

INSTRUCTION MANUAL

AMPHIBOX IP68 FLAT BOXES

PRODUCT BENEFITS

- +** **FLAT:** Flat for easy handling and bench work
- +** **SIMPLE:** Cable input/output ports accommodate a wide range of diameters for ease of use
- +** **RUGGED:** IP68 watertight seal, UV-resistant material
- +** **INTUITIVE:** Choice of trays for easy splice identification
- +** **INNOVATIVE:** Integrate RFID tags for easy box identification

PRESENTATION

Omelcom AMPHIBOX boxes are used for FTTx deployment in underground or pole-mounted applications.

The flat form factor makes it easy to lay the box down horizontally for splicing. It also makes wall-mounted and in-cabined installation easier.

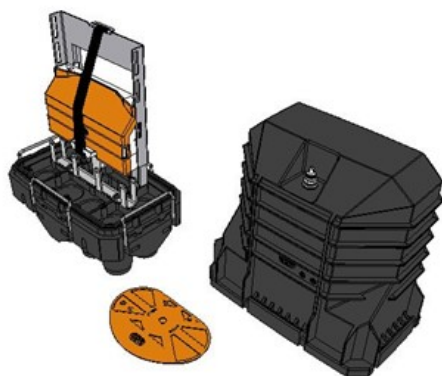
The box's multi-cable seals are compatible with a wide range of diameters and are easy to install. For instance, just three different models cover the diameter range from 6 OF to 288 OF cables.

Omelcom AMPHIBOX boxes are also equipped with tray blocks to adjust the content of each box and to expand its capacity through time.



Our optional RFID system is a great way to trace and protect your assets.





AMPHIBOX FLAT M

Dimensions: 240x150x320 mm

Weight: 2,5 kg

The kit includes:

- 1 base with 6 round + 1 oval ports
- 1 anchor support bar at the base
- 1 cover with flash test valve
- 1 frame for 2 tray blocks and span fixation
- 1 complete routing block
- 1 tray cover



AMPHIBOX FLAT L

Dimensions: 240x150x390 mm

Weight: 2,9 kg





The kit includes:

- 1 base with 6 round + 1 oval ports
- 1 anchor support bar at the base
- 1 cover with flash test valve
- 1 frame for 4 tray blocks and span fixation
- 1 complete routing block
- 1 tray cover

Seals capacity

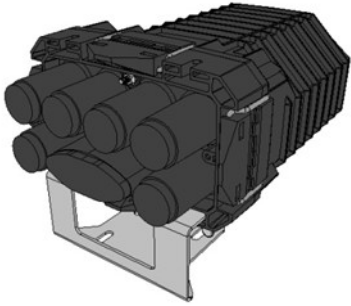
Cold mechanical seal		Number of inputs / outputs	Compatible cable diameters
AMPHIBOX-POM-2X16mm		2	$5 \text{ mm} \leq \varnothing \leq 16,5 \text{ mm}$
AMPHIBOX-POM-2X20mm		2	$7 \text{ mm} \leq \varnothing \leq 20,5 \text{ mm}$
AMPHIBOX-POM-4X10mm		4	$5 \text{ mm} \leq \varnothing \leq 10 \text{ mm}$
AMPHIBOX-PRM-1X20mm		1	$15 \text{ mm} \leq \varnothing \leq 20,5 \text{ mm}$
AMPHIBOX-PRM-1X16mm		1	$10 \text{ mm} \leq \varnothing \leq 16,5 \text{ mm}$
AMPHIBOX-PRM-4X8mm		4	$5 \text{ mm} \leq \varnothing \leq 8,5 \text{ mm}$
AMPHIBOX-PRM-8X7mm		8	$3 \text{ mm} \leq \varnothing \leq 7,3 \text{ mm}$
AMPHIBOX-PRM-2X12mm		2	$8 \text{ mm} \leq \varnothing \leq 12,5 \text{ mm}$
AMPHIBOX-PRM-4X10mm		4	$6 \text{ mm} \leq \varnothing \leq 10,5 \text{ mm}$
AMPHIBOX-PRM-12X4mm		12	$0 \text{ mm} \leq \varnothing \leq 4,5 \text{ mm}$

Heats hrink seal		Number of inputs / outputs	Compatible cable diameters
AMPHIBOX-POT-2X27mm		2	$10 \text{ mm} \leq \varnothing \leq 27 \text{ mm}$
AMPHIBOX-PRT-1X30mm		1	$10 \text{ mm} \leq \varnothing \leq 30 \text{ mm}$

Type	Capacity	Compatibility
AMPHIBOX-BK7-6-12S 	Number of splice tray per pack : 6 Number of HS splice protectors per tray (ø2,5x45 mm) : 12	Fibre G652 & G657
AMPHIBOX-BK7-3-2PLC 	Number of splice tray per pack : 3 Number of µ-smoooves per tray (ø1,4x40 mm) : 32 Number of PLC splitter (4x7x50 mm) : 2	Fibre G652 & G657
AMPHIBOX-BK7-6-12ANT 	Number of splice tray per pack : 6 Number of ANT splice protectors per tray: 12	Fibre G652 & G657
AMPHIBOX-BK7-3-24HS 	Number of splice tray per pack : 3 Number of HS splice protectors per tray (ø2,5x45 mm) : 24	Fibre G652 & G657

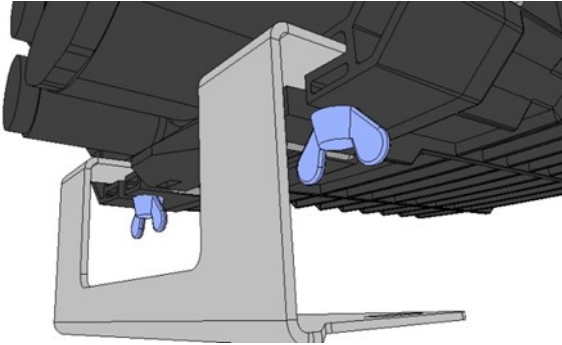
1 - Preparation phase

1.1 Preparation of the Amphibox

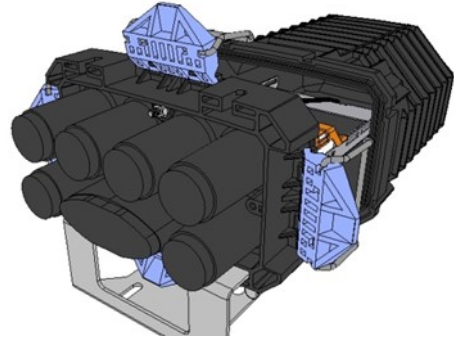


It is recommended to use the wall mounting kit for an easier installation.

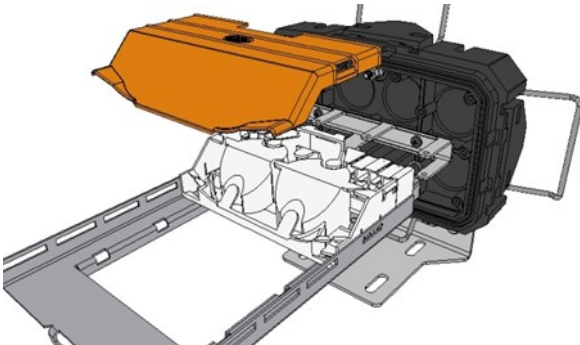
Keep the o-ring joint clean and protected during the installation. Use only cleaning cloth or clear water if needed. Avoid damaging the sealing surfaces on the base and the cover.



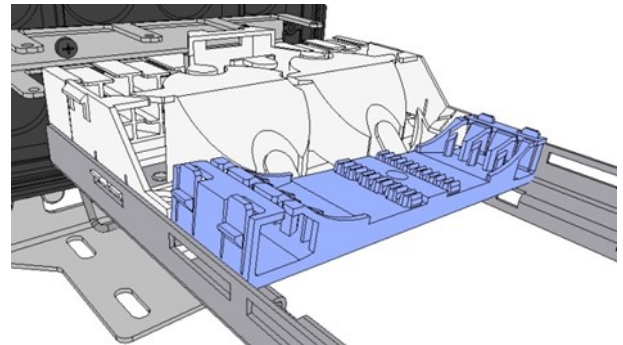
Fix the Amphibox on the bracket



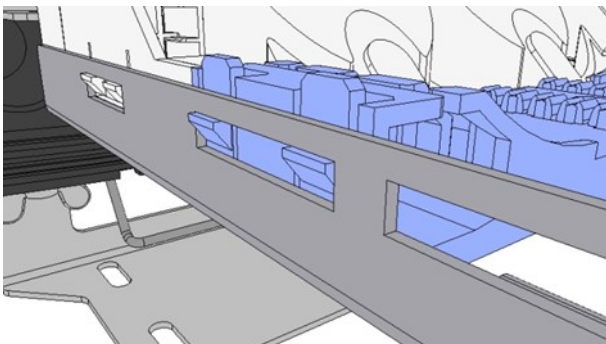
Open the 4 latches and remove the cover



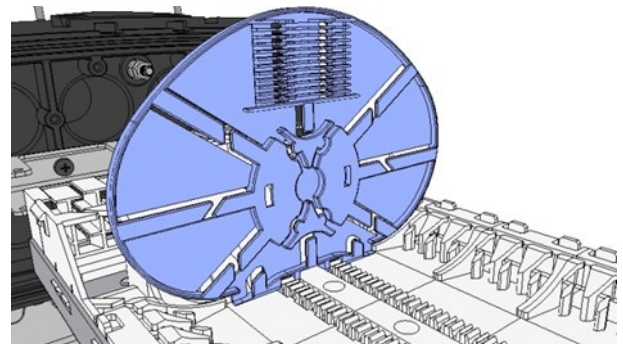
Remove the velcro strip and the cover of the routing block



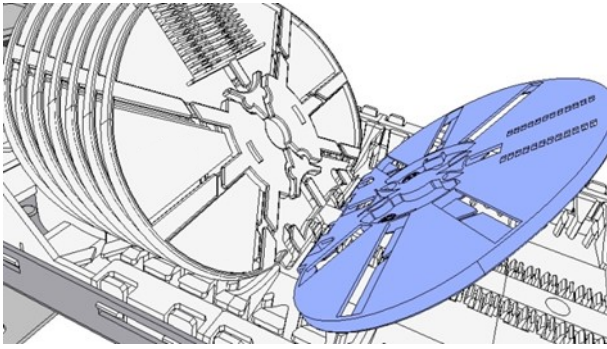
Install the base plates tray block on the frame starting from the nearest available position to the routing block



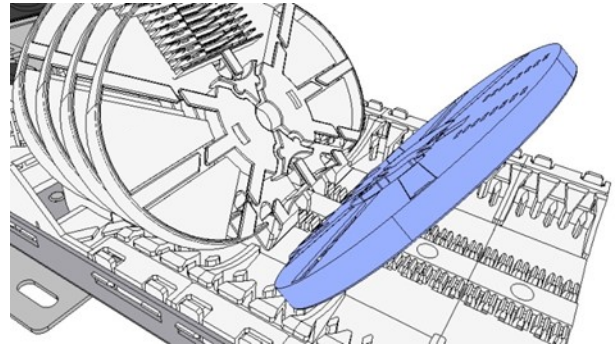
Push down the base plates tray block until the side latches snap into the frame



Install the splice tray by pushing perpendicularly into the hinges (lowest possible position) until it snaps. To remove a tray, pull it in the same way.

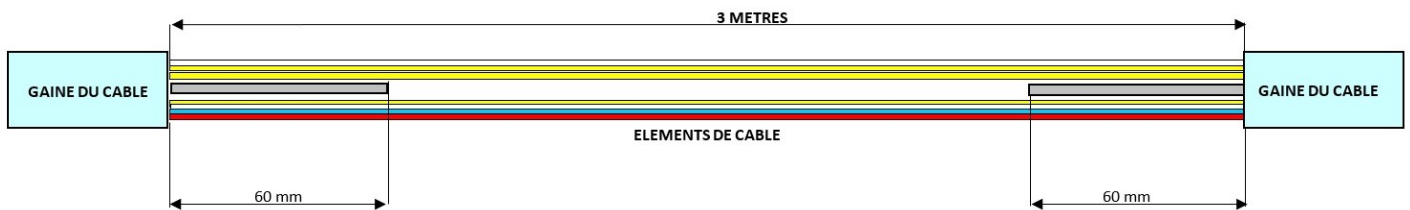


For trays of an height of 4 mm, install one tray on each hinge position of the base block.



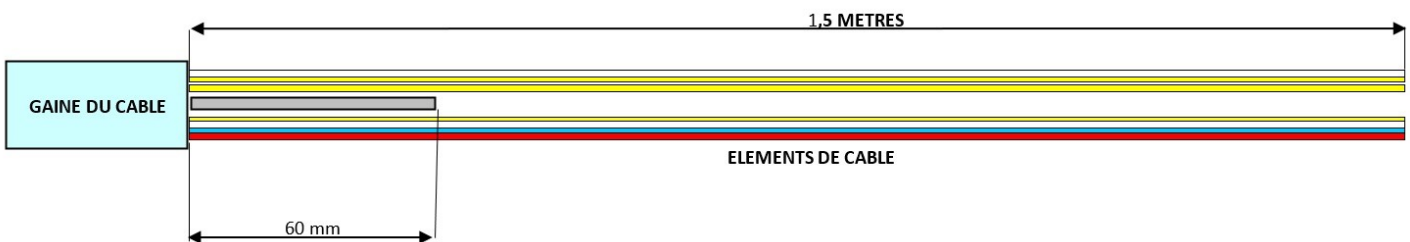
For trays of an height of 8 mm, leave one hinge position free between two consecutive trays.

1.2 Cables set-up



LOOPED CABLES

- A window cut of 3 m is needed.
- Remove the strength member leaving 60 mm from the cable jacket. If the diameter of the strength member is bigger than 5 mm, remove the outer plastic layer for 20 mm.
- If a shield is present, leave 10 mm of the shield and clean it. Solder the grounding wire on the cable shielding and wrap a few layers of insulating tape around it.

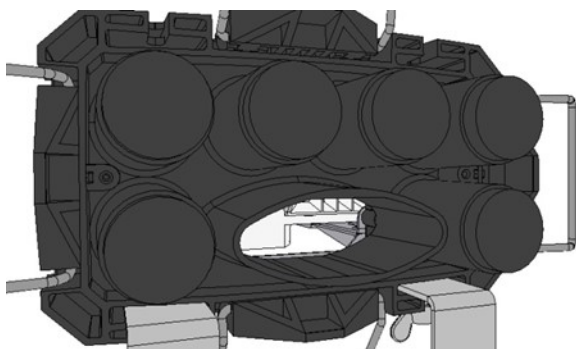


DROP CABLE

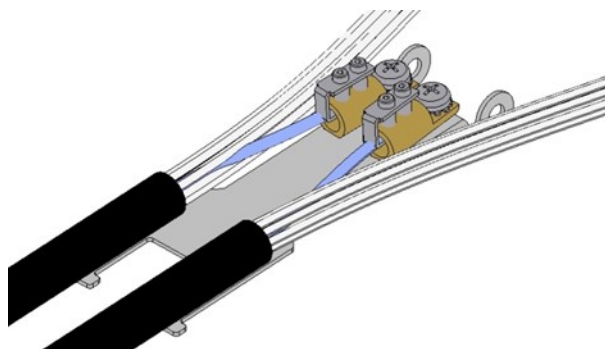
- Remove the cable jacket for 1.5 m.
- Remove the strength member leaving 60 mm from the cable jacket. If the diameter of the strength member is bigger than 5 mm, remove the outer plastic layer for 20 mm.
- If a shield is present, leave 10 mm of the shield and clean it. Solder the grounding wire on the cable shielding and wrap a few layers of insulating tape around it.

2 - Cable installation using heat shrink seals

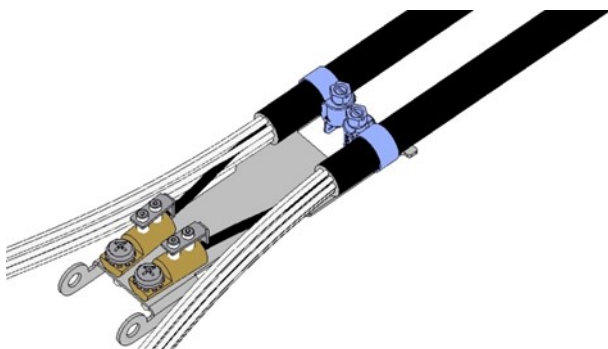
2.1 Looped cable



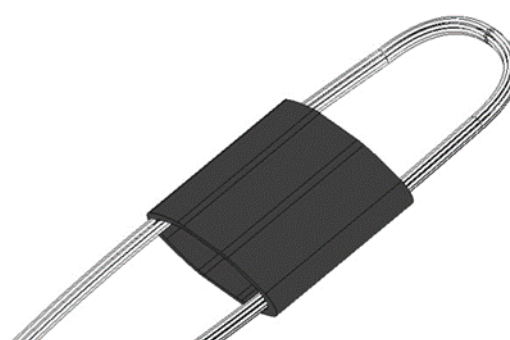
Open the oval port, if necessary using a wire cutter or a wire saw. Keep the o-ring joint clean and protected during the cutting operation.



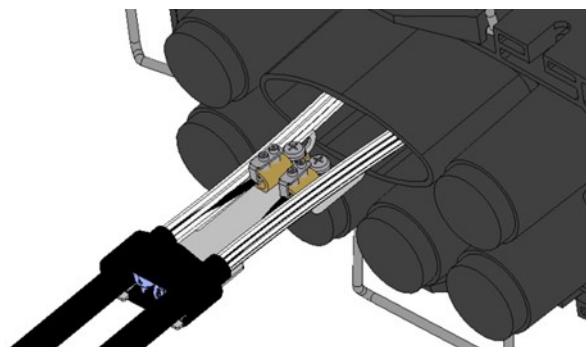
Insert the strength members of the cable into the connector on bracket such as all loose tubes can be routed without unnecessary crossings.



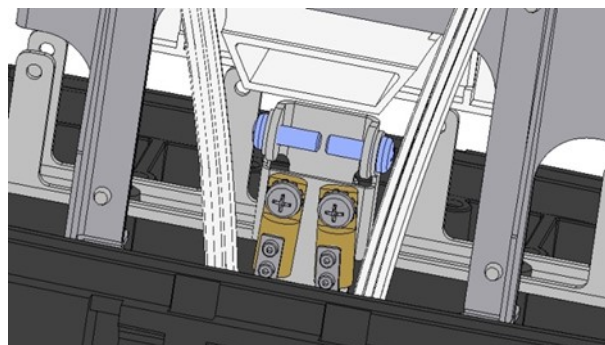
If the cable diameter is less than 10 mm, fix the cables with tie wraps. If the cable diameter is more than 10 mm, fix the cables with the hose clamp onto the bracket. Wrap few layers of tape around the hose clamp.



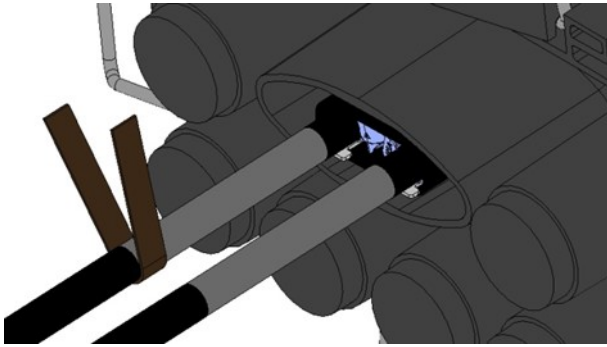
To prevent dirt and modules' grease to affect glue performances, put the packaging film of the sleeve into the latter. This will protect the internal lining. Bend the loose tubes gently and push them into the sleeve.



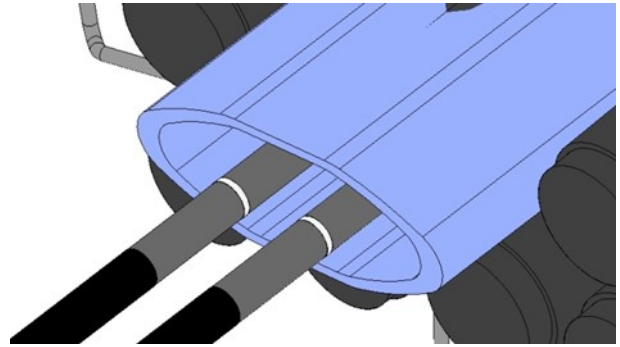
Push gently the looped loose tubes into the oval port up to the bottom of the bracket.



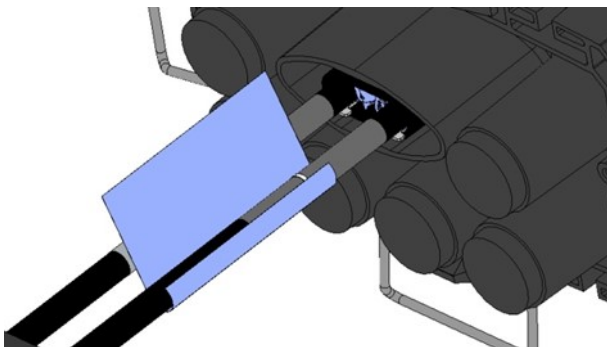
Position the loop bracket and fix it to the frame.



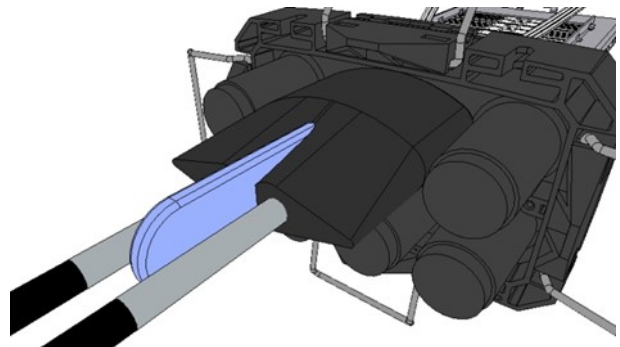
Abrade the jacket of the cable and the external surface of the port using a sand paper stripe.



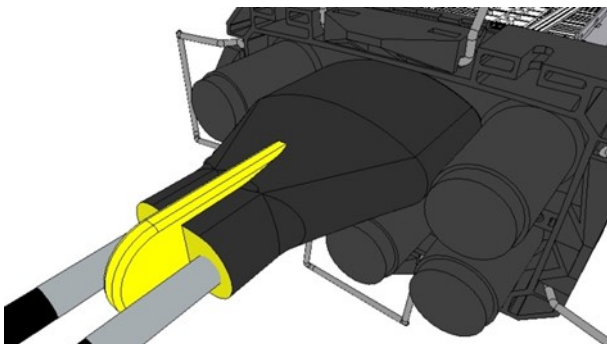
Push the seal upwards to the base and mark the cable flush with the seal. Make sure the seal touches the base.



Place the edge of the aluminium protection foil 2 cm over the mark on the cable. Wrap it around the cable.

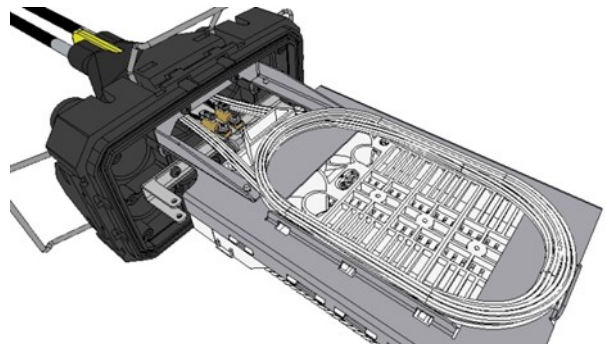


Push the seal against the base and set the melt welding clip. Start heating the seal on the base for one minute and shrink in spiral movements downwards around the seal.



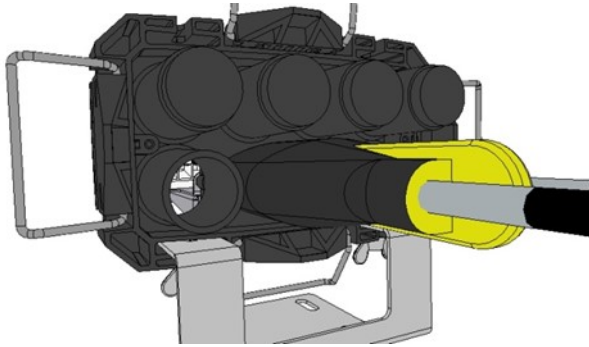
**Hold the cable in position.
Shrink until the molten matter overflows from the extremity.
Heat the clip on both sides until the adhesive flows clearly on the clip between the cables.**

Do not move the closure or cable for 10 minutes.

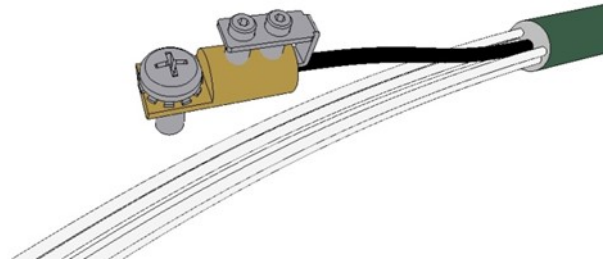


Bundle the unused tubes with tie-wraps and store them behind the frame.

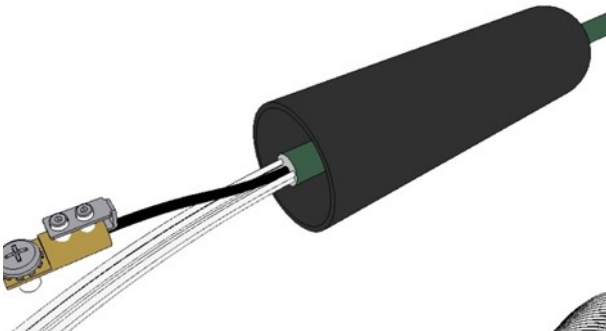
2.2 Drop cable



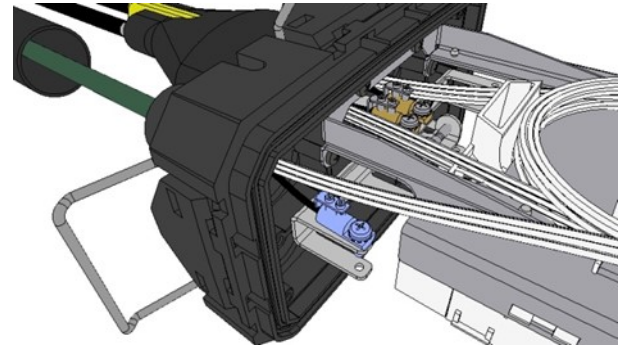
Open the oval port, if necessary using a wire cutter or a wire saw. Keep the o-ring joint clean and protected during the cutting operation.



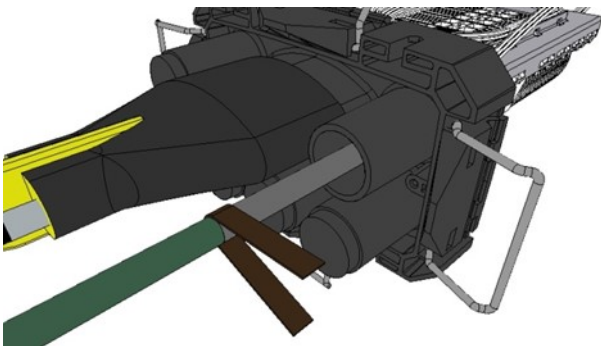
Insert the strength member of the drop cable into the connector and tight the screws.



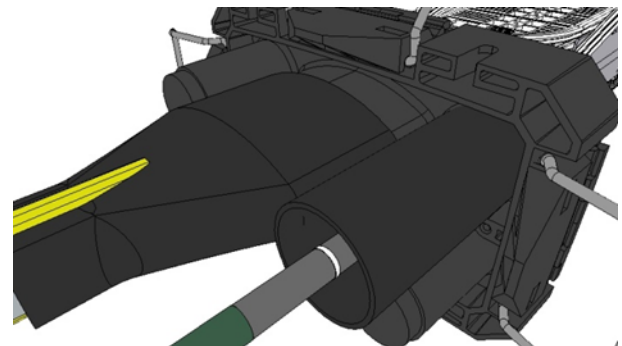
To prevent dirt and modules' grease to affect glue performances, put the packaging film of the sleeve into the latter. This will protect the internal lining. Push the cable gently into the sleeve.



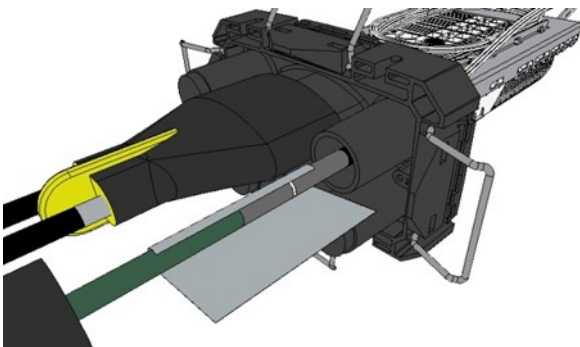
Push the cable into the opened round port and mount the connector onto the anchor support bar.



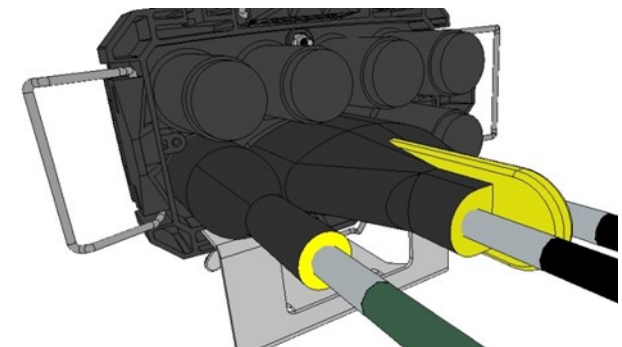
Abrade the jacket of the cable and the external surface of the port using the sand paper stripe.



Push the seal upwards to the base and mark the cable flush with the seal. Make sure the seal touches the base.



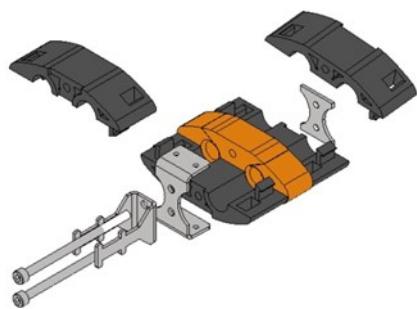
Place the edge of the aluminium protection foil 2 cm over the mark on the cable. Wrap it around the cable.



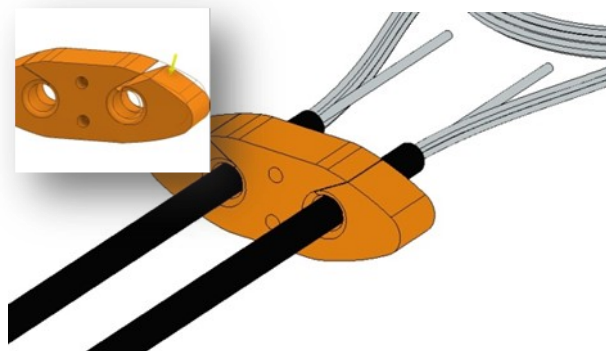
Push the seal against the base and start heating the seal on the base. Hold the cable in position. Shrink until the molten matter overflows from the extremity. Do not move the closure or cable for 10 minutes.

3 - Cable installation using mechanical seals

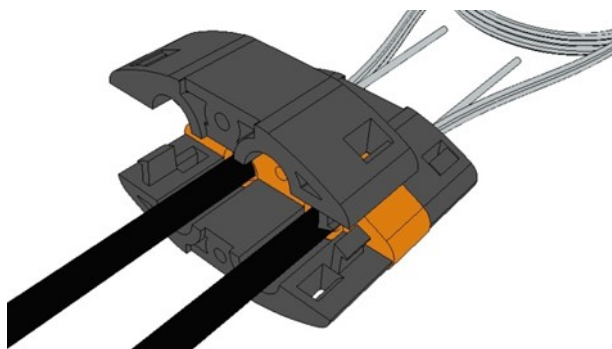
3.1 Looped cable



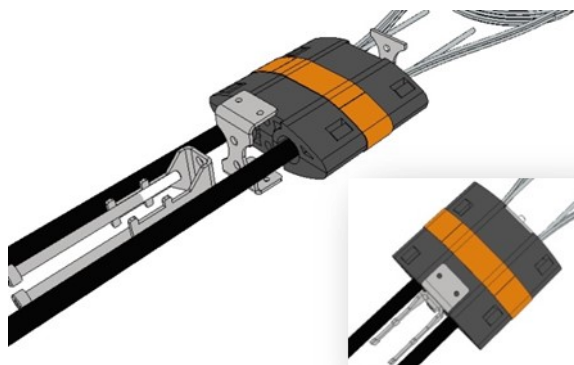
Open and remove the oval shells unscrewing the two screws of the oval port sealing device.



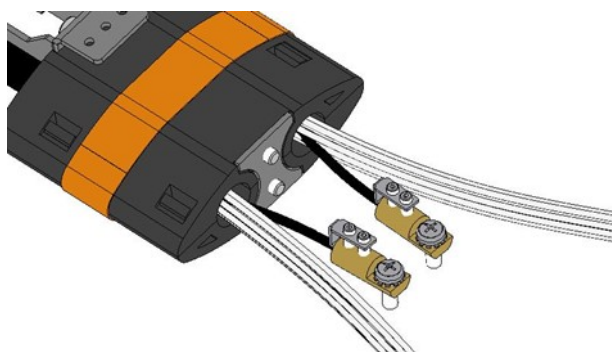
Install the looped cable into the grommet through the two cuts. The two cable jacket ends should protrude approximately 1 cm.



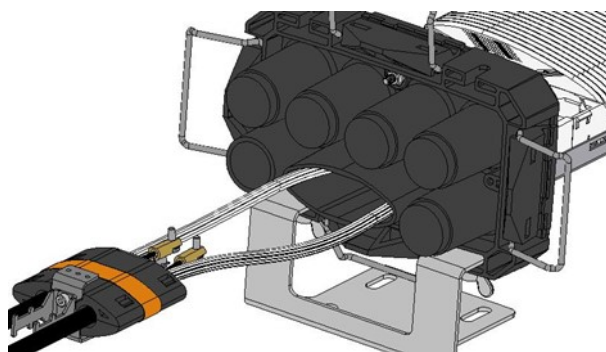
Close the grommet between the shells respecting the correct orientation (the grooves of the metal plates should not touch the grommet).



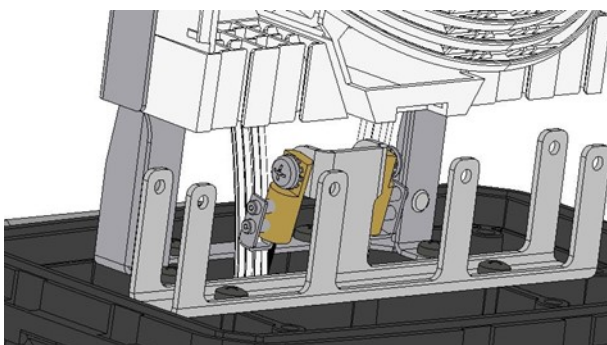
Finish the assembly of the device mounting back the plates and the screws. At this stage, avoid any compression of the grommet.



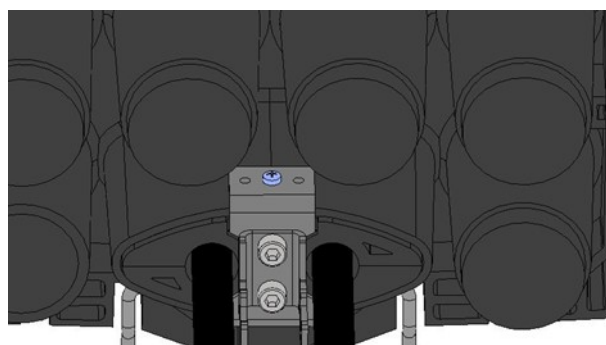
Insert the strength members of the cable into the connectors and tight the screws.



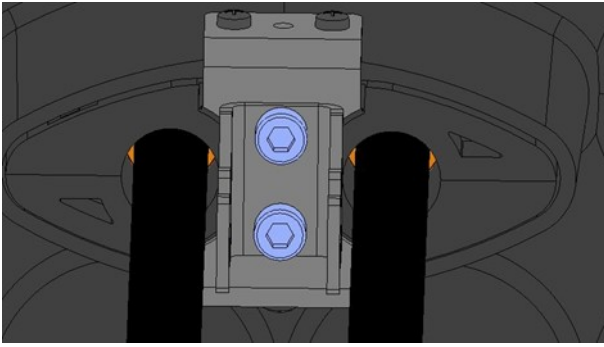
Push gently the looped loose tubes into the oval port.



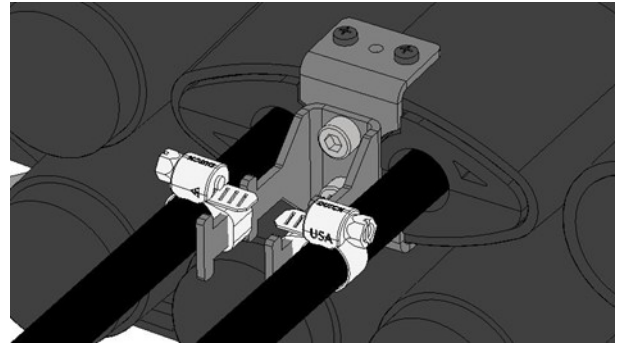
Fix the strength connectors to the frame avoiding unwanted twists with the tubes.



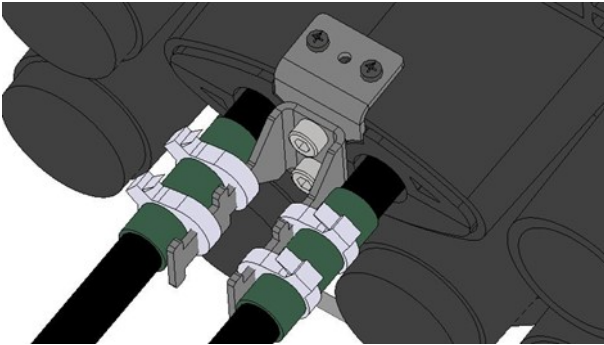
Push the device towards the base and fix it to the oval port, tightening the self-tapping screws.



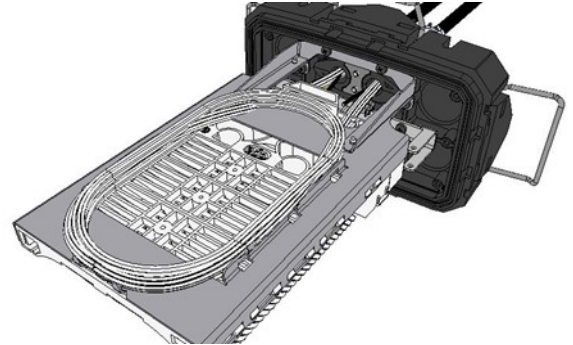
Seal the oval port by tightening the two screws of the device alternatively, respecting a minimum torque of 4.5 N.m.



When the cable has a diameter over or of 10 mm, use two hose clamps to fix the cable to the bracket of the device.

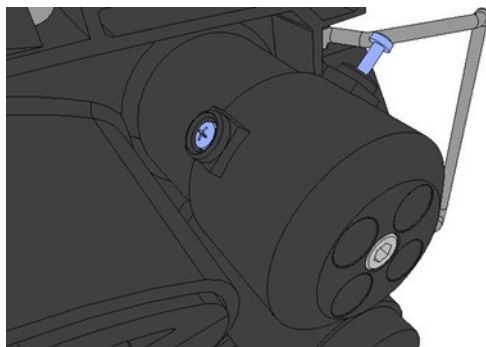


When the cable has a diameter under 10 mm, wrap velcro stripes on the cable and fix it with four tie wraps.

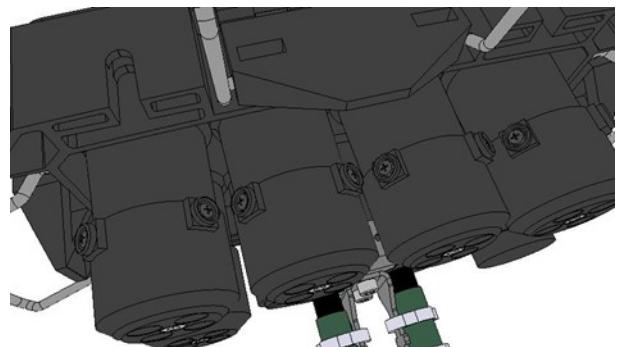


Bundle the unused tubes with tie wraps and store them behind the frame.

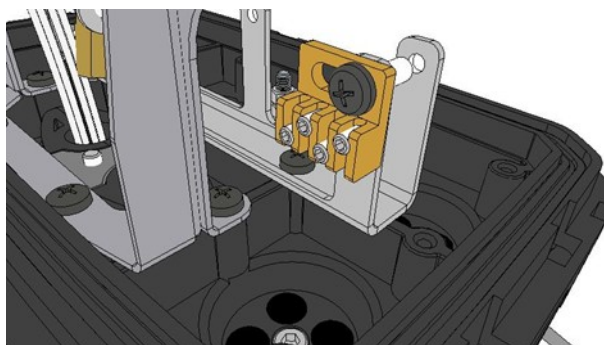
3.2 Drop cables



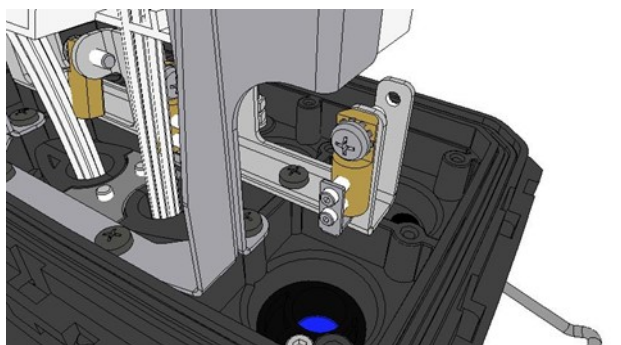
Push the round mechanical seal towards the base and fix it to the chosen round port tightening the two self-tapping screws.

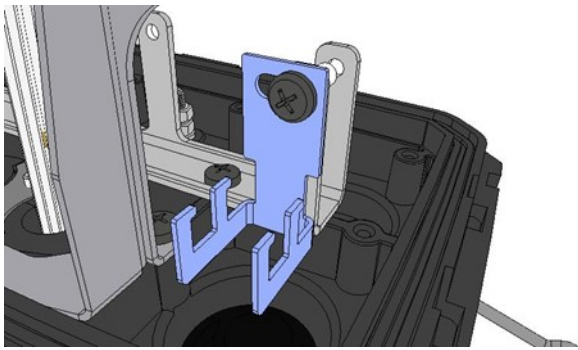


Adjust the orientation of the seal for better access to the two fixing points.

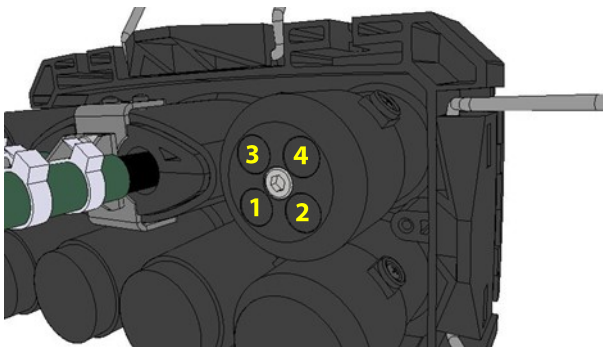
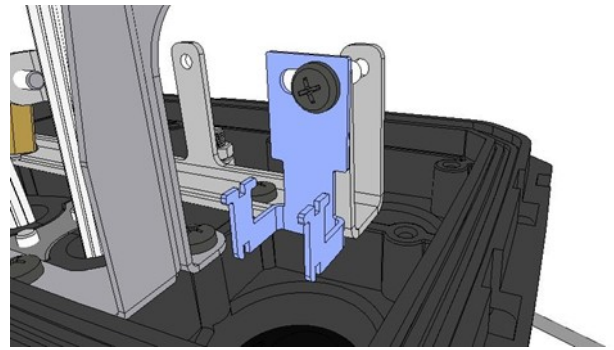


When drop cables have strength members, install the strength connectors to the frame in front of the chosen round port. Following the type of chosen seals, the corresponding connector is delivered within the bundle.

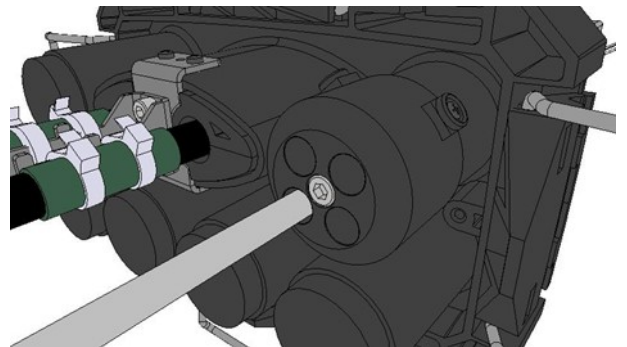




In case of a drop cable without strength member, install the bracket to the frame in front of the selected round port. Following the type of chosen seals, the corresponding bracket is delivered within the bundle.



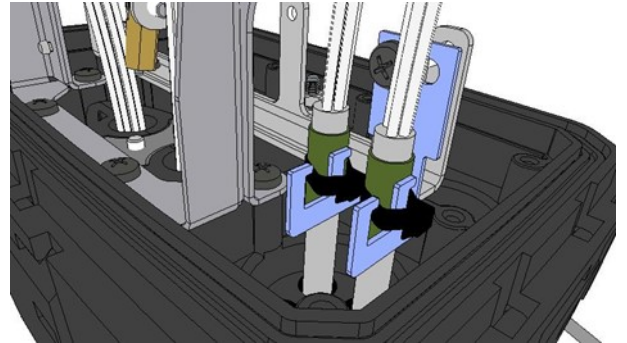
In case of multiple input seal, install the cables starting from the farthest positions away from the edge of the closure.



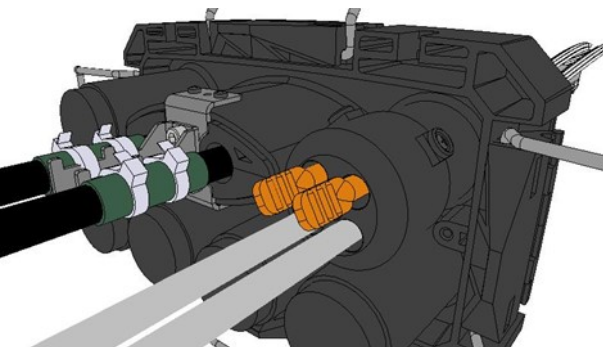
Push the drop cable in the chosen input.



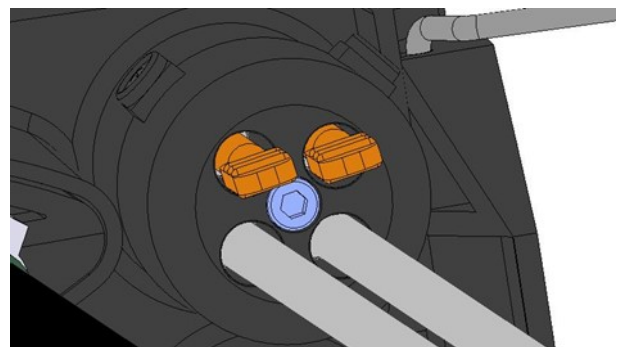
If present, fix the cable strength member into the connector..



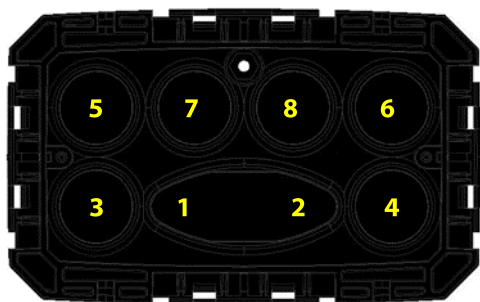
...or wrap a piece of velcro stripe and fix the cable to the bracket using tie wraps.



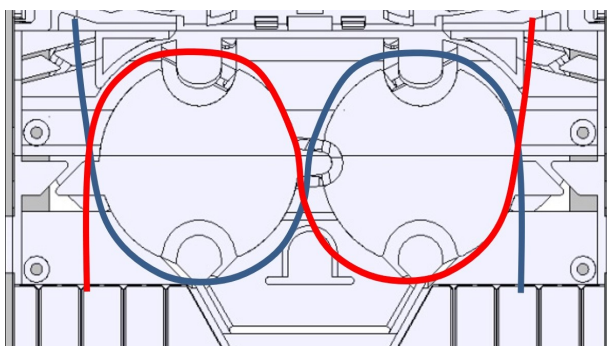
Insert the dummies into unused inputs.



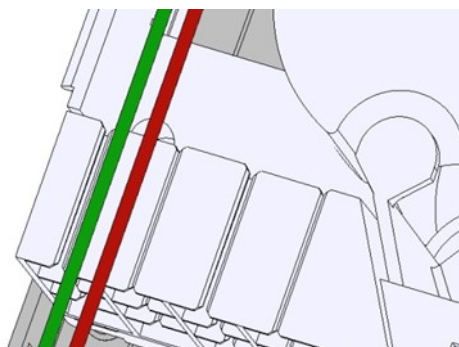
Seal the round port by tightening the screw with a minimum torque of 3.5 N.m.



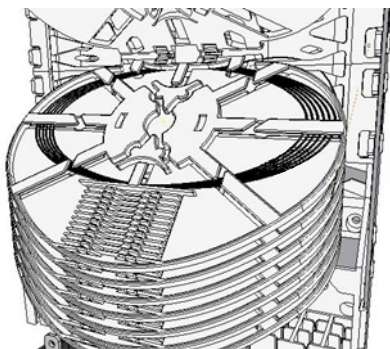
This picture shows the suggested sequence for ports occupancy.



The block at the base of the frame routes the fibers from right to left and vice versa.



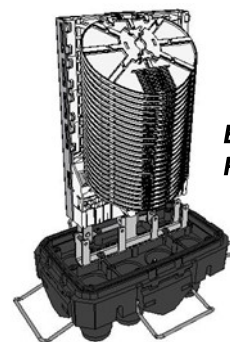
Match the loose tubes on the tube holders and mark at 1 cm over the edge.



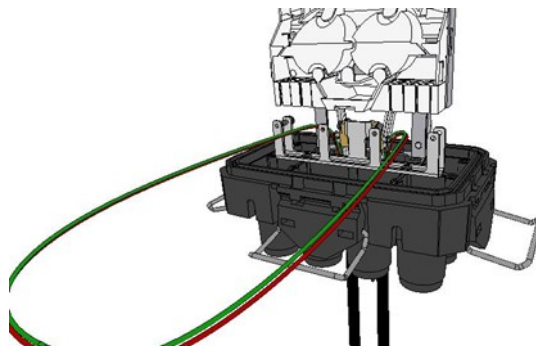
Gently guide the fibers up the respective splice tray and make sure that all the fibers are well positioned.

**ODD PORT /
LEFT SIDE**

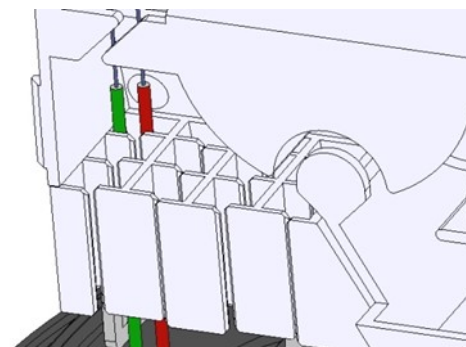
**EVEN PORT /
RIGHT SIDE**



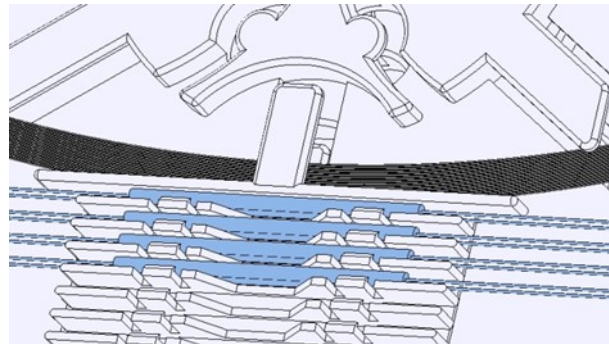
The even/odd ports corresponds respectively to right/left sides of the frame.



Use the window underneath the routing block to bring the looped loose tubes from the back to the front side of the frame.



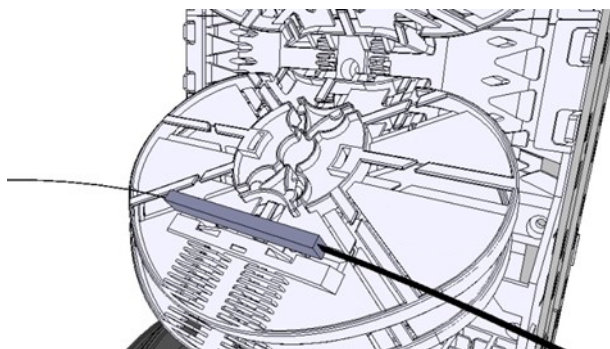
Remove the tube's sheath from the level of the mark and place them into the first available slot at the bottom of the device.



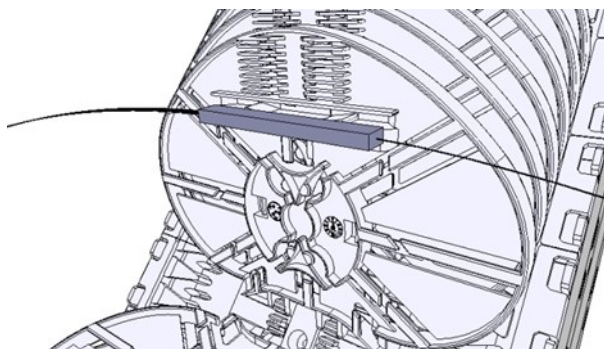
Splice the fibers and place the splice protectors into the holder.

Identify the trays with a marker or a label.

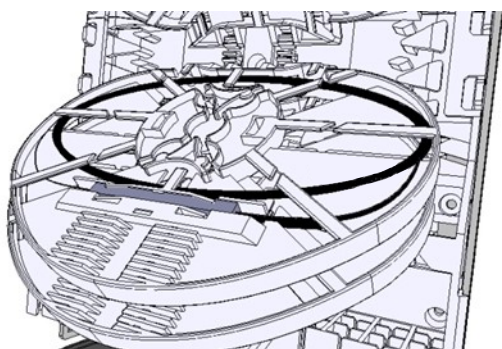
5 - Splitter installation



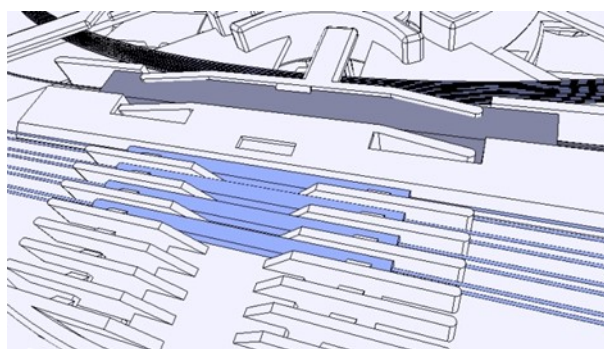
Splitters can be installed in a specific splice tray (part number CO522). Mount a PLC splitter (max 4x7x60mm) on the first side of the chosen tray.



A second splitter can be housed in the other side of the same tray.

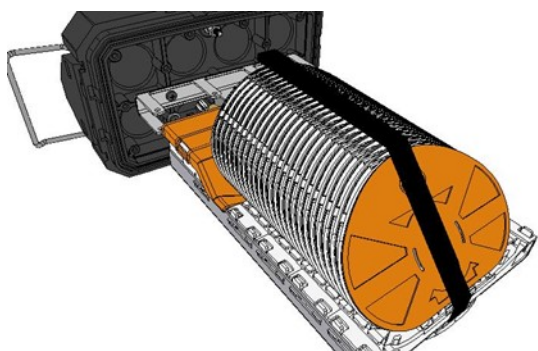


Dispose of the slack of the input and output fibers of the splitters within the tray. Identify the trays with a marker or a label.

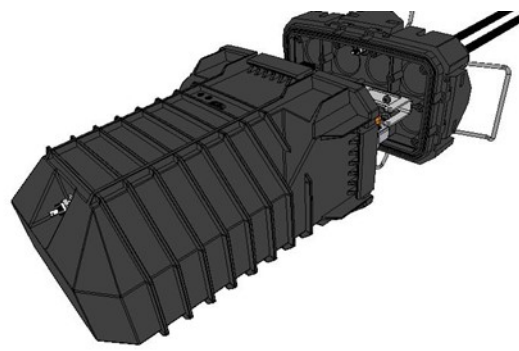


The PLC splitter tray can contain 16 micro splice protectors maximum (diameter 1.4mm) on each side.

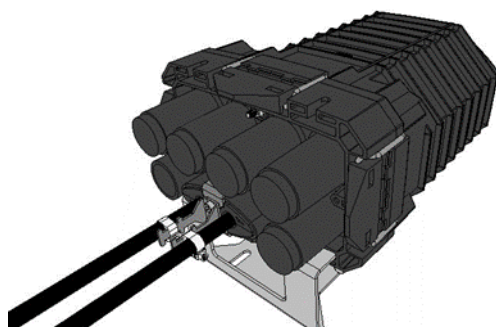
6 - Closing the Amphibox



Place the cover on the routing block and the upper splice tray, then tight the velcro strip.



Remove the outer bag and place the silica gel in the closure.



Important : It is recommended the replacement of the silica gel each time the Amphibox is opened.

Check the cleanliness of the o-ring joint and reposition the cover. Pay attention to its correct orientation.

Close the four latches and install the Amphibox at the chosen location.