

NAF FTTH 12 METAL JOINT CLOSURE Installation instructions for microduct cables 7263450



Introduction

NAF FTTH 12 metal joint closure can be installed directly in the ground or in a manhole. It's a compact joint closure for extending and branching FTTH cables. Due to the mechanical cable glands, it is suitable for both direct buried cables and microducts.

Properties of the joint closure:

- A butt type joint closure consisting of round metallic protective shell, mechanical cable gland and splice tray.
- Suitable for 7/3.5 mm microducts and microduct cables that fit into those microducts.
- Capacity for 12 splices
- Mechanical cable gland for three cables or microducts with outer diameter of max. 7 mm
- Simple and strong structure
- Measures 285 x Ø 70 mm
- Material is acid-proof stainless steel.
- IP 68. Designed and manufactured in Finland .
- Can be installed directly in the ground.

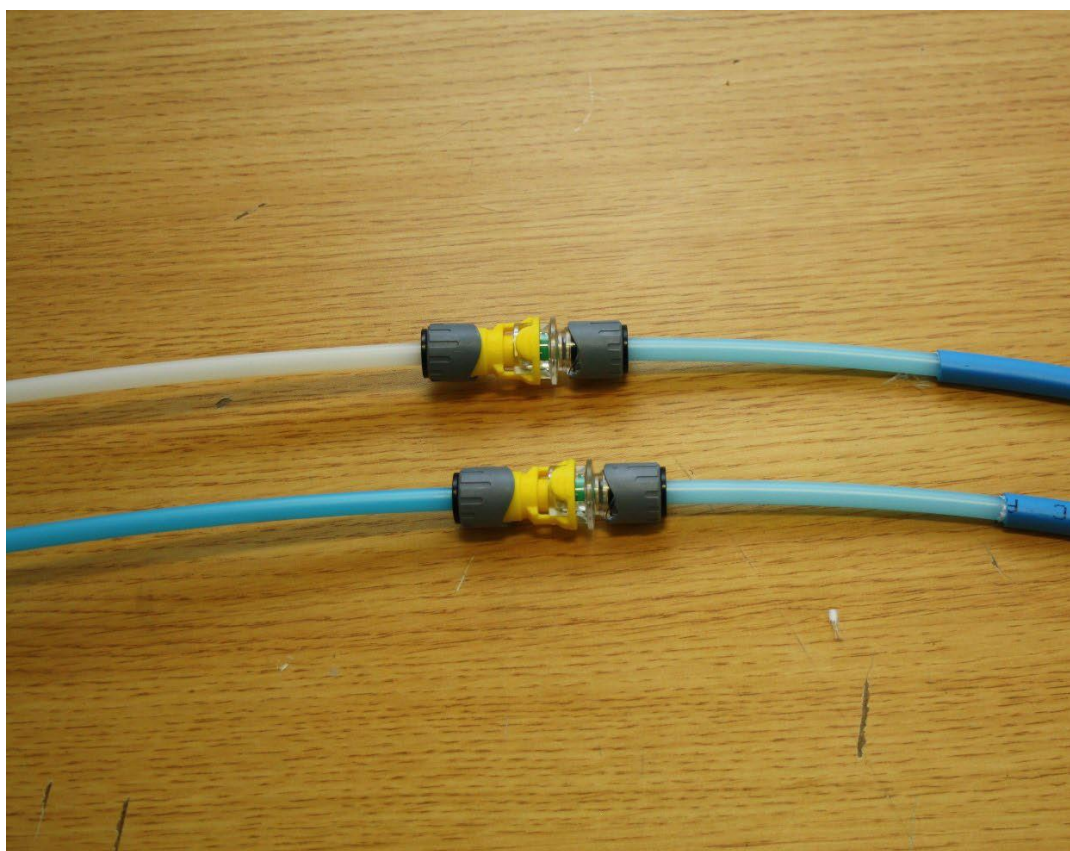
Equipment

- protective shell
- mechanical cable gland
- splice tray with plexiglass cover
- equipment bag
 - o splice holder for 24-fibers, 1 pc
 - o grounding connectors, 2 pcs
 - o corrugated arc clamps, 3 pcs
 - o mounting screws, 7 pcs
 - o cable ties 2,5 x 100 mm, 6 kpl
 - o cleaning wipe, 1 pc
 - o silica gel bag 25 g, 1 pc
 - o cover plug, 1pc

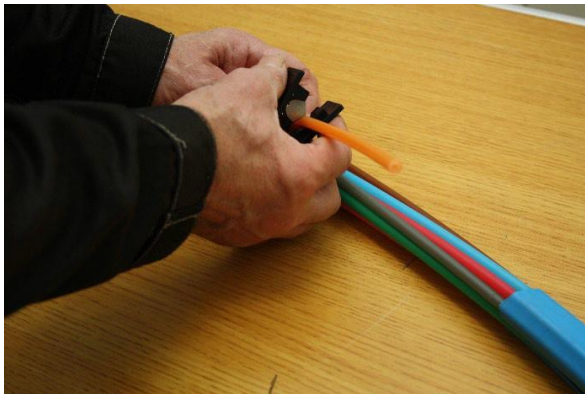
Importing microducts into the joint closure

Microduct cables are brought into the joint closure in 7/3.5 mm microducts. In installations, it is very important that the double-sheathed microducts coming from the trunk cables or FTTH cables are not brought directly into the joint closure, but only short, max. 1 meter long, 7/3.5 mm microducts without double jacket are brought in, which are connected to the incoming microducts with gas-tight connectors, picture below .

When choosing the connectors, the outer diameter of the cables or fiber bundles should be considered, i.e., 1.1 or 2.1 mm, so that moisture cannot pass between the microducts and the cables.



Branching of the microduct from the main route of the microduct to the joint closure.



Take out the microduct, clean it and split it, and remove the microduct's protective sheath from about 50 cm.

Take out the microduct to be branched, cut it at the other end of the branching point, bend and cut the microduct from the middle of the branching point with the microduct cutting tool.



Take out the double jacketed branch pipe and peel off its outer jacket layer for a length of about 10 cm. When peeling, use a tool with which you can make an incision in the outer layer of the pipe, after which you can pull off the outer layer.



The outer layer has been removed from the end of the branch pipe for a length of about 10 cm.

Cut the tear cords between the layers at the base of the outer layer.



Connect the microducts.

Note! It is very important that the connection point is on the straight sections of the pipes, because at the bending point the tightness of the connection is not reliable and the blowing of the cable may also stop at such a point.

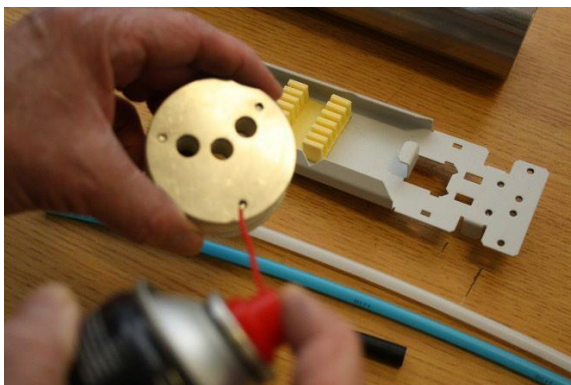


Support the connection point with cable ties so that the connection point is definitely on a straight section of ducts.

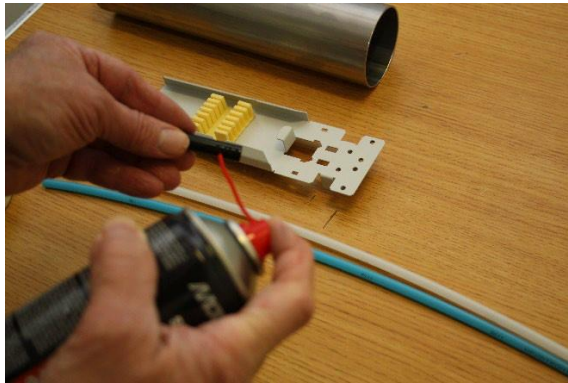
Importing the microducts into the joint closure



Loosen the screws of the cable gland before passing the microducts.



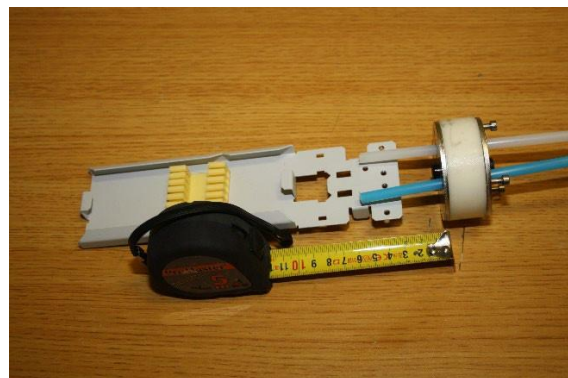
Spray silicone spray on the screws of the mechanical cable gland and on the screw holes on the back, so that the acid-steel fixing screws do not get stuck.



If there are only two microducts in the joint during the initial installation or in general, first install the cover plug that comes with the joint in the middle opening of the cable gland. Before installing the plug, spray it with silicone spray as well.



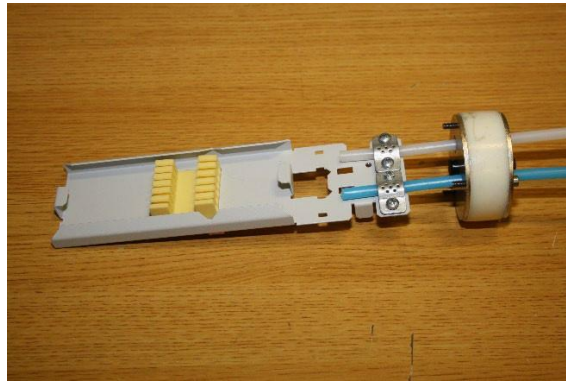
If there will be three microducts in the joint closure, place the pipe coming from the microduct route to one of the pass-throughs on the side.



Bring in the microducts from the openings of the cable gland. Place the splice tray under the microducts so that the distance between the edge of the splice tray and the mechanical cable gland is about 30 mm and the microducts are inside the joint closure for about 50 mm.

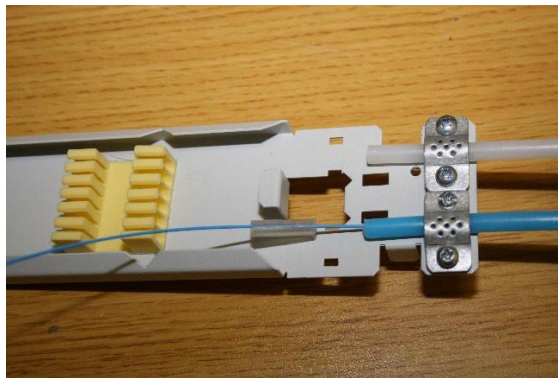


Do the initial tightening with the screws of the cable gland. Tighten the screws enough to hold the microducts in place, but the intention is not to lock them in place as of yet.

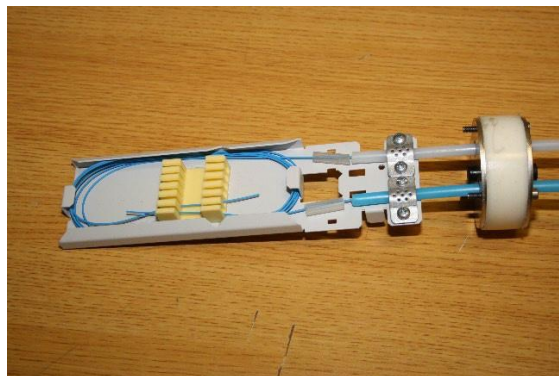


Fasten the microducts to the splice tray with corrugated arc clamps.

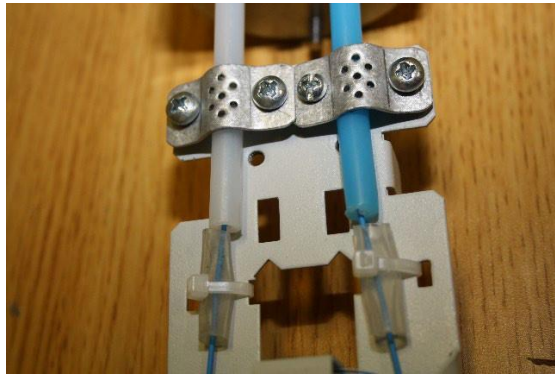
Importing microduct cables into the joint closure



Bring cables or fiber bundles from the microducts to the joint closure for about 120 cm. This length is necessary because one unstripped loop of the cables or fiber bundle is left on the splicing tray in case the fibers break during stripping. If fiber bundles with an outer diameter of about 1 mm are brought into the closure, thread a short silicone tube into the cables to protect the fibers from being compressed by cable tie. If you install microduct cables of about 2 mm in diameter, silicone tubes are not needed.



Make 3 loops with the cables on the splice tray and cut off any extra lengths.



Secure the cables to the splice tray with cable ties. Be careful not to overtighten the cable ties, but only enough to lock the cables in place.

The peeling of microduct cable



Mark the peeling point on the cables. One whole loop for each cable is set on the splice tray before marking the peeling point.

The cables in use are microduct cables or plastic-coated fiber bundles manufactured by Hexatronic and Nestor Cables. The outer diameter of the cables is 2.1 mm and the outer diameter of the fiber bundles is 1.1 mm. A special tool is needed to peel these, picture below.



Peeling tool for 1.1 mm fiber bundles and for 2.1 mm cables (*H. Vesala Oy*)



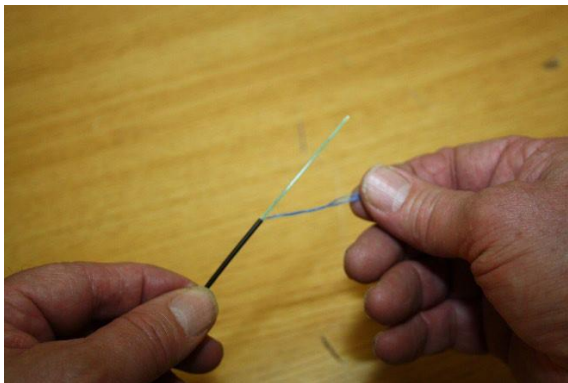
Peeling tool for 1.1 mm fiber bundles (*Hexatronic*)

Microduct cables with an outer diameter of 2.1 mm (Hexatronic, Nestor Cables)



Cut the cable jacket 5-7 cm from the end of the cable by rotating the tool around the cable. After this, pull the jacket off.

Before these procedures, test that the cutting depth of the blade is suitable so that you do not cut the tear cord or fibers under the jacket.



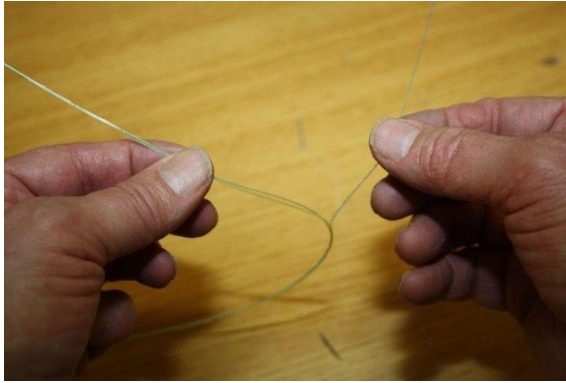
Take out the tear cord and strip the cable from a length of about 80 cm.



Peeling of the microduct cable using a tear cord.

The inner parts of Hexatronic and Nestor Cables 2.1 mm outer diameter microduct cables differ from each other, so the cables are stripped as follows:

Hexatronic



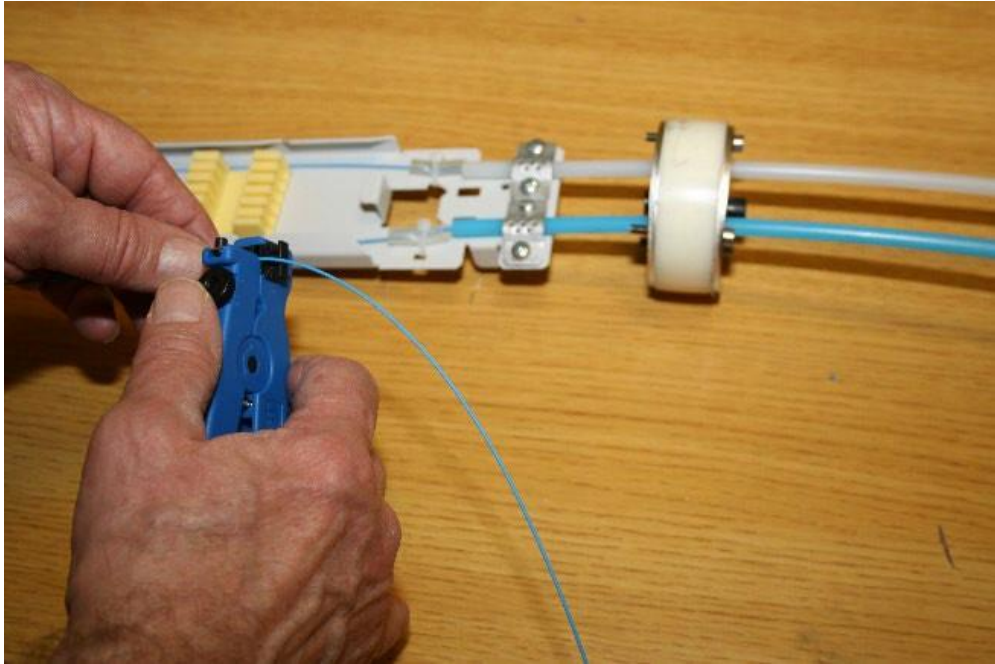
Under the sheath is an acrylate-coated fiber bundle. This is carefully peeled by hand and separating the fibers from each other with your fingers and removing the remnants of the acrylate layer connecting them.

Nestor Cables



There is a fiber tube under the jacket, which is stripped with a normal fiber tube stripping tool.

Microduct cable with outer diameter of 1,1 mm (Hexatronic, Nestor Cables)



Split the sheath of the fiber bundle along the entire length to be peeled, i.e. a length of about 80 cm. If you are using a plastic peeling tool, before you start peeling, test that the cutting depth of the blade is suitable so as not to damage the fibers.

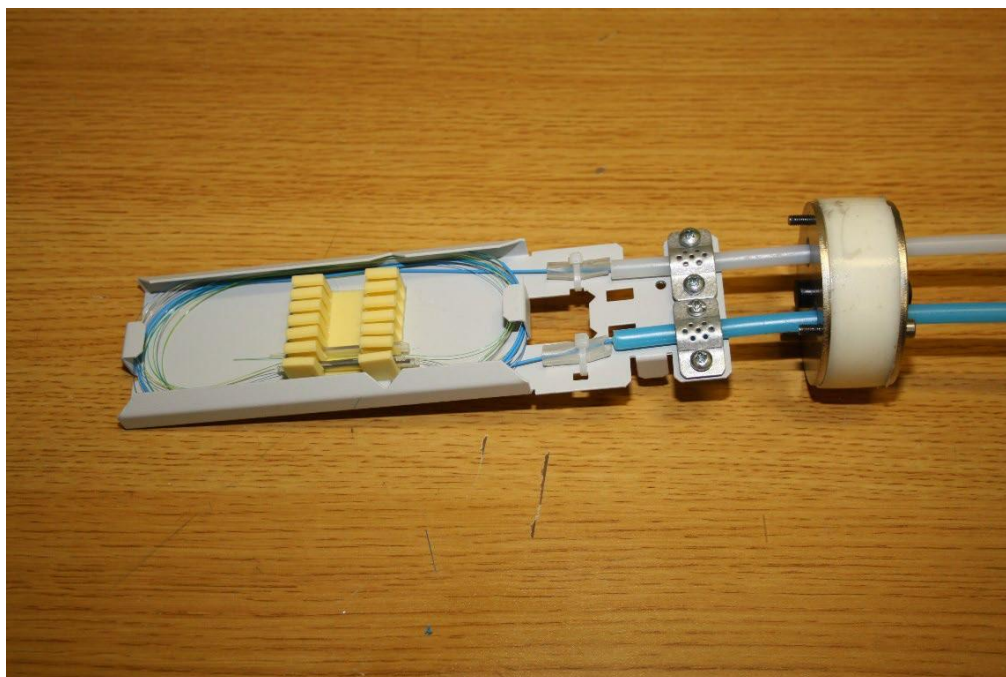


When you get the protective sheath of the fiber bundle split, pull the fiber bundle apart.

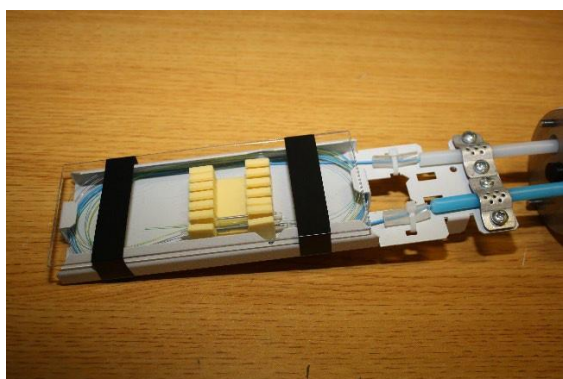
Carefully separate the fibers from each other and remove the remains of acrylic plastic from fibers that connect them with your fingers.

Splicing of the fibers

Place the fibers on the splicing tray and cut off their excess lengths. One full loop of each cable or fiber bundle is left on the splice tray for possible repairs. This is necessary if there have been problems with the stripping of cables or fiber bundles.



Splice the fibers. Place the unspliced fibers as bundles into their own groove in the splice holder.



Protect the fibers by attaching a plexiglass cover over the splice tray.

Attach the plexiglass cover with insulating tape.



Add a silica gel bag to the joint closure.

Closing of the joint closure



Push the inner part of the joint with the grommets inside the protective shell of the joint closure.

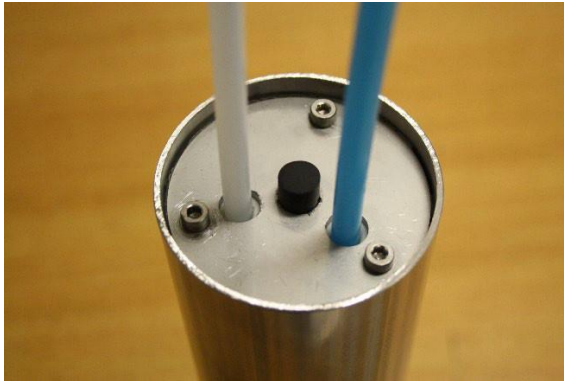


Push the inner part of the joint with the grommets deep enough that the tightening screws of the mechanical cable gland remain inside the edge of the protective shell.



Tighten the screws of the mechanical cable gland evenly, i.e., first each one until they tighten a little. Also check that the grommet is straight.

After this, do the final tightening but avoid over-tightening the screws.



Suitable tightening is when the sealing material is slightly visible on the edges of the grommet and around the microducts.



An installed joint closure.