COMMSCOPE®

Installation Instructions

TC-1560-IP
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http://www.commscope.com

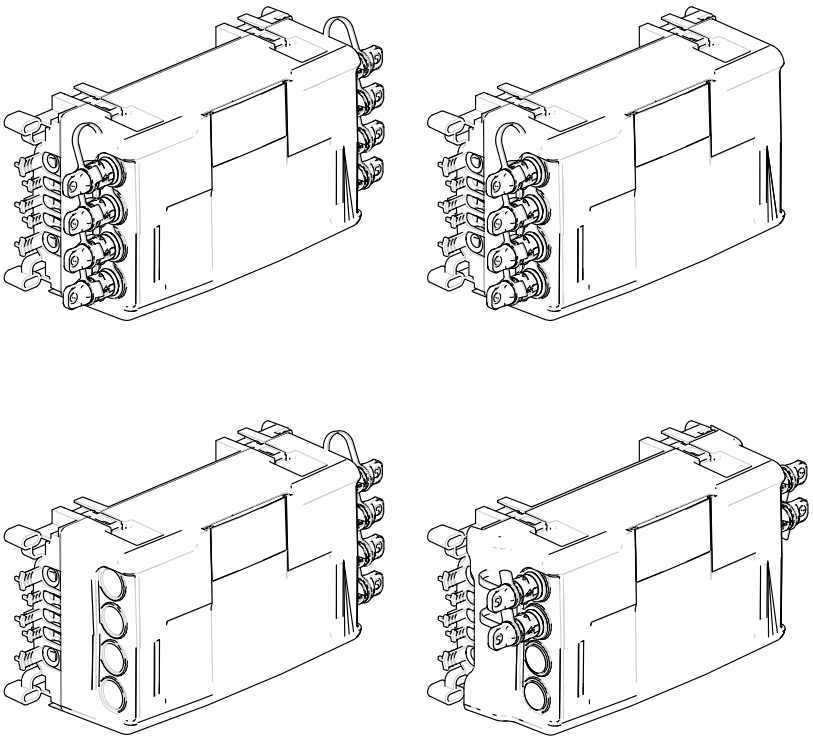
NOVUX™ Fiber Optic System
HSC1 PRODIGY

About this manual

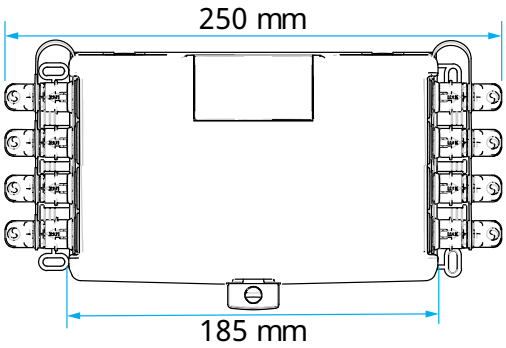
This manual describes the basic installation steps of the HSC1 Prodigy. The document starts with providing an overview of the tools required to perform the installation. Also warnings and cautions are indicated, which should be observed before starting the product installation. Installation steps in this document are limited to: closure preparation, retractable cable application, looped cable application, installing branch off cables, making and storing splices and connecting the prodigy connector.

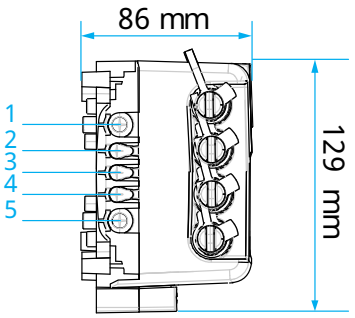
Images in this manual are for reference only and are subject to change.

Closure variants



Dimensions closure

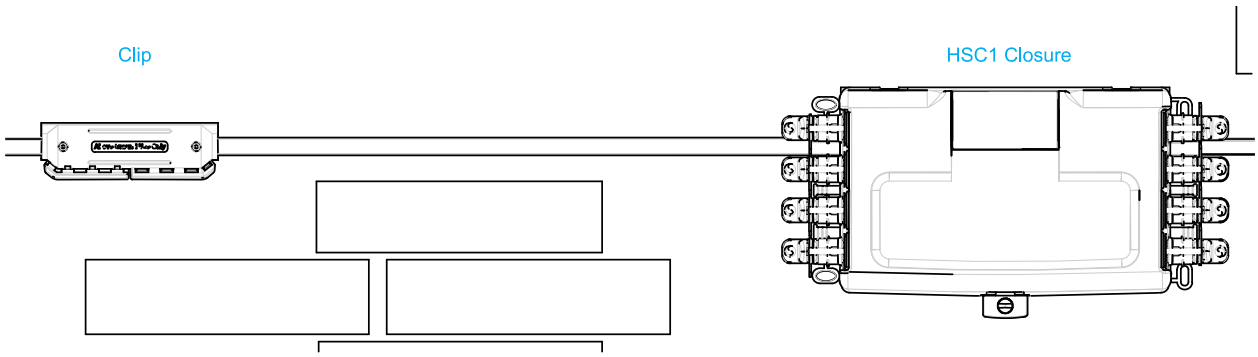




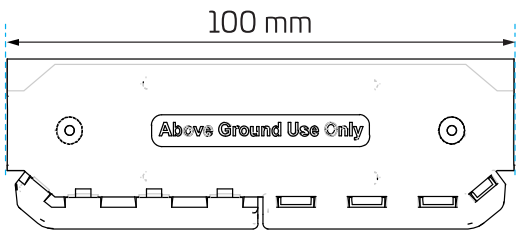
Cable range

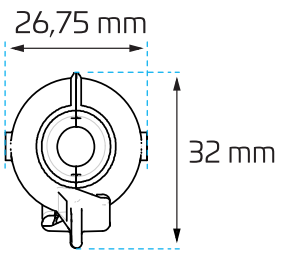
	Cable range (mm)	Position in closure
Feeder Cable	8-12	1
Branch cable (push through)	3-7	2, 3, 4
Branch cable (push through)	8-12	5

System overview: retractable cable

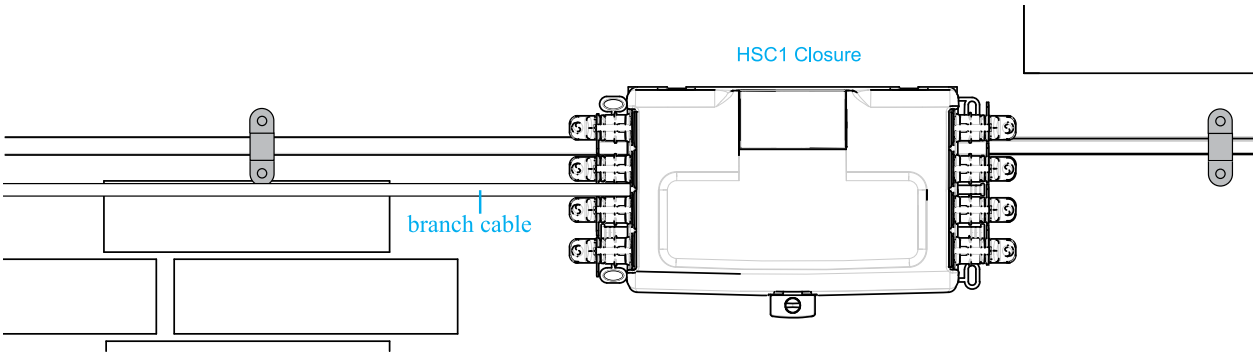


Dimensions clip



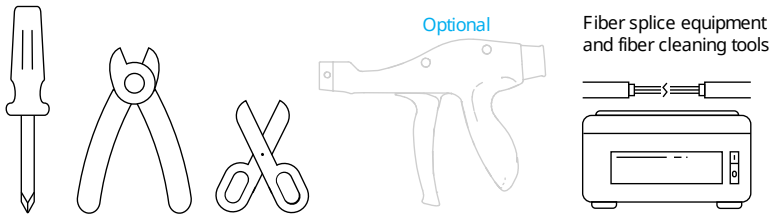


System overview: looped cable (microsheath only)

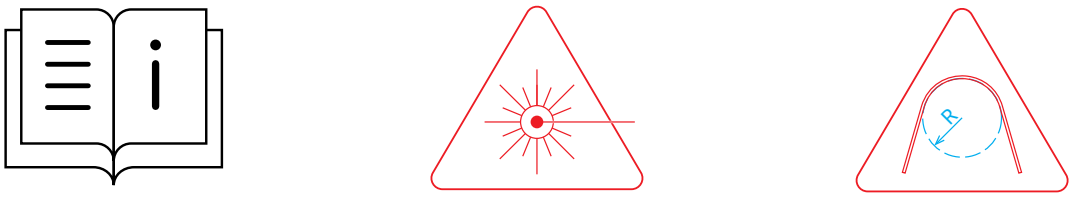


Contents

1 Tools

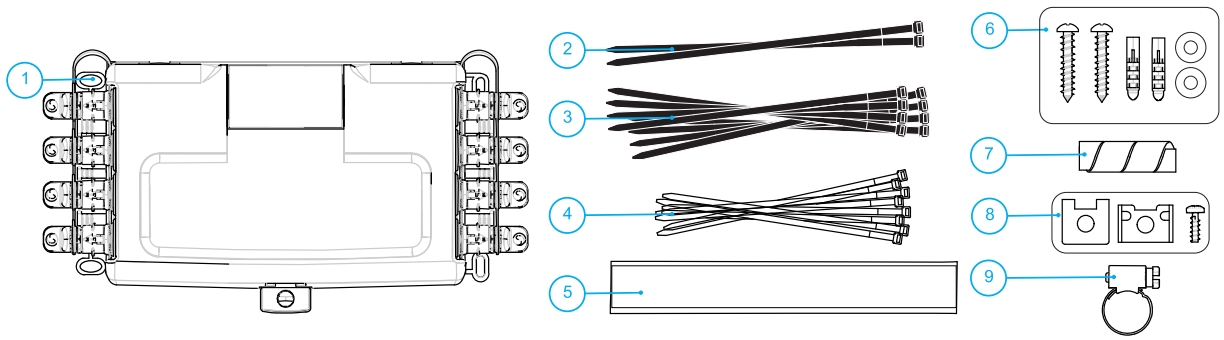


2 Warnings and Cautions



- 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.

3 Kit contents HSC

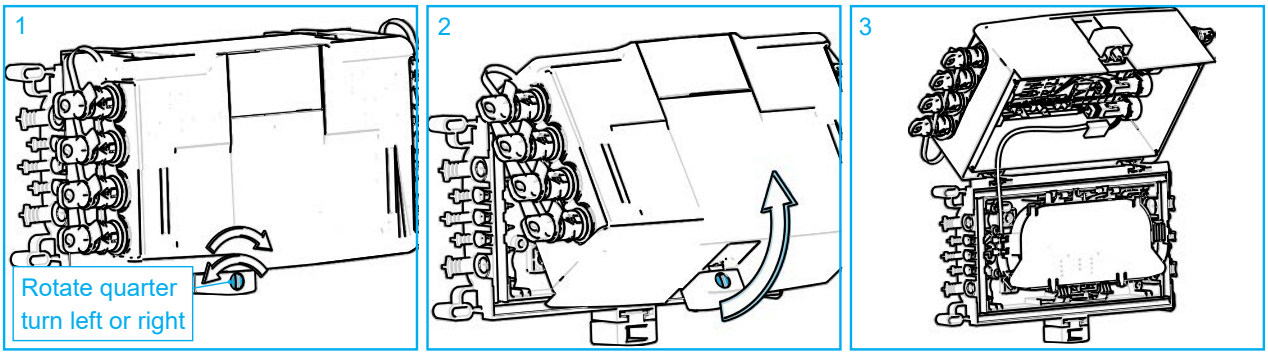


N°	Description	Qty		N°	Description	Qty
1	HSC prodigy closure	1		6	Mounting equipment	1
2	Cable ties black large	2		7	Spiral tube	1
3	Cable ties black small	12		8	Metal plates (top and bottom)	2
4	Cable ties white large	8		9	Hose clamps	2
5	Silicone tape (1,25 cm width)	1				

Note: Contents can vary depending on the configuration.

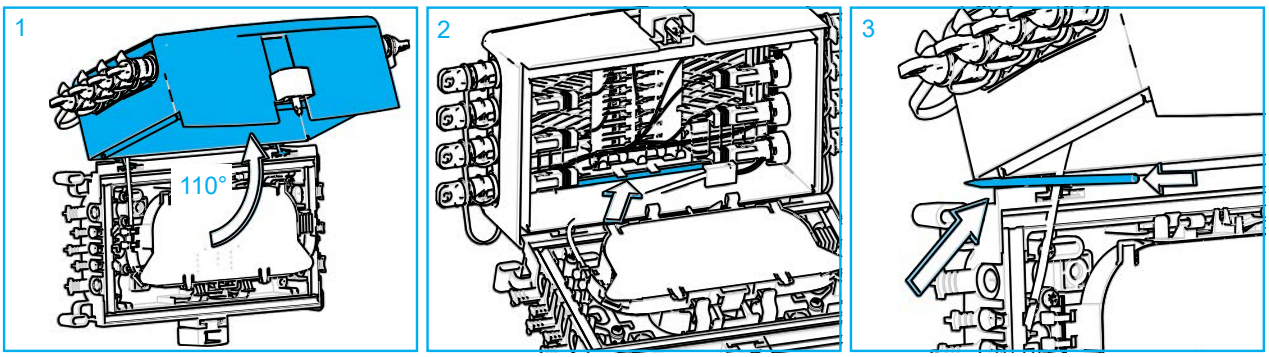
4 Closure preparation

4.1 Open the closure



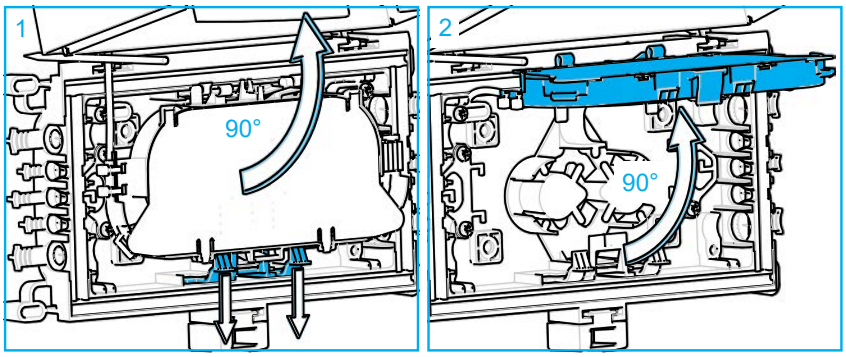
1 To open the closure, the screw can be turned a quarter turn left or right to unlock.
2 Hinge the cover open to the top.
3 Cover fully open.

4.2 Lock the cover

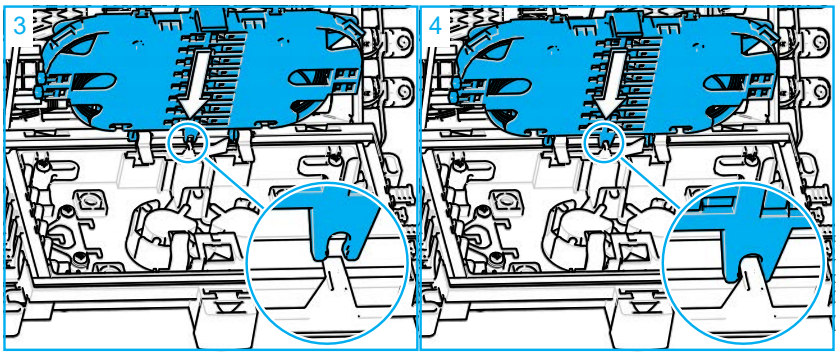


1 To be able to mount the closure to the wall, the maximum opening of the cover is limited to 110°.
2 Two fiber guidance pens are located in the cover. One can be used to lock the cover in open position. Remove the second fiber guidance pen and keep aside.
3 Slide the fiber guidance pen between the bottom and the cover as shown.

4.3 Open and lock the tray



1 Push the tabs that lock the tray downwards.
2 Rotate the tray open 90°.

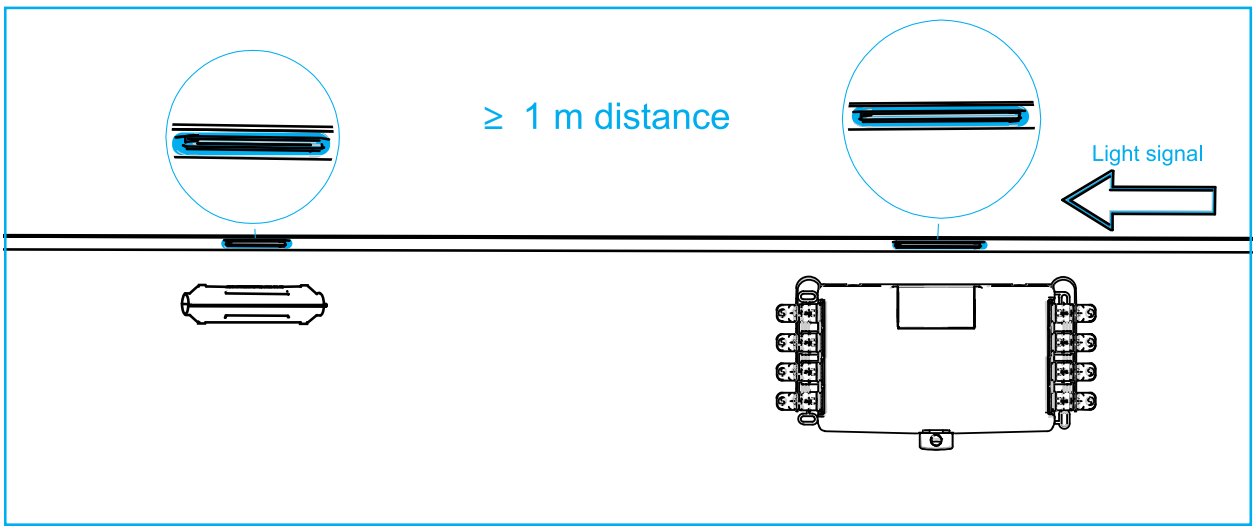


3 Slide the tray downwards.
4 The hinges of the tray will lock now in the squared cavities and the locking feature will slide over the rib.

5 Retractable cable application

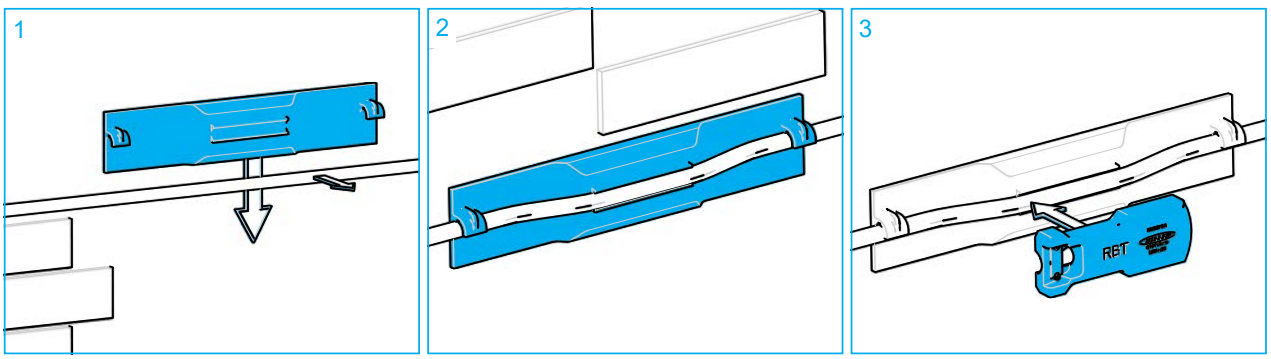
5.1 Feeder cable preparation

Two window cuts should be made. One is the opening to pick the fiber and will be mounted in the closure. The other one will be at least 1 m from the first window cut and will be used to cut the fiber. This second window cut can be protected with a clip afterward.



5.1.1 Use cable holder

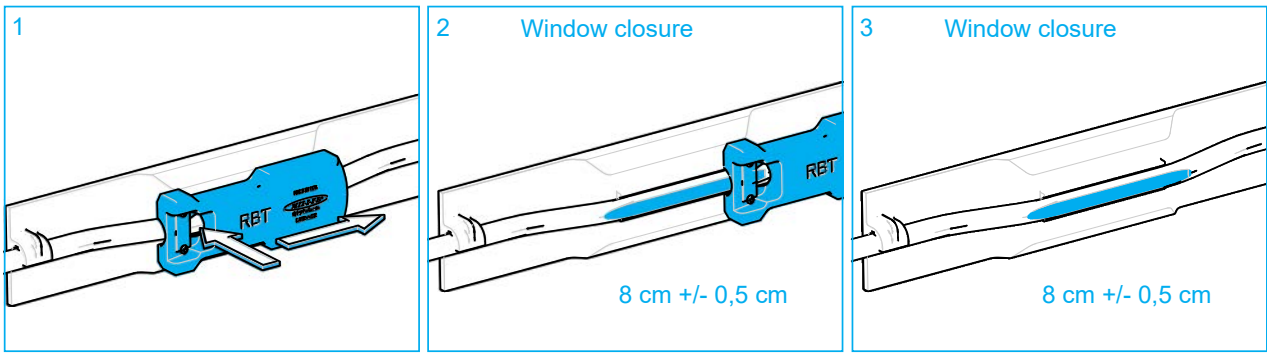
The cable holder can be used with a CommScope cable of 9,2 mm.



1 Slide the cable holder between the cable and the mounting surface where the window cut should be created.
2 Secure the cable under the two locking tabs.

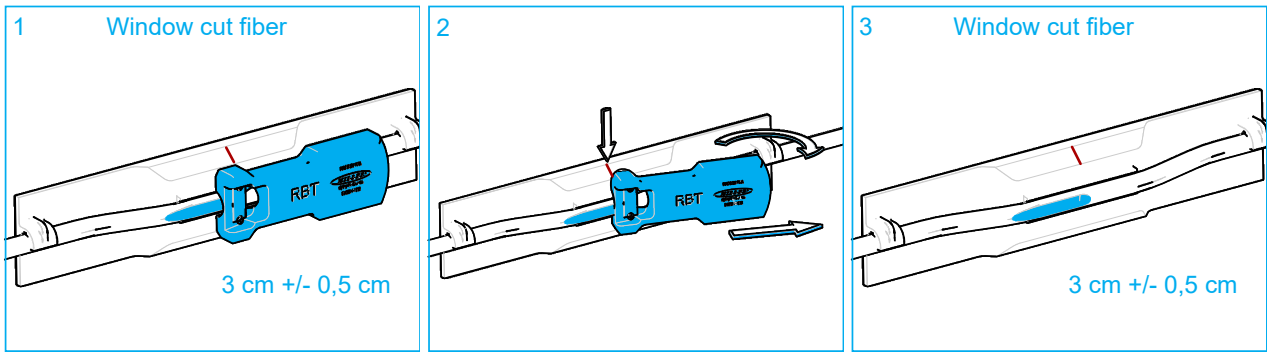
3 Now the shaving tool can be used to make the window cut.

5.1.2 Window cut mounted in the closure



1 Position the shaving tool on the cable at the left side of the bump.
2 Push firmly while moving to the right side over the complete length of the bump.
3 The opening will be around 8 cm ±0,5 cm.

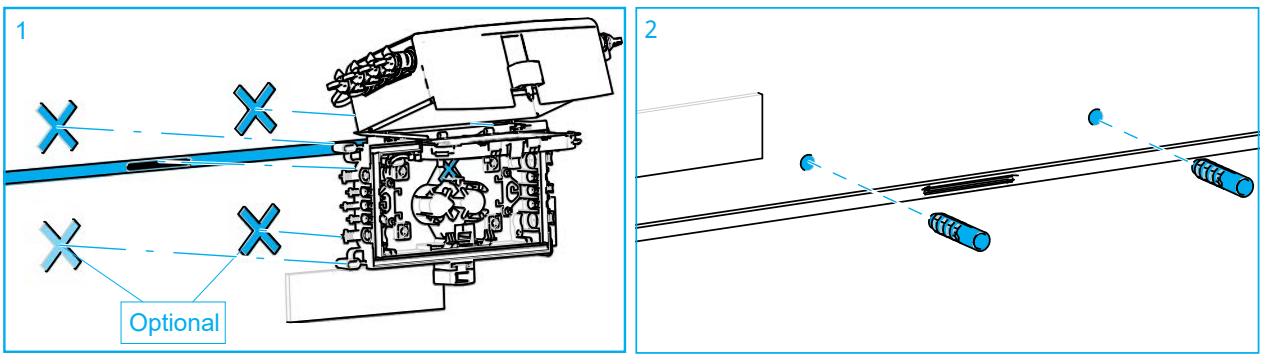
5.1.3 Window cut to cut the fiber



1 Position the shaving tool on the cable at the left side of the bump.
2 Push firmly while moving to the right side until the middle of the bump, indicated by a groove. Turn the shaving tool away from the cable.
3 The opening will be around 3 cm ±0,5 cm.

5.2 Feeder cable installation

5.2.1 Indicate mounting position

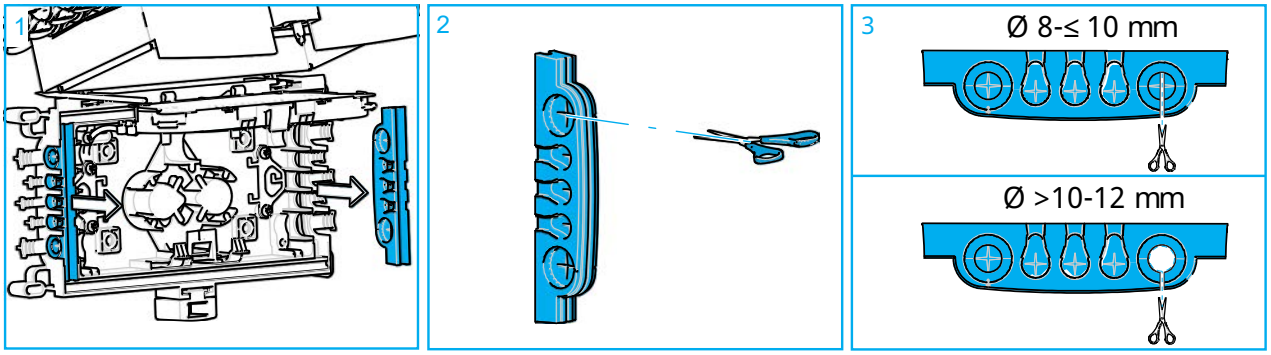


1 There are 4 mounting position options to mount the closure. It is preferred to use the 2 upper mounting positions.

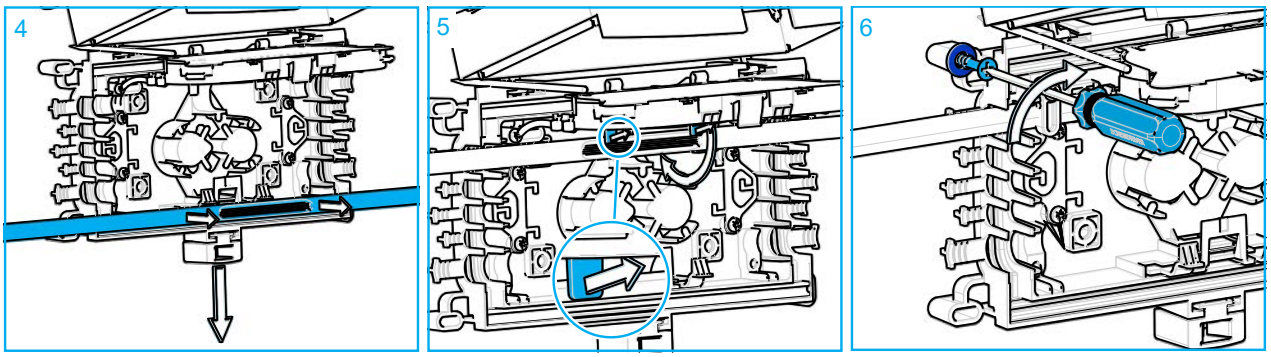
Note: Make sure the window cut is in the middle of the closure, in the foreseen cavity.

2 Drill the holes and insert the plugs.

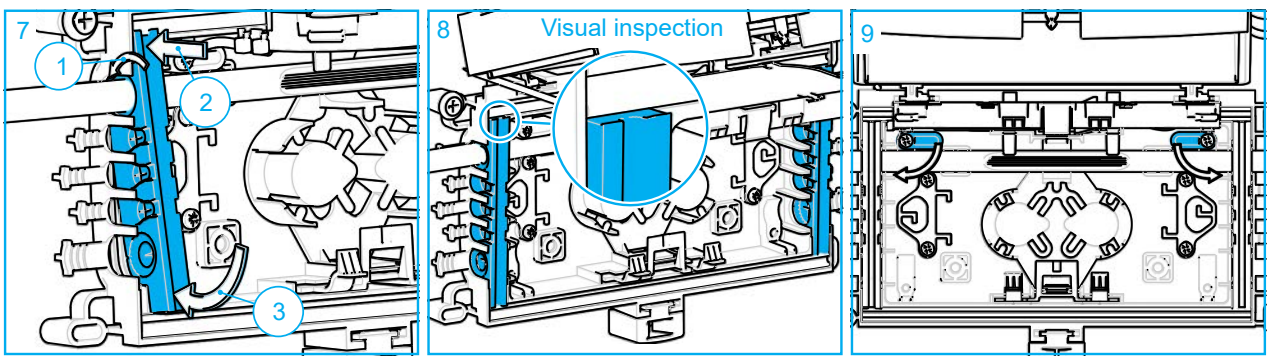
5.2.2 Install the retractable cable in the closure



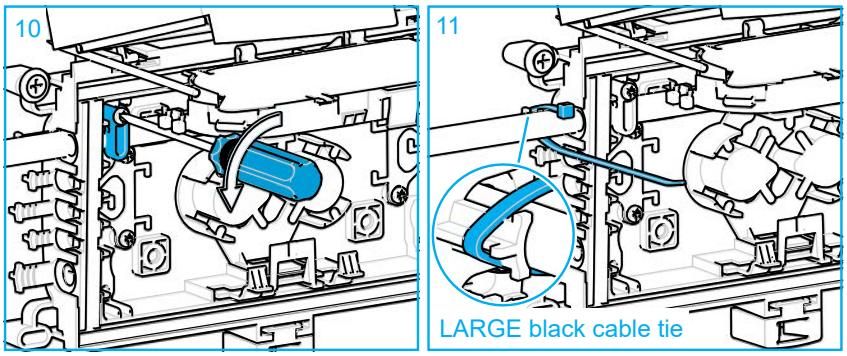
1 Remove the seals from the closure.
2 Cut an opening from the bottom side in one of the feeder ports.
3 For a cable larger then 10 mm cut away the inner rubber.



4 Slide the closure behind the cable. Lift the cable a bit to the front if possible
5 lift the 2 flange in the closure (above the window cut of the cable) a bit to facilitate the cable falling into the cavity.
6 Secure the bottom of the closure to the mounting surface with the 2 screws and install a washer between the bottom and the head of the screw.

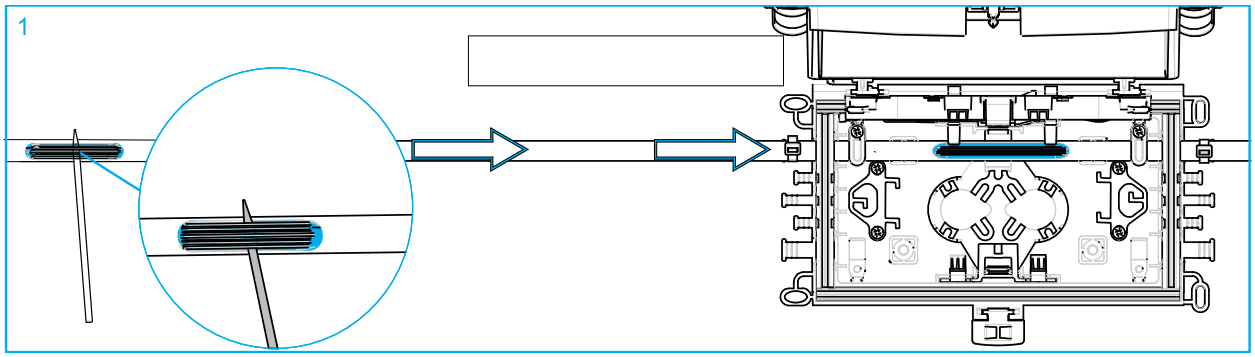


7 Mount the seal around the cable. Mount the tip of the seal in its cavities. Make sure the rubber material under the cable is correctly seated in the cavity. Push the cable downwards, then rotate the rest of the seal in its cavity
8 Make sure the step between the 2 seals is as small as possible.
9 Loosen the two cable bridges and turn them over the cable.

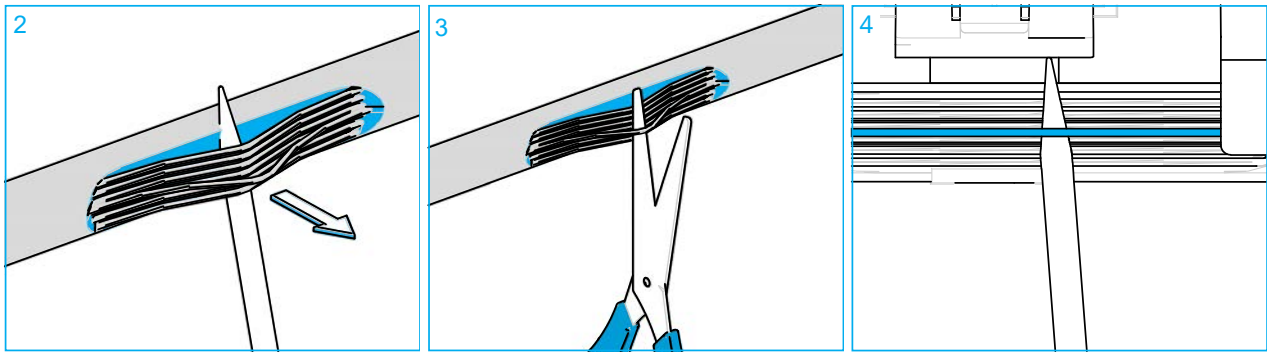


10 Secure the two cable bridges.
11 Secure the cable with **one large black** cable tie to the outside of the closure. Do this at the left side and at the right side.

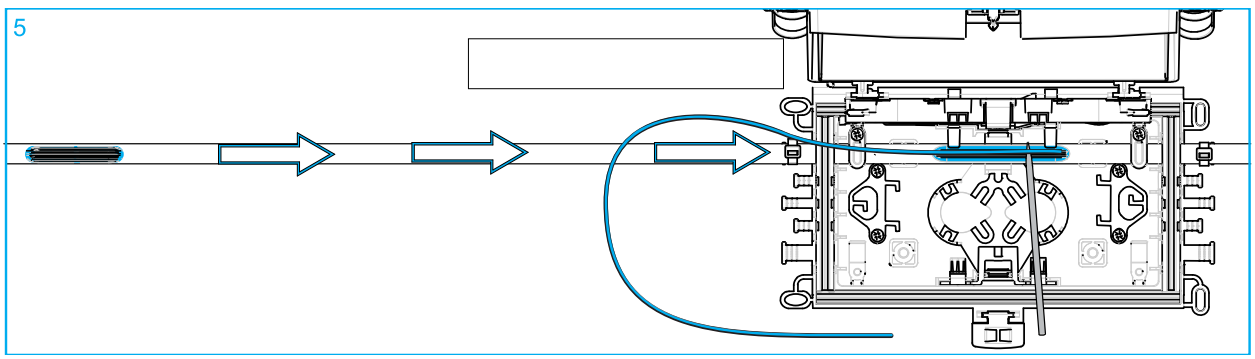
5.2.3 Pull back the fiber



1 To have a feeder fiber available in the closure, select the correct fiber in the opening made outside the closure.

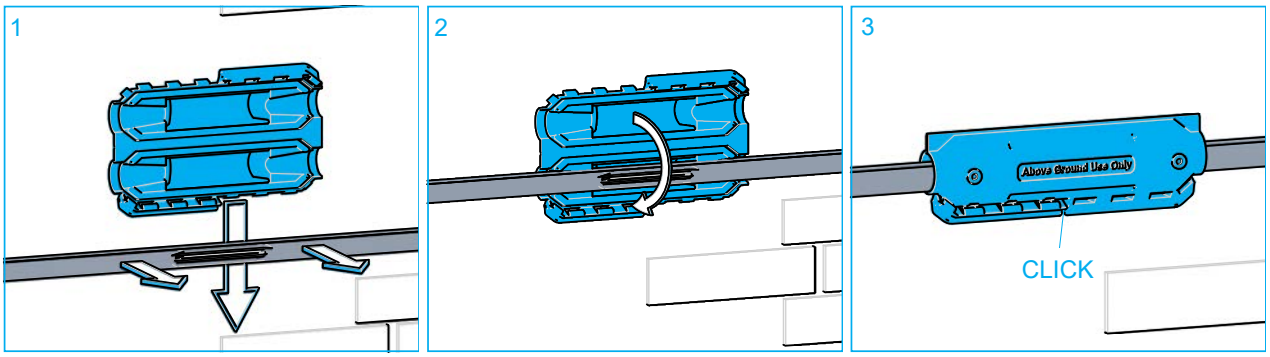


2 Pull out the bundle a little bit to have easier access to the fibers.
3 Select the correct one and cut it.
4 In the closure, pick this fiber with the fiber guidance pen and pull it out.



5 Completely pull back the fiber. Now it is available to be used in the closure.

5.2.4 Protect window cut to cut fiber

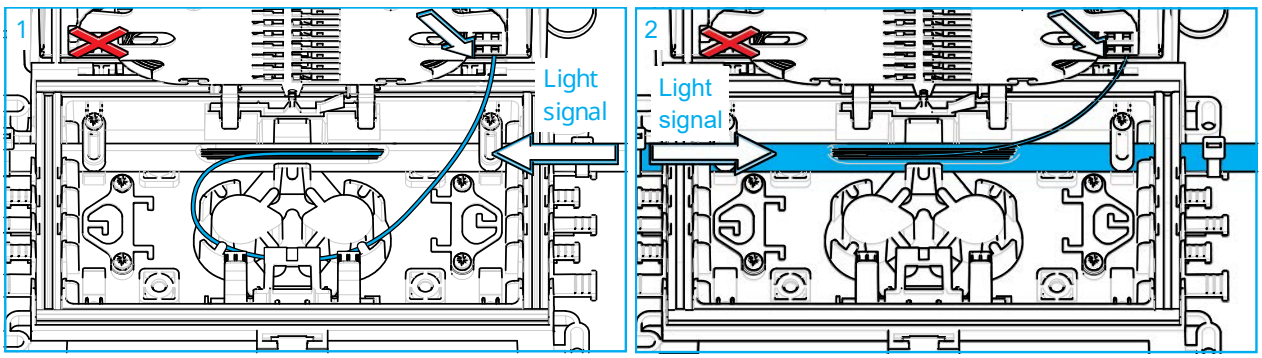


1 To protect the window cut created to cut the selected fiber, a clip can be used. Slide the clip between the cable and the mounting surface.
2 Once correct positioned, close the clip.
3 A clicking sound is observed when closing the clip.

5.3 Route the feeder fiber to the top tray

Note: The feeder fiber that will be spliced to the input of the prodigy connectors, should be routed to the **top tray**. The fibers can only enter this tray from the right side (left side is foreseen to bring the legs of the connectors to the top tray).

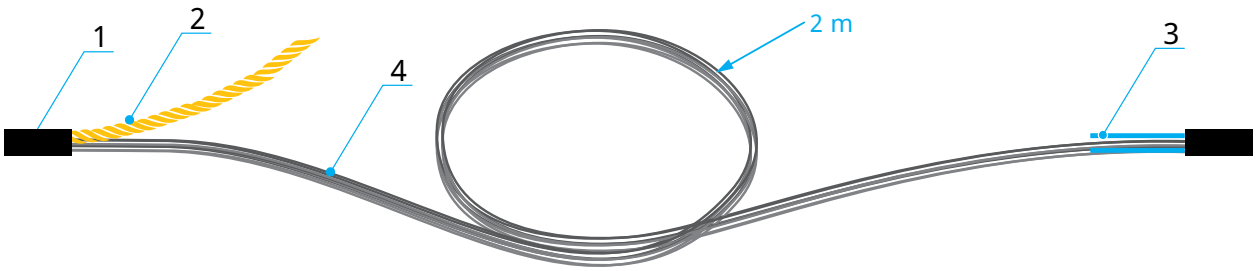
Important: Except for a 1x16 splitter application, where the feeder fiber must be routed to the bottom tray (also right side of the tray only).



1 If the light signal is coming from the right side, first make a tour around the island in the bottom before routing the subunit to the tray.
2 If the light signal is coming from the left side, the subunit can enter the tray directly on the right side of the tray as shown.

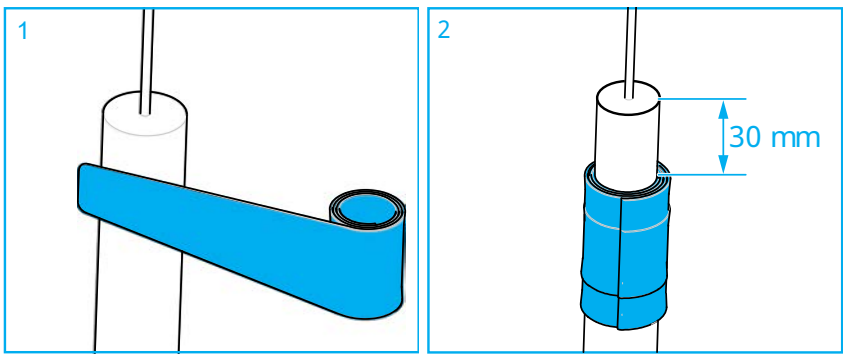
6 Looped cable application

6.1 Looped feeder cable preparation



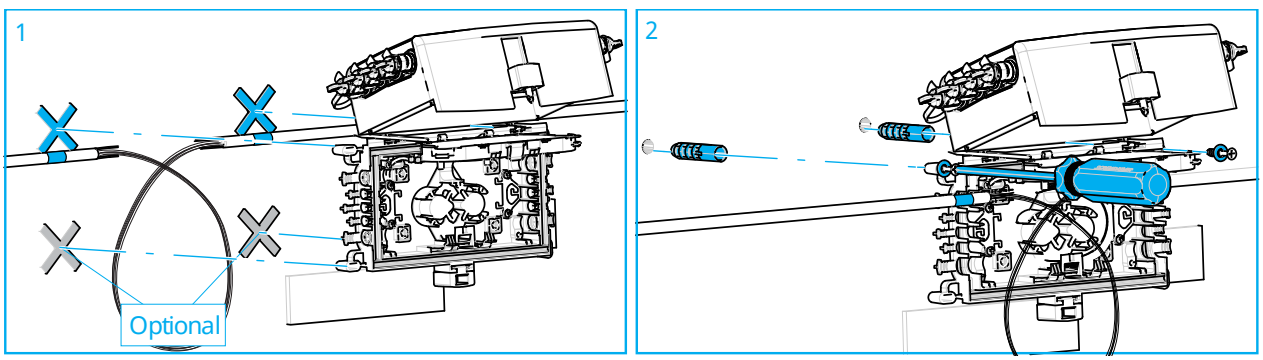
N°	Description	Preparation
1	Jacket	Remove the jacket over a distance of 2 m.
2	Aramid yarn	Keep a strand of approximate 25 cm.
3	Rigid strength member (single or dual)	Leave 2,5 cm.
4	Subunits	Clean the subunits, remove all grease.

Note: Make sure your hands are clean and degreased before preparing and installing the cables. Degrease the cable where the cable will enter the closure.



If the diameter is smaller than 9 mm / 0.35 Inches or if the jacket is a thin jacket (e.g. with microsheath cable), add 5 wraps of silicon tape. Position the tape 30 mm from the jacket end. Stretch the tape minimum 50% while wrapping the tape around the cable. Make sure the tape is wrapped where the hose clamp will be positioned.

6.2 Mount the enclosure

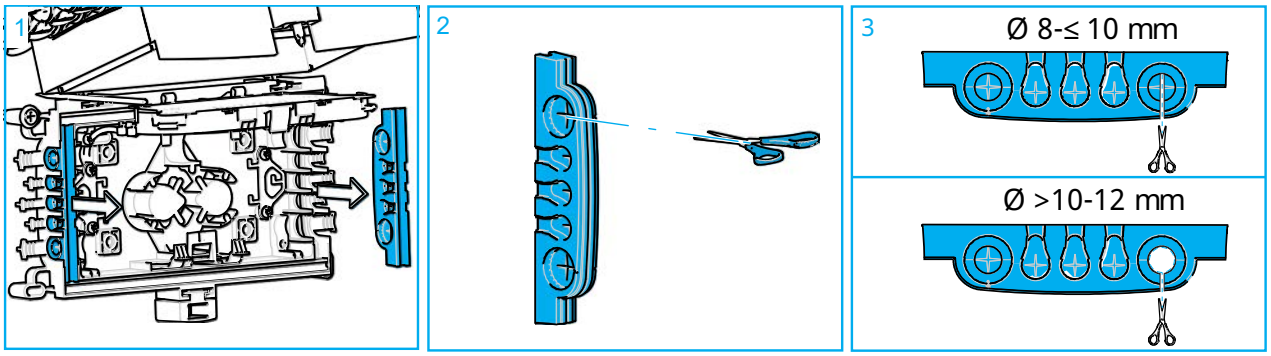


1 Position the closure on the mounting surface. Indicate the screw positions. There are 4 mounting position options,

it is preferred to use the 2 upper mounting positions.

2 Remove the closure, drill the holes and install the plugs. Position the cable on top of the closure. Secure the closure to the wall.

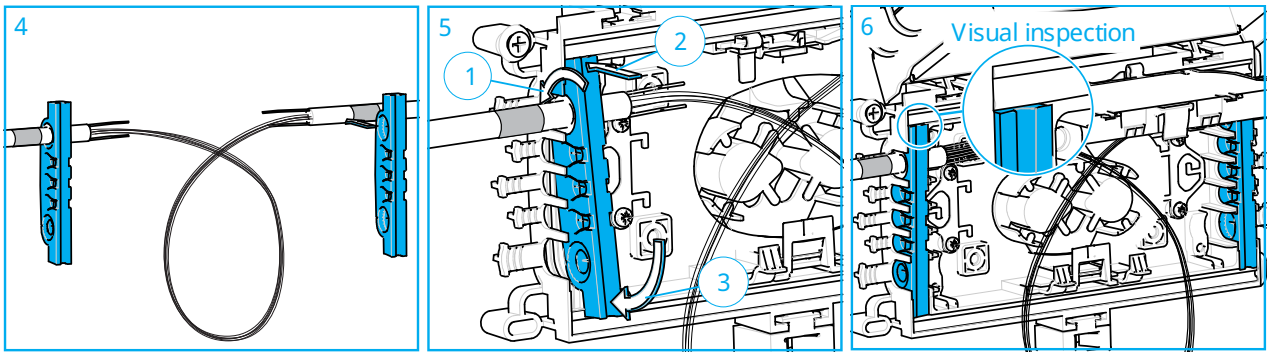
6.3 Looped feeder cable installation



1 Remove the seals from the closure.

2 Cut an opening from the bottom side in one of the feeder ports.

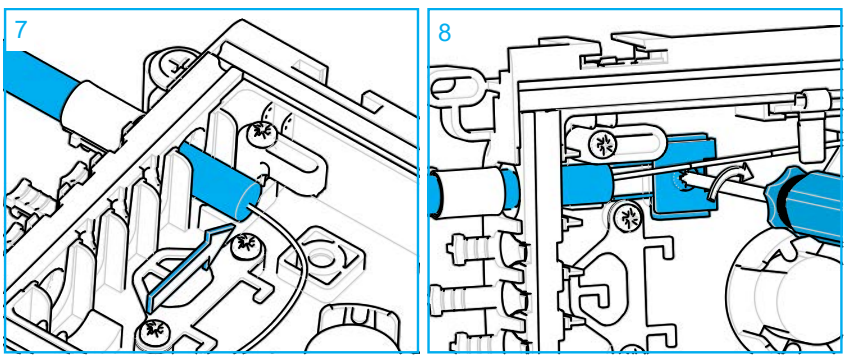
3 For a cable larger then 10 mm cut away the inner rubber.



4 Install the seals around the cable.

5 Mount the tip of the seal in its cavity. Make sure the rubber material is correctly seated in the cavity. Push the cable downwards, then rotate the rest of the seal in its cavity.

6 Make sure the step between the 2 seals is as small as possible.

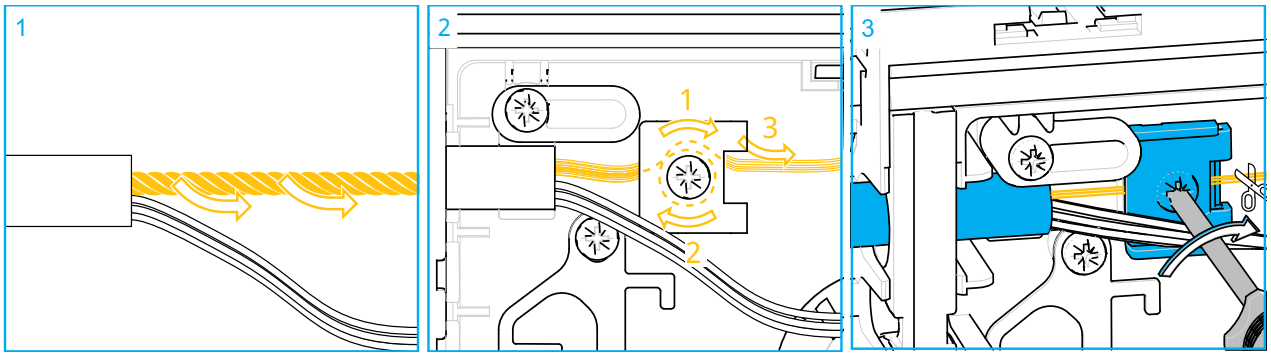


7 Align the cable with the cable holder feature in the closure as shown.

8 Secure the strength member between the 2 metal plates. More details in the next section.

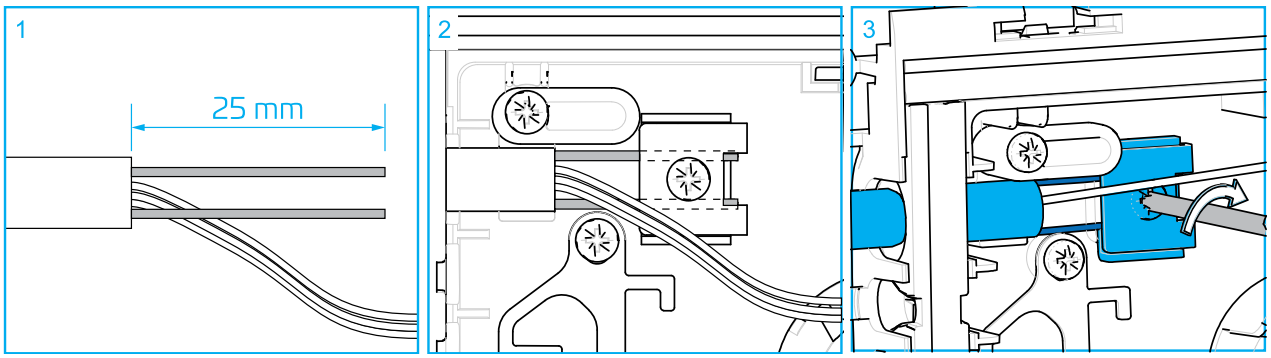
6.4 Secure the feeder cable

6.4.1 Aramid yarn



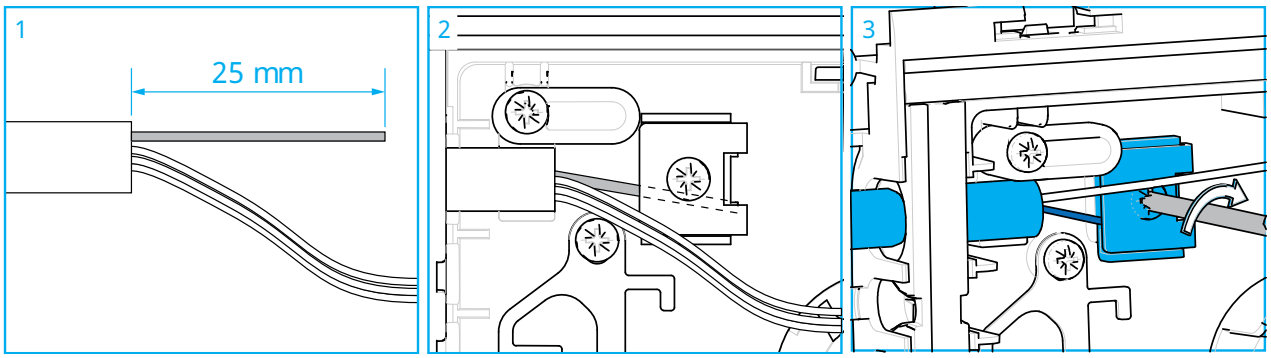
1 Twist the yarn.
2 Take the top metal plate with the screw inserted. Wound the twisted yarn 1 full rotation around the screw clockwise (so that when the screw tightens it pulls on the aramid yarn).
3 Install the top plate with the screw and the wounded yarn on the bottom metal plate. Tighten the screw. Cut off the excess aramid yarn.

6.4.2 Dual rigid strength member



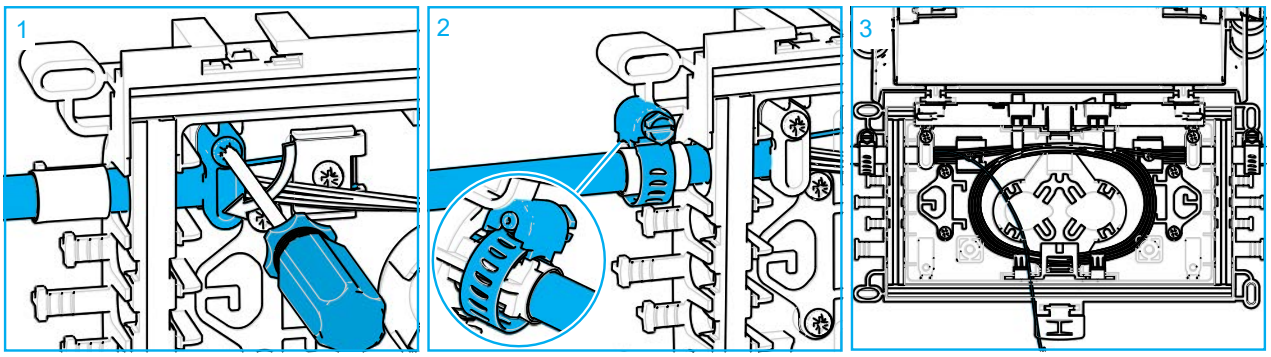
1 Verify the length of the dual strength members.
2 Slide the two rigid strength members between the 2 metal plates, one left and one right from the screw.
3 Tighten the screw.

6.4.3 Single strength member

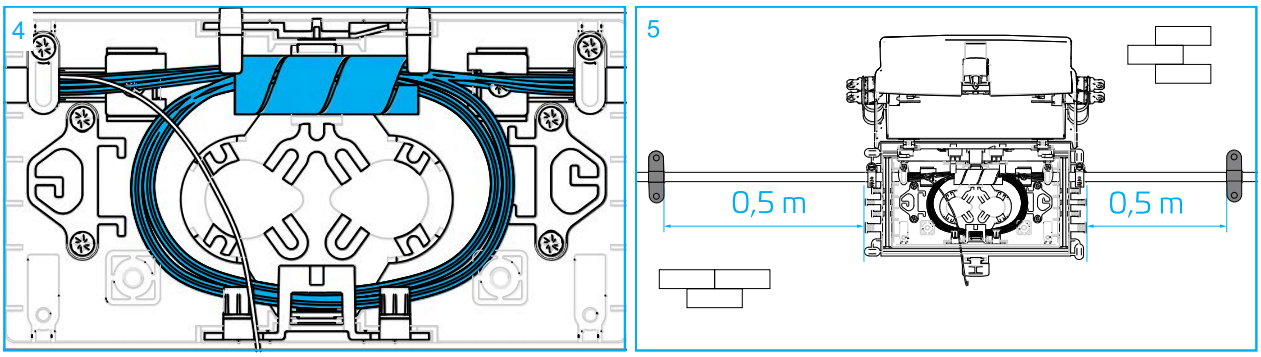


1 Verify the length of the rigid strength member.
2 Position the rigid strength member between the 2 metal plates. It will be positioned left or right from the screw.
3 Tighten the screw.

6.4.4 Secure the cable to the closure and to the wall



1 Loosen the two cable bridges and turn them over the cable. Secure the two cable bridges.
2 Secure the cable at the outside with the hose clamp.
3 Isolate one subunit and cut it at the jacket end of the cable.

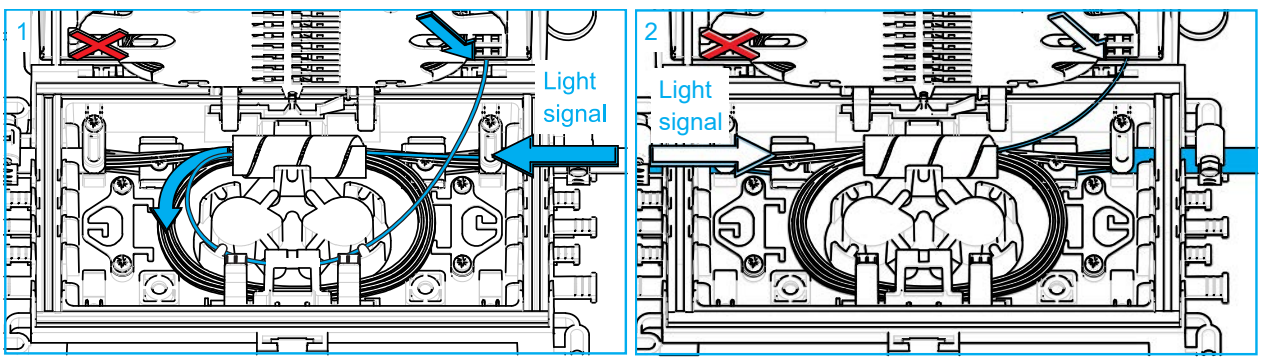


4 Store the other subunits in loops and secure with the large piece of spiral tube as shown.
5 Secure the cable to the wall. The cable should be clamped approx 0,5 m from the edge of the closure.

6.5 Route the feeder fiber to the top tray

Note: The feeder fiber that will be spliced to the input of the prodigy connectors, should be routed to the **top tray**. The fibers can only enter this tray from the right side (left side is foreseen to bring the legs of the connectors to the top tray).

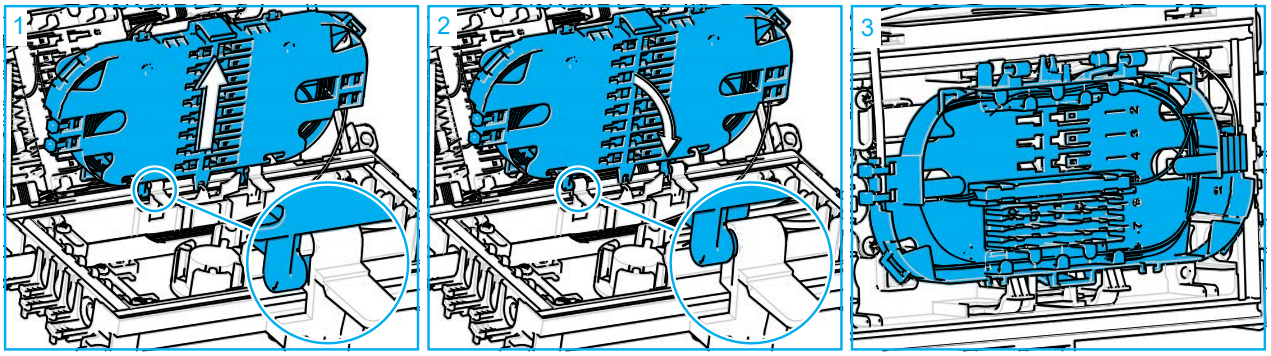
Important: Except for a 1x16 splitter application, where the feeder fiber must be routed to the bottom tray (also right side of the tray only).



1 If the light signal is coming from the right side, first make a tour around the island in the bottom before routing the subunit to the tray.
2 If the light signal is coming from the left side, the subunit can enter the tray directly on the right side of the tray after leaving the spiral tube as shown.

7 Splice feeder fiber to the input of the prodigy connectors

7.1 Close the tray

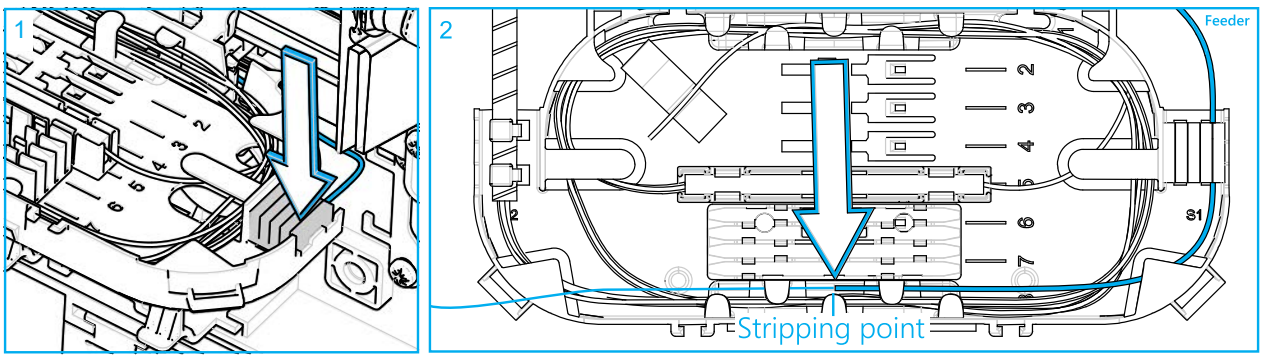


1 To close the tray, the tray should first be lifted upwards. the hinges fall into the free openings.
2 Turn the tray towards the bottom.
3 The tray is properly closed and locked behind the two tabs.

7.2 Routing on the tray

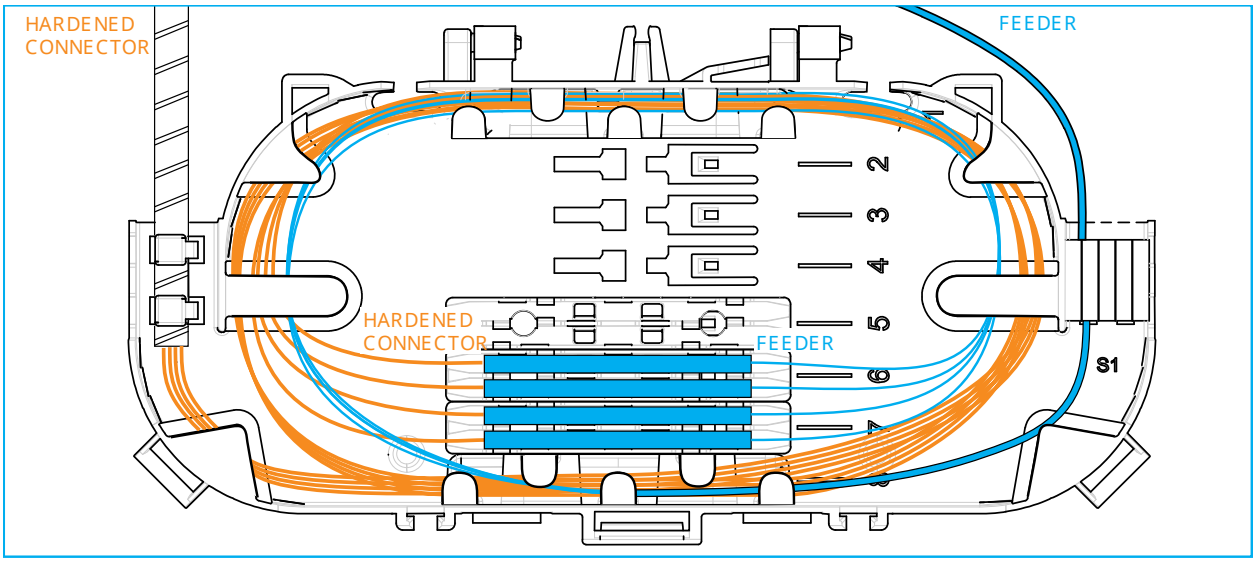
Note: Route the feeder fiber to the top tray. On this tray the input of the hardened connectors are located.

Note: Except for the 1x16 splitter application. In this application, the feeder subunit should be routed to the bottom tray as the input of the hardened connectors as well as the remaining outputs are stored on this tray.



1 Push the subunit in the foam on the entrance of the tray.
2 Indicate the stripping point in the middle of the fiber guide and strip the fiber per local practice.

7.3 Point to point connection

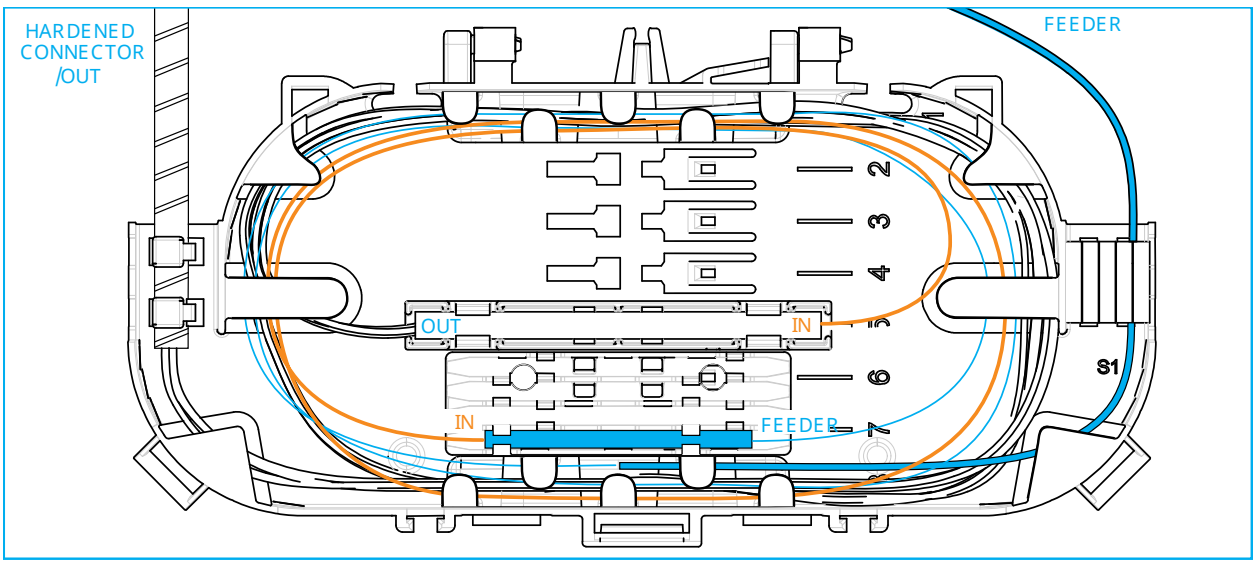


1 Make fusion splice per standard practice and store the splice protector in the splice protector holder. Every position can hold up to 3 splice protectors. Store over length in loops on the tray (full tray width).

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

Note: The fiber guidance pen can be used to position all the fibers under the lips.

7.4 1X4, 1X8 splitter



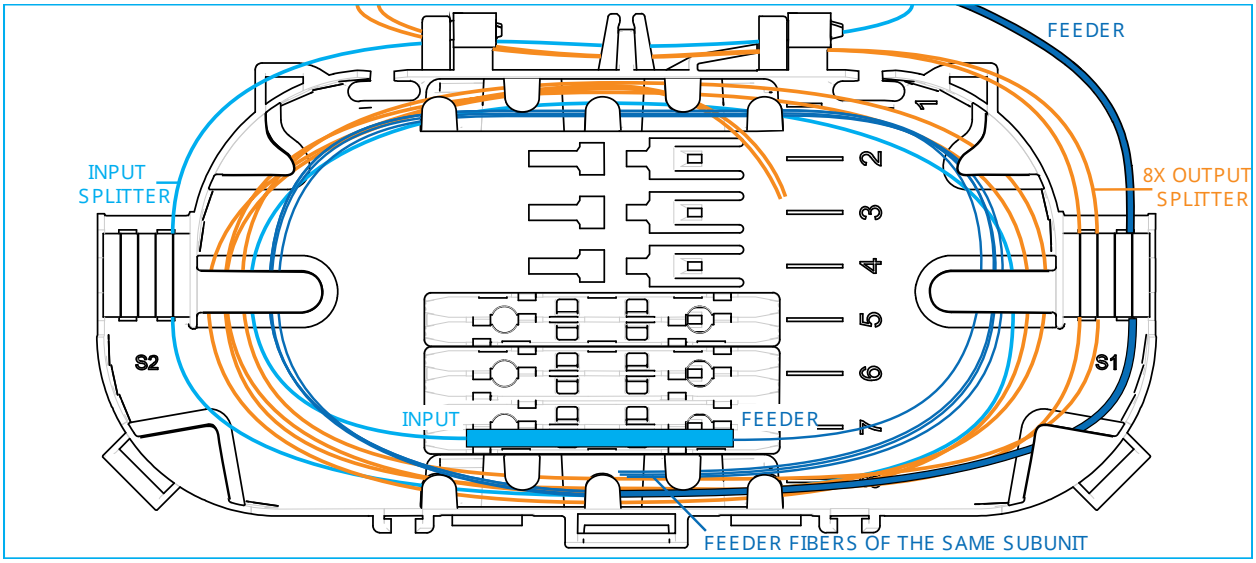
1 Splice the splitter input to the feeder fiber per local practice and store the splice protector in one of the splice protector holders. Store over length in loops on the tray (full tray width). Store remaining feeder fibers in the tray.

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

Note: The fiber guidance pen can be used to position all the fibers under the lips.

7.5 1x16 splitter

Note: The input and the 8 remaining output of the splitter are routed in the factory to the **bottom** tray. The feeder subunit should enter the bottom tray on the right side.



1 Splice the splitter input to the feeder fiber per local practice and store the splice protector in one of the splice protector holders. Store over length in loops on the tray (full tray width). Store remaining feeder fibers in the tray.

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

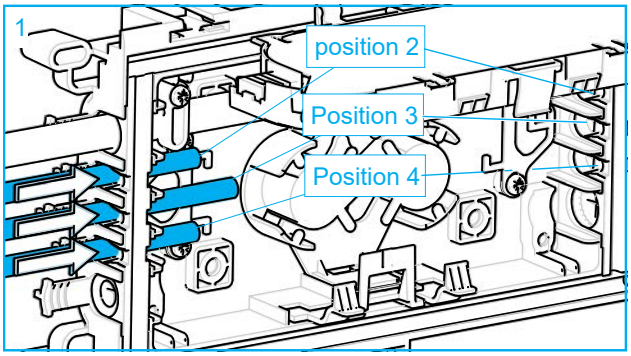
Note: The fiber guidance pen can be used to position all the fibers under the lips.

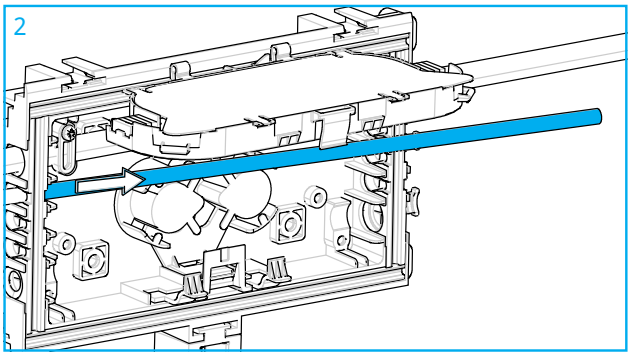
7.6 Splitter application

8 Branch application

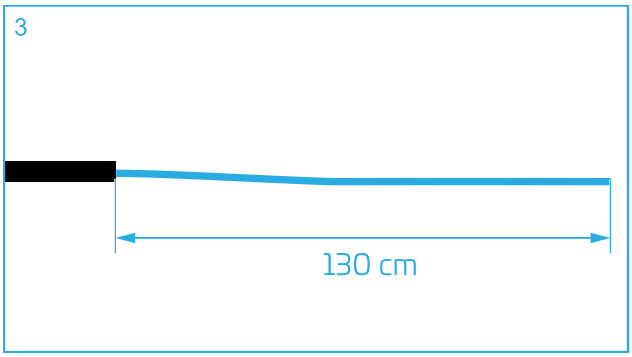
8.1 Branch cable (3-7 mm)

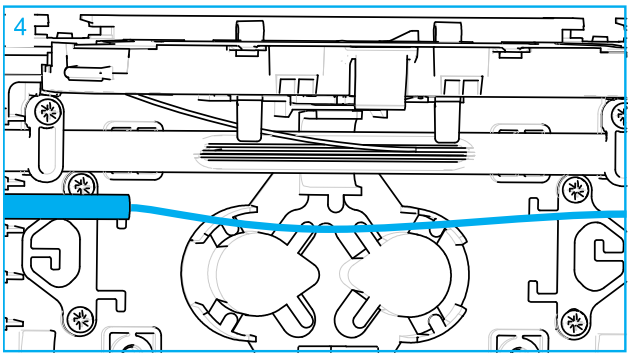
8.1.1 Install branch cable (3-7 mm)





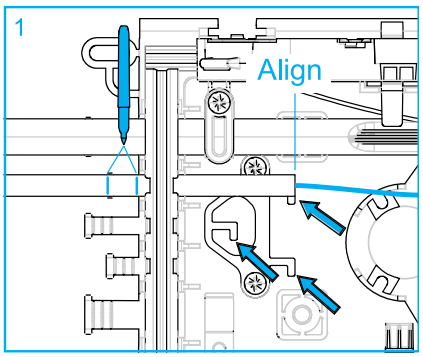
1 Push the cable through the rubber seal. Position 2, 3 and 4 are available for branch cables with a diameter range between 3 and 7 mm.
2 Make sure to push through enough cable to be able to strip the cable.

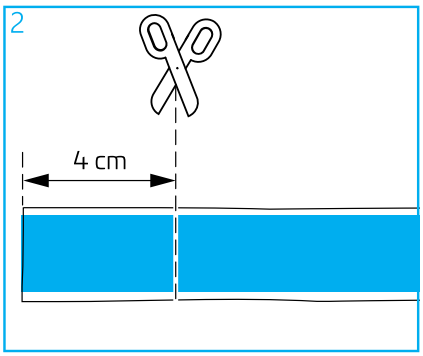


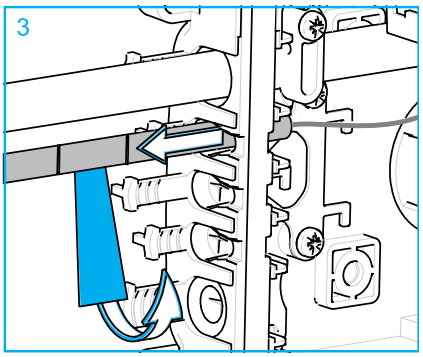


3 Strip the jacket off the cable per local practice over a length of 130 cm.
4 Align the cable jacket with the cable bracket.

8.1.2 Secure branch cable (3-7 mm)



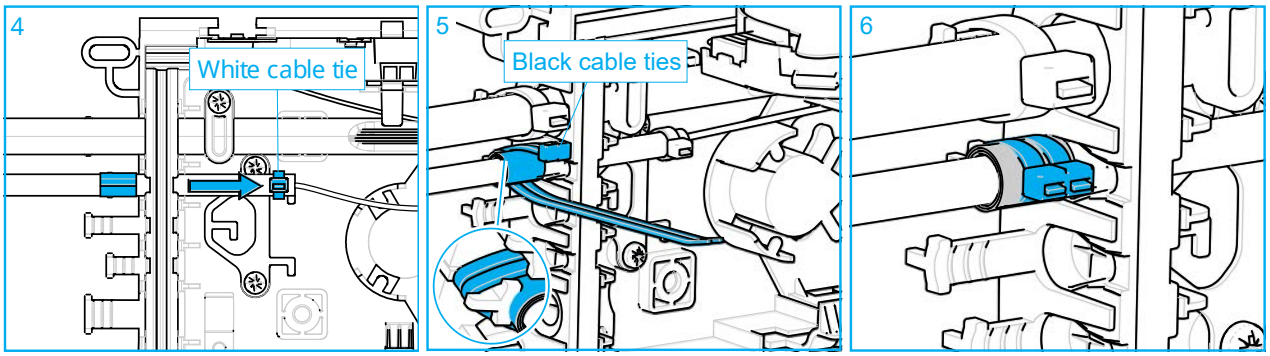




1 Align the end of the cable jacket with the end of the L-shape of the bracket. The arrows indicate the position of the cable jacket end for positions 2,3 and 4. Mark the position of the silicone tape.
2 Cut the silicone tape to a length of 4 cm.

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

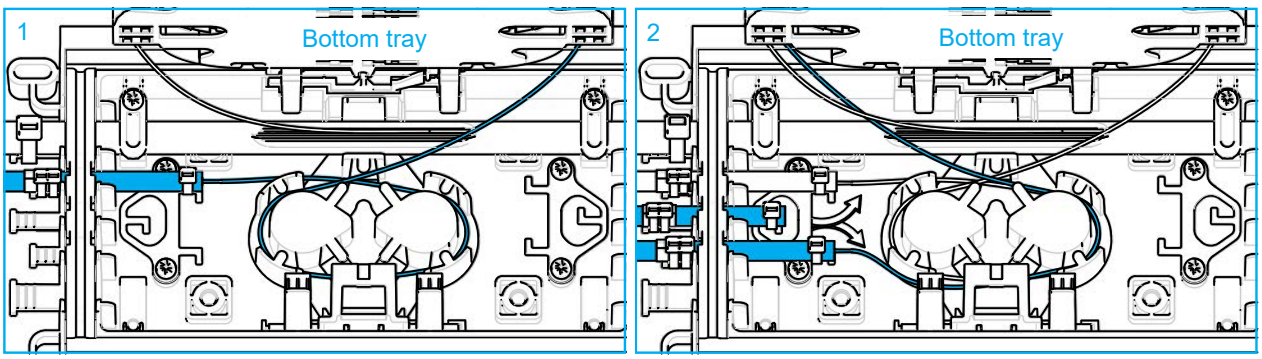
3 Pull back the cable a bit to have more access. Remove the protective paper. Apply the silicone tape on the cable between the marks. Stretch the tape minimum 50% while wrapping the tape around the cable. First apply a full turn around the cable, then continue to cover up.



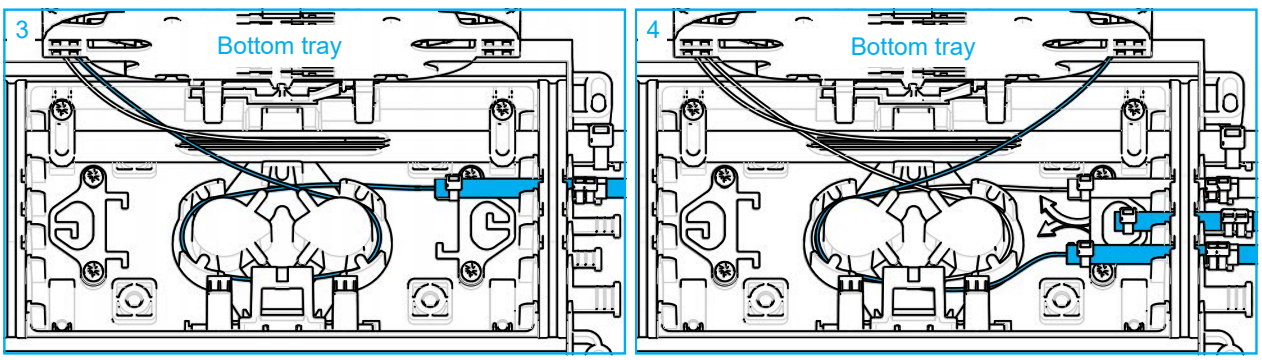
4 Secure the cable **at the inside** with a **white** cable tie onto the L-shape.
5 Secure the cable **at the outside** with **2 small black** cable ties onto the T-shape over the silicon tape. Make sure the cable tie grips into the recess at the bottom side of the T-shape.
6 The 2 small black cable ties secured at the outside.

8.1.3 Route the subunit of the branch cable to the bottom tray

Note: Feeder to branch splices are done in the bottom tray.

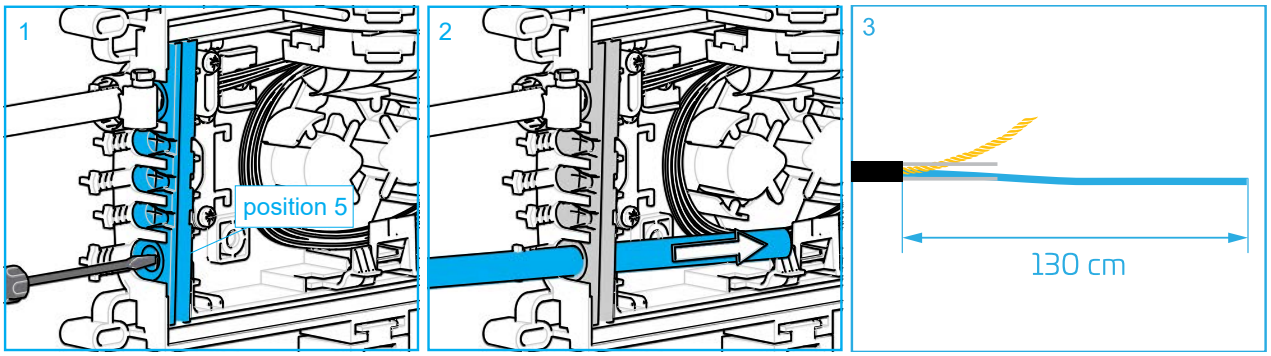


1 For the cable in position 2, guide the subunit around the island and enter the tray as shown.
2 The cable installed in position 3 can turn around the island in both senses. Best practice is to choose the entrance of the tray opposite of the feeder fiber entrance to avoid crossings on the tray. For the cable installed in position 4, guide the subunit around the island and enter the tray as shown



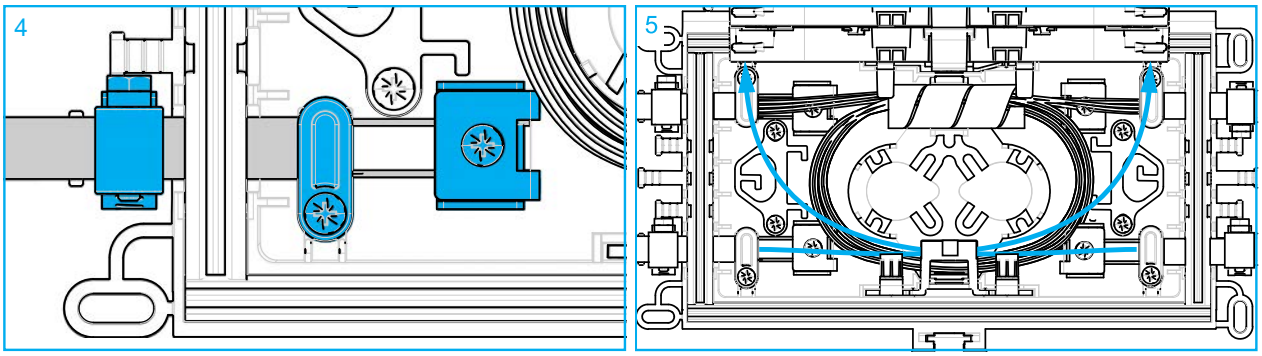
3 For the cable in position 2, guide the subunit around the island and enter the tray as shown.
4 The cable installed in position 3 can turn around the island in both senses. Best practice is to choose the entrance of the tray opposite of the feeder fiber entrance to avoid crossings on the tray. For the cable installed in position 4, guide the subunit around the island and enter the tray as shown.

8.2 Branch cable (8-12 mm)



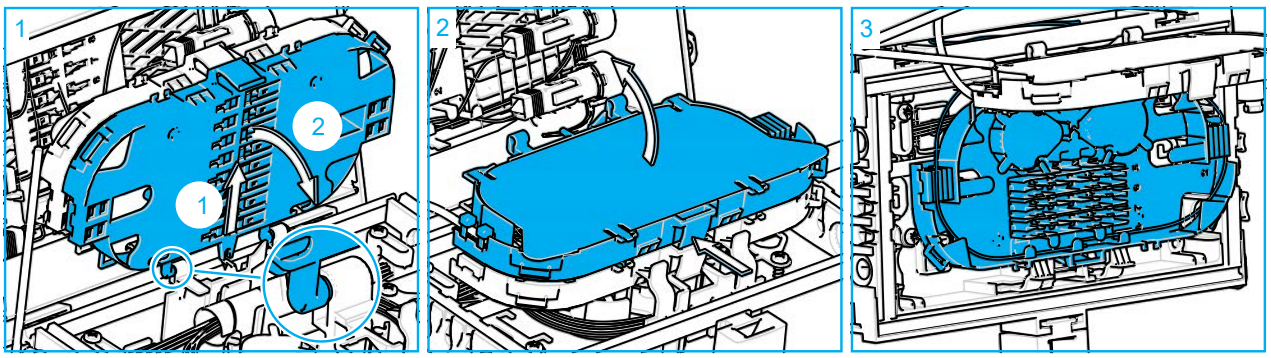
1 Position 5 is available for branch cables with a diameter range between 8 and 12 mm. Poke a hole in the seal with a small flat screw driver to ease pushing through the cable.
2 Push the cable through the rubber seal. Make sure to push through enough cable to be able to strip the cable.
3 Strip the jacket off the cable per local practice over a length of 130 cm. Prepare the strength members as explained in section: Looped feeder cable preparation on page 12.

Note: The parts required to secure the branch cable in this position are not part of the standard kit but are available in a separate accessory kit.



4 Align the cable with the cable holder feature in the closure as shown in step 7 in section: Looped feeder cable installation on page 13. Secure the strength members as explained in section: Aramid yarn on page 14, Dual rigid strength member on page 14 or Single strength member on page 14. Secure the cable bridge at the inside of the closure as shown in step 1 in section: Secure the cable to the closure and to the wall on page 15. Finally secure the cable with a hose clamp at the outside of the closure as shown in step 2 in section: Secure the cable to the closure and to the wall on page 15.
5 Route the subunit(s) to the bottom tray.

8.3 Close bottom tray

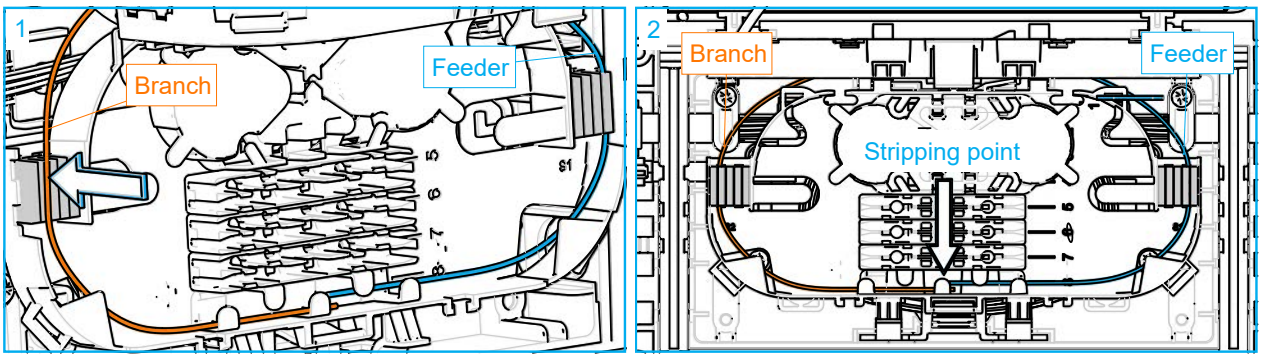


1 To close the bottom tray, the tray assembly should first be lifted upwards, the hinges fall into the free openings. The complete assembly can be turned downwards until it locks under the two tabs.
2 Open the top tray and hinge upwards.

3 Remove the cover of the tray. The bottom tray is now accessible.

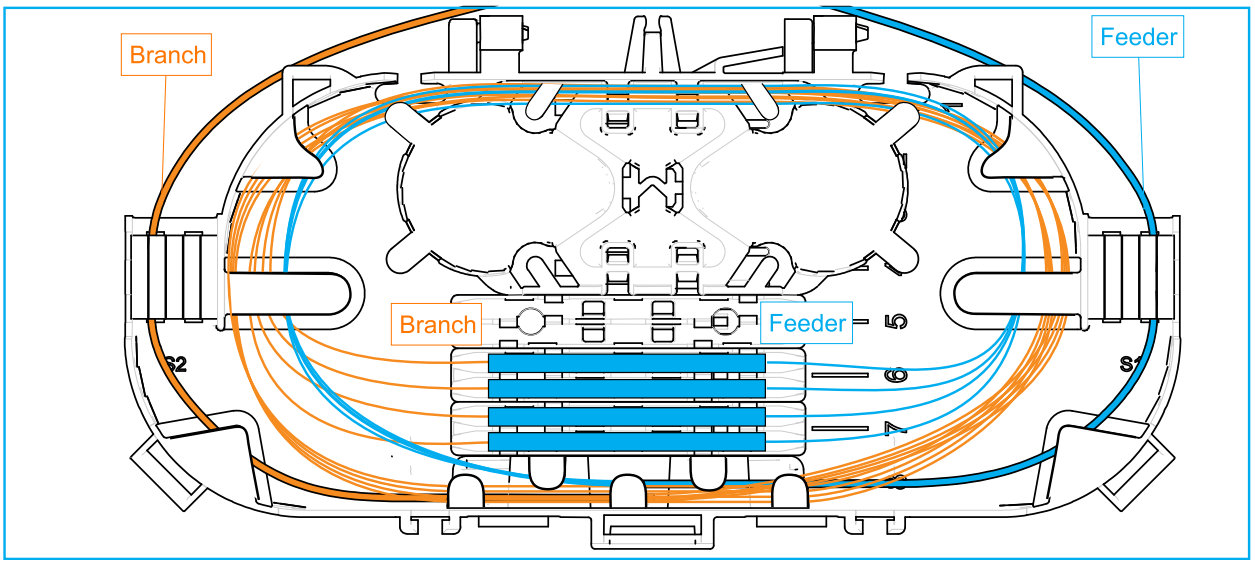
8.4 Routing on the bottom tray

Note: Make sure the selected feeder fiber is already routed to the tray.



1 Push the subunit in the foam on the entrance of the tray.
2 Indicate the stripping point in the middle of the fiber guide and strip the fiber per local practice.

8.5 Splicing on the bottom tray



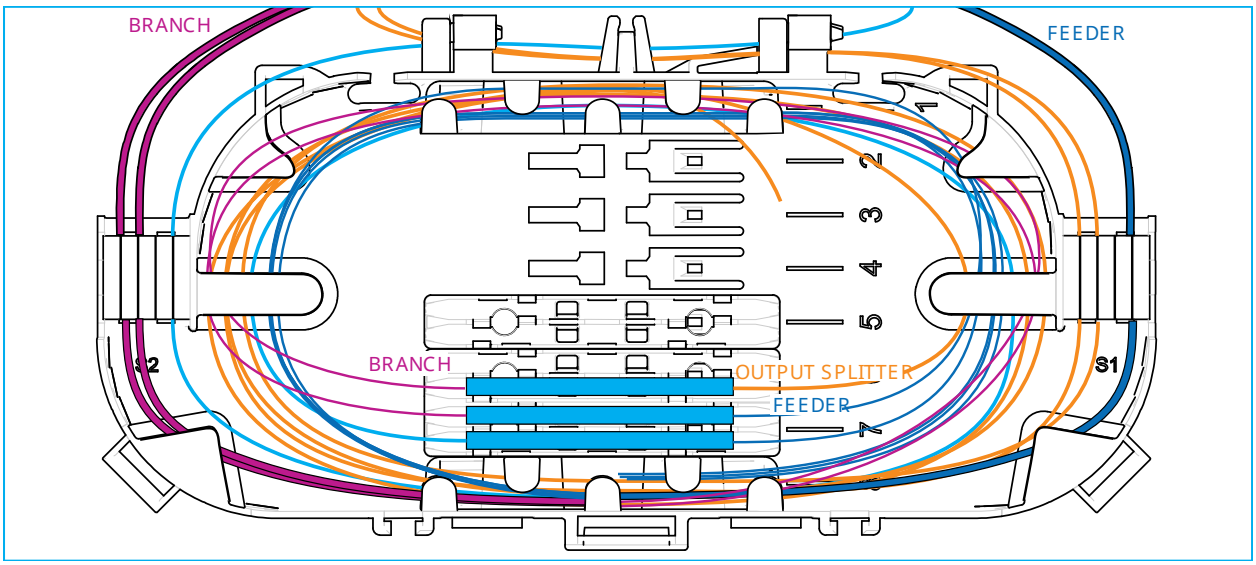
1 Make fusion splice per standard practice and store the splice protector in the splice protector holder (position 1 to 6). Every position can hold up to 3 splice protectors. Store over length in loops on the tray (full tray width).

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

Note: The fiber guidance pen can be used to position all the fibers under the lips.

8.6 1x16 splitter application branching

The remaining feeder fibers as well as the 8 remaining splitter output fibers can be spliced to fibers from a branch cable.



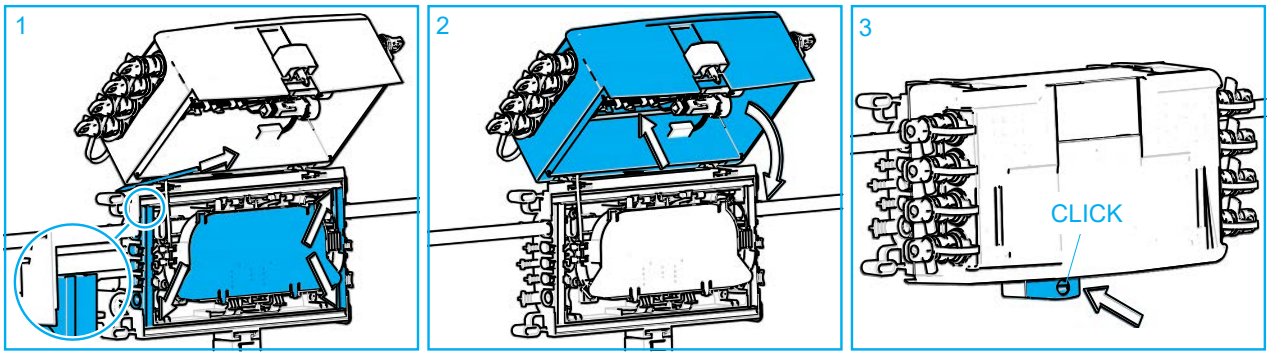
1 Bring the branch subunit to the tray at the **left** side. Make fusion splice per standard practice and store the splice protector in the splice protector holder (position 1 to 6). Every position can hold up to 3 splice protectors. Store over length in loops on the tray (full tray width).

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

Note: The fiber guidance pen can be used to position all the fibers under the lips.

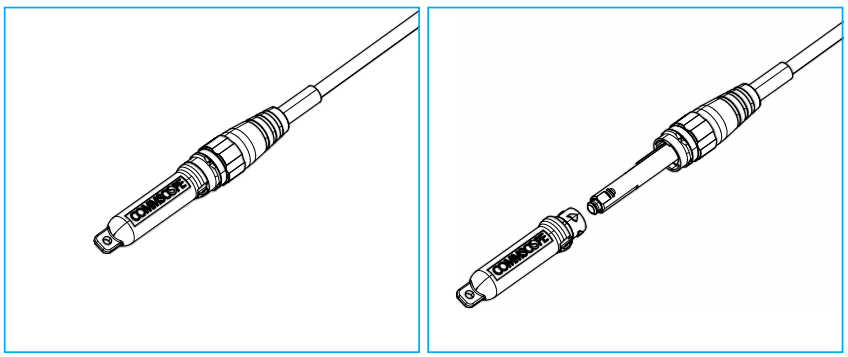
9 Prodigy connector installation

9.1 Close the cover



1 Reinstall the tray cover. Verify the long seal and make the step between the 2 seals as small as possible. Remove the fiber guidance pen.
2 Relocate the fiber guidance pen in the top cover and slide the cover a maximum to the front. rotate the cover downwards.
3 To lock the closure, push on the locking feature. A clicking sound is observed.

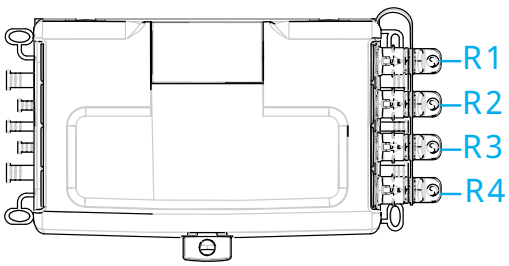
9.2 Connector components

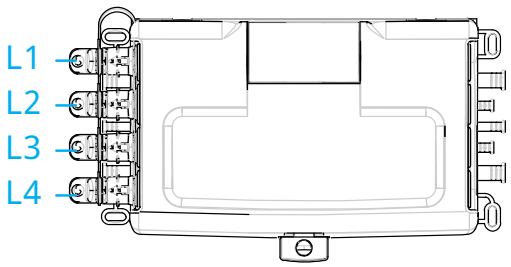


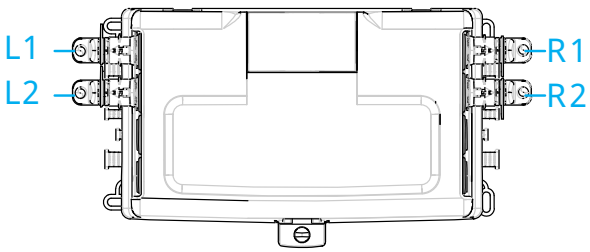
The basic components of the drop cable connector are shown in the figure above. The dust cap threads onto the connector. Prodigy connects easily with a 45-degree twist to lock the connector core in the adapter, and provides a self-locking mechanism with an audible click. A pulling eye is provided in the end of the dust cap for pulling the drop cable through conduit.

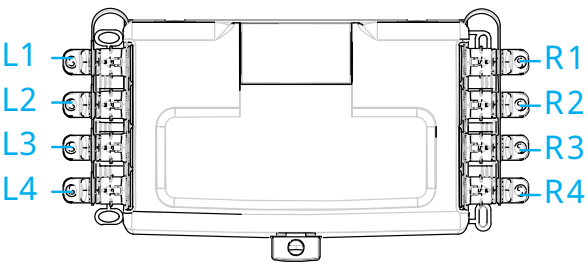
Note: Do not exceed a pulling force of 445 N (100 lbf) and when connected, don't exceed cable pull of 111 N (25lbf).

9.3 Numbering and color code connectors



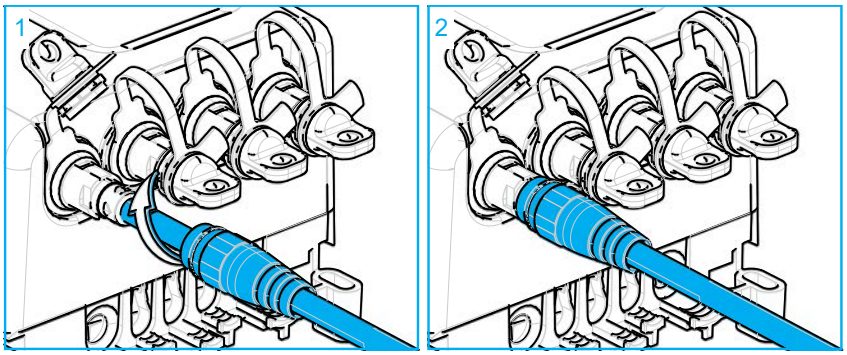






Color code						
Ports	**1:4 splitter 4 LEFT PORTS**	**1:4 splitter 4 RIGHT PORTS**	**1:4 splitter 2 LEFT +2 RIGHT**	**2x 1:4 splitter 8 PORTS**	**1x8 splitter 8 PORTS**	**1x16 splitter 8 PORTS**
L1	BLUE	-	BLUE	BLUE	BLACK	BLACK
L2	ORANGE	-	ORANGE	ORANGE	RED	RED
L3	GREEN	-	-	GREEN	WHITE	WHITE
L4	BROWN	-	-	BROWN	SLADE	SLADE
R1	-	BLUE	GREEN	BLUE	BLUE	BLUE
R2	-	ORANGE	BROWN	ORANGE	ORANGE	ORANGE
R3	-	GREEN	-	GREEN	GREEN	GREEN
R4	-	BROWN	-	BROWN	BROWN	BROWN

9.4 Install the Prodigy connector



1 The Prodigy connects with a 45-degree twist to lock the connector core in the adapter.
2 The connector provides a self-locking mechanism with audible "click".

9.5 Disconnecting the Prodigy connector

1 Unscrew the drop cable dust cap from the adapter dust cap.
2 Pull the locking ring down to "unlock" the connector.
3 Grasp the connector and pull it out with a "45-degree twist to unlock" out of the adapter.
4 Thread the adapter dust cap into the optical port until finger tight.
5 Thread the drop cable connector into the drop cable dust cap until finger tight.

9.6 Prodigy connector cleaning

The connectors and adapters are cleaned at the factory, however inadvertent contact and/or dust can still occur during transport, storage and installation. CommScope recommends all connector interfaces be cleaned prior to every mating. To clean the connector interface, follow the procedure as described in the installation instruction “cleaning hardened connectors”. To clean the connector interface, follow the procedure as described in the installation instruction “cleaning hardened connectors”.

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