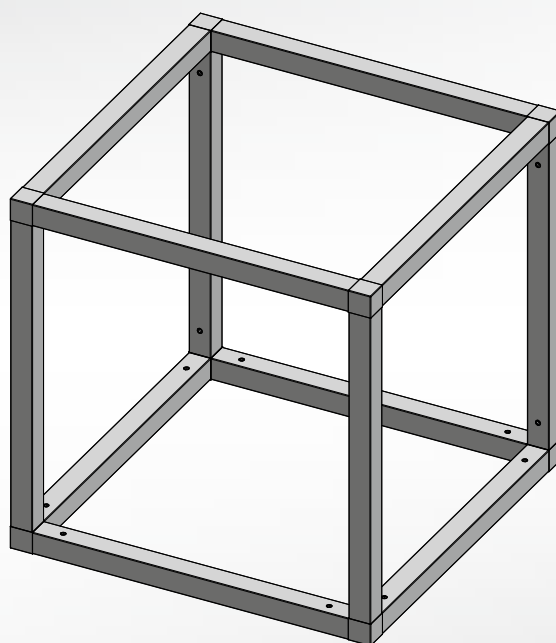


CADRO

| Technical Information and Assembly



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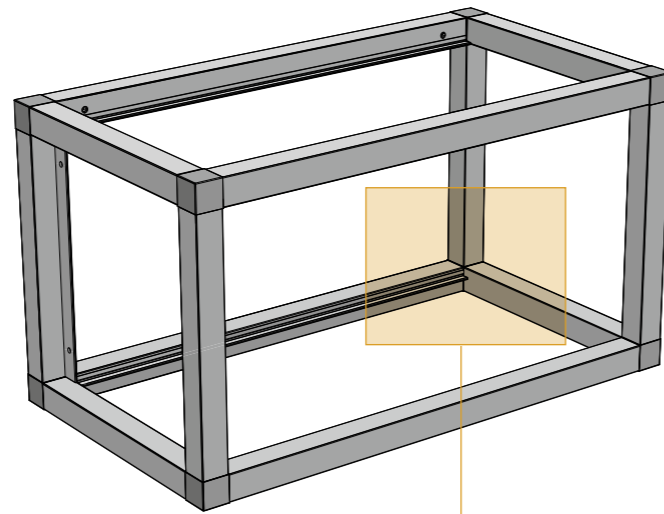
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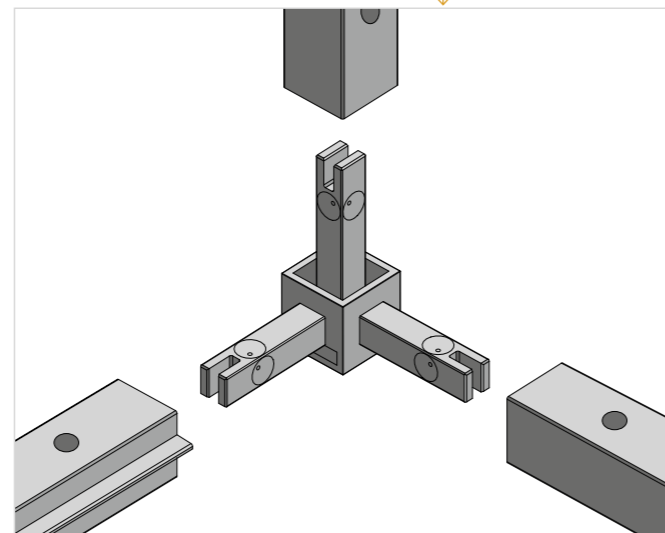
CADRO Base.

Basic assembly of each CADRO piece of furniture.



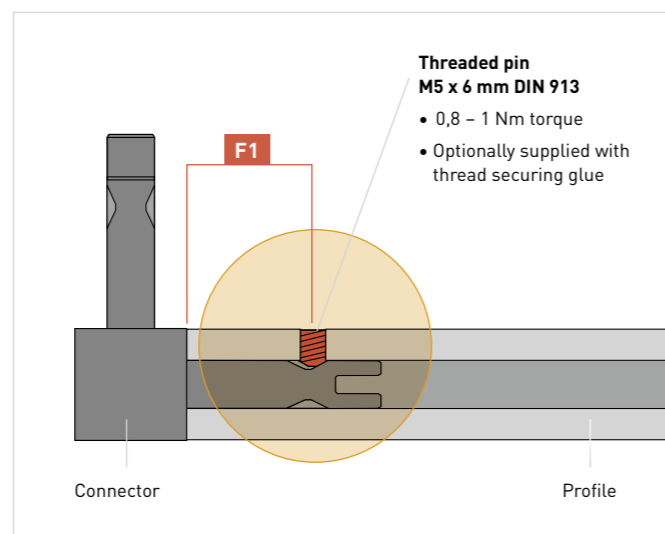
The basic principle.

The principle is very simple and always remains the same:
The connectors are inserted into the ends of the profiles and screwed with threaded pins to achieve a firm connection.



The safe connection.

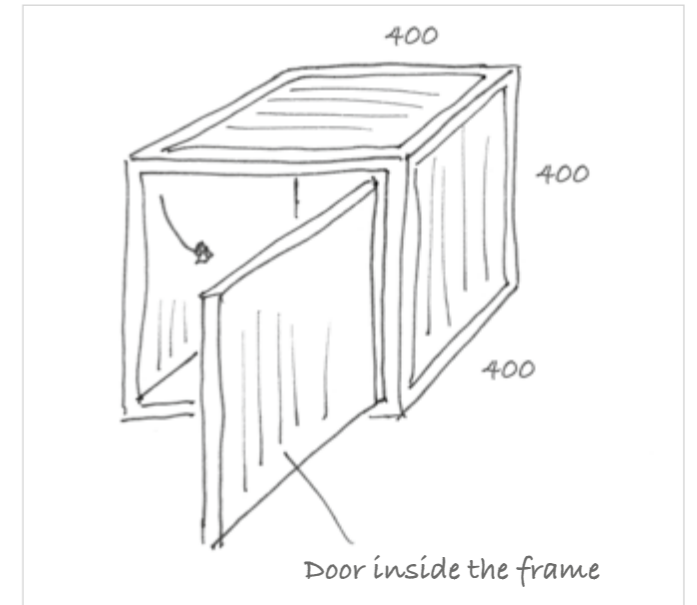
The pins are optionally supplied with a thread securing glue and fastened with a 0,8 – 1 Nm torque. The M5 grub screws are fixed in the surrounding conical cavities in the connector's arms pulling together the connector and the profile without leaving any gap. Due to the predetermined distance of the threaded hole, the connection gains its outstanding stability and security. This technology allows every user to creatively use the system with generous tolerances.



Planning.

The sketch.

Well-founded planning is the basis for every piece of furniture. However, there is no need for time-consuming and costly 3D-planning. All it takes is a simple hand-drawn sketch on which the external dimensions and the functions are shown in a simplified form.

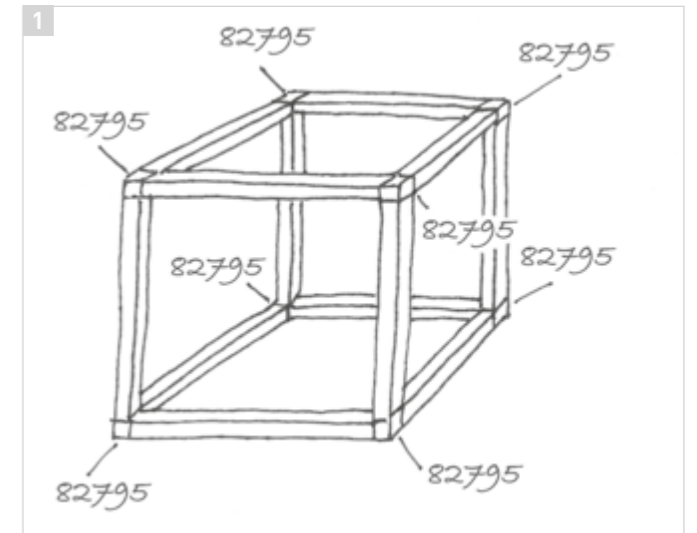


The CADRO frame.

The next step is to choose the CADRO components that are required for the CADRO frame construction.

1 Definition and quantity of the required connectors.

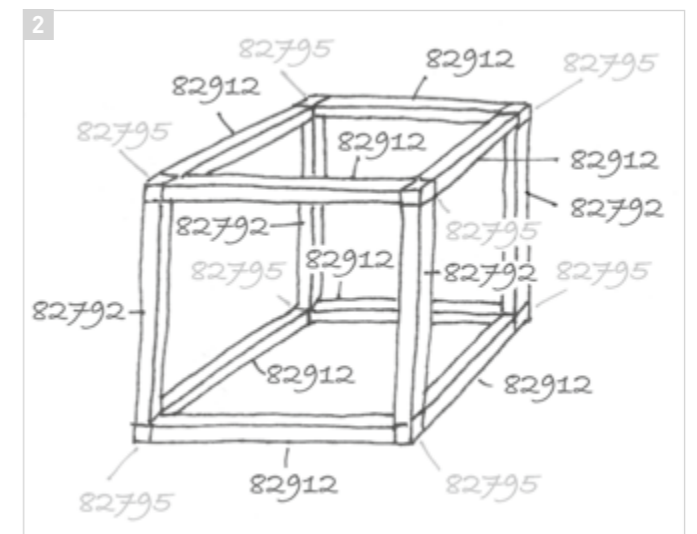
This determines the quantity of the required grub screws:
3-way connector = 3 screws, 4-way connector = 4 screws, etc.



2 Choice and positioning of the profiles in consideration of the required functions (to screw side or shelf panels, for example).

This is how you get your list of materials required for your CADRO piece of furniture.

For more detailed information on functions and fields of application of the different profiles and connectors, please refer to our catalogue "CADRO frame system".



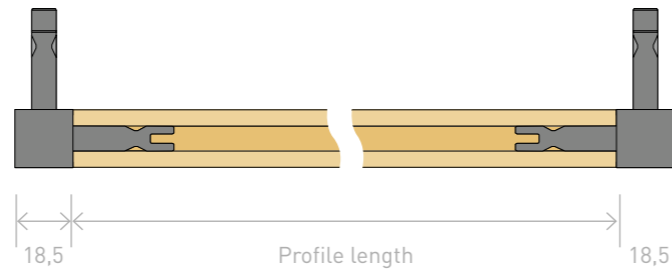
CADRO Base.

Processing.

Definition of the profile lengths.

All connectors within the assembled frame have a thickness of 18,5 mm. This dimension must be deducted from the outer dimensions of the furniture for each connector to obtain the exact profile dimensions. E.g. for 2 connectors and an outer dimension of 400 mm the result is:

Outer dimension:	400 mm
2x connector:	- 37 mm
Dimension of the profile:	363 mm



Cutting of the profiles.

The required length of the respective profile can be cut to size on commercially available circular table saws with an aluminium cutting saw blade. A generous saw tolerance of +/- 0,3 mm facilitates the processing.

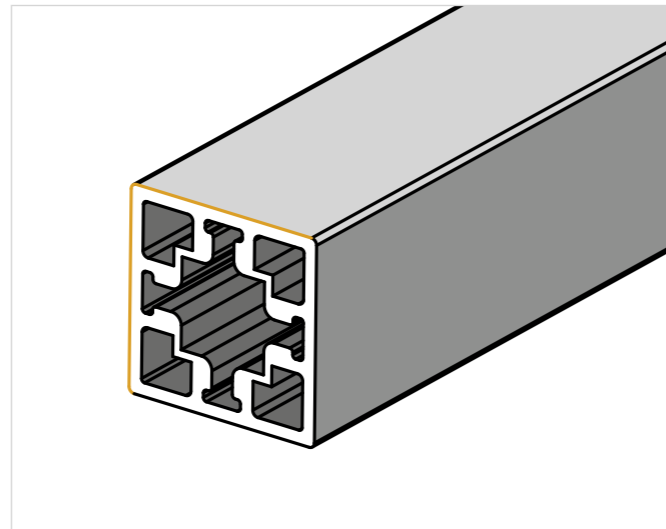


Cleaning.

We recommend blowing over and through the profiles completely with compressed air in order to free them from chips produced during sawing. This minimizes any potential damage to the surfaces during further processing.

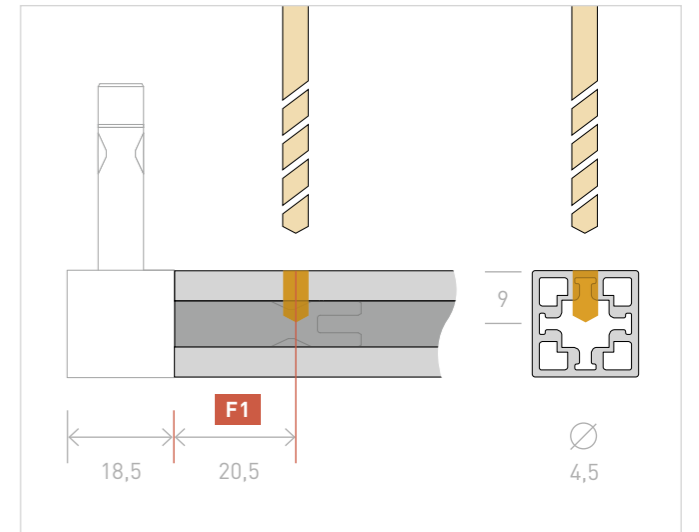
Depending on the current state and age of the saw blade, a small burr can appear on the profile edges. This should carefully be removed, especially if black profiles are being used. In this case we use an abrasive sponge with a grit of 180 (e.g. from Würth).

Cross-sections of black profiles that are not entirely clean can easily be blackened with a black ink pad.



Drilling/Milling.

The hole for the grub screws has a distance of 20,5 mm to the cut end of the profile. A 4,5 mm metal drill is used for drilling, to do this we recommend a twist drill (e.g. from Würth). In order to drill exact holes you need a pillar drilling machine with stop or you can use our drilling and tapping jig, which easily can be adjusted to the different profiles and standardized drilling positions (see pages 10|11). Position 1 is intended for the connector, the hole should be completely drilled through the external profile wall, approx. 9 mm, up to the middle (see on the left). Alternatively, the holes can also be drilled by using a CNC milling machine.

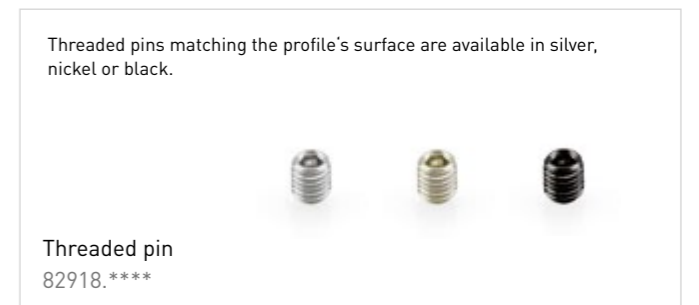


Cleaning.

Drilling or milling chips must now again be removed with compressed air.

Inserting of the grub screws.

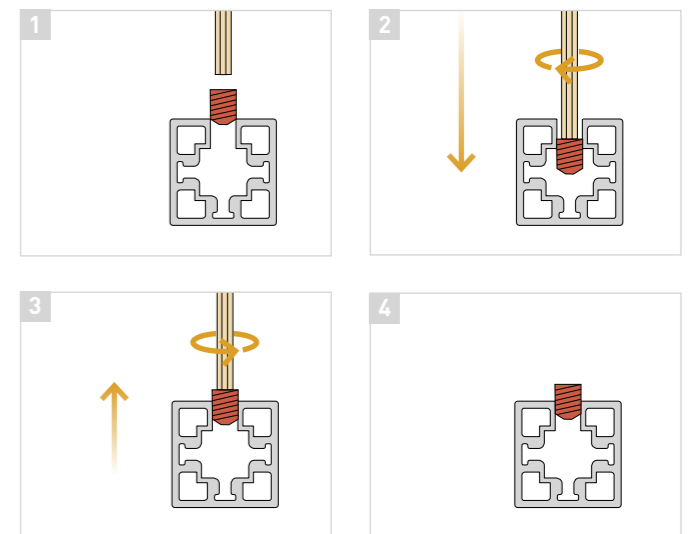
For the most popular 3 profile colours, we offer the matching threaded pins which discreetly fit into the overall appearance of the frame. If necessary, they can also be covered with cover caps.



Grub screws of the size M5 x 6 mm DIN 913 are used to link the connectors with the profiles. These are simply being screwed into the 4,5 mm drill hole with a cordless screwdriver. Thus the steel screw forms the thread in the aluminium profile, it is not necessary to cut the thread into the profile in advance.

Work steps:

- 1 Place as straight as possible.
- 2 Screw through the profile wall completely.
- 3 Unscrew the threaded pin again so far that the connector's arm can be inserted without any problems.
- 4 Finished: The profile is prepared for assembly.



CADRO Base.

The drilling and tapping jig.



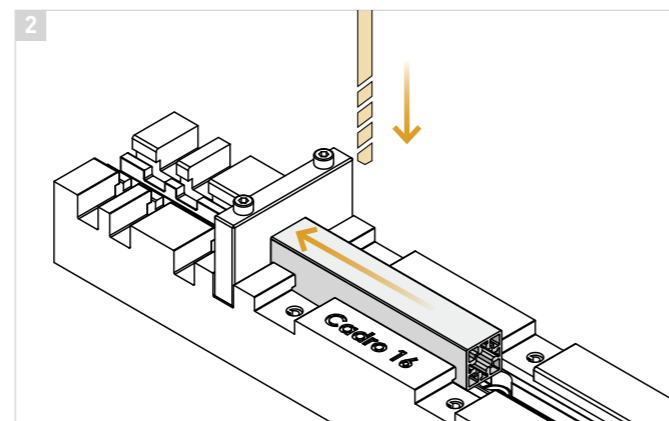
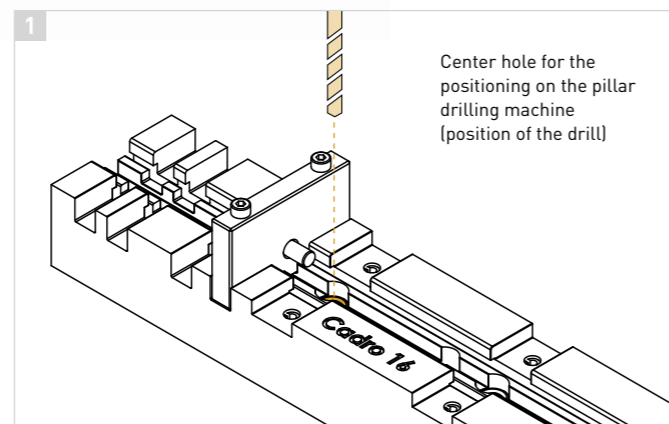
The drilling and tapping jig is specially designed for the profiles of the CADRO system. It is fixed only once on a pillar drilling machine and then offers the possibility to drill precise and uniform holes by simply changing the position of the stop plate.

1 The drilling and tapping jig is mounted with the centering hole exactly on the drilling position of the pillar drilling machine..

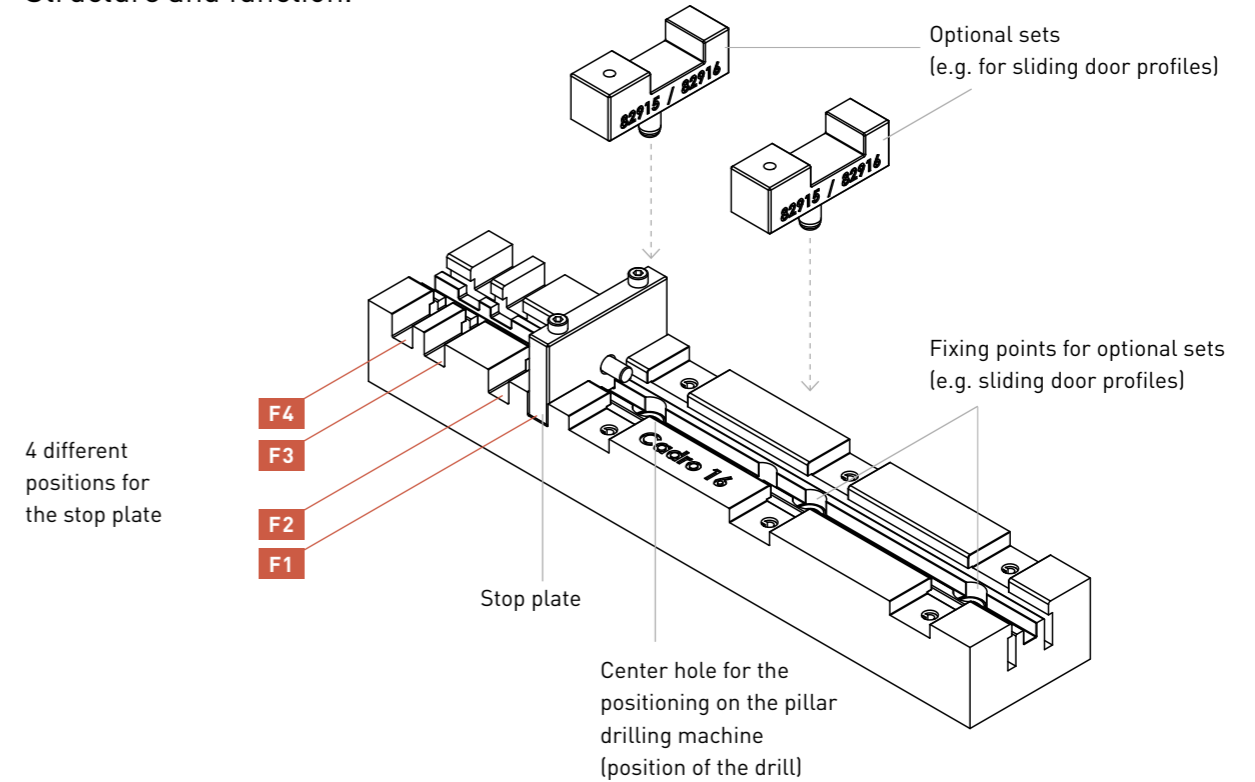
2 The profile to be processed is placed in the middle of the rail of the drilling and tapping jig and then slid with the profile's end against the stop plate, Thus it obtains a firm hold for further processing.

Some profiles require additional sets for a safe positioning in the drilling and tapping jig. These are optionally available (see page 11). In this case the stop plate must be turned upwards by 180° with the pin for fixing the profile.

There are 4 possible positions for the stop plate which must be selected depending on the type and function of the required drill hole (see page 11).



Structure and function.



Positions for the stop plate.

The stop plate can easily be moved to the desired position by loosening and rescrewing the two cylinder head screws.

- F1** – M5 for connector
– M5 for universal connector
- F2** – M6 for optional side wall attachment (eccentric dowel pin)
– M5 for corner connector
– Ø 8 mm for glass door hinge hole (with fixing stop attachment 82927.04.0000)
- F3** – M5 for securing screw for wall mounting
- F4** Recommendation to obtain uniform distances for pieces and series of furniture:
– Ø 4,5 mm for the alternative wall mounting and
– Ø 10 mm for the cover cap (page 14)

Optional sets.

Additional sets	For profile
82927.02.0000 (2x2 attachments) for sliding door profiles	82913.****/82915.****
	82914.****/82916.****
	83104.****/83106.****
82927.03.0000 (3x2 attachments) for display profiles	83105.****/83107.****
	83108.****
82927.04.0000 (2 fixing stop plates) for glass door hinge hole	83109.****
	83120.****

CADRO Base.

Assembly.

Tools.

All you need to assemble the basic frame is a 2,5 mm Allen key or, better still, a cordless screwdriver with the appropriate bit. When using a cordless screwdriver, the torque lock should be set to 0,8-1 Nm (e.g. for the Makita HP331D level 12/screws).



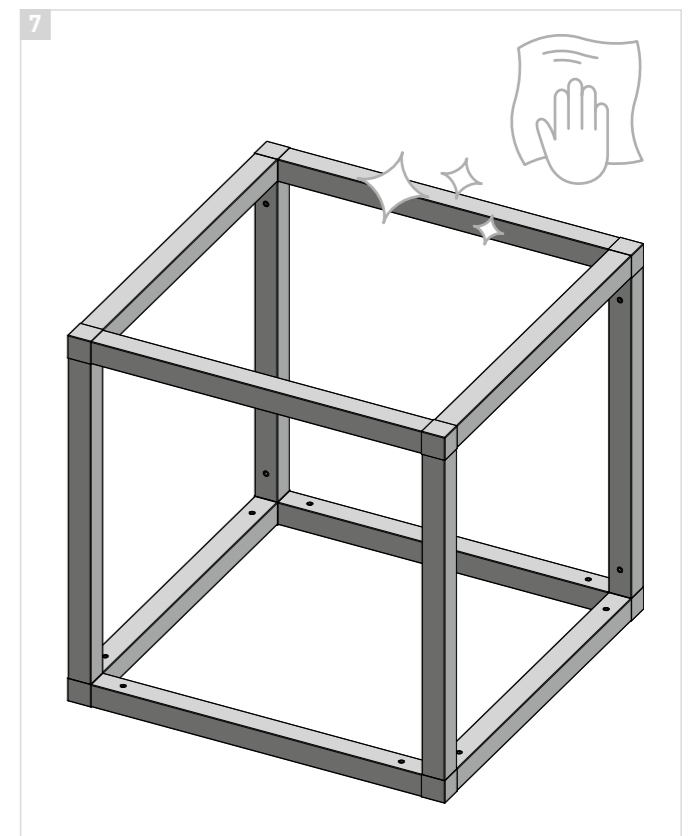
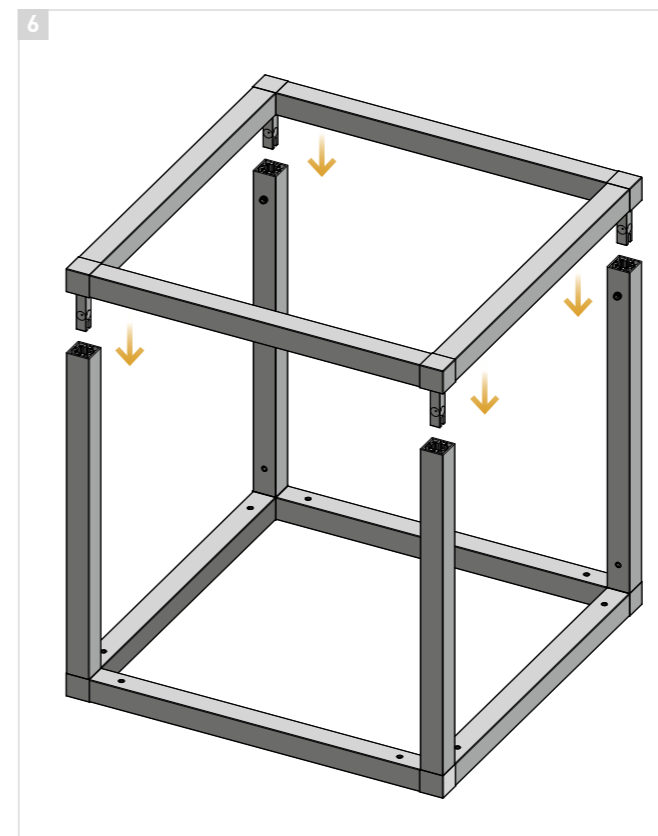
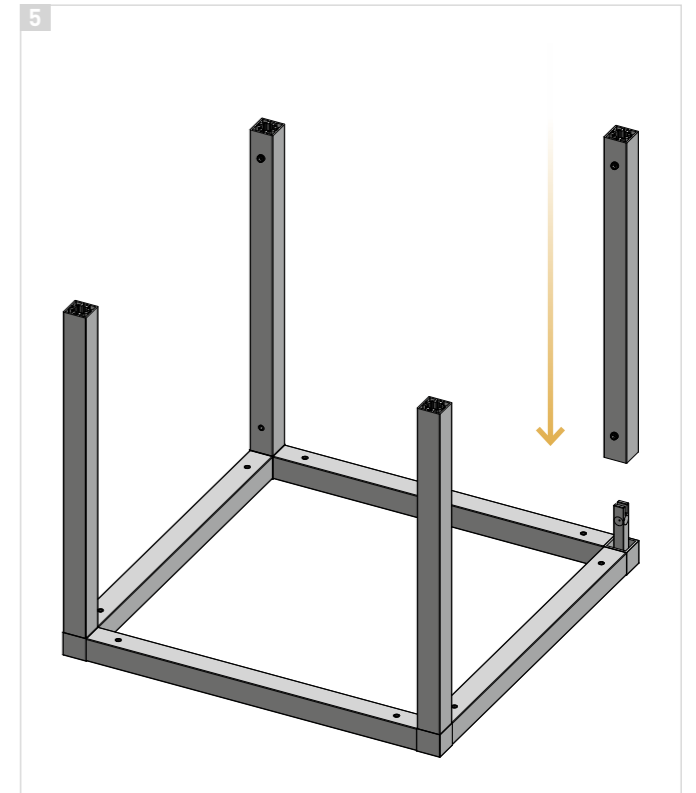
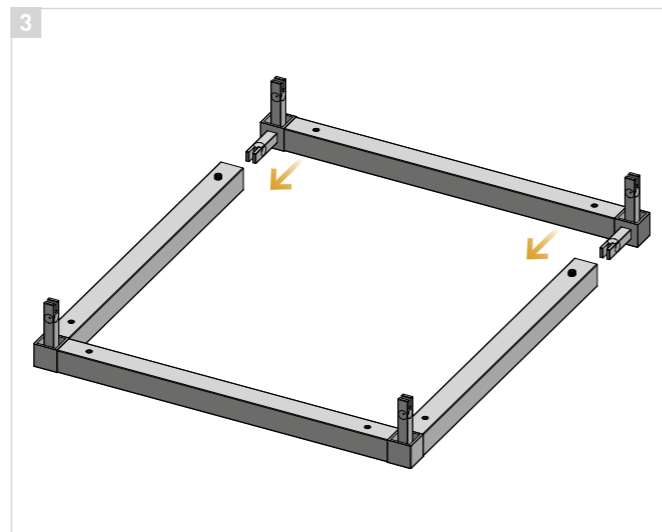
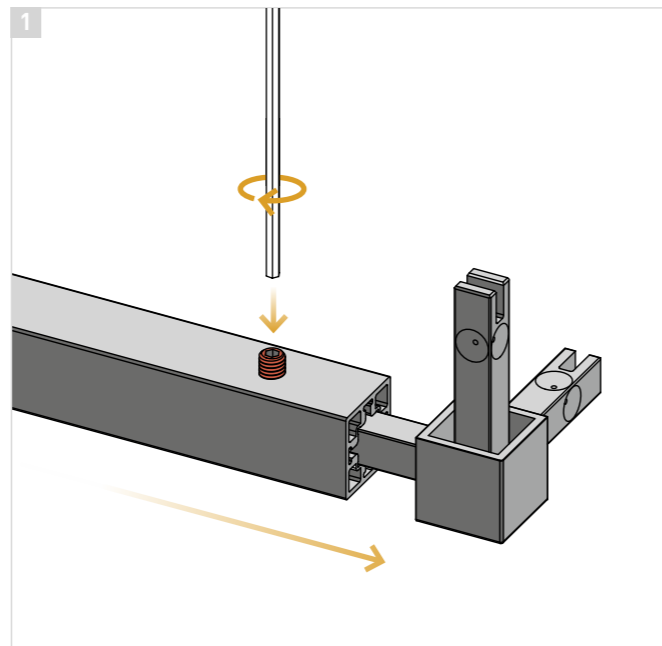
Order of assembly.

1 The assembly is quite simple: The prepared profiles are inserted into the connectors and linked to one another by tightening the grub screw. During the assembly, take care that the screws are placed in a well hidden or non-visible area.

It is important, as described in steps **2** – **6**, to assemble modules that afterwards are inserted into one another and then screwed together.

Cleaning.

7 As a result of the processing, e.g. traces of grease or slight surface damages may appear on the frame. These residues are now being removed with a microfiber cloth and cleaning agent (e.g. Normfest Topas intensive window cleaner). Remaining residues can also be removed with a rubber eraser (we use Schleiflix from Kingsporn with a grain size of 240).



CADRO Base.

Attachment.

The invisible wall mounting system.

1 The profile has to be centrally milled out at the furniture element's back with a width of 12 mm and a minimum height of 67 mm. Please make sure that a minimum distance of 48 mm (between the upper edge of the milling and the end of the profile) is observed!

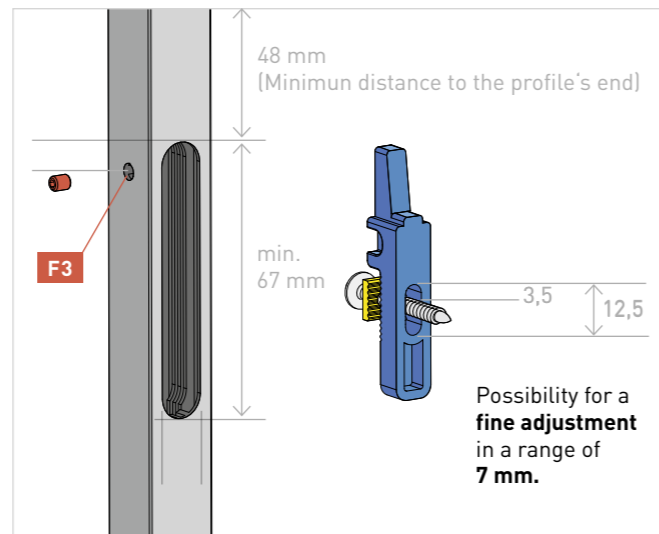
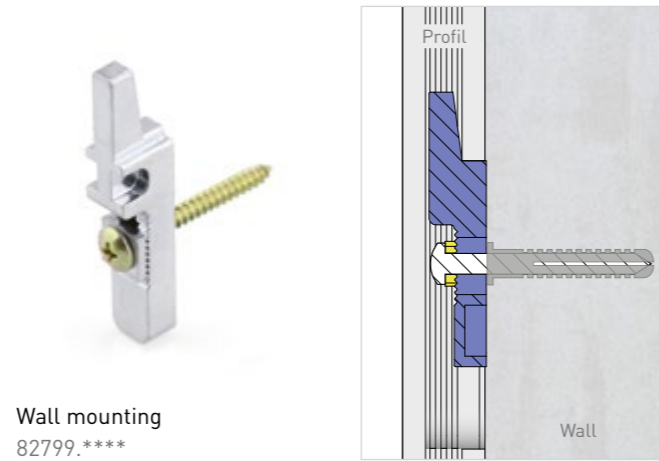
2 Afterwards drill a hole in the right or left side of the profile next to the milling with subsequent tapping. This hole has to be positioned in the centre of the profile's width and 7,5 mm beneath the upper edge of the milling.

3 The wall mounting device 82799.**** is now being screwed on the wall at the required positions to match the millings. **Afterwards, check if the wall mounting devices are in good level using, if necessary, the fine adjustment function.**

4 The furniture element can now be hooked into the wall mounting and be secured with the threaded pins.

SAFETY NOTE:

The maximum vertical load, when properly being attached to a wall suitable for the use, is 30 kg for each mounting bracket. The supplied fastening elements are suitable for common, solid masonry materials. Their suitability therefore must be checked directly on site.

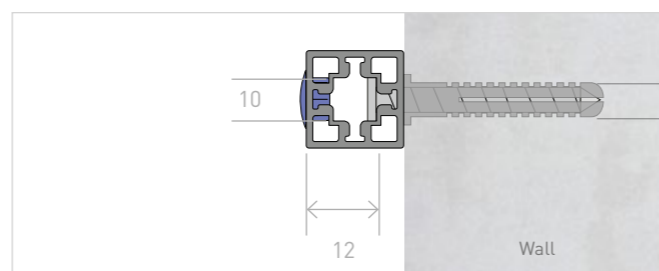
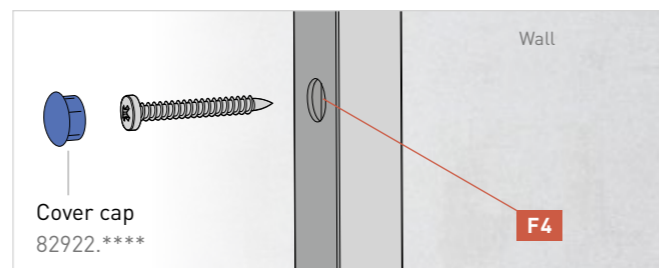


The alternative wall mounting.

1 The first drilling has to be made in the profile's end centre using a 4,5 mm drill.

2 After that, a second drilling with a 10 mm diameter and a depth of 12 mm has to be made in the centre of the first one for the flat head screw.

3 Thus, the furniture element can firmly be screwed and the drill hole in the profile finally be covered with a cap.



Load capacity of wall-mounted standard shelves.

The information on the load capacity depends on the respective frame construction and conditions of the mounting surface. The table on the right shows standard values that refer to standard modules with two levels. The maximum recommended shelf width is 1200mm. For shelving depths greater than 250 mm, the maximum load capacity has to be checked by the designer.

Shelf module (Width x depth x height)	Load capacity of each level
600 x 250 x 450 mm	8,5 kg
900 x 250 x 450 mm	12,5 kg
1200 x 250 x 450 mm	16,5 kg

The perfect connection.

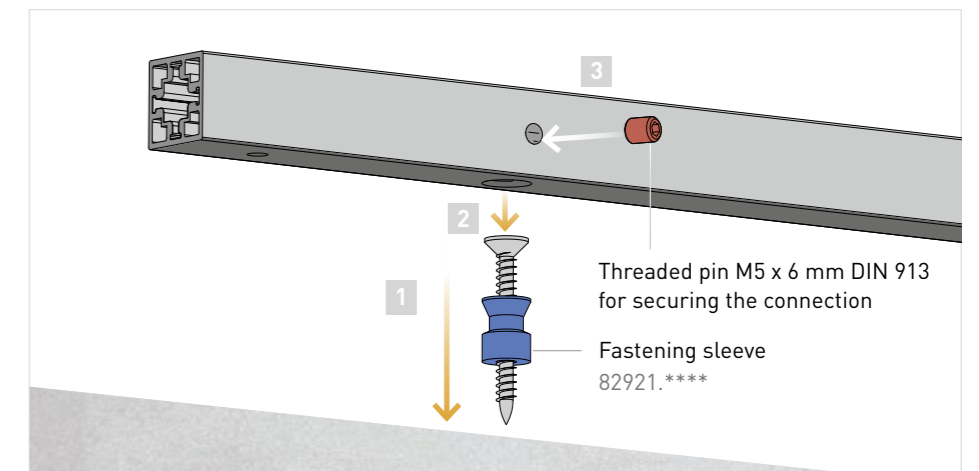
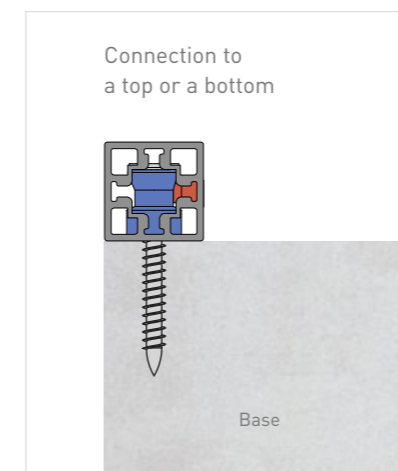
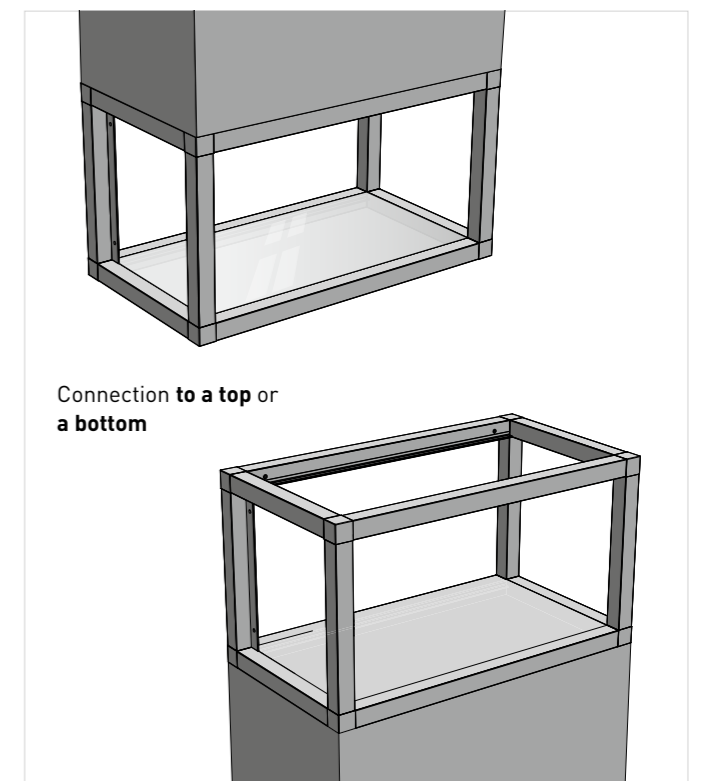
1 The fastening sleeves 82921.**** are fixed to the already existing furniture element (pedestal, hanging cabinet, ceiling, etc.) using appropriate countersunk head screws.

2 At the same distance as used for the fastening sleeves, a 10,5 mm centre drill hole for each fastening sleeve is to be drilled into the CADRO frame with a depth of 15 mm.

3 On the right or left side of the profile next to the drill hole a second hole with thread has to be drilled. This hole has to be centrally positioned to the fastening sleeve's position as well as to the profile. It serves to secure the frame at the fastening sleeve with a threaded pin M5 x 6 mm DIN 913.

SAFETY NOTE:

To securely attach your furniture element, we recommend to attach at least four fastening sleeves depending on the size of your module! If four fastening sleeves are used properly to attach a hanging shelf to a ceiling or to a cabinet, the maximum load capacity is 30 kg. The suitability of the fastening elements in relation to the wall or cabinet material must be checked on site.



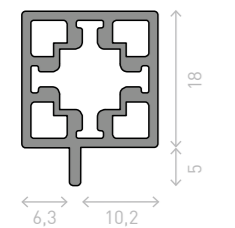
CADRO Base.

Side and shelf panels.

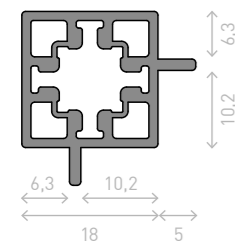
Peripheral groove.

In order to create closed furniture elements with side and rear walls, the wall elements are provided with a peripheral groove having a width of

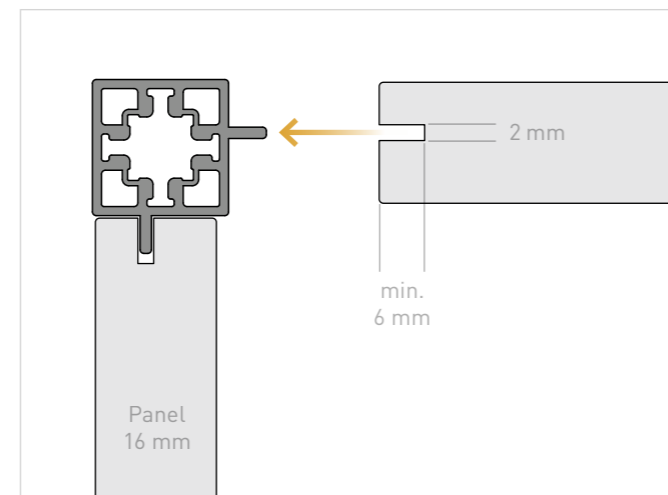
2 mm. Thus they can neatly and securely be assembled into the frame without any visible fixation.



Profile for glass panels
82794.****



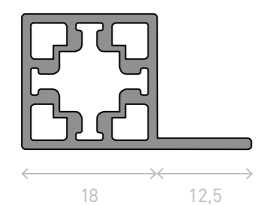
Profile for side/shelf panels
82975.****



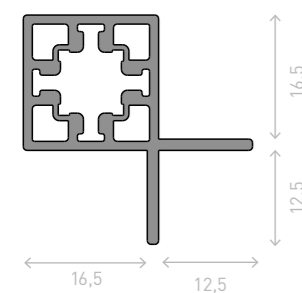
Screwing with profiles.

As an alternative, side and shelf panels can be screwed to the side and shelf profiles from the inside or the backside. We recommend the use of 3 x 12 mm countersunk head screws. The profiles are predrilled with

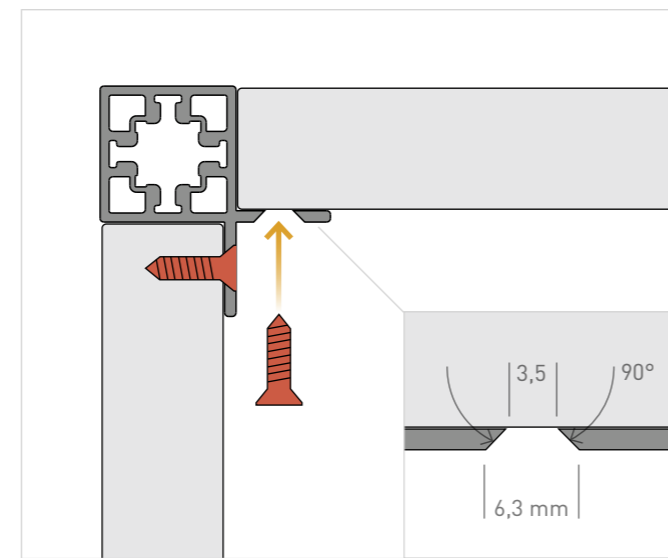
3,5 mm und reworked with a 6,3 mm countersink so that the screws can flushly be fixed.



Profile for side/shelf panels
82912.****



Profile for side/shelf panels
83168.****



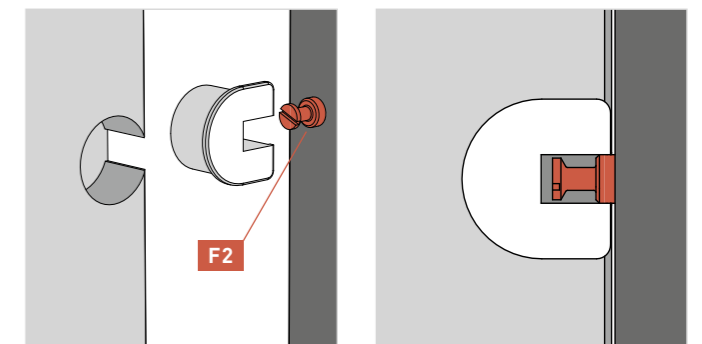
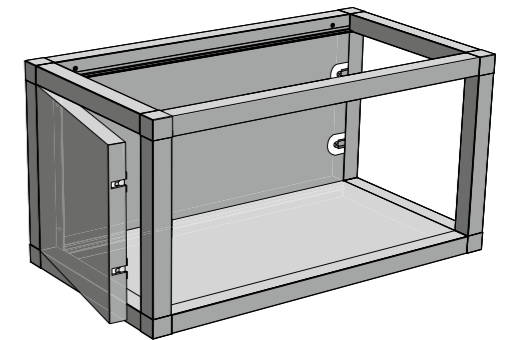
Eccentric system.

The eccentric solution is only visible from one side so as not to disturb the aesthetics of the furniture element.

- 1 The required side walls are milled out according to the eccentric dimensions.
- 2 The holes for the eccentric dowel pins have to be drilled on the opposite profile sides.

ADVICE:

If you intend to fix side and shelf panels using eccentric systems, we recommend the use of 16 mm side/shelf panels. If 18 mm side/shelf panels are being used, please note that the eccentric fastening protrudes approx. 2 mm.



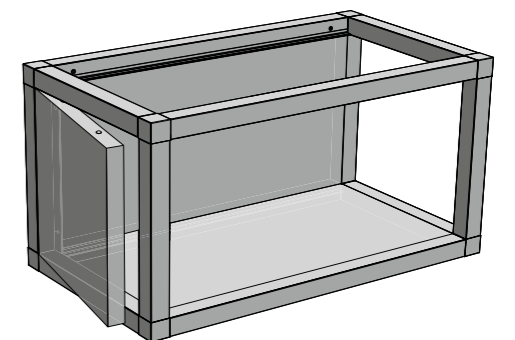
Ball spring plungers.

Thanks to an integrated metal spring under the ball, the side or rear panel simply can be „clicked in“. Thus, the fixing system remains invisible from the outside as well as from the inside.

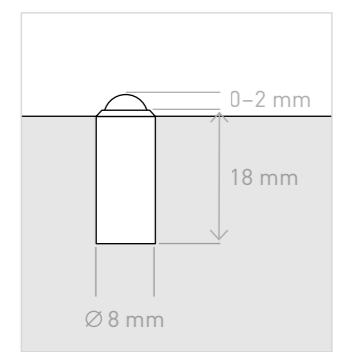
- 1 The edges of the required side panels have to be predrilled with an 8 mm drill. Afterwards the ball spring plungers are inserted. The drilling depth has to be 18 mm.
- 2 As for the CADRO profile, the drillings have to be made at the same positions.

ADVICE:

You can use the already existing holes for the threaded pins in the profiles to avoid additional drillings for the ball spring plungers.



Ball spring plunger
82942.****



CADRO Base.

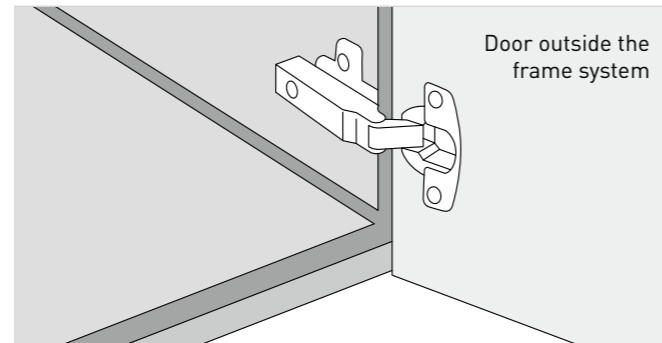
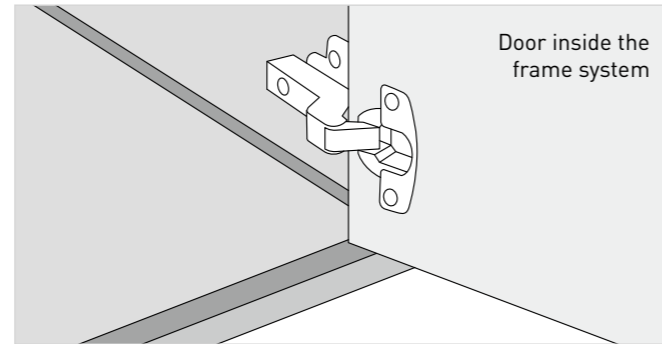
Hinged doors.

With commercially available pot hinges, doors can be mounted inside and outside the frame system. In this case, we recommend:

Hettich Sensys hinges **for inset doors** (base B-4) in combination with Sensys cross mounting plates. The choice of the mounting plate depends on the individual application, e.g. joint 1 mm / cup distance C = 4 mm: Sensys 110° hinge for inset doors + cross mounting plate distance 3 mm.

Hettich Sensys hinges **for offset doors** (base 12,5 mm) in combination with Sensys cross mounting plates (being fixed with countersunk head screws Ø 4,5 x 18 mm). The choice of the mounting plate depends on the individual application, e.g. overlay 17 mm / joint 1 mm / cup distance C=4,5 mm: Sensys 110° hinge for offset doors + cross mounting plate distance 0 mm.

In some cases it may be necessary to shim the mounting plate.



CADRO handles.

Handle "STRAIGHT".

Die-cast zinc

Art.-No.	⊕⊖
83154.****	128



Railing handle.

Zamac and aluminium

Art.-No.	⊕⊖
56294.****	128
56321.****	160
56322.****	192
56323.****	320

(Special lengths on request)



Handle strip "CADRO Line".

Aluminium

Art.-No.	⊕⊖
56502.****	variable

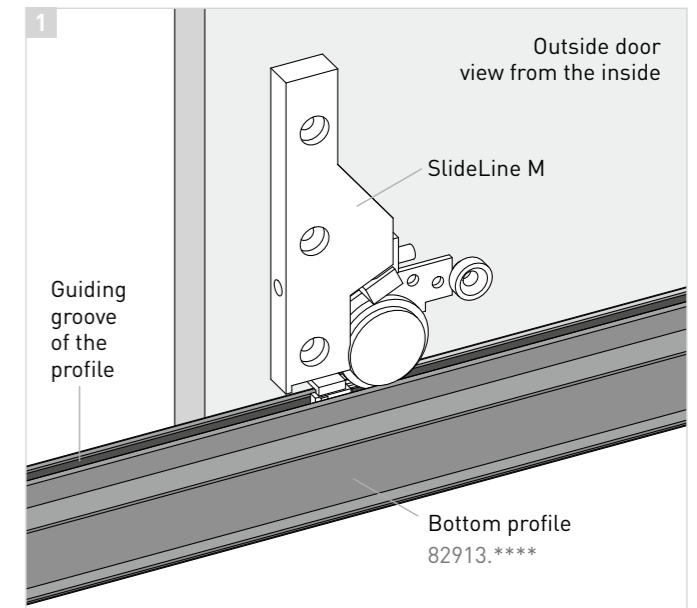
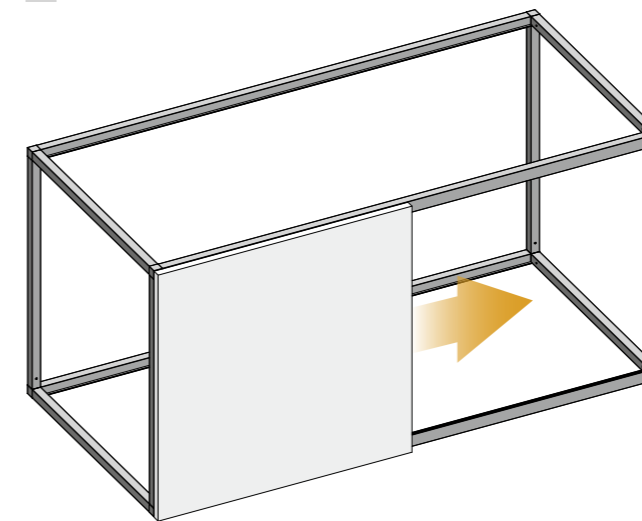
- Black super matt painted/
Black matt brushed anodized
- Stainless steel mat brushed painted

Sliding doors.

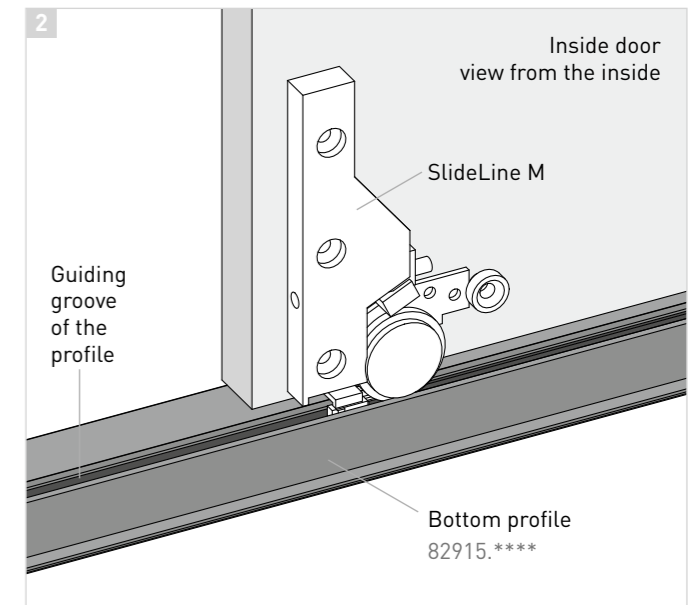
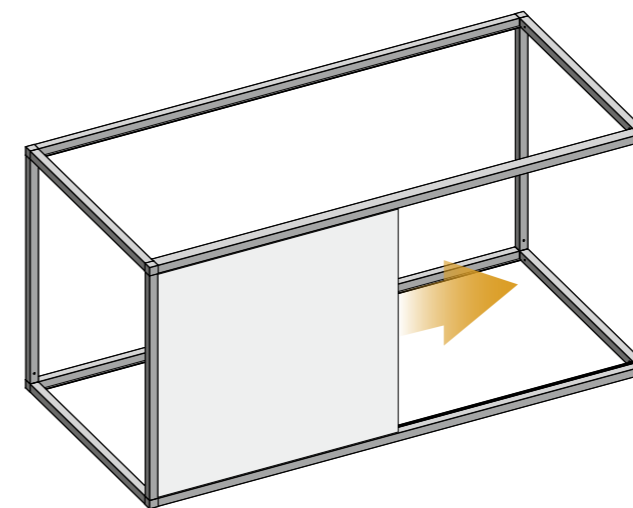
We have designed special profiles for sliding doors for the high-quality range of fittings **SlideLine M made by Hettich**. The fittings are optionally available for undamped doors or with integrated collision damping system. All components perfectly fit into the guiding grooves of the CADRO top and bottom profiles, so that sliding doors can be easily and conveni-

ently integrated into the frame system. Depending on the profile used, sliding doors can be mounted **outside** the frame system **1** or **inside** the frame system **2**. The profiles also offer the possibility to insert shelves at the top and bottom or to screw them tight from the inside.

1 Door outside the frame system



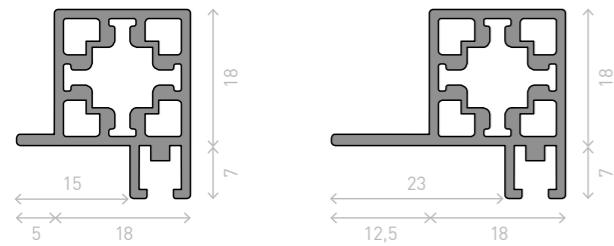
2 Door inside the frame system



CADRO Base.

Profiles for sliding doors **mounted outside** the frame system.

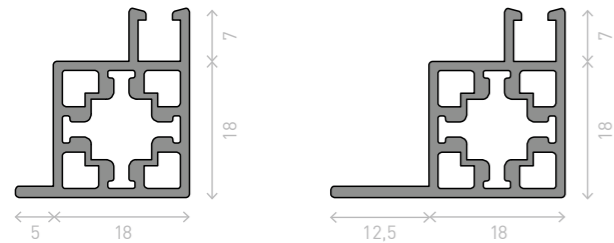
A Profile on top



Top profile 82914.****

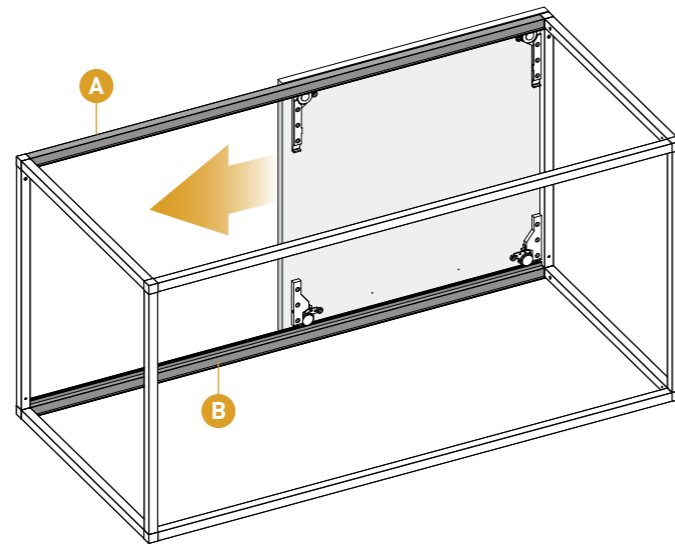
Top profile 83105.****

B Profile at the bottom



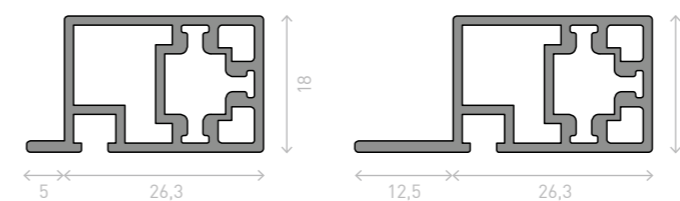
Bottom profile 82913.****

Bottom profile 83104.****



Profiles for sliding doors **mounted inside** the frame system.

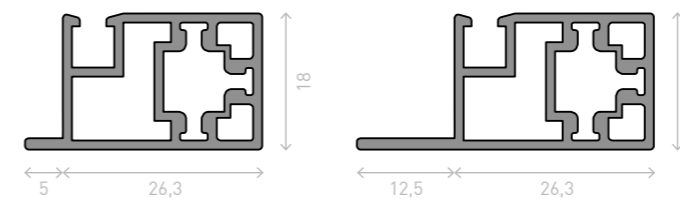
A Profile on top



Top profile 82916.****

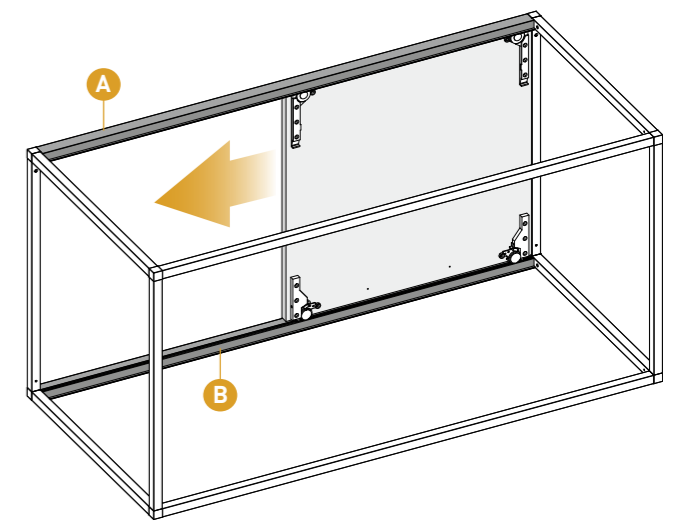
Top profile 83107.****

B Profile at the bottom

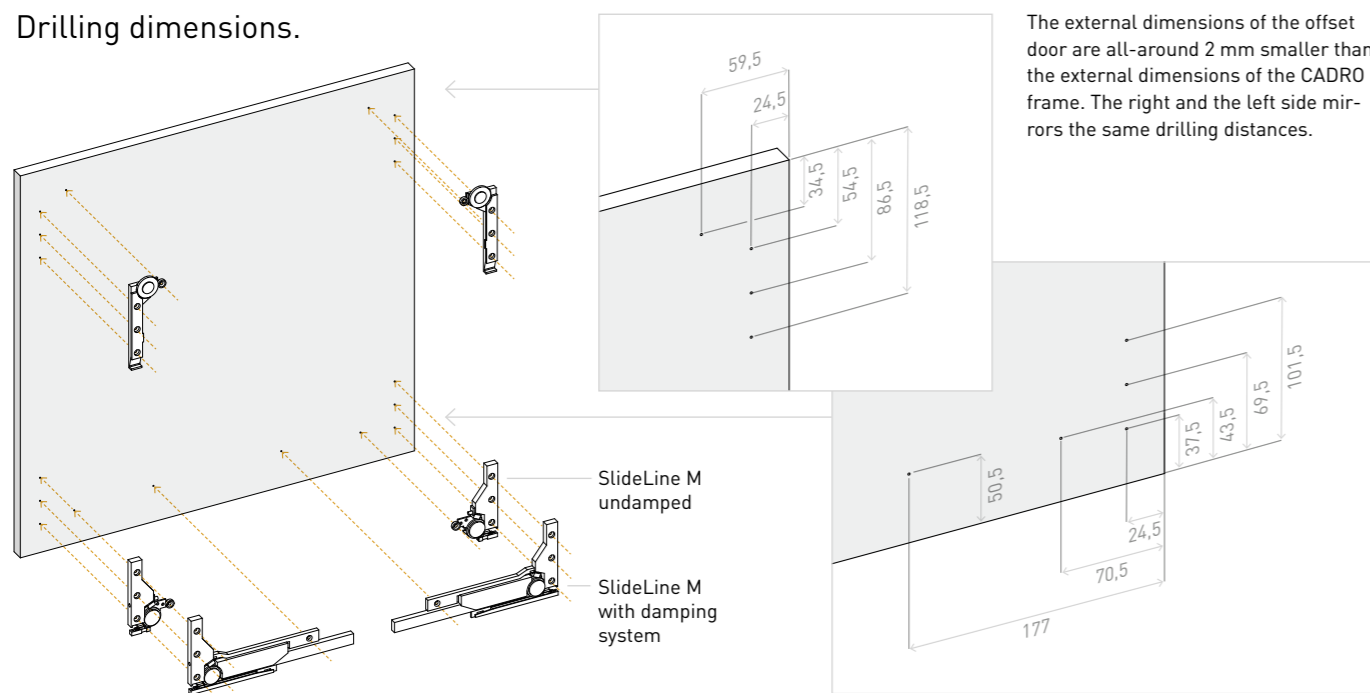


Bottom profile 82915.****

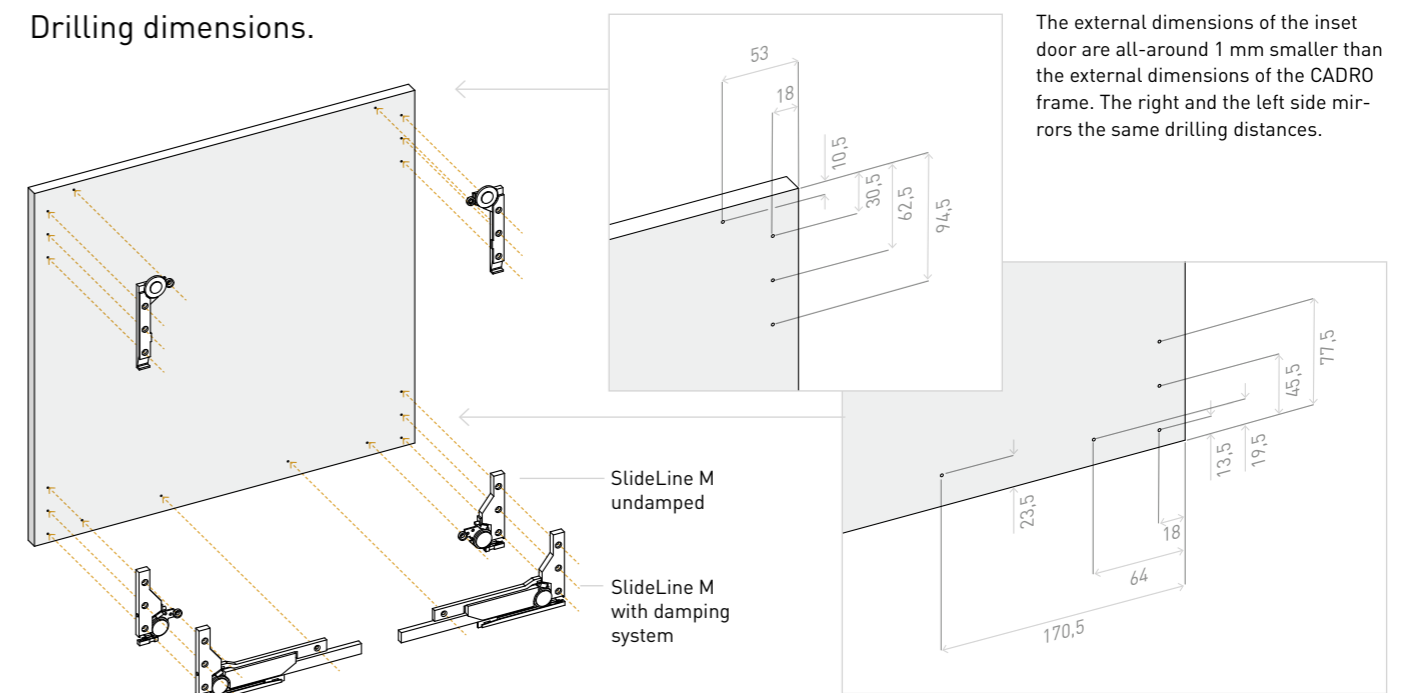
Bottom profile 83106.****



Drilling dimensions.



Drilling dimensions.



CADRO Base.

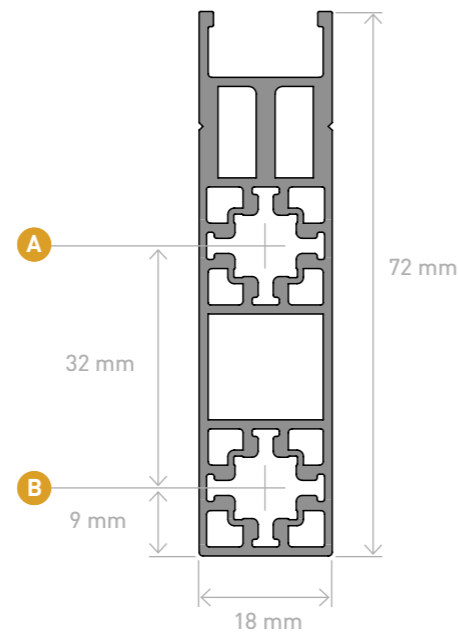
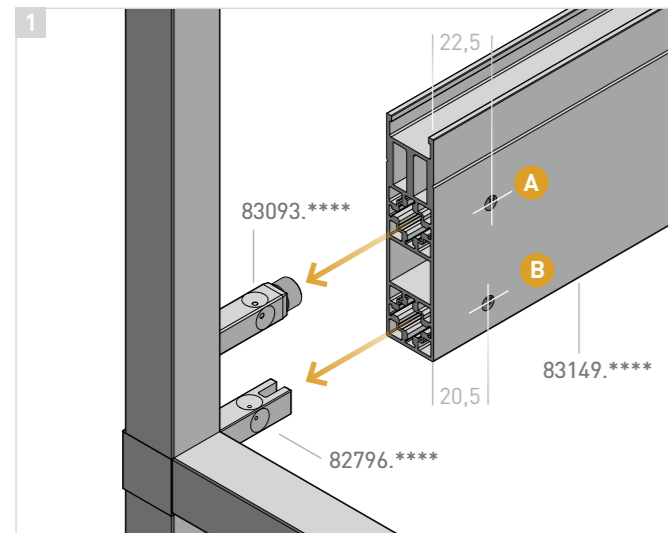
Drawers with Hettich guiding rail Actro YOU/Actro 5D.

Assembly of the basic profile.

In order to integrate the basic profile for drawer guidings rails into the CADRO frame system, it is advisable to place a connector at the lower profile connection position **B**. Thus, a stabilizing cross profile can also be integrated at this position.

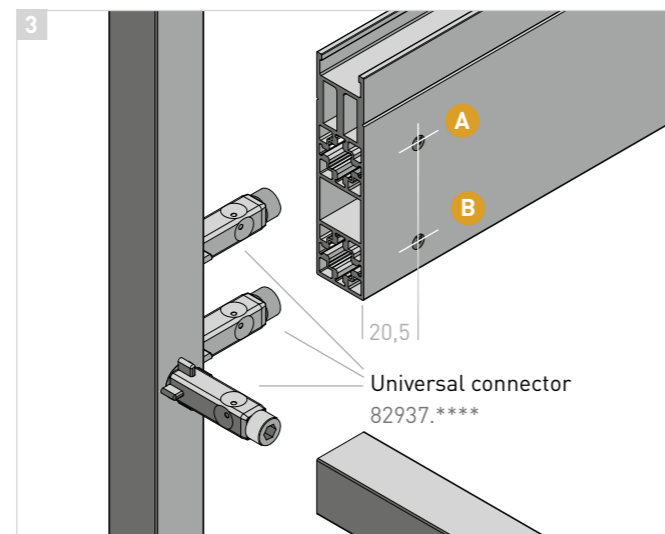
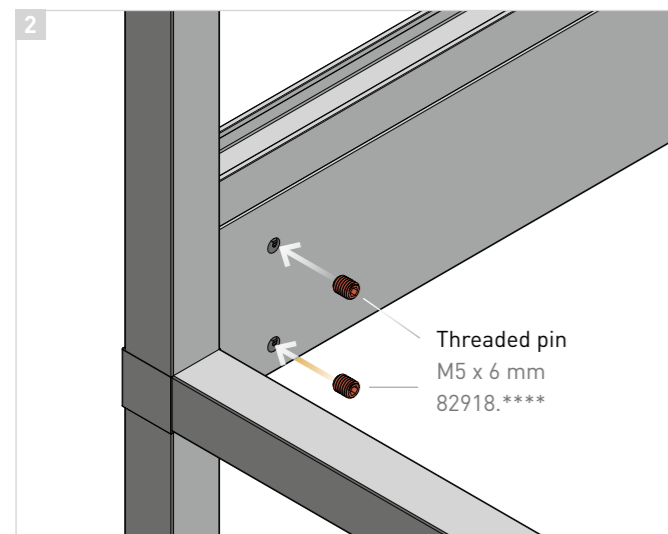
1 Fixing at the upper position **A** is done using the connecting arm 83093.**** which is screwed into a 4 mm core bore. The basic profile is provided with holes for the usual M5 grub screws being drilled at the specified distances ...

2 ... and then being fixed by screwing.



Basic profile for Hettich drawer 83149.****

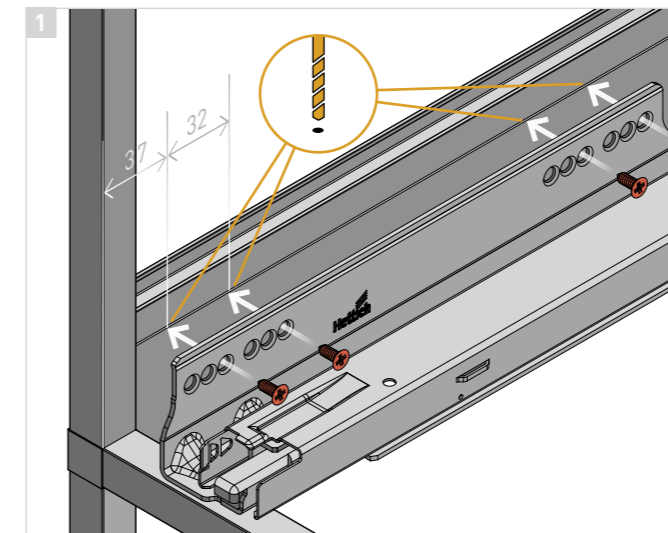
3 Another possibility to connect the profiles without connecting nodes is the use of the universal connectors (see page 24).



Attaching the guiding rail.

The basic profile 83149.**** is perfectly adapted to the Hettich drawers. It is provided with a groove, on which the predrillings for mounting the guiding rails "Actro YOU/Actro 5D" precisely can be placed.

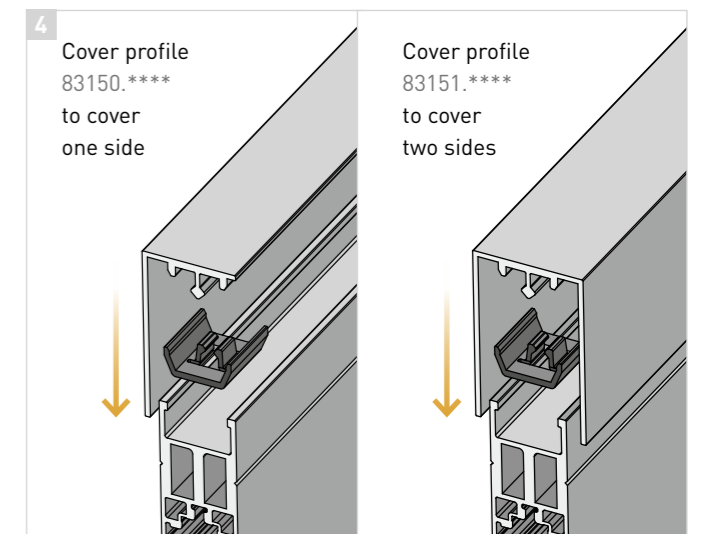
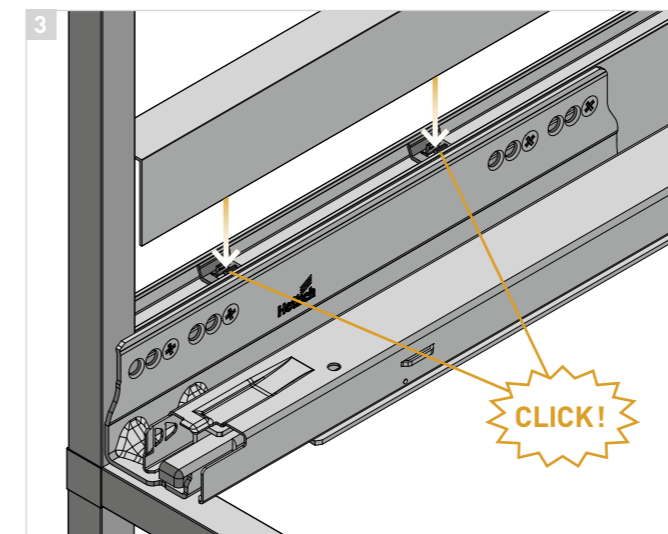
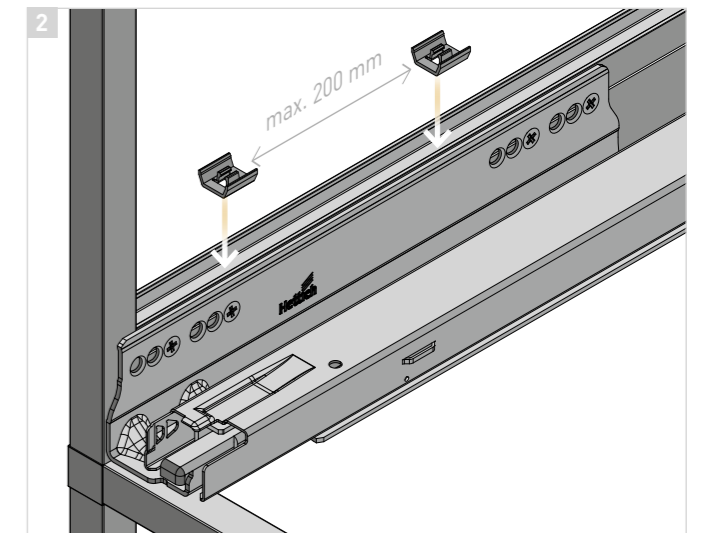
1 For drawers with offset fronts the first drilling position is to be placed at a 37 mm distance (measured from the front edge of the carcass). In case of inset fronts, the position is shifted backwards according to the thickness of the front. The number and position of the drillings depends on the depth of the respective drawer and its planned load capacity. In order to connect the Actro guiding rail to the CADRO drawer profile, we recommend the use of a M5 x 11 mm countersunk head screw.



2 The guiding rails are exactly mounted and to attach the cover profile 83150.**** (one-sided covering) or 83151.**** (two-sided covering) the top of the basic profile is provided with the clip 83177.****. We recommend the use of one clip after every 20 cm.

3 Now the required cover profile can be firmly clipped on to hide the guiding mechanism.

4 To cover one side of the basic profile, the cover profile 83150.**** is used. Two-sided covering is provided by the profile 83151.****.



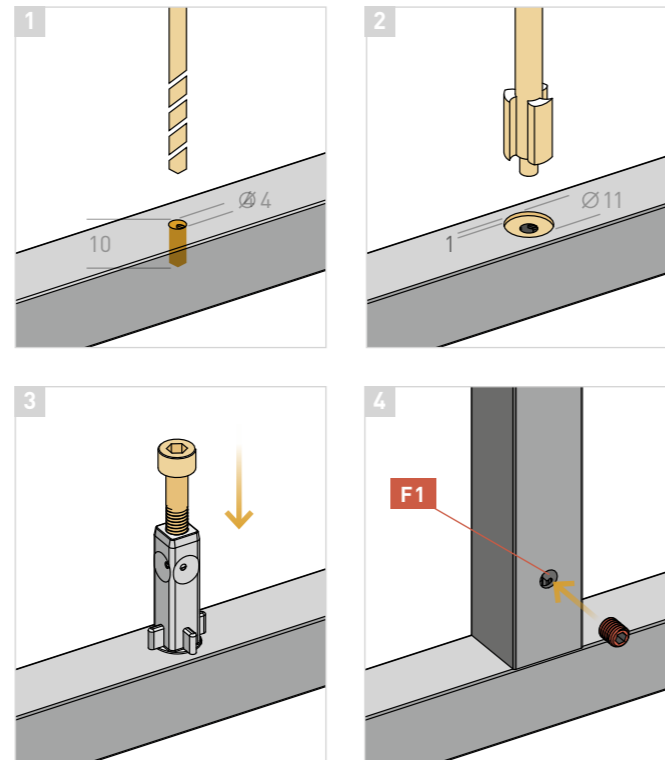
CADRO Base.

Alternative profile attachment.

Universal connector.



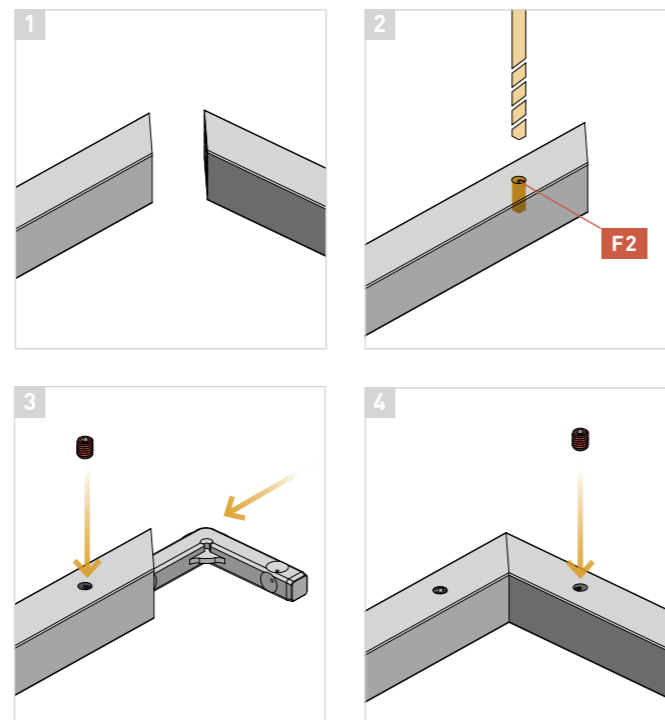
- 1 Drill a 4 mm diameter core bore in the centre of the profile's width (18 mm). Drilling depth approx. 10 mm.
- 2 At the same position a maximum 1 mm deep countersink with a 11,0 mm diameter has to be drilled. Afterwards put the universal connector at its position and slightly knock it in with a hammer.
- 3 Screw in the cylinder head screw 82939.**** (M5 x 35 mm).
- 4 Slide the required connection profile provided with a drilling for the threaded pin (stop plate **F1**) onto the universal connector, insert the threaded pin and screw it tight.



Corner connector.



- 1 Each of the two profile ends to be joined must be cut at a 45° angle.
- 2 With a distance of 40 mm (stop plate **F2**) to the upper end of the profile the drilling for the threaded pins has to be made.
- 3 Now the corner connector can centrally be inserted into the profile. Afterwards, the second profile can be slid over the protruding end of the corner connector.
- 4 Finally, screw in the threaded pins to secure the connection.



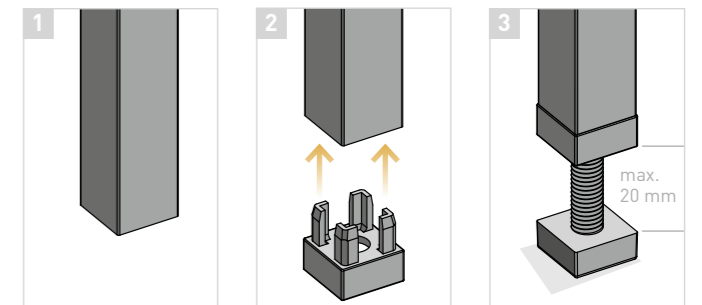
Accessories.

Connecting thread and adjustable stand.

- 1 Cut the profile to the required length.
- 2 The connecting thread is inserted into the profile's end up to the flush end.
- 3 Thanks to the integrated M8 nut in the connecting thread, it is possible to insert the adjustable stand 82931.**** or to fix commercially available castors with M8 screws.

The adjustable stand offers an adjustable range of height from 0 to 20 mm.

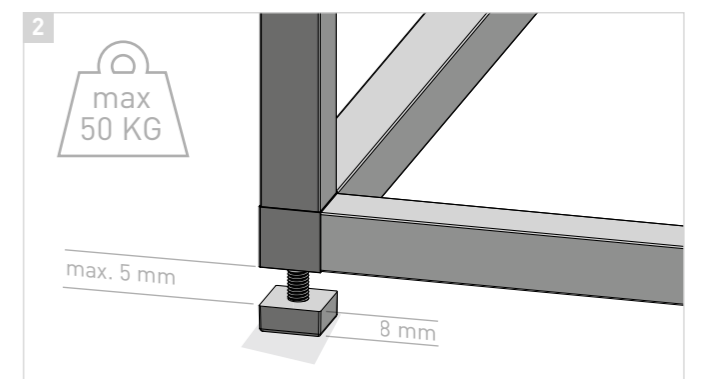
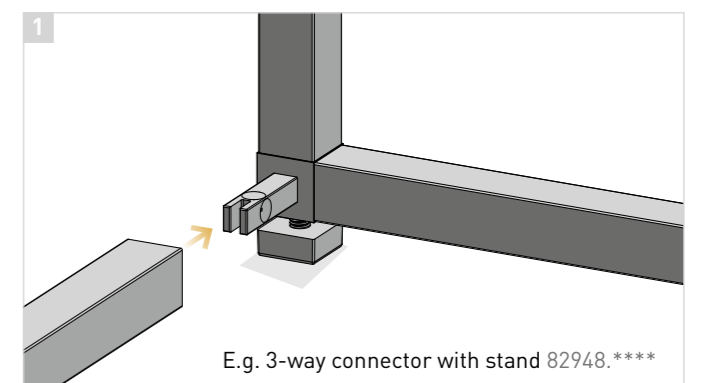
SAFETY NOTE:
When used properly, the recommended maximum load capacity for each adjustable stand is 60 kg.



Connectors with adjustable stand.

- 1 The connectors with adjustable stand are connected with the profiles the same way as the basic connectors (see pages 12 | 13).
- 2 The connectors allow a height adjustment in a range from 0 – 5 mm. The stands are screwed into the connectors with an M6 thread.

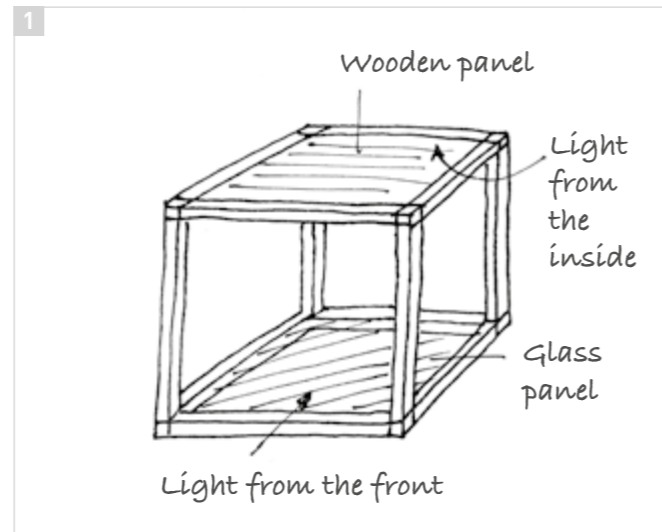
SAFETY NOTE:
When used properly, the recommended maximum load capacity for each adjustable stand is 50 kg.



CADRO Lighting.

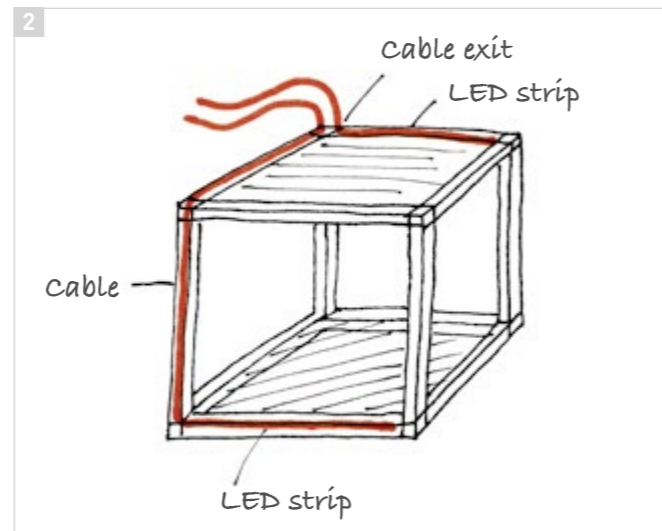
Planning.

1 When planning a CADRO piece of furniture with integrated lighting, the positioning of the light, besides the choice of the appropriate panels, is very important. The lighting profiles in which low-voltage LED strips can be integrated should be used here.



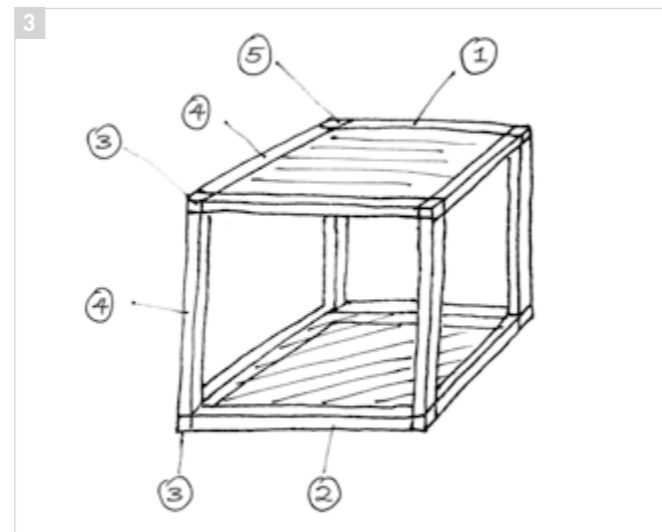
2 The planning includes therefore the position of the lighting profiles fitted with LED strips and the resulting guidance of the cables to the cable exit and finally to the transformer. For the lighting and guidance of the cables the connectors and profiles from the CADRO lighting range are to be used. They are specially designed to hold and guide the cables and LEDs.

The assembly of the remaining construction is done by using the basic components with their respective functions (see page 7).



3 For the lighting application, this results in the following parts list:

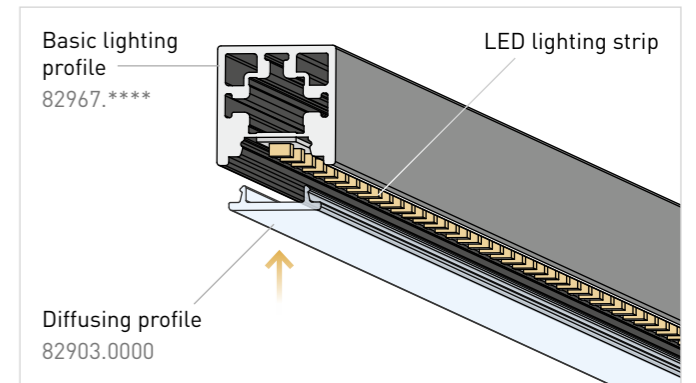
- ① Lighting profile for shelf panels (82968.****) + diffusing profile (82903.0000) + LED lighting strip 12 V 2,6 W (45070.****)
- ② Basic lighting profile (82967.****) + diffusing profile for shelf panels (82969.0000) + LED lighting strip 12 V 2,6 W (45070.****)
- ③ 2 x: 3-way connector for cabling (83077.****)
- ④ 2 x: Basic lighting profile (82967.****) + cable cover (82903.0001)
- ⑤ 3-way connector for power supply (82974.****)



Lighting profiles.

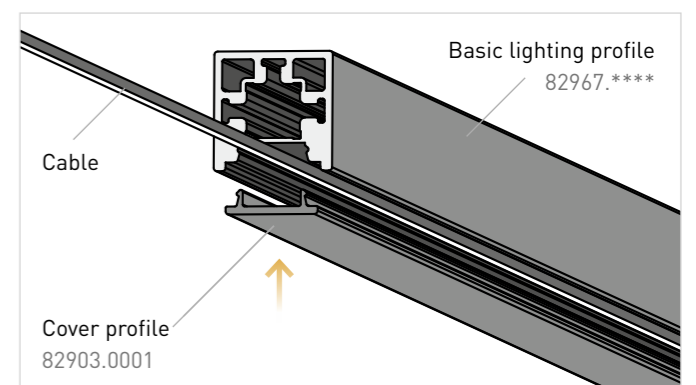
Basic lighting profile with diffusing profile.

An LED lighting strip (depending on the profile's length e.g. 45070.****) is simply glued into the basic lighting profile 82967.**** and afterwards neatly covered by the diffusing profile 82903.0000.



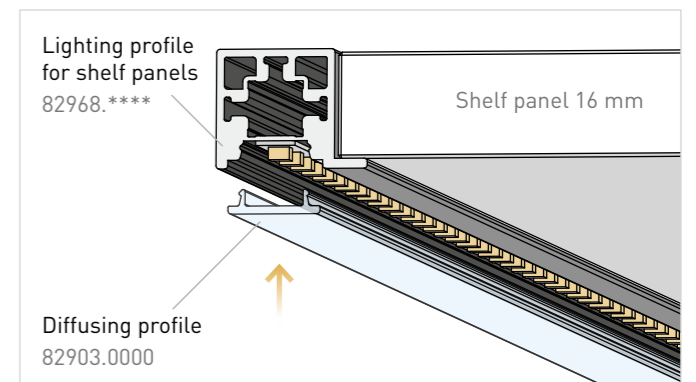
Basic lighting profile used for cable guidance.

The lighting profiles are also used for cable guidance. By using the non-transparent cable covering profile 82903.0001, the cables disappear invisibly within the frame construction.



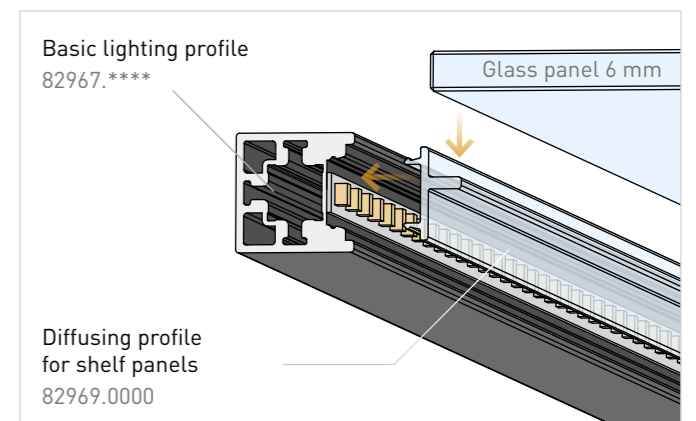
Lighting profile for shelf panels with diffusing profile.

The lighting of the lighting profile for shelf panels works exactly like the lighting of the basic lighting profile, but also offers the possibility to insert wooden panels.



Basic lighting profile with diffusion profile for shelf panels.

If the basic lighting profile 82967.**** including LED lighting strip is covered with the diffusing profile 82969.**** for shelf panels, it is possible to place glass or plexiglass shelf panels with a thickness of 6 mm. These are then illuminated from the sides.



CADRO Lighting.

Assembly.

The assembly of the frame is done in the same way as described on page 12 | 13. As for the lighting profiles and connectors for lighting and cable guidance, their use results from the previous planning (Example described on page 26).

Integration of LED lighting strips.

1 Now the self-adhesive LED lighting strips are simply glued into the lighting profiles according to the planning.

Alternatively, the flexible LED lighting strips can also be laid directly in the frame across the corners.

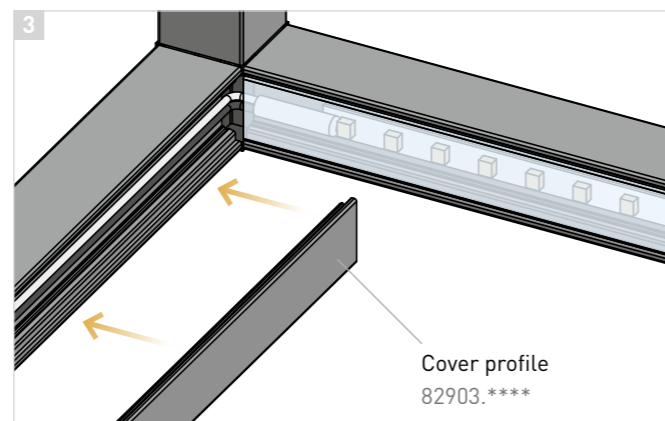
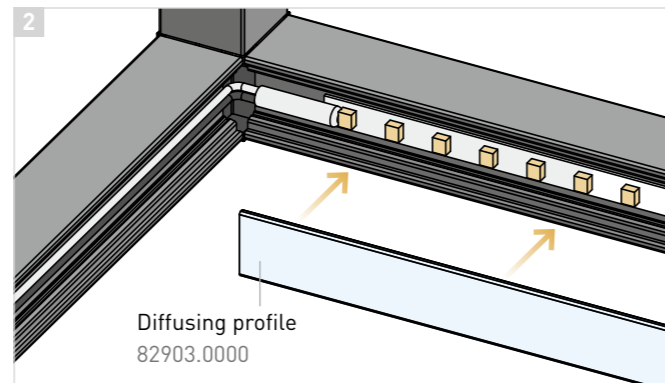
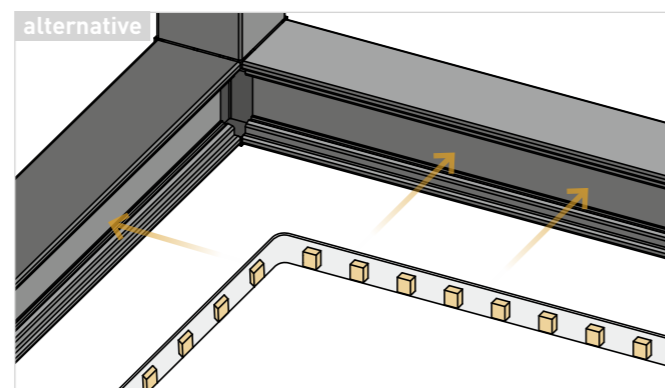
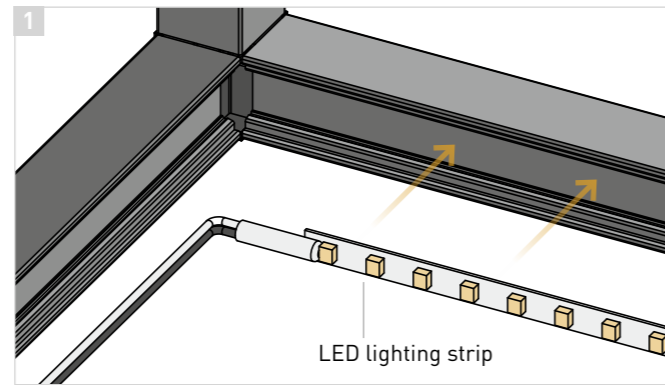
2 The illuminated areas of the profiles are covered by the diffusing profiles

Laying the cables.

3 For an invisible power supply, the cables are guided through the lighting profiles to the connector for power supply being covered afterwards by a cover profile which matches the colour of the frame.

PLEASE NOTE:

Experience has shown that one lighting profile can accommodate a maximum of 3 cable lines (6 x 1.5 mm outside diameter). In its cross section the closed duct measures 2,9 x 8,8 mm.

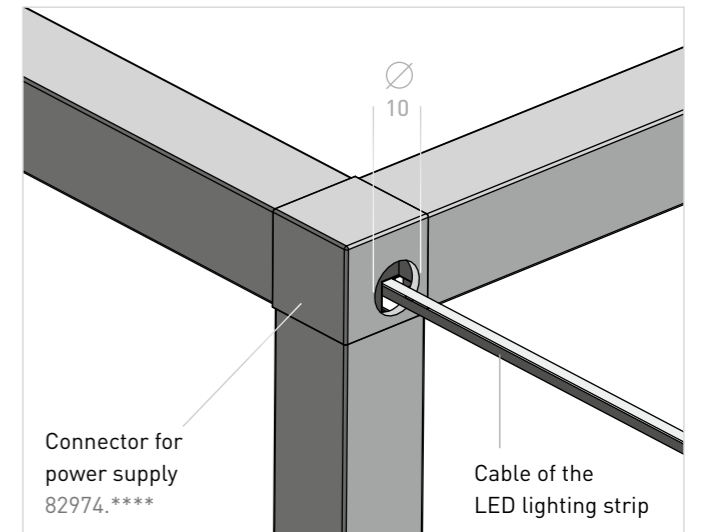


Power supply.

Cable exit.

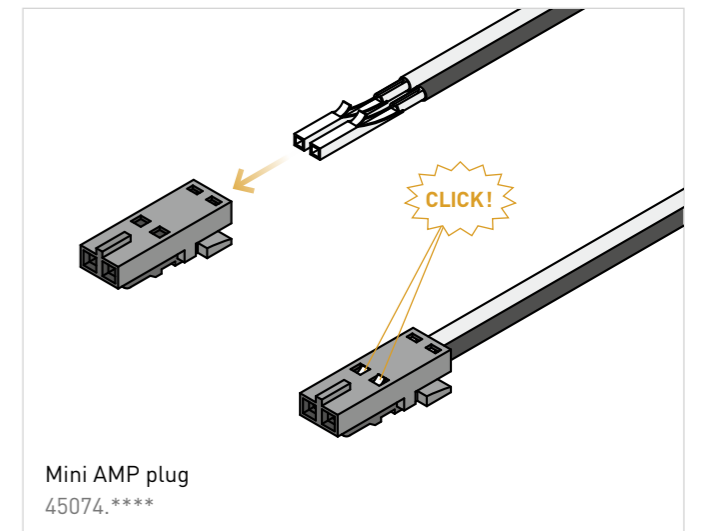
All cables are guided through the connector for power supply towards the outside, that is usually towards the wall - in case of hanging furniture mostly upwards, as for standing furniture also downwards.

For the connection to an LV-transformer, a plug is now being attached to each pair of cables.



Plug mounting.

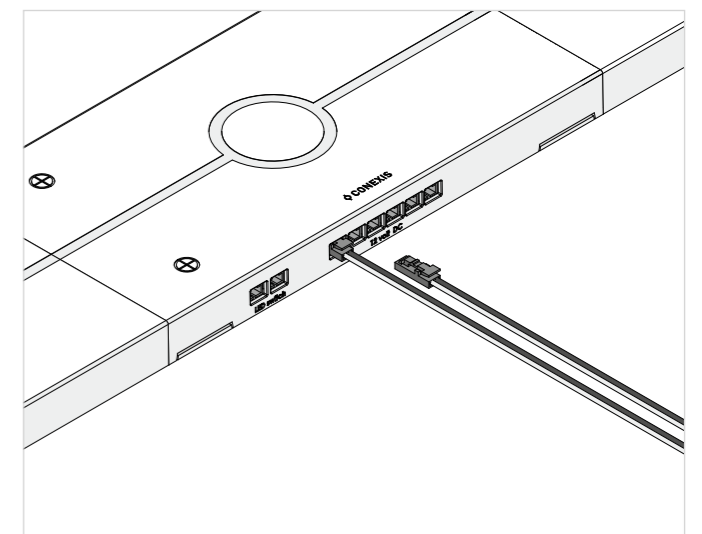
For this purpose, the ends of the cables which are already provided with sleeves are inserted into the Mini AMP plug. Please pay close attention to the black /white marking of the cable and the position of the plug (see figure on the right). After the automatic locking, the plug and the cable are permanently connected to one another.



CONEXIS.

Now, the connection to a commercially available transformer can be made. Our CONEXIS power distribution system offers a particularly convenient and versatile way of electrifying your CADRO piece of furniture. It allows you to easily and safely integrate a large number of power connections into the furniture - both 230 V and 24 V as well as 12 V including switching system.

Find out more, we would be happy to introduce CONEXIS to you.



CADRO Glass display case.

Frames for glass panels.

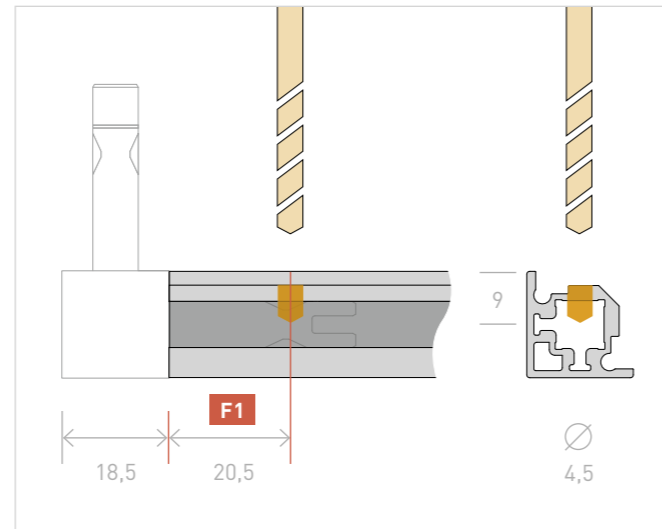
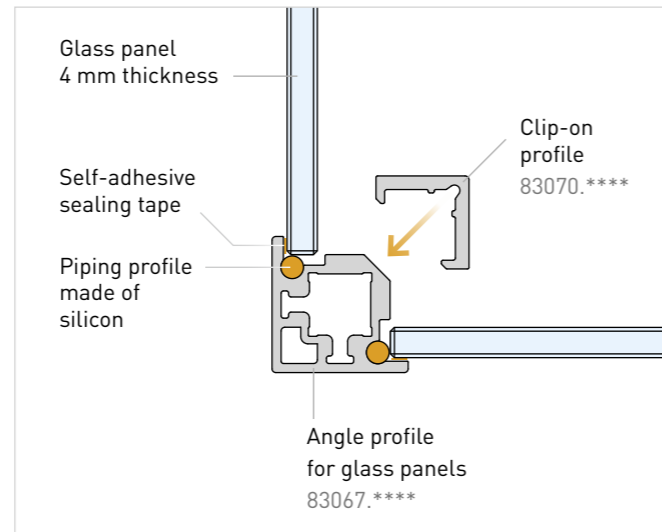
The principle.

The assembly of the glass panel profiles and glass display case connectors follows the proven CADRO principle (see page 6). This means that the drilling distances for the connection, the dimensions of the connectors and the determination of the profile length correspond exactly to the structure of the base frame. After the assembly, the glass elements are simply inserted into the frame and fixed with the corresponding clip-on profiles (see page 34). The length of the clip-on profile always corresponds to the length of the associated frame profile.

Thanks to a silicon piping, the glass panels are impact-resistantly mounted within the profiles and glued to the inner edges of the profile frame to obtain additional stability.

Drillings.

You can also use the fixing stop plate **F1** of our drilling jig to drill the holes in the glass panel profiles. What is special here, is that the drilling and screwing is done at the inside of the profiles and thus afterwards is being completely covered by the clip-on profiles. The drill hole has a diameter of 4.5 mm. Due to the lower available depth for screwing, M5 x 4 mm DIN 913 grub screws are inserted (83140.***).



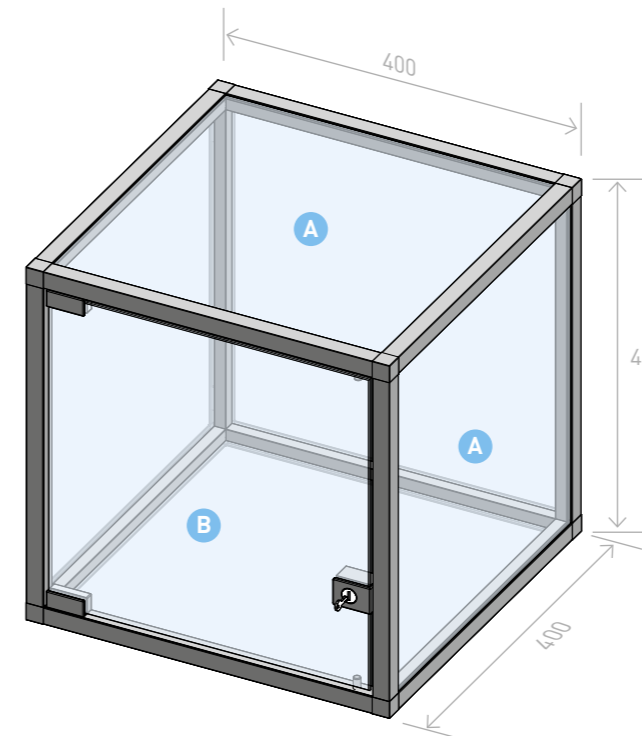
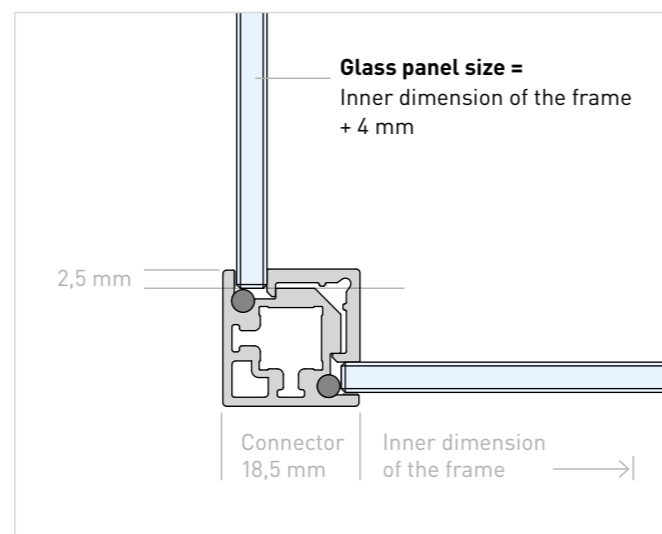
Glass elements.

The system is designed for 4 mm thick glass panels. The size of the glass panels to be fixed in the frame is defined by adding 4 mm (all-around 2 mm) to the inner dimension of the frame (= profile dimension). (See also figure on the right.)

For doors being mounted with hinges from our range CADRO Glass display case, 4 mm (all-around) have to be deducted from the inner dimension of the frame. (For more see page 31.)

RECOMMENDATION:

We recommend the use of safety glass. Our system accepts a 1 mm dimensional tolerance, if this is exceeded during glass production a minimal adjustment of the profile lengths may be necessary. Therefore we recommend to check the dimensions of the glass panels before the assembly of the frame!

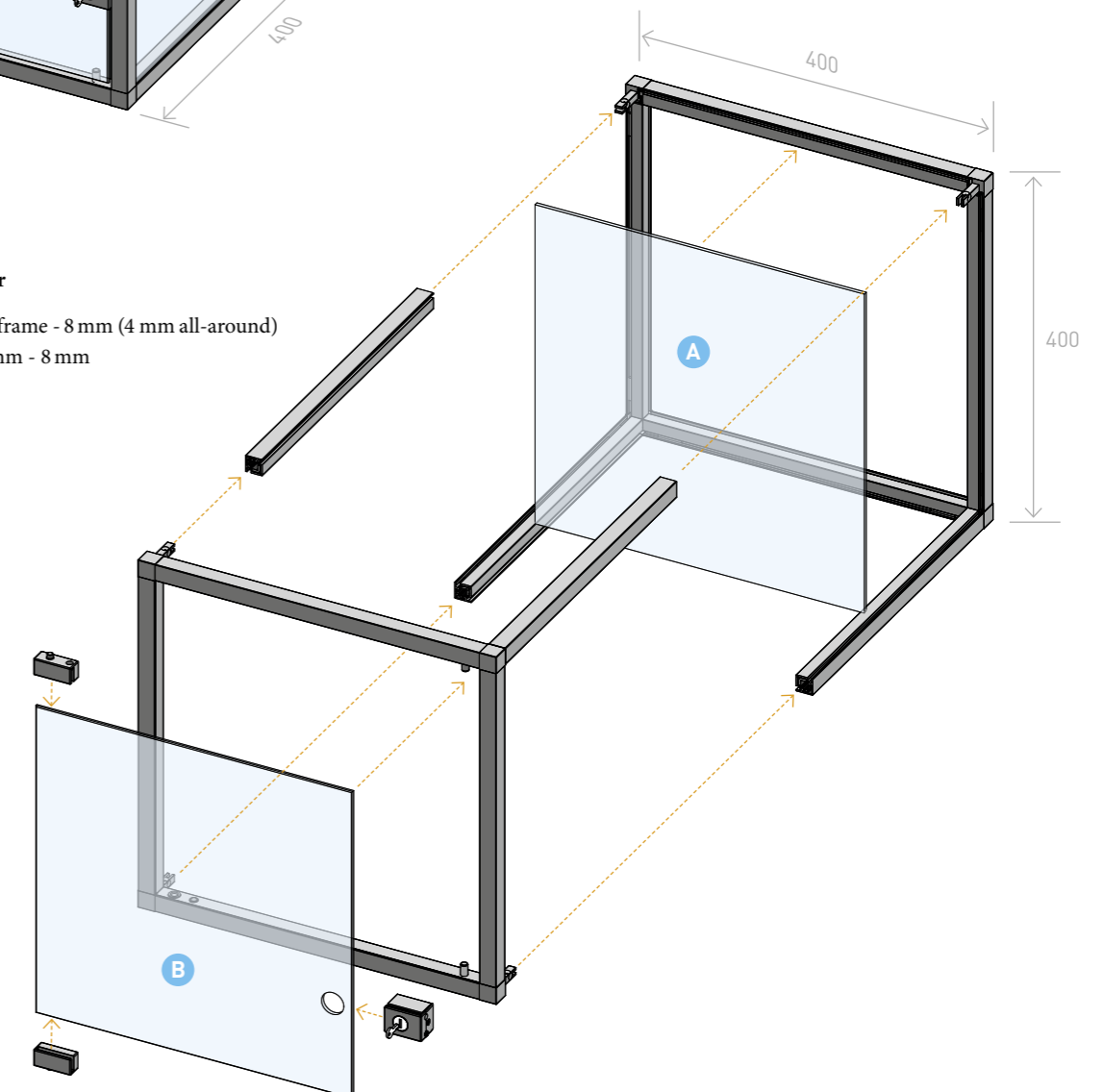


Dimensions of the components using the following example:

Inner dimension of the frame (profile length)
 = Outer dimension of the frame - 2 x connector
 = 400 mm - 37 mm x 400 mm - 37 mm
 = 363 x 363 mm

A Size of the glass panel to be fixed in the frame
 = Inner dimension of the frame + 4 mm (2 mm all-around)
 = 363 + 4 mm x 363 + 4 mm
 = 367 x 367 mm

B Size of the glass door
 = Inner dimension of the frame - 8 mm (4 mm all-around)
 = 363 mm - 8 mm x 363 mm - 8 mm
 = 355 x 355 mm

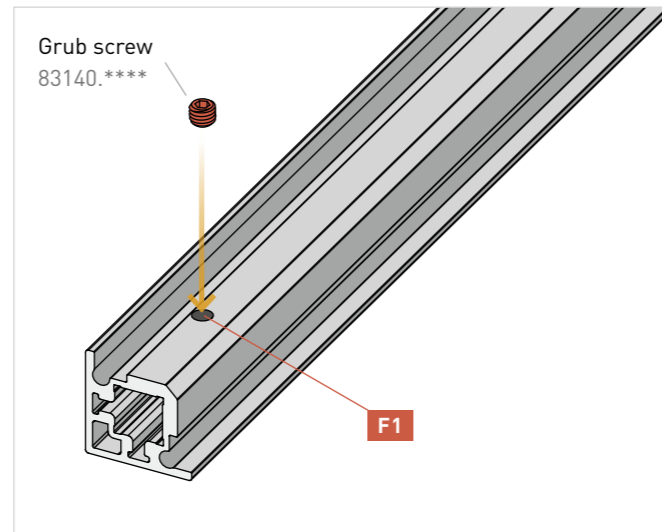


CADRO Glass display case.

Preparation of the profiles.

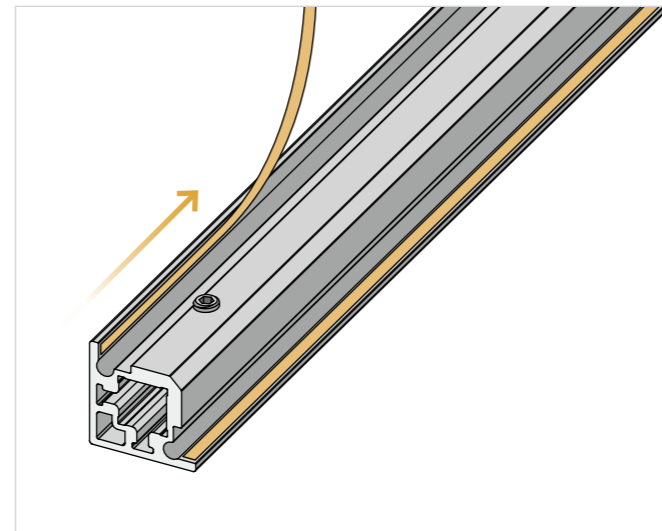
Inserting of the screws.

The screws are inserted the same way as done for the base frame (see page 9). However, M5 x 4 mm DIN 913 grub screws are used for the glass profiles.



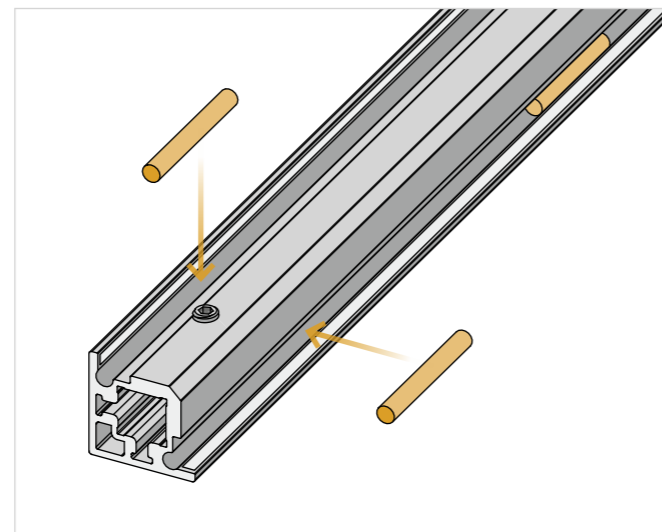
Sealing strip.

Wherever glass panels are to be firmly mounted in the glass display case, a 2 mm wide self-adhesive sealing strip is attached on the inner profile edges (83170.***). Thus, the glass panels can be precisely and securely be fixed.



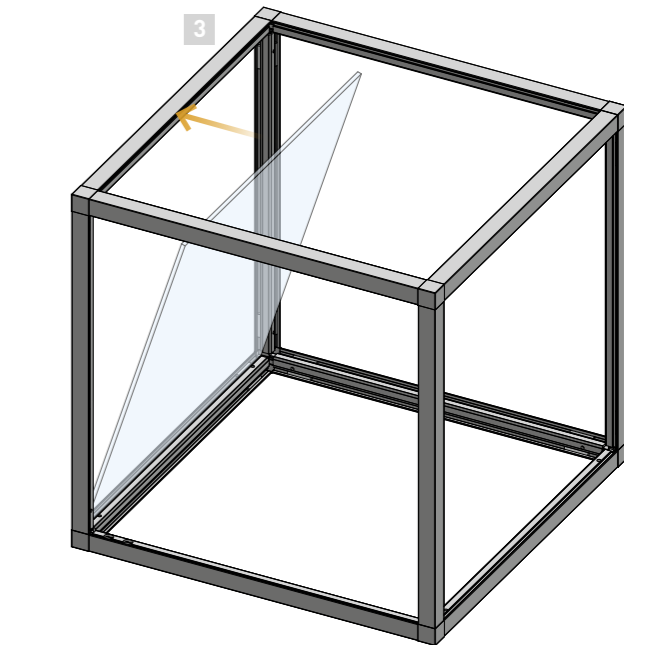
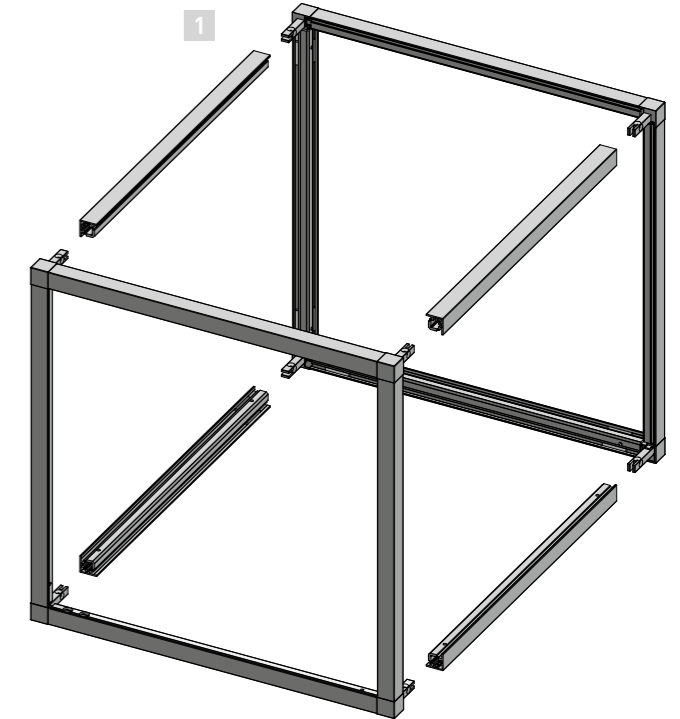
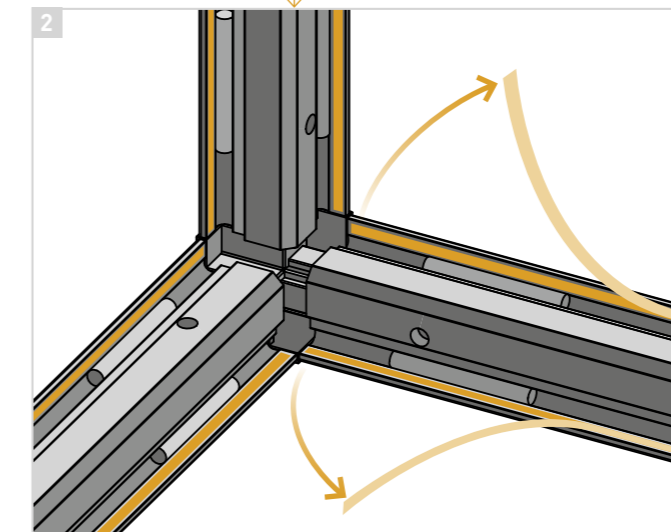
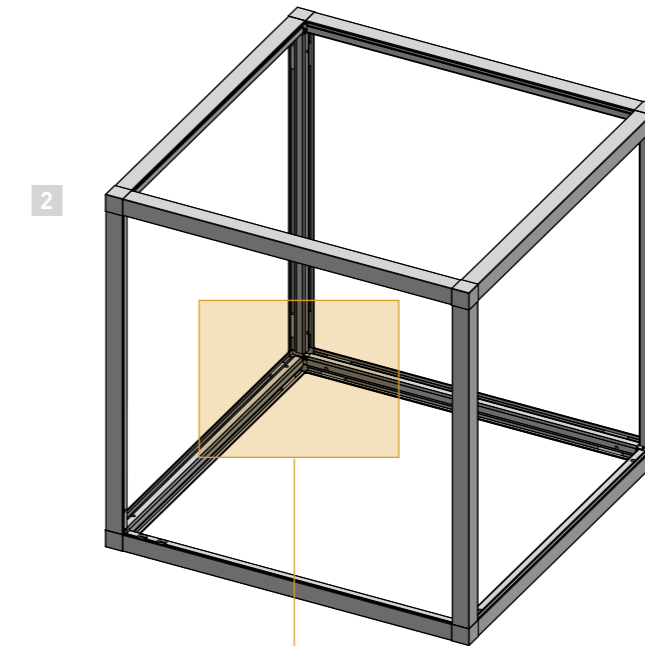
Silicon piping profile.

To prepare the profiles for firmly inserting the glass panels, the required sides are equipped with pieces of the silicon piping profile 83085.****. We recommend the use of one piece at each profile end and another one every 25 cm (minimum).



Assembly.

- 1 The frame is assembled according to the order as described on page 12 | 13.
- 2 Afterwards, **all** protective films must be removed from the sealing strip.
- 3 Finally, the glass panels are inserted one after the other and securely fixed using the clip-on profiles. (Page 34 | 35 4 to 9)

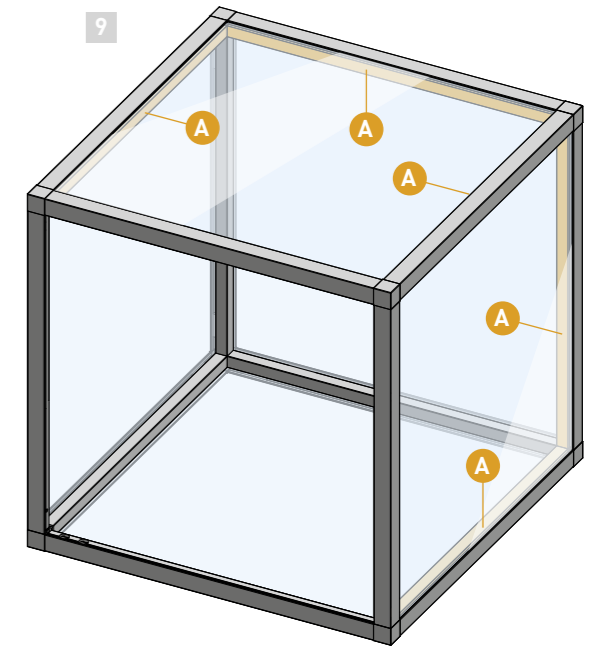
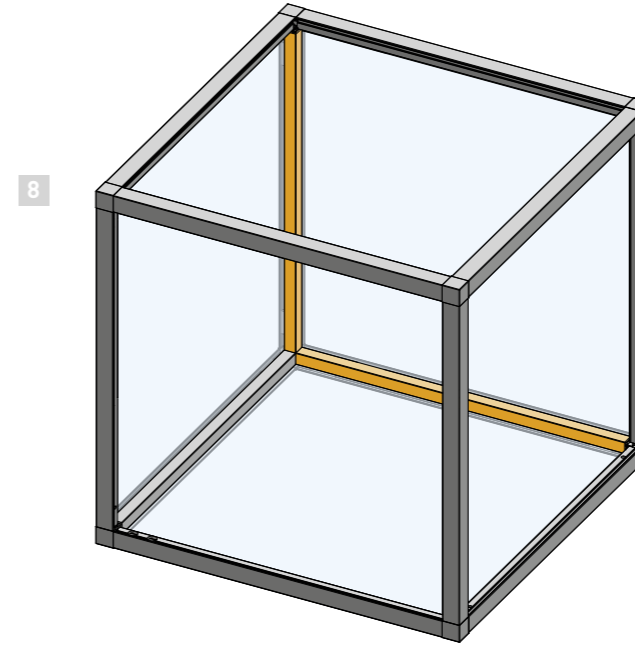
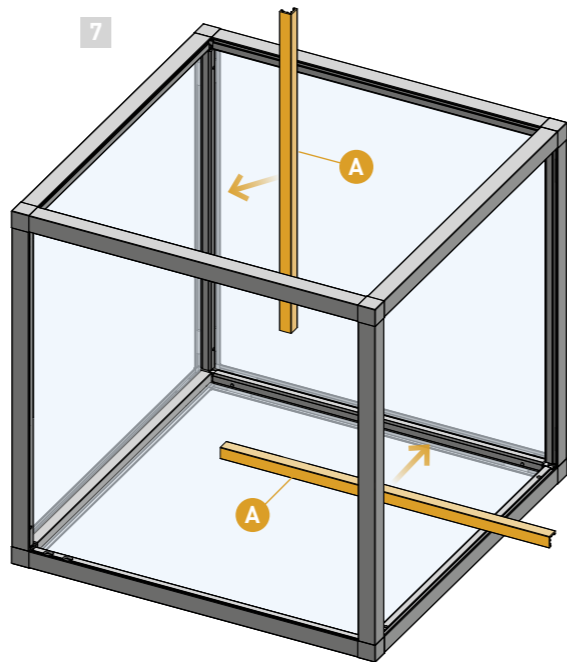
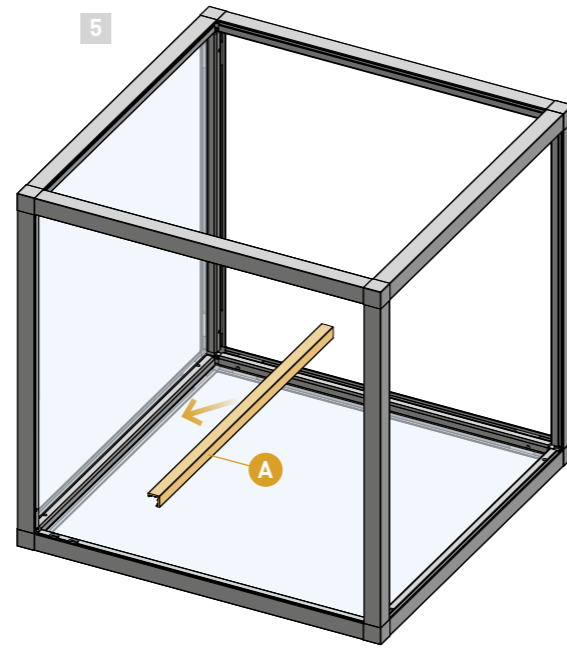
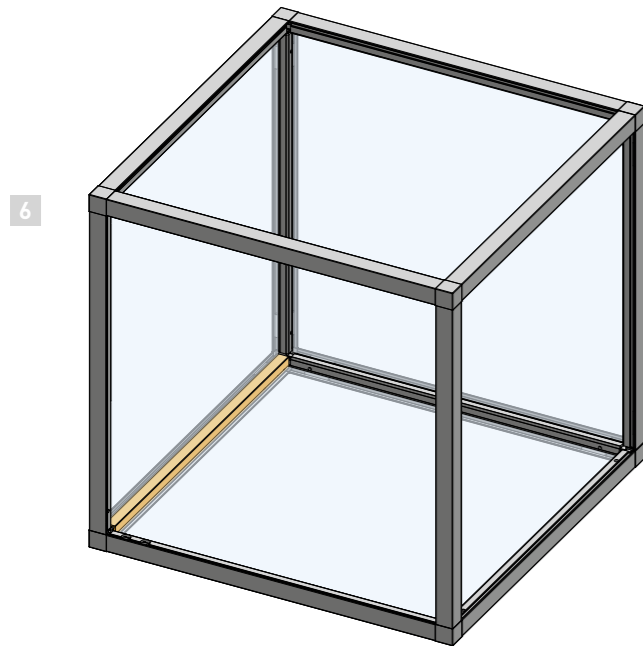
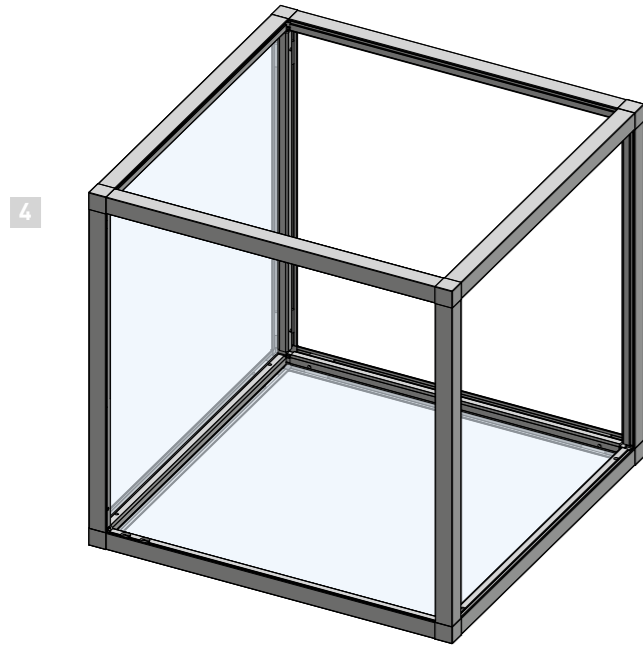


RECOMMENDATION:
If the glass panels are slightly too large, the loosening of the screw connection of the connectors may simplify the assembly. However, in this case do not forget to screw them tight again before mounting the clip-on profiles!

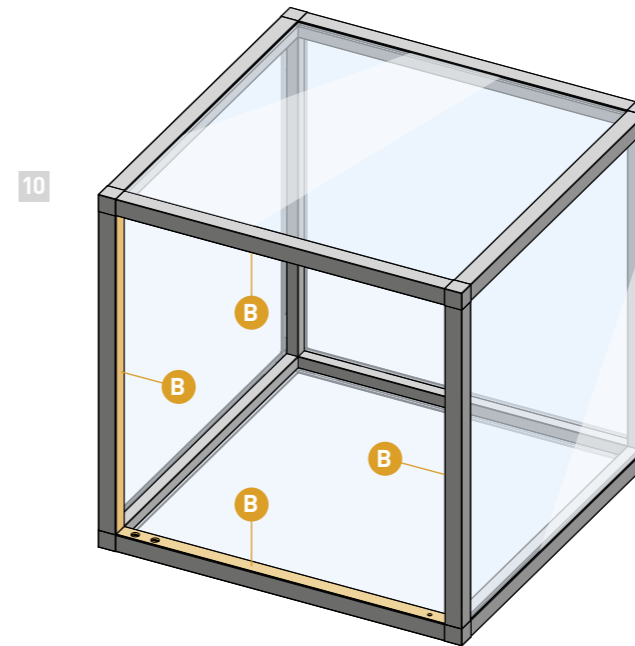


CADRO Glass display case.

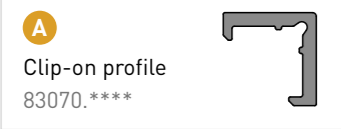
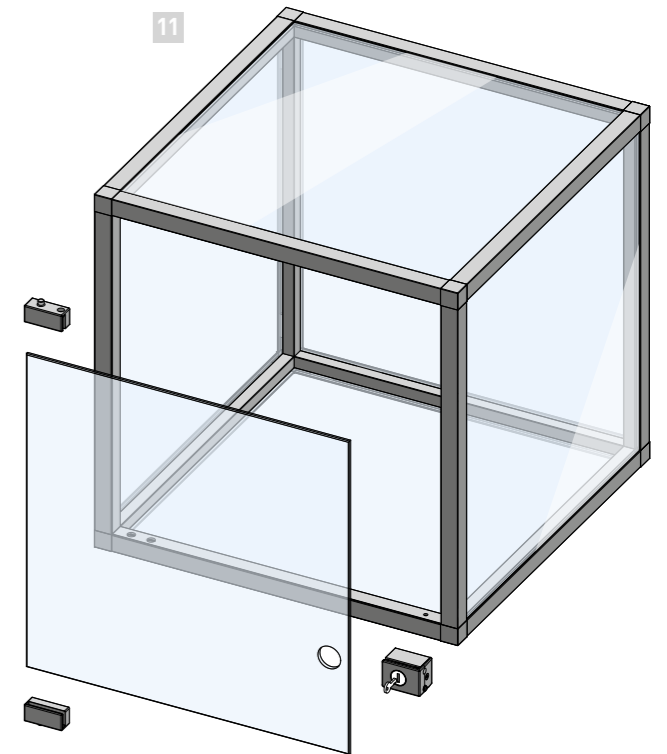
Assembly.



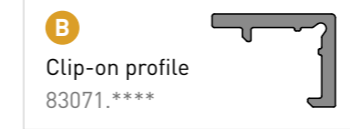
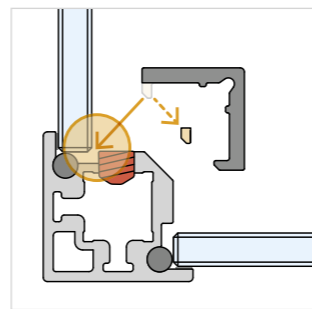
10 In the open area intended for the glass door, the clip-on profile 83071.**** is to be used. Because of its larger width, it neatly covers the frame profile in the area where no glass panel is firmly installed.



11 Now the door can be inserted with the help of the accessories (see following pages).



RECOMMENDATION:
In case of inaccurate drilling for the connectors, the screw can hinder the clip-on profiles to be clicked in. In this case it is possible to remove a little bit of the fixing edge of the clip-on profile at the corresponding position.



CADRO Glass display case.

Glass door hinges.

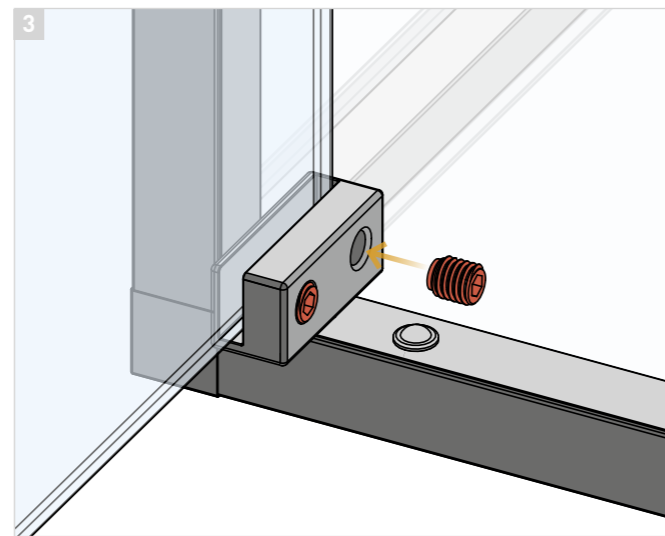
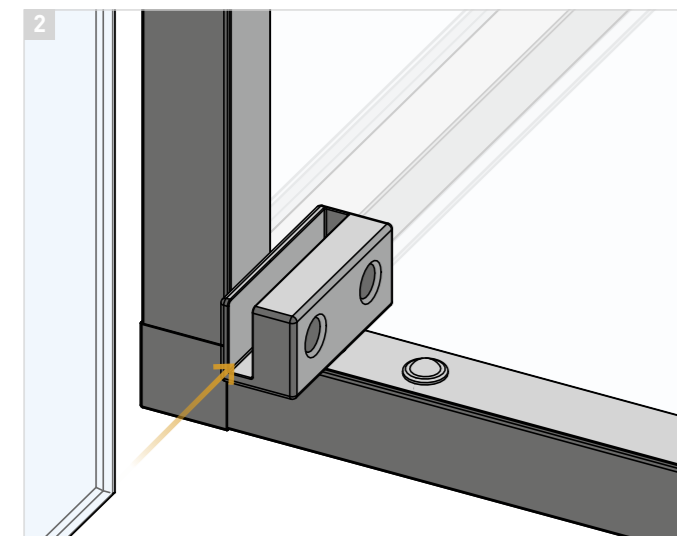
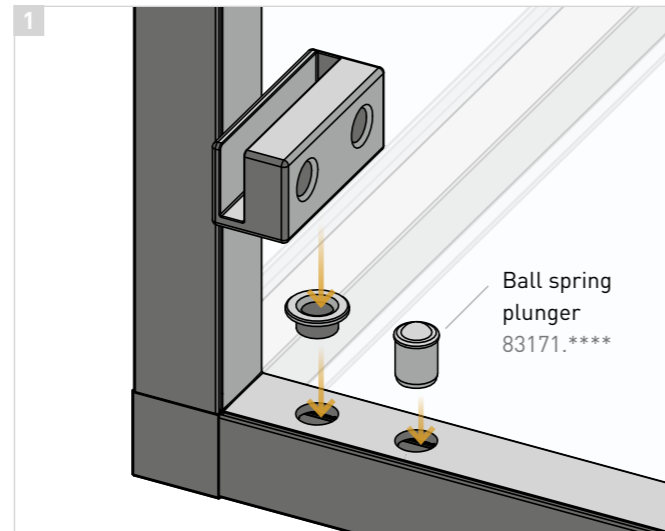
The glass door hinges from our CADRO Glass display case range of products have been designed to support 4 mm thick glass doors for display cases. The glass door is simply slid into the hinges at the top and the bottom and then fixed by screwing (see below). The use of ball spring plungers helps the door to remain in its closed position. In addition, we recommend to mount our glass door stop (page 40).



Glass door hinges (set)
83139.****

Assembly of the hinges.

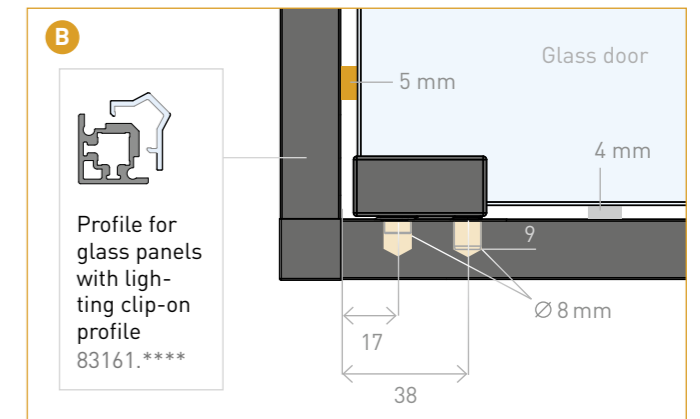
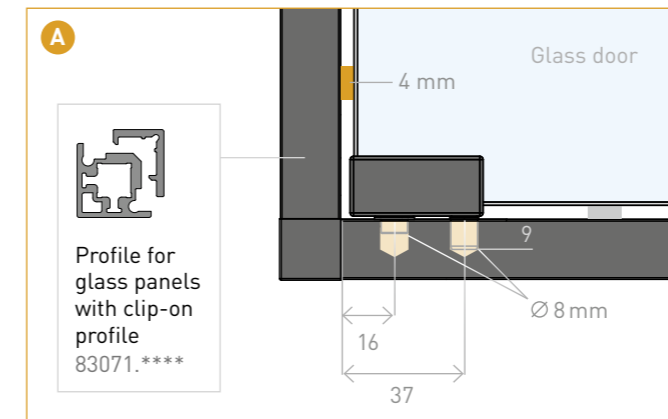
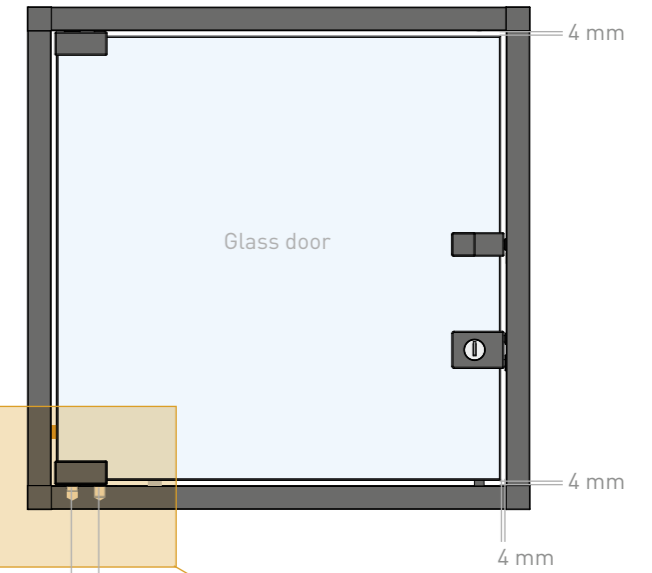
- 1 The slide bearings and the ball spring plungers (optional) are inserted at the bottom and the top of the frame and the hinges are fixed in the bearing sleeves.
- 2 The glass door is now simply slid into the hinges up to the stop plate and ...
- 3 ... fixed with the grub screws in a straight position.



Drilling and hole positions in the profile.

The drilling positions for the top and bottom hinge and the ball spring plungers are arranged oppositely at the same positions depending on the size of the glass door.

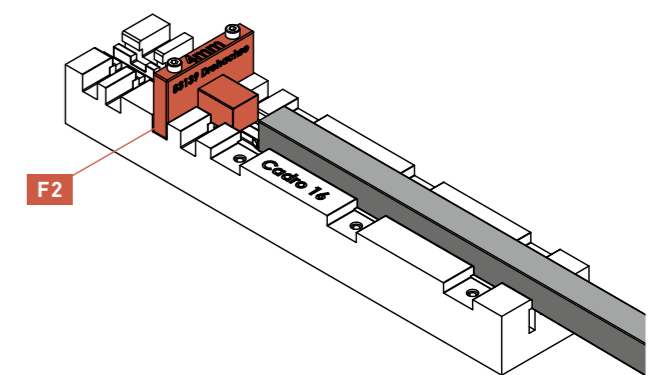
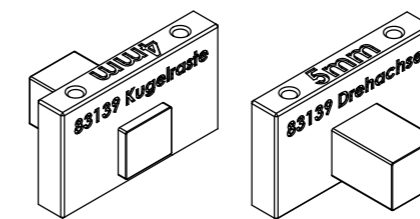
- A As a rule, the door is all-around 4 mm smaller than the inner dimension of the frame (see also page 31).
- B If LEDs and the clip-on lighting profile 83161.**** (see page 44) are mounted in the vertical profile of the glass display case on the side of the hinges, 1 mm has to be added to the distance.



Fixing stop plate for drilling jig.

A special set of stop plates in addition to our drilling and tapping jig for the position A (4 mm) and B (5 mm) facilitates the preparation the profiles. The respective stop plate is placed on the position F2 and simply turned over to drill the holes for the pivot axis and the ball spring plunger.

Set of stop plates for glass door hinges
82927.04.0000



CADRO Glass display case.

Glass door lock.

The glass door lock can be used for glass doors with a thickness of 4 mm. The profiles should be planned **before** the assembly of the frame and be prepared with the corresponding drillings (see figure below). The placement of the hole for the lock in the glass door must also be planned and made as shown in the figure below.

PLEASE NOTE:

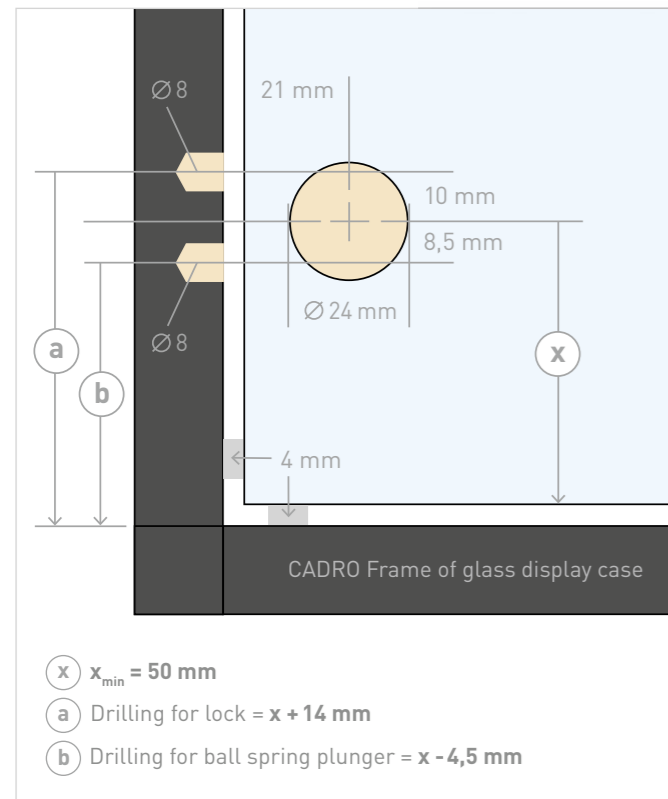
It is not possible to use the lighting clip-on profile 83161.*** on the side of the latch. Alternatively, a lock can be attached at the top and bottom of the glass door if no lighting profiles are planned in this area of the glass display case.

Glass door lock (set)
83141.***

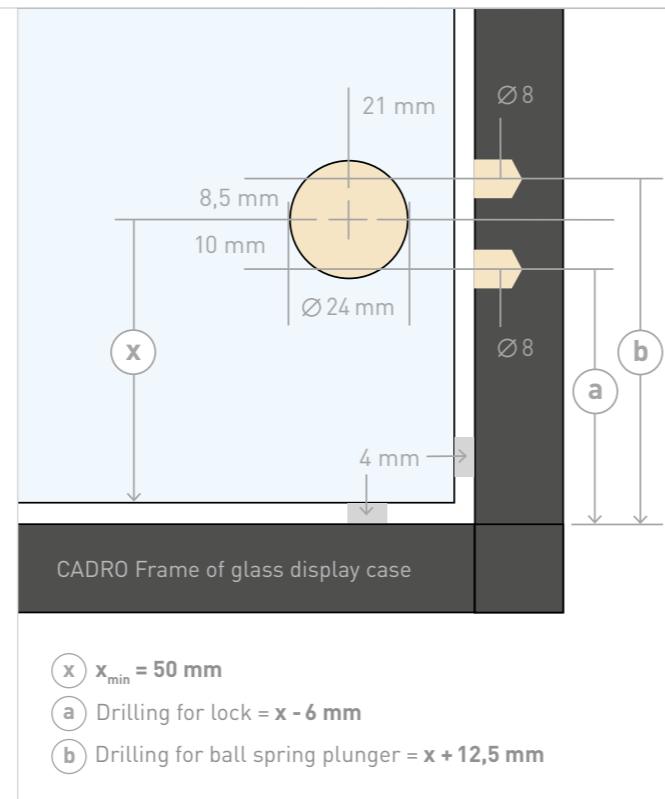


Drilling and hole dimensions.

Drilling dimensions for glass door DIN right



Drilling dimensions for glass door DIN left



Lock assembly.

1 At first, the lock must be opened on the back. Then, the two screws of the cover must be removed to take off the cover. The protective film of the adhesive surface also has to be removed so that the lock can be stuck to the glass door.

2 In order to fix the lock at the accurate position, the lock cylinder must be at first passed through the hole in the glass door. Then ...

1 ... place the housing on the glass edge of the door and ...

2 ... press the adhesive surface firmly onto the glass surface.

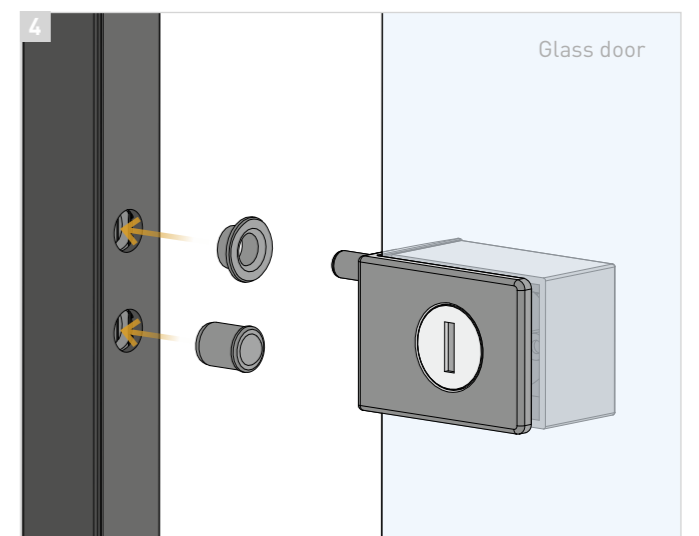
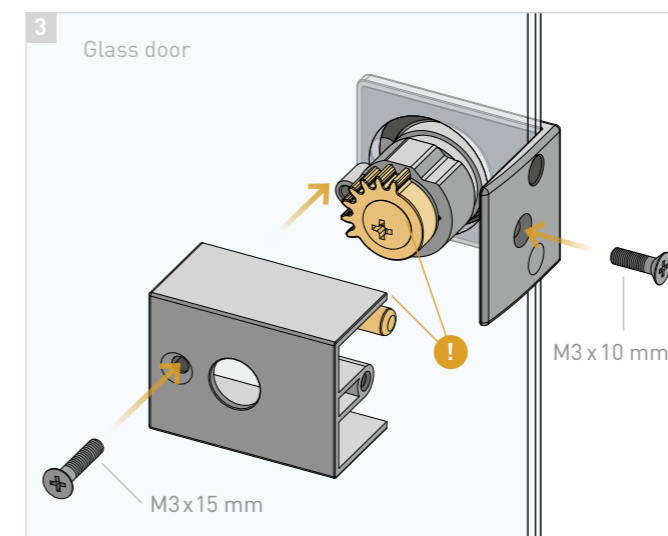
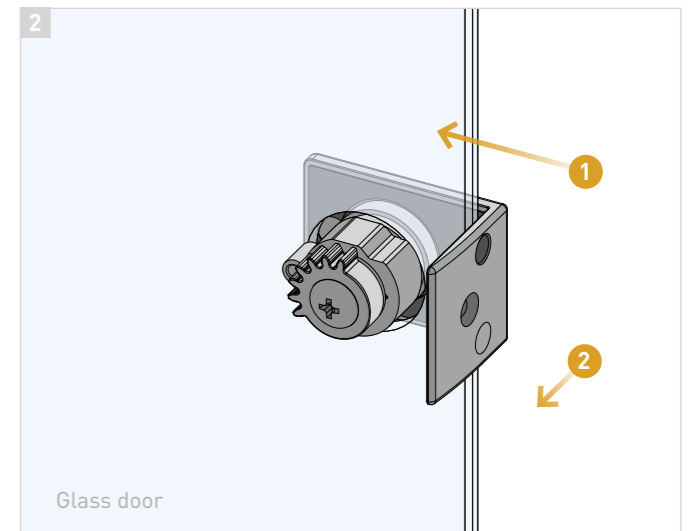
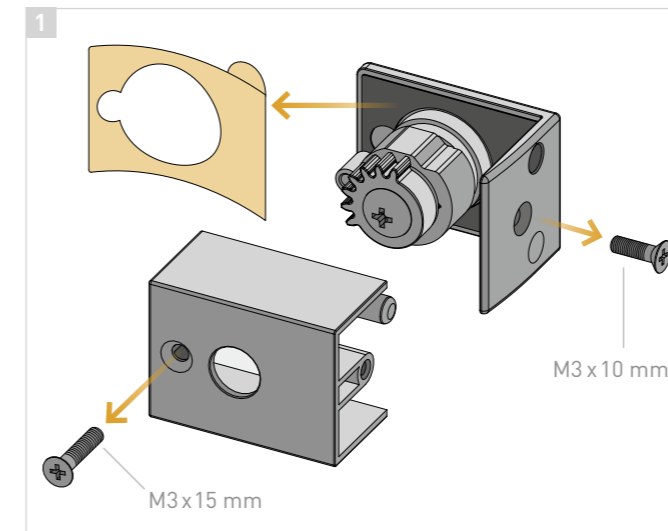
The lock is now straightly and securely fixed.

3 Afterwards, the cover including the latch is reattached.

! Please make sure that the locking cylinder and the latch is correctly positioned!

If necessary, carry out a functional test before retightening the cover screws.

4 Finally, the sleeves for the latch and the ball spring plunger are inserted in the corresponding holes in the frame.



CADRO Glass display case.

Glass door handle attachment.

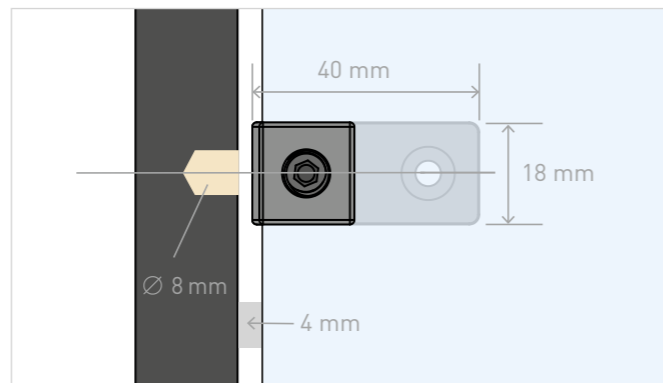
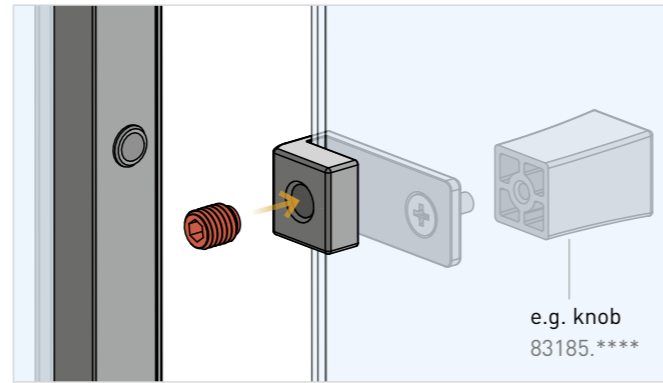


Glass door handle attachment
83142.***

Choose a suitable knob as a handle for your display case door and fasten it by screwing to the handle attachment before mounting the glass panel. The attachment can now be placed anywhere on the edge of the glass door and then be screwed tight. Thus, it is not necessary to drill a hole in the glass door. Optionally, the ball spring plunger can then be mounted in the frame.

PLEASE NOTE:

The use of the handle attachment in combination with the lighting clip-on profile 83161.*** is not possible.



Glass door stop.

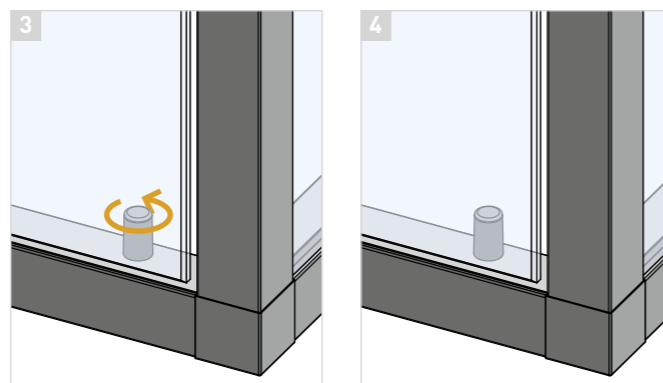
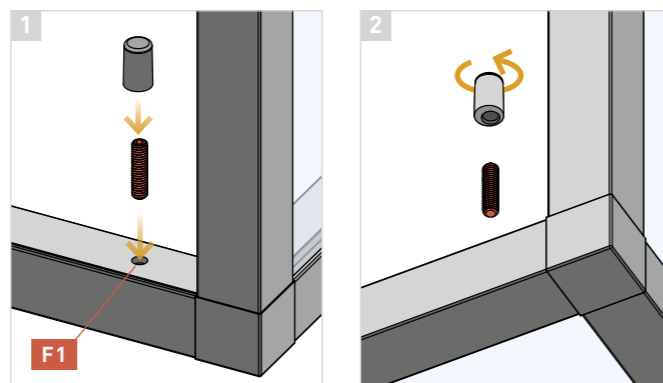


Glass door stop/
shelf support
83143.***

1 The door stop set includes a plastic cap and a M4 x 16mm grub screw to be fixed in the profile at the position **F1**. For this purpose, a 3,3 mm core drilling has to be done into the profile into which an M4 thread is cut afterwards. The preparation of the profiles is ideally done after planning and before the final assembly of the glass display case. The threaded pin is then screwed in and covered with the matching plastic sleeve.

2 + 3 The eccentric bore of the sleeve allows the door stop to be adjusted by turning later on so that the glass door can accurately be closed **4**. Thus, the door stop allows a compensation of up to 2 mm.

The "door stop" can also be used as a support for glass shelves (see page 41).



Glass shelf support.

The door stop set can also be used as a glass shelf support inside the display case and be mounted inside the profiles at any desired height. Slight differences in height can precisely be adjusted using the eccentric cover cap.

Assembly.

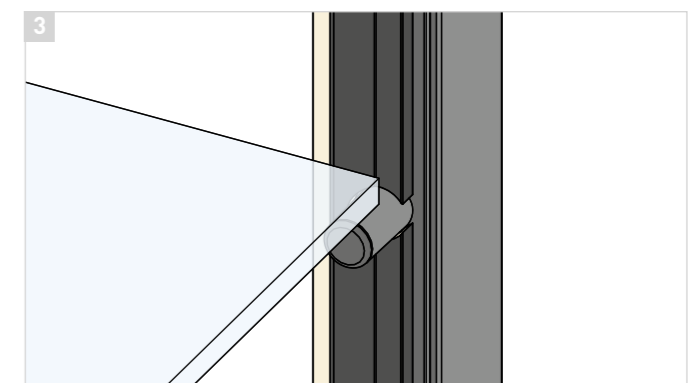
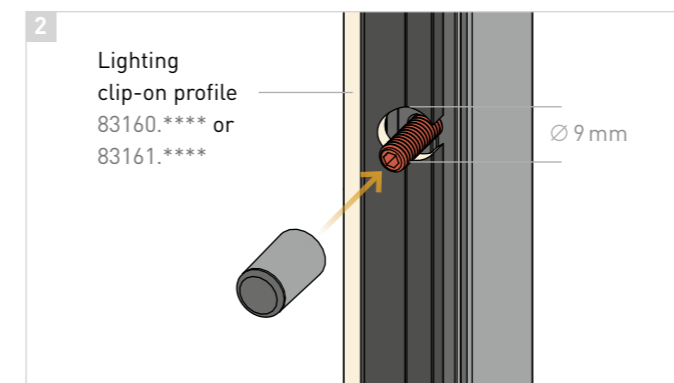
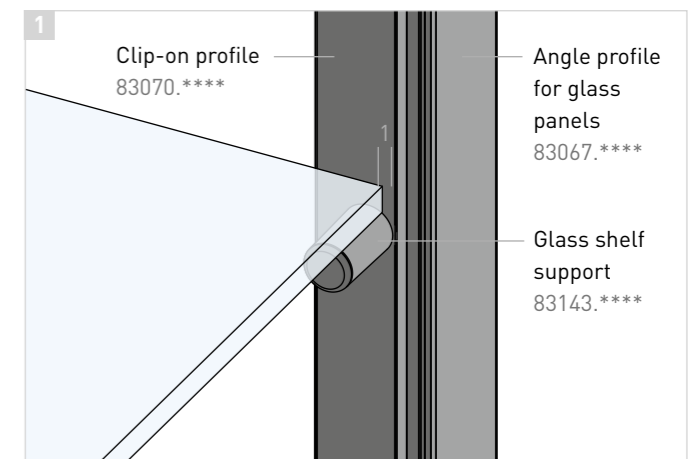
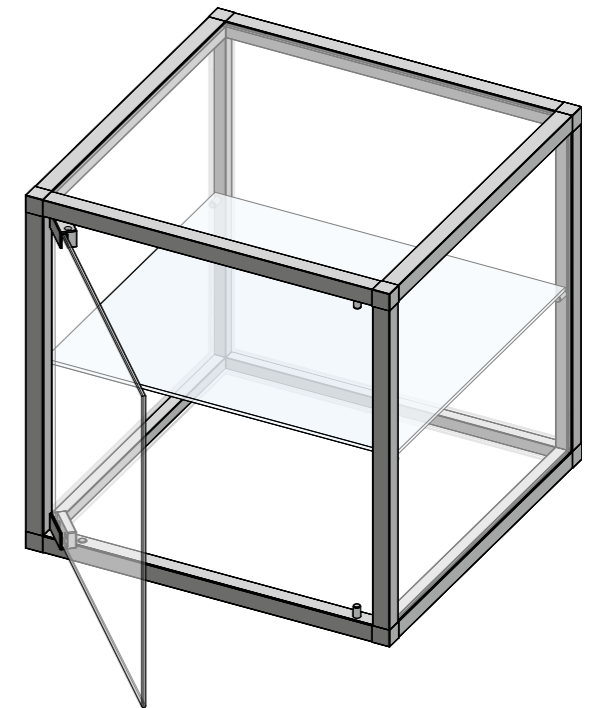
1 The glass shelf runs inside the profile frame at the front and back and up to the glass panels at the right and the left. We recommend a tolerance of approx. 1 mm.

Assembly with lighting profiles.

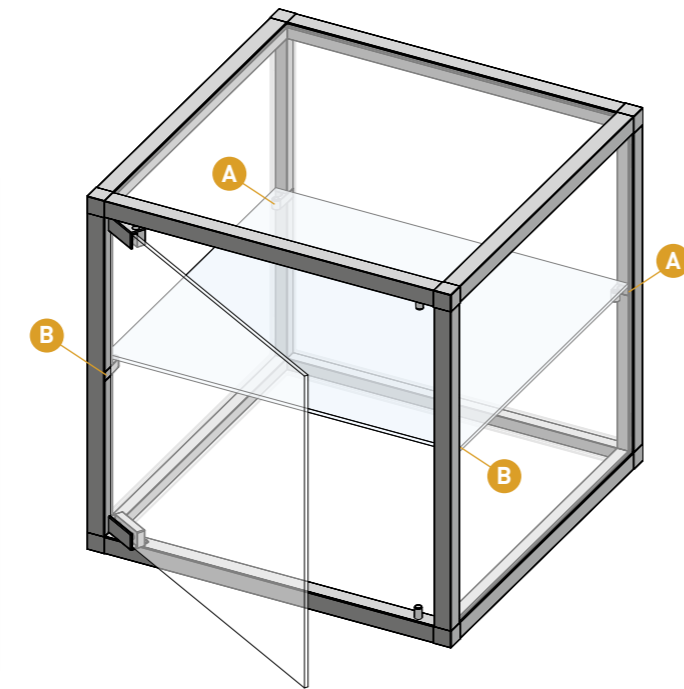
2 + 3 When using the lighting clip-on profiles in the display case frame (see also page 42 | 43) the shelf support penetrates the plastic profile. For this purpose, the lighting clip-on profile is provided with a 9 mm drilling at the position of the core drilling for the grub screw. The cover cap can now be slid until it reaches the aluminum profile and has enough space for adjustment.

RECCOMENDATION:

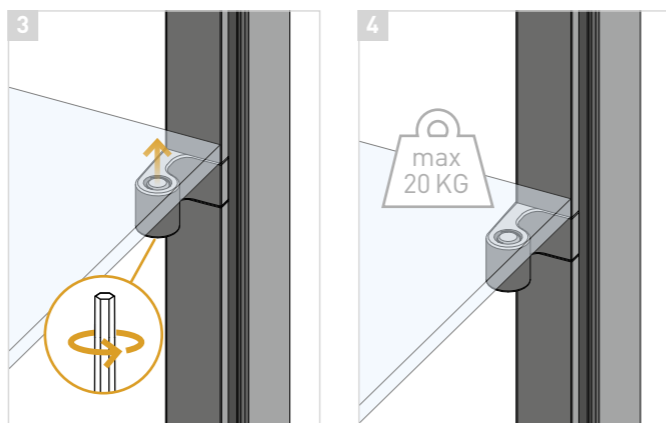
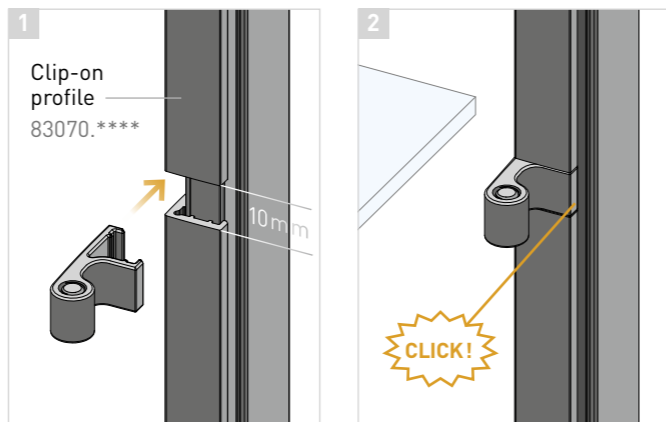
To obtain congruent holes in the plastic and the aluminum profile, always use the same stop plate. The plastic profiles can be clipped on a short remaining piece of aluminum profile in the drilling area. Thus they can be straightly positioned in the drilling and tapping jig. After drilling, the plastic profile can easily be detached.



Clip-on glass shelf support.



Depending on the position, the glass shelf supports were designed to be used for the clip-on profiles 83070.**** and 83071.****:



Assembly..

1 + 2 The glass shelf supports are simply attached at the basic profile of the glass display case within the frame. To do this, the clip-on profiles for fixing the glass must be provided with gaps in the area of the glass shelf supports (10 mm).

3 Now, the glass panel (see page 43) is positioned. Afterwards, the position of the glass panel can be precisely adjusted by turning the plastic adjustment screws (M5).

4 With the proper use of 4 supports, the load capacity of the glass shelf supports is 20 kg max. per level.

Glass shelf dimensions.

Generally, glass shelves are mounted in a way that they are inserted in the frame profiles at the front and the back. Their sides reach until the side glass panels of the glass display case. In the area of the front edge, the glass door hinge needs enough space for movement. This results in the following dimensional calculation for glass shelves:

For glass display cases without lighting.

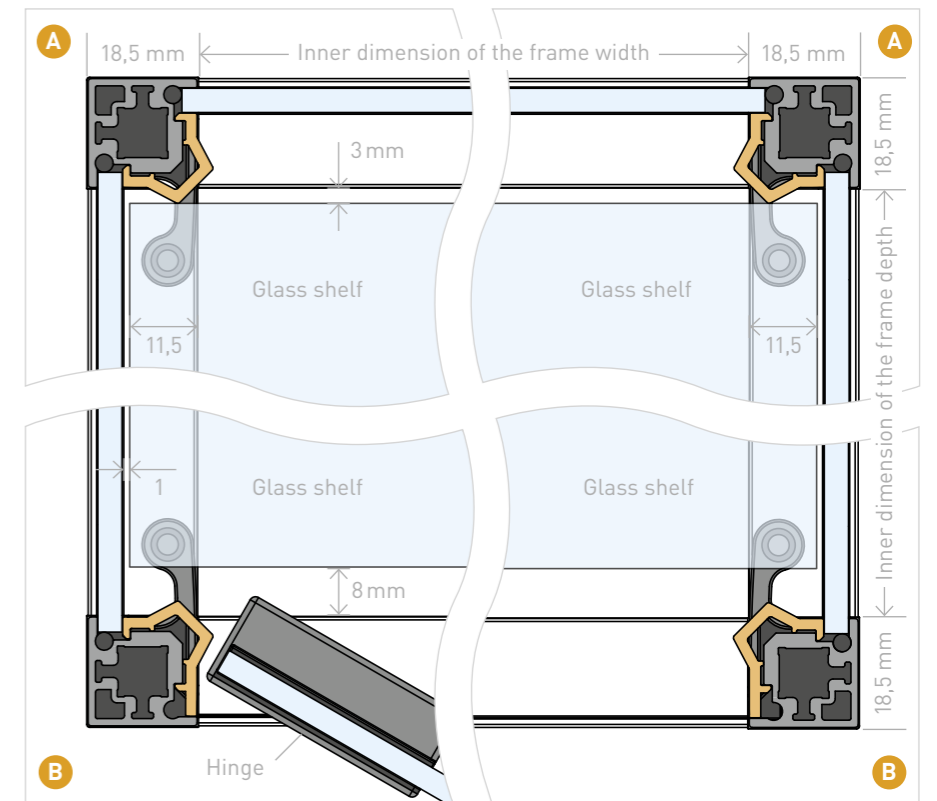
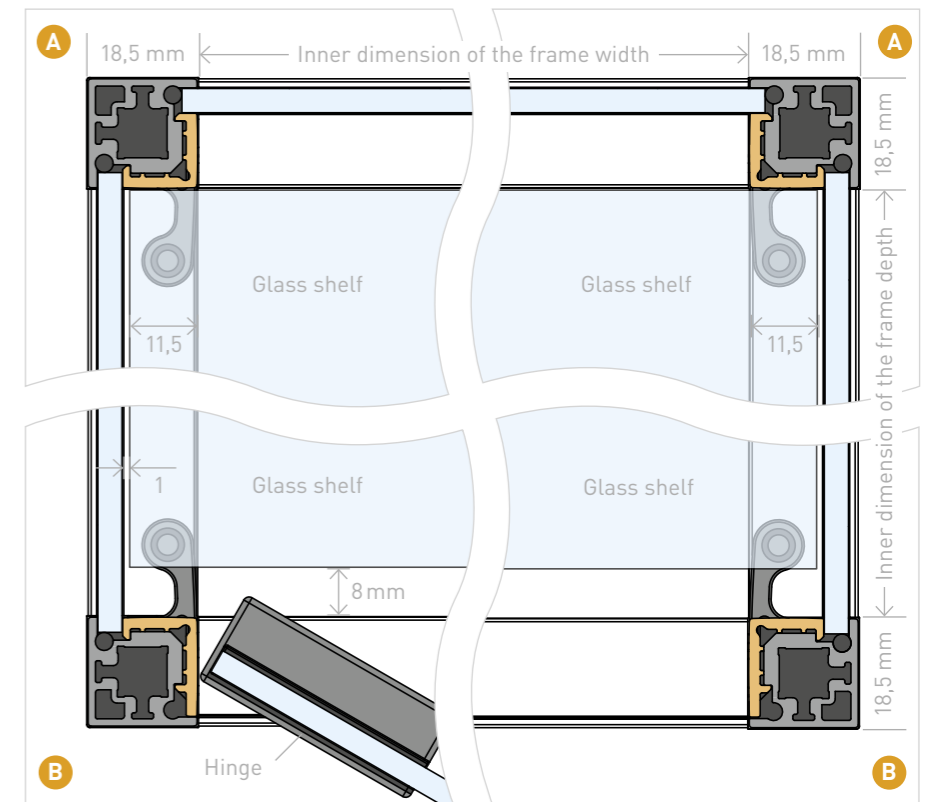
Width:
Inner dimension of the frame width (profile length) + 23 mm (2 x 11,5 mm)

Depth:
Inner dimension of the frame depth (profile length) - 8 mm

For glass display cases with lighting clip-on profiles.

Width:
Inner dimension of the frame width (profile length) + 23 mm (2 x 11,5 mm)

Depth:
Inner dimension of the frame depth (profile length) - 11 mm (8 mm + 3 mm)



CADRO Glass display case.

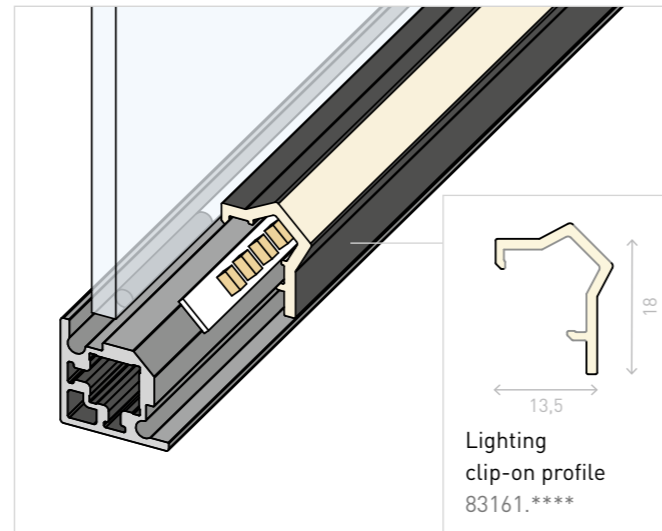
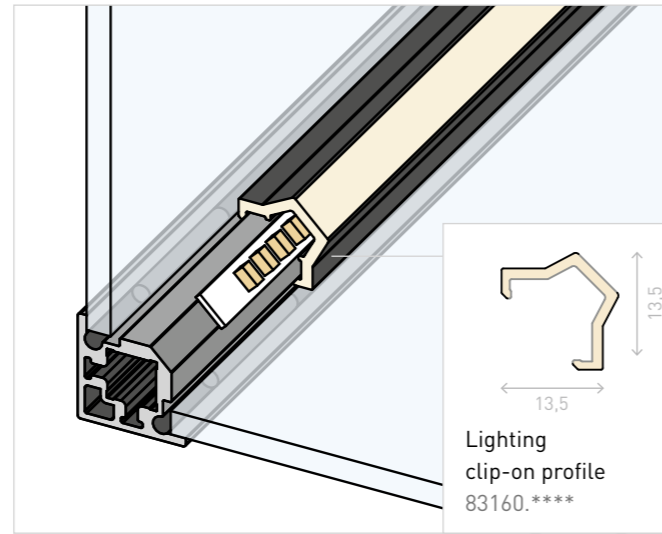
Lighting profiles.

By using the lighting clip-on profiles, angle profiles can be transformed into lighting strips which discreetly and effectively illuminate your exhibits. Due to the film-coated lighting clip-on profiles, the light only penetrates the inner edge of the profile frame and thus, illuminates the interior of the display case.

The profile 83161.**** is used to create a closed profile side, e.g. for door surfaces.

PLEASE NOTE:

We recommend a detailed lighting planning in advance for your display case. For this purpose, see also chapter CADRO Lighting | planning on page 26.

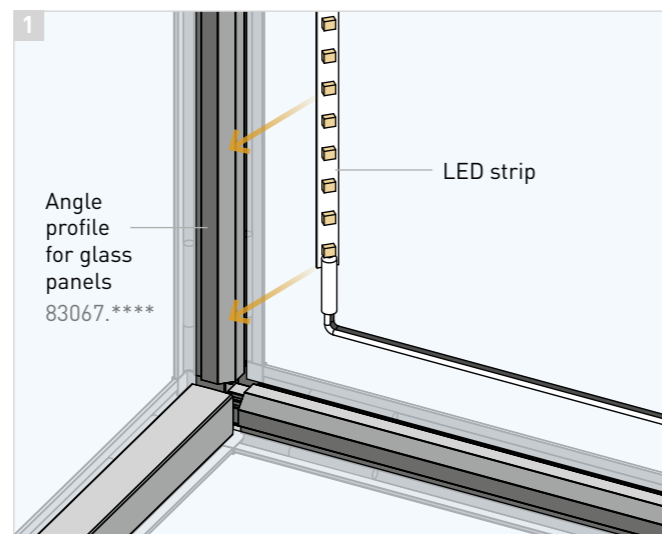


Assembly.

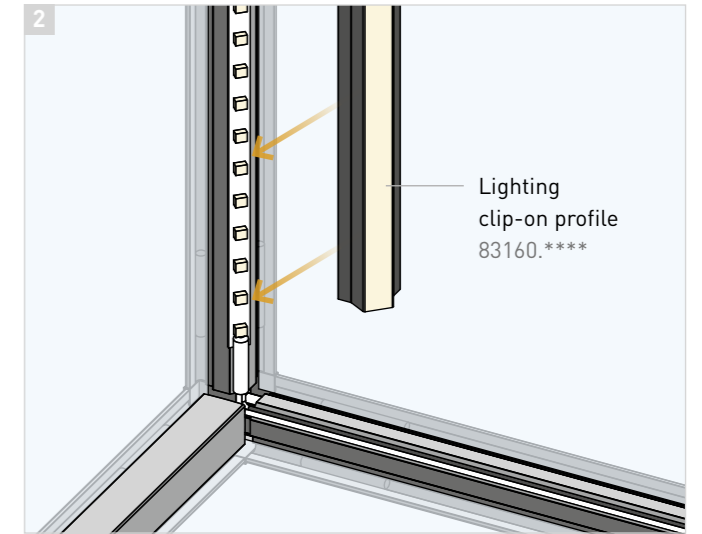
At first, insert the glass panels and fix them with the corresponding plastic clip-on profiles where **no** illumination is needed and **no** cables need to be installed according to the planning (see also page 34 | 35).

Attachment of the LED lighting strips.

1 Now, the self-adhesive LED strips are attached on the beveled surface of the angle profile for glass panels 83067.****.



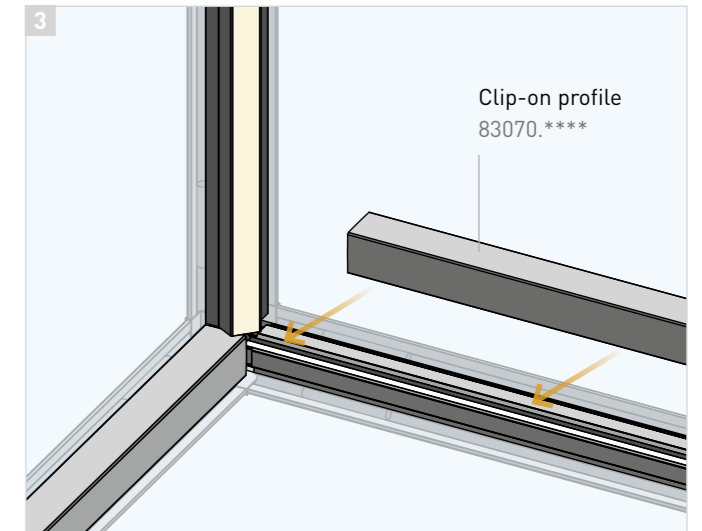
2 Now, the LEDs are being covered by clipping on the lighting clip-on profiles. At the same time, they help to fix the glass panes securely within the frame.



Laying of the cables.

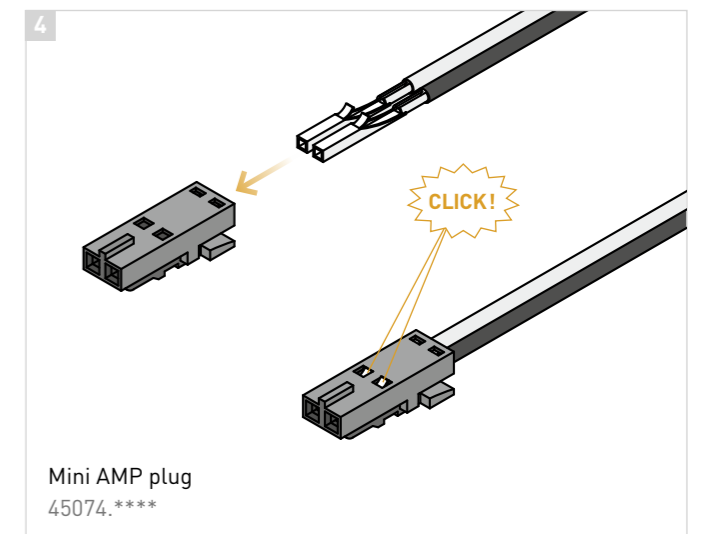
3 The cables are now guided towards the connector with cable exit (see also page 29). Afterwards, the glass panels are fixed with the corresponding clip-on profiles. Thus, the cables are covered and invisibly hidden within the frame.

For the connection to a low-voltage transformer, a plug is finally mounted at the end of each pair of cables.



Plug assembly.

4 For this purpose, the ends of the cables, which are already fitted with sleeves are connected to the Mini AMP plug 45074.****. Please observe the black/white marking of the cable and the position of the plug (see figure on the right). After the automatic locking, the plug and the cable are permanently connected to each other. In case of a faulty assembly of the plug, the cable can only be released by pressing on the locking device of the plug.



Power supply.

Now, the connection can be made to a commercially available transformer or – even more convenient – to our **power distribution system CONEXIS**. (See page 29.)

CADRO Room concept.

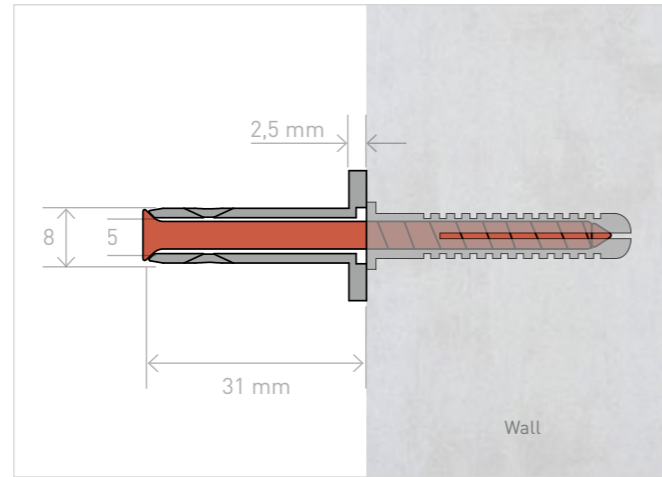
Fixing elements.

Wall / floor attachment I.

The wall / floor attachment is simply screwed onto the fixing surface with a suitable countersunk screw (min. length 60 mm), if necessary with a dowel.



Wall / floor attachment
83096.****

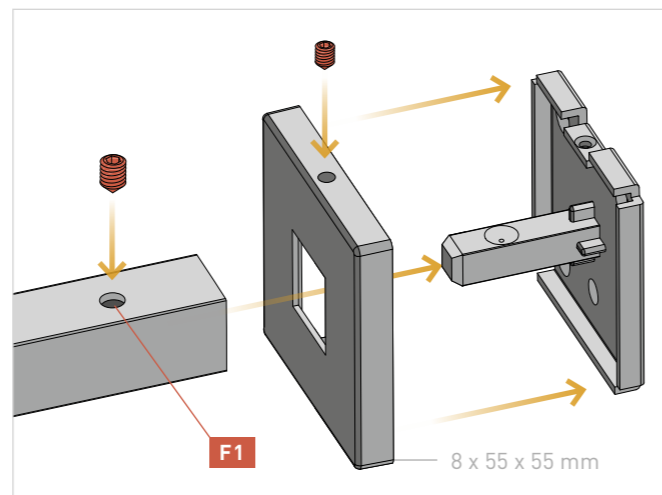
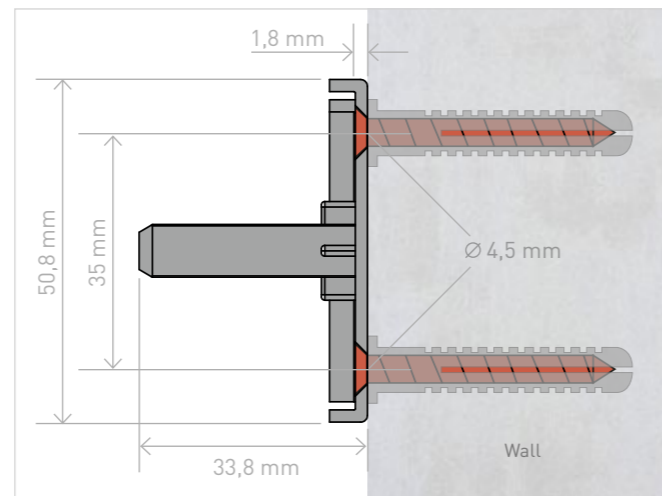


Wall / floor attachment II.

This wall / floor attachment includes a mounting plate and a cover. The mounting plate is fixed to the fixing surface with four screws. After mounting of the profile, the plate and the screws neatly disappear behind the cover.



Wall / floor attachment
83147.****



SAFETY NOTE:
Provided that the attachments 83096.**** and 83147.**** have correctly been fixed to the wall or the floor, we recommend a maximum tensile load of 25 kg per attachment.

Wall / floor / ceiling attachment.

The wall / floor / ceiling attachment is integrated into the profile frame, so that the frame can be placed parallel to a wall, ceiling or floor. The set including the clamp 83172**** offers the possibility to mount the frame at two different distances by choosing the required angle (A + B). For example in order to bridge baseboards without any problems. The cover then helps to hide the screws almost seamlessly.

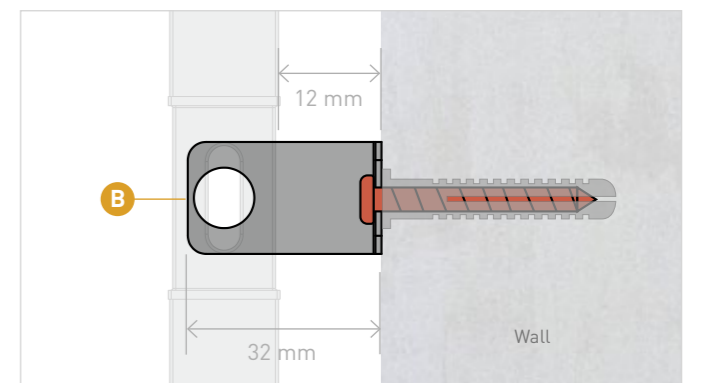
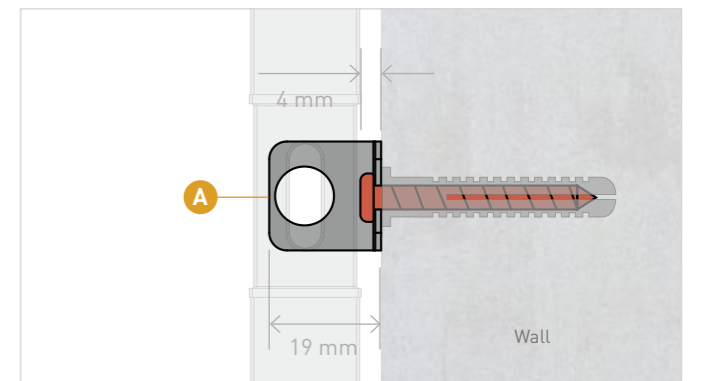
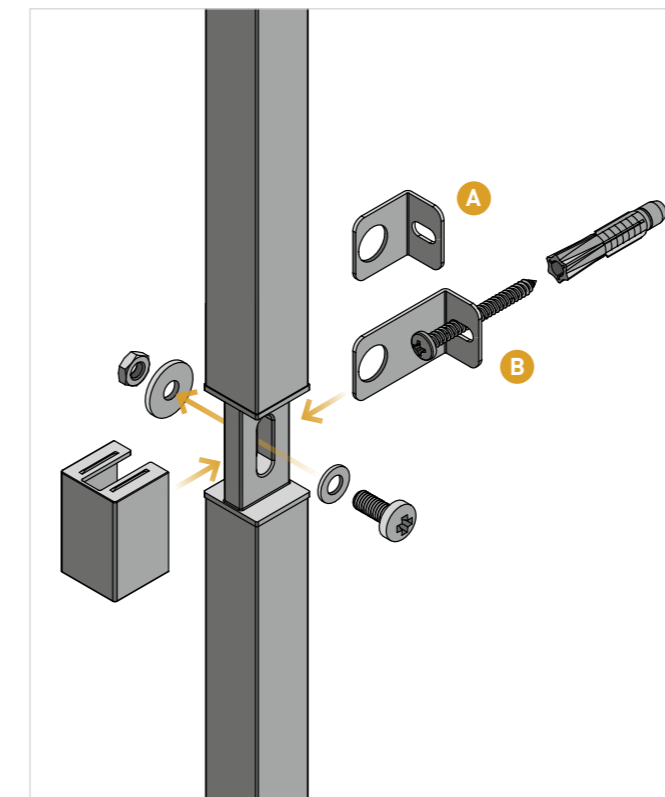


Wall / floor / ceiling attachment
83099.****

SAFETY NOTE:
Provided that the attachments have correctly been fixed to the wall, floor or ceiling, we recommend a maximum tensile load of 30 kg per attachment. The supplied attachments have been designed for common, solid masonry materials. The suitability of the fastening elements therefore must be checked on site.



Clamp
83172.****

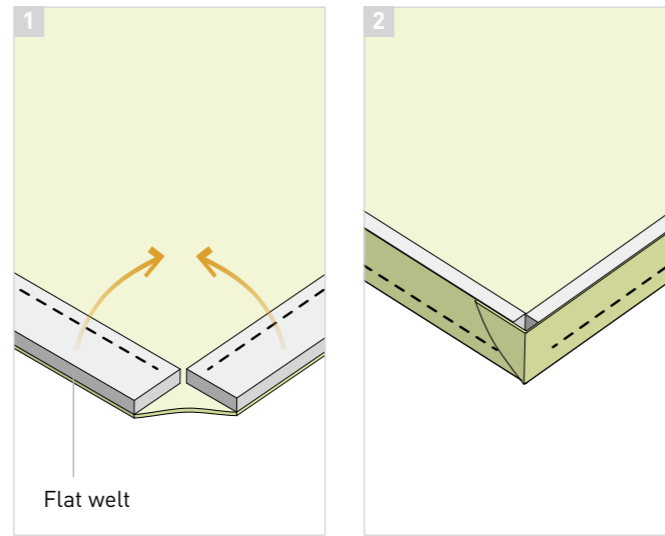


CADRO Room concept.

Display profiles.

Textile banners.

With the display profiles it is possible to create e.g. stretching frames, display walls or complex exhibition objects for exhibition booths or shop fitting. These can then be provided with commercially available, individually printed textile banners with flat welts (1 + 2).

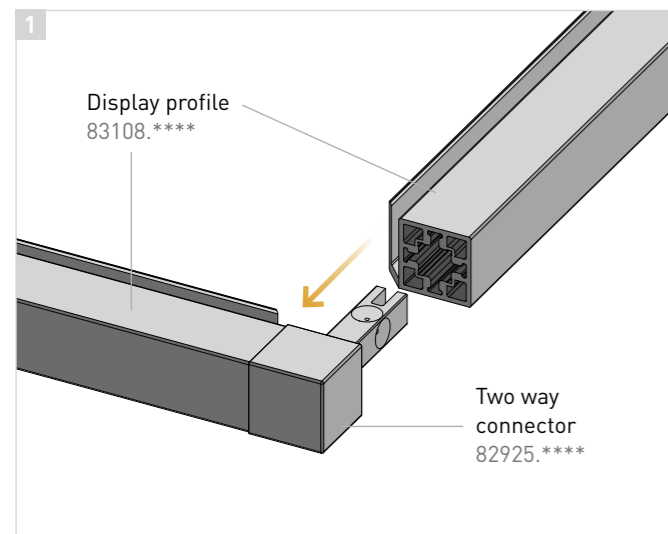
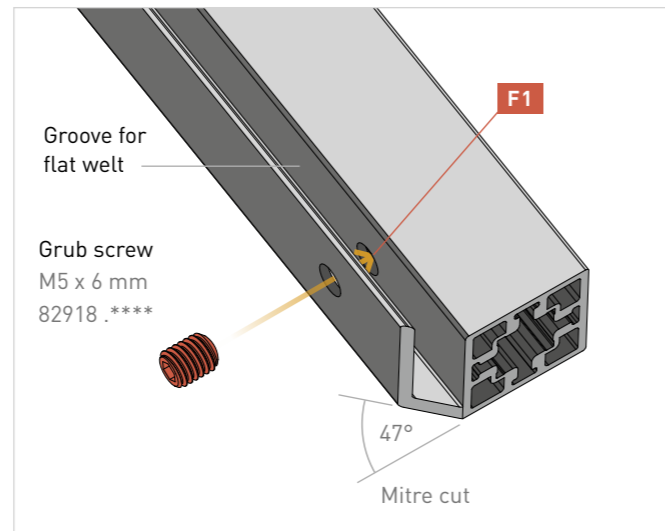


Frame.

To create frames for textile banners with the connectors, the display profiles must be mitred at an angle of 47° in the area of the groove in which the flat welt is to be inserted. The hole for the fixing screw is ideally placed in the invisible area, i.e. at the usual position through the groove for the flat welt. The screw is then completely countersunk in the profile when being tightened, so that the flat welt can be inserted into the groove.

1 The profiles are now joined together with the connector as usual (or – depending on the design planning – expanded with the matching profiles and elements from the CADRO range of products).

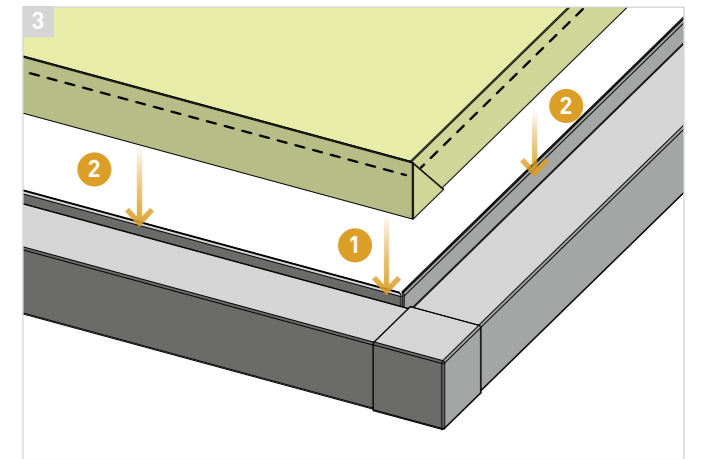
2 The opening of the groove always points to the motif side.



Inserting textile banners.

3 Now the textile banner can be firmly stretched into the groove of the frame. At first the corners are inserted and then stretched along the length.

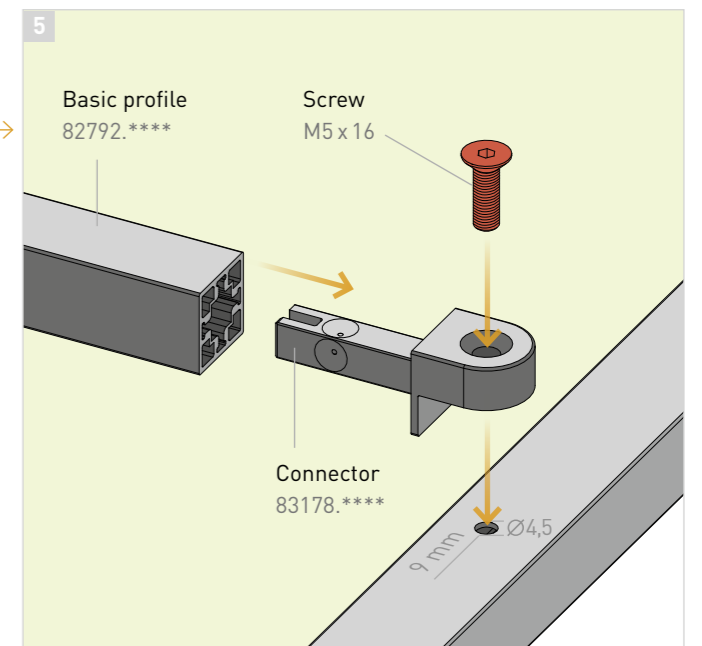
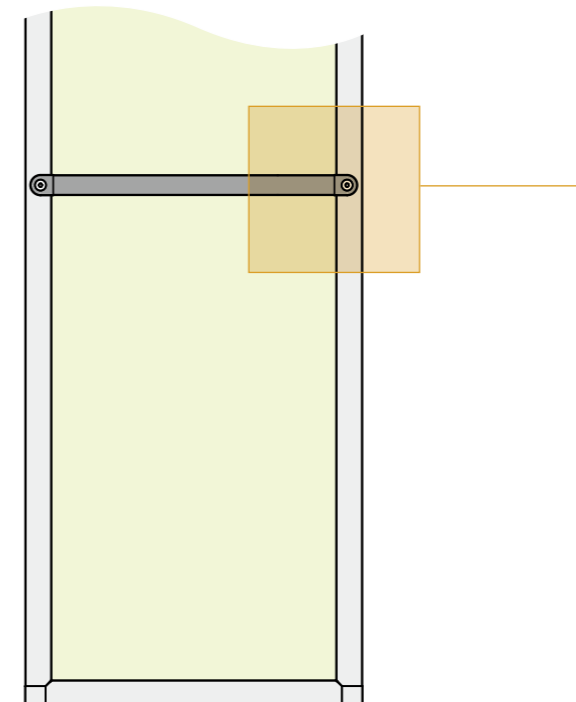
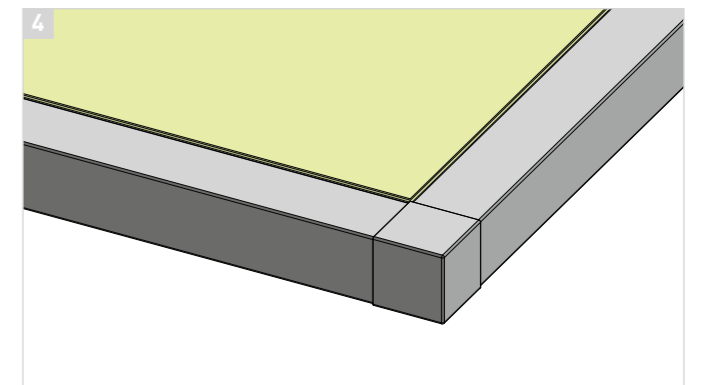
4 The seams disappear in the groove and the motif banner forms a clean transition to the CADRO frame.



Cross profile.

Depending on the frame construction and the strain exercised on the textile banner, it may be necessary to mount a cross profile between the profiles, e.g. if very long profiles are being used. This prevents the profiles being under permanent strain from bending in the course of time.

5 The basic profile 82792 .**** can be used as a strut at the back being fixed with two connectors 83178 .**** between the display profiles. Thus, the groove remains intact and the textile banners can easily be exchanged.



 CADRO | Frame system



