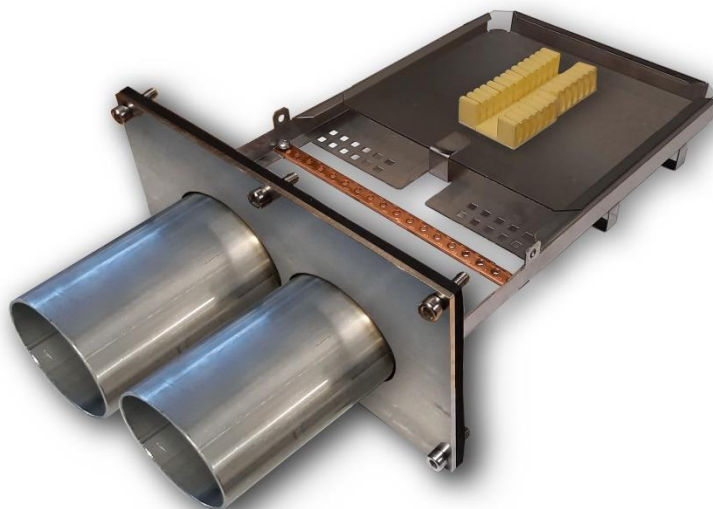


NAF MINI 48/96 General Joint Closure
Installation instructions for direct buried cables



Introduction

NAF Mini 48/96 GJC is a joint closure which can be directly buried, placed in a manhole or a cabinet. It is used for jointing and branching fiber optic cables.

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Features of the joint closure

- The case is so butt joint consisting of an inner part with splice tray and a protective cover.
- The capacity of the closure is for 48 splices, but it is possible to add another splice tray to the housing so that the capacity can be doubled. The upper splice tray is hinged.
- If only one splice tray is used, the height of the splice tray can be adjusted, depending on the needs of the installation situation.
- Underneath the splice tray are fixed guides for uncut tubes containing fibers
- Suitable for different types of fiber optic cable structures, as well as for microduct projects, where, in addition to small microduct cables, microducts are also brought into the joint closure.
- The closure can be used for mid span access.
- The closure can be buried in the ground.
- The flange has two oval pass-throughs.
- When direct buried cables are used, the sealing is done with shrinks or with mechanical cable glands. When microducts are used, the sealing is done with mechanical cable glands.
- External dimensions 391 x 180 x 94 mm
- Material is acid-proof steel.
- IP 68. Designed and manufactured in Finland.

The materials included in the joint closure for direct buried cables:

- Screw-on splice tray including two 24-fiber splice holders.
- Cable shrinks 56/16 – 200 mm, 2pcs
- Heat-shrink cap 56/26 – 125 mm, 1pc
- Equipment bag:
 - Branch block, 2 pcs
 - Extra 24-fiber splice holder, 1 pc
 - Grounding connectors, 6 pcs
 - Fixing screws, 12 kpl
 - Grounding connector M6-16 mm², 1 pc
 - Cable ties 2x100 mm, 12 pcs
 - Cleaning wipe, 1 pc
 - Silica gel bag 25 g, 1 pc

The installation of direct buried cables to the joint closure

Preparation of cables for joint closure installation

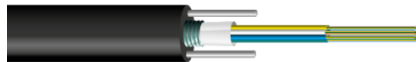
Clean the cables and mark the starting points for the peeling and peel the cables.

The peeling lengths for different cable types are as follows:

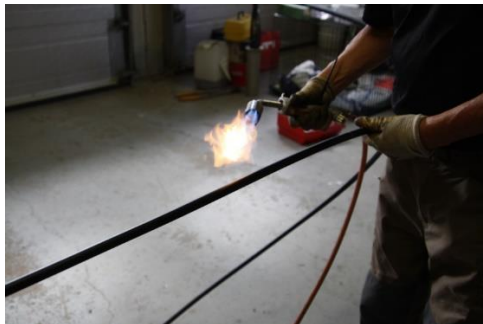
- Cables with a central tube structure (FY...): The length to be peeled is 100 cm.
- Multi Loose Tube cables (FZ...): The peeling length for direct extensions is 160 cm and for mid-span access 320 cm

Peel the cables.

Instructions for peeling different types of direct buried cables can be found on the cable manufacturers' websites, but here are a few points for stripping cables. In addition, a few instructions for joint closure installation are included.

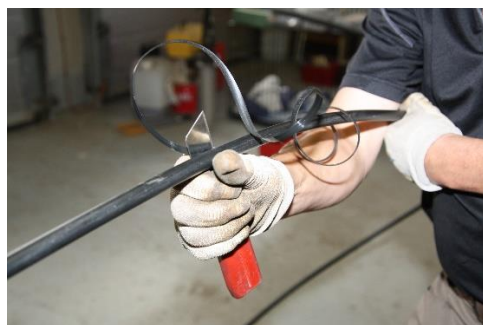


Cable structure



The peeling of FZVD2PMU Flex direct buried cable

Clean the cable from any dirt and heat the cable sheath over the entire length to be peeled. This makes peeling easier, as the cable sheath material is HDPE, which is harder material than the LDPE traditionally used in outdoor cables.



If cables with corrugated steel plates and steel wires are installed (FYOVD2PMU, FZVD2PMU Flex, FYMVD2PMU-FT), peel the cable sheath along the entire peeling length from the grooves on the steel wires, or for about 30 cm from the beginning of the peeling point.

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Cut the steel wires at each end to a length of about 10 to 15 cm.



You can split the sheath and the corrugated steel plate underneath the sheath with ST-OCS splitting tool. In this case, with the blade of the splitting tool, the sheathing is split from the grooves of the steel wires. This should be done on each side.



Cable splitting tool ST-OCS



Bend the cable slightly to separate the halves of the cable at the peeling point. Pull the cable halves apart while taking care not to damage the fiber tubes. Cut off the halves of the sheath so that the remaining pieces are about 3 cm long. Cut off the reinforcements under the sheathing.

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Scrape off the white ribbon under the armoring from one of the sheath halves and the plastic layer on the surface of the armoring.

Flatten the end of the cable sheath with pliers and squeeze the connector of the grounding wire onto that half of the sheath.

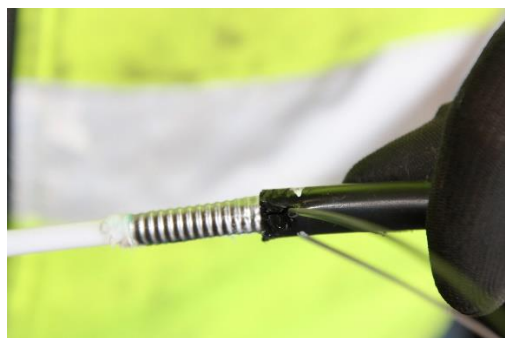


Protect the connector of the grounding wire with insulation tape. After that squeeze the sheath halves against each other and tape them together.



Another method of peeling is to split the sheathing with a knife from the grooves of the steel wires at a length of about 20 cm.

N.B. In this case, only the outer sheath of the cable is split, but the steel plate under the sheathing should remain intact.

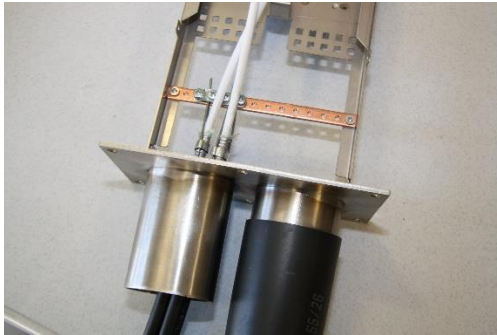


Heat the sheath, starting from the point where the cable is peeled, at a length of about 10 cm, and remove the halves of the sheathing from the corrugated steel plate. Cut off the steel damper and the reinforcements under it 3–5 cm from the starting point of peeling. Pull the sheath away from the end of the cable.

Before installing the cables, if necessary, change the position of the splice tray in height so that the position of the splice tray is optimal for the installation of fibers.

Instructions for the use of cable shrinks with the Joint Closure

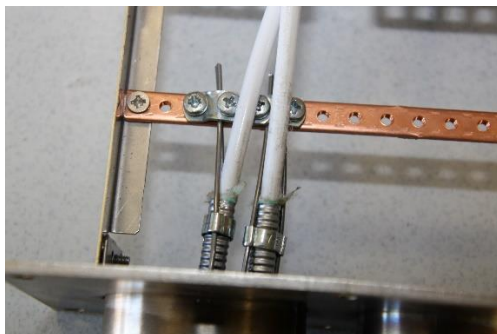
Carefully clean the cable sheaths from the starting points of the peelings backwards at a length of about 30 cm.



Thread a shrink or shrinks over the cables, place branch blocks at the base of the shrinks, and direct the ends of the cables inside the casing.

Attach the steel wires or central elements of the cables to the grounding rail of the case.

If you are installing cables with a central loose tube structure, e.g. FYOVD2PMU, FYO2PMU, FYO2PMU Mini, cable center tubes can be directed directly to the extension plate. If you are installing cables with a multi loose tube structure, for example. FZOMVDMU-SD or FZVD2PMU Flex, fiber tubes should be directed first under the splice tray and from there on to the splice tray.



Connect all metal parts of the cables to the mounting rail on the case.

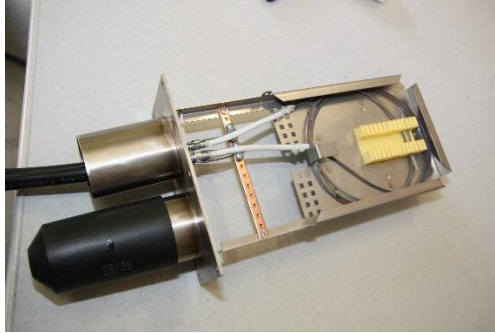
You can connect the corrugated steel plate to the mounting rail with the help of steel wires using an Oetiker hose tensioner, using an grounding wire or a corrugated arc fastener.



Thoroughly clean the fibers from gel.

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Attach fiber tubes or center tubes of cables to the splice tray. Lay out the fibers on the splice tray and cut off their excess lengths.

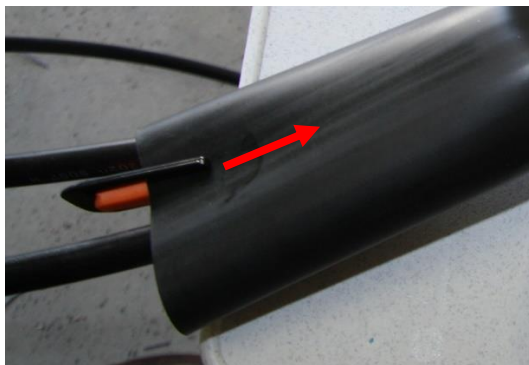


Heat the shrinks into place, starting the heating from the flange of the joint closure.



Once you have completed the shrinkage along the length of the pass-throughs, stop heating and wait for the shrinks to cool off.

If you shrink continuously, the shrinks will start to drain off the pass-throughs.



At this stage, double-check that the branch block is in place.

N.B. Before proceeding with the shrinkage, tie the cables from the same pass-through together with cable ties.

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Shrinkage is done.

Tie the cables leaving the pass-throughs together on the outside of the shrinks with cable ties, and a little further away, tie all the cables into a single bundle to avoid any damage to the pass-throughs when handling the cables.



Finally, check that glue is visible and evenly distributed from the ends of the shrinks and the branch block. If the glue is not evenly visible at the end of the shrink, the shrinkage is poorly done!

Splice the fibers.

Add the necessary markings to the splice tray(s).



Before closing the joint closure, attach the silica gel to the ground rail of the closure.



Close the joint closure.

NAFICON INSTALLATION INSTRUCTIONS

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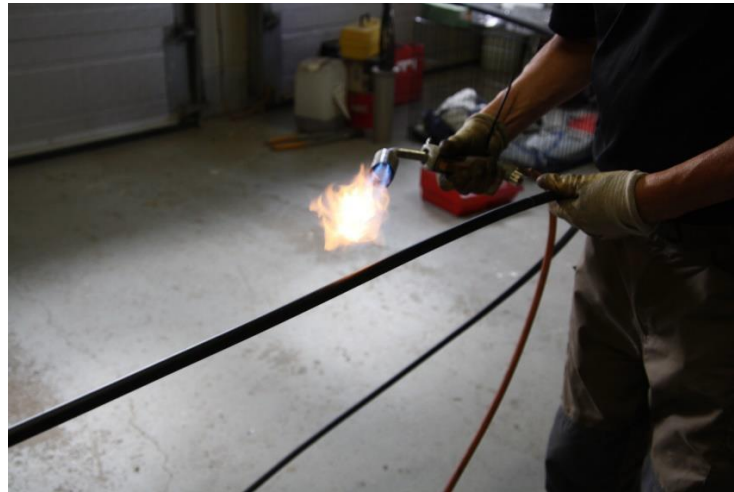
Attach the grounding connector under one of the screws in the case.



If you use a cordless drill or a cordless screwdriver to tighten the screws, then finally use a hand tool to make sure that the joint closure is properly closed.

Joint closure installation for mid span access when using mechanical cable glands

The following instruction is a about mid span access for FZVD2PMU Flex direct buried cable and branching it to FYOVD2PMU direct buried cable while using this NAF Mini 48/96-f GJC and mechanical cable glands. **Note that the pictures of the joint closure may differ from the NAF Mini 48/96-f GJC, because they are from an earlier version of the closure. The process is still exactly the same.**



Clean the cable from any dirt and heat the cable sheath over the entire 320 cm length to be peeled. This makes peeling easier, as the cable sheath material is HDPE, which is harder material than the LDPE traditionally used in outdoor cables.



Peel the sheath off the steel wires along the entire length to be peeled.

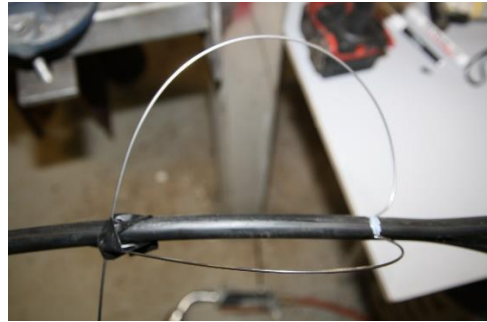


Dig out the steel wires.

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Cut the steel wires at each end to a length of about 20 cm.



Bend the steel wires backwards and lock them with e.g. insulation tape to prevent damage from their sharp ends.



Split cable sheath using ST-OCS splitting tool. Guide the tool blade into the groove of the steel wire and pull the sheath open on both sides of the cable.



Bend the cable slightly to separate the halves of the cable at the bending point.



Pull the cable halves apart while taking care not to damage the Flex fiber tubes.



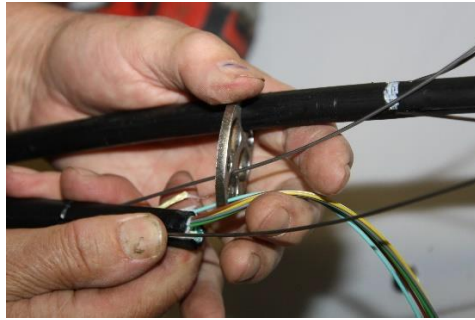
Cut off the halves of the sheath so that the remaining pieces are about 3 cm long.



Flatten the ends of the cable with pliers.



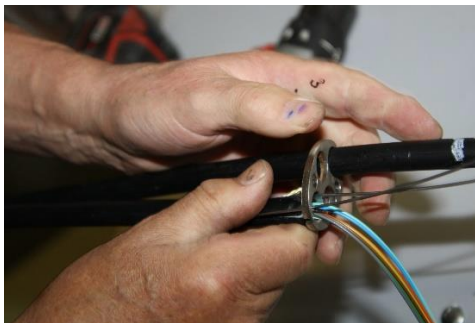
Thin the ends of the cable a little. Thus, they go more easily through the cable glands, but this is also necessary for the installation of earthing connectors.



Push the ends of the cable through the holes in the outer pass-through piece.



Cable ends pulled through the outer pass-through piece.



Pull the cable ends through the holes in the inner pass-through.



Split the pass-through holes used in the rubber part of the pass-through piece with a sharp thin knife.



Place the rubber part in place.



Pull the parts of the whole cable gland together.



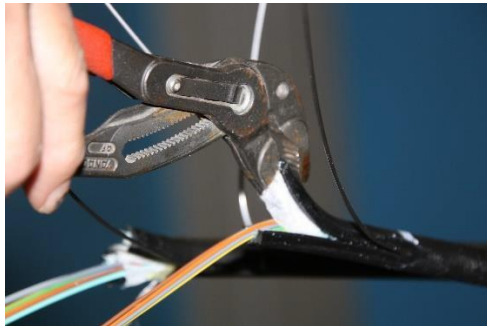
Grease the tightening screws on the cable gland before tightening them.



Screw the metal parts of the cable gland together, but do not tighten at this stage.



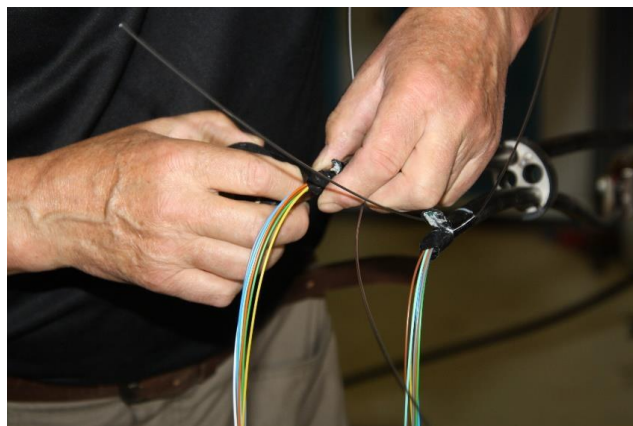
Mechanical cable gland installed.



Bend one of the halves of cable sheaths.

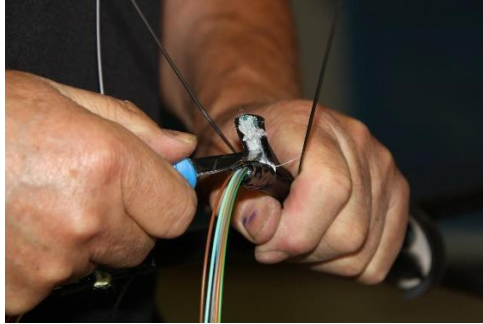


Turn the Flex tubes against the other sheath half and protect them at the end of the sheath with insulation tape.

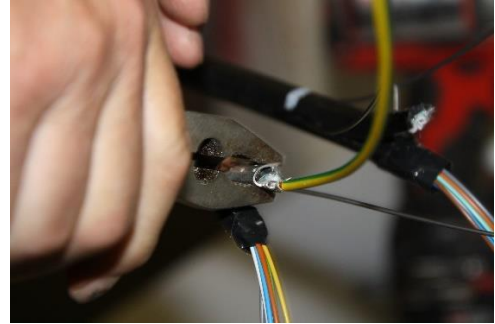


Flex fiber tubes protected at the ends of the cable.

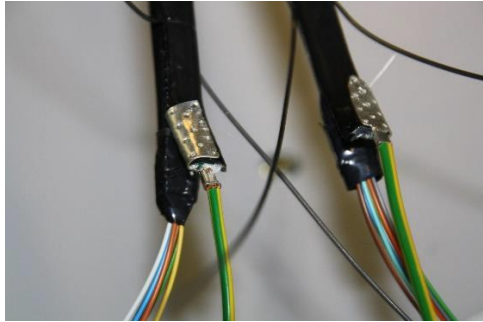
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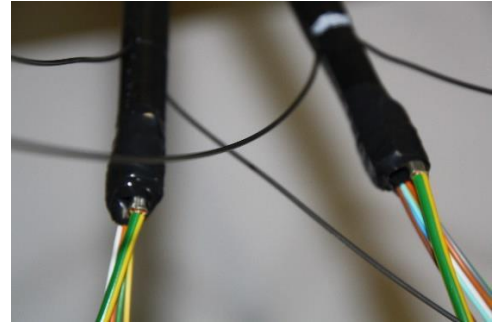
Scrape of the white ribbon under the armoring from one of the halves of sheaths and the plastic layer on the same surface of the armoring.



Squeeze the connector of the grounding wire into that half of the sheath.



The connectors of the grounding wire installed.



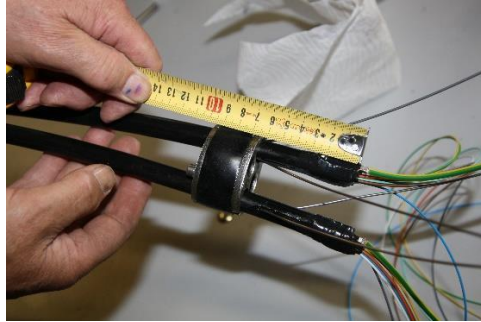
Protect grounding wire connections with insulation tape.



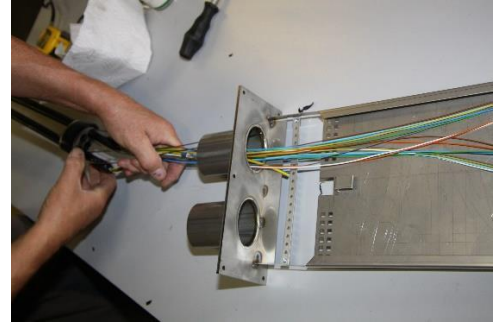
Spray a little silicone on to the cable sheath to make it easier to slide the cable gland into the right place.



Wipe off excess silicone.



Pull the cable gland to its correct point, i.e. the distance from the end of the cable sheath to the outer edge of the cable gland must be about 10 cm.



Insert the cable ends inside the casing.



Tighten the cable gland screws. Note, always tighten manually to prevent screws or their counterparts from breaking.



Cable gland tightened into place.
When the installation is done properly, the rubber part must be visible from the edges.



Attach the steel wires and grounding wires to the grounding and mounting rail of the closure.



All Flex fiber tubes can be placed on the splice tray at this stage.

Installation of the FYOVD2PMU direct buried cable into the joint closure, installation of fibers on the splice tray and closing joint closure.

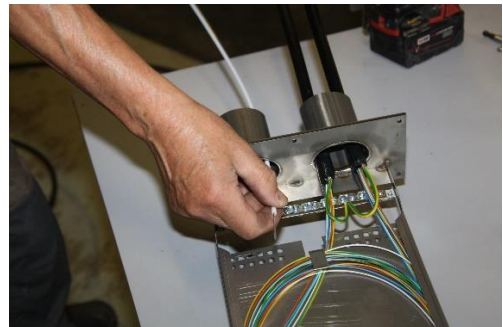
Clean the end of the FYOVD2PMU cable from any dirt and mark the starting point for peeling of the sheath. Peel the cable sheath over the steel wires over the entire peelable 100 cm length. Pull the steel wires out of the sheath, cut them to about 20 cm and turn them aside.



Split the sheath from the grooves of the steel wires using the ST-OCS sheath peeler or something similar.

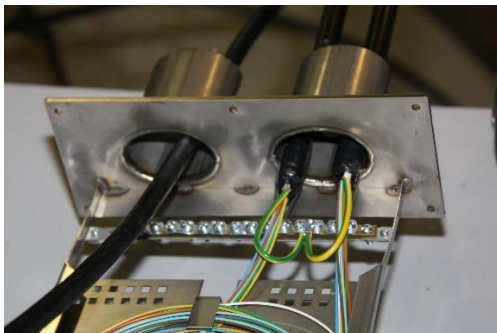


Pull the halves of the sheath apart and cut them to about 3 cm in length. Cut the reinforcements under the sheath. Then press the halves of the sheath together.



Remove one cover plug from the 4-hole cable gland and then place the cable gland into the second oval pass-through of the closure.

Insert the cable through the pass-through inside the casing.



Pull the cable a fair distance through the pass-through so that you can install a grounding wire on the end of the sheath.



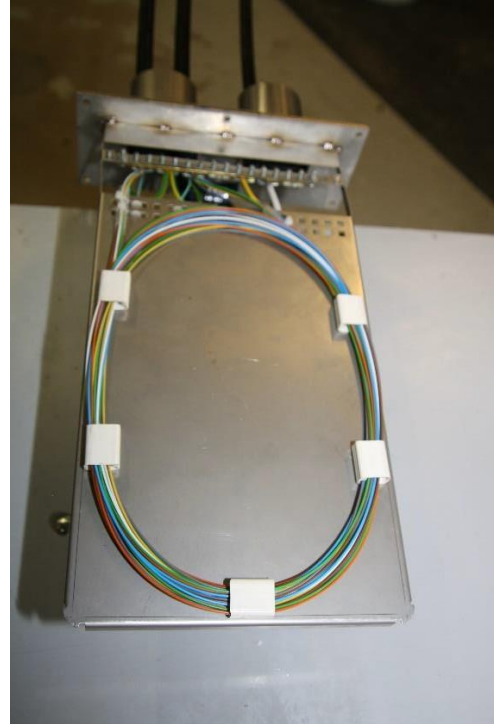
Install the connector of the grounding wire on the other half of the sheath and protect the connection point with insulation tape.

NAF MINI 48/96 GJC



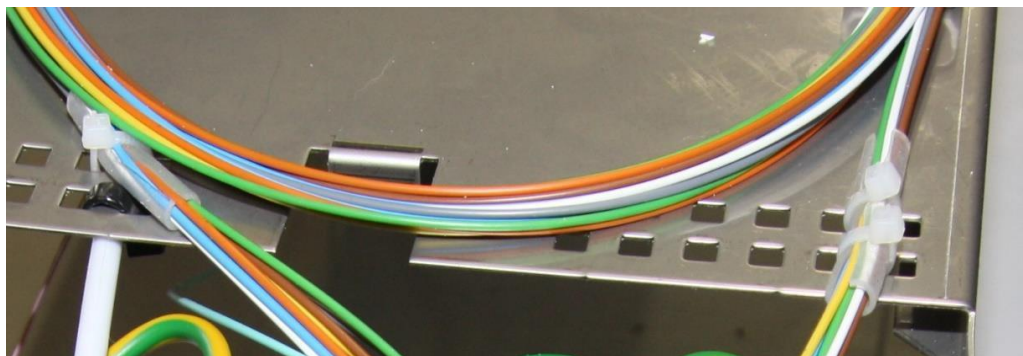
After the grounding wire is installed, pull the cable out of the casing so that the end of the sheath is aligned with the opening of the oval pass-through inside the casing. Tighten the screws on the cable gland. Attach the steel wires and grounding wires to the grounding and mounting rail of the closure.

Then place the center tube of the cable on the splice tray and mark the cut-off point.

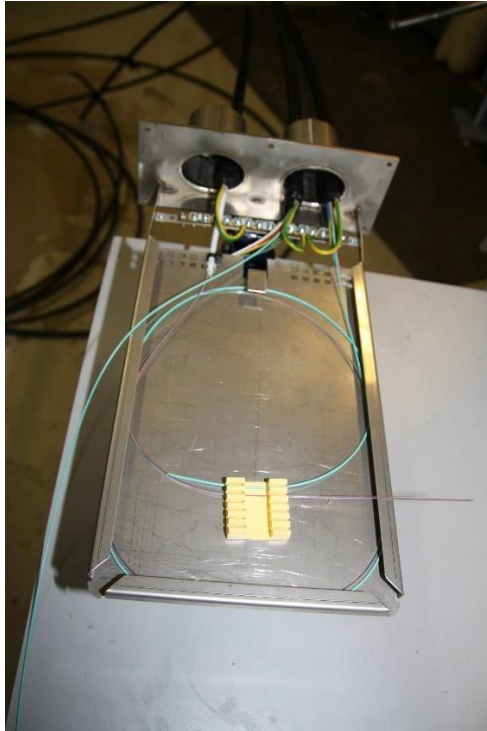


At this stage straighten the Flex fiber tubes as a bundle and separate the tube/tubes to be cut off. Note, always cut these tubes from the midpoint.

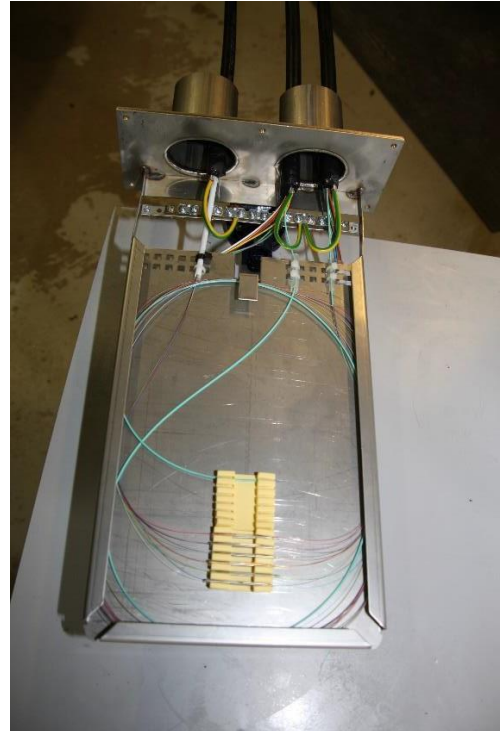
Guide the other fiber tubes below the splice tray and use the fasteners that are attached to the bottom of the splice tray.



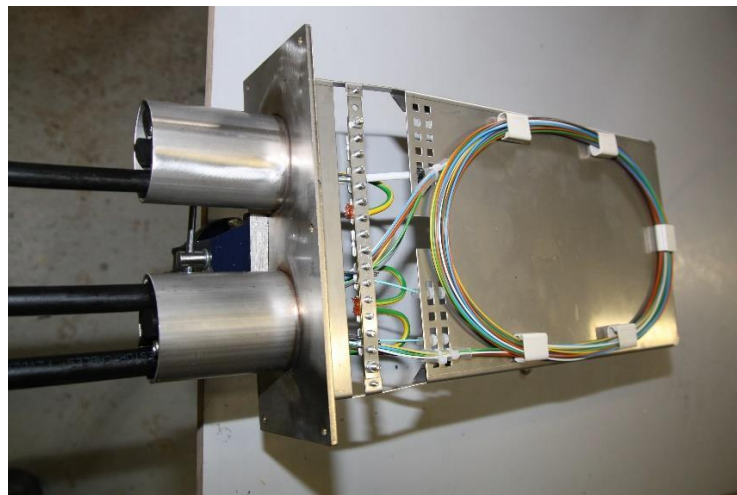
Attach the uncut fiber tubes to the splice tray with split silicone tubes and cable ties. Fasten the cut fiber tubes to the splice tray as well with slightly smaller silicone tubes and cable ties.



Place the splice holder/holders on the splice tray and measure the fibers on to the splice tray. After measuring, peel the Flex fiber tubes in a few parts near the mounting point of the tubes.

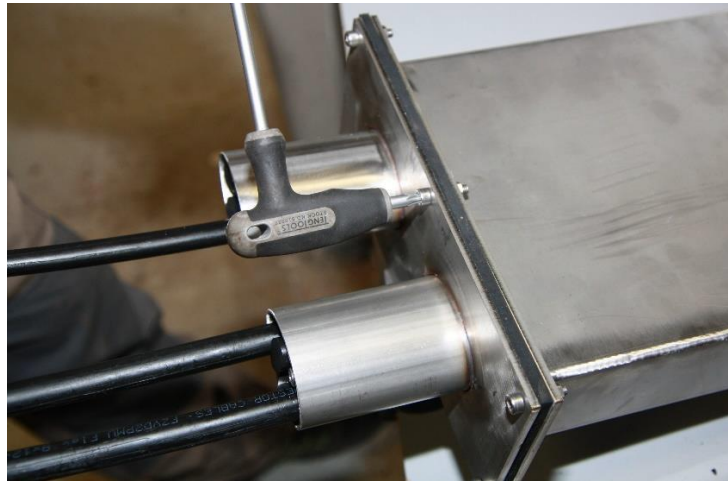


Splice the fibers and place the splice protection sleeves on. The unused fiber tubes of the second cable can be left on the splice tray.



Installed joint closure viewed from below

Add the necessary markings to the cables and to the joint closure.



Close the joint closure. If you are using a battery-powered screwdriver to tighten the screws, finally use a hand tool to make sure that the joint closure is securely closed.



Joint closure with mid span access installed

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