

NOVUX™ Fiber Optic System DSC 650

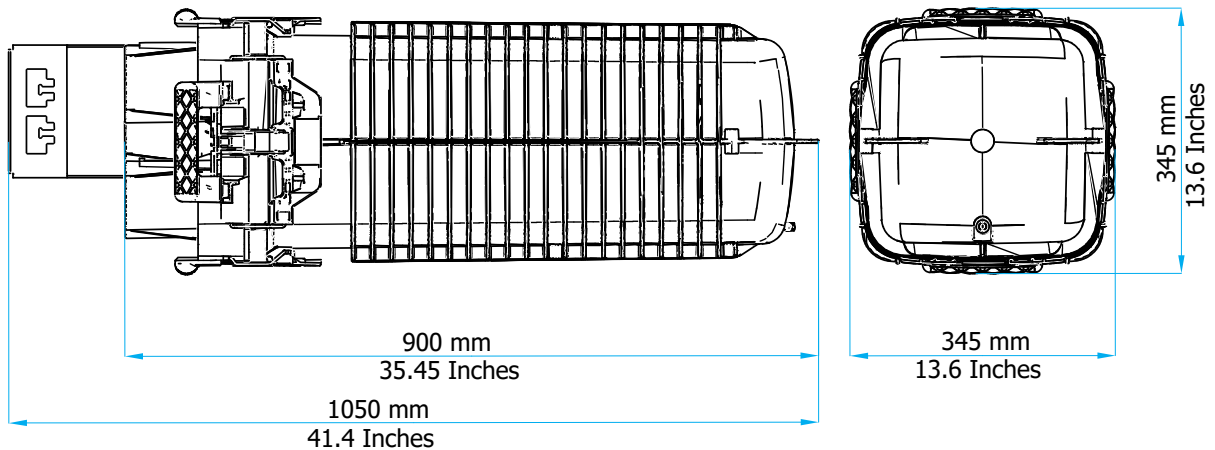
1 About this manual

This manual describes the installation steps of the Dome Splice Closure 650. 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.

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

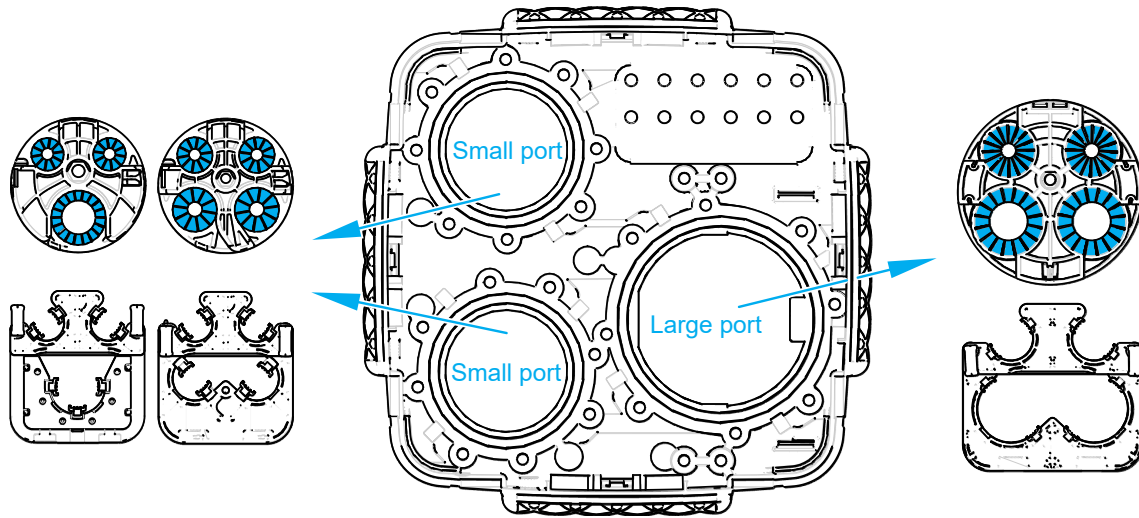
2 General product information



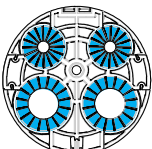
2.1 Dimensions




2.2 Cable diameter range

See the figure/table below to determine which cable diameter can be used in combination with which port/gel block.



Gel Seals	Upper -Small Ports-		Lower -Large Ports-	
	# Ports	Cable Outside Diameter Min. - Max.	# Ports	Cable Outside Diameter Min. - Max.
Small 3-way 	2	8 - 20 mm 0.32 - 0.79 inch	1	25 - 35 mm 1.0 - 1.38 inches
Small 4-way 	2	8 - 22 mm 0.32 - 0.87 inch	2	10 - 28 mm 0.39 - 1.1 inches
Large 4-way 	2	18 - 25 mm 0.7 - 1.0 inch	2	25 - 40 mm 1.0 - 1.6 inches

 **Note:** Regarding the Small 4 port cable gel seal: if both the lower large ports have maximum cable diameters (28 mm / 1.1 inches) the maximum cable diameter in the upper small ports is 20 mm / 0.79 inches.

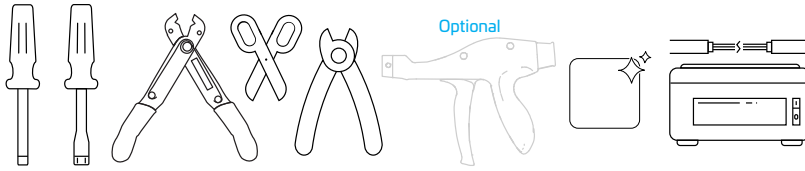
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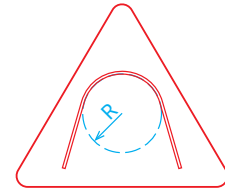
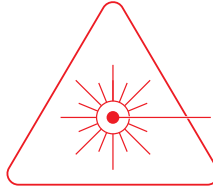
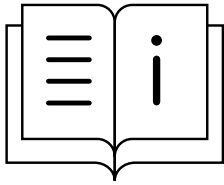
3 Abbreviations

DSC: Dome Splice Closure

4 Tools

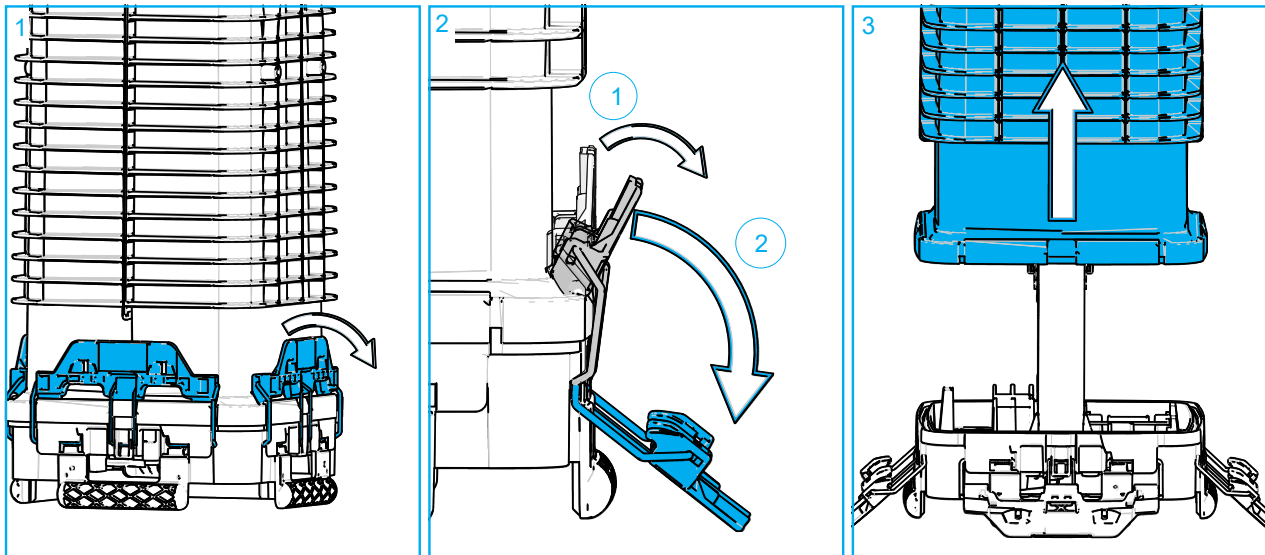


5 Warnings and Cautions



- 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.

6 Open the closure

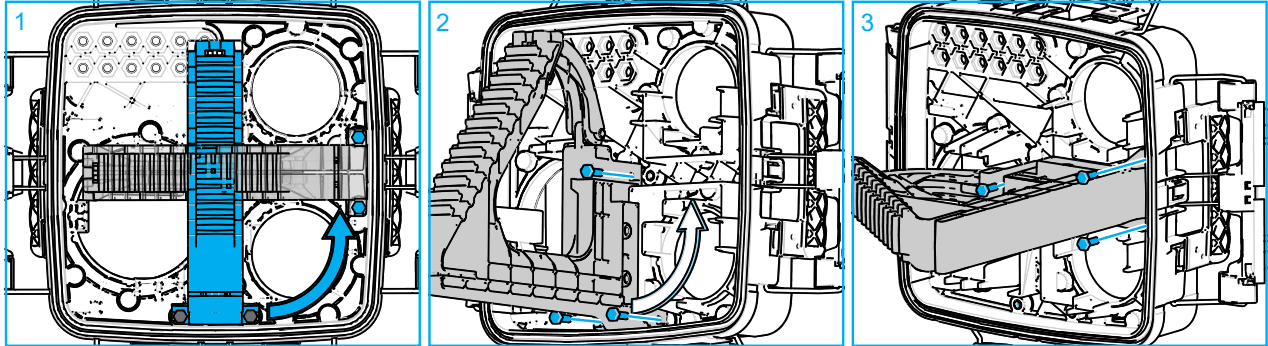


- 1 Open the latch.
- 2 The latch has a 2-way system. First pull the latch backwards and then turn the latch down.
- 3 Open the 4 latches and lift the dome over the tower. Set the dome aside until the end of the installation.

7 Closure preparation

7.1 Tower

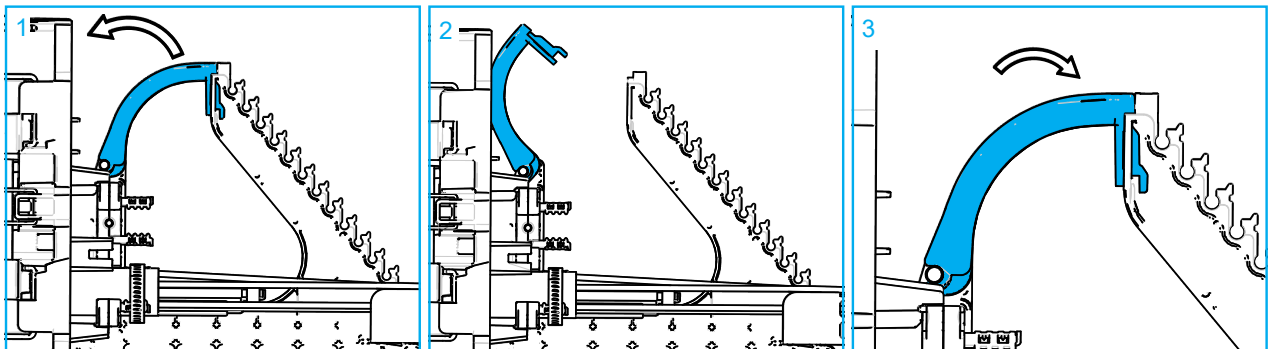
7.1.1 Tower positioning and displacement



- 1 The tower is factory installed between the large and small entrance port. When only using the 2 small entrance ports, the tower must be positioned between the 2 small entrance ports.
- 2 Remove the 3 bolts holding the tower in place. Move the tower to the position between the small entrance ports.
- 3 Secure the tower with the 3 bolts.

7.1.2 Open tower

The tower has a closed construction. It is possible to open it to facilitate guiding under the tower.

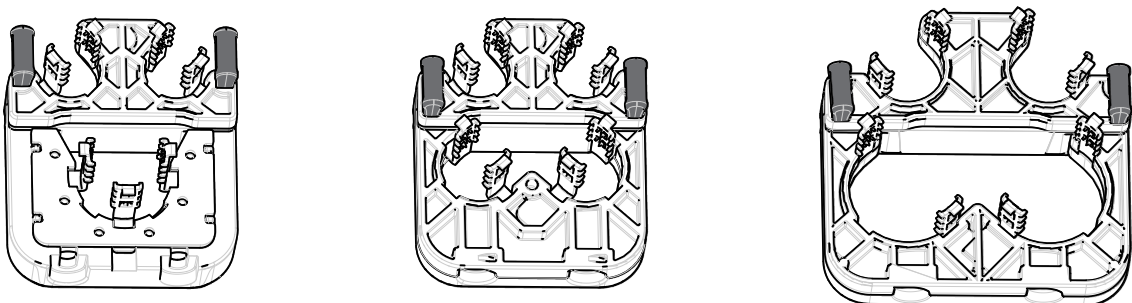


7.2 Cable attachments assembly

7.2.1 overview

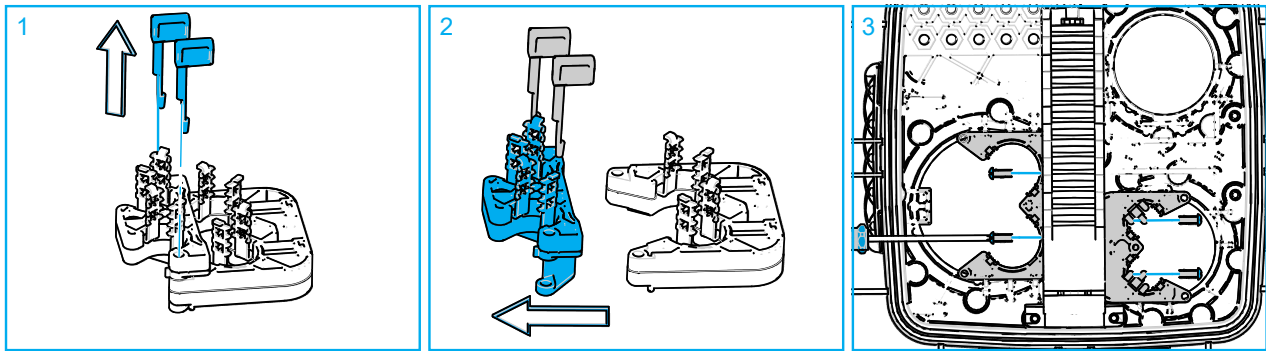
There are 3 cable attachment assembly's available.

- 2 cable attachment assembly's for use with the small gel seal blocks/entrance ports (3 or 4 cable attachments)
- 1 cable attachment assembly for use with the large gel seal blocks/entrance ports (4 cable attachments)

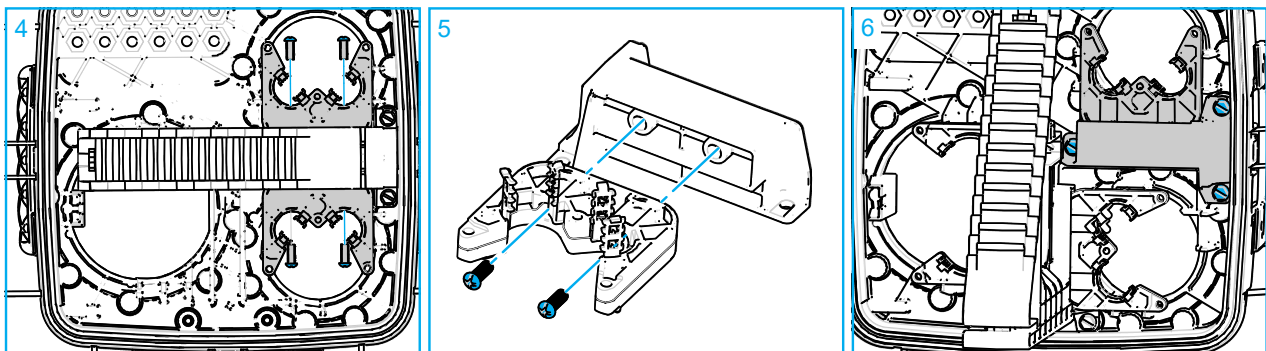


7.2.2 Cable attachment assembly installation

Two cable attachment assembly's can be installed on the tray support tower. To use the full capacity of the closure, a third cable attachment assembly can be installed in the closure on an additional support.




- 1 Remove the two pins that hold the cable attachment assembly in place.
- 2 Remove the top cable attachment assembly.
- 3 Install the bottom cable attachment assembly on the tray support tower with 2 screws.



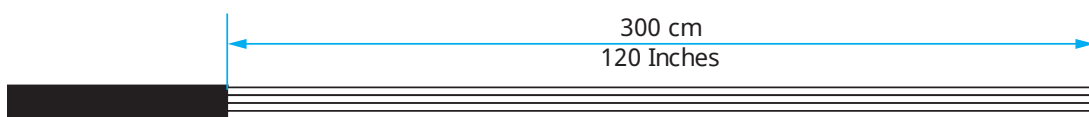
- 4 When the tower is installed between the 2 small ports, install 2 small cable attachment assembly's on the tray support tower.
- 5 If applicable, install a 3rd cable attachment assembly on the additional support.
- 6 Install the support with the cable attachment assembly with 3 bolts between the 2 small entrants ports in the closure.

8 Cable preparation

Cable Type	Opening Location	Min. & Max. Suggested Storage Length	Strength Member lengths		
			Small	Large	XC
Loose Buffer Tube	Stub end	300 cm \pm 5 cm / 120 \pm 2 Inches	31 mm	44 mm	80 mm
Loose Buffer Tube Ribbon	Stub end	300 cm \pm 5 cm / 120 \pm 2 Inches	1-1/4 inches	1-3/4 inches	3.2 inches
Central Core Tube Ribbon	Stub end	300 cm \pm 5 cm / 120 \pm 2 Inches			

 **Note:** Midspan can be used for up to 864 fibers, contact technical support for more information.

8.1 Remove Jacket

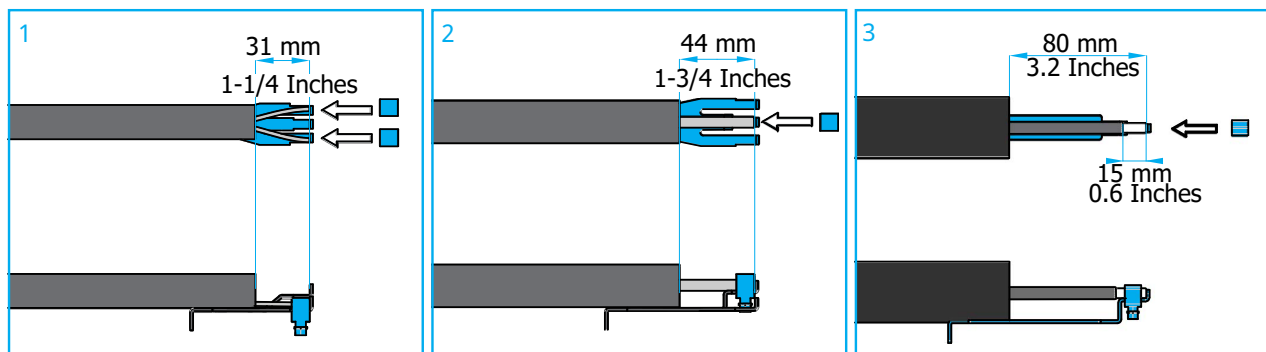
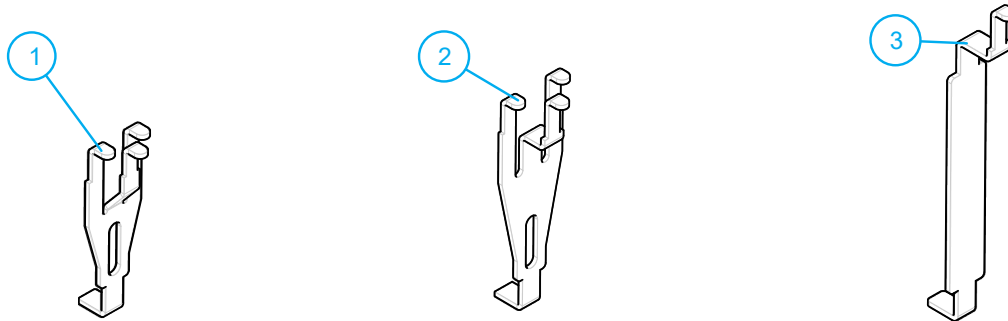


- 1 Remove the cable jacket over a length of 300 cm / 120 Inches.

8.2 Strength member fixation

There are three sizes of strength member attachment brackets and lugs in the kit. Use the large attachment bracket and lug (2) for strength members with diameters over 6,35 mm / 0.25 inches, and the small strength member attachment bracket and lug (1) for smaller strength member. The XC bracket and lug (3) is for use with cable Ø 40 mm / 1.6 inches. The Small and large strength member attachment brackets are foreseen from 3 prongs. The central prong is for use with central strength members. For dual strength members, use the two outer prongs

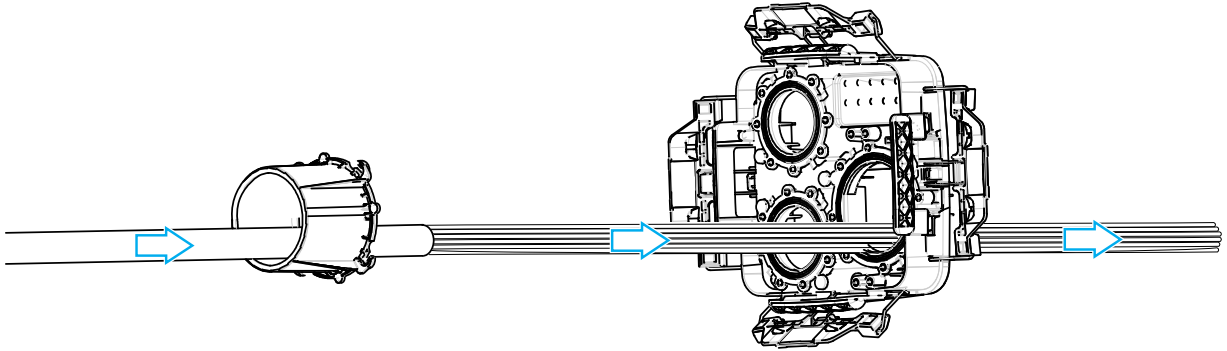
	Small bracket (1)		large bracket (2)		XC-bracket (3)	
	mm	Inches	mm	Inches	mm	Inches
Strength member Ø	< 6,35	< 0.25	> 6,35	> 0.25	Cable Ø 40 mm / 1.6 inches	
Strength member length	31	1-1/4	44	1-3/4	80	3.2



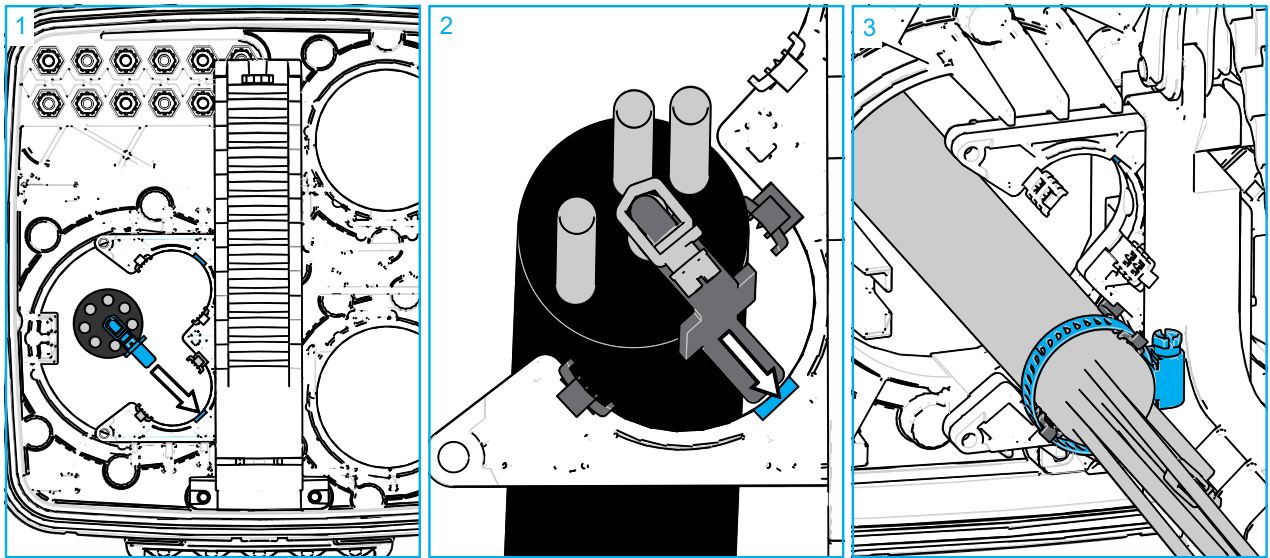
- 1 If using the small strength member attachment bracket (1), trim the strength member to 31 mm / 1-1/4 Inches length from the ring cut and secure the strength member on the bracket with the appropriate lug.
Note: If needed, remove the unused prongs of the strength member bracket by using pliers to bend them sharply away from the cable and cutting them off.
- 2 If using the larger strength member attachment bracket (2), trim the strength member to 44 mm / 1-3/4 Inches length from the ring cut and secure the strength member on the bracket with the appropriate lug.
Note: If needed, remove the unused prongs of the strength member bracket by using pliers to bend them sharply away from the cable and cutting them off.
- 3 If using the extra large strength member attachment bracket (3), trim the strength member to 80 mm / 3.2 Inches length from the ring cut and remove 15 mm / 0.6 Inches of sheathing at the end of the strength member. Secure the strength member on the bracket with the appropriate lug.

9 Cable installation

- !** **Important:** Slide the gel seal cover over the cables to be installed. Make sure the cables always go through the gel seal cover before inserting through the port.



Insert the cable with cable strength member attachment bracket installed into the entrance port.



- 1 Insert the cable with the strength member fixation installed through the gel seal cover and into the port of the closure.

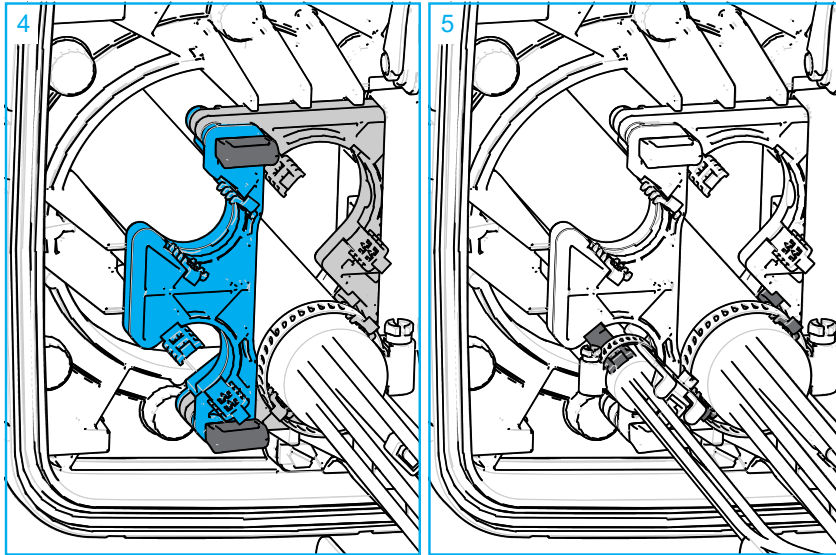
- !** **Important:** Slide the gel seal cover over the main cables to be installed.

- 2 Install the strength member bracket into the bottom cable attachment assembly by pushing the metal tab into the slot. Strength member bracket and grounding attachments should be opposite each other on the cable.
- 3 Adjust the sheath retention clips until they grip the cable sheath. Wrap a hose clamp around the sheath retention clips and cable and use a quarterinch nut driver to tighten the hose clamp in place. Tighten the clamp such that the retention teeth fully seat into the cable assembly. Do not tighten the clamp so much that it deforms.

Note: The sheath retention clips should not extend past the ring cut of the cable.

Note: Position the hose clamp bolts to the sides of the cable. They could become trapped between the cables and the closure or interfere with upper cable attachments if left on the top or bottom.

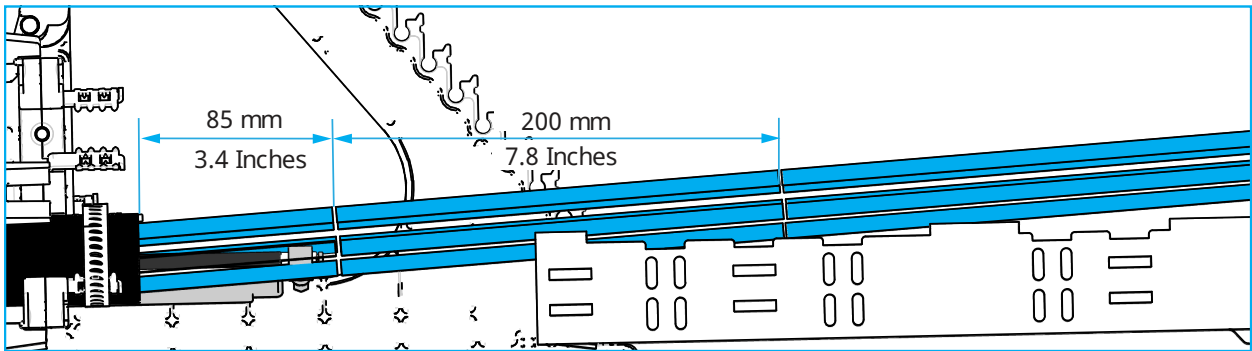
Note: For cable with no rigid strength member, the strength member attachment is not required.



- 4 Re-install "top" cable attachment assembly onto "bottom" cable attachment assembly and secure in place with the two pins.
- 5 If required, cables can be installed in the "top" cable attachment assembly.

10 Routing

10.1 Preparation



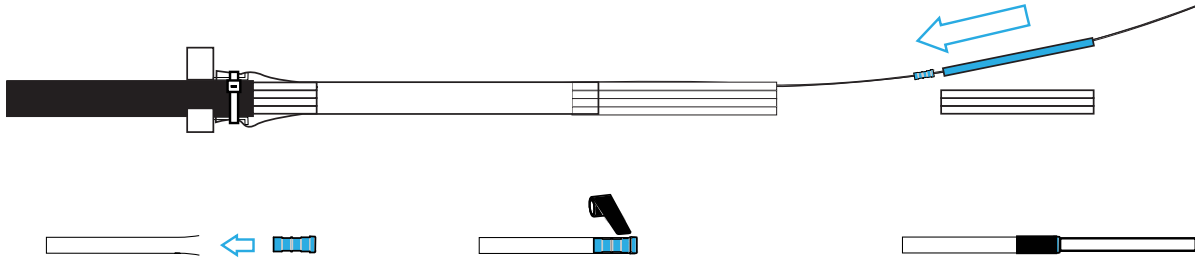
- 1 Ring cut buffer tubes at 85 mm / 3.4 Inches and 285 mm / 11.2 Inches from cable sheath ring cut.



- 2 Slide a piece of the big mesh tube (length: 100 cm / 40 inches - Ø: 31.75 mm / 1.25 inches) over the buffer tubes and a small mesh tubes (Ø: 9,53 mm / 3/8 inch) with a length of 86 cm / 34 inches over each buffer tube.



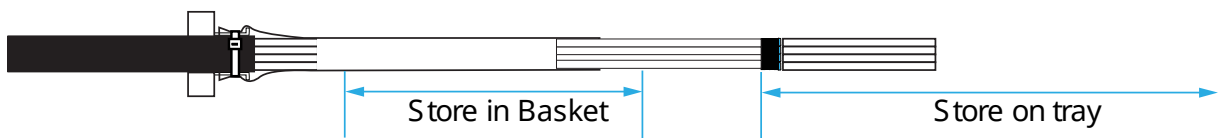
- 3 Slide back the loose buffer tubes and slide the big mesh tube over the buffer tube end, just behind the cable fixation. Secure with a cable tie. Slide the small mesh tubes in the big mesh tube with an overlap of 10 cm / 4 Inches.



- Remove the loose buffer tube and slide a fiber sleeve and the part of the buffer tube (20 cm / 8 inches) back over the fibers. Attach the fiber sleeve to the small mesh tube. Slide the fiber sleeve into the small mesh sleeve and secure with 1 wrap of tape.

Note: Finish the tubes one by one to make sure the buffer tube stays the same color!

- Repeat for all tubes.



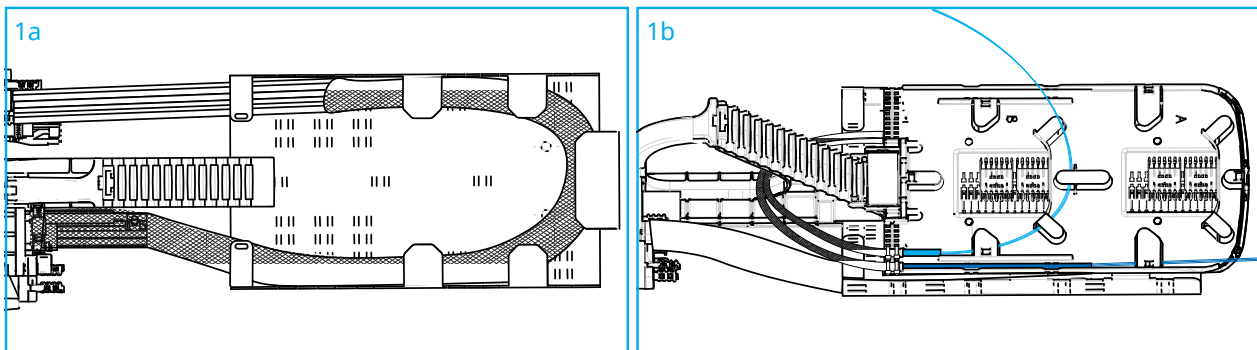
- The transition of the big mesh tube to the small mesh tube will be stored in the basket.

10.2 Route in basket

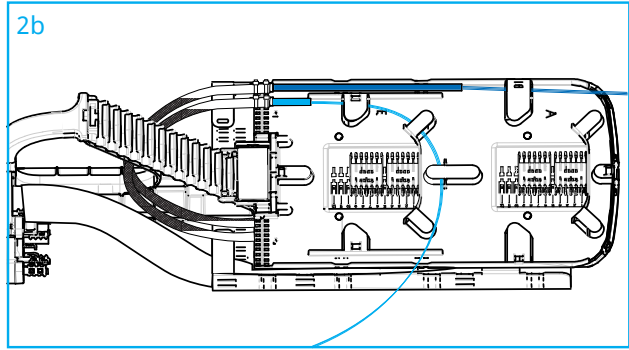
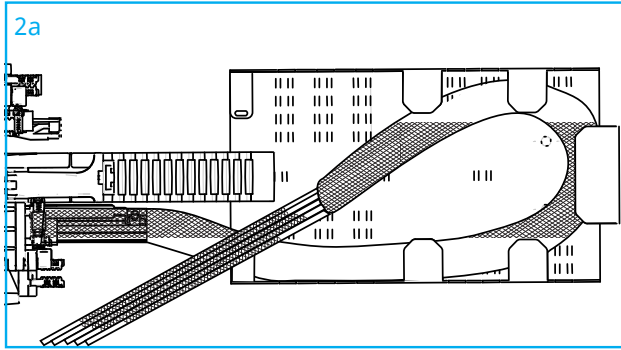
Route the tubes/fibers in the basket to the other side of the basket and then under the tower to the tray.

Note: Make sure the transition between the mesh tubes is in the basket. The transition of the tubes can still be shifted over the fibers to obtain an ideal position in the basket.

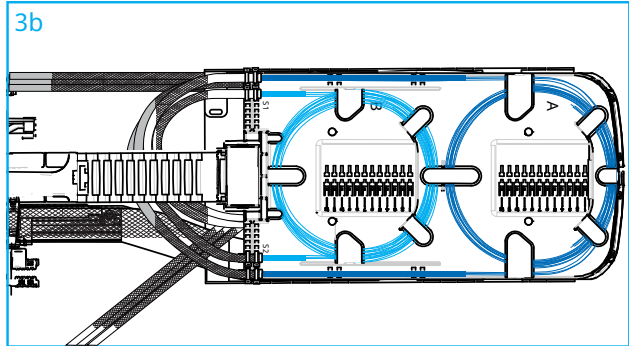
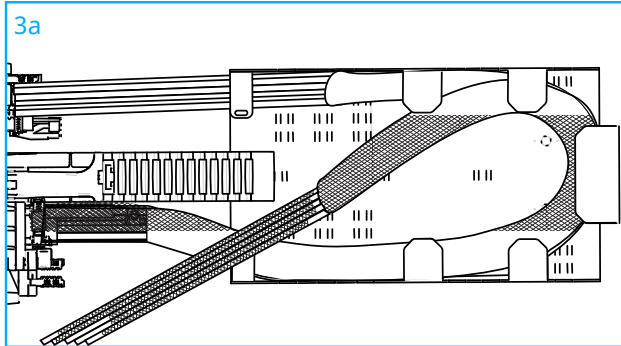
Install a tray (start at the bottom position) and route the mesh tube under the tower to the tray. Secure the end of the mesh tube (fiber sleeves) to the tray with 2 cable ties. Adjust the length of the buffer tube going to the B-section of the tray to 4 cm / 1.6 inches.



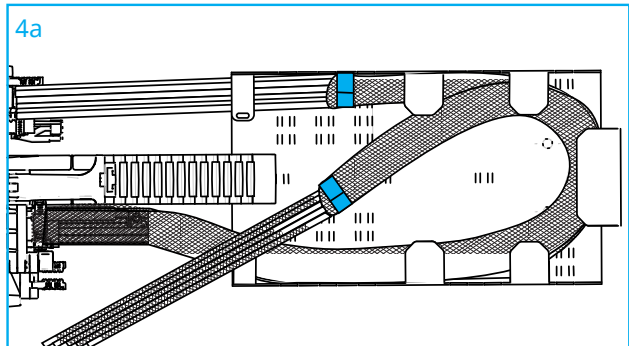
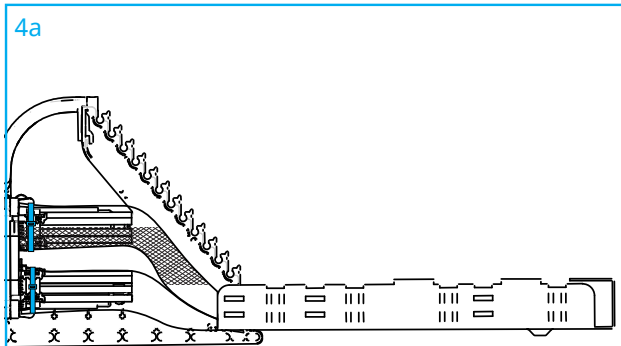
- Entrance on the tray on the same side of the tower.



2 Entrance on the tray on the other side of the tower.



3 When feeder and drop cable will enter on the same side of the tower, one of the 2 must make an s-turn. Feeder typically goes to the S2 side of the tray, Drop to the S1 side.



4 If all tubes are routed, ensure the big mesh is secured with a cable tie over the sheath retention clips and secure the transition of the big and small mess tube in the basket with a piece of Velcro strap.

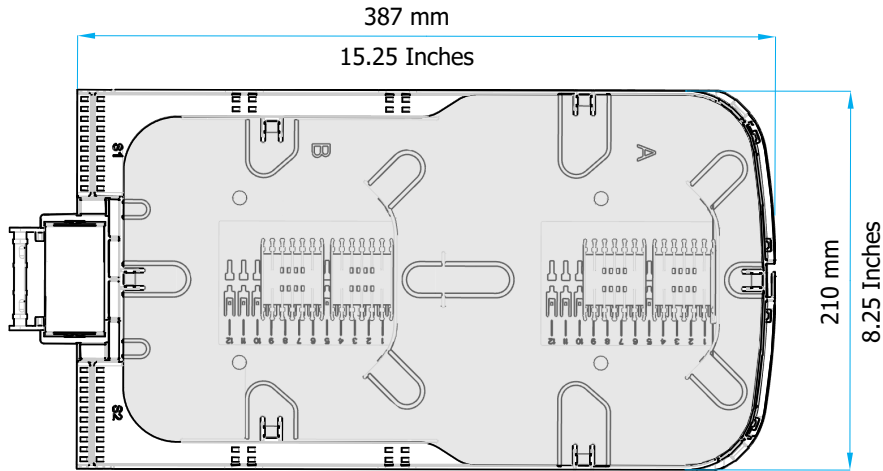
11 Trays

11.1 General product information

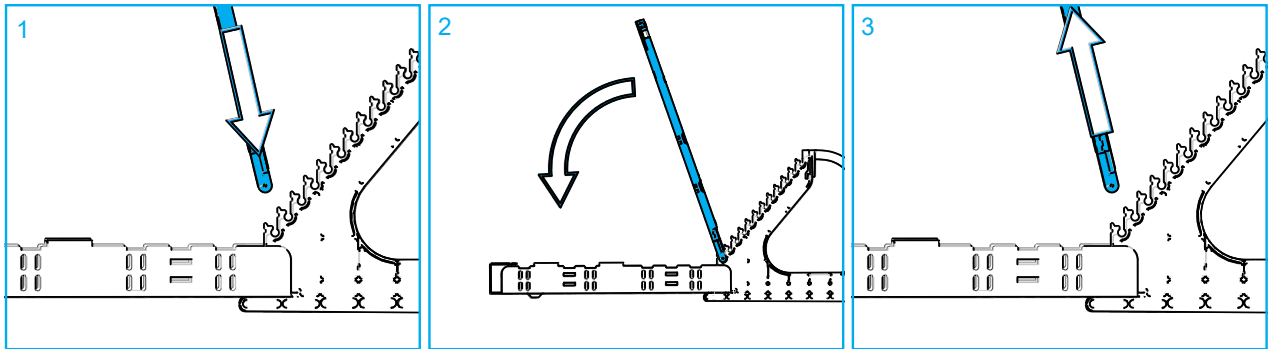
The DSC650-ACC-TRAY-576-RR kits are designed for use in DSC650 and can contain up to 12 trays. The tray kits are typically equipped with splice modules to accommodate a variety of splice types.

The trays have a maximum capacity of 576 ribbon fibers or 288 single fibers.

11.2 Tray dimensions

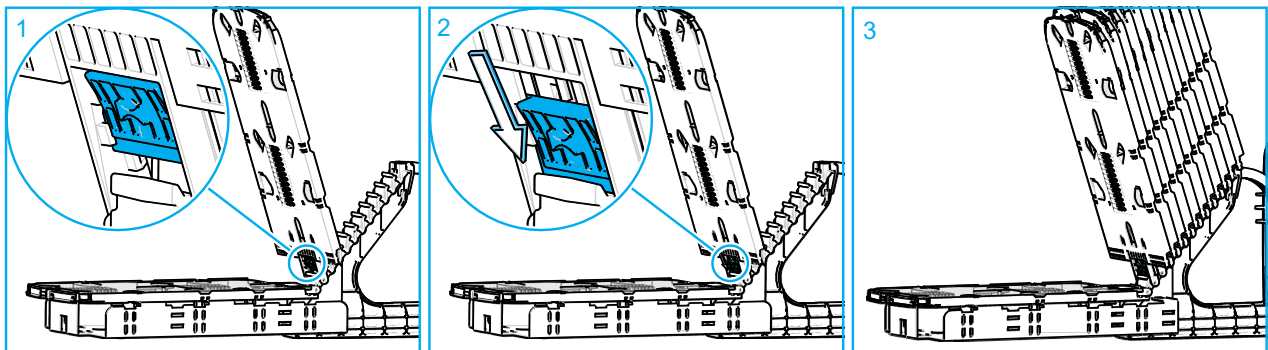


11.3 Tray installation



- 1 Hold the tray vertically over the tray holder bracket.
- 2 Insert the tray hinge into the first slot on the tray holder bracket and lower the tray. Repeat this procedure to add the other trays.
- 3 To remove splice trays from the closure base, raise the tray. Pull the tray hinge out of the tray holder bracket, releasing the tray.

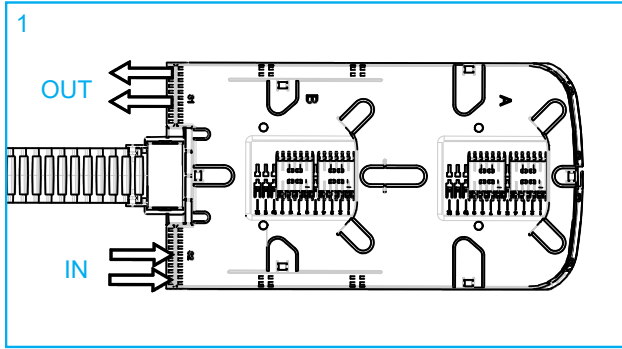
11.4 Tray support



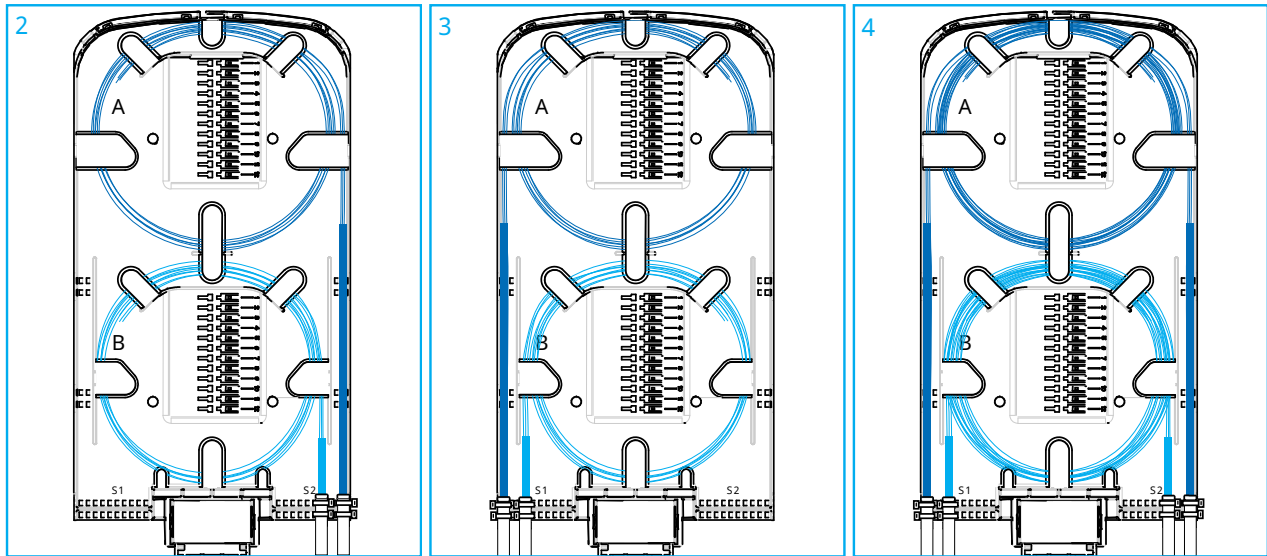
- 1 The tray includes a tray support latch to lock the tray in a raised position.
- 2 Lift the tray and lock it in position by sliding down the tray support latch. To unlock the tray, slide the tray support latch up and lower the tray.
- 3 To regain access to a lower tray, all trays above it must be individually locked in the open position. Start by locking the top tray, then lock the lower ones until the tray that requires access.

11.5 Route on tray

The tray has 2 splice zones/ A and B. Left side (F1) is typically for the drop fibers. Right side is for the feeder fibers.



- 1 Route the fiber tubes so that the feeder fibers enters the tray on the F2 side. The drop fibers will typically enters on the F1 side of the tray.




- 2 Route the small braided tubes from the feeder cable through the basket to the F2 side of the tray. Secure the braided tube to the tray with the fiber guidance sleeve and 2 cable ties. Slide the colored tube against the fiber guidance sleeve. Adjust the length of the colored buffer tube going to the B section of the tray to 4 cm / 1.6 inches. Store the fibers in the sections A and B.
- 3 Route the small braided tubes from the drop cable through the basket to the F2 side of the tray. Secure the braided tube to the tray with the fiber guidance sleeve and 2 cable ties. Slide the colored tube against the fiber guidance sleeve. Adjust the length of the colored buffer tube going to the B section of the tray to 4 cm / 1.6 inches. Store the fibers in the sections A and B.
- 4 Picture 3 shows the feeder and drop fibers stored and ready for splicing.

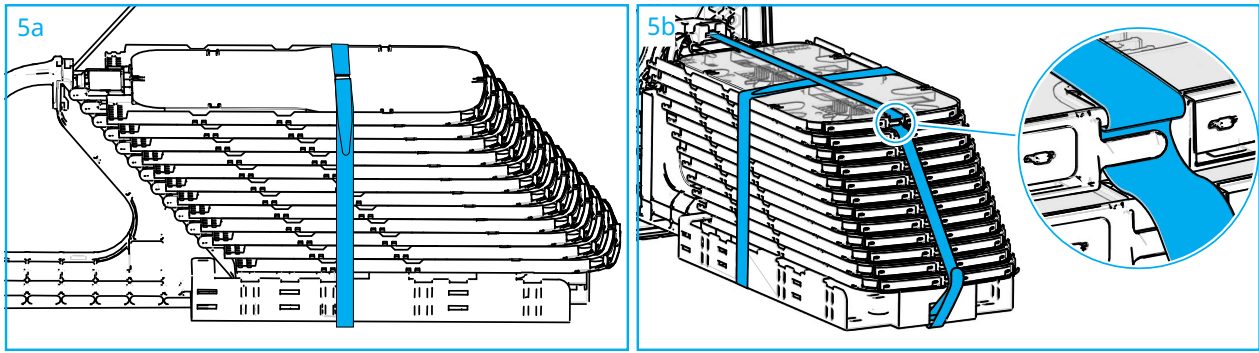
11.6 Splice Fibers and Store on Trays

Fiber splicing should be done in compliance with company approved practices. This section outlines some basic splice organizing techniques to be followed.

- 1 Always begin splicing with the bottom tray. Lift the remaining trays and secure all of them with the tray support.
- 2 Remove all stored, unspliced fibers from the tray and clean those that will be spliced. Refer to the splice manufacturer's instructions for directions on fiber splicing.
- 3 Store the first completed splice in the top splice slot (the slot farthest from the hinge). Coil the slack loops around the respectively tray section (A or B) in an orderly fashion. The splice modules can be moved or removed to accommodate your splice arrangement.

 **Note:** Make sure all fibers are routed under the guiding lips.

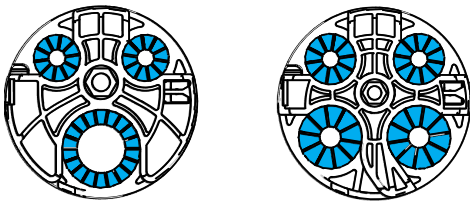
4 When all the splices in the tray are stored, replace the clear plastic tray cover.



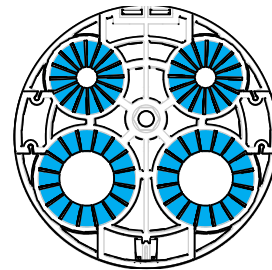
5 Secure all trays to the bracket with the fastener straps.

12 Gel seal blocks

Small gel cable seals

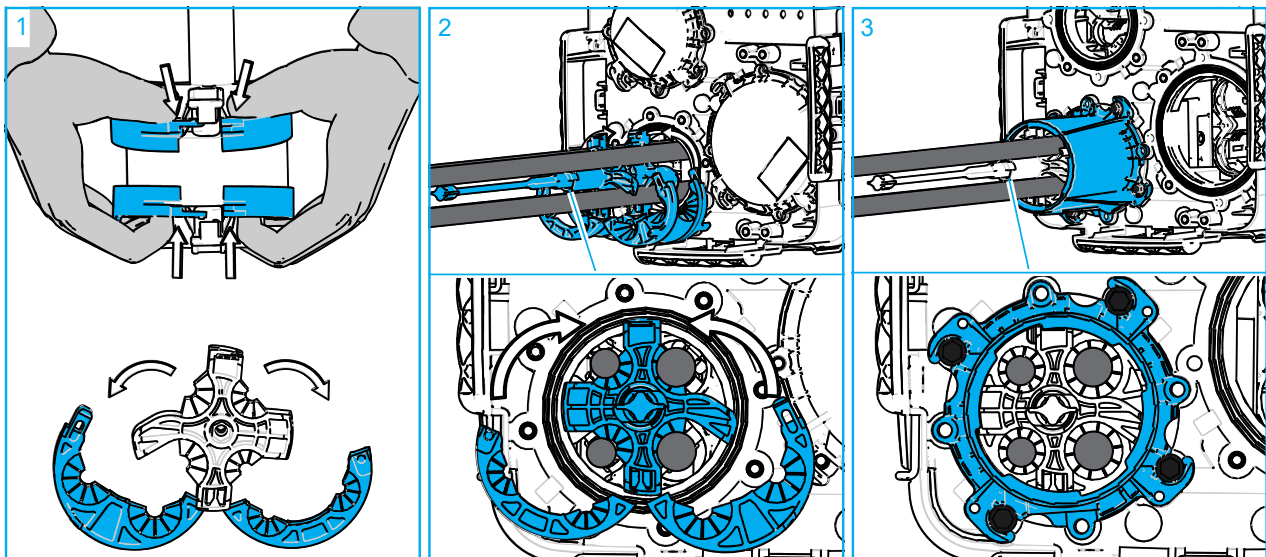


Large gel cable seal

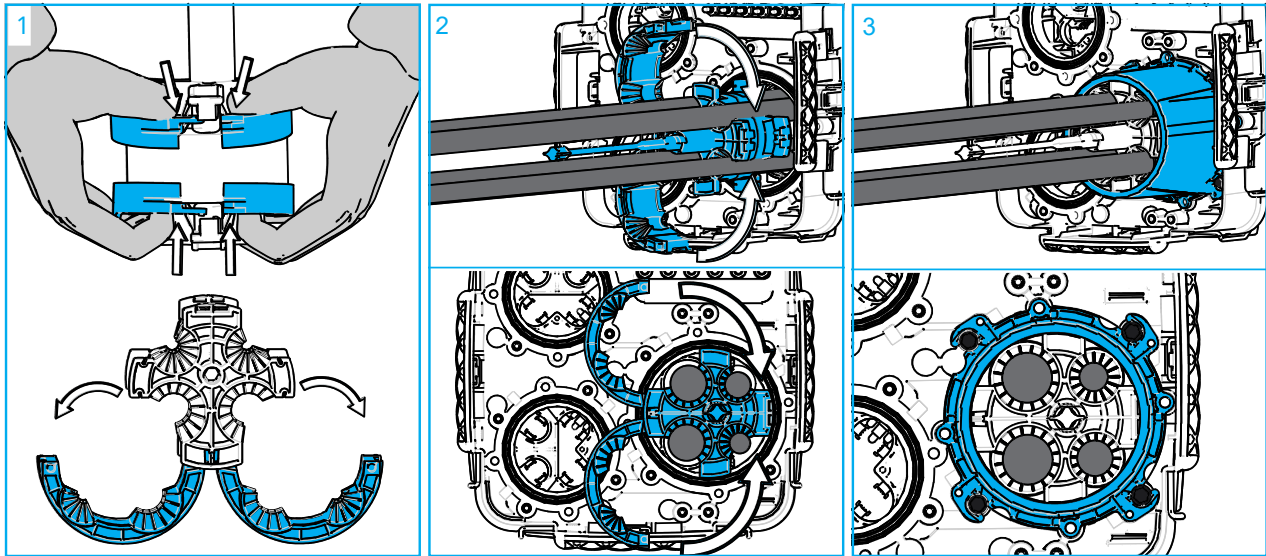


12.1 Install gel seal blocks

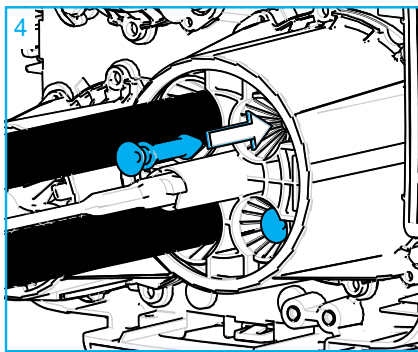
Small gel block



Large gel block

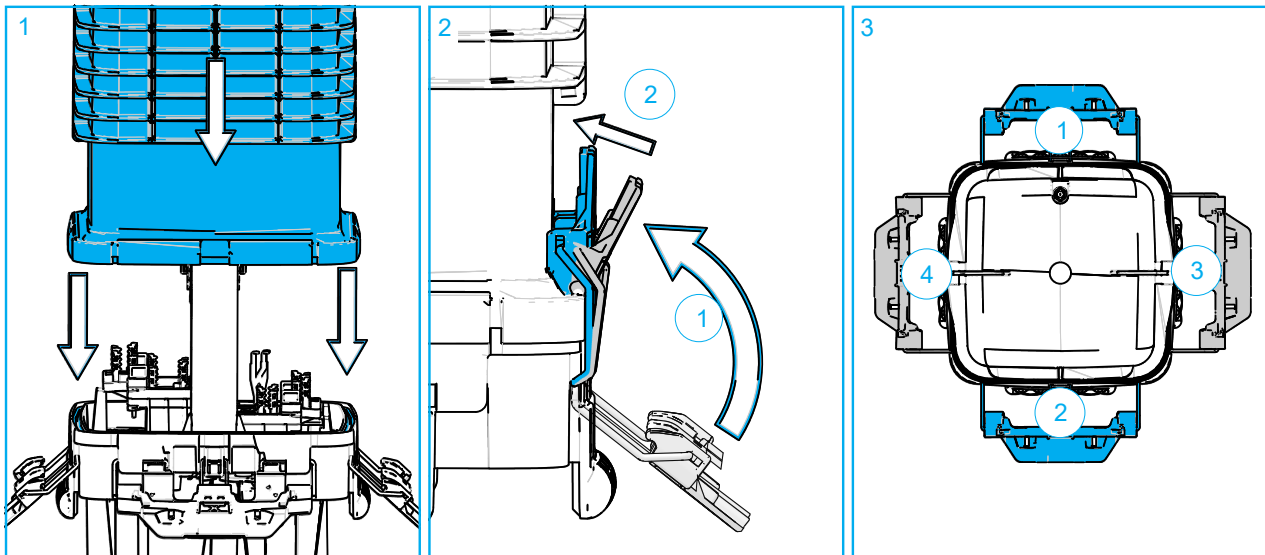


- 1 Unlock and open the gel block assembly.
- 2 Place the gel block assembly between the cables with the tail centered and lock it.
- 3 Install the gel block cover over the gel block assembly and secure it with the 4 screws.

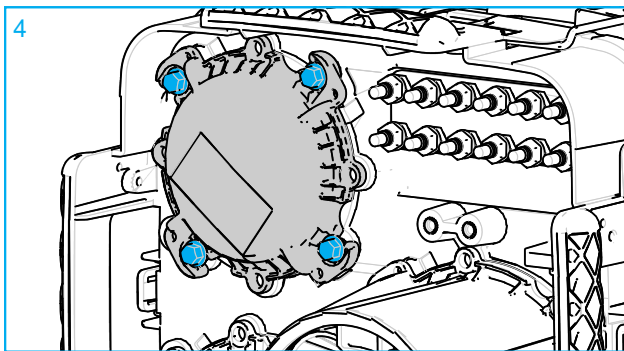


- 4 Insert one cable port plug into each empty cable port.

13 Close the closure

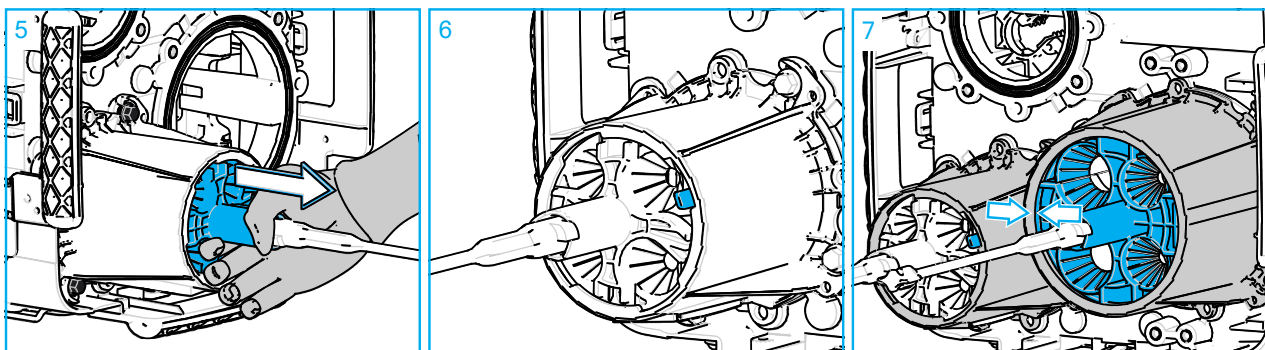


- 1 Make sure that the rubber gasket in the bottom half of the closure is clean and seated in the groove. Slide the dome over the fiber management system.
- 2 Lift the latch and place the hook over the rim of the dome. Close the latch.
- 3 Close the 4 latches crosswise 2 by 2. First at the back and front, then left and right. This will ensure an even pressure distribution on the sealing ring.

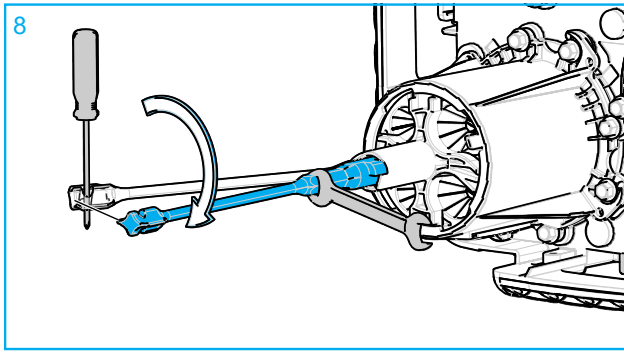


- 4 Install a cover on the unused entrance ports.

Note: Make sure that the rubber gasket is clean and seated in the groove.



- 5 Pull the gel seal block in position.
- 6 The Small gel seal blocks are in place when the gel block tab pops out.
- 7 The large gel seal block is in place when it touches the end of the gel seal cover.



8 Twist the "tail" of each gel block clockwise to seal cables (The tail can bend away from cables). When the tail reaches its physical stop, the seal is complete. Insert a screwdriver through the loop in the tail, or use a Crescent wrench to apply extra torque, if required.

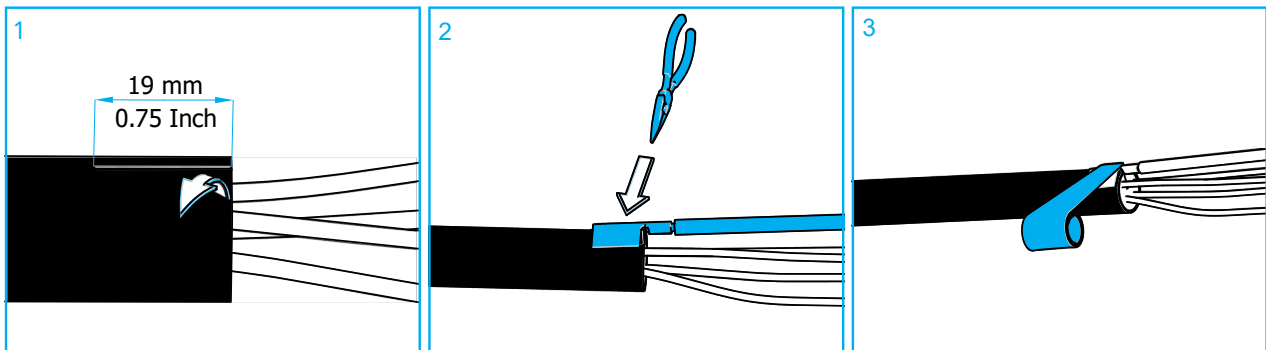
Note: Do not use a drill to turn the tail as this could cause damage to the gel seal.

14 Testing the Closure Seal

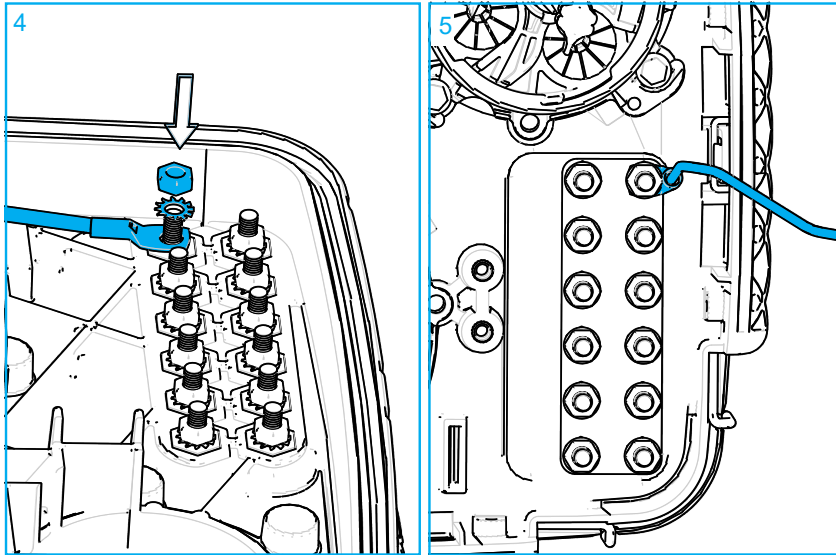
Pressure test the closure with no more than 5 psi. Thoroughly soap all seals and the valve to check for seal integrity.

Note: After flash testing, release the pressure from the closure through the valve.

15 Grounding



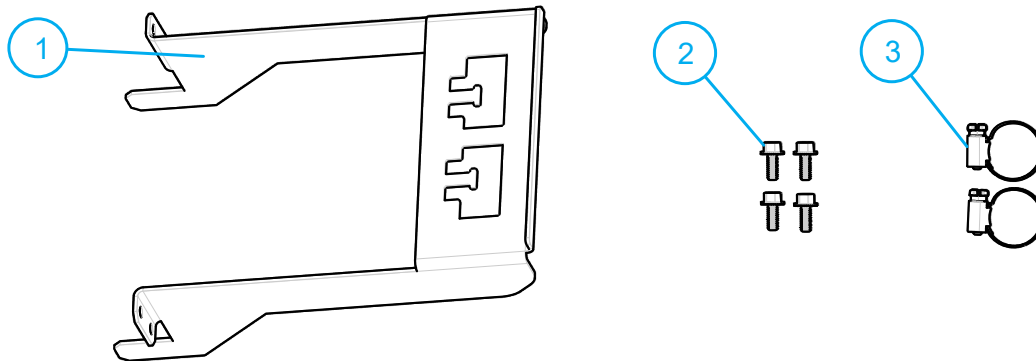
- 1 If a shield is present in the cable, tab the cable 19 mm / $\frac{3}{4}$ inch from each sheath ring cut.
- 2 Attach a supplied bond wire to the tab with the alligator clamp over the sheath and armor. Crimp the alligator clamp onto the sheath and armor with a pliers.
- 3 Tape the bonding wire in place and proceed cable installation as explained in the basic installation instructions.



- 4 After installation of the cable in the closure, attach the bounding wire to the grounding at the inside of the closure. Tighten the screws with a socket wrench using 40 lb-in of torque.
- 5 The external grounding needs to be attached at the outside of the closure. (External grounding cable is not included in the kit.)

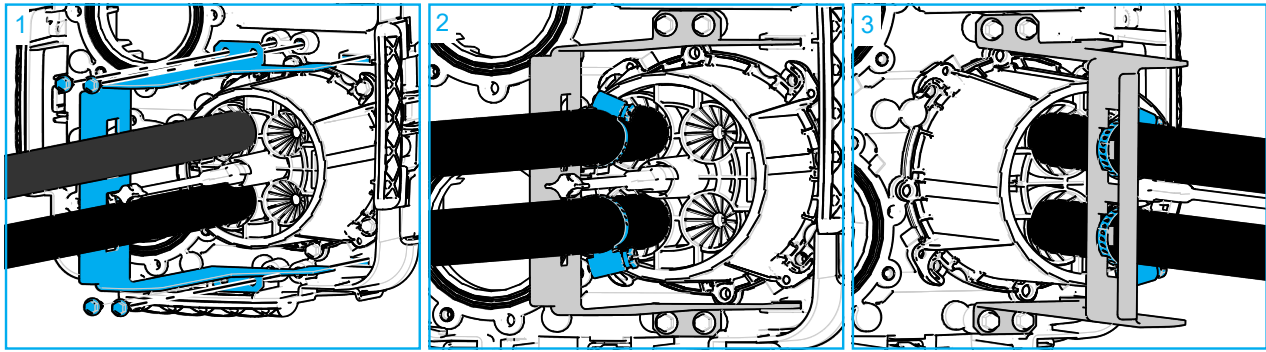
16 External cable fixation

16.1 External cable fixation Kit content



N°	Description	Qty
1	External cable fixation bracket	1
2	Screws	4
3	Hose clamps	2

16.2 Installation external cable fixation bracket

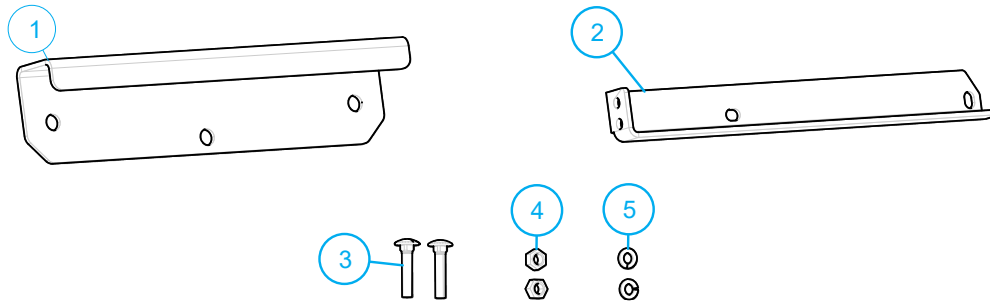


- 1 Install the external cable fixation bracket on the base with the 4 screws.
- 2 Secure the cable to the bracket with the hose clamp.

17 Mount the closure

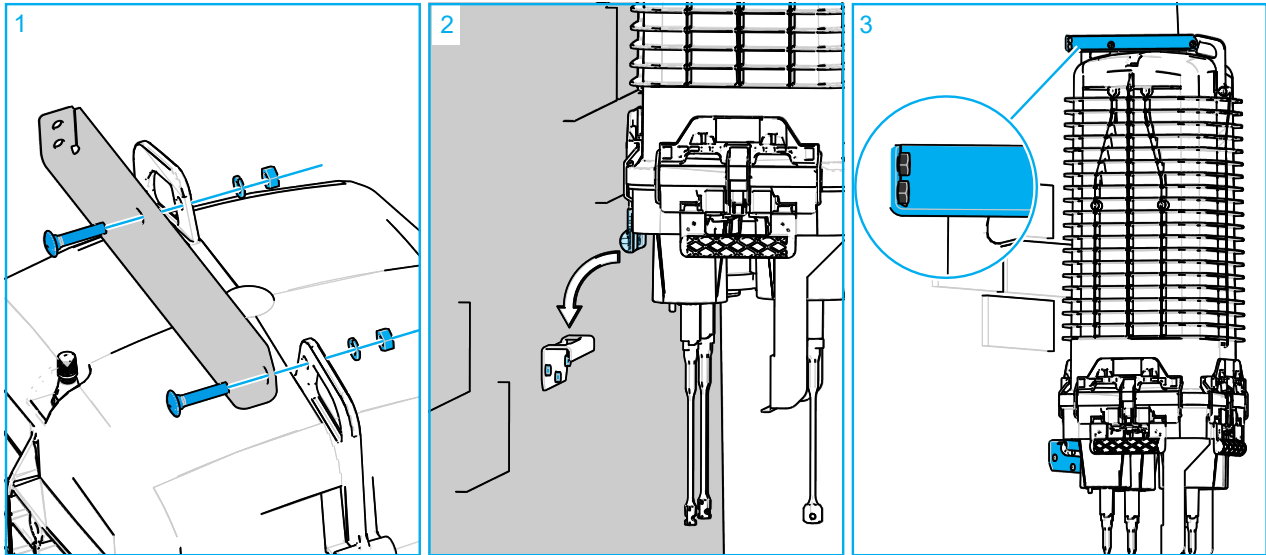
17.1 Wall mounting

17.1.1 Kit content



N°	Description	Qty
1	Base mounting plate	1
2	Top mounting plate	1
3	Bolts	2
4	Nuts	2
5	Washers	2

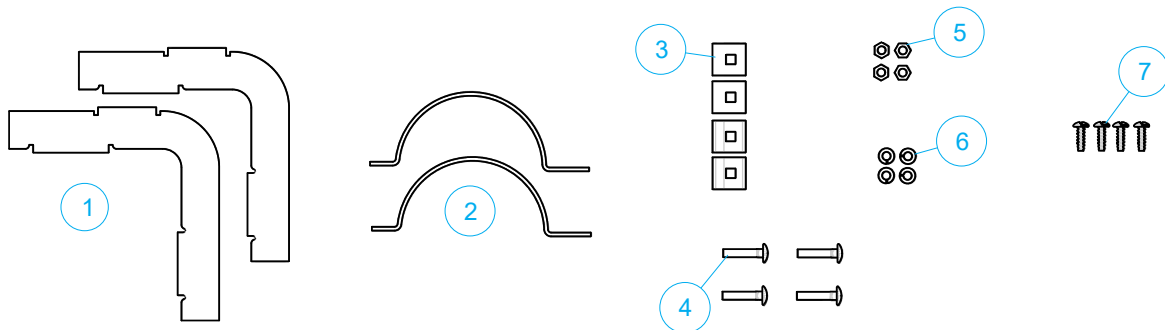
17.1.2 Install Mounting bracket



- 1 Mount the top mounting plate on the top of the dome.
- 2 Mount the base mounting plate to a wall and place the handle of the dome closure in the base mounting plate.
- 3 Mount the top base plate on the wall.

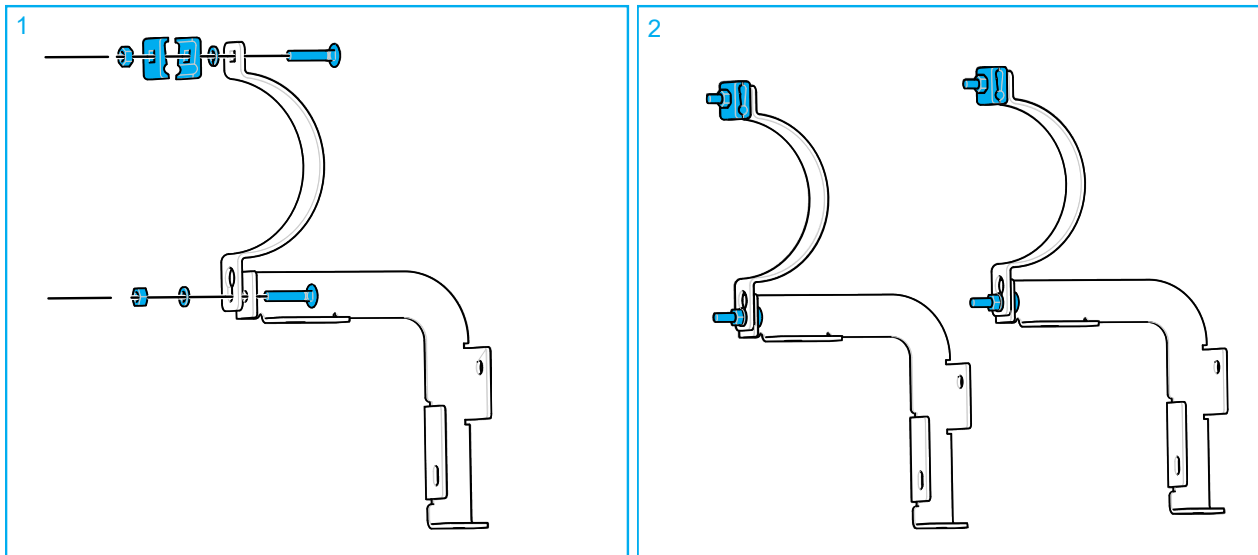
17.2 Aerial mounting

17.2.1 Aerial mounting kit

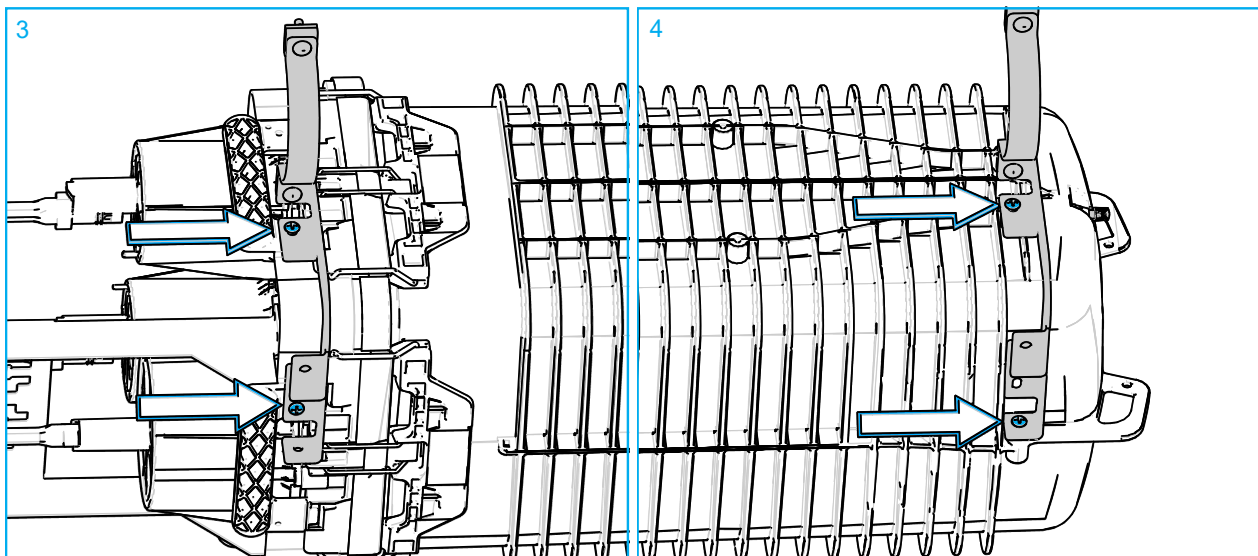


N°	Description	Qty
1	Mobra base plate	2
2	Strand Hanger	2
3	Strand clamp	2
4	Bolts	4
5	Nuts	4
6	Washers	4
7	Screws	4

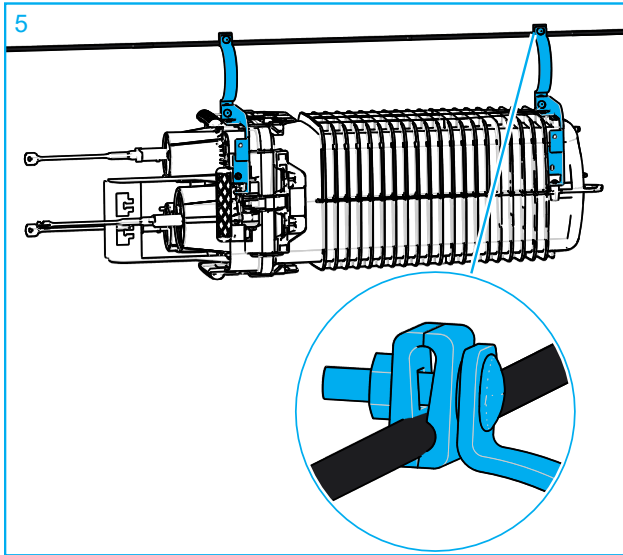
17.2.2 Install Aerial mounting kit



- 1 Install the strand hanger on the mobra base plate and attach the strand clamp to the strand hanger as shown in picture 1.
- 2 Do the same with the other mobra base plate and stand hanger.



- 3 Install 1 assembly to the base of the closure with the 2 screws.
- 4 The other assembly needs to be installed on the closures dome with 2 screws.



- 5 Secure the closure with the strand clamp on the cable by tightening the clamps with the bolts.

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