

## NOVUX™ Fiber Optic System CC 100 Basic Instructions

### About this manual

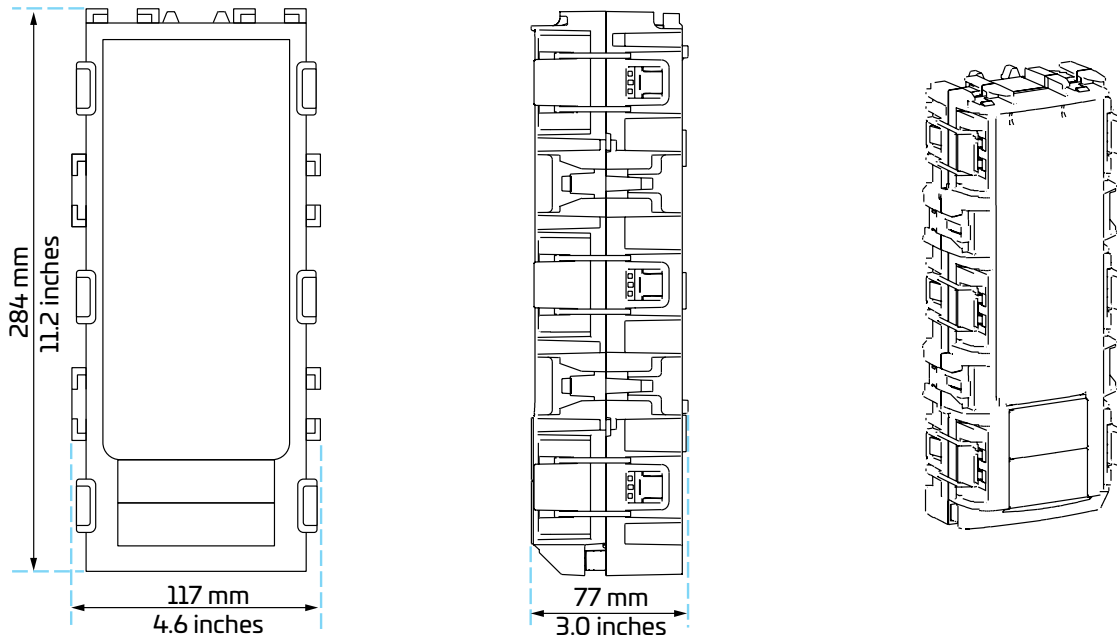
This manual describes the basic installation steps of the Compact Closure 100. The document starts with providing an overview of the tools required to perform the installation. Also warnings and cautions are indicated, which should be observed before starting the product installation.

Installation steps in this document are limited to: closure preparation, organizer preparation, feeder cable preparation and installation, branch cable preparation, installation and splicing on the rear tray, closing the closure and mounting the closure. For the installation steps required for the splice application (front side), refer to TC-1425-IP-SP: CC 100 Splice application. For the installation steps required for the patch application, refer to TC-1425-IP-PA: CC 100 Patch application.

Images in this manual are for reference only and are subject to change.

### General product information

#### Dimensions



#### Cable diameter range


| Position     | Cable diameter            |                                  |
|--------------|---------------------------|----------------------------------|
|              | mm                        | Inches                           |
| Feeder cable | ≤ 14                      | ≤ 0.55                           |
| Branch cable | ≤ 12                      | ≤ 0.47                           |
| Single drops | ≤ 8 (flat cable: 8 x 4,5) | ≤ 0.32 (flat cable: 0.32 x 0.18) |
| Dual drops   | ≤ 6,2                     | ≤ 0.25                           |

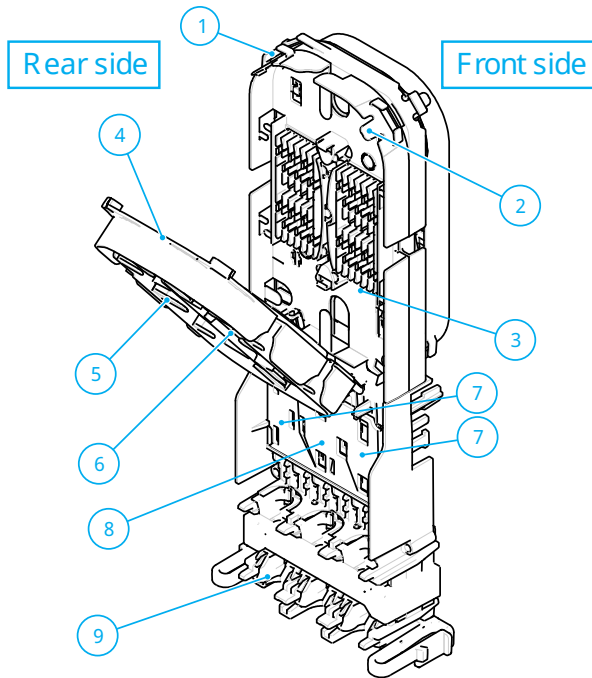
## Overview organizer

The organizer is designed to receive cables and to store tubes and fibers as well as splice protectors and splitters.

The splice trays are designed with an inner width of **70 mm (2.75 Inches)** to store over length's of fibers and ensure a minimum radius of **20 mm (0.79 Inches)** is respected when a U-turn of the fiber is required.

The loop storage basket for storing tubes has an inner width of **62 mm (2.44 Inches)** and the uncut 250µm fiber storage basket for storing uncut feeder fibers has an inner width of **60 mm (2.36 Inches)**.

 **Note:** Verify up front if these bend radii are suitable for the intended application and the used fiber and tube type.



 **Note:** The front side can differ depending on the application ordered.

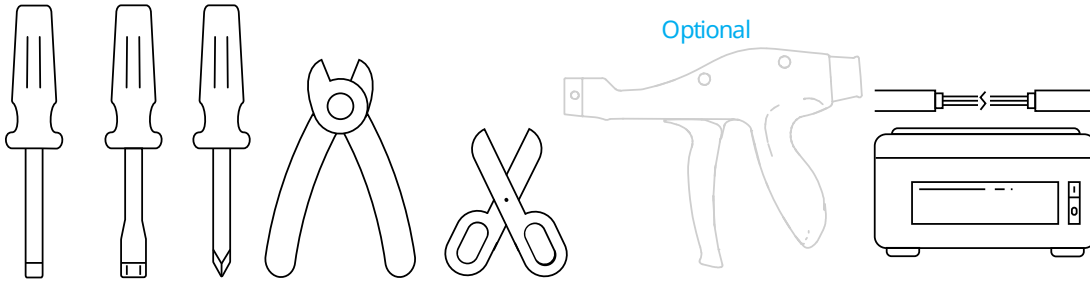
- 1 Tray identification bar
- 2 Snap hooks
- 3 Rear tray with cover
- 4 Uncut 250µm fiber storage
- 5 Loop storage basket
- 6 Fiber guidance pen
- 7 Feeder cable strain relief holders/ interface plate
- 8 Branch cable strain relief holders/ interface plate
- 9 Port reducers

# 1 Abbreviations

CC: Compact Closure

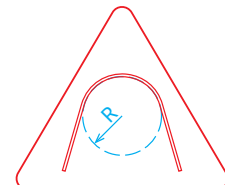
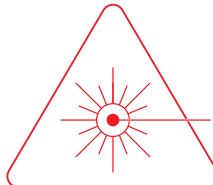
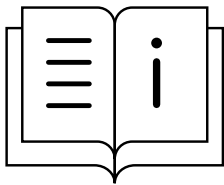
UMB: Universal Mounting Bracket

# 2 Tools



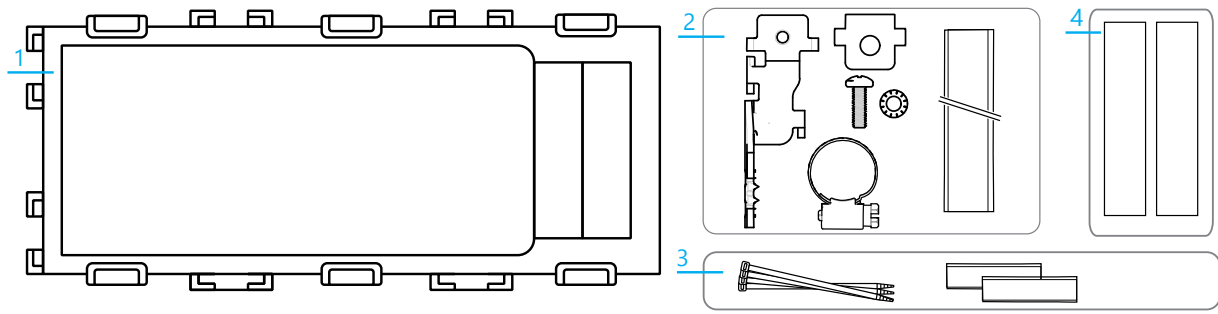
- Flat screw driver
- Socket wrench
- Phillips screw driver
- Small side cutter
- Scissors
- Cable Tie Gun
- Fiber splice equipment and fiber cleaning tools

# 3 Warnings and Cautions




- Follow the installation instruction steps to ensure the performance of the closure. It is necessary to take precautions and keep the working space clean to protect the closure sealing materials and splices.
- Exposure to laser radiation can seriously damage the retina of the eye. Do not look into the ends of any optical fiber. Do not assume the laser power is turned off or that the fiber is disconnected at the other end. Looking into the ends of any optical fiber is entirely at your own risk. A protective cap or hood **MUST** be immediately placed over any radiating adapter or optical fiber connector to avoid the potential of dangerous amounts of radiation exposure. This practice also prevents dirt particles from entering the connector and adapter.
- Fiber optic cables may be damaged if bent or curved to a radius that is less than the recommended minimum bend radius. Always observe the recommended bend radius limit when installing fiber optic cables, subunits and patch cords.

## 4 Kit contents

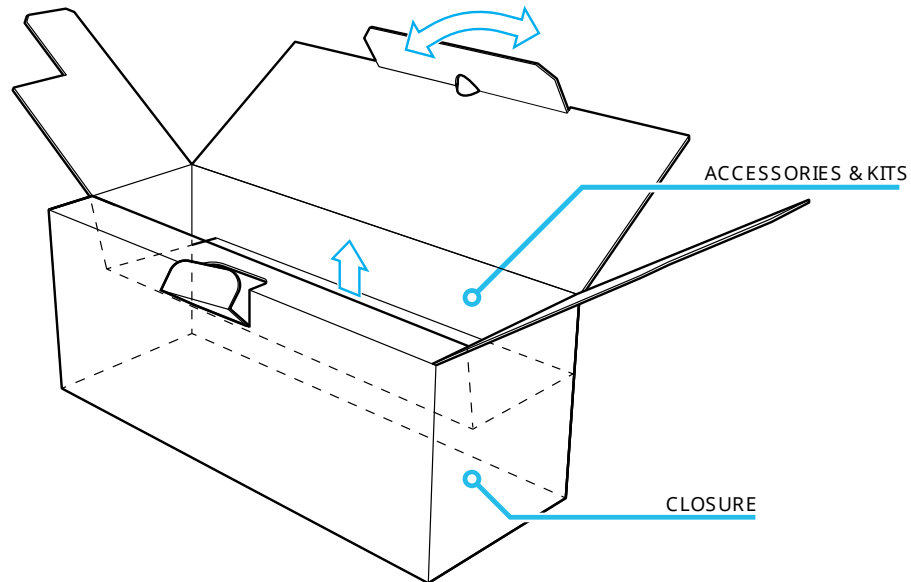


| N° | Description  | Qty |
|----|--|-----|
| 1  | Closure with organizer   | 1   |
| 2  | Feeder and branch cable strain relief kit (1 bracket, 1 metal plate, 1 washer, 1 bolt, 1 hose clamp, 1 strip of silicone tape 2,5 cm / 1 Inch width) | 3   |
| 4  | 4 cable ties with 2 strips of silicon tape 1,25 cm / 0.5 Inch  | 3   |
| 5  | Octopus™ gel blocks  | 1x2 |

 **Note:** Contents can vary depending on the configuration.

## 5 Closure preparation

### 5.1 Open the packaging box

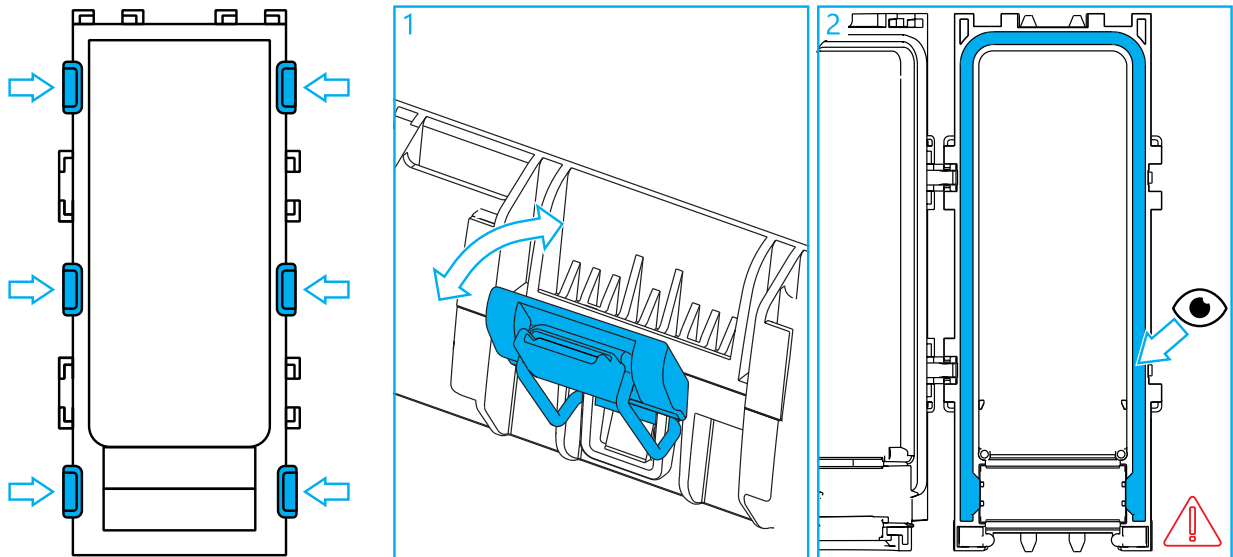


1 Open the packaging box and verify the kit contents.

Kits and accessories are stored on the top layer. The closure with organizer is stored under the accessory shelf.



## 5.2 Open the latches

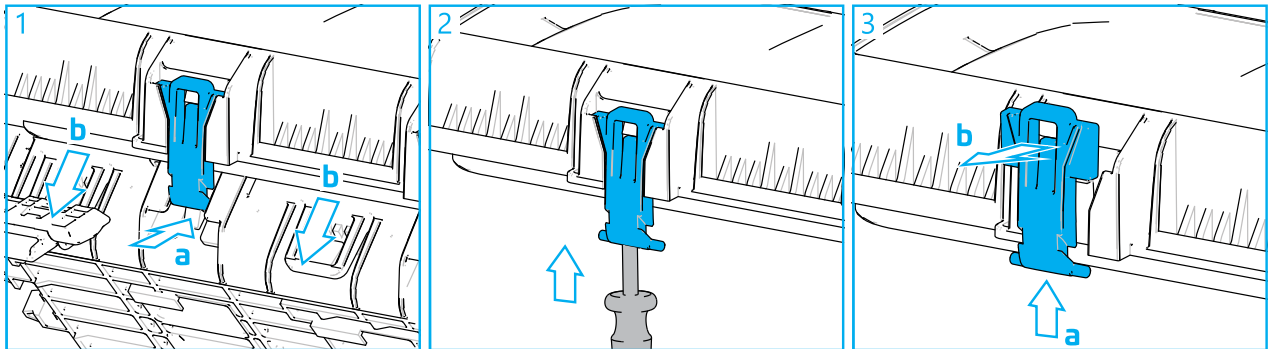


- 1 To open the closure, open the latches.
- 2 Rotate the cover. Verify the long seal remains correctly seated within the closure cavity.

## 5.3 Install the hinges in another position

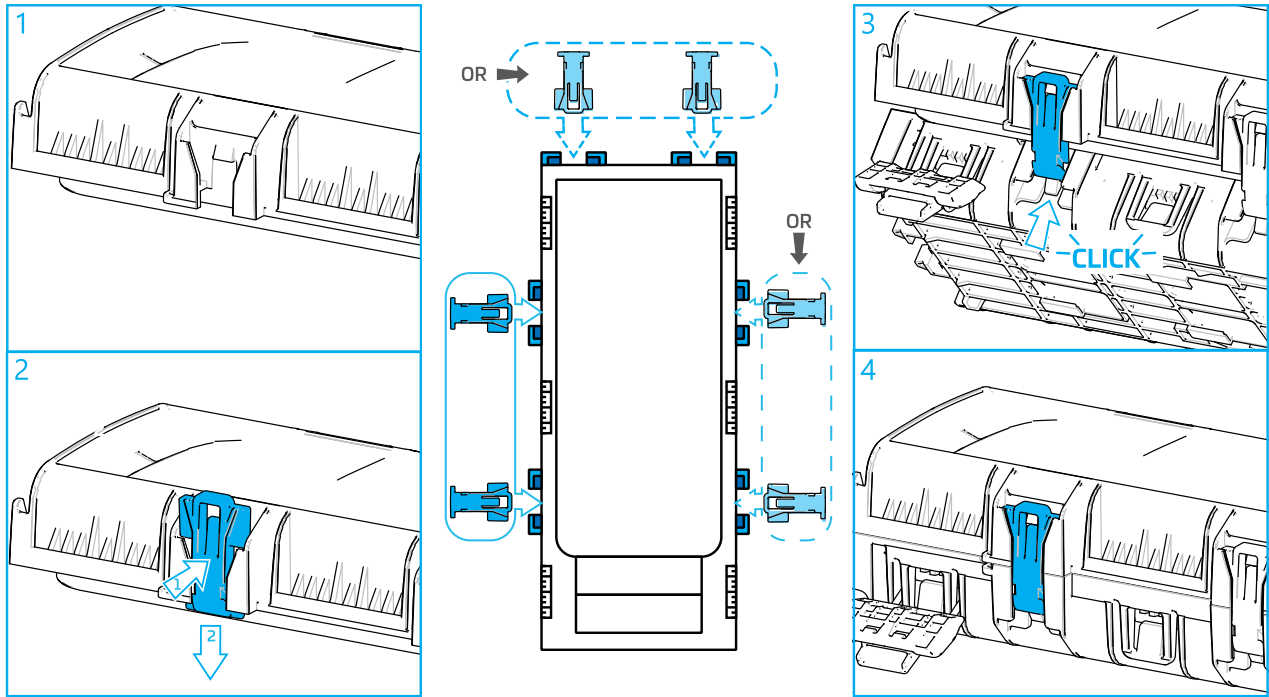
The hinges are pre-installed on the left side. However it is possible to install them in another position. First the hinges should be removed.

### 5.3.1 Remove the hinges



- 1 Remove the cover from the base.
  - a Push on the snap features under the hinge on the base.
  - b Slide the cover with the hinges over the snap features.
- 2 Use a screw driver to disassemble the hinges from the cover.
- 3 Lift the hinges up and then remove.

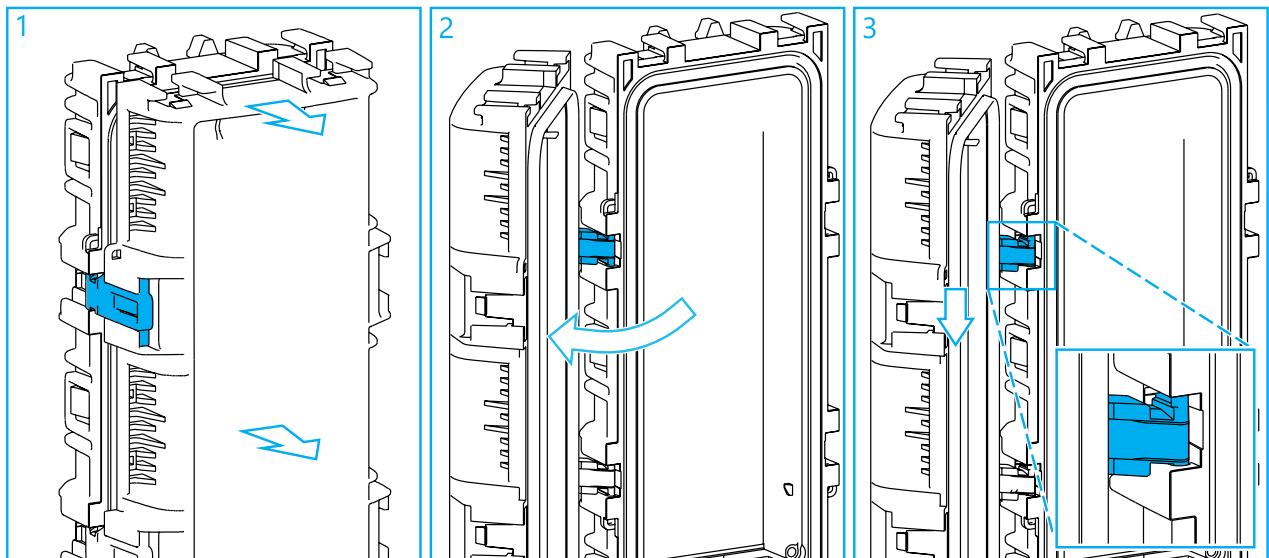
### 5.3.2 Re-install the hinges



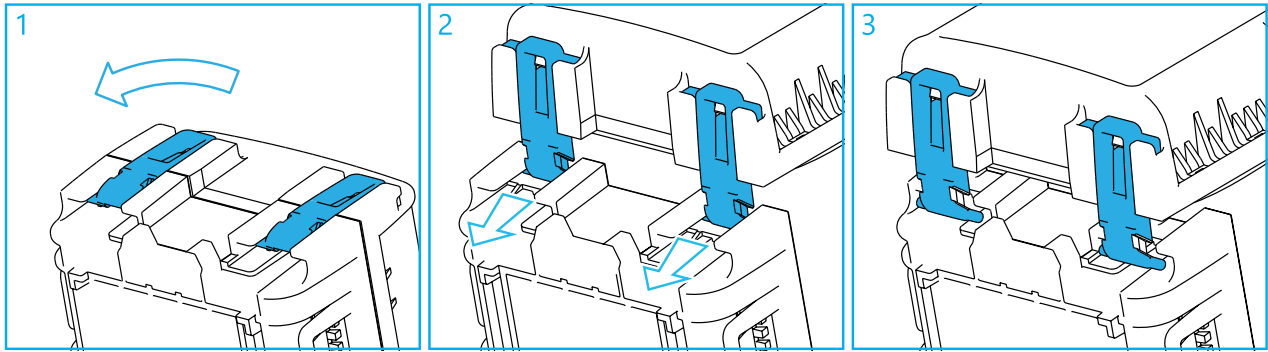
The hinges can be installed on the left, right or at the top of the cover.

- 1 Slide the hinge into the openings of the cover.
- 2 Then slide the hinge down in its lock position.
- 3 Assemble the cover and base by sliding the cover hinges into the cavities within the base. The hinges are properly seated in the base if a clicking sound is noticed.
- 4 Rotate the cover towards the base and close the cover.

### 5.4 Access the inside of the closure

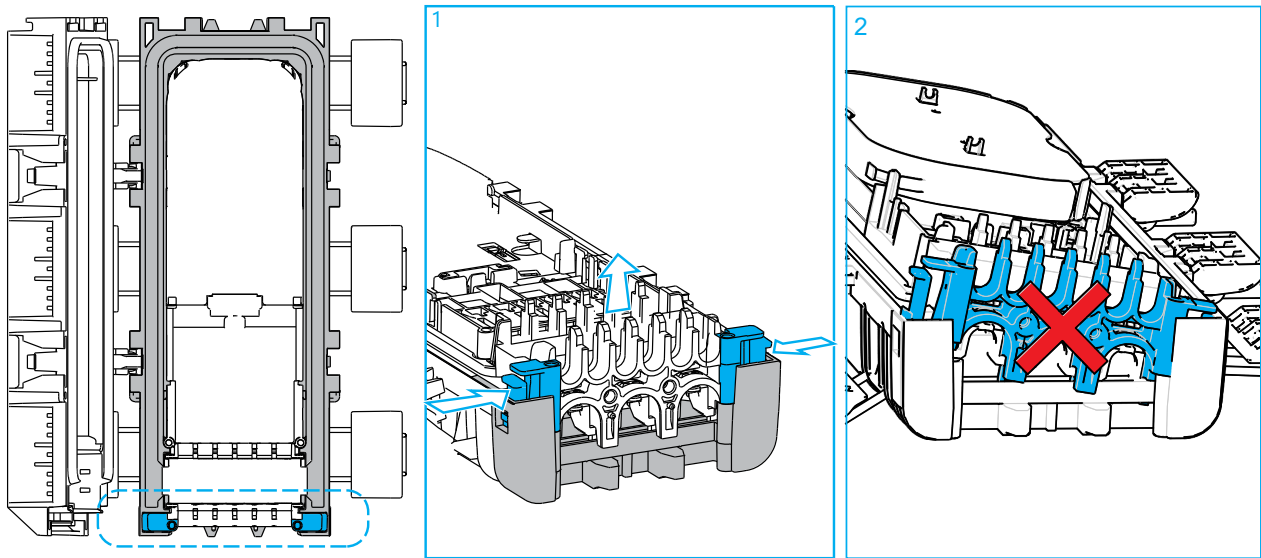


- 1 Open the closure, lift the cover up.
- 2 Hinge the cover open to the side of the installed hinge.
- 3 Secure the cover in open position: the cover with hinges will move downwards and will lock into the base.



**Note:** If the hinges are installed in the top position, the cover **cannot be secured in open position**. To access the inside of the closure, the cover should be detached.

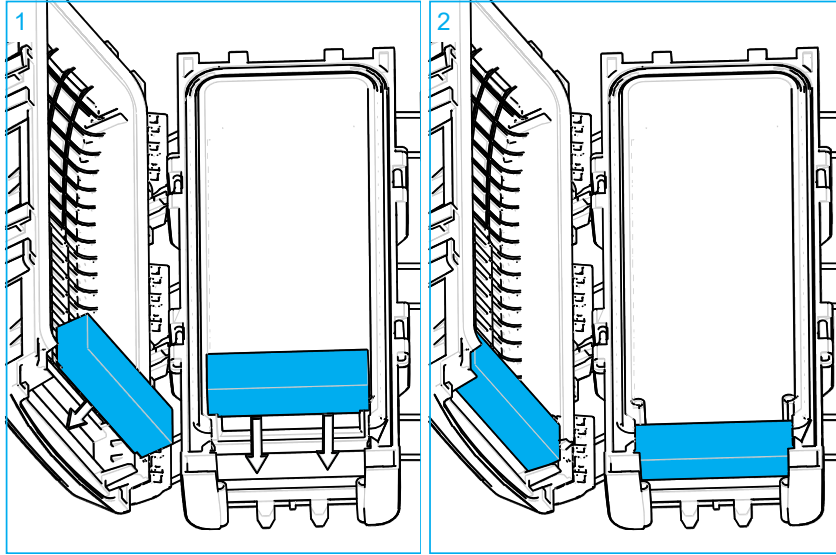
## 6 Remove fiber organizer



- 1 Push on the two tabs situated under the Octopus™ gel seal to release the organizer.
- 2 To remove the organizer, it is important to lift both sides simultaneously to avoid damaging it.

## 7 Install the Octopus™ gel blocks

One Octopus™ gel block must be installed in the cover, another in the base.



- 1 Install the Octopus™ gel blocks with the plastic support of the gel block facing downwards. Push the gel blocks on the ends into its cavity and push it in its cavity as far as possible.
- 2 Now the Octopus™ gel blocks are correctly installed.

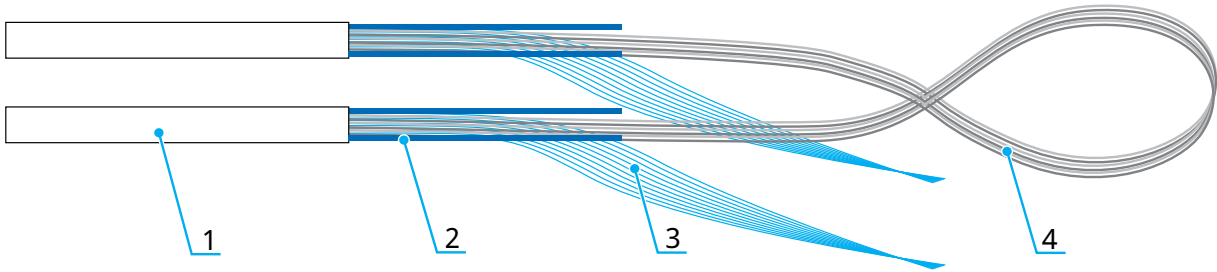
## 8 Feeder cable

### 8.1 Feeder cable preparation

**Note:** For cables with a diameter smaller than 6 mm (0.24 Inches) use one of the following cable retention kits: TC-1466-IP (Cable retention: Aramid), TC-1468-IP (Cable retention: Jacket (Mclip)) or TC-1469-IP (Cable retention: Rigid strength member).

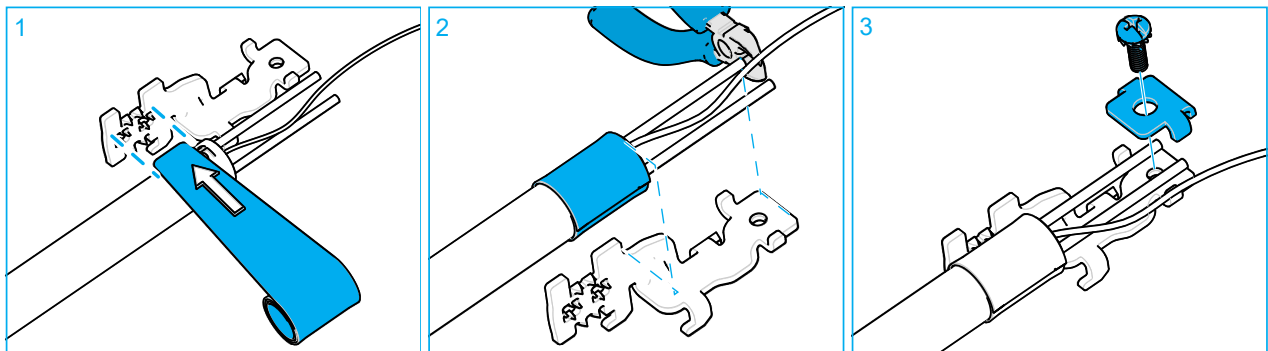
**Important:** The midspan opening of the cable should be in all cases as explained in table below.

#### 8.1.1 Prepare cable



| N.º | Description            | Preparation  |
|-----|------------------------|--|
| 1   | Jacket                 | <ul style="list-style-type: none"> <li>• ENDCUT: Make a midspan of 130 +/-5 cm (51.2 +/-2 Inches).</li> <li>• MIDCUT: Make a midspan of minimum 200 +/-5 cm (78.7 +/-2 Inches).</li> <li>• CABLE END: remove the jacket over a distance of 130 +/-5 cm (51.2 +/-2 Inches)</li> </ul> |
| 2   | Rigid Strength members | Leave 4 +/-0,5 cm (1.6 +/-0.2 Inches) (or verify with bracket).  |
| 3   | Aramid yarn            | If no rigid strength member is present, leave 12 +/-1 cm (4.7 +/-0.4 Inches) of aramid yarn.   |
| 4   | Subunits               | Clean the subunits, remove all grease.   |

#### 8.1.2 Feeder cable rigid strength member strain relief

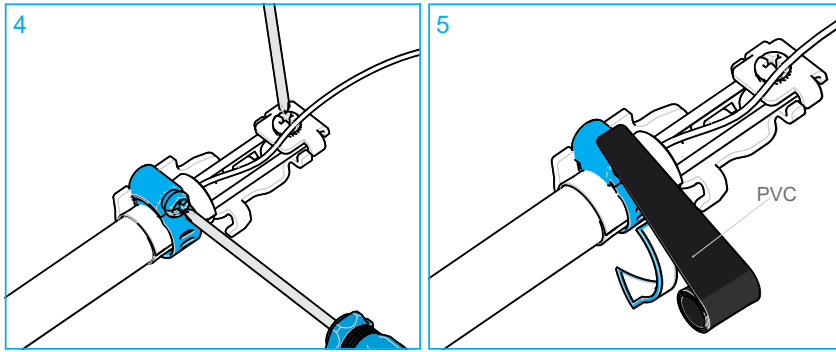


1 If the diameter is smaller than 9 mm (0.35 Inches) or if the jacket is a thin jacket, add 5 wraps of self amalgamating silicon tape. Stretch the tape between 50% and 300% while wrapping the tape around the cable. Make sure the tape is wrapped where the hose clamp will be positioned.

**Attention:** Make sure your hands are clean and degreased before preparing and installing the cables.

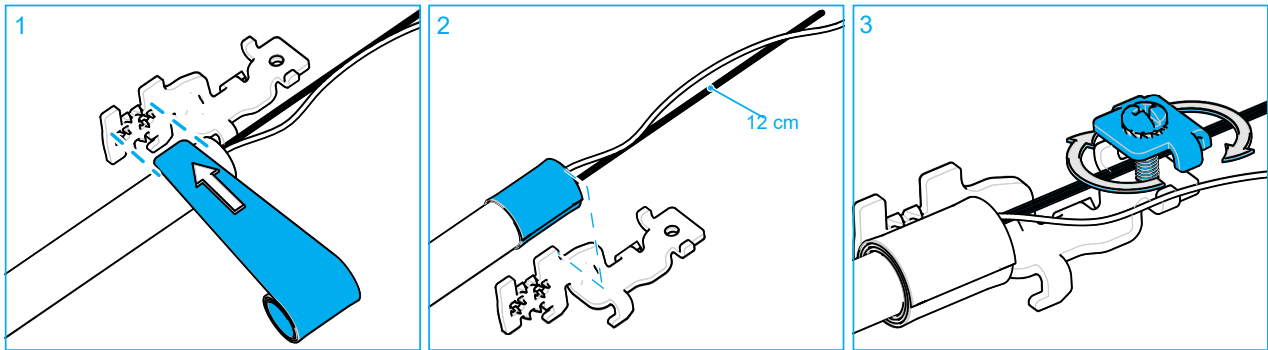
2 Verify the length of the strength member(s) as indicated or measure 4 +/-0.5 cm (1.6 +/- 0.2 Inches) and cut to length. Place the cable on the bracket with the jacket end aligned with the bracket edge as shown in figure 2 and the strength members aligned with the top of the bracket.

3 Route the subunits aside, install the metal plate and bolt with washer and secure the bolt.



- 4 Install the hose clamp around the cable bracket assembly and secure with an appropriate tool. Make sure the head of the hose clamp is positioned against the bracket.
- 5 Finalize with wrapping 2 layers PVC tape around the hose clamp to keep the excess length of the hose clamp band close to the cable.

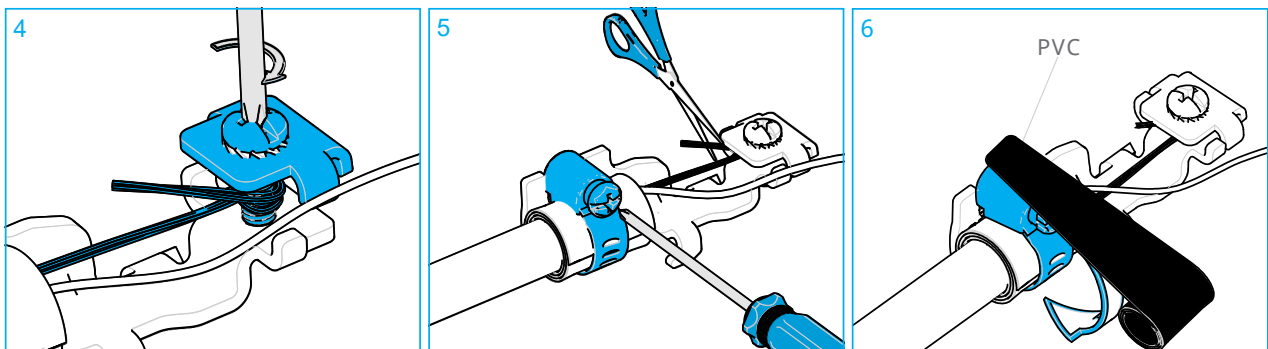
### 8.1.3 Feeder cable aramid yarn strain relief



- 1 If the diameter is smaller than 9 mm (0.35 Inches) or if the jacket is a thin jacket, add 5 wraps of self amalgamating silicon tape. Stretch the tape between 50% and 300% while wrapping the tape around the cable. Make sure the tape is wrapped where the hose clamp will be positioned.

**⚠ Attention:** Make sure your hands are clean and degreased before preparing and installing the cables.

- 2 Cut the aramid yarn to a length of 12 +/- 1 cm (4.7 +/- 0.4 Inches).
- 3 Place the cable on the bracket with the jacket end aligned with the bracket edge. Route the subunits aside, install the metal plate and bolt with washer. Wrap the aramid yarn around the bolt.



- 4 Secure the bolt.
- 5 Install the hose clamp around the cable bracket assembly and secure with an appropriate tool. Make sure the head of the hose clamp is positioned against the bracket.
- 6 Finalize with wrapping 2 layers PVC tape around the hose clamp to keep the excess length of the hose clamp band close to the cable.

## 8.2 Feeder cable installation

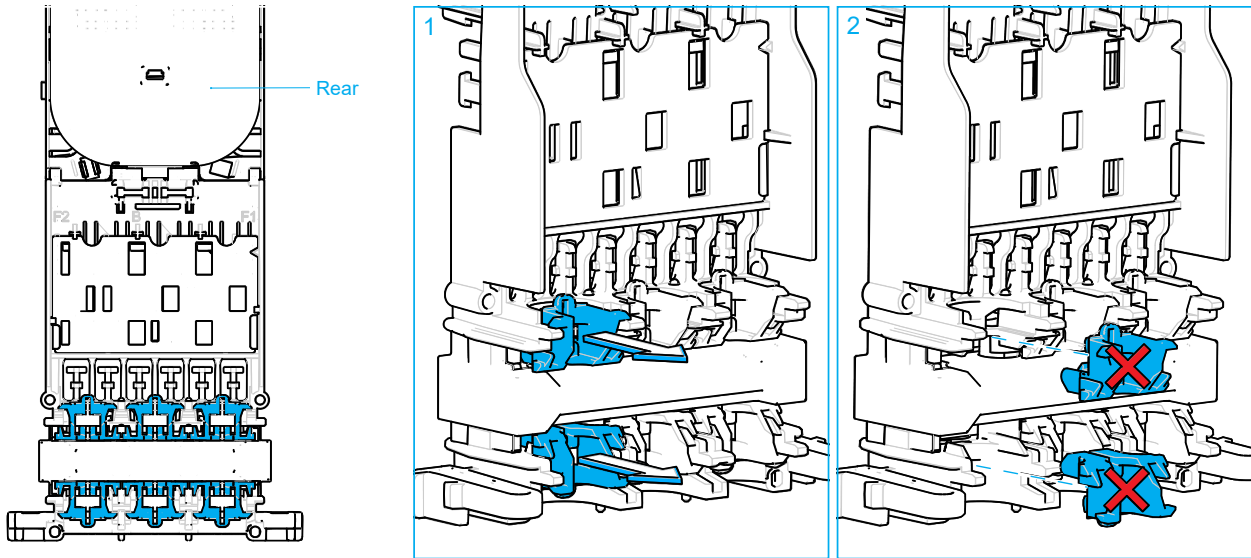
### 8.2.1 Port reducers

Port reducers are installed above and below the Octopus™ gel seal. Depending on the cable diameter, the port reducers should remain or need to be removed.

If the cable diameter is **less than or equal to 10 mm / 0.39 Inches**: keep the two port reducers in place. In this case, continue with the next section. Steps below are not applicable.

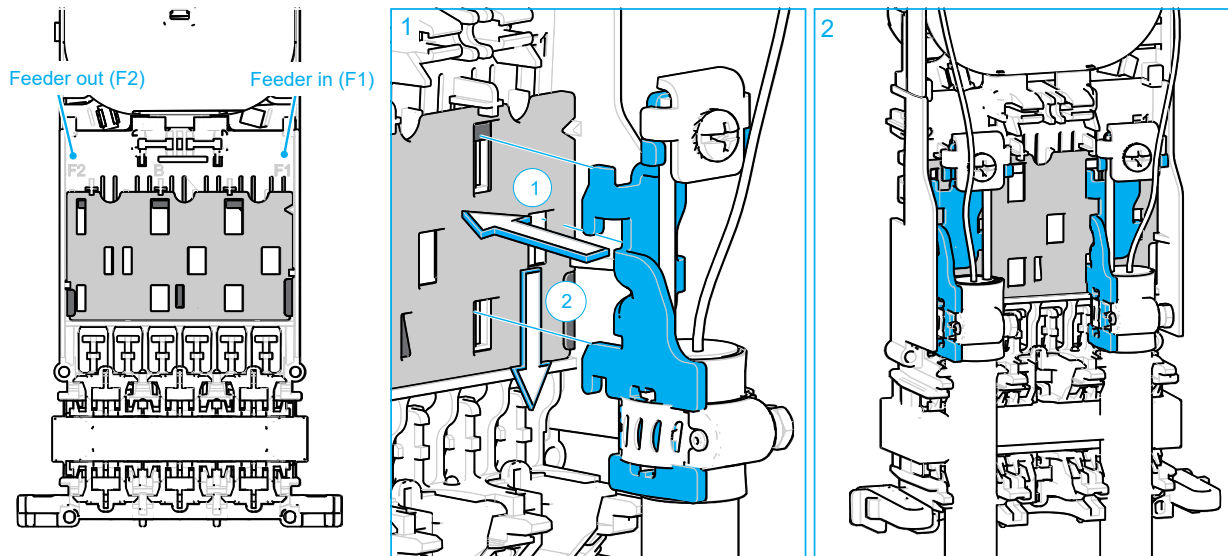
If the cable diameter is **more than 10 mm / 0.39 Inches**: remove the two port reducers of the respective port. In this case, continue with the steps below.

If the cable is not positioned freely, remove the two port reducers.



- 1 Lift up the two port reducers at both sides of the Octopus™ gel seal (no tools needed).
- 2 Remove the both parts of the respective port. (In total 4 parts for a looped feeder cable.)

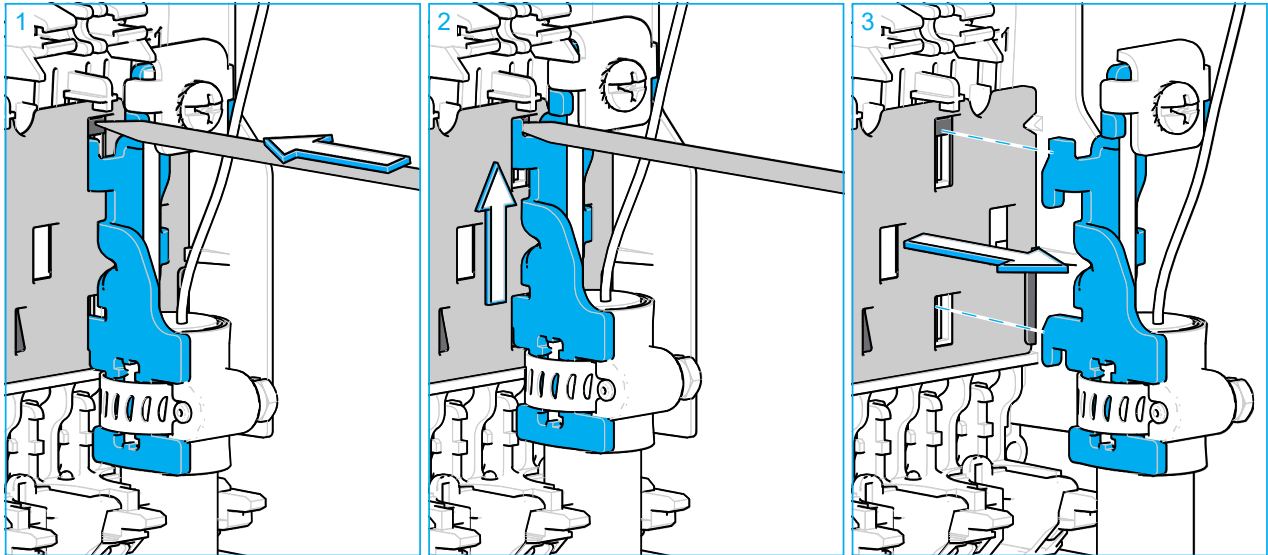
### 8.2.2 Install feeder cable



- 1 Install the feeder cable (with its cable retention) into the organizer. A looped feeder cable will typically be installed one end left (F2 - feeder out) and one end right (F1 - feeder in).
- 2 The cable retention bracket snaps into the interface plate of the organizer.



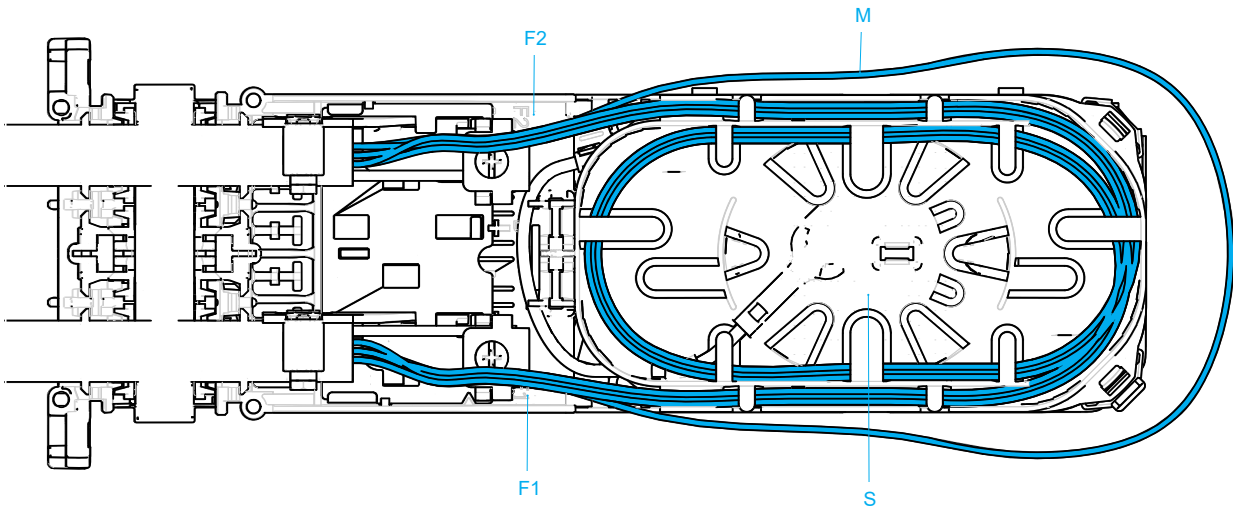
### 8.2.3 Remove feeder cable



- 1 To remove the feeder cable strain relief bracket, position the fiber guidance pen in the slot at the top left of the support and press to release the lock.
- 2 Release the bracket by sliding upwards while maintaining pressure on the lock.
- 3 Remove the bracket and the cable.


## 8.3 Route feeder fibers to rear splice tray


### 8.3.1 Route subunits to storage



- F1: Entry
- F2: Exit
- S: Storage area
- M: Subunit

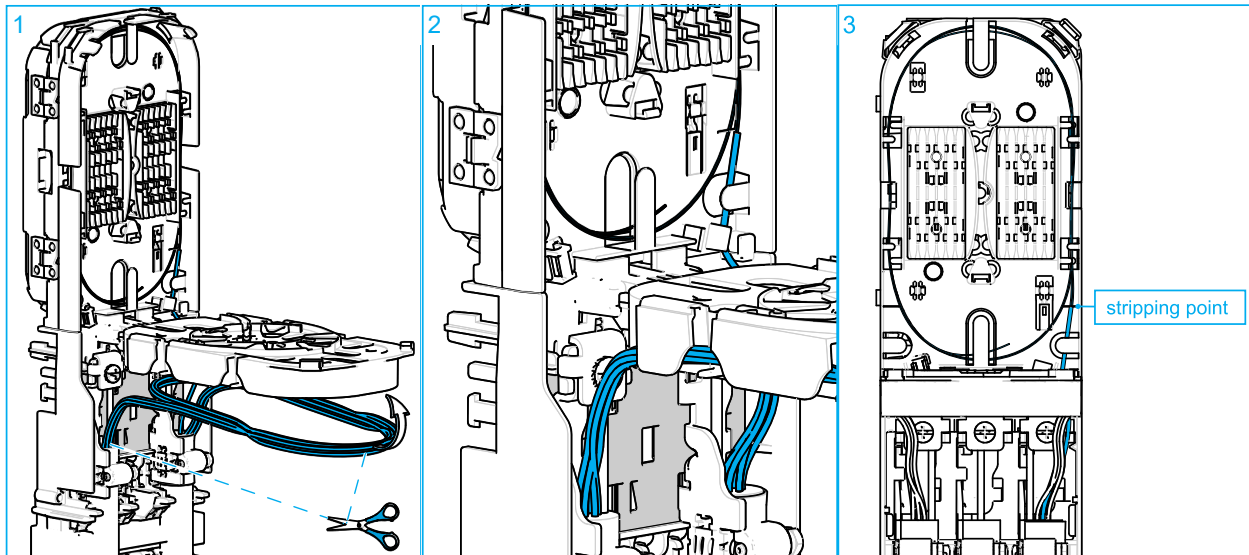
Select the subunits that will be used for splicing to the drops or branch cable. Keep them separate. Route the subunits that will not be used to the loop storage basket. Make sure all subunits are positioned properly under the lips.

 **Note:** The loop storage basket to store tubes has an inner width of **62 mm (2.44 Inches)**.

 **Note:** The maximum storage capacity depends on the construction and diameters of the tubes in the cable and the number of subunits required to store.





### 8.3.2 Directly to splice tray rear



- 1 Cut the subunits at the jacket end installed on side F2 (endcut) OR cut the subunit in the middle (midcut). The non-used end can be re-stored in the loop storage.
- 2 Bring the cut subunit to the splice tray (rear) and mark the stripping point on the sheath at the level of the line in the tray. The line indicates the stripping point, however if the stripping point is located in the transition zone which is textured, this is acceptable.
- 3 Strip the subunit to this mark and clean all fibers per standard practice.

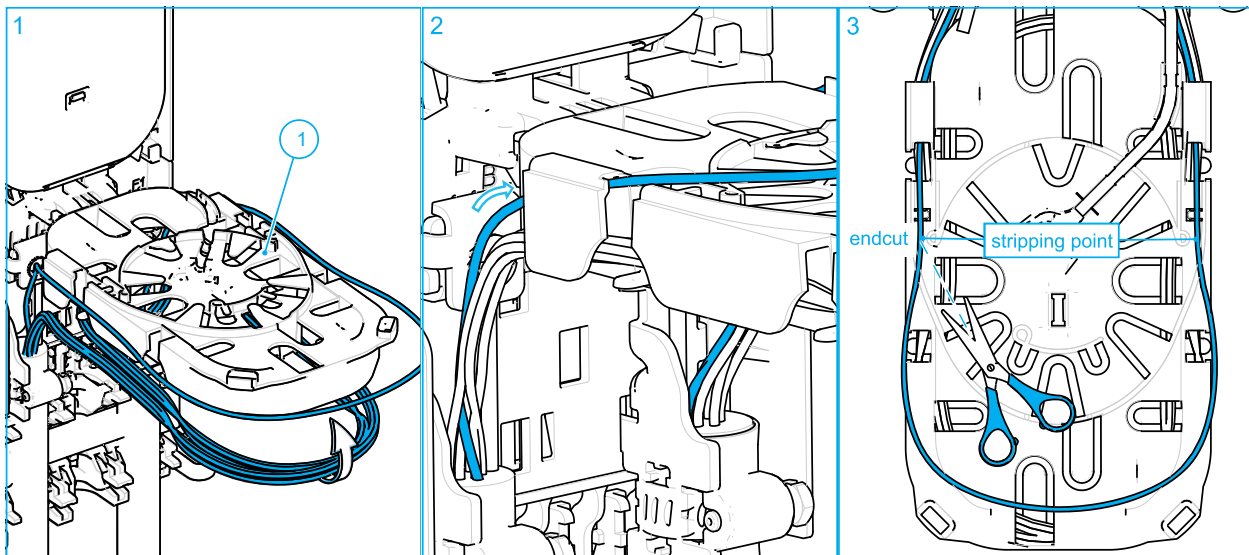
### 8.3.3 Via uncut fiber storage

 **Note:** Maximum 2 subunits can enter the uncut fiber storage.


 **Note:** The uncut storage basket to store uncut feeder fibers has an inner width of **60 mm (2.36 Inches)**.

The uncut fiber storage can be used with shaved subunits or with cut subunits.

#### 8.3.3.1 Shaved subunit

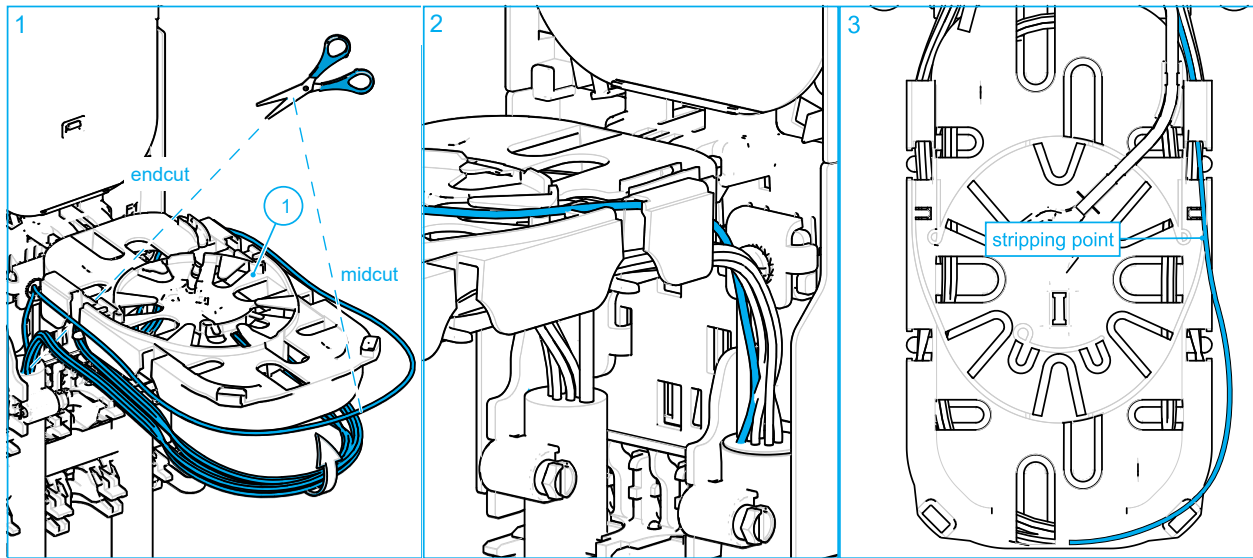


- 1 Bring the selected subunit to the rear of the loop storage, the uncut fiber storage.

 **Note:** It is important that the selected subunit is routed first and that the bundle of subunits is installed back on top of this routed subunit.

- Put the selected subunit on top of the uncut fiber storage basket and indicate the marks (stripping points) between which the subunit should be shaved. Shave and clean the subunit per standard practice. Cut the fiber to be spliced at the jacket end of the subunit, side F2.

### 8.3.3.2 Cut subunit

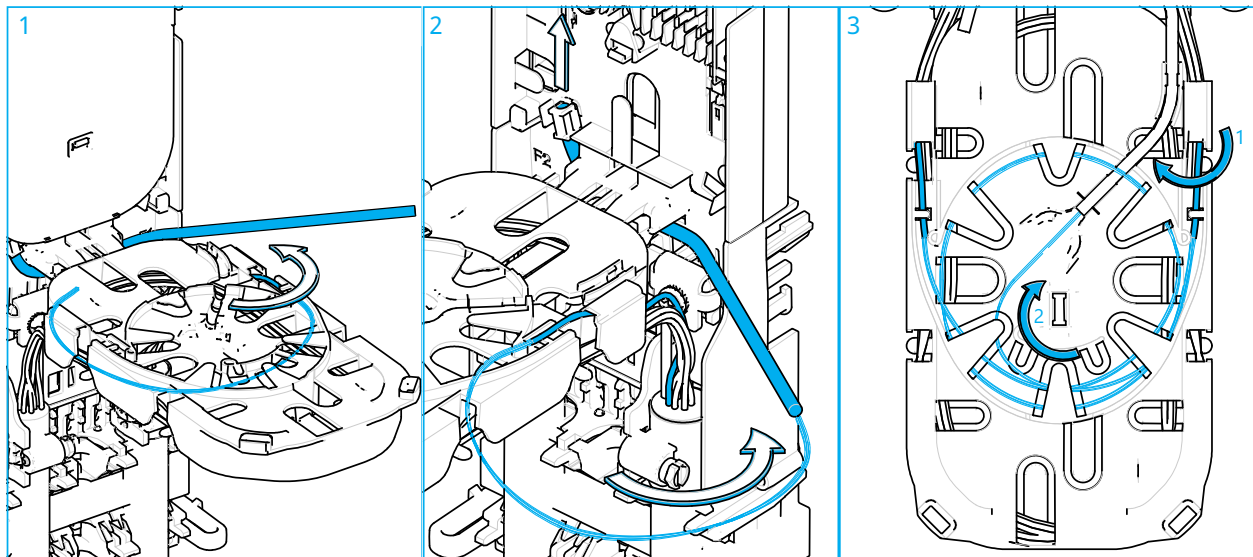


- Bring the selected subunit to the rear of the loop storage, the uncut fiber storage.

**Note:** It is important that the selected subunit is routed first and that the bundle of subunits is installed back on top of this routed subunit.

- Put the selected subunit on top of the uncut fiber storage basket and mark the stripping point. Strip the subunit to this mark and clean all fibers per standard practice.

### 8.3.3.3 Routing on uncut fiber storage to splice tray




- Detach the transportation tube.
- Route the fibers through the transportation tube.

**Note:** Make sure **fibers are grease free** before pushing the fibers through the transportation tube.

- Reinstall the transportation tube. Position the fibers with correct bend in the storage area. Store the uncut shaved fibers in loops in the uncut storage basket.

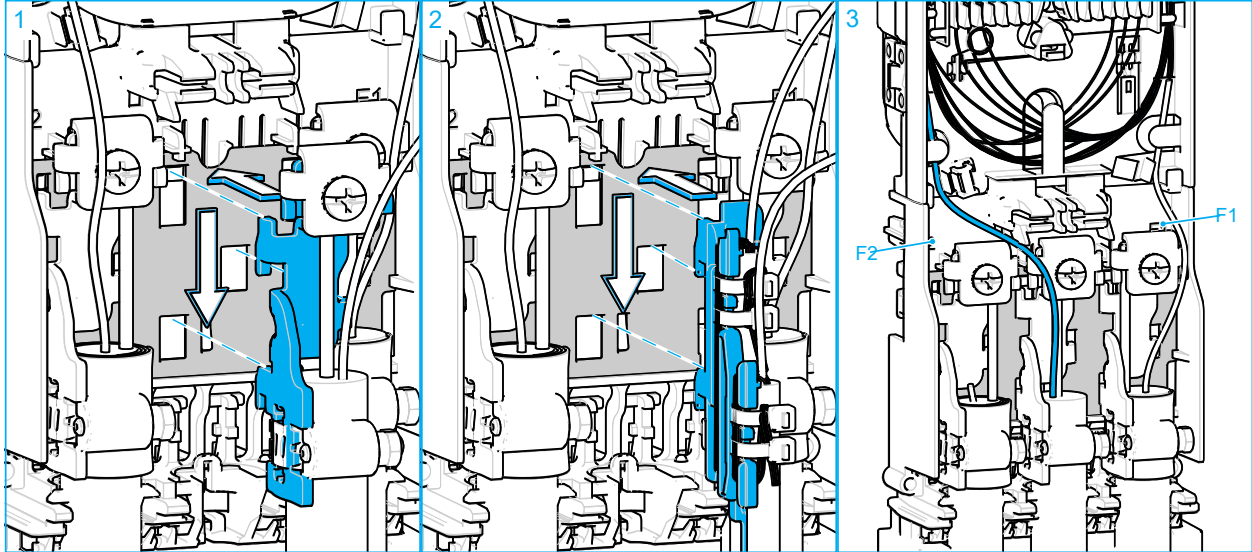
**Note:** Make sure all fibers are properly positioned under the lips and avoid bulging of the fiber.

 **Note:** The fiber guidance pen (situated on top of the loop storage basket) can be used to position all the fibers under the lips.

## 9 Branch cable

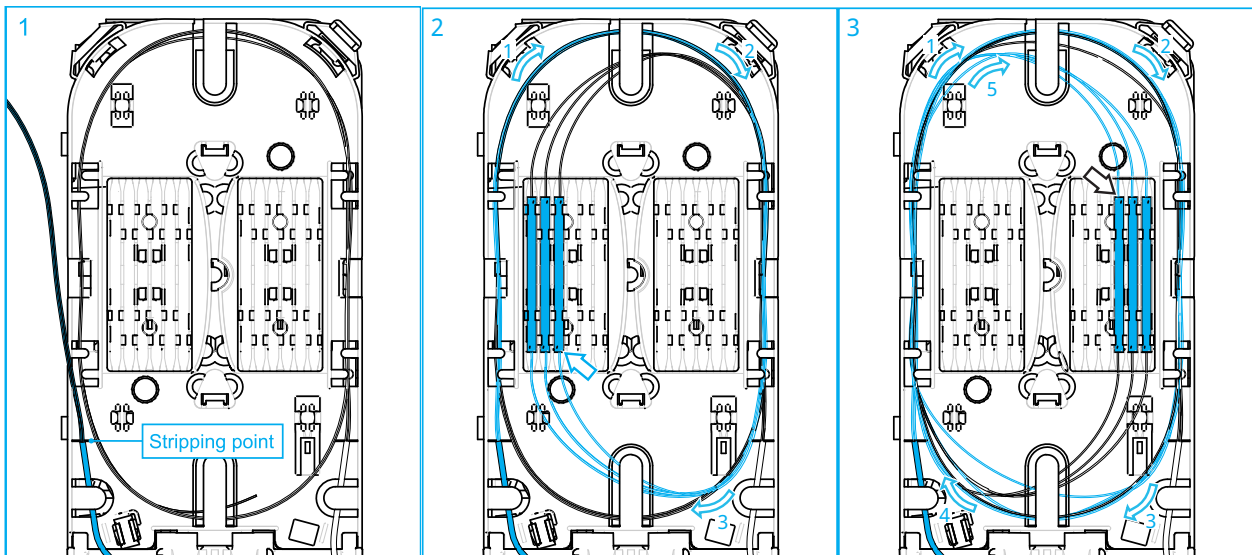
### 9.1 Install Branch cable

Remove the jacket of the branch cable over a distance of 130 +/-5 cm (51.2 +/-2 Inches). Continue to prepare the branch cable as explained in section Feeder cable preparation [on page 9](#)



- 1 Insert the branch cable in the middle position on the rear side. Verify in section Port reducers [on page 11](#) if the port reducers should be removed.
- 2 It is also possible to install 2 branch cables in the middle position. A dual cable retention kit should be acquired. For the installation of the dual cable, consult document TC-1467-IP: Cable retention: dual cable. Keep the two port reducers in place.
- 3 Route the subunits to the rear splice tray. The subunits can be routed left or right. It is advised to route the branch fibers to **the opposite side** than the feeder fibers enters the tray. Note that this is depending on how the feeder fiber is routed to the splice tray (via the uncut fiber storage or directly to the splice tray).

### 9.2 Splice branch cable (rear tray)



- 1 Bring the cut subunit of the branch cable to the splice tray (rear). Make sure the sub unit from the branch cable

enters the tray at **the opposite side** as where the feeder sub unit is located. Mark the stripping point on the sheath. The line in the tray indicates the stripping point, however if the stripping point is located in the transition zone which is textured, this is acceptable. Strip the subunit to this mark and clean all fibers per standard practice.

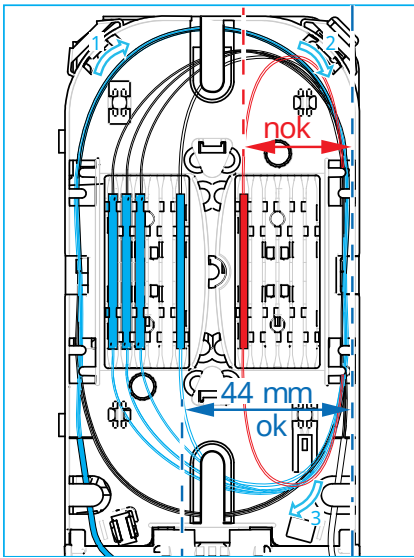
- 2 Before making the fusion splice, identify where to store the splice protector, into the left holder or the right holder.
  - a **If the feeder sub unit is positioned at the right side** (most common situation), the sub unit of the branch cable enters at the left side.

*In this case, the first 12 splice protectors are positioned in the left splice protector holder (figure 2). The next 12 splice protectors are positioned in the right splice protector holder. Note that the fibers of splice protector 13 to 24 requires more length to store the splice protector properly (a half turn more) (figure 3).*

**Note:** One groove in the splice protector holder can receive 2 splice protectors, stacked one upon another.

- b **If the feeder sub unit is positioned at the left side** (or the feeder fiber comes from the uncut fiber storage zone), the sub unit of the branch cable enters at the right side.

*In this case, the first 12 splice protectors are positioned in the right splice protector holder. The next 12 splice protectors are positioned in the left splice protector holder. Note that the fibers of splice protector 13 to 24 requires more length to store the splice protector properly (a half turn more).*



**Important:** Make sure to respect always the minimum bend radius. This is obtained by storing the splice protector holder on the correct side.

**Note:** Make sure all fibers are properly positioned under the lips and avoid bulging of the fiber.

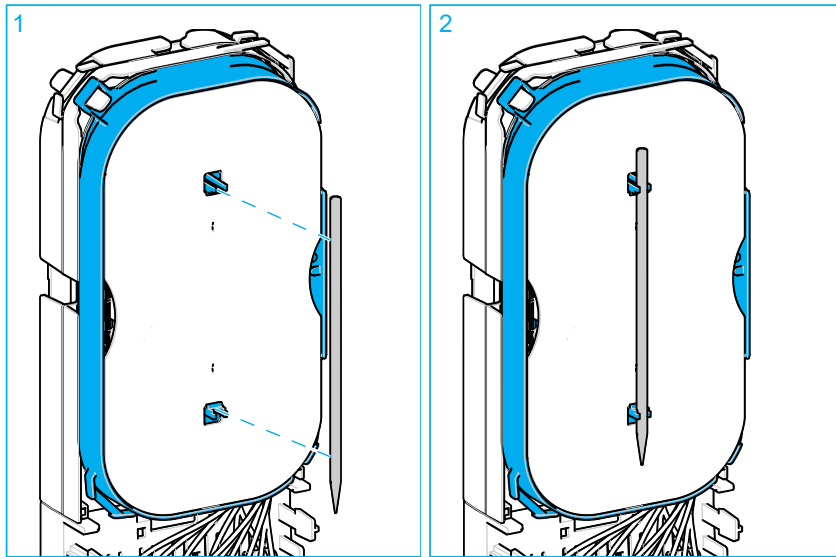
**Note:** The fiber guidance pen (situated on top of the loop storage basket) can be used to position all the fibers under the lips.

## 10 Re-install organizer

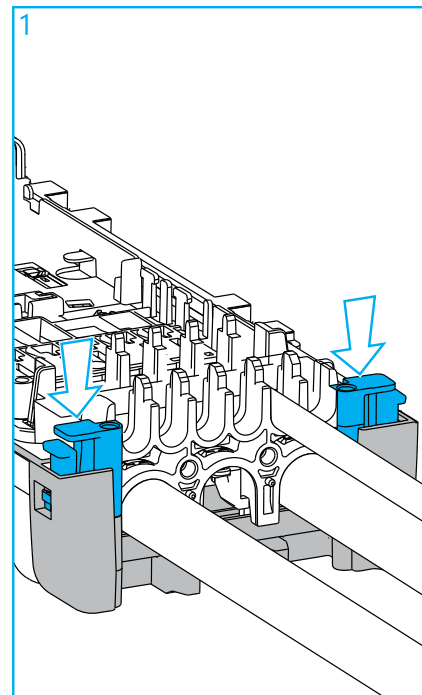
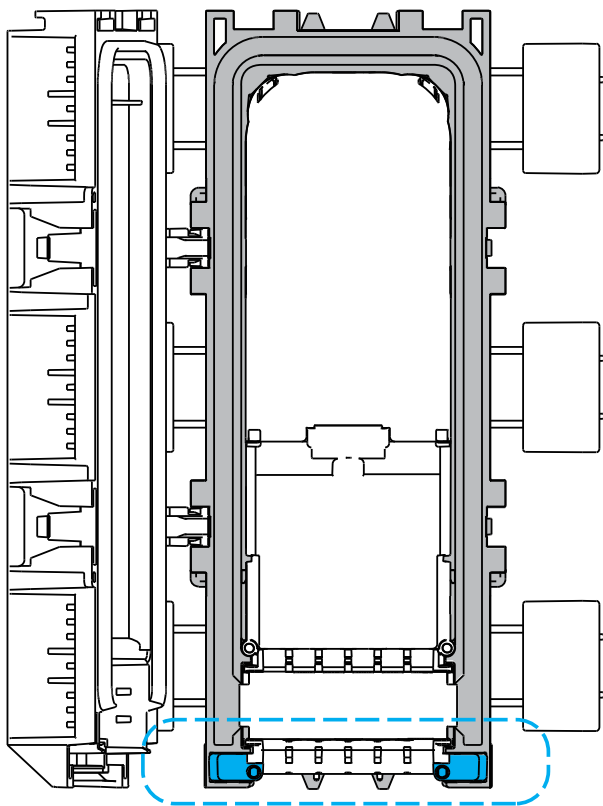
### 10.1 Fiber guidance pen placement

Store the fiber guidance pen back in its position (back side uncut storage zone).

**Note:** Note that in the splice application, the fiber guidance pen can also be installed at the front side. It is advised to store the fiber guidance pen in this position to facilitate further handling.



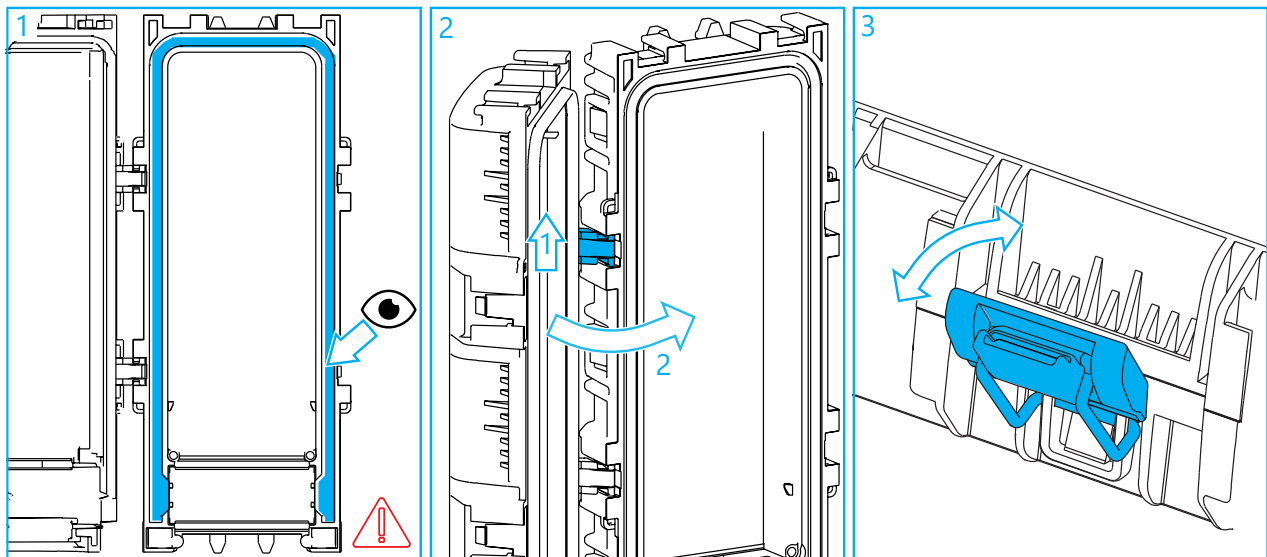
## 10.2 Re-install organizer




- 1 Position the organizer in the closure with the front side (drop side) facing on top. Push firmly on the snap features to lock the organizer in the closure. When a click sound is noticed, the organizer is properly locked.



## 11 Close the closure



- 1 Inspect the long seal. The seal should be clean and dust free. Verify the long seal is correctly seated within the closure cavity.
  - 2 Position the cover back onto the base. Figure 2 shows the cover installed with the hinges on the left side.
-  **Note:** First lift the cover slightly up to release the cover from its lock position, then rotate it towards the base.
- 3 Close the latches.

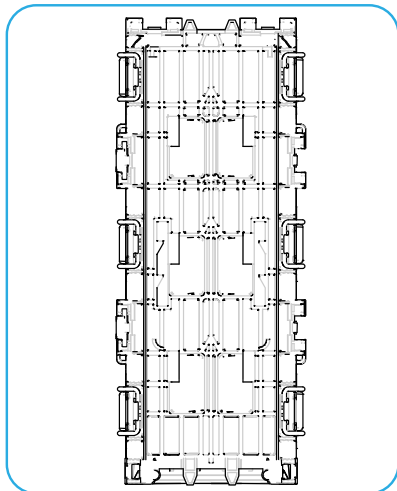
## 12 Mount the closure

### 12.1 Using the mounting bracket

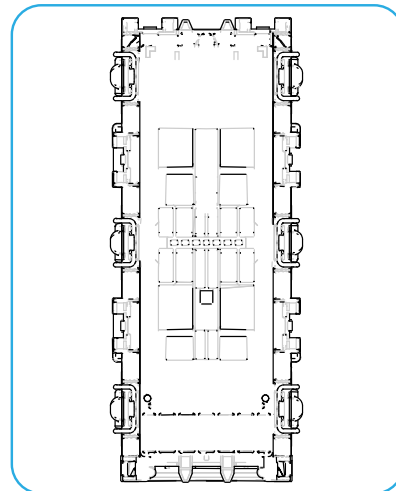
#### 12.1.1 Mounting bracket selection depending on the base

There are two mounting brackets available for the CC 100 closures. The selection of the correct mounting bracket is depending on the construction of the base, see figure below. Both mounting brackets are not interchangeable.

Mounting bracket Plug-Play

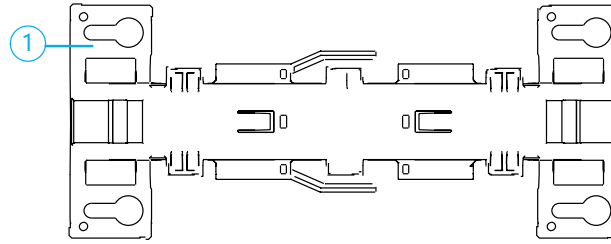


Universal Mounting Bracket Small (UMB S)



## 12.1.2 Mounting bracket Plug-Play

### 12.1.2.1 Kit contents

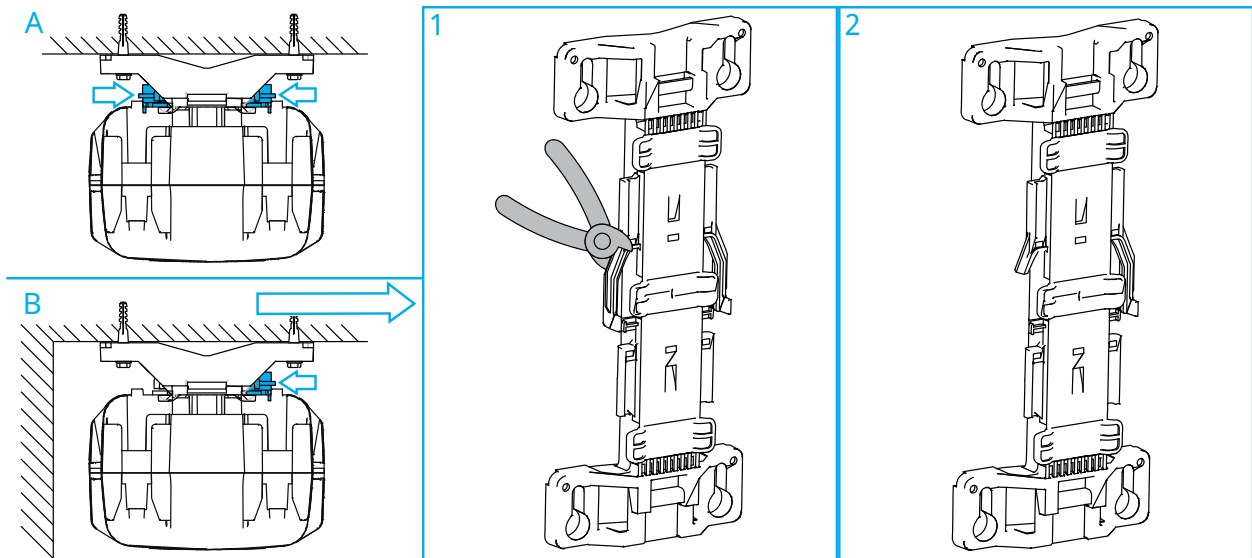


| N° | Description      | Qty |
|----|------------------|-----|
| 1  | Mounting bracket | 1   |

**Note:** Mounting hardware (such as screws, plugs, washers) should be selected according to intended mounting surface (not included in the kit).

### 12.1.2.2 Position the mounting bracket

The mounting bracket should be positioned in such a way that both locking tabs are accessible (figure A) when the closure is mounted on the mounting bracket. If it is not possible to position the mounting bracket with free access to both locking tabs (figure B), remove the locking tab that will be not accessible before mounting the mounting bracket.

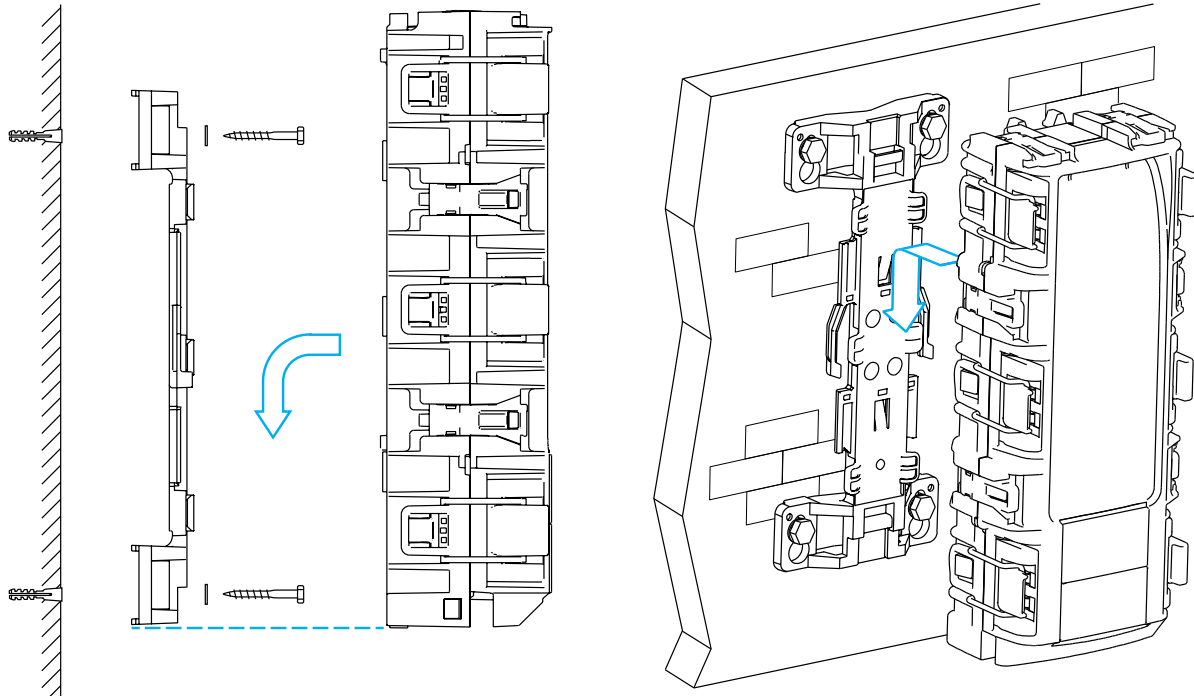


- 1 Position the mounting bracket on its mounting location. Ensure the correct orientation of the mounting bracket. Select the locking tab that will not be accessible after mounting the closure. Cut away the locking tab with a side cutter.
- 2 Mounting bracket ready to install as described in section Wall mounting [on page 20](#).


**Note:** Make sure the cables allow the closure to make an upward movement to detach the closure from the mounting bracket (see section Detach closure from the mounting bracket [on page 21](#))

### 12.1.2.3

### Wall mounting



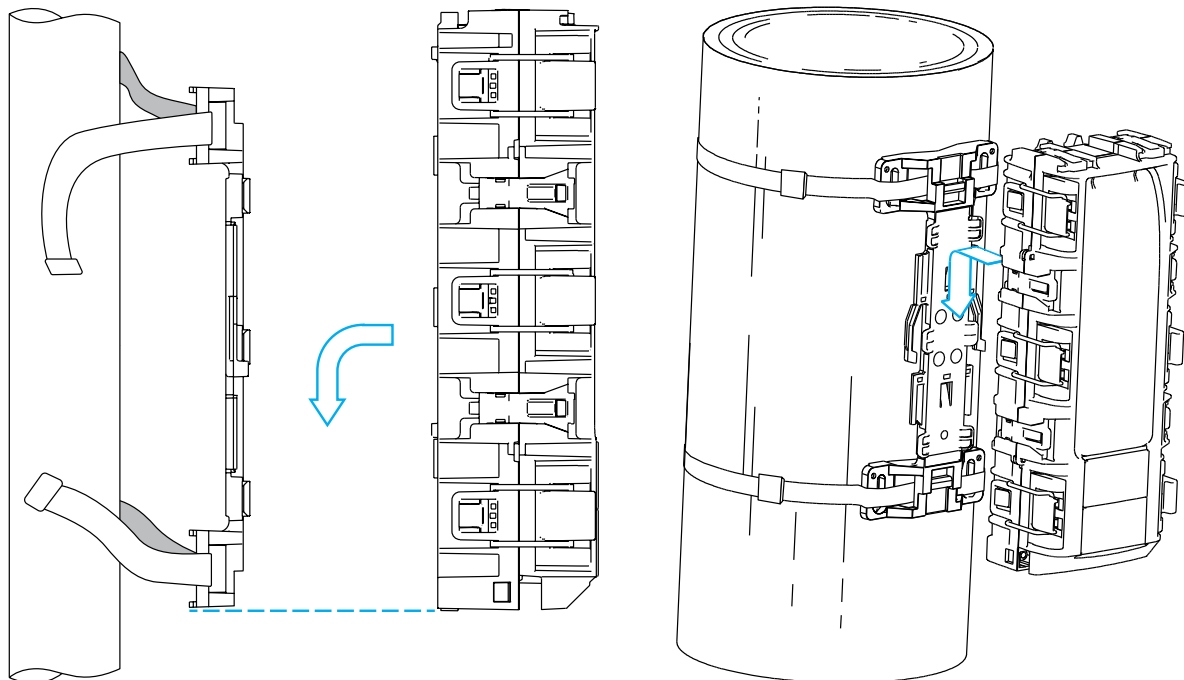
1 Using the mounting bracket as a template, mark the mounting screw locations on the selected surface for the installation. Install wall plugs first, then position the mounting bracket against the surface. Continue with the washers and the screws to secure the mounting bracket onto the surface.

 **Note:** Make sure the mounting bracket has the correct orientation (small holes facing upwards).

2 Secure the closure on the mounting bracket. Move the closure to the mounting bracket, bottom surface of the closure on the same height as the bottom surface of the bracket. Then slide the closure downwards.

### 12.1.2.4

### Pole mounting

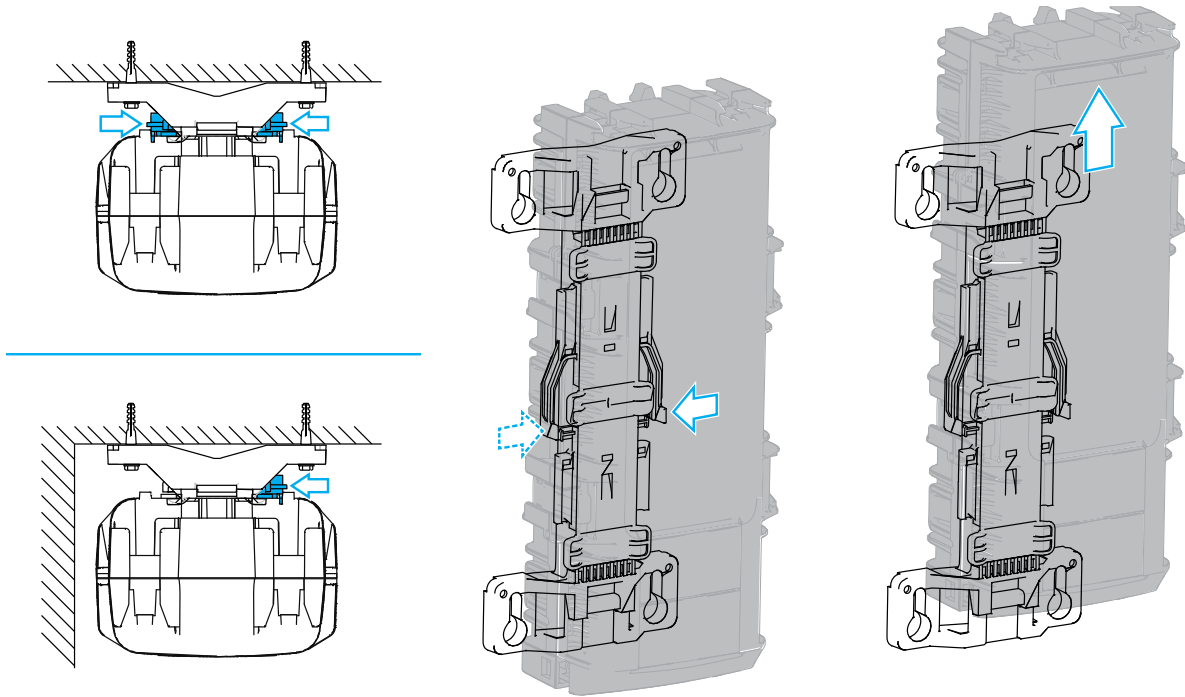


1 Insert a (metal) strap through the openings on the mounting bracket as indicated. Attach the mounting bracket to a utility pole, small holes facing upwards.



- Secure the closure on the mounting bracket. Move the closure to the mounting bracket, bottom surface of the closure on the same height as the bottom surface of the bracket. Then slide the closure downwards.

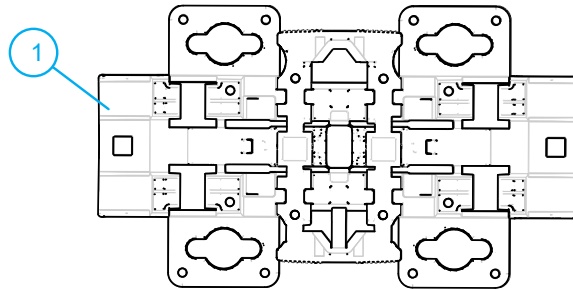
### 12.1.2.5 Detach closure from the mounting bracket



- Push the locking tab(s) to the inside. Keep the locking tab(s) pressed in while moving the closure upwards.

### 12.1.3 Universal Mounting Bracket Small (UMB S)

#### 12.1.3.1 Kit contents mobra

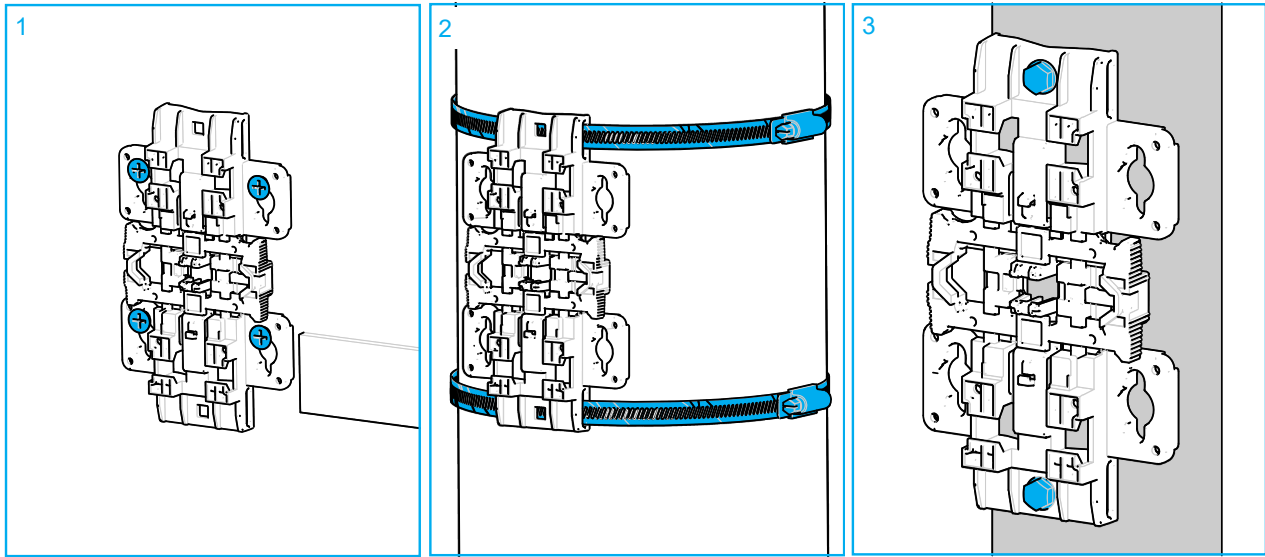


| N° | Description                | Qty |
|----|----------------------------|-----|
| 1  | Universal Mounting Bracket | 1   |


**Note:** Mounting hardware (such as screws, plugs, washers) should be selected according to intended mounting surface (not included in the kit).

### 12.1.3.2 Mount the UMB S

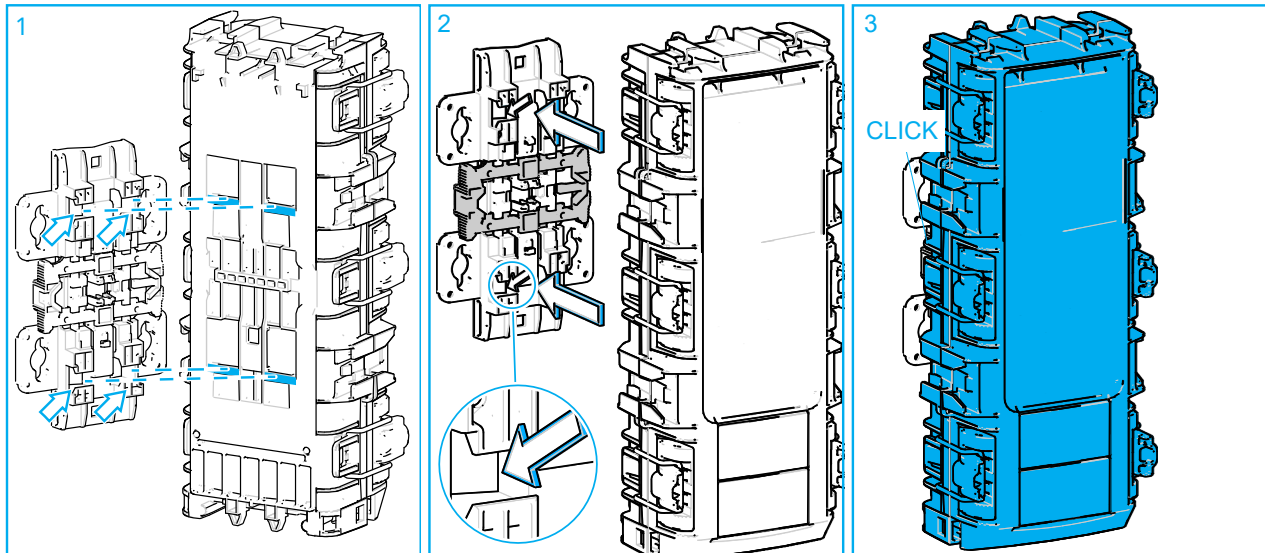
Depending on the use, there are several options for mounting the UMB.




- 1 Mounting with 4 screws.
- 2 Mounting with straps.
- 3 Mounting with 2 screws.

 **Note:** Mounting hardware is not a part of the kit.

### 12.1.3.3 Install the closure on the UMB S

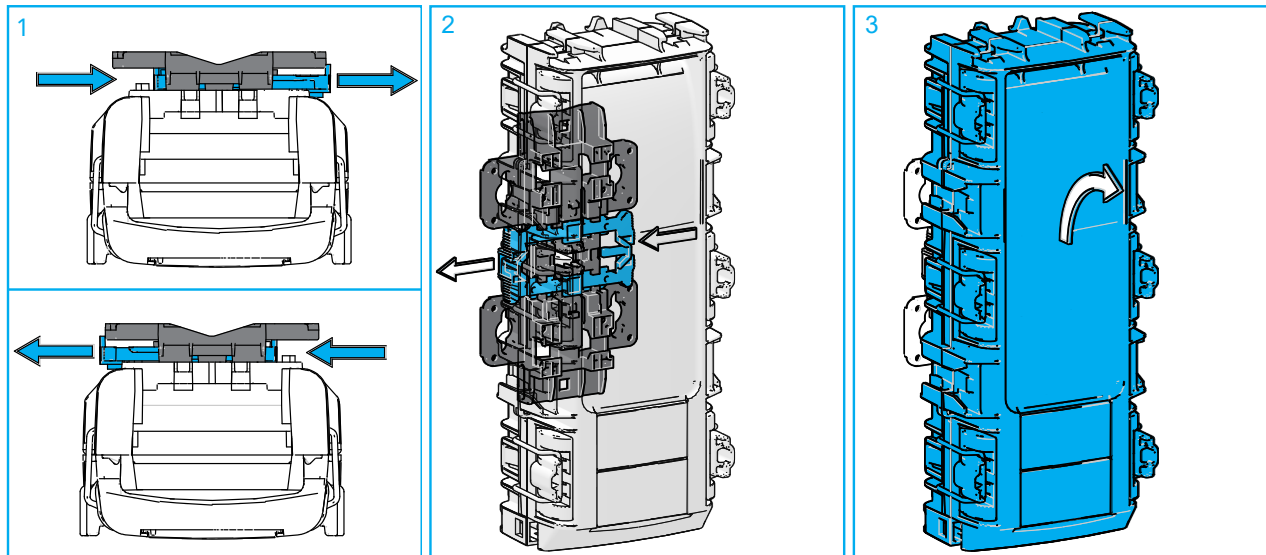


- 1 Secure the closure onto the UMB S with the features highlighted.


 **Note:** Make sure the handle is positioned centered in the bracket before installing the closure onto the UMB.

- 2 Move the closure to the mounting bracket. Then slide the closure downwards.
- 3 When a click sound is noticed, the closure is properly locked.

### 12.1.3.4 Detach the closure from the UMB S

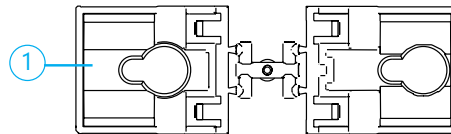


- 1 The handle can be pushed left or right to unlock the closure.
- 2 Push the handle to one side.
- 3 Lift and remove the closure.


 **Note:** Verify that the handle is centered again.

## 12.2 Using the mounting clips

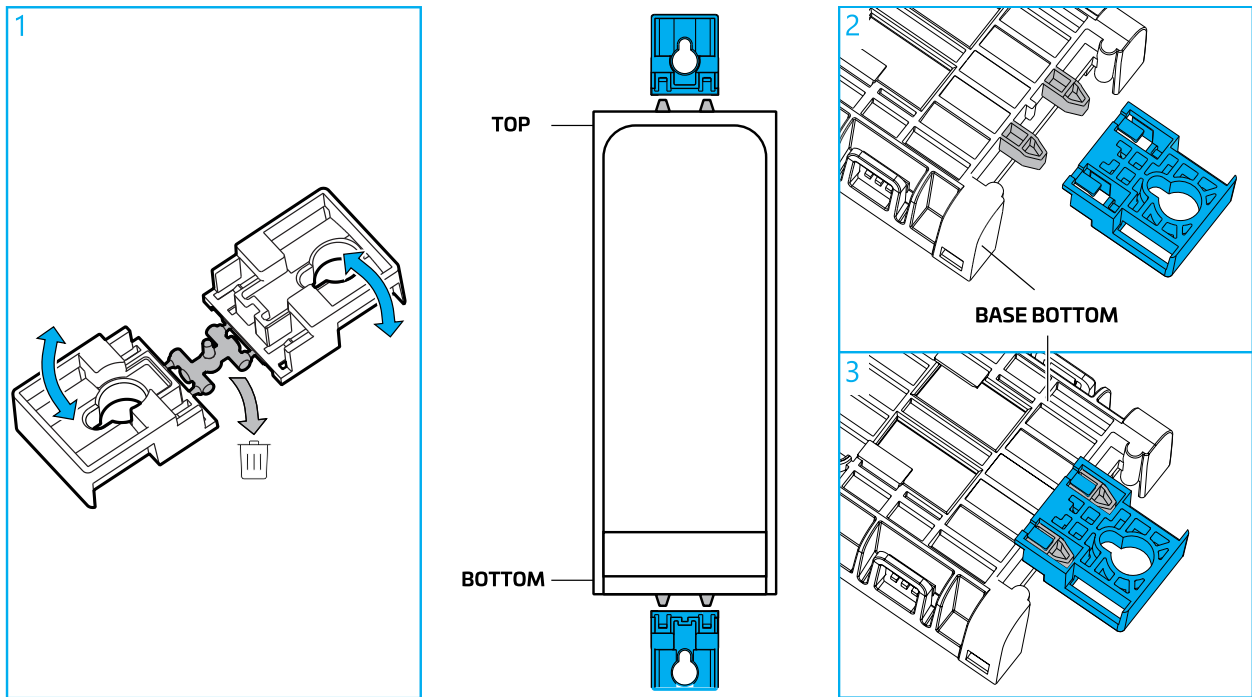
### 12.2.1 Kit contents



| N° | Description    | Qty |
|----|----------------|-----|
| 1  | Mounting clips | 1   |

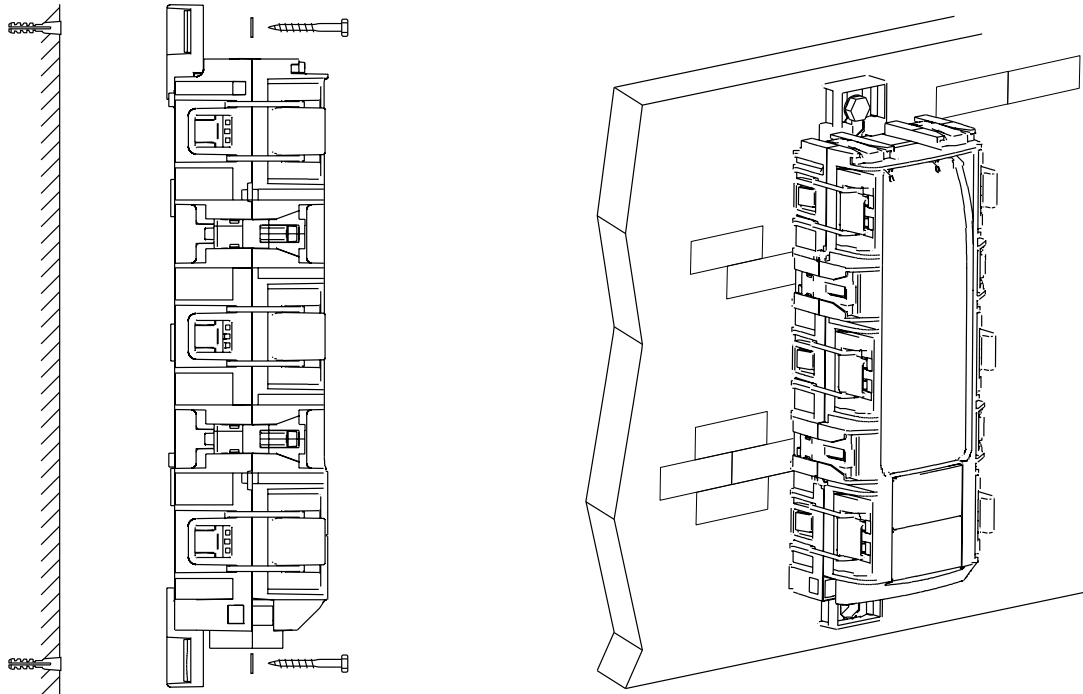
 **Note:** Mounting hardware (such as screws, plugs, washers) should be selected according to intended mounting surface (not included in the kit).

## 12.2.2 Mounting clips installation



- 1 Break off the two mounting clips.
- 2 Note: the two clips are not identical. Make sure to mount the clips in the correct position. Small hole facing upwards.
- 3 Mount the clips on the base at both sides (top and bottom).

## 12.2.3 Wall mounting



- 1 Using the mounting clips as a template, mark the mounting screw locations on the selected surface for the installation.
- 2 Install wall plugs first, then position the closure with the mounting tabs against the surface. Continue with the washers and the screws to secure the closure onto the surface.

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