

## 4 MM TUBE INSTALLATION IN FIST-EDSA2 CLOSURE

### Contents

1	<b>General product information</b> .....	1	8	<b>Adding additional cables</b> .....	9
2	<b>Tools</b> .....	1	9	<b>Closing the FIST-EDSA2</b> .....	9
3	<b>Warnings and Cautions</b> .....	1	10	<b>Optional: EDSA-MOBRA</b> .....	10
4	<b>Kit content</b> .....	2	11	<b>Trademarks and patents</b> .....	10
5	<b>Feeder cable</b> .....	3	12	<b>Contact information</b> .....	10
6	<b>Tubes diameter 4 mm with WGT</b> .....	6			
7	<b>Gel seal replacement</b> .....	8			

### 1 General product information

The FIST-EDSA2 is an outdoor fiber distribution splice closure.

- 1-2 feeder cables/ducts with an outer diameter range from 4 mm up to 16 mm.
- Up to 48 tubes diameter 4 mm in the rectangular drop ports.
- IP68, 2 m water head sealing level.
- FIST-SOSA2 fiber management system.
- Option to add additional feeder and drop cables into the round port with standard FIST-RSKG seals.

### 2 Tools

Standard installation and stripping tooling for fiber optic cables.  
 No special tools are required for installation of the FIST-EDSA2 fiber closure.

### 3 Warnings and Cautions

Follow the installation instruction steps to ensure the performance of the closure. It is necessary to take precautions and keep the working space clean to protect the closure sealing materials and splices.

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

## 4 Kit content

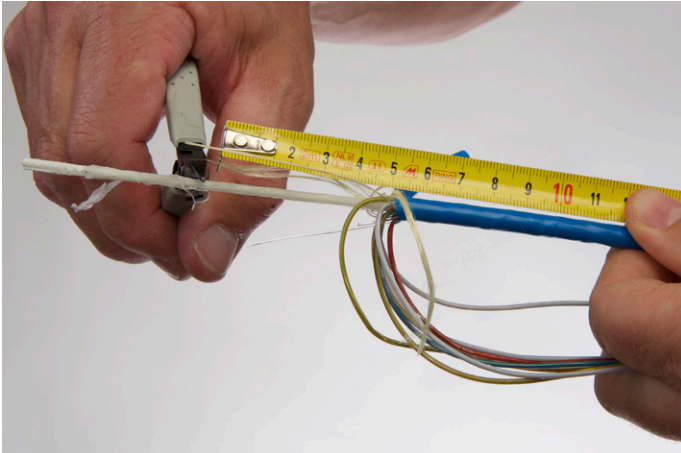


Kit content can vary. Picture for reference only.

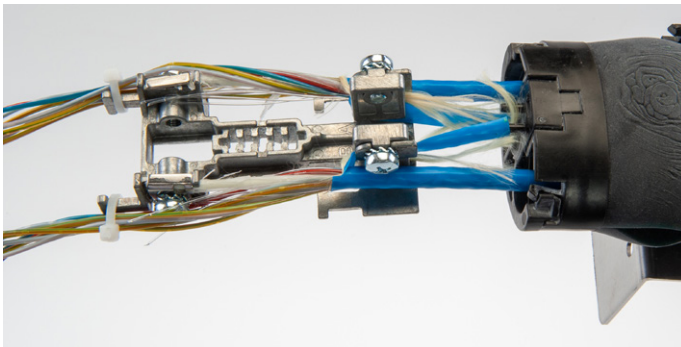
## 5 Feeder cable

Loop or single feeder cable is possible. Feeder port: cable/ducts (4 mm-16 mm).

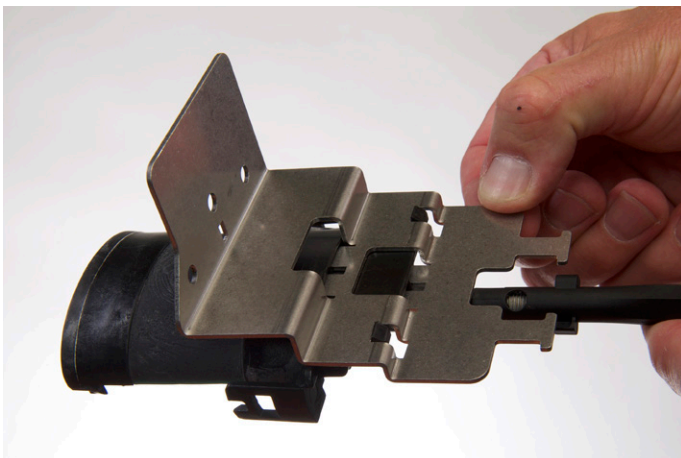
5.1 Make a window cut of 2 m.



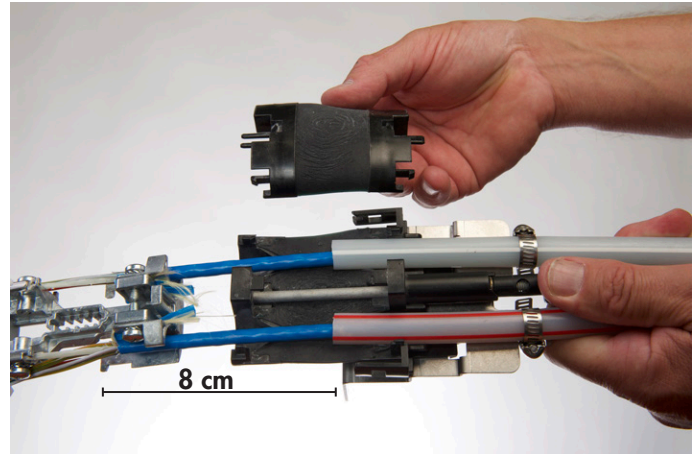
5.2 Cut the strength member at 50 mm. Keep a minimum of 70 mm aramid and cable jacket for extra fixation.



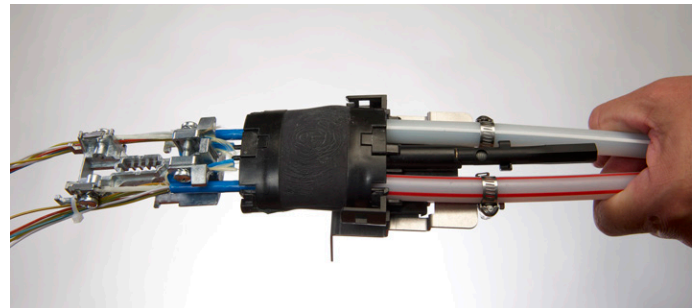
5.3 Cable fixation: Install the strength member in the holder and fix with metal plate and screw. Fold back the aramid and cable jacket, fix between holder and metal device with screw. T shapes can be used to hold/guide the loose tubes, make sure the tubes are not squeezed by the T-wraps.



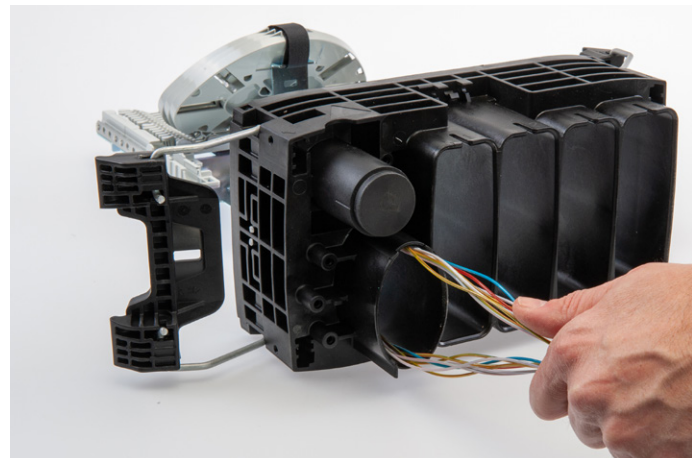
5.4 Fixation of guiding tubes: Install the bottom part of the oval gel seal (with trigger) on to the metal support. Slide in till it hooks up. The outside cable support plate must be installed on all FIST-EDSA2 applications.



5.5 Install the guiding tubes in such a way that they butt up with the transition in the gel profile. Fix the tubes to the metal bracket with hose clamps. If only one cable/tube is used, the unused port needs to be filled with the dummy rod.

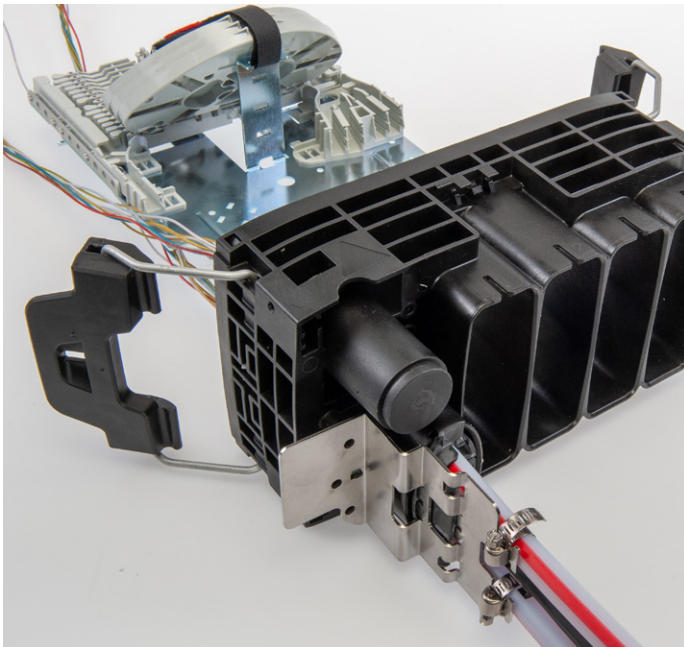


5.6 Close the gel seal.

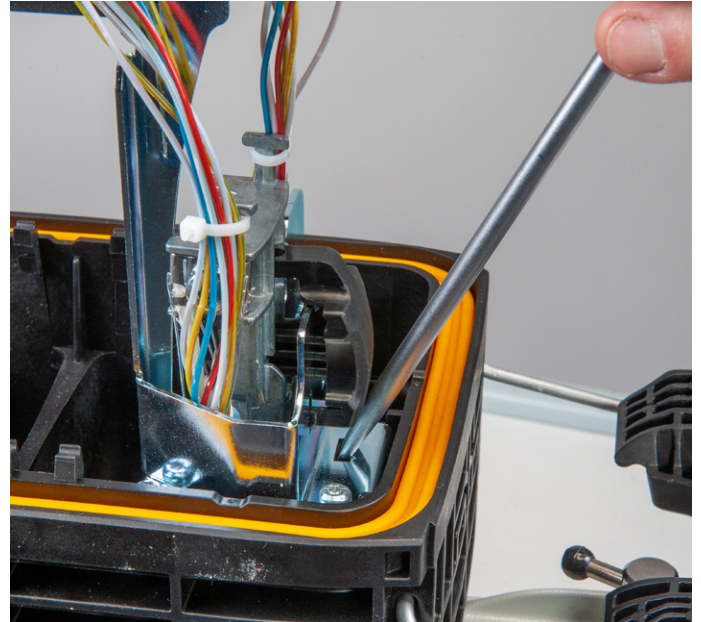


5.7 Finishing the oval port: Feed the loop trough the oval port. Make sure you guide the oval gel seal correct into the base. Letter A on the gel seal flange should be near letter A on the base. When larger tubes/cables are installed it can help to apply some amount of oil to the gel seal surface and the inner wall of the port.

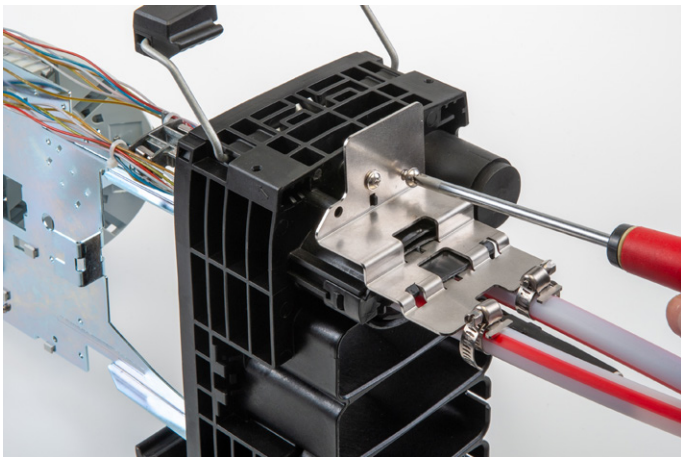




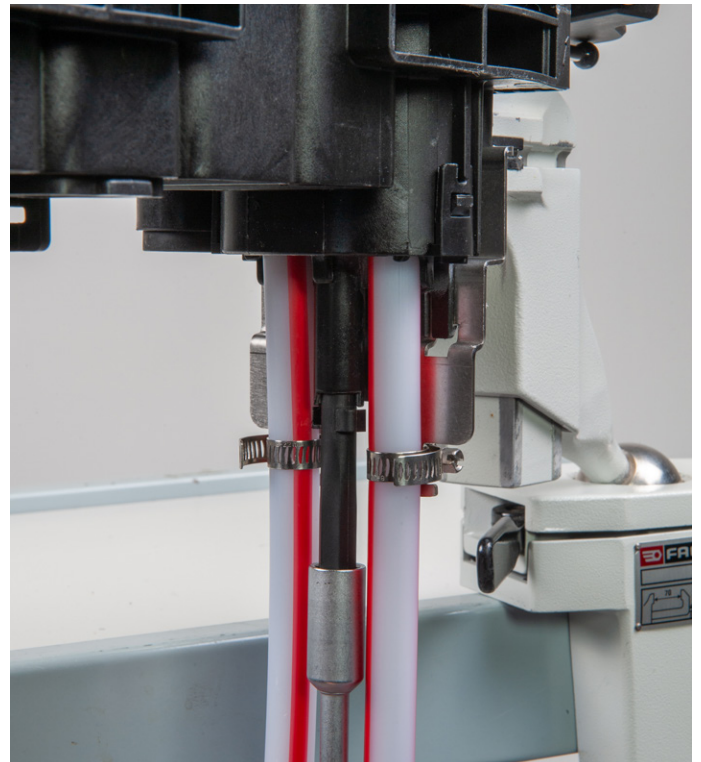
5.8 Make sure the flange of the gel seal is locked onto the base by 1 snapfit.



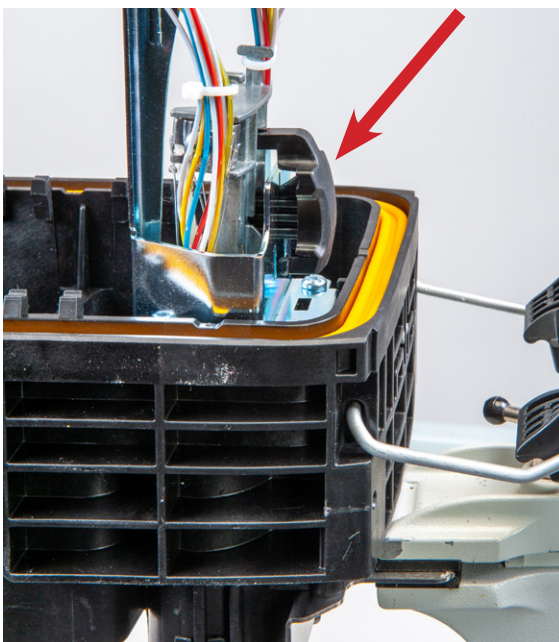
5.10 Lock the cable/tube holder with the plastic part. A flat screwdriver can be used to lock the plastic part onto the metal basket. Check if the 2 snapfits are snapped in properly.



5.9 Fix the metal bracket to the base with the 3 screws. The lip of the metal plate can be fixed into a workstand. This can help you with the installation of all the cables/tubes.



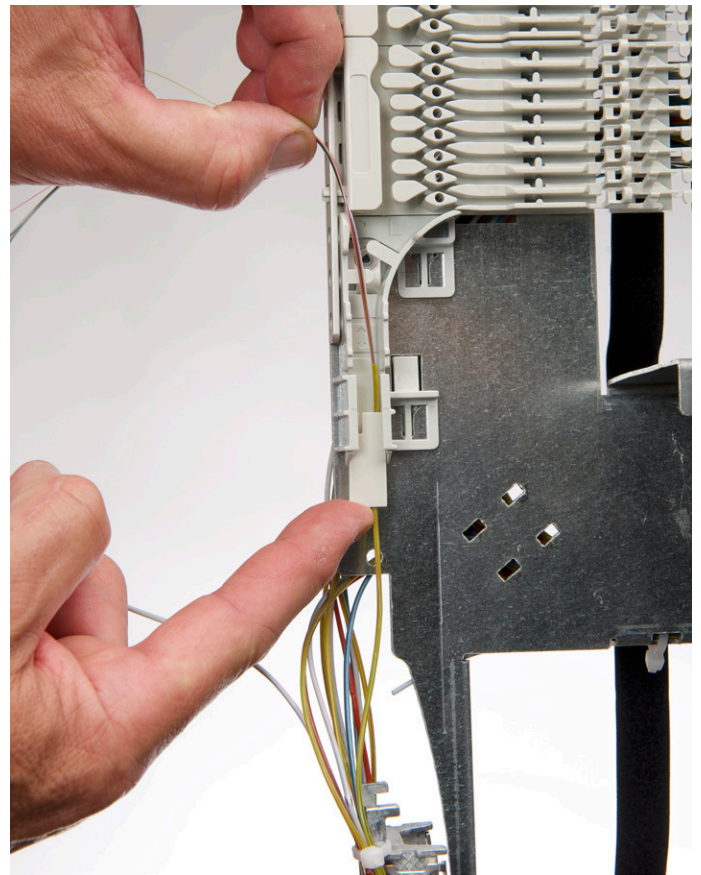
5.11 To seal the cables/tubes: turn the trigger till the 2 wings on the trigger make contact with the 2 lips on the shaft of the gel seal.



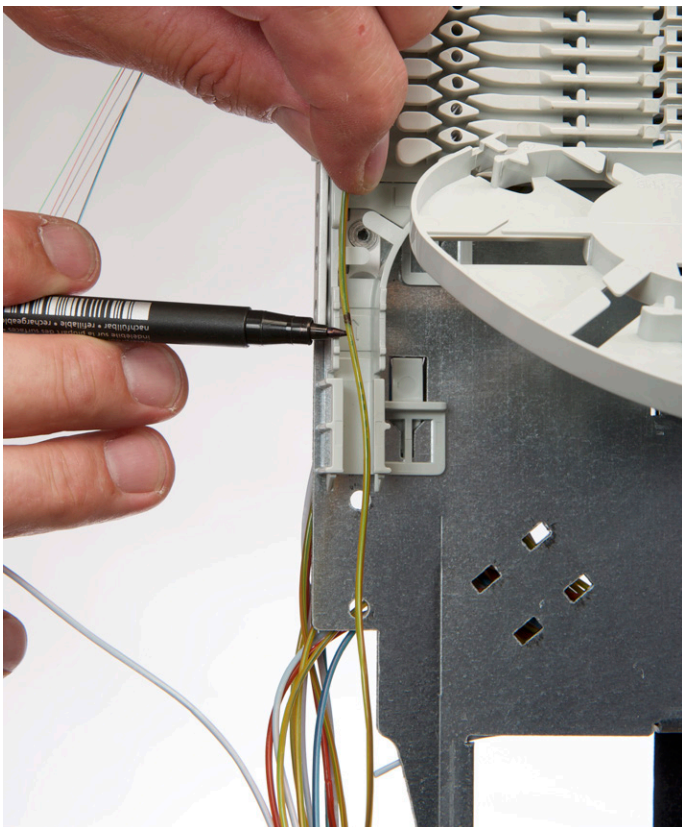




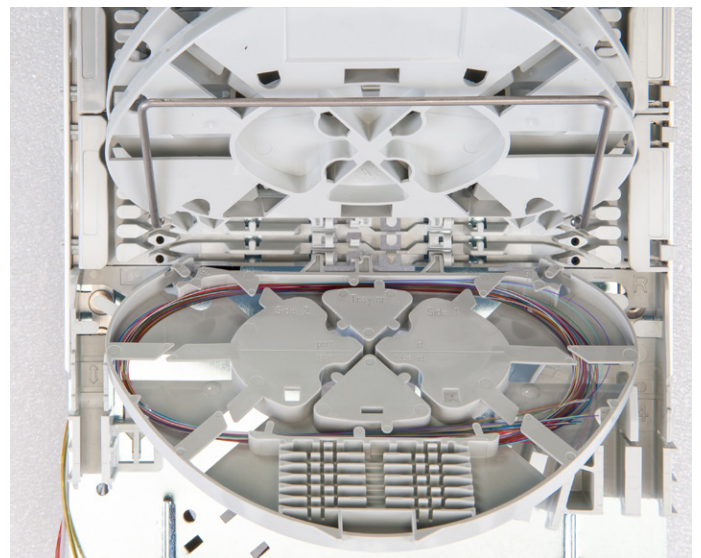
5.12 Loop storage: Store the loops properly.



5.14 Strip the tubes and place into the tube holder. Make sure the tubes are kept in place by correct installation of the tube holder retainer.



5.13 Fiber routing: Guide the loose tubes to the tube holder at the left side. Mark the loose tube as shown (between 2 marking lines at the holder).



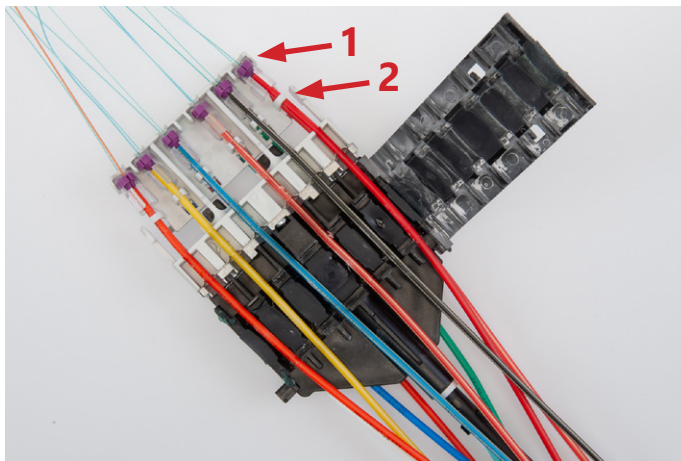
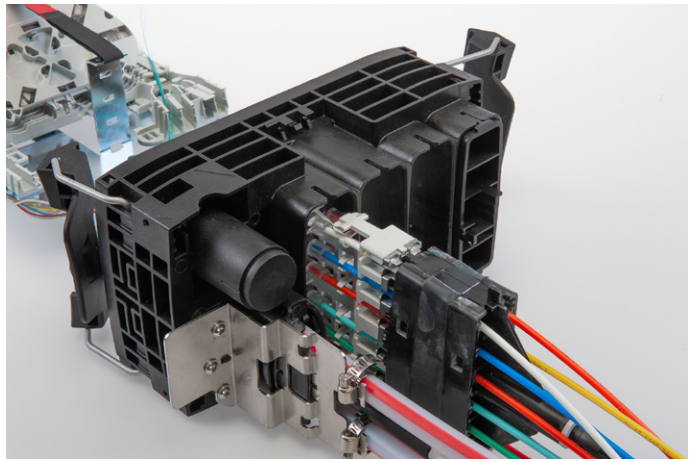
5.15 Guide the fibers to the cassette as standard practice.



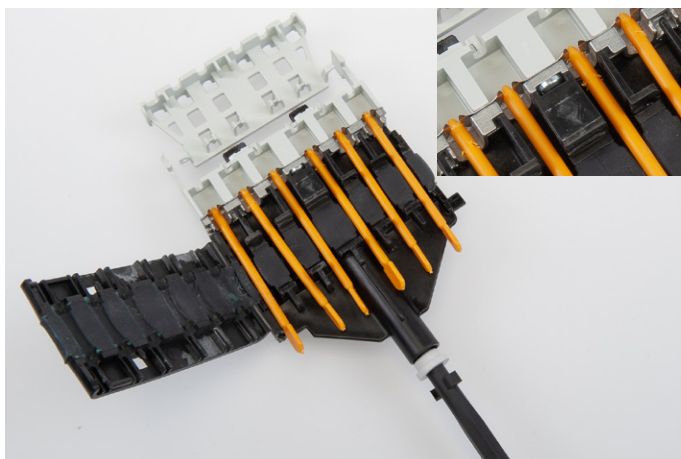
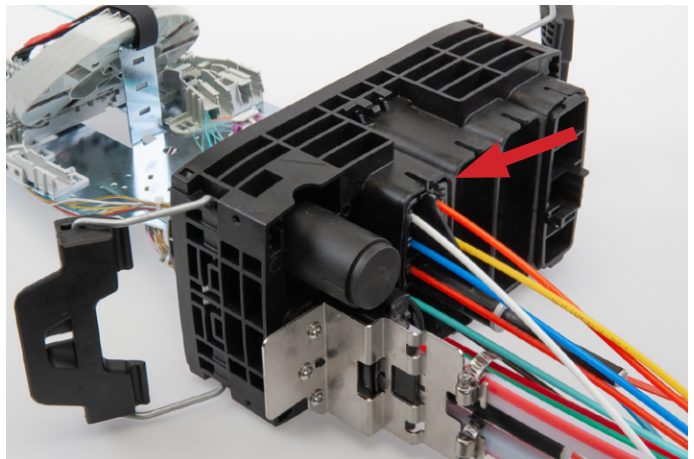
## 6 Tubes diameter 4 mm with WGT

Up to 48, 4 mm tubes with WGT can be installed in the drop ports. (1 port = 12 drops, WGT= Water/ Gas block Termination unit)

6.1 Tubes and WGT preparation. Prepare the tubes and fibers as standard practice, follow the guidelines of the manufacturer to have a proper tube/fiber seal. Install the WGT onto the end of each tube, leave 1.75 m fiber overlength. (Dimensions of the WGT's that can be used: diameter max 11 mm, height max 23 mm (Diameter tubes 4+-0.2 mm, minimum wall thickness of the tubes 0.95 mm)



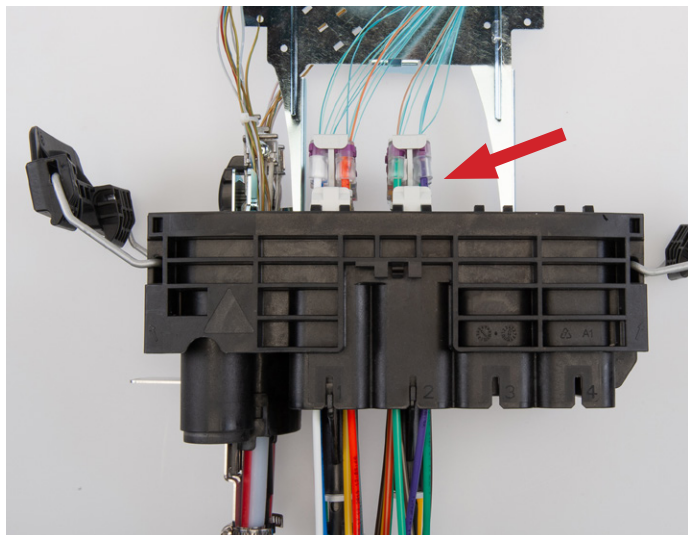
6.2 Installation of the tubes in the gel seal: Open the gel seal. Make sure the WGT is properly aligned into the pocket (top surface WGT aligned with top surface of the cableterm pocket (1)). The tubes can be pushed into the metal spring and grabbed by the snap hooks (2) of the cableterm pocket).



6.3 Unused ports need to be filled with dummy rods. If all ports or filled the gel seal can be closed.

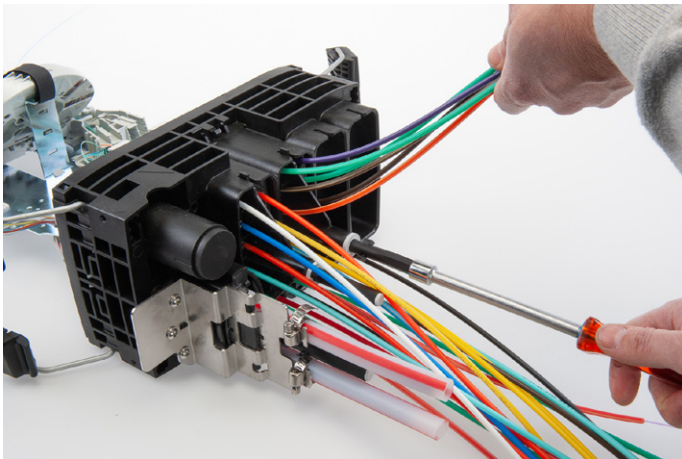
**Important: Make sure not to push the dummy rods to deep in the metal spring. Only the tapered end of the dummy rods should be grabbed by the metal spring so they can be easy removed if needed ( see detailed picture).**

6.4 Finishing the drop port: Feed the assembly through the port till it butts up with the base. (click system). Attention: only one orientation feasible, make sure the rib on the gel seal block will be aligned into the channel of the 4 rectangular drop ports (see arrow).

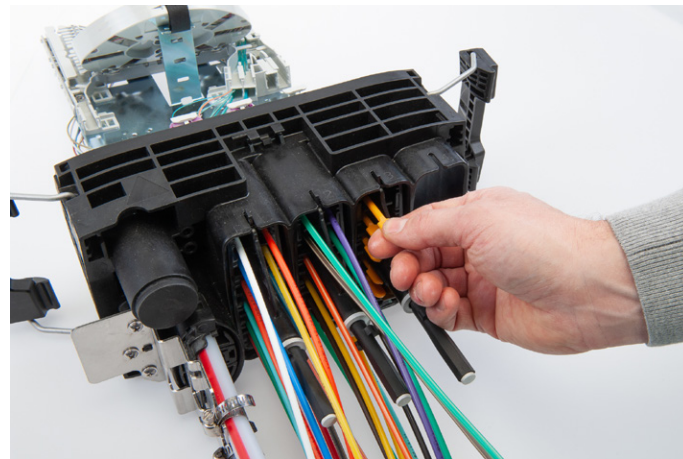


6.5 Push the grey plastic wings over the protruding legs (see arrow).

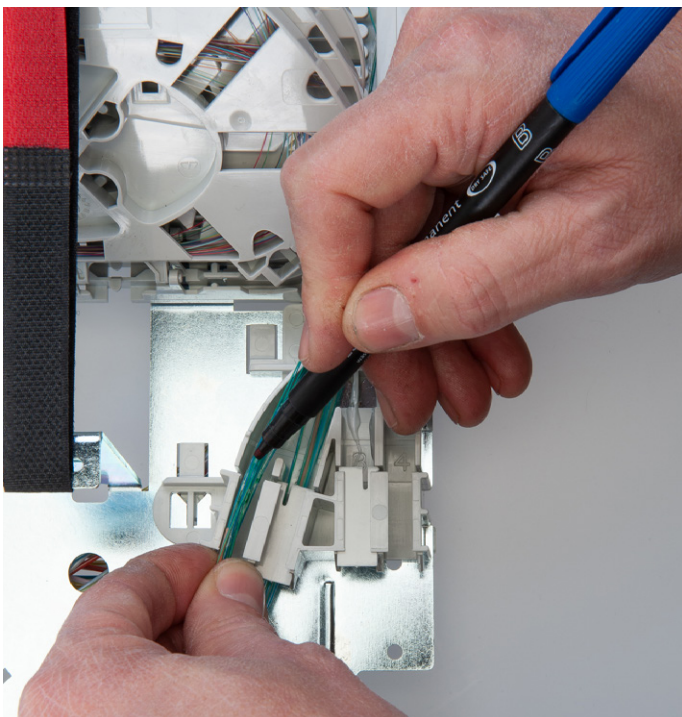




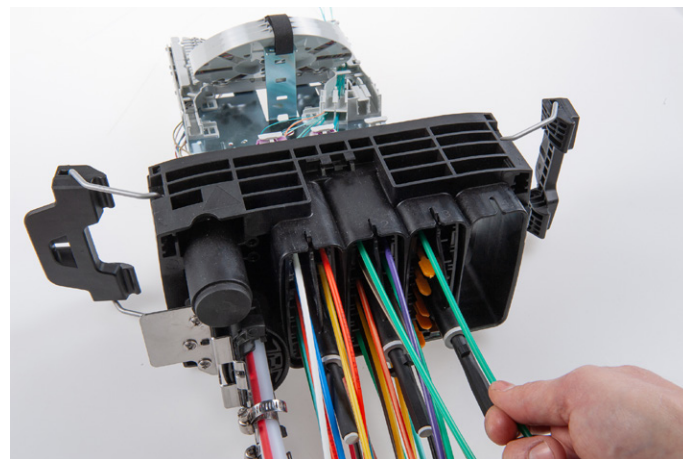
6.6 Next step is to activate the gel seal mechanism, engage by turning the trigger clockwise on the central bolt until the 2 lips make contact with the grey color gland.



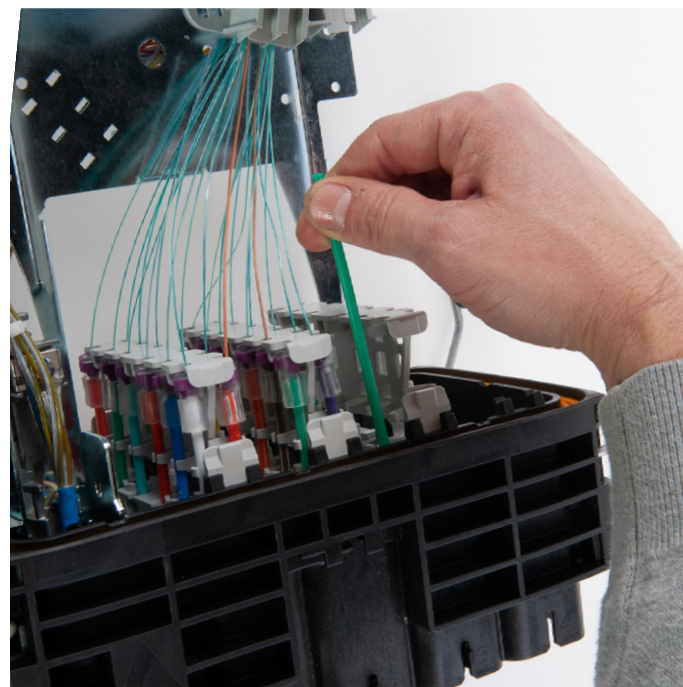
6.8 To add a tube, release the trigger of the gel seal and remove the dummy rod.



6.7 Fiber routing: Use the corresponding funnels of the tube holders to guide the fiber units. Fiber units from port 1,2,3,4 to funnel 1,2,3,4. In case the fibers have a protective coating mark the fibers between the marking lines and remove the coating as standard practice. Fix the plates as shown. Guide the fibers units to the selected tray as standard practice.



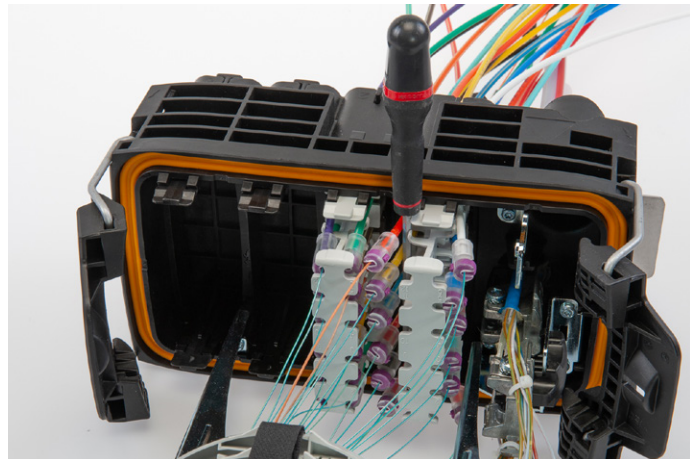
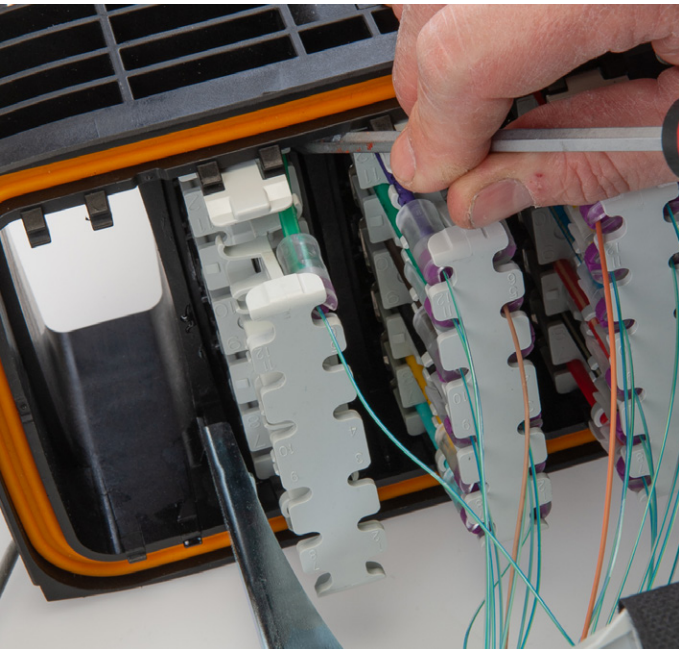
6.9 Guide the tube through the gel seal.



6.10 Pull the tube from the inside till you have some overlength. (A screwdriver can be used to guide the tube) Install the WGT (leave 1.75 m of fiber). Push back, align the WGT in the cableterm pocket and push the tube into the metal spring and the snap hooks.



## 7 Gel seal replacement

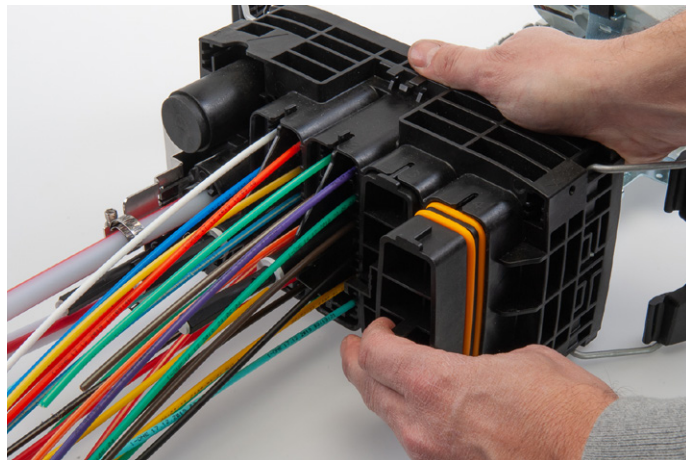
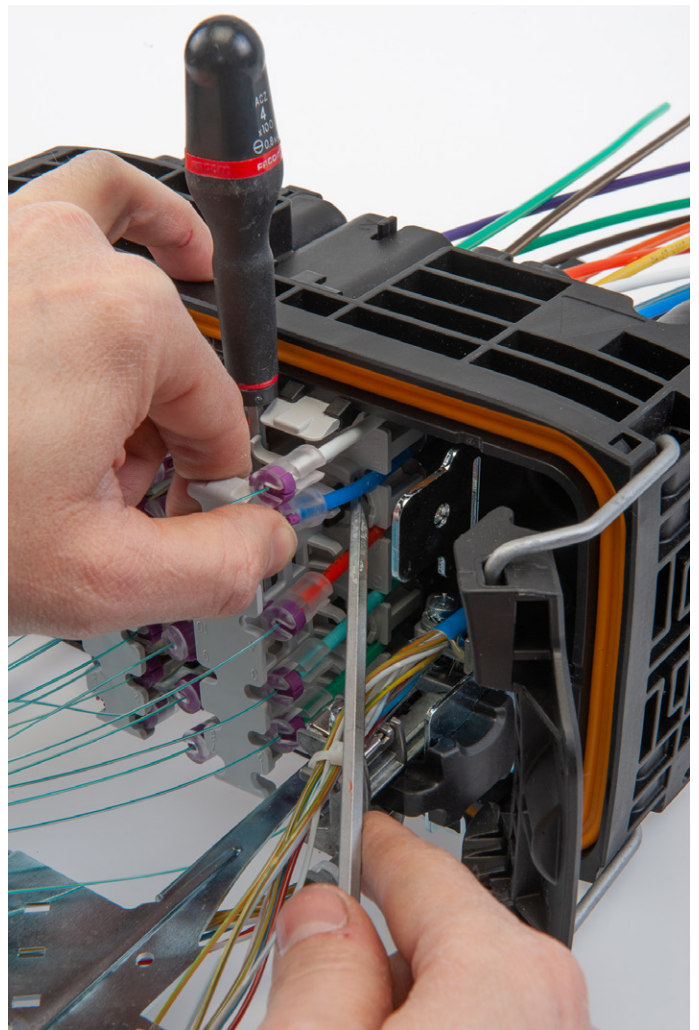


7.1 Pull the WGT units out of the cableterm pockets and lift the tubes out of the snap hooks (leave the tubes in the metal spring).

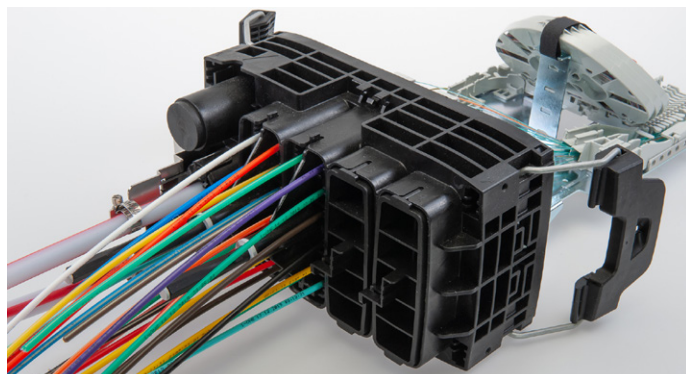
6.11 A flat screwdriver can be used to push the tubes into the metal spring. Tighten the trigger of the gel seal as standard practice.

6.12 Dummy blindseal plug.

If you do not need the full capacity at day 1, the dummy blindseal plug can be used to seal the port. Afterwards this dummy blindseal plug can be removed and replaced by gel seal to increase the capacity.



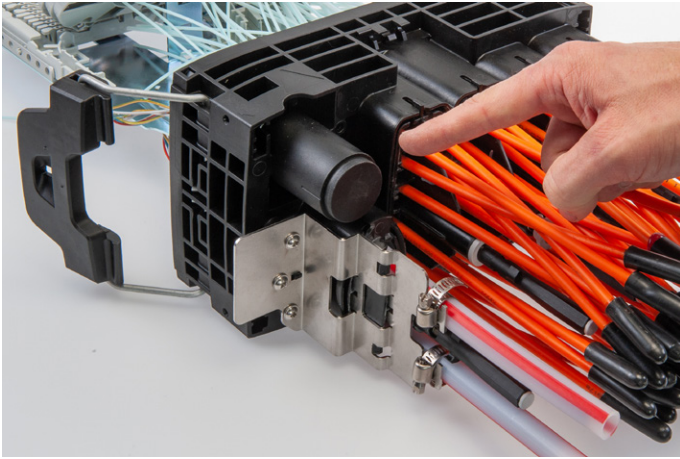
Make sure the 2 yellow o-rings are properly installed into the grooves of the dummy blindseal. Apply some silicon oil to the o-rings and the inner wall of the port, this will help you to slide in the dummy blindseal in the drop port. Make sure the 2 wings are locked with the base.



7.2 Release the trigger of the gel seal. Create some clearance between the tubes and the cableterm pocket. A flat screwdriver can be used to push the discs out the cavity. Slide the cableterm pocket to the side and remove. The gel seal can be pulled out. Take a new gel seal and install. Slide in the cableterm pocket until it is locked. Install all the tubes and WGT units as described above. When everything is in place activate the gel seal mechanism.

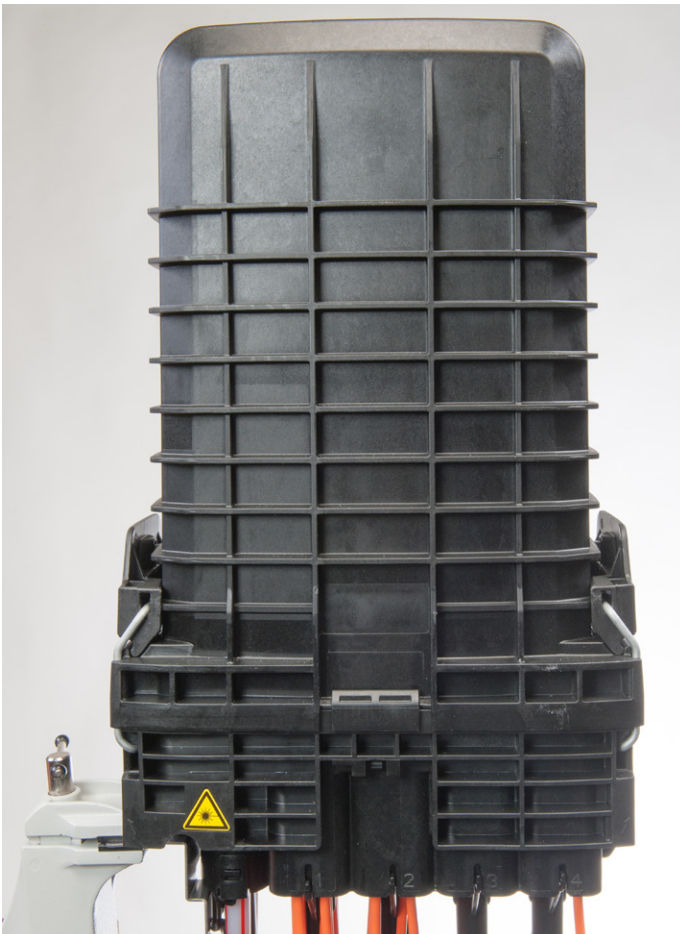


## 8 Adding additional cables



Gel seal kits for the round port are available with different amounts of cables. Use the appropriate Round Seal Kit Gel (RSKG) and follow the installation instruction delivered with the RSKG kit to install the round gel seal. Depending on the used cable you can route the fibers to the left or right tube holder as standard practice. Recommended is to divide the fibers that are coming from the round port in separate slots by using more tube holder retainers. Make sure the tube holder retainer is snapped in properly.

## 9 Closing the FIST-EDSA2

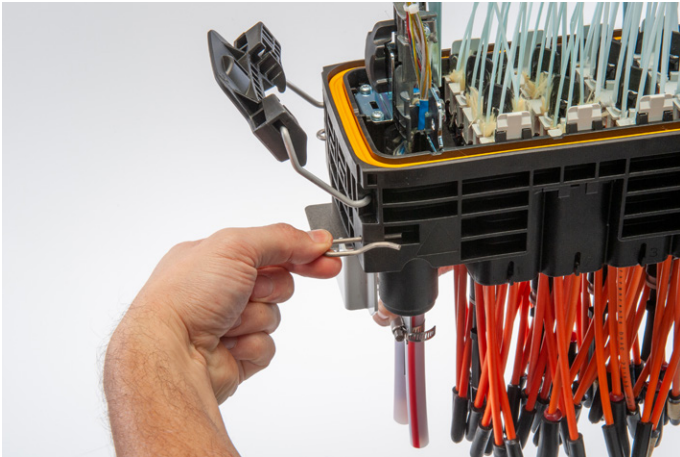
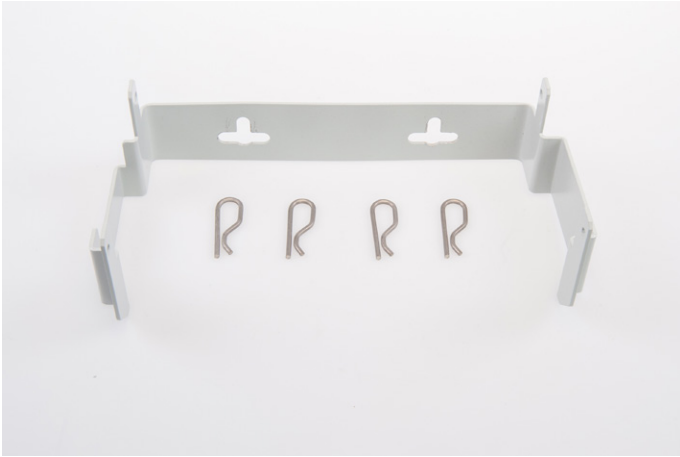


9.1 Make sure that the seal is clean. Put on the dome and close the 2 latches. Double check if all triggers are tightened.



9.2 Depending on the closure configuration the dome can have a pressure valve installed on the top. Max 0.2 bar pressure can be applied to the pressure valve. Check the tightness of the closure if closure is properly sealed. Release the pressure after the test and install the valve protection dustcover.

## 10 Optional: EDSA-MOBRA



10.1 When the EDSA-MOBRA is used the FIST-EDSA2 base can be mounted on the 4 lips and easy locked with the 4 split pins.

## 11 Trademarks and patents

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