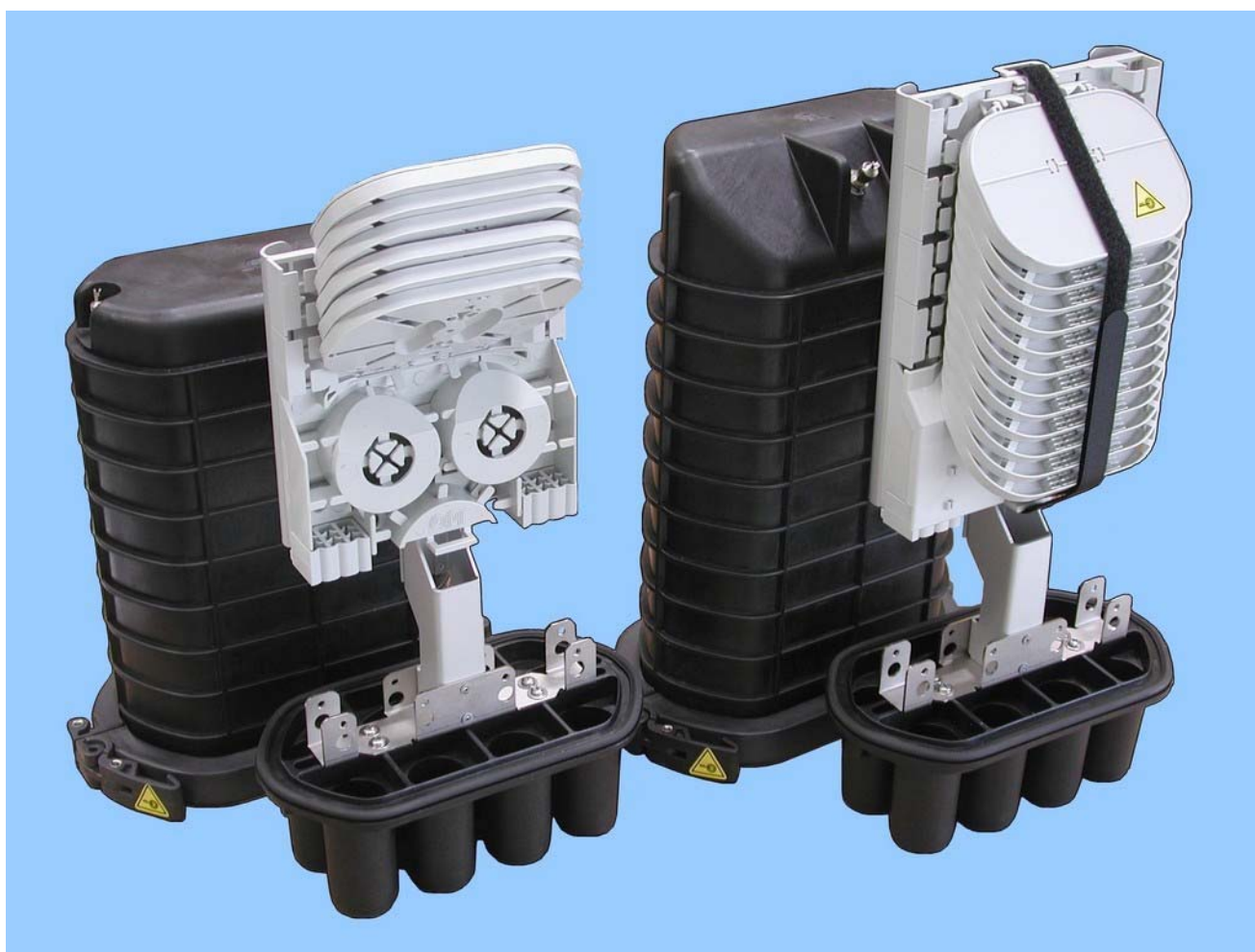


 NTET Group	INSTALLATION INSTRUCTION <i>Istruzione d'installazione</i>	Numero-Rev: O.IO.IA.0035-00	
		Data: 24.09.2009	Pagina: 1/24
Titolo: FOCUS-CODC			

00	24.09.2009	ISSUED	IA-Cammarota	IA-Pensato	Q-Mariani
Revisione	Data	Descrizione	Preparato	Verificato	Approvato

OPTICAL DISTRIBUTION CLOSURE FOCUS-CODC



OPT	Registrazione documento
N° reg.: 6517	Data:
Firma:	

MD.Q.5505-00

 NTET Group	INSTALLATION INSTRUCTION <i>Istruzione d'installazione</i>	Numero-Rev: O.IO.IA.0035-00 <hr/> Data: 24.09.2009 Pagina: 2\24
Titolo: FOCUS-CODC		

CONTENT

- 1 INTRODUCTION**
- 2 GENERAL**
 - 2.1 Kit content
 - 2.2 Additional kits needed for FOCUS-ODC installation
- 3 PRELIMINARY OPERATIONS**
- 4 CABLE INSTALLATION BY HEATSHRINKING**
 - 4.1 Loose buffer tube cable**
 - 4.1.1 Looped cable
 - 4.1.2 Drop cable (6 ports base)
 - 4.2 Central core cable (single or ribbon)**
 - 4.2.1 Looped cable
 - 4.2.2 Drop cable (6 ports base)
 - 4.3 Heatshrink installation**
 - 4.3.1 Oval port
 - 4.3.2 Round port
 - 4.4 Installation of 2 cables within the same round port**
 - 4.4.1 Installation of the first drop cable and predisposition for the second one
 - 4.4.2 Installation of the second drop cable
- 5 INSTALLATION OF THE SHIELD CONTINUITY AND SECTIONING TAP**
- 6 CABLE INSTALLATION USING COLD APPLIED SEAL SYSTEMS**
 - 6.1 Installation within oval port
 - 6.2 Installation within round port
- 7 FIBRE ROUTING**
- 8 CLOSING THE CLOSURE**

1 INTRODUCTION

FOCUS is a Fibre Optic Connecting Unit System developed by OPTOTEC S.p.A. for the Optical Access Network Infrastructure.

FOCUS-CODC is an environmentally sealed single-ended closure for the fibre management system that provides the functions of splicing and passive component integration in the outside plants (IEC 529, IP 68). It has provision for all cable termination and sealing requirements. A wide range of configurations can be arranged by adding FOCUS-SAM modules and/or passive device sub-assemblies. The base and dome are sealed with a clamp and an O-ring system.

One oval entry port for looped (uncut) cable and six round ports for drop cables entry/exit are provided in the base.

Uncut loose buffer tube storage space is available behind the stack. Depending on the installation conditions, heat or cold activated cable seals kits are available.

The FOCUS-SAM assemblies allow for a selective access for maintenance and upgrades without affecting live circuits. Control on fibre management is maximized during installation, operation, maintenance and upgrades.

The closure allows the accommodation of the fibres with a minimum bend radius of 30 mm throughout the whole system.

TITOLO:

FOCUS-CODC

2 GENERAL

2.1 KIT CONTENT

The unit incorporating:

- ✓ Dome with pressure valve
- ✓ Base including FOCUS-SAM mounting frame, one complete mixer
- ✓ Clamp
- ✓ O-ring
- ✓ 100 g Silica gel pack
- ✓ Two organizer covers
- ✓ Installation instruction

Please, note:
the kit content could be different depending on cables, network configurations or customer requirements.



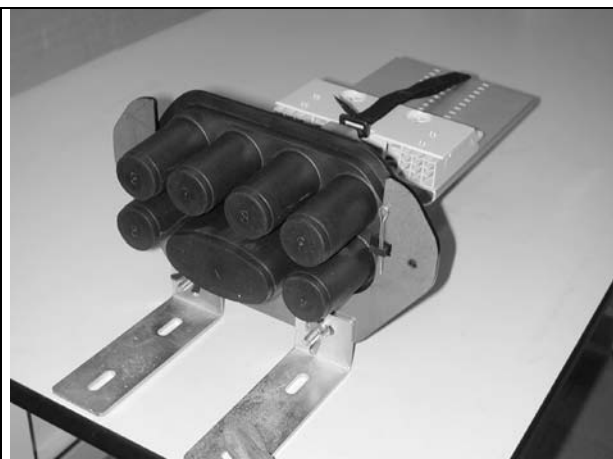
2.2 ADDITIONAL KITS NEEDED FOR THE FOCUS-CODC INSTALLATION

P/N	Article	Description
2500080	FOCUS-SAM-SC2-H	2 Single Circuit splice trays with heat-shrink splice protection holder kit
2500081	FOCUS-SAM-SC6-H	6 Single Circuit splice trays with heat-shrink splice protection holder kit
2500082	FOCUS-SAM-SE1-H	1 Single Element splice tray with heat-shrink splice protection holder kit
2500083	FOCUS-SAM-SE3-H	3 Single Element splice trays with heat-shrink splice protection holder kit
2500091	FOCUS-SAM-HD4-H	4 High Density splice trays with heat-shrink splice protection holder kit
2500084	FOCUS-SAM-SC2-C	2 Single Circuit splice trays with crimp splice protection (ANT) holder kit
2500085	FOCUS-SAM-SC6-C	6 Single Circuit splice trays with crimp splice protection (ANT) holder kit
2500086	FOCUS-SAM-SE1-C	1 Single Element splice tray with crimp splice protection (ANT) holder kit
2500087	FOCUS-SAM-SE3-C	3 Single Element splice trays with crimp splice protection (ANT) holder kit
2500088	FOCUS-SAM-HD2-C	2 High Density splice trays with crimp splice protection (ANT) holder kit
2500089	FOCUS-SAM-HD6-C	6 High Density splice trays with crimp splice protection (ANT) holder kit
2500949	FOCUS-CODCKIT-WMB	Wall mounting bracket
2500951	FOCUS-ODCKIT-OPS-LT	Oval port heat shrink seal kit for loose tube cables
2500952	FOCUS-ODCKIT-RPSA-LT	Round port (6 port base) heat shrink seal kit for loose tube cables
2500953	FOCUS-ODCKIT-RPSB-LT	Round port (18 port base) heat shrink seal kit for loose tube cables
2500954	FOCUS-ODCKIT-2° CAVO DROP	Second drop cable installation kit (within the same round port having the predisposition)
2500955	FOCUS-ODCKIT-PHMK	Riser mounting kit (pot-head closure configuration)
2500956	FOCUS-ODCKIT-PMK	Pole mounting bracket
2500959	FOCUS-ODCKIT-TAP	Multiple shield continuity and sectioning tap
2500960	FOCUS-ODCKIT-CAVO DROP+PRED.2°	First drop cable installation kit with predisposition for the second cable within the same round port
2500961	FOCUS-ODCKIT-SCS	Sewer cable seal
2500962	FOCUS-ODCKIT-CCSR-6x8	Cold applied seal kit for max 6 loose tube cables with 4mm≤Ø≤8mm (type A round port)
2500963	FOCUS-ODCKIT-CCSO-4x10	Cold applied seal kit for max 4 loose tube cables with 4mm≤Ø≤10mm (oval ports)

Titolo:

FOCUS-CODC

3 PRELIMINARY OPERATION



Open and remove the clamp.
Remove the dome and the O-ring.

Keep the O-ring clean and safe during the installation. Use only cleaning tissue or clear water if needed.
Avoid damaging of the sealing surfaces on the base and the dome.

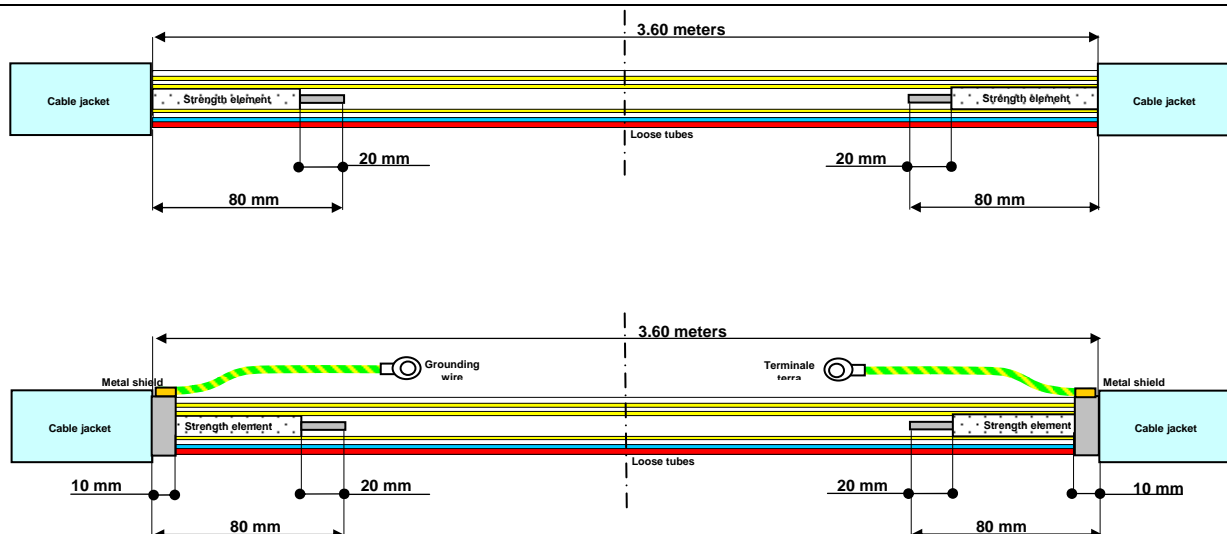
It is recommended to use the FOCUS-CODCKIT-WMB for easier installation. This wrap-around bracket allows the closure to be mounted temporally on a workbench, so that the closure installed with cables can be removed away from it.

Fix the FOCUS-CODC on the bracket using the two split pins.

4 CABLE INSTALLATION BY HEATSHRINKING

4.1 LOOSE BUFFER TUBE CABLE

4.1.1 Looped cable



A window cut of 360 cm is needed.

Mark the cable in the middle of the loop and remove cable jacket left and right of the mark over a distance of 180 cm on both sides.

In case of Reversed Oscillating cable, mark the cable in the middle of the loop and remove cable jacket left and right of the mark over a total distance of 110cm (little more as the distance between two reversal points on the cable).

Locate the buffer tube reversal point on the cable and mark the cable on 180 cm left and right from this point. Remove further the cable jacket starting from this point.

Remove the strength member leaving 80 mm from the cable jacket.

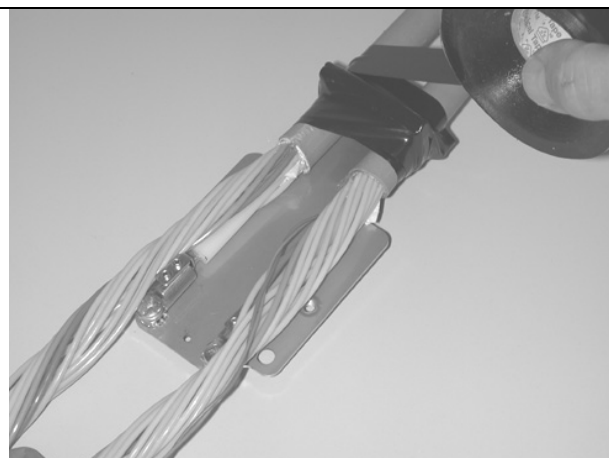
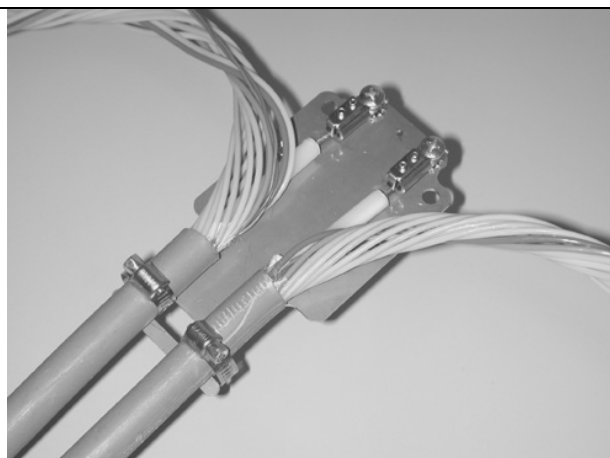
If the diameter of the strength member bigger than 5 mm, remove the outer plastic matter on the core for 20 mm.

If shield present, leave 10 mm of the shield and clean it.

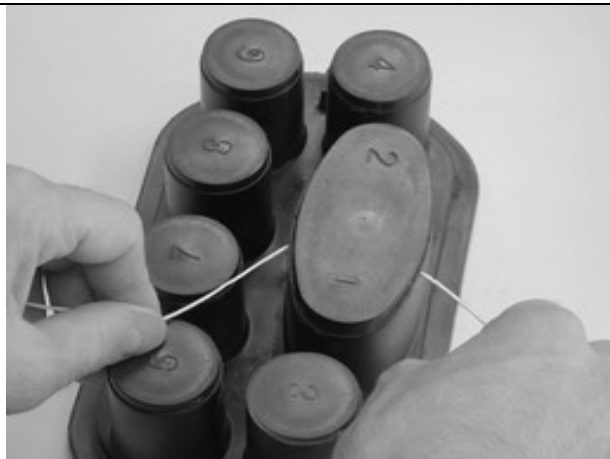
Solder the grounding wire on the cable shielding and wrap a few layer of insulating tape around it.

Titolo:

FOCUS-CODC



Insert the strength members of the cable into the strength member connector on the loop bracket such that all loose tubes can be routed without unnecessary crossings. Avoid twisting of the loop in the case of a reversed oscillating cable and fasten with the Allen key. If the cable diameter is less than 8mm fix the cables with tie wraps. If the cable diameter is more than 8mm fix the cables with the hose clamp onto the loop bracket. Wrap a few layers of tape around the hose clamp.



Open the oval port.

A cutting wire can be used.



Take the oval sleeve and place the packing bag that has been opened on both sides in the oval sleeve to prevent the hot melt inside the sleeve from dirt and grease. Bend the loose tubes gently and push them in the sleeve.



Push the looped loose tubes in the oval port up to the bottom of the bottom bracket and pull the cable gently in the closure.

Titolo:

FOCUS-CODC



Position the loop bracket and fix it at the frame.
Install heat shrink following the procedure described in § 4.3.1



Bundle the not used tubes with tie-wraps and store them behind the frame.

Loose tubes routed up to the tube holder should be routed in such a way that one still has complete access of the stored tubes. This is needed for later routing of loose tubes from the loops to the tube holders, without creating crossings and without creating disturbances on the loose tubes already routed up to the tube holders.



Select and identify the loose tubes with the fibres that have to be spliced.

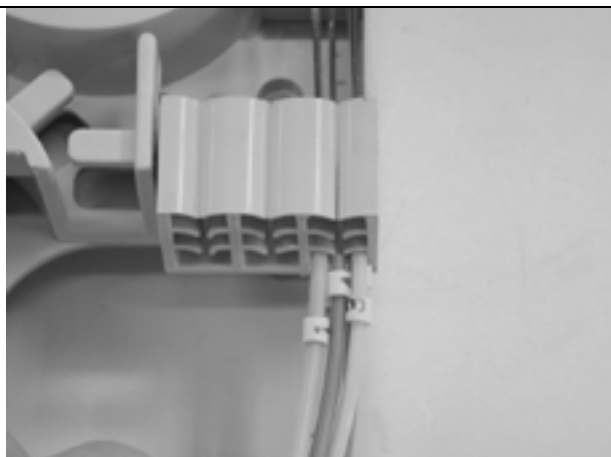
Cut the loose tubes in the middle of the loop.

Match the loose tubes on the tube holder and mark both sides.
Strip the loose tubes and clean the fibres.

In case of reversed oscillating cable, separate and identify the loose tubes.

Match the loose tubes on the tube holder and mark both sides.
Shave between the two marks with the appropriate tooling, remove gently the tube and clean the fibres.

Separate the fibres till the tube holder and route to the organizers



Different loops can be put together beneath the same tube holder retainer.

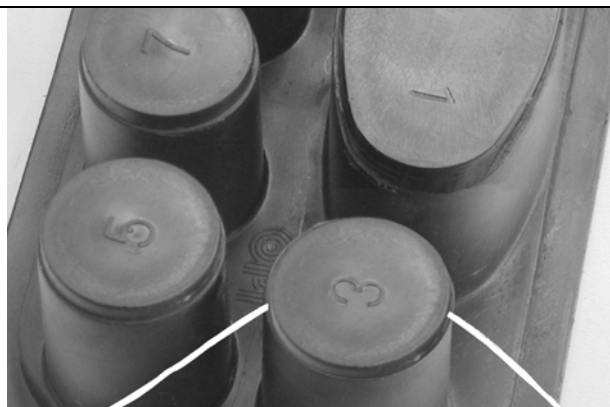
If the fibres are 'twist free' one can route the fibres separate to the organizers. Separate all fibre loops first till the tube holder.

If the fibres are not 'twist free' select first the fibres that have to be spliced and cut these fibres in the middle of the loop. Remove these out of the bundle till the tube holder. These fibres can be routed to single circuit trays, others uncut will be routed to a single element tray (See at § 7).

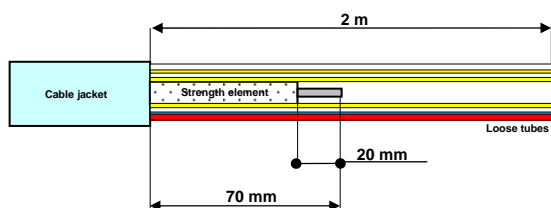
Titolo:

FOCUS-CODC

4.1.2 Drop cable (6 ports base)



Open the round port. A cutting wire can be used.



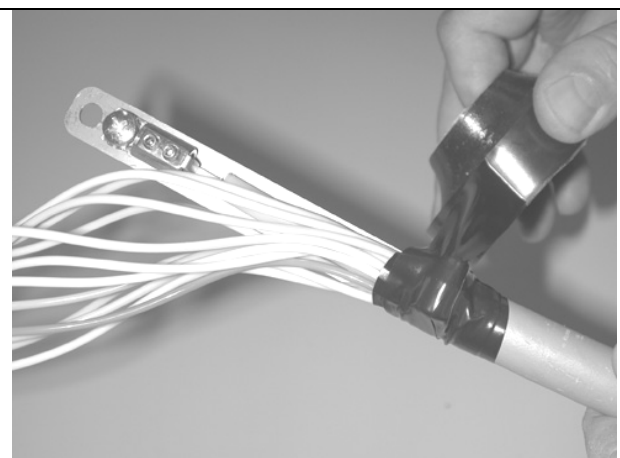
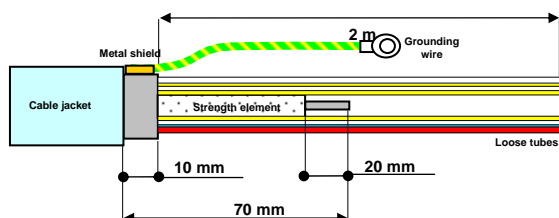
Remove the cable jacket for 2 meters.

Remove the strength member leaving 70mm from the cable jacket.

If the diameter of the strength member is bigger than 5 mm, remove the outer plastic matter on the core for 20 mm.

If shield present, leave 10 mm of the shield and clean it.

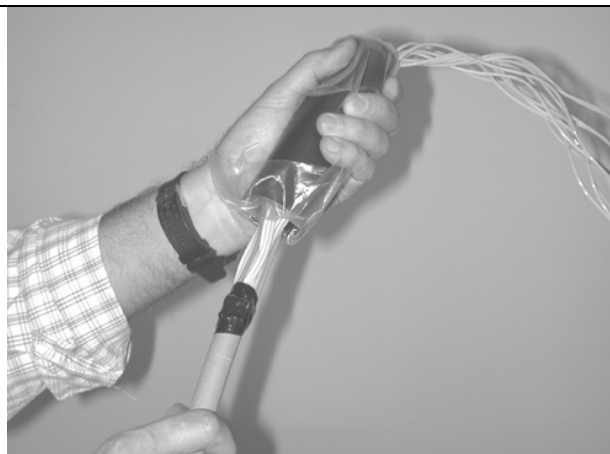
Solder the grounding wire on the cable shielding and wrap a few layer of insulating tape around it.



Insert the strength members of the cable into the strength member connector on the drop bracket such that all loose tubes can be routed without unnecessary crossings and fasten with the Allen key.

If the cable diameter is more than 18mm fix the cables with tie wraps. If the cable diameter is less than 18mm fix the cables with the hose clamp onto the loop bracket. Wrap a few layers of tape around the hose clamp.

Titolo: **FOCUS-CODC**



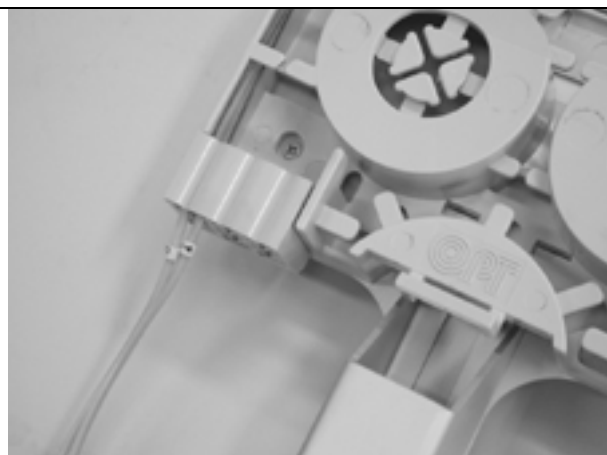
Take the sleeve and place the packing bag that has been opened on both sides in the sleeve to prevent the hot melt inside the sleeve from dirt and grease. Push the loose tubes in the sleeves.



Push the loose tubes in the round port and fix the drop bracket. Be sure that all loose tubes are routed without crossing around the strength member. Install heat shrink following the procedure described in § 4.3.2



Match the loose tube on the tube holder, mark and strip the loose tube from this mark. Clean the fibres. Position one or more loose tubes in the tube holder in the lowest possible cavity of the tube holder.



Titolo:

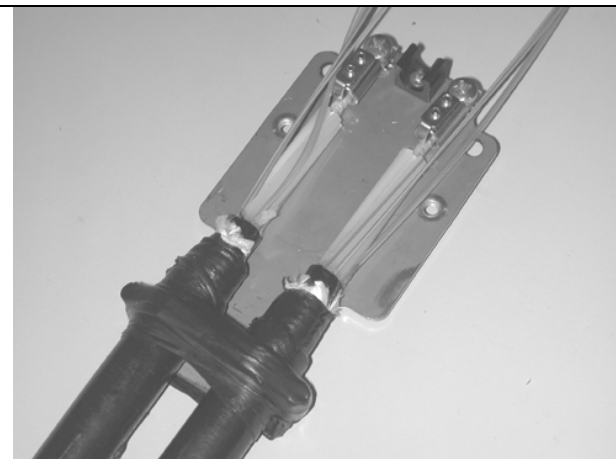
FOCUS-CODC

4.2 CENTRAL CORE CABLE (SINGLE FIBER OR RIBBON)

4.2.1 Looped cable

A window cut of **400 cm** is needed.

Mark the cable in the middle of the loop and remove cable jacket left and right of the mark over a distance of 200 cm on both sides. Remove the strength members leaving 80 mm from the cable jacket. If the diameter of the strength member bigger than 5 mm, remove the outer plastic matter on the core for 20 mm. If shield present, leave 10 mm of the shield and clean it. Solder the grounding wire on the cable shielding and wrap a few layer of insulating tape around it.

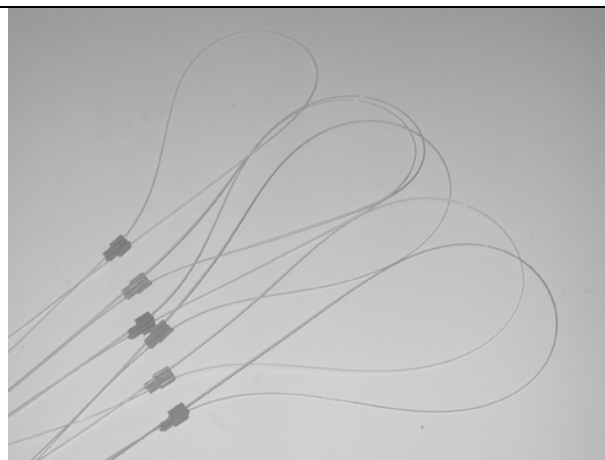
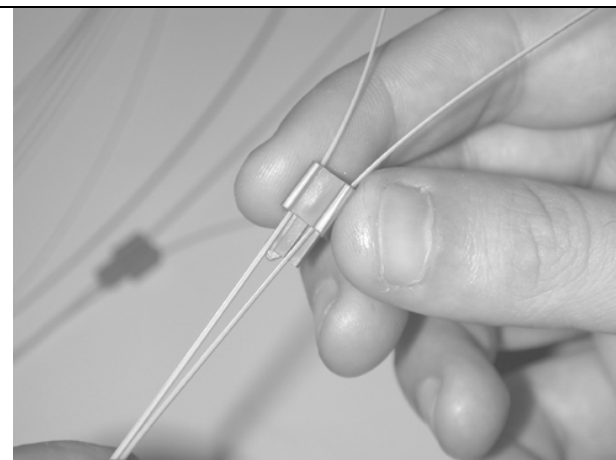


Insert the strength members of the cable into the strength member connector on the loop bracket such that all fibres can be routed without unnecessary crossings and fasten with the Allen key.

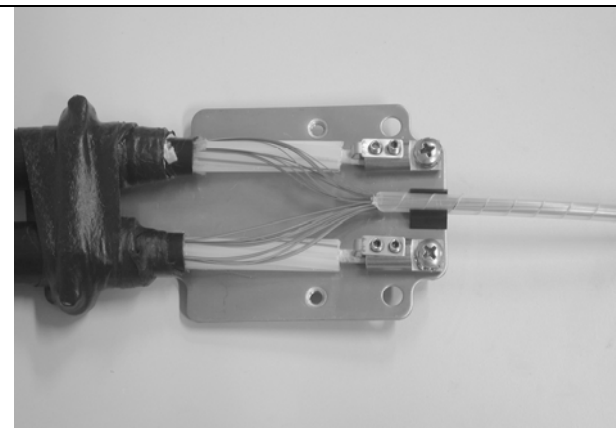
If the cable diameter is less than 8mm fix the cables with tie wraps.

If the cable diameter is more than 8mm fix the cables with the hose clamp onto the loop bracket.

Wrap a few layers of tape around the hose clamp.



Divide and identify the fibres or ribbon coming from the same slot of the cable using the clips. These can be helpful to shift as far as possible the twisting of the fibres from the middle of the loops, in case of twisted fibres.

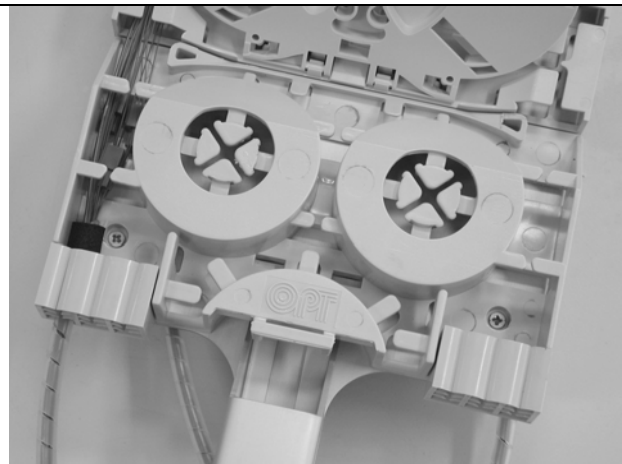
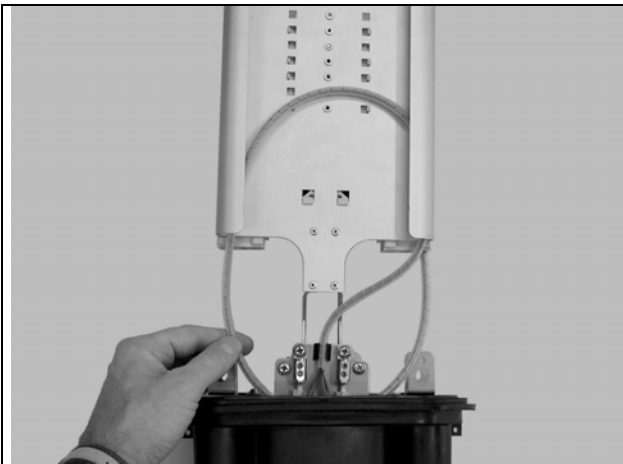


Take the spiral tube with $\varnothing 4 \times 6$ and cut it to a length of 80 cm.

Protect the fibers with the tube and secure it in the clip located between the two terminals of the cable bracket.

Titolo:

FOCUS-CODC



Place the heat shrink on the cable and secure the bracket. Route the loop of the spiral tube containing the fibres toward the mixer and store the extra length behind the frame. Attach to the end of the spiral tube, a piece of adhesive sponge rubber. Arrange the clips into the side duct of the mixer or wrap around groove plates in such way to not disturb the correct routing of the fibres to the organizers. Starting from the clips, all the fibres are completely separated, because all the cable twists are stored along the spiral tube. Route the fibres to the organizers.

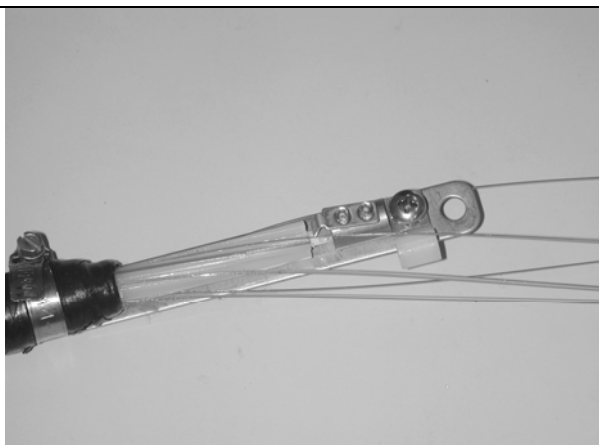
4.2.2 Drop cable(6 port base)

Remove the cable jacket for 2 meters. Remove the strength member leaving 70mm from the cable jacket.

If the diameter of the strength member is bigger than 5 mm, remove the outer plastic matter on the core for 20 mm.

If shield present, leave 10 mm of the shield and clean it.

Solder the grounding wire on the cable shielding and wrap a few layer of insulating tape around. Clean the fibres.

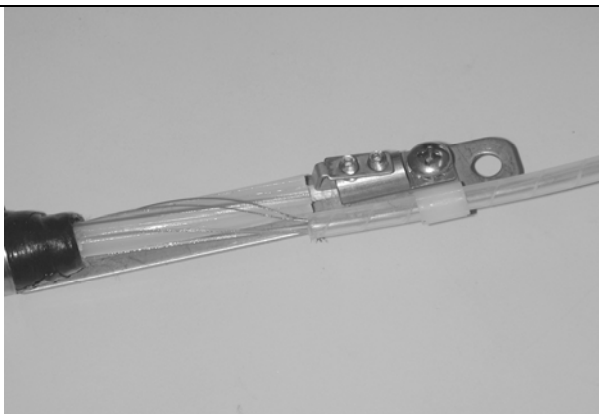


Insert the strength members of the cable into the strength member connector on the drop bracket such that all fibres or ribbons can be routed without unnecessary crossings and fasten with the Allen key.

If the cable diameter is more than 18mm fix the cables with tie wraps.

If the cable diameter is less than 18mm fix the cables with the hose clamp onto the loop bracket.

Wrap a few layers of tape around the hose clamp.



Put the spiral tube on the fibres and hold it into the clamp of the drop bracket.



Open the round port, place the heat shrink and fix the drop bracket.

Titolo:

FOCUS-CODC

4.3 INSTALLATION OF THE HEATSHRINK

4.3.1 Oval port



Clean by using the clean tissue.



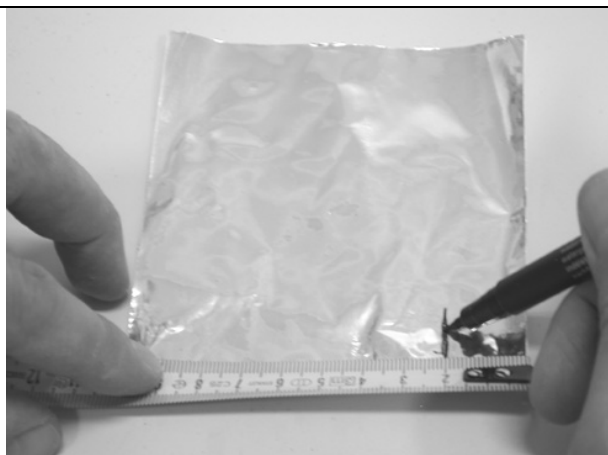
Abrade the port.



Clean and abrade the cable



Remove the packing bag out of the seal, push the seal upwards to the base and mark the cable flush with the seal. Make sure the seal butts up against the base.



Mark the aluminium protection foil at 20 mm starting from the border.



Match the mark of the aluminium protection foil with the mark on the cable. Wrap aluminium cable protection foil around the cable.

Titolo:

FOCUS-CODC



Push the seal against the base and place the clip.



Start heating the seal on the base, and wait one minute and shrink in spiral movements downwards.



Hold the cable in position.
Shrink till the hot melt is visible on the bottom.
Post heat the clip on both sides till the adhesive shows a proper flow on the clip between the two cables.

Do not move the closure or cable during 20 minutes.

4.3.2 Round port



Repeat all the steps as described in oval port.

Clean port and cable by using the clean tissue.
Abrade port and cable.
Remove the packing bag out of the seal, push the seal upwards to the base and mark the cable flush with the seal. Make sure the seal butts up against the base.
Mark the aluminium protection foil at 20 cm starting from the border.
Match the mark of the aluminium protection foil with the marks on the cables. Wrap aluminium cable protection foil around the cable.
Push the seal against the base and start heating the seal on the base. Wait one minute and shrink in spiral movements downwards.
Shrink till the hot melt is visible on the bottom.

Do not move the closure or cable during 20 minutes.

Titolo:

FOCUS-CODC

4.4 INSTALLATION OF 2 CABLES WITHIN THE SAME ROUND PORT

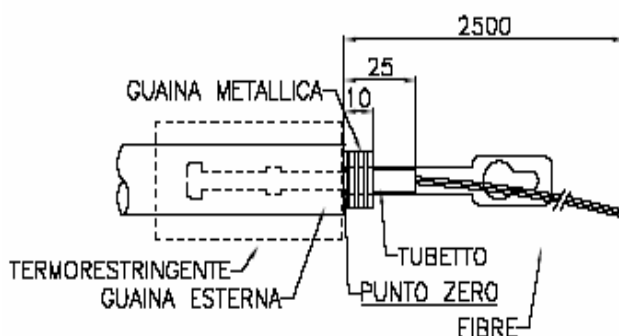
4.4.1 Installation of the first drop cable and predisposition for the second one



Take the Ø39-10mm sleeve and place the packing bag that has been opened on both sides in the sleeve to prevent the hot melt inside the sleeve from dirt and grease.

Push the cable in the Ø39-10mm sleeve first (to seal the cable to the round port), and then in the Ø17-3mm sleeve (to fix the cable to the bracket)

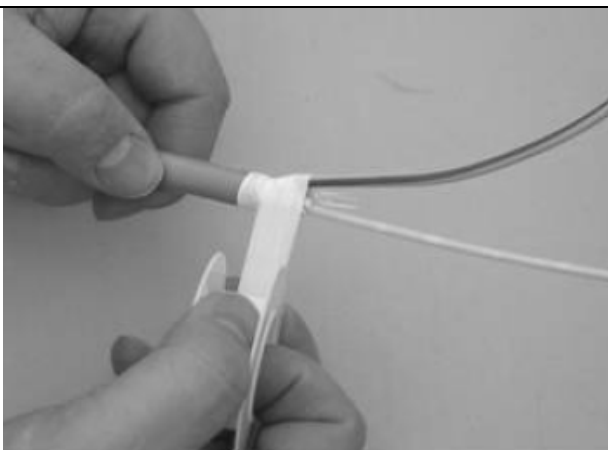
Select the round port for the installation and open it as described in § 4.1.2..



Prepare the cable following the measures as the picture shown.

If shield present, leave 10 mm of the shield and clean it.

Solder the grounding wire on the cable shielding.



Wrap a few layer of insulating tape around it.

Let the cable get into the selected round port.

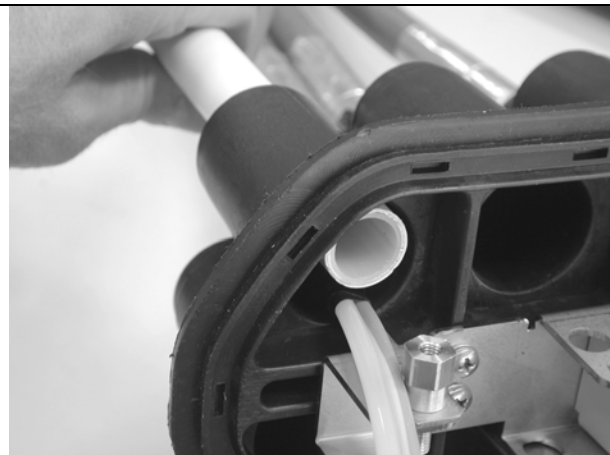
Remove the loose tube as the previous picture describes.

Insert the fibres into the silicon tube and place this on the loose tube of the cable.

Degrease, abrade the surface of the cable and heat the heat-shrink sleeve to fix the cable on the bracket.

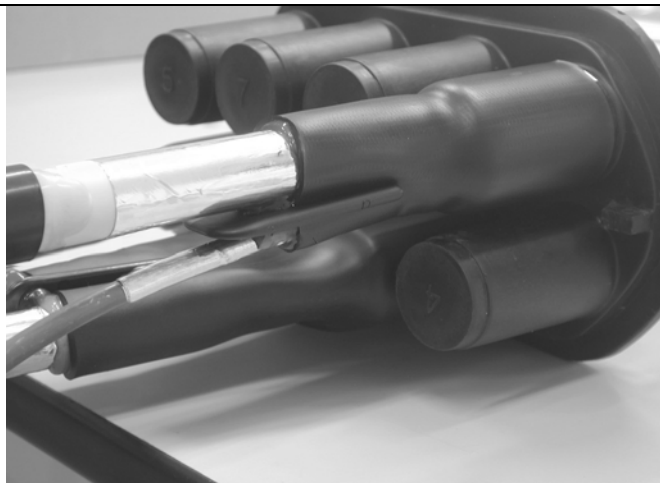
Titolo:

FOCUS-CODC



Open the round port, push the loose tubes in it and fix the bracket using the hexagonal screw. Be sure that loose tube is routed without crossings.

Push the multi-layer pipe into the same round port as the picture shows.



Install the heat-shrink sleeve following the steps described in §4.3.1

Clean port, pipe and cable by using the clean tissue.

Abrade port, pipe and cable.

Remove the packing bag out of the seal, push the seal upwards to the base and mark the cable flush with the seal. Make sure the seal butts up against the base.

Mark the aluminium protection foil at 20 cm starting from the border.

Match the mark of the aluminium protection foil with the marks on the cables. Wrap aluminium cable protection foil around the cable.

Push the seal against the base, place the clip between the cable and pipe and start heating the seal on the base. Wait one minute and shrink in spiral movements downwards.

Shrink till the hot melt is visible on the bottom.

Do not move the closure, pipe or cable during 20 minutes

Place the silicon tube within the tube holder and route the fibres.

4.4.2 Installation of the second drop cable

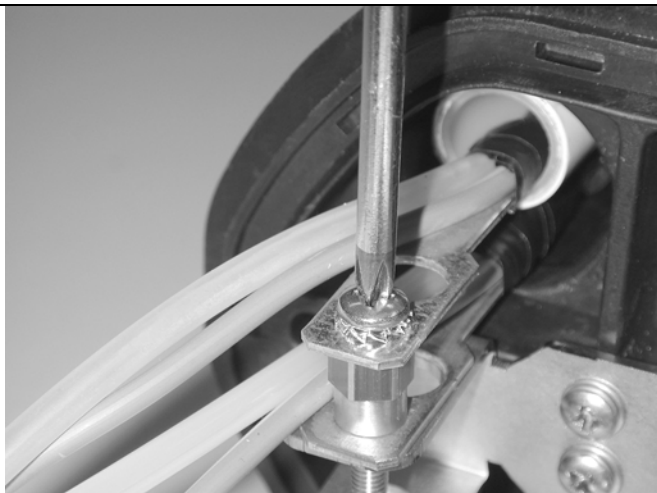


Open the pre-installed multi-layer pipe by cutting the heat-shrink cap on its extremity.

Push the second drop cable to install in it.

Titolo:

FOCUS-CODC



Prepare the second drop cable as described in § 4.4.1

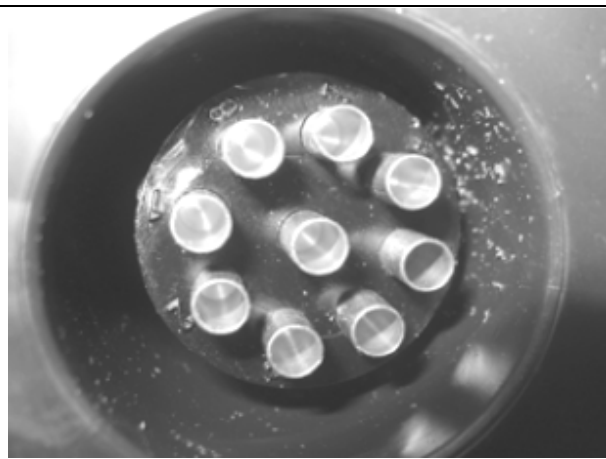
Fix the new bracket onto the hexagonal screw head that was installed previously for the first cable.

Seal the cable within the pipe following the steps described in §4.3.2.

5 INSTALLATION OF THE SHIELD CONTINUITY AND SECTIONING TAP



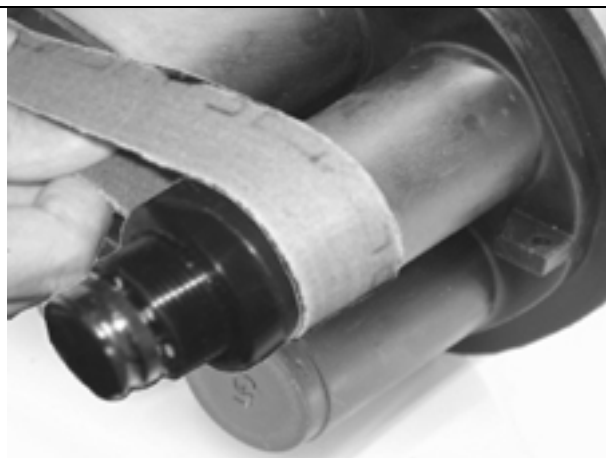
Open a round port and push the tap upwards to the base.



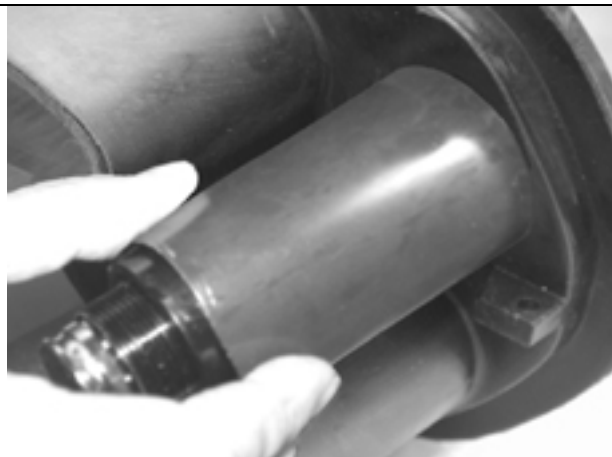
All the contacts should be visible and easy to access inside the closure.



Clean and abrade the outer surfaces of the port and the device.



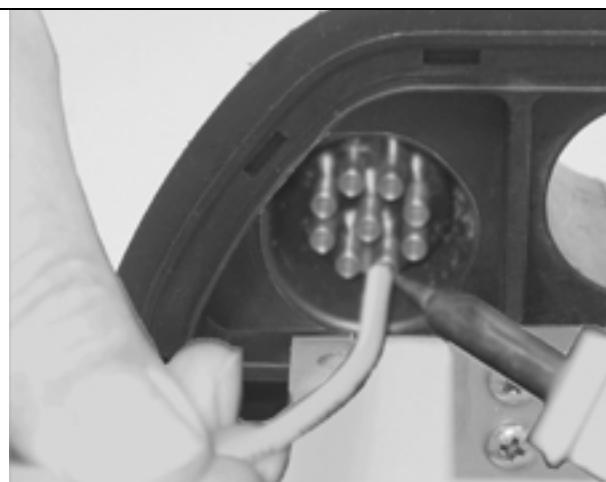
Titolo:
FOCUS-CODC



Push the heat-shrink sleeve upwards to the base.



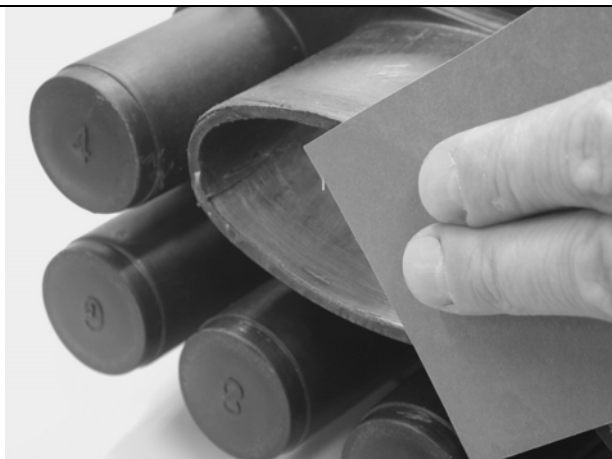
Start heating the seal on the base. Wait one minute and shrink in spiral movements downwards. Shrink till the hot melt is visible on the bottom.



Sold each wire coming from the cable shields on the respective contact on the tap (9 available). Use always the first contact for grounding wire connection.

6 CABLE INSTALLATION USING COLD APPLIED SEAL SYSTEMS

6.1 INSTALLATION WITHIN OVAL PORT



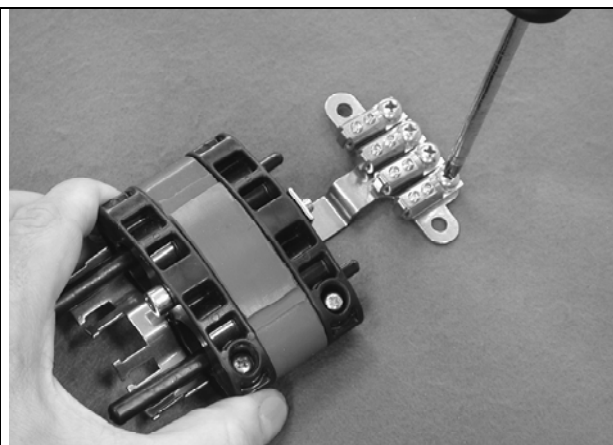
Open the oval port making a sharp cut.

If necessary, abrade until a smooth surface has come.

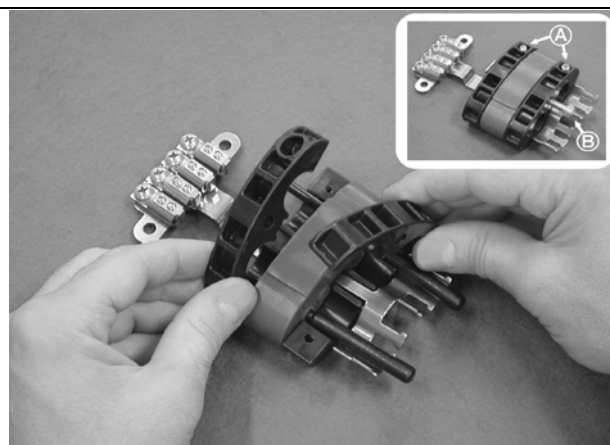
Clean accurately inside the oval port with a clean tissue.

Titolo:

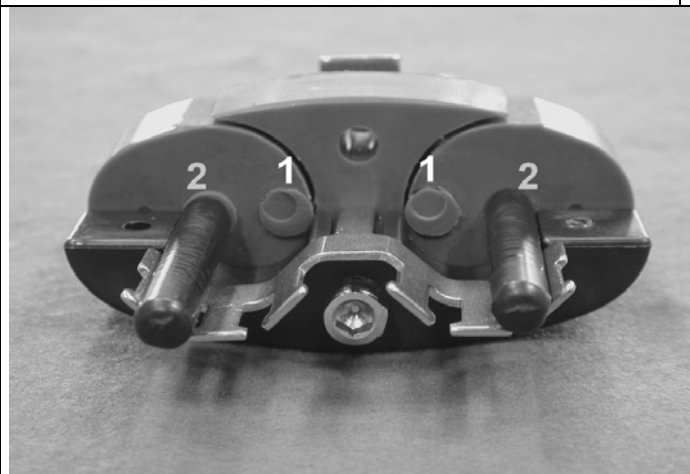
FOCUS-CODC



Fix the required strength member connectors.



Open and remove both the oval shells unscrewing the 4 "A" screws and the "B" bolt.



Prepare the cable to install following the steps described in § 4.1.1

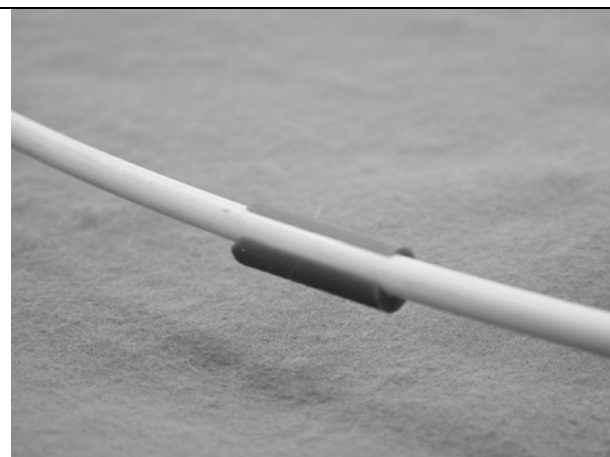
Use always the "1" holes for the main looped cable installation.

Use always the "2" holes for optional drop cables installation.

REMARK: do not remove the plugs of the "2" holes if optional drop cable installation is not required.



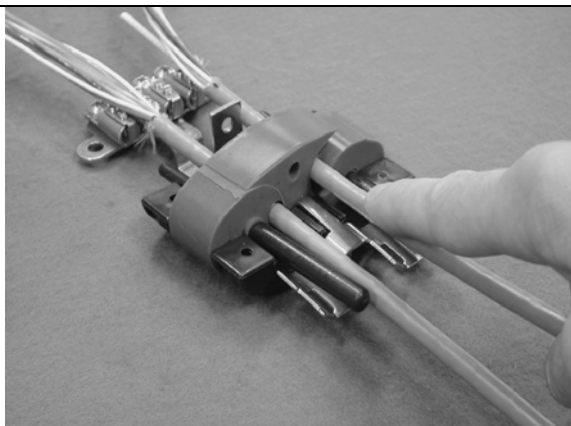
Remove completely the "1" plugs for the installation of the main looped cable with $5 \leq \varnothing \leq 10$ mm.



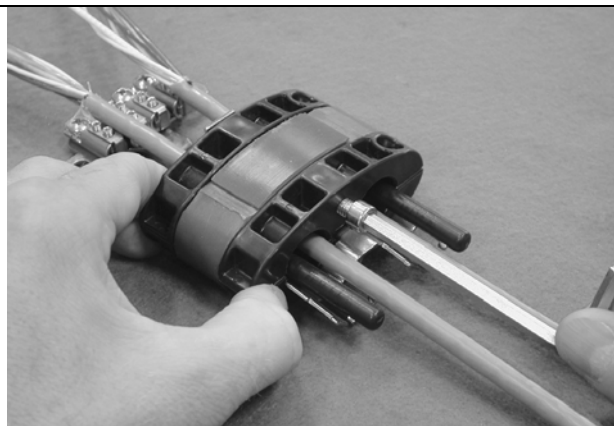
For the installation of the main looped cable with $\varnothing < 5$ mm, match the slotted slice of the plugs on the cable.

Titolo:

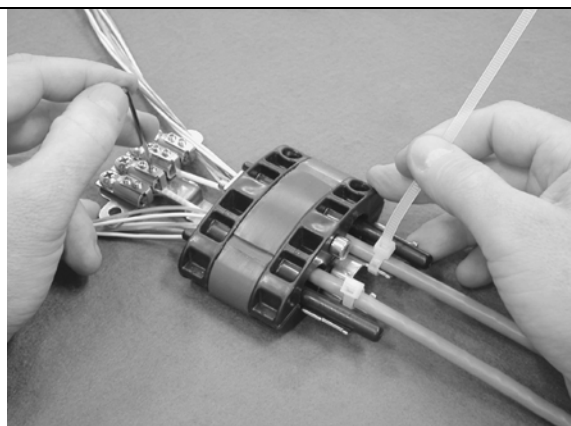
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Insert the main looped cable in the oval grommet. Do not move the other plugs during this operation.



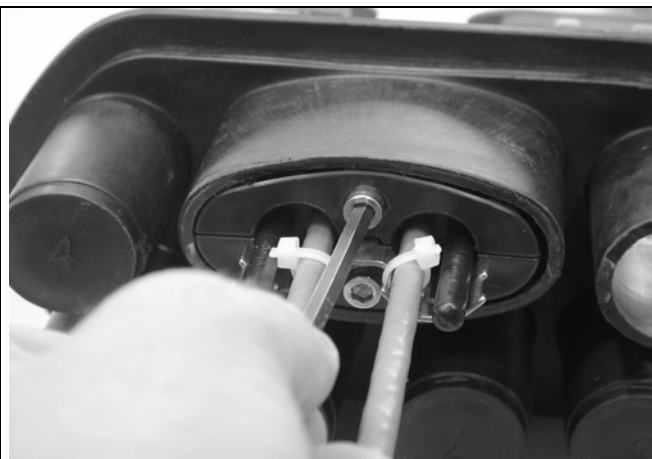
Close the oval shells and place back the bolt without to squeeze the grommet.



Fix the looped cable into the strength member connectors and to the output bracket with tie-wraps.



Push gently the looped loose tubes in the oval port and fix the device to the closure.

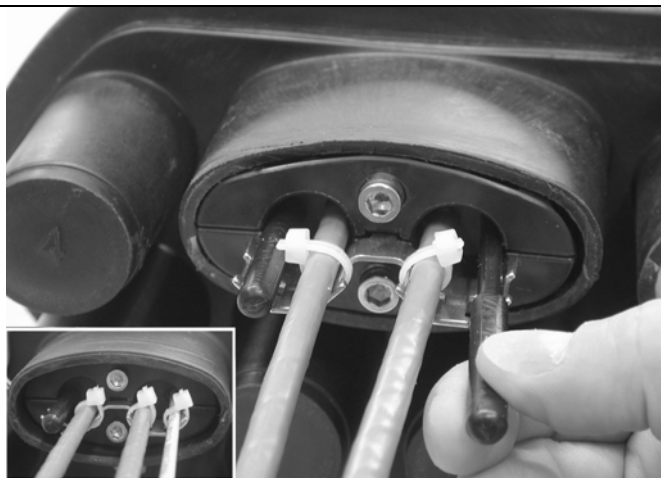


Close the oval port by alternatively screwing the two bolts until the grommet has come to a complete seal.

Invert the operations to open the device.

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In case of further drop cable installation on the same oval port is required, proceed as follow:

Open the device by alternatively unscrewing the 2 bolts.

Pull the black plug to set free the selected "2" hole and push gently the drop cable in.

Prepare the drop cable as described in the §4.1.2 and fix it to both the respective strength member connector and output bracket with a tie-wrap.

Close the device to seal the oval port back.

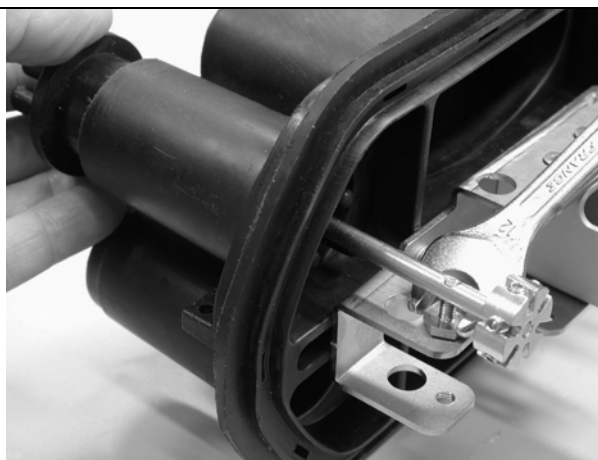
6.2 INSTALLATION WITHIN ROUND PORT



Open the round port making a sharp cut.

If necessary, abrade until a smooth surface has come.

Clean accurately inside the round port with a clean tissue.



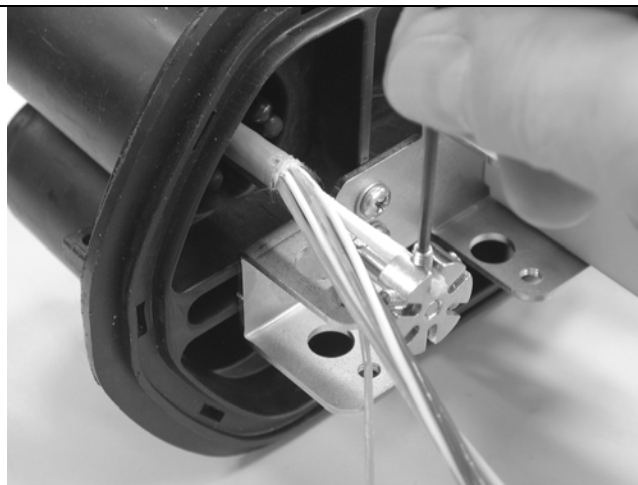
Push the device into the round port and fix it inside the closure.



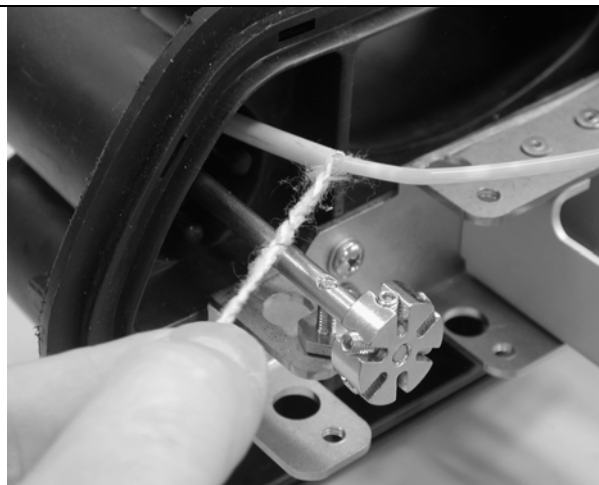
If present, extract only the plug to open the selected hole for the cable installation. Push gently the cable in.

Titolo:

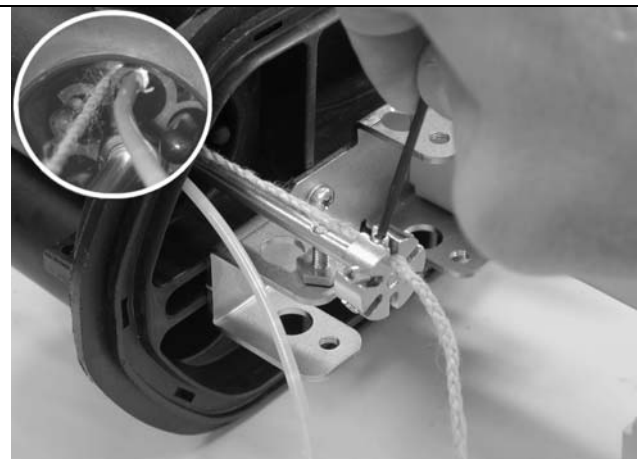
FOCUS-CODC



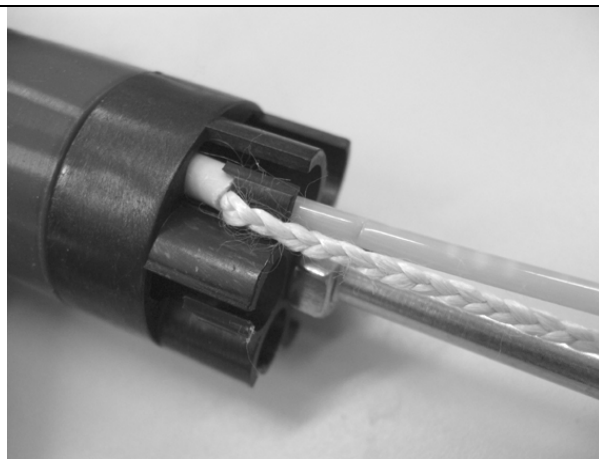
Prepare the cable as described in §4.1.2 and fix its central strength member into the respective slot of the multiple strength connector. Choose the slot in axis with the selected hole.



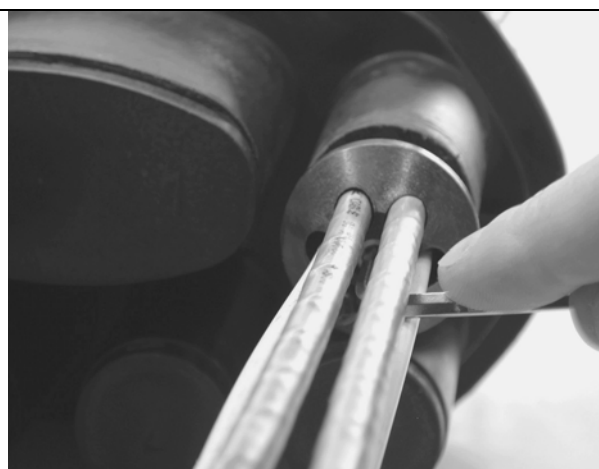
If the cable has not central strength member (Kevlar only), prepare the cable as previously but leaving 15cm of Kevlar and make a little braid with it.



Put under tension and block the Kevlar braid between the tongue upon the selected hole of the device and the slotted multiple strength connector (see the picture).



Close the device to seal the port by screwing the central bolt. Invert this operation to open the device.

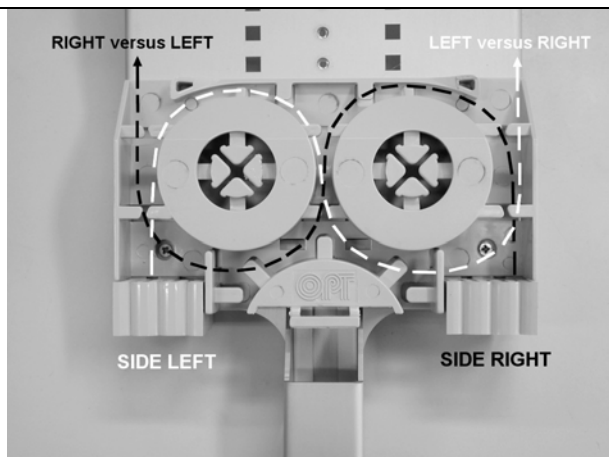


For further cable installations, open the device and repeat the previous operations.

Titolo:

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7 FIBRE ROUTING



Fibres can be routed through the mixer as illustrated in figure.

Select the cable termination as such, that a minimum of fibres will cross and have to be routed through the mixer.

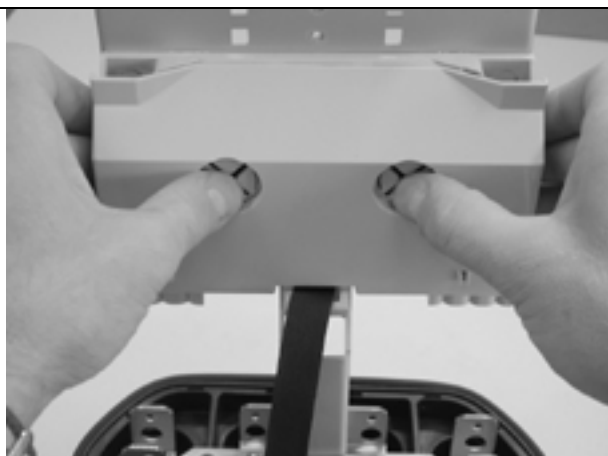
Therefore the selection of the ports according to the cable lay-out is important.



6 PORT BASE:

Port 1 - 3 - 5 and 7 for cables to side L.

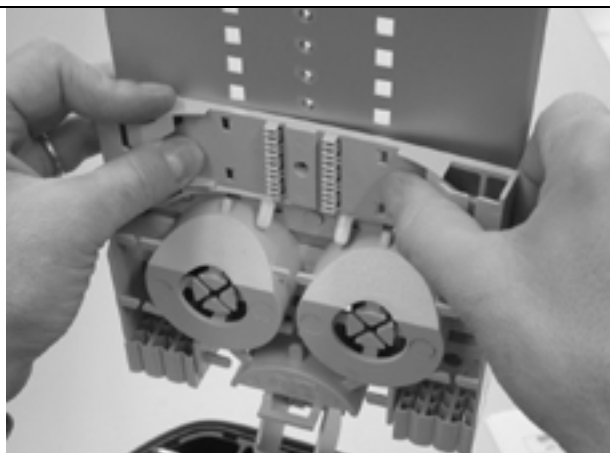
Port 2 - 4 - 6 and 8 for cables to side R.



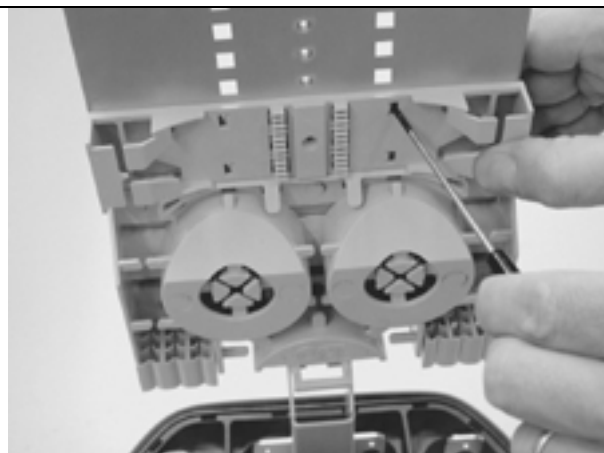
Remove the Velcro belt and the mixer cover. Push the two snaps to open the mixer cover.

Titolo:

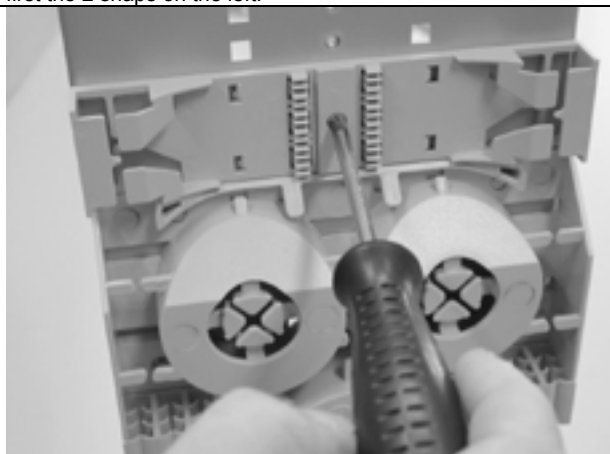
FOCUS-CODC



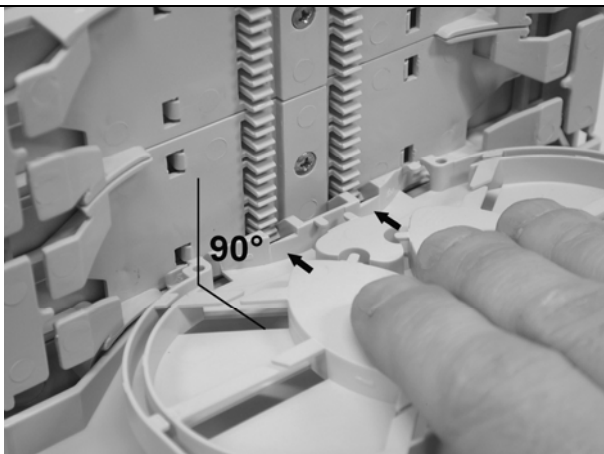
To fix the wraparound groove plate on the frame, push and slide first the 2 snaps on the left.



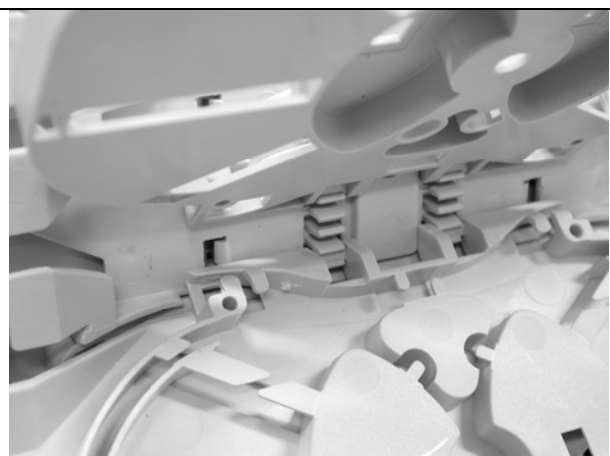
Push the other two snaps by using a tin flat head screw driver.



Lock the wraparound groove plate with the securing screw.



Place a tray in the wraparound groove plate by pushing perpendicularly the tray into the hinges (lowest possible position) until it snaps. To remove a tray pull it in the same position. In case of Single Circuit Trays mount one organizer on each hinge.



To snap the Single Element Tray in groove plates leave always one hinge facility open between two consecutive trays.



Titolo:

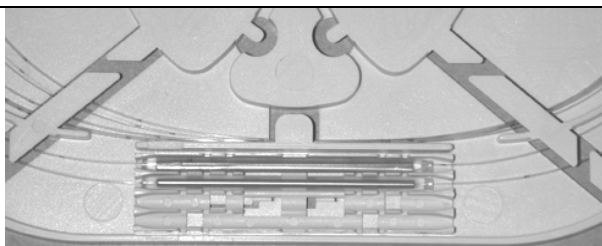
FOCUS-CODC



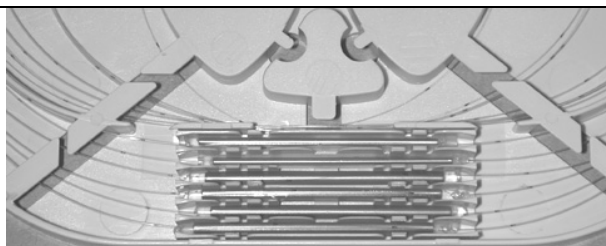
Identify the tray to be worked on and make it accessible. Route the fibre in the grooves of the wraparound groove plates to the entrance of the identified tray.



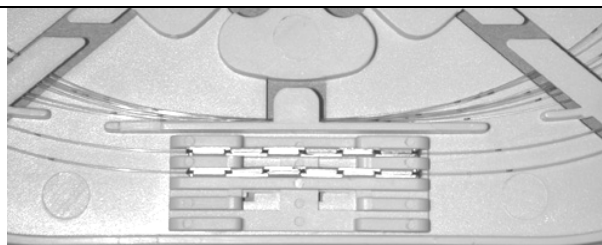
Pull gently on the fibres in the tray and make sure that the fibres are well contained (picture shows the case of a loop back storage).



Take the splice protector and push it in the splice holder. Heat shrink splice protectors in SC tray (max 4).



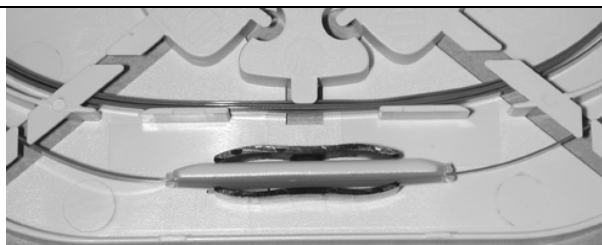
Heat shrink splice protectors in SE tray (max 12).



ANT splice protectors in SC tray (max 4).



ANT splice protectors in SE tray (max 12).



Ribbon in SE tray.

Titolo:

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8 CLOSING THE CLOSURE

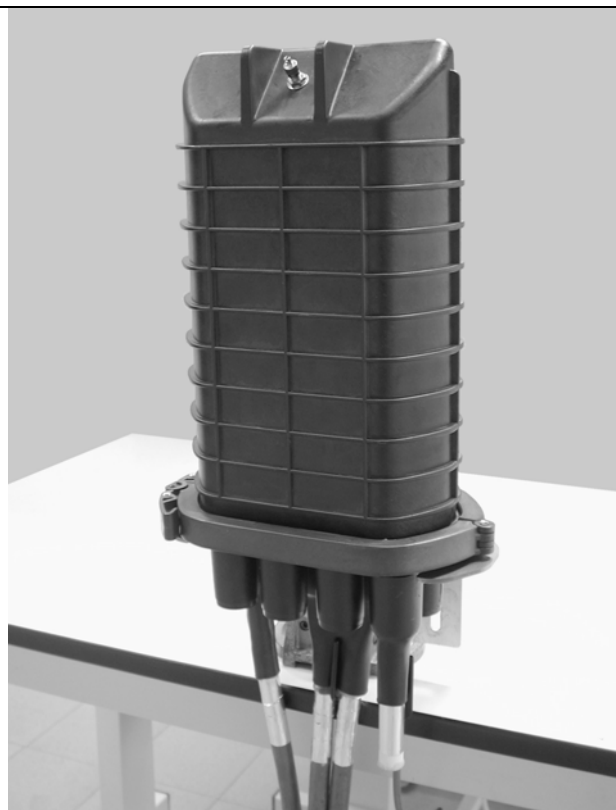
Remove the outer bag and place the Silica gel in the closure (be careful, do not disturb any fibre or tube routing).

Important: replace the Silica gel each time the closure has been opened.

Place the o-ring back on a clean base and place the dome on top of it.

Close with the clamp.

Secure the clamp with a tie wrap.



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