Big Size Splice Closures
INSTALLATION INSTRUCTION

ATTENTION: For a correct installation of the Splice Closures use EXCLUSIVELY the Out Line kits identified by the following codes

OF0048: warm sealing circular kit
OF0049: warm sealing oval kit

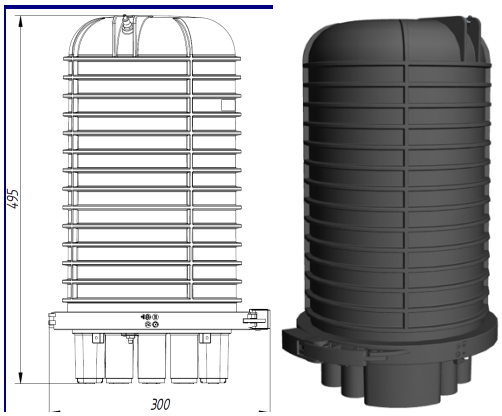
OF0506: cold sealing circular kit (8 x 2 ÷ 3,5 mm)
OF0565: cold sealing circular kit (8 x 3,5 ÷ 5 mm)
OF0305: cold sealing circular kit\ (4 x 3,5 ÷ 5 mm)
OF0292: cold sealing circular kit (4 x 5 ÷ 8 mm)
OF0558: cold sealing circular kit (2 x 8 ÷ 10 mm)
OF0557: cold sealing circular kit (2 x 10 ÷ 11,5 mm)
OF0300: cold sealing oval kit (2 x 6 ÷ 8 mm)
OF0560: cold sealing oval kit (2 x 8 ÷ 10 mm)
OF0559: cold sealing oval kit (2 x 10 ÷ 11,5 mm)

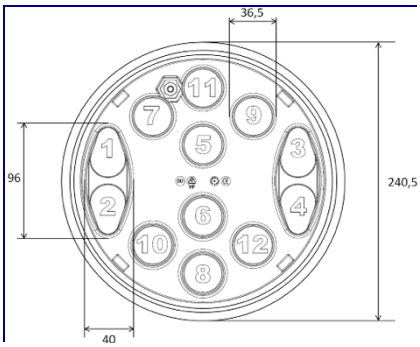
Index

1 Introduction

The PCP Joint OF0769 and the Large SC OF0768 are designed for managing fiber optic cables with tube structure. They are to be installed in the fiber management system and offer junction functions and integration of passive components in the external network.
The PCP Joint allows the management of an incoming primary tube and the junction of the optical fibers with the inputs of optical splitters 1x4. The outputs of the splitters will be managed in secondary cables.
Both the PCP and Large SC are conceived as a modular system with a basic configuration which can be equipped, in factory as directly on the field, with various modules/accessories.

1.1 Size [mm]





2 General

2.1 Common Content

- Dome
- Mechanical jaw for closing
- o-ring gasket
- junction modules (see below)
- 2 Top covers with pens
- 2 ribbons
- Wall fixing kit (OF0047)
- Circular cold sealing kit (OF0292)
- RFID OF0472 NFC (ISO-IEC 14443A)

2.1.1 Specific Content

Refer to the Technical Datasheet of the single product code

2.2 Tooling

- Phillips screwdriver
- Allen key N.2, N.3, N.4, N.5
- Tube cutter
- Fiber stripper (secondary coating)
- Heat gun

2.3 Labeling

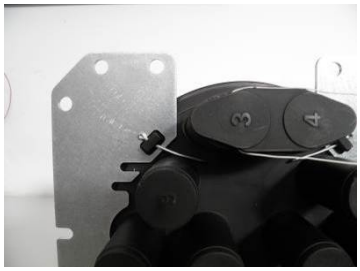
Stick eventual adhesive labels with logo in the available areas on the *dome*

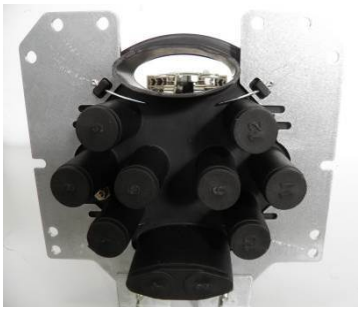
3 Installation

3.1 Blocking of the splice closure to the bracket

3.1.2 Put the fixation bracket on the base of the splice closure and block it with split pins in the kit

3.1.3 Insert the split pins in the dedicated hole pushing them towards the internal, bending them on the inlet wall





3.1.4 Block the system in vertical or horizontal position depending on the wiring to be done

3.2 Opening of the splice closure

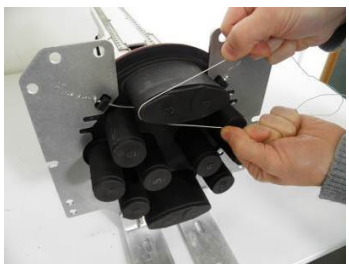
3.2.1 Open the mechanical jaw eventually using a screwdriver

3.2.2 Remove the dome and the o-ring

NOTE: Take maximum care to the o-ring avoiding any damage to it. Take care also to the closure surfaces of the dome and base

3.3 Opening of inlets

3.3.1 Oval inlet: place the steel wire for cutting on the inlet to be used and cut



3.3.2 Circular inlet: place the steel wire for cutting on the inlet to be used and cut

NOTE 1: The first circular inlet to be use is the n.5 or n.6, depending on which side of the SC must be used

NOTE 2: The inlet n° 12 is reserved to the eventual continuity plug

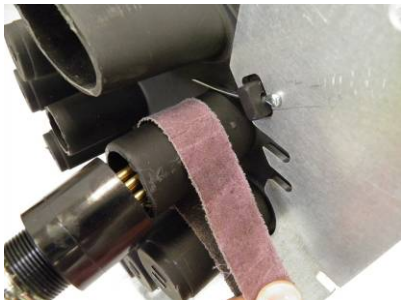
3.4 Installation of the continuity plug

3.4.1 Open the inlet n°12 and insert the continuity plug up to its end on the base of the SC.

3.4.2 After the insertion of the plug the ground contacts must be protruded towards the internal part of the base.

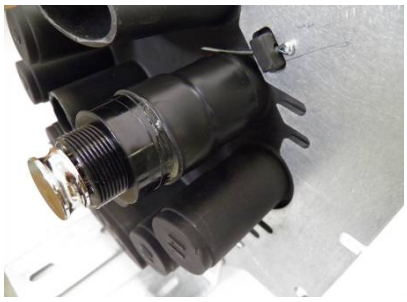
3.4.3 Be sure that the numbered bracket is in the right position with numbers well visible.

3.4.4 Clean with care and abrade the surfaces over which the heat-shrinking sleeve will be installed.



3.4.5 Insert the heat shrinking sleeve on the transition inlets/plug (surfaces previously cleaned and abraded).

3.4.6 Shrink the heat-shrinkable sheath with thermal gun. After the shrinking the adhesive must be slightly outside from the edge of the sheath.



NOTE: The continuity plug has 9 numbered contacts. The G/V cable containing the mechanical core of the minicable or the ground cable of the STD cable must be welded to the contacts of the continuity plug.
The central metallic element of the mimicable or the G/V ground cable welded to the STD cable must be always connected to the ground plant.
This connection must be done connecting the central metallic element of the minicable or the G/V ground cable welded to the STD cable with the continuity plug which must have been connected to the ground plant with a copper wire 6 mm2.

4 Setup and wiring of cables

4.2 Loose tube standard cable (heat-shrinking kit)

4.2.1 Drop cable (circular inlet)

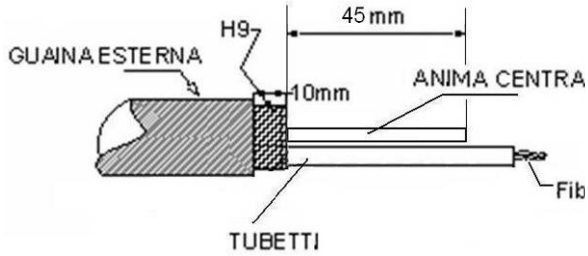
4.2.1.1 Use the heat-shrinking kit **OF0048**

4.2.1.2 Let the end of the cable pass in the heat-shrinking sleeve and let it slide along the cable

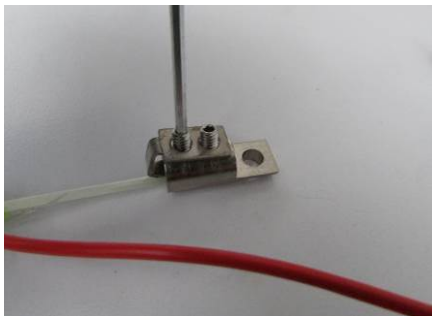
NOTE: The top part of the sleeve (that towards the base of the splice closure) must be that without adhesive in the initial 2cm

4.2.1.3 Setup the end of the cable respecting dimensions showed in the below drawing

- Remove the outer sleeve for at least 1,5m
- Remove with the adequate tool the outer sleeve of the cable for a length of 2,5m at least.
- Remove for other 10 mm only the outer sleeve of the cable leaving the metallic element for the ground connection.
- Cut the yarns (aramid or in glass) up to the stripping point
- Cut the fiberglass core up to 45mm from the stripping point

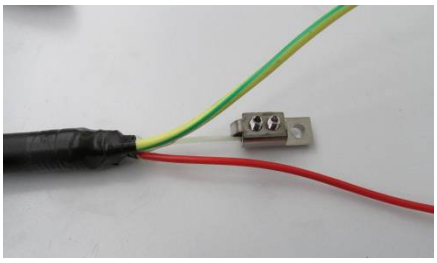


4.2.1.4 Fix the central core of the cable to the cable clamp of the kit OF0048



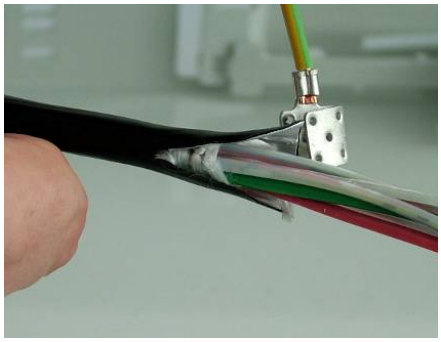
4.2.1.5 In case of core H9 cable set up the equipotential wiring on the cable itself operating as the following steps.

- Carefully clean the exposed part where the welding for the ground connection will be done.
- Remove with abrasive tape the eventual plastic film covering the metallic core; degrease and apply a de-oxider on the cleaned metallic core.
- Unsheath a copper cable (yellow/green, not included in the kit) 2,5 mm^2 section, with adequate length to be connected on the contact of the continuity plug placed on N°12 inlet and unsheath an end for about 10mm
- Widen the copper cable ends and weld some tin on them
- Tin weld the copper cable ends on the metallic crore of the cable
- Protect the welding with several rounds of insulating tape or teflon.

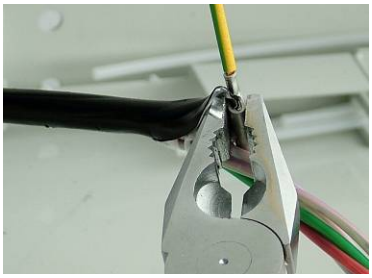


4.2.1.6 In case of core H5 cable, set up the equipotential wiring on the cable itself operating as the following steps.

- Do a cut 20mm long about on the cable, taking care not cutting the below tubes.
- Take the copper wire with the flag connector (yellow/green, not supplied) 2,5 mm^2 section with adequate length to be connected on the contact of the continuity plug placed on N°12 inlet and put it on the previously done cut, so that one of the two parts of the connector is in contact with the internal Polylam of the cable and the other with the outer sheath of the cable.

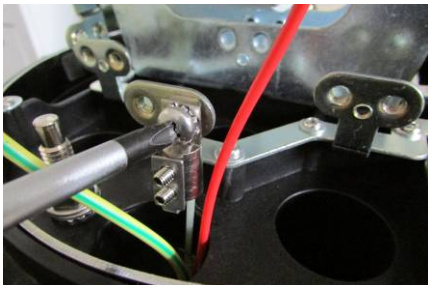


- Clamp the connector with plyers.

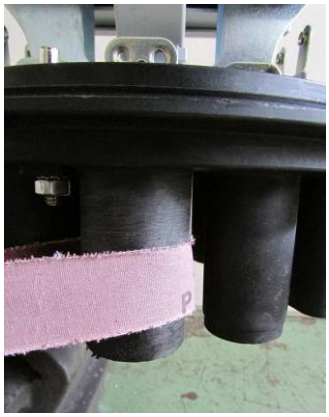


- Protect with PVC tape or teflon.

4.2.1.7 Insert the so prepared cable in the chosen inlet previously open and fix the cable-holder to the internal SC bracket in the position corresponding to the inlet.



4.2.1.8 Clean the inlet and abrade its surface with abrasive tape.



4.2.1.9 Put the heat-shrinking sleeve in position as far as the base of the splice closure and mark the cable as in picture.

NOTE: the top part of the sleeve must be that without adhesive in the initial 2cm

4.2.1.10 In correspondence of the mark, wind the cable with the Aluminium sheet making the marked line on the sheet match the mark on the cable

4.2.1.11 Heat-shrink the sleeve starting from the top part leaving it rest for about 2 minutes

4.2.1.12 End the heat-shrinking phase spiraling down the sleeve up to the disappearance of green pigmentation on the surface of the sheath.

NOTE: the heat-shrinking can be done either by a heat-gun and a flame

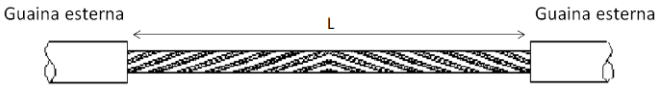
4.2.2 Looping cable (Oval inlet)

4.2.2.1 Use the heat-shrinking kit **OF0049**

4.2.2.2 Setup the end of the cable respecting the here below indicated dimensions.

- Make a first slip on the continuous cable until you find an intermediate point of inversion of the rotation of the tubes present in the cable.

- From the found point of inversion, keep on stripping the cable in both directions, for a total of minimum 4m (length “L”).

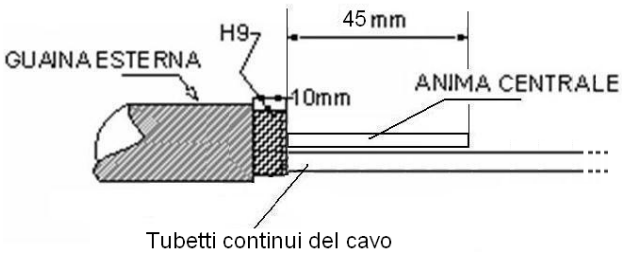


- On each of the ends of the two parts of cable remove the only outer sheath for other 10mm, leaving the metallic core for the ground connection

- Cut the yarns (aramid or in glass) up to the stripping point

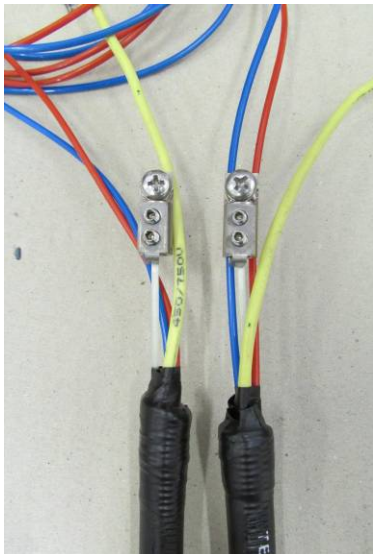
- Cut the fiberglass core on both the parts of the cable up to 45mm from the stripping points.

- Setup the end of the cable respecting the here below drawing.

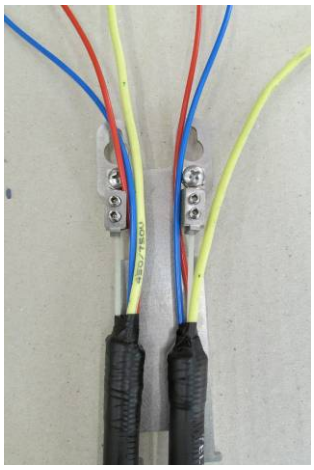


4.2.2.3 Fix the central core of both the parts of the cable to the cable clamp of the kit OF0049

4.2.2.4 Set up the equipotential connection on the metallic core of the cable operating as described at points 4.2.1.5 or 4.2.1.6



4.2.2.5 Fix the cable holders on the bracket included in the kit.



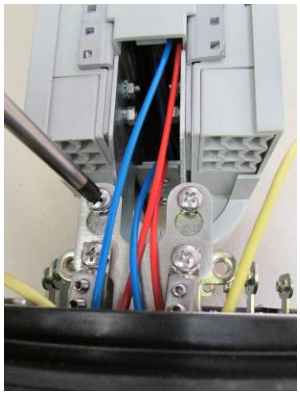
4.2.2.6 If the cable diameter is > 8mm fix the cables to the bracket using the metal screw clamps of the kit, otherwise (if D < 8mm) use the cable ties in plastic.

4.2.2.7 If the metal screw clamps are used, use the Teflon tape in the kit to cover the screw clamps themselves so that the sleeve is protected during the heat-shrinking

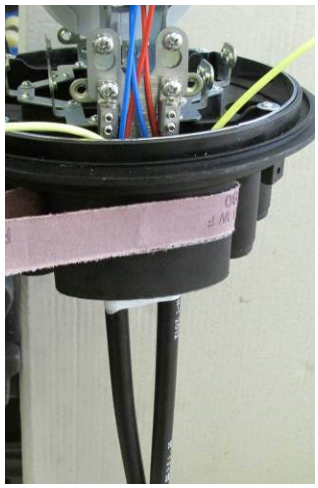
4.2.2.8 Make a coil of the continuous tubes of the cable and pass them through the heat-shrinking sleeve in the kit OF0049, taking care to not damage the internal part interna of the sleeve and the adhesive

NOTE: the top part of the sleeve (that towards the base of the splice closure) must be that without adhesive in the initial 2 cm about

4.2.2.9 Insert the continuous tubes and the so prepared system in the oval inlet, carrying the tubes in the rear part of the frame and fix the bracket always in the rear part of the internal frame of the splice closure.



4.2.2.10 Deeply clean the inlet using the small towel and abrade the surface with the abrasive tape



4.2.2.11 Deeply clean with the small towel and abrade the surface of the cables with the abrasive cable

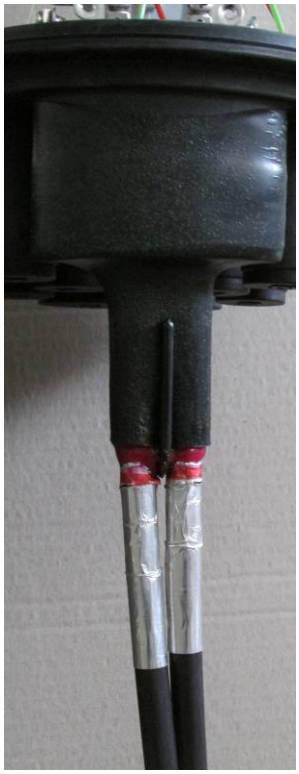
4.2.2.12 Put in position the heat-shrinking sleeve as far as the base of the splice closure and mark the cable as in the picture

4.2.2.13 In correspondence of the mark, coil the cables with the Aluminium sheets making the line marked on the sheets match the marks on the cables

4.2.2.14 Insert the branching fork between the two cables and put is and bring it to abutment on the sheath

4.2.2.15 Heat-shrink the sleeve starting from the top part leaving it rest for about 2 minutes

4.2.2.16 End the heat-shrinking spiraling down the sleeve up taking the cables in position, up to the becoming black of the green pigmentation on the surface of the sheath.
Heat the branching fork in a homogeneous way on both the parts so that the adhesive melts with the adhesive on the sheath



4.3 Loose tube minicables (cold sealing kit)

4.3.1 Drop minicable (circular inlet)

4.3.1.1 Use exclusively the cold sealing kit **OF0506, OF0565, OF0305, OF0292, OF0557, OF0558**

4.3.1.2 Grease the internal part of the previously open inlet and the outer part in silicon of the cold sealing kit

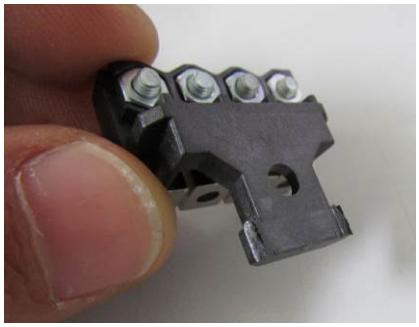
4.3.1.3 Insert the body of the kit in the internal part of the inlet up to the abutment

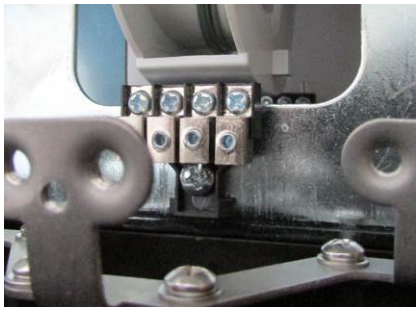
NOTE: Several possible positions exist for the fixation flange. Choose the one that is most convenient for tightening the screw

4.3.1.5 Fix the cable anchoring bracket on the internal frame of the splice closure, in correspondence of the used inlet

4.3.1.4 Insert the fixing flange, bring it to the stop and tighten the Allen screw until the two parts are coupled

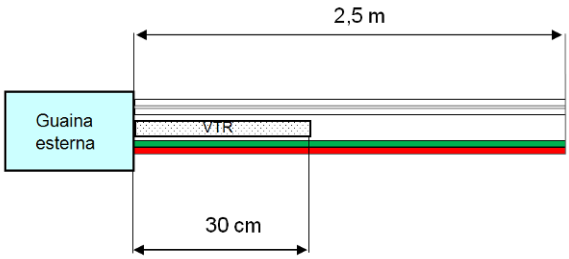
NOTE: if the kit is installed on the internal inlets (n.5 or n.6), remove the wings on the anchoring bracket using scissors.





4.3.1.6 Prepare the end of the cable respecting the dimension visible in the here below drawing.

- Remove the outer sleeve of the cable for about 2,5m.
- remove coatings, aramid yarns and bindings along the entire length of the nappy
- Cut the central fiberglass core leaving 30 cm about from the nappy



4.3.1.7 Mark the cable on the outer sleeve at 9 cm from the nappy point

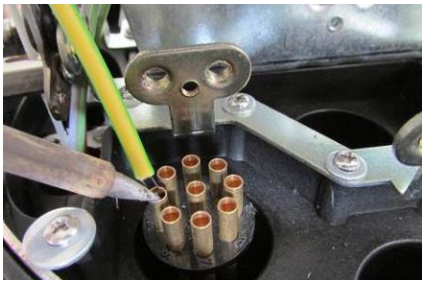
4.3.1.8 Extract one of the 4 caps from the body of the kit and insert the cable taking care not to damage the tubes

4.3.1.9 Push the cable inside the inlet, inserting the central core of the cable through the corresponding cable clamp, until you reach the mark on the sheath.

4.3.1.10 Tighten the dowel on the fixing bracket to firmly fix the central core to the bracket itself

4.3.1.11 Free the metallic core of the cable up to the cable-holder

4.3.1.12 Insert the metallic core of the cable in the yellow/green tube and weld it to the contact of the continuity plug as described at section 3.4.7



4.3.1.13 Proceed to the closing of the circular inlet screwing the Hexagonal head screw (n.3) doing 5 complete rounds (360°) from position 0 of the screw (position in which there is no crushing of the gasket)

4.3.1.14 Clamp the cable to the body of the kit using the supplied cable-tie

4.3.1.15 To install the subsequent minicables, loosen the central screw of the kit body and repeat the operations described from section 4.2.1.6 a 4.2.1.13

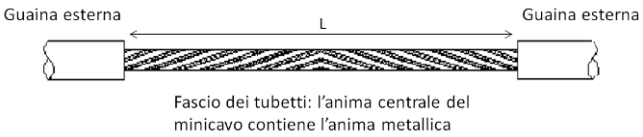
NOTE: for the installation of the OF506, OF0565, OF0305, OF0292, OF0558, OF0557 circular cold sealing kits, follow the instructions given in each kit

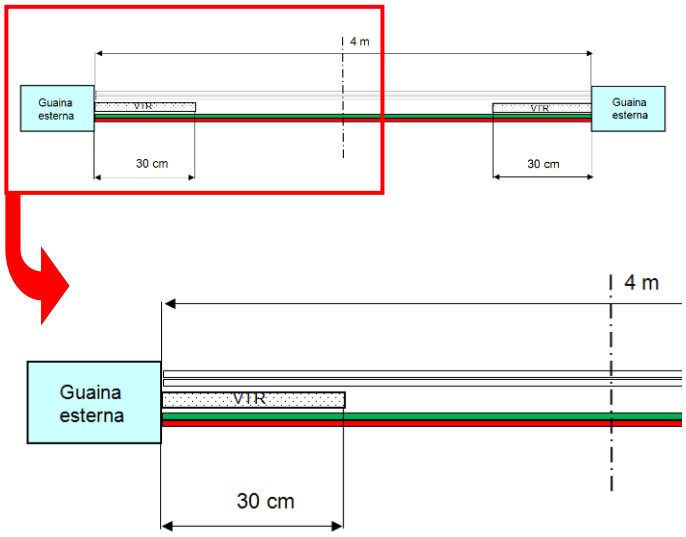
4.3.2 Looping minicable (oval inlet)

4.3.2.1 Use exclusively the cold sealing oval kits **OF0300, OF0559, OF0560**

4.3.2.2 Prepare the end of the cable respecting the dimension visible in the here below drawing.

- Make a first strip on the continuous cable until you find an intermediate point of inversion of the rotation of the tubes present in the minicable.
- From the point of inversion identified, proceed in the uncoiling of the cable in both directions, for a total of at least 2.4m (length "L").
- Release the individual tubes in the central section of the strip.
- Cut the exceeding central fiberglass core on both the sides, respecting the dimension indicated in the drawing

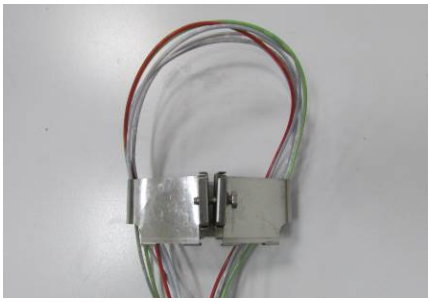




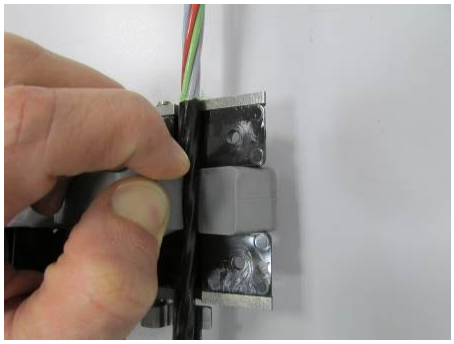
4.3.2.3 Open the body of the cold sealing oval kit as it is described in the following.

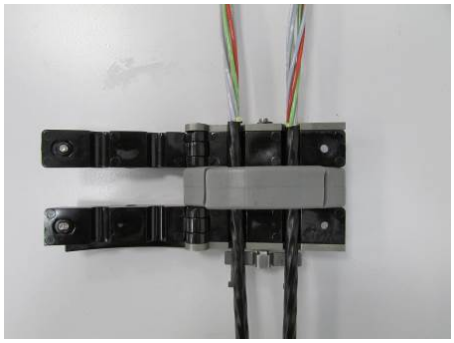
- Completely unscrew and remove the front Allen screw No. 5 from the body of the kit
- Completely unscrew the two TC screws on the plastic jaws
- Open the plastic jaws and remove the upper and lower steel front plates

4.3.2.4 Pass the continuous tubes of the cable through the fixing jaw of the kit and slide it down along the cable so that it does not disturb the following operations

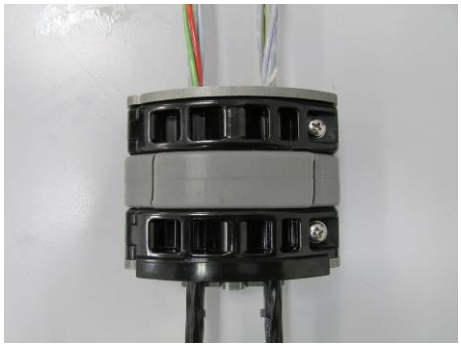


4.3.2.5 Open the pre-cut gasket and insert the two parts of the continuous cable into the kit body so that the cable routing is in line with the upper exit of the kit body.

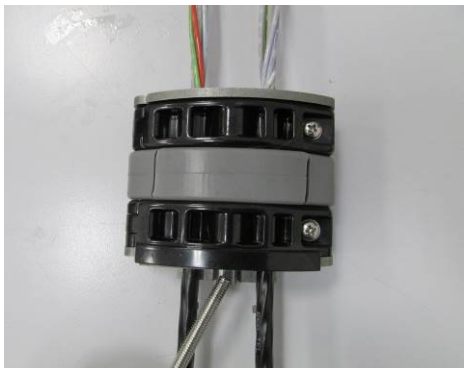




4.3.2.6 Close both the plastic jaws tightening the TC screws and reposition the upper and lower steel plates



4.3.2.7 Re-insert and lightly tighten the Allen screw N.5 up to point 0 (position in which the compression of the gasket is zero)

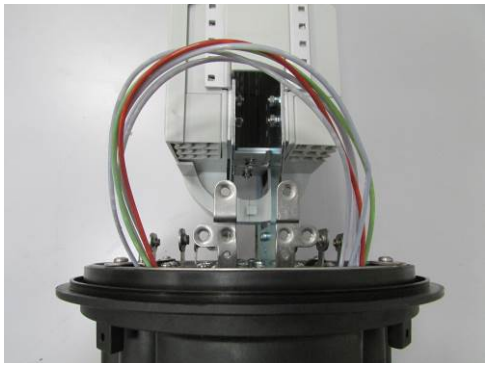


NOTE: make sure that the gasket is closed tightly on the cable

4.3.2.8 Clamp the cable to the lower bracket using the supplied cable ties

4.3.2.9 Fix the kit bracket to the subframe from the rear and loosen the Allen screws of the cable turrets Grease the outer silicon part of the cold sealing kit

4.3.2.10 Wrap the tubes of the continuous cable in a skein and insert them inside the oval opening, extracting them from the other side.



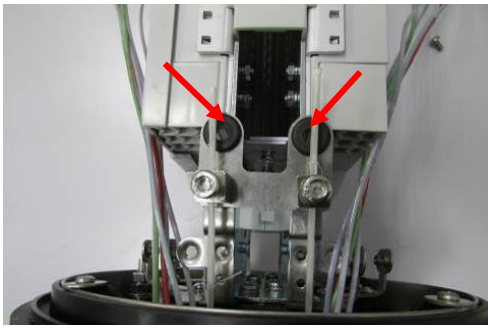
4.3.2.11 Insert the body of the kit inside the inlet up to the stop, inserting the fiberglass cores in the cable turrets and being careful not to damage the tubes

4.3.2.12 Slide the fixing jaw of the kit towards the inlet of the splice closure (with the Allen key facing the side of the two circular openings), get to the stop and tighten the Allen screw n.4 until the two parts are coupled

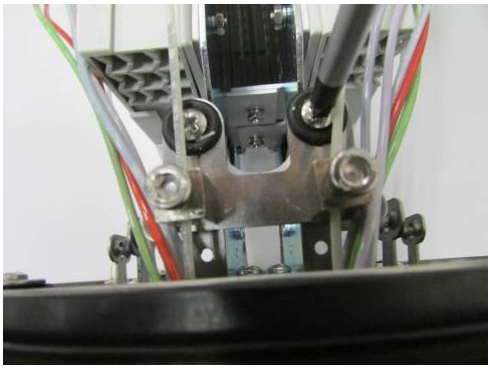
4.3.2.13 Take the upper bracket for core cable fixing and unscrew the two M4 hexagonal head screws

4.3.2.14 Insert the two parts of the central core of the cable in the two cable holder towers

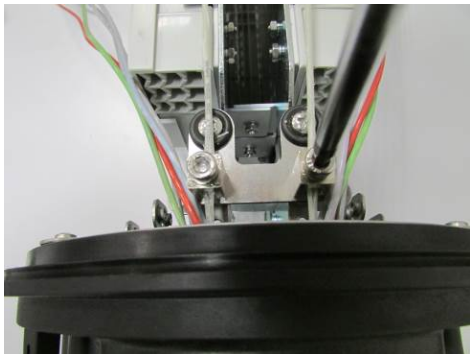
4.3.2.15 Slide the bracket towards the bottom up to align the fixation point to the internal frame



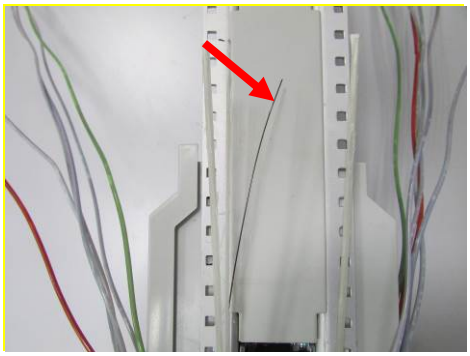
4.3.2.16 Tighten the previously removed cross head screws to fix the bracket to the frame

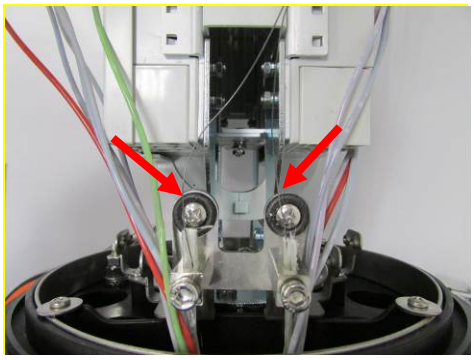


4.3.2.17 Tighten the M4 hexagonal head screws of the clamps to block the central core of the cable



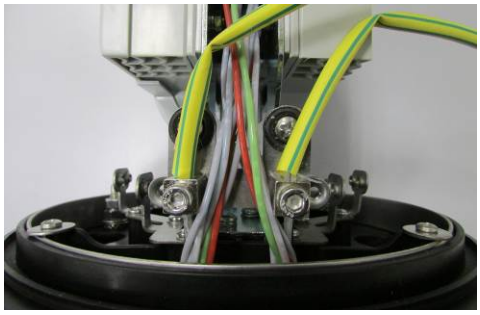
4.3.2.18 Free the metallic core of the cable (both the parts) contained in the VTR central core up to the cable holder tower

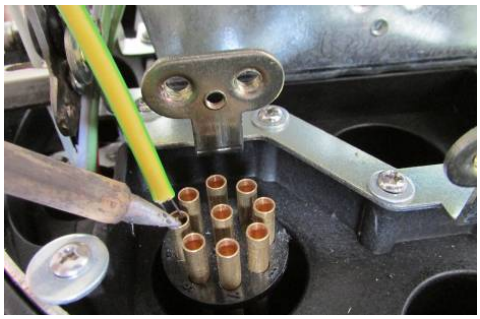




NOTE: the extraction of the central metallic core must be done after its tightening on the clamp so that the solidity of the VTR core is not altered and it can be well fixed.

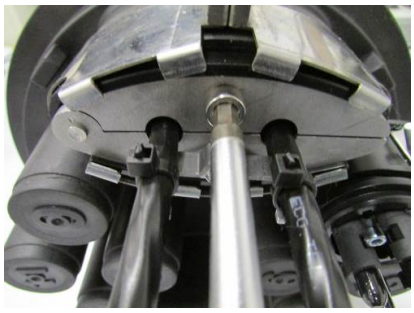
4.3.2.19 Insert the metallic core of the cable in the yellow/green tube and weld it to the contact of the continuity plug doing what described in section 3.4.7





4.3.2.20 Proceed to close the oval inlet by tightening both Allen screws (No.5) **completing 10 complete turns** (360°) from position 0 of the screws (position in which the crushing of the gasket is zero

NOTE: for a correct closure of the gasket, the Allen screws No.5 must be tightened at the same pace, that is a complete turn on one and the other, alternately, until reaching 10 complete turns for both



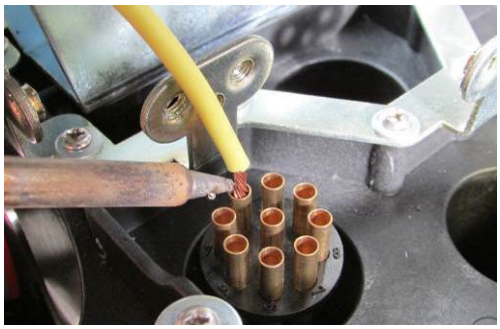
NOTE: if the tightening operations have been carried out correctly, the two lower metal plates will be perfectly aligned.
Otherwise, align the plates by further tightening one or the other screw.

NOTE: to install the cold sealing oval kits codes OF0300, OF0559, OF0560 follow the instruction contained in each kit

4.4 Connection of cables to the continuity plug

4.4.1 Standard cables

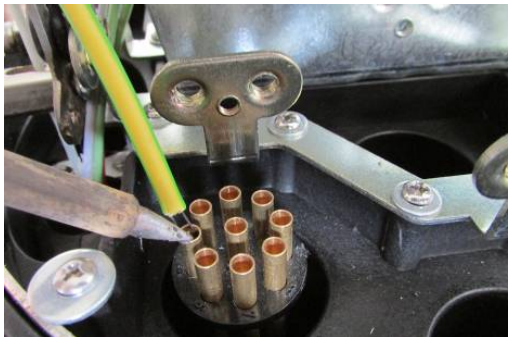
Weld the G/V cable on the continuity plug contact following what described at section 3.4.5



NOTE: cut the G/V cable at the right length depending on the position of the used inlet respecting to the inlet n° 12 of the continuity plug

4.4.2 Minicables

Weld the G/V cable on the continuity plug contact following what described at section 3.4.7



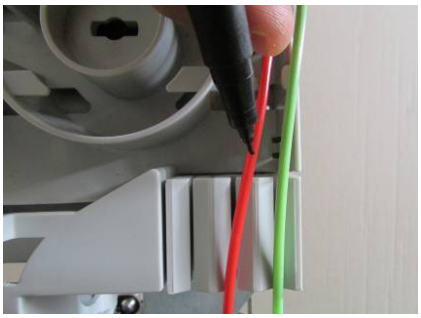
5 Management/routing of fibers in the splice closure

5.2 Management of loose tubes in the *fast plate* and central part of the frame

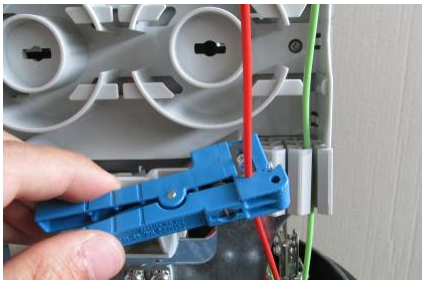
5.2.1 Drop cable (circular inlet)

Once the cable has been fixed inside the splice closure (see paragraphs 4.1.1 for standard cable or 4.2.1 for minicable), follow the steps described below

5.2.1.1 Bring the tubes closer to the tube fixing area (right or left depending on the inlet used and operational needs) and mark the tube just above the block for tube fixation.



5.2.1.2 Strip the fibers in correspondence of the mark using the dedicated tooling



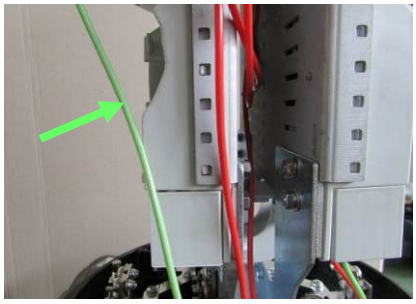
5.2.1.3 Push the tube in the channel for tube fixation up to the first free position

5.2.1.4 Route the fibers following the instructions in paragraph 6.2

5.2.2 Looping cable (oval inlet)

Once the cable has been fixed inside the splice closure (see paragraphs 4.1.2 for standard cable or 4.2.2 for minicable), follow the steps described here below

5.2.2.1 Select the extraction tube and section it according to need (in the middle or at the height of one of the two strip points)



5.2.2.2 Wrap the continuous tubes of the cable in a skein and fix them in the central area between the 2 frame and fix it with plastic cable tie.

5.2.2.3 Bring the extracted tube close to the tube fixing area (right or left depending on the operating needs) and mark the tube just above the tube fixing block.

5.2.2.4 Strip the fibers in correspondence of the mark, using the dedicated tooling.

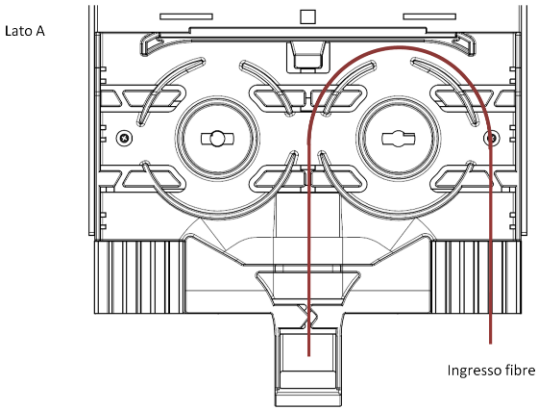
5.2.2.5 Repeat the same operations described at points 5.1.1.2, 5.1.1.3 & 5.1.1.4

5.3 Management of fibers in the *fast plate* and junction modules

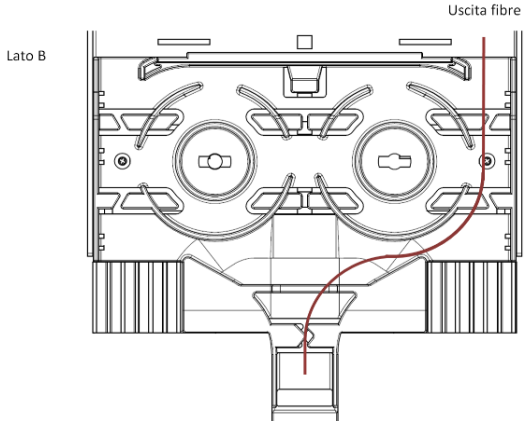
The fast plate permits to manage the internal sorting of the fibers. It allows:

- the attestation of the protection / transport tubes of the cable fibers
- The transit of fibers from side A to side B of SC and viceversa
- the passage of the fibers from the right to the left side of the internal frame of the splice closure

5.3.1 transit of the fibers from an internal frame to the other (side “A” - side ”B” and viceversa) using the path under the fiber management block

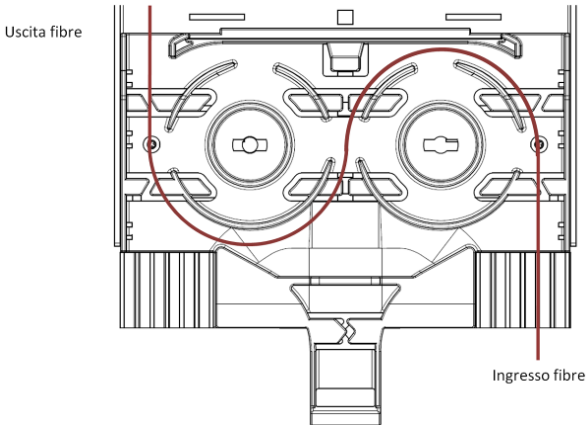


Example of transit of fibers from side A to side B with incoming fibers on the right of side A



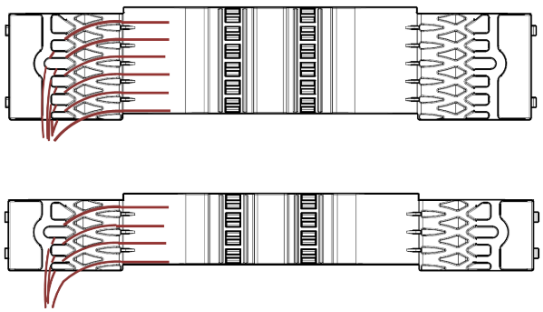
Similar paths must be followed in mirror way even for the transit of fibers from side B to side A.

5.3.2 Transit of fibers from one side to the other of the same internal frame



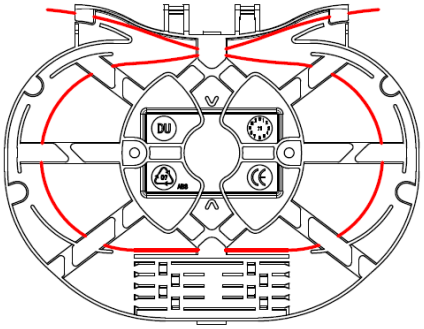
5.3.3 The transit of the fibers from one side to the other of the same internal frame is done internally in the access vane following the paths indicated in the picture.

5.3.4 Routing of fibers in the support block of junction modules

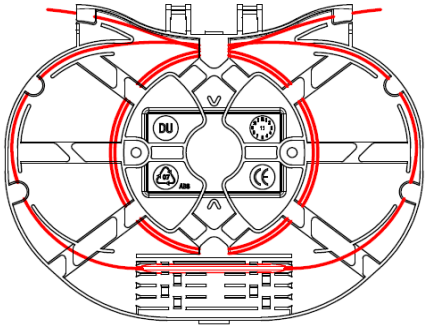


NOTE: The incoming of fibers on the left side of the support block must follow the paths indicated in the picture. In the same way mirror paths must be done in case of incoming of fibers on the right side.

5.3.5 Management of the fibers and junctions in a module



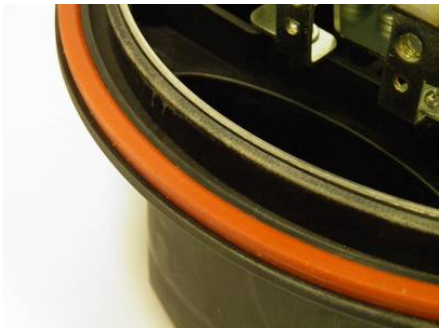
Example of arrangement of single continous fibers, single circuit for loose tubes cables, internally on SF junction modules



Example of arrangement internally on SF junction modules of single fibers jointed with heat shrinkable sheath.

6 Closing the splice closure

6.2 Clean with care and replace the previously removed o-ring



NOTA: the right side of the o-ring gasket is that where the round part goes in touch with the internal surface of the base, while its square corner looks towards outside.

6.3 Place the *dome* on the base being careful the o-ring does not come out of its seat, place the mechanical jaw and act on its lever to tighten.

6.4 Once the jaw is completely closed, insert the plastic safety strap in its seat