

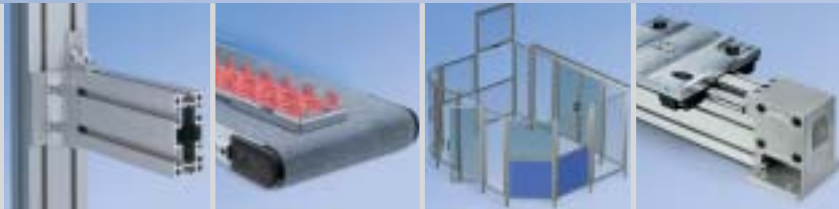


mk Factory Equipment

One construction kit – many options



Base Technology



Profile Technology

Conveyor Technology

Factory Equipment

Linear Motion

Advantages of the mk modular system

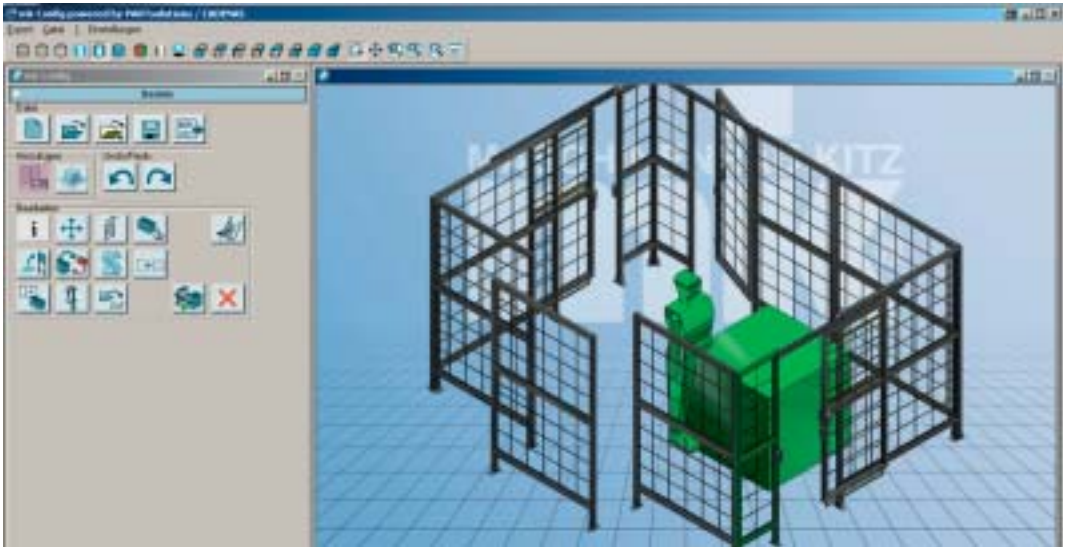
- Everything comes from one source: interchangeable modules and components for profile, conveyance and linear technology, as well as factory equipment
- Outsourcing of various project functions at a fixed price helps integrators to minimize their project costs and risks
- Coverage of all basic mechanical functions for modern factory automation
- The widest profile range on the market reduces the need for special design and therefore provides a cost benefit due to standardization
- High material quality, solid connecting technology and high-quality accessories guarantee high loading capacity and long service life
- The highest flexibility for system extensions or alterations due to reusability of individual components and modules
- The degree of assembly of our products can be freely selected, guaranteeing optimum adaptation to existing utilization of resources at all times
- The modular construction is subject to constant optimization and extension because mk itself uses it daily for the preparation of customer-specific solutions

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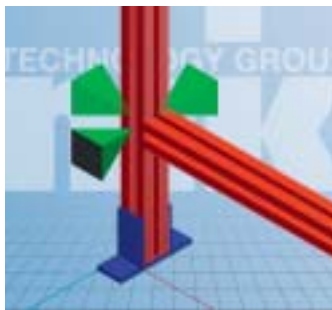
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Our 3D Product Configurator

mk Config



Fast and Easy Design of Perimeter Guarding



- Reduction of engineering and design time by up to 80 - 90%
- Standard and economy framing options
- Large variety of paneling, window and door options
- Reduced material costs by use of standardized components
- No CAD software or CAD skills required
- Can be installed or run directly from CD
- Easy to use interface with 3D graphics
- Automatic creation and dimensioning of 2D and 3D drawings
- Import .dxf layouts
- IGES, STEP and JPEG export formats
- Automatic generation of parts lists, cut lists, bill of materials lists and weight estimates
- Direct design verification and modification via e-mail
- Easier, faster and more accurate order processing
- Choose between different ordering options (raw materials, kit, assembled) depending on your workload and capacities

Our Factory Equipment Products

Our 3D configurator (mk-Config) allows you to construct guards with swinging, sliding and lift doors. Using individual modules, individual workstations for the

workshop, assembly areas or offices can also be set up. Our modules are complimented by a comprehensive range of stylish and functional guard rails, treads

and platforms that allow you to individually design your work areas and buildings.



Guarding



Workstations



Guard Rails, Treads, Platforms

Guarding

With guarding from mk, you are opting for a flexible and economic modular design. Choose from a large assortment of guarding modules, swinging door, sliding door and lift door elements that can be electrically secured on request. Pneumatic, hydraulic or electrically operated door elements can be easily integrated. mk allows you to design distance guarding that conforms to the applicable safety standards.

➔ Page 10

Workstations

The mk system makes it easy to custom design workstations in the workshop and in the assembly and office areas. Maximize the functionality and ergonomics of your workstations while remaining flexible and economical. The mk profile technology allows you to easily and cost-effectively design workstations based on your needs thanks to the modular design.

➔ Page 70

Guard Rails, Treads, Platforms

Safe access and platforms for your plant can be easily build with the mk GTP-System. Based on the proven mk profile technology, dimensionally accurate individual solutions for access, transitions or even work platforms can also be set up.

➔ Page 120

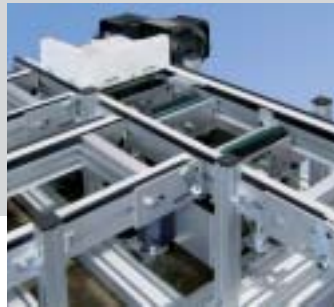
Introducing mk



*„We live our passion for technology –
this have shaped us for over 40 years“*



Maschinenbau Kitz GmbH, was founded in 1966 and is headquartered in Troisdorf, near Bonn, operates internationally; together with its subsidiaries and sales partners as the „mk Technology Group“. Backed by over 40 years of experience, mk sells mechanical modules, components for profile, conveyor and linear tech-



nology, as well as factory equipment. These products are based on more than 250 different aluminum profiles and extensive stainless steel sheet metal work. The modular construction principle these products offer ensure full compatibility between all products. The resulting benefits include considerable cost savings

during installation of the system, as well as a high degree of flexibility for future extensions and re-configurations. Our most important target markets include original machine constructions, as well as work in the automotive, electrical, packaging, pharmaceutical, and food industries.



Information about Factory Equipment



Advantages of mk Factory Equipment

- Fast and easy design and manufacture of individual guardings and workstations due to the modular design
- Less project-related fabrication leads to reduced costs due to the use of standardized and compatible modules
- Optimal functionality and ergonomics for workplaces and workstations thanks to a comprehensive construction kit system
- Easy conversion or expansion due to compatibility of the modules and reusable connection technology allows constant adjustment for changing assembly processes
- Attractive design of workstations thanks to the use of high-quality aluminum profiles
- Complementary assortment of dimensionally accurate guard rails, treads and platforms for safe work on your systems
- mk Config – the 3D product configurator for guardings simplifies planning and reduces project costs
- Rapid availability of all modules and individual parts from stock

Safety distance for 1400 mm tall partition

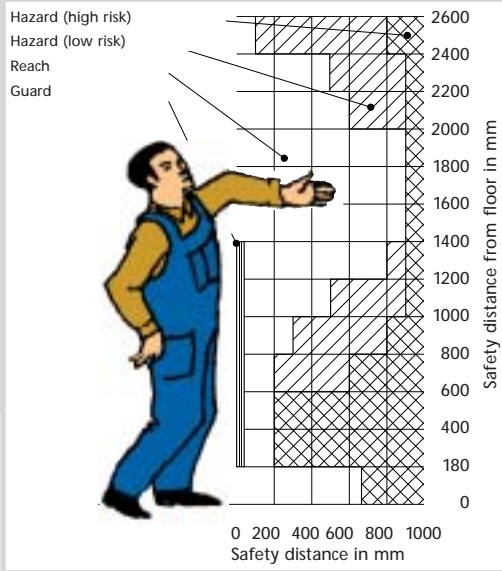


Figure a

Safety distance for 2000 mm tall partition

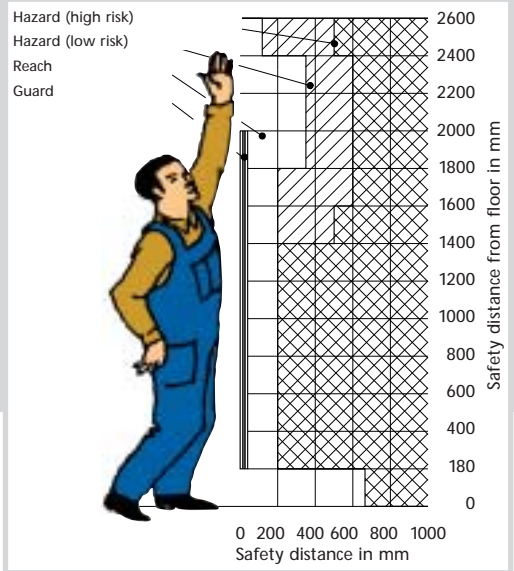


Figure b

Safety through mk Guarding

Effectively safeguard your plant with mk guarding systems. Choose from a wide range of guarding components and build barriers which are precisely matched to your individual spatial circumstances as well as the required safety distances of your plant. In this way you prevent employees or visitors from entering hazard zones or falling equipment, tools or workpieces from causing serious accidents.

All mk guarding is designed and produced taking into account the country-specific relevant safety standards. So that you are always on the safe side!










Safety Distances

Fixed safety distances are specified by local ordinances to effectively protect employees. Depending on the required safe distance, choose between closed paneling such as sheet metal, polycarbonate or glass (required safety distance = 0 mm) and open welded or corrugated fencing solutions (required safety distance with an opening of 40 x 40 mm = 200 mm). Guarding components with the standard frame heights 1400 mm and 2000 mm are available depending on the nature of the equipment or area to be protected (see Fig. a and b).

mk Guarding



Contents mk Guarding

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Guarding

System selection



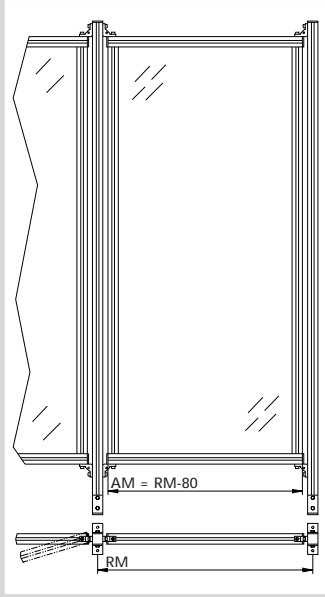
Apart from the ability to individually design guarding, mk also offers two different standards which are fully compatible with each other.

The post-panel solution is characterized by separate panel frames which are each mounted between posts anchored in the ground. In the panel solution, the posts with the panel infill form a unit and are erected next to each other, are connected and anchored in the ground.

The various solutions are based on the same base dimensions. This ensures continuous compatibility and modularity. In the

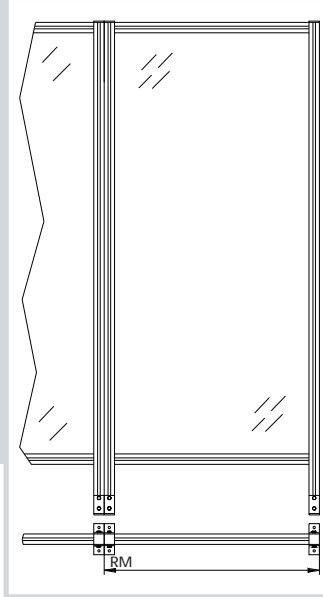
post-panel solution the base dimension extends from post centerline to post centerline and in the panel solution the base dimension refers to each frame's outer dimensions.

The default floor clearance of both systems is 200 mm, which enables easy floor cleaning with no critical safety or security issues. The favorable weight/strength ratio of the profile structure provides an ergonomically advantageous effect when it comes to handling and assembling the individual elements.



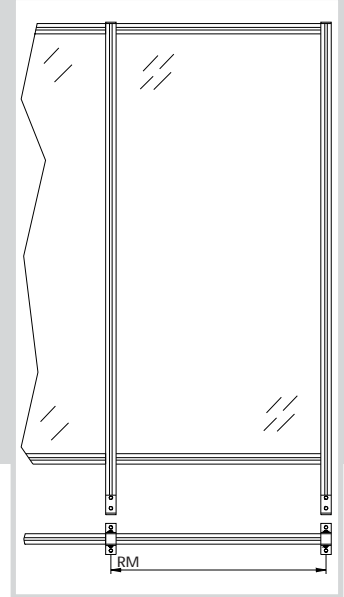
Post-Panel Method

This style is best suited for large areas which may require regular maintenance at various locations, for example, which must be quickly and readily accessible. Using just four attachment points, each with an angle-screw combination, the panels can be easily removed at any location, or simply swung aside. As this is only possible using a wrench, this system conforms to standard safety regulations. A further advantage is hinge-like assembly of the panels, which allows the guarding to be designed and installed at any desired angle.



Partition Method

Because of their standard right-angle connections, the Partition style of guarding is ideal for long straight or rectangular perimeter guards. As such the partitions can be installed flush together with little effort. The compatibility with Panel-Post guards and the modularity and versatility of the individual guarding components enable the layout and manufacture of almost any guarding requirement. The connecting plates feature protrusions which lock the panels in place (see page 15).



Custom Solutions

Although custom solutions for perimeter guarding provide savings due to lower material cost, there is often a significant assembly component which should not be overlooked. Custom, i.e. machine specific guards are possible on request. Many examples of custom guards can also be found in the mk Profile Technology System catalog.

Guarding

Assembly Details

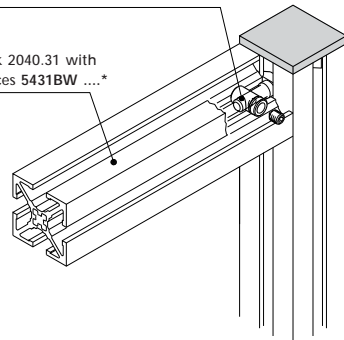
Post-Panel Methods

Internal Fastening of Panels

The profile connection of the panels and panel frames is achieved using the Tension Plug 40/1. For this the horizontal beams require profile service 5431BW*.

Tension Plug 40/1 (extra light)
B51.03.037

Profile mk 2040.31 with
End Services 5431BW*



Panel Connection with Angles

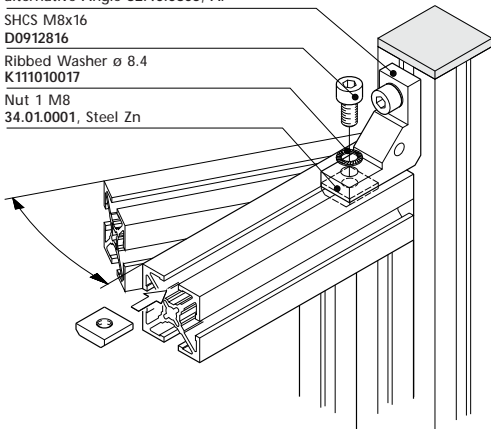
The panel connection with angles offers the highest stability with minimal labor. By loosening only four screws, the entire panel can be removed if necessary. Panels may be rotated up to $\pm 90^\circ$. The connection shown below is standard for the Post-Panel style of guards.

Angle B20/40 82.05.0026, Al
alternative Angle 82.40.0805, Al

SHCS M8x16
D0912816

Ribbed Washer $\varnothing 8.4$
K111010017

Nut 1 M8
34.01.0001, Steel Zn



Floor Mounting of Posts

Using the Floor Mounting Bracket 67.02.0004, floor height variations of up to 10 mm can be compensated. Posts or Partitions are fastened to the floor with Anchors and are tightened with the included M8 hex nut.

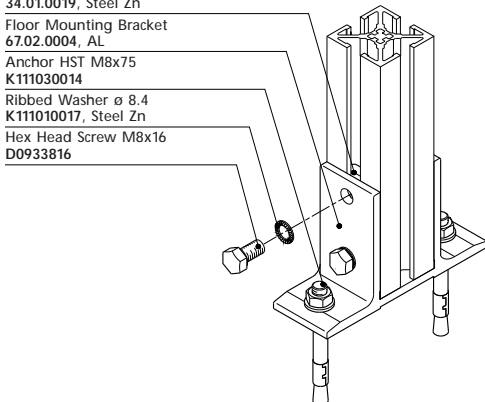
Nut 2/40 M8
34.01.0019, Steel Zn

Floor Mounting Bracket
67.02.0004, AL

Anchor HST M8x75
K111030014

Ribbed Washer $\varnothing 8.4$
K111010017, Steel Zn

Hex Head Screw M8x16
D0933816

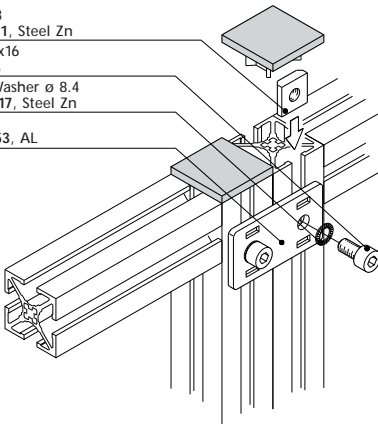


Partition Methods

Parallel connection of two Partitions

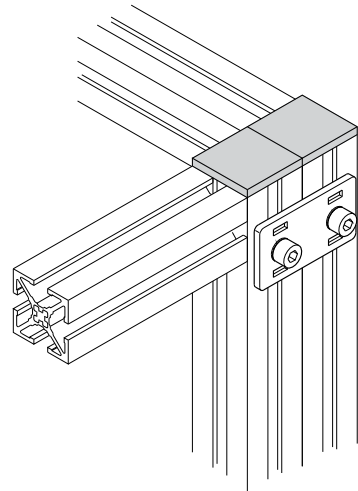
Connecting plates are stamped and include protrusions which ensure an exact and dimensionally precise connection of the partitions. Two connecting plates should be used per partition, each of which is installed using two M8 screws.

Nut 1 M8
 34.01.0001, Steel Zn
 SHCS M8x16
 D0912816
 Ribbed Washer ø 8.4
 K111010017, Steel Zn
 Plate 05
 50.05.0053, AL



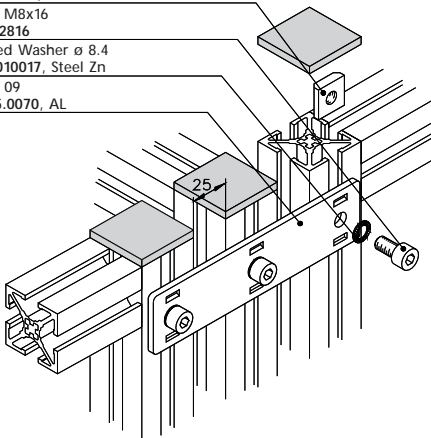
Angle Connection of Partitions

When connecting two partitions at right angles either plates or angles can be used.



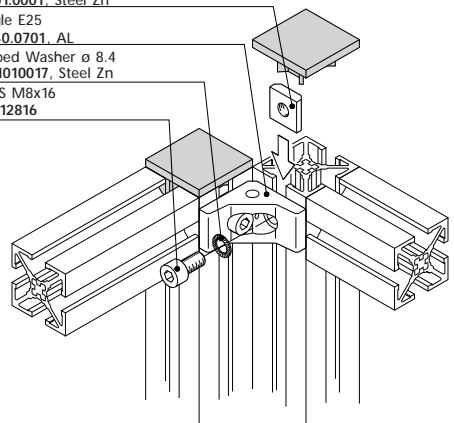
T-connection of Partitions

Nut 1 M8
 34.01.0001, Steel Zn
 SHCS M8x16
 D0912816
 Ribbed Washer ø 8.4
 K111010017, Steel Zn
 Plate 09
 50.05.0070, AL



Angle Connection of Partitions

Nut 1 M8
 34.01.0001, Steel Zn
 Angle E25
 82.40.0701, AL
 Ribbed Washer ø 8.4
 K111010017, Steel Zn
 SHCS M8x16
 D0912816



Guarding

Assembly Details

Custom Solutions

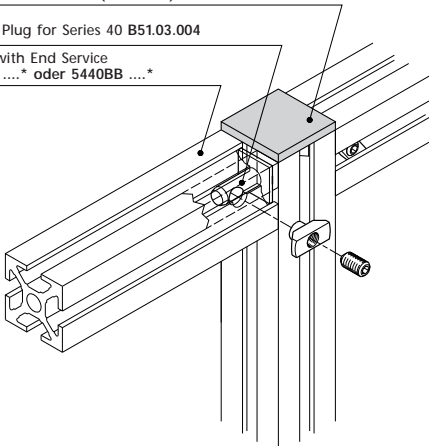
Internal Fastener Series 40

The Tension Plug is ideal for simple, and also later, assembly of profiles. This connection method requires an access hole which is drilled with the help of the Drill Fixture shown on page 17, and can be accomplished by the customer using a normal power drill. Profiles can also be supplied pre-drilled by mk.

End Cap for Profile mk 2040.01, mk 2040.40 and 2040.31 mk 2507 (PPN 1060)

Tension Plug for Series 40 B51.03.004

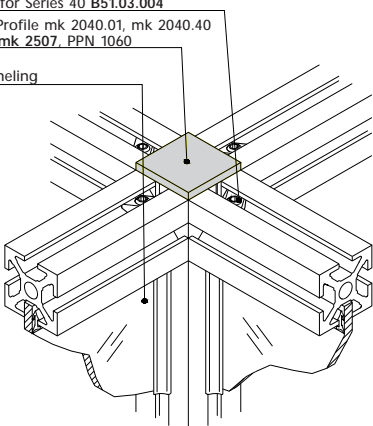
Profile with End Service 5401BB* oder 5440BB*



Tension Plug for Series 40 B51.03.004

End Cap for Profile mk 2040.01, mk 2040.40 and 2040.31 mk 2507, PPN 1060

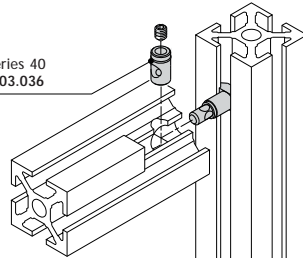
ex. 6 mm paneling



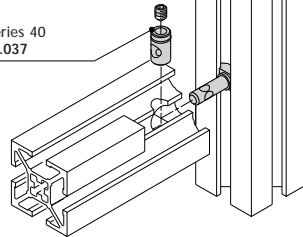
Internal Fastener Series 40/1

Especially for using panelling, because all internal slots remain available. In addition, the tension plug could be fit in, even if the front sides are closed.

Tension Plug for Series 40 (normal+light) B51.03.036



Tension Plug for Series 40 (extra light) B51.03.037



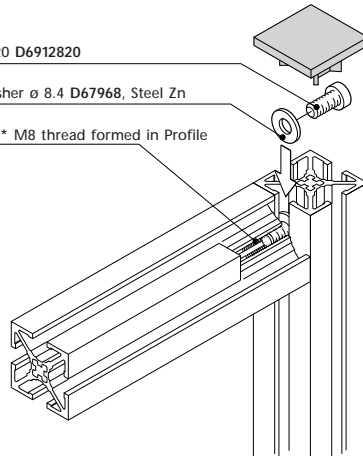
Economy Fastener Series 40 light

This connection requires an M8 thread or threaded insert in the profile that is to be attached, and a $\varnothing 9$ mm access hole at the connection position in the other profile.

SHCS M8x20 D6912820

Spring Washer $\varnothing 8.4$ D67968, Steel Zn

5431AB* M8 thread formed in Profile



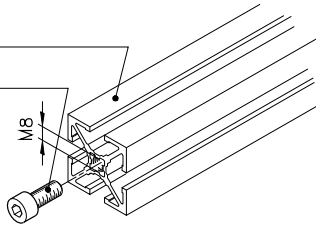
Custom Solutions

Profile Services

As a standard for Profile Series 40, mk uses a Metric M8 thread for the Economy Fastener. Profile mk 2040.31 features a $\varnothing 7.4$ mm center hole, which allows two fastening methods. When using standard M8 screws, an M8 thread must be formed (Note that thread forming is not the same as tapping). If using self-tapping screws, no services are required.

Profile mk 2040.31

SHCS M8

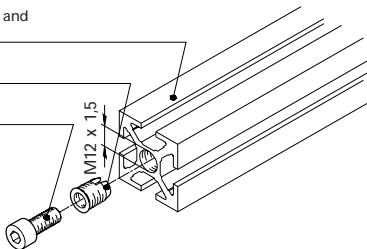


Profiles mk 2040.40 and mk 2040.01 are normally used with an M8 threaded insert, whereby the $\varnothing 10$ mm center hole first requires an M12x1.5 tap. The threaded insert significantly increases the thread strength. To install the threaded insert use Insert Tool K902010012.

Profile mk 2040.01 and Profile mk 2040.40

Insert
 K112030008, 9S20K

SHCS M8



Drill Fixture

This Drill Fixture is used to locate the $\varnothing 9$ mm access hole required for the Economy Fastener. A detent ensures the correct 20 mm center distance from the end of the profile. This detent can also be pushed in for access holes required at other locations.

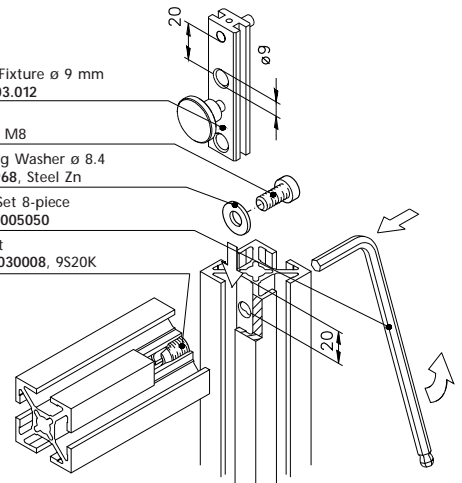
Drill Fixture $\varnothing 9$ mm
 B51.03.012

SHCS M8

Spring Washer $\varnothing 8.4$
 D67968, Steel Zn

Key Set 8-piece
 K902005050

Insert
 K112030008, 9S20K

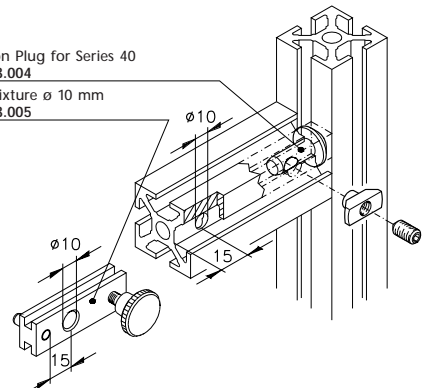


Drill Fixture

This Drill Fixture serves to locate the required $\varnothing 10$ mm hole when using Tension Plug B51.03.004, B51.03.036 and B51.03.037. A detent provides the required 15 mm offset between the center of the hole and the end of the profile.

Tension Plug for Series 40
 B51.03.004

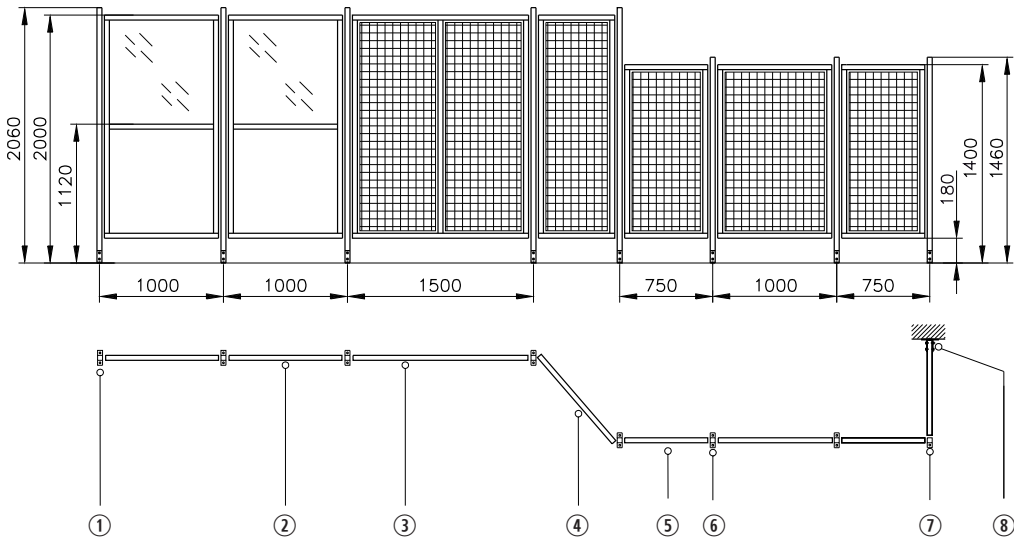
Drill Fixture $\varnothing 10$ mm
 B51.03.005



Guarding

Post-Panel Method

Depicted here is an example of the many possibilities when standard elements such as Posts, Panels and various paneling materials, or Fillers, are combined. The standard heights are fixed at 2060 and 1460 mm. These reference dimensions, as well as the standard heights, can also be modified to your specific requirements.

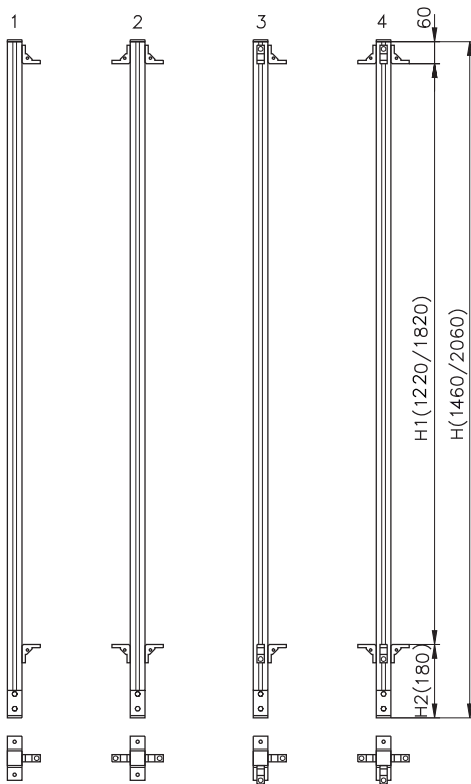


- | | |
|---|------------------------|
| ① Post 1 | ⑤ Simple Panel/Fencing |
| ② Panel with horiz. brace/Metal/Polycarbonate | ⑥ Post 2 |
| ③ Panel with vertical brace/Fencing | ⑦ Post 3 |
| ④ Simple Panel/Fencing | ⑧ Wall attachment |

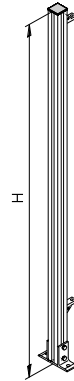
Post-Panel Method

Post

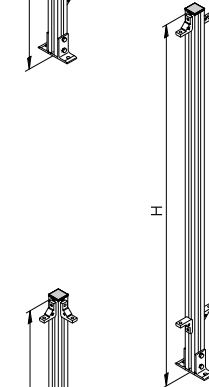
consisting of: Profile mk 2040.31, Angles B20/40 82.05.0026, Screws, Nuts, End Cap and Floor Mounting Bracket.



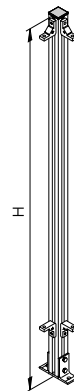
Standard H: 1460 and 2060 mm



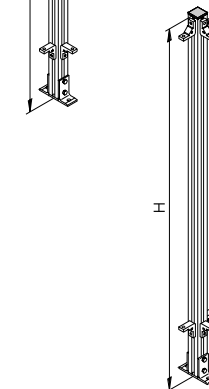
Post (no Angles)
B69.65.000 H ...
 not shown



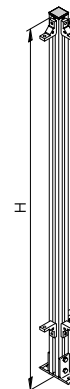
Post 1
B69.65.001 H ...



Post 2
B69.65.002 H ...



Post 3
B69.65.003 H ...



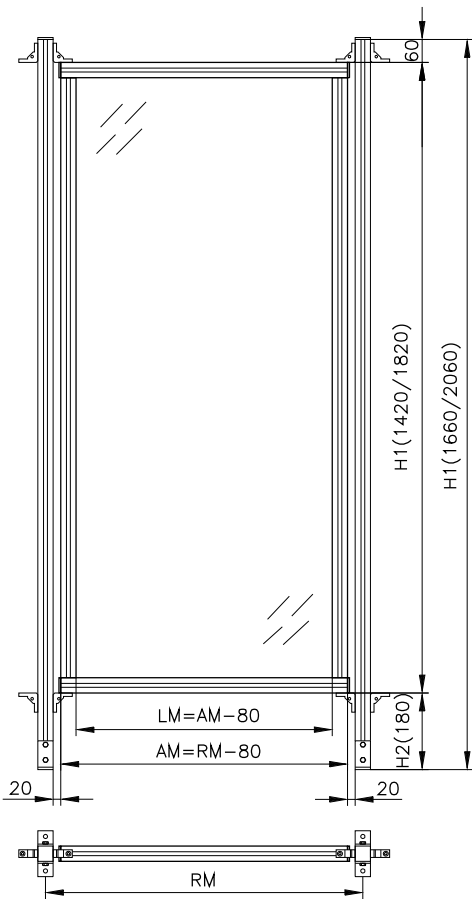
Post 4
B69.65.004 H ...

Guarding

Post-Panel Method

Panel

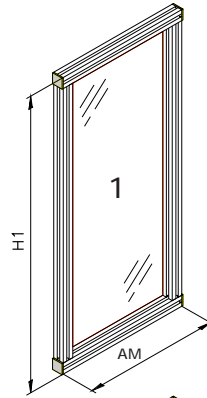
consisting of: Profile mk 2040.31 and Tension Plugs. The panels are attached to the angles of the posts. Paneling material (Fillers) can be found on pages 44-55.



LM = Light (Opening) dimension
 AM = Outside dimension
 RM = Reference dimension

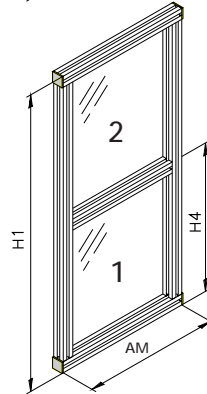
Standard H1: 1400 and 1800 mm

Panels using Profile mk 2040.31



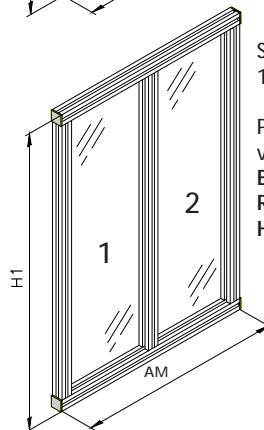
Standard RM:
 500, 750, 1000,
 1250 mm Fencing
 max. 1000 mm

Simple Panel
B69.50.001
 RM
 H1



Standard RM:
 500, 750, 1000,
 1250, 1500, 2000 mm

Panel with
 horizontal brace
B69.50.002
 RM
 H1



Standard RM:
 1500, 2000 mm

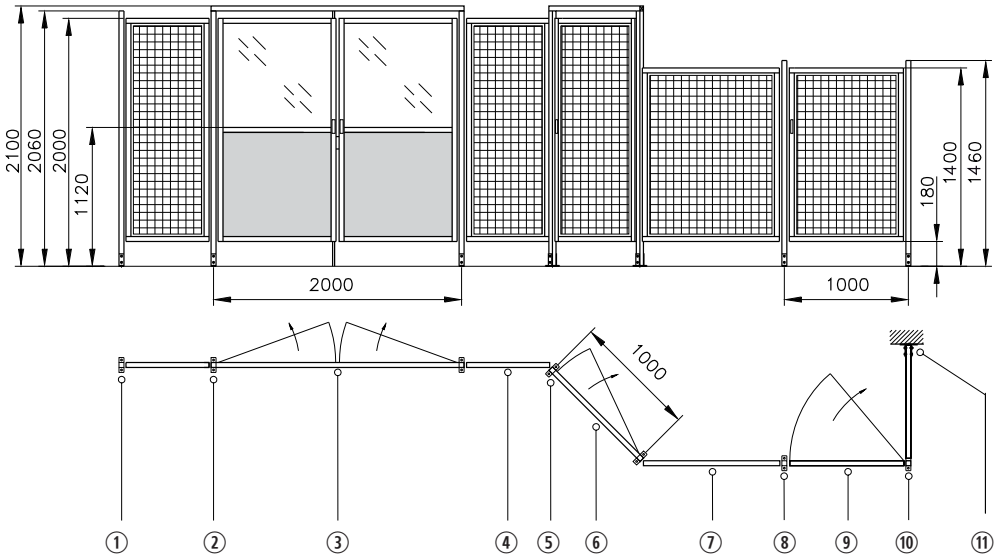
Panel with
 vertical brace
B69.50.003
 RM
 H1

Post-Panel Method



Swing Doors

The modular construction method of the mk Guarding System enables a completely flexible incorporation of doors into the enclosure design. You can specify the dimensions of your door and include any of the filler materials shown on pages 50-55. The width of doors is typically dependent on their function, as well as frequency of use:
 Normal use: 750 mm minimum opening.
 Emergency exit: 1000 mm minimum opening.



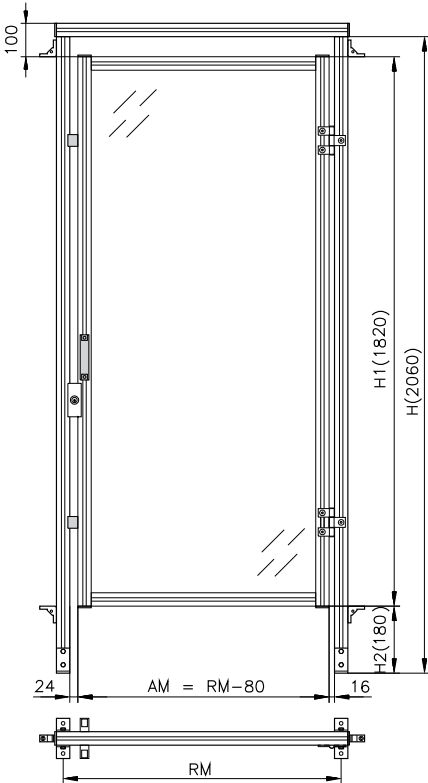
- | | |
|---|-------------------------------|
| ① Post 1 | ⑦ Simple Panel/Fencing |
| ② Swing Door Frame | ⑧ Post 1 |
| ③ Double Swing Door/Metal/Polycarbonate | ⑨ Swing Door DIN-left/Fencing |
| ④ Simple Panel/Fencing | ⑩ Post 1 |
| ⑤ Swing Door Frame | ⑪ Wall attachment |
| ⑥ Swing Door DIN-left/Fencing | |

Guarding

Post-Panel Method

Swing Door Frame

The modular construction method of the mk Guarding System enables a completely flexible incorporation of doors into the enclosure design. You can specify the dimensions of your door and include any of the paneling materials (Fillers) shown on pages 50-55.

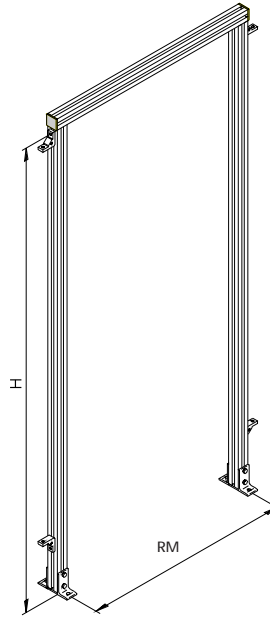


AM = Outside dimension
RM = Reference dimension

Standard H: 2060 mm

Swing Door Frame

consisting of: Profile mk 2040.40, Tension Plugs, Floor Mounting Baskets, Screws, Angles and Nuts. The Swing Door Frames are suitable for both the single and double swinging doors. Panels can be attached to the outsides of the frames.



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

Swing Door Frame
B69.55.001
RM
H

AM = Outside dim.
RM = Reference dim.

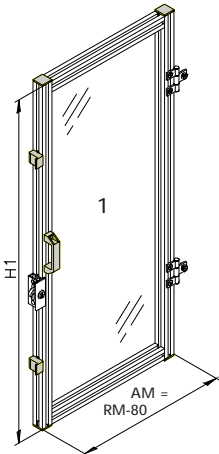
Standard H: 2060 mm

Post-Panel Method

Single Swing Door

consisting of: Profile mk 2040.40, Tension Plugs, Door Stops, Handle, Hinges and either an external Double Bit or Cylinder Lock. Fillers can be found on pages 50-55. Please indicate lock type when specifying door.

Special versions available with: Latches, Cam Locks, Profile cylinders and T- or Lever Handle Locks.

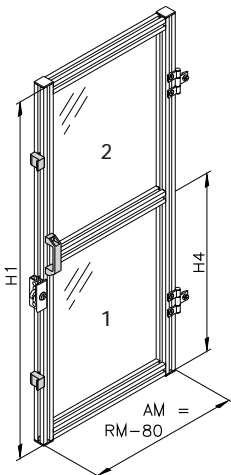


Standard RM:
 750, 1000, 1250 mm
 Fencing
 max. 1000 mm

Single Swing Door
lock

DIN-right
B69.60.001
 RM
 H1

DIN-left
B69.60.002
 RM
 H1



Standard RM:
 750, 1000, 1250 mm

Single Swing Door
 with horizontal brace
lock

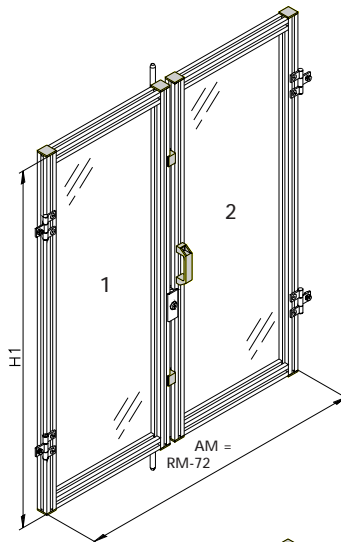
DIN-right
B69.60.003
 RM
 H1

DIN-left
B69.60.004
 RM
 H1

Standard H1: 1800 mm

Double Swing Door

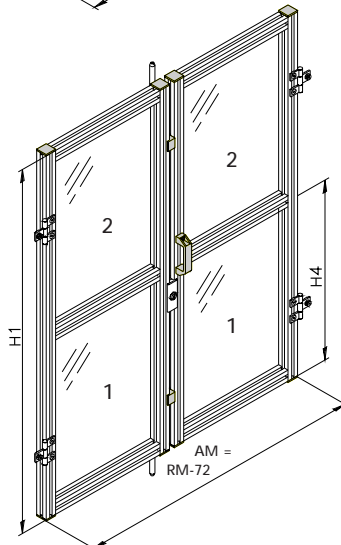
Double Doors include upper and lower slide latches. Accessories can be found on pages 56-60.



Standard RM:
 1500, 2000 mm

Double
 Swing Door
lock

B69.60.005
 RM
 H1



Standard RM:
 1500, 2000 mm

Double
 Swing Door
 with horizontal
 brace
lock

B69.60.006
 RM
 H1

Guarding

Post-Panel Method

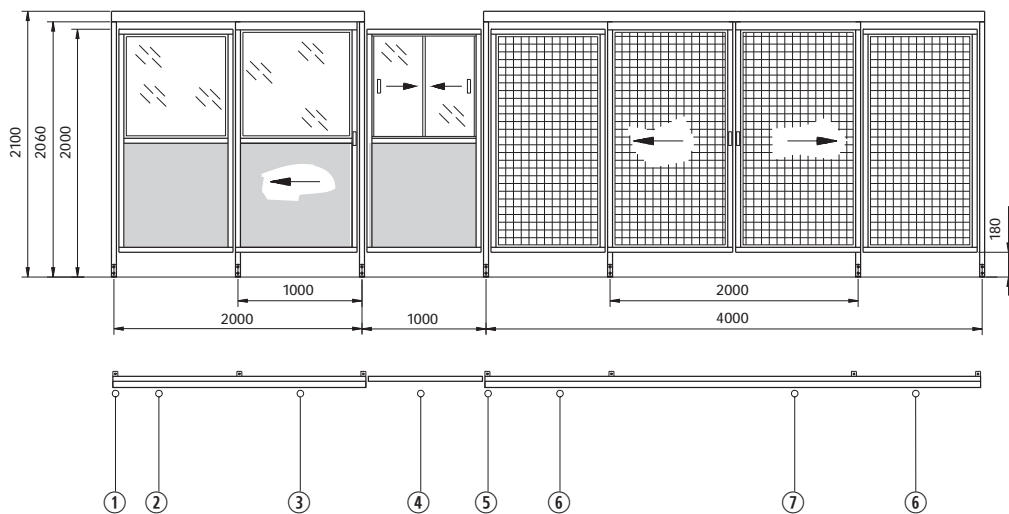
Sliding Doors

When selecting sliding doors, two types are available:

- Sliding Doors B
- Sliding Doors C

The Sliding Door Frames can be used in combination with Sliding Door type B and C.

It is also possible, through a slight redesign, to include windows or other access panels within the doors themselves.



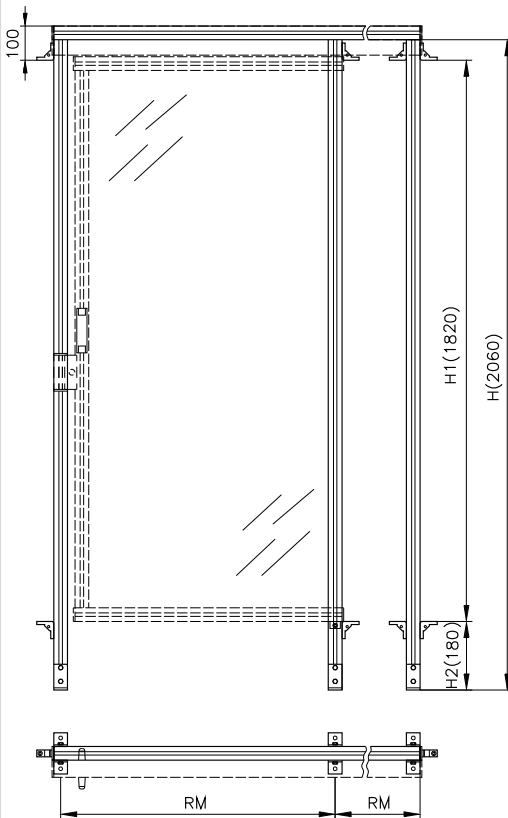
- ① Sliding Door Frame
- ② Panel with horiz. brace/Metal/Polycarbonate
- ③ Single Sliding Door with horizontal brace/Metal/Polycarbonate
- ④ Panel with horiz. brace/Metal/Polycarbonate Slider

- ⑤ Sliding Door Frame
- ⑥ Simple Panel/Fencing
- ⑦ Double Sliding Door/Fencing

Post-Panel Method

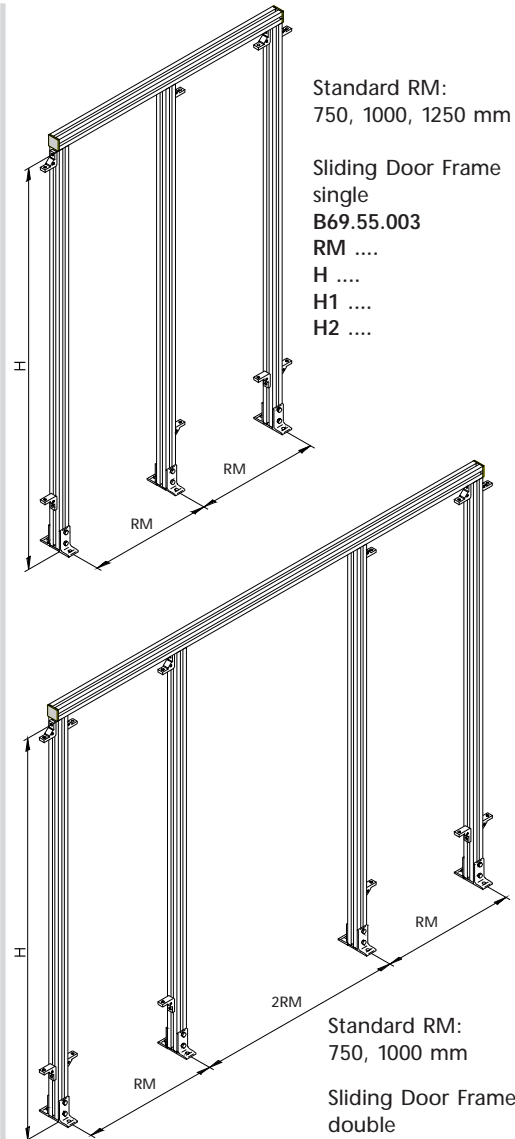
Sliding Door Frame

consisting of: Profile mk 2040.40, Tension Plugs, Angles, Screws, Nuts and Floor Mounting Baskets. The Sliding Door Frame "Single" is used for DIN-right and DIN-left sliding doors.



RM = Reference dimension

Standard H: 2060 mm



Standard RM:
750, 1000, 1250 mm

Sliding Door Frame
single
B69.55.003
RM
H
H1
H2

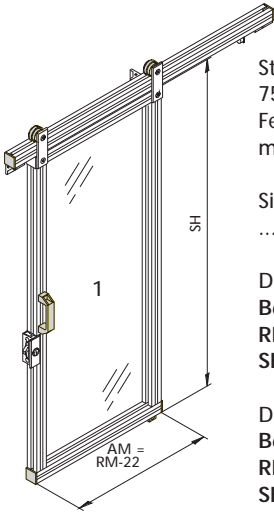
Standard RM:
750, 1000 mm

Sliding Door Frame
double
B69.55.004
RM
H
H1
H2

Guarding

Post-Panel Method

Sliding Doors B

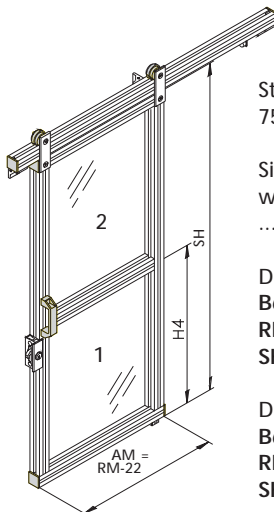


Standard RM:
750, 1000, 1250 mm
Fencing
max. 1000 mm

Single Sliding Door
.....-lock

DIN-right
B69.61.007
RM
SH

DIN-left
B69.61.008
RM
SH



Standard RM:
750, 1000, 1250 mm

Single Sliding Door
with horizontal brace
.....-lock

DIN-right
B69.61.009
RM
SH

DIN-left
B69.61.010
RM
SH

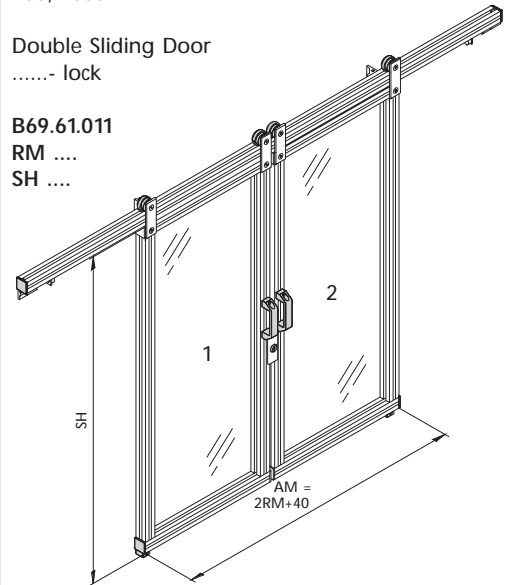
SH = Height of sliding door

If the distance between the sliding door and the floor is to correspond to the height H2 of the sliding door frame or the adjacent post, SH = H - H2 - 43 has to be selected.

Standard RM:
750, 1000 mm

Double Sliding Door
.....- lock

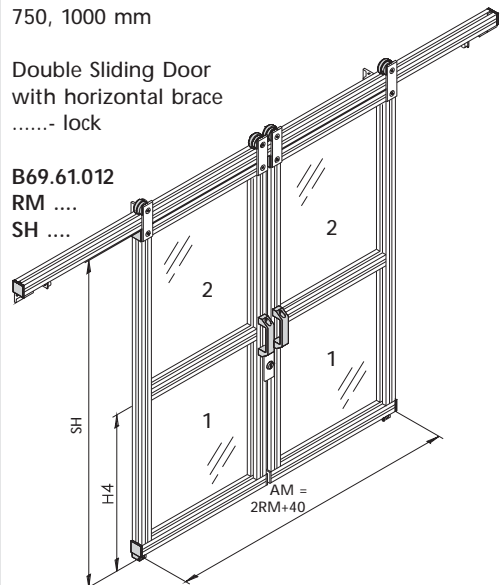
B69.61.011
RM
SH



Standard RM:
750, 1000 mm

Double Sliding Door
with horizontal brace
.....- lock

B69.61.012
RM
SH

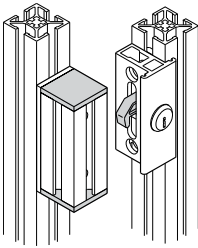




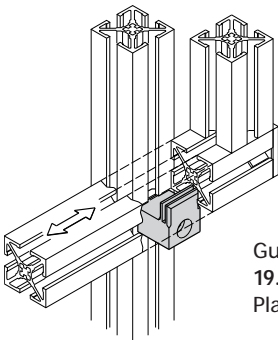
Post-Panel Method

Hardware Sliding Doors B

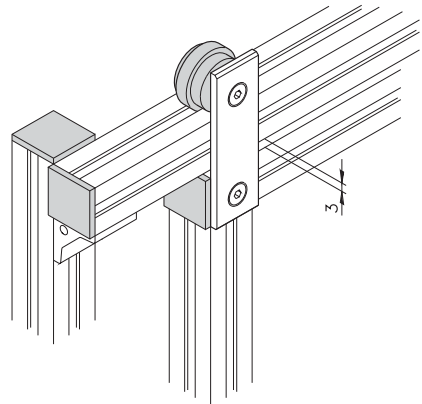
A cost-effective alternative to Sliding Doors C, the hardware for Sliding Doors B has the additional advantage of being easily assembled. The flanged Roller Assembly guides the door along the upper Profile T-slot. Once properly installed, the door is designed to be non-removable.



Locks see page 59



Guide for Sliding Door
19.00.0005
 Plastic, black



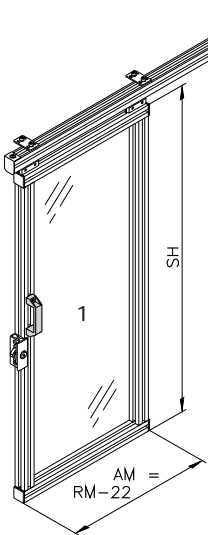
Roller Assembly **B68.11.003** for Sliding Door

consisting of: Plate, Roller, Bolt, Washer, Flanged, Button-Head Screw and Nut

Guarding

Post-Panel Method

Sliding Doors C

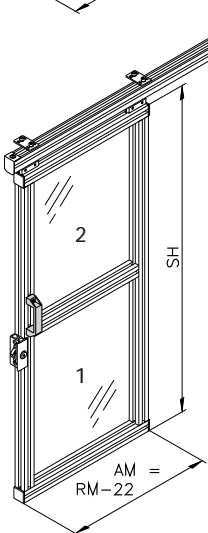


Standard RM:
750, 1000, 1250 mm
Fencing
max. 1000 mm

Single Sliding Door
.....-lock

DIN-right
B69.61.015
RM
SH

DIN-left
B69.61.016
RM
SH



Standard RM:
750, 1000, 1250 mm

Single Sliding Door
with horizontal brace
.....-lock

DIN-right
B69.61.017
RM
SH

DIN-left
B69.61.018
RM
SH

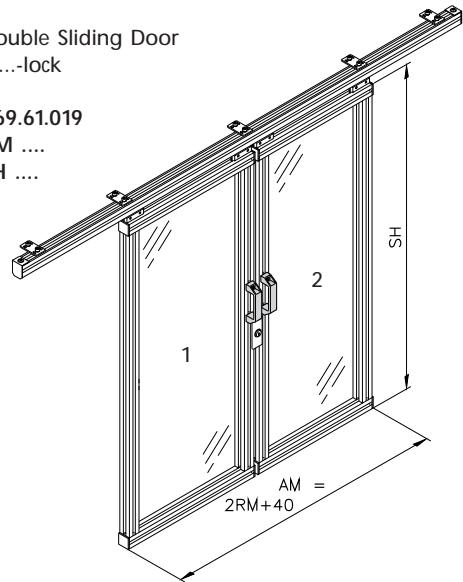
SH = Height of sliding door

If the distance between the sliding door and the floor is to correspond to the height H2 of the sliding door frame or the adjacent post, SH = H - H2 - 30 has to be selected.

Standard RM: 750, 1000 mm

Double Sliding Door
.....-lock

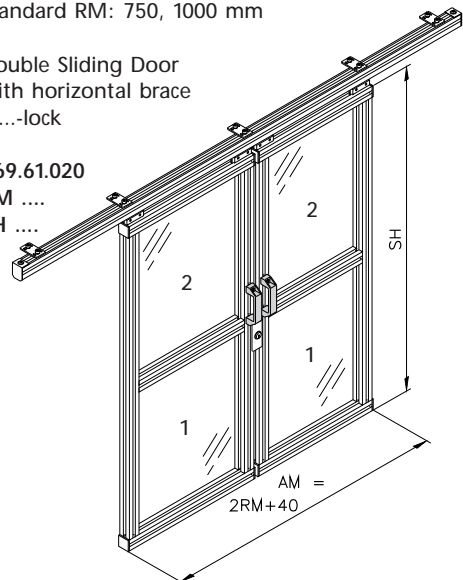
B69.61.019
RM
SH



Standard RM: 750, 1000 mm

Double Sliding Door
with horizontal brace
.....-lock

B69.61.020
RM
SH

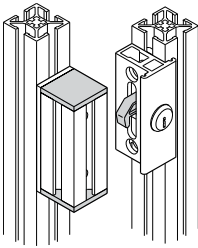




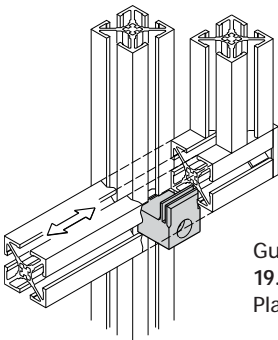
Post-Panel Method

Hardware Sliding Doors C

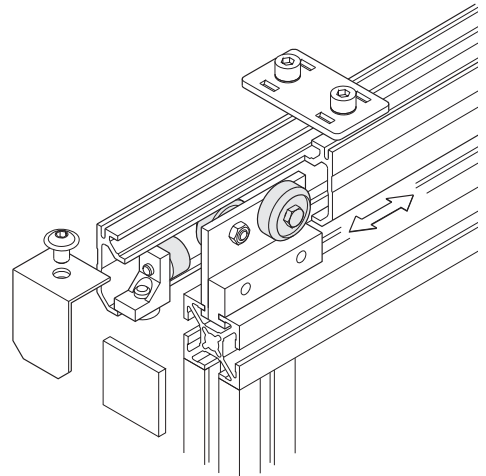
The C-guide consisting of Profile mk 2245 offers the advantage of a closed track. The lower guide engages the T-slot to keep the sliding door properly positioned. Maximum track length is 5100 mm.



Locks see page 59



Guide for Sliding Door
19.00.0005
 Plastic, black



Mounting Hardware for Sliding Doors

Single Sliding Door

B68.11.005 L = 2 x RM + 40

consisting of: 1x Track, 2x Carriages, 2x Stop, 2x End Cap and Plates (number depends on length)

Double Sliding Door

B68.11.006 L = 4 x RM + 40

consisting of: 1x Track, 4x Carriages, 2x Stop, 2x End Cap and Plates (number depends on length)

Carriage for Sliding Door

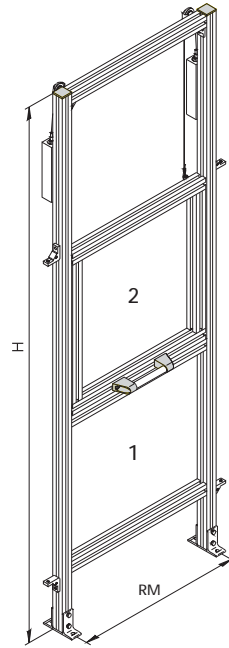
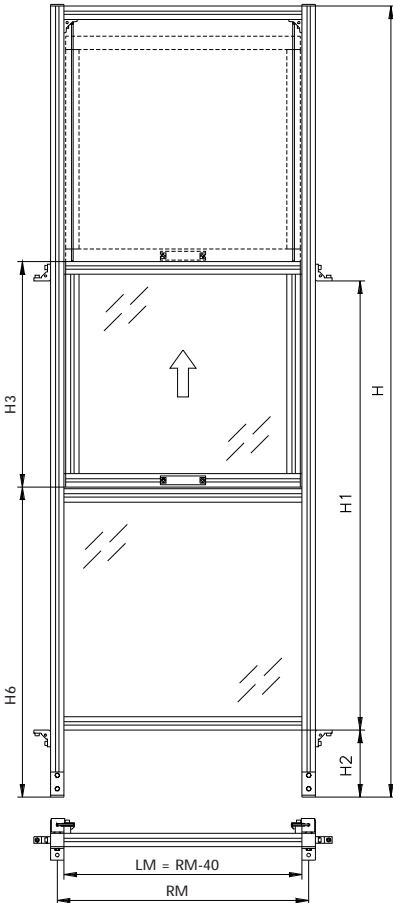
B38.00.045

Guarding

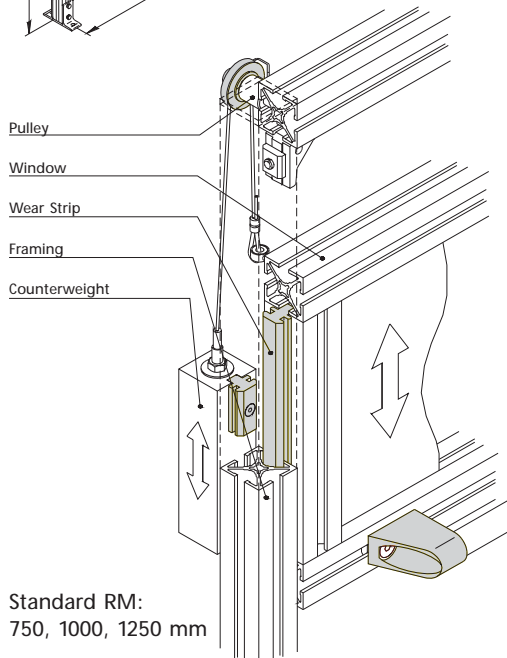
Post-Panel Method

Vertical Door

consisting of: Profile mk 2040.40, Tension Plugs, Floor Mounting Brackets, Handle, Wear Strips, Pulleys and Counterweights. Manually operated – balanced using the Counterweights. Pneumatic, hydraulic or electromechanical operation possible on request. Paneling material (Fillers) can be found on pages 50-55.



Vertical Door
B69.62.001
RM
H
H1
H2
H3
H6
Stroke

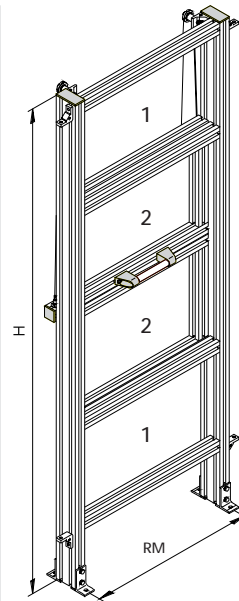
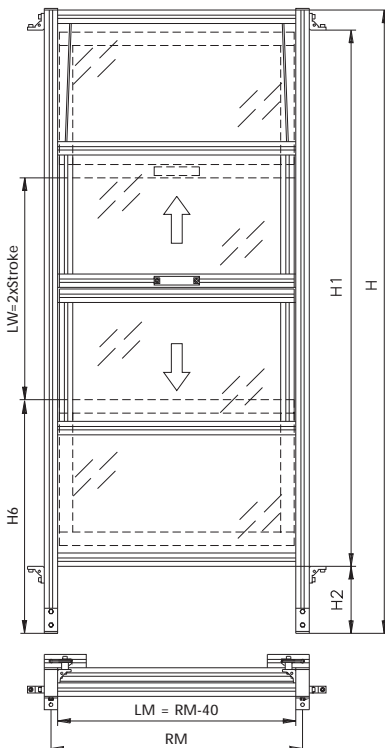


Standard RM:
750, 1000, 1250 mm

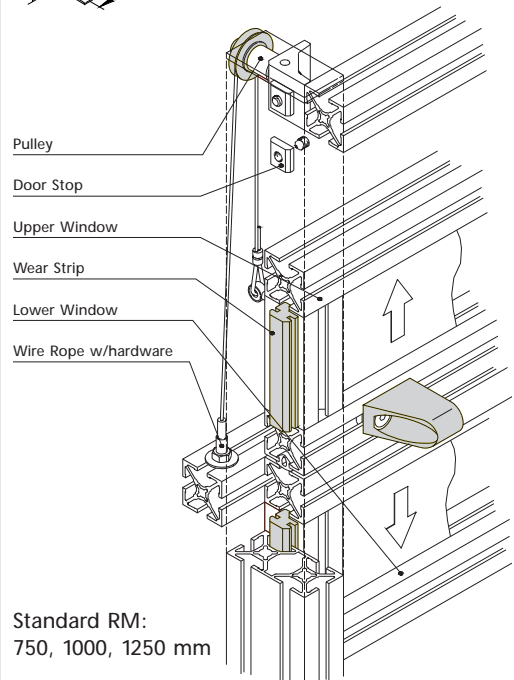
Post-Panel Method

Scissor Door

consisting of: Profile mk 2040.40, mk 2040.41, Tension Plugs, Floor Mounting Brackets, Handles, Wear Strips, Pulleys, Wire Rope and hardware. Manually operated – balanced through the scissor action of the equally weighted doors. Pneumatic, hydraulic or electromechanical operation possible on request. Paneling material (Fillers) can be found on pages 50-55.



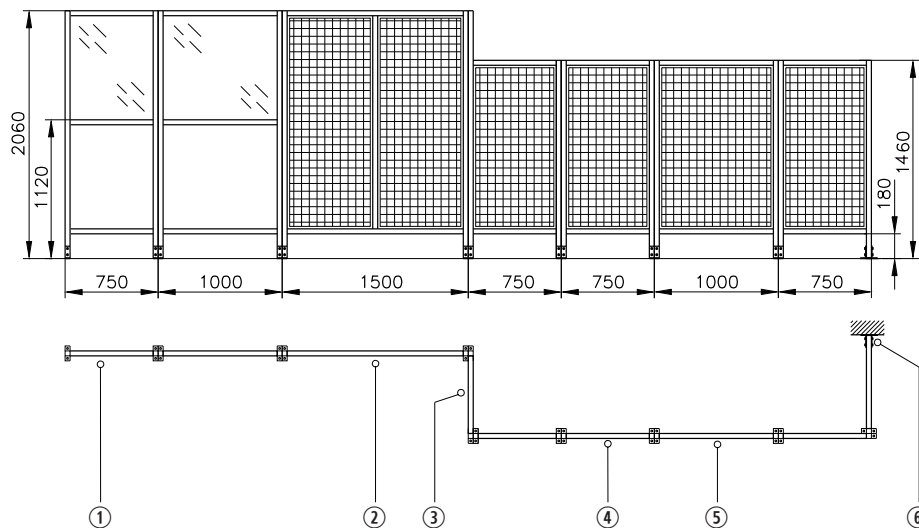
Scissor Door
B69.62.002
 RM
 H
 H1
 LW
 H6



Guarding

Partition Method

Shown below is a sampling of the many possible combinations using just a few standard elements such as partitions and filler material. The standard heights are 2060 and 1460 mm. The reference dimensions as well as the standard heights can be changed to suit your particular requirements.



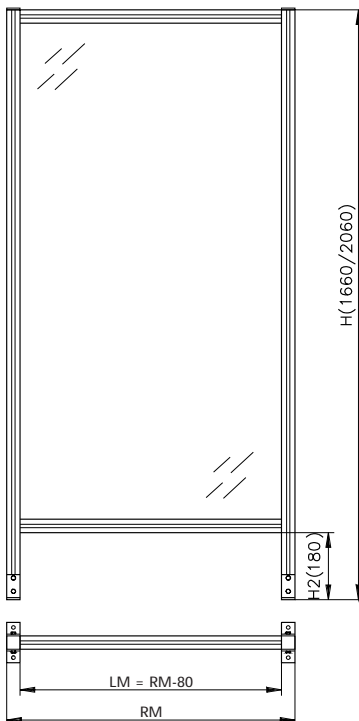
- ① Partition with horizontal brace/
Metal/Polycarbonate
- ② Partition with vertical brace/Fencing
- ③ Partition/Fencing

- ④ Partition/Fencing
- ⑤ Partition/Fencing
- ⑥ Wall attachment

Partition Method

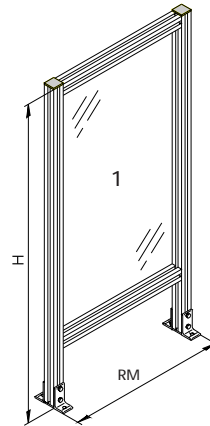
Partition

consisting of: Profile mk 2040.31, Tension Plugs, Floor Mounting Baskets, Screws and Nuts. To attached neighboring partitions, please order plates separately (page 15). The paneling material (Fillers) can be found on pages 44-55.



LM = Light (Opening) dimension
 RM = Reference dimension

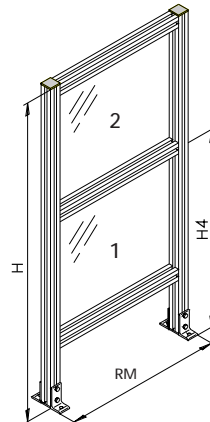
Standard H: 1460 and 2060 mm



Standard RM:
 500, 750, 1000, 1250 mm

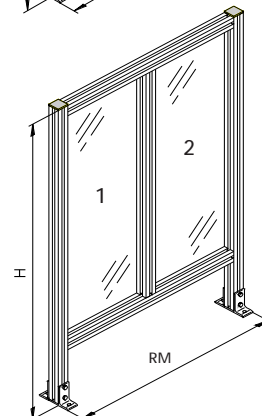
Fencing
 max. 1000 mm

Partition single
B69.51.001
 RM
 H



Standard RM:
 500, 750, 1000,
 1250, 1500, 2000 mm

Partition with
 horizontal brace
B69.51.002
 RM
 H



Standard RM:
 1500, 2000 mm

Partition with
 vertical brace
B69.51.003
 RM
 H

Guarding


Partition Method

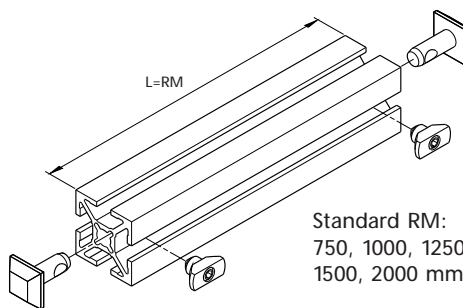
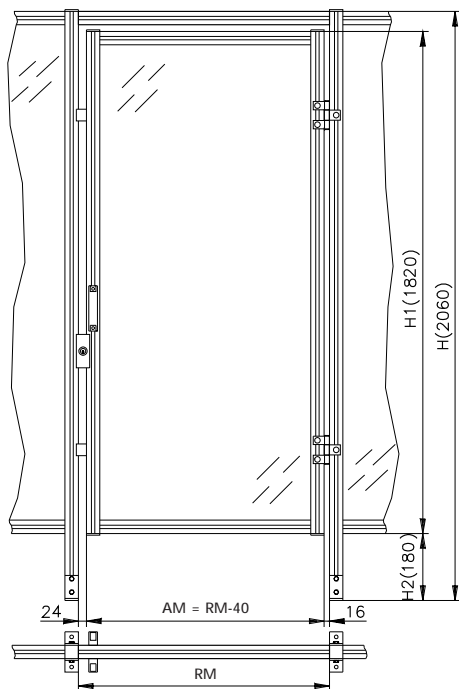
Swing Doors

The modular construction method of the mk Guarding System enables a completely flexible incorporation of doors into the enclosure design. You can specify the dimensions of your door and include any of the paneling materials shown on pages 50-55.

Door Header

consisting of: Profile mk 2040.40, Tension Plugs. The profile is used with both single and double swinging doors. Panels are attached at the profile ends.

 Tension Plug 40 see page 16



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

Door Header
B69.55.010
RM

AM = Outside dimension
RM = Reference dimension

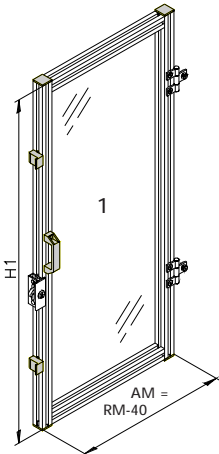
Standard H: 2060 mm

Partition Method

Single Swing Door

consisting of: Profile mk 2040.40, Tension Plugs, Door Stops, Handles, Hinges and and either an external Double Bit or Cylinder Lock. Paneling materials can be seen on pages 50-55. Please indicate lock type when specifying door.

Special versions available with: Latches, Cam Locks, Profile cylinders and T- or Lever Handle Locks.

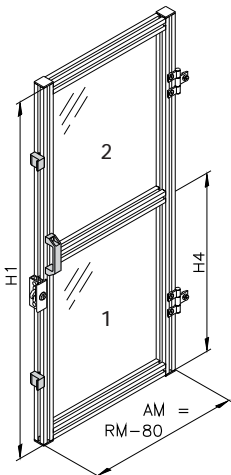


Standard RM:
 750, 1000, 1250 mm
 Fencing
 max. 1000 mm

Single Swing Door
-lock

DIN-right
B69.60.001
 RM
 H1

DIN-left
B69.60.002
 RM
 H1



Standard RM:
 750, 1000, 1250 mm

Single Swing Door
 with horizontal brace
-lock

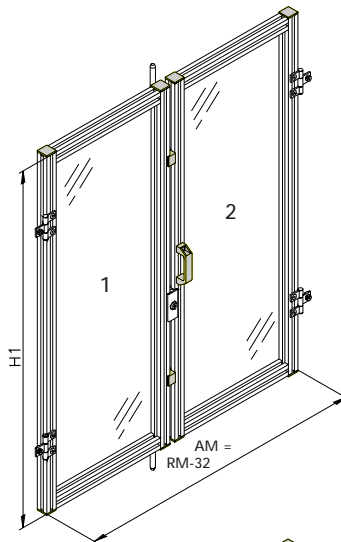
DIN-right
B69.60.003
 RM
 H1

DIN-left
B69.60.004
 RM
 H1

Standard H1: 1800 mm

Double Swing Door

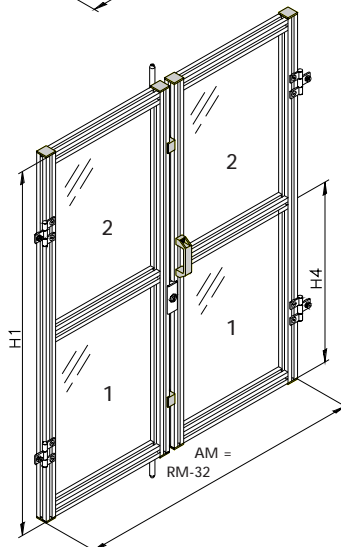
Double Doors include upper and lower slide latches. Accessories can be found on pages 56-60.



Standard RM:
 1500, 2000 mm

Double
 Swing Door
-lock

B69.60.005
 RM
 H1



Standard RM:
 1500, 2000 mm

Double Swing
 Door with
 horizontal brace
-lock

B69.60.006
 RM
 H1

Guarding

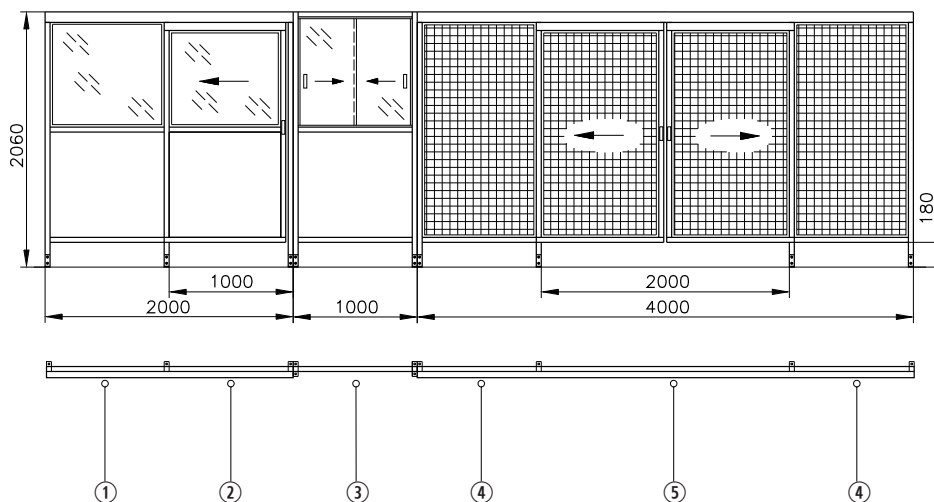
Partition Method

Sliding Doors

When selecting sliding doors, two types are available:

- Sliding Doors B
- Sliding Doors C

The Sliding Door Frame, in combination with Sliding Doors of type C, is the model of a precise and aesthetically pleasing high-quality sliding door. It is also possible, through a slight redesign, to include windows or other access panels within the doors themselves.



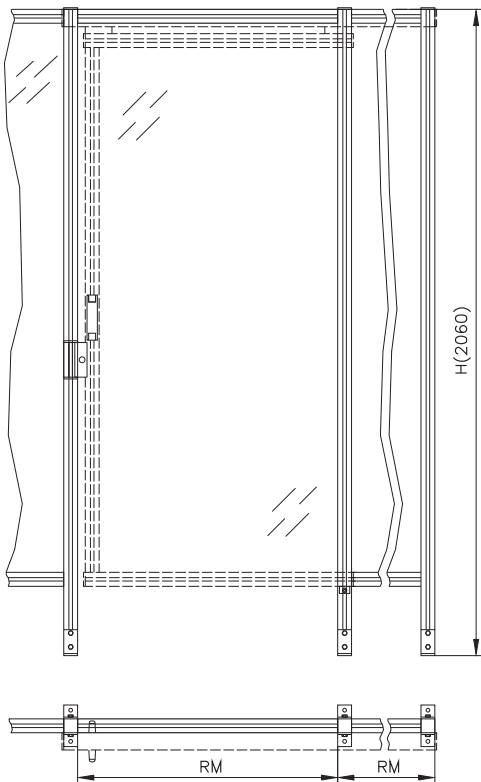
- ① Partition with horizontal brace/
Metal/Polycarbonate
- ② Single Sliding Door with horizontal
brace/Metal/Polycarbonate

- ③ Partition with horizontal
brace/Metal/Polycarbonate Slider
- ④ Partition single/Fencing
- ⑤ Double Sliding Door/Fencing

Partition Method

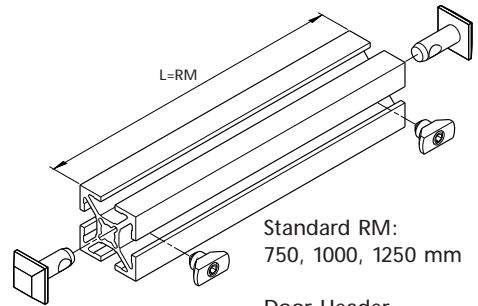
Sliding Door Frame

consisting of: Profile mk 2040.40, Tension Plugs, Screws, Nuts and Floor Mounting Baskets.
 The Single Sliding Door Frame is used for Sliding Doors DIN-Right and DIN-Left.



RM = Reference dimension

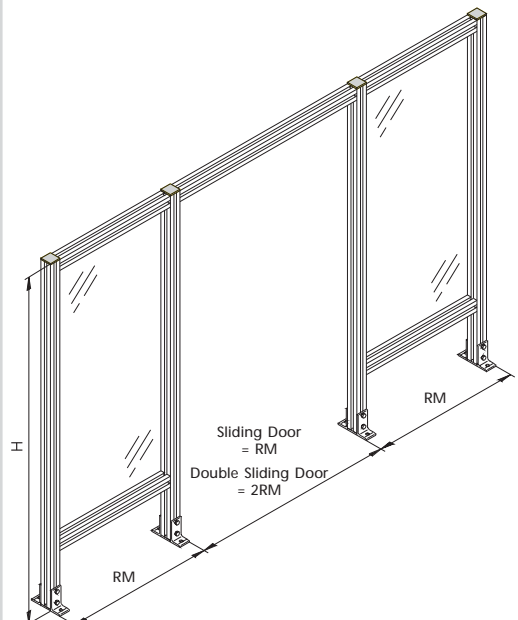
Standard H: 2060 mm



Standard RM:
 750, 1000, 1250 mm

Door Header
 B69.55.010
 RM

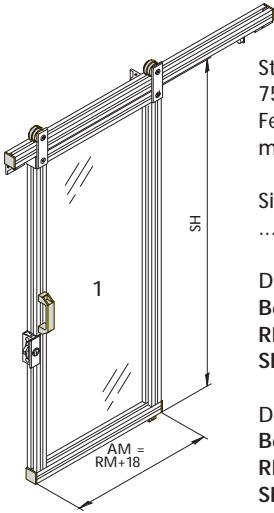
The following standard components are combined using the Door Header, when manufacturing Sliding Door Frames: Sliding Door: Post (less angles) B69.65.000 and a simple Partition B69.51.001 Double Sliding Door: 2 x Partition B69.51.001.



Guarding

Partition Method

Sliding Doors B

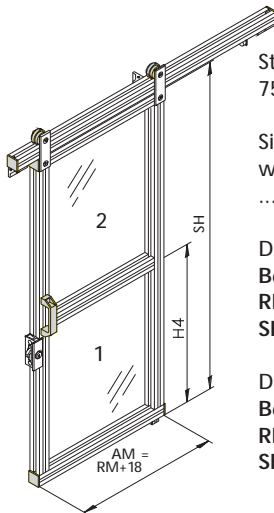


Standard RM:
750, 1000, 1250 mm
Fencing
max. 1000 mm

Single Sliding Door
.....-lock

DIN-right
B69.61.007
RM
SH

DIN-left
B69.61.008
RM
SH



Standard RM:
750, 1000, 1250 mm

Single Sliding Door
with horizontal brace
.....-lock

DIN-right
B69.61.009
RM
SH

DIN-left
B69.61.010
RM
SH

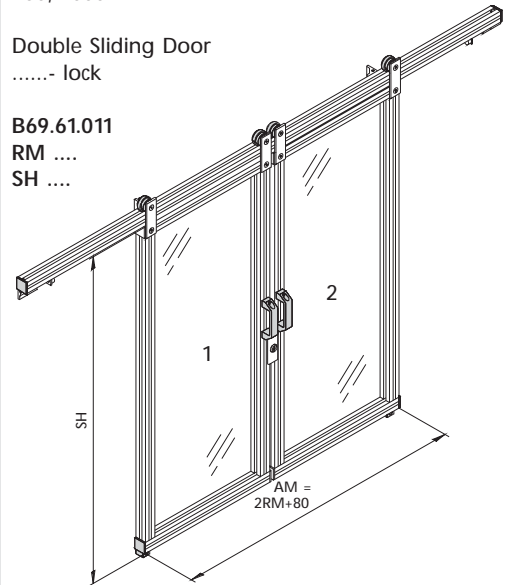
SH = Height of sliding door

If the distance between the sliding door and the floor is to correspond to the height H2 of the adjacent post, $SH = H - H2 - 43$ has to be selected.

Standard RM:
750, 1000 mm

Double Sliding Door
.....- lock

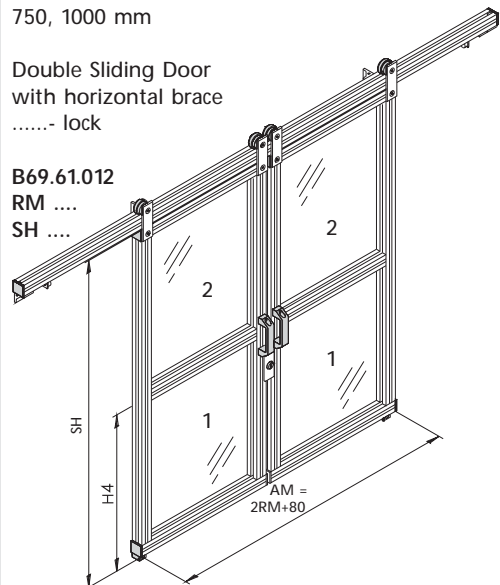
B69.61.011
RM
SH



Standard RM:
750, 1000 mm

Double Sliding Door
with horizontal brace
.....- lock

B69.61.012
RM
SH

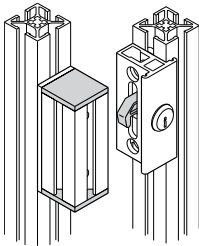




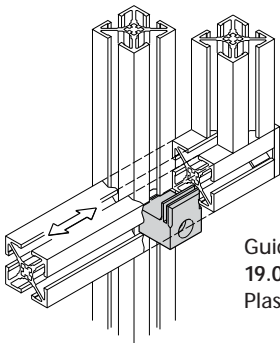
Partition Method

Hardware Sliding Doors B

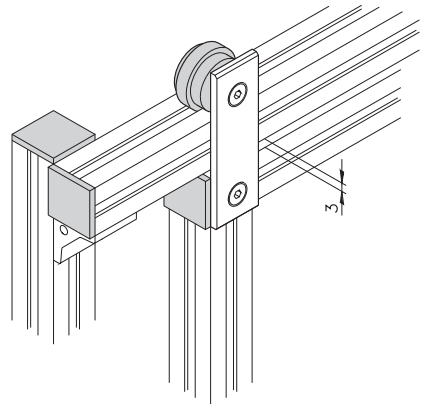
A cost-effective alternative to Sliding Doors C, the hardware for Sliding Doors B has the additional advantage of being easily assembled. The flanged Roller Assembly guides the door along the upper Profile T-slot. Once properly installed, the door is designed to be non-removable.



Locks see page 59



Guide for Sliding Door
19.00.0005
 Plastic, black



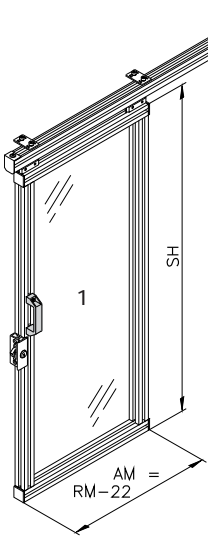
Roller Assembly **B68.11.003** for Sliding Door

consisting of: Plate, Roller, Washer, Flanged Button-Head Screw and Nut.

Guarding

Partition Method

Sliding Doors C

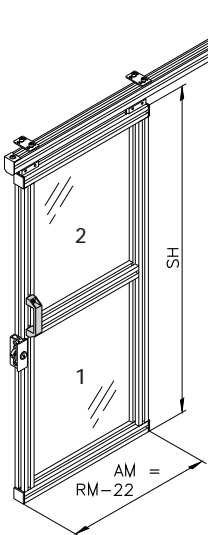


Standard RM:
750, 1000, 1250 mm
Fencing
max. 1000 mm

Single Sliding Door
.....-lock

DIN-right
B69.61.015
RM
SH

DIN-left
B69.61.016
RM
SH



Standard RM:
750, 1000, 1250 mm

Single Sliding Door
with horizontal brace
.....-lock

DIN-right
B69.61.017
RM
SH

DIN-left
B69.61.018
RM
SH

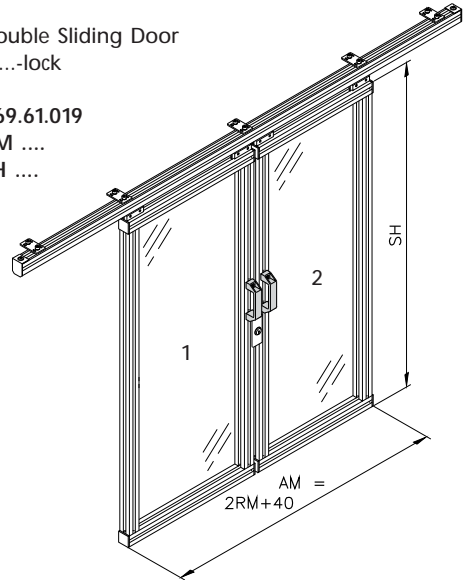
SH = Height of sliding door

If the distance between the sliding door and the floor is to correspond to the height H2 of the adjacent post, $SH = H - H2 - 70$ has to be selected.

Standard RM: 750, 1000 mm

Double Sliding Door
.....-lock

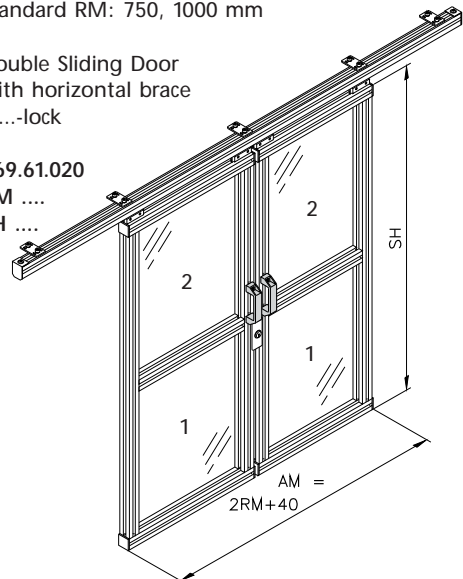
B69.61.019
RM
SH



Standard RM: 750, 1000 mm

Double Sliding Door
with horizontal brace
.....-lock

B69.61.020
RM
SH

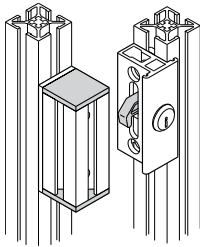




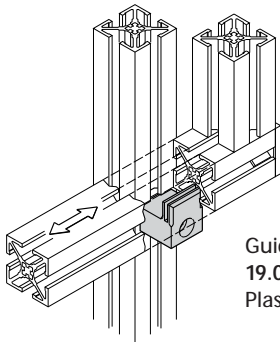
Partition Method

Hardware Sliding Doors C

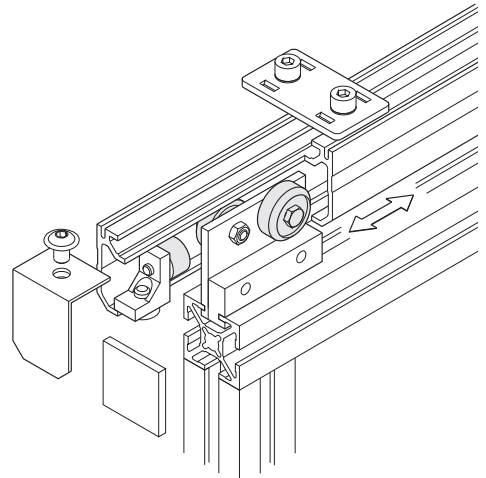
The C-guide consisting of Profile mk 2245 offers the advantages of a closed track. The lower guide engages the T-slot to keep the sliding door properly positioned. Maximum track length is 5100 mm.



Locks see page 59



Guide for Sliding Door
19.00.0005
 Plastic, black



Mounting Hardware for Sliding Doors

Single Sliding Door

B68.11.005 L = 2 x RM + 40

consisting of: 1x Track, 2x Carriages, 2x Stop, 2x End Cap and Plates (number depends on length)

Double Sliding Door

B68.11.006 L = 4 x RM + 40

consisting of: 1x Track, 4x Carriages, 2x Stop, 2x End Cap and Plates (number depends on length)

Carriage for Sliding Door

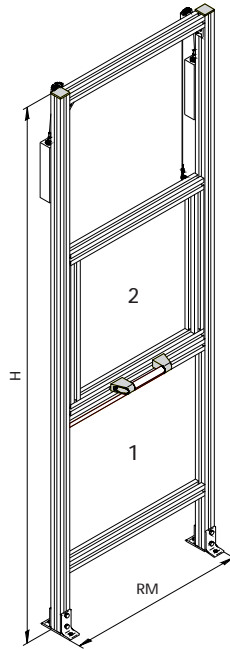
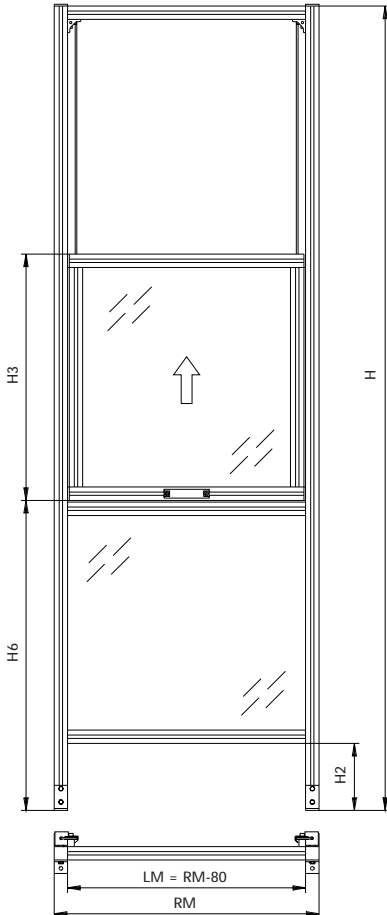
B38.00.045

Guarding

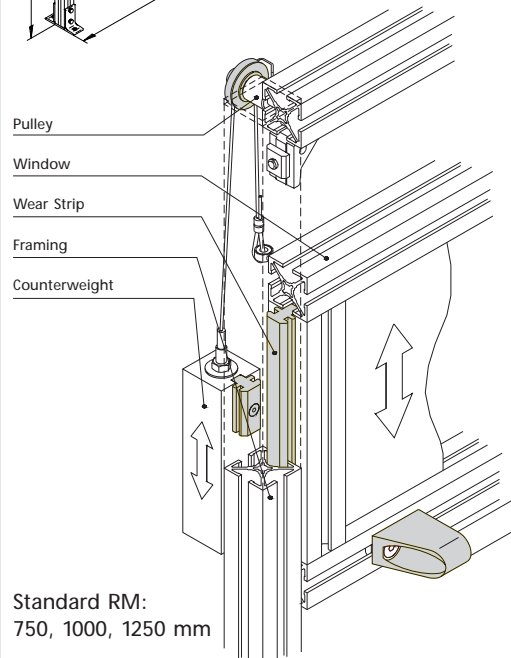
Partition Method

Vertical Door

consisting of: Profile mk 2040.40, Tension Plugs, Floor Mounting Baskets, Handle, Wear Strips, Pulleys and Counterweights. Manually operated – balanced using the Counterweights. Pneumatic, hydraulic or electromechanical operation possible on request. Paneling material (Fillers) can be found on pages 50-55.



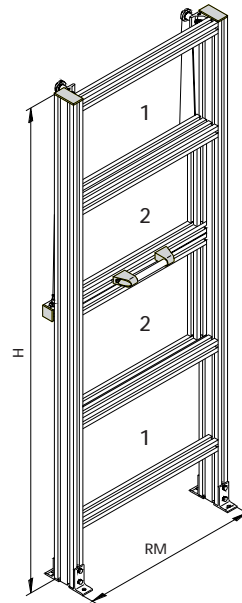
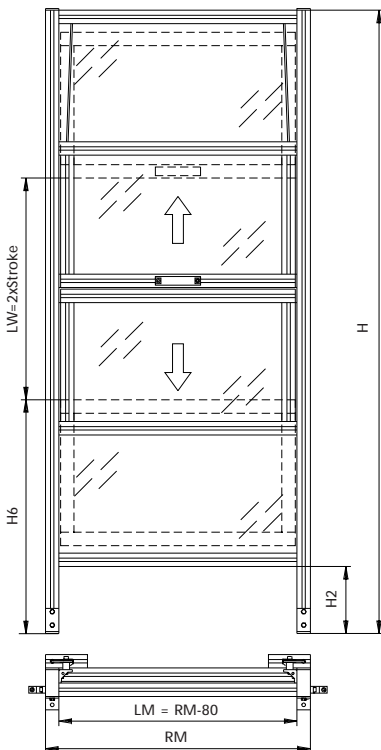
Vertical Door
B69.62.001
RM
H
H2
H3
H6
Stroke



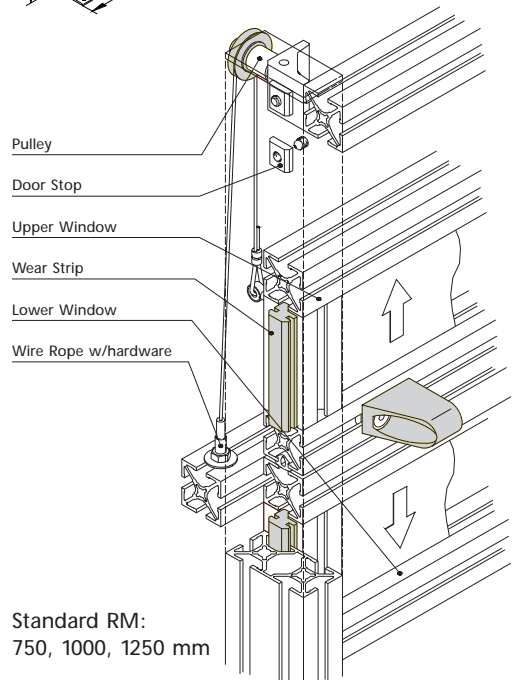
Partition Method

Scissor Door

consisting of: Profile mk 2040.40, mk 2040.41, Tension Plugs, Floor Mounting Brackets, Handles, Wear Strips, Pulleys, Wire Rope and hardware. Manually operated – balanced through the scissor action of the equally weighted doors. Pneumatic, hydraulic or electromechanical operation possible on request. Paneling material (Fillers) can be found on pages 50-55.



Scissor Door
B69.62.002
 RM
 H
 LW
 H6

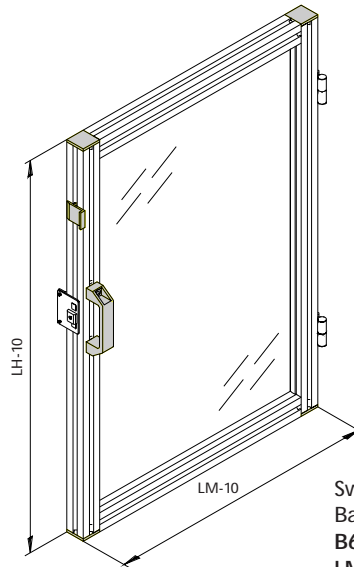
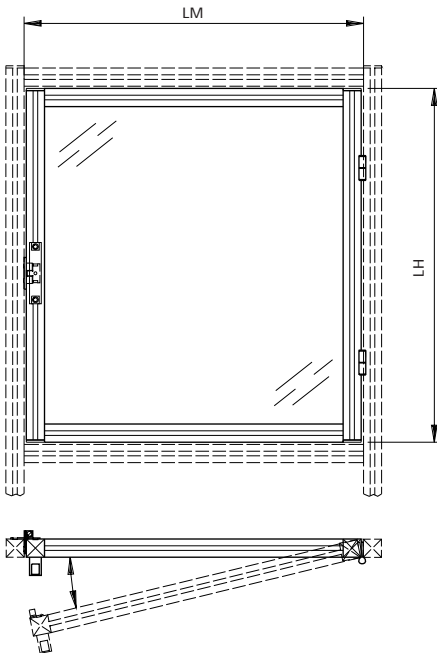


Guarding

Paneling

Swing Doors

A standard Access Door may be all you need where safety or security is not required. Our Ball Latch ensures a quick and secure closure of the door within the profile frame. Please note that this is not a safety door. For safety doors, use either a door lock and/or electronic interlock switch. Paneling material (Fillers) can be found on pages 50-55. Safety Accessories see pages 61-63.

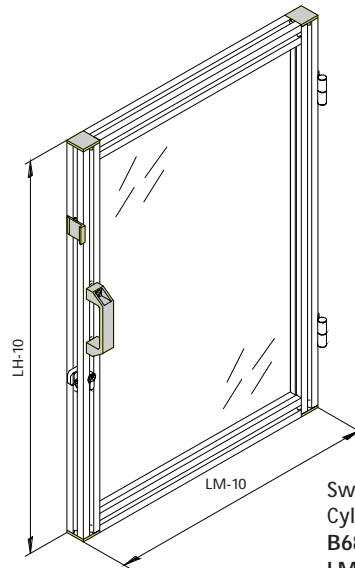
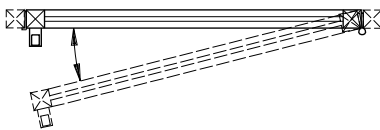
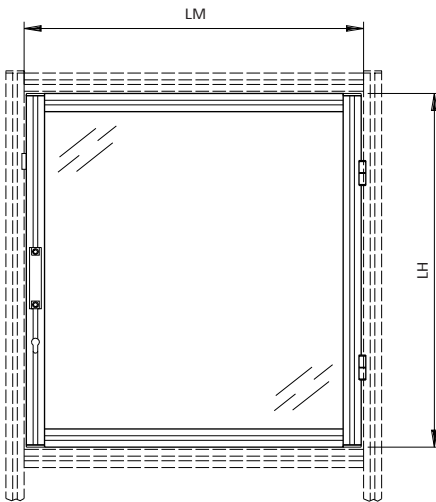


Swing Door with
Ball Latch
B68.07.001
LM
LH
without paneling
material

Paneling

Swing Doors

Standard Door with Door Lock. An alternative to the Access Door, the Swing Door uses a Profile Cylinder Lock instead of a ball latch. Paneling material (Fillers) can be found on pages 50-55. Safety Accessories see pages 61-63.



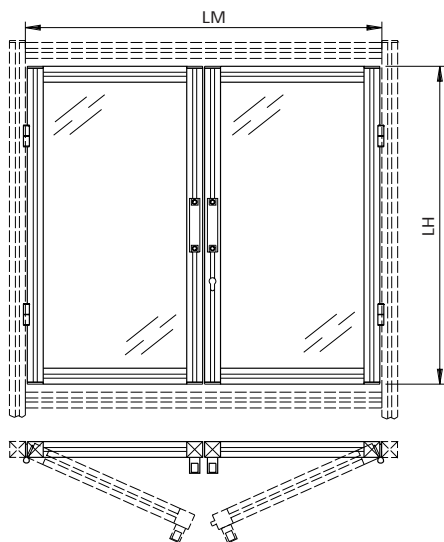
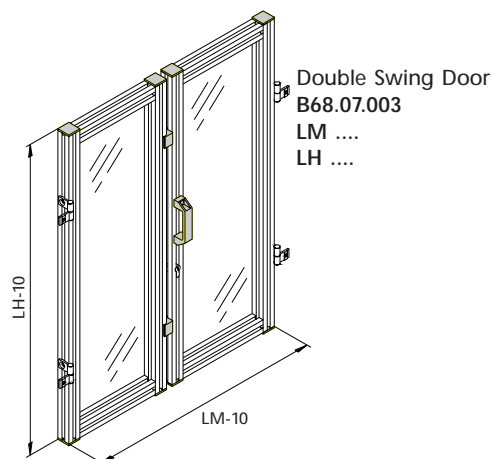
Swing Door with
 Cylinder Lock
B68.07.002
 LM
 LH
 without paneling
 material

Guarding

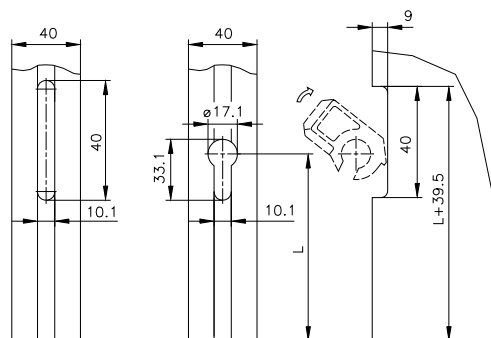
Paneling

Double Door

consisting of: Profile mk 2040.40, Hinges, Hangles, Latches, Paneling, Seal Strip and attachment hardware. Paneling materials (fillers) can be found on pages 50-55.



Machining patterns for the Profile Cylinder Lock

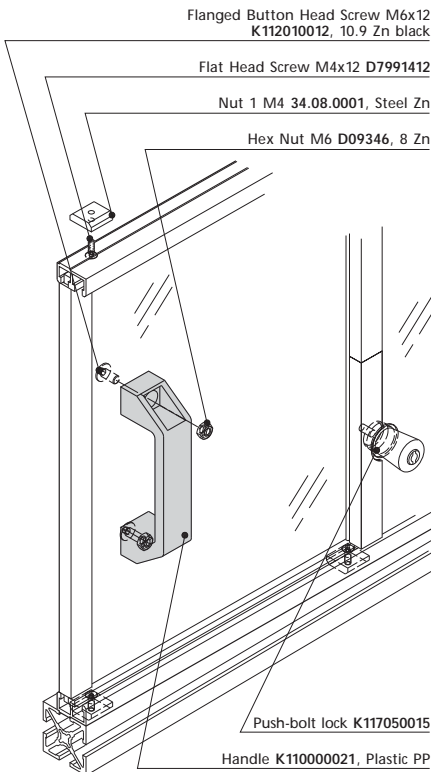


LM max. = 1200 mm
LH max. = 1800 mm

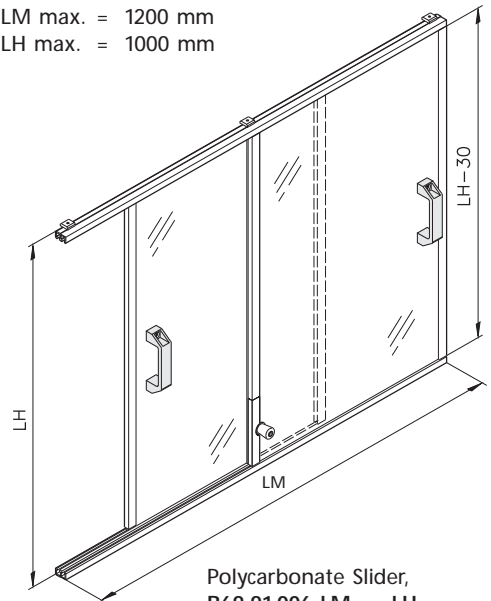
Paneling

Slider

consisting of: Profile mk 2240, Profile mk 2207, PE-Tubing, 6 mm Polycarbonate or Alucobond panels, handles, attachment hardware and push-bolt lock. Both sliding elements can be installed or removed in the open position. In the closed position they are locked using a push-bolt lock and are simultaneously secured against dismantling by locking pins within the slider profiles.



LM max. = 1200 mm
 LH max. = 1000 mm

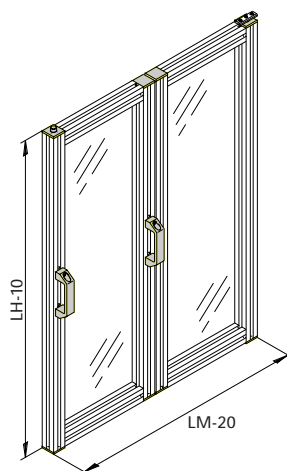
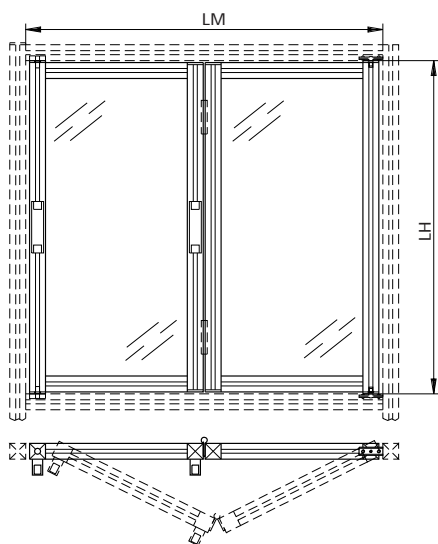


Guarding

Paneling

Bifold door

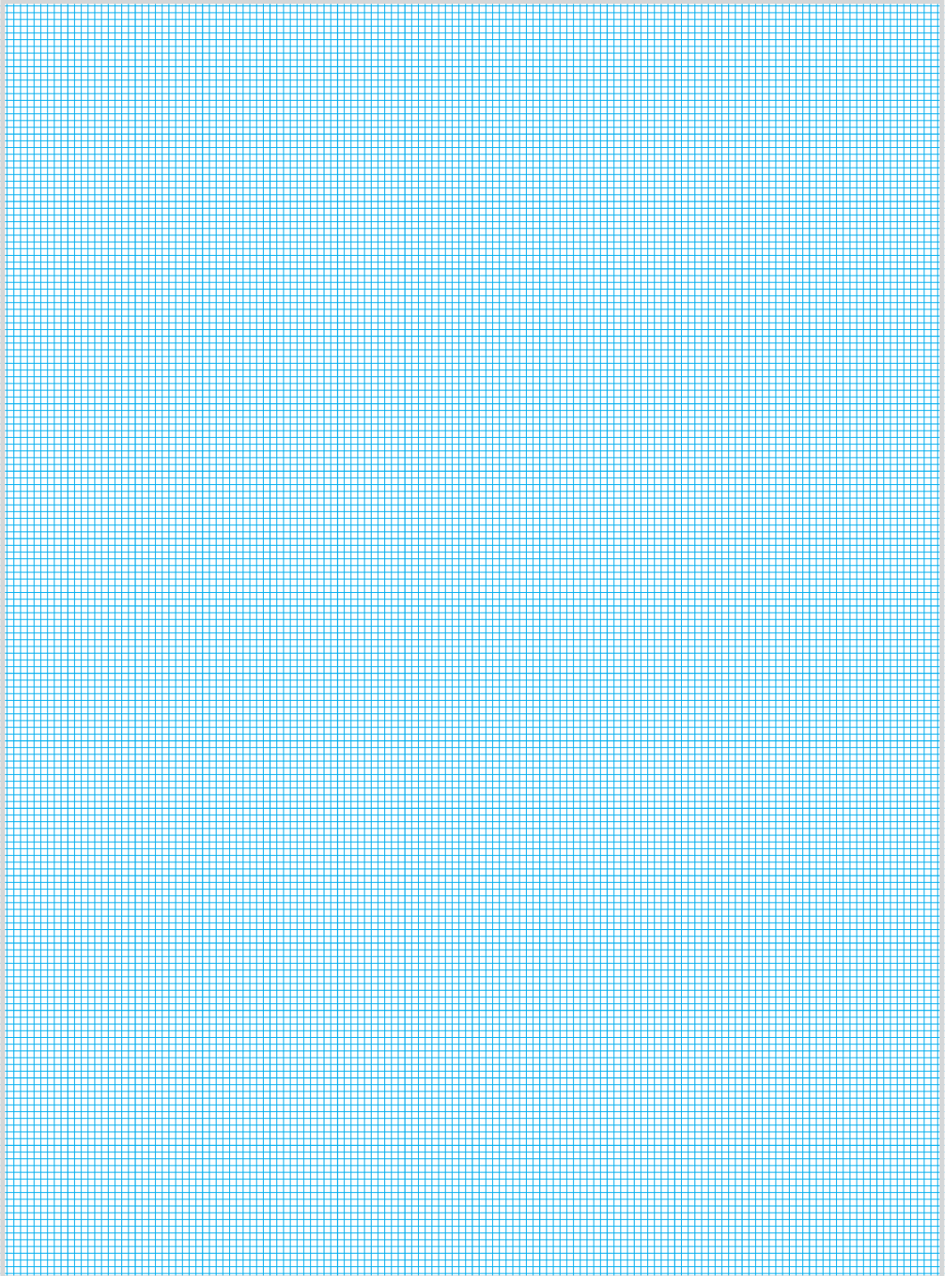
consisting of:
Profile mk 2040.40, Handles, Seal Strip and attachment hardware. Paneling material (Fillers) can be found on pages 50-55.



Bifold door
Acrylic
B69.91.004
LM
LH

Bifold door
Polycarbonate
B69.91.005
LM
LH

LM max. = 1200 mm
LH max. = 1000 mm



Guarding

Paneling

Paneling

The paneling shown here can be used with all frames, partitions and doors shown in the catalog. When ordering (or specifying) paneling, please indicate the relevant LM and LH dimensions of the profile frame, if applicable. Also, some frames have sections labeled 1 and 2. Ensure that you have indicated the desired paneling material in the correct (1,2) location. Please review your confirmation and/or drawing carefully! Metal panels painted per your specifications.

Paneling Material and Cuts

Material	Color	Sheet Size	Thickness	Ident-No. Material	Ident-No. Cut 1)
Acrylic	clear	3050 x 2050 mm	4 mm	K01D211004 ¹⁾	50.15.6014
		3050 x 2050 mm	5 mm	K01D211005 ¹⁾	50.15.6000
		3050 x 2050 mm	6 mm	K01D211006 ¹⁾	50.15.6001
		4' x 8'	1/4"	P90.05.001 ²⁾	
Polycarbonate	clear	3050 x 2050 mm	4 mm	K01B211004 ¹⁾	50.15.6009
		3050 x 2050 mm	5 mm	K01B211005 ¹⁾	50.15.6002
		3050 x 2050 mm	6 mm	K01B211006 ¹⁾	50.15.6003
		4' x 8'	1/4"	P90.03.002 ²⁾	
Polycarbonate	grey tint	3050 x 2050 mm	4 mm	K01B231004 ¹⁾	50.15.6009
		3050 x 2050 mm	5 mm	K01B231005 ¹⁾	50.15.6002
		3050 x 2050 mm	6 mm	K01B231006 ¹⁾	50.15.6003
		4' x 8'	1/4"	P90.03.003 ²⁾	
PETG	clear	3050 x 2050 mm	5 mm	K01P211005 ¹⁾	50.15.6019
		3050 x 2050 mm	6 mm	K01P211006 ¹⁾	50.15.6017
Fencing Alu		2000 x 1000 mm	40 x 40 x 4 mm	K00315121.40 ¹⁾	24.00.0000
		3000 x 2000 mm	40 x 40 x 4 mm	K00315122.40 ¹⁾	24.00.0000
Fencing Steel	zinc plated	2000 x 1000 mm	40 x 40 x 4 mm	K00128221.40 ¹⁾	24.02.0000
		3000 x 2000 mm	40 x 40 x 4 mm	K00128222.40 ¹⁾	24.02.0000
Trespa	silver	5' x 10'	1/4"	P90.08.001 ²⁾	

1) not in USA. 2) only in USA.* width and height in mm.

Paneling and Accessories

Paneling

Paneling Material and Cuts

Material	Color	max. Sheet Size	Thickness	Ident-No. Material	Ident-No. Cut ¹⁾
Fencing Steel	black powder-coated	2000 x 1000 mm	40 x 40 x 4 mm	K00128321.40 ¹⁾	24.05.0000
		2000 x 1250 mm	40 x 40 x 4 mm	K00128323.40 ¹⁾	24.05.0000
		2000 x 1500 mm	40 x 40 x 4 mm	K00128324.40 ¹⁾	24.05.0000
	yellow	4' x 8'	1"x1", 12 Ga.	P90.00.007 ²⁾	
		4' x 8'	1/2"x1/2", 16 Ga.	P90.00.009 ²⁾	
		4' x 8'	1"x1", 12 Ga.	P90.00.008 ²⁾	
Alucobond	silver anod.	3000 x 1500 mm	4 mm	K00316223004 ¹⁾	50.15.4001
		3000 x 1500 mm	4/2,5 mm reworked 6 mm	50.15.3005 K00316223006 ¹⁾	50.15.4002
Dibond	white	4' x 8'	2 mm	P90.06.001 ²⁾	
Steel	zinc plated	2000 x 1000 mm	1,5 mm	K00112121150 ¹⁾	07.28. *
	painted	2000 x 1000 mm	1,5 mm	K00112131150 ¹⁾	07.28. *
	zinc plated	4' x 8'	18 Ga.	P57.02.000 ²⁾	
Stainless Steel	polished	2000 x 1000 mm	1,5 mm	K00205121150 ¹⁾	07.29. *
		4' x 8'	20 Ga.	P57.01.000 ²⁾	
Aluminum	silver anod.	2000 x 1000 mm	1,5 mm	K00305321150 ¹⁾	07.30. *
		2000 x 1000 mm	2 mm	K00305321200 ¹⁾	07.33. *
Expanded PVC	black	4' x 8'	1/4"	P90.07.001 ²⁾	
	blue	4' x 8'	1/4"	P90.07.002 ²⁾	
	grey	4' x 8'	1/4"	P90.07.003 ²⁾	
	white	4' x 8'	1/4"	P90.07.004 ²⁾	
Alumalite	silver	4' x 8'	1/4"	P90.04.001 ²⁾	

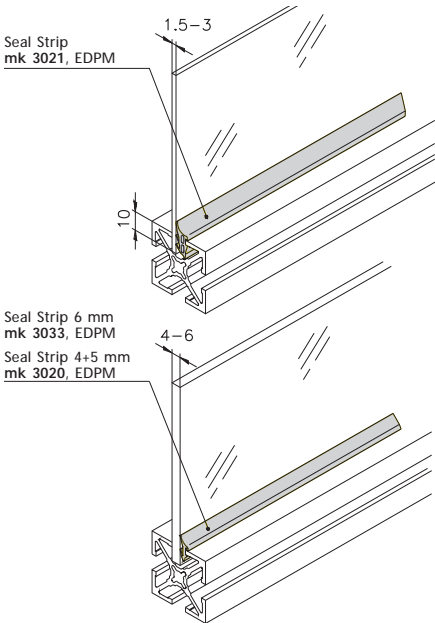
Sizing

Installed using	Width	Height	Installed using	Width	Height
Seal Strip	LM+20 mm	LH+20 mm	Angle	LM	LH
Panel Clamp	LM-31 mm	LH-31 mm	Fencing w. Clamp Profile	LM+10 mm	LH+10 mm
Panel Block	LM	LH	Fencing	LM+20 mm	LH+20 mm

1) not in USA. 2) only in USA. * width and height in mm.

Guarding

Paneling



Paneling with Seal Strips

(LM+20 mm, LH+20 mm)

Alucobond silver anodized (E6/EV1)

4 mm B69.90.501 LM ... LH ...

6 mm B69.90.502 LM ... LH ...

Acrylic clear

5 mm B69.90.101 LM ... LH ...

6 mm B69.90.102 LM ... LH ...

Polycarbonate clear or gray tint

4 mm B69.90.201 LM ... LH ...

5 mm B69.90.202 LM ... LH ...

6 mm B69.90.203 LM ... LH ...

Steel painted RAL

1,5 mm B69.90.301 LM ... LH ...

2 mm B69.90.302 LM ... LH ...

Stainless Steel

1,5 mm B69.90.303 LM ... LH ...

2 mm B69.90.304 LM ... LH ...

Aluminum, anodized

1,5 mm B69.90.401 LM ... LH ...

2 mm B69.90.402 LM ... LH ...

Other materials available on request.

Nut 1 M8 34.01.0001, Steel Zn

Flanged Button Head Screw M8x16
K112010003, 10.9 Zn

Cover
07.01.0005, Steel Zn black

Angle with M8 thread

Steel painted (1.5-2 mm)

Ribbed Washer \varnothing 8.4
K111010017, Steel Zn

SHCS M8x16
D0912816

Hex Nut M8 D09348

Panel Block mk 2552, PA6 30%GFK

Flanged Button Head Screw M8x12
K112010002, 10.9 Zn

Paneling with Angles

(LM, LH)

Steel painted RAL

1,5 mm B69.90.311 LM ... LH ...

max length to 1200 mm

2 mm B69.90.312 LM ... LH ...

max length over 1200 mm with additional Panel
Blocks mk 2552.

Paneling

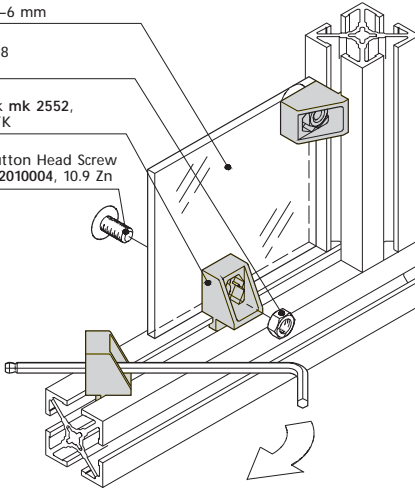
Paneling requires $\varnothing 9$ mm holes at a distance of 10-15 mm from the edge.

Paneling 2–6 mm

Hex Nut M8
 D09348

Panel Block mk 2552,
 PA6 30%GFK

Flanged Button Head Screw
 M8x20 K112010004, 10.9 Zn



Paneling with Panel Blocks (LM, LH)

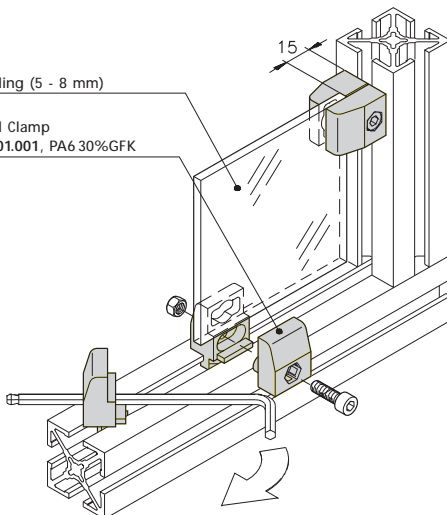
Polycarbonate clear or gray tint

5 mm	B69.90.206	LM	LH
6 mm	B69.90.207	LM	LH

Other materials available on request.

Paneling (5 - 8 mm)

Panel Clamp
 B34.01.001, PA6 30%GFK



Paneling with Panel Clamps (LM-31 mm, LH-31 mm)

Acrylic clear

5 mm	B69.90.103	LM	LH
6 mm	B69.90.104	LM	LH

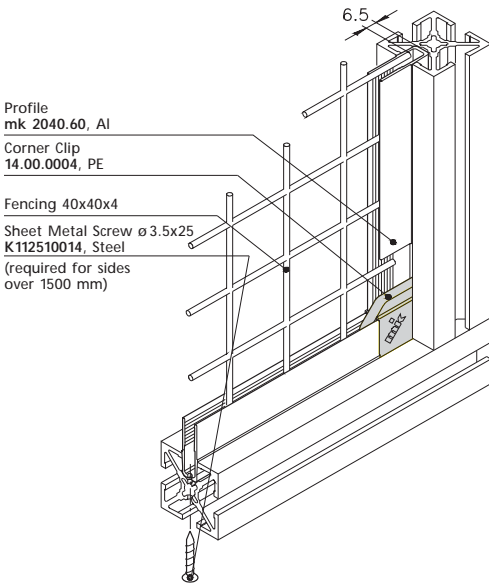
Polycarbonate clear or gray tint

5 mm	B69.90.204	LM	LH
6 mm	B69.90.205	LM	LH

Other materials available on request.

Guarding

Paneling



Profile
mk 2040.60, Al

Corner Clip
14.00.0004, PE

Fencing 40x40x4

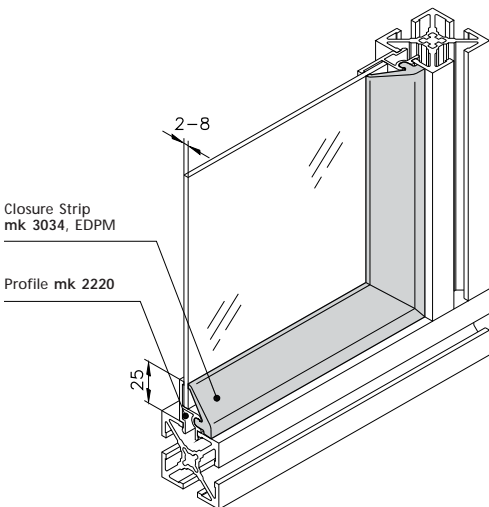
Sheet Metal Screw \varnothing 3.5x25
K112510014, Steel
(required for sides
over 1500 mm)

Paneling with Fencing

(LM+23 mm, LH+23 mm)

Fencing

Al 40x40x4 mm	B69.90.001	LM	LH
Steel Zn 40x40x4 mm	B69.90.002	LM	LH



Closure Strip
mk 3034, EDPM

Profile mk 2220

Paneling with Closure Strip

(LM-22 mm, LH-22 mm)

Polycarbonate clear or gray tint

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

Acrylic clear

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

Steel painted RAL

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

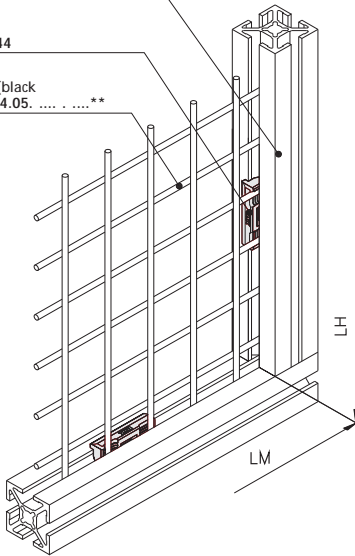
Not for safety guards allowed

Paneling

Profile 40 x 40 mm 54.31.*

Fence Clip mk 2544

Fencing 40x40x4 (black powder coated) 24.05.**



Paneling with Fencing

(LM+20 mm, LH+20 mm)

Fencing black powder coated

Fencing 40x40x4 mm (Steel)

24.05. LM ... LH ...

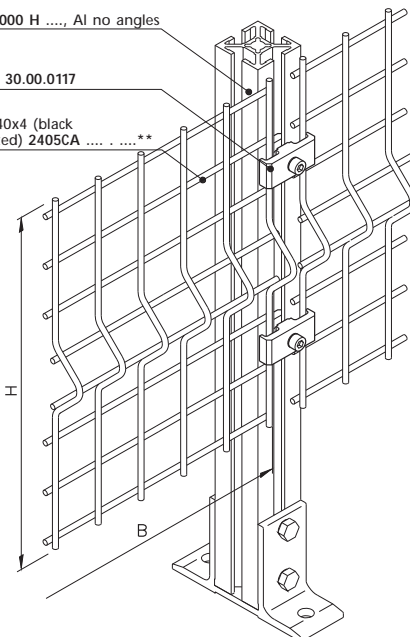
Fencing complete with Fence Clips

B69.90.003 LM ... LH ...

Post B69.65.000 H, Al no angles

Fence Clamp 30.00.0117

Fencing 40x40x4 (black powder coated) 2405CA**



Paneling with Fencing

(B = RM* -10 mm, H = max. 1880 mm)

Fencing black powder coated

Fencing 40x40x4 mm (Steel)

B69.90.004 B ... H ...

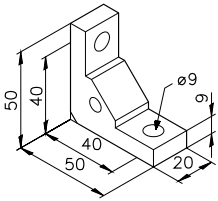
*RM = Centerline of Posts

Guarding

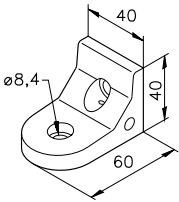
Accessories

Angle attachments

for profile frames to upright posts.



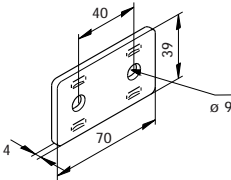
Angle B20/40
82.05.0026



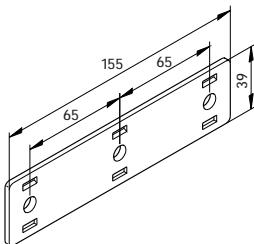
Angle F40/R
82.40.0805

Parallel connections

between neighboring profiles and/or frames.



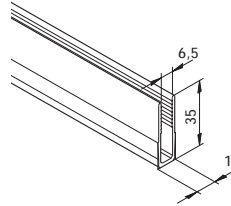
Parallel Plate
50.05.0053



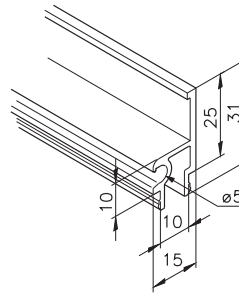
Parallel Plate
50.05.0070

Profiles for paneling

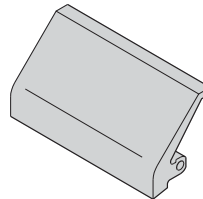
for fix the paneling within the profile.



Profile mk 2040.60
54.60.*
0.30 kg/m
AlMgSi 0.5 F25
A 112.52 mm²



Profile mk 2220
52.20.*
0.30 kg/m
AlMgSi 0.5 F25
A 112.52 mm²

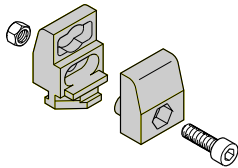


Closure Strip
mk 3034 black
EPDM
Stock length 200 m
for paneling 2-8 mm

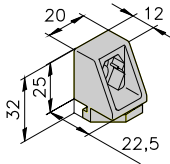
Accessories

Paneling components

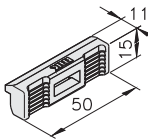
Panel Clamps, designed for use with 5-8 mm thick panels, are placed into the T-slots of the assembled frame. If attaching paneling material to angles, the Panel Block should be used as an additional support on sides with lengths of over 600 mm.



Panel Clamp
B34.01.001



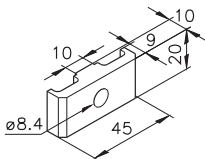
Panel Block
mk 2552



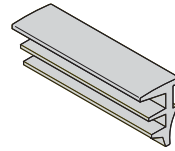
Fence Clip
mk 2544



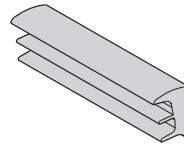
Fence Clamp
30.00.0117



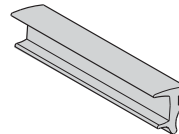
Corner Clip
14.00.0004
 for fencing



Seal Strip
mk 3020 black
 EPDM
 Stock length 200 m
 for gap 5-6 mm



Seal Strip
mk 3021 black
 EPDM
 Stock length 200 m
 for gap 7-8,5 mm

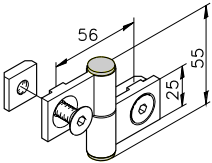


Seal Strip
mk 3033 black
 EPDM
 Stock length 200 m
 for gap 4 mm

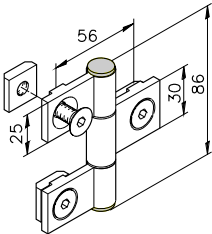
Guarding

Accessories

Hinges

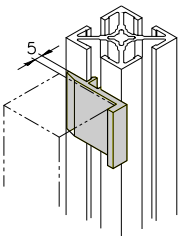


Hinge
40-1/40-1
B46.01.010
complete

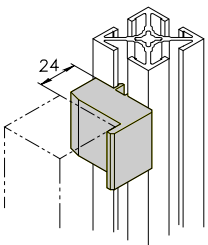


Hinge
40-1/40-7/40-1
B46.01.030
complete

Door Stop



Door Stop
for Swinging Doors
(w. 5 mm gap)
22.90.0035
Plastic PE



Door Stop
for Swinging Doors
(w. 24 mm gap)
22.92.0035
Plastic PE

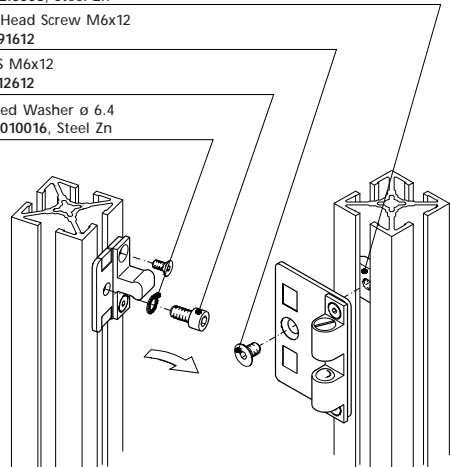
Ball Latch

B68.02.101 for door gap of 5 mm, complete
B68.02.102 for door gap of 24 mm, complete

Nut 1, M6
34.02.0008, Steel Zn
Flat Head Screw M6x12
D7991612

SHCS M6x12
D0912612

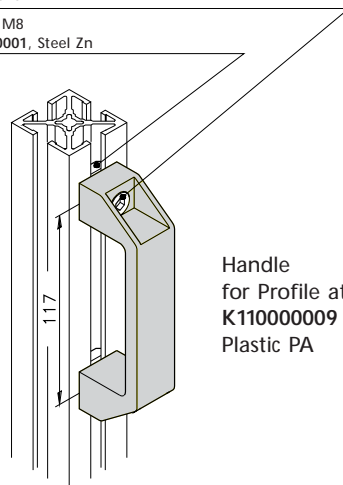
Ribbed Washer \varnothing 6.4
K111010016, Steel Zn



Handle

SHCS M8x16
D0912820

Nut 1, M8
34.01.0001, Steel Zn

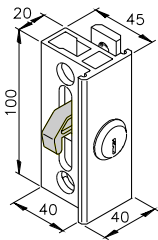


Handle
for Profile attachment
K11000009
Plastic PA

Accessories

External Lock

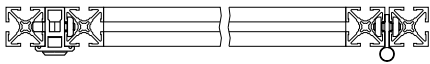
Mounted to door profile T-slot. The gap between the door and frame must be 24 mm. For Sliding Doors, please order Catch B68.06.005 or B68.02.007 separately.



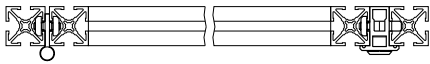
External Double-Bit Lock
 DIN-right B68.02.017
 DIN-left B68.02.018

External Cylinder Lock
 DIN-right B68.02.019
 DIN-left B68.02.020

Swing Door DIN-right

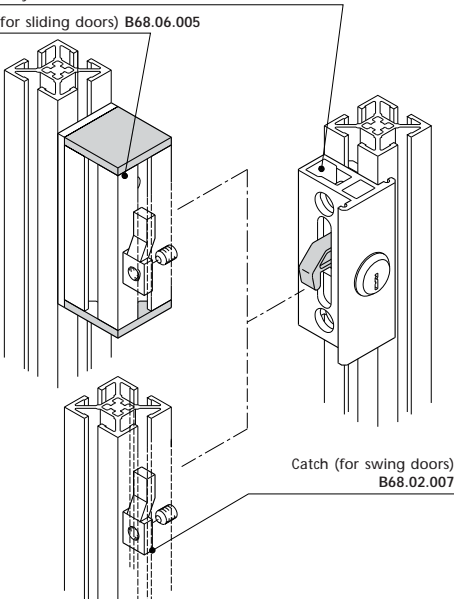


Swing Door DIN-left



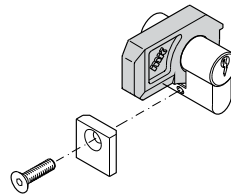
External Cylinder Lock B68.02.019

Catch (for sliding doors) B68.06.005



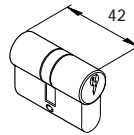
Internal Locks

Installed within door frame profile. The gap between the door and frame must be 5 mm.

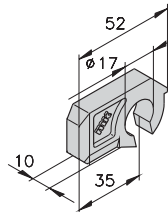


Cylinder Lock
 complete as shown,
 plus key

B68.02.051

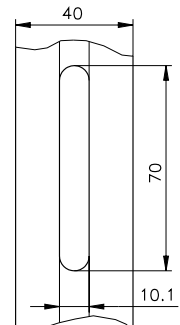
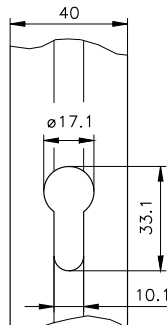


Cylinder
 K117055000



Keeper
 mk 2533
 PA 30 % GFK

Profile machining pattern for Internal Lock

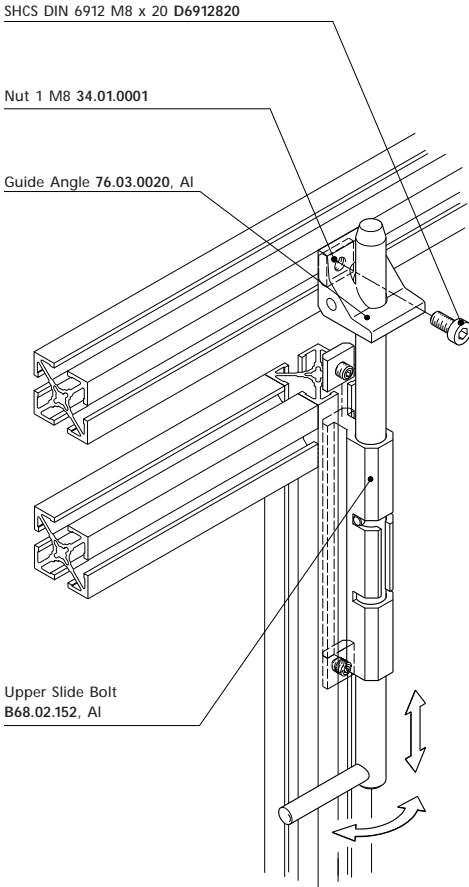


Guarding

Accessories

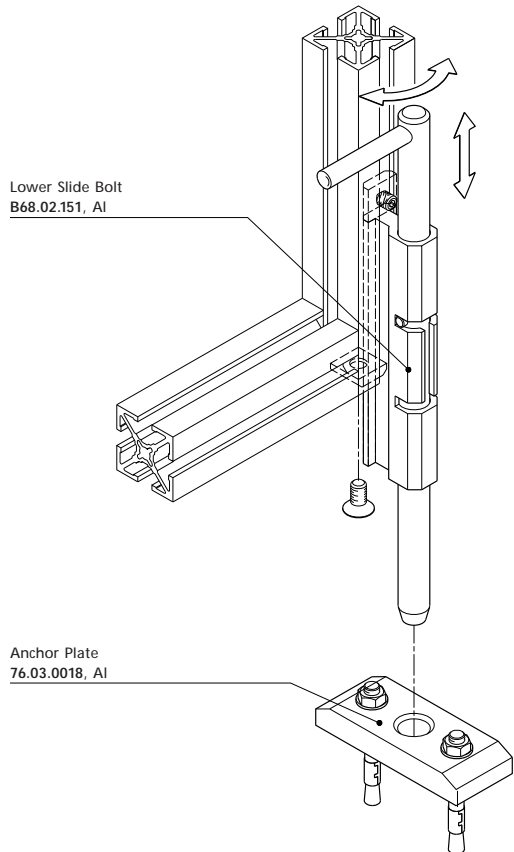
Upper Slide Bolt

To securely latch swing doors to upper framing members, use the Upper Slide Bolt and Guide Angle.



Lower Slide Bolt

A thread must be made in the vertical brace for fixing the slide bolt for locking swing doors on the ground. The Lower Slide Bolt is designed for use with doors featuring a maximum 200 mm sweep clearance.



Safety Accessories

Safety Interlocks

The safety interlock is suitable for use with swing doors which must be closed to ensure the required operational safety.

Standards: IEC 60947-5-1/
 DIN EN 60947-5-1/
 BG-GS-ET-15

Max. SK/PL: Stand alone:
 max. SK 4, PL „e“

Rating: IP 65 per IEC 60529/
 DIN EN 60529/
 DIN VDE 0470-1

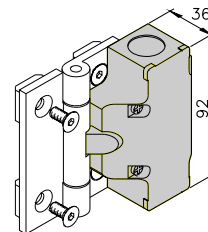
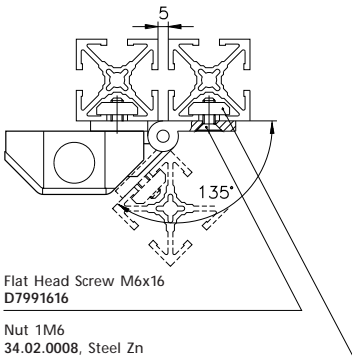
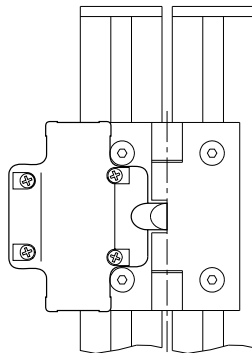
Contacts: 1 NO & 1 NC

Contact Rating I_e/U_e : 2,0 A/230 VAC;
 1A/24 VDC

Short Circuit Protect: 2A (slow blow fuse)

Mech. Life: > 10⁶ operations

Note: Actual switch availability may vary according to local and international safety and electrical standards. Although dimensionally identical, please inquire as to normally available ratings.



Hinged-
 Safety Interlock
 ETVS400-12/B-M20
 K370000030

Guarding

Safety Accessories

Safety Interlocks

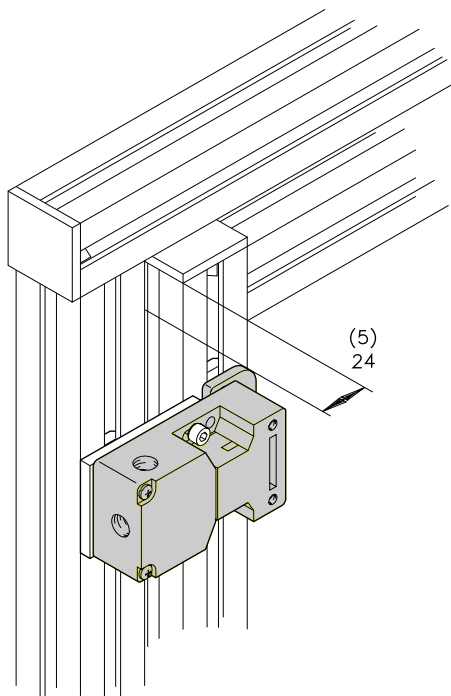
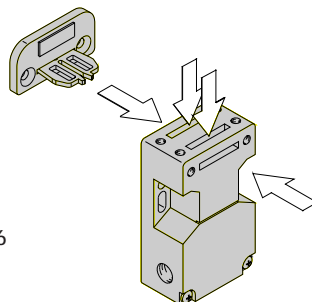
The safety interlock with separate actuation is suitable for sliding or swinging doors, and in particular for removable guarding sections which must be locked to ensure the required operational safety.

Standards:	IEC 60947-5-1/ BG-GS-ET-15
Max. SK/PL:	without 2. interlock: max. SK 3 PL „d“
Rating:	IP 67 per IEC 60529/ DIN EN 60529/ DIN VDE 0470-1
Contacts:	1 NO & 1 NC
Actuator:	straight link made of stainless steel and magnetic clamp
Contact Rating I_e/U_e :	4 A/230 VAC; 4 A/24 VDC
Short Circuit Protect.:	6 A (time-delay fuse)
Holding Force:	30 N
Mech. Life:	> 10 ⁶ operations

Note: Actual switch availability may vary according to local and international safety and electrical standards. Although dimensionally identical, please inquire as to normally available ratings.

Actuating Key
AZ15/16-B1-1747
K37000011

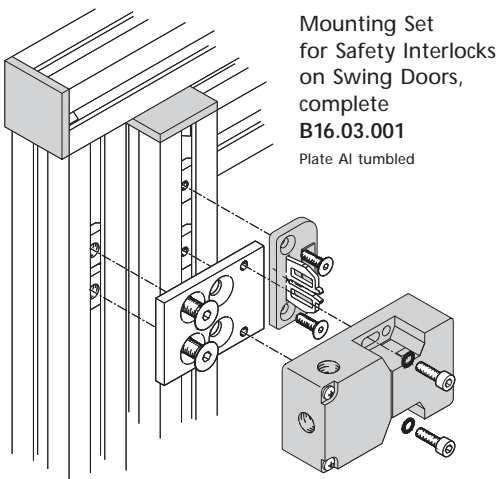
Safety Interlocks
AZ 16 zvrk – M16
K37000010



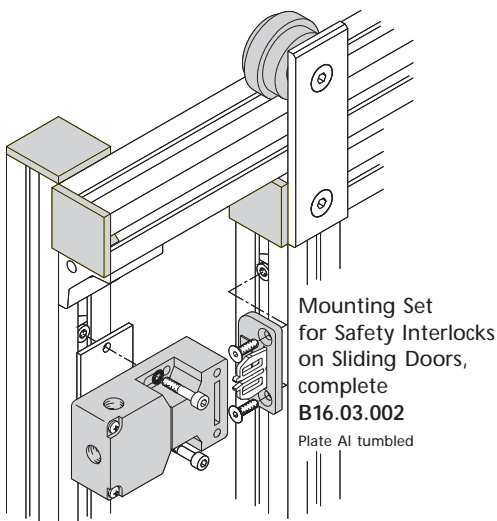
Safety Accessories

Mounting for Safety Interlocks

The safety switch mounting kit can be used for swing doors with either a 5 or 24 mm gap.



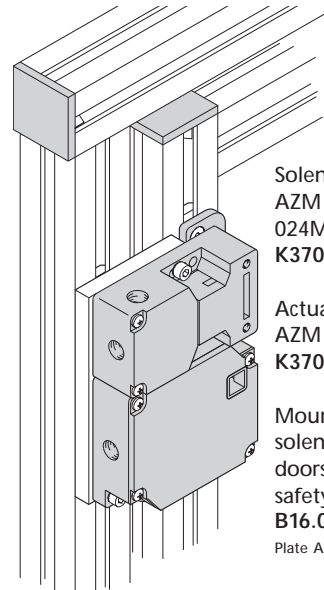
Mounting Set
for Safety Interlocks
on Swing Doors,
complete
B16.03.001
Plate Al tumbled



Mounting Set
for Safety Interlocks
on Sliding Doors,
complete
B16.03.002
Plate Al tumbled

Solenoid Latching

The solenoid latching ensures that sliding and swing doors, as well as removable guarding sections cannot be opened until all potentially hazardous operations have ceased.



Solenoid Latch
AZM 161 SK-12/12rk-
024M16
K370000020

Actuator Key
AZM 161-B1
K370000021

Mounting kit for
solenoid latch on swing
doors, complete (without
safety interlocks)
B16.03.003
Plate Al tumbled

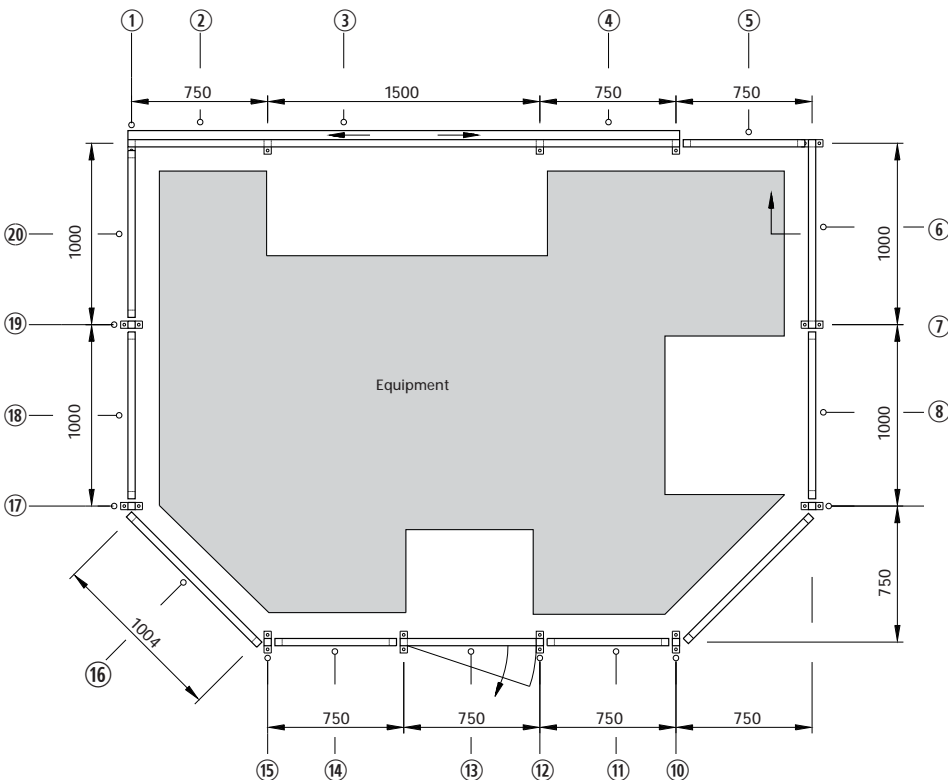
Standards:	IEC 60947-5-1/ DIN EN 60947-5-1/ DIN EN 1088; BG-GS-ET-19
Max. SK/PL:	without 2. interlock: max. SK 3, PL „d“
Rating:	IP 67 DIN VDE 0470-1
Contacts:	2 NO & 4 NC
Actuating Key:	Stainless steel 1.4301
Contact Rating I_e/U_e :	4 A/230 V; 2,5 A/24 VDC
Short Circuit Protect.:	6 A (time-delay fuse)
Solenoid Locking Force:	2000 N
Mech. Life:	> 10 ⁶ operations
Solenoid-supply voltage U_s :	24 VAC/VDC (others available)

Guarding

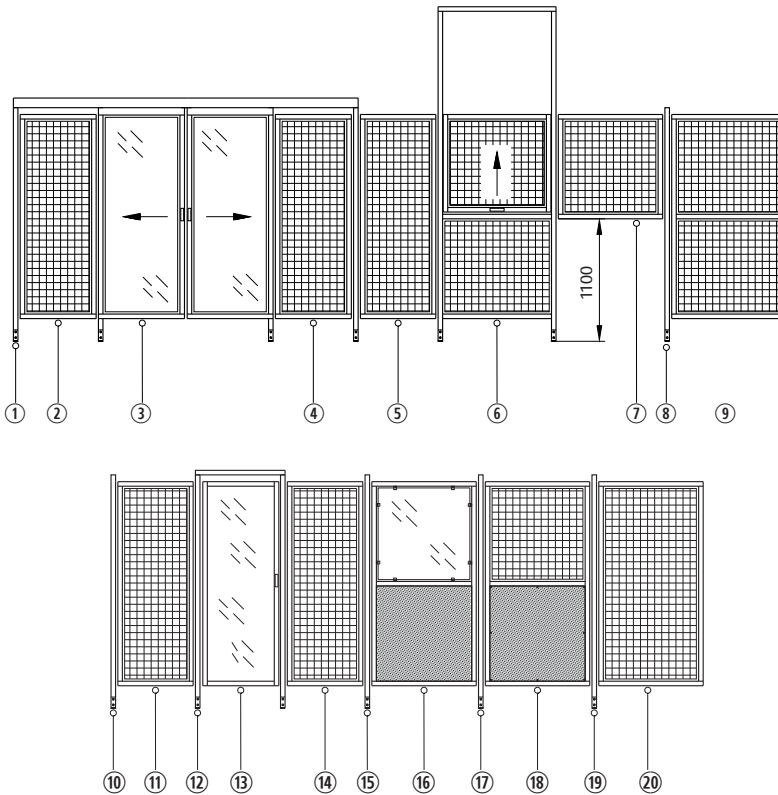
Order Example for manual order

To properly safeguard your area or equipment, please consider the following order example.

- Create the machine or plant layout or use our 3D configurator.
- Draw in the guarding outline, considering the safety distances and hazard zones shown in illustrations A and B on page 9.
- Lay in the locations of required swing, sliding and/or vertical doors.
- Fully dimension the guard and individual elements. If possible, use our standard reference dimensions. Confirm dimensions are complete and accurate.
- Identify the position the individual components using sequential numbering.
- Sketch the side views as they are to be installed, so that possible digressions from standard can be confirmed and identified.
- List the individual elements of the guard in the form of a parts list. For elements requiring paneling materials, panels and doors for example, enter their respective Ident-Numbers in the correct position (1,2) as identified on their respective pages.
- We would be pleased to assist you.



Order Example for manual order



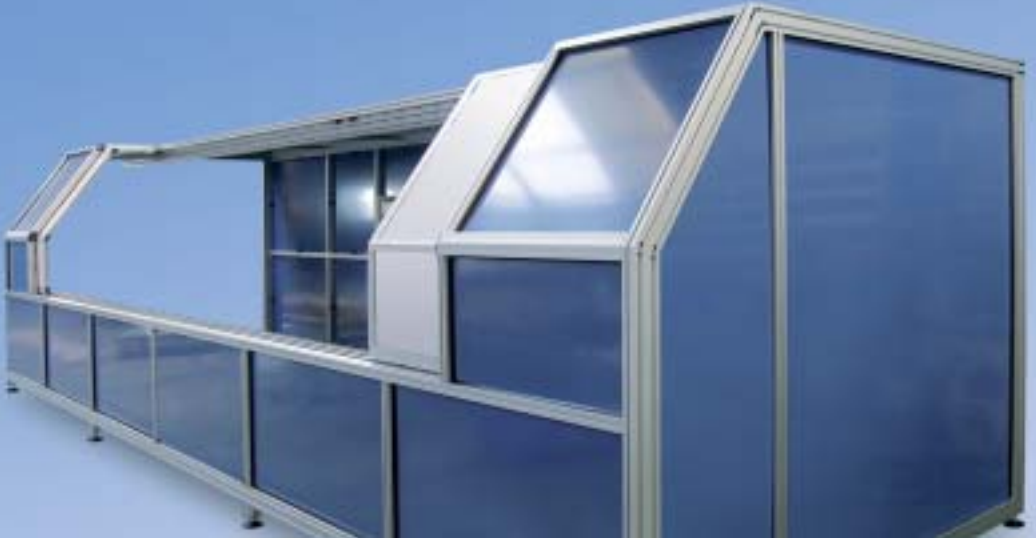
Ref Nr.	Qty.	Description	Ident-Nr.	RM	Height	Paneling 1		Paneling 2	
						Height 1	Description	Ident-Nr.	Description
1	1	Sliding Door Frame double	B69.55.004	750	2060				
2	5	Simple Panel	B69.50.001	750		1800	Fencing 40x40x4	B69.90.003	
3	1	Double Sliding Door with Double Bit Lock	B69.61.005	750		1800	Polycarbonate 6mm clear	B69.90.203	Polycarbonate 6mm clear
4		see Pos. 2							
5		see Pos. 2							
6	1	Vertical Door	B69.62.001	1000	3000		Fencing 40x40x4	B69.90.003	Fencing 40x40x4
7	1	Simple Panel	B69.50.001	1000		920	Fencing 40x40x4	B69.90.003	
8	5	Post 2	B69.65.002		2060				

etc.

RM = Reference dimension

Guarding

Application Examples



Guarding with sliding scissor door, motor-driven



Custom guarding for conveyor segments



Machine guarding with vertically swinging door actuated by gas springs



Bifold door within post-panel system



Guarding with customer-specific perforated sheet metal panels



Custom guarding with vertically swinging doors actuated by gas springs

Guarding

Application Examples



Standard guarding
(Post-Panel Method)



Guarding for production machinery



Telescoping guarding on rollers



Vertical door elements with counterweights



Guarding with fencing paneling



Scanner cabin with double swing door

Workstations



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Information about Industrial Workstations



Advantages of mk Industrial Workstations

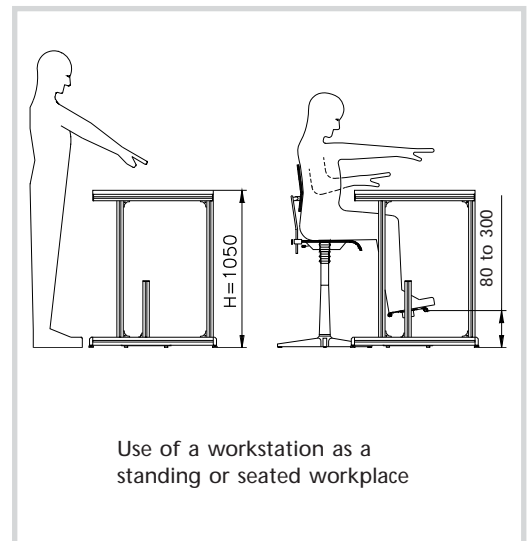
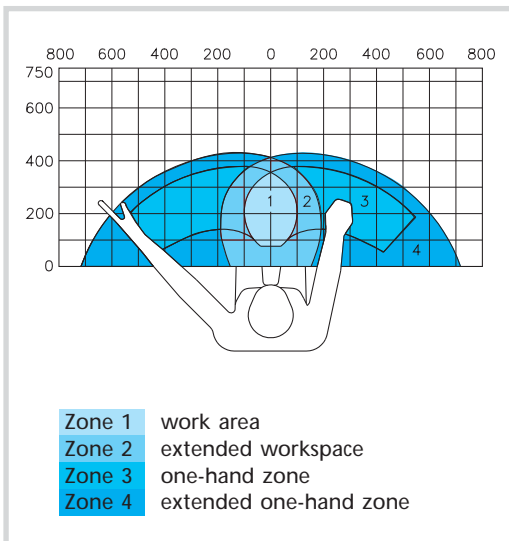
- mk's extensive know-how regarding customer-specific workstations and workplaces ensures a standardized and modular product range for individual design according to specific work tasks. Useful modules make the planning and design easier.
- mk offers workstation systems which adapt to people and not the other way around.
- If production conditions change, simple and economical adjustment to the new application can be achieved smoothly and cost-effectively.
- mk always follows the basic philosophy of „form follows function“ in its product development. This is expressed by elegant shapes, timelessness and attractive appearance.
- Consistent, logical system manufacture made of compatible elements, high quality materials and workmanship and above all a high degree of practical, beneficial use ensure economic efficiency for the long term.
- We would be pleased to assist you.

Ergonomics and mk Industrial Workstations

The word Ergonomics is a combination of the Greek words Ergon = work and Nomos = law. Our workstations are designed to provide a balance between human well-being and performance. It is a known fact that the ergonomically ideal layout of workstations and workplaces not only stimulates the efficient manufacture of

products in general, yet also has direct benefits with respect to reducing the psychological demands placed on employees. When properly designed, workstations are built around normal and comfortable human body movement rather than subject it to forced positions. It also has a positive influence on the well-being of the

individual with respect to their work and to their company. Statistically, a disregard of ergonomic principles when designing workstations has been shown to result in reduced performance of between 5 %- 20 %, due to back and neck pain alone.



Industrial Workstations

Standards, Connections and Attachments

Standards and Practices

mk has used the following Standards and Practices as a basis for its designs:

- BGI 523; Person and workplace
- DIN 31000/A1; VDE 1000/A1; general principals for safe design of technical products
- DIN EN 527-1/-2/-3; Office furniture, office and work desks
- DIN EN 894-1/-2/-3; Safety of machinery – Ergonomic requirements for the design of displays and control actuators
- DIN EN ISO 6385; Ergonomic principles in the design of work systems
- DIN EN ISO 10075-1/-2/-3; Ergonomic principles related to mental work-load
- DIN VDE 0100-410; VDE 0100-410; Construction of low-voltage power systems, protective measures – protection against electric shock

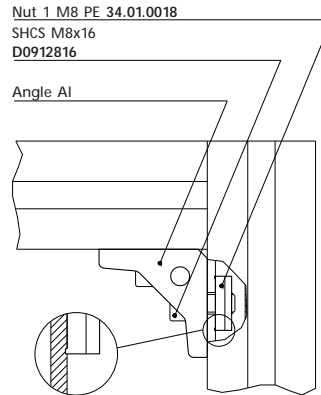
Electricity and Grounding

If workplaces are electrified (i.e. lighting, electrical outlets, etc.), DIN VDE 0100-410 requires that all conductive elements of the workplace must be connected via a common ground, so that the workplace remains safe in the case of an electrical short.

As a rule, mk uses a grounding method in all its standard workstation systems which is applied whether the workstation has electrical components or not. Connecting angles using our PE-Nuts, this grounding is accomplished without the use of additional wires. This means that in the case of later electric additions, that only the electrical grounding must be connected with the workplace.

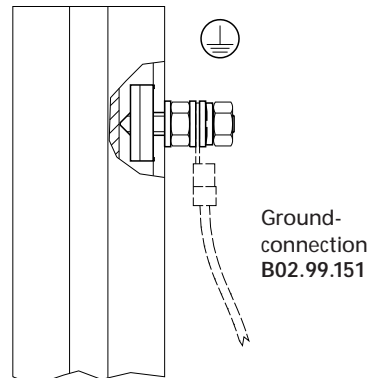
Angle connection with PE-Nuts

The nut is stamped to include protrusions which break through the anodized surface of the profile. This provides conductivity through the screw and thus ensures grounding of the connection.



Common Grounding mk Industrial Workstations

A defined grounding location of an mk workplace for attachment to a common ground.



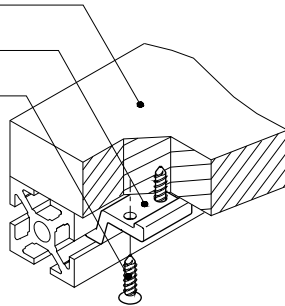
Standards, Connections and Attachments

Worksurface attachment

mk offers various methods within the standard program whereby a worksurface can be attached to the framing.

Worksurface

Clamp 26.00.0052, Al
 Wood Screw \varnothing 5x30
 K112510040

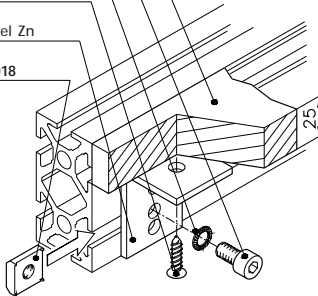


Worksurface 25 mm

SHCS M8x16
 D0912816
 Ribbed Washer \varnothing 8.4
 K111010017, Steel Zn
 Wood Screw \varnothing 5x25
 K112510039

Angle 82.03.0018, Steel Zn

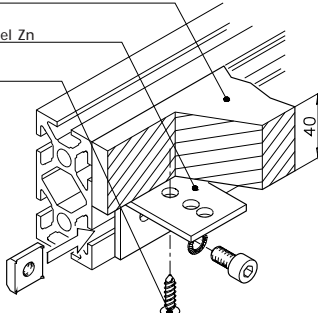
Nut 1 M8 PE 34.01.0018



Worksurface 40 mm

Angle 82.03.0018, Steel Zn

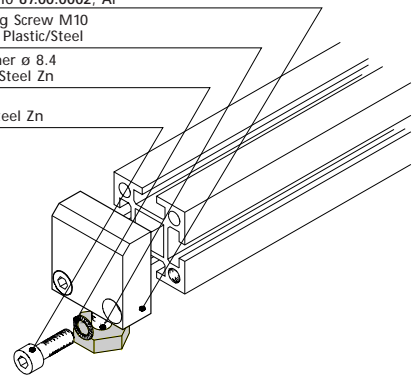
Wood Screw \varnothing 5x30
 K112510040



Leveling Pad attachment

Floor level variations of up to 30 mm can be compensated for with the Floor Leveling Screw. This is available standard on all mk System Workplaces.

Pad Block M10 67.00.0002, Al
 Floor Leveling Screw M10
 K110060003, Plastic/Steel
 Ribbed Washer \varnothing 8.4
 K111010017, Steel Zn
 SHCS M8x25
 D0912825, Steel Zn

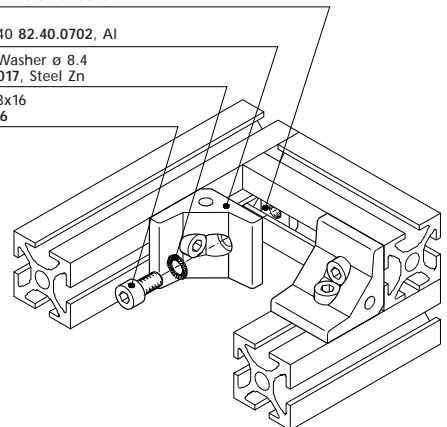


Angle connections

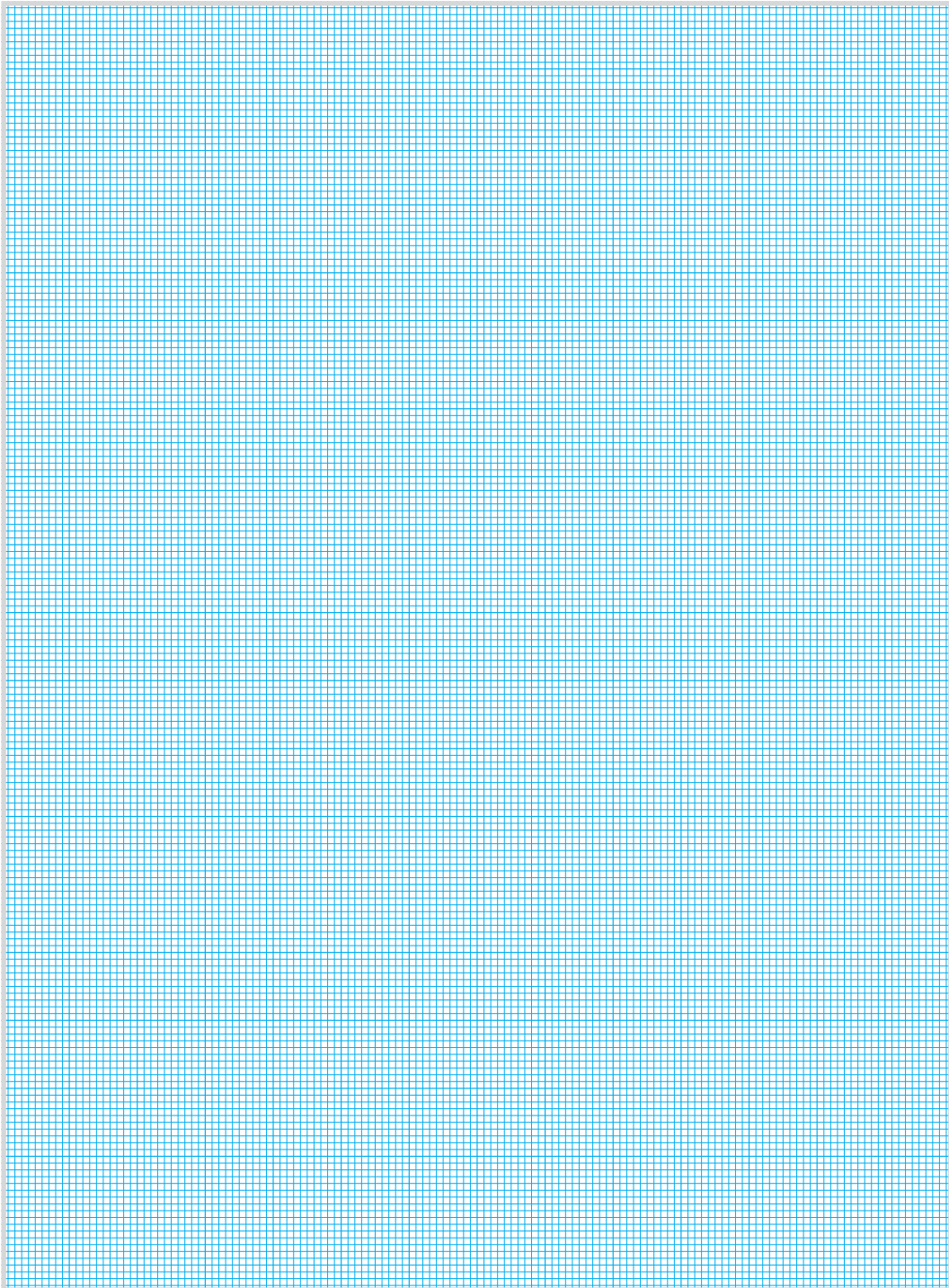
Angles are available either with or without key steps. Keyed angles offer the advantage of preventing profile twisting while easily achieving a flush connection.

Nut 1 PE M8 34.01.0018

Angle E40 82.40.0702, Al
 Ribbed Washer \varnothing 8.4
 K111010017, Steel Zn
 SHCS M8x16
 D0912816



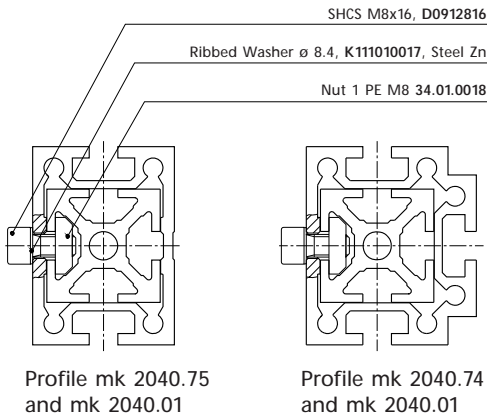
Industrial Workstations



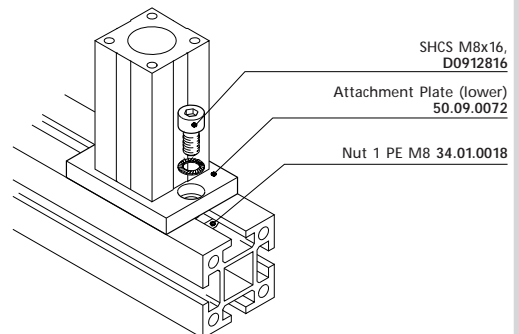
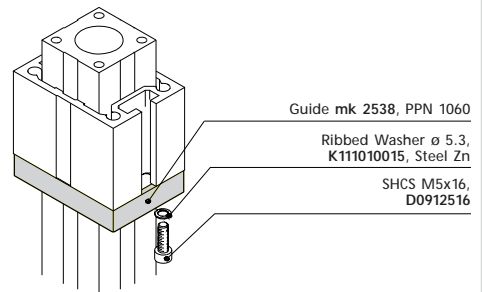
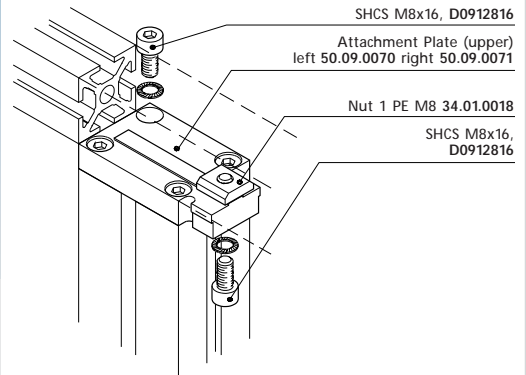
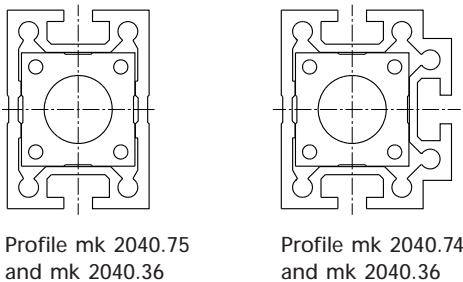
Telescoping Legs



Telescoping Profiles
for manual height adjustment



Telescoping Profiles
for electric height adjustment



Industrial Workstations

Workstations

Fixed height

Manufactured using our Series 40 Profiles, mk fixed height workstation frames are designed using an extremely rigid desk construction. The standard dimensions shown reflect their suitability as either standing or seated workplaces. Naturally customer-specific dimensions are no problem, although the standard program has taken relevant ergonomic standards into consideration. The light and heavy versions differ primarily in the worksurface size and placement as well as the profiles used for framing.

A selection of various worksurfaces and paneling is shown on the following pages.

Workstation C1 light

B02.13.030

Load capacities

Load type	Surface load	Point load
Static load	2000 N (450 lbs)	1200 N (270 lbs)

Standard dimensions (mm)

Standard height H	Standard depth T	Standard width B
850	600	1200
1050	750	1400
		1600

Other dimensions possible

Workstation E1 heavy

B02.13.050

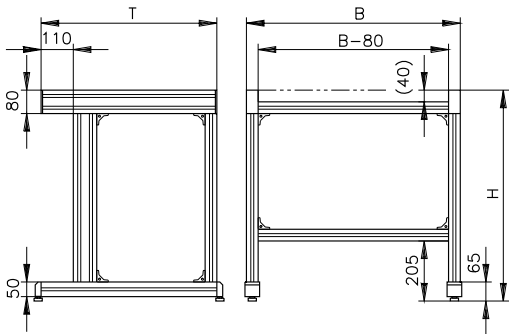
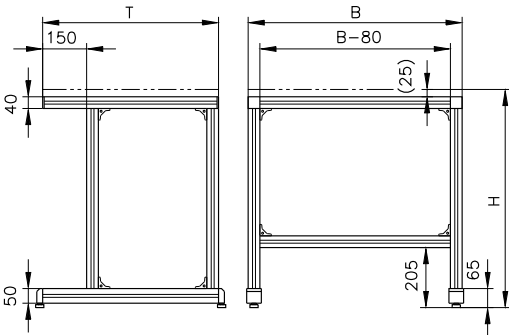
Load capacities

Load type	Surface load	Point load
Static load	4000 N (900 lbs)	2400 N (540 lbs)

Standard dimensions (mm)

Standard height H	Standard depth T	Standard width B
850	600	1200
1050	750	1400
		1600

Other dimensions possible

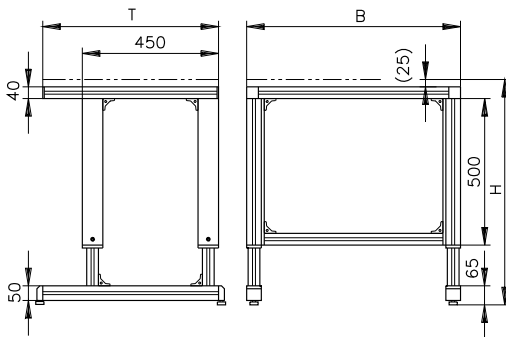


Workstations

Manual height adjustment

Manufactured using our Series 40 Profiles, mk height adjustable workstation frames are designed using an extremely rigid desk construction. The method of height adjustment is accomplished using screws to hold telescoping profiles. The adjustment of the work height is easily accomplished while maintaining high workstation rigidity and load capacity. The light and heavy versions differ primarily in the worksurface size and placement as well as the profiles used for framing.

A selection of various worksurfaces and paneling is shown on the following pages.



Workstation D1 light

B02.13.040

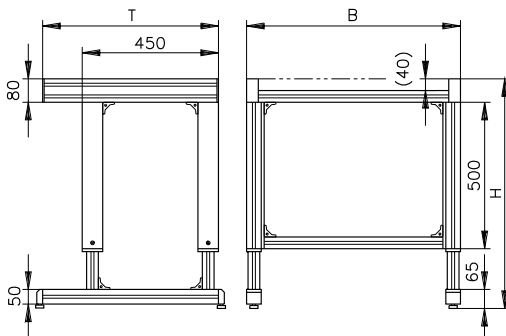
Load capacities

Load type	Surface load	Point load
Static load	2000 N (450 lbs)	1200 N (270 lbs)

Standard dimensions (mm)

Standard height H	Standard depth T	Standard width B
680 to 1070	600	1200
as of H = 900 mm	750	1400
with additional brace		1600

Other dimensions possible



Workstation F1 heavy

B02.13.060

Load capacities

Load type	Surface load	Point load
Static load	2500 N (562 lbs)	1500 N (337 lbs)

Standard dimensions (mm)

Standard height H	Standard depth T	Standard width B
680 to 1070	600	1200
as of H = 900 mm	750	1400
with additional brace		1600

Other dimensions possible

Industrial Workstations

Workstations

Manual, hydraulic height adjustment with crank

Manufactured using our Series 40 Profiles, mk height adjustable workstation frames are designed using an extremely rigid desk construction. The height adjustment of this workstation style is accomplished using a hand crank to drive telescoping profiles with the appropriate wear strips. The surface elevation can be quickly changed to accommodate different operators or products. A change between seated and standing positions can also be realized. The torque requirement of appx. 6 Nm (53 in-lbs) falls within the range of ergonomic design guidelines for manual operation as outlined in DIN 33401. A selection of various worksurfaces and paneling is shown on the following pages.

Workstation D4 light

B02.13.043

Load capacities

Load type	Surface load	Point load
Static load	2000 N (450 lbs)	1200 N (270 lbs)
Dynamic load	1600 N (360 lbs)	1000 N (225 lbs)

Standard dimensions (mm)

Standard height H	Standard depth T	Standard width B
680 to 1070	600	1200
as of H = 900 mm	750	1400
with additional brace		1600

Other dimensions possible

Workstation F4 heavy

B02.13.063

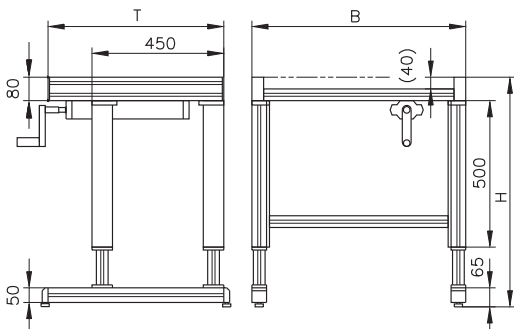
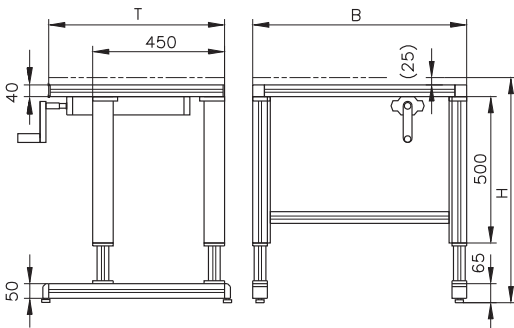
Load capacities

Load type	Surface load	Point load
Static load	2800 N (630 lbs)	1600 N (360 lbs)
Dynamic load	1600 N (360 lbs)	1200 N (270 lbs)

Standard dimensions (mm)

Standard height H	Standard depth T	Standard width B
680 to 1070	600	1200
as of H = 900 mm	750	1400
with additional brace		1600

Other dimensions possible



Workstations

Electric, hydraulic height adjustment

The workstation with electric and hydraulic height adjustment includes the same ergonomic features as described in the workstation with manual height adjustment. Height adjustment is accomplished using a keypad which features digital height display and four memory functions. A selection of various worksurfaces and paneling is shown on the following pages.

Technical Data

Travel speed	$v = 10 \text{ mm/s}$
Voltage/Frequency Europe (North America)	230 V/50 Hz (115 V/60 Hz)
Operating voltage (secondary)	29 V DC
Construction	IP30/II

comes complete with 3 m cable

Workstation D5 light hydr. B02.13.044

Load capacities

Load type	Surface load	Point load
Static load	2000 N (450 lbs)	1200 N (270 lbs)
Dynamic load	2000 N (450 lbs)	1200 N (270 lbs)

Standard dimensions (mm)

Standard height H	Standard depth T	Standard width B
680 to 1070	600	1200
as of H = 900 mm	750	1400
with additional brace		1600

Other dimensions possible

Workstation F5 heavy hydr. B02.13.064

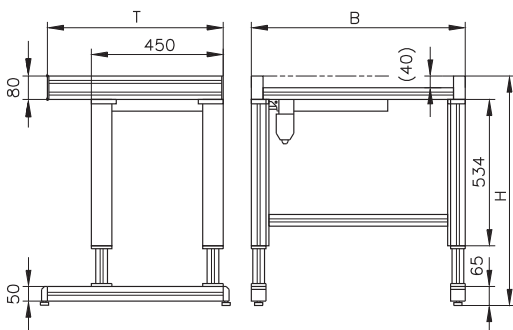
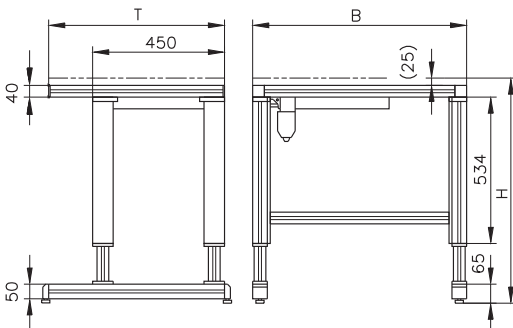
Load capacities

Load type	Surface load	Point load
Static load	2800 N (630 lbs)	1600 N (360 lbs)
Dynamic load	2000 N (450 lbs)	1200 N (270 lbs)

Standard dimensions (mm)

Standard height H	Standard depth T	Standard width B
680 to 1070	600	1200
as of H = 900 mm	750	1400
with additional brace		1600

Other dimensions possible



Industrial Workstations

Worksurfaces

mk offers a variety of standard worksurface materials with thicknesses of 25 and 40 mm. The workstation frame rigidity, the worksurface material and the product, as well as the friction between the two, are factors to be considered when selecting an appropriate worksurface. Additionally, environmental factors such as humidity and high temperatures can influence this decision. An additional advantage to consider is with the application of heavy workstations with 40 mm worksurfaces. These workstations feature available T-slots which are accessible from the top and sides for the attachment of additional equipment or components.

Multiplex surface

25 mm	m = 18.9 kg/m ²	50.13.5005
40 mm	m = 30.0 kg/m ²	50.13.5008

Multilayered beechwood, dimensionally stable and free of knots. Level, impregnated and polished natural surface, painted on request.

Multiplex mounting kit

Required to fasten 25 mm and 40 mm thick surfaces **B02.99.050**
 consisting of:
 6 pieces Clamp **26.00.0052**
 12 pieces Wood Screws **K112510040**

Laminated surface

20.6 mm	m = 15.5 kg/m ²	50.13.6004
26.6 mm	m = 20.0 kg/m ²	50.13.6005
39.6 mm	m = 27.2 kg/m ²	50.13.6008

Laminated particle board, standard color light gray, black edging with rounded corners. Limited resistance to oil, acid, alkalies and heat. Conductive surfaces available on request.

Laminate mounting kit

Required to fasten 25 mm and 40 mm thick surfaces **B02.99.050**
 consisting of:
 6 pieces Clamp **26.00.0052**
 12 pieces Wood Screws **K112510040**

Aluminum Plate

10 mm	Ident-Nr. 50.13.0012
15 mm	Ident-Nr. 50.13.0013
20 mm	Ident-Nr. 50.13.0014
25 mm	Ident-Nr. 50.13.0015

Aluminum Plate mounting

Required to fasten 10 mm and 25 mm thick surfaces **B02.99.053**
 Depending on the material thickness, aluminum plates are attached with Series 40 Angles. For further information, please refer to page 75 or in the mk Profile Technology catalog.

Aluminum Profile Surface (on request)

Profile worksurfaces used for fixturing with commonly available tools. Surface features T-slots along entire length.

Important Note:

Typically the material selection available in North America (United States, Canada and Mexico) will vary from that shown. In addition, thicknesses of material will be the more standard ANSI dimensions. Please inquire prior to ordering.

Customer Specific Surfaces

On request we can provide you with other surface materials (such as wood with stainless sheeting, UHMW or butcher block, for example).



Paneling

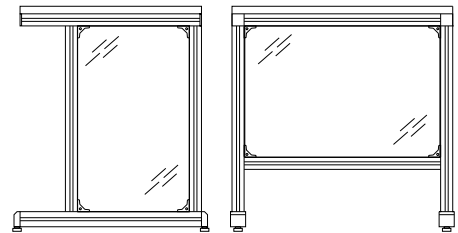
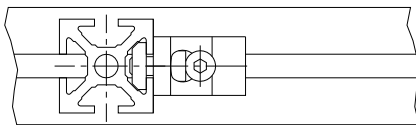
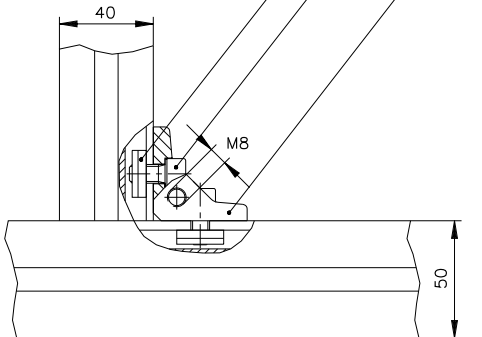
Additional panels may be desired to further enhance the aesthetic appeal of the workstation. Available as sets, these panels are pre-defined for the Workstations C1 and E1 (fixed height), as well as D and F (height adjustable). The sets can be readily installed at a later date. Besides their visual appeal, the panels can increase the structural rigidity of the workstation.

Standard is steel, painted RAL 5015 as shown. Other materials and/or colors are available.

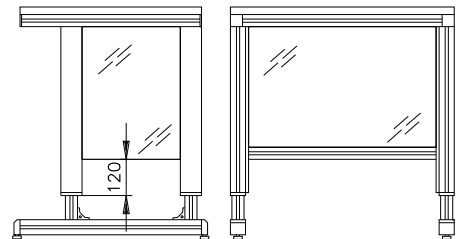
Angle E25s 82.40.0741, Al

SHCS M8x16 D0912816

Nut 1 PE M8 34.01.0018



Paneling for mk Workstations with fixed height



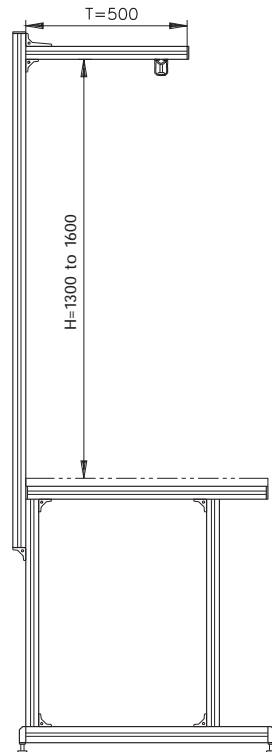
Paneling for mk Workstations with adjustable height

Workstation	Ident-No. Paneling (set)
C1 and E1	B02.20.500
D and F	B02.20.501

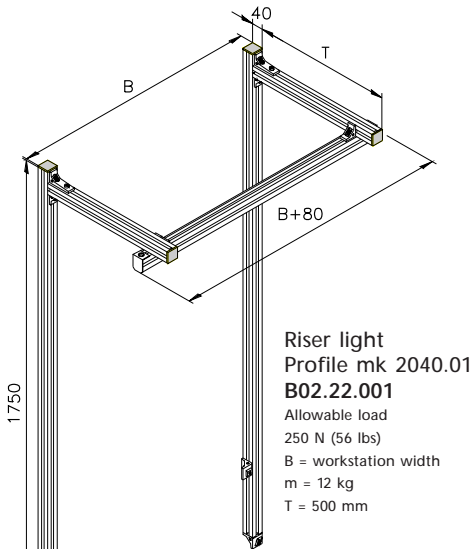
Industrial Workstations

Risers

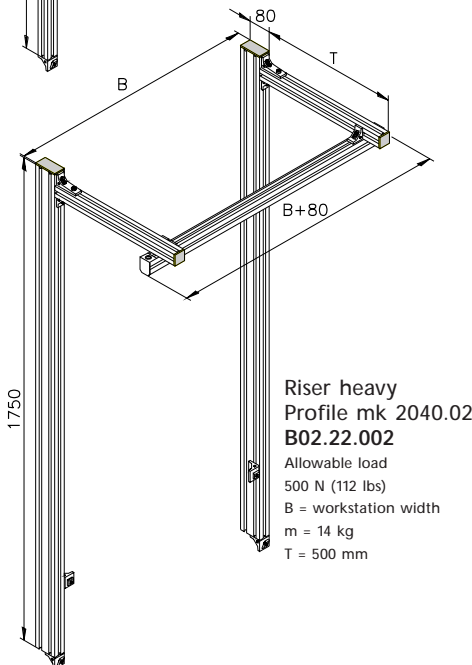
mk Risers serve as a place to locate various accessories above the worksurface including shelving, electric and pneumatic outlets, etc. The standard version is supplied with a C-channel designed to accept tool holders. This channel features our standard T-slot, whereby lamps can be hung and properly located, for example, without the need for any additional profile. The height of both the Risers and the Outriggers can be freely adjusted. Due to varying load requirements, mk offers both a Light and a Heavy version.



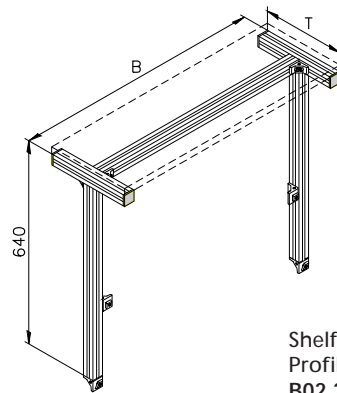
Risers



Riser light
 Profile mk 2040.01
B02.22.001
 Allowable load
 250 N (56 lbs)
 B = workstation width
 m = 12 kg
 T = 500 mm



Riser heavy
 Profile mk 2040.02
B02.22.002
 Allowable load
 500 N (112 lbs)
 B = workstation width
 m = 14 kg
 T = 500 mm

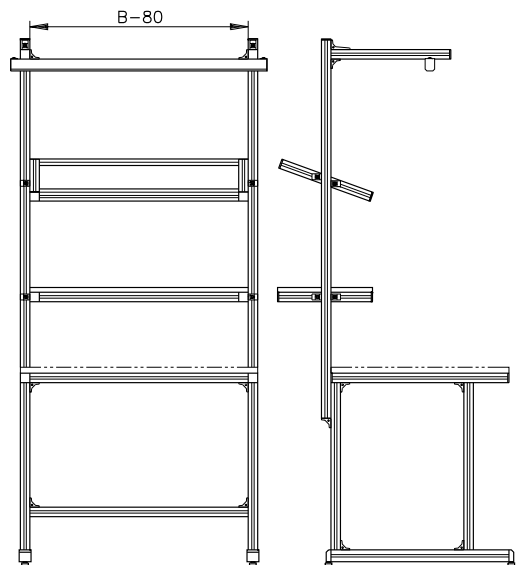
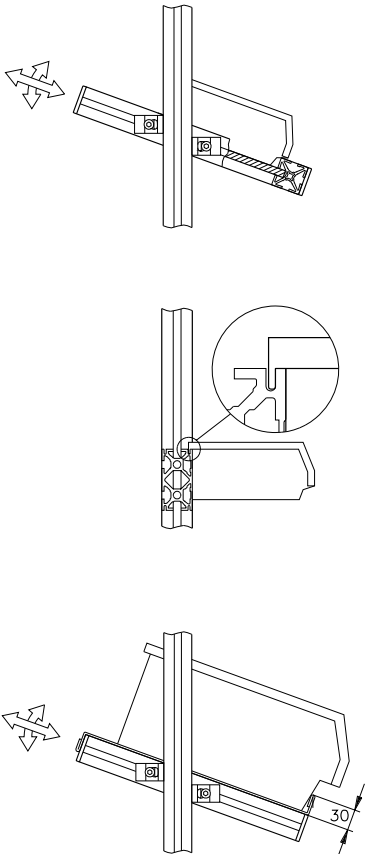


Shelf
 Profile mk 2040.01
B02.22.003
 Surface material see
 Worksurfaces on page 82
 B = workstation width
 m = 6 kg
 T = 300 or 400 mm

Industrial Workstations

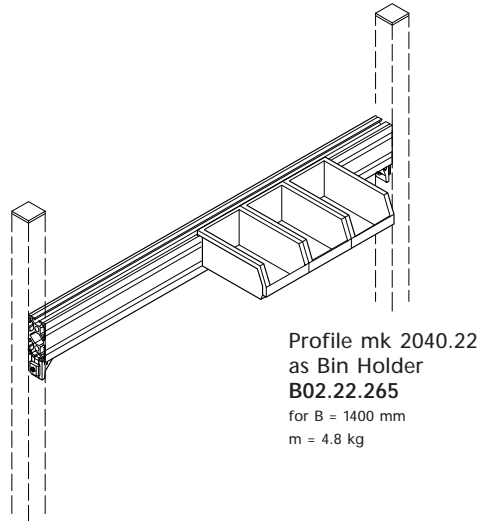
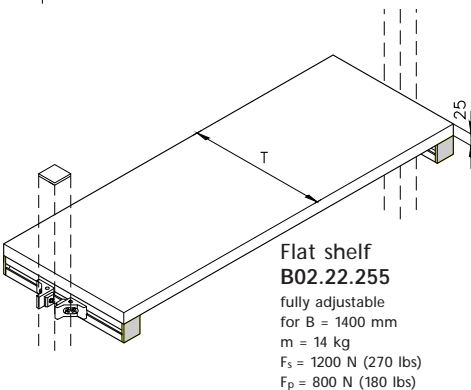
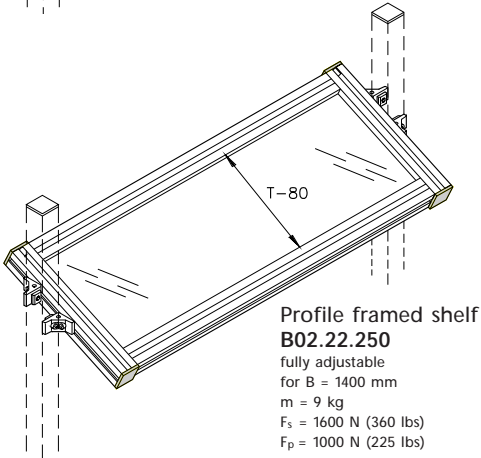
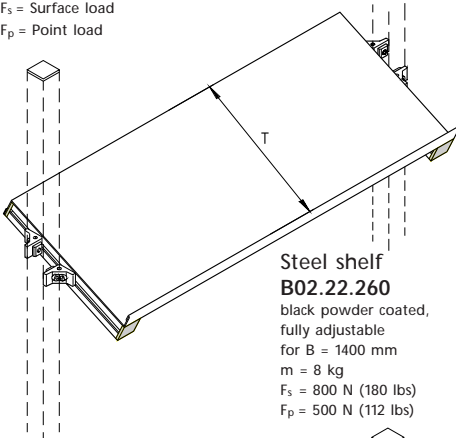
Shelving

mk offers three basic standard shelving styles for the placement of bins, tools, test and measurement equipment, or work-specific literature and instruction binders. Basically, the shelving options vary according to their application and orientation. For optimum ergonomic use, the shelves are freely adjustable with respect to their height, depth and incline angle.



Shelving

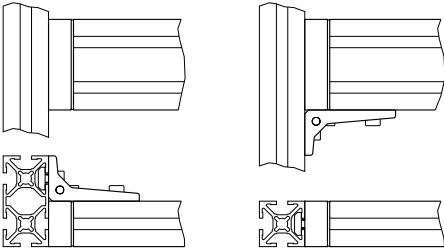
F_s = Surface load
 F_p = Point load



Industrial Workstations

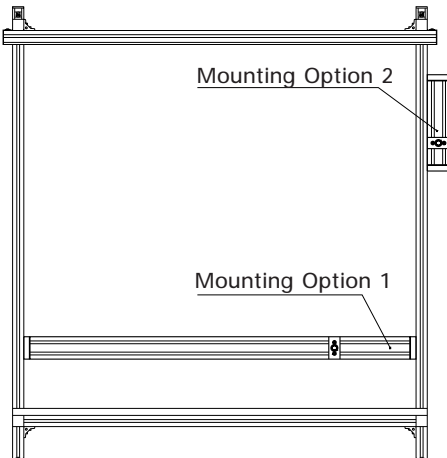
Pneumatic Outlets

Series 40 Profile mk 2040.02 serves as the air plenum for pneumatic outlets. This profile offers enormous advantages with respect to the flexibility of placing air inlets, outlets and distributor plates. Air can be drawn anywhere along the 80 mm profile surface and at as many locations as is desired. A variety of plate options are available for the profile ends as well. Please refer to the mk Profile Technology catalog for a complete listing of all available plates. Note that our system is designed for a maximum pressure of 6 bar (90 psi).



on heavy Riser

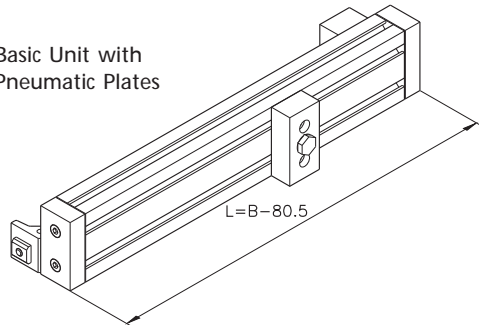
on light Riser



Mounting Option 2

Mounting Option 1

Basic Unit with
Pneumatic Plates



Pneumatic Module
B02.23.179
for B = 1400 mm
m = appx. 5.5 kg (12 lbs)

Pneumatic Outlets

Pneumatic Parts

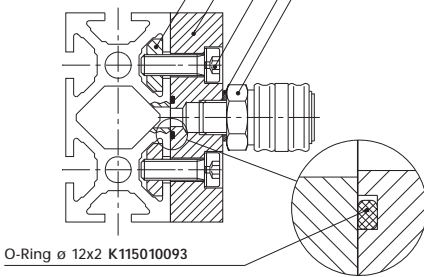
Prior to mounting plates to the profile T-slot, an \varnothing 8.4 mm hole must be drilled at the desired location. For exact hole placement, Drill Fixture B46.03.007 is recommended, or the plates themselves can be used to mark the hole location. An O-ring placed between the profile and the plate serves to seal the connection. Proper O-ring placement is ensured by a groove on the underside of the plate.

Mounting 1/O-Ring

Coupling G1/4" K502050700

Polyamide Seal G1/4" K502050351
SHCS M8x25 DIN 6912
D6912825
Distributor Plate A1 G1/4"
53.00.0352, AI

Nut 1 PE M8 34.01.0018



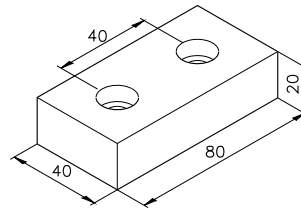
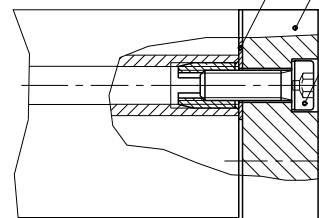
O-Ring \varnothing 12x2 K115010093

Mounting 2/End Seal

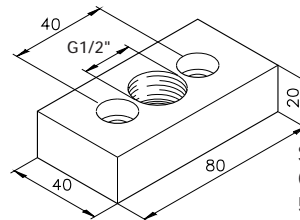
SHCS M8x25 DIN 6912
D6912825

Supply Plate A G1/2" 53.00.0200, AI

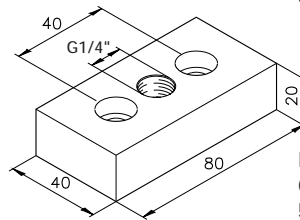
End Seal A 53.01.0005, Klingerit



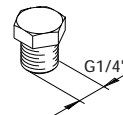
End Plate A
53.00.0100, AI



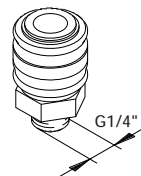
Supply Plate A
G1/2"
53.00.0200, AI
NPT 1/2"
53.00.0210, AI



Distributor Plate A1
G1/4"
53.00.0352, AI
NPT 1/4"
53.00.0353, AI



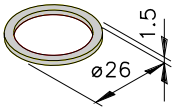
Closure Screw
G1/4"
K502050426
G1/2"
K502050428
NPT 1/4"
K502050451
NPT 1/2"
K502050450
(NPT only in USA)



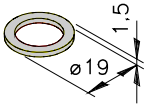
Coupling G1/4"
K502050700
NPT 1/4"
K502050706
NPT 1/2"
K502050705
(NPT only in USA)

Industrial Workstations

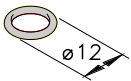
Pneumatic Outlets



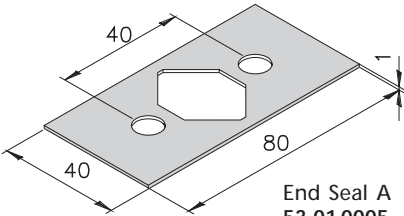
Polyamide Seal
G1/2"
K502050353



Polyamide Seal
G1/4"
K502050351



O-Ring
K115010093



End Seal A
53.01.0005



Electric Outlets

Electric Accessories

As an alternative to integrated electric outlets, mk offers high quality power strips (Schuco) in two versions. The housing is a clear anodized aluminum profile with tough plastic end pieces. The outlets are angled to neatly accommodate right-angled plugs. A lighted rocker switch turns the 16A rated power strip on and 2-poles off. Complete with a 1.75 m long cable, the power strip can be mounted anywhere along the profile T-slots.

Please Note:

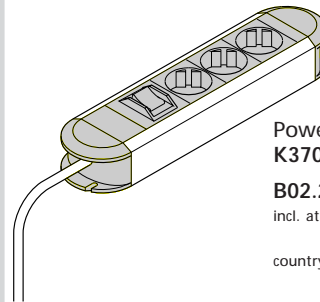
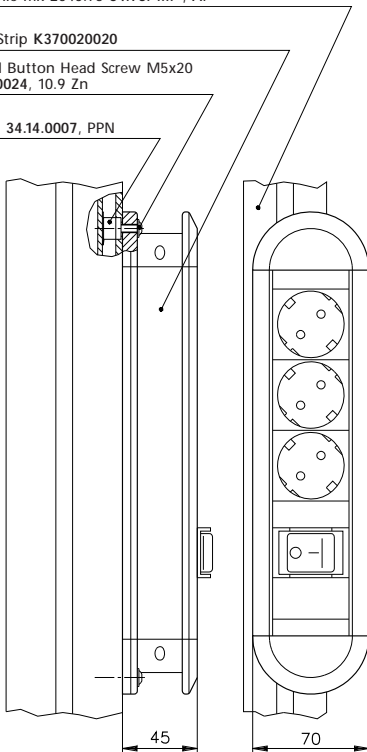
These, and all mk Electric Accessories and Components, vary in style and appearance to conform to local and international standards. Please inquire before ordering.

ex. Profile mk 2040.75 54.75.*, Al

Power Strip K370020020

Flanged Button Head Screw M5x20
 K112010024, 10.9 Zn

Clip M5 34.14.0007, PPN

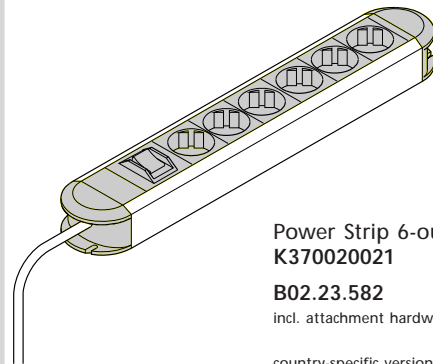


**Power Strip 3-outlet
 K370020020**

B02.23.581

incl. attachment hardware

country-specific versions



**Power Strip 6-outlet
 K370020021**

B02.23.582

incl. attachment hardware

country-specific versions

Industrial Workstations

Electric Outlets

The Electric Outlet Module shown consists of a combination of Profiles mk 2040.41 and mk 2069. Noteworthy are the assembly's rigidity and design. Various outlet and switch combinations can be placed freely along the entire length. A further advantage of this design is the ability to add or move electric elements as desired. Each assembly is tested per DIN VDE 0100-410/413 and comes with a wiring diagram. Also included is a 3 m long cable with plug.

Important Note:

These, and all mk Electric Accessories and Components, vary in style and appearance to conform to local and international standards. Please inquire before ordering.

SHCS, M8x16 D0912816

Flat Head, M8x20 D7991820

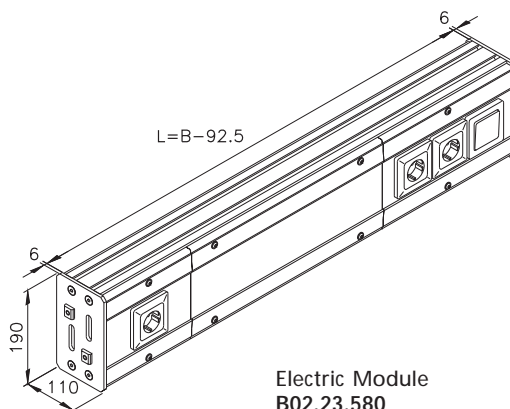
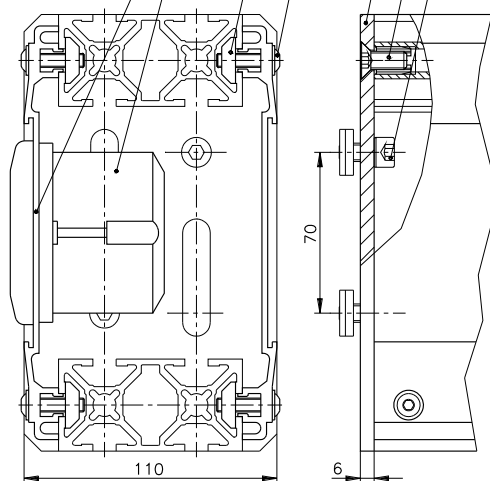
End Plate 50.12.0005, Al

Flanged Button Head Screw M6x25
K112010015, 10.9 Zn

Nut 1 M6 34.02.0008, Steel Zn

Outlet (EU 230V/50Hz) K370020050

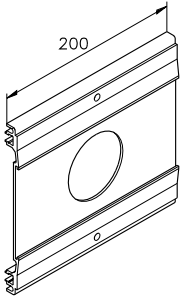
Profile mk 2069
51.69.*, Al



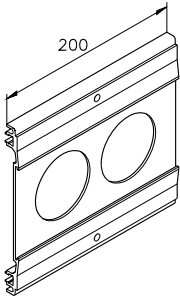
Electric Module B02.23.580

for B = 1400 mm
m = 11 kg
Rated for max. 16 A

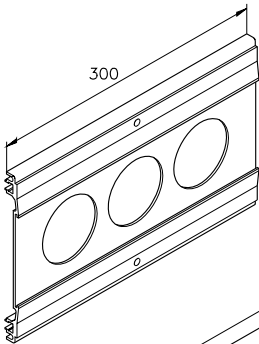
Electric Outlets



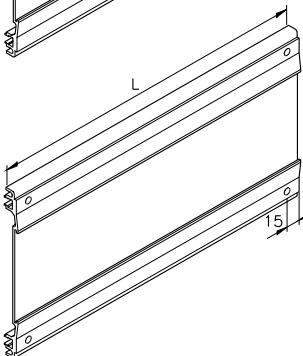
1x – Cover
5169BB0200
 AISiMg 0,7 F28
 Reworked
 to local standards



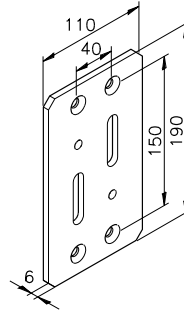
2x – Cover
5169BC0200
 AISiMg 0,7 F28
 Reworked
 to local standards



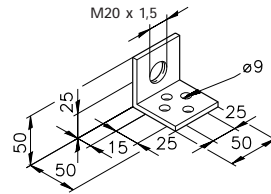
3x – Cover
5169BD0300
 AISiMg 0,7 F28
 Reworked
 to local standards



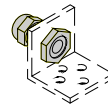
Cover
5169BA
 AISiMg 0,7 F28



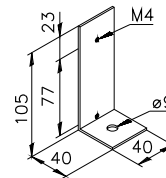
End Plate
50.12.0005
 Al



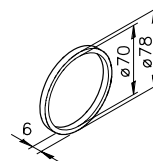
Angle for
 strain relief
16.05.0030
 Al



Cord Grip
K399010001



Angle for
 power strip
82.01.0007
 Al

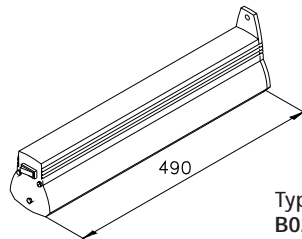
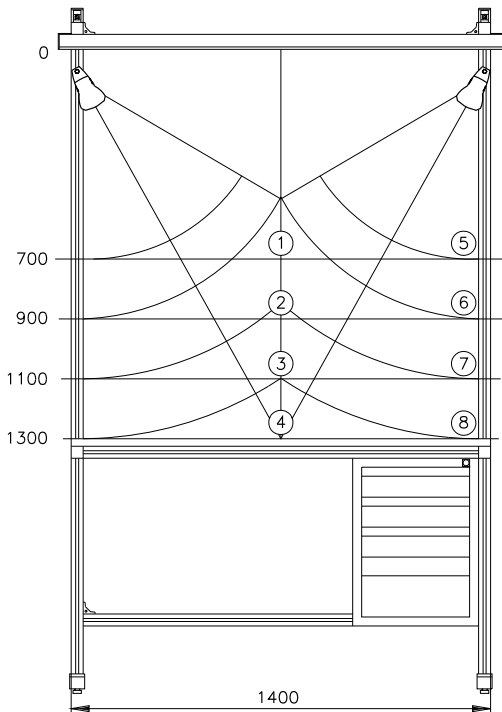


Spacer for
 Round Housing*
16.01.0038
 *not applicable in USA

Industrial Workstations

Workplace Lighting

One of the more important requirements of first-class productivity and the ability of personnel to produce quality products is optimized lighting of the workstation. For this mk offers suitable work lights for every situation. The lamps provide a bright and even illumination of the work area, and are absolutely non-reflective. The illustrated matrix and table shown below are designed to provide a quick, simple and exact selection of recommended illumination for various distances. The measurements took place in ambient lighting measured at 135 Lux.

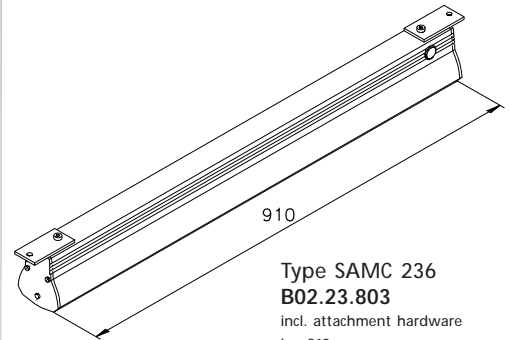
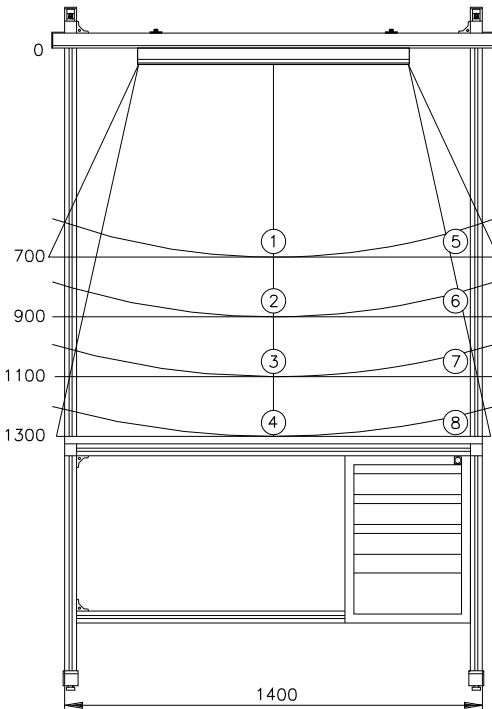


Type SAMKC 136
B02.23.802
incl. attachment hardware

Luminous Intensity

Type	Point		Point	
SAMKC136	1	700 lx	5	500 lx
SAMKC136	2	560 lx	6	340 lx
SAMKC136	3	530 lx	7	340 lx
SAMKC136	4	400 lx	8	340 lx

Workplace Lighting



Type SAMC 236

B02.23.803

incl. attachment hardware

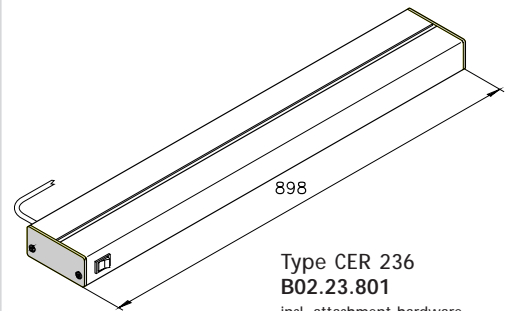
L = 910 mm

Type SAMCE 240

B02.23.804

incl. attachment hardware

L = 1120 mm



Type CER 236

B02.23.801

incl. attachment hardware

Luminous Intensity

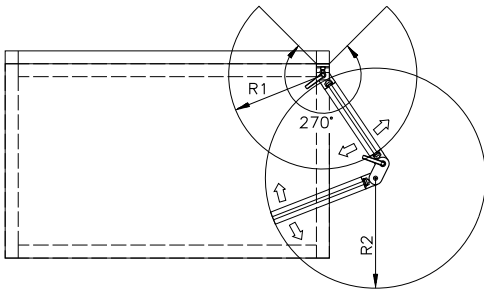
Type	Point		Point	
SAMC236	1	1350 lx	5	600 lx
SAMC236	2	1000 lx	6	540 lx
SAMC236	3	800 lx	7	500 lx
SAMC236	4	600 lx	8	480 lx
SAMCE240	1	1550 lx	5	1000 lx
SAMCE240	2	1200 lx	6	850 lx
SAMCE240	3	1000 lx	7	800 lx
SAMCE240	4	800 lx	8	800 lx
CER236	1	1250 lx	5	680 lx
CER236	2	1100 lx	6	610 lx
CER236	3	900 lx	7	560 lx
CER236	4	740 lx	8	530 lx

Industrial Workstations

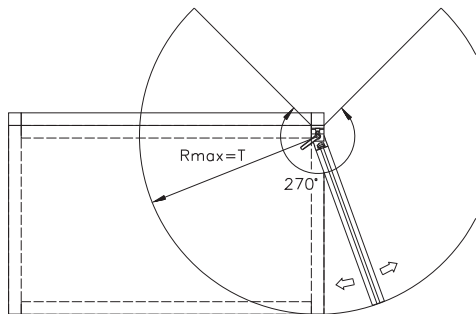
Accessories Workstations

Swing Arm

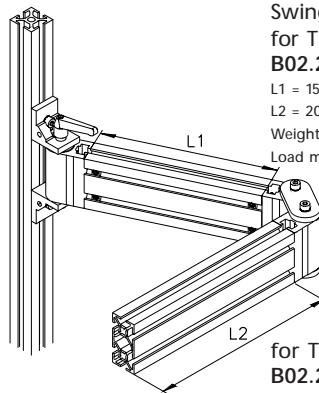
mk Swing Arms are designed for stability, flexibility and high load capacity. Applications range from simple bin holders for small parts on up to monitor platforms at testing or logistic stations. Besides freeing up valuable space on the work-surface, an optimum ergonomic presentation of parts can be achieved for each operator due to the Swing Arms' inherently flexible design. Locking (or adding some resistance through tightening) of the joints is accomplished using the adjustable handles or the socket head cap screws.



R1 max = 290 mm
R2 max = 340 mm

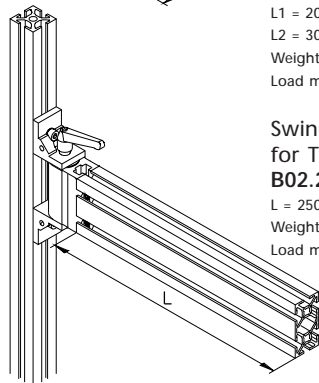


T = Workstation Depth



Swing Arm, Double
for T = 600mm
B02.24.360

L1 = 150 mm
L2 = 200 mm
Weight 5 kg (11 lbs)
Load max. 300 N (67.5 lbs)



for T = 750 mm
B02.24.361

L1 = 200 mm
L2 = 300 mm
Weight 5.5 kg (12 lbs)
Load max. 300 N (67.5 lbs)



Swing Arm
for T = 600 mm
B02.24.362

L = 250 mm
Weight 4.6 kg (10 lbs)
Load max. 300 N (67.5 lbs)

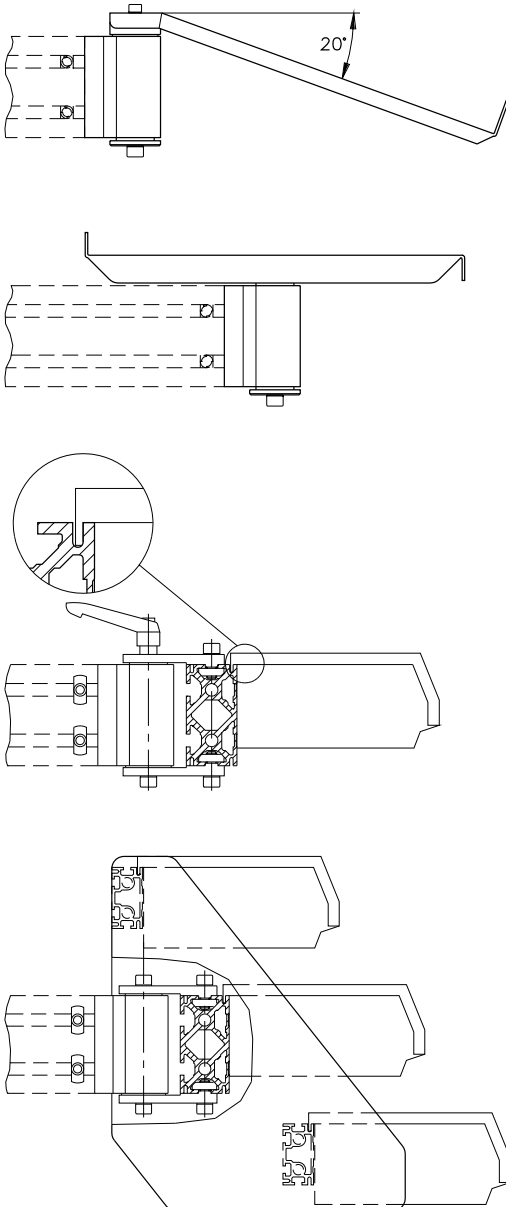


for T = 750 mm
B02.24.363

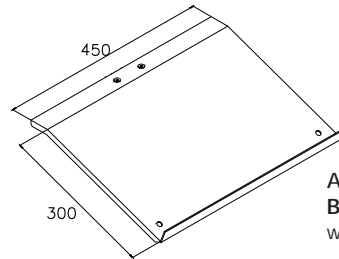
L = 400 mm
Weight 4.9 kg (11 lbs)
Load max. 300 N (67.5 lbs)

Accessories Workstations

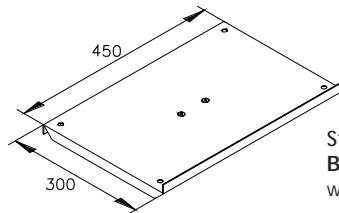
Mounting to Swing Arms



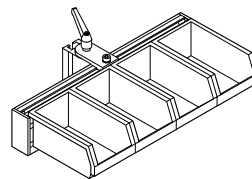
Mounting to Swing Arms



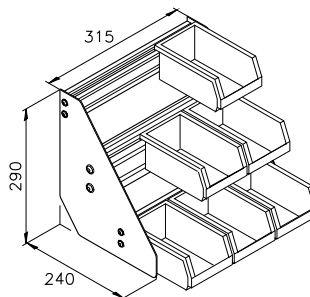
Angled Shelf
B02.24.364
 Weight: 3.6 kg (8 lbs)



Straight Shelf
B02.24.365
 Weight: 3.4 kg (7.5 lbs)



Bin Holder
B02.24.366
 $L = (\text{Bin width} + 1 \text{ mm}) \times N$
 (N = # of bins, not incl.)



Rack with Swing Arm Mounting
B02.24.367

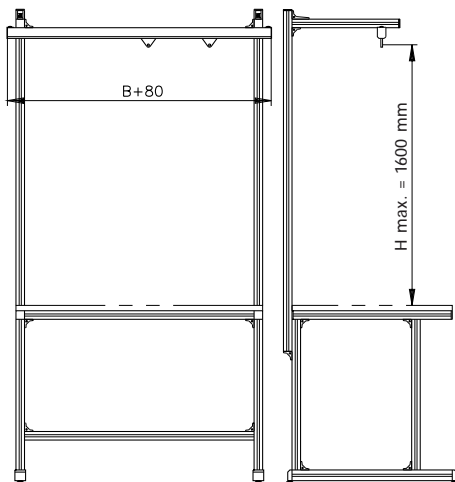
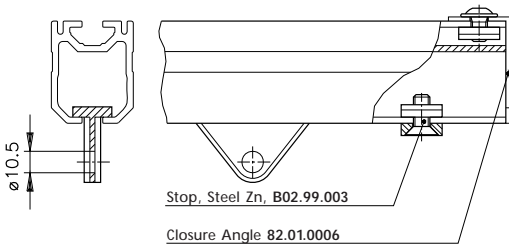
Table Rack
B02.24.356
 Weight: 4.6 kg (10 lbs)
 Bins not included

Industrial Workstations

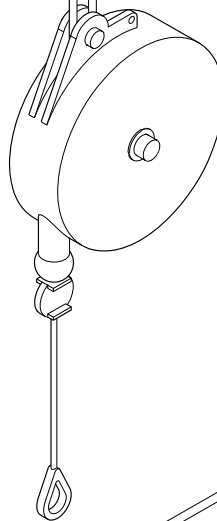
Accessories Workstations

Tool Holders

The Tool Holder components shown are some of the basics, which can be expanded with customer specific components. They help to ensure a safe and organized workplace. In addition, they present tools without minimizing the available work-surface. With the adjustable Tool Balancers an ergonomically important strain relief is available to the operator.



Carabiner
K120010003

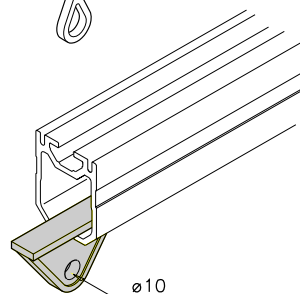


Tool Balancer F2
K120010006

supports 1-2 kg (2-4.5 lbs)
max. extension 2 m

Tool Balancer F3
K120010005

supports 2-3 kg (4.5-6.5 lbs)
max. extension 2 m



Tool Holder
K120010004
Plastic PAGF

Accessories Workstations

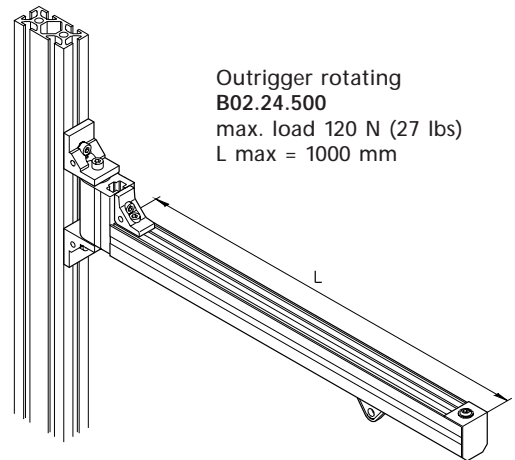
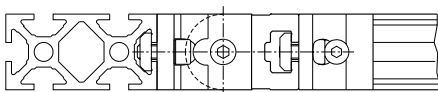
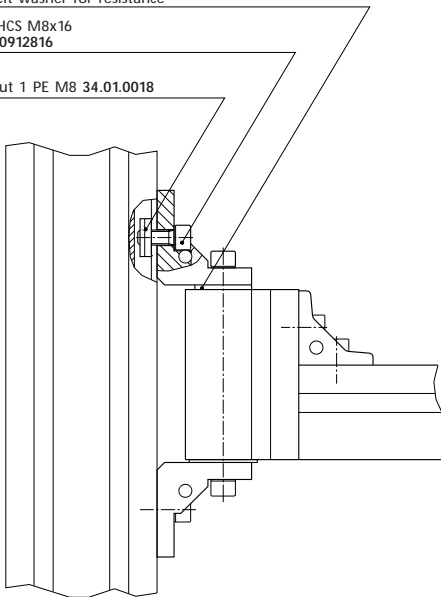
Outriggers

The mk Outrigger is an extended application of the C-channel for tool hanging as used with mk Risers. With a 270° swivel range and maximum length of 1000 mm, a tool can be used exactly where needed for manual assembly or manufacturing operations. When work is completed, the tool can be pushed back and clear of the work area.

Felt washer for resistance

SHCS M8x16
 D0912816

Nut 1 PE M8 34.01.0018



Outrigger rotating
B02.24.500
 max. load 120 N (27 lbs)
 L max = 1000 mm

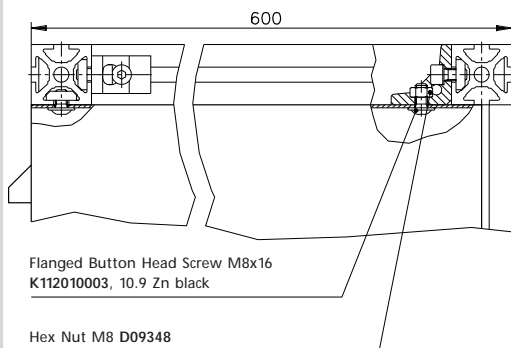
Industrial Workstations

Accessories Workstations

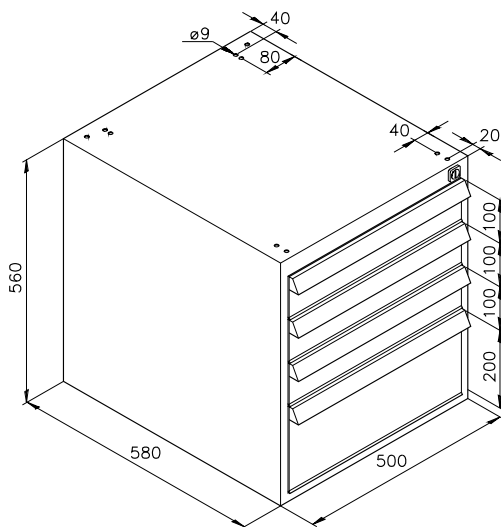
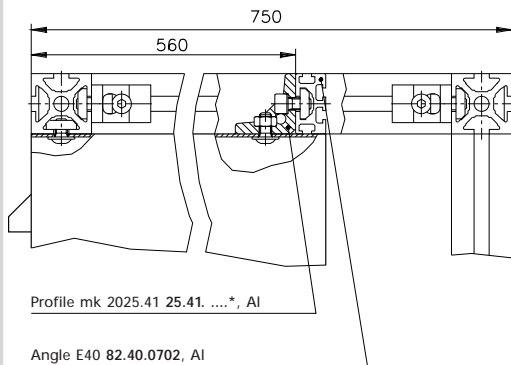
Hanging Cabinets

These Hanging Cabinets offer ample storage space for work-specific items, thus presenting a professional appearance and organization by maintaining a clean and uncluttered work area. The cabinets are manufactured using reinforced sheetmetal construction, and can be loaded with up to 200 kg (440 lbs). All Hanging Cabinets feature cylinder locks and are painted RAL 7035 (shown).

Hanging Cabinet mounting T = 600 mm



Hanging Cabinet mounting T = 750 mm



4-Drawer Cabinet

B02.23.901

Weight 35 kg (77 lbs)

Mounting hardware kit

Workstation Depth 600 mm

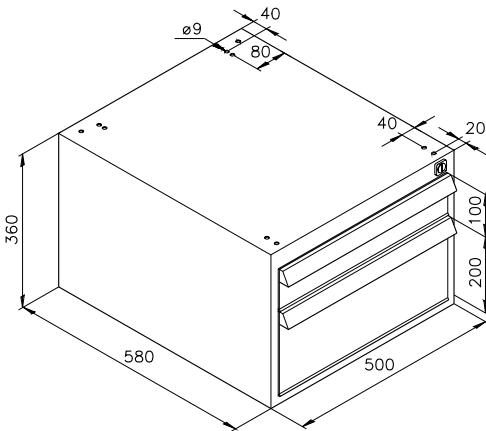
B02.99.001

Mounting hardware kit

Workstation Depth 750 mm

B02.99.002

Accessories Workstations



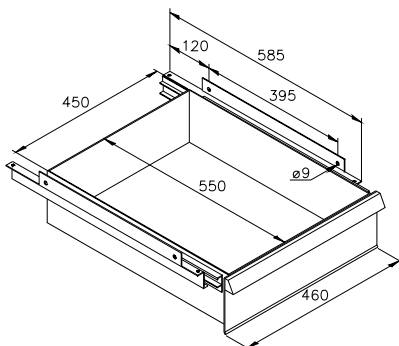
2-Drawer Cabinet

B02.23.902

Weight 23 kg (51 lbs)

Mounting hardware kit
 Workstation Depth 600 mm
B02.99.001

Mounting hardware kit
 Workstation Depth 750 mm
B02.99.002



Drawer

B02.23.903

Weight 8 kg (17.5 lbs)

Mounting hardware kit
B02.99.004

Important Note:

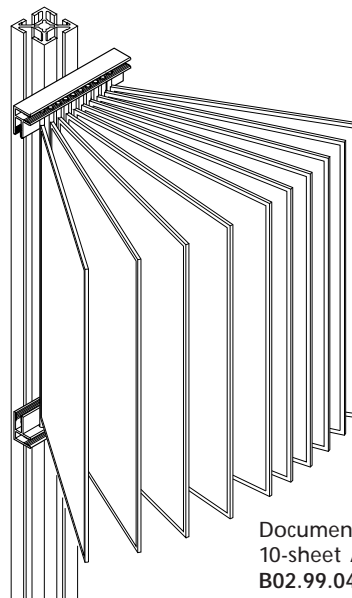
Cabinets may vary in style, color or appearance depending on local and international availability. mk makes every effort to maintain global uniformity, yet it is sometimes more economically realistic to work with regional suppliers. There will be, however, no difference in the quality and workmanship of our products.

Please inquire before ordering.

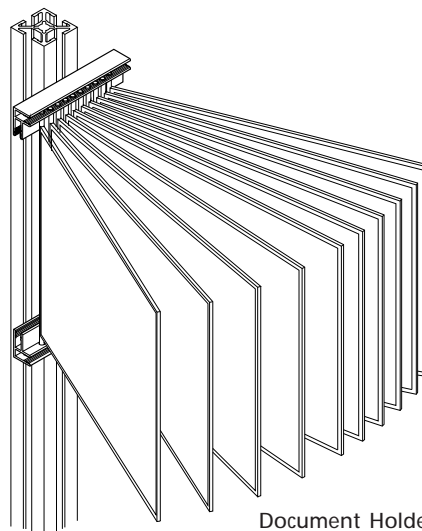
Industrial Workstations

Accessories Workstations

Document Holder

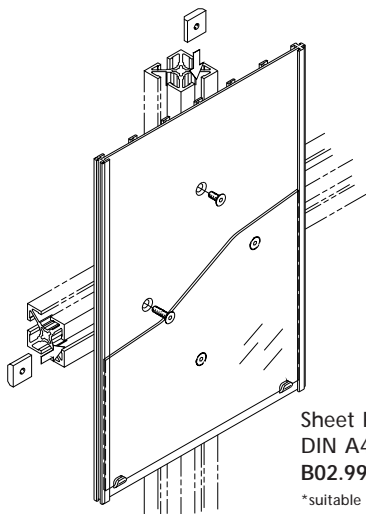


Document Holder
10-sheet A4* portrait
B02.99.041
*supplied for local formats

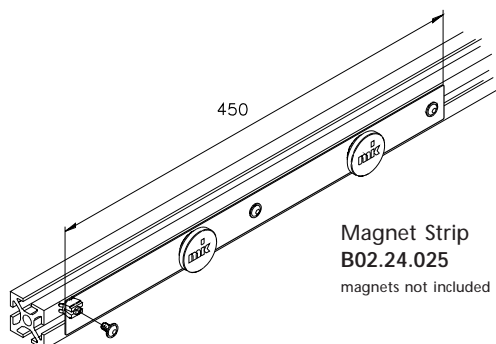


Document Holder
10-sheet A4* landscape
B02.99.042
*supplied for local formats

The Sheet Pocket of anodized mk Profile with clear plastic cover can be installed vertically or horizontally.



Sheet Pocket
DIN A4*
B02.99.043
*suitable for A4 only



Magnet Strip
B02.24.025
magnets not included

Accessories Workstations



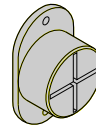
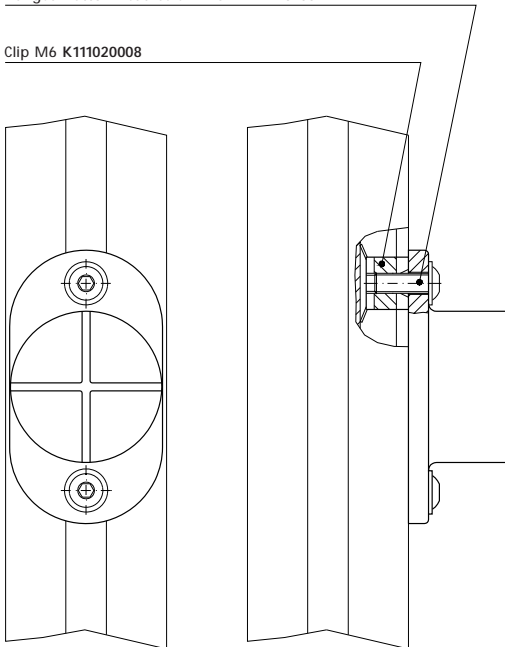
Holders

Holders for shop rags and water bottles round out the organized workstation. Every element at the workplace therefore has its place, thus preventing possible obstructions for the worker as well as damage to, or contamination of, the workpiece.

The Bottle Holder is made of stainless steel and is designed to accept drink cartons as well. Shop rags or cleaning towels now also have a defined place on the workstation. The Rag Holder can be mounted to any available T-slot, either horizontally or vertically.

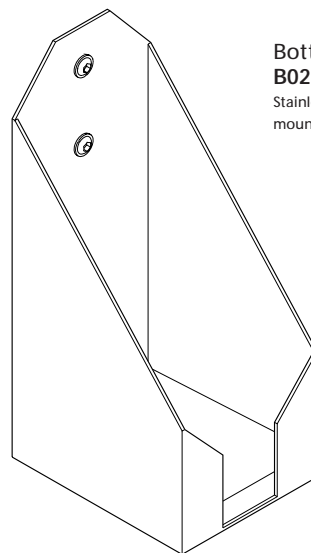
Flanged Button-Head Screw M6x12 K112010012

Clip M6 K111020008



Rag Holder
B02.24.015

Plastic with
 mounting hardware



Bottle Holder
B02.24.010

Stainless steel with
 mounting hardware

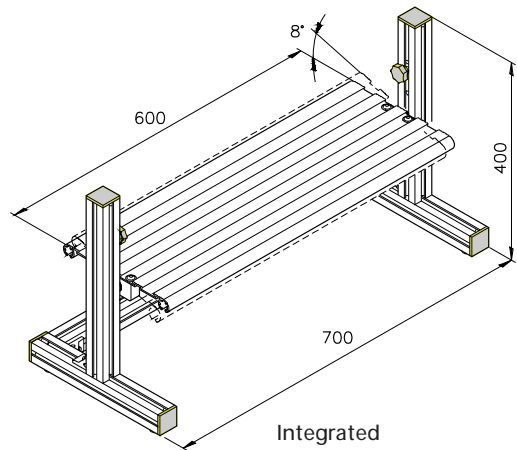
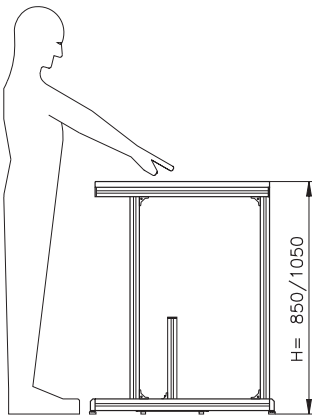
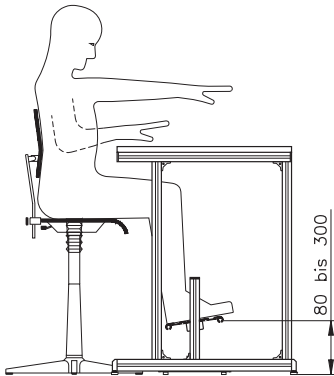
Industrial Workstations

Accessories Workstations

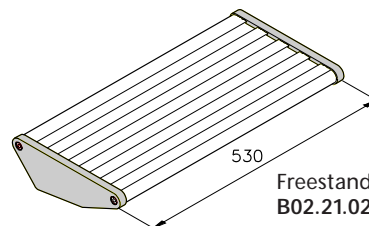


Foot Rest

An important element to reduce strain at the workstation is the proper seating height. It is achieved when, with vertical upper arms, the forearms lay parallel on the worksurface, the thigh and lower leg form an angle of at least 90° at the knee, and the soles of the feet are flush with the floor. For workstations which are too tall, a foot rest can compensate for the distance between foot and floor. The freely adjustable Foot Rest is comfortable for the feet and reduces leg strain for a pleasant working environment.



Integrated
Foot Rest
H min - 83 mm
H max - 300 mm
B02.21.030

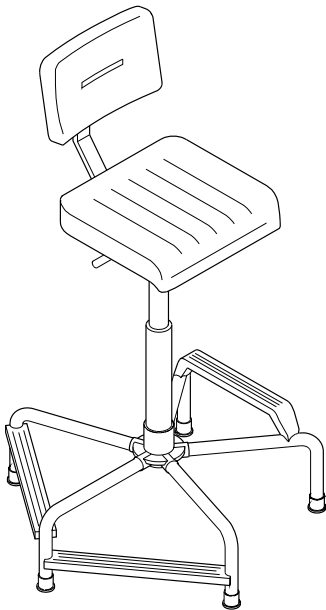


Freestanding Foot Rest
B02.21.020
Heated version on request

Accessories Workstations

Work Stools

The correct seating position is a requirement for relaxed and strain-free work. The optimum ergonomic position is described on page 104 in combination with a height adjustable foot rest. In order to achieve this ergonomically ideal position, a chair conforming to the relevant norms and standards should be utilized. The seat should be adjustable in such a way as to accommodate operators of varying body sizes, as well as the functions they are to perform.



Work Stool
K606-ST1030

Seat height from 480 to 880 mm,
 black

Important Note:

Work Stools may vary in style, color or appearance depending on local and international availability. mk makes every effort to maintain global uniformity, yet it is sometimes more economically realistic to work with regional suppliers. There will be, however, no difference in the quality and workmanship of our products. Please inquire before ordering.

Industrial Workstations

Ordering instructions and example

Defining Form and Function

The workstation must be laid out in such a way as to satisfy two (principally) important factors. One the one hand there are economic considerations such as the efficient production, manufacture or assembly of a given product while on the other maintaining employee health and well-being while at work.

In order to accomplish this it is necessary to separate and distinguish between the required human and technical aspects in an effort to formulate an appropriate workstation. The result will be an mk Workstation which is custom-tailored to the specific requirements of the customer, while satisfying both the ergonomic and economic considerations.

Establishing the Requirements for the Proper Workstation

It is important to first define the scope of the activities to be performed at the workstation.

- Is the workstation subject to heavy loads or large forces, or is it designed for light assembly where precision plays more of a role?
- What is the size of the product, its dimensions and weight?
- Will there only be one product, or could there be multiple, different products?
- Will the processes performed always be the same?
- Is this a free-standing workstation, or will it be part of a larger system?

The resulting answers will already point to whether a light or heavy workstation is appropriate, and whether the height can be fixed or needs to be adjustable.

Ergonomic Considerations

- What type and duration of work can the employee be expected to perform at the workstation?
- Can work categories be defined?
- Must considerations be made for more than one individual?
- How large is the individual?

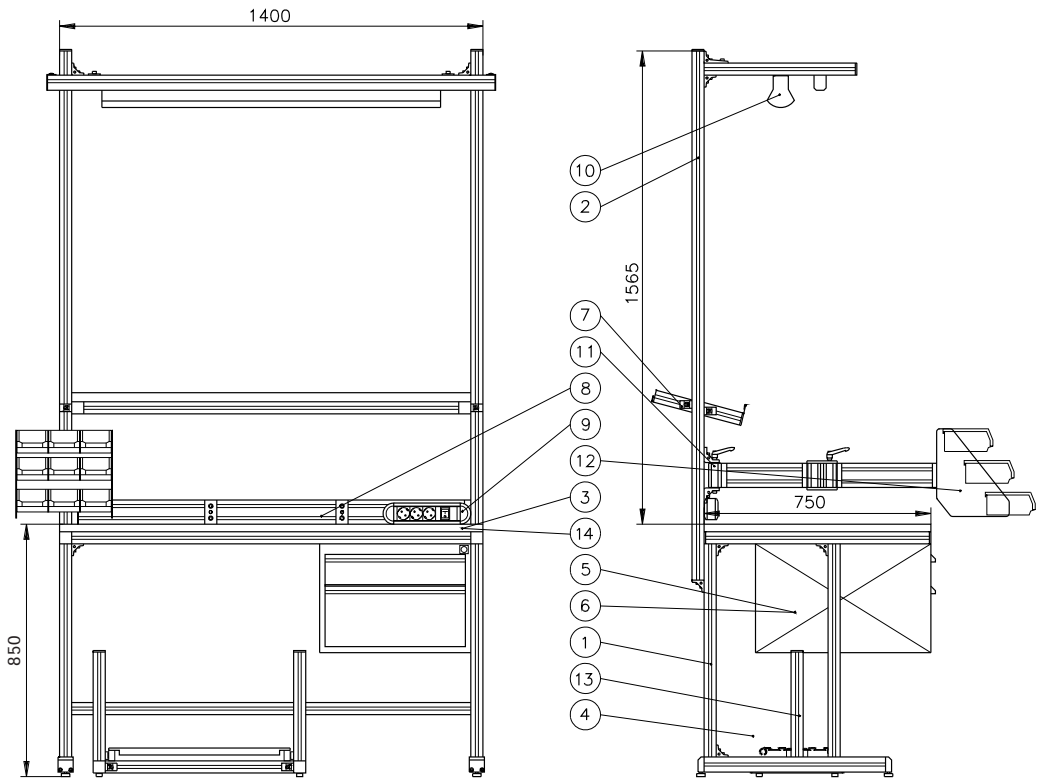
Herewith the actual work considerations for both the user and the product should be defined.

With respect to the following parameters, define the type of work to be performed and evaluate the importance of the required elements.

- Type of work performed: Manufacturing, assembly, rework, testing, packaging, shipping, etc.
- Evaluation: Importance, frequency, sequence, accessibility, freedom of movement
- Required supplies: Production aids, tools, assembly parts, information presentation, etc.
- Workstation requirements: Risers, shelves, swing arms, lighting, etc. but also work stools, foot rests, etc.

When planning a workstation, consider that the best solution to provide a safe and efficient workplace is often only achieved when understanding the entire process as a whole. Laying out single workstations, without the larger picture in mind, can result in bottlenecks or minimize their full potential. Therefore, sensible layout planning must be used, which takes into account and optimises the whole material flow. We will be pleased to assist you with the planning.

System Workstation Series 40



Example Workstation B02.05.100 composed of:

① Workstation C1 1400 x 750 x 850 mm	B02.13.030	⑧ Pneumatic Outlets	B02.23.179
② Riser Light B = 1400 mm	B02.22.001	⑨ Power Strip 3-sheet	K370020020
③ with Multiplex surface	50.13.5005	⑩ Workstation Light	B02.23.803
④ Panel in RAL 5015	B02.20.500	⑪ Swing Arm double	B02.24.360
⑤ 2-Drawer Cabinet	B02.23.902	⑫ Rack with swing arm mounting	B02.24.367
⑥ Cabinet mounting hardware	B02.99.002	⑬ Height adjustable Foot Rest	B02.21.030
⑦ Steel shelf	B02.22.260	⑭ Worksurface Mounting kit	B02.99.050

Information about Office Workplaces



Advantages of mk Office Workplaces

- mk's extensive know-how regarding customer-specific workstations and workplaces ensures a standardized product range for individual design according to specific work tasks. Useful modules make the planning and design easier.
- mk offers workstation systems which adapt to people and not vice versa.
- The function and adaptability provides the opportunity to individually design office equipment to ensure a professional appearance in the company.
- Durable components and high-quality workmanship ensure robust everyday practicality for many years.

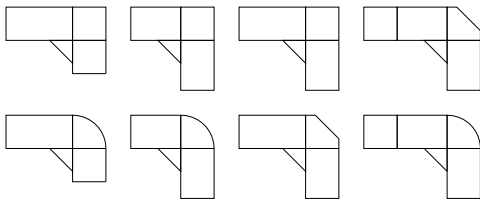
Individually tailored office workplaces

Based on our proven Profile System, mk developed the mk Office Desk System X80 (80 cm basic dimension). It's functionality and adaptability allow you to layout and design workplaces to your exact requirements – resul-

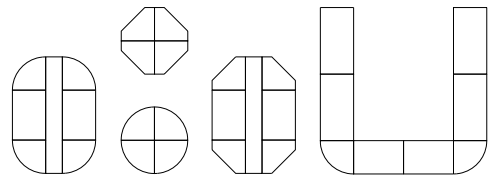
ting in a professional look which reflects positively on your company. Important are your actual requirements. Whether setting up an entire department or a single office, the Office Desk System X80 offers an ideal solu-

tion. High quality materials and workmanship guarantee robust construction which will last for years. Various standard desks are available. Naturally we will assist you during planning and selection.

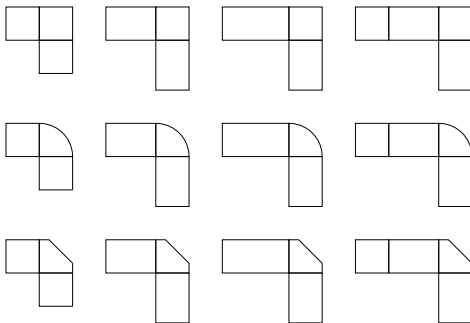
Examples PC-Workstations



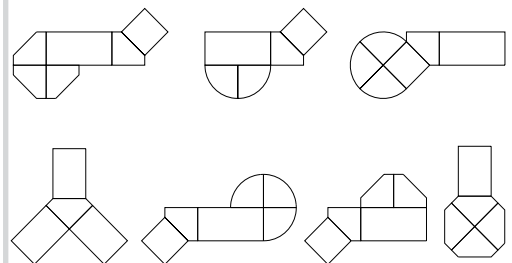
Examples Conference and Training Tables



Application Examples



Examples Desks with Meeting Area



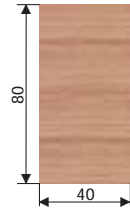
Office Workplaces

Worksurfaces

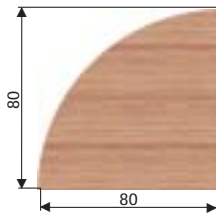
The worksurfaces are made of robust multi-layered beechwood, featuring a V-groove around its perimeter. Assembly with tension pins and square alignment blocks avoids any high spots or edges over the entire surface.

On request we can also supply other surface shapes and/or materials.

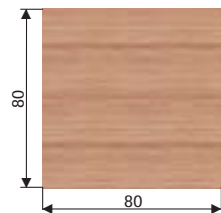
Worksurface
80x40
50.13.5015



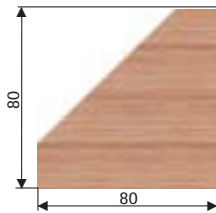
Round Corner
80 R
50.13.5016



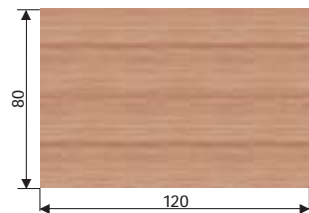
Worksurface
80x80
50.13.5012



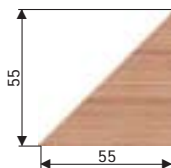
Chamfered Corner
50.13.5017



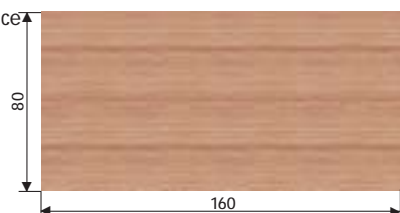
Worksurface
80x120
50.13.5013



Keyboard Surface
50.13.5018

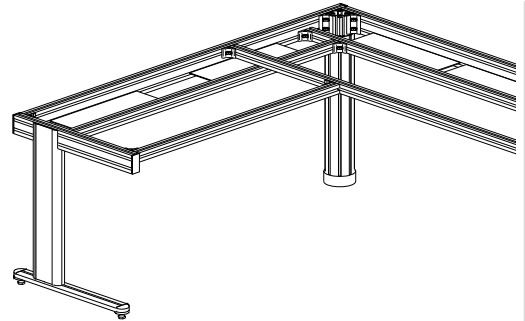


Worksurface
80x160
50.13.5014



Desk Frames

mk Office Desk Frames consist of our proven Aluminum Structural Profiles (with natural anodize) Advantages of System X80 include the absence of leg obstructions and the compact construction of the frames, which can be disassembled and reassembled effortlessly. The desks can be leveled to the floor, and come standard with basic wire management.



Legs

Aesthetic accent sheets can be placed onto the exterior of several profiles.

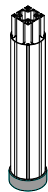
BEECH



SILVER



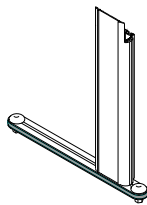
BLACK



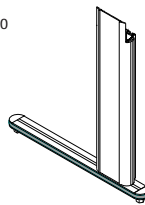
Post 80R



Post 80R



Leg 160
Ball



Leg 160



File Cabinets

With high-quality hardware (central locking) manufactured roller cabinets, using multi-layer Beechwood, we offer two standard units.

Model 4S:

1 pencil drawer and
 three box drawers
K120101001

Model 3S:

1 pencil drawer, 1 box drawer
 and 1 file drawer
K120101000



Model 4S



Model 3S

Industrial Workstations

Application Examples



Industrial workplace with integrated material handling using roller conveyors



Complete solution workplace with integrated electrical outlets, ball transfer table and driven roller conveyor



Kanban workstations increase assembly productivity by providing parts logistics



Packing table with integrated scale and chute



Service assembly and disassembly table



QA inspection station for motor parts

Industrial Workstations

Application Examples



Customer-specific assembly table with linear track and pneumatic clamping



Customer-specific industrial workstation with electrical supply



Kanban assembly workstation made of Series 40 profiles, flow rack for max 76 different products, workbench with hydraulic height adjustment



Test bench for vacuum pumps



Test bench for vacuum pumps

Office Workplaces

Application Examples



mk Office desk with
integrated conference table



File cabinets of
multiplex beech



Meeting table with multiplex
beech tabletop



Multiple workstation office



Office workplaces as training room



Office workplaces as training room

Office Workplaces

Application Examples



Conference Room



mk Office desk with
integrated conference table



Customer-specific reception desk with curved profiles and partitions with glass panes fixed using mk profiles



Customer-specific reception workplace with Profile mk 2040.26



Workstations for open plan offices








Recessed socket outlets

GTP (Guard Rails, Treads, Platforms)



Contents GTP (Guard Rails, Treads, Platforms)

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	Guardrails	124
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Information about GTP (Guard Rails, Treads, Platforms)



Advantages mk GTP (Guard Rails, Treads, Platforms)

- mk's guard rails, treads and platform range is the perfect supplement to mk guarding.
- Whether mobile or fixed work platforms, safe crossovers or access to elevated workplaces, mk transforms customer inquiries into reality with exacting profile designs.
- If production conditions change, simple and economic reconfiguration can be accomplished smoothly and easily.

Safe access and safe work with the mk GTP System

The Guardrail-, Tread- and Platform-System from mk is the perfect combination of the various local safety requirements between Platform and Workstation ergonomics. In order to carry out service and repair work on large

equipment, appropriate access is necessary. Even elevated workplaces on machines and equipment require suitable platforms. Further, production and assembly lines often require crossovers for access to process-relevant loca-

tions. Under these aspects, and with respect to surfaces, traffic patterns and minimum clearance requirements, mk transforms customer requests into reality using pre-engineered Profile Technology.



Standard Platform

GTP (Guardrails, Treads, Platforms)

Guardrails

Using the advantages of mk Profile Technology, mk Guardrails can be used in a variety of situations. Applications include industrial work platforms or as handrails along stairways. Treads require handrails as of four steps.

For tread widths of less than 1500 mm, a handrail must be installed on the right-hand side (as seen when descending). Wider treads require handrails on both sides. As a rule, industrial platforms at an elevation of >200 mm should be designed with Guardrails. The standard program is designed exclusively for indoor use. Appropriate versions for outdoor use may also be available on request.

Handrails

Profile mk 2040.16, with its 40 mm diameter, conforms to DIN 59410 requirements. The connecting elements as well as the end caps are designed with large radii, in order to enhance operator safety.

Rail height

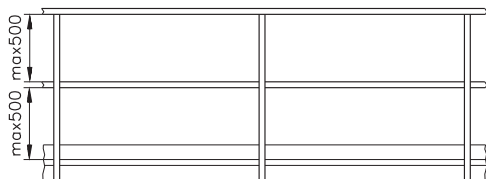
The minimum height requirements vary with the application. Stair rails must be at least 900 mm tall and platforms require rails to be at 1100 mm.

Toe kicks

min. height = 100 mm

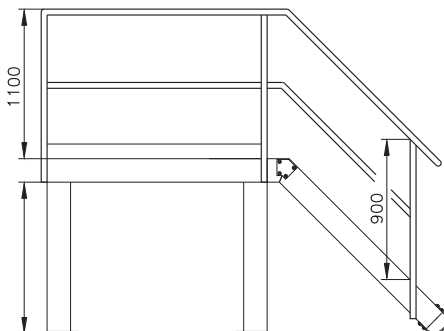
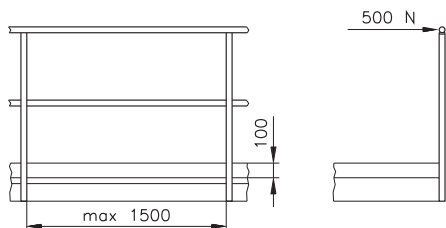
Knee braces

As a rule, guardrails are designed with knee braces (additional cross braces between posts). The distance between the knee braces and both the Guardrail and Platform is maximum 500 mm.

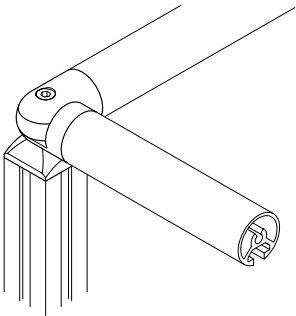


Post spacing

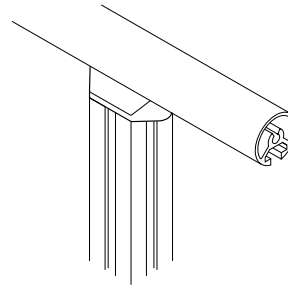
The distance between the posts must be less than 1500 mm. It must be designed in such a way as to support a force of at least 500 N/m (370 lb/ft).



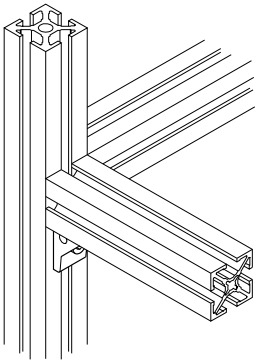
Guardrails



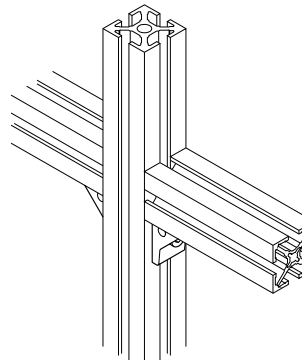
Joint 40/H5
 B46.01.026
 Al



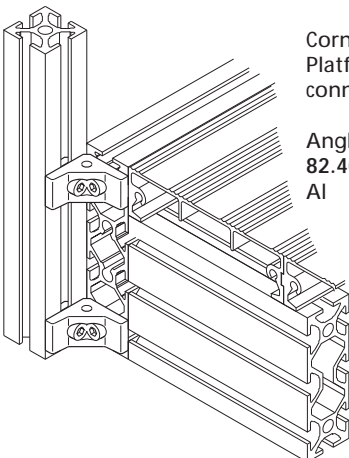
T-Connector 40/H2
 79.00.0011
 Al



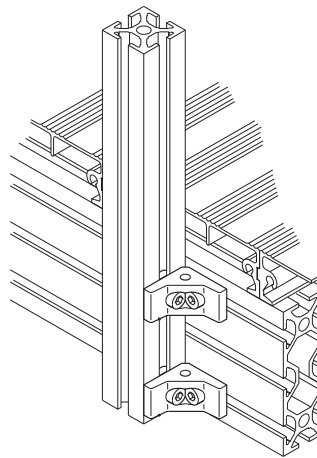
Post/Corner Brace
 connection
 Angle E25
 82.40.0701
 Al



Post/Straight Brace
 connection
 Angle E25
 82.40.0701
 Al



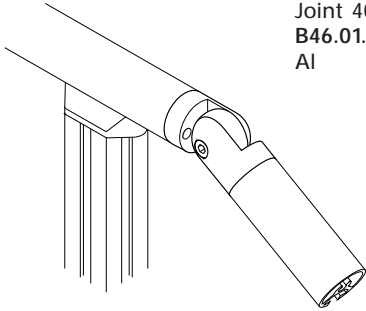
Corner Post/
 Platform
 connection
 Angle E25
 82.40.0701
 Al



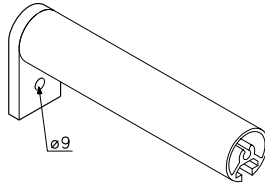
Straight Post/
 Platform
 connection
 Angle E25
 82.40.0701
 Al

GTP (Guardrails, Treads, Platforms)

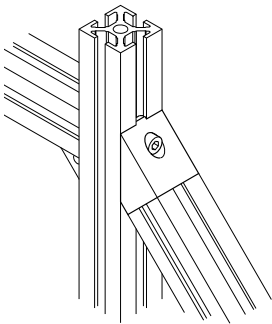
Guardrails



Joint 40/H2
B46.01.023
AI



Wall connection
for Profile mk
2040.16 (shown)
50.03.0034
AI
Wall connection
for Profile mk
2040.01 (rectangular)
50.03.0033
AI

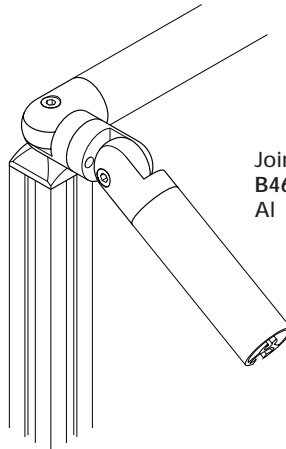


Post/Angled Brace
connection

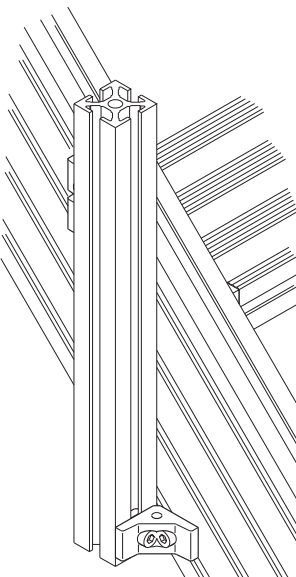
Angle Block 45°
79.01.0066

Angle Block 35°
79.01.0064

Angle Block 30°
79.01.0062
AI

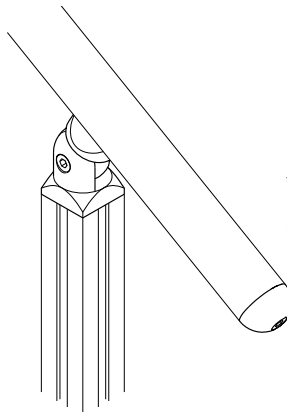


Joint 40/H3
B46.01.024
AI



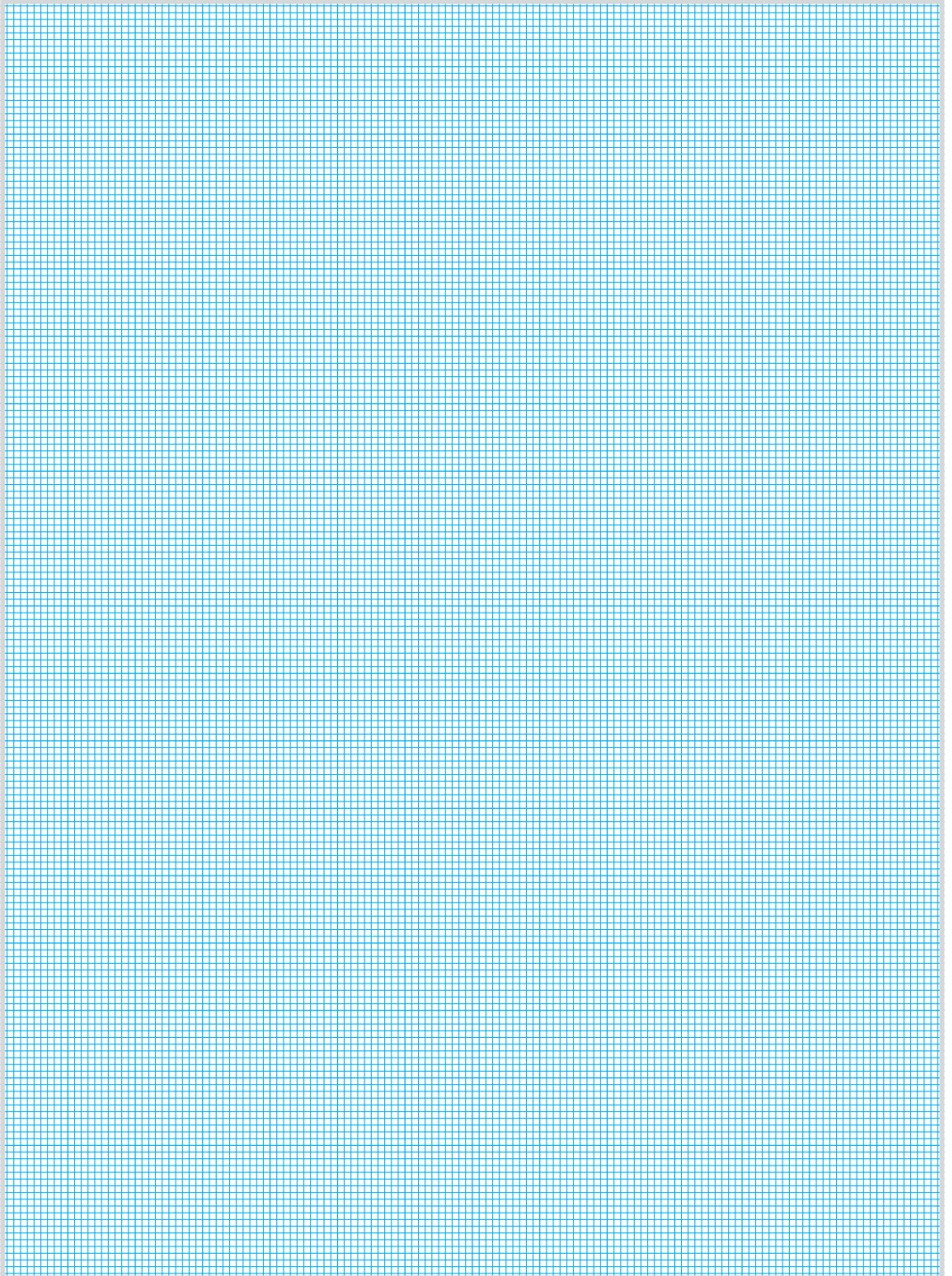
Post/Stair
connection

Angle E25
82.40.0701
AI



Joint 40/H4
B46.01.025
AI

End Cap for Profile
mk 2040.16
76.01.0002
AI

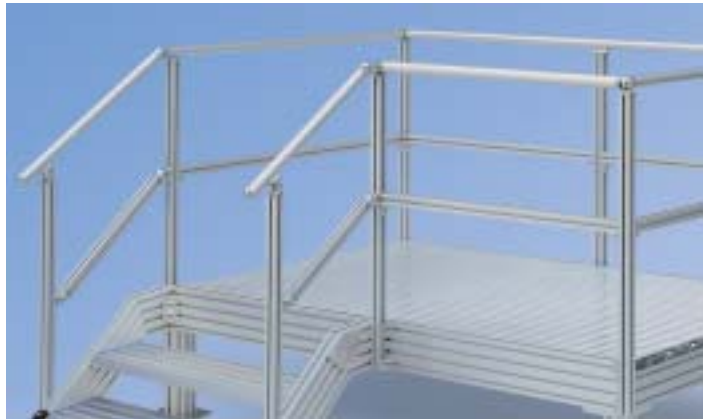


Guardrails

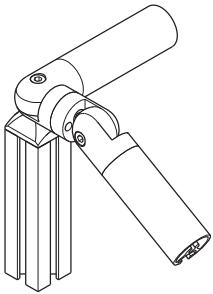
Application Examples



Assembly platform, one side secured by guard rail



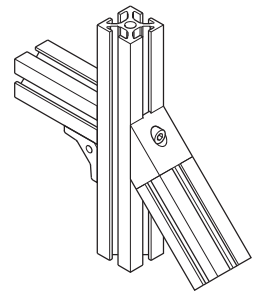
Platform with handrail, diameter 40 mm



Joint for the crossover from stair to platform



Example of the end of a guard rail



Knee rail construction for the crossover from stair to platform



Platform with guard rail as crossover above a conveyor section



Components such as the electronic supply can be attached to the guard rail posts from the mk profile technology range

GTP (Guardrails, Treads, Platforms)

Treads

mk Treads (stairs) are manufactured using Profiles mk 2040.68, mk 2040.69 and mk 2040.06. The profiles used for the treads feature a grooved top surface to help prevent slippage. The screwed connection in the Profile T-slots makes any further rework unnecessary.

Stair inclines

Angles are used to attach stairs of various incline angles to the platform structure. The recommended angle depends on the application. Stairs used often should be designed with a 30° or 35° angle. Steeper angles should only be used for stairs which are rarely utilized (as in a service situation, for example).

Note:

Vertical tread spacing of 160 mm is ideal for traffic with heavy loads.

Step spacing TA - 160 mm

Number of steps = $H/160-1$ (round off)

Step spacing TA - 190 mm

Number of steps = $H/190-1$ (round off)

Order Example:

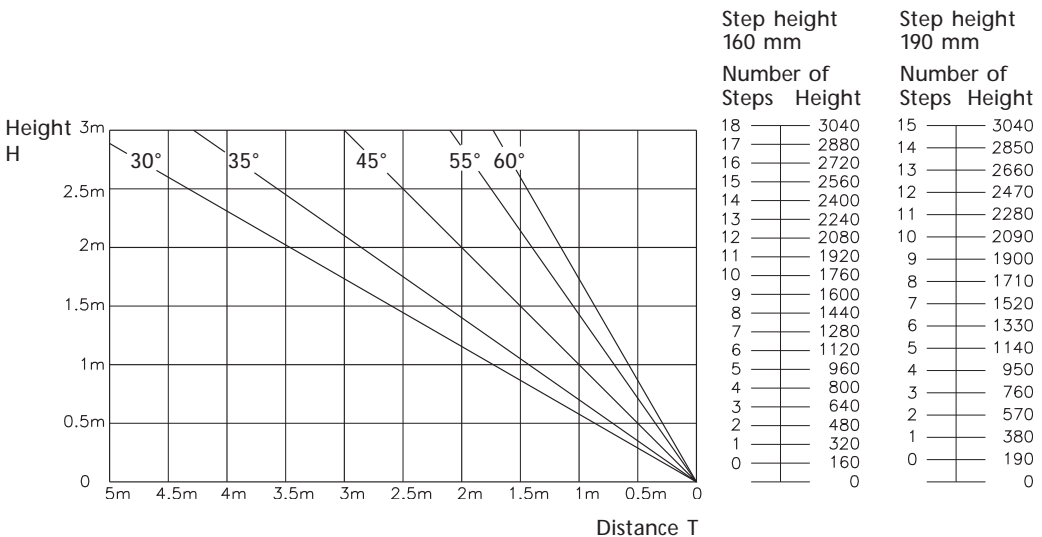
Stairs should be suitable for use with heavy loads:

Width (B) = 1000 mm

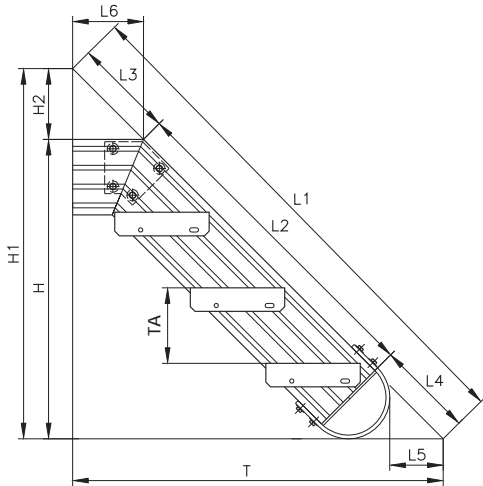
Height (H) = 1800 mm

Angle = 45°

Number of Steps = 10



Treads



Calculations:

$$30^\circ \quad T = H1 \times 1.732$$

$$L2 = H \times 2 - 314.5$$

$$35^\circ \quad T = H1 \times 1.428$$

$$L2 = H \times 1.743 - 267.5$$

$$45^\circ \quad T = H1$$

$$L2 = H \times 1.414 - 204.4$$

$$55^\circ \quad T = H1 \times 0.7002$$

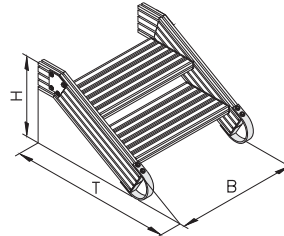
$$L2 = H \times 1.22 - 163.5$$

$$60^\circ \quad T = H1 \times 0.5774$$

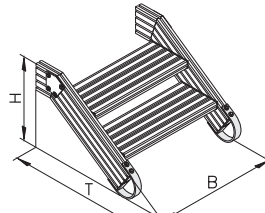
$$L2 = H \times 1.155 - 147.7$$

	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

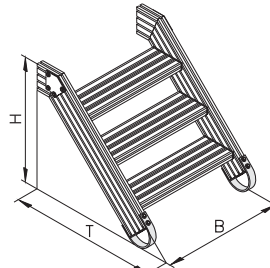
H = Platform height



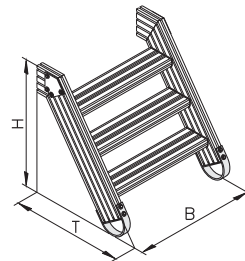
Stair 30°
B02.31.005



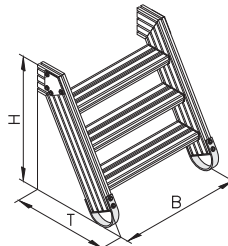
Stair 35°
B02.31.006



Stair 45°
B02.31.007



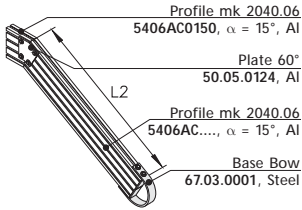
Stair 55°
B02.31.008



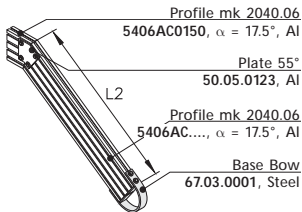
Stair 60°
B02.31.009

GTP (Guardrails, Treads, Platforms)

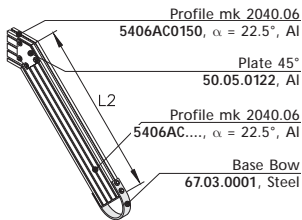
Treads



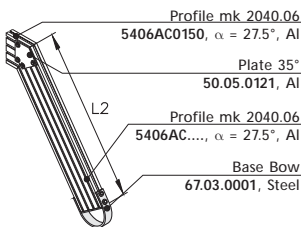
Riser 40/30°
B02.34.006



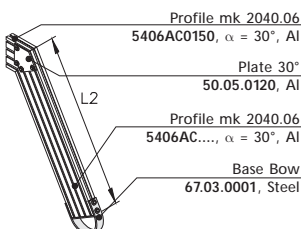
Riser 40/35°
B02.34.007



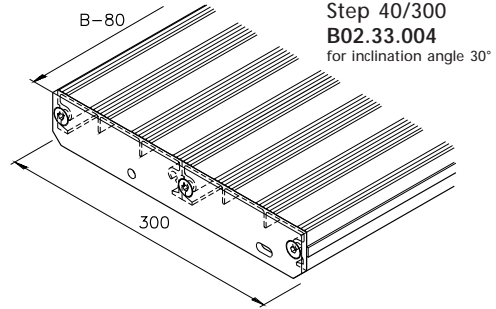
Riser 40/45°
B02.34.008



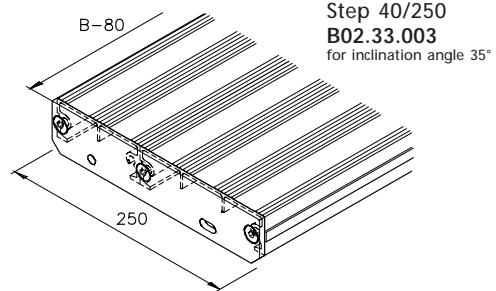
Riser 40/55°
B02.34.009



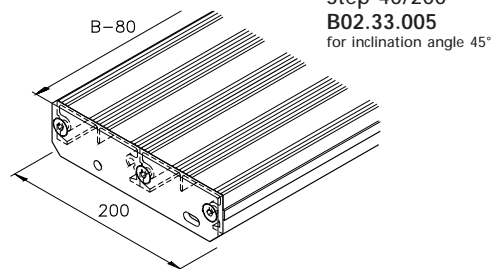
Riser 40/60°
B02.34.010



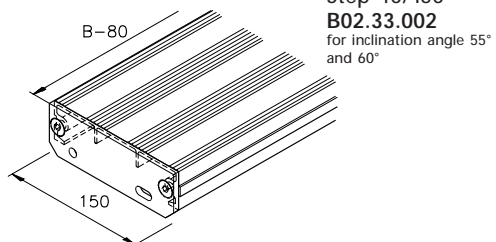
Step 40/300
B02.33.004
for inclination angle 30°



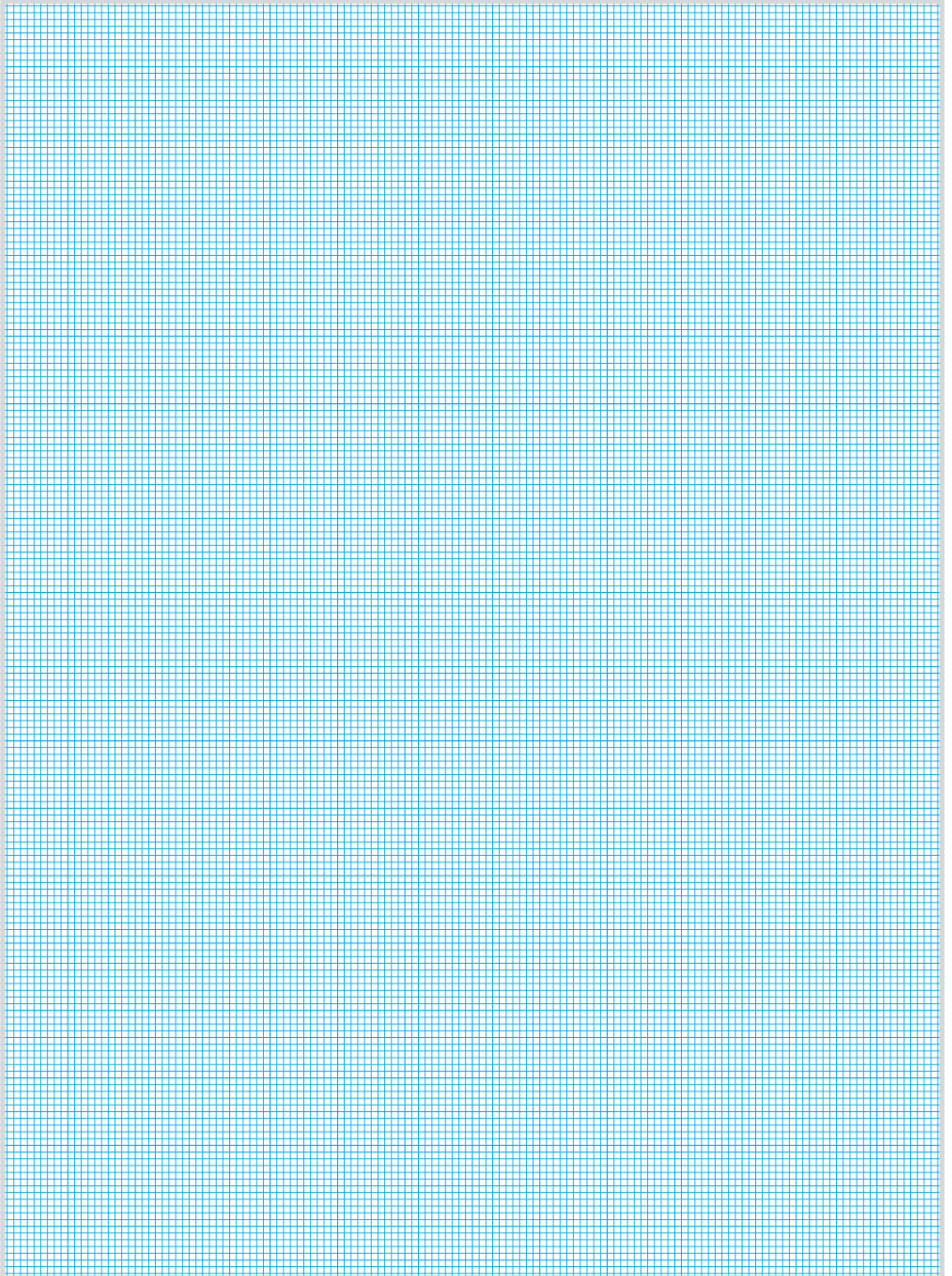
Step 40/250
B02.33.003
for inclination angle 35°



Step 40/200
B02.33.005
for inclination angle 45°



Step 40/150
B02.33.002
for inclination angle 55°
and 60°

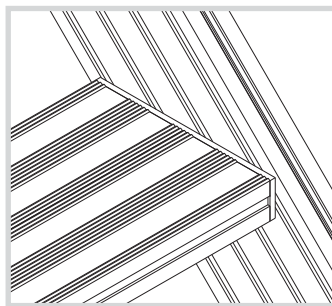


Treads

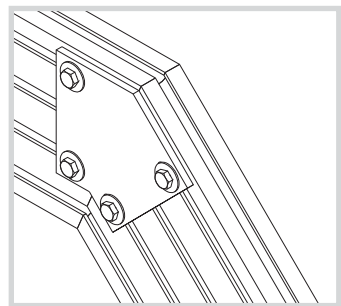
Application Examples



**High-traffic stairs provide secure hold
and high loading capacity**



Step with Riser



Plate



Standard stairs with grooved surface structure



Universal floor support for the stair slope



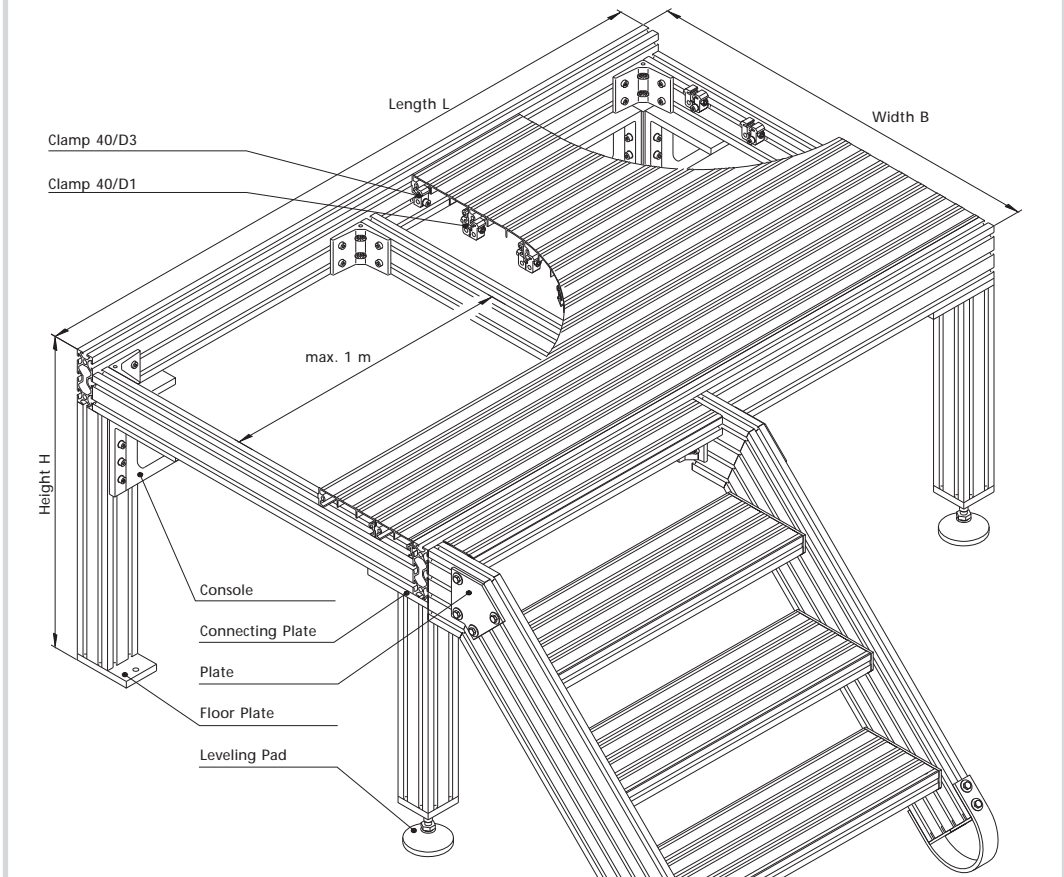
Rigid connectors for high load capacities



GTP (Guardrails, Treads, Platforms)

Platforms

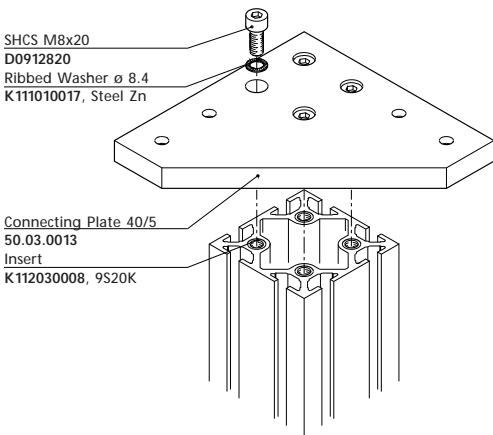
The mk Profile Technology System with its four profile series offers nearly unlimited possibilities for the construction of Platforms. Spans of up to 8 m can be manufactured, for example, in combination with our Foamed Structural Profiles. The mk Profile Technology catalog shows many such application examples. The following components show some of the basics. Platforms are covered with mk Profiles or customer requested materials. For industrial applications, the platforms can be supplied with toe kicks (minimum height 100 mm) per DIN 31003.



Assembly Details

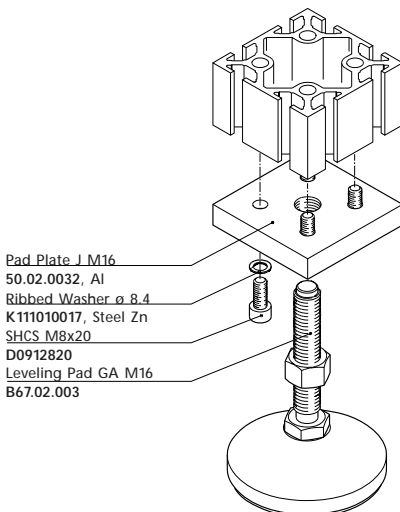
Connecting Plates

A simple and secure connection is provided using the Connecting Plate. Three Profiles can be attached with this one element.



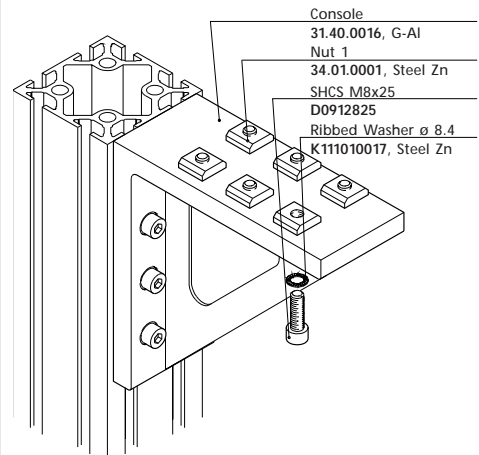
Leveling Pads

The leveling pad features an 80 mm adjustment range as well as a high load capacity of 25,000 N.



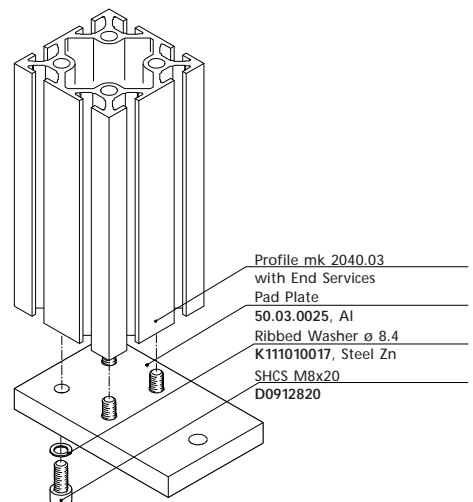
Consoles

Consoles are designed for the highest stability requirements. This cast aluminum console features a total of 12 attachment holes and is ideally suited for larger spans.



Floor Mounting

The floor mounting plate can be lagged to the floor after the frame has been positioned.

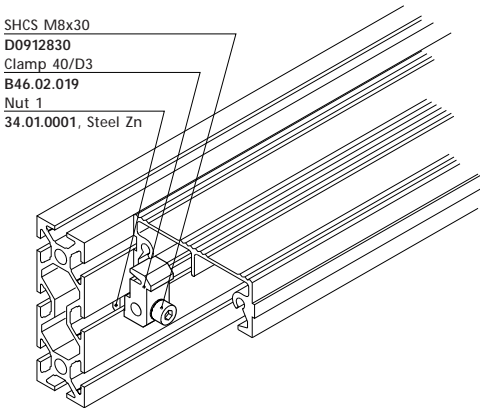
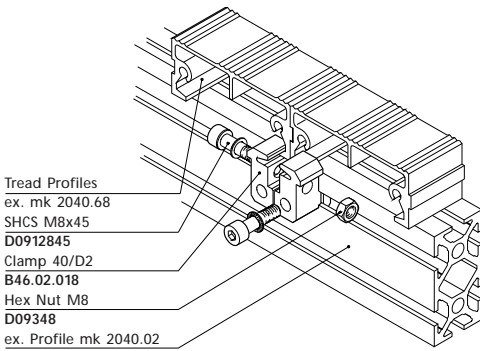


GTP (Guardrails, Treads, Platforms)

Assembly Details

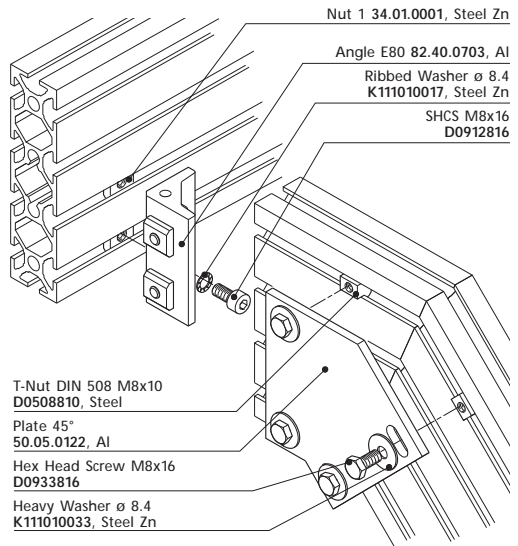
Tread Profile Attachment

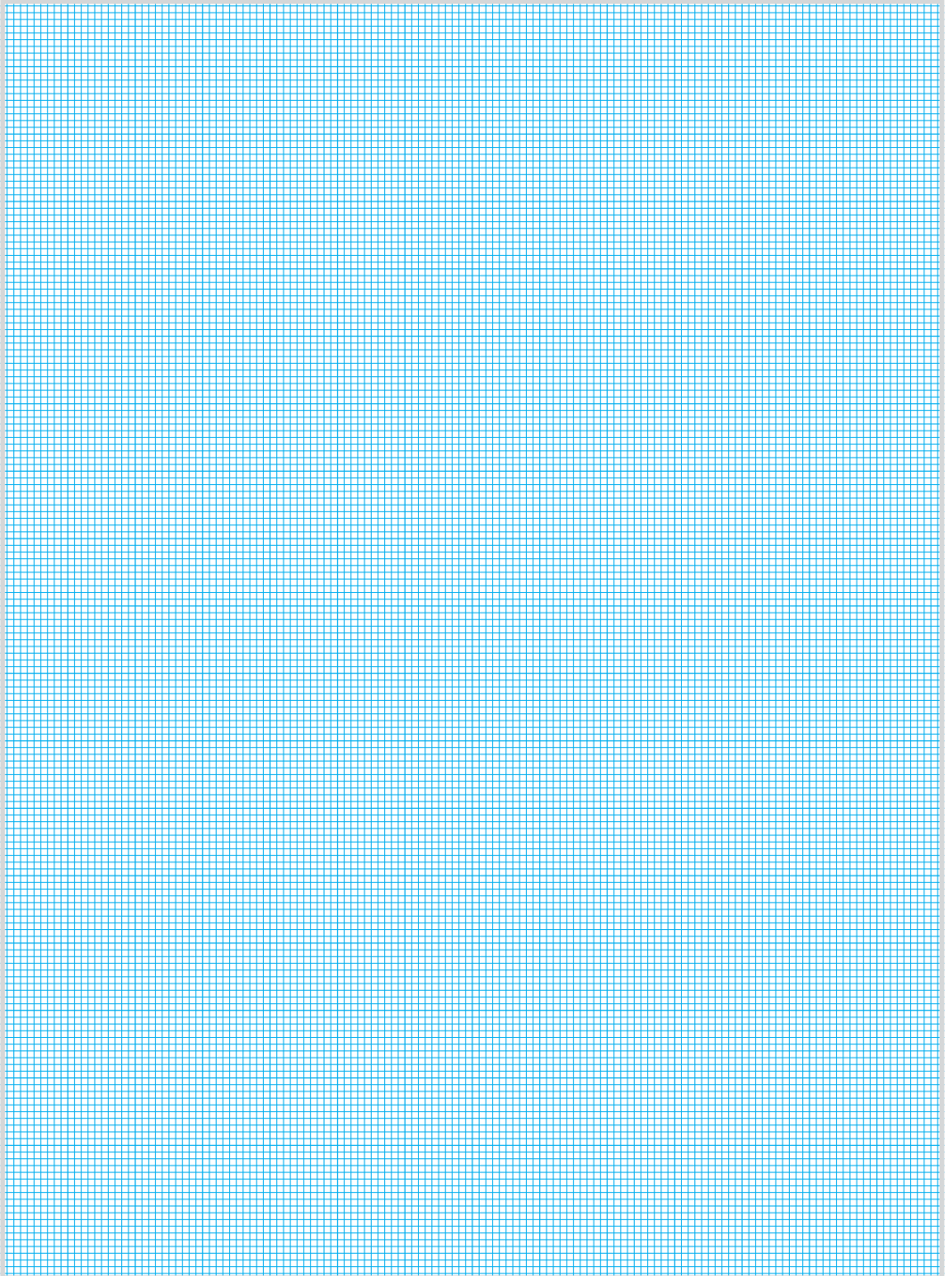
The tread profiles feature a tongue and groove, and are further attached to each other and to the sub-structure using specially designed clamps.



Riser Attachment

The riser is constructed with two angle cut profiles joined using the appropriate plate, and attached to the platform with angle E80.





Platforms

Application Examples



Assembly platform for helicopters. Air cushion floor elements enable effortless movement of the whole structure on the factory floor



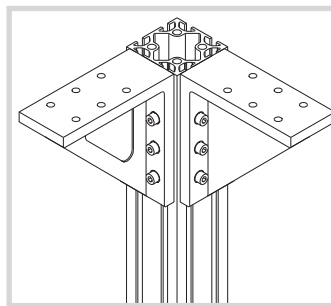
mk stairs are compatible with mk profile technology



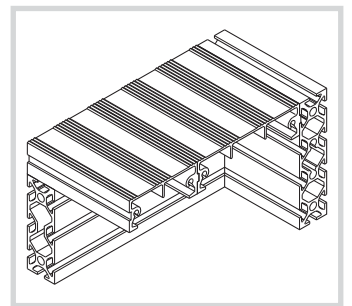
The mk profiles provide space for electric, pneumatic and hydraulic supply lines



Individual platform as warehouse mezzanine



Console connection



Floor profile with
slip-resistant grooves

Range of performance

mk Parts



Reduce your planning time by using the "mk Parts" CAD parts library!

- Online at www.mk-group.com
- Off-line in the "mk QuickDesigner" software package
- Free access to CAD data
- Simple processing with native and neutral CAD formats
- Automatic part list information for the components
- Part configuration online
- Shopping cart function for online requests

mk Config



Quick and easy design of your guarding!

- Contained in the "mk QuickDesigner" software package
- Conveniently create guarding without costly design
- Cost optimization through automatic selection of default fields
- Exporting of 3D drawings for further processing or enhancement in your CAD system

mk Comparison- and Selection Tool: Conveyor Technology and Linear Motion



Immediately obtain your matching mk conveyor or linear technology system online based on your requirements!

- Online selection tool for determining the optimal system based on the parameters entered
- Comparison of up to 3 systems at a glance
- Motor selection program
- Direct link to our e-catalog

mk Profile Technology Online Shop



Order profiles, connectors and accessory elements at mk-group.com/shop – 24 hours a day!

- Visual parts selection prevents confusion
- Search function by name or ID number
- Direct price calculation
- Order online

mk Online Order Tracking



Check the status of your order at any time – online!

As a registered user, you can view the history of your orders at mk in our online shop. Follow the status of your online or off-line orders. Find out, for example, whether your order is currently in assembly or whether it has already been shipped.

mk Quick Delivery Programm (QDP)



We deliver your GUF-P MINI and GUF-P 2000 fast!

- Top adherence to delivery dates and availability thanks to optimized storage and a lean manufacturing process
- We cover a wide range of applications due to standardization and modularization of these units
- Fast delivery of spare parts
- Price advantage

Our service

We're there where you need us



Headquarters, Troisdorf,
Germany

Every hour of downtime for you or one of your customers cost you money and reputation. Therefore, we are on your side in the planning and design phase, as well in after-sales business as a partner. Our international network of

production, sales and service sites make it possible to quickly respond to your requirements and make the service you are used to possible. Our site addresses are available on our website at www.mk-group.com/contact.

Information material

Our catalogs are organized by our 4 main business areas. Various product flyers compliment our catalogs.

Current information about mk products and other interesting topics is also available on our website at www.mk-group.com.

mk Profile Technology Catalog



More than 250 combinable system profiles made of high-quality alloys, perfected and stability-oriented connectors, as well as a comprehensive range of accessories is available in our comprehensive 300-page mk profile technology catalog.

mk Conveyor Technology Catalog



20 different conveyor systems from belt, timing belt, chain and flat top chain conveyors to roller conveyors are available in our 320+ page mk conveyor technology catalog. Our mk INOX conveyor technology catalog includes belt and flat top chain conveyors, as well as roller conveyors made of stainless steel.

mk Linear Motion Catalog



mk linear technology stands for optimal, needs-based design. Gliding assemblies, track roller assemblies and recirculating ball bearings are displayed on 130 pages. You have the choice between profile and linear guides, as well as complete linear modules.

mk Factory Equipment Catalog



Building on our profile technology, a comprehensive range of modules for individual factory equipment is on 160 pages. It includes guarding, system workstations, guard rails, treads and platforms in modular design.

CD mk QuickDesigner



The "mk QuickDesigner" software package includes the 3D guarding configurator "mk Config" and the "mk Parts" CAD library. You can use these tools to quickly and easily design your guarding.

Mini-CD mk E-Catalog



The handy Mini-CD contains all mk catalogs and the profile technology price list in the form of an eBook. You can conveniently page and search through the catalogs on your screen, as well as save them as PDF files.

Component Index

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