Tyco Electronics

# FIST-GCO2-F

INSTALLATION INSTRUCTION

## GCO2-FC
## GCO2-FD

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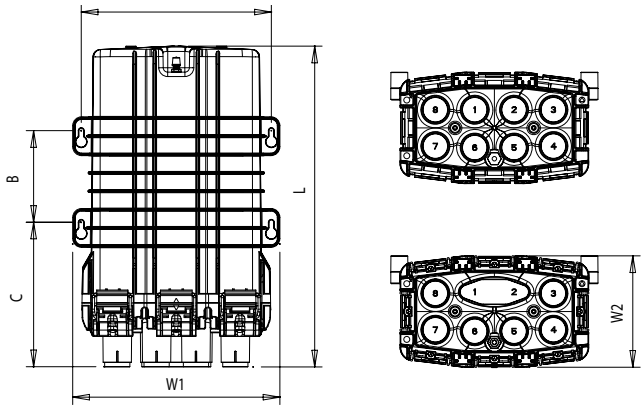
## 1 Introduction

The generic closure FIST-GCO2-FX is an environmentally sealed enclosure for the fiber management system that provides the functions of splicing and passive component integration in the external network. The product can be tailored to almost any required configuration by adding splicing and/or passive device Sub-Assemblies. The FIST-GCO2-FX has provision for all cable termination and sealing requirements.
To clean FIST components, the use of isopropylalcohol is recommended.
The closure is a single-ended design made of a thermoplastic material.
The base and dome are sealed with latches and an O-ring system. One oval entry port for looped (uncut) cable management and six round ports for single cable entry/exit are included in the base. The cable seals are manufactured from heat-shrinkable or gel material. The Universal Mounting System provides the foundation for mounting SOSAs and SASAs. The two sizes have each a standard capacity of 16 or 24 units. Uncut loose buffer tube storage is available behind the UMS-profiles (Universal Mounting System).

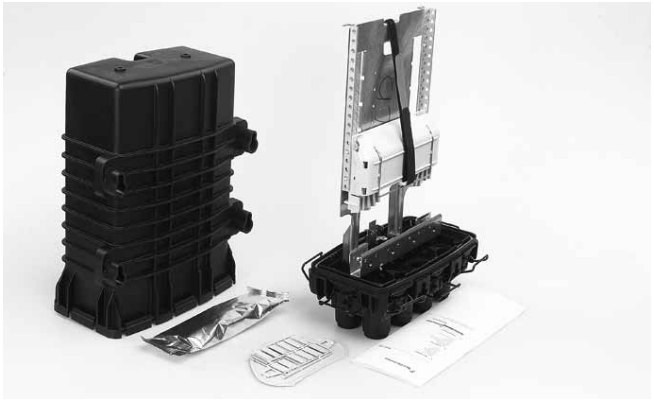
**Dimensions (in mm)**




| Product size | L (nom.) | W1 (nom.) | W2 (nom.) | A (nom.) | B (nom.) | C (nom.) |
|---|---|---|---|---|---|---|
| FIST-GCO2-FC | 384 | 279 | 150 | 256 | 123 | 195 |
| FIST-GCO2-FD | 432 | 279 | 150 | 256 | 123 | 195 |

# 2 General

## 2.1 Kit contents



According network layout and cable constructions the kit content can be different from the kit content described in this installation instruction.

- Dome
- Base including routing block + cover (universal mounting system)
- O-ring
- 100g Silicagel
- 1 tray cover + fiber guiding pin +tube holder retainers
- 1 tray wedge
- Installation Instruction

***Cable diameters in 6 port base***

| | Round port | Oval port |
|---|---|---|
| Loose tube | 5 - 30 mm | 12 - 25 mm |
| C.Core | 5 - 25 mm | 12 - 25 mm |

### 2.2 Elements needed from the FIST installation kit

| Product Name | UOM | QTY/UOM | Product description |
|---|---|---|---|
| FISTV-E7185-3010 | 1 RL | 50 m | Cut wire to open the FIST-GCO2-F ports |
| FISTV-E7100-1005 | 1 PK | 10x100g | Silicagel for inside the closure, to be replaced after each re-entry |
| FISTV-SPLI-COL | 1 PK | 30 sets | Split identifications collet (2-sizes) till 3.5mm |

### 2.3 Tools

| | | | |
|---|---|---|---|
| · | FIST-LCIT | Looped cable insertion tool for oval outlet | To insert loose tubes in oval port |
| · | FACC-TUBE-CUTTER-01 | Tube cutter | To cut spiral tubing |
| · | FACC-TUBE-STRIPPER-02 | Tube stripper | To strip loose tubes |
| · | FACC-AXIAL-STRIPPER-RC1 | Tube splitter | To split buffer tubes 2.0-3.1mm |
| · | FACC-HEAT-GUN-220V | Heatgun + Heatgun tip | To shrink cable seals |

### 2.4 Cable preparation table

| | | Window cut | drop cable |
|---|---|---|---|
| Loose Tube | FC | 3.0 m | 2.2 m |
| | FD | 3.2 m | 2.2 m |

## 3 Installation

### 3.1 Installation of workstand/mounting bracket

3.1.1 The FIST-GCO2-F will be mounted on the work-stand. The work-stand is wrap-around, so that the FIST-GCO2-F installed with cables can be taken away from it.

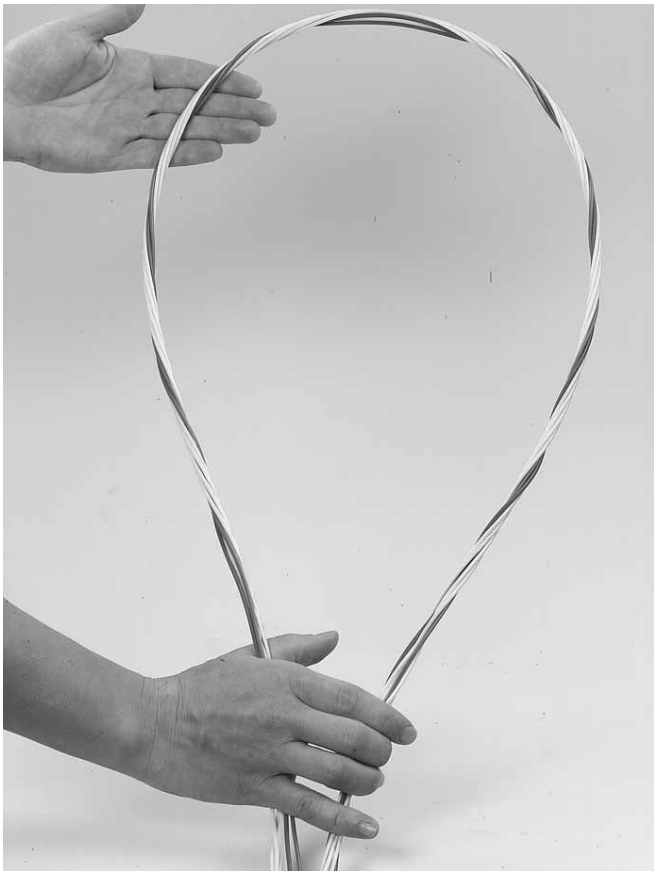
# 4 Single fiber

## 4.1 Loose buffer tube cable

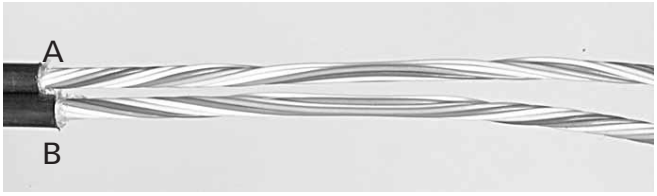
### *4.1a Looped cable preparation*

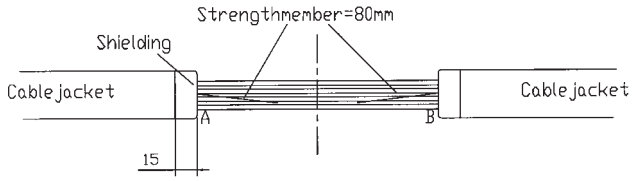
4.1.1. S-cable: A window cut of 3m is needed for GCO2-FC, 3.2m for GCO2-FD.

4.1.2 S-cable: Mark the cable in the middle and mark the cable on (1.5), (1.6) meters left and right of the first mark. Remove the cable jacket starting in the middle.



4.1.3 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). Locate the buffer tube reversal point on the cable and mark the cable (1.5), (1.6) meters left and right from this point. Remove further the remaining cable jacket starting from this point.
**Important:** make sure that the twist position of loose tube is identical left and right. **This must be done correctly for ease of installation.**



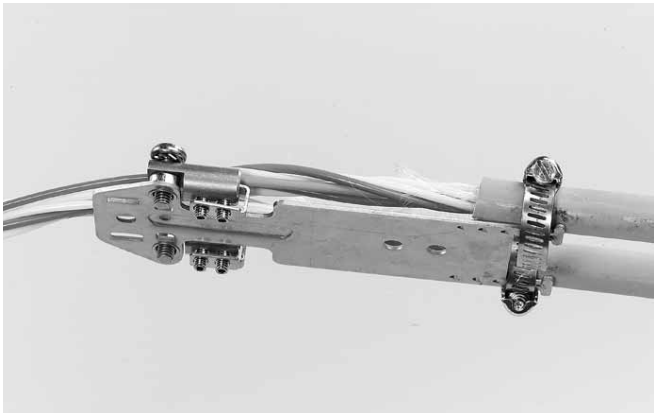




4.1.3 Remove the strength member leaving 80mm from the cable jacket, if shield present leave 15mm of the shield

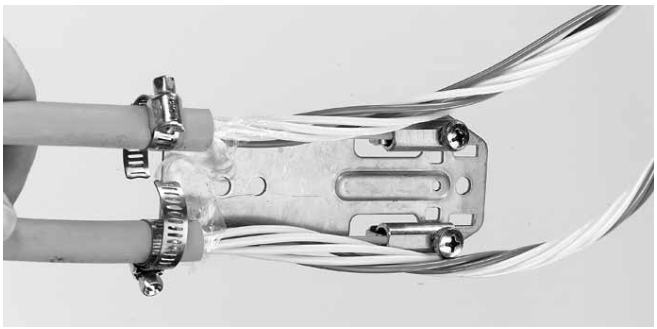
4.1.4 Clean the loose tubes, remove all grease.

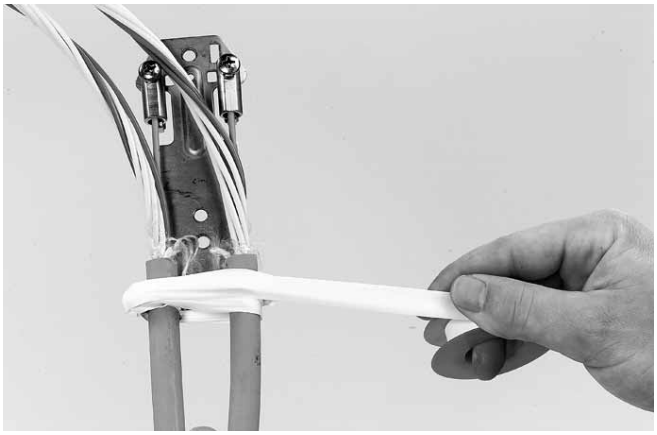
4.1.5 Identify the loose tubes with the split collet rings markers if necessary. There are different FIST-split-collet-rings depending on diameter of the loose tube.

### *4.1b Bracket/ Strength member and cable termination preparation*



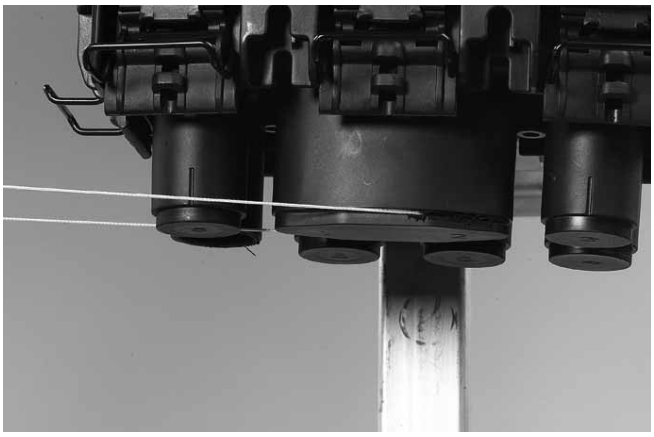
4.1.6 Insert the strength members of the cable into the universal strength member connector on the loop bracket (loosen the bolts with the Allen key if necessary) such that all loose tubes can be routed without unnecessary crossings. Avoid to twist the loop in case of a reversed oscillating cable. Secure with the Allen key.





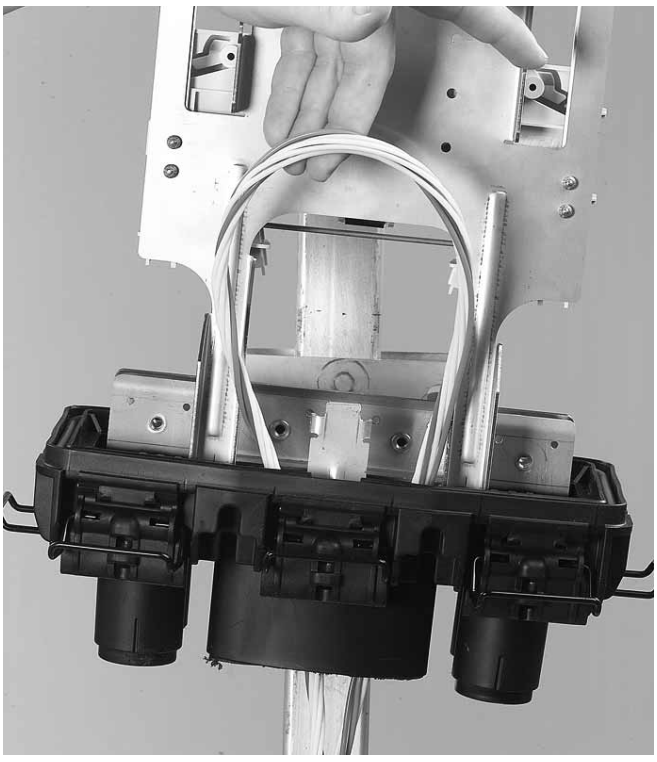
4.1.7 If the cable diameter is more than 8mm secure the cables with the hose clamp onto the loop bracket. Wrap a few layers of tape around the hose clamp.
If the cable diameter is less than 8mm secure the cables with tie wraps.

- **When using cables with a diameter smaller than 12mm, bend the sharp edges of the hose clamp towards the cable and use some tape around the bracket to protect the heatshrink.**

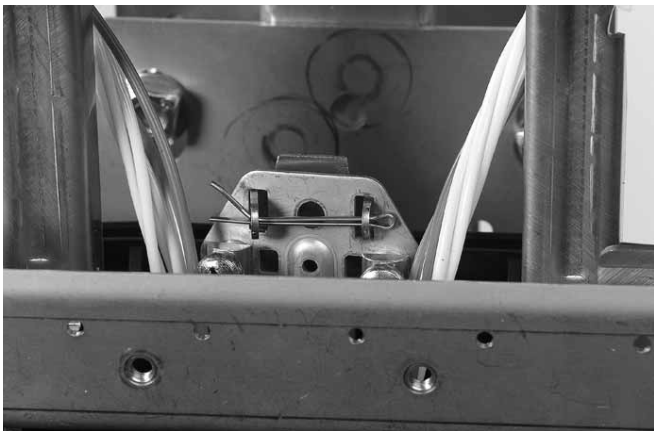


4.1.8 Open the oval port; the cutting wire can be used.

4.1.9 Take the oval sleeve and place the packing bag that has been opened on both sides in the oval sleeve to protect the hotmelt inside the sleeve against dirt and grease. Take the LCIT and bend the loose tubes gently over it. Push the loose tubes in the sleeve. The non-coated edge of the sleeve (arrow) should be pointed to the base of the closure.



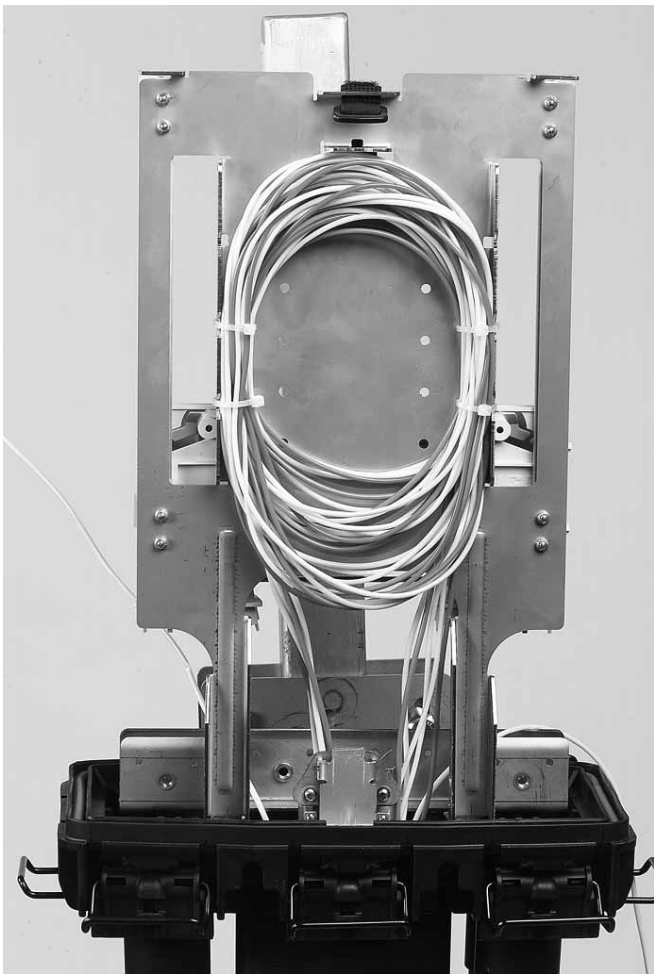
4.1.10 Push the loose tubes (looped around the LCIT) through the oval port. Remove the LCIT and pull the cable gently in the closure.



4.1.11 Secure the bracket with the split pen.

4.1.12 Install heatshrink.

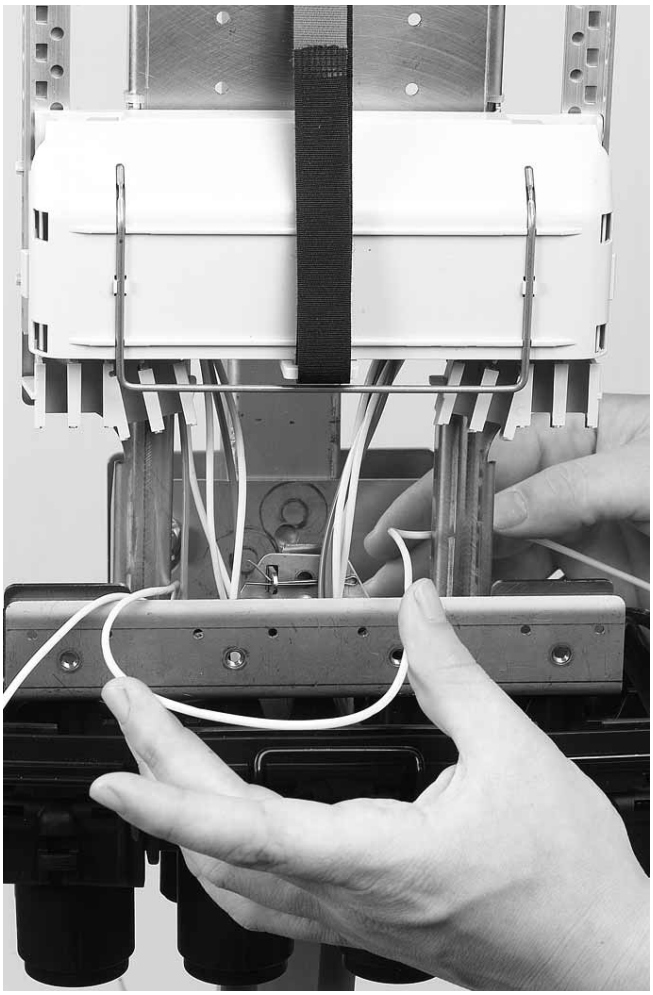
### *4.1c Loose buffer tube storage*



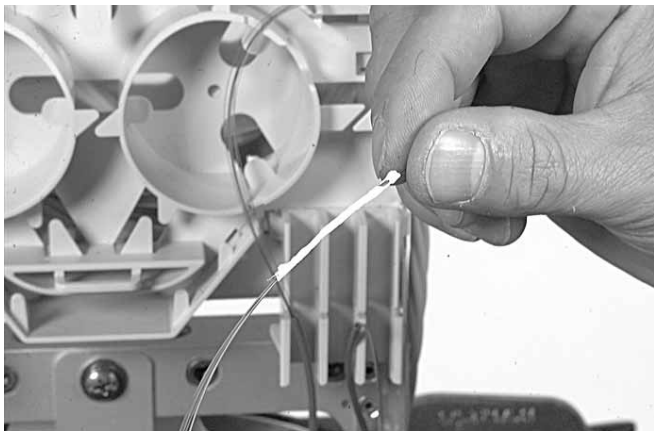
4.1.14 Make some loops with the uncut loose tubes, store these in the dedicated area, securing positions ensured with tie wraps

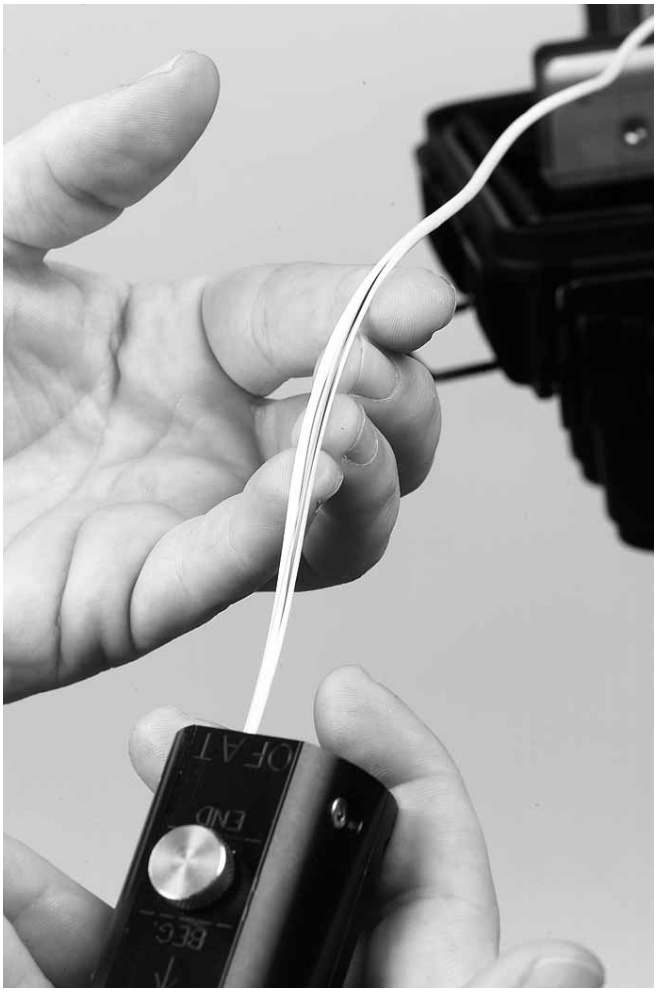
**Remark: loose tubes routed up to the tube holder should be routed in such a way that one still has complete access of the stored tubes in the dedicated area. This is needed for later routing of loose tubes from the loops to the tube holders, without creating crossings and without creating disturbances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

### *4.1d Fiber storage in trays*



4.1.15 Select the loose tube(s) with the fibers that have to be spliced.





4.1.16 **In case of reversed oscillating cable (SZ-cable)**: separate the loose tube(s). Match the loose tube(s) on the tubeholder and mark both sides between the two marks. Shave between the two marks with the appropriate tooling. Clean the fibers and wind some Teflon around the ends of the tubes and fibers ,to protect the transition from tube to fibers.

**In case of S-cable:** cut the loose tube(s) (with fibers that have to be spliced) in the middle of the loop. Separate the cutted loose tube(s) from the others. Match the loose tube(s) on the tubeholder and mark both sides. Strip the loose tube(s). Clean the fibers.

- Separate the fibers till the tubeholder and route to single circuit or single element tray(s).

4.1.17 In case of **Reversed oscillating cable** Identify exchange and customer-side using some Teflon tape around the fibers. One can also use the FIST-split-collets-rings markers to identify the loose tubes.

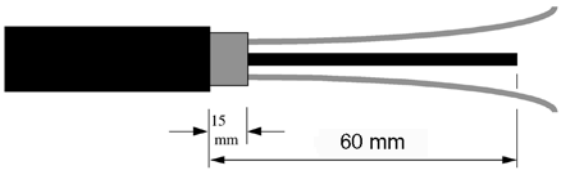
4.1.18 - If the fibers are 'twist free' one can route the fibers separate to single circuit trays or single element trays. Separate all fiber loops first till the tubeholder.

If the fibers are not 'twist free' select first the fiber(s) that have to be spliced and cut these fibers in the middle of the loop. Remove these out of the bundle till the tubeholder. These fibers can be routed to single circuit trays, others uncut will be routed to a single element tray (never in dark fiber storage) (See at fiber routing).

### *4.1e Drop cable preparation*

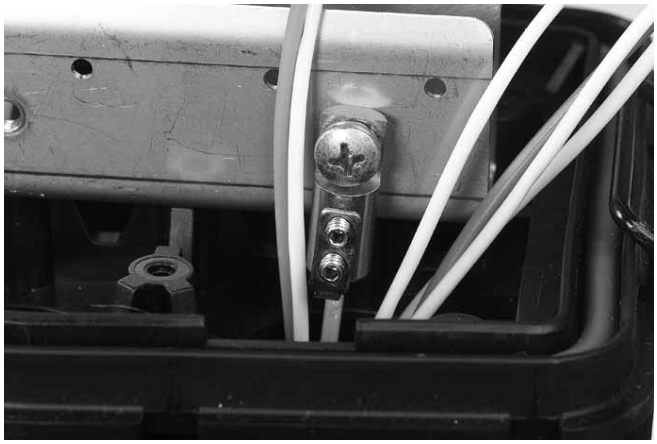
4.1.19 Open the round port; the cutting wire can be used

4.1.20 Remove the cable jacket for 2.2m.



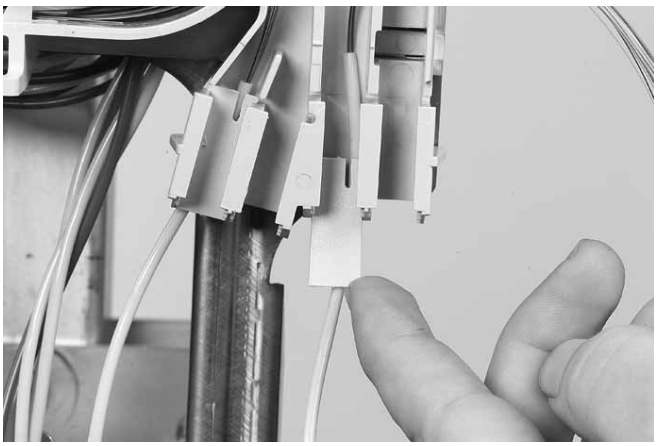

4.1.21 Remove the strength member leaving 60mm from the cable jacket, if shield present leave 15mm of the shield.

4.1.22 Take the sleeve and place the packing bag that has been opened on both sides in the sleeve to protect the hot melt inside the sleeve against dirt and grease. Push the loose tubes through the sleeves. The non-coated edge of the sleeve (arrows) should be pointed to the base of the closure (see installation heatshrink).



4.1.23 Push the loose tubes through the port and secure the strength member in the strength member connector. Be sure that all loose tubes are routed without crossing around the strength member.

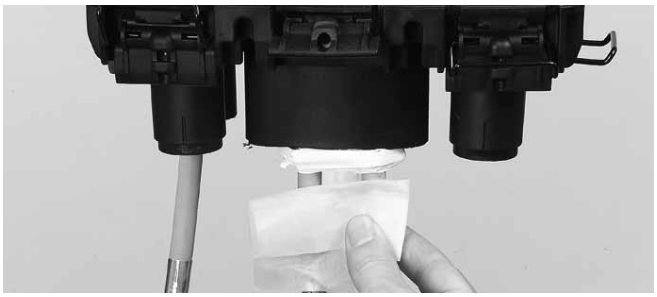
4.1.24 Match the loose tube on the tube holder, mark and strip the loose tube from this mark. Clean the fibers.

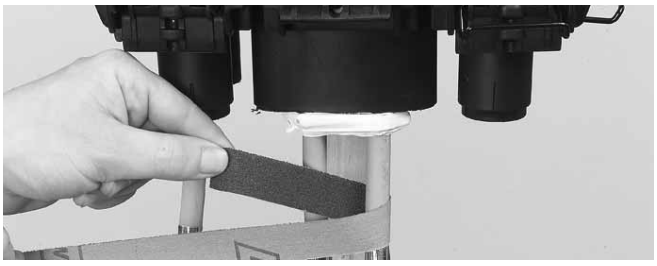


4.1.25 Position one or more loose tubes in the tube holder according to the correct position. Slide the tube holder retainer in with the snap upwards. Use the lowest cavity of the tube holder above the loose tube. The tube holder retainer must snap.

## 5 Heatshrink installation

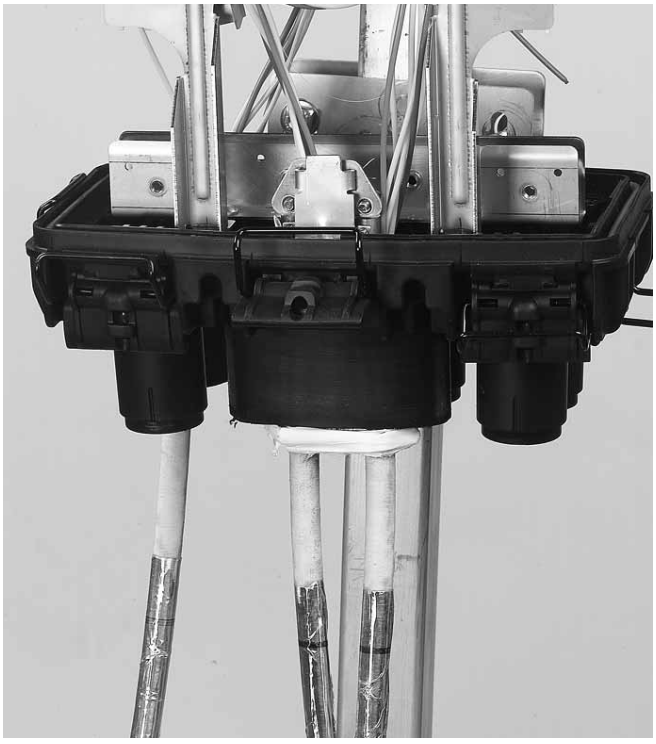
### 5.1 Oval port



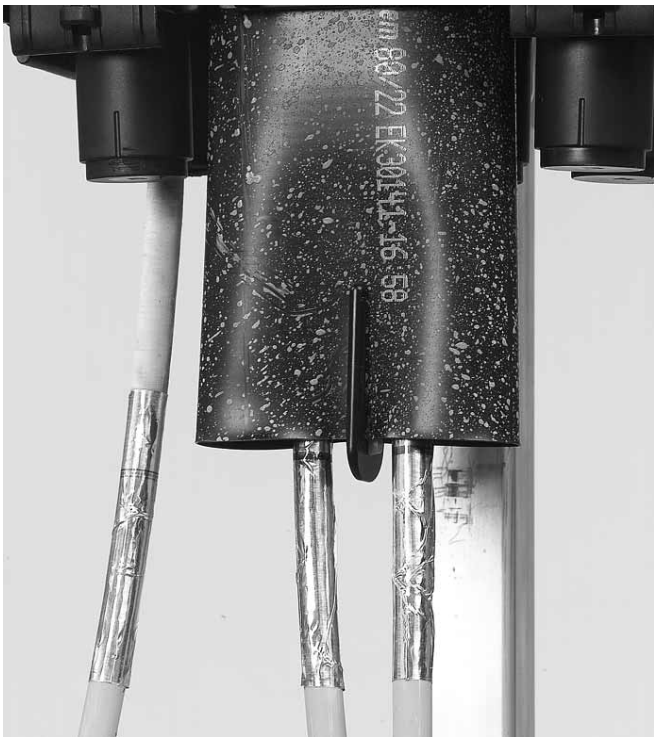


5.1.1 Clean by using the cleaning tissue. First clean and then abrade port and cable.

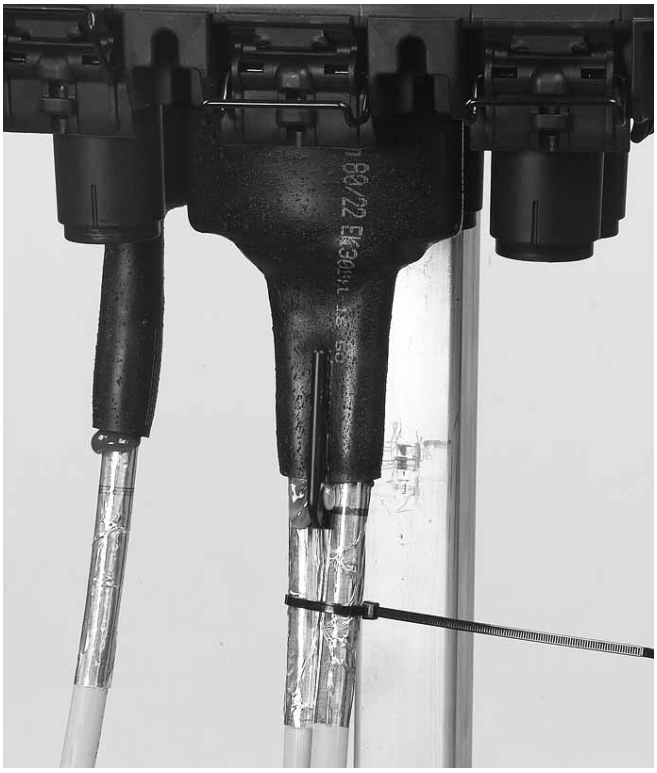
5.1.2 Remove the packing bag out of the sleeve, push the sleeve upwards to the base and mark the cable flush with the sleeve. Make sure the non-coated zone butts up against the base.



5.1.3 Match the blue line of the aluminium protection foil with the marks on the cables. Wrap aluminium cable protection foil around the cable (the aluminium foil should not be more than 30 mm inside the sleeve.



5.1.4 Push the sleeve against the base and place the clip.

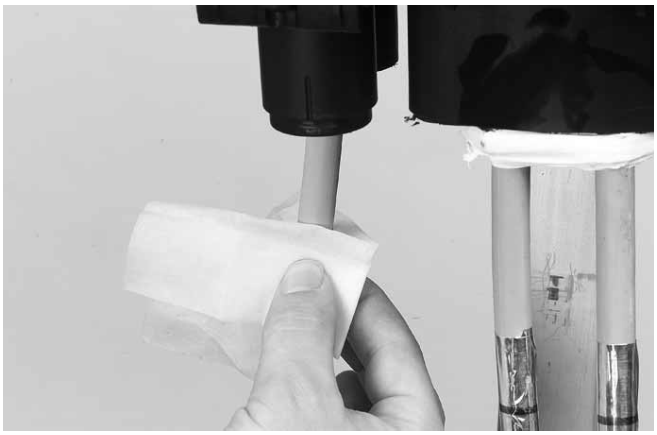


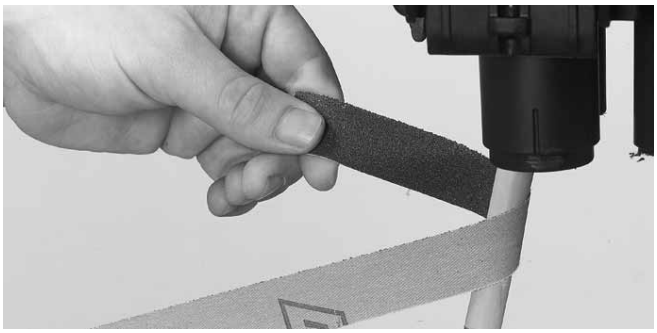
5.1.5 Start heating the sleeve on the base, and wait one minute and shrink in spiral movements downwards. Hold the cable in position. Shrink till the green painting dots become black, and the hotmelt is visible on the end of the sleeve. Postheat the clip on both sides till the adhesive shows a proper flow on the clip between the two cables.

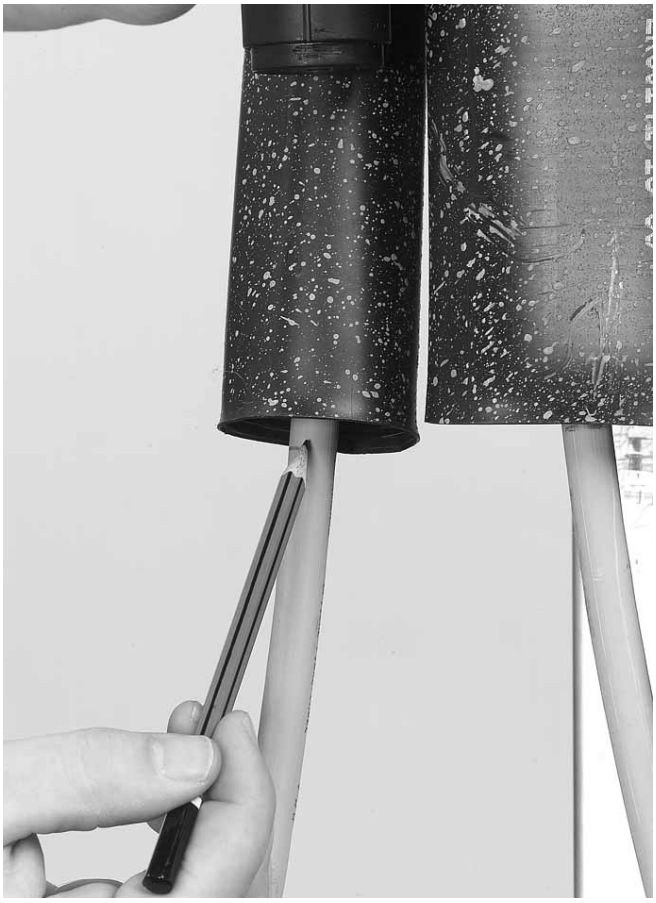
**Do not move the FIST-GCO2-F or cable during 20 minutes.**

### 5.2 Round port

Start using ports 3 or 8.



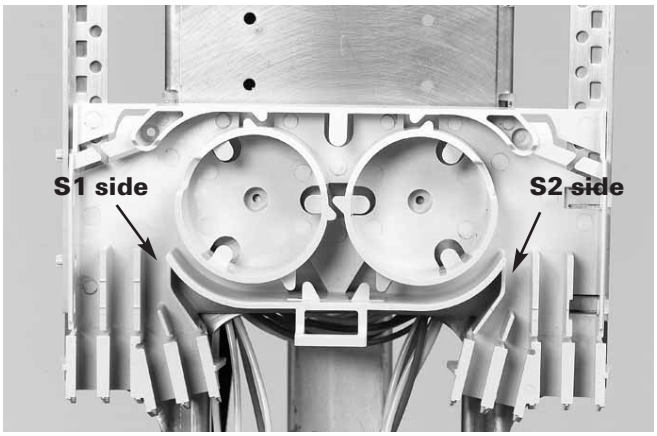




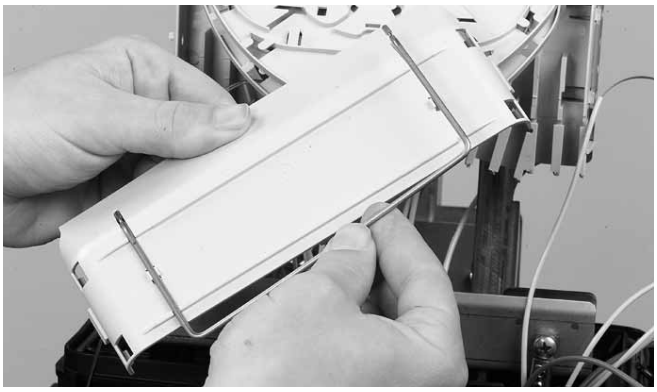
5.2.1 Mark the cable with the end of the sleeve. Make sure the sleeve butts up against the base.

5.2.2 Drop cable sleeve installed.

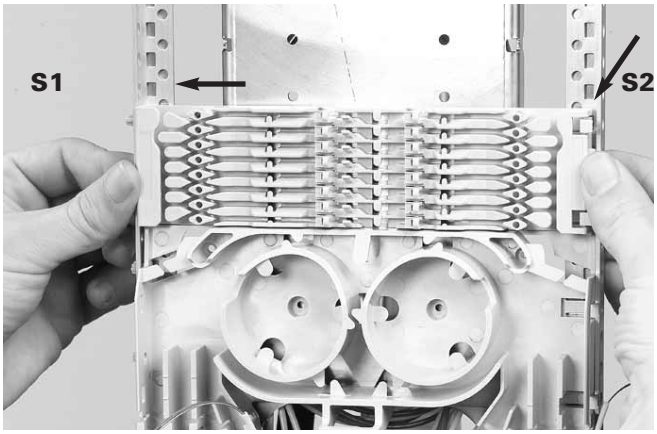
## 6 Fiber routing



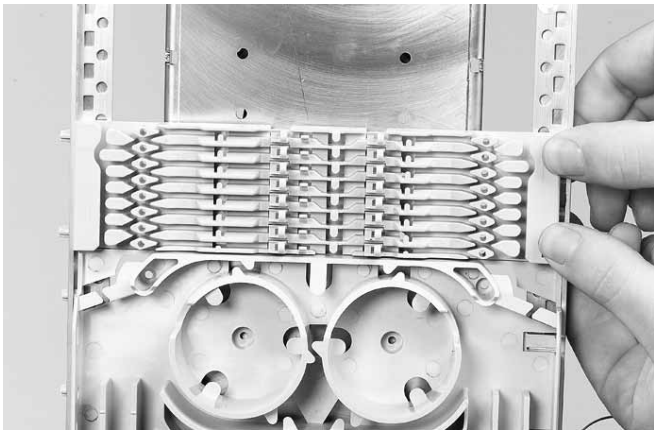

Fibers can be routed between S1, S2. Select the cable termination as such that a minimum of fibers or tubes will cross.



6.1 Remove the VELCRO and routing block cap. To remove the routing block cap lift the two snaps at one side of the routing block cap.




6.2 Secure the wraparound groove plate on the UMS by putting the plate with the long protrusions in the S1 UMS-profile and sliding the plate in the S2 UMS-profile until it snaps. (Do not leave gaps between groove plates).

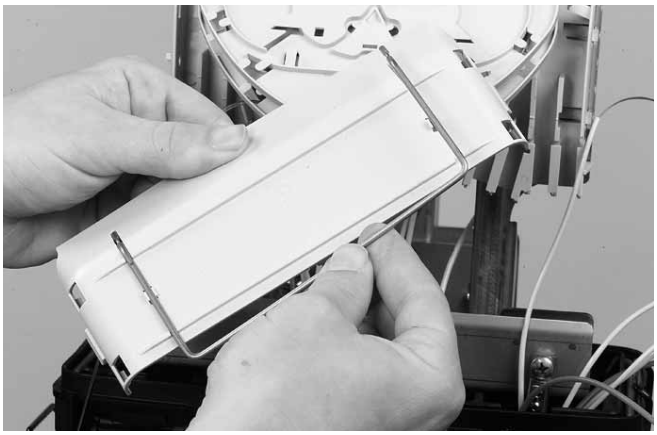


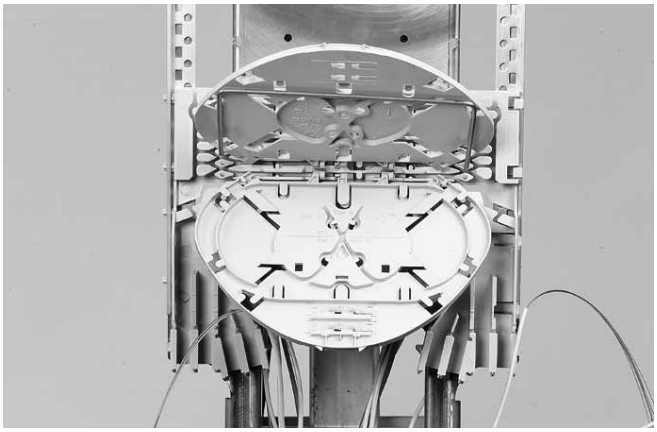
6.3 To remove push the two snapfits at S2 UMS-profile and slide the wraparound plate towards S1 UMS-profile.



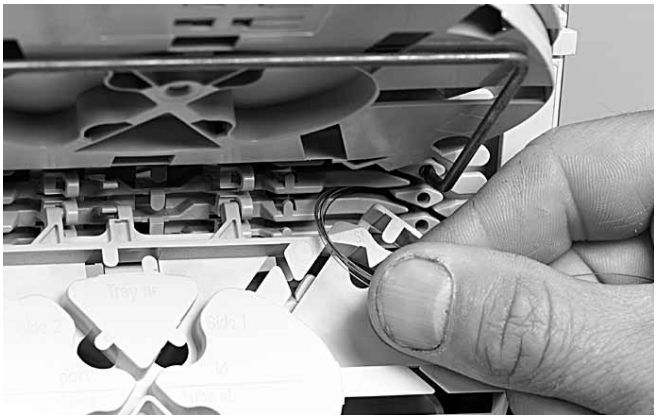
6.4 Place a tray in the wraparound groove plate; do this by pushing the lip on the groove plate (lowest possible position) slightly down with the tray and move the tray lateral into the hinge-cavities of the groove plate. To snap the High Capacity Single Element tray (HCSE) in the W/a single fiber groove plate **leave always one hinge facility open between Fasblock or previous tray and the HCSE-tray.**

6.5 To remove the tray put the fiber guiding pin between lip on wraparound groove plate and tray and move lateral towards S1.

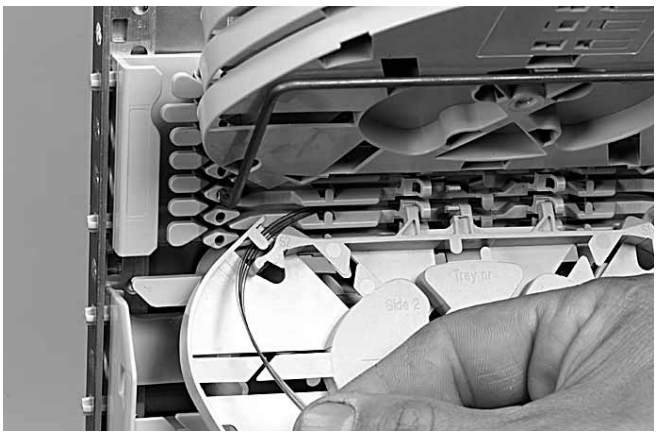




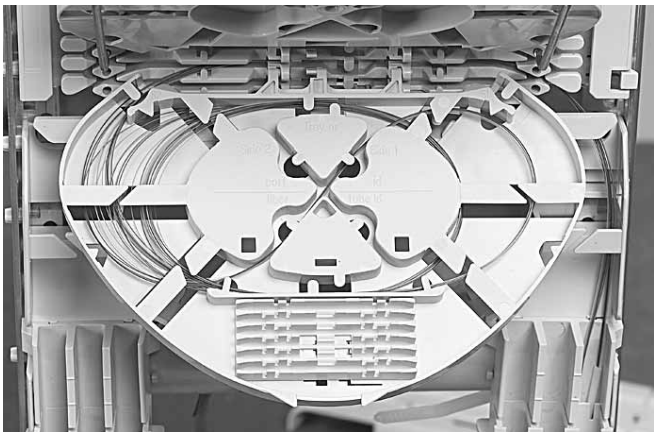
6.6 Identify the tray to be worked on and make it accessible. If the routing block and trays are in vertical position you will have to support the trays above the selected one using the tray wedge which fits in the holes of the wraparound groove plate. Position the wedge carefully such that the groove is still accessible for the fibers and be careful not to push the wedge against fibers. To remove the wedge,use two hands to pull on both ends (near the groove plate).



6.7 Route the fiber in the grooves of the wraparound groove plates to the entrance of the identified tray. Fiber must be routed in the groove below the hinge of the tray!



6.8 Pull gently on the fibers in the tray and make sure that the fibers are well contained in the routing block and wraparound groove plate.

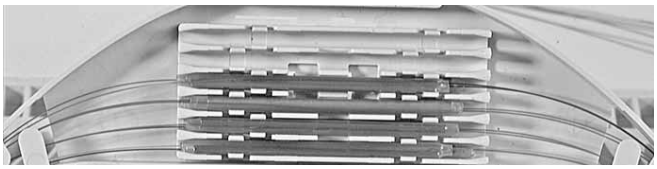


6.9 Store the fibers temporarily on a tray (picture shows the case of a loopback).

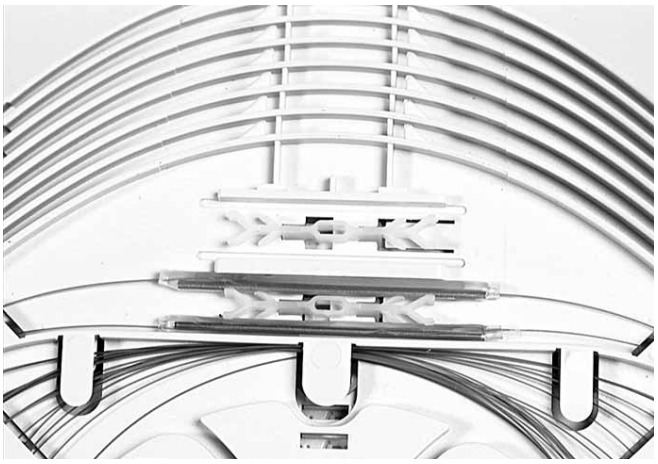
6.10 Storing dark fibers can be done in different ways.
1) Organise dark fibers into the different trays, following instructions as described.
2) Organise dark fibers together into the first available tray (i.e. with a max. of 24cut or 12 loops primary coated fibers in one SE-tray).

## 7 Fiber routing on tray

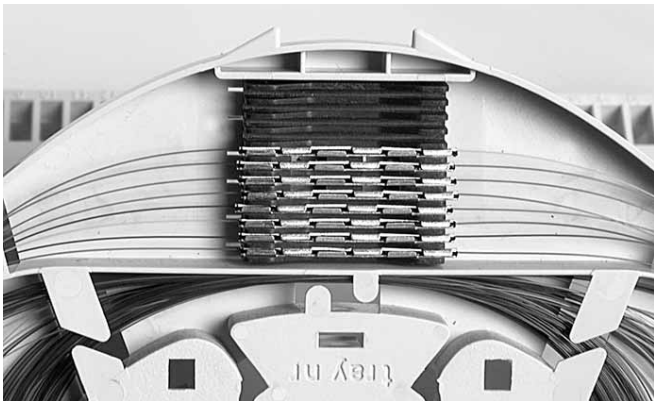
7.1 Take the splice protector and put it centred towards the splice holder



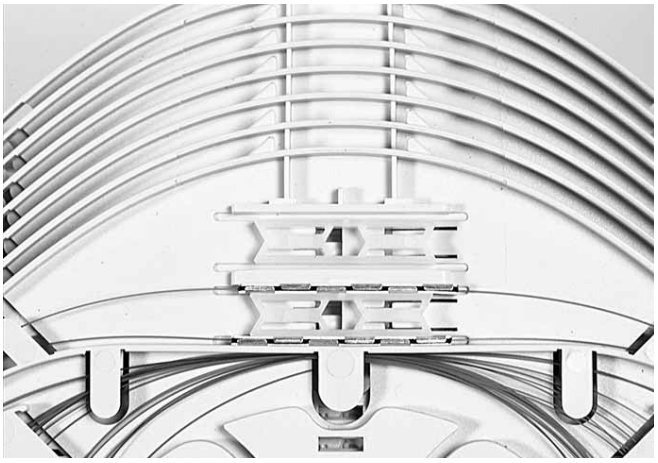
7.2 SMOUV in SE tray.



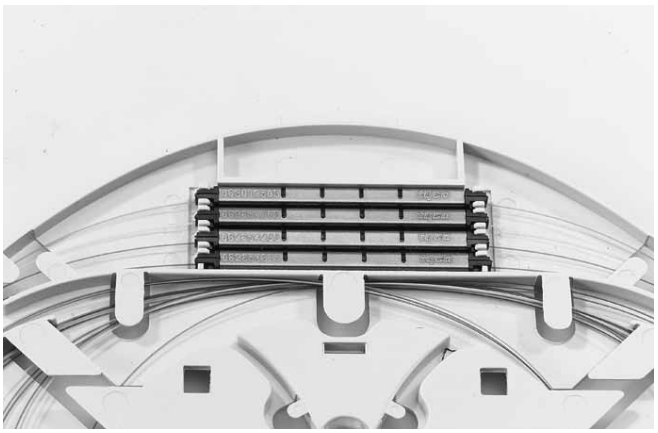
7.3 SMOUV in SC tray.



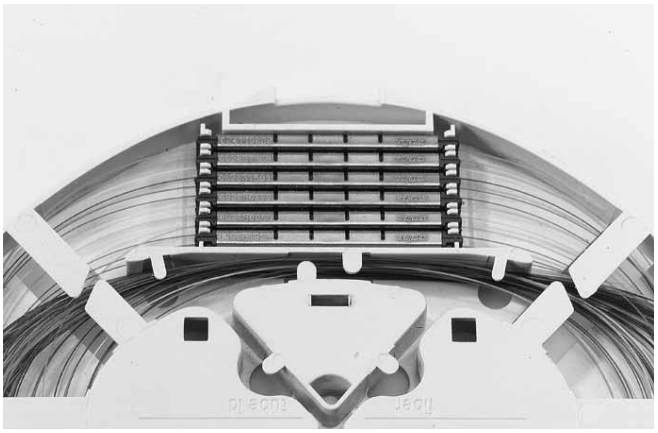
7.4 ANT in SE tray.



7.5 ANT in SC tray.

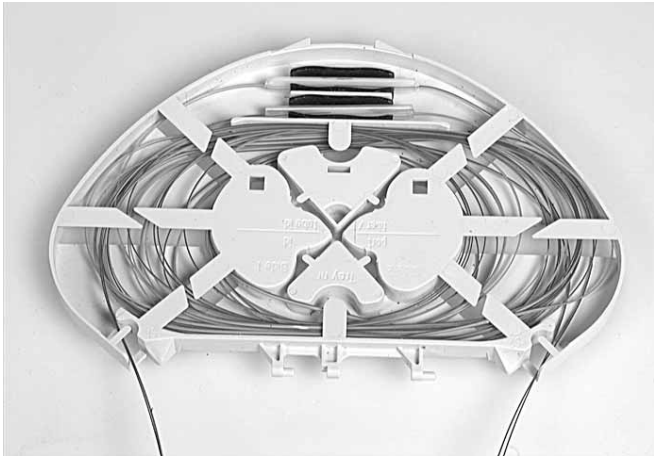


7.6 RECORDsplice in SC tray.

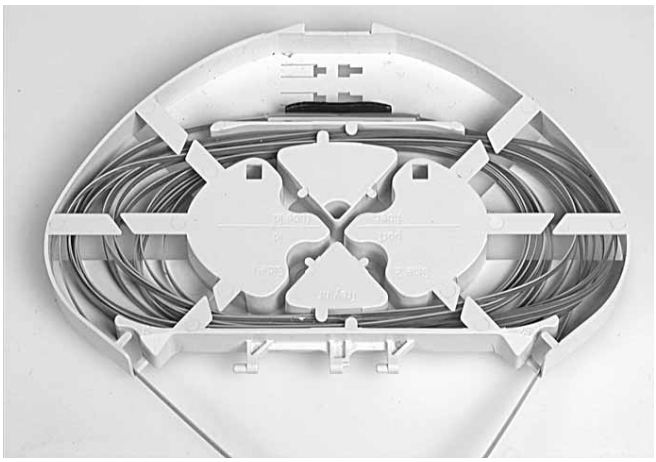


7.7 RECORDsplice in SE tray.

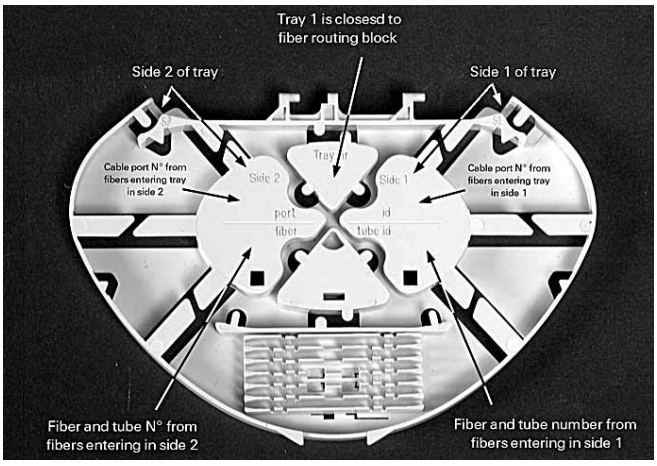
7.8 RECORDsplice/ANT in SC tray.



7.9 Ribbon 4/8 tray.

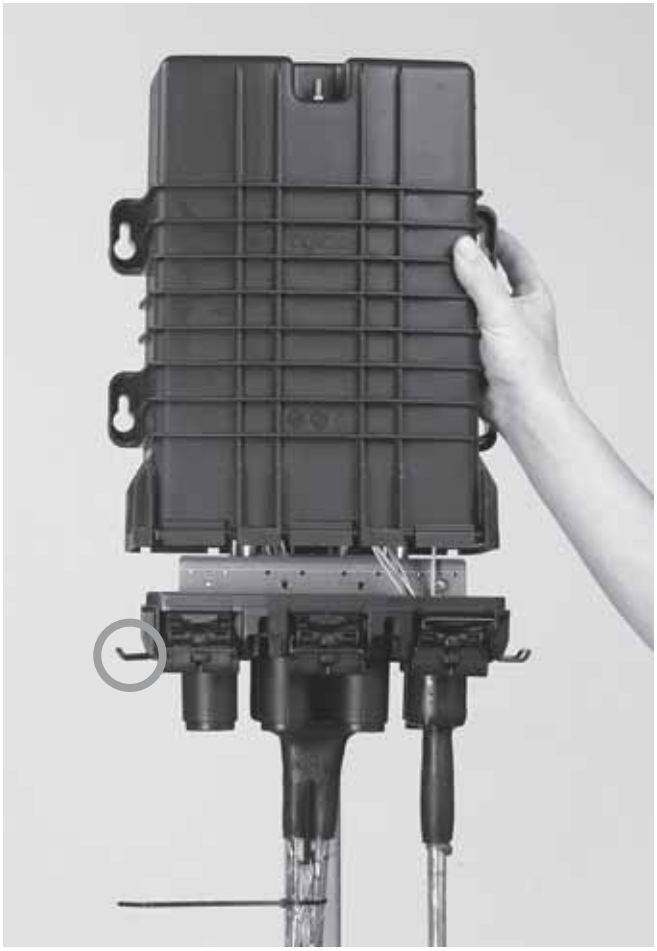


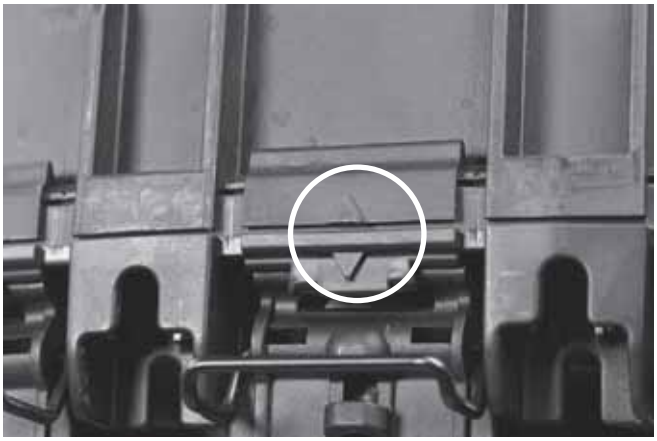
7.10 Ribbon 12 tray.



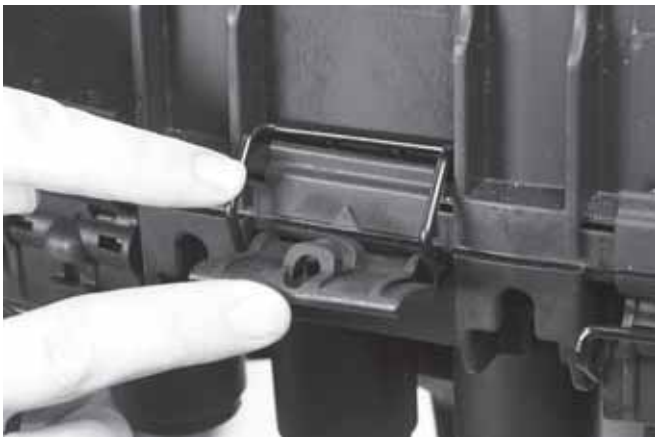

7.11 Use a permanent marker en to write on the tray.

## 8 Closing the closure





8.1 Remove the outer bag and place the silicagel in the closure. Check that all latches are in an open position. Place the O-ring back on a clean base and place the dome on top of it. Check whether the triangles of dome/base match.



8.2 Closing the latches with a screwdriver.

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