

## NOVUX™ Fiber Optic System CC 100 High Density Application

### About this manual

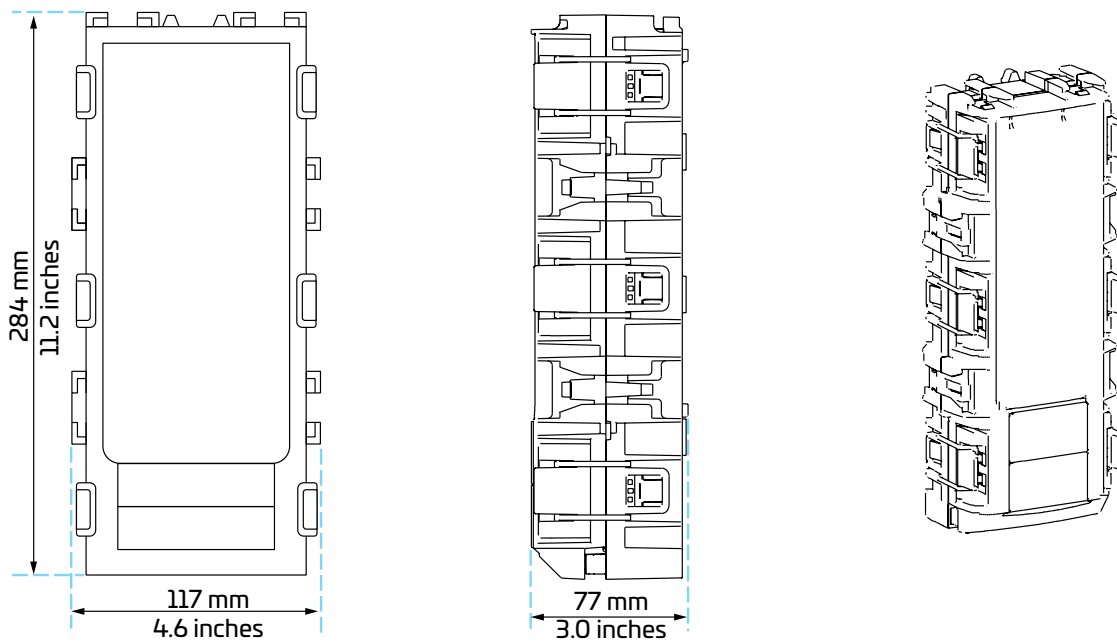
This manual describes the installation steps of the High Density 72f Splice application of the Compact Closure 100 series. The closure can hold maximum 6 trays of each 12 splices.

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 includes: closure preparation, organizer preparation, feeder cable preparation and installation, branch cable preparation and installation, routing to and on the trays, closing the closure and mounting the closure.

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

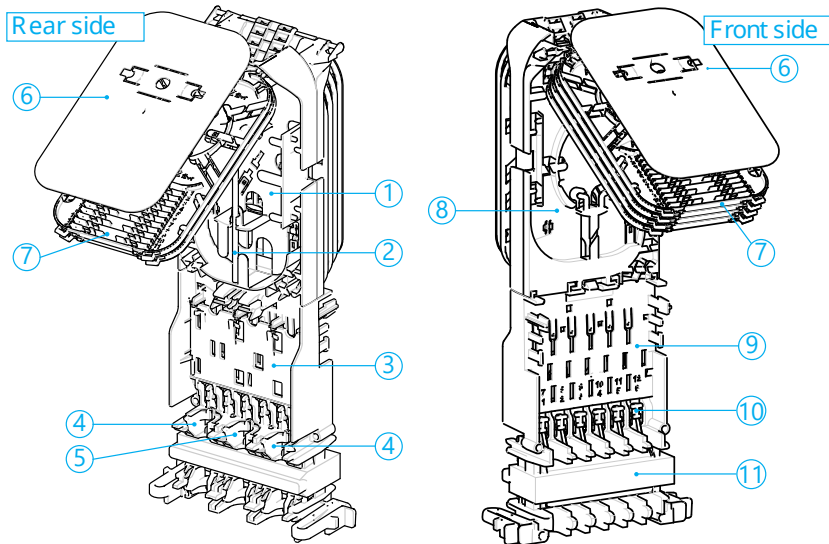
## Overview organizer


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

The splice trays can hold up to 12 splices (Smouv 45 mm) and 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 subunits 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 amount of trays can vary depending on the configuration ordered.

N°	Description	N°	Description
1	Loop storage basket	7	Single circuit module (SCM) trays for G.657.A2 fibers
2	Fiber guidance pen	8	Pocket zone
3	Cable strain relief holders/ interface plate	9	Cable strain relief holders/ interface plate
4	Feeder cable position	10	Drop cable retention T-shapes
5	Branch cable position	11	Octopus™ gel seal
6	Cover SCM tray		

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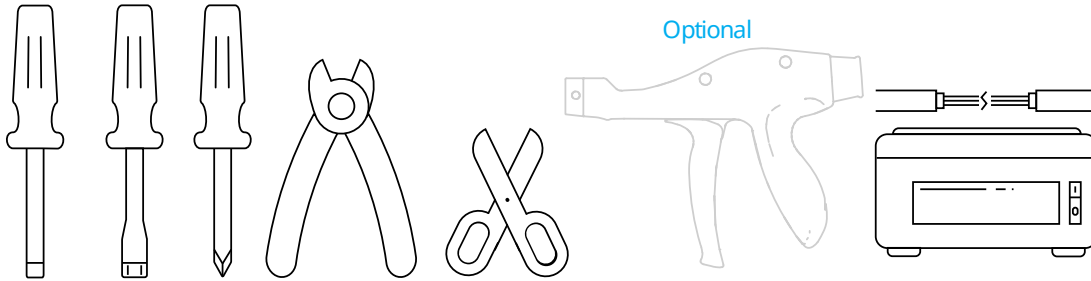
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# 1 Abbreviations

CC: Compact Closure

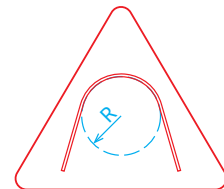
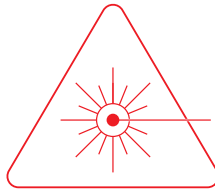
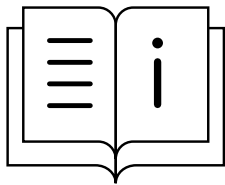
UMB: Universal Mounting Bracket

# 2 Tools



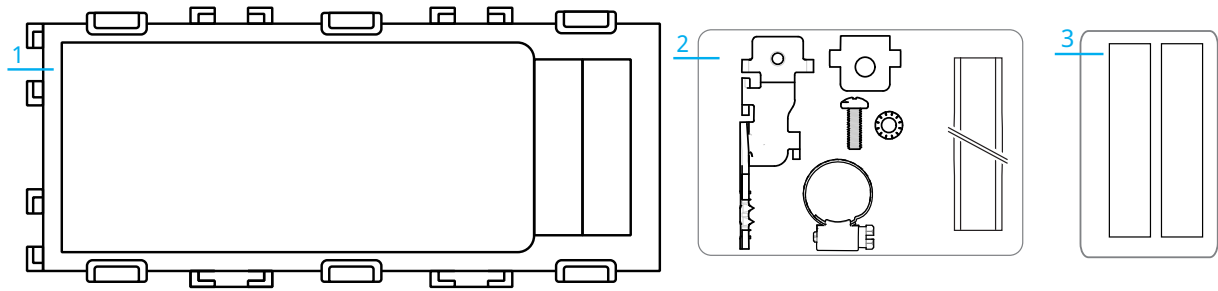
- Flat screw driver
- Socket wrench
- Phillips screw driver
- Small side cutter
- Scissors
- Cable Tie Gun
- Fiber splice equipment and fiber cleaning tools

# 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

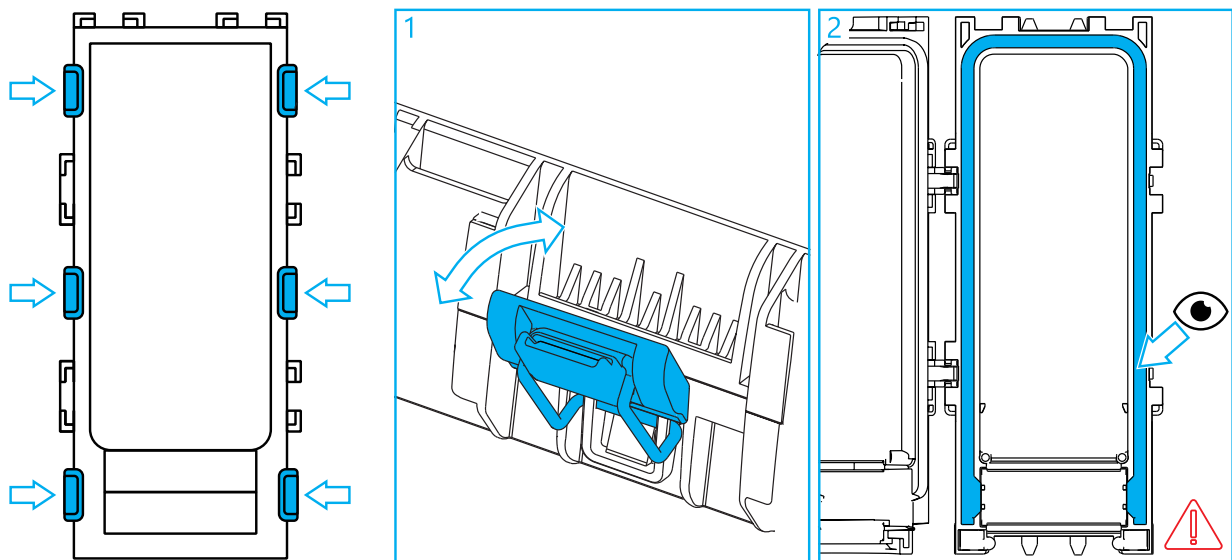


N°	Description
1	Closure with organizer
2	Feeder and branch cable strain relief kit (1 bracket, 1 metal plate, 1 washer, 1 bolt, 1 hose clamp, 1 strip of silicone tape 2,5 cm / 1 Inch width)
3	Octopus™ gel blocks (in some configurations, the gel blocks may be pre-mounted)

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

## 5 Closure preparation

### 5.1 Open the latches

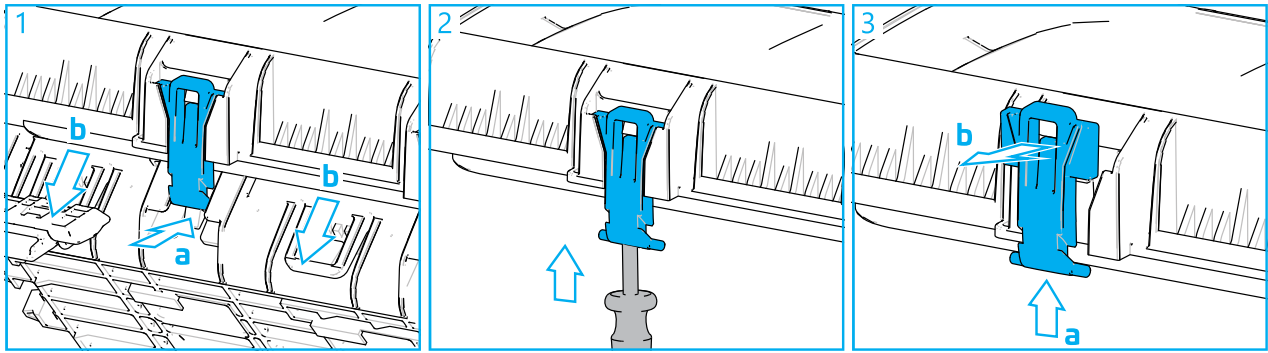


- 1 To open the closure, open the latches.
- 2 Rotate the cover. Verify the long seal remains correctly seated within the closure cavity.

### 5.2 Install the hinges in another position

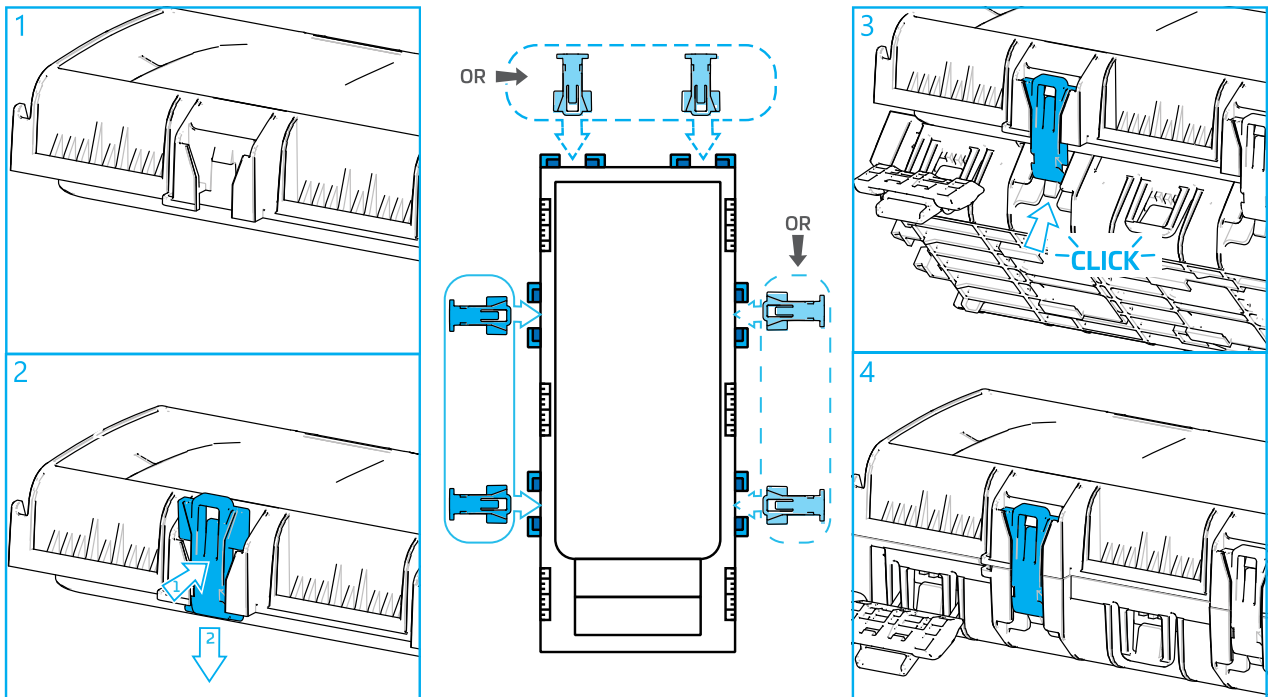
The hinges are pre-installed on the left side. However it is possible to install them in another position. First the hinges should be removed.

## 5.2.1 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.

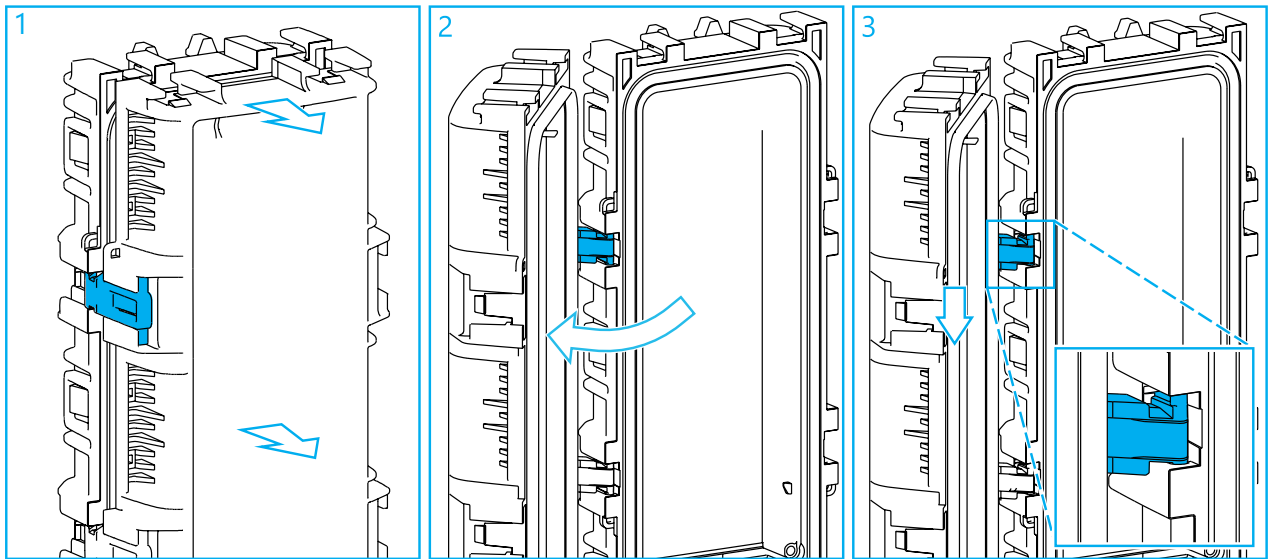
## 5.2.2 Re-install the hinges



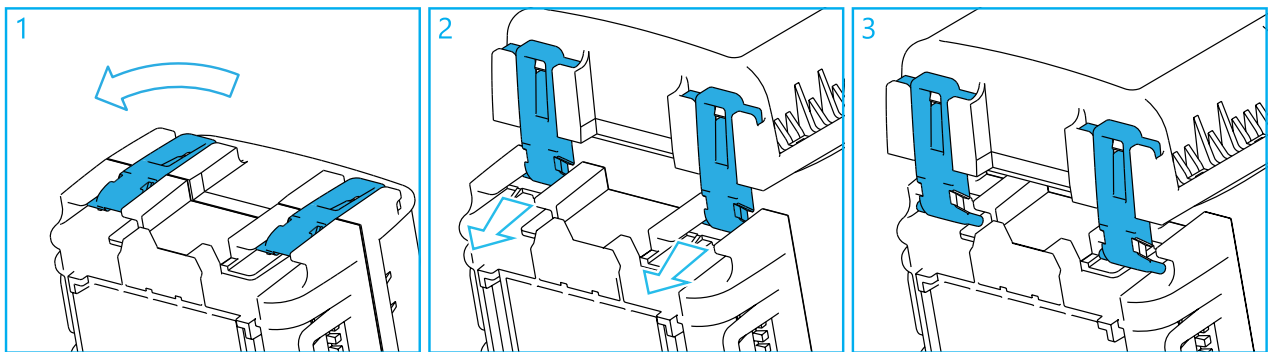
The hinges can be installed on the left, right or at the top of the cover.


- 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.

### 5.3 Access the inside of the closure

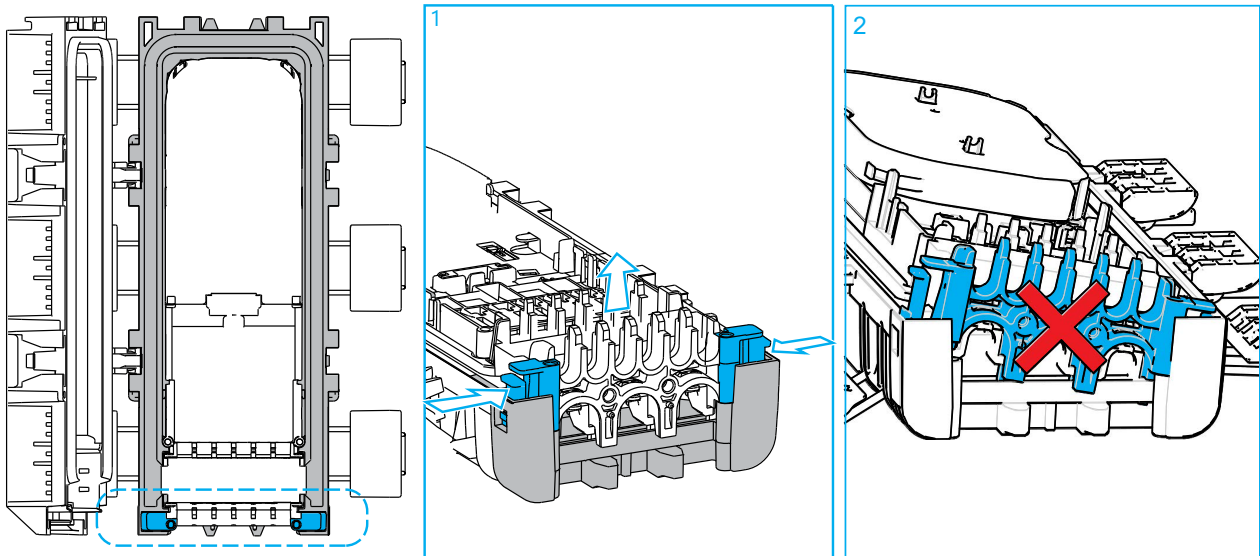


- 1 Open the closure, lift the cover up.
- 2 Hinge the cover open to the side of the installed hinge.
- 3 Secure the cover in open position: the cover with hinges will move downwards and will lock into the base.



 **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

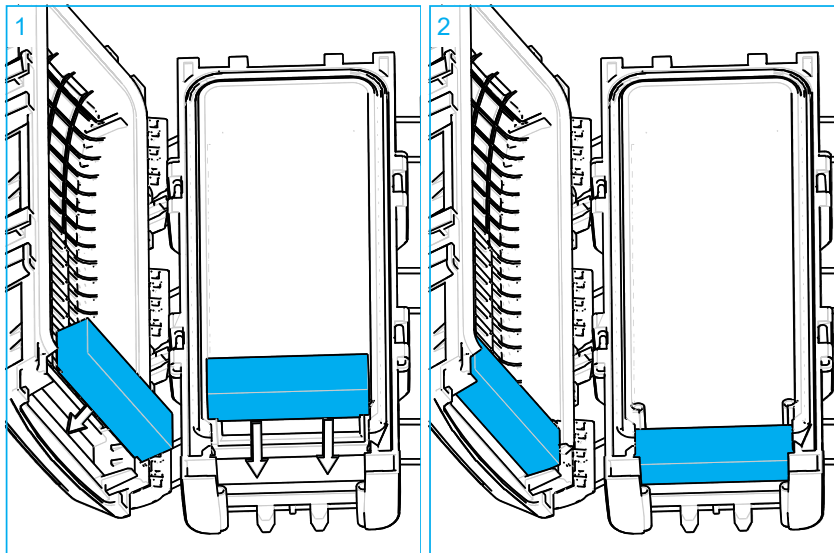


- 1 Push on the two tabs situated under the Octopus™ gel seal to release the organizer.
- 2 To remove the organizer, it is important to lift both sides simultaneously to avoid damaging it.

## 7 Install the Octopus™ gel blocks

 **Note:** In some configurations the Octopus gel blocks may be pre-mounted.

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.



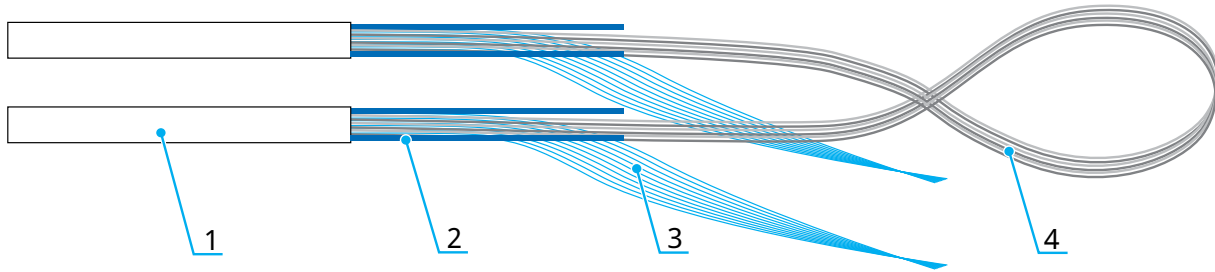
## 8 Feeder cable

### 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: NVX-CR-TI-SM-NN (Cable retention: Aramid), NVX-CR-MC-RD/FT-NN (Cable retention: Jacket (Mclip)) or NVX-CR-SA-SM-NN (Cable retention: Rigid strength member).

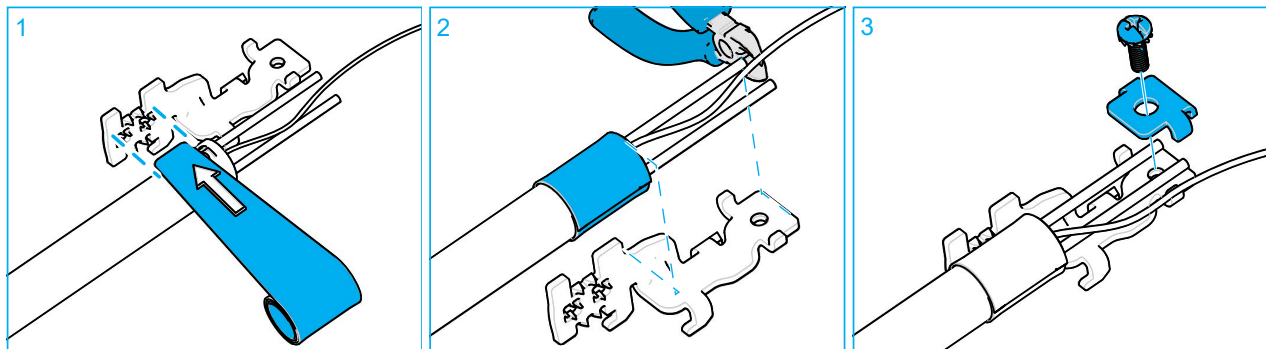
**Important:** The midspan opening of the cable should be in all cases as explained in table below.

#### 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

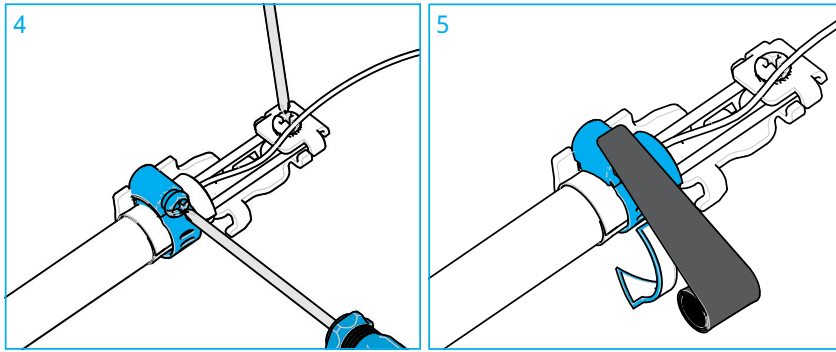


1 If the diameter is smaller than 9 mm (0.35 Inches) or if the jacket is a thin jacket, add 5 wraps of self amalgamating silicon tape. Stretch the tape between 50% and 300% while wrapping the tape around the cable. Make sure the tape is wrapped where the hose clamp will be positioned.

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

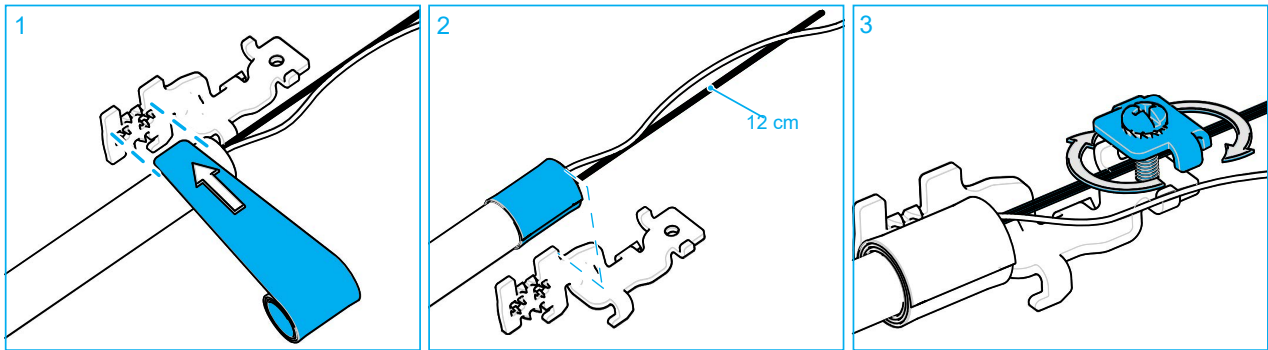
2 Verify the length of the strength member(s) as indicated or measure 4 +/-0.5 cm (1.6 +/- 0.2 Inches) and cut to length. Place the cable on the bracket with the jacket end aligned with the bracket edge as shown in figure 2 and the strength members aligned with the top of the bracket.

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.

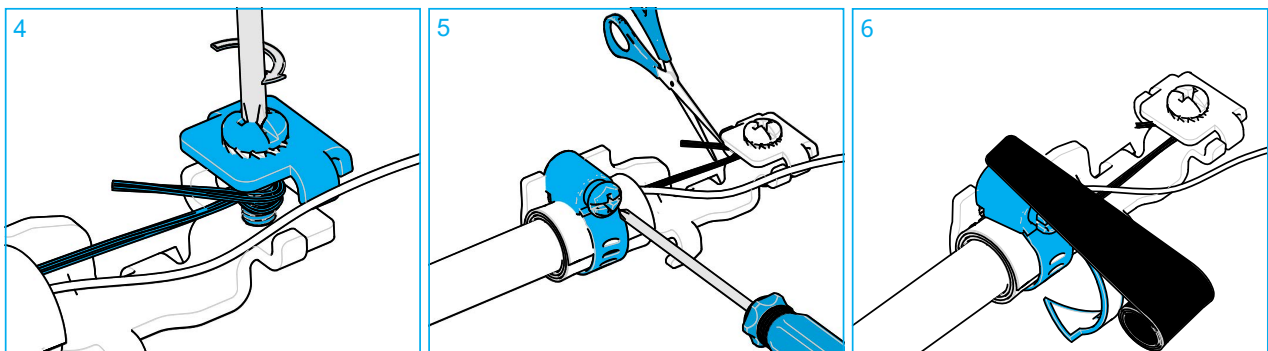
### 8.1.3 Feeder cable aramid yarn strain relief



- 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

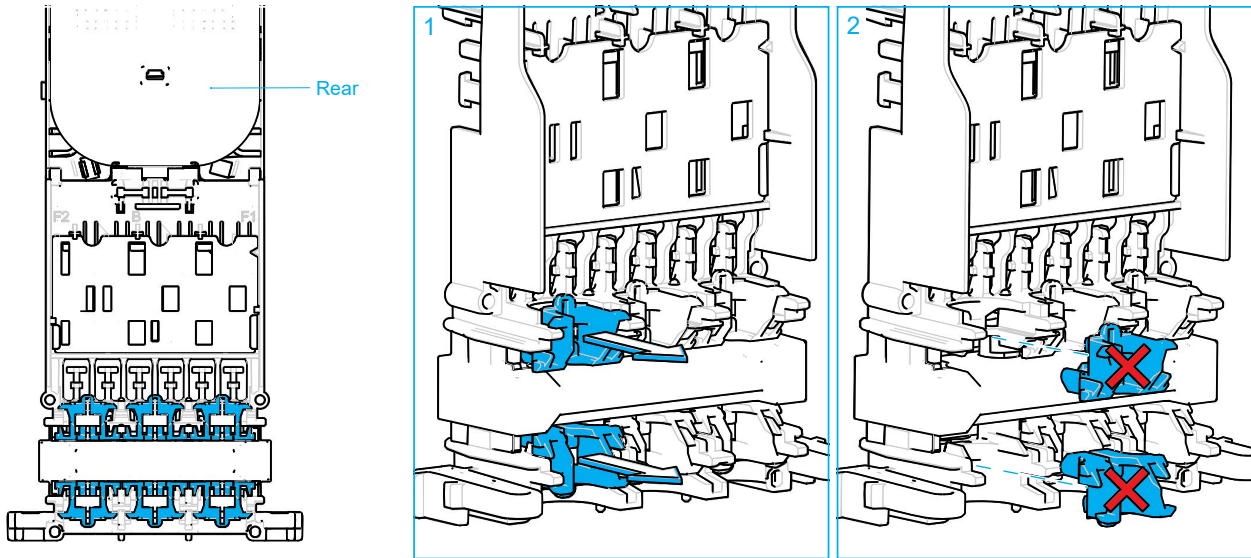
### 8.2.1 Port reducers

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.

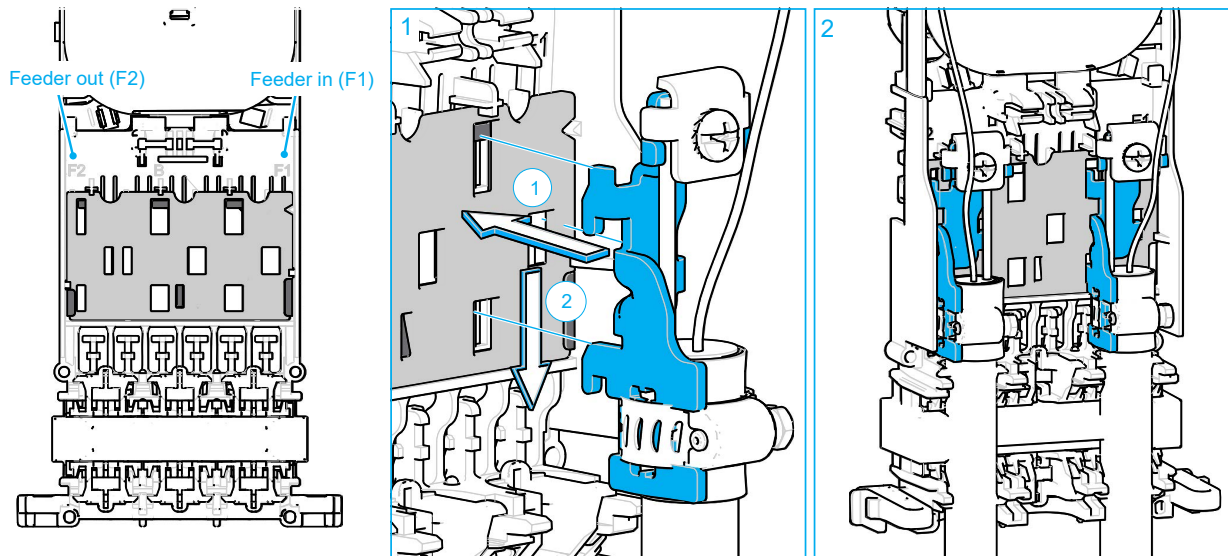
If the cable diameter is **more than 10 mm / 0.39 Inches**: remove the two port reducers of the respective port. In this case, continue with the steps below.

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



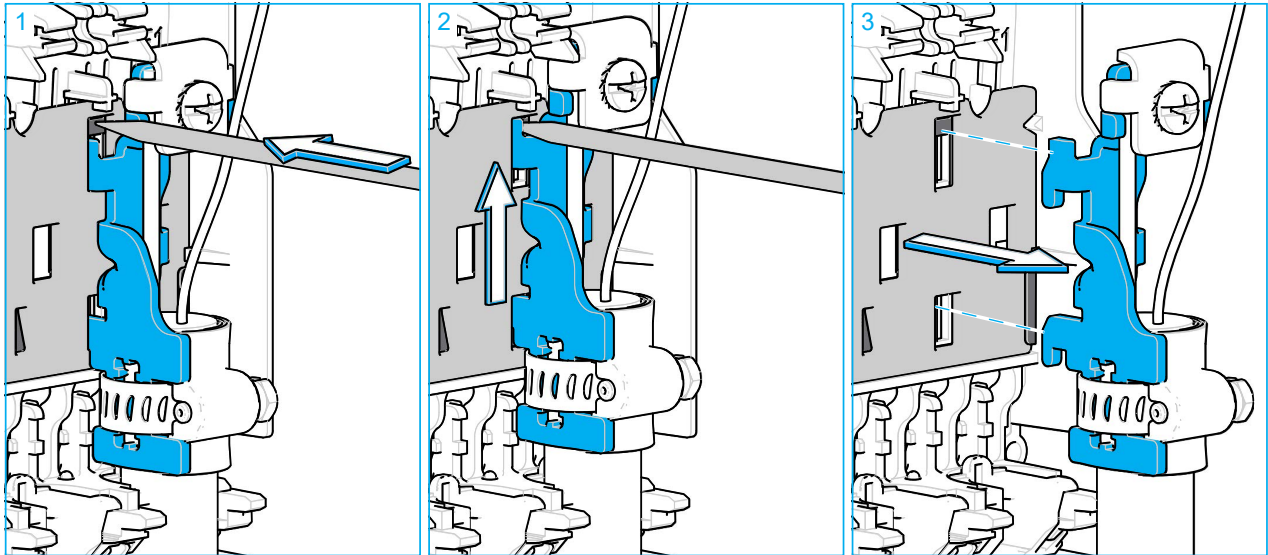
- 1 Lift up the two port reducers at both sides of the Octopus™ gel seal (no tools needed).
- 2 Remove the both parts of the respective port. (In total 4 parts for a looped feeder cable.)

### 8.2.2 Install feeder cable



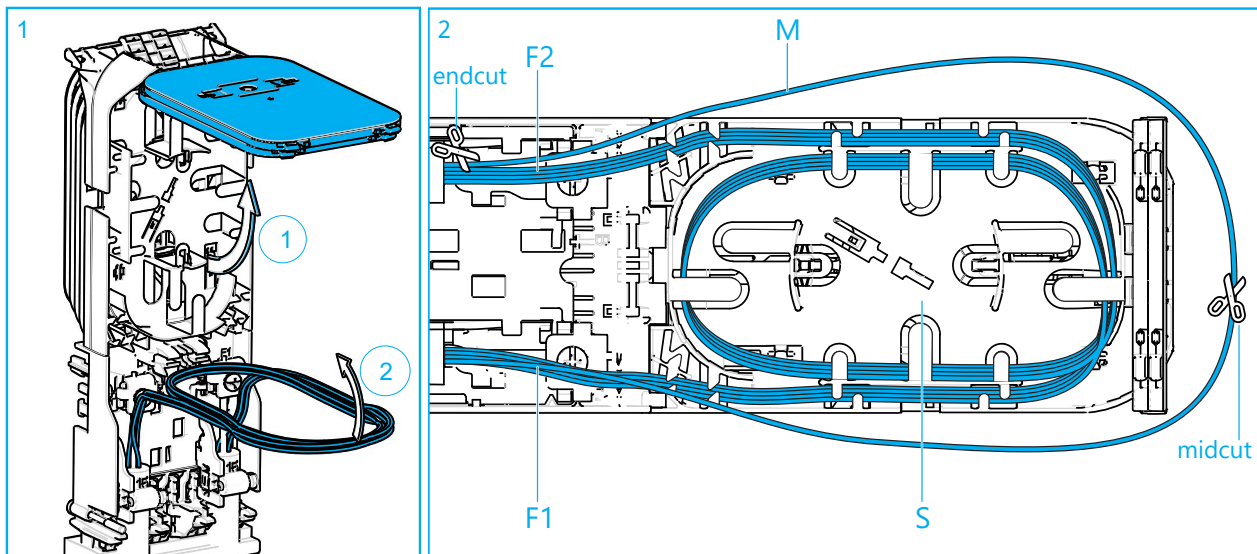
- 1 Install the feeder cable (with its cable retention) into the organizer. A looped feeder cable will typically be installed one end left (F2 - feeder out) and one end right (F1 - feeder in).
- 2 The cable retention bracket snaps into the interface plate of the organizer.

### 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 Loop storage



- 1 Hinge open the 2 trays at the rear side. The loop storage basket is situated under these trays.
- 2 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.

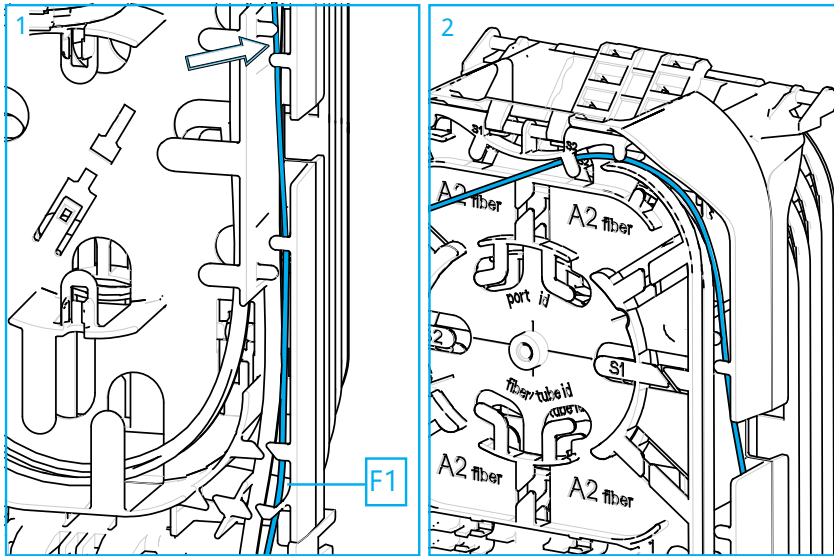
- F1: Feeder In
- F2: Feeder Out
- S: Loop storage area
- M: Subunit

 **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.

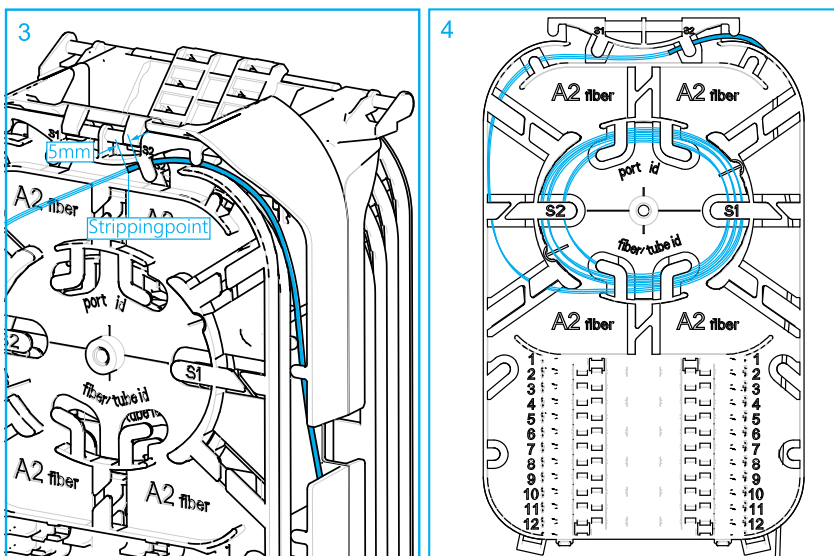
- 3 The different options for the selected subunits are:
  - a **Shaving:** bring the subunit to the front side and mark the stripping point left and right, remove the tube of the unit between these two points.
  - b **Endcut:** cut the subunit at the jacket end of cable at the exit (F2) and route the subunit to the stripping point (right) at the front side.
  - c **Midcut:** cut the subunit in the middle of the unit and store the end that will not be used (F2) in the loop storage basket.

## 8.4 Routing to the rear trays

### 8.4.1 Route the cut subunit to the rear trays

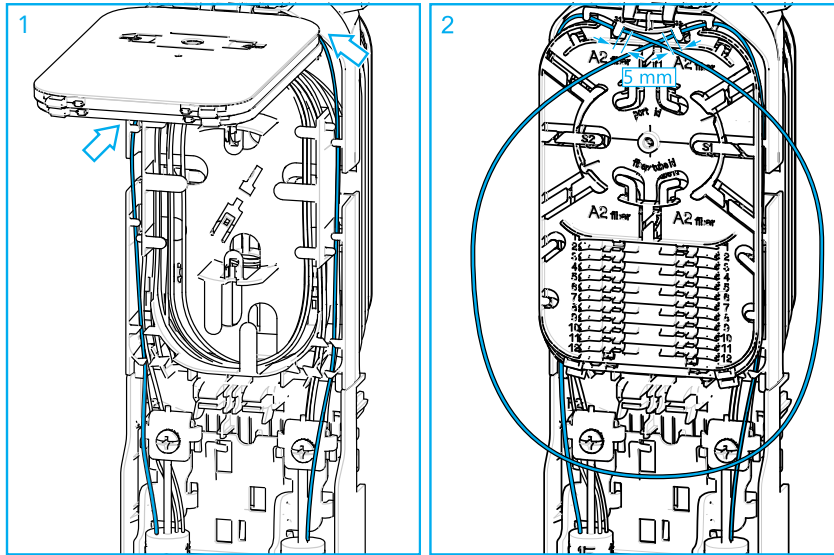


- 1 Route the subunit straight upwards to the 2 trays at the rear side.
- 2 Enter the tray with the subunit. Make sure the subunit is correctly positioned under the lips.

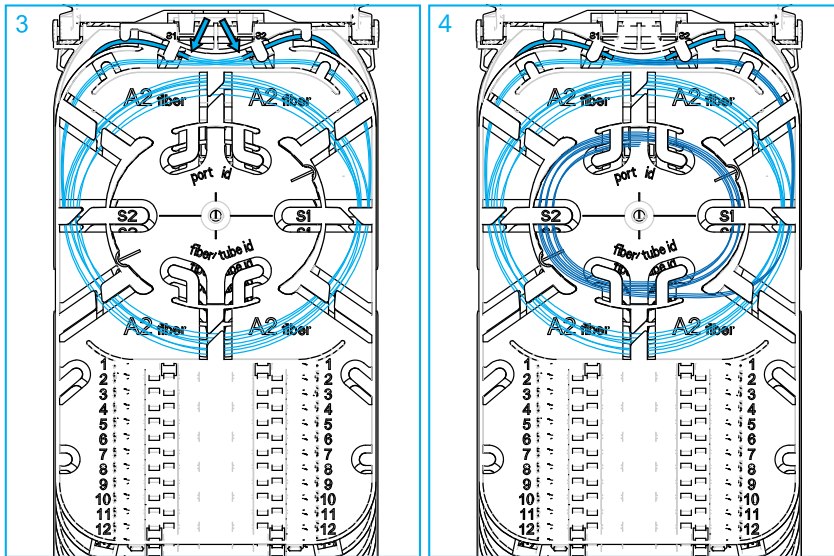


- 3 Strip the subunit on the tray. Mark the stripping point 5 mm from the lip and strip the subunit to this mark. Clean all fibers per standard practice.
- 4 Store the fibers temporarily in the inner circle on the tray.

## 8.4.2 Route the shaved subunit to the rear trays



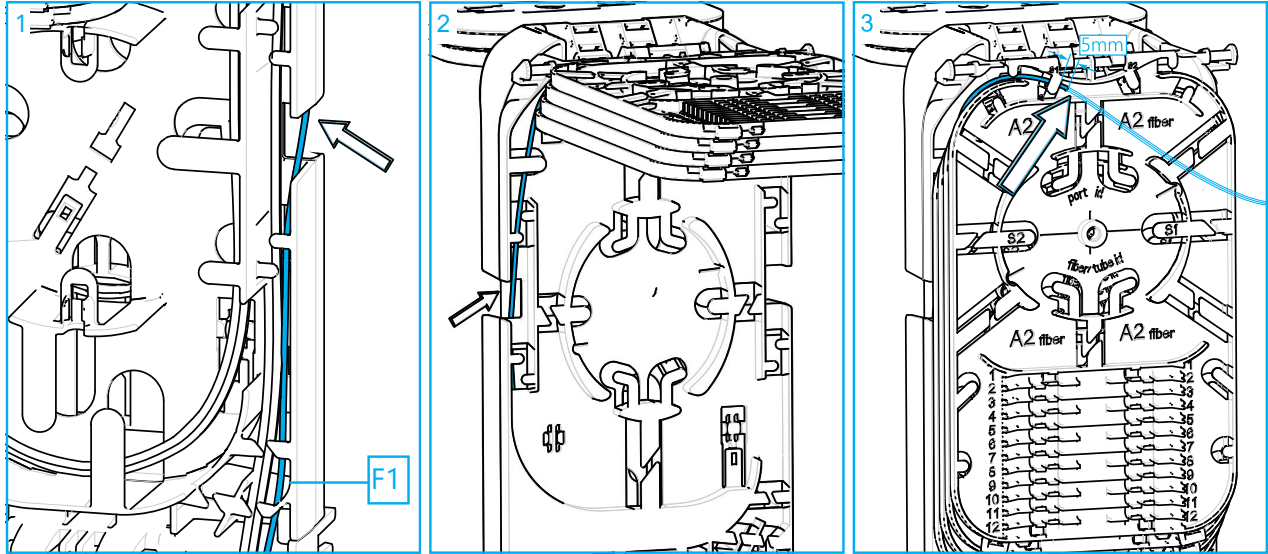
- 1 Route the both sides of the shaved subunit to the rear tray. One end left and one end right.
- 2 Position the subunits under the lips. Mark the stripping point 5 mm from the lip and strip the subunit to this mark. Clean all fibers per standard practice.



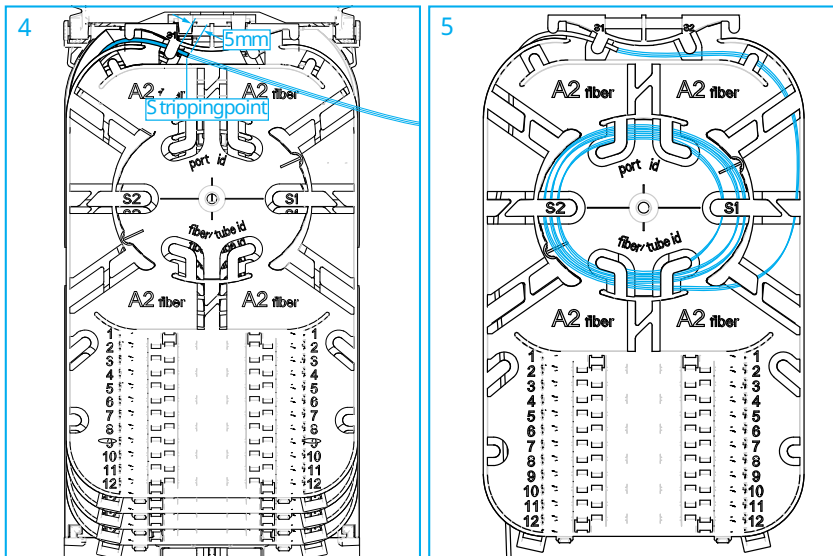
- 3 Store the fibers in loops in the outer circle.
- 4 The fiber to be spliced can already be cut. Store it in the inner circle. The inner circle can be used to store waiting fibers.

## 8.5 Routing to the front trays

### 8.5.1 Route the cut subunit to the front trays

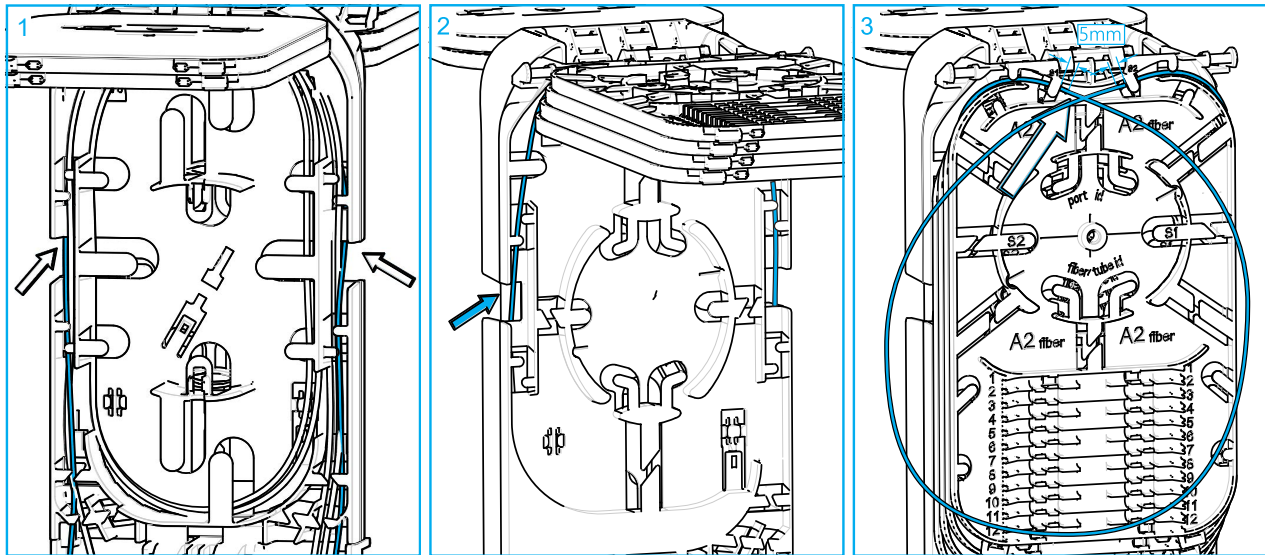


- 1 Route the subunit straight upwards through the opening to transfer to the front side.
- 2 Continue routing the subunits to the selected tray and enter the tray with the subunit. Make sure the subunit is correctly positioned under the lip.
- 3 Strip the subunit on the tray.

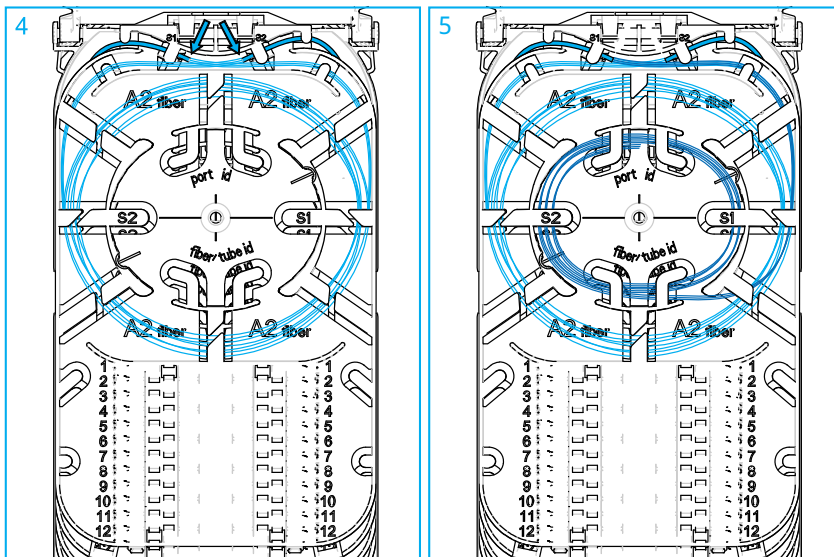


- 4 Mark the stripping point 5 mm from the lip and strip the subunit to this mark. Clean all fibers per standard practice.
- 5 Store the fibers temporarily in the inner circle on the tray

## 8.5.2 Shaved subunit on the tray



- 1 Route the both sides of the shaved subunit through the openings to transfer to the front side.
- 2 Continue routing the subunits to the selected tray and enter the tray with the subunit.
- 3 Position the subunits under the lips. Mark the stripping point 5 mm from the lip and strip the subunit to this mark. Clean all fibers per standard practice.

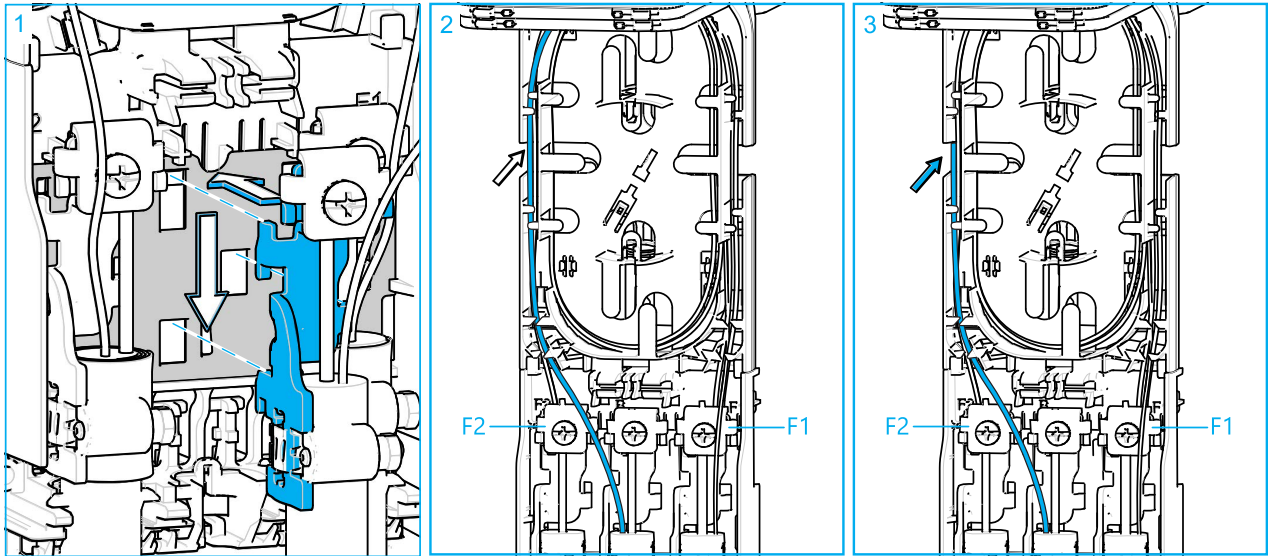


- 4 Store the fibers in loops in the outer circle.
- 5 The fiber to be spliced can already be cut. Store it in the inner circle. The inner circle can be used to store waiting fibers.




# 9

## Install branch cable



1 Prepare the cable as explained in the section 'Feeder cable preparation'. Verify in section 'Port reducers' if the port reducers should be removed. Insert the branch cable in the middle position on the rear side.

 **Note:** The cable retention kit for the branch cable is not a part of the closure kit and should be order separately.

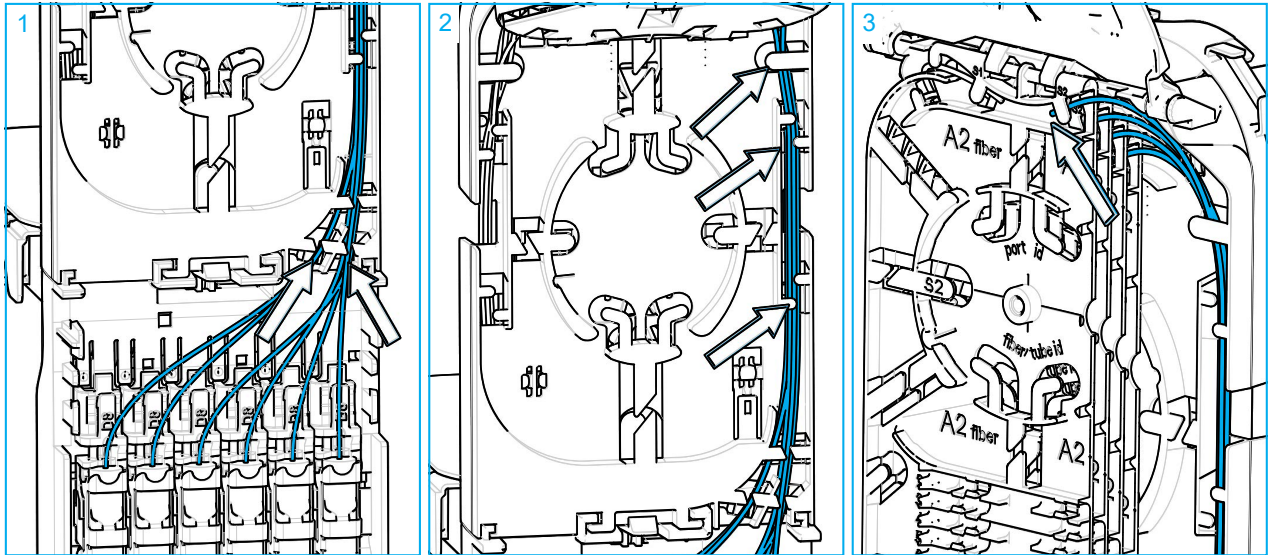
- 2 Routing of the branch fibers to the trays on the rear side.
- 3 Routing of the branch fibers to the trays on the front side.

## 10 Install drop cable

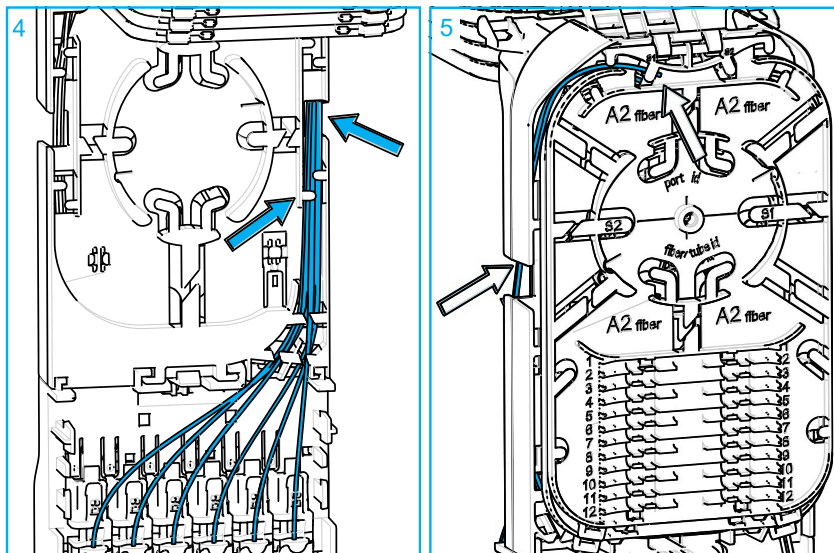
**Note:** The separate cable retention kits: NVX-CR-TI-SM-NN (Cable retention: Aramid ), NVX-CR-DU-FL-NN (Cable retention: Dual cable), NVX-CR-MC-RD/FT-NN (Cable retention: Jacket (Mclip)) or NVX-CR-SA-SM-NN (Cable retention: Rigid strength member) are suitable to install the drop cable in the CC 100.

**Important:** For this closure (CC 100), the jacket of the drop cable should be removed in all cases over a distance of  $130 \pm 5$  cm /  $51 \pm 2$  Inches.

### 10.1 Route drop fibers to the trays

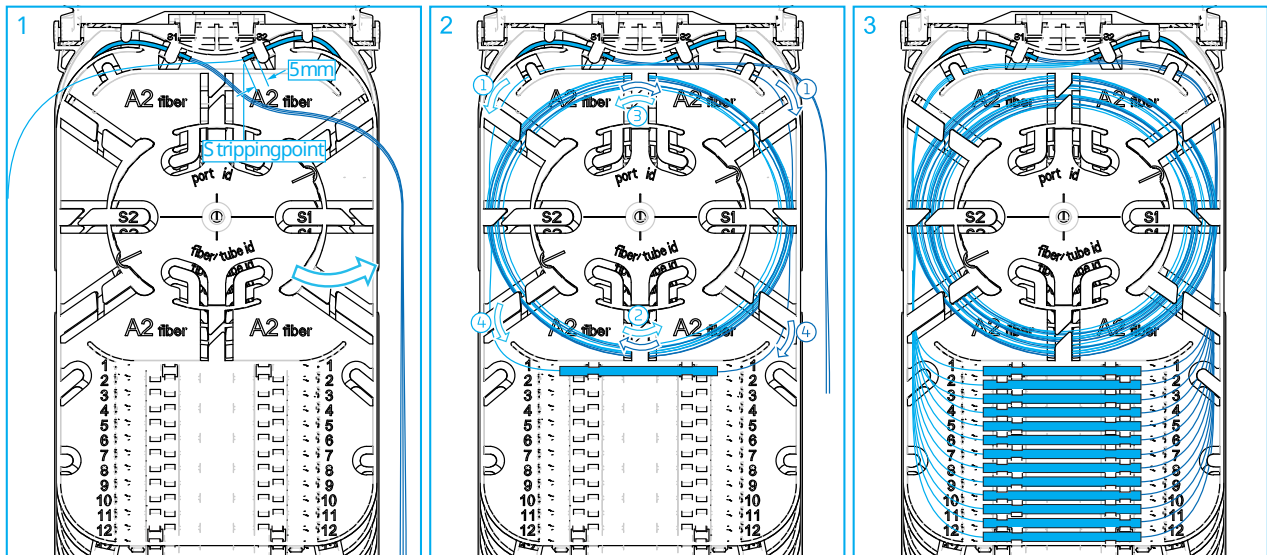


- 1 All drop subunits are routed to the right side. Distribute the subunits to the left and right side of the rib.
- 2 Continue routing the subunits to the front trays, making sure they are positioned under the lips.
- 3 The subunits front enter the trays.



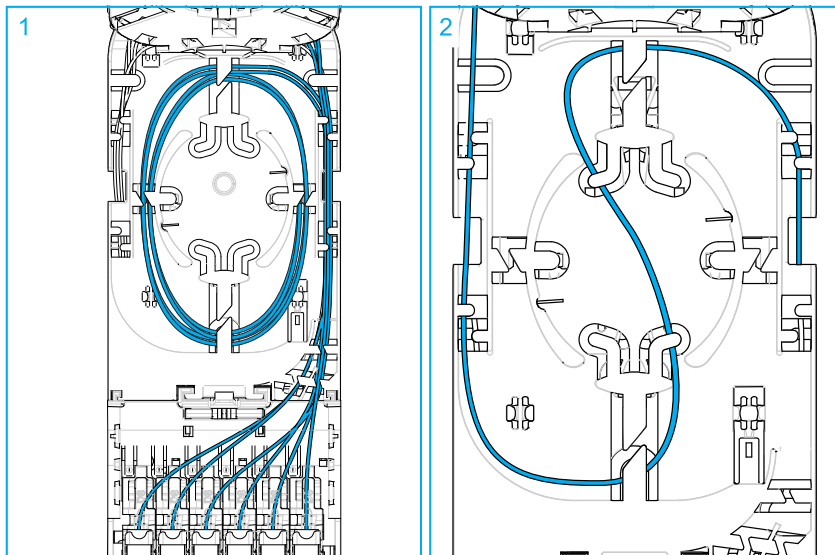
- 4 To access the trays at the rear side, route the subunits through the slots to transfer to the rear side.
- 5 Continue routing the subunits to the trays.

## 11 Splicing on the trays



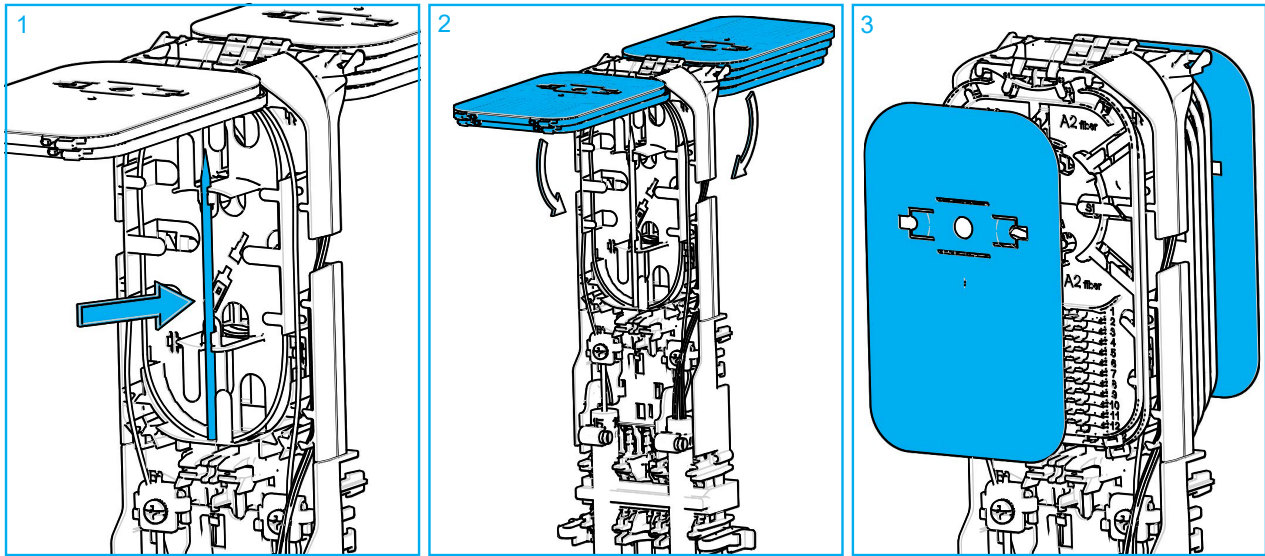
- 1 Overview of feeder fibers and drop or branch fibers entering the top tray.
- 2 Make splice per local practice and store the splice protector in the first splice protector holder location (top). Store the over lengths in loops in the over length storage area respecting following rules:
  - The fibers may not be routed too tightly around the middle circle.
  - Avoid bulging of the fiber.
  - Make sure all fibers are properly positioned under the lips. The fiber guidance pen can be used.
- 3 This tray has following specifications:
  - The tray can hold 1 layer of 12 splice protectors length 45 mm / 1.77 Inches.
  - In the middle area of the over length storage, there is the possibility to mark port id and fiber/ tube id with a permanent marker.

## 12 The pocket zone

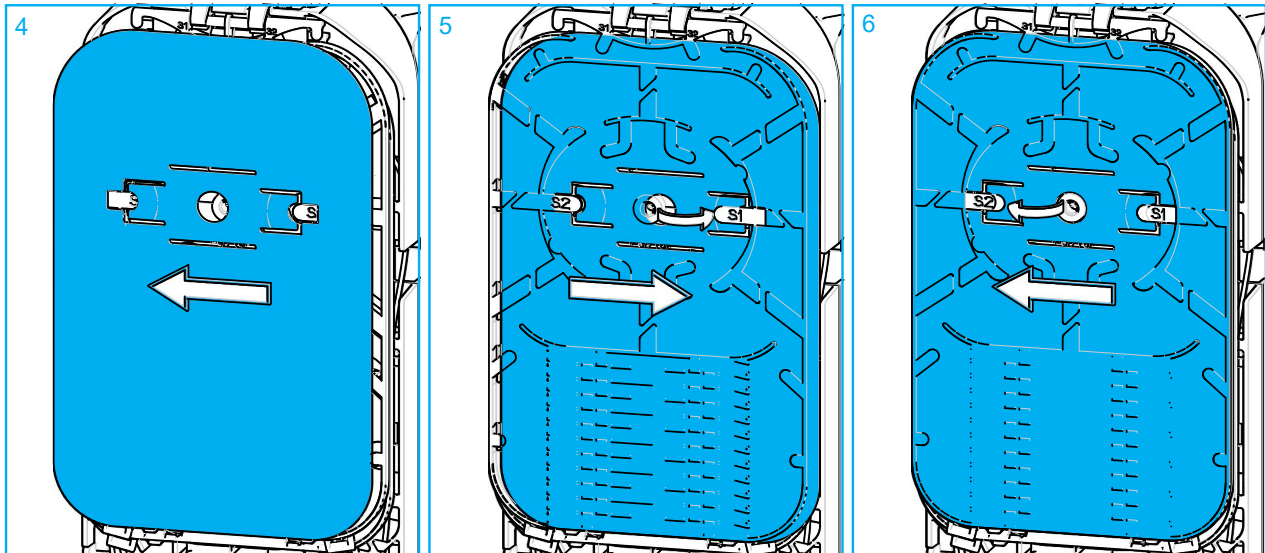


- 1 The pocket zone is situated under the trays at the front side. this area can be used to store the subunits temporarily.
- 2 This area can also be used to change side if required.

## Reposition fiber guidance pen, trays and covers

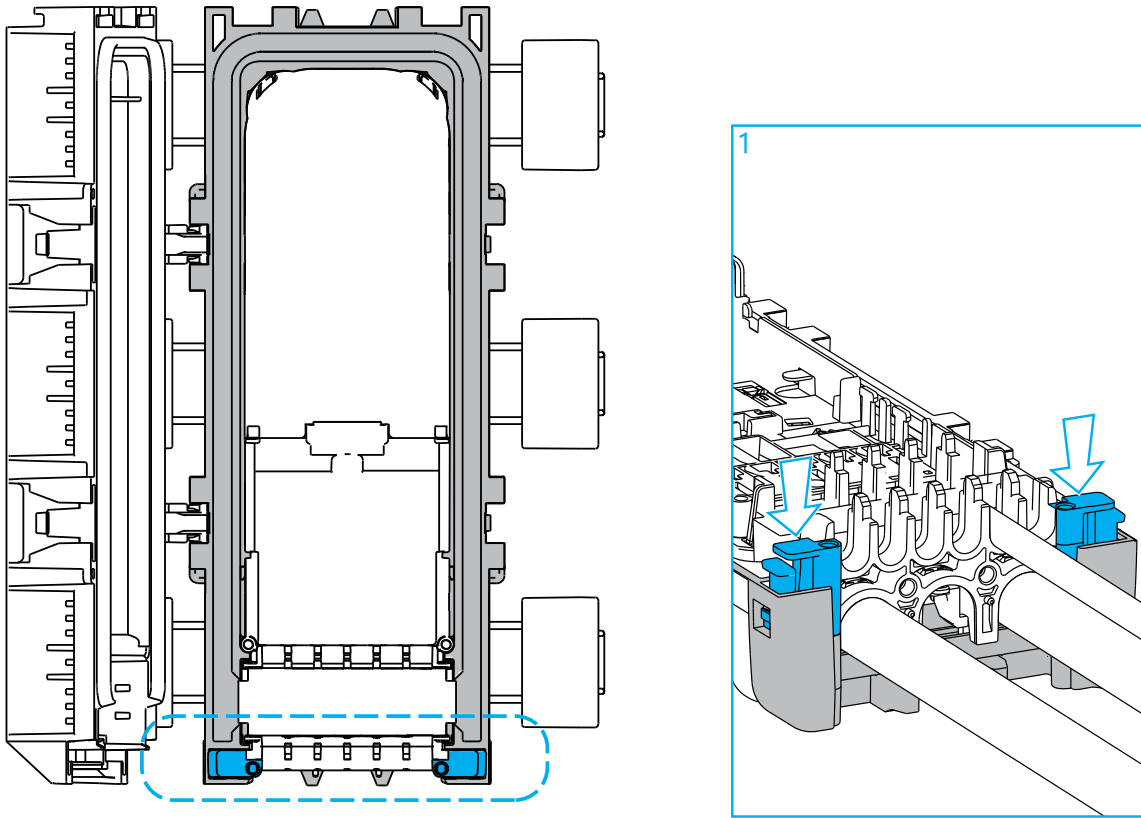


- 1 Reinstall the fiber guidance pen for future use.
- 2 Close all the trays.
- 3 Install a cover on the top trays. More details underneath.



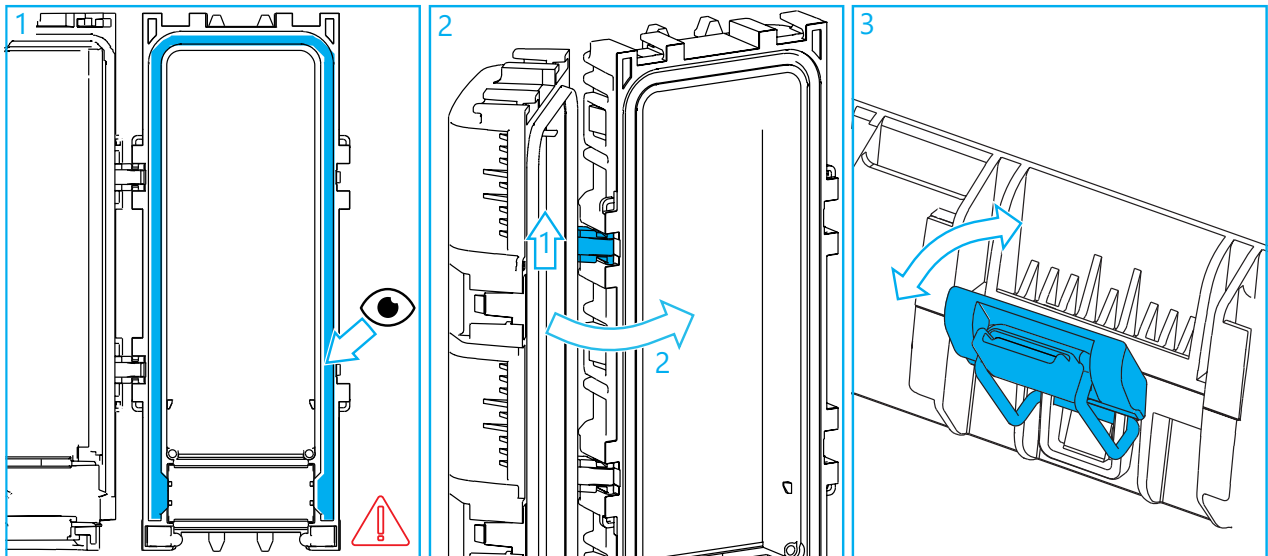
- 4 Position the cover on the tray and slide to one side, until the flange of the cover can slide under the lip of the tray.
- 5 Then slide the cover to the other side while pushing the flange under the lip.
- 6 Slide the tray again to the first side while pushing the other flange under the other lip of the tray. Center the cover.


## 14 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.

## 15 Close the closure

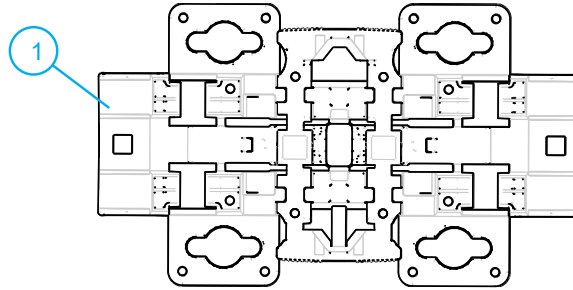


- 1 Inspect the long seal. The seal should be clean and dust free. Verify the long seal is correctly seated within the closure cavity.
- 2 Position the cover back onto the base. Figure 2 shows the cover installed with the hinges on the left side.  
 **Note:** First lift the cover slightly up to release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


## 16 Mount the closure

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

#### 16.1.1 Kit contents mobra

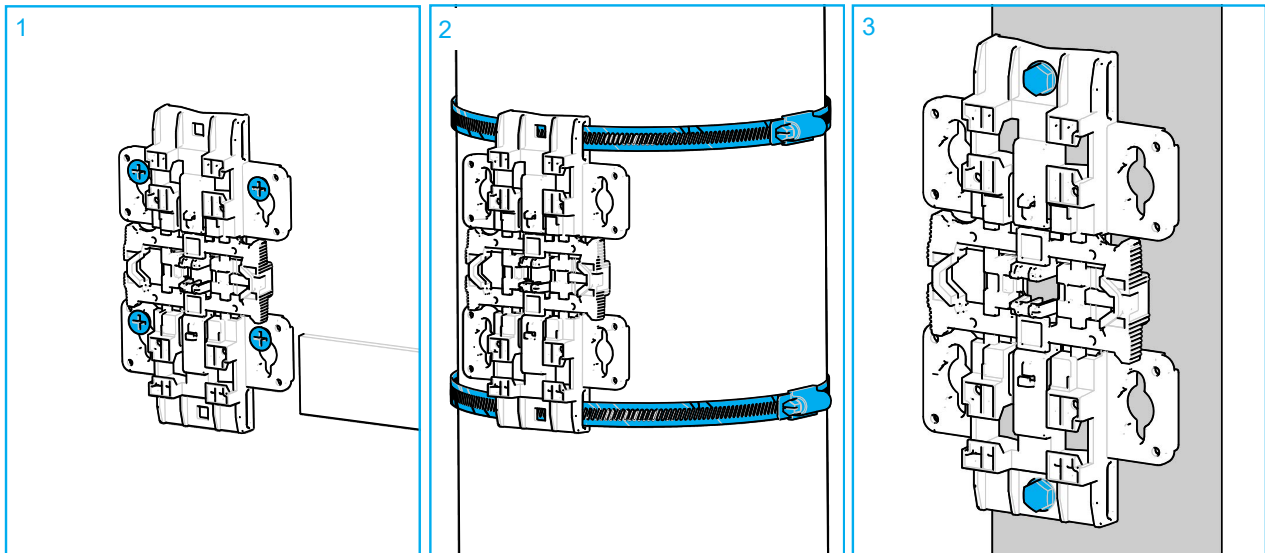


N°	Description	Qty
1	Universal Mounting Bracket	1


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

#### 16.1.2 Mount the UMB S

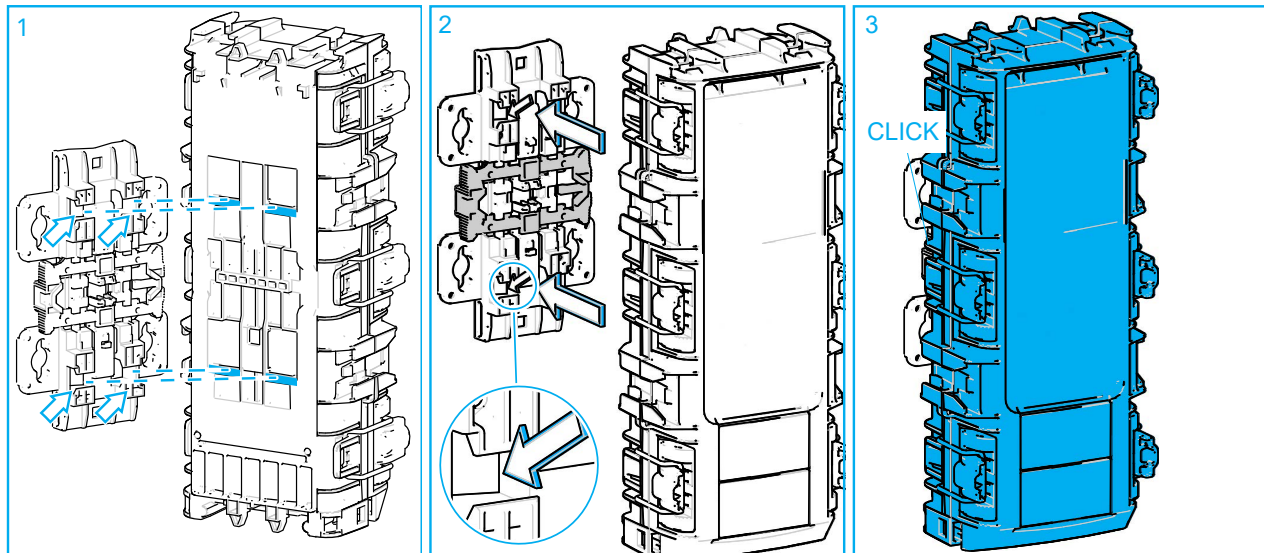
Depending on the use, there are several options for mounting the UMB.




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

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

### 16.1.3 Install the closure on the UMB S



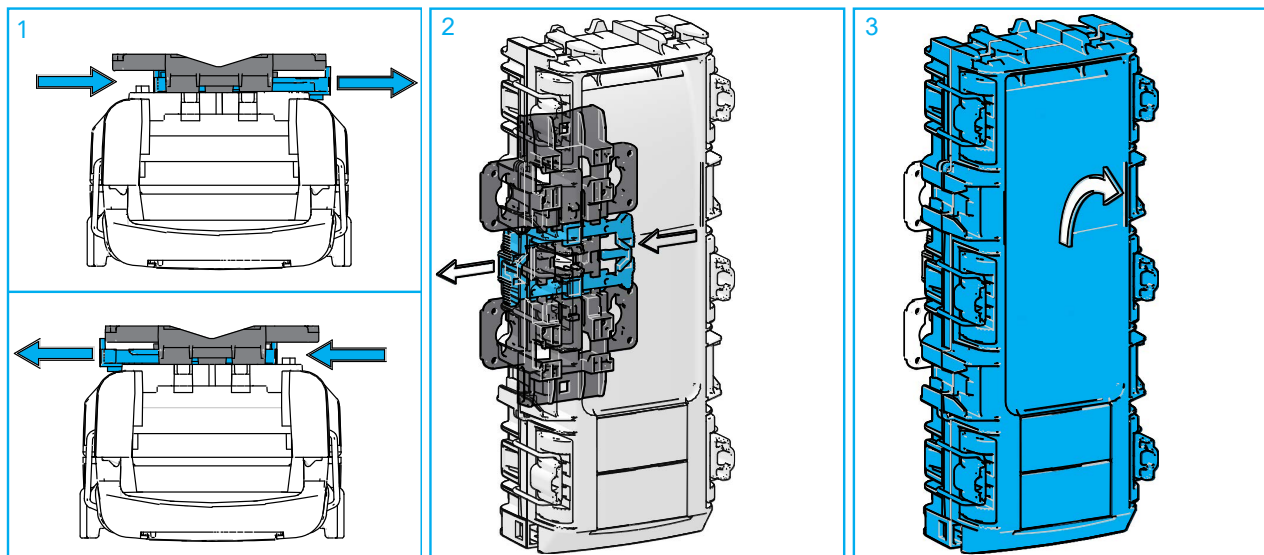
1 Secure the closure onto the UMB S with the features highlighted.

 **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.


### 16.1.4 Detach the closure from the UMB S



1 The handle can be pushed left or right to unlock the closure.

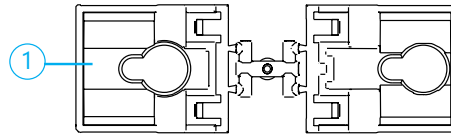
2 Push the handle to one side.

3 Lift and remove the closure.


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

## 16.2 Using the mounting clips

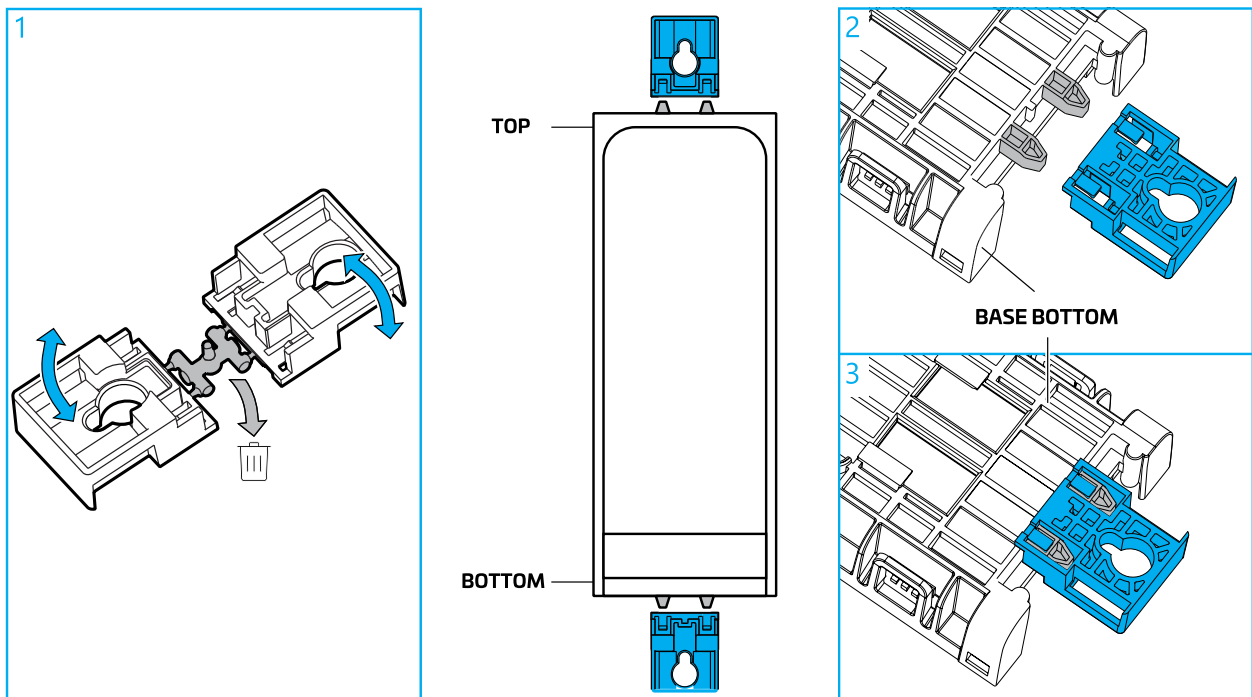
### 16.2.1 Kit contents



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).

### 16.2.2 Mounting clips installation

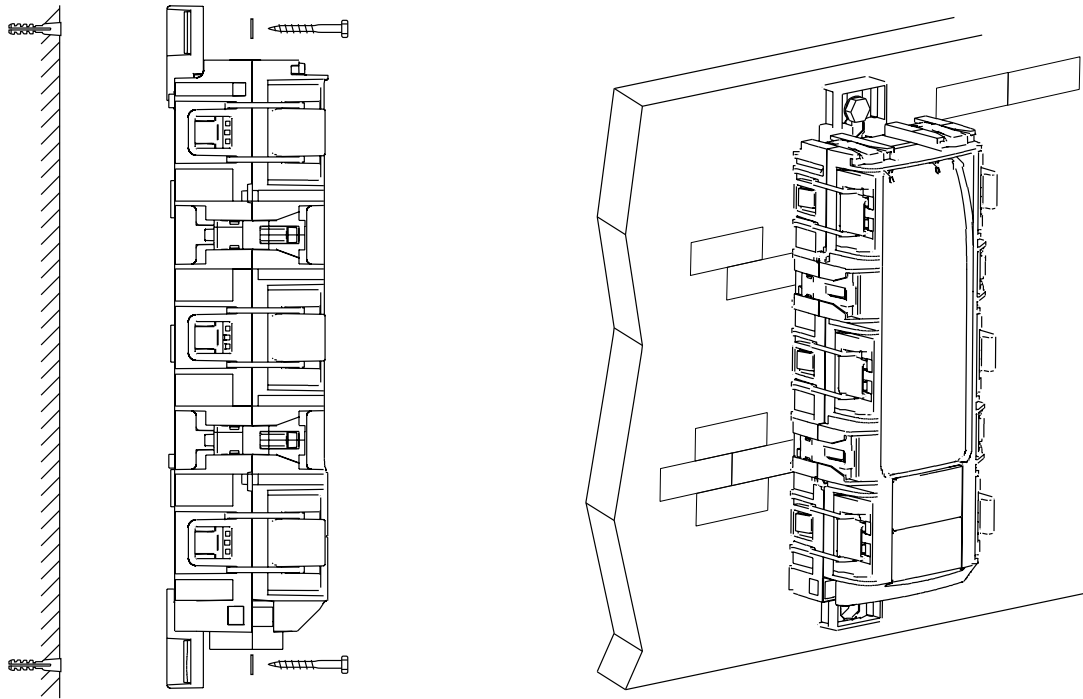


- 1 Break off the two mounting clips.
- 2 Note: the two clips are not identical. Make sure to mount the clips in the correct position. Small hole facing upwards.
- 3 Mount the clips on the base at both sides (top and bottom).



## 16.2.3

### 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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