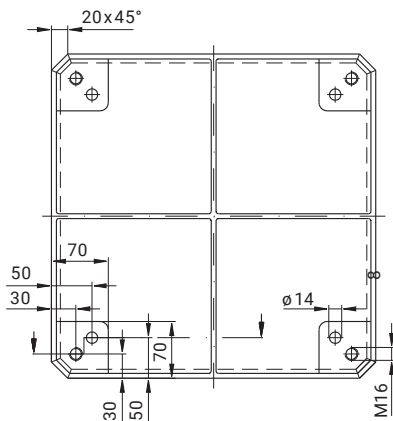
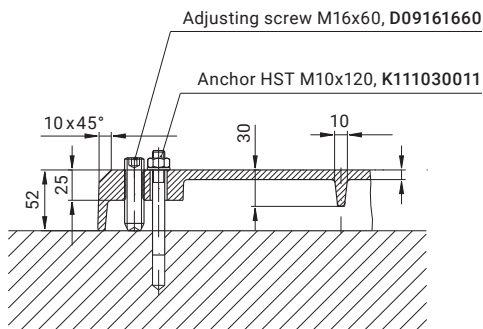
Base plates provide stability for machines, frames, stands, guarding or other equipment. On request, we will be happy to design a base plate for your particular application or manufacture it according to your drawing of the drilling pattern. It is also possible to insert threads or bores into the corners of the base plate.

The assembly kit for each angle (item numbers beginning with B) contains the necessary fastening accessories (segment anchors and adjusting screws).

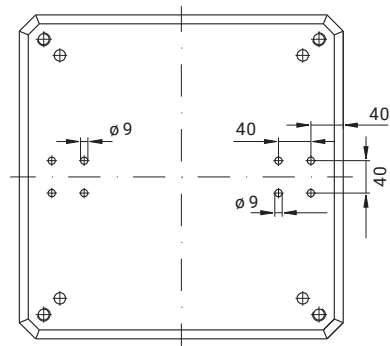
Material: Grey cast, painted black

[25](#) [40](#) [50](#) [60](#)

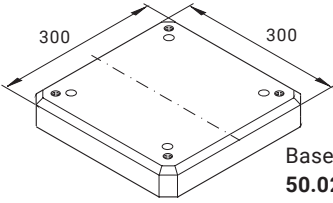
Fastening example



Sample drilling pattern



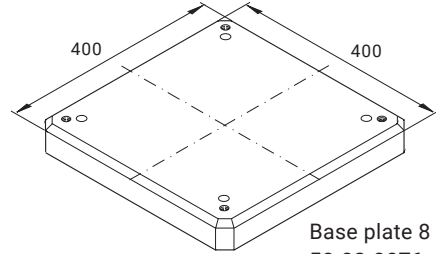
The middle lines indicate the path of the reinforcing bars on the underside of the base plates. Please note the paths of these bars when creating your drawing, as damaging the bars will significantly reduce the load capacity of the base plate.



Base plate 6
50.02.0088

B46.07.274*

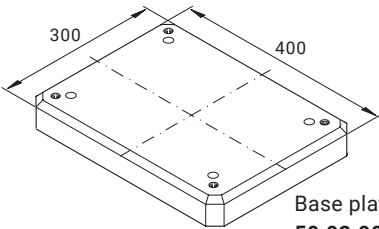
Weight: 10.5 kg



Base plate 8
50.02.0076

B46.07.276*

Weight: 13.7 kg



Base plate 7
50.02.0089

B46.07.275*

Weight: 12.1 kg

*With fastening accessories

Base Plates

Heavy-Duty Base Plates

The following heavy-duty base plates ensure the stability of heavy machine frames, gantries and stands. They are painted black and pre-drilled for connecting certain basic profiles. Plates without a drilling pattern have only the threads and bores necessary for attaching it to the floor. On request, we will be happy to design a base plate for your particular application or manufacture it according to your drawing of the drilling pattern.

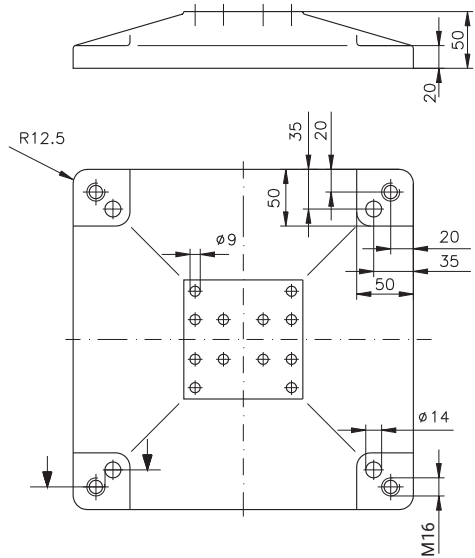
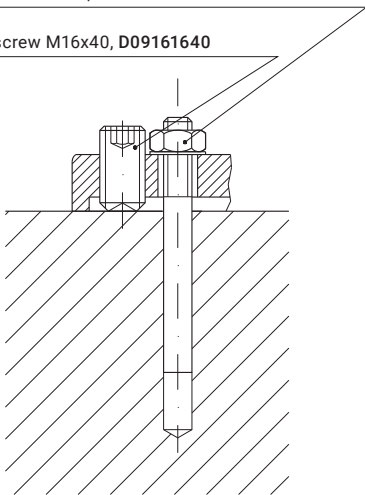
Material: Grey cast, painted black

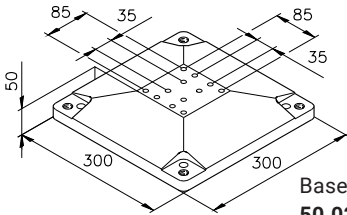
25 | 40 | 50 | 60

Fastening example

Anchor HST M10x120, K111030011

Adjusting screw M16x40, D09161640

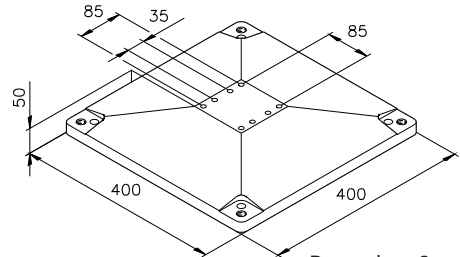




Base plate 4
50.02.0028

Connection bores
 for mk 2000, mk 2004,
 mk 2005, mk 2011,
 mk 2018 and mk 2019
 profile

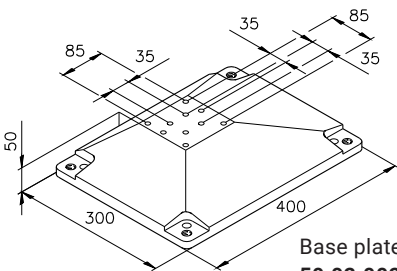
Weight: 6.8 kg



Base plate 2
50.02.0026

Connection bores
 for mk 2004, mk 2005
 and mk 2011 profile

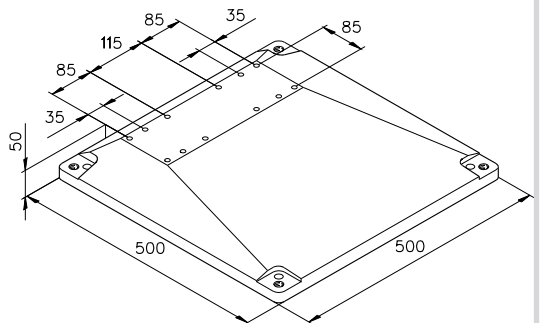
Weight: 11.5 kg



Base plate 1
50.02.0023

Connection bores
 for mk 2000, mk 2004,
 mk 2005, mk 2018
 and mk 2019 profile

Weight: 8 kg



Base plate 5
50.02.0029

Connection bores
 for 2 x mk 2004, mk 2005
 and mk 2011 profile

Weight: 16.6 kg



Support Brackets

Support Brackets

The support brackets for 40 x 40 mm profiles are frequently used to anchor guarding partitions to the floor. No end machining is required on the profile itself. Height differences of up to 10 mm can be compensated by moving the profile.

Material: Tumbled aluminium

25 | 40 | 50 | 60 | M8x16

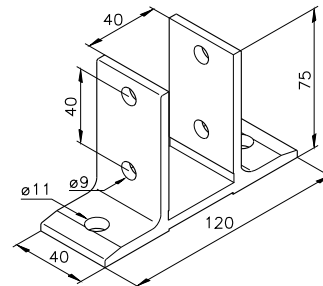
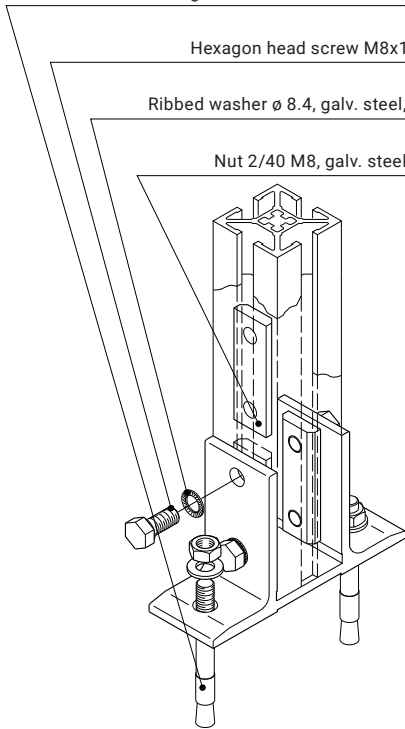
Fastening example

Segment anchor HST M8x75, K111030014

Hexagon head screw M8x16, D0933816

Ribbed washer ø 8.4, galv. steel, K111010017

Nut 2/40 M8, galv. steel, 34.01.0019,



Support bracket
67.02.0004

for 40 x 40 profile



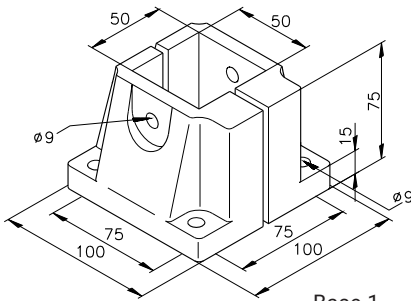
Support Brackets

Support brackets (listed as "bases" below) for 50 x 50 mm profiles are used to anchor stands or columns to the floor. No end machining is required on the profile itself.

Material: Die-cast aluminium

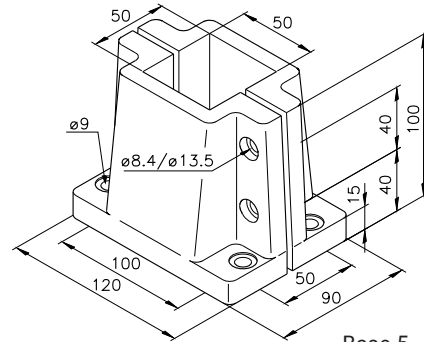
25 | 40 | 50 | 60

5



Base 1
65.00.0001

for 50 x 50 profile



Base 5
65.00.0005

for 50 x 50 profile

Support Brackets

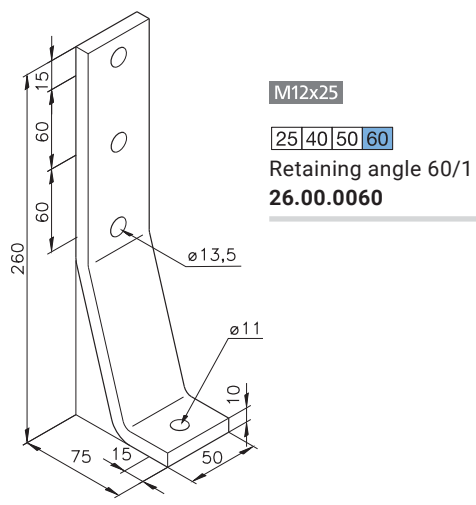
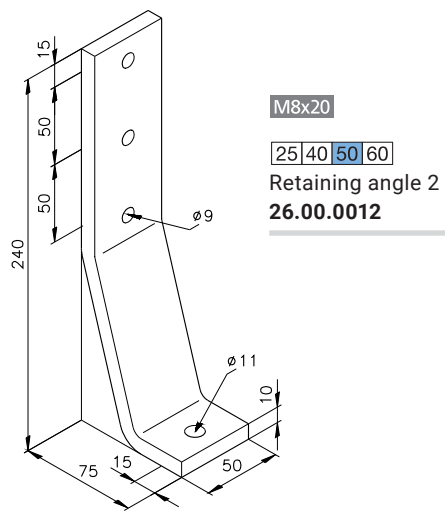
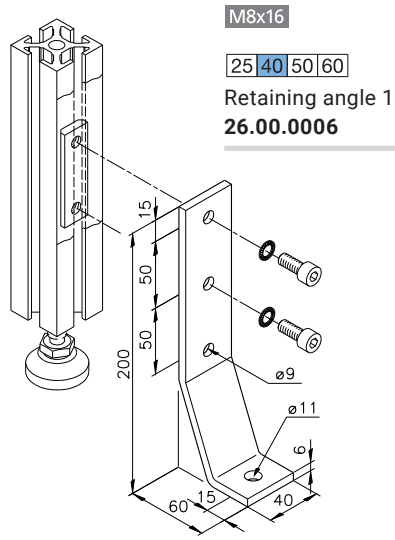


Retaining Angles

Retaining angles can be retrofitted onto structures such as frames, belt conveyors or other structures with levelling feet in order to anchor and fix them to the floor. No end machining is required on the profile itself.

Material: Galvanised steel

Fastening example



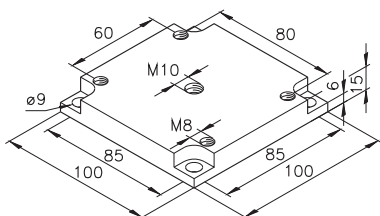




M8x16 25 40 50 60

Foot plate R3
50.02.0093

Tumbled
aluminium



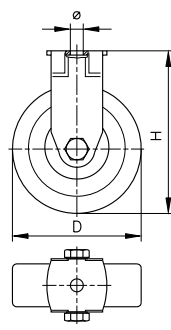
For mk 2005/mk 2011 and casters with \varnothing 10.5 mm connection bores or 80/60 bore pattern

Fixed and Swivel Casters

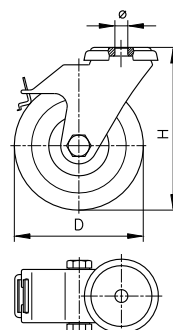
Fixed and Swivel Casters, Type A

The casters are made from galvanised, chromated steel. The housings of the type A variety can be connected to either the face or the slot of a profile using a foot plate with an M10/M12 thread. The rubber tread on the wheels provides for very smooth operation. The wheels have ball bearings. All swivel casters are equipped with a total locking device.

Fixed casters (A)



Swivel casters (A) with locking device



Wheel \varnothing D [mm]	Wheel width [mm]	Load capacity [N]	Total height H [mm]	Connection bore \varnothing [mm]	Item no.
Fixed casters (A)					
50	18	400	69	10.5	K106001040
75	25	600	98	10.5	K106001041
100	32	900	133	10.5	K106001044
100	32	900	133	12.5	K106001042
125	25	800	158	12.5	K106001043
Swivel casters (A) with locking device					
50	18	400	69	10.5	K106000140
75	25	600	98	10.5	K106000141
100	32	900	133	10.5	K106000144
100	32	800	133	12.5	K106000142
125	25	800	158	12.5	K106000143



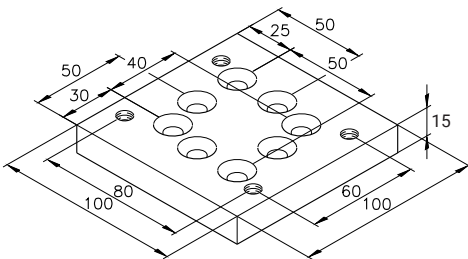
Fixed and Swivel Casters, Type B

The casters are made from galvanised, chromated steel. The housings of the type B variety can be connected to a frame using the pad plates shown below. The wheels have ball bearings and feature a high load capacity. All swivel casters are equipped with a total locking device.

M8x25 25 40 50 60

Foot plate R1
50.02.0091

Tumbled aluminium

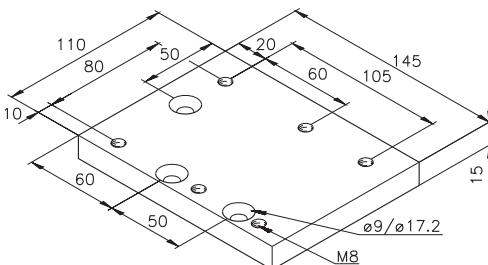


For attaching casters with an 80/60 bore pattern to the profile slot using two countersunk head screws

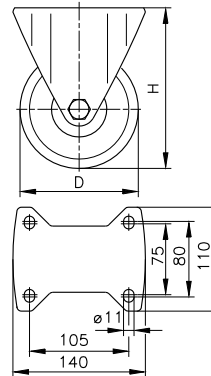
M8x25 25 40 50 60

Foot plate R4
50.02.0094

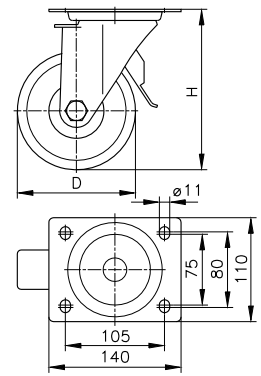
Tumbled aluminium



Fixed caster (B)



Swivel caster (B) with locking device



Wheel ø D [mm]	Wheel width [mm]	Load capacity [N]	Total height H [mm]	Bore pattern [mm]	Item no.
Fixed caster (B)					
125	40	7000	165	105/80	K106001045
125	40	7000	165	80/60	K106001048
Swivel caster (B) with locking device					
125	40	7000	165	105/80	K106000145
125	40	7000	165	80/60	K106000148

Section 6 Accessory Components



6 Cover Profiles 186



Hinges
Hinges 188
Ball joint elements 192

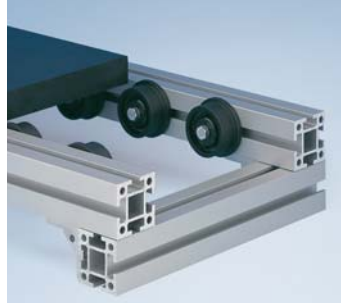


Installation Elements
Cable ducts 194
Sensor holders 195
Pneumatic components 196



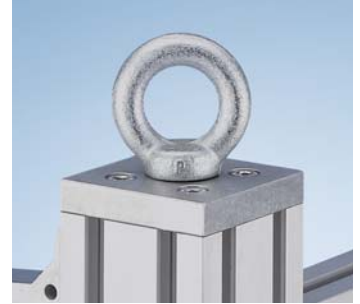
Operating Elements

Handwheels	200
Clamping levers	201



Conveying Elements

Mini-rollers	202
Track rollers	203

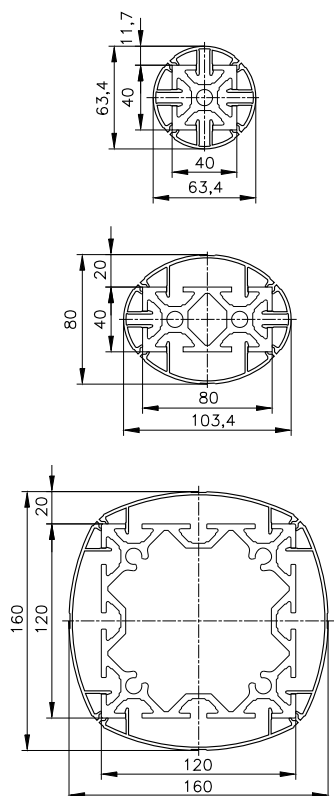


Other Accessories

Bumpers	206
Eye bolts	207



Fastening example

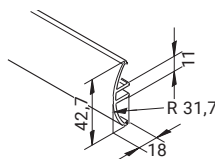


Cover Profiles

Cover profiles can be clipped into the profile slot of many Series 40 construction profiles without additional fastening accessories. This produces a pleasant look with round contours. Typical applications include table legs, frames, power supply columns and many more.

Material: Anodised aluminium

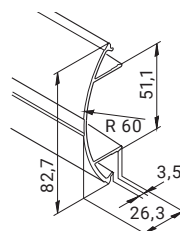
25 | 40 | 50 | 60



Profile mk 2040.43

0.41 kg/m

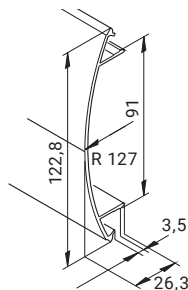
Stock length	54.43.5100
Cut	54.43.



Profile mk 2040.42

0.68 kg/m

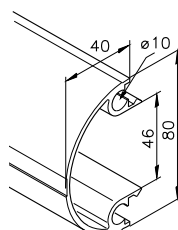
Stock length	54.42.5100
Cut	54.42.



Profile mk 2040.44

0.85 kg/m

Stock length	54.44.5100
Cut	54.44.



Profile mk 2040.32

1.26 kg/m

Stock length	54.32.5100
Cut	54.32.

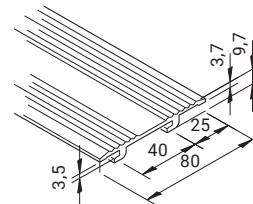
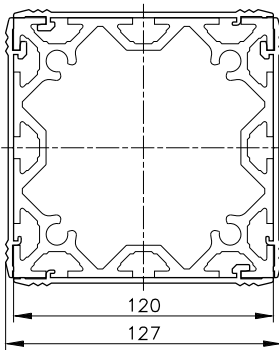


The following cover profiles can be used to cover Series 40 profiles without additional fastening accessories. The profiles' structure prevents slipping, in case the profiles are to be used as a stepping surface.

Material: Anodised aluminium

25 | 40 | 50 | 60

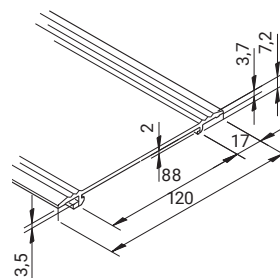
Fastening example



Profile mk 2040.67

0.78 kg/m

Stock length	54.67.6100
Cut	54.67.



Profile mk 2040.85

0.93 kg/m

Stock length	54.85.5100
cut	54.85.

Hinges

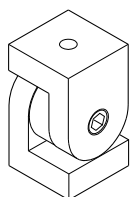
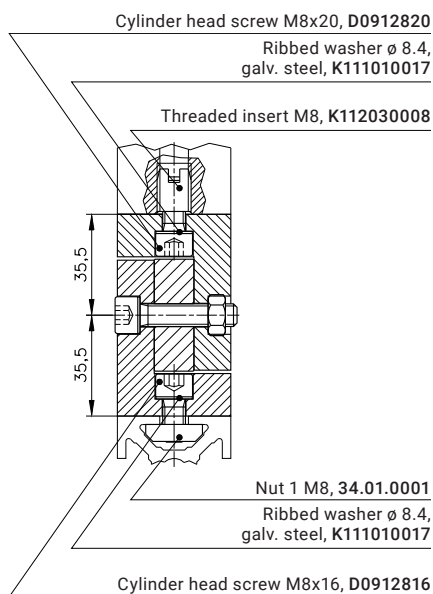
Hinges

Hinges are used to connect profiles at an angle of your choosing (for limits, see the information provided for each item). The hinges are secured in place by tightening the cylinder head screw. The maximum load is 200 kg in the longitudinal direction of the profile. The hinge should be reinforced for use with high torque.

Material: Tumbled aluminium

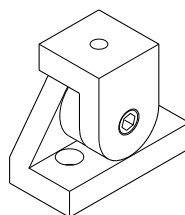
25 | 40 | 50 | 60

Fastening example



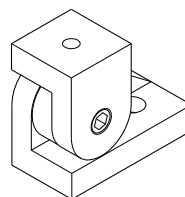
Hinge B21
B46.01.221

Angle of rotation: + - 90°



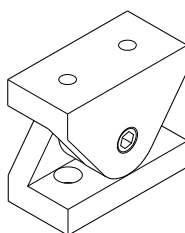
Hinge B22
B46.01.222

Angle of rotation: + - 53°



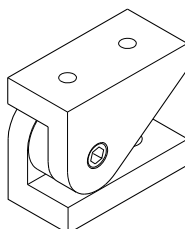
Hinge B23
B46.01.223

Angle of rotation: + 90°/ - 37°



Hinge B24
B46.01.224

Angle of rotation: + - 53°



Hinge B25
B46.01.225

Angle of rotation: + 90°/ - 37°



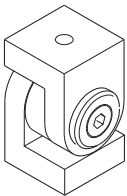
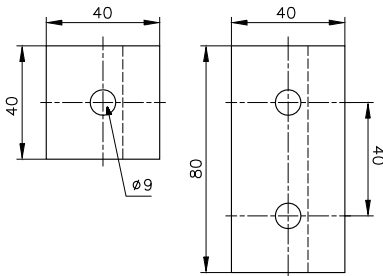
Hinges

The following hinges have a slide bushing that allows you to adjust the angle even when the joint is tightened. The hinges are designed to bear radial loads.

Material: Tumbled aluminium

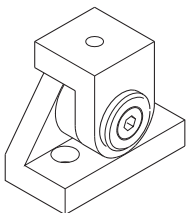
25 40 50 60

Dimensional sketch



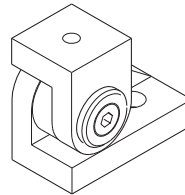
Hinge B01
B46.01.201

Angle of rotation: + - 90°



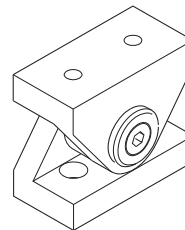
Hinge B02
B46.01.202

Angle of rotation: + - 53°



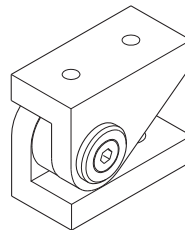
Hinge B03
B46.01.203

Angle of rotation: + 90° / - 37°



Hinge B04
B46.01.204

Angle of rotation: + - 53°



Hinge B05
B46.01.205

Angle of rotation: + 90° / - 37°

Hinges

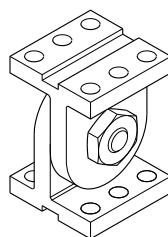
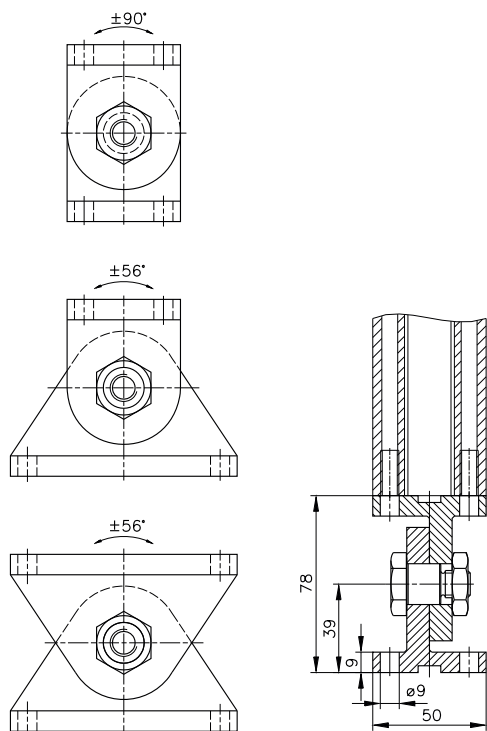
Hinges

Hinges are used to connect profiles at an angle of your choosing (for limits, see the information in the fastening example). The hinges are secured in place by tightening the retaining bolt. The maximum load is 300 kg in the longitudinal direction of the profile. The hinge should be reinforced for use with high torque.

Material: Tumbled aluminium

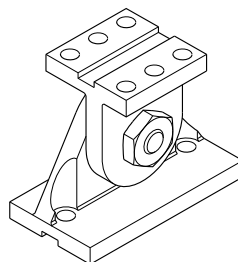
25 40 50 60 M8x20

Fastening example



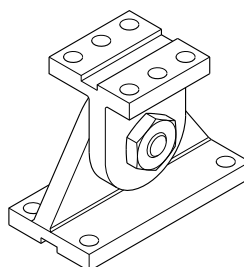
Hinge B50
B46.01.250

for 2 x mk 2000 faces



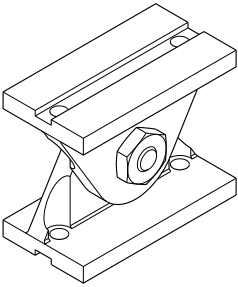
Hinge B51
B46.01.251

for mk 2000 face
to Series 50 slot



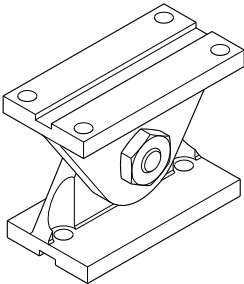
Hinge B52
B46.01.252

for mk 2000 face
to mk 2004 face



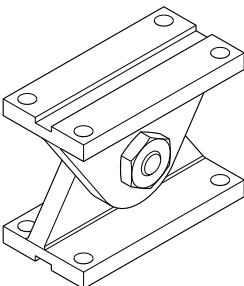
Hinge B53
B46.01.253

for series 50 slot
to Series 50 slot



Hinge B54
B46.01.254

for mk 2004 face
to Series 50 slot



Hinge B55
B46.01.255

for 2 x mk 2004 faces

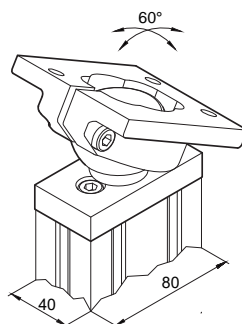
Hinges

Ball Joint Elements

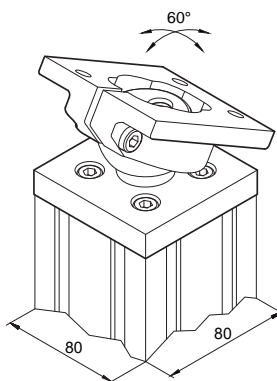
Ball joint elements can be swivelled by 60° in all directions. Once in the correct position, the element can be locked by tightening the fixing screw.

Material: Tumbled aluminium plate, grey cast clamp, stainless steel spherical calotte

25 | 40 | 50 | 60

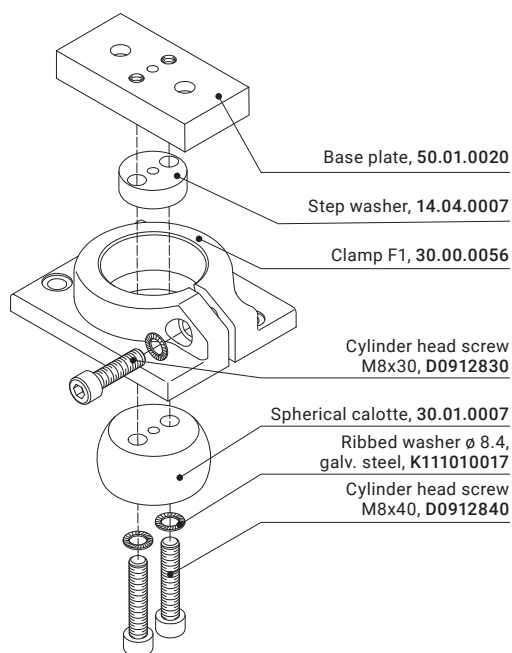


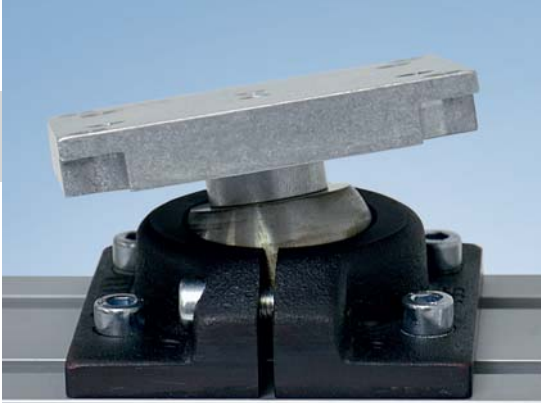
Ball joint element F1
B46.02.024*



Ball joint element F2
B46.02.025*

Fastening example

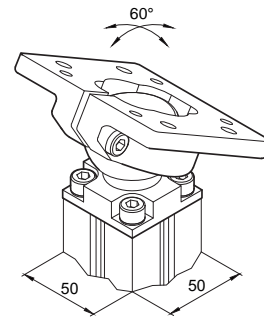




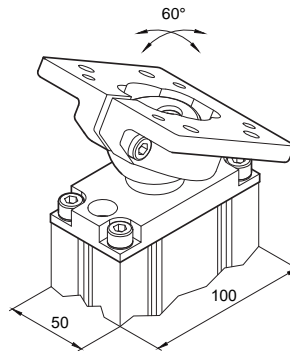
Ball Joint Elements

Material: Tumbled aluminium plate, grey cast clamp, stainless steel spherical calotte

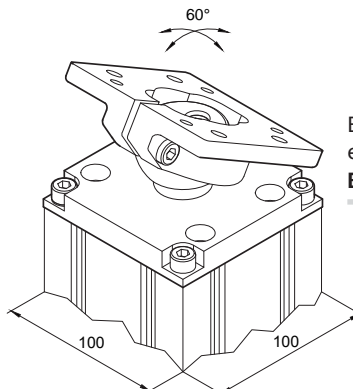
25 40 50 60



Ball joint element C1
B46.02.010*

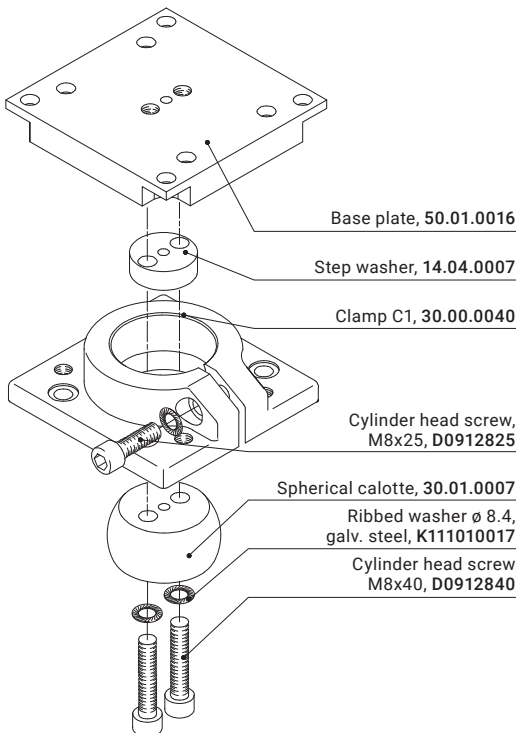


Ball joint element C2
B46.02.011*

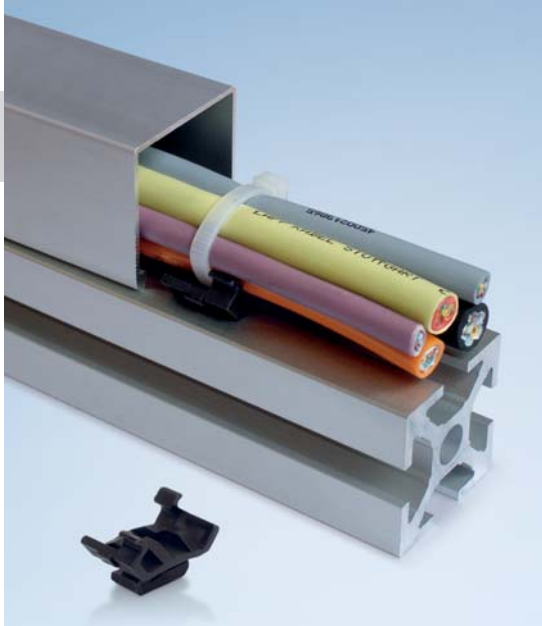


Ball joint element C3
B46.02.012*

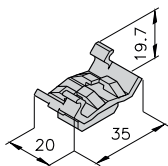
Fastening example



*With fastening accessories



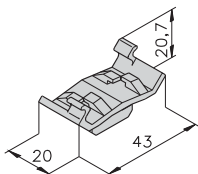
Clip material: PP plastic



25 40 50 60

Clip 40
mk 2546

Clip material: PA6 plastic



25 40 50 60

Clip 50
mk 2550

Installation Elements

Cable Ducts

Aluminium cable ducts offer outstanding function and an attractive design. They are fixed to a profile using the clips and conventional cable ties.

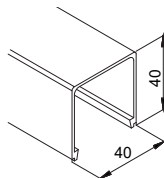
Material: Anodised aluminium

25 40 50 60

Profile mk 2040.50

0.51 kg/m

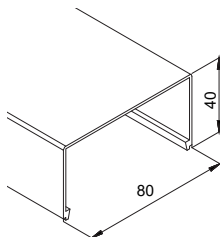
Stock length	54.50.5100
Cut	54.50.



Profile mk 2040.51

0.67 kg/m

Stock length	54.51.5100
Cut	54.51.

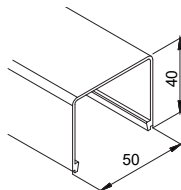


25 40 50 60

Profile mk 2051

0.56 kg/m

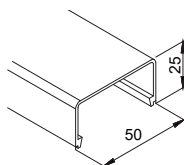
Stock length	51.51.5100
Cut	51.51.



Profile mk 2050

0.43 kg/m

Stock length	51.50.5100
Cut	51.50.



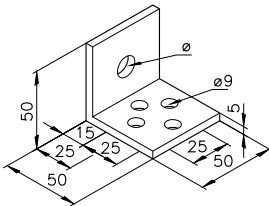


Sensor Holders

Sensor holders are used to attach proximity switches. They can be attached quickly and flexibly without additional profile machining.

Material: Tumbled aluminium

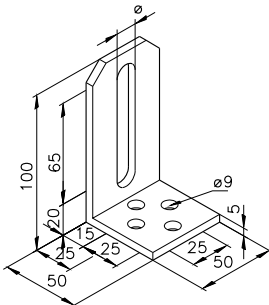
25 40 50 60 M8x16



Sensor holder A
 ø 13 – 16.00.0000

ø 19 – 16.00.0001

R1/4" – 16.05.0011

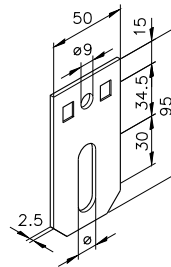


Sensor holder B
 ø 13 – 16.00.0006

ø 19 – 16.00.0007

Material: Galvanised steel

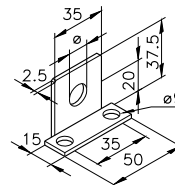
25 40 50 60 M8x12



Sensor holder D
 ø 9 – 16.00.0016

ø 13 – 16.00.0017

ø 19 – 16.00.0018



Sensor holder E
 ø 9 – 16.00.0026

ø 13 – 16.00.0027


ø 19 – 16.00.0028

Installation Elements

Pneumatic Components

The following pneumatic components allow the mk 2040.02 and mk 2040.03 profiles to be used as a compressed air line, eliminating the need to install additional components. The system is designed for a maximum pressure of 6 bar. \varnothing 8.4 mm bores must be drilled at the necessary locations to connect the components in the profile slot. The B46.03.007 drilling jig can be used to determine the exact positioning of the bores, or the connection plate can be used directly as a jig.

25 40 50 60

6  For drilling jigs, see page 330

Lateral fastening example

Coupling G1/4" K502050700

Polyamide gasket G1/4" K502050351

Cylinder head screw M8x25 DIN 6912

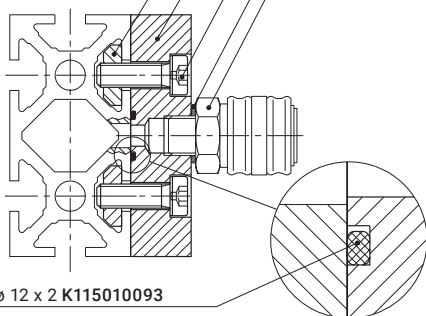
D6912825

Distributor plate A1 G1/4"

53.00.0352, Al

Nut 1 ESD M8 34.01.0018

O-ring \varnothing 12 x 2 K115010093



An O-ring is used to seal the connection when the distributor plate is fastened to the profile slot. It fits perfectly into a circular slot in the connection plate.

Face fastening example

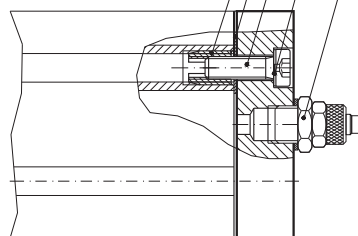
Hose connection

Ribbed washer \varnothing 8.4, galv. steel, K111010017

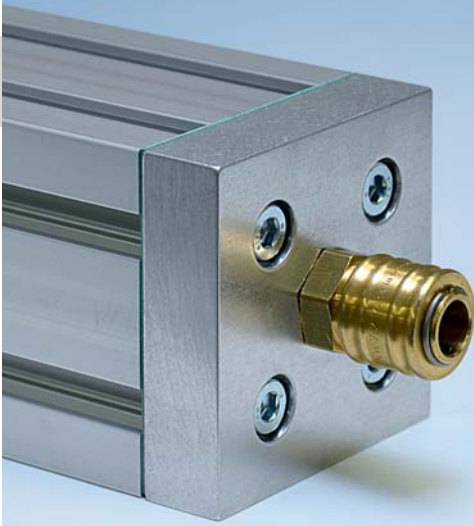
Cylinder head screw M8x25, DIN 6912, D6912825

Flat seal A 53.01.0005

Threaded insert M8, 9S20K, K112030008

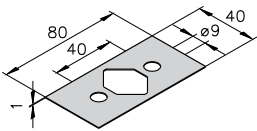


A flat seal is used to seal the connection when the distributor or connection plate is fastened to the profile's face.



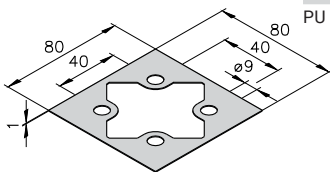
Pneumatic Components

A flat seal is required when fastening the plates to the profile face; when fastening to the side of the profile, an O-ring is used to seal the joint between the profile and the plate. The coupling is threaded into the plate with a sealing ring. See also the fastening examples. The system is designed for a maximum pressure of 6 bar.



Flat seal A
53.01.0005

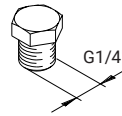
PU plastic, soft



Flat seal B
53.01.0006

PU plastic, soft

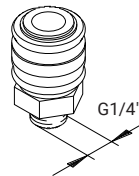
25 40 50 60



Plug screw
 G1/4"
K502050426

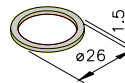
G1/2"
K502050428

Brass



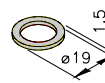
Coupling G1/4"
K502050700

Brass



Polyamide sealing ring
 G1/2"
K502050353

PA plastic



Polyamide sealing ring
 G1/4"
K502050351

PA plastic



O-ring \varnothing 12 x 2 mm
K115010093

NBR rubber

Installation Elements

Pneumatic Components

We offer various plates for creating a compressed air system, depending on your particular application and profiles.

Material: Tumbled aluminium

6

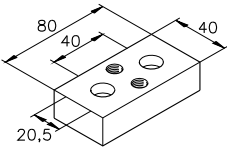
Distributor plates

M8x25 DIN 6912



Distributor plate A18
G1/8"

53.00.0300



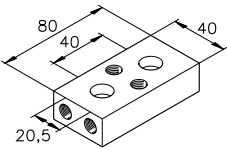
Distributor plate A14
G1/4"

53.00.0303



Distributor plate A28
G1/8"

53.00.0301



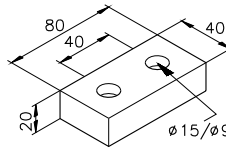
Distributor plate A24
G1/4"

53.00.0304

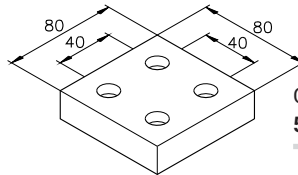
Closure plates

M8x25 DIN 6912

Closure plate A
53.00.0100



Closure plate B
53.00.0101



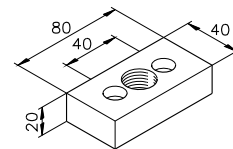
Connection plates

M8x25 DIN 6912



Connection plate A
G1/4"

53.00.0352



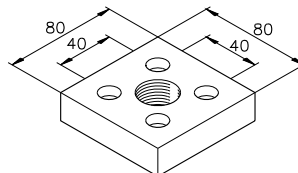
Connection plate A
G1/2"

53.00.0200



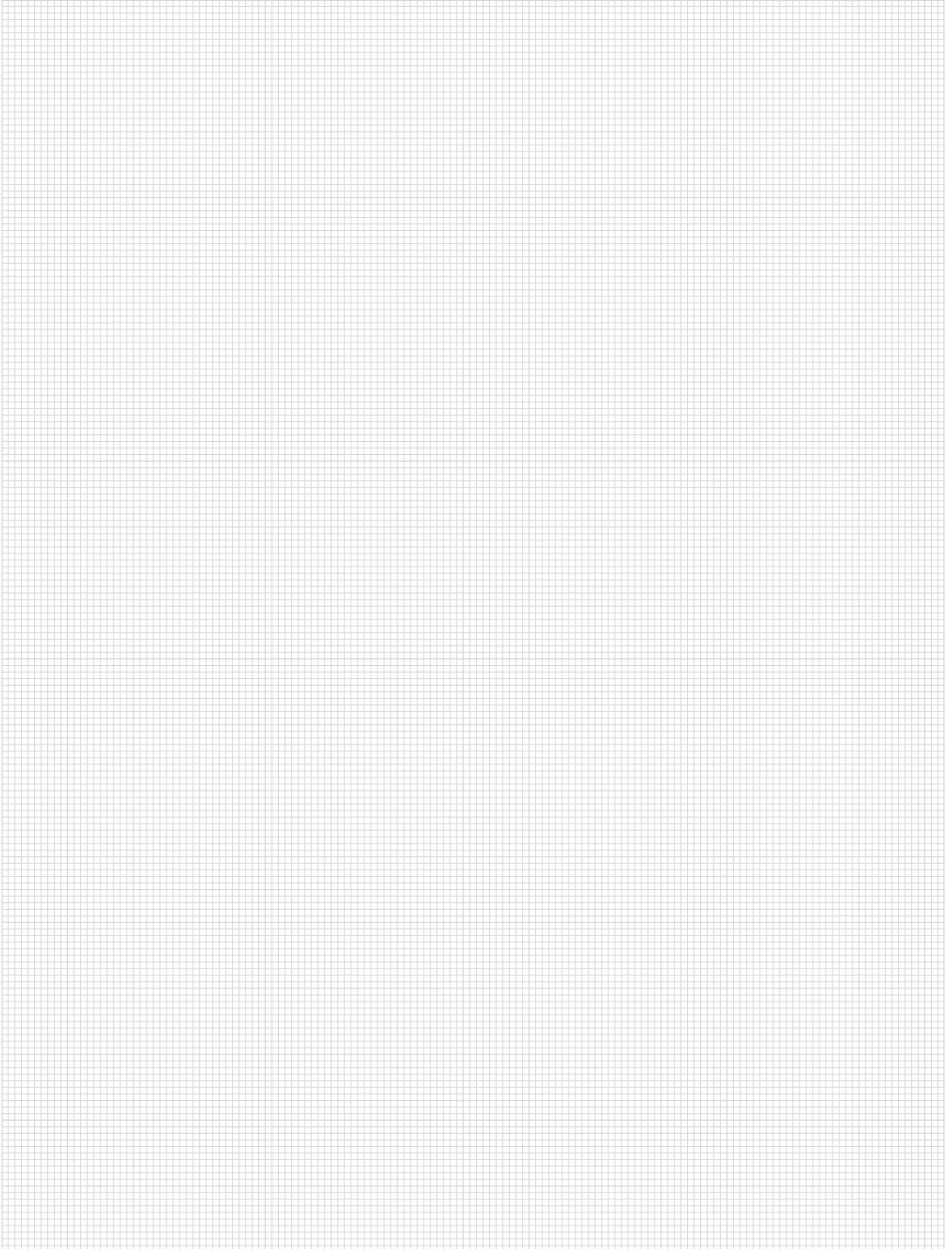
Connection plate B
G1/2"

53.00.0201



Connection plate C
G3/4"

53.00.0202





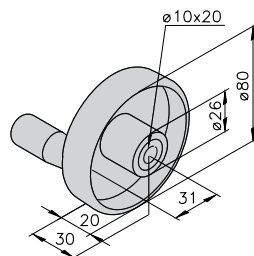
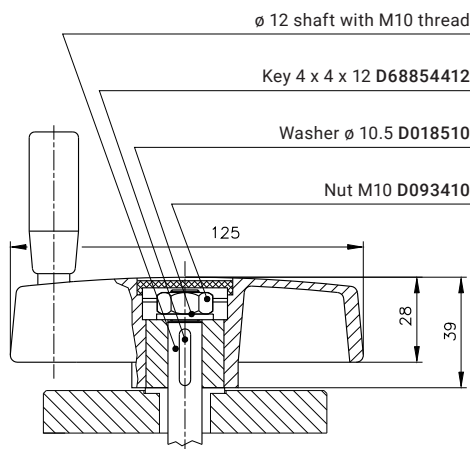
Operating Elements

Handwheels

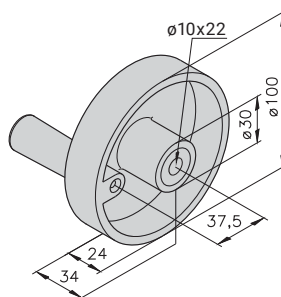
Handwheels in various designs can be mounted on spindles in adjusting units, or used in conveyor technology to adjust the side rails. Handwheels with outer diameters of 100 mm or larger have handles that can be folded away and lowered.

Material: PP plastic, matte black

Fastening example

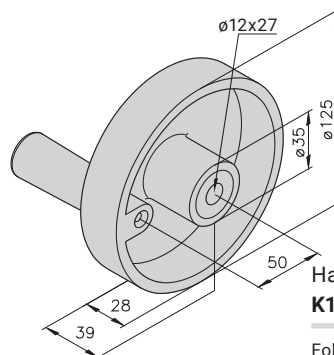


Handwheel ø 80
K110020028



Handwheel ø 100
K110020030

Folding handle



Handwheel ø 120
K110020031

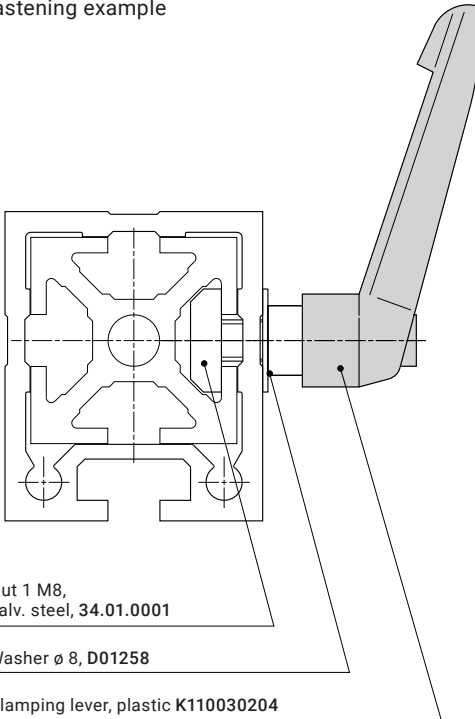
Folding handle



Clamping Levers

Clamping levers can be used to manually adjust and lock attached components in any position. Applications include holders for side rails, slide carriages or telescoping profiles.

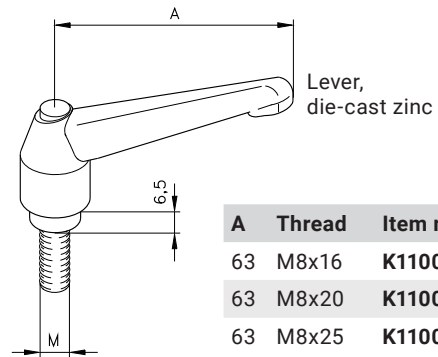
Fastening example



Nut 1 M8,
galv. steel, 34.01.0001

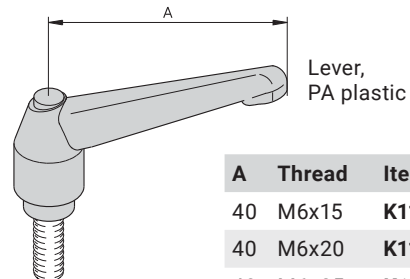
Washer \varnothing 8, D01258

Clamping lever, plastic K110030204



Lever,
die-cast zinc

A	Thread	Item no.
63	M8x16	K110030055
63	M8x20	K110030056
63	M8x25	K110030057



Lever,
PA plastic

A	Thread	Item no.
40	M6x15	K110030200
40	M6x20	K110030201
40	M6x25	K110030202
63	M8x16	K110030204
63	M8x20	K110030205
63	M8x25	K110030206

Conveying Elements

Mini-rollers

Mini-rollers are used for the manual transfer of workpiece carriers, among other applications. They can be used with Series 40 and Series 50 construction profiles. The roll distances depend on the size of the conveyed material.

25 40 50 60

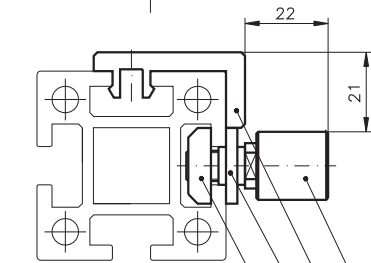
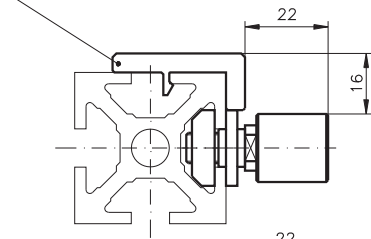
6



Wear strips
Starting on page 148

Fastening example

mk 1040.05 wear strip, 21.05.

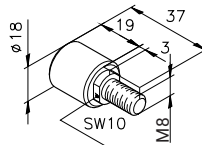


Nut 1 M8, 34.01.0001

Step washer, 63.00.0011

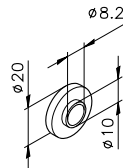
mk 1008 wear strip, 22.08.

mk mini-roller, K101120001



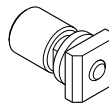
mk mini-roller
K101120001

Blued steel



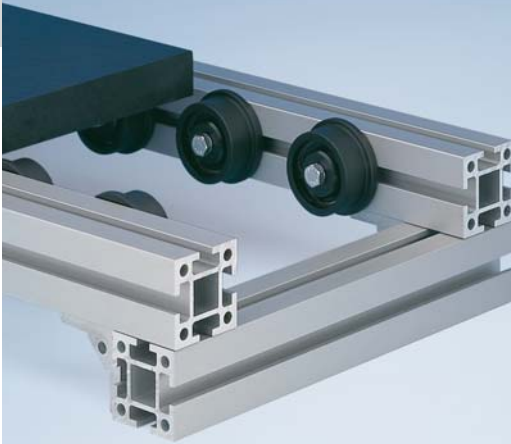
Step washer
63.00.0011

Galvanised steel



mk mini-roller
B60.04.002

with fastening accessories
80 N max. radial load

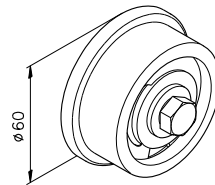
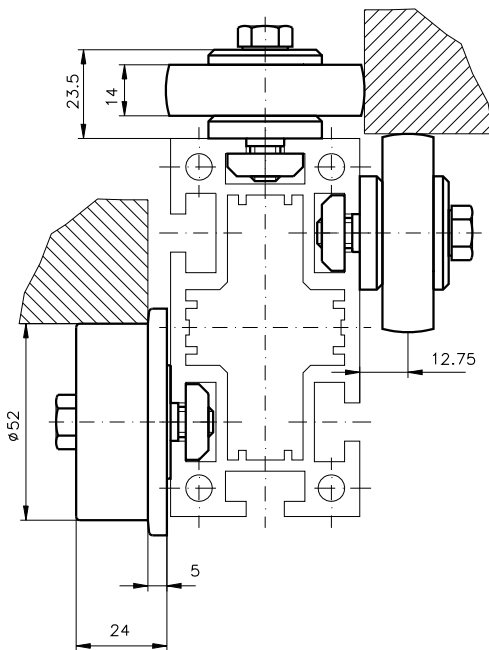


Track Rollers

Track rollers are used for the manual transfer of workpiece carriers, among other applications. They are often used when frames or other system components need to be moved linearly. The following varieties of flange, track and guide rollers are available for various applications.

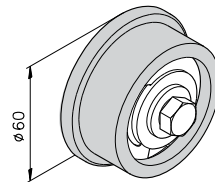
25 40 50 60

Fastening example



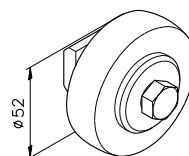
Flange roller 1
B60.00.001

Blued steel roll,
 500 N max. radial load



Flange roller 2
B60.00.002

POM plastic roll,
 200 N max. radial load



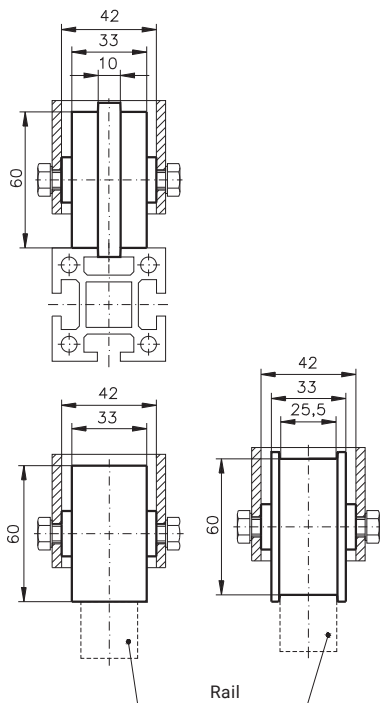
Track roller
B60.01.001

Blued roller bearing
 steel,
 1000 N max. radial load

*With fastening accessories



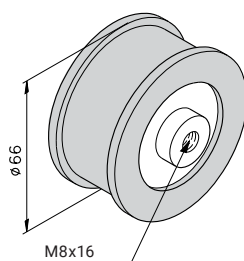
Fastening example



Conveying Elements

Track Rollers

Track rollers are used for the manual transfer of workpiece carriers, among other applications. They are often used when frames or other system components need to be moved linearly. The following varieties of flange, track and guide rollers are available for various applications.



25 40 50 60

Flange roller A1

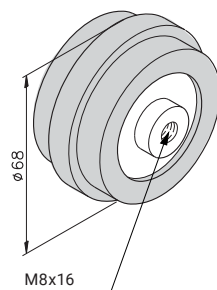
B60.00.004

25 40 50 60

Flange roller A1

B60.00.003

Steel roll,
1,000 N max. radial load



25 40 50 60

Guide roller A2

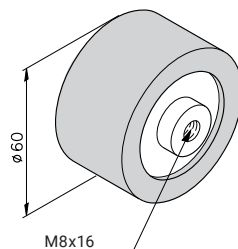
B60.02.019

25 40 50 60

Guide roller A2

B60.02.002

POM plastic roll,
200 N max. radial load



25 40 50 60

Track roller A4

B60.01.005

25 40 50 60

Track roller A4

B60.01.003

POM plastic roll,
200 N max. radial load



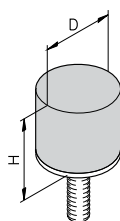


Other Accessories

Bumpers

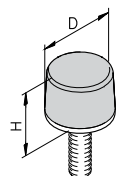
Bumpers are used to dampen shocks and noise in doors, flaps, caps, carriages and other applications.

Material: Rubber, Shore 55



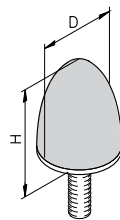
Bumper, type D

D	H	Thread	Item no.
20	12	M6x12	K113060004
20	15	M6x15	K113060001
30	28	M8x20	K113060002
50	21	M10x28	K113060003



Bumper, type K/D

D	H	Thread	Item no.
25	17	M6x18	K113060006
50	18	M10x28	K113060007



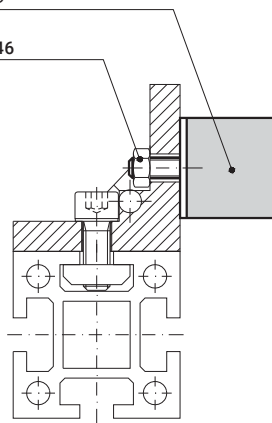
Bumper, type KP/D

D	H	Thread	Item no.
30	36	M8x10	K113060012
30	36	M8x20	K113060011

Fastening example

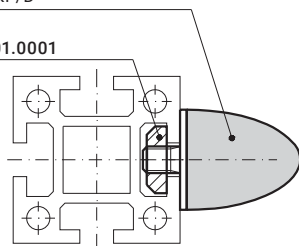
Bumper, type D

Nut M6, D09346



Bumper, type KP/D

Nut 1 M8, 34.01.0001





Eye Bolts

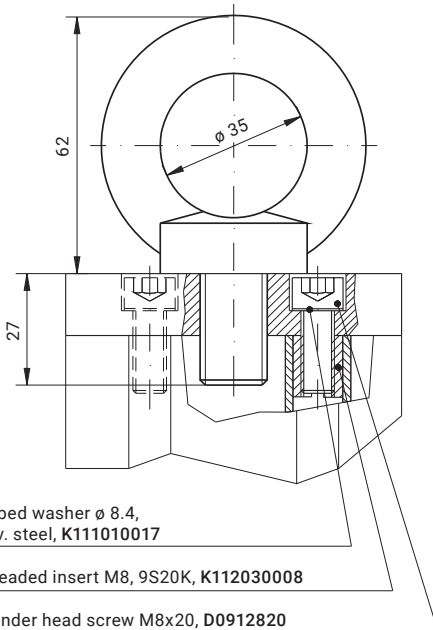
Eye bolts for use as lifting devices can be attached to steel foot plates or to plates 4 and 5 shown here. The maximum load capacity refers to vertical loads.

Material: Galvanised steel



Foot plates
starting on page 167

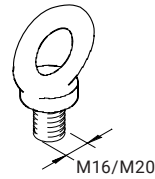
Fastening example



Ribbed washer \varnothing 8.4,
galv. steel, K111010017

Threaded insert M8, 9S20K, K112030008

Cylinder head screw M8x20, D0912820

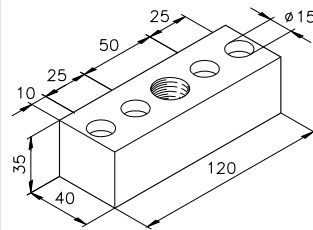


Eye bolt*
M16 DIN 580
D058016

4,000 N load capacity

Eye bolt*
M20 DIN 580
D058020

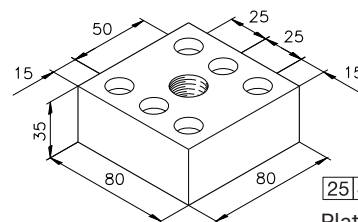
12,000 N load capacity



25 40 50 60

Plate 4 M20
50.09.0040

12,000 N load capacity

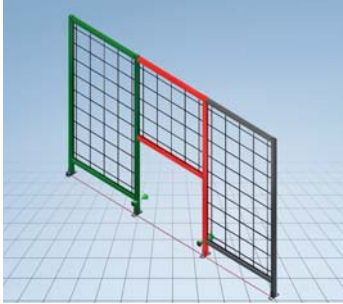


25 40 50 60

Plate 5 M20
50.09.0041

12,000 N load capacity

Section 7 Guarding



Notes on Guarding

Guarding configurator	210
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System selection	213



Partitions and Doors

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Windows

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Panelling

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Door and Window Components

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Ball latches	255
Door stop	255
External locks	256
Internal locks	257
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Roller units	259



Safety Accessories

Safety interlocks	260
Mechanical solenoid latches	264
Electronic solenoid latch	265
Slam latches	266



Handles

Bracket handles	268
Machine handles	270
Profile for strip handles	271

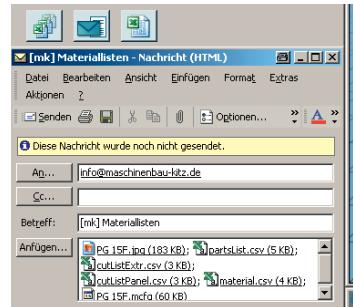
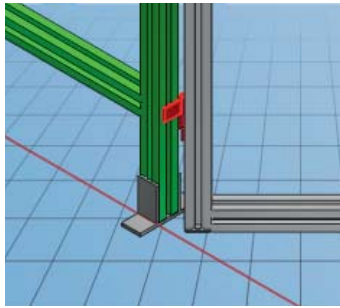
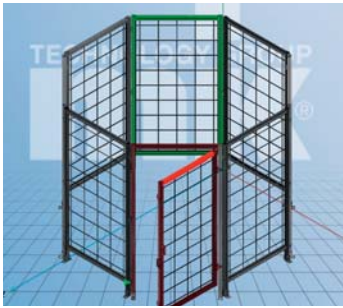
Floor Elements → See section 5

Notes on Guarding



www.mk-group.com/en/guarding

Guarding Configurator



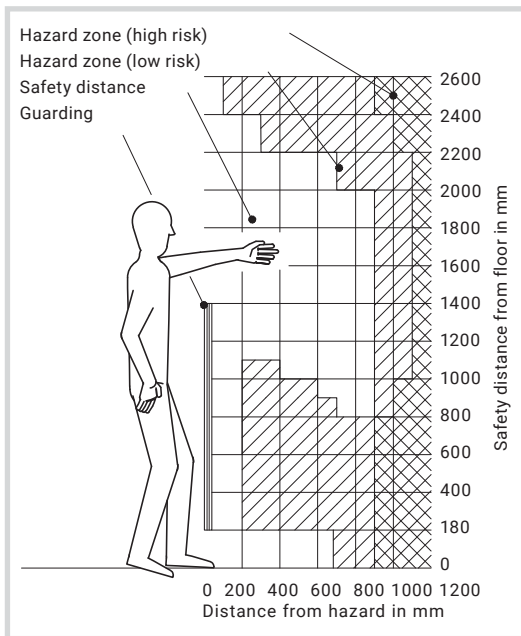
- Reduce your development and design time
- Large selection of panelling materials and door variants
- Standardised components for reduced costs
- No CAD system or CAD knowledge necessary
- Design in three dimensions with intuitive user guidance
- Option to import DXF layouts
- Export 3D drawings to IGES, STEP and JPEG format
- Automatically generate saw lists, weight estimates and bills of materials for individual parts and assemblies
- Choose your preferred degree of assembly (raw material/ assemblies/turnkey)
- Posts and partitions can be connected at variable angles from 0° bis 135°
- Automatic determination of support brackets
- Full/half support brackets and end caps can be manually selected and combined
- Pillar-panel solution: End cap options allows for quick disassembly using straight plate fasteners

Safety Distances

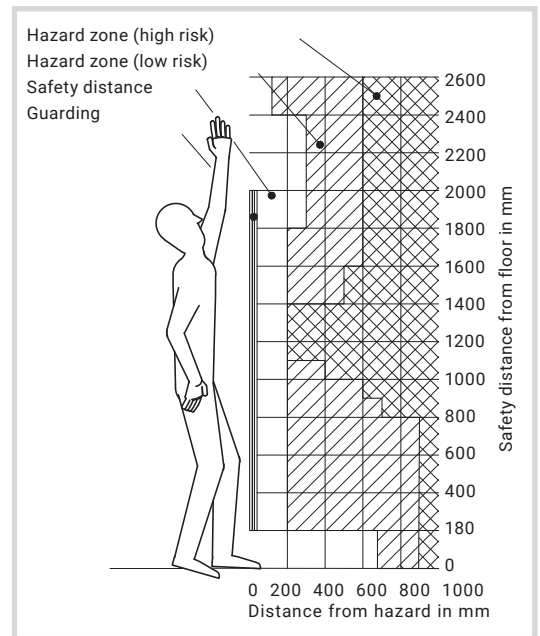
Our guarding has a flexible, modular design to allow you to secure your systems, machines and production areas effectively and economically. Choose from a wide range of machine housings, protective fences, panelling, doors and windows, all of which can be electronically secured if desired. It is also a cinch to connect pneumatically, hydraulically or electrically operated door elements to your machine control system. All mk guarding is designed and manufactured in accordance with the safety standards applicable in your country. You can be sure that you and your employees are always on the safe side.

Legally mandated safety distances to hazards are defined to ensure safety. Choose the appropriate panelling for your required safety distance. Closed panelling such as sheet metal, polycarbonate or glass have a required safety distance of 0 mm. Open panelling such as welded grids or wire meshes have a required safety distance of 200 mm (for 40 x 40 mm openings). With the preferred partition method, standard frame heights of 1400/2000 mm and 1460/2060 mm are available according to the height of your particular hazard. Custom heights are available on request.

Distance from hazard for 1400 mm frame height



Distance from hazard for 2000 mm frame height



These distances are in accordance with the DIN EN ISO 13857:2008-06 standard (Safety distances to prevent hazard zones being reached by upper and lower limbs).

Notes on Guarding



» Machine housings and protective fences for increased occupational safety. «

Our guarding range is based on the mk profile system and offers functional machine housings, enclosures and protective fences. Their flexible, modular design ensures that systems, machines and production areas can be secured effectively and economically.

The System Selection section below shows the three possible variants. The partition method is the preferred method and the standard design used by mk. Therefore, the various modules are shown in full only for the partition method in the following section.

The various methods are based on the same grid dimensions. This ensures that all systems remain modular and compatible. mk also offers custom solutions tailored to our customers' specific needs.

The floor clearance of the guarding is 180 mm as standard, which allows for floor cleaning without compromising safety. The profile structure's favourable mass-to-strength ratio offer ergonomic benefits when handling and installing the elements.

System Selection

ECO Solution

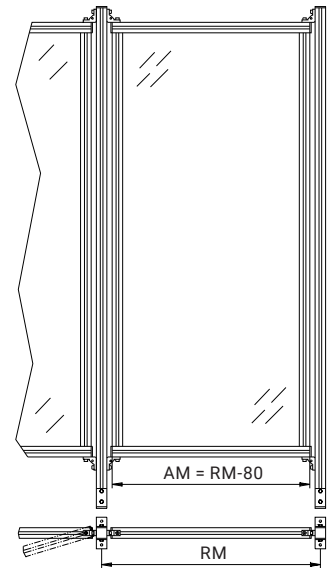
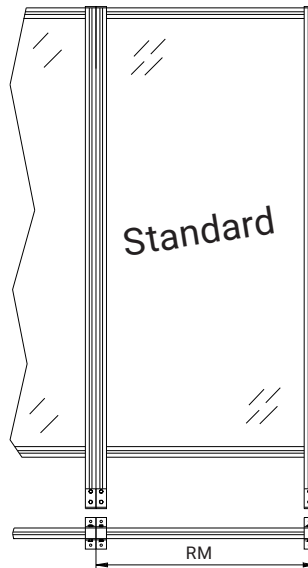
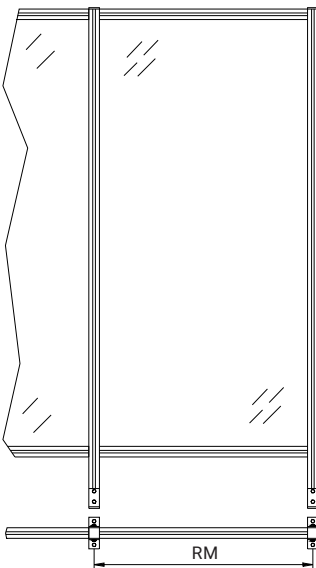
Because it requires less material, the ECO solution is the most cost-effective alternative, but it requires significantly more installation work. mk therefore prefers the partition method, since the individual partitions can be quickly and easily installed on site.

Partition Method

The partition method, which is the standard at mk, is an economical, sturdy and easy-to-install type of guarding. Because of the flush connections between the partitions, this method is excellently suited for both long, straight paths and for designs with variable angles.

Pillar-Panel Solution

The pillar-panel solution features separate panel frames that are mounted between posts anchored to the floor. This allows you to easily remove individual partitions, and the captive fastening system allows you to do so in accordance with the Machinery Directive.



AM = outer dimension RM = grid dimension

Partitions and Doors

Partitions

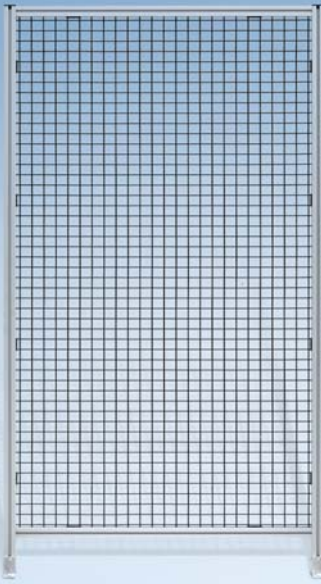
... for the Partition Method

Our standard partitions and doors for the partition method are presented below, each with a fastening example. Plate fastening is the preferred method for connecting a partition to the adjacent partitions. The heights and grid dimensions can be adapted to customer-specific requirements.

Information required for ordering

- RM (500, 750, 1000, 1250 as standard, also 1500 and 2000 mm with vertical brace)
- H (2060 or 1460 mm as standard)
- H2 (180 mm as standard)
- H4 (optional for partitions with horizontal brace)
- Panelling

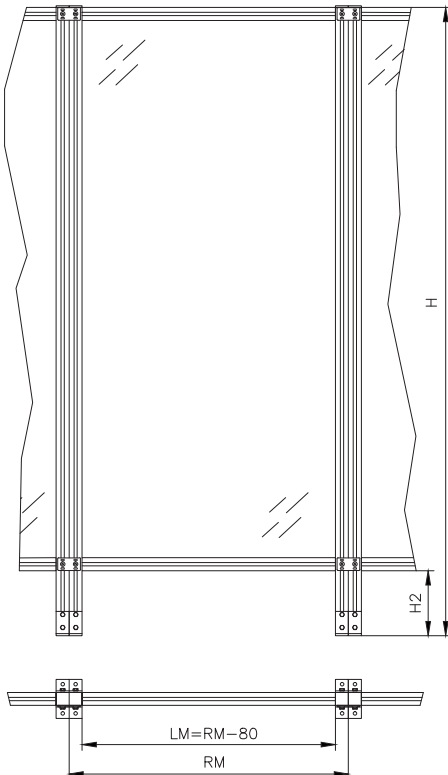
The panelling (e.g. polycarbonate) must be specified when ordering; otherwise the assemblies (B..) will be delivered without panelling.



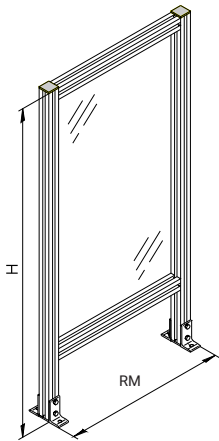
Panelling starting on page 232
Corner blocks on page 95

7

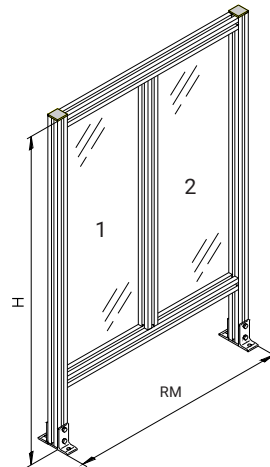
Fastening example



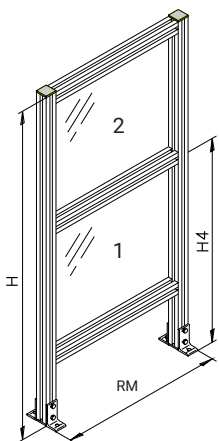
LM = clear dimension
RM = grid dimension



Simple partition
B69.51.001



Partition
 with vertical brace
B69.51.003



Partition
 with horizontal brace
B69.51.002

Assemblies (B...):

mk 2040.31 profile, connecting elements, support brackets, end caps, panelling (if specified when ordering, otherwise none).

Partitions and Doors

Swing Doors

... for the Partition Method

A swing door is connected to the sides of partitions using hinges. The door lintel that connects the partitions provides the necessary stability. It can be used for both single-leaf and double-leaf swing doors.

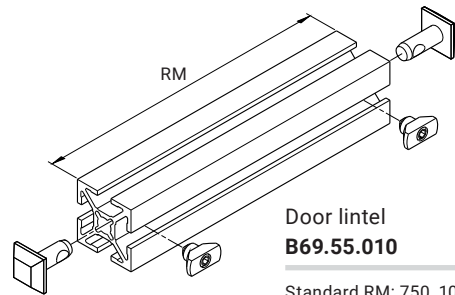
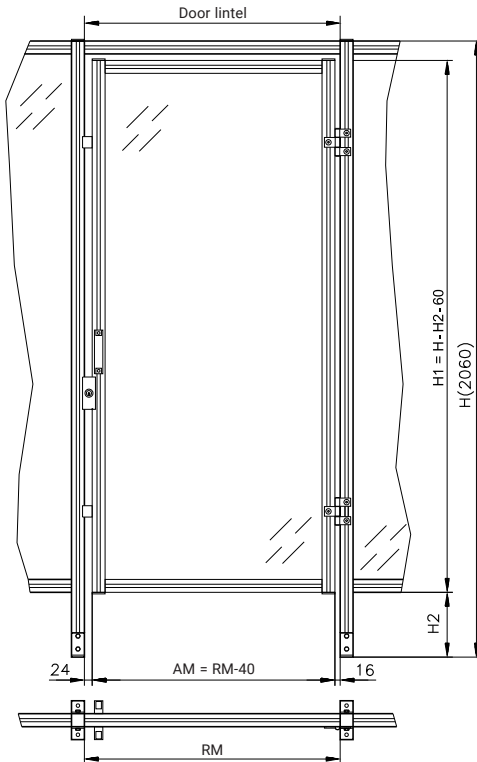
The dimensions of the doors can be selected freely. The standard height from floor level is 2000 mm; based on the standard brush height of 180 mm, this means $H_1 = 1820$ mm. Various panelling options, lock types and safety interlocks are available.



Panelling starting on page 232
Locks starting on page 256

7

Fastening example



Door lintel
B69.55.010

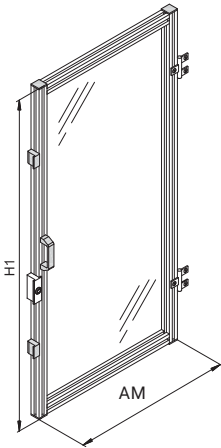
Standard RM: 750, 1000,
1250, 1500, 2000 mm

AM = outer dimension of swing door
RM = grid dimension between two partitions

Assemblies (B...):

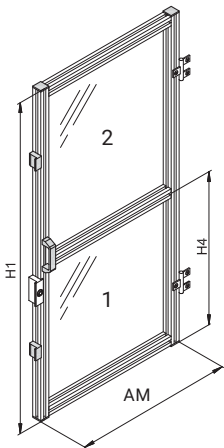
mk 204.40 profile, connecting elements

Single Swing Doors



Swing door,
single-leaf
DIN right
B69.60.001

DIN left
B69.60.002



Swing door,
single-leaf
with horizontal
brace
DIN right
B69.60.003

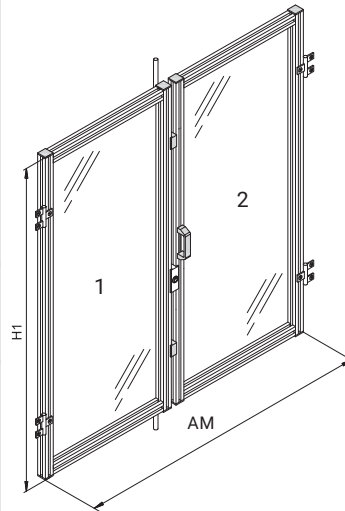
DIN left
B69.60.004

Assemblies (B...):

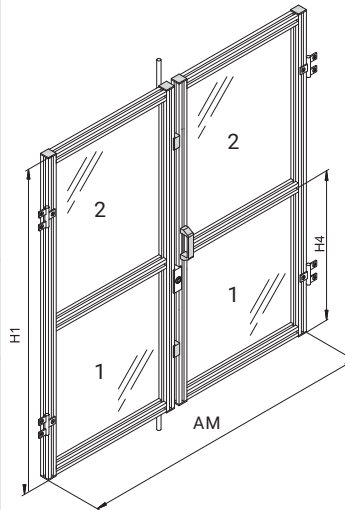
mk 2040.40 profile, connecting elements, stops, handles, end caps, hinges, lock, panelling (if specified when ordering, otherwise none).

Double Swing Doors

Double swing doors are equipped with additional interlocks on the top and bottom.



Swing door,
double-leaf
B69.60.005



Swing door,
double-leaf
with horizontal
brace
B69.60.006

Information required for ordering

■ RM, H1, H4 optional, panelling, lock type

Partitions and Doors

Sliding Doors

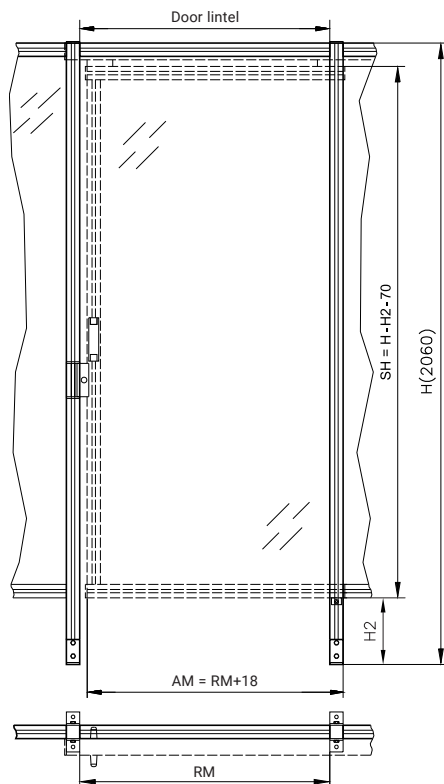
... for the Partition Method

The combination of track and B38.00.045 roller carriage provides an extremely sturdy sliding mechanism while also offering the benefits of a closed rail system. As with swing doors, sliding doors are mounted on the sides of two partitions, which are connected by the door lintel included in the assembly.

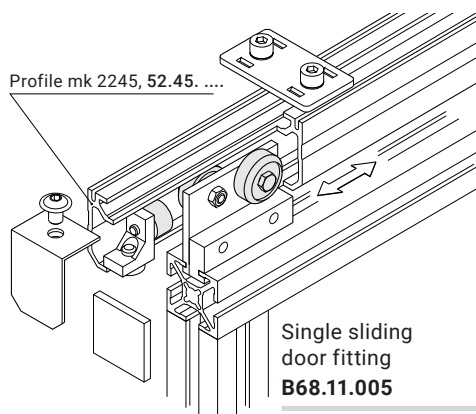


↩ Panelling starting on page 232
Locks starting on page 256

Fastening example



AM = outer dimension of sliding door
RM = grid dimension
SH = sliding door height



$L = 2 \times RM + 40$

Double sliding door fitting
B68.11.006

$L = 4 \times RM + 40$

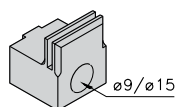
Sliding door roller carriage
B38.00.045

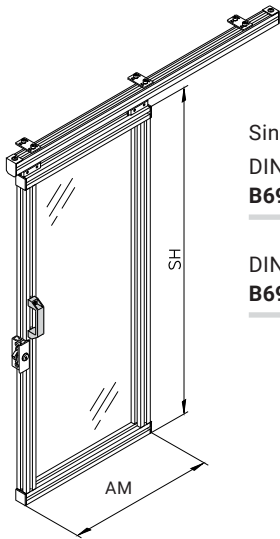
Max. 30 kg

M8x25

Guide piece
19.00.0005

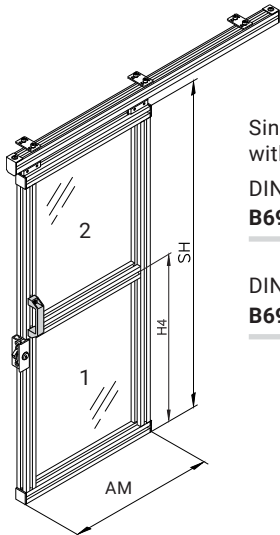
Black plastic





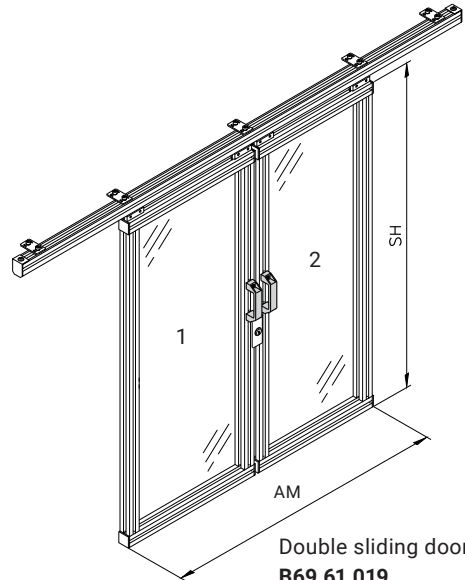
Single sliding door
 DIN right
B69.61.015

DIN left
B69.61.016

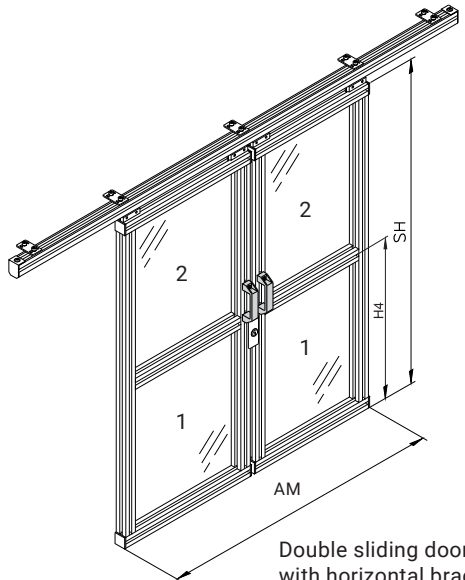


Single sliding door
 with horizontal brace
 DIN right
B69.61.017

DIN left
B69.61.018



Double sliding door
B69.61.019



Double sliding door
 with horizontal brace
B69.61.020

Assemblies (B...):

mk 2040.31 and mk 2245 profiles, connecting elements, fitting set, handles, end caps, buffer, lock, panelling (if specified when ordering, otherwise none).

Information required for ordering

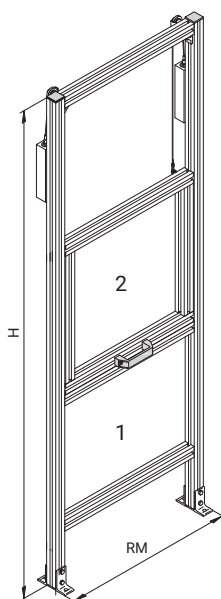
- RM, SH, H4 optional, panelling, lock type

Partitions and Doors

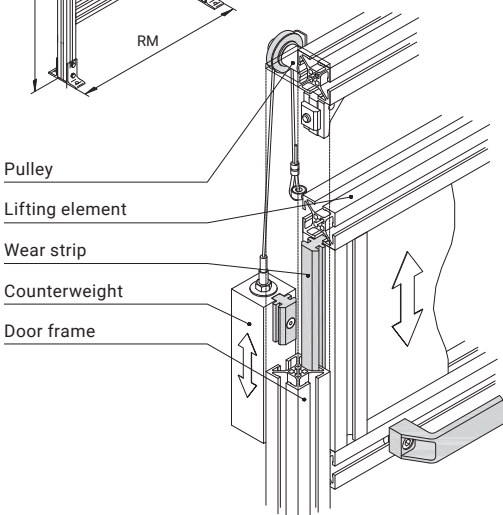
Simple Lifting Doors

... for the Partition Method

Lifting doors consist of a solid partition and a lifting element, which is balanced using steel cables that are connected to counterweights via idler pulleys. This lets you easily lift and lower the door manually. Pneumatic or electronic activators are available on request.



Simple lifting door
B69.62.001



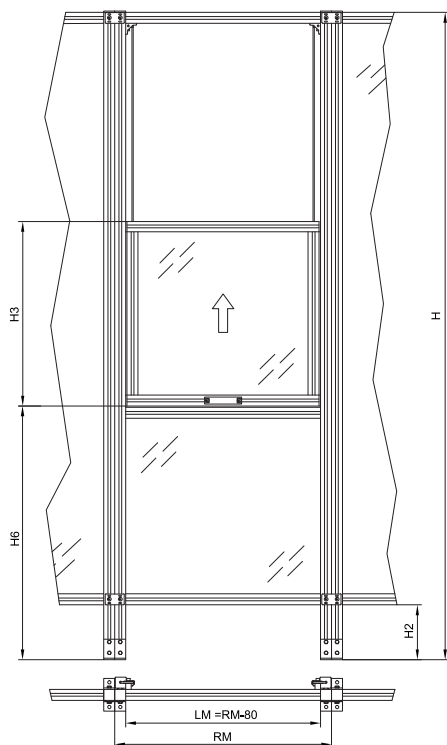
Information required for ordering

■ RM, H, H2, H3, H6, Hub, panelling



Panelling
starting on page 232

Fastening example

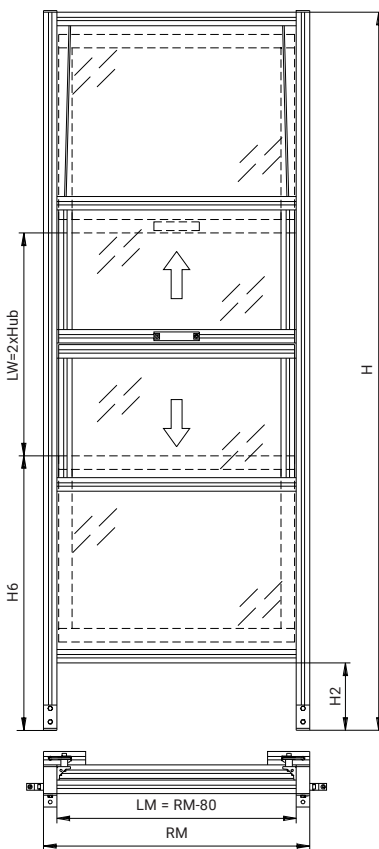


LM = clear dimension
RM = grid dimension

Scissor Doors

... for the Partition Method

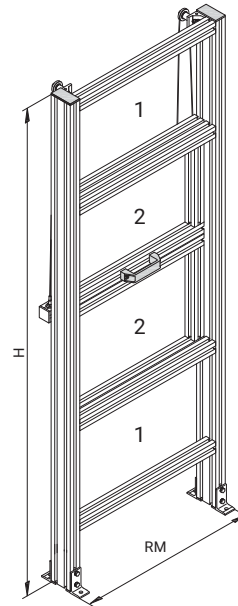
With opposing lifting doors, lifting is facilitated by the weight balancing provided by the other door moving in the opposite direction. Pneumatic or electronic activators are available on request.



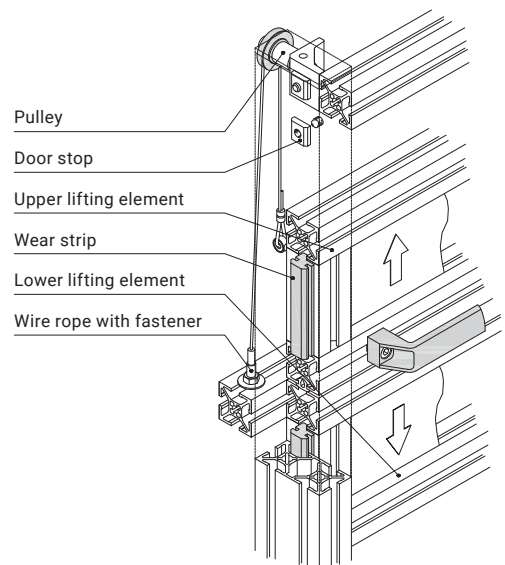
LM = clear dimension
 RM = grid dimension

Assemblies (B...):

mk 2040.40 and mk 2040.41 profiles, connecting elements, support brackets, handle, wear strips, idler pulleys, panelling (if specified when ordering, otherwise none).



Scissor door
B69.62.002



Information required for ordering

■ RM, H, H₂, LW, H₆, panelling

Partitions and Doors

Posts

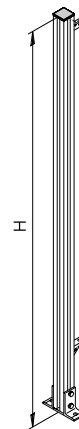
... for the Pillar-Panel Solution

The pillar-panel solution features separate panel frames that are mounted between posts anchored to the floor. This allows you to easily remove individual partitions, and the captive fastening system allows you to do so in accordance with the Machinery Directive (see below). The angle mounting method allows them to be installed at various angular degrees. The heights and grid dimensions can be adapted to customer-specific requirements.

Information required for panel frame orders

- RM (500, 750, 1000, 1250 as standard, also 1500 and 2000 mm with vertical brace)
- H (2060 as standard)
- H2 (180 mm as standard)
- H4 (optional for partitions with horizontal brace)
- Panelling

The panelling (e.g. polycarbonate) must be specified when ordering; otherwise the assemblies (B...) will be delivered without panelling.



Post 1
B69.65.001 H

Post (without angle)
B69.65.000 H

Not pictured

Assemblies (B...):

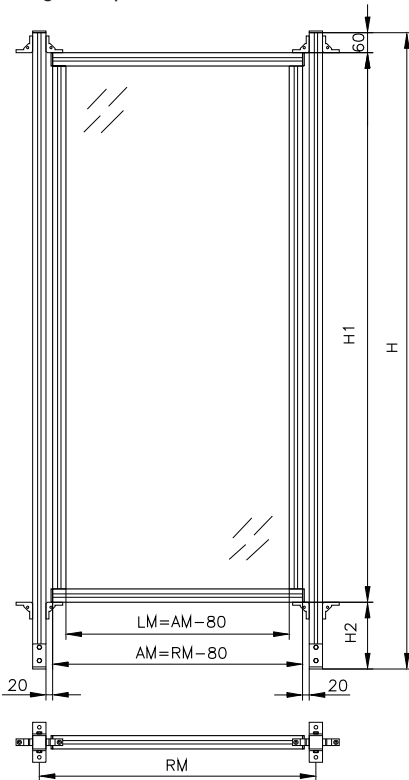
mk 2040.31 profile, angle B20/40, nuts with screws, end cap, support bracket



Panelling starting on page 232
Captive fastening system on page 224

7

Fastening example

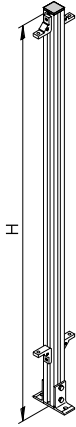


LM = clear dimension
AM = outer dimension
RM = grid dimension

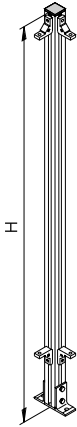
Panel Frames

... for the Pillar-Panel Solution

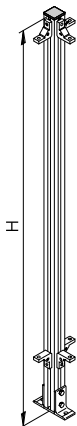
Outer dimension AM: RM - 80 mm
 Standard height H1: 1820/1220 mm



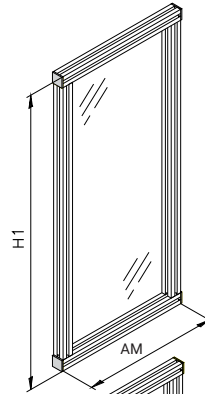
Post 2
B69.65.002 H



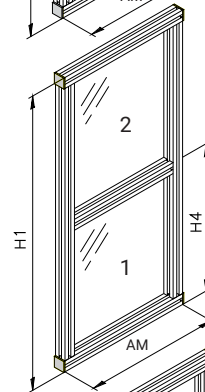
Post 3
B69.65.003 H



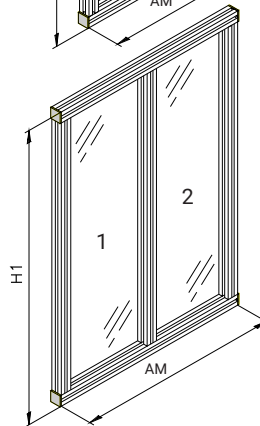
Post 4
B69.65.004 H



Simple panel frame
B69.50.001



Panel frame
 with horizontal brace
B69.50.002



Panel frame
 with vertical brace
B69.50.003

Assemblies (B...):

mk 2040.31 profile, connecting elements, end caps, panelling (if specified when ordering, otherwise none).

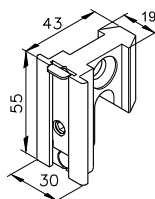
Partitions and Doors

Captive Fastening System

... for the Pillar-Panel Solution

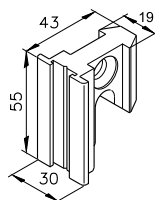
The captive fastening system allows you to quickly and conveniently install and remove partitions, for instance during maintenance work. In accordance with the Machinery Directive, the parts to be undone for removing the partition are designed so that they cannot be detached from the machine. The guarding features a robust construction, can be attached and detached using widely available tools. You can choose between two different variants based on your particular application.

25 40 50 60



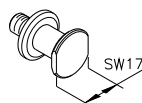
Holder, captive
B46.00.243

Complete, including bolts and fastening accessories



Holder, open
B46.00.245

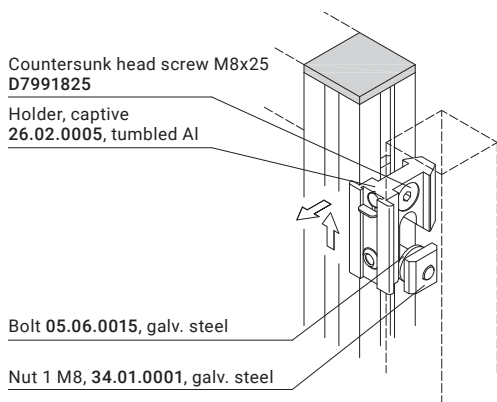
Complete, including bolts and fastening accessories



Bolt
05.06.0015

Galv. steel

Fastening example



Countersunk head screw M8x25
D7991825

Holder, captive
26.02.0005, tumbled Al

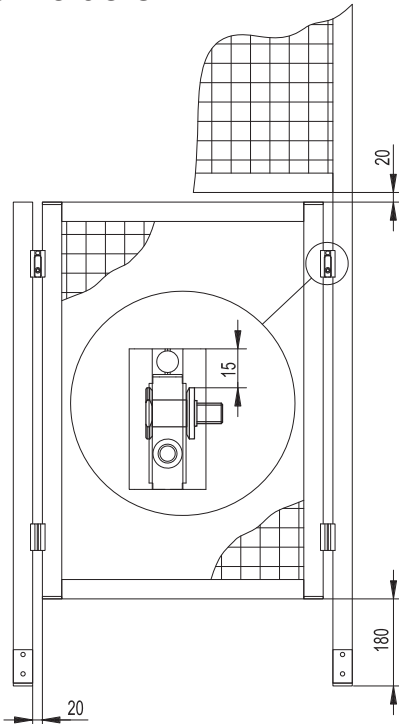
Bolt **05.06.0015, galv. steel**

Nut 1 M8, **34.01.0001, galv. steel**

The following is required to mount a partition:

- If captive fastening is required: 2 x B46.00.243 (top) and 2 x B46.00.245 (bottom)
- If locking is not required: 4 x B46.00.245 (top and bottom)

Installing the bolts and Holders



- Attach two (top) holders to both sides of the partition to be removed using a countersunk head screw and a nut. Make sure they are the same height.
- Screw two bolts into the profiles to the left and right of the partition to be removed using nut 1 M8. The distance from the top edge of the holder to the top edge of the bolt should be 15 mm.
- Attach two (bottom) holders as described above. Make sure they are the same height. Measure the distance between the top and bottom holders.
- Screw in two bolts as described above. Make sure the distances from top to bottom bolt are equal.
- If you need the partition to fall out when the guarding is unlocked (caution: risk of injury!), the bolts must be fastened to the partition and the holders fastened to the posts.

Installing the Partitions

■ For installation, the cover sheet must be in the upper position and the threaded pin must be unscrewed from the opening in the sheet (against the retaining sheet). The red marking is now visible.



■ Place the lower holder on the lower bolts. Tip the partition slightly to do so.

■ Swivel the partition so that the upper holders lean against the upper bolts, then lift by about 20 mm and swivel to vertical.



■ Lower the partition and allow all four holders to lock into the bolts.




■ Tighten the threaded pins integrated in the holders to lock the partition. If using captive holders, the cover sheet falls to its lower position, thereby covering and exposing the green one. This way you can always tell whether the partition is secured.

■ Perform the same procedure in reverse to remove the partition.

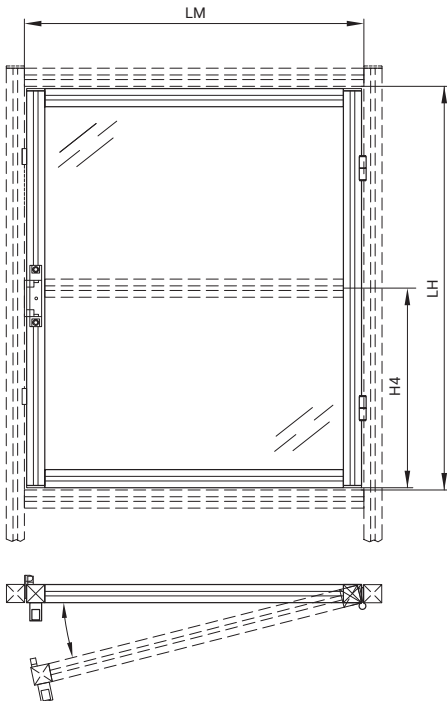
Windows

Single-Leaf Windows with Ball Latch

The ball latch ensures that the window can be reliably and securely locked in the profile frame. Safety interlocks should be used in openings that are critical for safety.

 Panelling starting on page 232
Locks starting on page 256

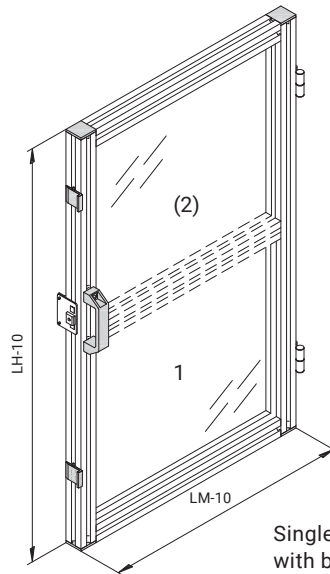
Fastening example



5 mm gap along the perimeter

Assemblies (B...):

mk 2040.31 profile, connecting elements, handle, end caps, hinges, stops and ball latches, without panelling.



Single-leaf window with ball latch
B68.07.001

Cross brace optional

Information required for ordering

■ LM, LH, H4 optional, panelling

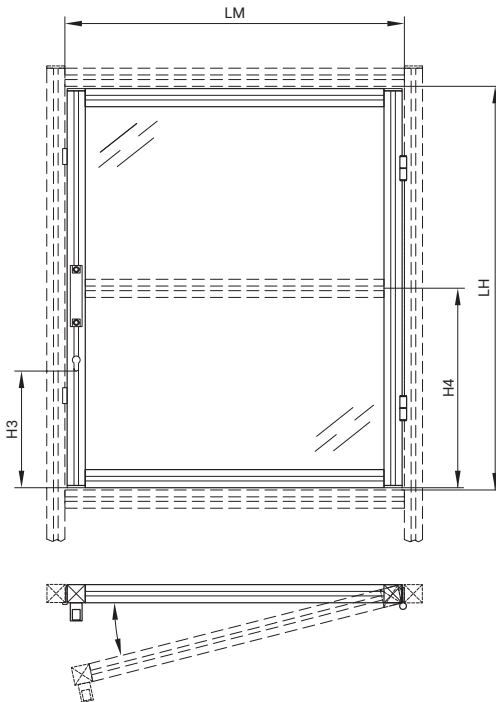
Single-Leaf Windows with Cylinder Lock

mk also offers a window with a cylinder lock in the profile as an alternative to windows with a ball latch lock.



Panelling starting on page 232
 Locks starting on page 256

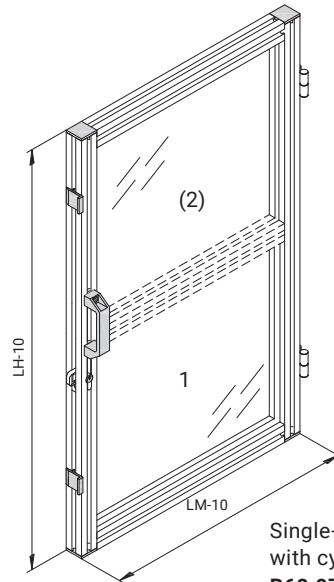
Fastening example



5 mm gap along the perimeter

Assemblies (B...):

mk 2040.31 profile, connecting elements, handle, end caps, hinges, stops, cylinder lock, panelling (if specified when ordering, otherwise none).



Single-leaf window with cylinder lock
B68.07.002

Cross brace optional


Information required for ordering

■ LM, LH, H3, H4 optional, panelling

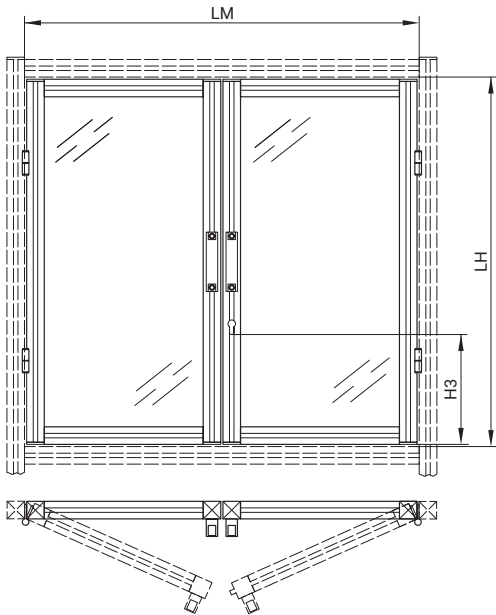
Windows

Double-Leaf Windows

The double-leaf variant should be used if the space requirements do not permit a single-leaf window.

 Panelling starting on page 232
Locks starting on page 256

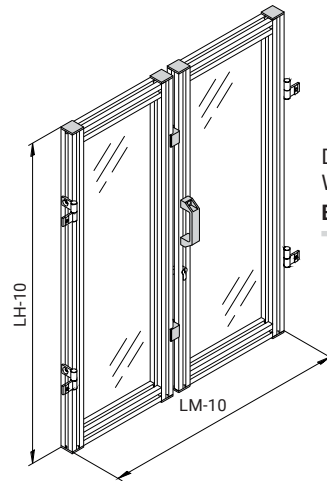
Fastening example



Max. clear dimension (LM) = 1200 mm
Max. clear height (LH) = 1800 mm

Assemblies (B...):

mk 2040.31 profile, connecting elements, handle, end caps, hinges, lock, panelling (if specified when ordering, otherwise none).



Double-Leaf
Windows
B68.07.003

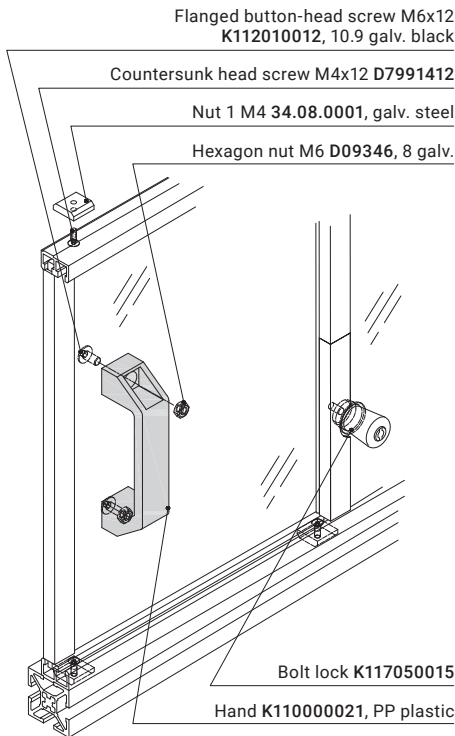
Information required for ordering

■ LM, LH, H3, panelling

Sliding Windows

The mk 2240 and mk 2241 profiles can be used in Series 40 and 50 structures. When the window is not completely closed, both sliding elements can be installed or removed as needed. When closed, they are locked using a bolt lock.

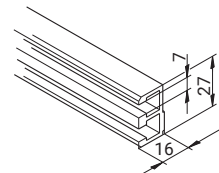
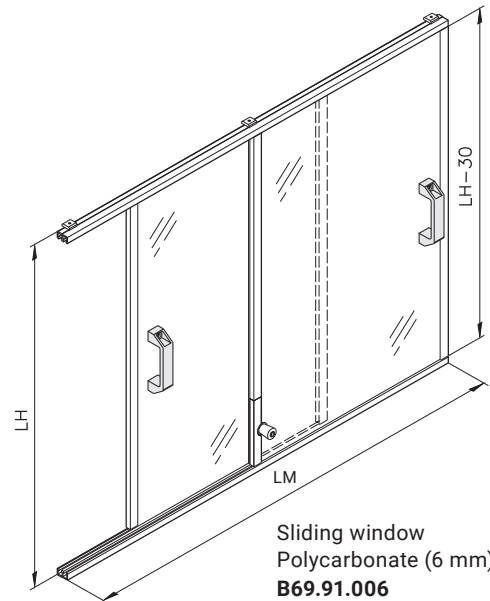
Fastening example



Max. clear dimension (LM) = 1200 mm
Max. clear height (LH) = 1000 mm

Assemblies (B...):

mk 2240, mk 2207 profiles, connecting elements, handle, stops, lock and panelling.

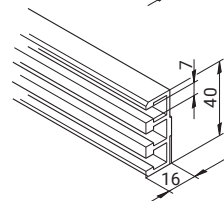


Profile mk 2240

0.47 kg/m

Stock length **52.40.5100**

Cut **52.40.**



Profile mk 2241

0.67 kg/m

Stock length **52.41.5100**

Cut **52.41.**


Information required for ordering

■ LM, LH

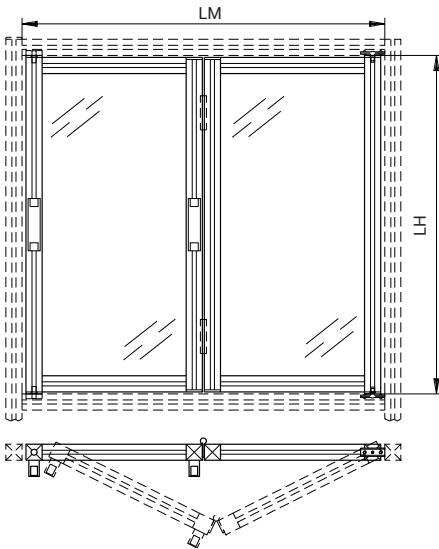
Windows

Folding Windows

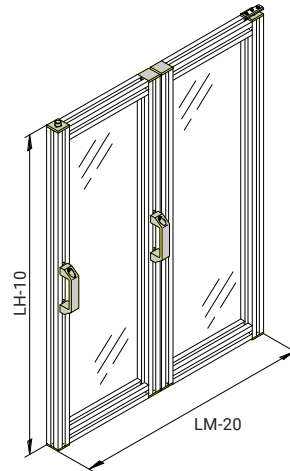
Folding windows require a smaller swivel range than casement windows and are therefore a space-saving alternative.

 **Panelling**
starting on page 232

7 Fastening example



Max. LM = 1200 mm
Max. LH = 1000 mm



Folding window
Acrylic glass
B69.91.004

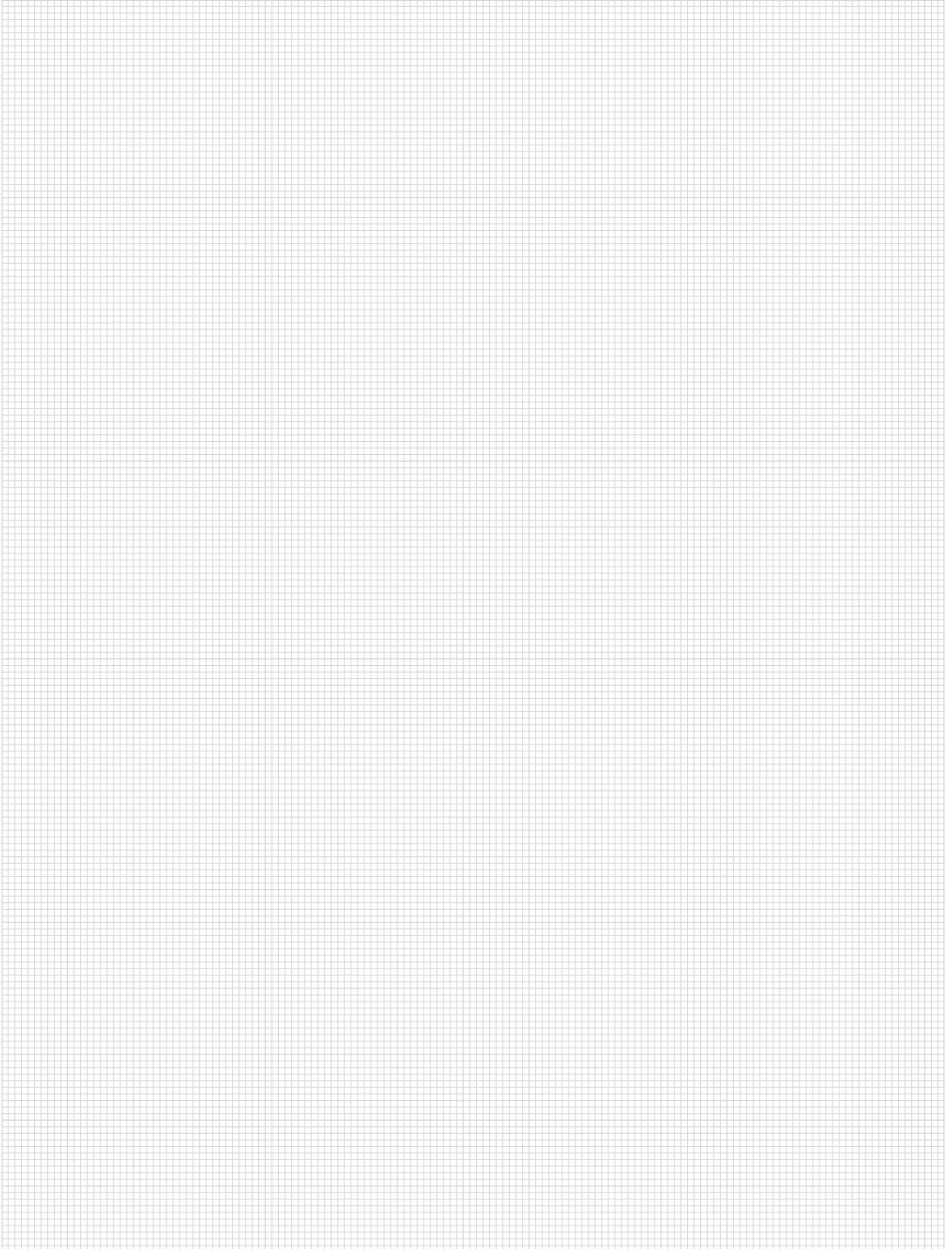
Folding window
Polycarbonate
B69.91.005

Information required for ordering

■ LM, LH, panelling

Assemblies (B...):

mk 2040.31 profile, connecting elements, handle, end caps, hinges, panelling (if specified when ordering, otherwise none).



Panelling

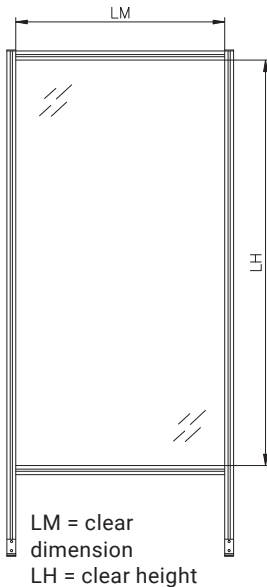
Information about Panelling

The panelling listed below can be used in partitions, frames and both door and window elements. Fastening accessories for mounting the panelling in a profile frame are presented on the following pages. You will also find order information for the corresponding assemblies, which contain both the panelling and the appropriate fastening accessories. Other panelling, such as safety glass, is available on request.

Information required for ordering

- Whole sheet panelling: material item no.
- Cut panelling: item no. for cut section along with width, height and colour (clear, tinted grey or RAL colour)

If the panelling is to be mounting in a profile frame, the width and height will vary according to the mounting method and the panelling, as shown in the table below.



Cut Lengths by Fastening Method

Fastening method	Width	Height
... with holders	LM	LH
... with panel clamp	LM - 31 mm	LH - 31 mm
... with angles	LM	LH
... with clamping profile	LM + 10 mm	LH + 10 mm
... with fence clip	LM + 20 mm	LH + 20 mm
... with sealing strip	LM + 20 mm	LH + 20 mm

Closed Panels



Clear Acrylic Glass

Acrylic glass (PMMA) is a thermoplastic material, also known under the brand name Plexiglas. It exhibits high strength, hardness and transparency. It is more resistant to breakage than traditional glass, but more sensitive to breakage and impacts than polycarbonate.

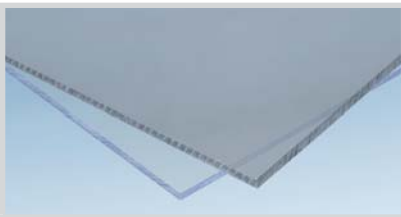
Material item no.	Size [mm]	Thickness [mm]	Cut item no.
K01D211004	2050x3050	4	50.15.6014
K01D211005	2050x3050	5	50.15.6000
K01D211006	2050x3050	6	50.15.6001



Clear PETG

PETG is a modified, transparent PET plastic that exhibits higher impact resistance than acrylic glass and is easier to work with. PETG offers better optical properties and higher chemical resistance than polycarbonate.

Material item no.	Size [mm]	Thickness [mm]	Cut item no.
K01P211005	2050x3050	5	50.15.6019
K01P211006	2050x3050	6	50.15.6017



Clear or Grey-Tinted Polycarbonate

Polycarbonate (PC), also known under the brand name Makrolon, is an impact-resistant and rigid thermoplastic material. Its durability and sturdiness makes it the most used type of transparent panelling.

Material item no.	Size [mm]	Thickness [mm]	Cut item no.
Clear			
K01B211004	2050x3050	4	50.15.6009
K01B211005	2050x3050	5	50.15.6002
K01B211006	2050x3050	6	50.15.6003
Tinted grey			
K01B231004	2050x3050	4	50.15.6009
K01B231005	2050x3050	5	50.15.6002

Panelling

Closed Panels

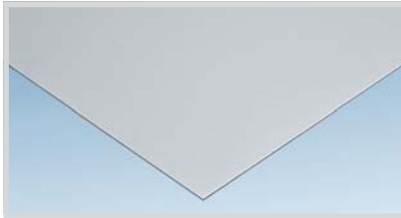


Silver Anodised Alucobond®

Alucobond® plates consist of two silver-anodised aluminium covering sheets with a black plastic core. This type of panelling provides slight damping and an attractive design.

Material item no.	Size [mm]	Thickness [mm]	Cut item no.
K00316223004	1500x3000	4	50.15.4001
K00316223006	1500x3000	6	50.15.4002

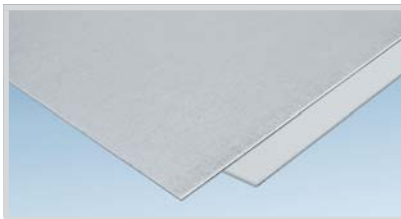
7



Silver Anodised Aluminium Sheet

Silver anodised aluminium sheet is easy to machine and provides an attractive look that matches the aluminium profiles. It is easy to clean and resists corrosion.

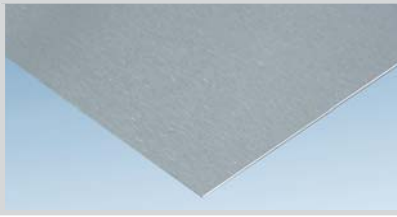
Material item no.	Size [mm]	Thickness [mm]	Cut item no.
K00305321150	1000x2000	1.5	07.30.
K00305321200	1000x2000	2	07.33.
K00305321250	1000x2000	2.5	07.36.



Galvanised or Painted Steel

Steel is available in a galvanised or painted design, and all cut sections are delivered deburred. Please note that the cut edges are not galvanised. Please specify the RAL colour when ordering painted steel.

Material item no.	Size [mm]	Thickness [mm]	Cut item no.
Galvanised			
K00112121150	1000x2000	1.5	07.28.
Painted			
K00112131150	1000x2000	1.5	07.28.



Ground Stainless Steel Sheet

Ground V2A stainless steel sheet is resistant to corrosion and suitable for use in food production applications.

Material item no.	Size [mm]	Thickness [mm]	Cut item no.
K00205121150	1000x2000	1.5	07.29.
K00205121200	1000x2000	2	07.32.



"Duet" Chequer Sheet

Aluminium chequer sheets with a slip-resistant "Duet" chequer pattern are used primarily as stepping surfaces for platforms and steps.

Material item no.	Size [mm]	Thickness [mm]	Cut item no.
K0030641125	1000x2000	2.5/4	07.21.1125
K0030641135	1000x2000	3.5/5	07.21.1135
K0030641150	1000x2000	5/6.5	07.21.1150

Panelling

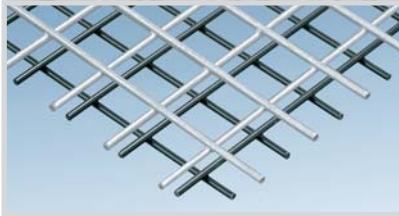
Grid Panels



Aluminium or Galvanised Steel Wire Mesh

Wire mesh is suitable for guarding intended to separate areas and is easy to work with. The wire is 4 mm thick, and the mesh size is 40 x 40 mm. Various RAL colours are available on request.

Material item no.	Size [mm]	Thickness [mm]	Cut item no.
Aluminium			
K00315121.40	1000x2000	4	24.00.
K00315122.40	2000x3000	4	24.00.
Galvanised steel			
K00128221.40	1000x2000	4	24.02.
K00128222.40	2000x3000	4	24.02.

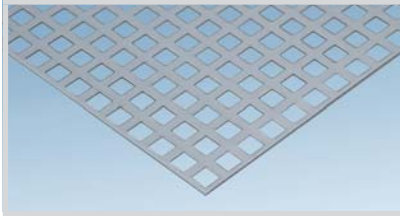


Welded Steel Grids, Powder-Coated or Galvanised

Welded grids are suitable for guarding intended to separate areas. They are sturdy, easy to work with and exhibit high load capacity. The wire is 4 mm thick, and the mesh size is 40 x 40 mm. You can select from galvanised steel and black powder-coated steel versions.

Material item no.	Size [mm]	Thickness [mm]	Cut item no.
Black powder coated			
K00128321.40	1000x2000	4	24.05.
K00128323.40	1250x2000	4	24.05.
K00128324.40	1500x2000	4	24.05.
Galvanised			
K00128421.40	1000x2000	4	24.06.
K00128423.40	1250x2000	4	24.06.

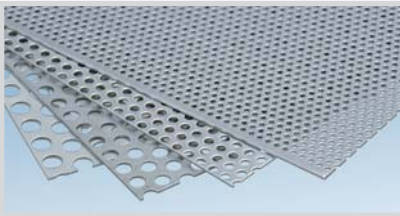
Perforated Sheets



“Square Hole” Perforated Sheets

Galvanised steel perforated sheets with square holes serve as a protective guard while also ensuring good ventilation. They can also be used as grates for draining liquids or for hanging tools. 10 x 10 mm square holes, 15 mm spacing (Qg 10-15).

Material item no.	Size [mm]	Thickness [mm]	Cut item no.
Galvanised steel			
K0011312121510	1250x2500	1.5	07.19.2110
K0011312122010	1250x2500	2	07.19.2210
Stainless steel			
K002061211150	1000x2000	1.5	07.45.0000



Galvanised “Round Hole” Perforated Sheet

Galvanised steel perforated sheets with round holes in various diameters and offset rows serve as protective guards while also ensuring good ventilation. They can also be used as grates for draining liquids or for hanging tools.

Material item no.	Ro* [mm]	Size [mm]	Thickness [mm]	Cut item no.
K0011311121503	3-5	1250x2500	1.5	07.19.1103
K0011311121505	5-8	1250x2500	1.5	07.19.1105
K0011311121508	8-12	1250x2500	1.5	07.19.1108
K0011311121510	10-15	1250x2500	1.5	07.19.1110
K0011311122003	3-5	1250x2500	2	07.19.1203
K0011311122005	5-8	1250x2500	2	07.19.1205
K0011311122008	8-12	1250x2500	2	07.19.1208
K0011311122010	10-15	1250x2500	2	07.19.1210

* Offset round holes (Ro) = hole \varnothing - spacing

Panelling

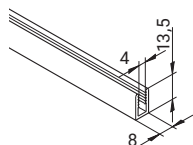
Edge Profiles

Edge profiles provide seamless closure for panelling. They protect against sharp cut edges and increase stability. They allow you to create simple contours, as shown at left. Simply place the edge profiles on the panelling and the teeth will fix them in place.

Material: Anodised aluminium



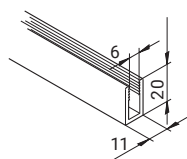
7



Profile mk 2206

0.14 kg/m

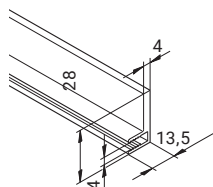
Stock length	52.06.6000
Cut	52.06.



Profile mk 2207

0.27 kg/m

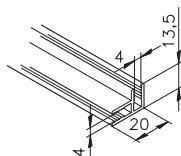
Stock length	52.07.6000
Cut	52.07.



Profile mk 2203

0.35 kg/m

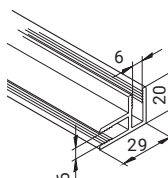
Stock length	52.03.6000
Cut	52.03.



Profile mk 2210

0.25 kg/m

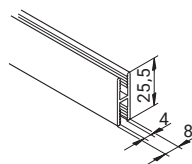
Stock length	52.10.6000
Cut	52.10.



Profile mk 2211

0.47 kg/m

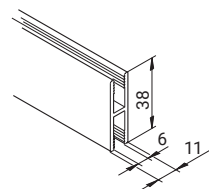
Stock length	52.11.6000
Cut	52.11.



Profile mk 2214

0.25 kg/m

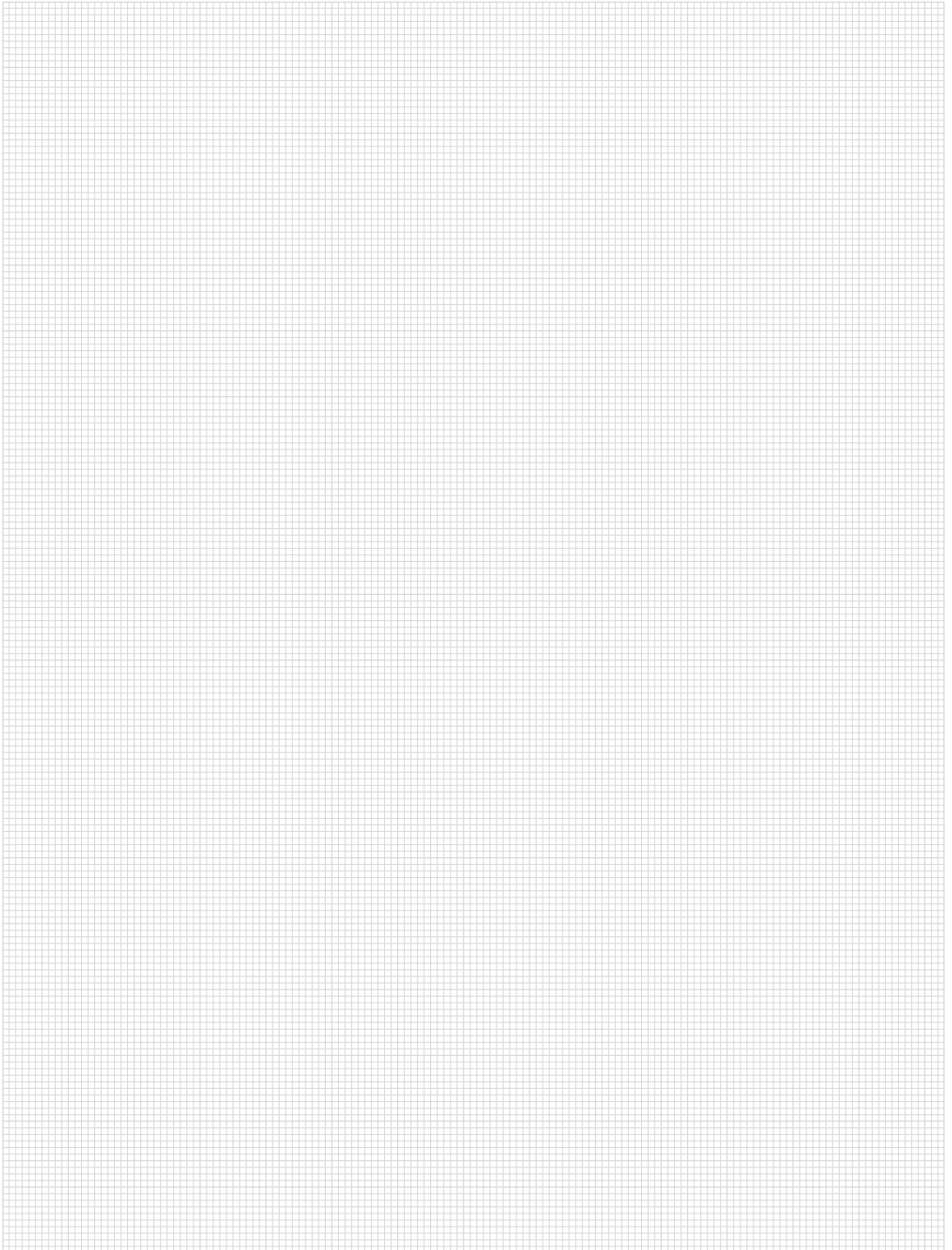
Stock length	52.14.6000
Cut	52.14.



Profile mk 2215

0.47 kg/m

Stock length	52.15.6000
Cut	52.15.



Panelling

Panelling with Fastening Accessories

... with Holder

The holder is used to retrofit panelling into existing structures in accordance with the Machinery Directive. The holder is available in two designs: with a simple flanged button-head screw, or as a captive connection with an undercut flanged button-head screw and a ribbed washer. The holder is closed by snapping on the cover, and the nut is secured so that it cannot be slid out.

Material: Fibre-reinforced plastic

25 40 50 60

Holder with cover

B34.01.003

without fastening accessories

B34.01.004

with fastening accessories

B34.01.004A2

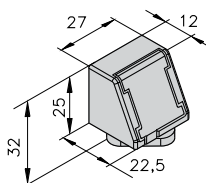
with VA fastening accessories

B34.01.005

with captive fastening accessories

B34.01.005A2

with captive VA fastening accessories

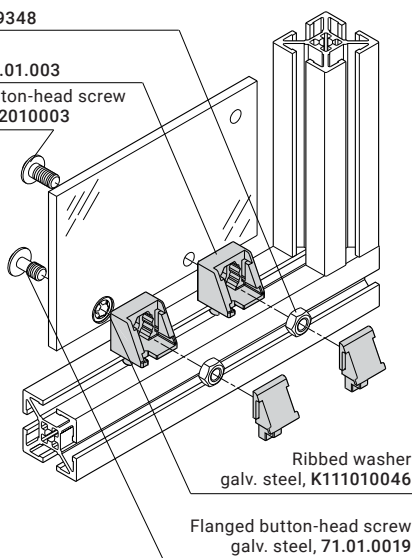


Fastening example

Nut M8, D09348

Holder, B34.01.003

Flanged button-head screw
M8x16, K112010003



Ribbed washer
galv. steel, K111010046

Flanged button-head screw
galv. steel, 71.01.0019

LM and LH represent the clear dimensions of the profile frame.

Polycarbonate

Clear or tinted grey

5 mm **B69.90.206** **LM** **LH**

6 mm **B69.90.207** **LM** **LH**

Panelling requires \varnothing 9 mm bores at a distance of 10 to 15 mm from the profile frame.



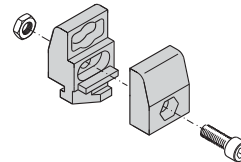
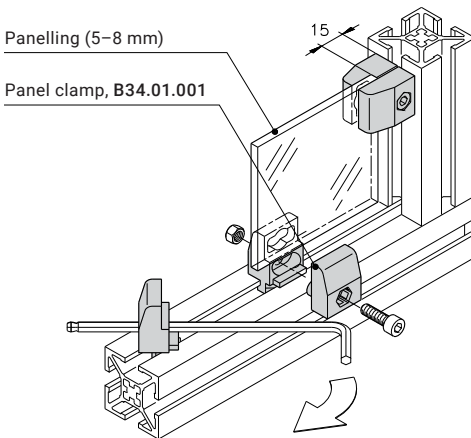
Panelling with Fastening Accessories

... with Panel Clamp

Panel clamps are used to fasten panelling from 5 to 8 mm in thickness. There is a gap of 15 mm all around between profile frame and panelling.

Material: Fibre-reinforced plastic

Fastening example



25 | 40 | 50 | 60

Panel clamp 40
B34.01.001

25 | 40 | 50 | 60

Panel clamp 50
B34.01.002

Acrylic glass

Clear

5 mm	B69.90.103	LM	LH
------	-------------------	----------------	----------------

6 mm	B69.90.104	LM	LH
------	-------------------	----------------	----------------

Polycarbonate

Clear or tinted grey

5 mm	B69.90.204	LM	LH
------	-------------------	----------------	----------------

6 mm	B69.90.205	LM	LH
------	-------------------	----------------	----------------

LM and LH represent the clear dimensions of the profile frame.

Panelling

Panelling with Fastening Accessories

... with Angle

Threads for inserting panelling elements are tapped into the angles' lateral bore. Angles E25 and E25s are the preferred angles. A holder can be used to support larger side lengths. Please specify the RAL colour when ordering painted steel.

Material: Tumbled aluminium

Fastening example

Nut 1 M8 34.01.0001, galv. steel

Flanged button-head screw
M8x16, K112010003

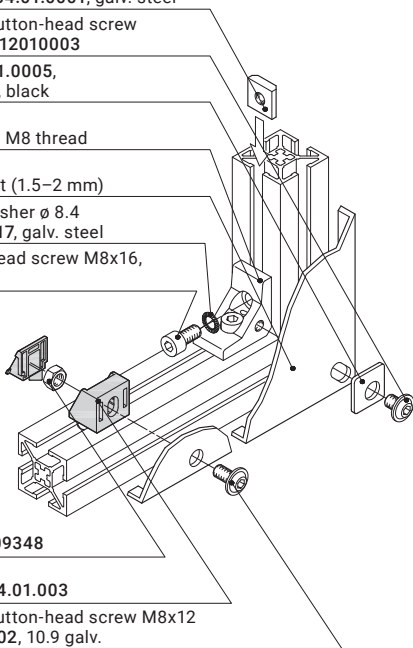
Shim 07.01.0005,
galv. steel, black

Angle with M8 thread

Steel sheet (1.5–2 mm)

Ribbed washer \varnothing 8.4
K111010017, galv. steel

Cylinder head screw M8x16,
D0912816

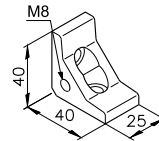


Nut M8 D09348

Holder B34.01.003

Flanged button-head screw M8x12
K112010002, 10.9 galv.

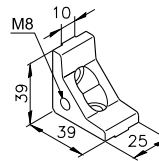
LM and LH represent the clear dimensions of the profile frame.



25 40 50 60

Angle, E25, M8

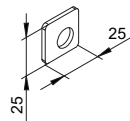
82.40.0721



25 40 50 60

Angle, E25s, M8

82.40.0761



Shim

07.01.0005

Galv. steel, black

Steel sheet

Galvanised or painted

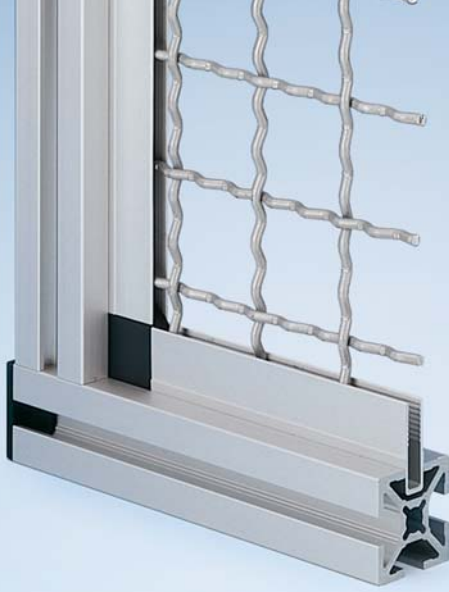
1.5 mm **B69.90.310** LM > 300 LH < 300

1.5 mm **B69.90.311** LM LH

For side lengths up to 1200 mm

2 mm **B69.90.312** LM LH

With additional B34.01.003 holders for side lengths over 1200 mm



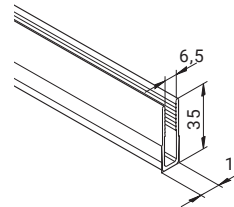
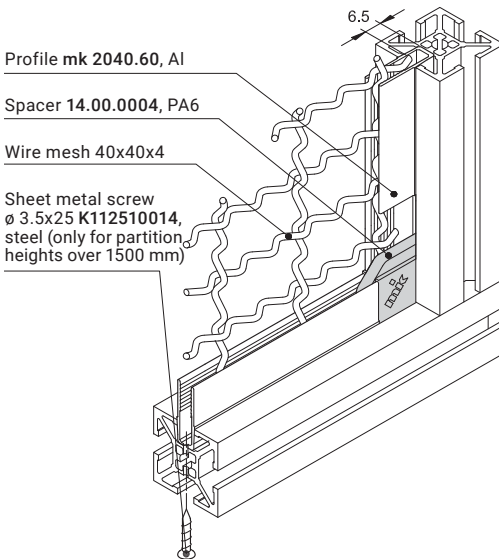
Panelling with Fastening Accessories

... with Clamping Profile

When using the mk 2040.60 profile to fasten wire mesh, an additional screw is needed to secure the profile when the side is longer than 1500 mm; see the fastening example. The spacer eliminates the need for time-consuming mitre cuts.

Material: Anodised aluminium

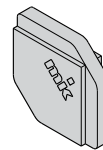
Fastening example



Profile mk 2040.60

0.30 kg/m

Stock length	54.60.6100
Cut	54.60.



Spacer

14.00.0004

PA6 plastic

Wire mesh

Aluminium

40x40x4 mm **B69.90.001** LM LH

Wire mesh

Galvanised steel

40x40x4 mm **B69.90.002** LM LH

LM and LH represent the clear dimensions of the profile frame.

Panelling

Panelling with Fastening Accessories

... with Fence Clip

Fence clips can be used to fasten welded grids easily, quickly and cheaply. The fence clip is simply hammered into the profile slot, which fixes the protective grate in the frame. The terminal is designed for 4 mm thick welded grids.

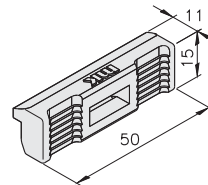
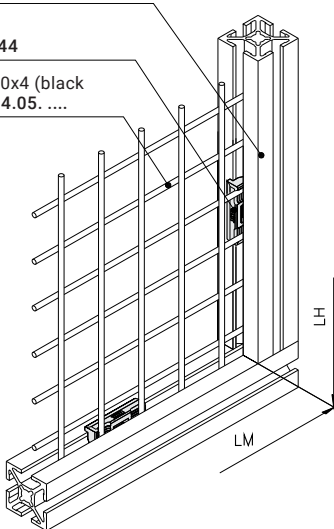
Material: ABS plastic

Fastening example

Profile 40x40 mm 54.31.

Fence clip mk 2544

Welded grid 40x40x4 (black powder coated) 24.05.



25 40 50 60

Fence clip
mk 2544

Welded grid

Black powder coated

40x40x4 mm	24.05.	LM	LH
complete with fence clips	B69.90.003	LM	LH

Welded grid

Galvanised steel*

40x40x4 mm	24.06.	LM	LH
complete with fence clips	B69.90.005	LM	LH

*Special RAL paint colours optional

LM and LH represent the clear dimensions of the profile frame.



Panelling with Fastening Accessories

... with Fence Clamp

Fence clamps can be used to easily retrofit welded grids onto existing structures. The "custom solution" variant is frequently used for this purpose. The stability of the welded grid is increased by two horizontal folds in the grid fencing.

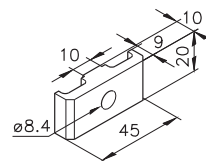
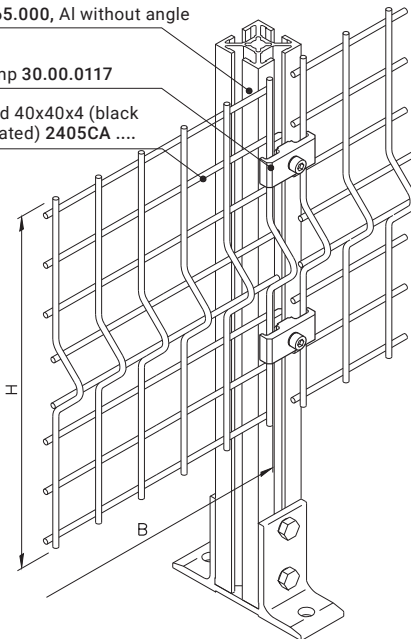
Material: Aluminium

Fastening example

Post B69.65.000, Al without angle

Fence clamp 30.00.0117

Welded grid 40x40x4 (black powder coated) 2405CA



M8x20

25 | 40 | 50 | 60

Fence clamp
30.00.0117

Welded grid

Black powder coated

40x40x4 mm **B69.90.004** B H

Dimensions: B = RM - 10 mm, H = max. 1880 mm
 RM = centre post to centre post

Panelling

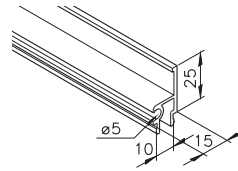
Panelling with Fastening Accessories

... with Sealing Strip

The combination of mk 2220 profile with mk 3034 sealing strip is a universal holder for panelling from 2 to 8 mm in thickness. All Series 40 and 50 construction profiles are suitable for use as the mounting profile.

Information required for ordering

- Item number
- Length in mm

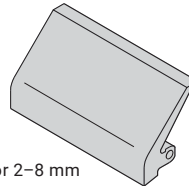


Profile mk 2220

0.32 kg/m

Stock length	52.20.6100
Cut	52.20.

Anodised aluminium



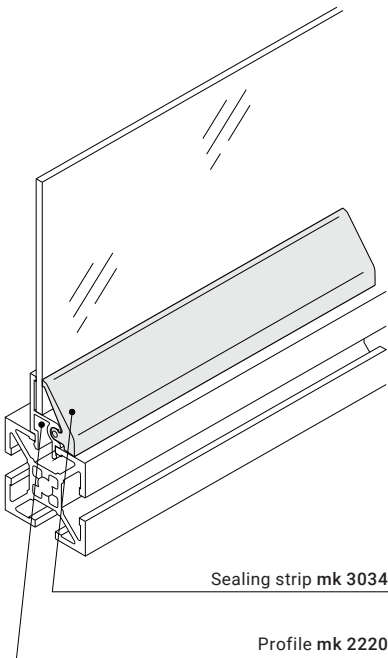
for 2–8 mm gap

25 40 50 60

Sealing strip
mk 3034

Black EPDM rubber

Fastening example



Polycarbonate

Clear or tinted grey

4 mm	B69.90.701	LM	LH
6 mm	B69.90.702	LM	LH

Acrylic glass

Clear

5 mm	B69.90.710	LM	LH
6 mm	B69.90.711	LM	LH

Steel sheet

Galvanised or painted

2 mm	B69.90.720	LM	LH
------	-------------------	----------------	----------------

Not permitted for guarding intended to separate areas.

LM and LH represent the clear dimensions of the profile frame.



Panelling with Fastening Accessories

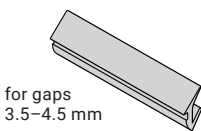
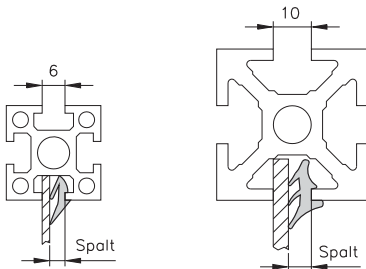
... with Sealing Strip

Sealing strips are used to fix panelling from 1.5 to 6.5 mm thick in the profile slot. They seal the profile slot to produce a seamless transition.

Information required for ordering

- Item number
- Length in mm

Fastening example

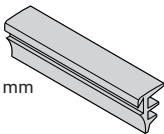


for gaps
3.5-4.5 mm

25 40 50 60

Sealing strip
mk 3027 black

TPE-V rubber

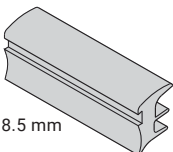


for 4-6 mm
gap

25 40 50 60

Sealing strip
mk 3020 black

TPE-V rubber

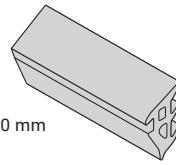


for 7-8.5 mm
gap

25 40 50 60

Sealing strip
mk 3021 black

TPE-V rubber

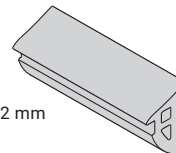


for 10 mm
gap

25 40 50 60

Sealing strip
mk 3023 black

EPDM rubber



for 12 mm
gap

25 40 50 60

Sealing strip
mk 3024 black

EPDM rubber

Alucobond®

Silver anodised

4 mm	B69.90.501	LM ...	LH ...
6 mm	B69.90.502	LM ...	LH ...

Acrylic glass

Clear

5 mm	B69.90.101	LM ...	LH ...
6 mm	B69.90.102	LM ...	LH ...

Polycarbonate

Clear or tinted grey

4 mm	B69.90.201	LM ...	LH ...
5 mm	B69.90.202	LM ...	LH ...
6 mm	B69.90.203	LM ...	LH ...

Panelling

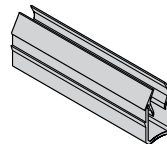
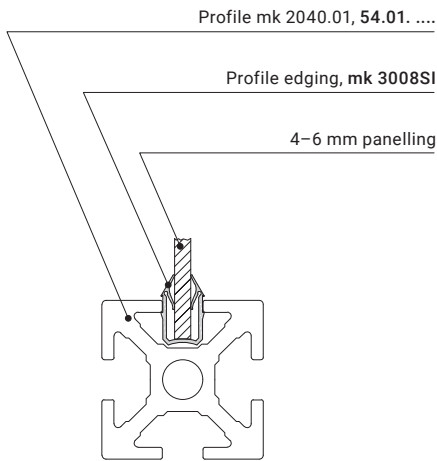
Panelling with Fastening Accessories

... with Profile Edging

Profile edging is suitable for holding panelling from 4 to 6 mm in thickness. During mounting, the profile edging together with the panelling is pressed into the slot of the profile. Due to the geometry, the side flanks are pressed against the panelling. This produces a seamless transition.

Material: PP plastic

Fastening example



for 4-6 mm
panelling

25 40 50 60

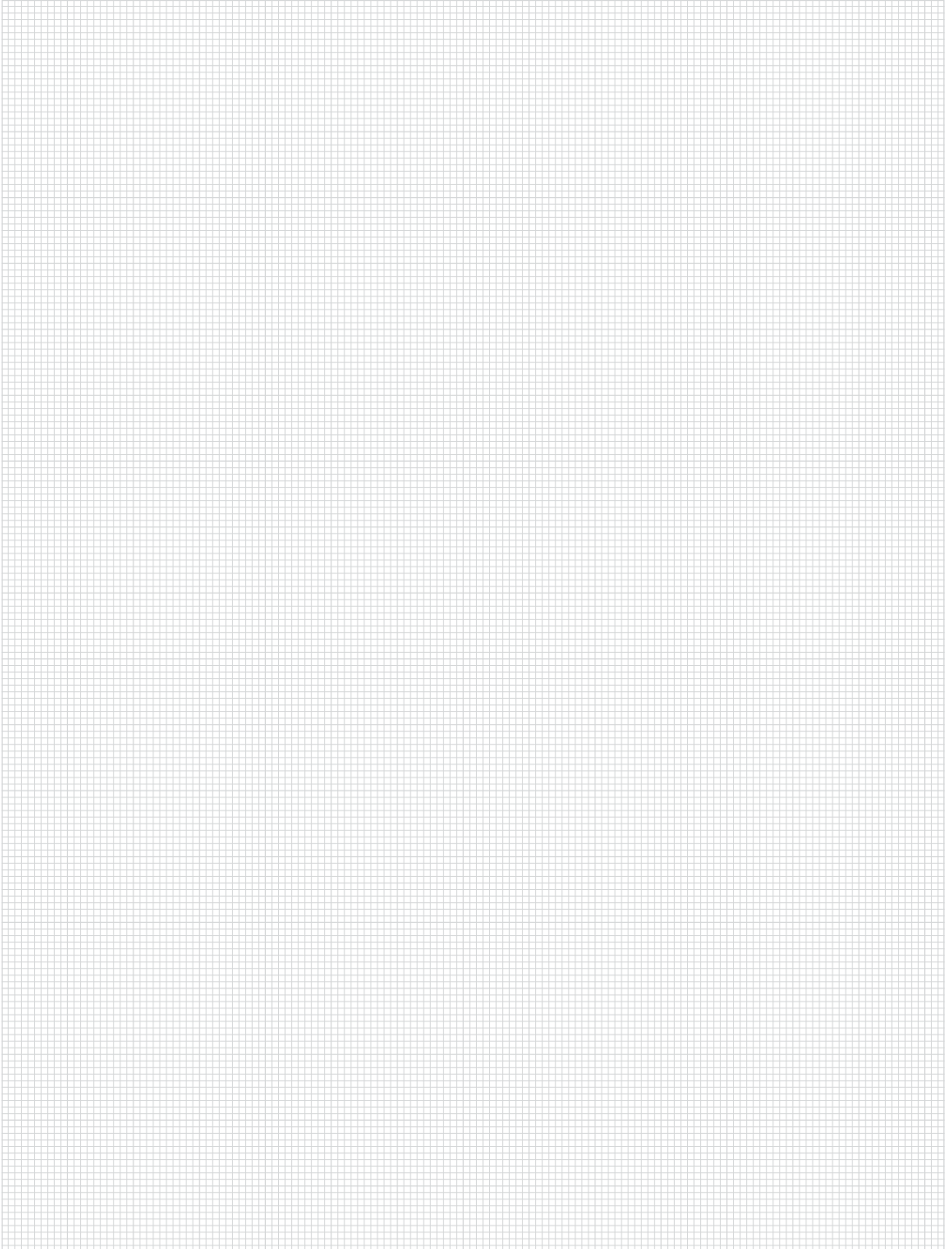
Profile edging
mk 3008

Black

mk 3008SI

Silver grey

2000 mm stock length



Door and Window Components

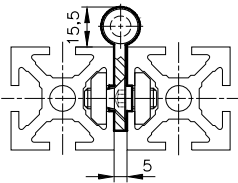
Hinges

The various hinge leaves allow you to combine profiles from different series. You can, for example, install a door built from Series 25 profiles into a structure built from Series 50. You can use two-leaf or three-leaf hinges, depending on whether you want to be able to unhinge the door later. A slide bushing can be inserted in the three-leaf hinges to allow for frequent opening even under high loads.

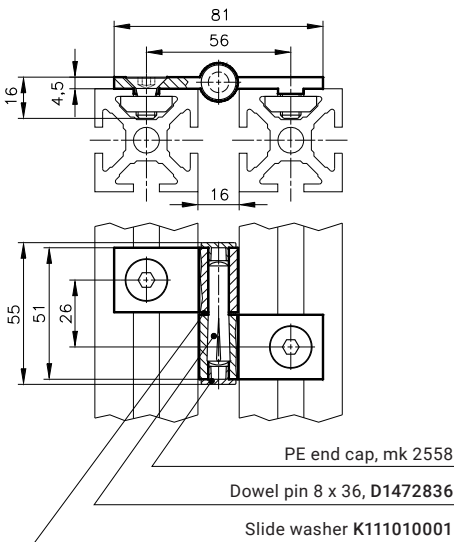
Material: Tumbled aluminium

7

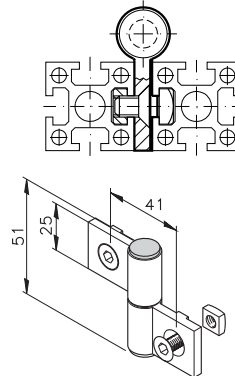
Example of installation position A



Example of installation position B



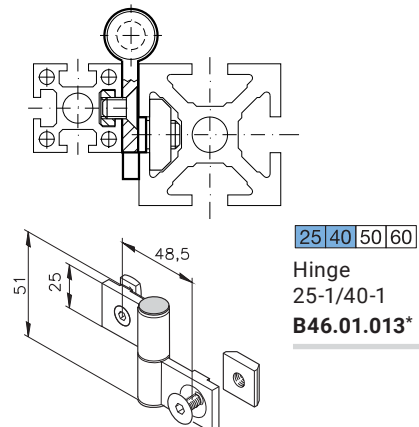
Hinge combination 25-1/25-1



25 | 40 | 50 | 60

Hinge
25-1/25-1
B46.01.012*

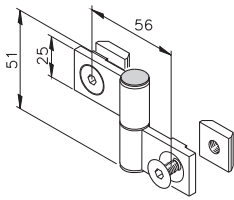
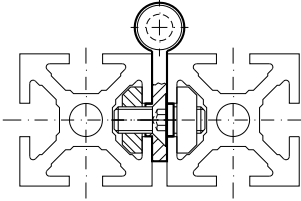
Hinge combination 25-1/40-1



25 | 40 | 50 | 60

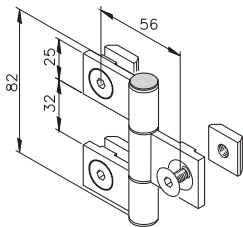
Hinge
25-1/40-1
B46.01.013*

Hinge combination 40-1/40-1
 and 40-1/40-7/40-1



25 40 50 60

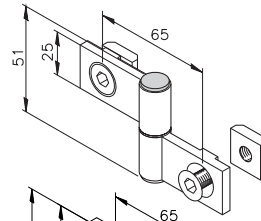
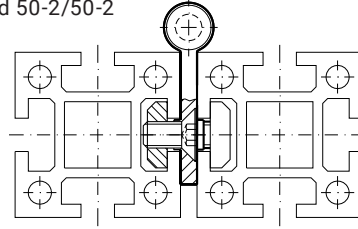
Hinge
 40-1/40-1
B46.01.010*



25 40 50 60

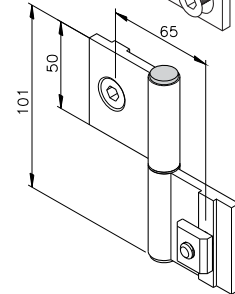
Hinge
 40-1/40-7/40-1
B46.01.030*

Hinge combination 50-1/50-1
 and 50-2/50-2



25 40 50 60

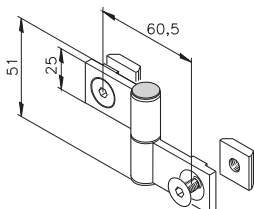
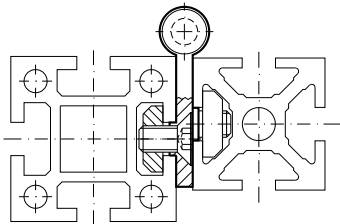
Hinge
 50-1/50-1
B46.01.001*



25 40 50 60

Hinge
 50-2/50-2
B46.01.002*

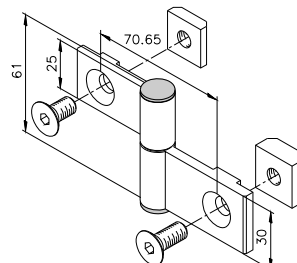
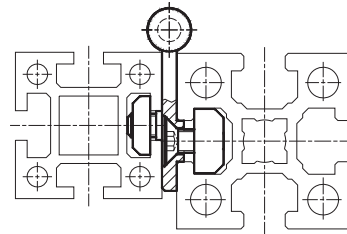
Hinge combination 40-1/50-1



25 40 50 60

Hinge
 40-1/50-1
B46.01.011*

Hinge combination 50-1/60-1



25 40 50 60

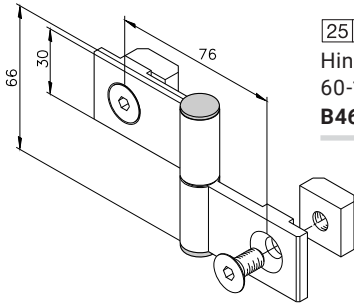
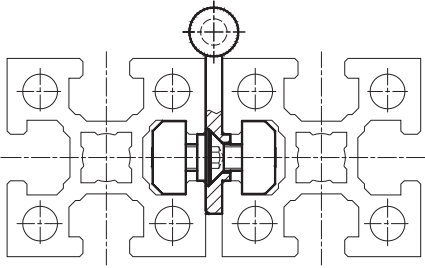
Hinge
 50-1/60-1
B46.01.064*

*With fastening accessories

Door and Window Components

Hinges

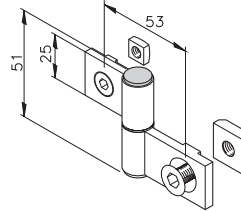
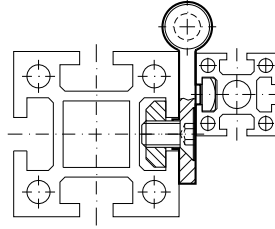
Hinge combination 60-1/60-1
and 60-1/60-7/60-1



25 | 40 | 50 | 60

Hinge
60-1/60-1
B46.01.058*

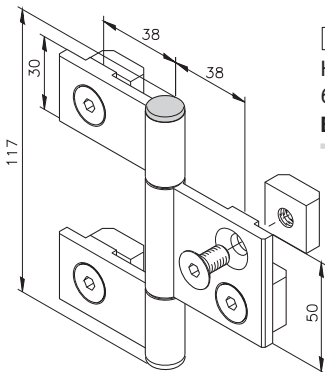
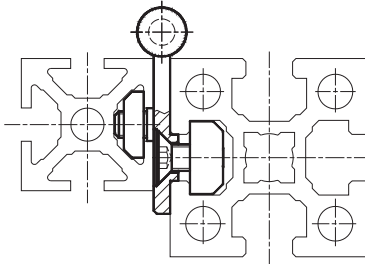
Hinge combination 25-1/50-1



25 | 40 | 50 | 60

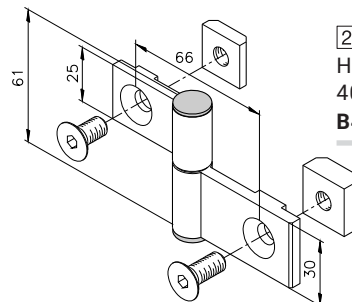
Hinge
25-1/50-1
B46.01.014*

Hinge combination 40-1/60-1



25 | 40 | 50 | 60

Hinge
60-1/60-2/60-1
B46.01.059*



25 | 40 | 50 | 60

Hinge
40-1/60-1
B46.01.063*



Hinges

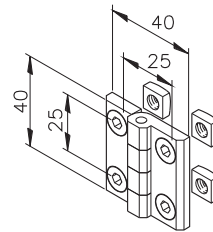
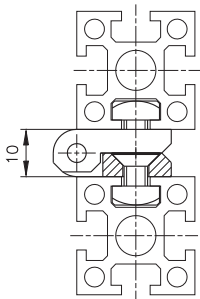
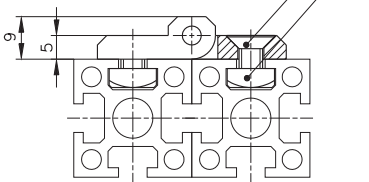
The following hinges have been designed exclusively for mounting on Series 25 profiles for small doors and flaps.

25 | 40 | 50 | 60

Fastening example

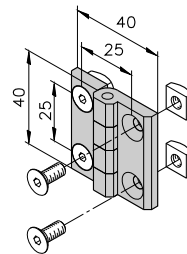
Countersunk head screw M5x10, D7991510

Nut 1 M5, 25.50.0500



Hinge 25
B46.01.015*

Black powder-coated
 die-cast zinc
 hinge leaf



Plastic hinge
B46.01.033*

PA6 plastic
 hinge leaf

*With fastening accessories

Door and Window Components

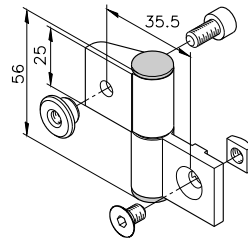
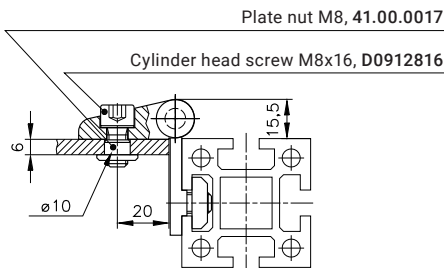
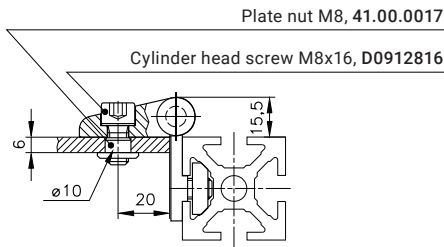
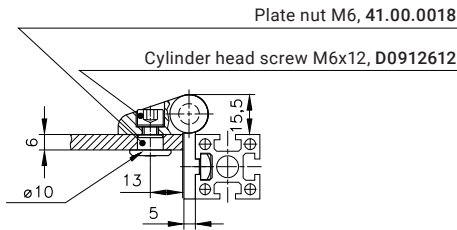
Hinges for Panelling

The following hinges can be used to attach panelling directly without an additional frame structure.

Material: Tumbled aluminium

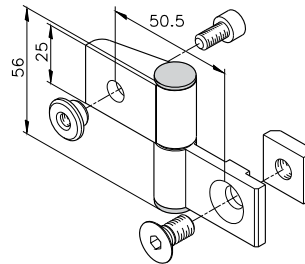
7

Fastening example



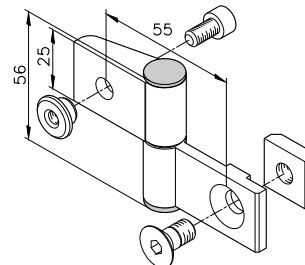
25 | 40 | 50 | 60

Hinge
25-1/25-3
B46.01.044*



25 | 40 | 50 | 60

Hinge
40-1/40-3
B46.01.050*



25 | 40 | 50 | 60

Hinge
50-1/40-3
B46.01.055*



Ball latch

Material: Brass

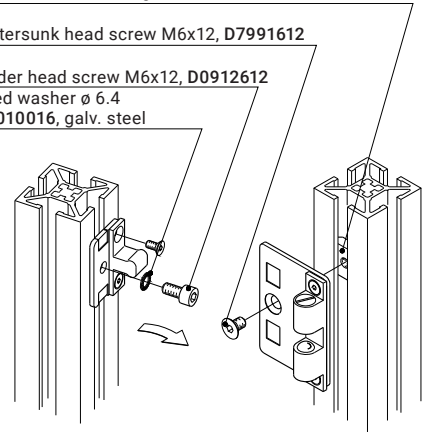
25 40 50 60

Nut 1, M6 34.02.0008, galv. steel

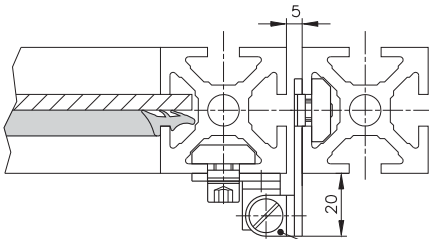
Countersunk head screw M6x12, D7991612

Cylinder head screw M6x12, D0912612

Ribbed washer \varnothing 6.4
 K111010016, galv. steel



Fastening example



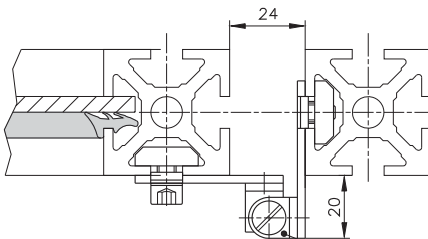
Ball latch for 5 mm door gap,
B68.02.101

Ball latch

B68.02.101* for 5 mm door gap

B68.02.102* for 24 mm door gap

7

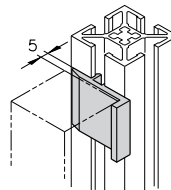


Ball latch for 24 mm door gap,
B68.02.102

Door stop

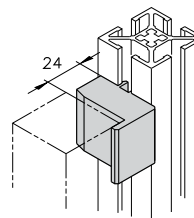
Material: PE-1000 plastic

25 40 50 60



Stop profile
22.90.0035

for 5 mm door gap



Stop profile
22.92.0035

for 24 mm door gap

*With fastening accessories

Door and Window Components

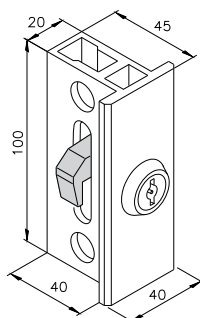


External Locks

External locks are attached to the side of the profile. The distance between the frame and door must be 24 mm. They can be used for sliding doors and hinged doors.

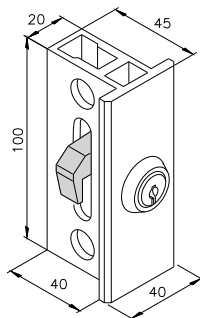
Material: Tumbled aluminium

25 | 40 | 50 | 60



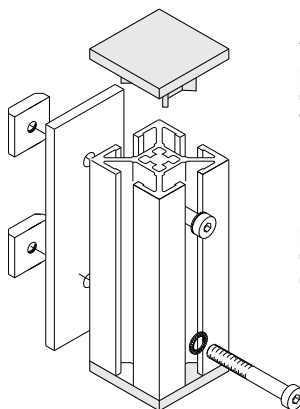
External double-bit lock
DIN right
B68.02.017

DIN left
B68.02.018



External cylinder lock
DIN right
B68.02.019

DIN left
B68.02.020

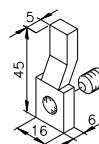


Frame extender
for sliding door
B68.06.005

With locking piece

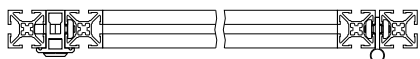
Locking piece
B68.02.007

Galv. steel

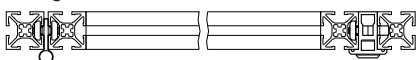


Fastening example

Swing door, DIN right



Swing door, DIN left



Spacer 14.05.0010, Al

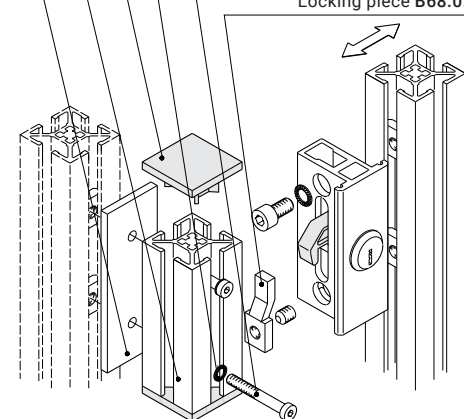
mk 2040.31 profile, L=100 mm 5431BN0100, Al

End cap, mk 2507, PPN

Ribbed washer \varnothing 6.4 K111010016, galv. steel

Cylinder head screw M6x45 D0912645

Locking piece B68.02.007

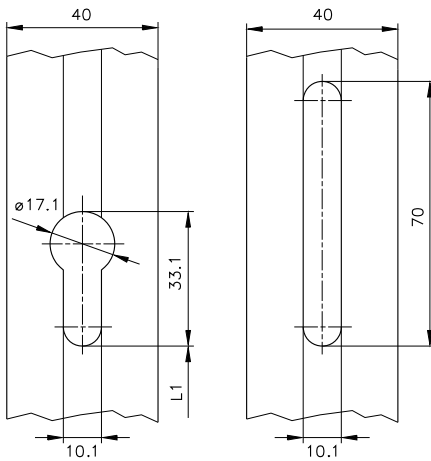




Internal Locks

Internal locks are cylinder locks that are installed directly in the door profile. The distance between the frame and door must be 5 mm.

Drilling pattern for cylinder lock



Profile machining for mk 2040.01 profile
5401BC

Profile machining for mk 2040.40 profile
5440BC

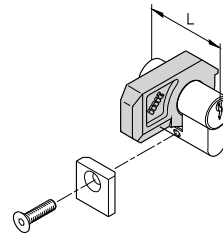
Profile machining for mk 2040.31 profile
5431BI

Please specify L1 when ordering

25|40|50|60

Cylinder lock, complete
B68.02.051

L = 42 mm

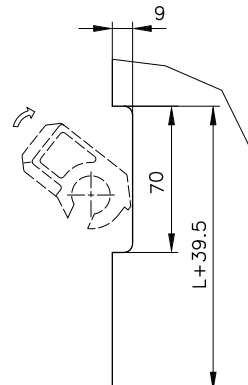


25|40|50|60

Cylinder lock, complete
B68.02.052

L = 52 mm

Removal of panelling material for the cylinder lock



Door and Window Components

Tower Bolts

For locking swing doors at the top frame profile and/or at the floor. A guide angle must be attached to the top frame profile, while a bolt strike plate is used on the floor. When fastening to the floor, you must form-tap an M8 thread into the mk 2040.31 vertical strut. 360 mm standard length.

Material: Tumbled aluminium

25 | 40 | 50 | 60

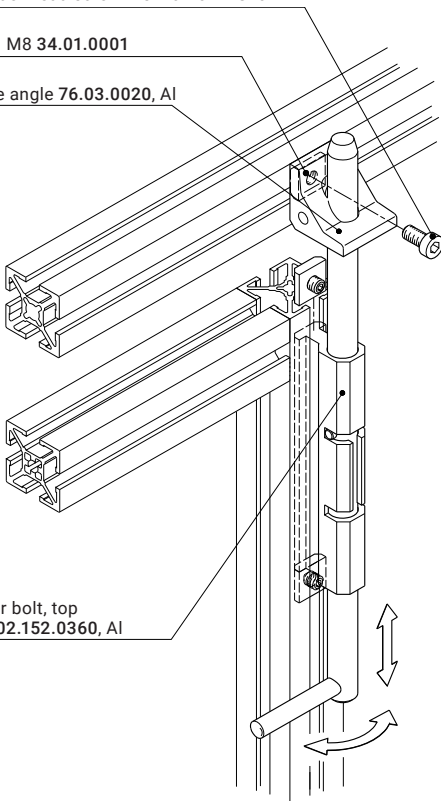
Fastening example

Cylinder head screw M8x16 D6912816

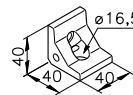
Nut 1 M8 34.01.0001

Guide angle 76.03.0020, Al

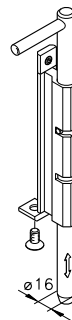
Tower bolt, top
B68.02.152.0360, Al



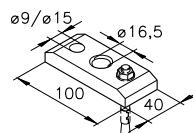
Tower bolt, top
B68.02.152.0360



Guide angle
76.03.0020



Tower bolt, bottom
B68.02.151.0360



Bolt strike plate
76.03.0018

Anchor

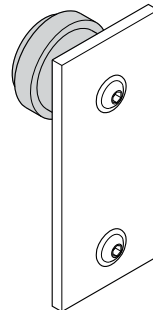
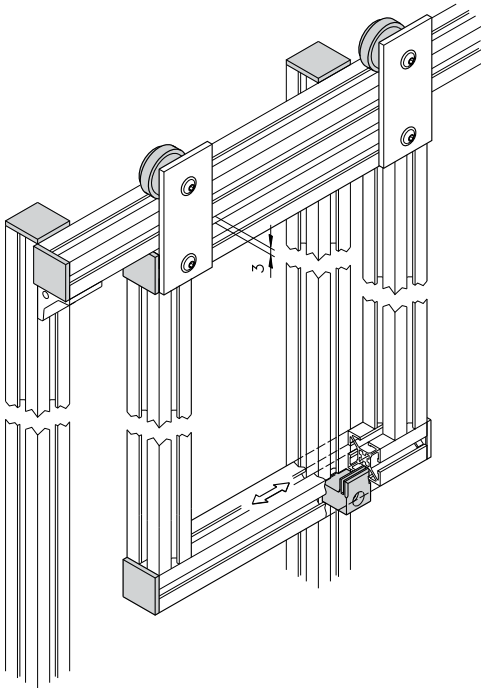


Roller Unit

This sliding mechanism is a cost-effective and easy-to-install variant. The plastic guide roller is simply guided through a collar in the profile slot. The roller unit assembly consists of a plate, roller, bolt, extra-wide washer, flanged button-head screw and nut.

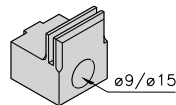
25 40 50 60

Fastening example



Roller unit
B68.11.003

Roller: POM
 Plate: Tumbled Al



M8x25

Guide piece
19.00.0005

Black plastic

Safety Accessories



Hinged Safety Interlock

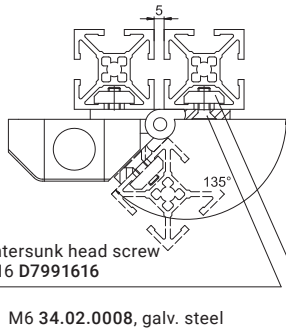
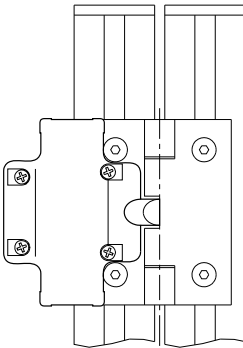
The hinged safety interlock is suitable for swing doors that must be closed to ensure the required operational safety.

Properties

- Plastic housing
- Protective earthing
- High resistance to oil and petrol
- Dimensions: 111.5 mm x 92 mm x 36 mm
- Easy installation, especially on 40 mm profiles
- Universal installation in guarding with hinges on the left or right
- Mounting bores for M6 countersunk head screws according to DIN 965
- Two M20x1.5 cable openings

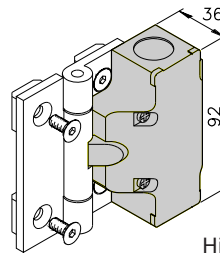
7

Fastening example



Countersunk head screw
M6x16 D7991616

Nut 1 M6 34.02.0008, galv. steel



Hinged safety interlock
TESZ1102/S
K370000030

Max. safety category/ performance level:	Without 2nd switch: max. SC 4, PL "e"
Contacts:	1 normally open, 2 normally closed
Degree of protection:	IP 65
Control voltage:	24 V DC

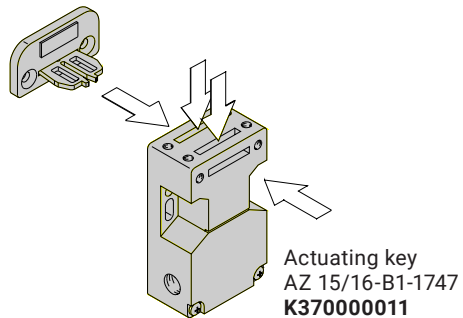
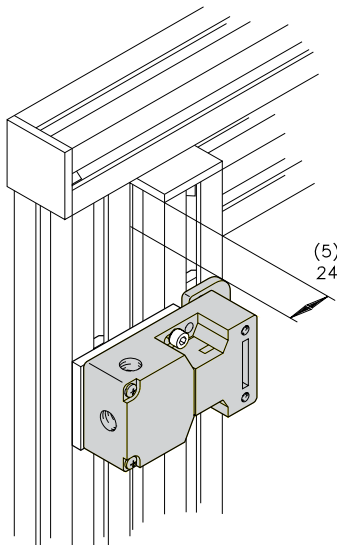


Safety interlock with separate actuating key

Properties

- Plastic housing
- Protective earthing
- Large space for connecting cables
- Dimensions: 52 mm x 90 mm x 30 mm
- Multiple coding
- Long service life
- High contact reliability at low currents
- Oblong bores for adjusting, round bores for fixing
- Three M16x1.5 cable openings

The safety interlock with separate actuating key is suitable for guarding that is laterally adjustable and/or rotatable, and especially for removable guarding that has to be shut in order to ensure the necessary operational safety. The switching element and actuating keys for the safety interlocks are not connected to each other, but are functionally combined or separated when switching. The actuating key is separated from the basic device when the guarding is opened. In doing so, the normally closed contacts are opened and the normally open contacts are closed in the safety interlock.



Safety interlock
 AZ 16 ZVRK – M16
K370000010

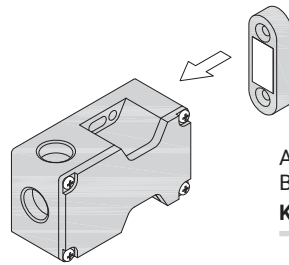
Max. safety category/ performance level:	Without 2nd switch: max. SC 3, PL "d"
Contacts:	1 normally open, 2 normally closed
Degree of protection:	IP 67
Retaining force:	30 N
Control voltage:	24 V DC

Safety Accessories

Magnetic safety interlock

Properties

- Plastic housing
- Suitable for food production
- Concealed installation possible
- Dimensions: 52 mm x 90 mm x 39 mm
- Long service life
- Resists lateral misalignment
- No mechanical wear
- Resistant to dirt
- Three M20x1.5 cable openings
- Cable connection space
- Max. 6 mm locking distance



Actuating key
BPS 16 magnet
K37000013

Safety interlock
BNS 16-12ZV
K37000012

Max. safety category/
performance level:

Without 2nd switch:
max. SC 3, PL "d"

Contacts:

1 normally open,
2 normally closed

Degree of protection:

IP 67

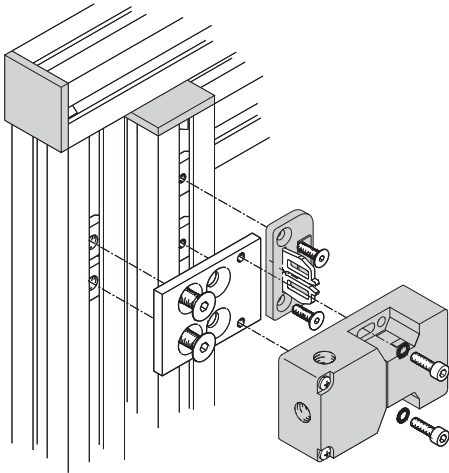
Control voltage:

24 V DC

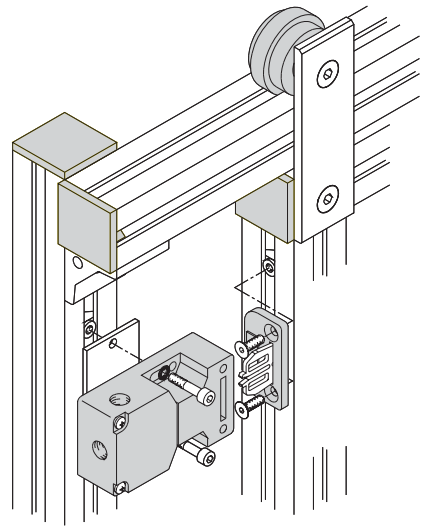
Fasteners for Safety Interlocks

The fastener set for safety interlocks can be used on swing doors with a gap of 5 to 24 mm.

Material: Tumbled aluminium plate



Safety interlock fastener
 set for swing doors
B16.03.001



Safety interlock fastener
 set for sliding doors
B16.03.002

Safety Accessories

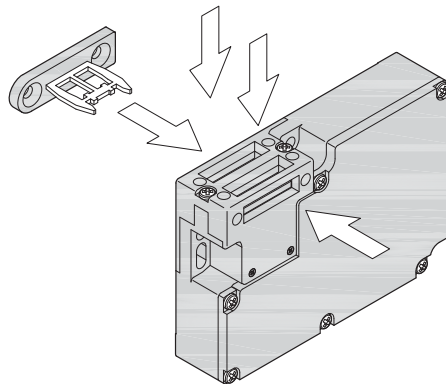
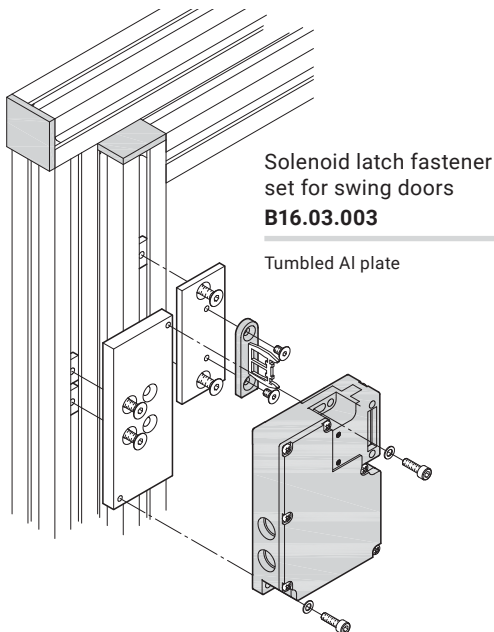
Mechanical solenoid latches

Properties

- Plastic housing
- Protective earthing
- Failsafe locking
- Dimensions: 130 mm x 90 mm x 30 mm
- Six contacts
- Long service life
- Large space for connecting cables
- Manual release
- Four M16x1.5 cable openings
- De-energise to trip

The solenoid latch ensures that sliding, rotating or removable guarding cannot be opened until the hazardous situation, e.g. coasting motion, has ended.

Protective doors that are secured with solenoid latches are generally only opened in exceptional cases. Solenoid latches use electric magnets to activate an interlock, which blocks or triggers the actuating key of the switch.



Solenoid latch
AZM 161SK-12/12RK-024
K370000020

Max. safety category/ performance level:	Without 2nd switch: max. SC 3, PL "d"
Contacts:	2 normally open, 4 normally closed
Degree of protection:	IP 67
Retaining force:	2000 N
Control voltage:	24 V DC

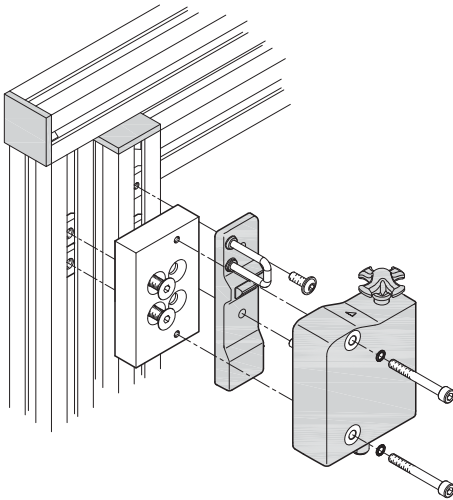


Electronic solenoid latch

Properties

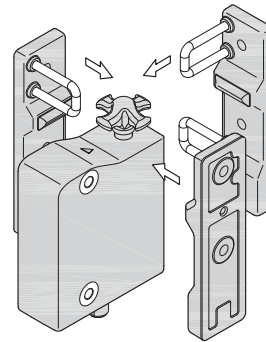
- Plastic housing
- Three different actuation directions
- Compact design
- Non-contact, coded electronic system
- Three LEDs for displaying operating states
- Resistant to cleaning agents
- Suitable for hinged and sliding doors
- Series circuit
- Manual release
- M12, eight-pin plug connector
- De-energise to trip
- Lock monitoring
- Diagnostics output

With lock monitoring



Fastener set for solenoid latch
B16.03.008

Tumbled Al plate



Actuating key
 AZ/AZM 300-B1
K370000023

Electronic solenoid latch
 AZM 300Z-ST-1P2P
K370000022

Performance level:	max. PL "e"
Contacts:	1 sourcing diagnostic output (Out), 2 sourcing safety outputs Out: guarding closed/ guarding closed and locked
Degree of protection:	IP66, IP67, IP69
Retaining force:	1000 N
Locking force:	25 N/50 N, set using rotating cross
Control voltage:	24 V DC

Safety Accessories

Slam Latches

Slam latches are multi-functional door handles for securing and monitoring guarding. They consist of a handle and an interlock module. The PROe lock has additional transponder-coded safety technology according to EN ISO 13849-1 (Cat. 4/PL e).

- Can be installed without machining
- For use with left-hinged and right-hinged doors
- Lockable to prevent unwanted shutdowns
- Secured against disassembly in closed state

Material: Black power-coated die-cast aluminium



Fastening example

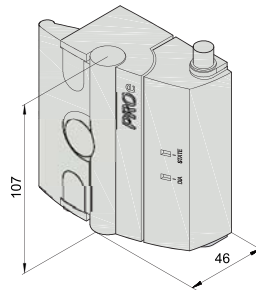
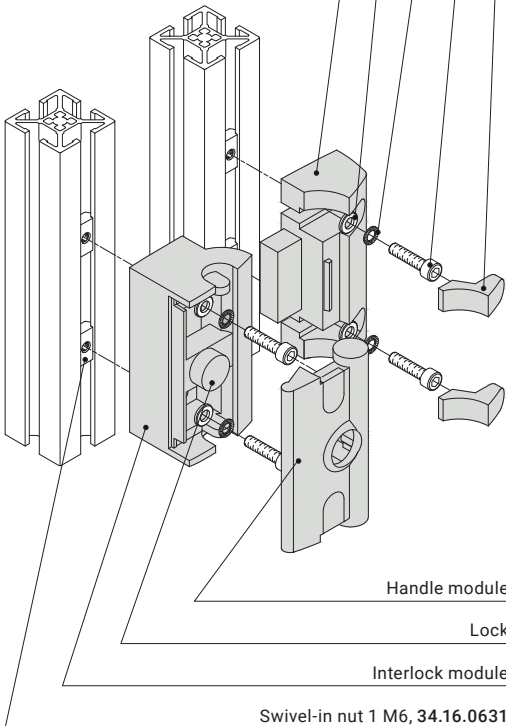
Sealing cap

Cylinder head screw M6x25, D0912625

Ribbed washer \varnothing 6, K111010016

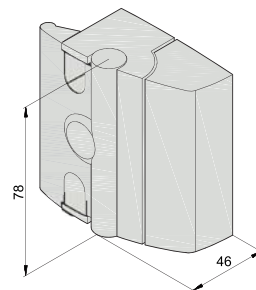
Washer \varnothing 6.4 M6, D01256

Holder with catch

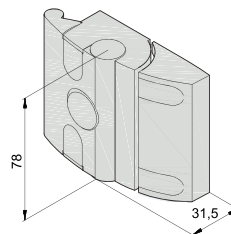


PROe slam latch
B68.02.032*

LED status indicators



PRO slam latch
B68.02.031*

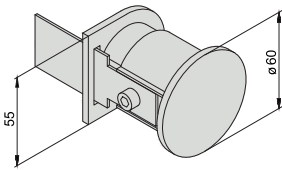


Compact slam latch
B68.02.030*

Emergency Opener

For rear emergency release of the PROe, PRO and Compact slam latches.

Material: PA 6 plastic, glass fibre reinforced



Emergency opener
B68.02.033*

Connection Accessories for PROe

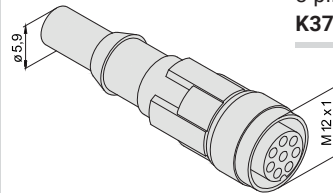
The PROe is connected using an M12 plug connector (8 pin). It is available with a cable length of 5 m, 10 m or 20 m.

Material: PVC

Connection cable,
 8 pin, 5 m
K370000043

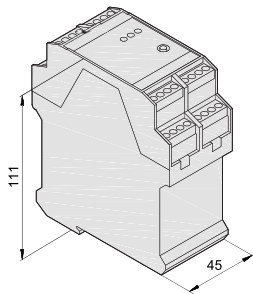
Connection cable,
 8 pin, 10 m
K370000044

Connection cable,
 8 pin, 20 m
K370000045



AR Evaluation Unit for PROe

This electronic evaluation unit allows you to connect up to 20 PROe slam latches in series.



AR evaluation unit
K370000046

*With fastening accessories

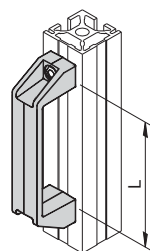
Handles

Bracket Handles

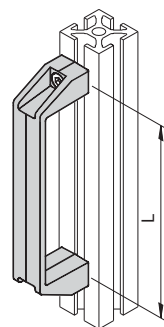
Bracket handles enable better handling of maintenance doors, windows and various covers and flaps.

Material: PA plastic

25 | 40 | 50 | 60

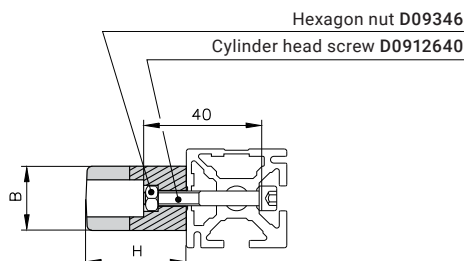


Bracket handle	Length [mm]	Width [mm]	Height [mm]
K110000021	122	26	41
K110000020	152	28	60

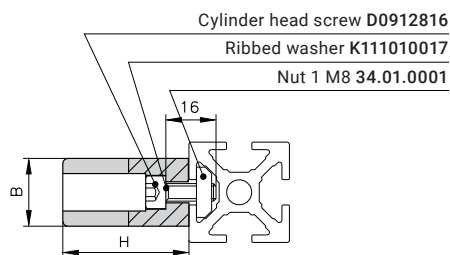


Bracket handle	Length [mm]	Width [mm]	Height [mm]
K110000009	117	26	41
K110000010	179	28	50

Fastening example for **K110000021** and **K110000020**



Fastening example for **K110000009** and **K110000010**



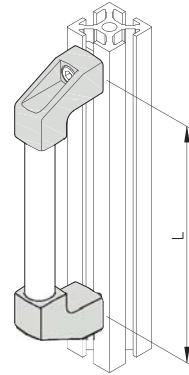
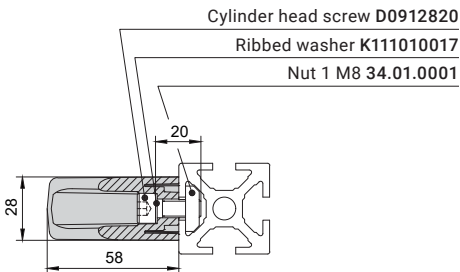


Bracket Handles

Material: PA6 plastic end pieces,
 anodised aluminium tube

25 | 40 | 50 | 60

Fastening example for **K11000011**



Bracket handle	Length [mm]	Width [mm]	Height [mm]
K11000011	200	28	58
K11000012	300	28	58
K11000013	400	28	58

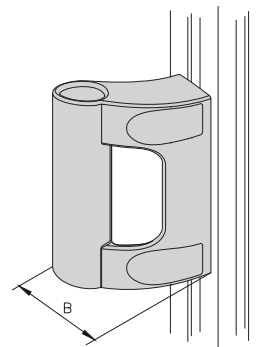
Handles

Machine Handles

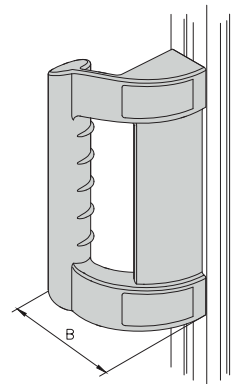
Machine handles enable better handling of maintenance doors, windows and various covers and flaps. They are delivered with caps.

Material: PA plastic

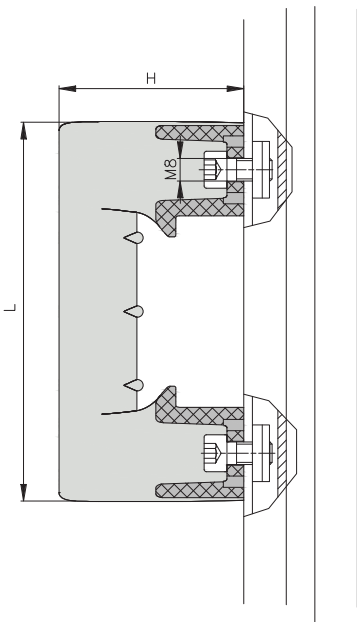
25 40 50 60



Machine handle	Length [mm]	Width [mm]	Height [mm]
K11000023	135	65	72



Machine handle	Length [mm]	Width [mm]	Height [mm]
K11000025	240	80	100



7 Fastening example for **K11000023**

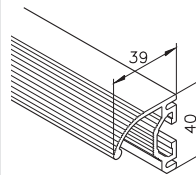
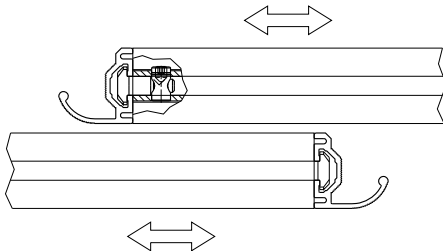


Profile for Strip Handles

The mk 2244 application profile is used as a strip handle for sliding doors. The ribbing provides the perfect structured surface for easily opening and closing sliding doors along their entire height.

Material: Anodised aluminium

Fastening example



Profile mk 2244

0.87 kg/m

Stock length	52.44.5100
Cut	52.44.

Section 8 Industrial Workstations



Notes on Industrial Workstations

Benefits of mk industrial workstations	274
Workstation ergonomics	275
Standards and ESD protection	276
Earth terminal	276



Table Frames

Fixed working height	278
Manual height adjustment	279
Manual-hydraulic height adjustment	280
Electrical height adjustment	282

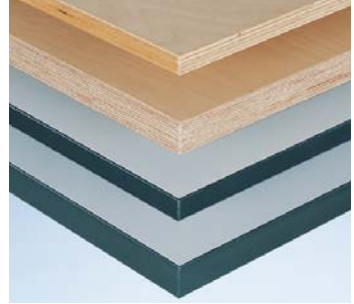


Table Tops

Table top materials	284
Table top fasteners	285

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Drawer Cabinets 286



Risers 289



Provision of Material

Rack systems	290
Swivel arms	291
Bin mounts	292
Shelves	293
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Lighting

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Power Supply

Pneumatic supply
 Electrical supply

300
 301



Accessories

Support brackets 304
 Floor mats 305



**Application Profiles
 for Workstations**

Profiles for telescoping 306
 Profiles for table/
 machine frames 308
 Profile for support brackets 309

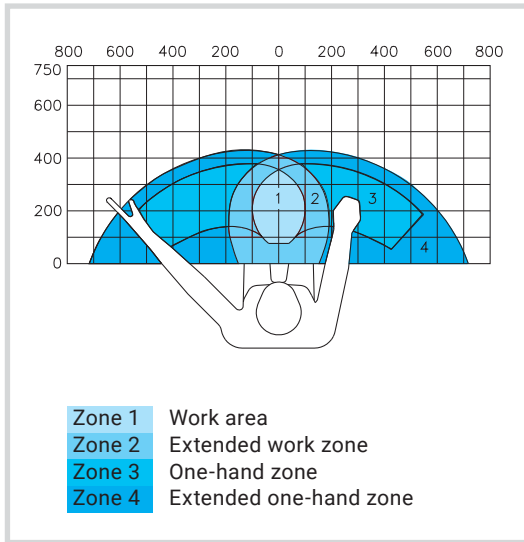


Benefits of mk Industrial Workstations

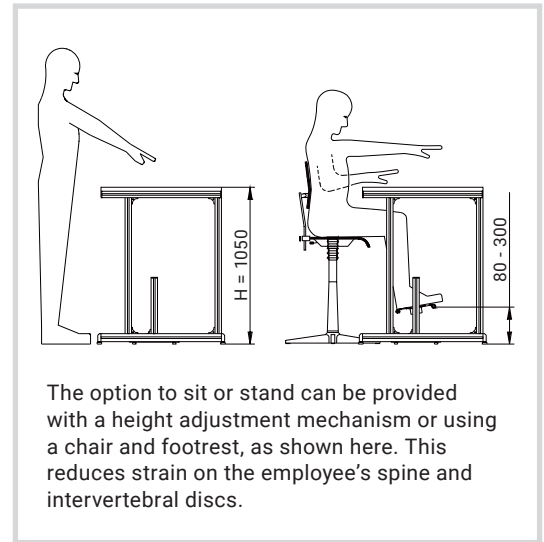
- Ergonomic and highly functional industrial workstations for optimal productivity
- Aluminium profile construction for ultimate flexibility to expand and make changes
- Table frame with an adjustable height and variable material provision systems allow the workstation to be adapted to the employee
- Extensively customisable, with risers, shelving systems, electrical and pneumatic supply options, tool hangers and drawer cabinets
- mk's extensive experience in expanding these stations into complete assembly lines, including workstation interlinking
- Custom solutions to fit existing processes, including requirements relating to lean production, kanban, ESD or cleanroom processes

Workstation Ergonomics

Ergonomic Reach Zones



Ergonomic Sit-to-Stand Workstation



The word "ergonomics" comes from Greek and translates roughly to the study of human work. Having ergonomically designed industrial workstations not only increases productivity and reduces the rate of mistakes, but also improves employee health and therefore improves morale and the working environment. mk industrial workstations can be quickly and easily adjusted each employee's particular physical

needs. This includes a height adjustment mechanism and a design that allows the workpiece, the tools and the bins for providing materials to be optimally positioned within the employee's reach for the particular task. This helps employees avoid unhealthy postures and optimises productivity. Providing optimal lighting for the particular task is another critical factor that mk has incorporated with its variable lighting system.

Notes on Industrial Workstations

Standards and Regulations

In designing its industrial workstations, mk has followed all applicable standards and regulations, for example DIN EN ISO 6385 (Ergonomics principles in the design of work systems).

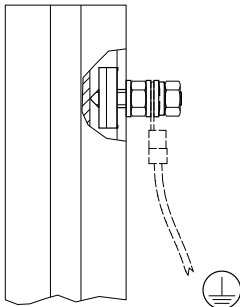
Earthing and Protective Conductors

If industrial workstations are electrified (e.g. lighting, electrical sockets, etc.), DIN VDE 0100- 410 specifies that all of a workstation's conductive components must be connected together and with the protective conductor of the supply line so that protection against electric shock is ensured in the event of a fault.

Connecting the profiles with angles and ESD nuts, sometimes known as PE nuts, ensures conductivity throughout the entire workstation. If the workstation is electrified after construction, this means that the protective conductor has to be connected to the workstation in only one location to provide earthing.

Earth Terminal

The earth terminal is used to connect the protective conductor to the industrial workstation to ensure protection against electric shock. This also protects sensitive components against electrostatic discharge.



Earth terminal
B02.99.151

Angle Fastener with ESD Nuts

The pressed protrusion on the nut penetrates the profile's insulating anodised coating and ensures that the connection is conductive through the screw connection.

Nut 1 M8 ESD 34.01.0018

Cylinder head screw M8x16 D0912816

Al angle

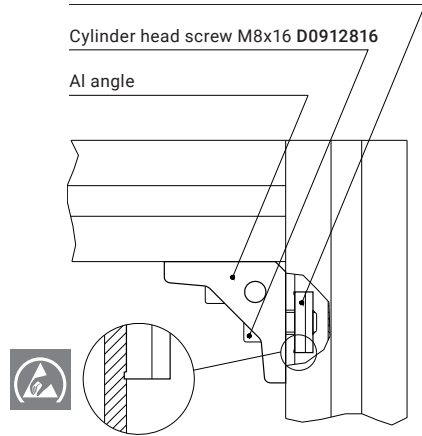





Table Frames

Fixed Working Height

Our table frames with a fixed working height are made from mk's Series 40 profiles and feature a sturdy pedestal design. The standard dimensions shown here allow it to be used as a sit-to-stand workstation. Custom dimensions can also be implemented, although our standard range complies with ergonomics recommendations from the applicable standards.

 For table tops, see page 284

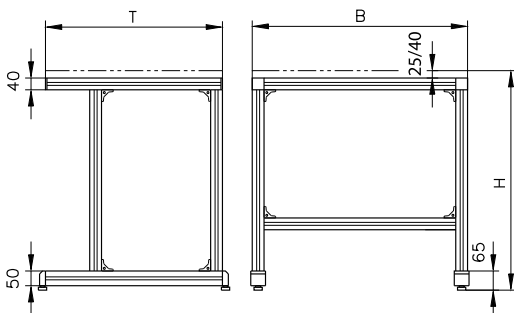


Table frame C1

B02.13.030

Loads

Load scenario	Top thickness	Surface load	Total load
Static load	< 35 mm	2000 N/m ²	2000 N
Static load	> 35 mm	2500 N/m ²	4000 N

Standard dimensions (mm)

Height H*	Depth T	Width B
850	600	1200
1050	750	1400
		1600

*Including 25 mm table top

Other dimensions possible. Heavy-duty design for high loads available on request. Steel privacy panelling in various RAL colours available.



Manual Height Adjustment

Our table frames with an adjustable working height are made from mk's Series 40 profiles and feature a sturdy pedestal design. In this table design, the height is adjusted using telescoping profiles with a fastening screw. This allows the working height to be easily adjusted while maintaining stability and load capacity.



For telescoping profiles, see page 306
 For table tops, see page 284

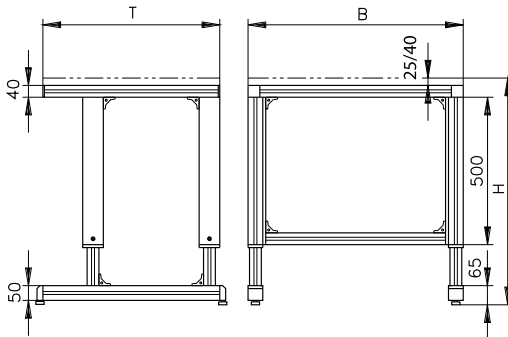


Table frame D1

B02.13.040

Loads

Load scenario	Top thickness	Surface load	Total load
Static load	< 35 mm	2000 N/m ²	2000 N
Static load	> 35 mm	2500 N/m ²	4000 N

Standard dimensions (mm)

Height H*	Depth T	Width B
680 to 1070	600	1200
	750	1400
		1600

*Including 25 mm table top

Other dimensions possible. Heavy-duty design for high loads available on request. Steel privacy panelling in various RAL colours available.

Table Frames

Manual-Hydraulic Height Adjustment

Our table frames with an adjustable working height are made from mk's Series 40 profiles and feature a sturdy pedestal design. In this table design, the height is adjusted using telescoping profiles with a matching gliding assembly and a hand crank. This allows you to quickly adapt the working height to the user or the workpiece. The employee can also switch between sitting and standing. The required driving torque of about 6 Nm is within the boundaries of the ergonomics requirements for the design of control actuators, DIN EN 894-3, for manual actuation. 5 mm stroke per crank rotation.


 For telescoping profiles, see page 306
For table tops, see page 284

Table frame D4

B02.13.043

Loads

Load scenario	Top thickness	Surface load	Total load
Static load	< 35 mm	2000 N/m ²	2000 N
	> 35 mm	2500 N/m ²	2800 N
Dynamic load*	< 35 mm	1600 N/m ²	1600 N
	> 35 mm	1600 N/m ²	1600 N

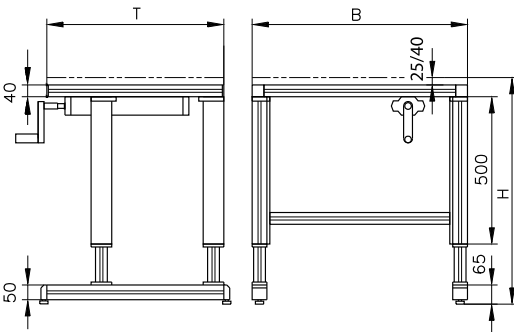
*Maximum load under which the table can still be moved

Standard dimensions (mm)

Height H*	Depth T	Width B
680 to 1070	750	1200
	800	1400
		1600

*Including 25 mm table top

Other dimensions possible. Heavy-duty design for high loads available on request. Steel privacy panelling in various RAL colours available.



Notes

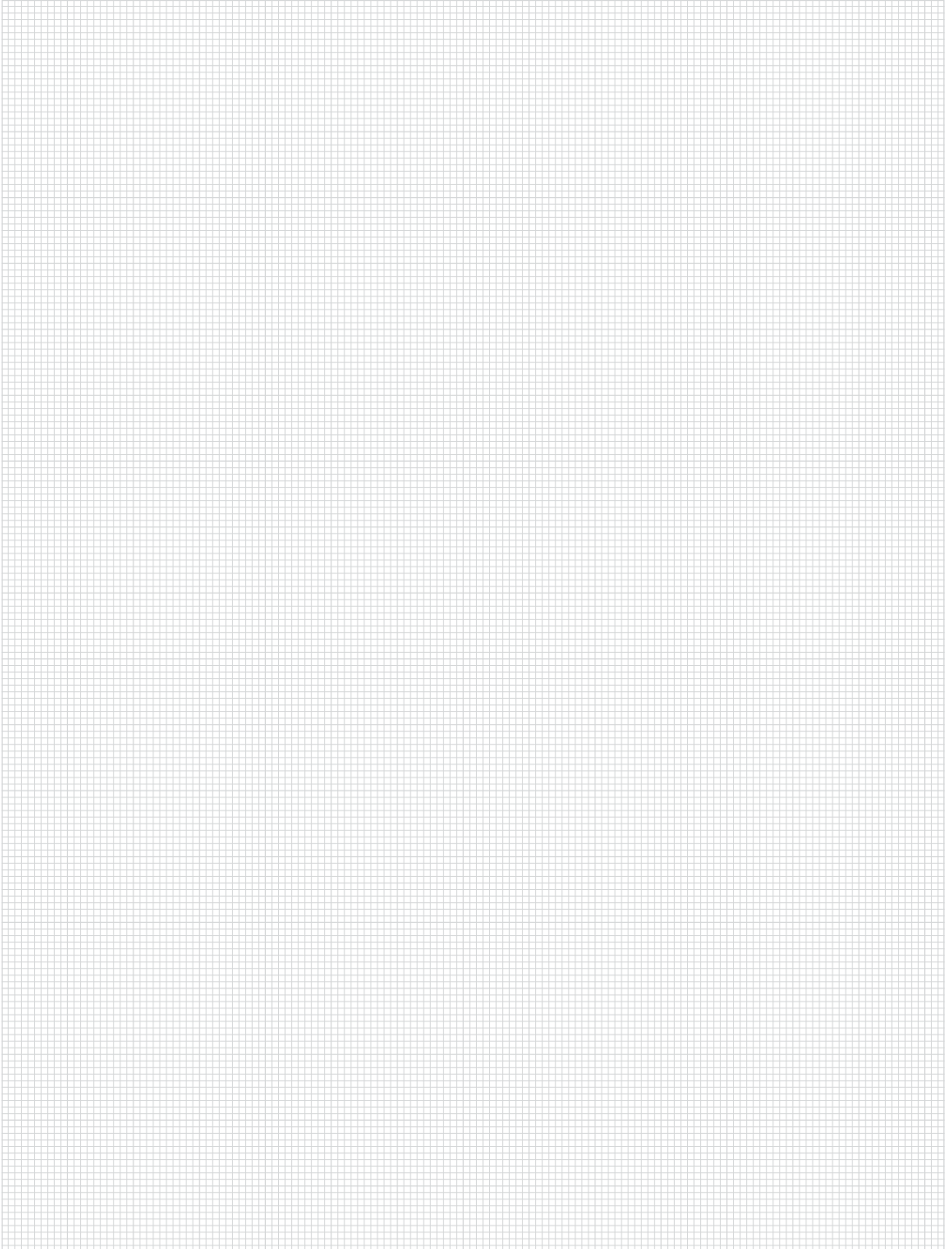


Table Frames

Electrical Height Adjustment

Our table frames with electrical height adjustment made from mk's Series 40 profiles are suitable for both sitting and standing. A button with an optional memory function is used to adjust the height of the workbench within a 400 mm range. A selection of different table tops, accessory components and additions such as risers are presented on the following pages.

Technical data

Travel speed	v = 12 mm/s
Voltage/frequency	230 V/50 Hz
Operating voltage (secondary)	24 V DC
Controller protection class	IP20
Motor/remote control protection class	IP30
Turnkey system with 3 m mains cable	



For table tops, see page 284

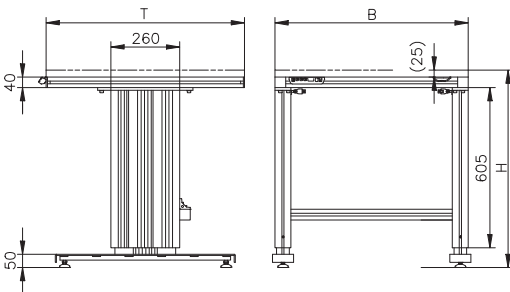


Table frame J1

B02.13.090

Loads

Load scenario	Top thickness	Surface load	Total load
Static load	25-40 mm	2000 N/m ²	3000 N

Standard dimensions (mm)

Height H	Depth T	Width B
720 to 1120	700	1200
+ table top thickness	750	1600
	800	2000

Other dimensions possible.



Heavy-Duty with Electrical Height Adjustment

The heavy-duty version of the workbench with electrical height adjustment features a table frame made from mk 2040.02 profiles that goes around the entire table and a maximum load capacity of 4500 N. A button with an optional memory function is used to adjust the height of the workbench within a 400 mm range. A selection of different table tops, accessory components and additions such as risers are presented on the following pages.



For table tops, see page 284

Technical data

Travel speed	v = 9 mm/s
Voltage/frequency	230 V/50 Hz
Operating voltage (secondary)	24 V DC
Controller protection class	IP20
Motor/remote control protection class	IP30
Turnkey system with 3 m mains cable	

Table frame K1 (heavy duty) B02.13.100

Loads

Load scenario	Top thickness	Surface load	Total load
Static load	40 mm	3000 N/m ²	4500 N

Standard dimensions (mm)

Height H	Depth T	Width B
760 to 1160	700	1200
	750	1600
	800	2000

Other dimensions possible.

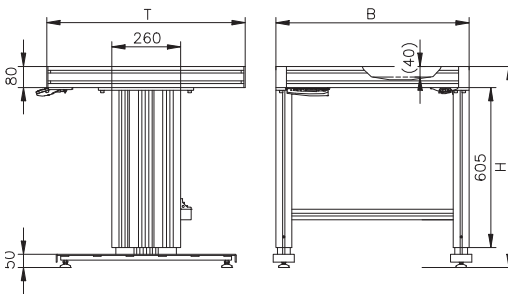


Table Tops

Table Top Materials

Potential factors for choosing a table top material include the stability and material of the workpiece and the wear resistance of the table top. Environmental conditions such as moisture or high temperatures can also influence the choice of material. On request, other surface materials such as stainless steel sheet or laminated wood can be used. ESD-compatible tops are also available on request.

Beechwood Multiplex Tops

- Multi-bonded beechwood
- Resistant to warping
- Jointless
- Ground natural surface, waterproofed on request

Laminated Tops

- Laminated particleboard
- Light grey standard colour
- Black edge band with rounded edges (grey on request)
- High resistance to shocks and impacts

Thickness	Mass	Item no.
25 mm	18.9 kg/m ²	50.13.5005
40 mm	30.0 kg/m ²	50.13.5008

Painted surfaces on request.

Thickness	Mass	Item no.
20.6 mm	15.5 kg/m ²	50.13.6004
26.6 mm	20.0 kg/m ²	50.13.6005
39.6 mm	27.2 kg/m ²	50.13.6008

Conductive design (ESD) on request.



Table Top Fasteners

The table tops can be mounted using angles or with the fastener set shown here. Holders such as angles can be used for both multiplex and laminated tops in any thickness offered.



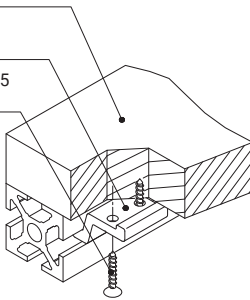
Angles
 starting on page 76

Fastening example

Table top

Holder 26.00.0052, Al

Chipboard screw \varnothing 4x25
 K112510020



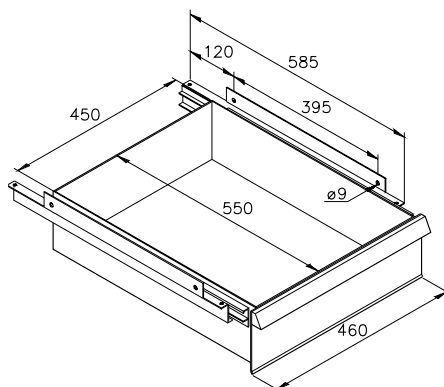
Fastener set
 for 20 to 40 mm table tops
B02.99.050

Consists of:
 6 x holders **26.00.0052**
 12 x chipboard screws \varnothing 4x25 **K112510020**

Drawer Cabinets

Drawer cabinets provide storage space without reducing the actual working area. The casing has a solid sheet steel construction. It can withstand loads up to 200 kg. All drawer cabinets are equipped with a cylinder lock and painted in RAL 7035.

Drawer cabinet, single drawer



Single drawer

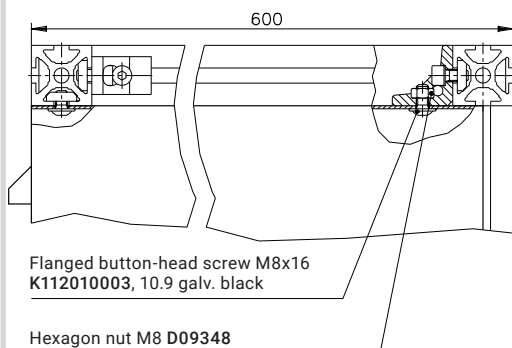
B02.23.903

m = 8 kg

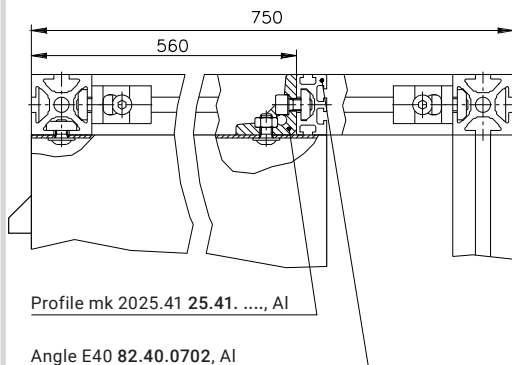
Fastener set

B02.99.004

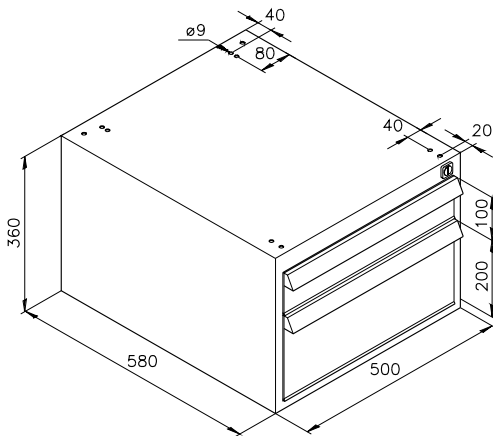
Fastening example for table depth T = 600



Fastening example for table depth T = 750



Drawer cabinet, two drawers



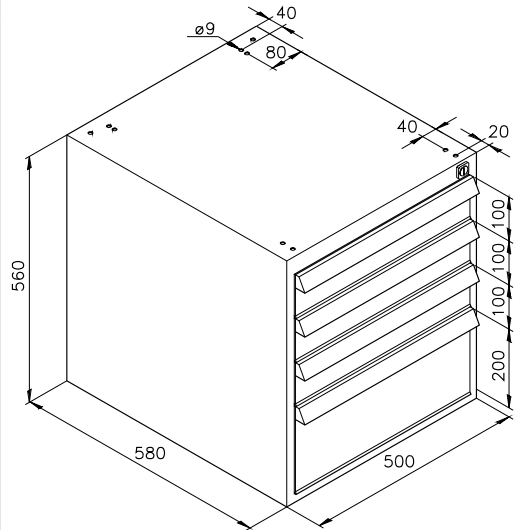
Two drawers
B02.23.902

m = 23 kg

Fastener set
 Table depth T = 600 mm
B02.99.001

Fastener set
 Table depth T = 750 mm
B02.99.002

Drawer cabinet, four drawers



Four drawers
B02.23.901

m = 35 kg

Fastener set
 Table depth T = 600 mm
B02.99.001

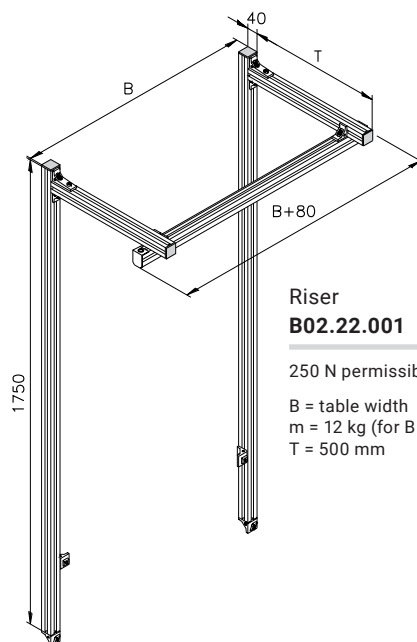
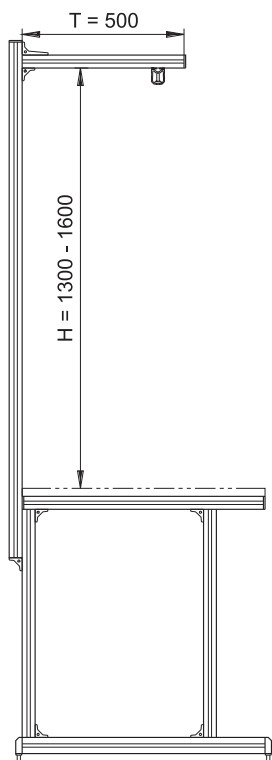
Fastener set
 Table depth T = 750 mm
B02.99.002

Risers

Risers are used for mounting additional parts above the table top, for example shelves, electrical/pneumatic supply components or tools. They come equipped with a C-rail as standard for attaching tool sliders. The heights of the riser's beams and cantilevers can be adjusted. We offer a heavy-duty riser design for higher load requirements.



For table tops,
see page 284

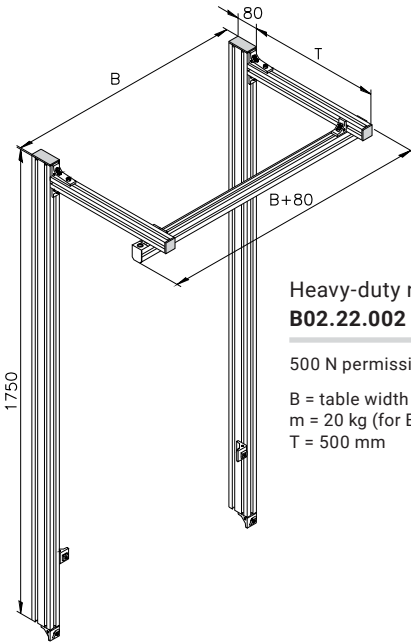


Riser
B02.22.001

250 N permissible load

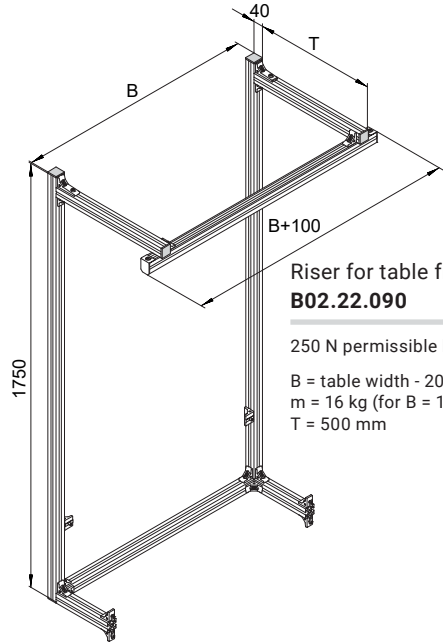
B = table width
 $m = 12$ kg (for $B = 1200$ mm)
 $T = 500$ mm

Risers



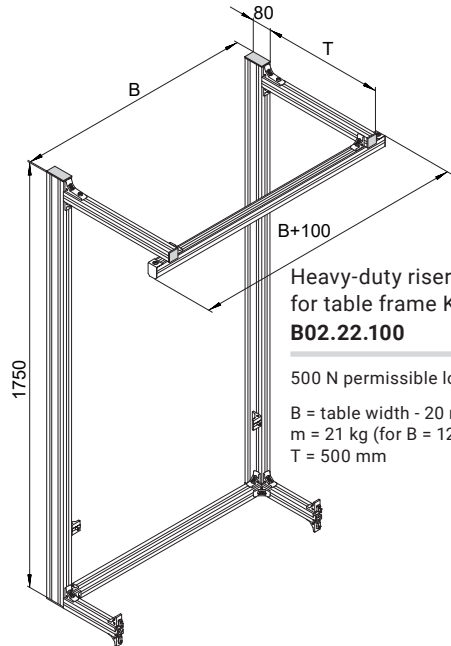
Heavy-duty riser
B02.22.002

500 N permissible load
 B = table width
 m = 20 kg (for B = 1200 mm)
 T = 500 mm



Riser for table frame J1
B02.22.090

250 N permissible load
 B = table width - 20 mm
 m = 16 kg (for B = 1200 mm)
 T = 500 mm



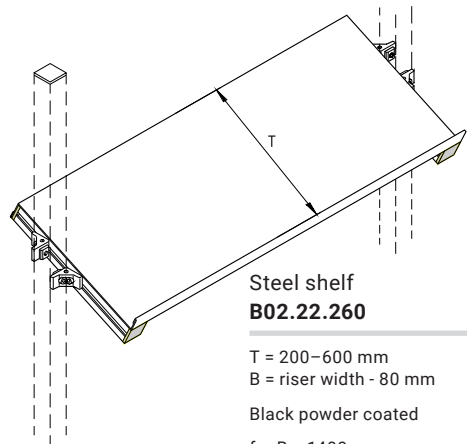
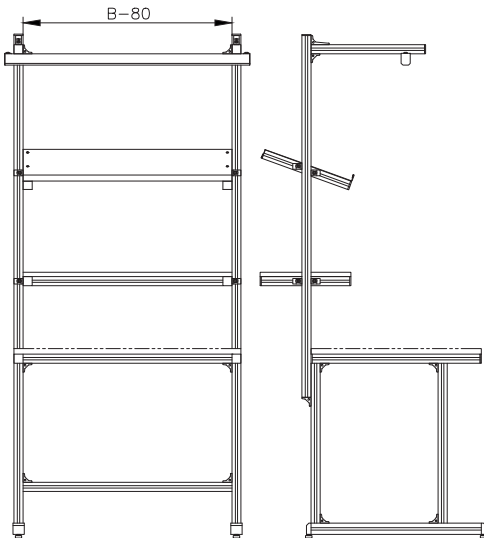
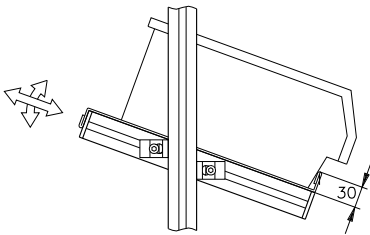
Heavy-duty riser
for table frame K1
B02.22.100

500 N permissible load
 B = table width - 20 mm
 m = 21 kg (for B = 1200 mm)
 T = 500 mm

Provision of Material

Rack Systems

Rack systems are used to hold bins, tools, measuring instruments or components to be mounted. You can use various angles to adapt the depth, height and incline of the rack system for optimal positioning. Please specify the width and depth when ordering.



Steel shelf
B02.22.260

T = 200–600 mm
B = riser width - 80 mm

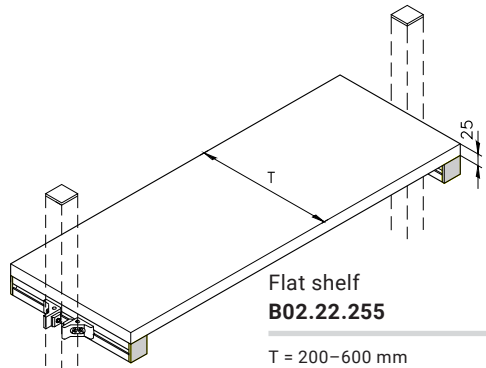
Black powder coated

for B = 1400 mm

m = 8 kg

F_S = 800 N

F_P = 500 N



Flat shelf
B02.22.255

T = 200–600 mm
B = riser width - 80 mm

for B = 1400 mm

m = 14 kg

F_S = 1200 N

F_P = 800 N

F_S = surface load

F_P = point load (max. load on a surface of at least 200 x 200 mm)

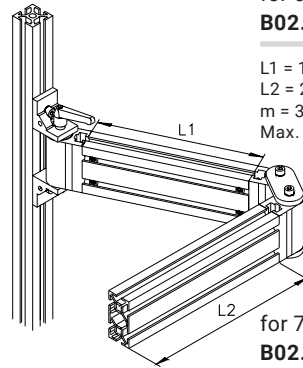


Swivel Arms

Uses for swivel arms range from holding shelves, to holding containers for small parts, to connecting monitors. In addition to creating additional work space, they can be adjusted to provide an ergonomically optimal layout for the worker. The clamping lever or cylinder head screw can be used for attachment.

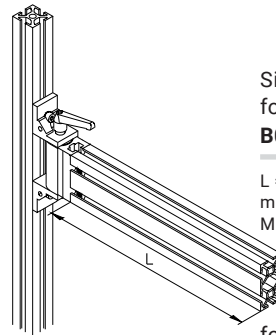
Double swivel arm
 for 600 mm table depth
B02.24.360

L1 = 150 mm
 L2 = 200 mm
 m = 3.6 kg
 Max. load = 300 N



for 750 mm table depth
B02.24.361

L1 = 200 mm
 L2 = 300 mm
 m = 4 kg
 Max. load = 300 N

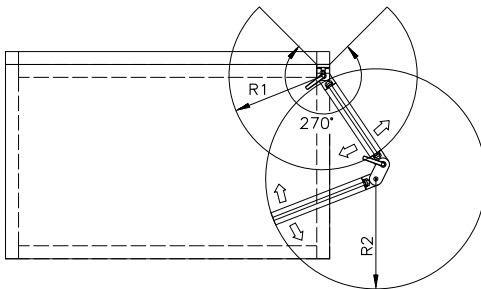


Single swivel arm
 for 600 mm table depth
B02.24.362

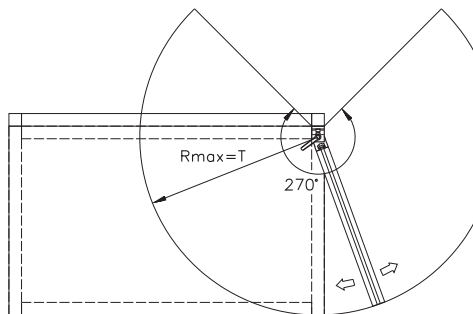
L = 250 mm
 m = 1.7 kg
 Max. load = 300 N

for 750 mm table depth
B02.24.363

L = 400 mm
 m = 2.2 kg
 Max. load = 300 N



R1 max = 290 mm
 R2 max = 340 mm



T = table depth

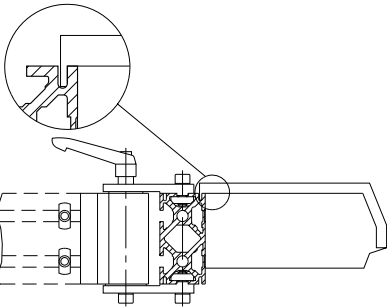
Provision of Material

Bin Mounts

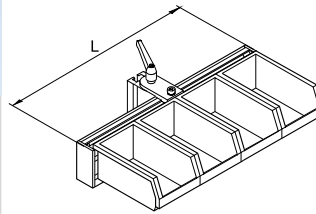
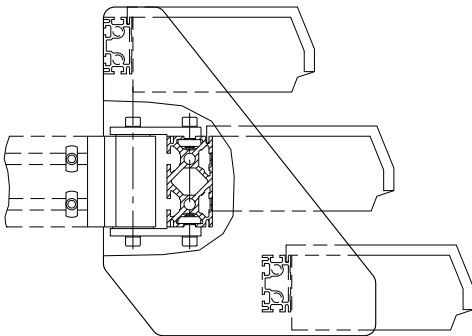
With bin holders, bins can be attached to swivel arms to allow for optimal ergonomic positioning. Alternatively, bins can be mounted on mk 2040.22 profiles.



Series 40, 2.75 mm slot width, for bin LF211/LF221

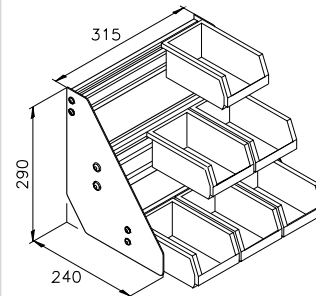


Series 25, 2.75 mm slot width, for bin LF211 only



Bin holder
B02.24.366

$L = (\text{bin width} + 1 \text{ mm}) \times N$

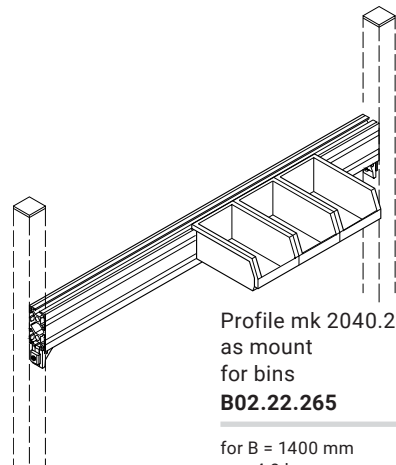


Rack
B02.24.367

with swivel arm connection
 $m = 3.4 \text{ kg}$

Rack
B02.24.356

without swivel arm connection
 $m = 2.5 \text{ kg}$



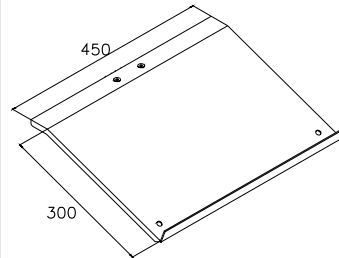
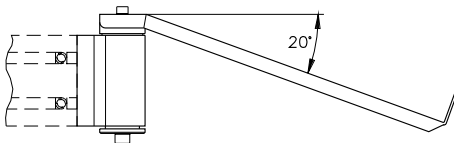
Profile mk 2040.22
as mount
for bins
B02.22.265

for $B = 1400 \text{ mm}$
 $m = 4.8 \text{ kg}$



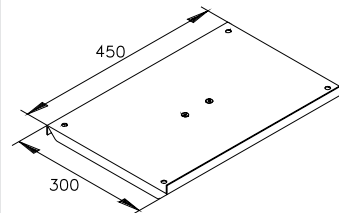
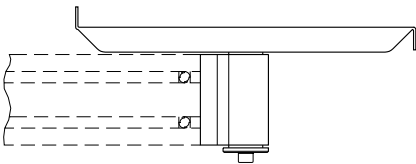
Shelves

Angled or straight shelves are connected to a swivel arm and can thus be brought into the ideal ergonomic position.



Angled shelf
B02.24.364

m = 3.6 kg



Straight shelf
B02.24.365

m = 3.4 kg

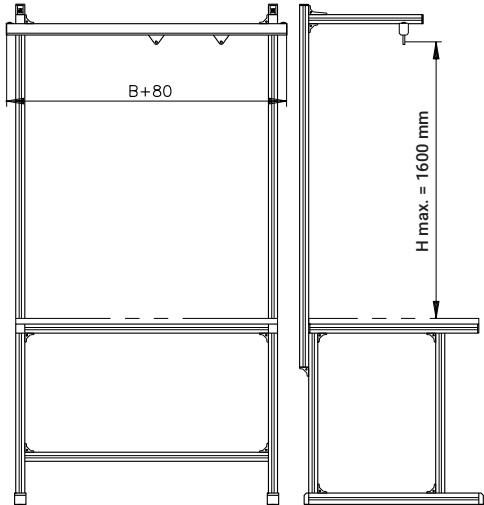
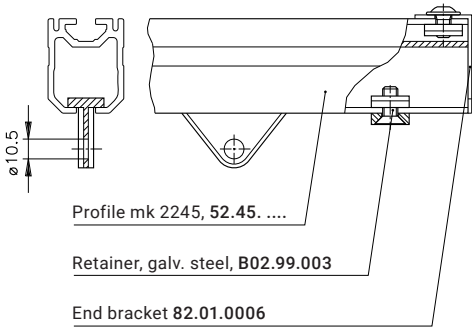
Provision of Material

Tool Hangers

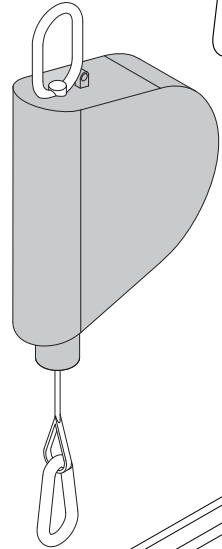
The tool hanger components shown here are just our standard selection. Custom components are also available on request. Tools hangers improve organisation and safety at the workstation. They also make tools available without encroaching on the work space. The adjustable spring tension system reduces strain and improves ergonomics for the user.



08



Snap hook
K120010003

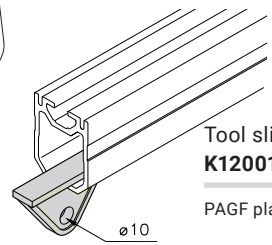


Spring balancer F2
K120010006

Load capacity: 0.5–2.0 kg
Max. rope extension: 2.5 m
Min. installation length: 0.36 m

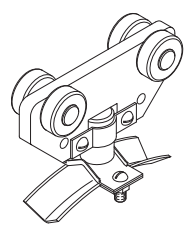
Spring balancer F3
K120010005

Load capacity: 1.5–3.0 kg
Max. rope extension: 2.5 m
Min. installation length: 0.36 m



Tool slider
K120010004

PAGF plastic

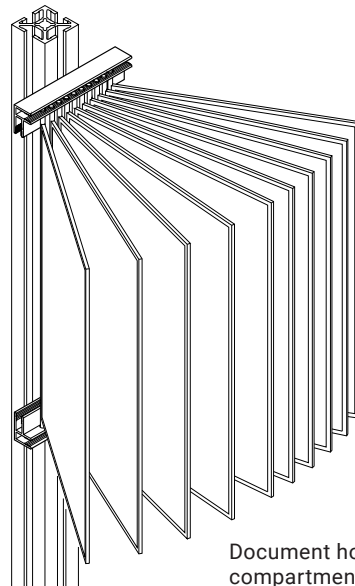


Roller unit for carrying cables and hoses
K120010001



Document Holders

Document holders allow you to protect and store documents, such as instructions for mounting, etc., at the workplace in an orderly manner.



Document holder, 10
compartments, A4 height
B02.99.041

Provision of Material



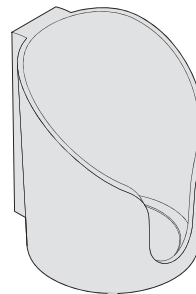
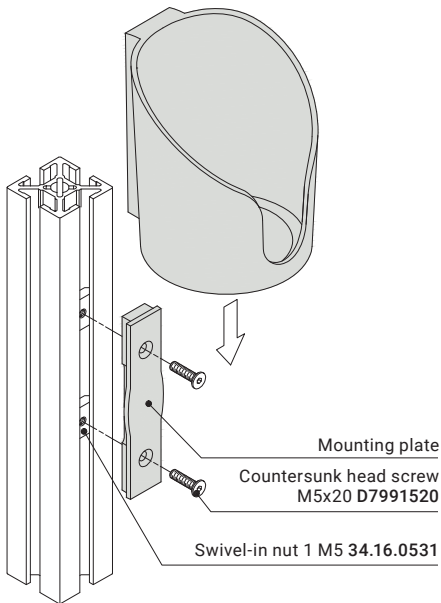
Bottle Holders

Bottle holders have a diameter of 100 mm and are designed for the secure storage of all common beverage bottles, cans, cups and drink boxes. The cut-out at the front makes the holders suitable for cups with a handle. The version with an open bottom can also be used to store a screwdriver or other such equipment.

Material: PA plastic

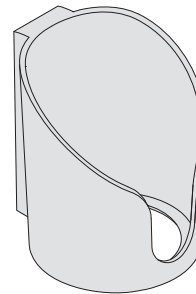
25 40 50 60

Fastening example



Bottle holder
with closed bottom
K120000120

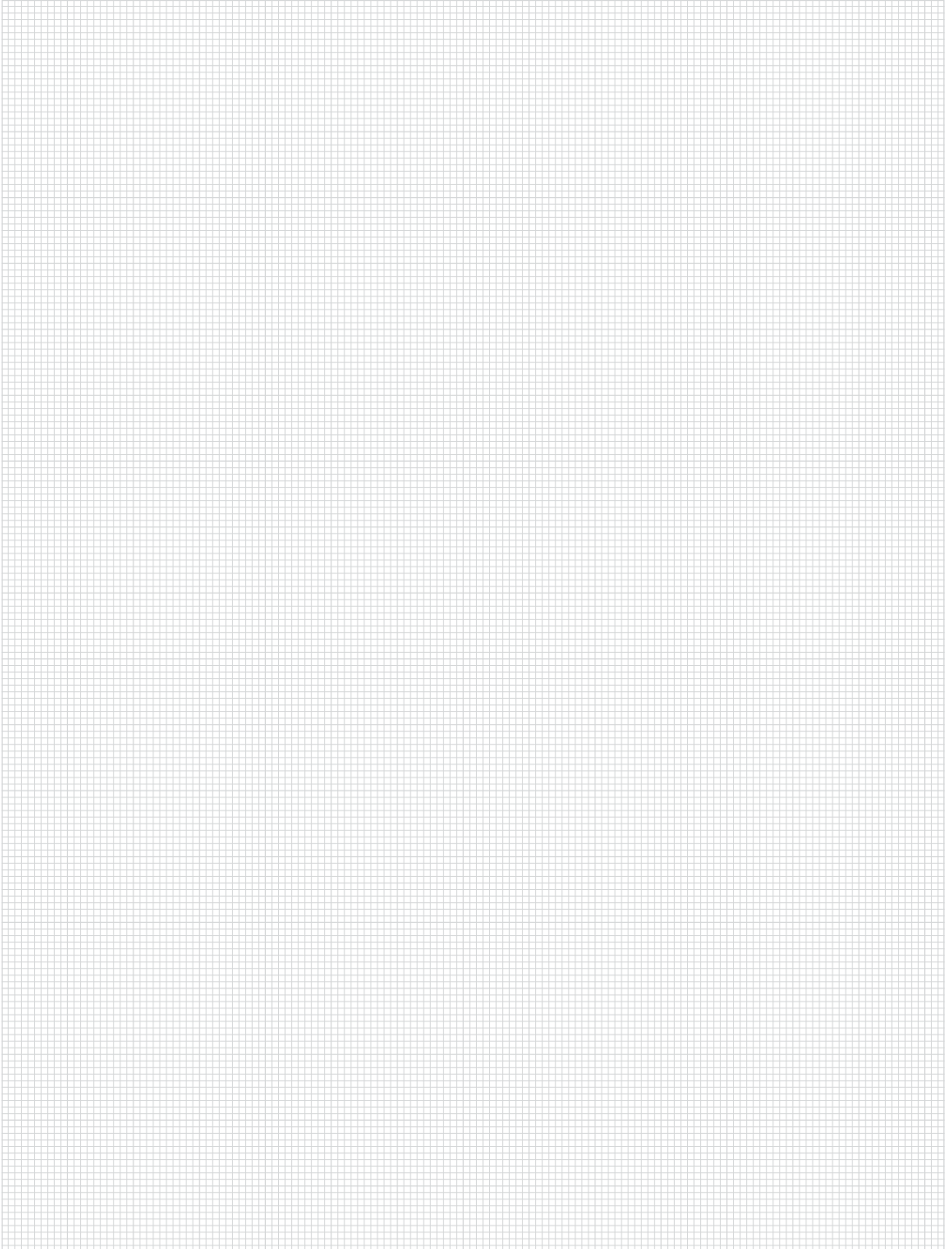
Including mounting plate
Total load = max. 5 kg



Bottle holder
with open bottom
K120000121

Including mounting plate
Total load = max. 5 kg

Notes



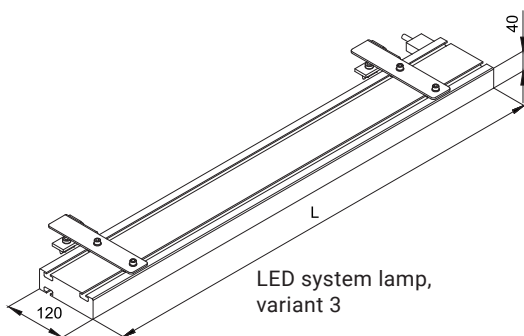
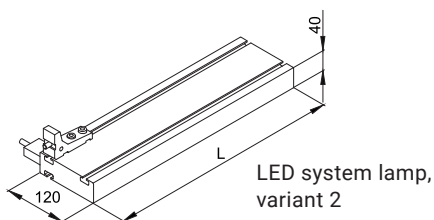
Lighting

LED System Lamps

mk's LED system lamps provide bright, even lighting of the work space without glare. The colour temperature is 5000K at a power of 15 to 64 watts, depending on the variant. The lamps are CE certified, designed for operation with a 230V mains voltage and delivered with a three-metre connection cable. They can be rigidly mounted or can be made to swivel using a flexible holder set. The swivel range is from 25° backwards to 90° forwards. Variants 1 and 2 function as swivelling side lighting and are attached on the right or left side using angles.

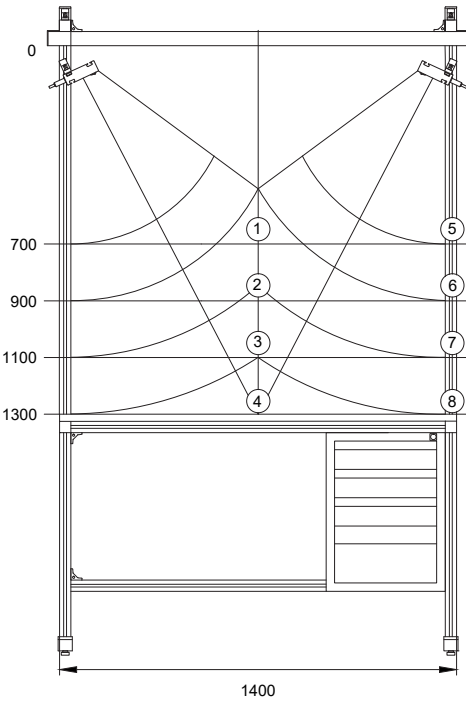
LED

Dimensional sketches

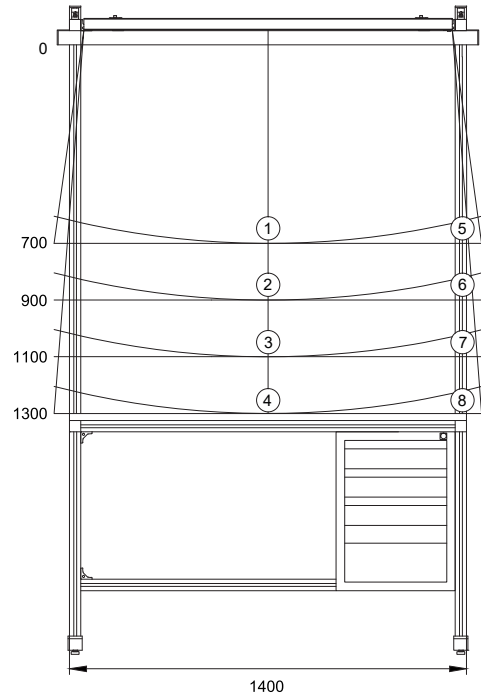


Variant	Item no.	L [mm]	Power [W]	Mounting
1	B02.23.806 001	449	15	Left/ swivelling
2	B02.23.806 002	449	15	Right/ swivelling
3	B02.23.806 003	899	35	Swivelling
4	B02.23.806 004	899	35	Rigid
5	B02.23.806 005	1199	40	Swivelling
6	B02.23.806 006	1199	40	Rigid
7	B02.23.806 007	1499	64	Swivelling
8	B02.23.806 008	1499	64	Rigid

Measurement points for variants 1 + 2



Measurement points for variants 3 to 8



Illuminance

Measurement point	Variant 1 + 2 (lux)	Variant 3/4 (lux)	Variant 5/6 (lux)	Variant 7/8 (lux)
1	500	1550	1650	2000
2	450	1350	1450	1800
3	380	1150	1250	1600
4	300	1000	1100	1400
5	400	700	700	1000
6	350	650	650	820
7	300	580	600	750
8	250	500	550	7000

Power Supply

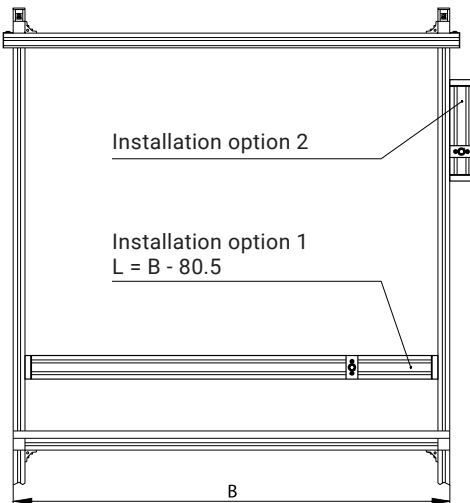
Pneumatic Supply

Pneumatic power is supplied via the mk 2040.02 construction profile. A major advantage of using profiles to supply the air is that it allows for great flexibility in the position and quantity of connection/distributor plates. The pneumatic supply system is designed for a maximum operating pressure of 6 bar.

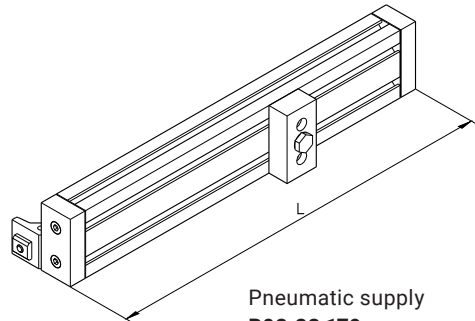


Pneumatic components
see page 196

8



Base unit with connection plates, assembly
available in various configurations



Pneumatic supply
B02.23.179

for B = 1400 mm
m = approx. 5.5 kg



Electrical Supply

The simplest way to supply electricity is using power strips in two different designs. The strips have an illuminated 16 A rocker switch, which has a 2-pole switch-off. The supply lines are 1.75 m long. They contain a longitudinal slot and eyelet for fastening them in various positions on the profile.

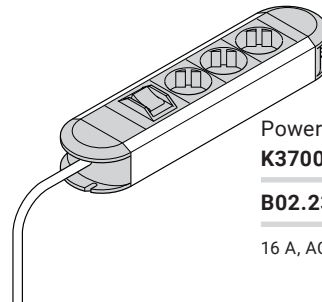
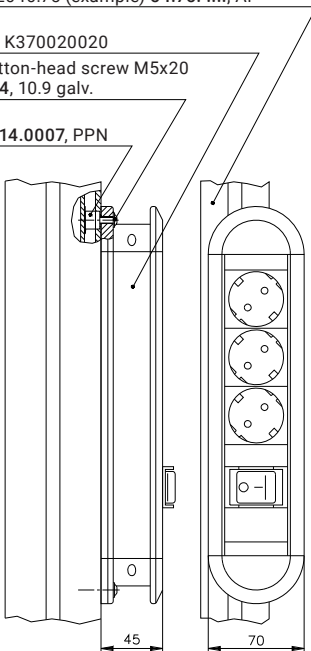
Fastening example

Profile mk 2040.75 (example) 54.75., Al

Power strip K370020020

Flanged button-head screw M5x20
 K112010024, 10.9 galv.

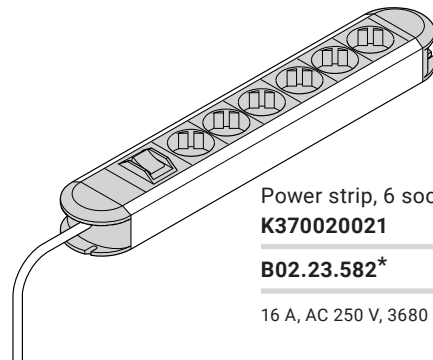
Clip M5 34.14.0007, PPN



Power strip, 3 sockets
K370020020

B02.23.581*

16 A, AC 250 V, 3680 W



Power strip, 6 sockets
K370020021

B02.23.582*

16 A, AC 250 V, 3680 W

*With fastening accessories

Power Supply

Electrical Supply

The standard electrical supply system is a combination of mk 2040.41 and mk 2069 profiles. The unit features exceptional stability and a closed design. Various sockets and switch combinations can be freely positioned along the entire working width. A major advantage of this system is that you can change or add equipment very easily, even custom components. The power supply system is tested in accordance with DIN VDE 0100-410 and includes a circuit diagram. The unit is delivered with a 3 m cable and plug.

Material: Anodised aluminium

Fastening example

Cylinder head screw M8x16 D0912816

Countersunk head screw M8x20 D7991820

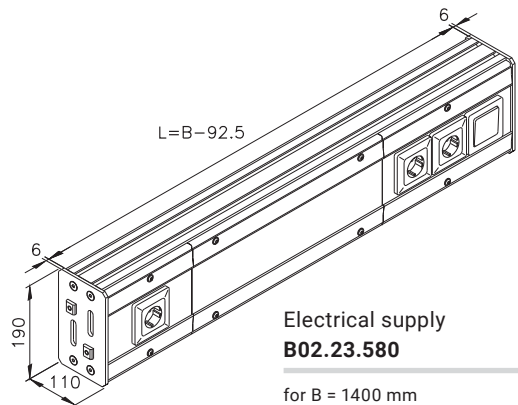
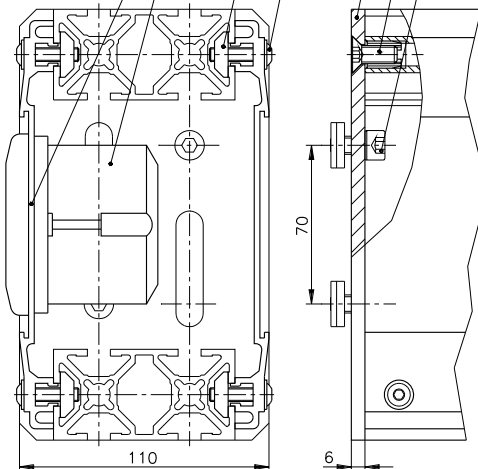
Head plate 50.12.0005, Al

Flanged button-head screw M6x25
K112010015, 10.9 galv.

Nut 1 M6 34.02.0008, galv. steel

Socket K370020050

Profile mk 2069
51.69..... Al



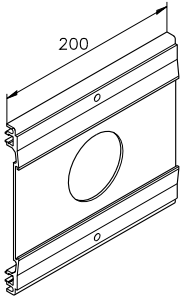
Electrical supply B02.23.580

for B = 1400 mm

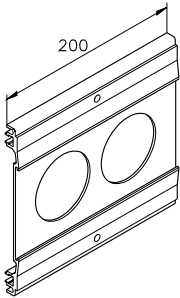
m = 11 kg

Permitted up to max. 16 A

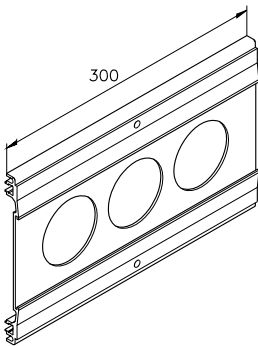
Choice of equipment
on the strip



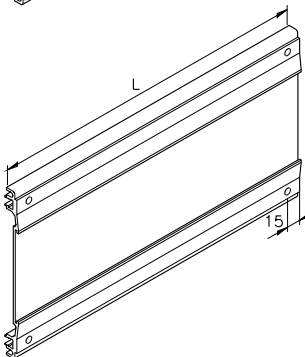
Single module
5169BB0200



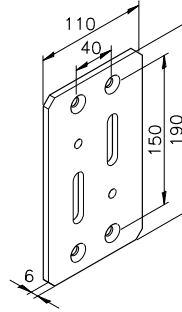
Double module
5169BC0200



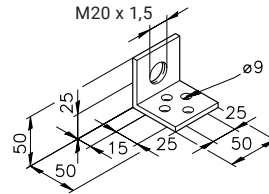
Triple module
5169BD0300



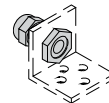
Cover module
5169BA ...



Head plate
50.12.0005

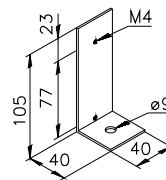


Tension relief angle
16.05.0030

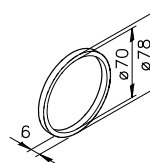


Cable gland
K399010001

Plastic



Angle for
 junction box
82.01.0007

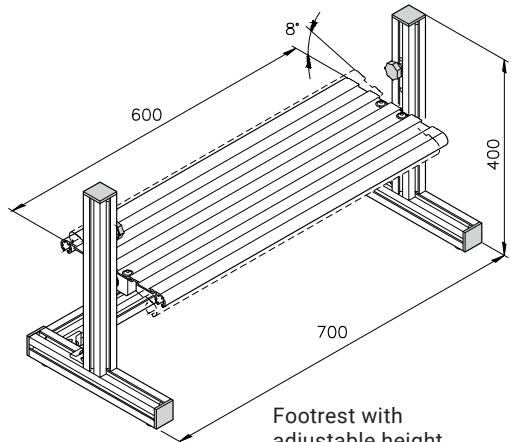
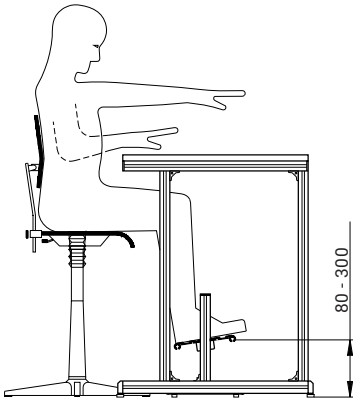


Spacer ring
 for hollow wall box
16.01.0038

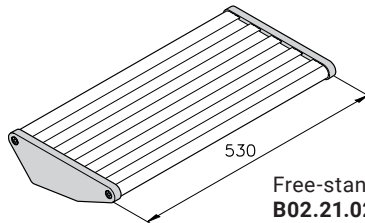
Accessories

Support Brackets

The correct seat height adjustment is an important prerequisite for low-stress work at the workbench. This is correct when the forearms/upper arms are parallel to the table surface, the upper and lower leg are at an angle of at least 90° and the feet are resting completely on the floor. If the workbench is too high, a footrest can compensate for the distance between the feet and the floor. The infinitely adjustable footrest ensures the most comfortable foot position and relieves the legs ensuring pleasant working conditions.



Footrest with
adjustable height
H min - 83 mm
H max - 300 mm
B02.21.030



Free-standing footrest
B02.21.020



Floor Mats

Floor mats made from black TPE-V ensure that workers do not slip at industrial workstations while also reducing strain on their musculature and skeletal systems.

Benefits:

- Hollow spaces reduce strain on the musculature and joints
- Anti-slip
- Oil resistant
- Various dimensions up to 1.2 m wide and 15 m long with 3 mm thickness
- Highly flame-resistant version available

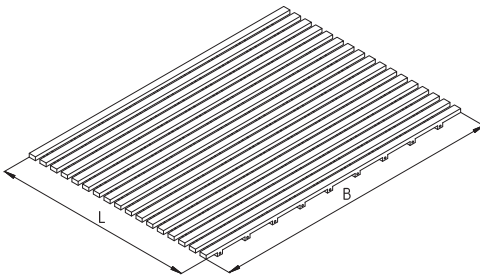
Floor mat

Item no.	Width B [mm]	Length L [m]
K12002.0600	600	max. 15
K12002.0800	800	max. 15
K12002.1000	1000	max. 15
K12002.1200	1200	max. 15

Floor mat B1

(highly flame resistant according to DIN 4102-1 B1)

Item no.	Width B [mm]	Length L [m]
K12003.0600	600	max. 15
K12003.0800	800	max. 15
K12003.1000	1000	max. 15
K12003.1200	1200	max. 15



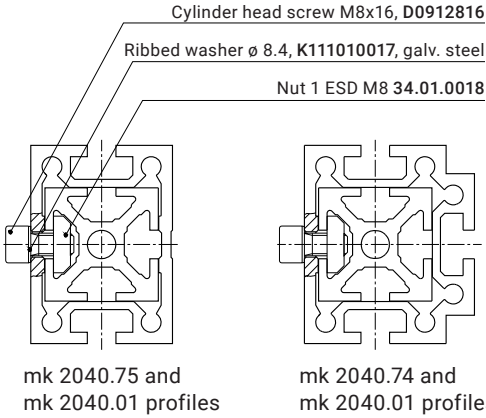
Application Profiles for Workstations

Profiles for Telescoping

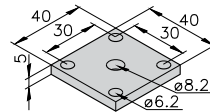
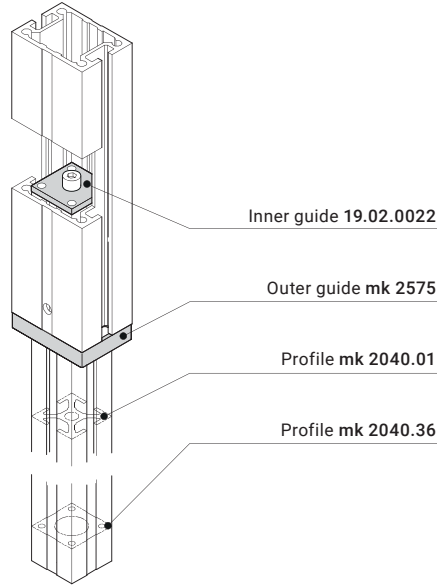
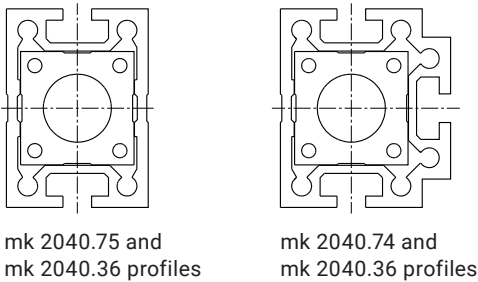
The following components can be used to construct telescoping/height-adjustable table frames and other support frames.

Material: Anodised aluminium

Telescoping profiles for manual height adjustment

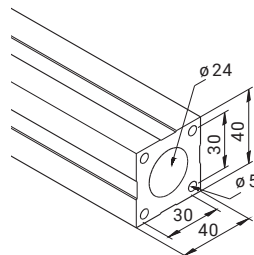


Telescoping profiles for hydraulic height adjustment



Guide
19.02.0022

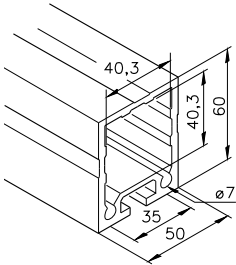
PA plastic



Profile mk 2040.36

2.83 kg/m

Stock length	54.36.5100
Cut	54.36.



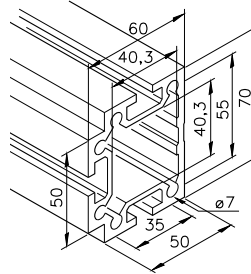
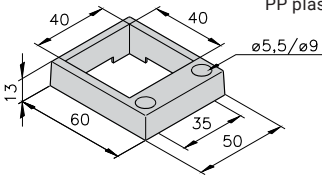
Profile mk 2040.38

2.52 kg/m

Stock length	54.38.5100
Cut	54.38.

Guide
mk 2538

PP plastic



Profile mk 2040.74

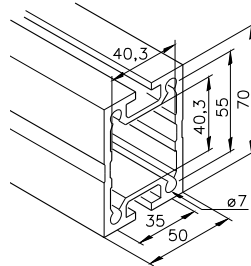
3.50 kg/m

Stock length	54.74.5100
Cut	54.74.

Profile mk 2040.75

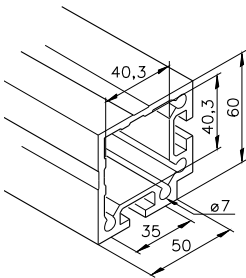
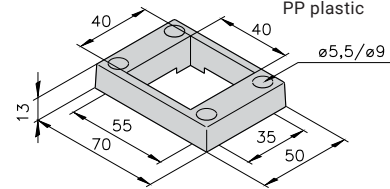
3.01 kg/m

Stock length	54.75.5100
Cut	54.75.



Guide
mk 2575

PP plastic



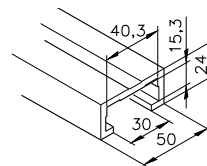
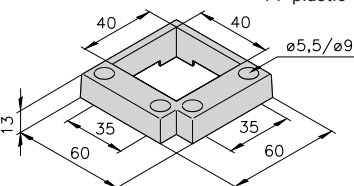
Profile mk 2040.39

3.00 kg/m

Stock length	54.39.5100
Cut	54.39.

Guide
mk 2539

PP plastic



Profile mk 2040.37

1.17 kg/m

Stock length	54.37.5100
Cut	54.37.

Unsere Profilerien

Serie 25



- Profile aus stranggepresstem Aluminium, Standardlänge 5100 mm oder auf Maß zugeschnitten

- mk Profitechnik basiert auf zwei Werkstoffen: Serie 25 und 40, AlMgSi 0,5F25, Serie 50 und 60, AlMgSi 0,7F25 (führt zu einer 10% höheren Steifigkeit)

Serie 40



- Oberflächenveredlung der Profile mit Eloxierung 10 µm im Farblon C0 (naturfarben)

- Alle Profil-Oberflächen sind chemisch vorbehandelt (keine Oberflächenriefen und keine Aufrauungen)

Serie 50



Serie 60



Application Profiles for Workstations

Profiles for Table and Machine Frames

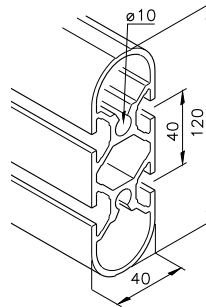
The following profiles can be used to build frames for tables, signs, presentation stands, desks, etc.

Material: Anodised aluminium

Profile mk 2040.34

3.56 kg/m

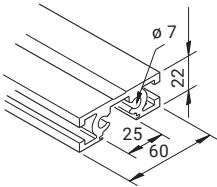
Stock length	54.34.7100
Cut	54.34.



Profile mk 2040.35

1.61 kg/m

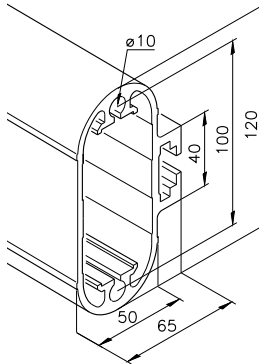
Stock length	54.35.5100
Cut	54.35.



Profile mk 2040.30

4.29 kg/m

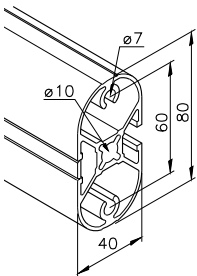
Stock length	54.30.5100
Cut	54.30.



Profile mk 2040.23

2.12 kg/m

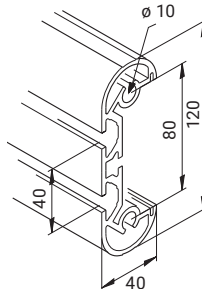
Stock length	54.23.5100
Cut	54.23.



Profile mk 2040.33

3.16 kg/m

Stock length	54.33.5100
Cut	54.33.

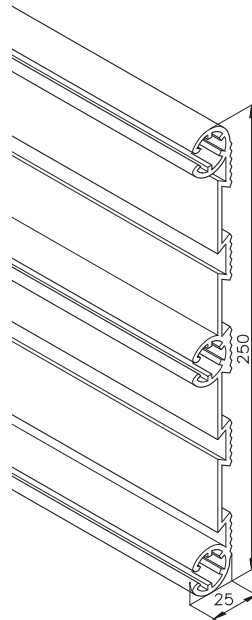




Profile for Footrests

The following profile is used to build footrests and can also be used as a stepping surface.

Material: Anodised aluminium



Profile mk 2040.70

3.53 kg/m

Stock length	54.70.5100
Cut	54.70.

Section 9 Stairs and Platforms



Notes on Stairs and Platforms

312



Stairs

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Stairs	315
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Profiles for steps	317



Platforms

Notes/technical data	318
Assembly details	319



Guardrails

Notes/technical data	320
Hinges for hand rails	321
Wall joint	323
T-connection	323
Cap	323

Notes on Stairs and Platforms



» Safe access
for safe work. «

With our platforms, we offer custom solutions for safely accessing work areas and performing work on vehicles, machines and systems. The platforms we offer include custom assembly and maintenance platforms, simple standard platforms, and footbridges for use in production areas.

mk platforms are planned and manufactured to order. We take into account the specific conditions on site, such as large heights or the need for extended reach. Appropriate functions are then planned, such as height adjustment, mobile capabilities or integrated rotary joints. By utilising the mk profile system, we can fulfil virtually any requirement in terms of effective area, travel distance or minimum clearance, depending on the specific application.

The size of the platforms can vary from simple footbridges to assembly platforms that are 15 m long and 6 m high. Foamed combined profiles can be used to construct free-standing bridges of up to 8 m.

Benefits of Stairs and Platforms

- Variety of designs and options that fulfil safety requirements and improve workstation ergonomics
- Modular design allows for easy assembly and disassembly using standard tools
- Large selection of configurations provided by the profile system gives us maximum flexibility to implement customer-specific functions
- High material quality, sturdy connection technology and high-quality accessories ensure high load capacities and long service lives
- Compatible modules and removable connection technology allow for easy modifications and additions
- High-quality aluminium profiles for an attractive design
- Mobile designs available with fixed or swivel casters or air cushions

Ergonomics



Safety



Flexibility



Stairs

Notes/Technical Data

Stairs are made from mk 2040.68, mk 2040.69 and mk 2040.06 profiles. The profiles used in the stairs have a slip-reducing surface structure. The screw connections in the profile slots eliminate the need for machining components.

Sample order

Width (B) = 1000 mm
 Height (H) = 1800 mm
 Angle = 45°
 Number of steps = 10

Incline angle

Stairs can be designed with various inclines depending on the intended function or available space. The recommended inclines for the stairs are based on the type of use. Our standard stairs have angles up to 45°. For frequently used stairs on which loads are transported, the stairs should have an incline angle of 30° or 35°. If space is limited, the stairs can have a 60° incline.

Note:

The distance between steps of 160 mm is suitable for climbing while transporting heavy loads.

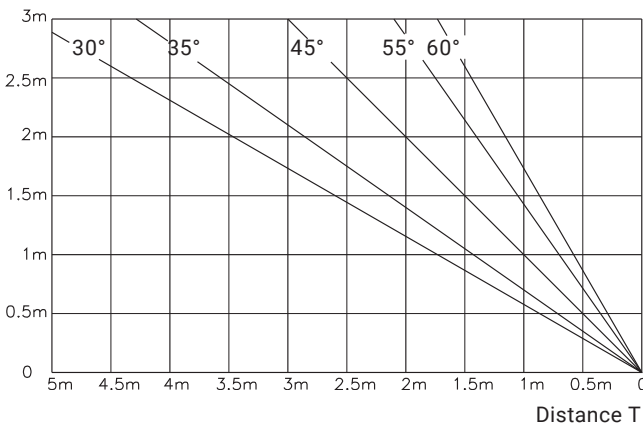
Step distance TA = 160 mm

Number of steps = $(\text{height } H \div 160) - 1$
 (rounded down)

Step distance TA = 190 mm

Number of steps = $(\text{height } H \div 190) - 1$
 (rounded down)

Height H



Step height
160 mm

No. of steps Height

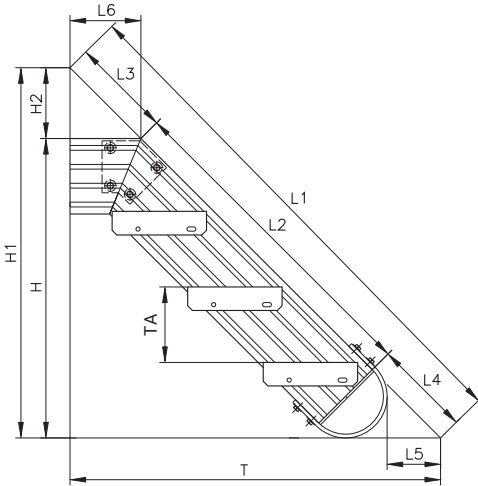
18	3040
17	2880
16	2720
15	2560
14	2400
13	2240
12	2080
11	1920
10	1760
9	1600
8	1440
7	1280
6	1120
5	960
4	800
3	640
2	480
1	320
0	160
	0

Step height
190 mm

No. of steps Height

15	3040
14	2850
13	2660
12	2470
11	2280
10	2090
9	1900
8	1710
7	1520
6	1330
5	1140
4	950
3	760
2	570
1	380
0	190
	0

Stairs

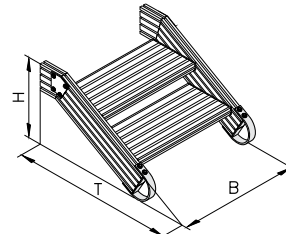


Formulas for calculation:

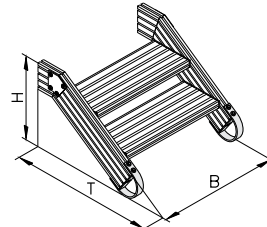
- 30° $T = H1 \times 1.732$
 $L2 = H \times 2 - 314.5$
- 35° $T = H1 \times 1.428$
 $L2 = H \times 1.743 - 267.5$
- 45° $T = H1$
 $L2 = H \times 1.414 - 204.4$
- 55° $T = H1 \times 0.7002$
 $L2 = H \times 1.22 - 163.5$
- 60° $T = H1 \times 0.5774$
 $L2 = H \times 1.155 - 147.7$

	H1	H2	L1	L3	L4	L5	L6
30°	H+86.6	86.6	L1=L2+487.5	173.2	314.5	224.5	150
35°	H+105	105	L1=L2+450.5	183.1	267.5	177	150
45°	H+150	150	L1=L2+416.5	212.1	204.5	113	150
55°	H+214	214	L1=L2+425	261.5	163.5	71	150
60°	H+260	260	L1=L2+448	300	148	55	150

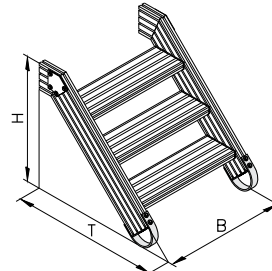
H = platform height



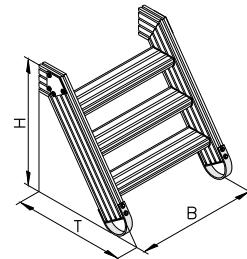
Stairs 30°
B02.31.005



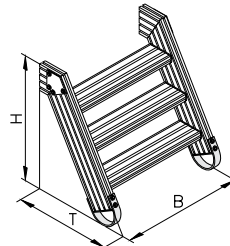
Stairs 35°
B02.31.006



Stairs 45°
B02.31.007

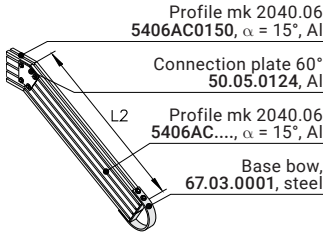


Stairs 55°
B02.31.008

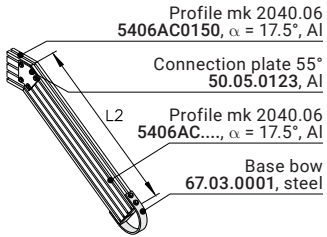


Stairs 60°
B02.31.009

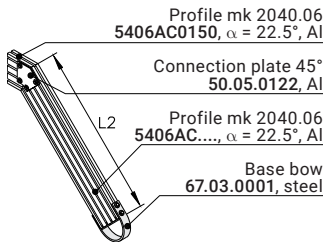
Side Walls



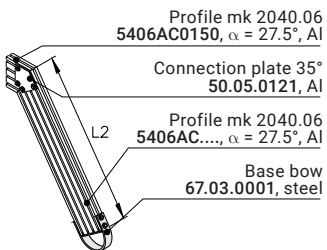
Side wall 40/30°
B02.34.006



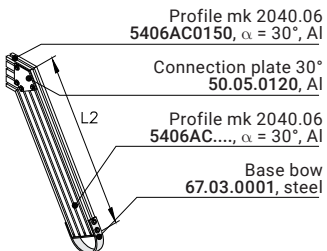
Side wall 40/35°
B02.34.007



Side wall 40/45°
B02.34.008



Side wall 40/55°
B02.34.009

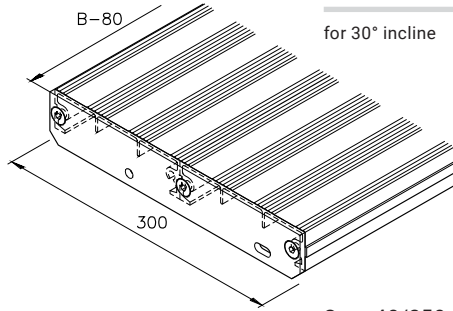


Side wall 40/60°
B02.34.010

Steps

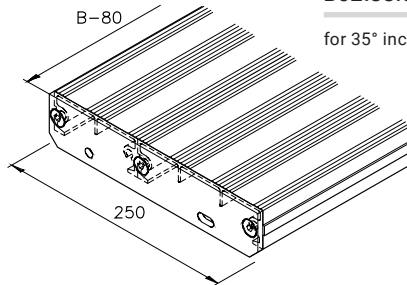
Step 40/300
B02.33.004

for 30° incline



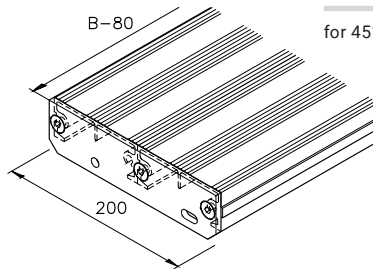
Step 40/250
B02.33.003

for 35° incline



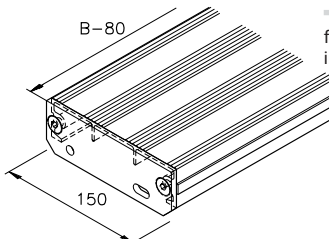
Step 40/200
B02.33.005

for 45° incline



Step 40/150
B02.33.002

for 55° and 60°
incline



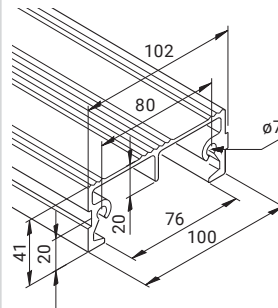
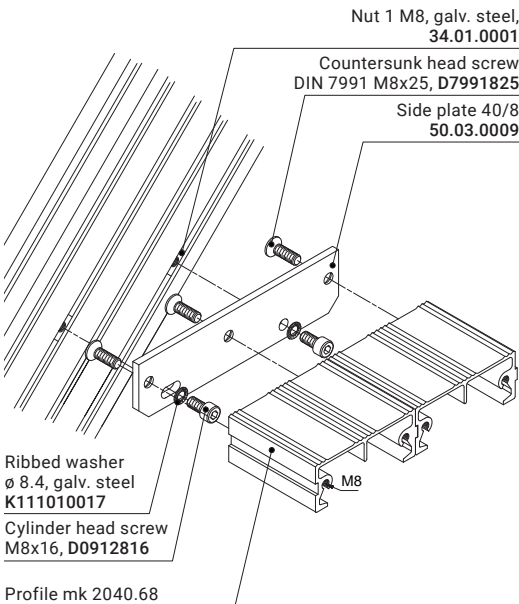


Profiles for Steps

Special profiles for building steps, machine platforms, walkways and platforms. The profiles can be connected side to side to create large stepping surfaces.

Material: Anodised aluminium

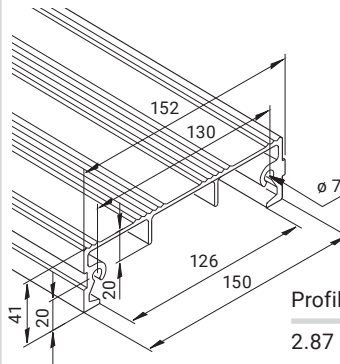
Fastening example



Profile mk 2040.68

2.37 kg/m

Stock length	54.68.6100
Cut	54.68.



Profile mk 2040.69

2.87 kg/m

Stock length	54.69.6100
Cut	54.69.

Platforms

Notes/Technical Data

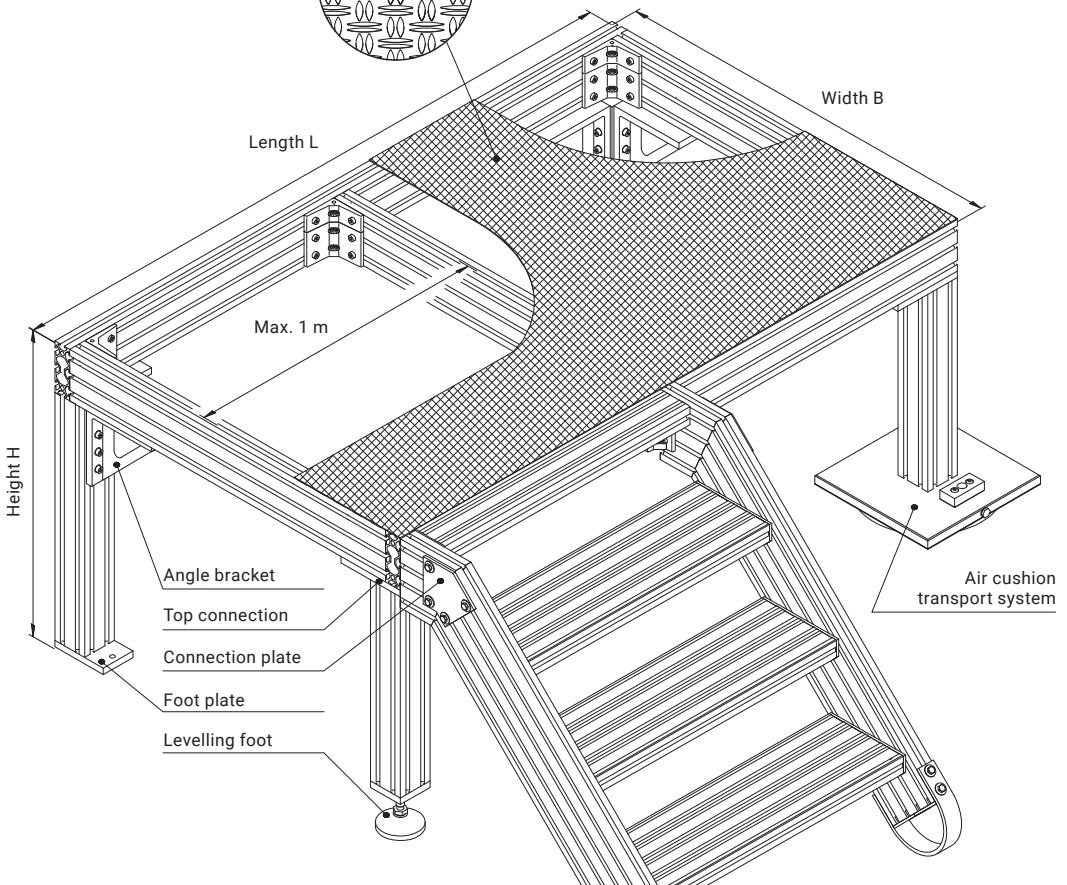
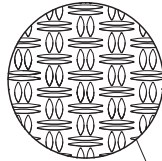
With its four series of profiles, the mk profile system offers nearly endless combinations for constructing platforms. Span widths of up to 8 m can be achieved, for example with foamed combined profiles. The components listed below are only our basic components.

Platforms are covered with chequer sheets as standard or with profiles on request. For industrial applications, the platform's outer contours are equipped with toe kicks (100 mm minimum height) in accordance with DIN EN ISO 14122-2. Platforms can also have a mobile design, for example with fixed or swivel casters or with an air cushion system.



Panelling
Starting on page 232

9



Connection Details

Base plate connection

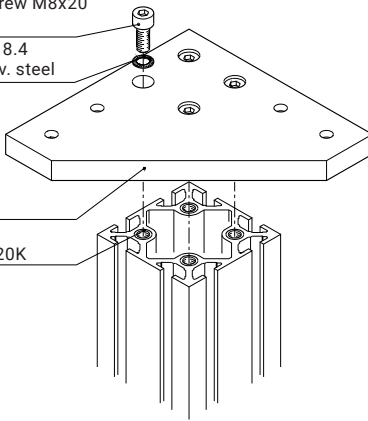
A base plate is a safe and simple option for connecting the stairs. Three profiles are connected with single element.

Cylinder head screw M8x20
 D0912820

Ribbed washer ϕ 8.4
 K111010017, galv. steel

Base plate 40/5
 50.03.0013

Threaded insert
 K112030008, 9S20K



Angle bracket connection

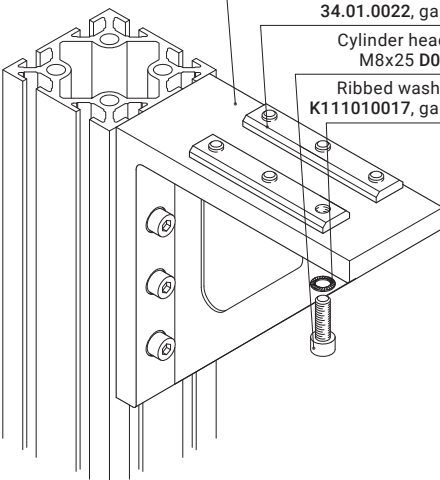
The angle bracket connection option is intended for the most demanding stability requirements. The die-cast aluminium angle brackets have 12 mounting bores and are designed for large span widths.

Angle bracket 31.40.0016, die-cast Al

Nut 3/40 M8
 34.01.0022, galv. steel

Cylinder head screw
 M8x25 D0912825

Ribbed washer ϕ 8.4
 K111010017, galv. steel



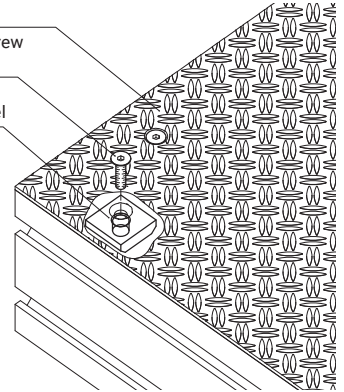
Floor fastening

The Duet chequer sheet can be used as the floor surface as an alternative to floor profiles. It is easily screwed onto the base structure.

Chequer sheet
 K0030641150, Al

Countersunk head screw
 M8x16 D7991816

Nut 1 M8
 34.01.0001, galv. steel



Side wall fastening

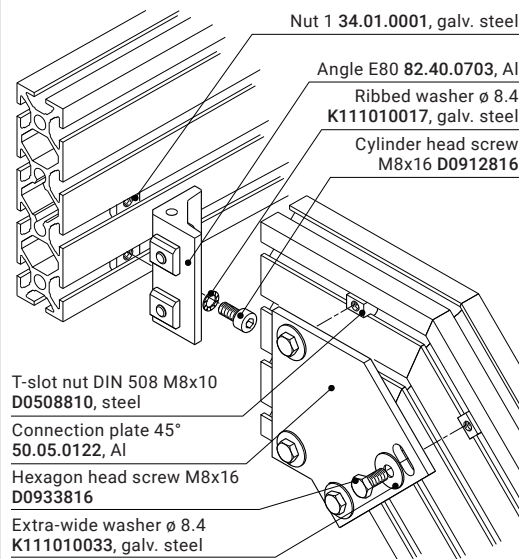
The stair's side walls consist of two cut profile sections each that are connected at their mitre-cut ends with a connection plate, allowing the horizontal profile section to be screwed to the platform using angle E80.

Nut 1 34.01.0001, galv. steel

Angle E80 82.40.0703, Al

Ribbed washer ϕ 8.4
 K111010017, galv. steel

Cylinder head screw
 M8x16 D0912816



T-slot nut DIN 508 M8x10
 D0508810, steel

Connection plate 45°
 50.05.0122, Al

Hexagon head screw M8x16
 D0933816

Extra-wide washer ϕ 8.4
 K111010033, galv. steel

Guardrails

Notes/Technical Data

Guardrails have many applications, such as stairs, work platforms and other platforms. Stairs with four or more steps must have a guardrail.

For steps up to 1500 mm in width, the guardrail must be mounted on the right side in the descending direction. Steps wider than this require a guardrail on both sides.

Hand rail

The mk 2040.16 profile has a diameter of 40 mm that complies with the requirements of the DIN EN ISO 14122-3 standard. Both the connection equipment and the end caps of the hand rails have large radii to prevent injuries.

Rail height

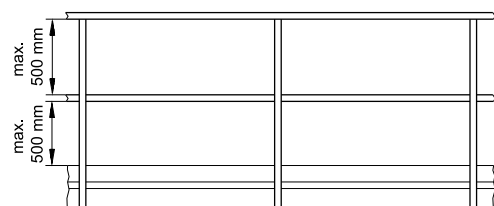
Legal regulations specify various minimum heights for guardrails. Guardrails on stairs must be at least 900 mm height, and guardrails on platforms must be 1100 mm.

Toe kicks

Min. height = 100 mm

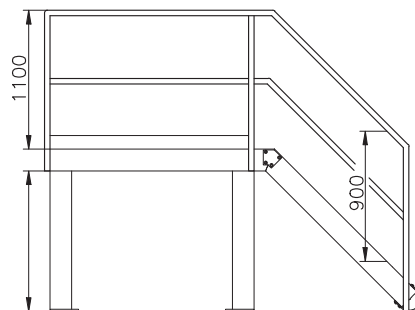
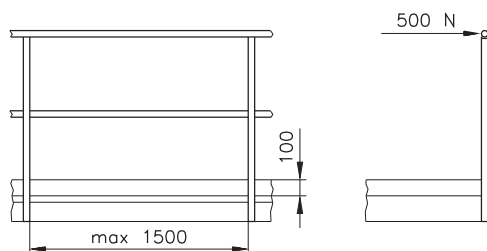
Knee braces

Guardrails are always equipped with knee braces (cross struts between two rail posts). The distance from the knee brace to the platform floor can be 500 mm at maximum.



Post spacing

The distance between the posts must be less than 1500 mm. The distance must be chosen so that the guardrail can support a lateral force of 500 N/m.



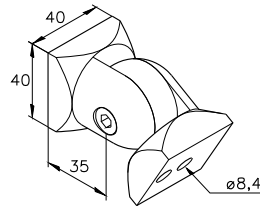
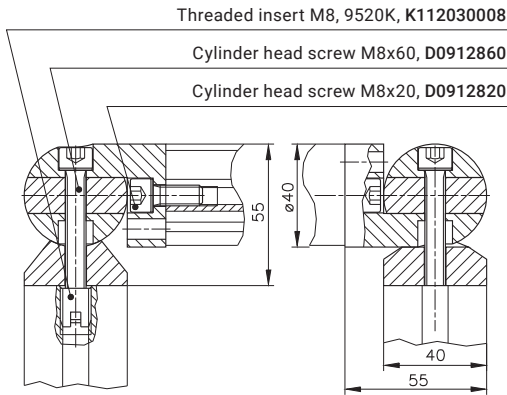


Hinges for Hand Rails

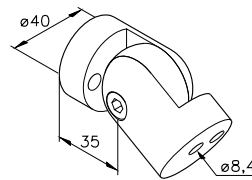
Our lightweight and sturdy hinges for hand rails are always used in combination with mk 2040.01 and mk 2040.16 profiles. The hinges are also available in optional surface variants, such as anodised or painted in various RAL colours.

Material: Tumbled aluminium

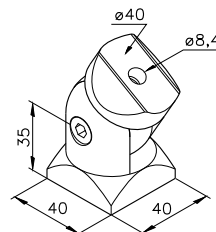
Fastening example with hinge 40/H5 **B46.01.026**



Hinge 40/H1
B46.01.022*



Hinge 40/H2
B46.01.023*



Hinge 40/H4
B46.01.025*

*With fastening accessories

Guardrails

Hinges for hand rails

Material: Tumbled aluminium

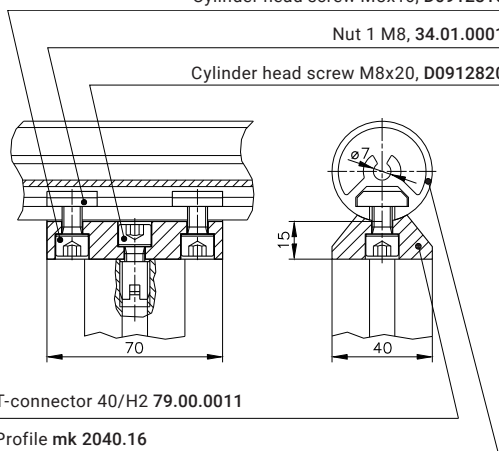


Fastening example with T-connector

Cylinder head screw M8x16, D0912816

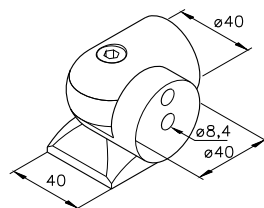
Nut 1 M8, 34.01.0001

Cylinder head screw M8x20, D0912820

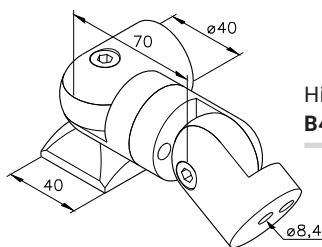


T-connector 40/H2 79.00.0011

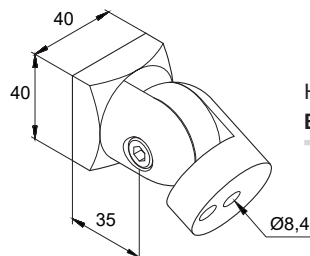
Profile mk 2040.16



Hinge 40/H5
B46.01.026*



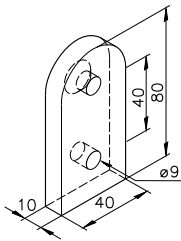
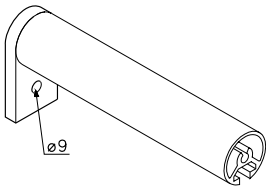
Hinge 40/H3
B46.01.024*



Hinge 40/H6
B46.01.027*

Wall Joint

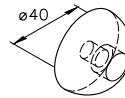
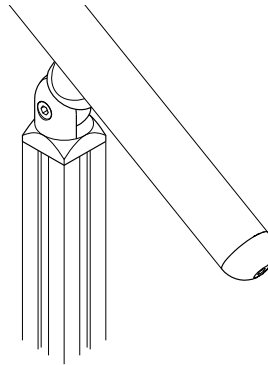
Material: Tumbled aluminium



Wall joint
50.03.0034

Cap

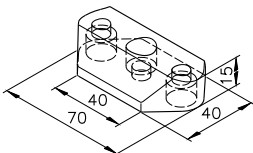
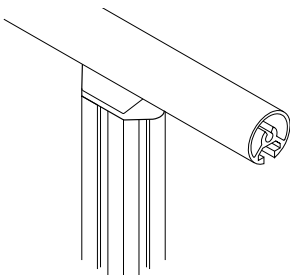
Material: Tumbled aluminium



Cap
76.01.0002

T-connection

Material: Tumbled aluminium



T-connector 40/H2
79.00.0011

Section 10 Tools



Drills

Twist drills

326



Taps and Forming Taps

Taps

326

Forming taps

326

HELICOIL taps

326



Installation Tools

Installation tool for threaded insert

326

Installation tool for HELICOIL

326

10



Allen Wrench Set

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Magnetic Holders for Nuts

327



Parting Tool for Cleanroom Profiles

327



Sanding Sponge

327



Drilling Jigs

Drilling jigs for
tension plugs 328

Drilling jigs for
cleanroom profiles 329

Drilling jigs for
pneumatic components 330

Tools

Drill



Order no.	Type
K903000058	Twist drill, ø 5.8
K903000070	Twist drill, ø 7
K903000080	Twist drill, ø 8
K903000090	Twist drill, ø 9

Taps and Forming Taps



Order no.	Type
K903060005	Tap, M5
K903060105	Tap, M5x0.5
K903070008	Forming tap, M8
K903060008	Tap, M8
K903060108	Tap, M8x1
K903060109	Tap, M9x1
K903060010	Tap, M10
K903060012	Tap, M12
K903060113	Tap, M12x1.5
K903060016	Tap, M16
K903060116	Tap, M16x1.5

Order no.	Type
K903060204	Tap, (HELICOIL) M4
K903060206	Tap, (HELICOIL) M6
K903060208	Tap, (HELICOIL) M8
K903060210	Tap, (HELICOIL) M10

10

Installation Tool for Threaded Insert



Order no.	Type	Thread	Length
K902010004	H	M3	58 mm
K902010005	M	M3	82 mm
K902010008	H	M5	69 mm
K902010009	M	M5	101 mm
K902010010	H	M6	74 mm

Order no.	Type	Thread	Length
K902010011	M	M6	102 mm
K902010012	H	M8	81 mm
K902010013	M	M8	105 mm
K902010016	H	M12	95 mm
K902010017	M	M12	118 mm

Type H = manual, type M = automatic

Installation Tool for HELICOIL



Order number	Type	Thread
K902010204	H	M4
K902010206	H	M6

Order number	Type	Thread
K902010208	H	M8
K902010210	H	M10

Type H = manual

Allen Wrench Set



The ball side is used for quick and easy turning of the screw. When tightening, the long key side provides the necessary tightening torque. The wrenches are made of high-quality chromium-vanadium steel.

Order number	Type
K902005050	Wrench set, eight piece

Magnetic Holders for Nuts



Strong magnetic lifting device with flexible brass hose and black plastic handle, chrome-plated surface, for holding nuts in inaccessible vertical slots.

Order number	Type
K901130001	Magnetic lifting device

Parting Tool for Cleanroom Profiles



For cutting or exposing slots in cleanroom profiles.

Order number	Type
B46.03.102	Parting tool

Sanding Sponge



For smoothing the sharp edges of the exposed slots created by the parting tool.

Order number	Type
K902030001	Sanding sponge

Tools

Drilling Jigs for Tension Plugs

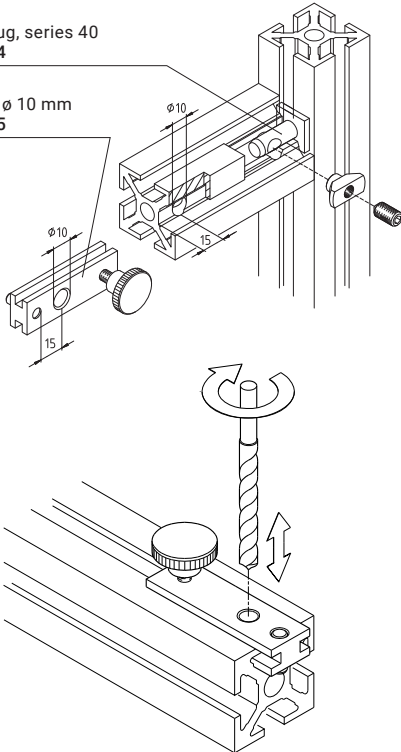
Drilling jigs are used to precisely drill bores for tension plugs. The ϕ 6 drilling jig is used for B51.03.009 tension plugs and the ϕ 10 drilling jig is used for B51.03.004, B51.03.040 and B51.03.041 tension plugs.

Material: Hardened steel

Fastening example

Tension plug, series 40
B51.03.004

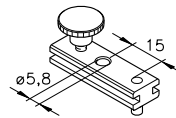
Drilling jig, ϕ 10 mm
B51.03.005



25 | 40 | 50 | 60

Drilling jig
B46.03.003

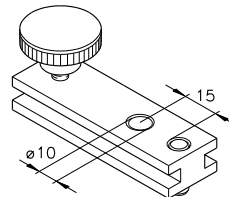
ϕ 6 mm
A=15 mm



25 | 40 | 50 | 60

Drilling jig
B51.03.005

ϕ 10 mm
A=15 mm

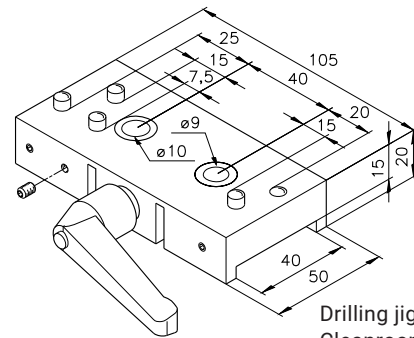
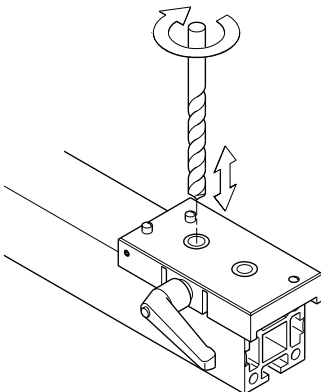
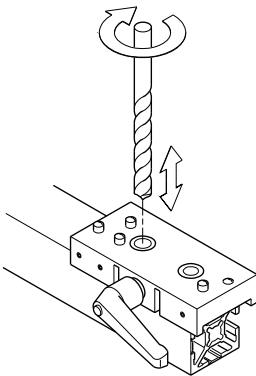




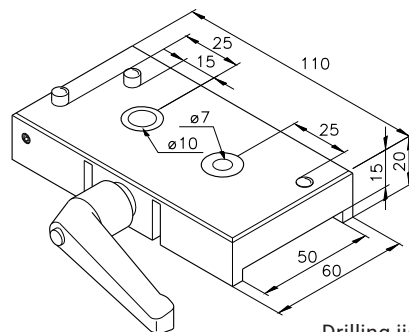
Drilling Jigs for Cleanroom Profiles

Drilling jigs with hardened steel bushings are used to drill bores in cleanroom profiles.

Material: Tumbled aluminium



Drilling jig
 Cleanroom 40
B51.03.020



Drilling jig
 Cleanroom 50
B51.03.035

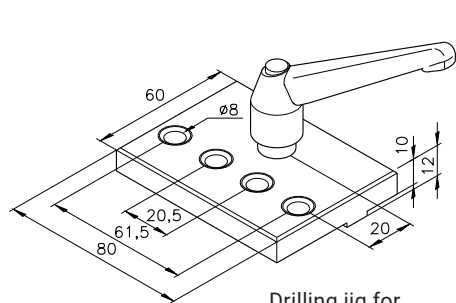
Tools

Drilling Jigs for Pneumatic Components

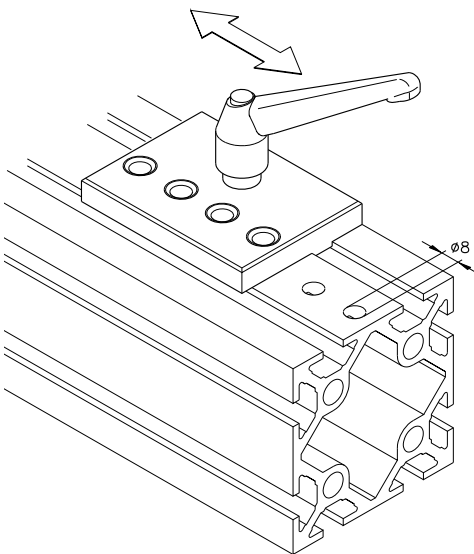
Drilling jigs with hardened steel bushings are used to drill bores in profiles for attaching pneumatic connections.

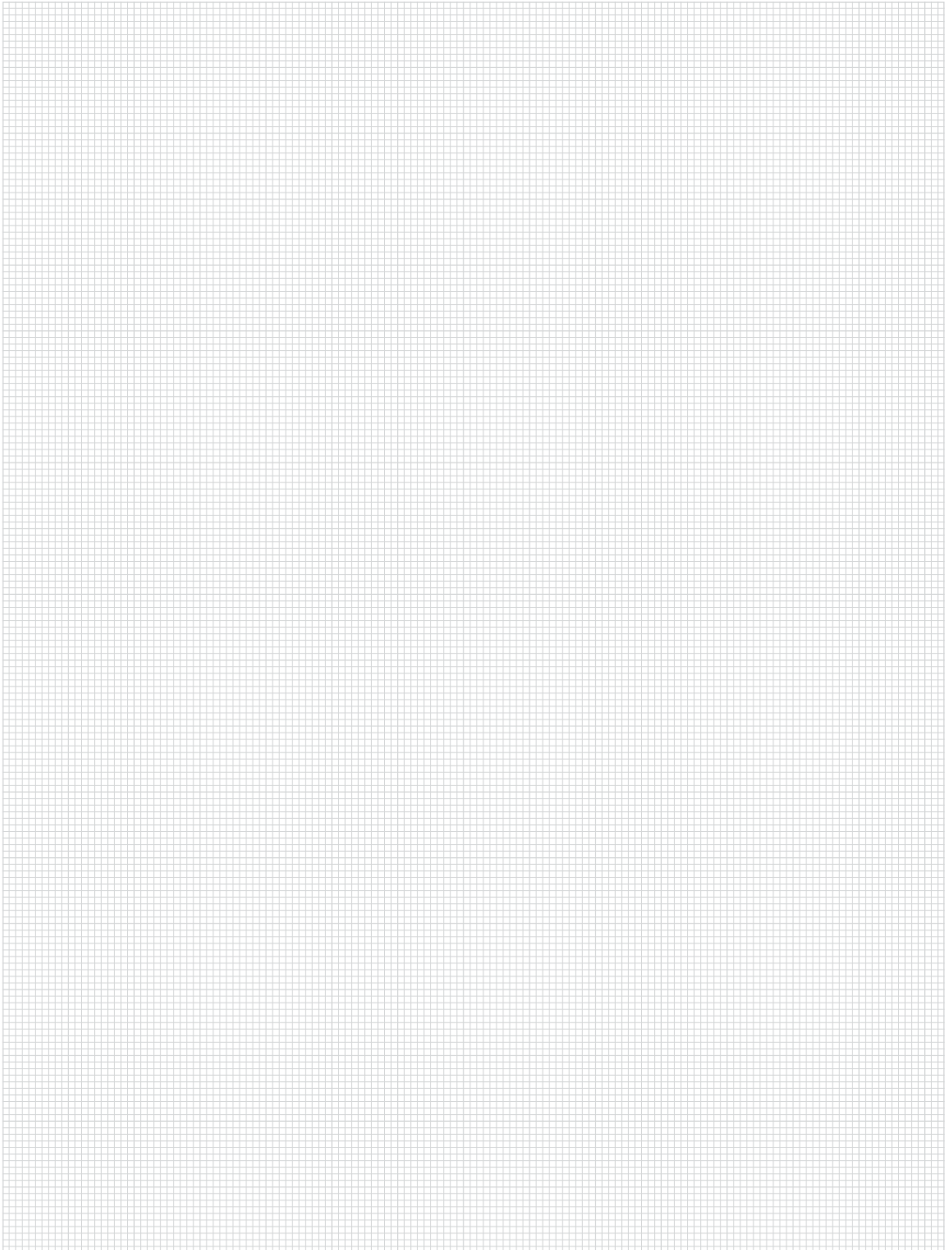
Material: Tumbled aluminium

25 | 40 | 50 | 60

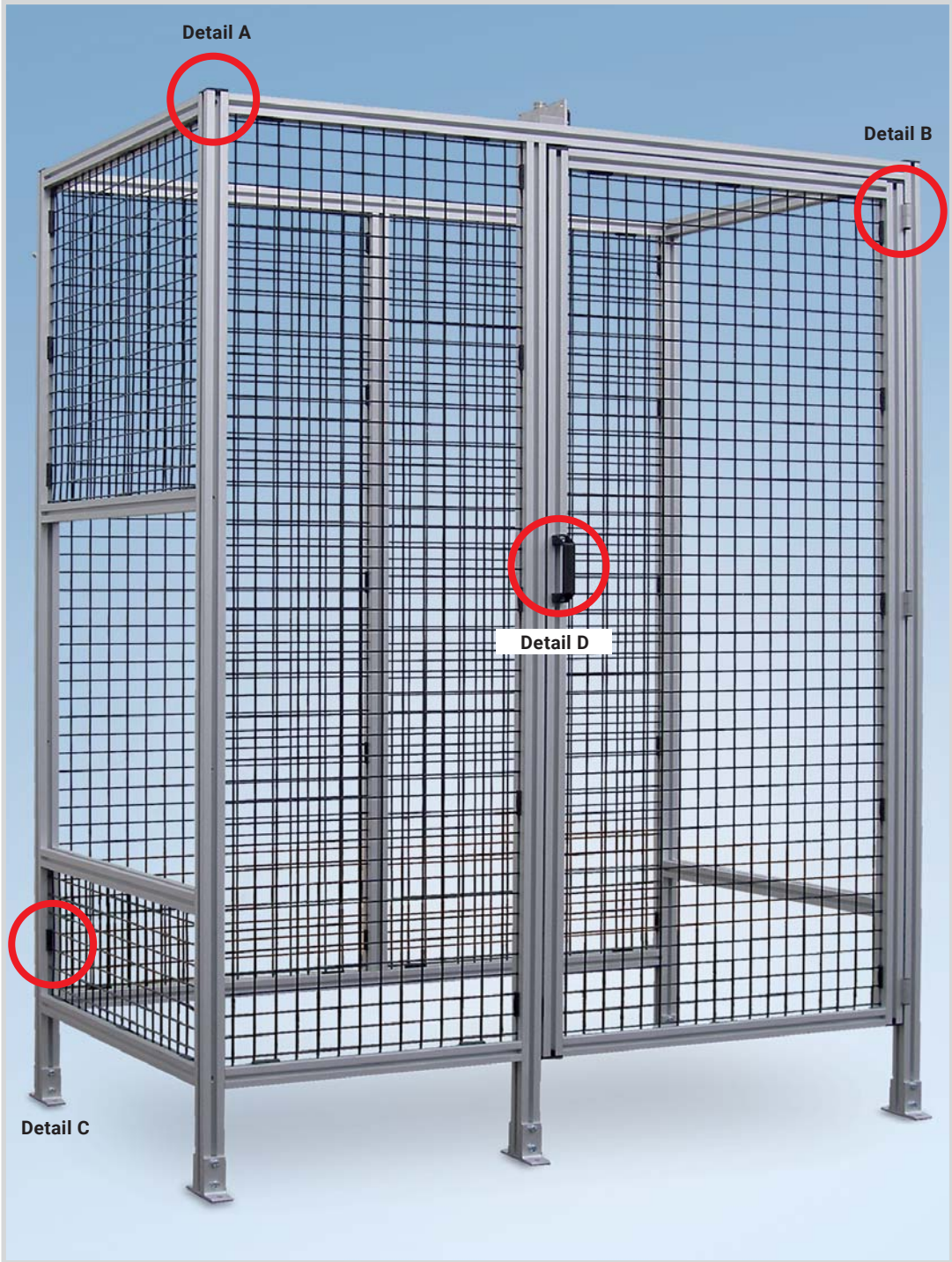


Drilling jig for
pneumatic components
B46.03.007



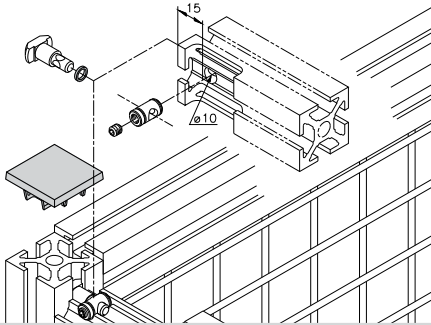


Application Examples with Instructions for Mounting



Detail A

→ Page 108



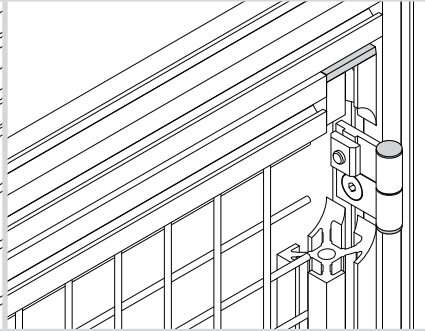
Tension plug

B51.03.040

The connection requires a $\varnothing 10$ mm through-bore 15 mm from the edge. Use the Series 40 drilling jig B51.03.005. After you insert the bolt in the bore, guide the tension plug into the profile's face and secure it by gently tightening the set screw. The traverse can now be connected to another profile in any position you wish.

Detail B

→ Page 251



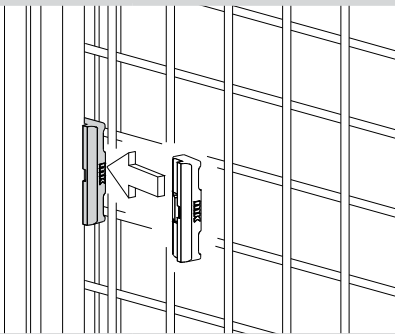
Hinge 40-1/40-1

B46.01.010

A hinge is mounted between two profiles using countersunk head screws and nuts that fit the particular profiles series. The fastening accessories you need are included in the set. The keys on the hinge leaves ensure that the components are parallel.

Detail C

→ Page 244



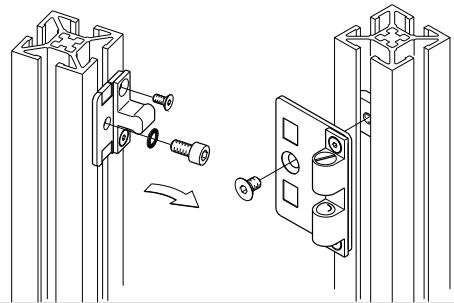
Fence clip

mk 2544

Fence clips can be used to quickly mount welded grids onto Series 40 profiles. You simply hammer the clip into the profile slot. To adequately secure the welded grid in the profile frame, the fence clips should be a maximum of 200 mm from the corners and 520 mm from each other.

Detail D

→ Page 255



Ball latch

**B68.02.101 for 5 mm door gap and
 B68.02.102 for 24 mm door gap**

Ball latches are a simple and affordable option for locking doors that do not require safety interlocking. They are easily installed with screws and nuts.

Application Examples with Instructions for Mounting

Protective Device Guard for Cleanroom



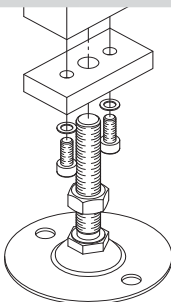
Protective device guard for applications in the cosmetics industry. Because of the stringent sanitary requirements, the machine housing was built from Series 40 cleanroom profiles with closed profile slots. Scratch-resistant Makrolon was used as the panelling material to provide an unobstructed view of the packaging station. Stainless steel levelling feet were also used, which are ideal for the conditions mandated by the sanitary regulations.

Detail A

→ Page 162

Detail B

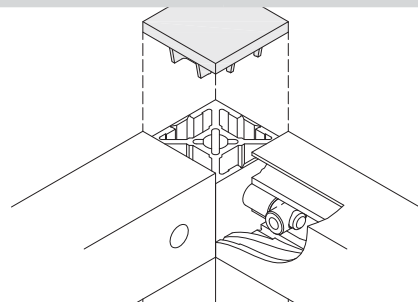
→ Page 53



Stainless steel levelling feet

B67.02.081

Stainless steel levelling feet are ideal for use in cleanrooms or for meeting FDA requirements. The foot's domed shape also ensures that liquids will run off. The height adjustment and swivel range allows the levelling foot to compensate for height differences and uneven surfaces. In addition, they can be anchored to the floor.



Cleanroom profiles with silver end caps

mk 2040.96 profile with mk 2507SI end cap

The caps match the matte silver colour of the anodised profiles to fit discretely into your overall structure. They are made of sturdy injection-moulded plastic and close the profiles' faces to protect against damage and provide seamless transitions at the edges.

Protective Device Guard for Measuring Station

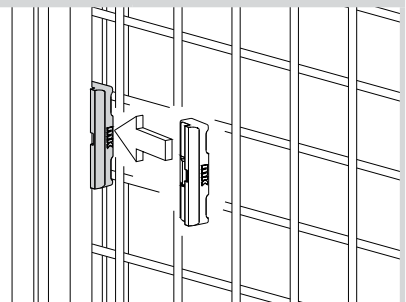
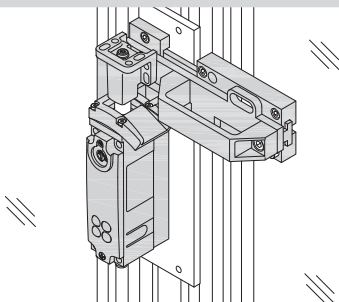


The system's gripping and transfer station is safeguarded using panel frames with welded grids in a custom RAL colour all around the station. The in-feed area and the measuring cell are protected by panel frames with polycarbonate and cover panels. A space-saving folding door is installed in addition to the swing door.

Detail A

Detail B

→ Page 244



Safety interlock

Safety interlock with tower bolt, folding door locking device, reliable lock monitoring and integrated CES-AP electronics. This interlock does not require a special evaluation unit. The interlock meets safety category 4 and PL e according to EN ISO 13849-1 when installed horizontally, i.e. with the top facing downwards. It has two failsafe semiconductor outputs and an OUT signal output, in addition to clocked safety outputs.

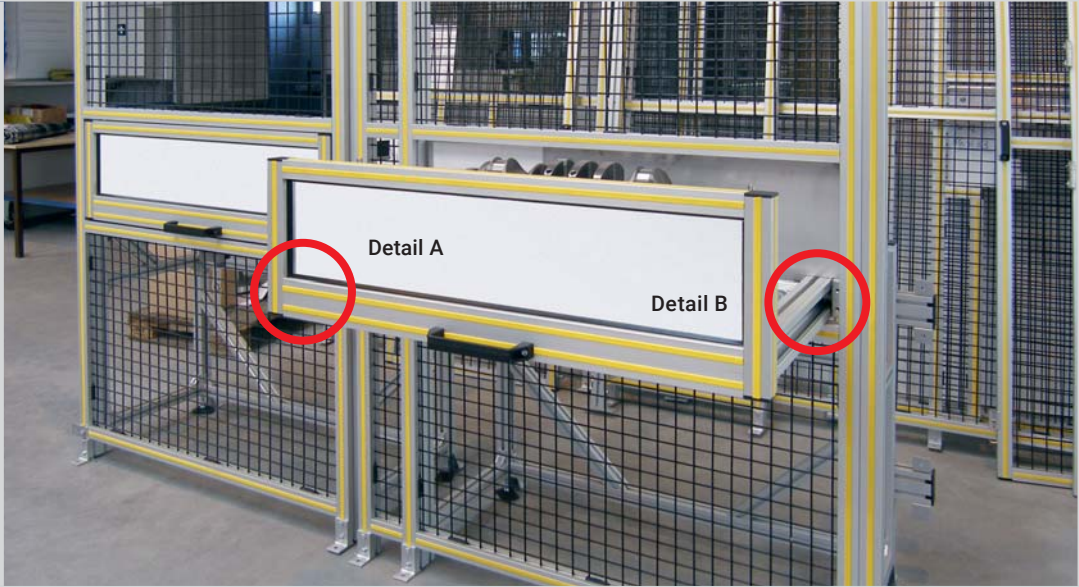
Fence clip

mk 2544

Fence clips can be used to quickly mount welded grids onto Series 40 profiles. You simply hammer the clip into the profile slot. To adequately secure the welded grid in the profile frame, the fence clips should be a maximum of 200 mm from the corners and 520 mm from each other.

Application Examples with Instructions for Mounting

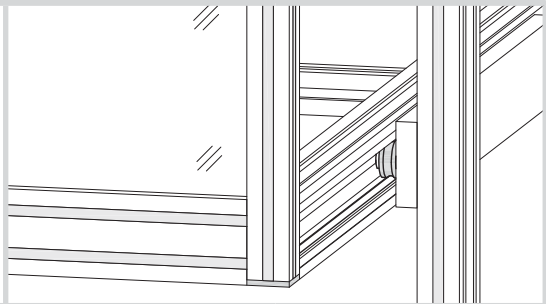
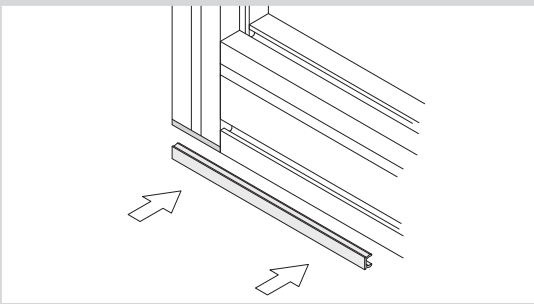
Protective Device Guard with Drawers for Manual Removal



Protective device guard around a measuring station for crankshafts, built using partitions with welded grids. The front partitions are equipped with a drawer with full extension for manual removal of the parts. The back side of the drawer therefore closes off the protected area while the part is being removed, which means the process does not have to stop.

Detail A

→ Page 146 **Detail B**



Closure strips

mk 3015

The open slots in the mk 2040.40 (40 x 40 mm), mk 2040.41 (40 x 80 mm) and mk 2040.45 (80 x 80 mm) profiles are closed using closure strips in a custom yellow colour in use at the customer's factory. The closure strips prevent dirt from getting in the slots. Various colour standards from mk allow for accents that are adapted to the customer's requirements.

Drawer with track roller assembly

Profile guide B51.04.142

The drawer's track roller assembly is built from an interior profile guide (PF-10-38.77) with a \varnothing 10 mm guide rod. The roller carriage (LW 38.77-44) is fixed to the frame. Low rolling resistance allows easy opening and closing. The simple and sturdy design requires low maintenance and exhibits low wear.

Protective Device Guard with Sliding Doors



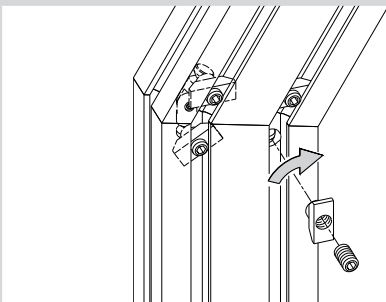
A machine housing was built for a manual lathe. The shape and appearance of the guarding needed to be adapted to the lathe. The housing was completely closed off using sheet panels to prevent chips and drilling fluid from getting into the production hall. Two separately controlled sliding doors allow easy access and operation of the machine. The sliding doors are electrically driven using timing belts.

Detail A

→ Page 113

Detail B

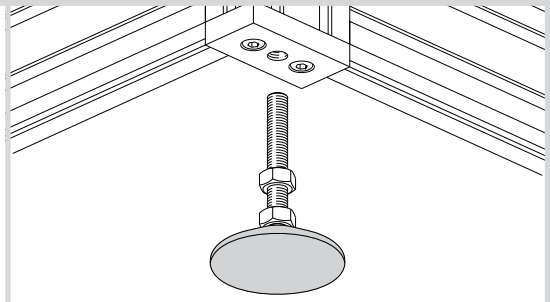
→ Page 157



Swivel clamp connector

B51.03.011

Hinge tension plugs allow the connection of miter-cut Series 40 profiles. All connection angles from 0° to 90° are possible. The connection requires a single-sided \varnothing 10 mm bore in both profiles on the chamfered side, 15 mm from the centre of the cut edge.



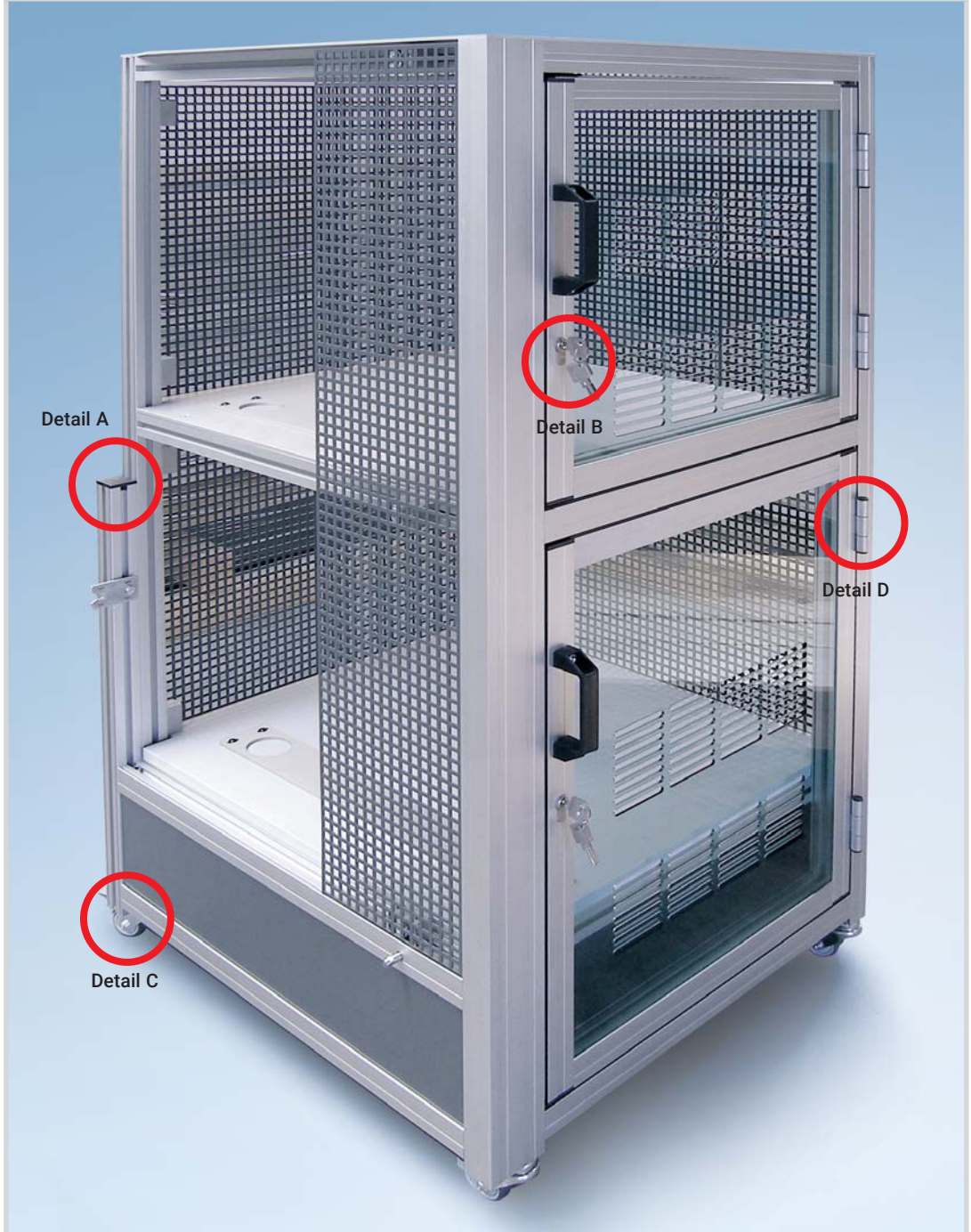
Levelling foot KB M12

B67.02.001

The levelling foot is screwed into the foot plate that matches the profile, in this case foot plate I M12 (50.02.0035). Once the height is adjusted, the foot is locked using the nut on the foot plate. The levelling foot has an adjustment range of 75 mm and a load capacity of 1,500 N. The ball joint allows for compensation of slanted surfaces.

Application Examples with Instructions for Mounting

Protective Enclosure with Swing Doors



Detail A

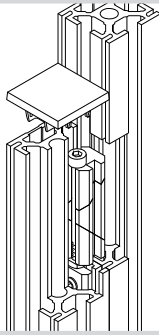
Detail B

Detail D

Detail C

Detail A

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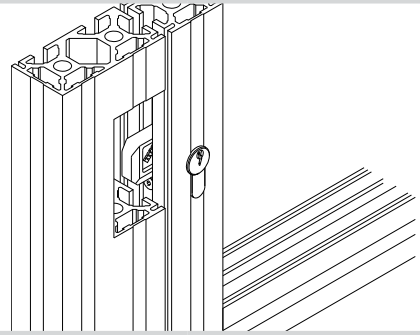
Parallel clamping connector

B51.03.017

The parallel clamping connector connects profiles in parallel without additional machining. The connector is inserted into the two opposite-facing slots and tightened using an Allen key.

Detail B

→ Page 257



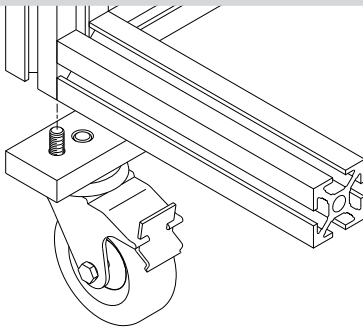
Cylinder lock

B68.02.051

The lock is designed for installation in the mk 2040.01 and mk 2040.40 profiles. This requires profile machining 5401BC or 5440BC. Both the total length of the profile and the distance from the bottom end of the profile to the bottom edge of the lock must be specified. To install the lock, the profile cylinder is pressed through the profile opening into the swivel bolt and then secured using a screw and nut connection.

Detail C

→ Page 182



Fixed and swivel casters

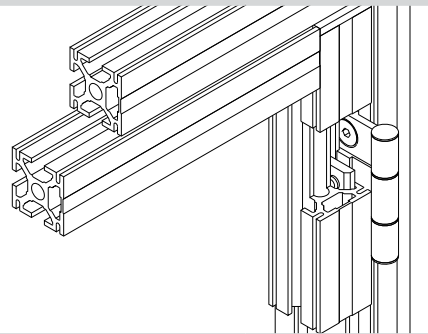
K106001041 and K106000141

The casters are attached in the centre of the foot plate that matches the profile (foot plate I M10 in this case) using an M10 hexagon head screw. The casters have a load capacity of 600 N. The swivel casters have a locking device.

50.02.0041 foot plate I M10

Detail D

→ Page 251



Hinge 40-1/40-7/40-1

B46.01.030

The hinge is mounted between two profiles using countersunk head screws and nuts that fit the particular profiles series. The fastening accessories you need are included in the set. The keys on the hinge leaves ensure that the components are parallel. The use of three hinge leaves means that the door cannot be unhinged and removed without removing the hinge.

Application Examples with Instructions for Mounting

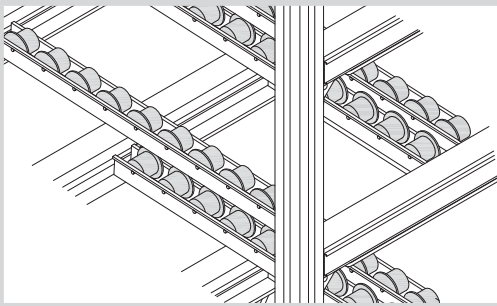
Custom Industrial Workstation



To assemble components quickly and easily, fitters need to have all the necessary parts within easy reach directly at their workstation. Once a bin is empty, it is removed and another slides into place. If electric/pneumatic tools are needed to help with assembly, they can be operated using the integrated power sockets and pneumatic connections.

11

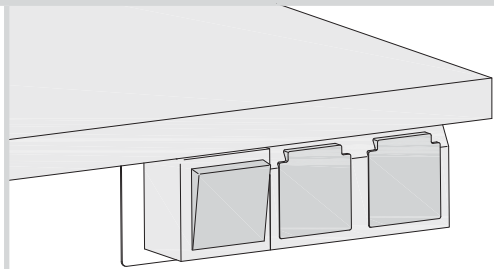
Detail A



Roller strips

Roller strips are mainly used in carton flow racks to reliably transport boxes. The rollers are made from a thermoplastic material that is resistant to impacts and breakage. The worker removes empty bins, and gravity causes full bins to slide into place so that the supply of materials is not interrupted.

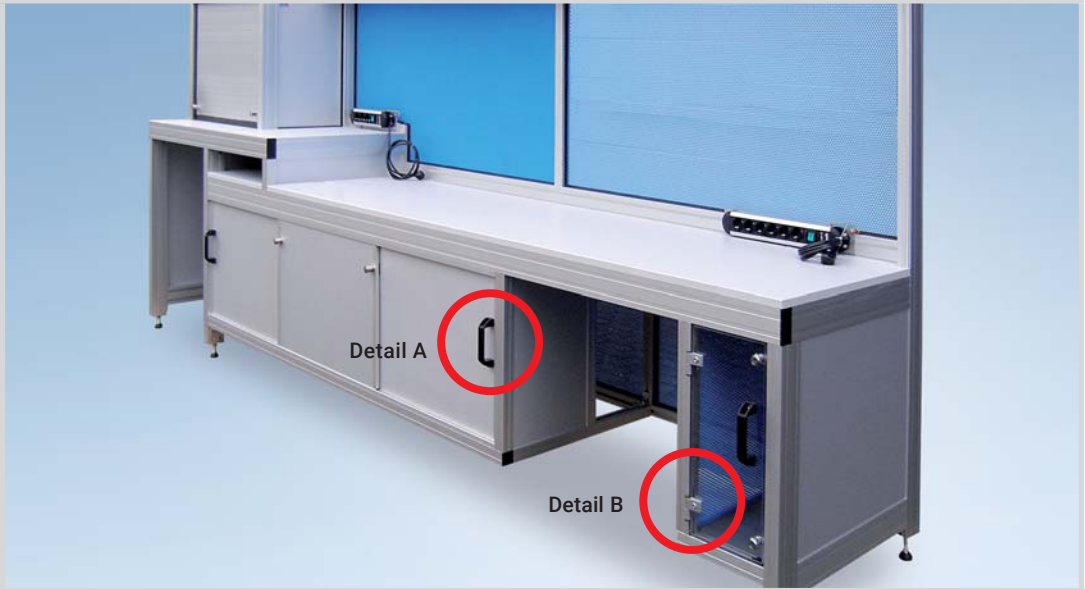
Detail B



Electrical supply

Power strips supply the power needed for the electric tools used in assembly. Various sockets and switch combinations can be freely positioned along the entire working width. The unit features exceptional sturdiness and an attractive design.

Custom Industrial Workstation



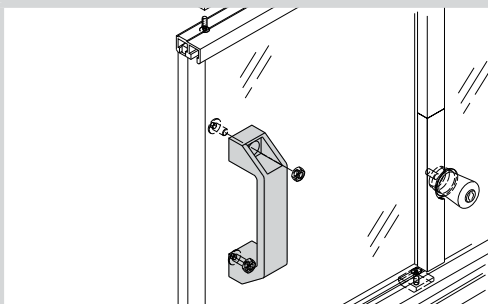
Workstation built to customer specifications with custom storage options and lockable sliding doors made from Alucobond®. A special feature is the raised work area with a lockable tambour door that slides upwards, which was customised to meet the customer's specifications. Series 40 closed profiles were used to meet the customer's requirement for closed surfaces in the workstation.

Detail A

→ Page 268

Detail B

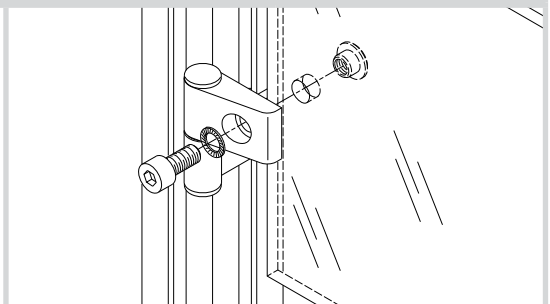
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Bracket handle

K11000020

The handle is mounted directly on the door panelling using two M6x16 screws (D0912616) and two M6 hexagon nuts (D09346). Two \varnothing 6 mm bores are drilled in the panelling at a distance of 152 mm.



Hinge 40-1/40-3

B46.01.050

The hinge is mounted directly on the 6 mm thick Makrolon plate. A \varnothing 10 mm bore at a distance of 20 mm from the edge is required for each hinge. All necessary fastening accessories are included in the set. The key in the hinge leaf ensures that the elements are parallel.

Application Examples with Instructions for Mounting

Kanban System Workstation – for Manual Product Removal



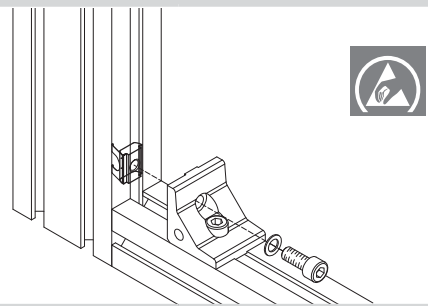
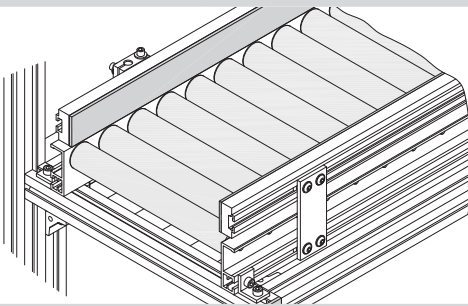
This kanban workstation is used for picking variable assemblies. The worker removes the appropriate parts from the kanban supply system. Empty bins are placed on the lower gravity roller conveyor and conveyed back to signal the need for a refill. The frame was made from Series 40 profiles in an ergonomic design and in accordance with customer requirements.

11

Detail A

Detail B

→ Page 135



Gravity roller conveyor

The picker pushes the containers along the RBS-P 2065 gravity roller conveyor past the individual parts and arranges them according to the particular assembly variant.

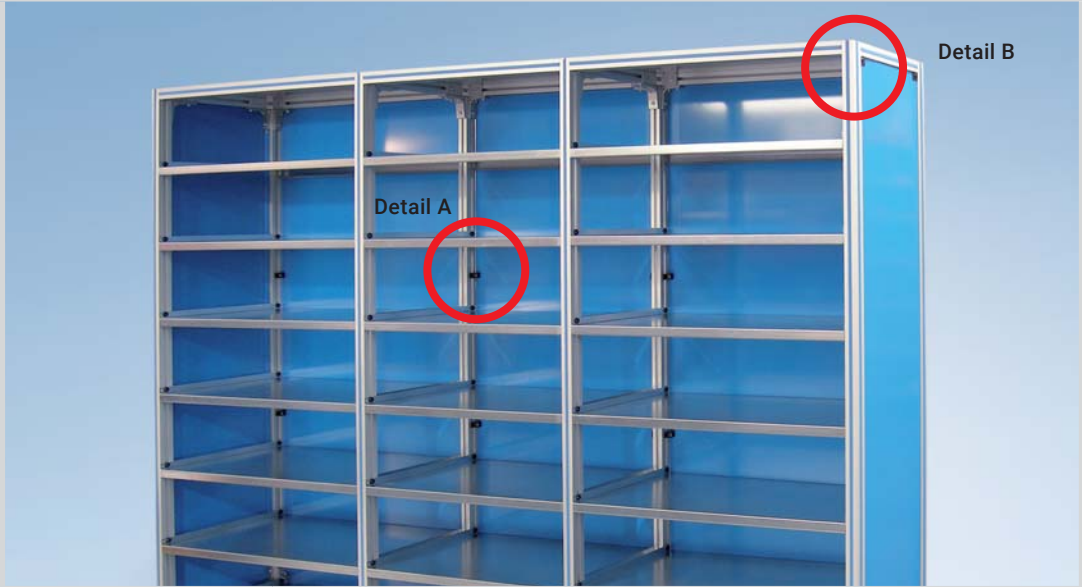
The supply technician removes the empty bins from the rear, fills them and then feeds them in again at the top.

Swivel-in nut 1 M8

34.16.0831

To avoid electrostatic discharge, ESD nuts were used throughout the entire system to prevent potential differences from building up. Discharge of these potentials could damage electrical components and was therefore to be avoided.

Kanban Shelf – for Manual Product Removal



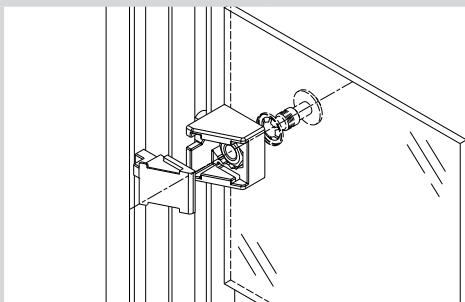
Each kanban system also uses kanban shelves that do not require constant restocking. Stocking from the rear side was therefore not required. The shelf is for items that are used infrequently during the assembly process, which are best stored in this shelf with plenty of storage space.

Detail A

→ Page 240

Detail B

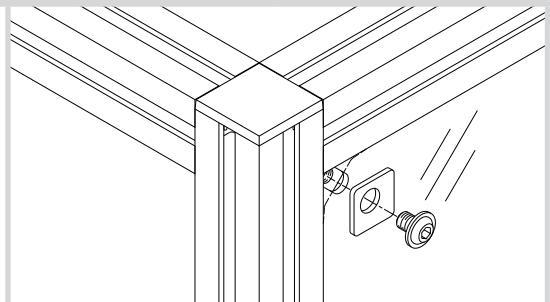
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Captive fasteners

B34.01.003

The captive fasteners, together with a undercut flanged button-head screw and ribbed washer, are used to retrofit panelling into existing structures in accordance with the Machinery Directive. The panelling requires $\varnothing 9$ mm bores at a distance of 10 to 15 mm from the profile frame.

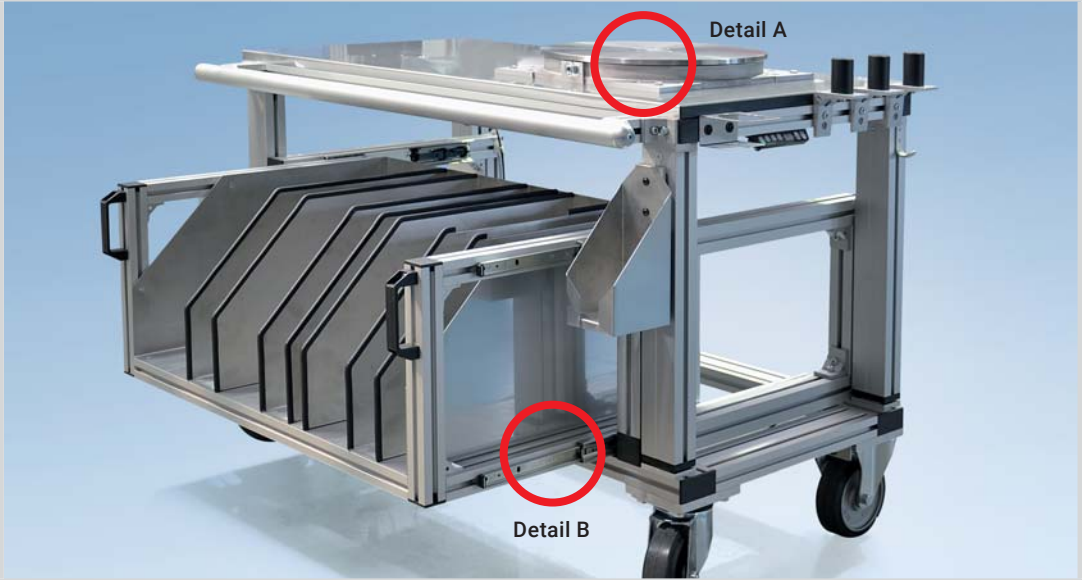


Angle fasteners

This type of fastening is suitable for sheets 1.52 mm thick. The edge bending around the sheet provides the necessary stiffness up to side lengths of 1200 mm. For lengths greater than this, an additional mk 2578 holder is required. The angles must have an M8 thread on the side. A shim (07.01.0005) is used to cover the oblong hole, and the sheets are screwed on using flanged button-head screws.

Application Examples with Instructions for Mounting

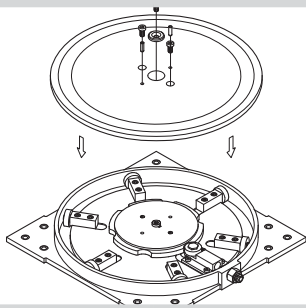
Custom Supply Trolley



Assembly and supply trolley with electrical height adjustment for assembling a drive unit. The unit is assembled on the top level. To ensure continuous assembly flows in production, the trolley can be moved to various assembly stations and docked using magnets. The trolley's lower level contains customised storage compartments, which can be slid out to allow for easier removal of the components to be assembled.

11

Detail A

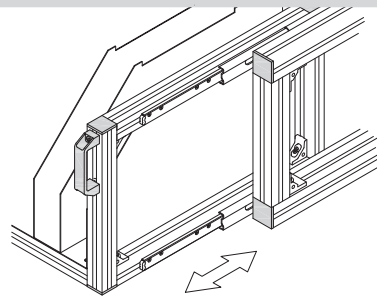


Rotary disk

B12.00.001

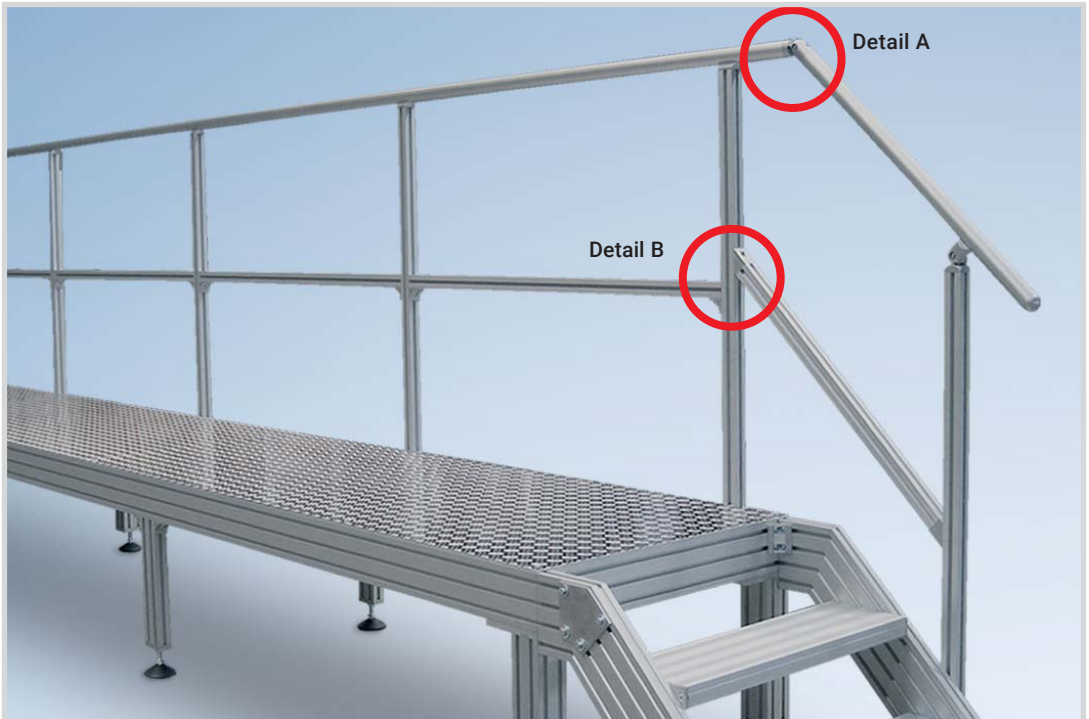
The rotary disk is ideally suited for the manual assembly process. Heavy loads can be quickly and easily positioned to facilitate assembly. The rotary disk has an incremental function, in this case $6 \times 60^\circ$, which allows the disk to be fixed in pre-defined positions. It can support a maximum load of 100 kg.

Detail B



Sliding compartment

The sliding compartment runs on a ball guide, which is attached at the sides (top and bottom) and has a load capacity of 150 kg. The guide retracts automatically and locks in the closed position, and it features damping at the end positions.

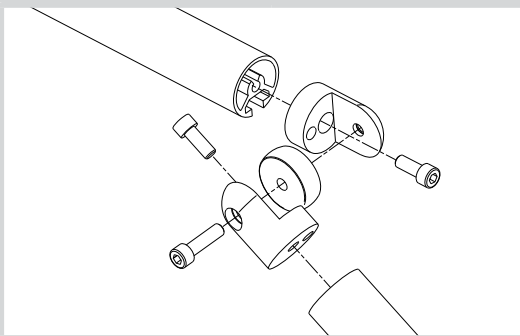


Detail A

→ Page 321

Detail B

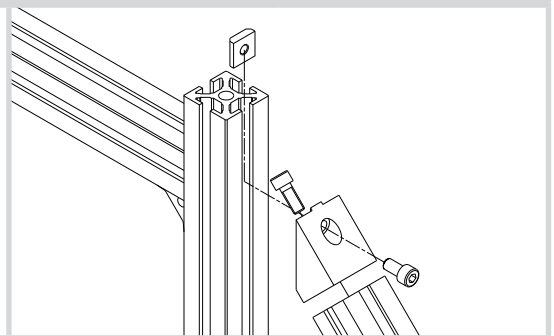
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Hinge 40/H2

B46.01.023

The hinge connects two mk 2040.16 profiles at any angle. First the two halves of the joint are screwed to the profiles using cylinder head screws, and then the entire assembly is assembled and locked using an additional cylinder head screw. All fastening accessories are included.



45° block

79.01.0066

The block is used to connect two profiles at an angle of 45°. The block is screwed to the face of a 40 x 40 profile and fastened to the other profile using a screw and nut connection.

Application Examples



System frame built from Series 25 profiles



System frame built from mk 2025.02 profiles



Fire engine interior built from Series 25 profiles



Cleanroom warehouse with storage and retrieval device and transfer stations built from mk's Series 40 cleanroom profiles



Mobile support frame built from Series 40 cleanroom profiles



Frame built from Series 40 profiles for a system that monitors plant growth

Application Examples



Flexible light-duty frame made from Series 40 profiles for desalination plant

11



Machine frame made from Series 50 profiles



Overhead structure built from Series 40 profiles to support supply lines for assembly workstations



Base structure built from Series 40 and Series 60 profiles



Base frame with levelling feet and holders for workpiece carriers

Application Examples



Custom guarding for production machine

11



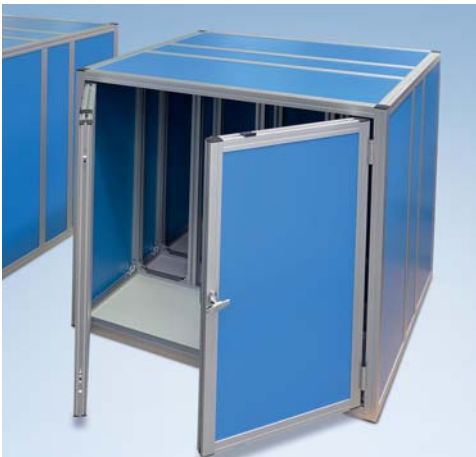
Protective device guard with Alucobond® and polycarbonate panelling material



Scanning enclosure with double swing doors



Cabinet with swing doors and ball latches, powder-coated cover panels, table top and removable shelves



Container with double swing door, rod-locking cabinet latch and tower bolt



Custom guarding with lifting swing door operated by pneumatic springs

Application Examples



Guarding with welded grids (partition method)
for tray transport system

11



Guarding with swing doors made
from cleanroom profiles



Cabinet with swing doors
and sliding shelves



Standard guarding (pillar-panel solution)



Manual lifting doors with counterweights in the profile, connected by cable and idler pulleys, capable of balancing



Custom protective device guard made from partitions with powder-coated perforated sheets and sliding doors with solenoid latches

Application Examples



Guarding for airport security areas with Alucobond® panelling



Custom guarding for pushchair test bench



Swing door mounted in panel frame with black powder-coated welded grid



Guarding with swing door (partition method)



Telescopic guarding on casters

Application Examples



Custom assembly table with linear guide and pneumatic tensioning device

11



Assembly workstation with crank-operated manual height adjustment, 600 kg load capacity



Assembly workstation with integrated press and document holder



Workstation with electro-hydraulic height adjustment and base cabinet



Workstation with hydraulic height adjustment and swivelling steel shelves with adjustable depth



Test station made from Series 50 profiles, base cabinet with drawers and swing door, riser with steel and perforated sheet panelling



Assembly workstation with lowering mechanism based on electrically driven hydraulic cylinders

Application Examples



Kanban workstation for increasing productivity by decoupling assembly and supply logistics



Workbench with swing doors and swivelling device for work surface



Custom test station with 19 inch rack and monitor mount



Assembly line for pumps built from Series 50 profiles with profile slots closed using red closure strips



Rolling workbench made from Series 50 profiles with three drawers for storing tools



Workstation with protective cover and manually adjustable sliding element



Test bench for pumps with perforated sheet panelling, sliding door and keyboard shelves

Application Examples



Interlinked industrial workstation with integrated electrical supply and driven roller conveyor

11



Service and assembly units



DFT flow line for manufacturing vacuum pumps



Material supply trolleys; bins of various sizes can be hung from the open slots in the profiles



Transport trolley in which the spring-loaded floor lowers when weight is applied and rises again when the weight is removed



Supply trolley made from Series 40 profiles painted red

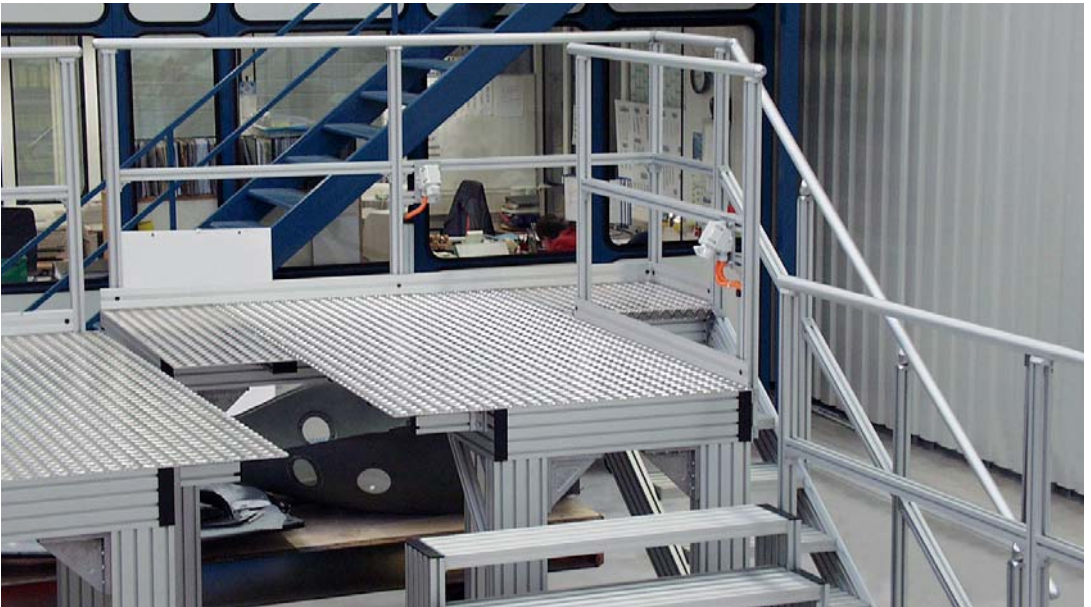


Material supply trolleys made from Series 40 cleanroom profiles with acrylic shelves

Application Examples



Assembly platform made from Series 40 profiles with levelling feet



Platform with Series 40 hand rails along one side of platform and stairs



Free-standing assembly platform, 15 metres long, with high-load stairs for secure grip when carrying heavy loads



Posts connected to platform and toe kick using angles



Guardrail posts built from mk profile technology can be used to attach various components, e.g. electronics supply equipment

Application Examples



Free-standing assembly platform with 45° stairs

11



T-connector 40/H2 for hand rail



Hinge 40/H3 for the intersection between stairs and platform



Guardrail corner with hinge 40/H2



Assembly flap in platform floor
 with anti-slip covering



Extremely sturdy connections consisting of die-cast angle brackets, standard angle brackets and beam profiles are available for all profile series



Platform support with air cushion transport system



Platform for performing maintenance and assembly work on helicopters safely and with ease

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