OASys® INTERNAL PLANT

GENERIC SUB-RACK 3A

Part Number: XPFSC00050 BT Item Code: 076040

Description

OPTICAL CABLE TERMINATION & FLEXIBILITY SUB RACK

Supplied in 'flat pack' format for easy handling.

Easily assembled within the equipment rack.

Front or rear mounting – ETSI, TEP 1E (RA90) OTIAN 1A OFR (FD02) and RA92 ETSI compatible.

Provision for pigtail/jumper cable storage. Jumper cable entry on right- or left-hand side from above or below.

Provision for optional patch panel upgrade kit (available August 2000).

REQUIRED SPACE ENVELOPE: 250 mm high (10SU/8VU) x 240 mm deep

Tools Required

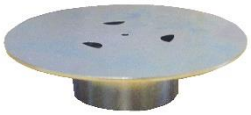
Additional Items:	**Prysmian Part No.**	**BT Item Code**
Rack Splicing Module	XPFSC00001	076041
Restraint Kit 2A	XAPSC00417	075869
Splice Protectors (pack of 50 – optional)	XPESC00053	075110
GSR Front Cover Kit (optional)	XPFSC00084	076047

Tools:	**Prysmian Part No.**	**BT Item Code**
Flush Cutting Tool 1A	XPFSC00150	076080
Pozidrive Screwdriver No.2	N/A	N/A
Flat Blade Screwdriver	N/A	N/A

Contents

This document describes the procedures necessary to carry out the following operations. Further assistance can be gained by contacting the Prysmian Helpline on 02380 608787.

GENERIC SUB-RACK COMPONENT PARTS (PICTURES NOT TO SCALE)

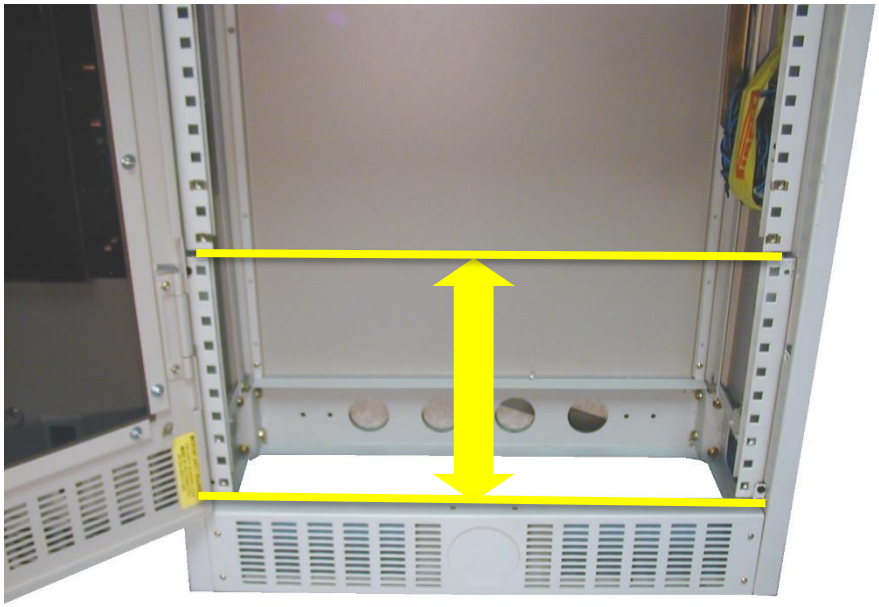
1 Mounting Brackets Qty 1 Pair 	**2 Bracket Mandrel Qty 2** 	**3 Base Plate Qty 1** 	**4 Top Plate Qty 1** 	**5 Pole Bush Qty 1** 
6 Top Hat Mandrel Qty 1 	**7 Breakout Unit Qty 3** 	**Fixings (Qty)** **8** Screw M4 x 30 Pozi Head **1** **9** Self Tapping Screw **2** **10** Screw M4 x 8 CSK Head **4** **11** Screw M4 x 8 Pozi Head **6** **12** M4 retaining washers **4** **13** Screw M6 x 12 Pozi Head **4** **14** M6 Cage Nut **4** **15** Screw M4 x 6 Socket Head **2** **16** Allen Key **1** **17** Cable Tie (3.6 x 295mm) **1**	**18 Pre-cut Tubes (770mm) Qty 6** 	**Assembled Sub-Rack** 

Rack Splicing Module Component Parts (Part Number XPFSC00001)

19 Cable Termination Assembly Qty 1 	**20 Splice Module Qty 12** 	**21 Bend Manager Qty 12** 	
22 Screw M4 x 8 mm Pozi Pan Head **Qty 5**	**23** M4 Retaining Washers **Qty 5**	**24** Pre-cut Grey Transport **Qty 6**	**Assembled Rack Splicing Module**
25 Coil of Grey Transport tube **Qty 2**	**26** Cable Ties **Qty 3**	**27** Fibre Threading Tube **1mtr**	

GENERIC SUB-RACK ASSEMBLY

Step 1



Identify the required mounting position within the equipment rack.
The space envelope required for the Generic Sub-Rack 3A (GSR3A) is:

Front Mounting (ETSI racks)

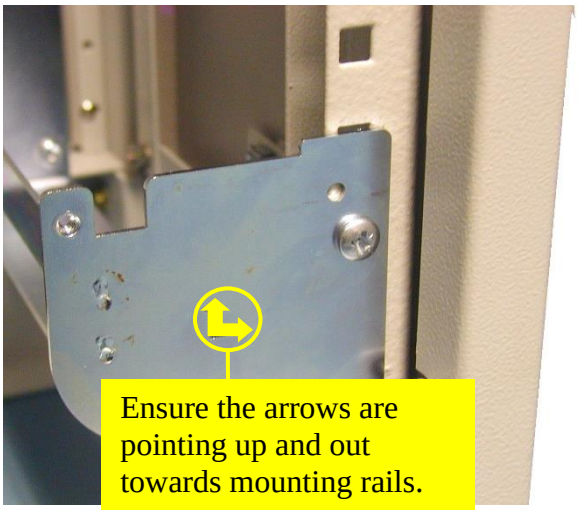
- 250 mm (10 SU)

Rear Mounting (TEP 1E & FD02 racks)

- 244 mm (8VU) for TEP-1E
- 250 mm (10 SU) for FD02

- Remove any existing inner rack brackets that may hinder installation.

Step 2

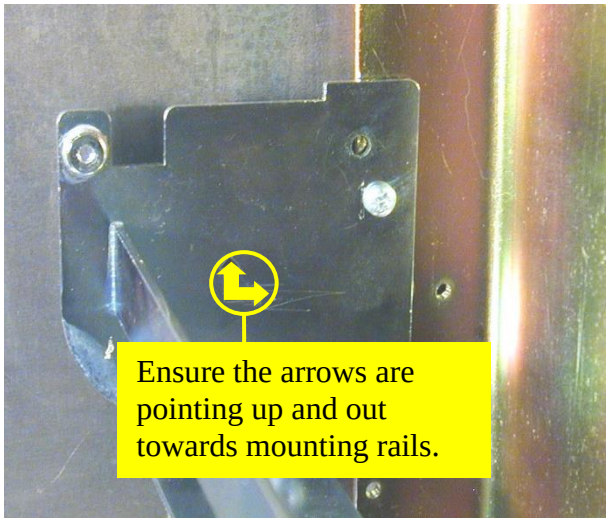


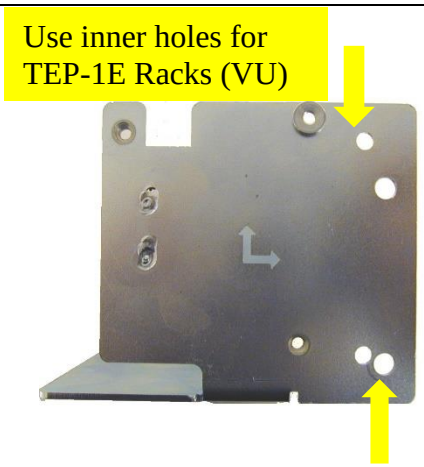
Front Mounting

- Select the pair of Mounting Brackets **(1)**. Arrange each bracket with the cut-out arrows towards the front of the rack with one arrow pointing upwards and the other towards the front mounting rail as shown.
- Fix four Cage Nuts **(14)** to the front rails at the appropriate mounting positions.
- Loosely secure the two Mounting Brackets using four M6 screws **(13)**.

INSTALLATION ADVICE
In certain circumstances it may be possible to pre-build the Sub-Rack before installing into the main rack.

Step 3





Rear Mounting

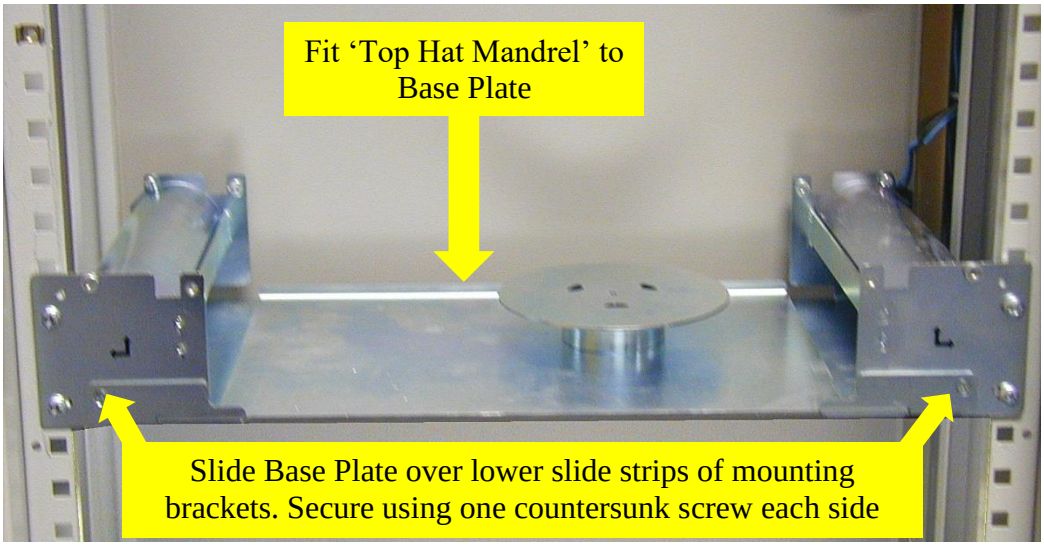
- Select the pair of Mounting Brackets **(1)**. Arrange each bracket with the cut-out arrows towards the rear of the rack with one arrow pointing upwards and the other pointing towards the mounting rail as shown.

- Working away from the rack, assemble two M4 screws **(11)** through the appropriate fixing holes and hold into place by fixing two retaining washers **(12)** on the rear face of the bracket.

- Loosely secure the brackets to the rear rails at SU positions 1 & 3 (VU positions 1 & 2 for TEP-1E racks) of the selected space envelope.

GENERIC SUB-RACK ASSEMBLY

Step 4



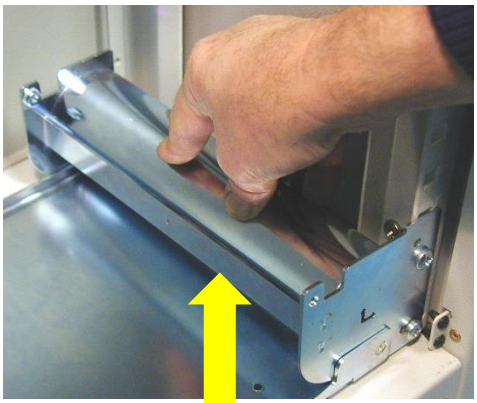
- Fix the 'Top Hat' Mandrel **(6)** to the Base Plate **(3)** using the M4 x 30mm screw **(8).** Fit onto the side of the Base Plate with the turned-up edges.

- Slide the Base Plate over the lower slide strips of the Mounting Brackets **(1)**. Align the holes in the front face of the Base Plate with the holes on the front face of the Mounting Brackets. Loosen the fixings on the front face (or rear) of the mounting Brackets from the mounting rails if necessary.

- Secure to the Mounting Brackets using two M4 Countersunk screws **(10)**. **Do not use any other M4 fixings for this operation.**

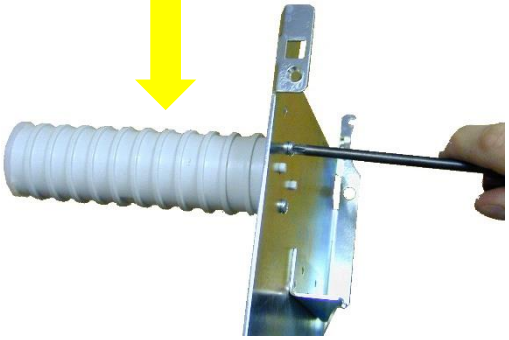
GENERIC SUB-RACK ASSEMBLY

Step 5



1. Assemble mandrels into bracket cradle

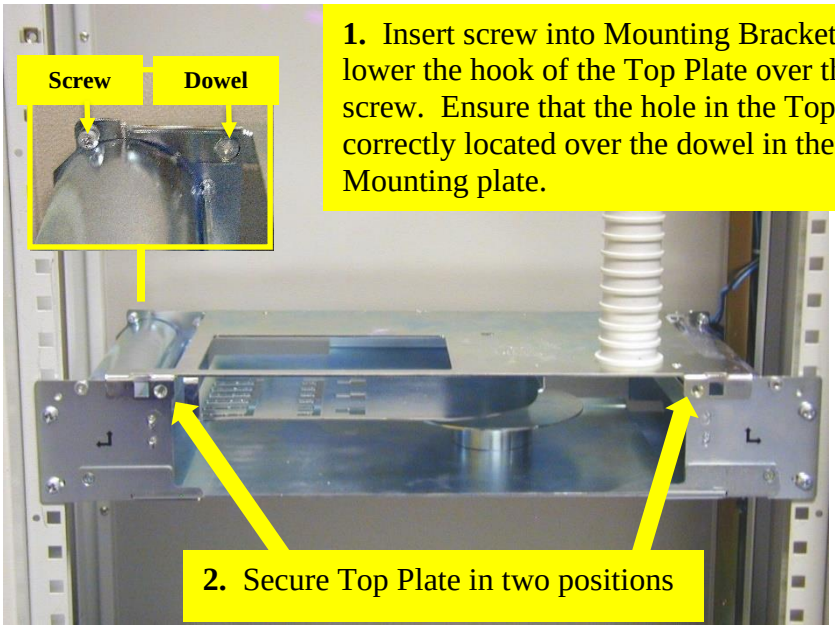
2. Fix Pole Bush to Top Plate



- Assemble the two Bracket Mandrels **(2)** into the cradles of the left- and right-hand Mounting Brackets. **Note**: the mandrels can be inserted either way around.

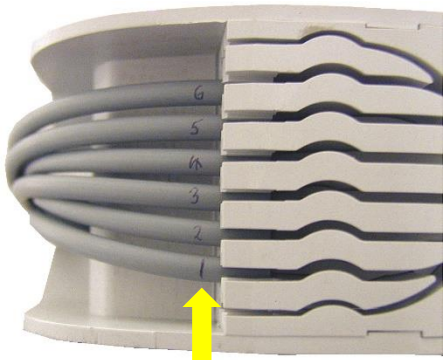
- Working away from the rack, assemble the Pole Bush **(5)** into the flat side of the Top Plate **(4)**. Start by locating the dowels of the bush into the plate holes, and secure from the underside using two self-tapping screws **(9)** as shown.

Step 6



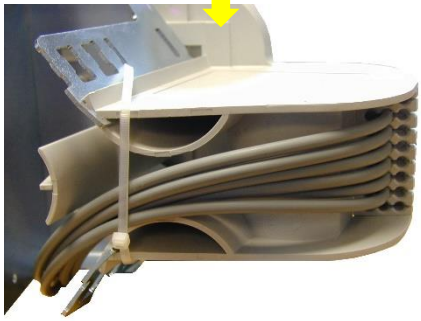
- Insert an M4 x 8 Pozi Head screw **(11)** into the hole at the rear of each Mounting Bracket **(1)**. Only insert the screws by a few turns.
- Locate the two hooks on the rear flange of the Top Plate **(4)** over the screws, ensuring that the two holes in the rear flange sit over the studs on the rear of the Mounting Brackets. Fully tighten the two screws.
- Align the holes in the front face of the Top Plate with the holes on the front face of the Mounting Brackets.
- Secure the Top Plate to the Brackets with two M4 countersunk screws **(10)**.

Step 7



Plug the tubes into the middle row of entry ports. Plug tube number one into the bottom port and plug the remaining tubes in sequentially.

Use a cable tie as shown to ensure that the tubes do not protrude past the outer edge of the CTA.

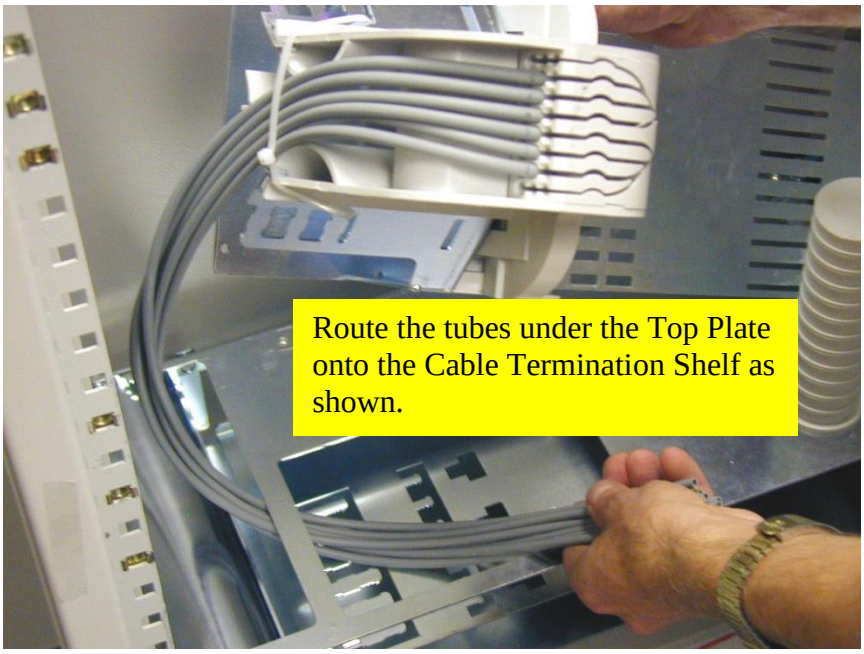


- Obtain the six lengths of Pre-cut Tubes **(18)** and number them 1 to 6 at both ends using a permanent marker pen**. NOTE**: For Access SDH applications, twelve transport tubes are supplied pre-fitted to the CTA. This is to allow the routing of higher fibre count cables.

- Plug one end of each tube into the middle row of the CTA **(19)** entry ports as shown above. Plug the tubes in sequentially so that the tube numbered 1 is at the bottom and the tube numbered 6 is at the top.

- Route the tubes around the CTA mandrel and down and fix a cable tie **(17)** around the CTA (through the upper and lower metal brackets) to form a bridge. This will prevent the tubes from protruding past the edge of the CTA.

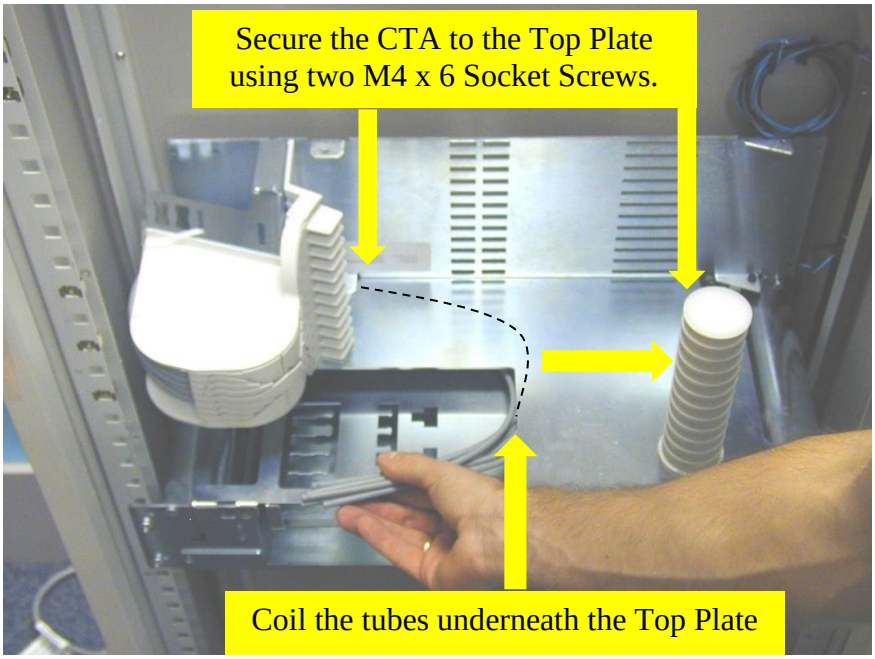
Step 8



- Route the tubes underneath the Top Plate **(4)** and onto the Cable Termination Shelf, which is built into the Top Plate.

- Lower the CTA Assembly **(19)** onto the Top Plate and align the two holes on the rear flange of the CTA with the fixing positions on the Top Plate.

Step 9



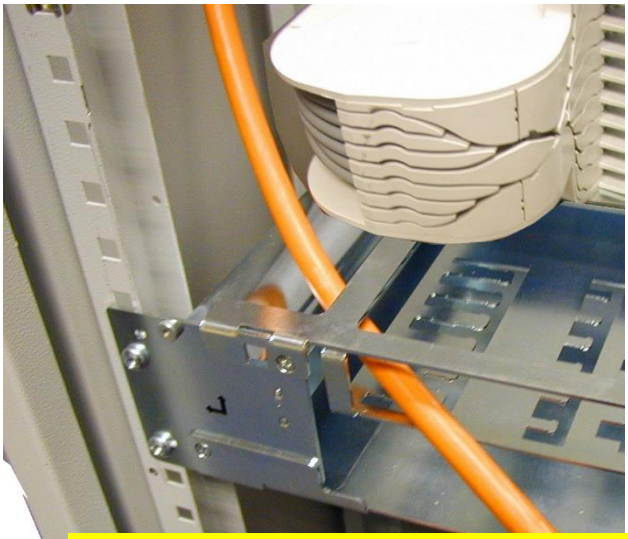
- Secure the CTA **(19)** to the Top Plate **(4)** using two M4 x 6 Socket Screws **(15)**.

- Temporarily store the tubes on the right-hand side of the Cable Termination Shelf.

The following operations require the use of cable ties. Cables ties must be hand tightened only, do not use mechanical aids. A Flush Cutting Tool 1A (Prysmian Part Number: XPFSC00150, BT Item Code 076080) must be used to cut off the excess cable tie tails, flush with the top of the cable tie ratchet block. This ensures that no sharp edges protrude from the top of the block. Refer to Installation Instruction IP010 supplied with the Flush Cutting Tool 1A for full instructions.

INPUT CABLE INSTALLATION

Step 10

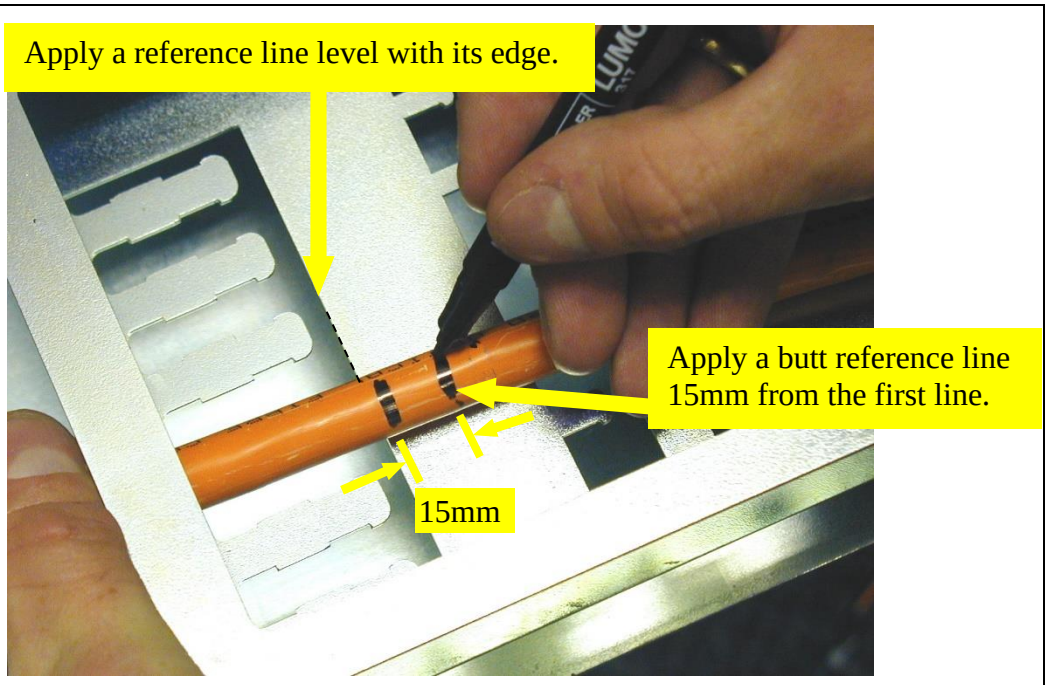


Run the cable down the left-hand side of the rack, past the mandrel and onto the cable termination shelf as shown.

- Run the input cable downwards on the left-hand side of the equipment rack.
- Feed the cable past the Bracket Mandrel **(2)** and route it between the Top Plate **(4)** and the Cable Termination Shelf as shown.
- Pull the cable through ensuring that at least 3 metres is available from the front of the Top Plate, for the jointing allowance. In some cases, more than 3 metres will be required. See the note in step 12.

INPUT CABLE INSTALLATION

Step 11

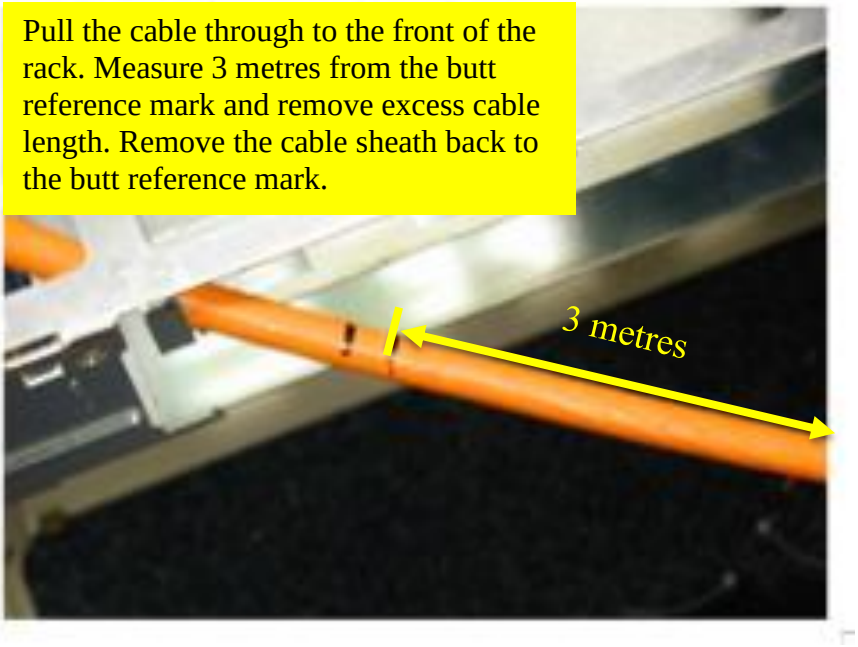


- Identify the appropriate cable termination position on the Cable Termination Shelf by referring to step 32.
- Hold the cable in position and mark a reference line level with the top edge of the first cut-out as shown.
- Mark a butt reference line 15mm from this mark as shown.

INPUT CABLE INSTALLATION

Step 12

Pull the cable through to the front of the rack. Measure 3 metres from the butt reference mark and remove excess cable length. Remove the cable sheath back to the butt reference mark.



- Position the cable at the front of the Top Plate **(4)** as shown to enable easy access.

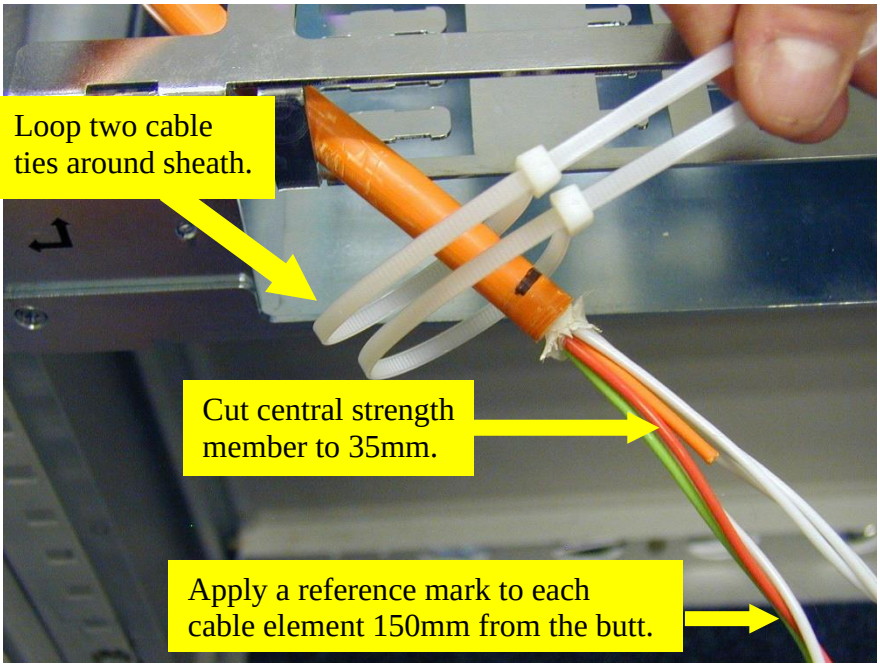
- Strip the cable sheath back to the butt reference line. Number the cable elements.

NOTE: For cables installed on a Generic Sub Rack 3A in a TEP-1E Optical Flexibility Frame at position VU58, 3.5 metres of sheath must be removed. In a similar manner, for a GSR3A installed at position VU68, the shelf will require 4.0 metres of sheath to be removed, and for a GSR3A installed at position VU78, the shelf will require 4.5 metres of sheath to be removed.

These additional lengths of fibre will allow the splicing machine to be used at normal working height.

INPUT CABLE INSTALLATION

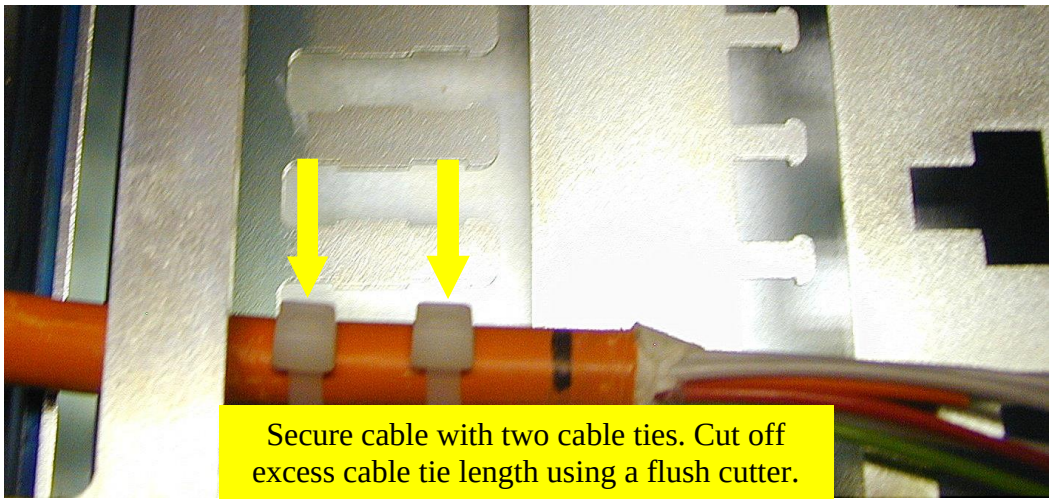
Step 13



- Cut the central strength member 35mm from the cable butt.
- Obtain two cable ties **(26)** and strap them around the cable, without fully tightening, to form two loops as shown.
- Apply a reference mark to each cable element 150mm from the cable butt.

INPUT CABLE INSTALLATION

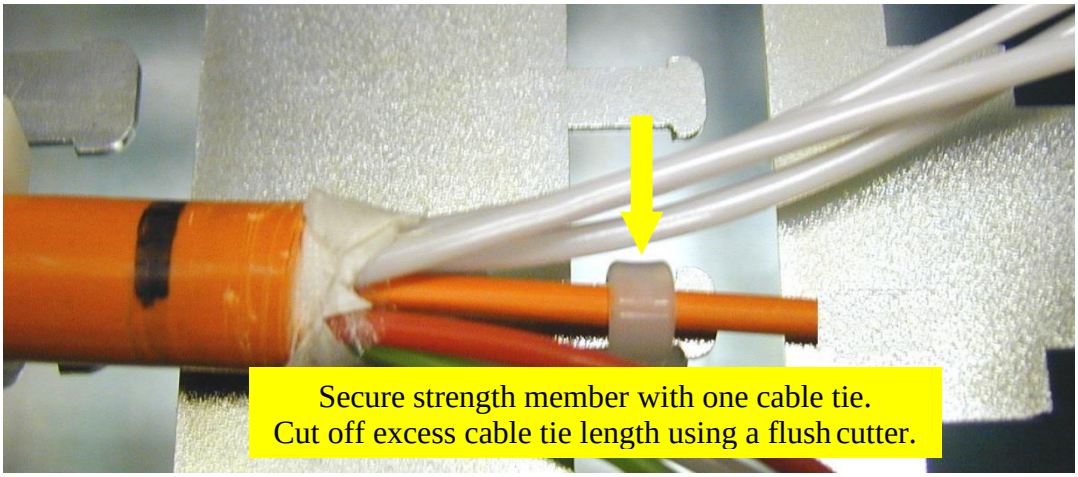
Step 14



- Position the cable over the appropriate cable termination position as identified from the table in step 32.
- Hook the cable ties around the securing tabs and tighten to anchor the cable as shown.

INPUT CABLE INSTALLATION

Step 15

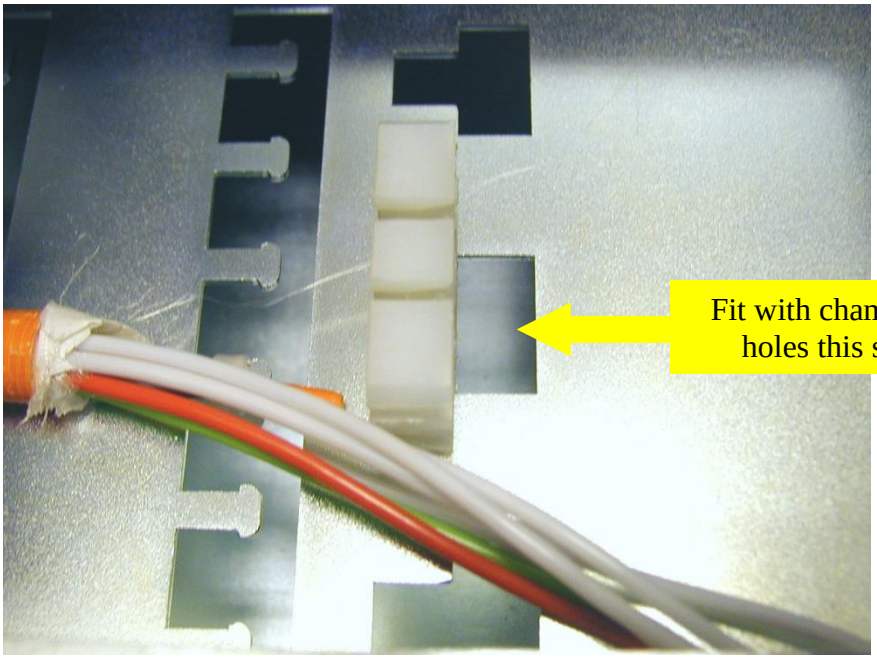


- Obtain a further cable tie **(26)** and secure the cable strength member to the smaller tab as shown.

- Cut off the cable tie tails flush with the top of the cable tie ratchet block using a Flush Cutting Tool 1A. Refer to the note at the top of the page.

INPUT CABLE INSTALLATION

Step 16

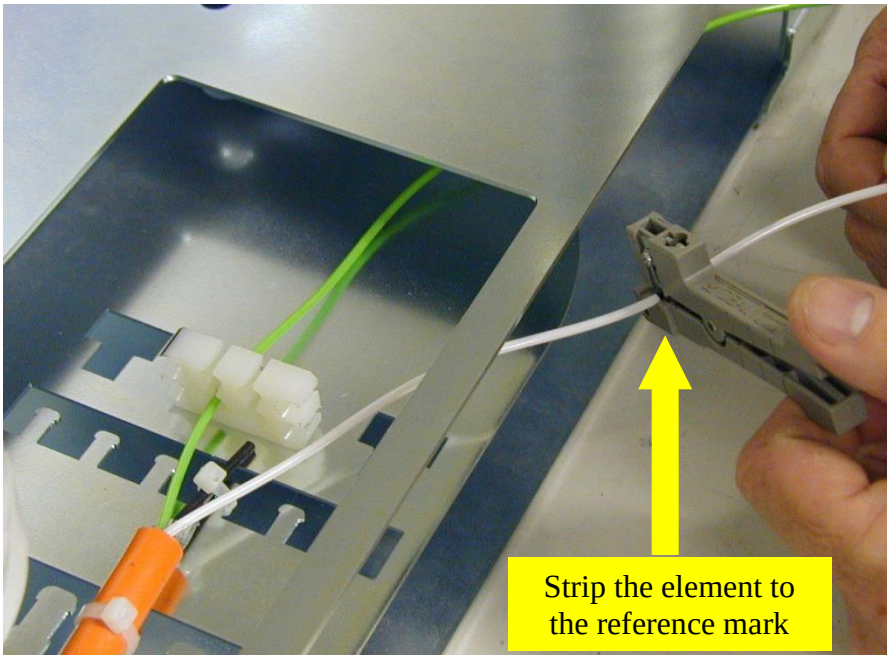


- Obtain the three Breakout Units **(7)** and position the first one with the chamfered holes to the right-hand side, over the 'T' shaped cut-out in the Cable Termination Shelf **(4)** nearest the cable.

- Push Breakout Unit down and slide towards cable butt until the stop position is reached.

INPUT CABLE INSTALLATION

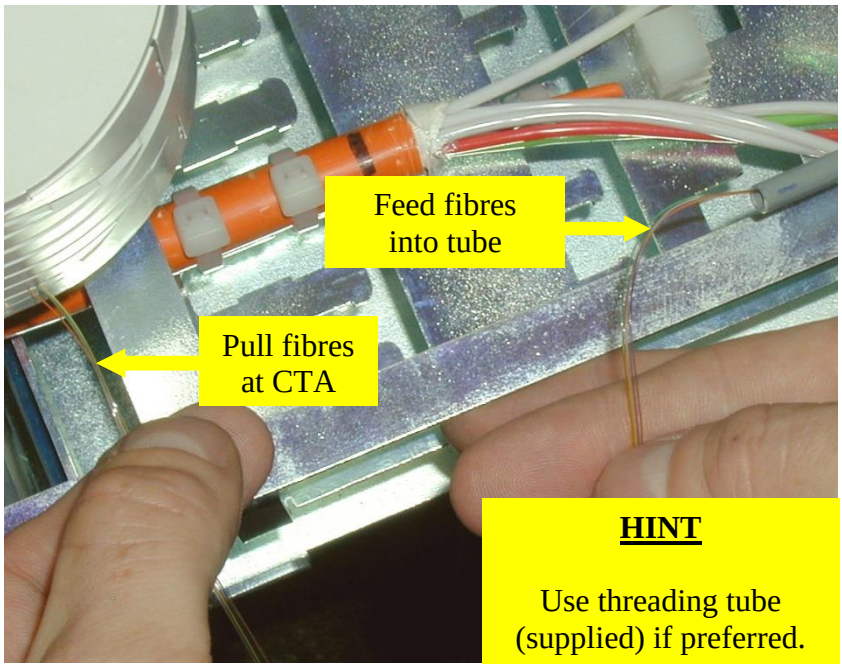
Step 17



- Identify the first cable element remove the tube to expose the fibres back to the reference mark applied earlier (150mm from the cable butt).

INPUT CABLE INSTALLATION

Step 18



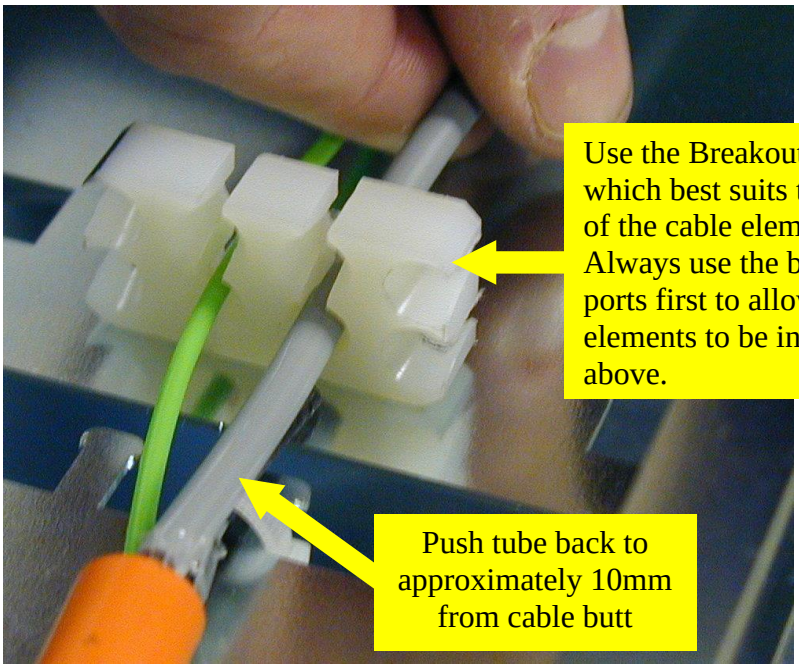
- Remove the coil of the six transport tubes stored on the shelf and obtain tube marked 1.
- Feed the fibres into the tube until they protrude at the entry port of the CTA **(19).**
- Continue feeding the fibres and gently pull them through at the CTA at the same time.

HINT

Use threading tube (supplied) to feed the fibres to the CTA if preferred.

INPUT CABLE INSTALLATION

Step 19

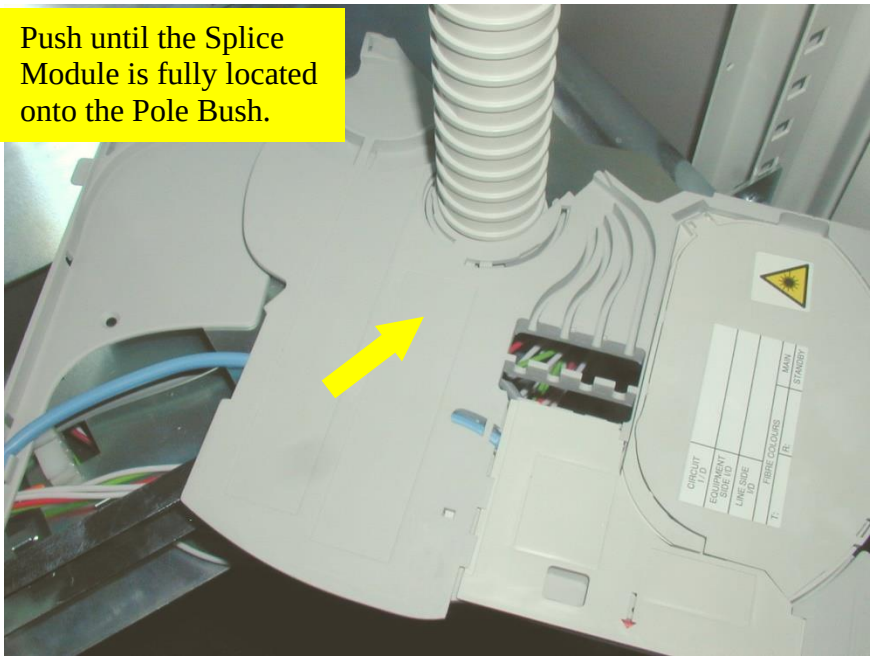


- Slide the transport tube over the fibres and the cable element and plug it into the appropriate Breakout Unit **(7)** port.
- Push the tube back until it's approximately 10mm from the cable butt.

NOTE: When using the Breakout Unit, use the port which best suits the layout of the cable elements. Always use bottom ports first to allow further cable elements to be installed above.

INPUT CABLE INSTALLATION

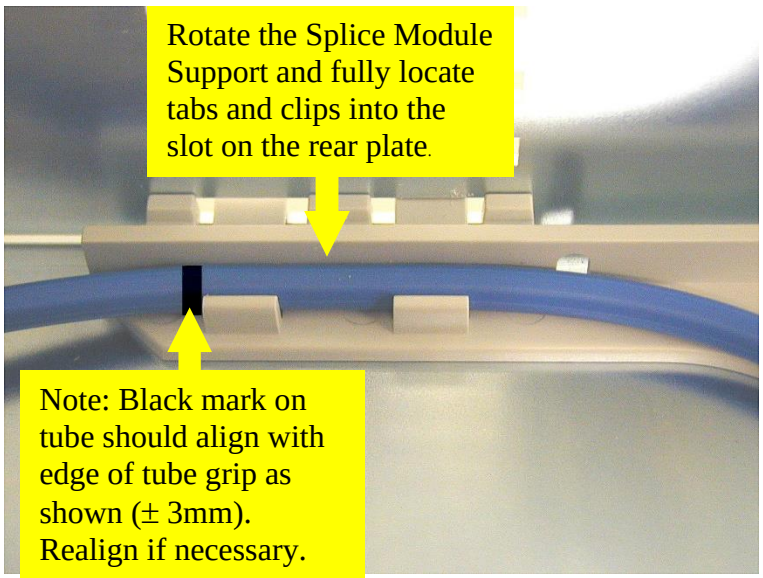
Step 20



- Select one Splice Module **(20)**.
- Fully open the Splice Module from its support as shown (A click should be felt).
- Offer the module to the first position on the Pole Bush as shown.
  The first position is indicated by its larger diameter.
- Fully locate the Splice Module onto the bush.

INPUT CABLE INSTALLATION

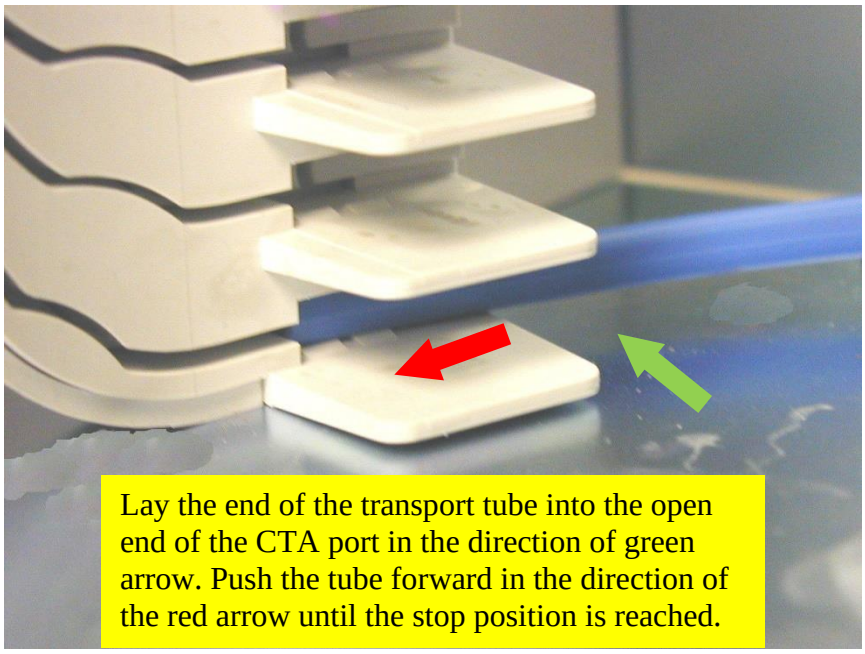
Step 21



- Do not load more than one Splice Module at this stage.
- Rotate the Splice Module Support and secure by locating the tabs into the slot of the CTA rear plate **(19)** as shown.

INPUT CABLE INSTALLATION

Step 22



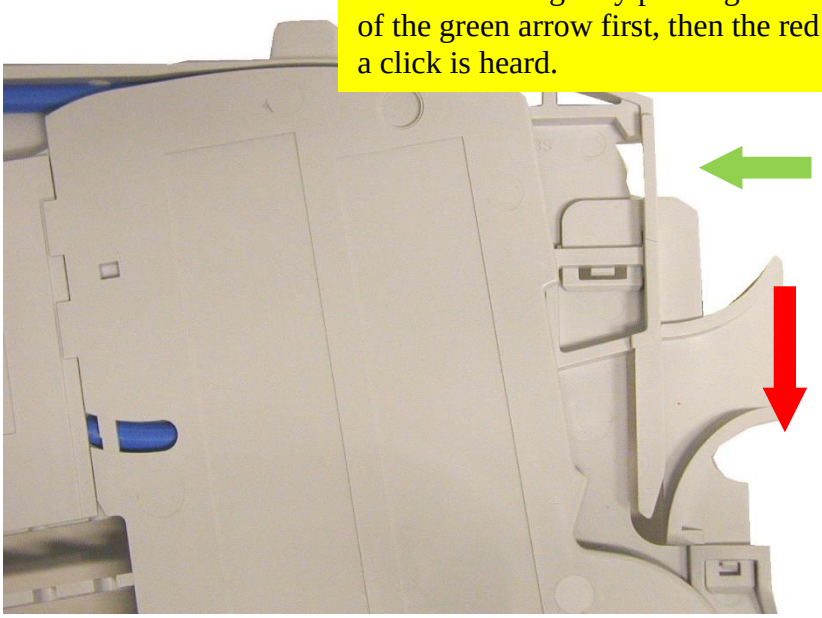
- Plug the free end of the Transport Tube into the corresponding port of the CTA manifold **(19)** ensuring that it is pushed right up to the stop. Check alignment of black tube mark in step 21.

- Fully close the Splice Module to ensure its correct location level into the CTA.

INPUT CABLE INSTALLATION

Step 23

Fit Bend Manager by pushing in the direction of the green arrow first, then the red arrow until a click is heard.



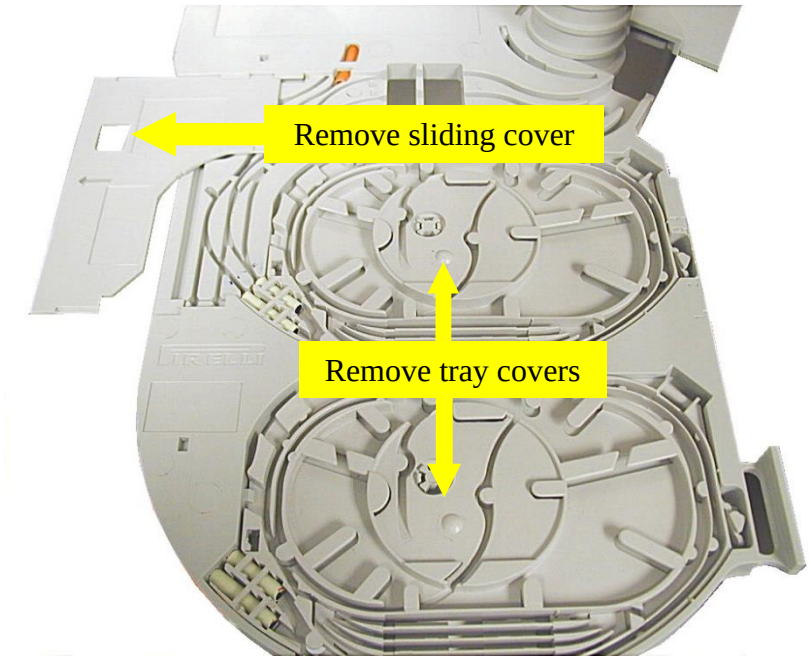
- Fully open the Splice Module and fit the Bend Manager **(21)** as shown. Ensure that both tab clips are correctly located.

WARNING

THE BEND MANAGER MUST BE FITTED AT THIS STAGE

INPUT CABLE INSTALLATION

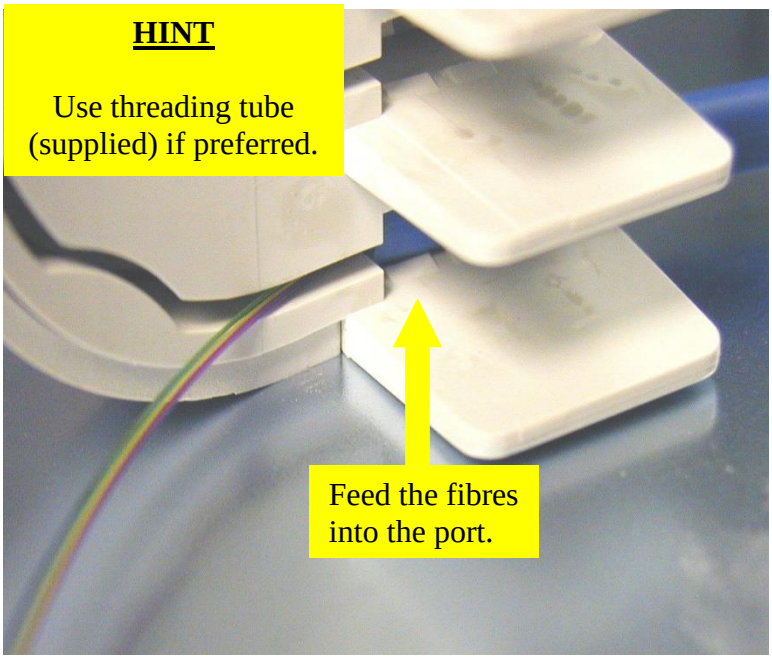
Step 24



- Open and remove both splice tray covers by releasing the clip accessed from the underside of the Splice Module. Remove the sliding cover of the Splice Module to reveal the fibre tracks and the fibre-guiding pin.

INPUT CABLE INSTALLATION

Step 25

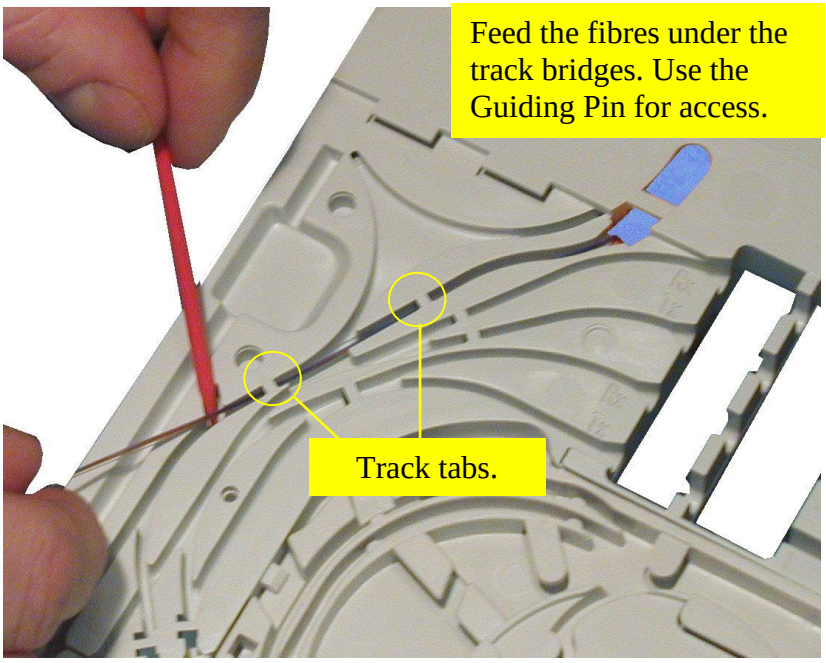


- At the CTA manifold **(19)**, split the fibres into their required groups.
- Feed the selected fibres into the first port until they emerge on the Splice module.

HINT: Use threading tube to feed the fibres onto the Splice Module if preferred.

INPUT CABLE INSTALLATION

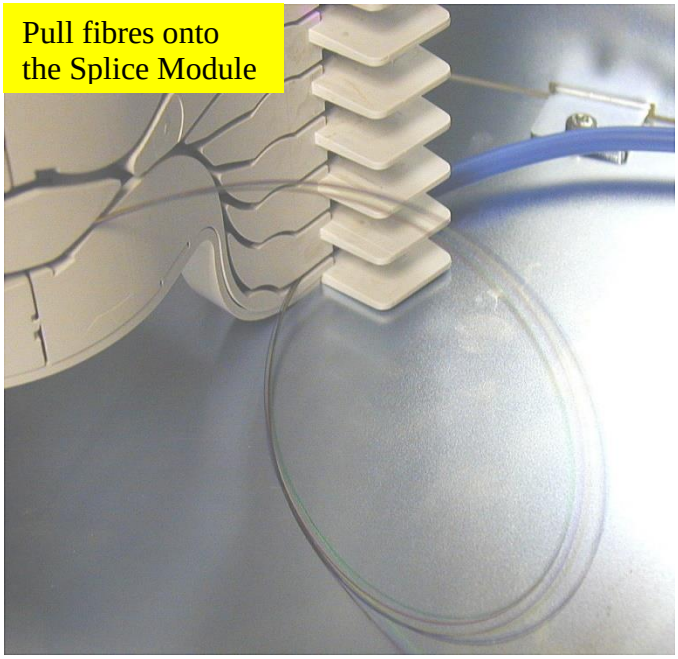
Step 26



- Continue feeding fibres onto the Splice Module, along the track, and under the first two track tabs. Use the Fibre Guiding pin to access the fibre ends.

INPUT CABLE INSTALLATION

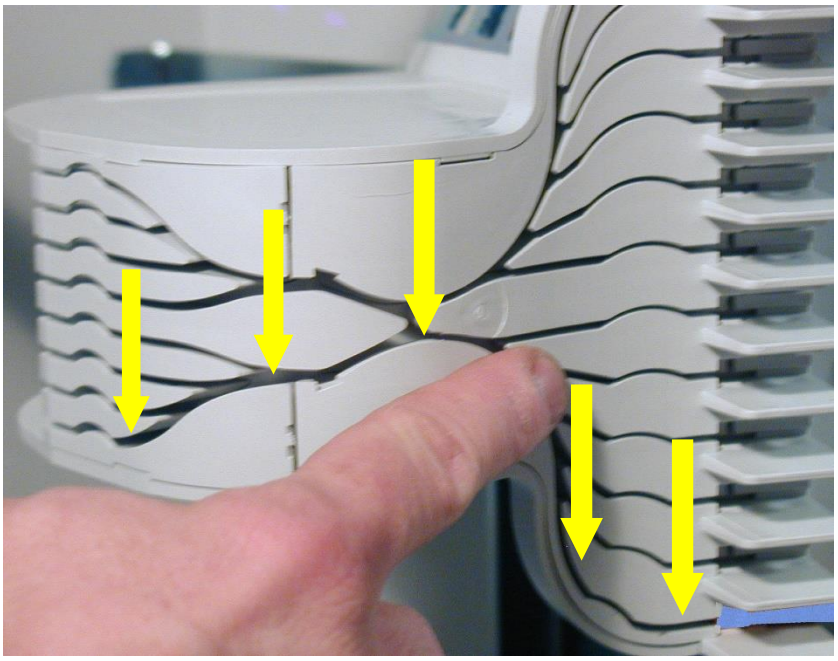
Step 27



- Pull the remaining length of the fibres onto the Splice Module, whilst carefully guiding the decreasing loop of fibre at the CTA manifold **(19).**

INPUT CABLE INSTALLATION

Step 28

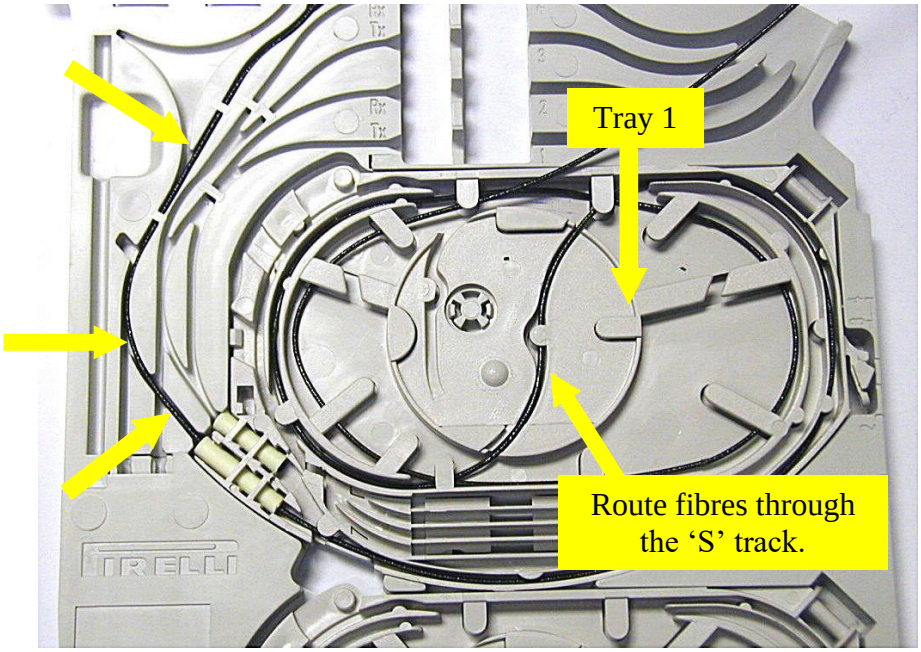


- Continue pulling the fibre using light finger pressure to guide all of the fibres into the deep slots of the CTA manifold **(19).** A light pulls on the fibre will ensure its correct location within the CTA.

- Ensure no fibres protrude out of the slots of the CTA manifold.

INPUT CABLE INSTALLATION

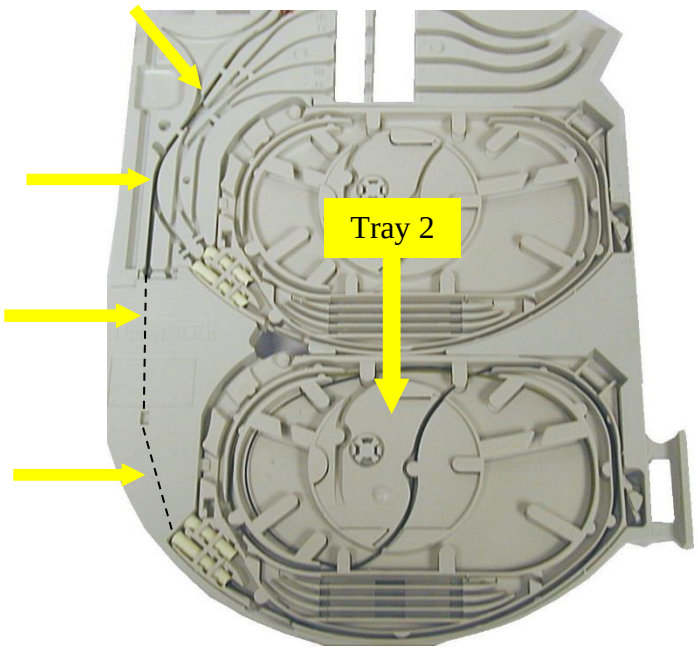
Step 29



- Segregate the fibres into their required groups.
- Route the first group onto splice tray 1 (nearest Pole Bush).
- Route the fibres anticlockwise ½ a turn around the tray, through the 'S' track and coil within the tray storage area for later use.

INPUT CABLE INSTALLATION

Step 30



- Route the second group of fibres through the outer hidden track (under the logo) onto splice tray 2 nearest the user.
- Coil the fibres as previously described.
- Check that all fibres are within their respective tracks.
- Replace the splice tray and module covers. Close the Splice Module.

INPUT CABLE INSTALLATION

Step 31

- Select a second Splice Module and assemble as before in the position directly above the installed module.

- Continue installation for the remaining cable elements.

- **Install the remaining Breakout Units (7) into the spare 'T' shaped cut-outs to ensure that they are kept safe for future use. Store the spare tubes into the Breakout unit to protect the ends.**

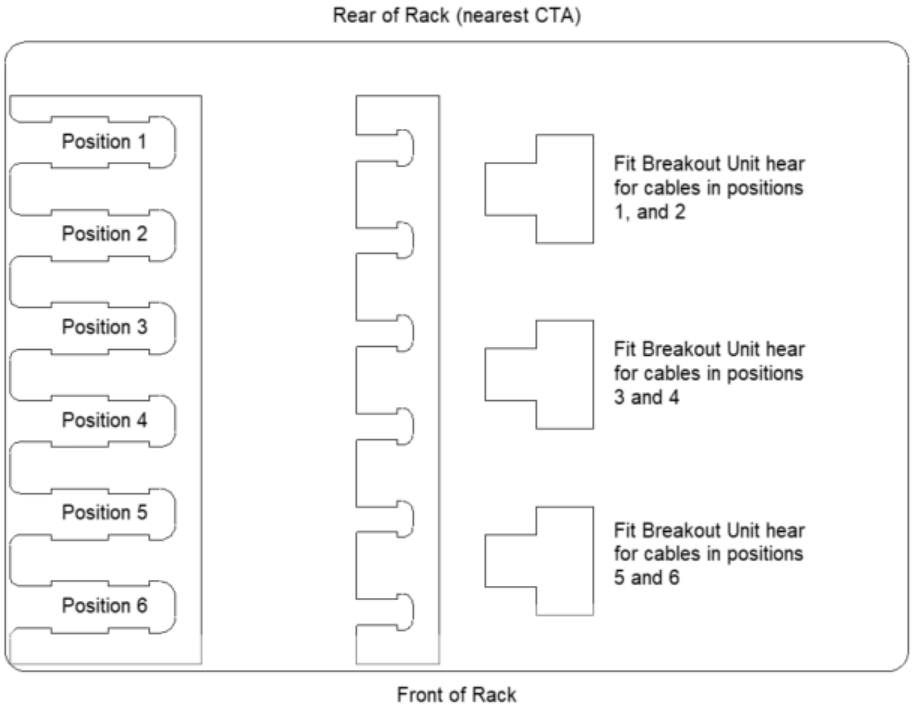
INSTALLATION ADVICE

Opening all the installed Splice Modules provides greater finger access to the Cable Termination Shelf. If finger access to the inside of the CTA manifold is restricted, leave the previously installed Splice Modules open.

Step 32

Cable Fixing Positions

The diagram opposite shows the cable fixing positions on the Cable Termination Shelf. Position 1 is at the rear of the plate nearest the CTA Assembly **(19)** and position 6 is at the front of the rack nearest the user.
Use the table below to determine the best available position for fixing the cable.



Step 32 continued

Installation of a Second Cable

- The table below is intended as a guide only. If followed it provides space at the front of the Sub-Rack for the installation of a second cable, thus making the installation easier.

- Installation of a second cable can be achieved using the same method as the first. This is described between step10 and step 31.

No. of Cables / Fibre Count	Fix Cable to Position	Comments
1 x 8 Fibre	1	Leave positions 2 to 6 free for the addition of extra cables
2 x 8 Fibre	1 and 2	Leave positions 3 to 6 free for the addition of extra cables
3 x 8 Fibre	1, 2 and 3	Leave positions 4 to 6 free for the addition of extra cables
4 x 8 Fibre	1, 2, 3 and 4	Leave positions 5 and 6 free for the addition of extra cables
5 x 8 Fibre	1, 2, 3, 4 and 5	Leave position 6 free for the addition of extra cables
6 x 8 Fibre	1, 2, 3, 4, 5 and 6	No further cables can be installed
1 x 16 Fibre	2	Leave positions 3 to 6 free for the addition of extra cables
2 x 16 Fibre	2 and 3	Leave positions 4 to 6 free for the addition of extra cables
3 x 16 Fibre	3, 4 and 5	Leave position 6 free for a maintenance cable
1 x 24 Fibre	4	Leave positions 5 and 6 free for the addition of extra cables
2 x 24 Fibre	4 and 5	Leave position 6 free for a maintenance cable
1 x 48 Fibre	5	Leave position 6 free for a maintenance cable

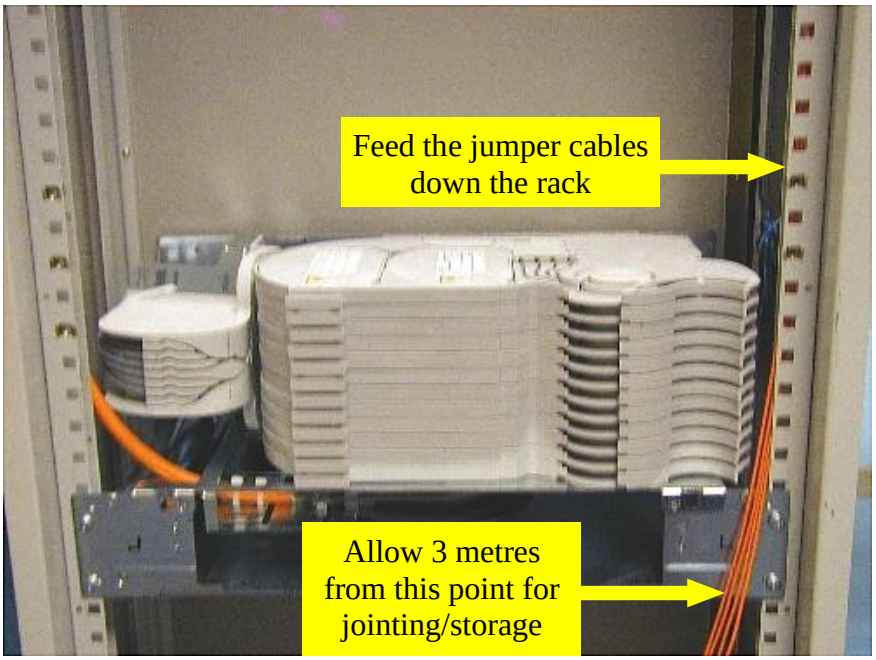
JUMPER CABLE INSTALLATION (ASSUMES ALL PRIMARY FIBRES ARE INSTALLED)

This procedure covers the installation of a pair of jumper cables into a fully populated Generic Sub-Rack 3A.

In cases where jumper cables enter the right-hand side of the Sub-Rack, it is important to ensure they do not cross over or tangle with cables routed to the splice module Bend Managers **(21)**. Reminders to this point are given in the steps below.

JUMPER CABLE INSTALLATION (ASSUMES ALL PRIMARY FIBRES ARE INSTALLED)

Step 33



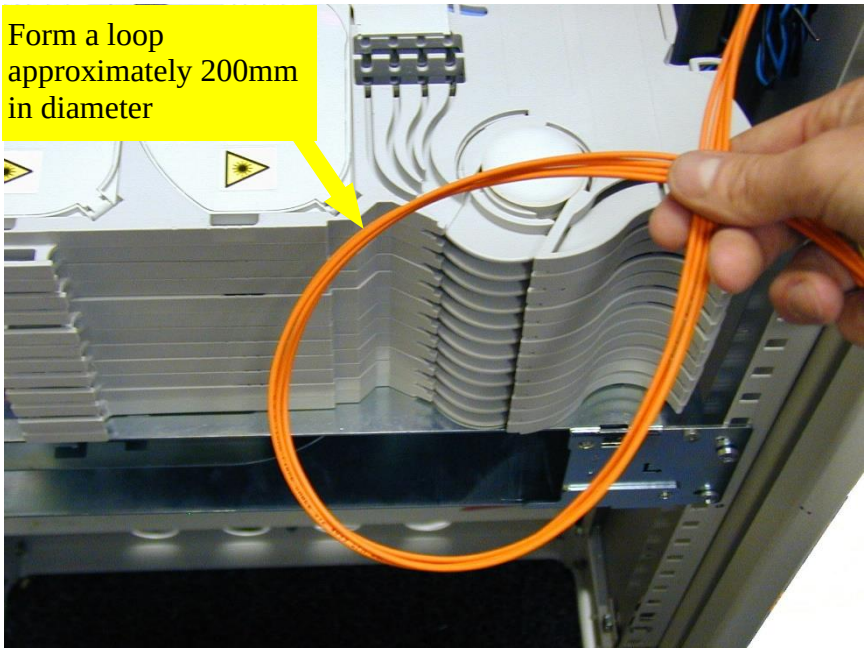
For left side jumper cables go to step 37:

For right side jumper cables:

- Feed the jumper cables down (or up) the right-hand side of the rack to the Sub-Rack. Allow 3 metres of jumper cable length from the front right-hand side of the sub-rack for jointing and storage.

JUMPER CABLE INSTALLATION (ASSUMES ALL PRIMARY FIBRES ARE INSTALLED)

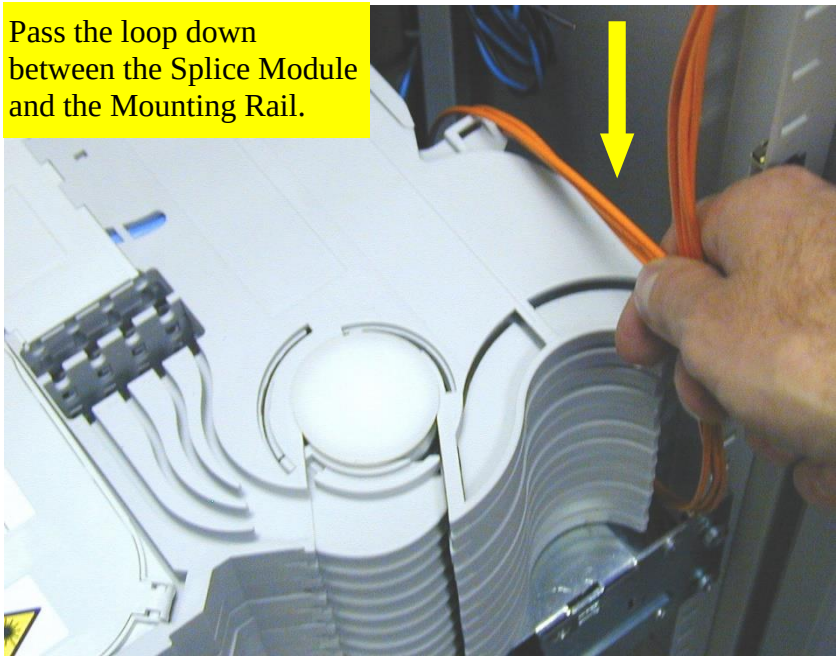
Step 34



- Form the cables into a loop approximately 200 in diameter. Feed the loop down the narrow slot between the module stack and the mounting rail on the right-hand side.

JUMPER CABLE INSTALLATION (ASSUMES ALL PRIMARY FIBRES ARE INSTALLED)

Step 35

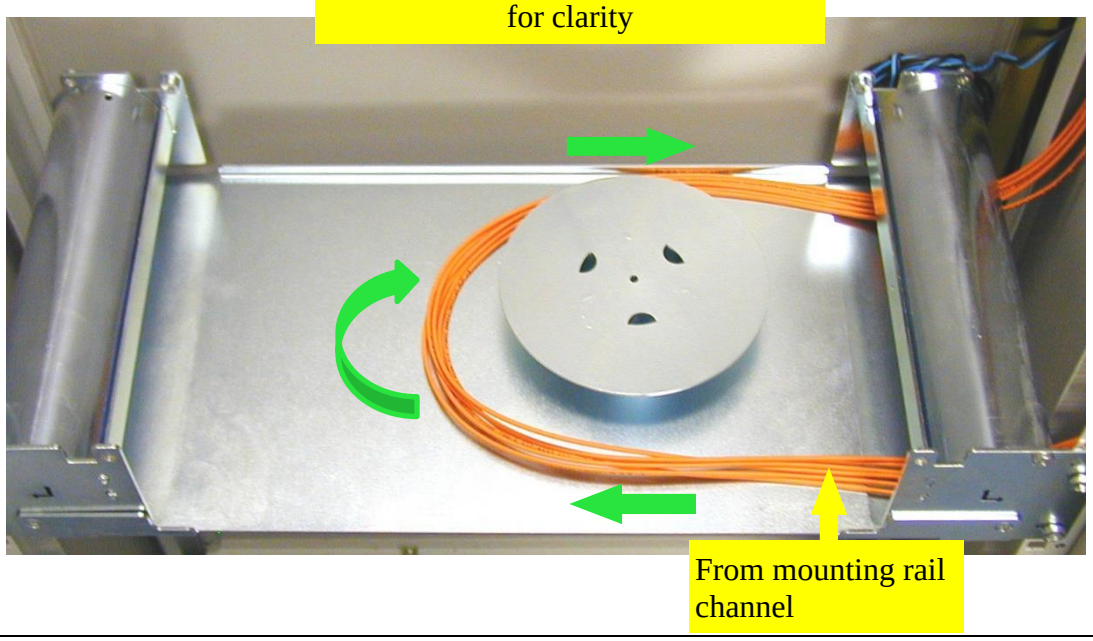


- Guide the loop under the Bracket Mandrel **(2)** and onto the Base Plate **(3)**.

Hint: Use a wire formed with a simple hook at one end to assist feeding the loop under the mandrel.

JUMPER CABLE INSTALLATION (ASSUMES ALL PRIMARY FIBRES ARE INSTALLED)

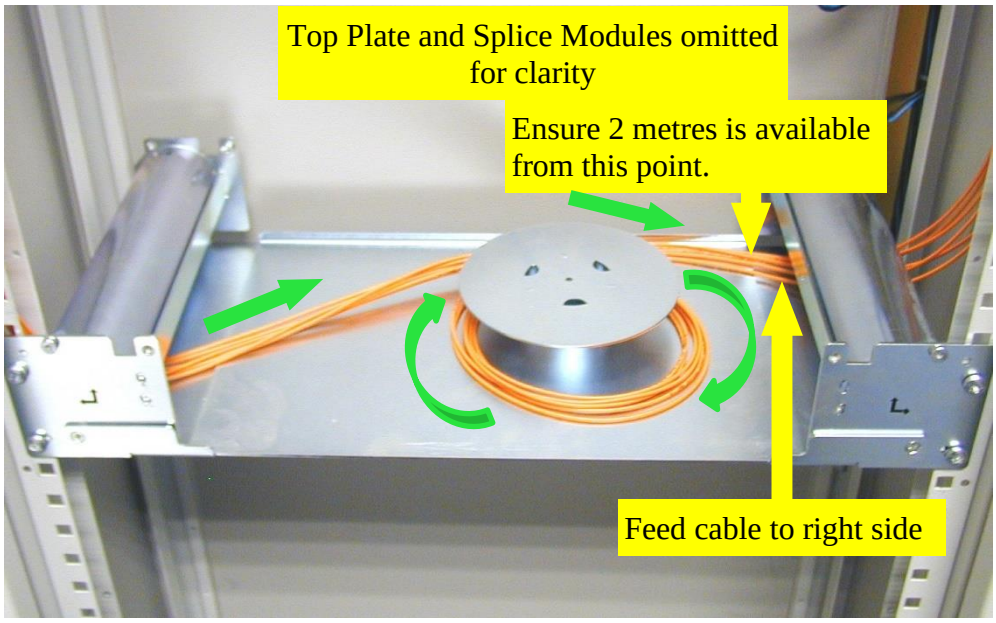
Step 36



- Pull approximately 60mm of the loop onto the Base Plate and route it over the 'Top Hat' Mandrel **(6)** as shown. Ensure the jumper cable ends do not cross over cables in the mounting rail channel. Go to step 38.

JUMPER CABLE INSTALLATION (ASSUMES ALL PRIMARY FIBRES ARE INSTALLED)

Step 37



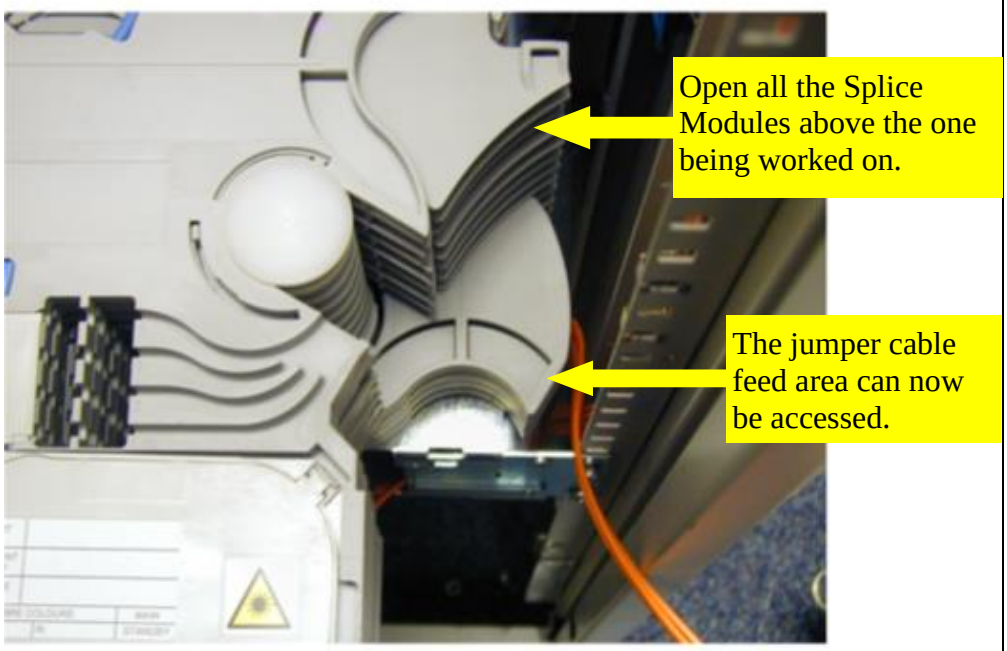
For left side jumper cables:

- Feed the cable ends across the Base Plate **(3)** and set into a loop around the Top Hat Mandrel **(6)** as shown.
- Feed the ends for jointing under the right-hand side Bracket Mandrel **(2)** and up to the right-hand side of the splice module stack.

Note: Ensure that 2 metres of cable length is available from the right side for jointing.

JUMPER CABLE INSTALLATION (ASSUMES ALL PRIMARY FIBRES ARE INSTALLED)

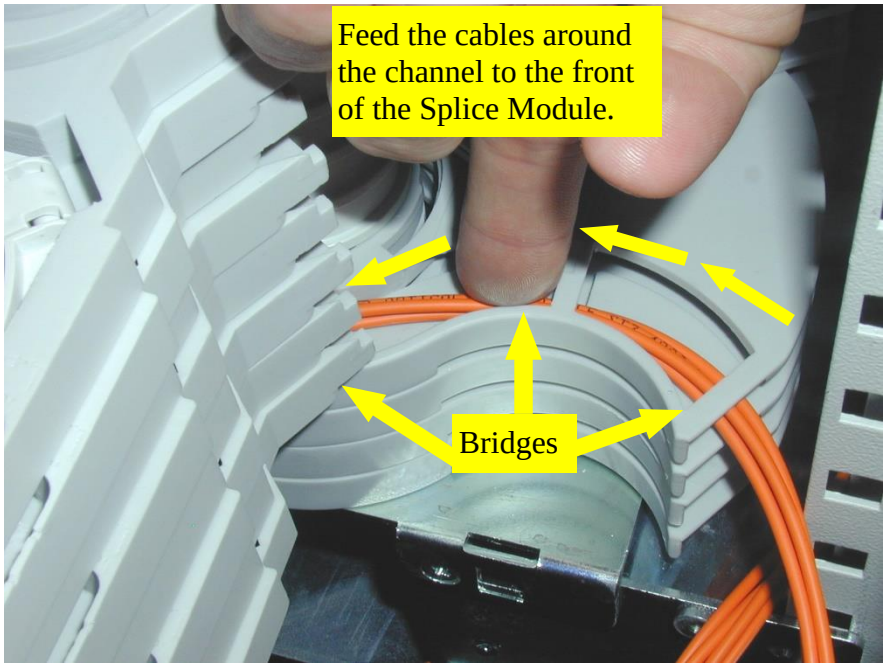
Step 38



- Identify the required Splice Module **(20)** and open all the Splice Modules above it to gain access to the jumper cable feeding area.

JUMPER CABLE INSTALLATION (ASSUMES ALL PRIMARY FIBRES ARE INSTALLED)

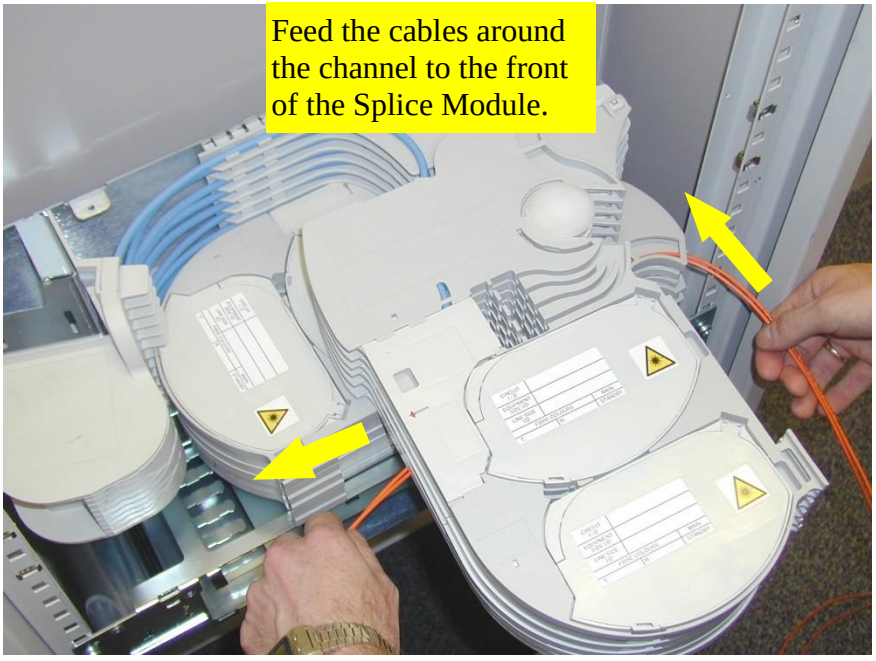
Step 39



- Feed the jumper cables around the channel until they protrude from the front of the Splice Module **(20)**. Ensure that the jumper cables are correctly located under the three channel bridges.

JUMPER CABLE INSTALLATION (ASSUMES ALL PRIMARY FIBRES ARE INSTALLED)

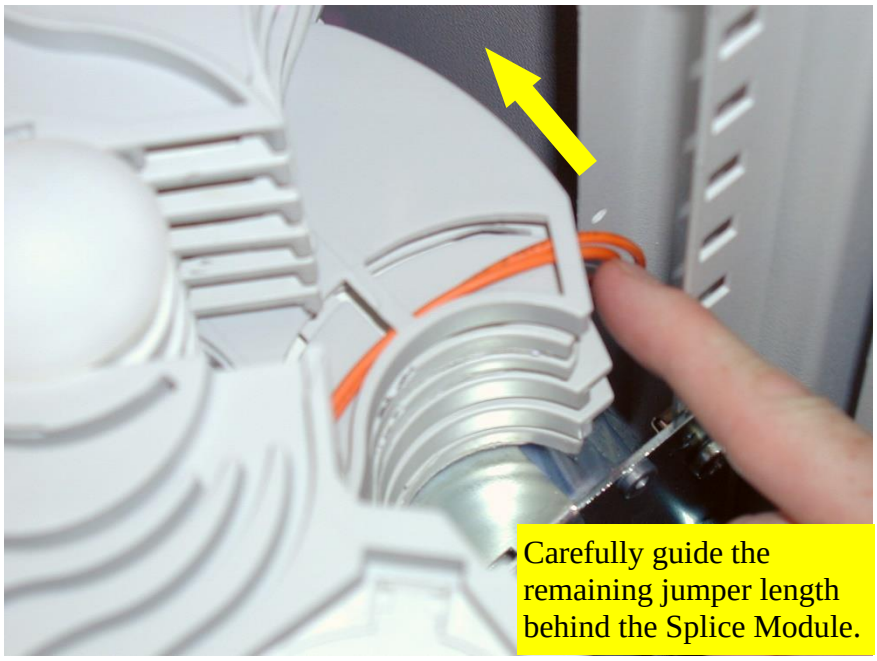
Step 40



- Pull the jumper cables through whilst feeding at the other end.

JUMPER CABLE INSTALLATION (ASSUMES ALL PRIMARY FIBRES ARE INSTALLED)

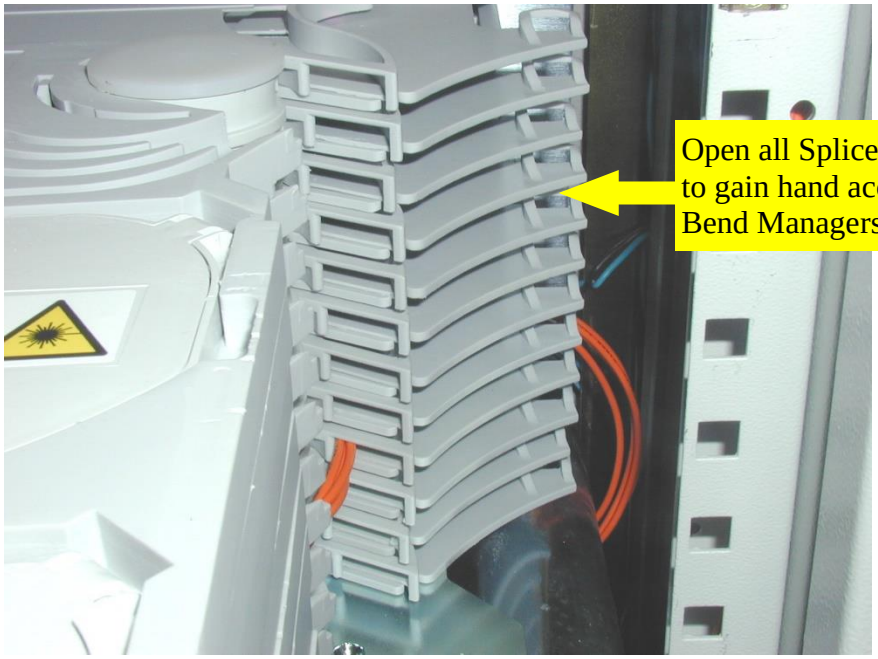
Step 41



- Continue pulling the cables through until nearly all the cable loop has been pulled through.
- Guide the remaining cable length back between the Splice Modules **(20)** and the Mounting Rail to prevent kinking as shown.

JUMPER CABLE INSTALLATION (ASSUMES ALL PRIMARY FIBRES ARE INSTALLED)

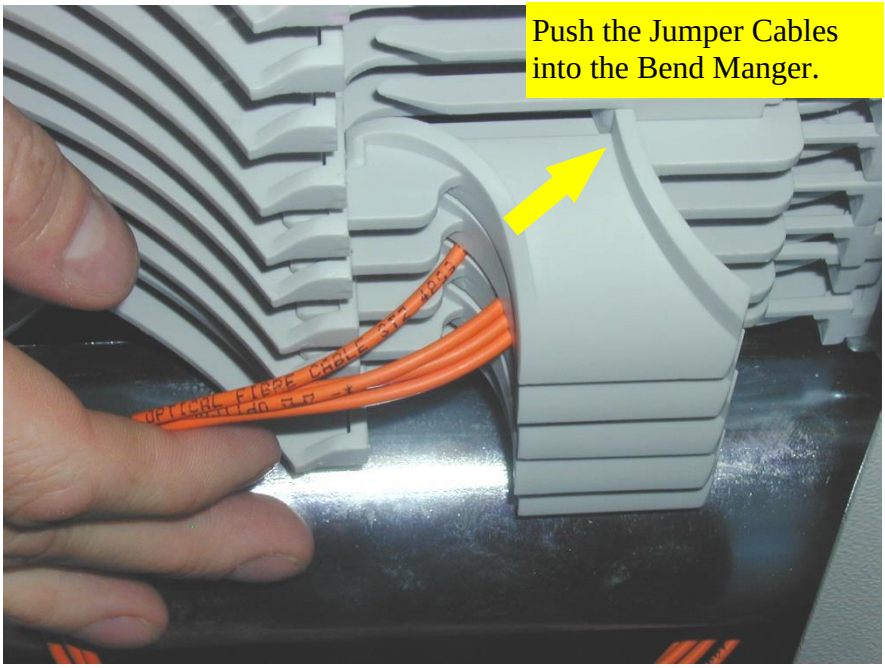
Step 42



- Open the Splice Module **(20)** to provide hand access to the Bend Managers **(21)**.

JUMPER CABLE INSTALLATION (ASSUMES ALL PRIMARY FIBRES ARE INSTALLED)

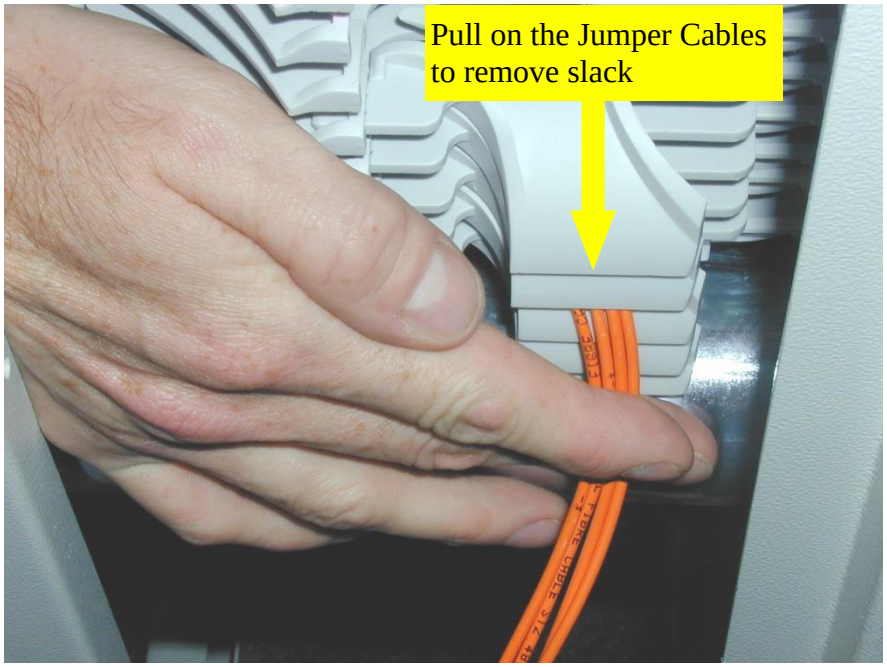
Step 43



- Push the jumper cables in the direction of the arrow above to locate them into the Bend Manager **(21)**.
- Ensure that the cables are correctly located into the bend manager.

JUMPER CABLE INSTALLATION (ASSUMES ALL PRIMARY FIBRES ARE INSTALLED)

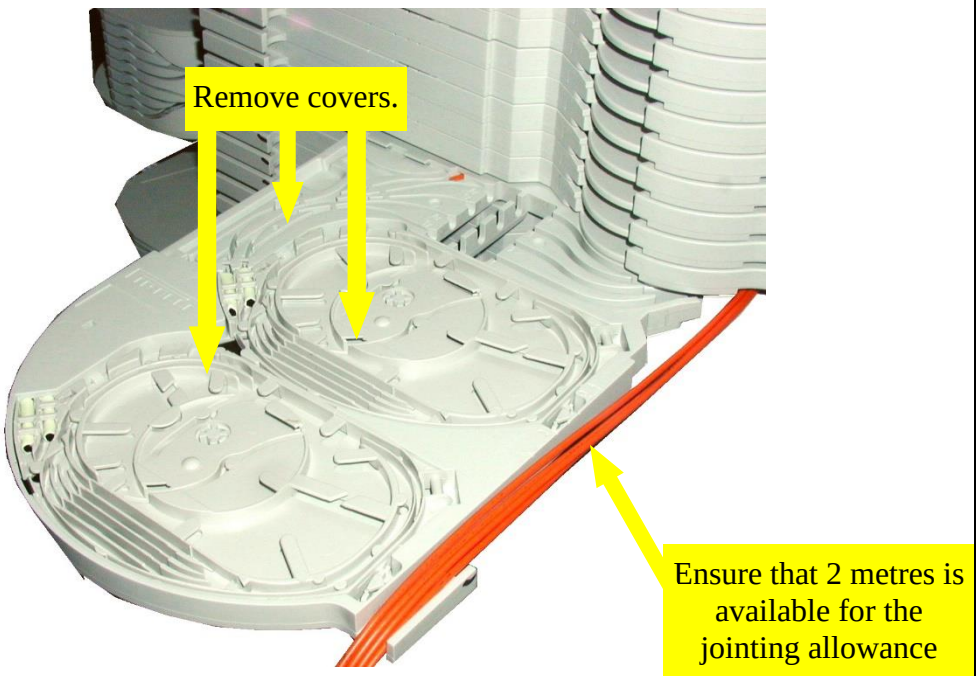
Step 44



- Pull the jumper cables to remove slack.

JUMPER CABLE INSTALLATION (ASSUMES ALL PRIMARY FIBRES ARE INSTALLED)

Step 45

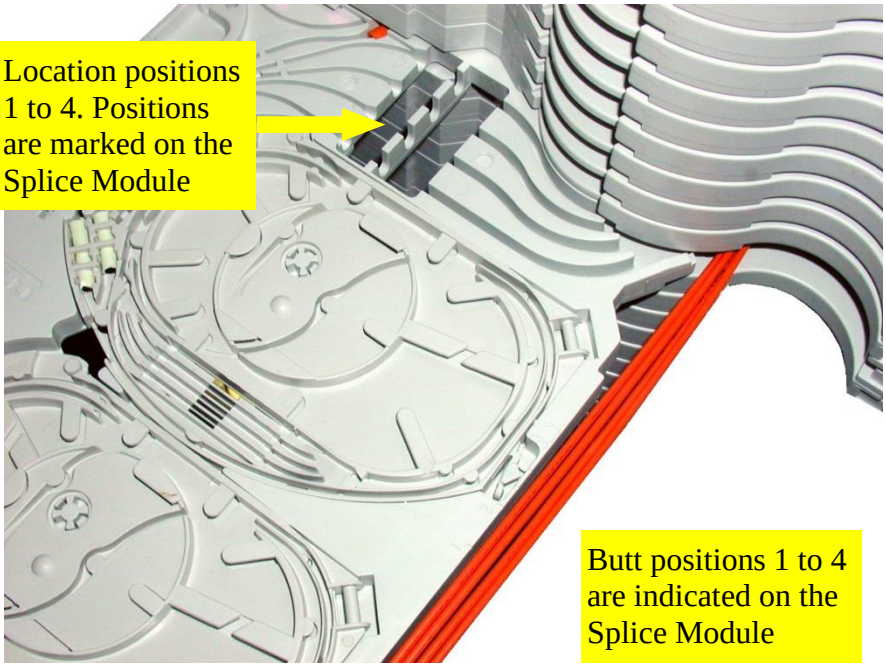


- Close all the other Splice Modules **(20)**.
- Remove both splice tray covers and the module cover.
- Ensure all jumpers cable ends are fed through to their appropriate level and that 2 metres is available for the jointing allowance.

NOTE: The following step requires the user to assemble a KRK device onto the COF 8001 cable. For Access SDH applications, two COF 8001 cables are to be fitted into one Restraint device. Refer to Installation Instruction IP008 supplied with the KRK kit for detailed instructions.

JUMPER CABLE INSTALLATION (ASSUMES ALL PRIMARY FIBRES ARE INSTALLED)

Step 46

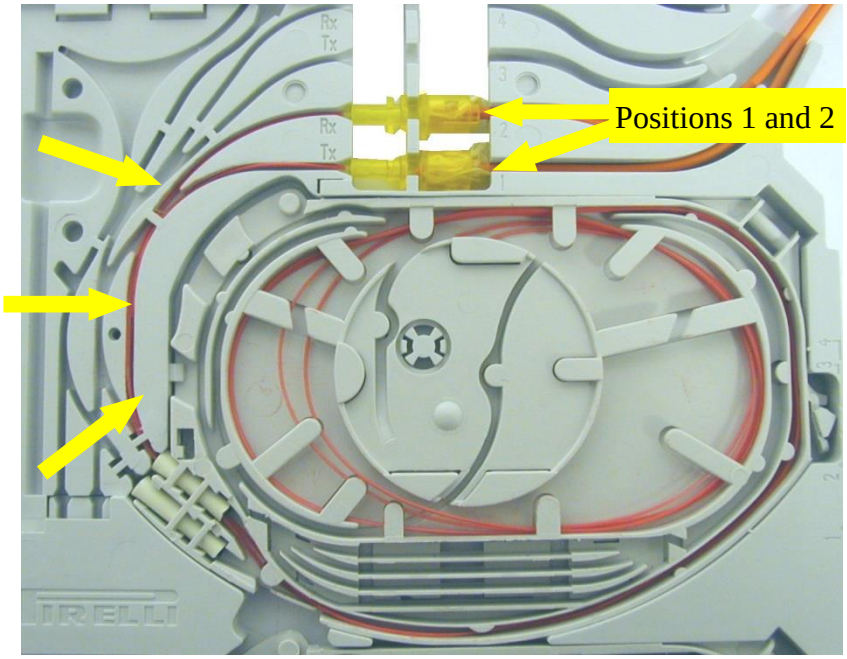


- Apply a butt mark to each jumper cable in accordance with its planned position within the Splice Module **(20)**. Positions 1 and 2 are for routing to splice tray 1 and positions 3 and 4 are for routing to splice tray 2.

- Remove the sheath to the butt mark. Prepare aramid yarn and assemble a Restraint device (not supplied) to each cable in accordance with instructions supplied with restraints.

JUMPER CABLE INSTALLATION (ASSUMES ALL PRIMARY FIBRES ARE INSTALLED)

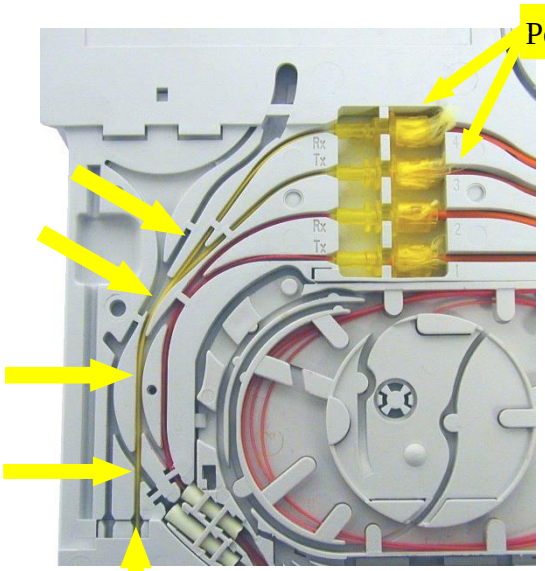
Step 47

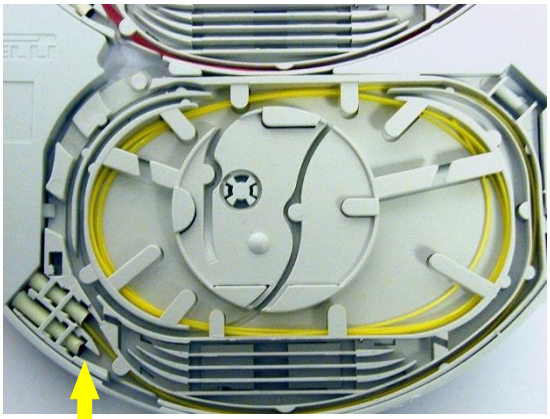


- Assemble restraints 1 and 2 onto the Splice Module **(20)** in their numbered positions.
- Route the secondary coated fibres in their individual tracks (under the tabs) to the inner port of splice tray 1 as shown.
- Coil the fibres anti-clockwise around the tray and store beneath the tray tabs for later use.

JUMPER CABLE INSTALLATION (ASSUMES ALL PRIMARY FIBRES ARE INSTALLED)

Step 48

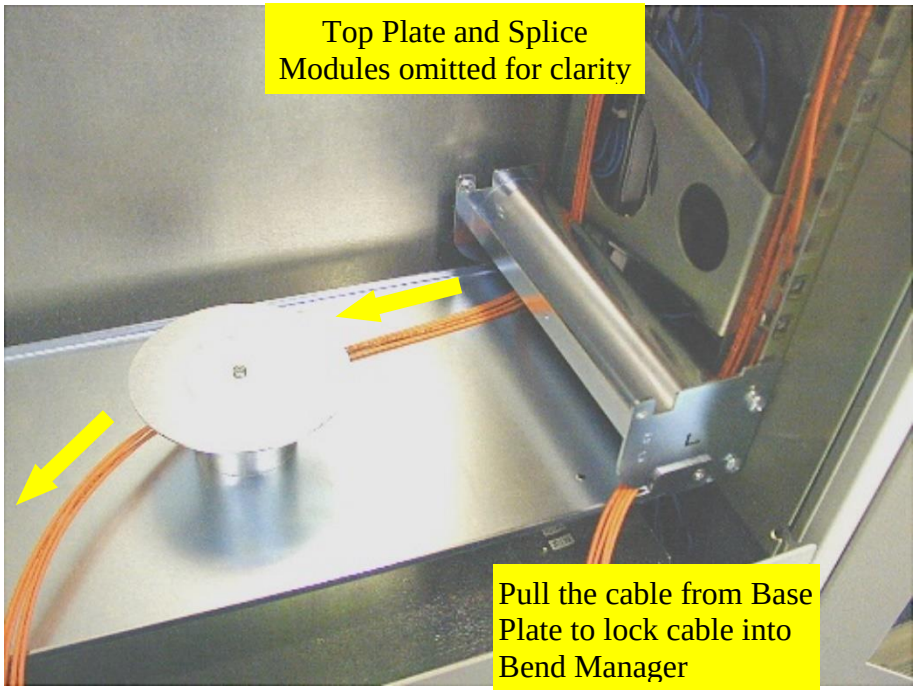




- Assemble restraints 3 and 4 onto the Splice Module **(20)** in their numbered positions.
- Route the secondary coated fibres in the individual tracks (under the bridge) as shown. Continue routing via the inner hidden track (under the logo) through to the inner port of splice tray 2.
- Coil the fibres as previously described and store for later use.
- Replace both splice tray covers and the module cover.

JUMPER CABLE INSTALLATION (ASSUMES ALL PRIMARY FIBRES ARE INSTALLED)

Step 49

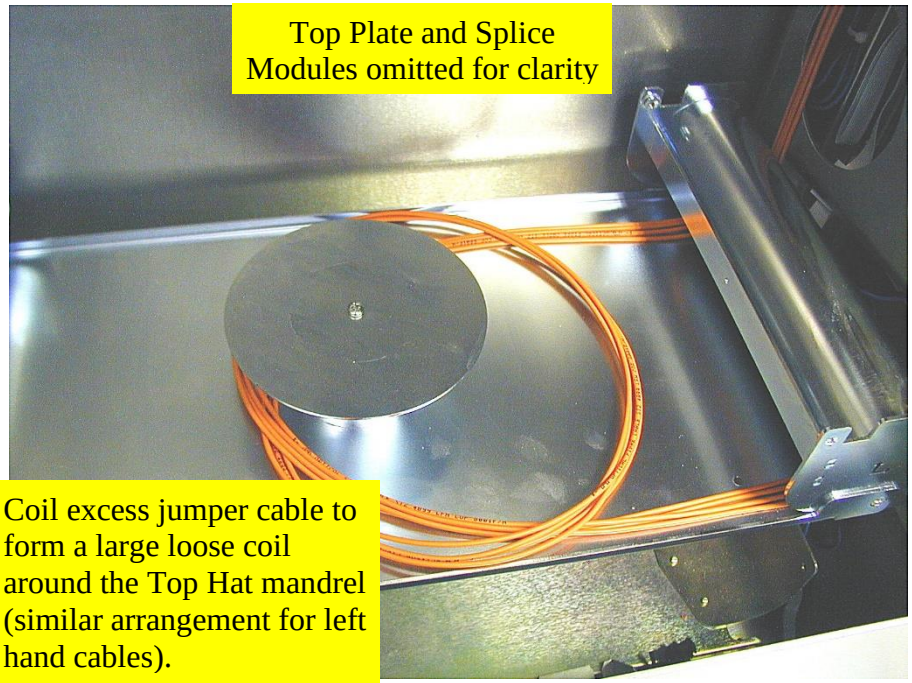


- Apply tension to the cable leaving the Bend Manager **(21)** by pulling on the cable loop on the Base Plate **(3)** as shown. This will ensure that the cables are **locked** into the bend Manager.

- Check that the cables are correctly retained by closing and opening the splice module.

JUMPER CABLE INSTALLATION (ASSUMES ALL PRIMARY FIBRES ARE INSTALLED)

Step 50



- Store excess jumper cable in large loose coils formed over the Top Hat Mandrel **(6)** as shown. A similar arrangement applies for cables entering the Base Plate **(3)** from the left side.

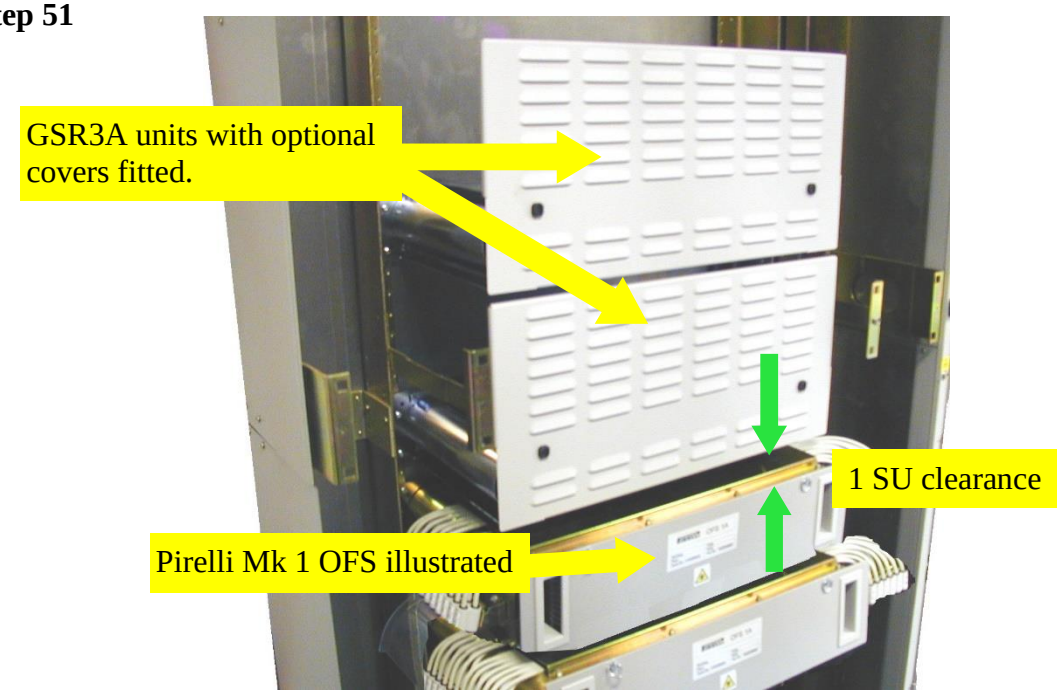
- Ensure that the cables entering the Base Plate on the right-hand side do not cross over or tangle with cables leaving the Bend Manager **(21)**.

INSTALLATION OF GENERIC SUB-RACK 3A INTO A FIRST GENERATION OFR (FD02 RACK)

This section broadly describes how the Generic Sub – Rack 3A (GSR3A) is installed within a first-generation Optical flexibility Rack (OFR). The first generation OFR'S were Type 1 (BICC), Type 2 (Raychem) and Type 3 (Prysmian). The GSR3A can be installed directly above existing first generation BICC, Raychem and Prysmian Optical Flexibility shelves.
It is extremely important that the mounting position diagram in step 54 and the examples below are used to determine the correct fixing position of the GSR3A to ensure that the spare capacity is used to its maximum.

INSTALLATION OF GENERIC SUB-RACK 3A INTO A FIRST GENERATION OFR (FD02 RACK)

Step 51

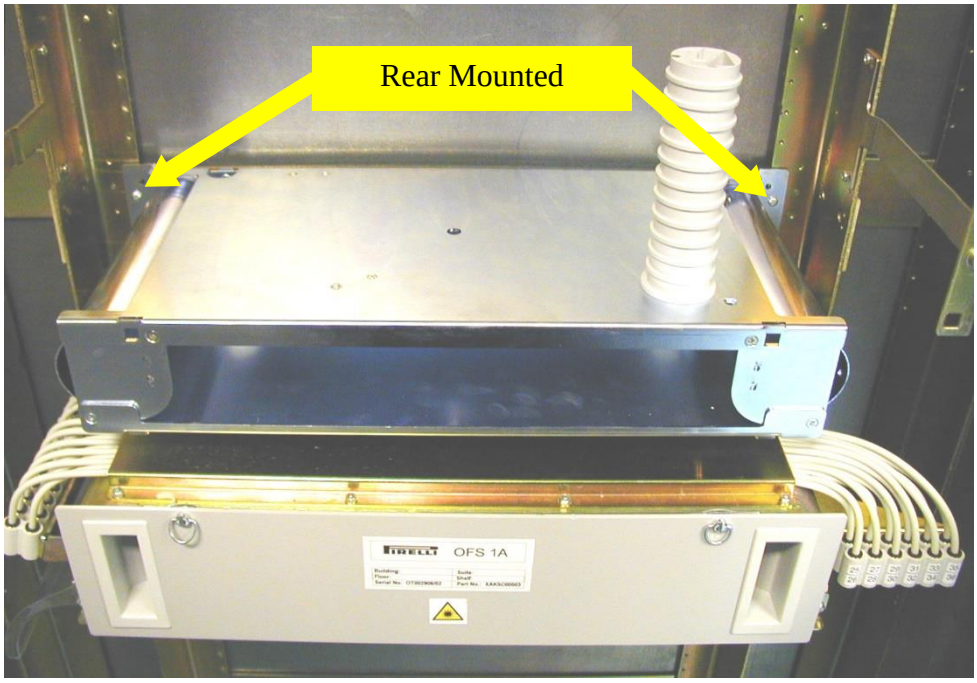


Establish the Available Capacity:

- Identify the available spare rack capacity within the OFR by referring to the GSR3A mounting position diagrams in step 54 (and examples below). Each Pirelli GSR3A unit requires 10 SU (250mm) of rack height.

INSTALLATION OF GENERIC SUB-RACK 3A INTO A FIRST GENERATION OFR (FD02 RACK)

Step 52



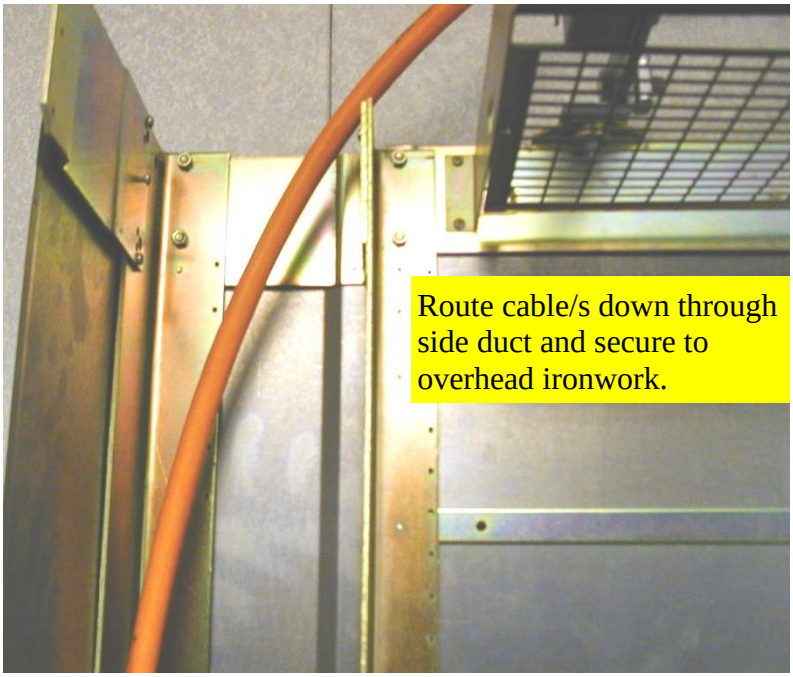
Mount the Sub-Rack:

- Rear mount the GSR3A metalwork into the OFR by referring to steps 2, 4, 5 and 6.

Note: Use bracket mounting holes identified for FD02 racks in step 2.

INSTALLATION OF GENERIC SUB-RACK 3A INTO A FIRST GENERATION OFR (FD02 RACK)

Step 53

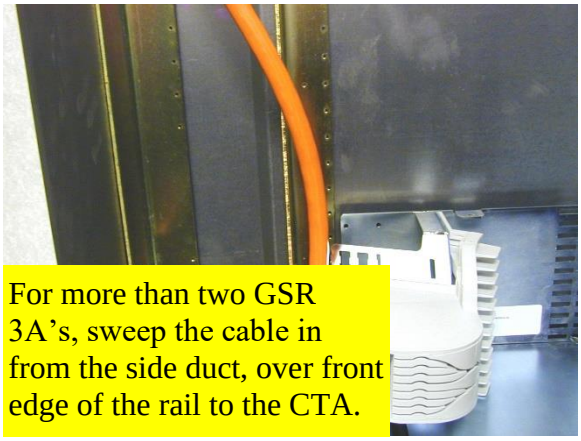


Route Cable to the OFR:

- Route the cable to the top left-hand side of the OFR. Secure the cable to the overhead ironwork as required.
- Allow a maximum of 5 metres of cable length from the top of the rack to allow for routing and jointing. This requirement will be reduced the higher the Sub-Rack is positioned within the OFR.

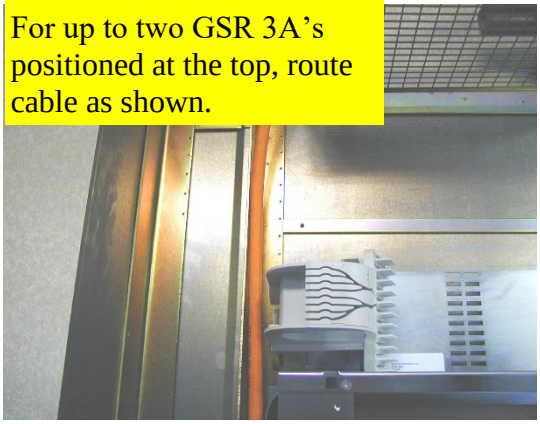
INSTALLATION OF GENERIC SUB-RACK 3A INTO A FIRST GENERATION OFR (FD02 RACK)

Step 54



For more than two GSR 3A's, sweep the cable in from the side duct, over front edge of the rail to the CTA.

For up to two GSR 3A's positioned at the top, route cable as shown.

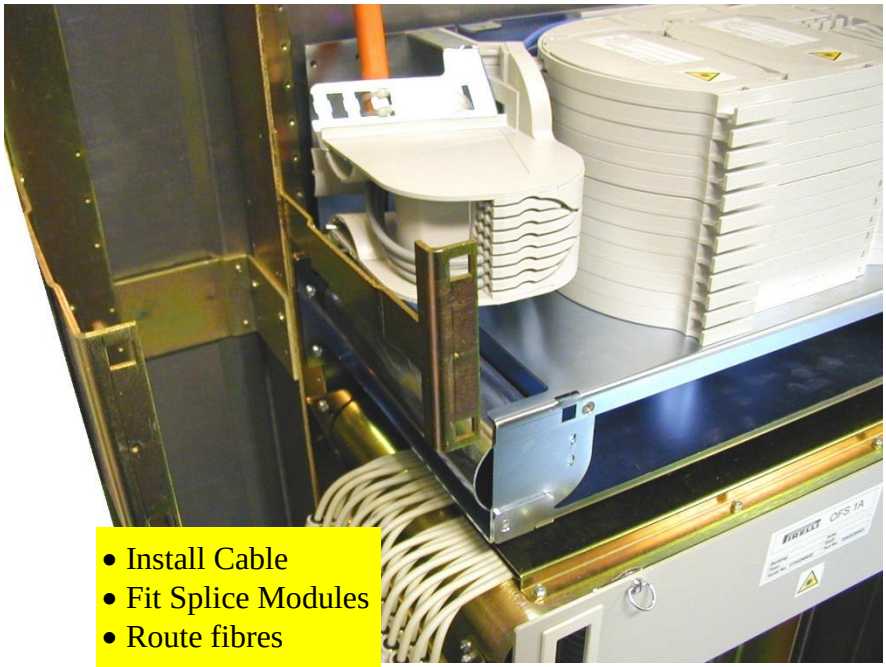


Run Cable to the Sub Rack:

- Run the cable down the left-hand side of the rack to the Cable Termination Assembly (CTA) of the Sub-Rack.
- Where more than two GSR3A's are to be fitted, route the cable in the left-hand side duct channel of the rack, and sweep over the front edge of the mounting rail to the CTA. This procedure avoids congestion of cables when other Sub-Racks are subsequently fitted into the rack.
- In situations where space is limited (i.e. only two GSR3A's can be fitted at the top), the cables may be run directly down to the CTA on the right-hand side of the left-hand mounting rail as shown.

INSTALLATION OF GENERIC SUB-RACK 3A INTO A FIRST GENERATION OFR (FD02 RACK)

Step 55



- Install Cable
- Fit Splice Modules
- Route fibres

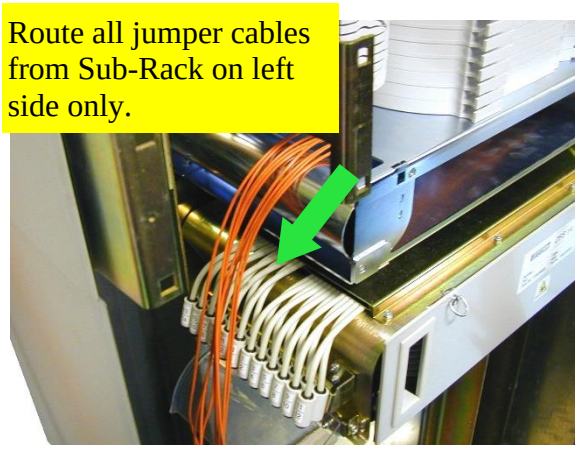
Install the Cable into the Sub-Rack:

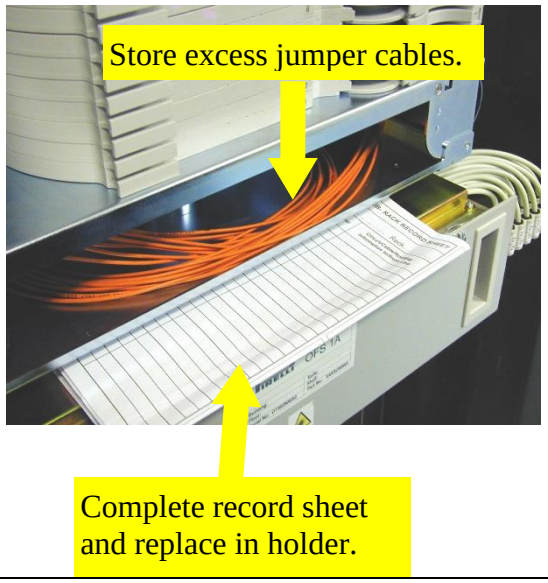
- Install the cable by referring to steps 8 to 26.

Note: If two cables are to be installed onto the Sub-Rack, position the first cable as described in step 10.

INSTALLATION OF GENERIC SUB-RACK 3A INTO A FIRST GENERATION OFR (FD02 RACK)

Step 56





Install the Jumper Cables:

- Install the jumper cables by referring to steps 27 to step 39.

  Note: Route the jumper cables down to the storage shelf of the Sub-Rack and ensure all jumpers exit on the left-hand side **only**.

- Feed the cables over the top of the bracket mandrel to achieve the correct bend control (or under the bracket mandrel if routing directly upwards).

- Use the storage shelf to manage excess jumper cable lengths as required.

- Complete the record sheet and fit the optional cover if required.

INSTALLATION OF GENERIC SUB-RACK 3A INTO A FIRST GENERATION OFR (FD02 RACK)

Step 57

GSR3A MOUNTING POSITIONS IN AN OFR

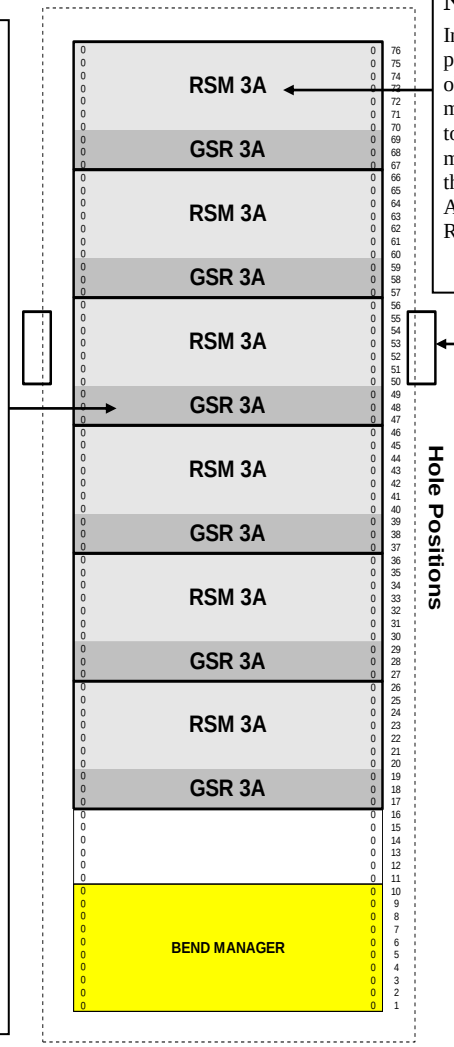
The Generic Sub-Rack 3A can only be mounted in the OFR between the following hole positions: -

17 to 19
27 to 29
37 to 39
47 to 49
57 to 59
67 to 69

This sequence has been defined as hole positions 50 to 55 are occupied by side duct cover mounting brackets which will prevent access to the jumpering area in the GSR3A.

Each GSR 3A requires a total space of 10SU when the Rack Splicing Modules are installed onto it.

A gap of at least 1SU must also be left between any existing OFS 1A's and the Generic Sub-Rack 3A to be installed.



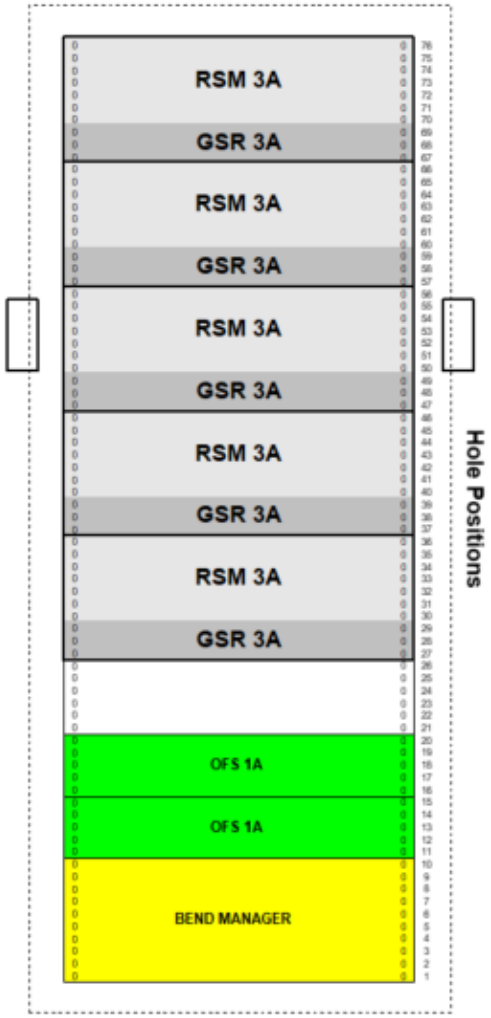
NOTE
In a BICC OFR, hole position 76 is sometimes obscured by the cable management bracket at the top of the rack. Therefore, it may not be possible to mount the Cable Termination Assembly Bracket of the RSM 3A Kit in this position.

Side duct cover mounting brackets

INSTALLATION OF GENERIC SUB-RACK 3A INTO A FIRST GENERATION OFR (FD02 RACK)

EXAMPLE 1

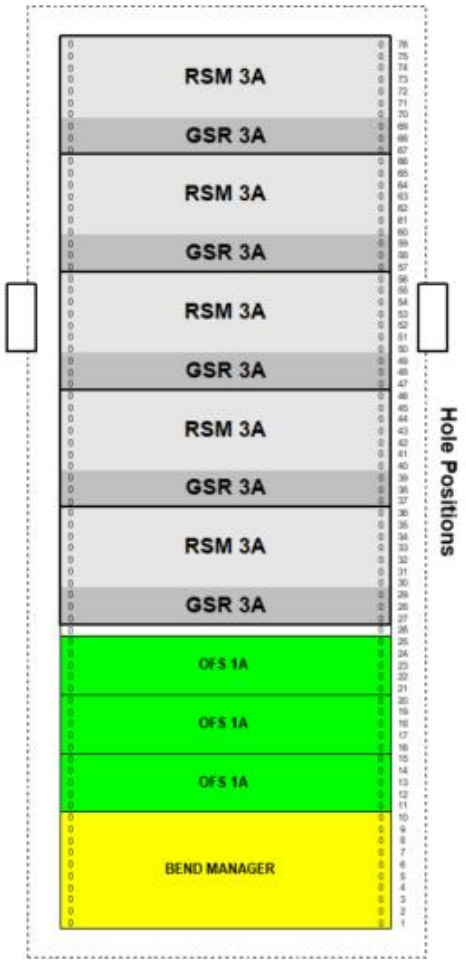
In this example two OFS 1A's have already been installed. Therefore, the next available mounting position for the Generic Sub-Rack 3A to be installed is between hole positions 27 to 29.



INSTALLATION OF GENERIC SUB-RACK 3A INTO A FIRST GENERATION OFR (FD02 RACK)

EXAMPLE 2

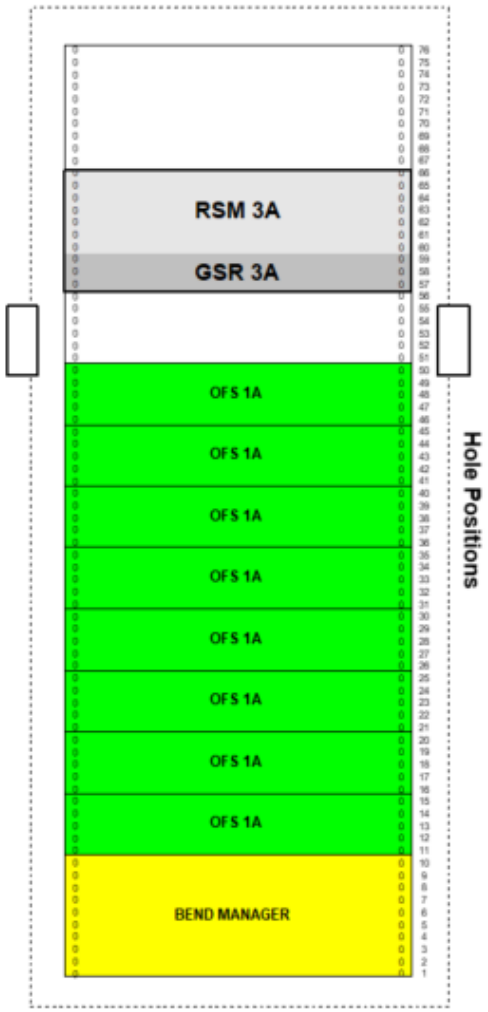
In this example three OFS 1A's have already been installed. Therefore, the next available mounting position for the Generic Sub-Rack 3A to be installed is between hole positions 27 to 29. This includes the 1SU gap that must be maintained between the OFS 1A and the GSR3A.



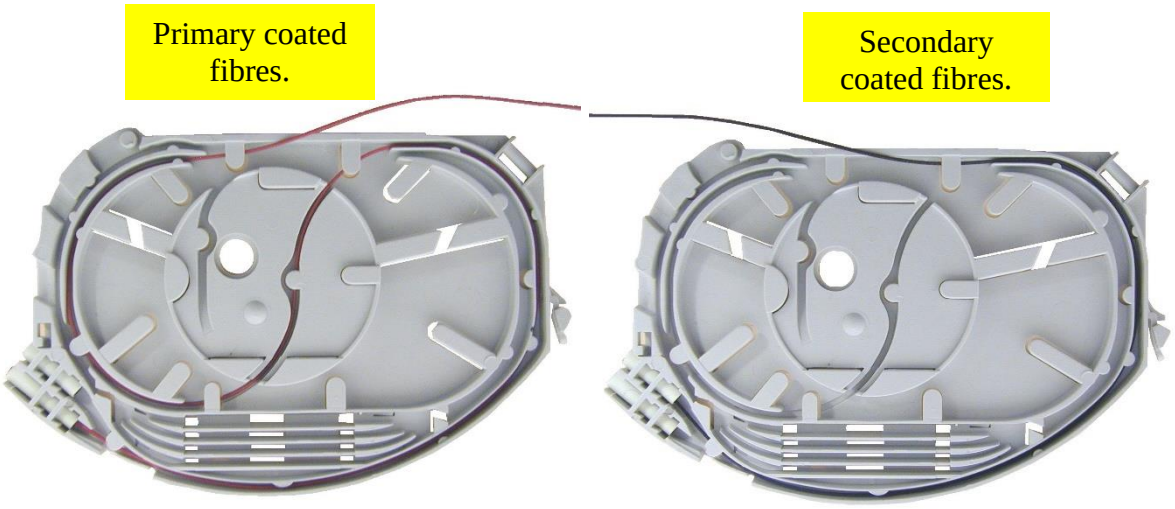
INSTALLATION OF GENERIC SUB-RACK 3A INTO A FIRST GENERATION OFR (FD02 RACK)

EXAMPLE 3

In this example eight OFS 1A's have already been installed. The next available mounting position for the Generic Sub-Rack 3A is between hole positions 57 and 59. The side duct cover mounting brackets prevent the Sub-Rack from being installed directly above the topmost OFS 1A.

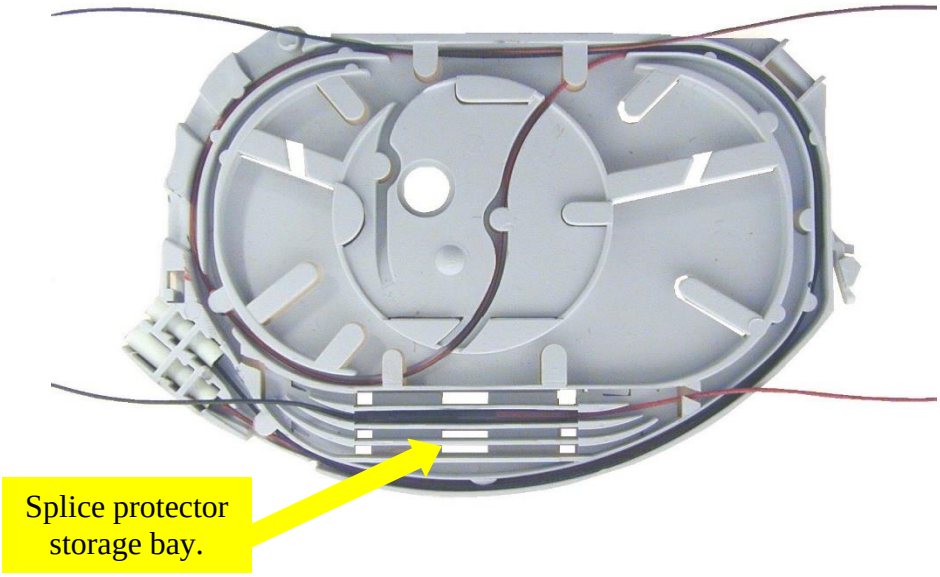


Step 58



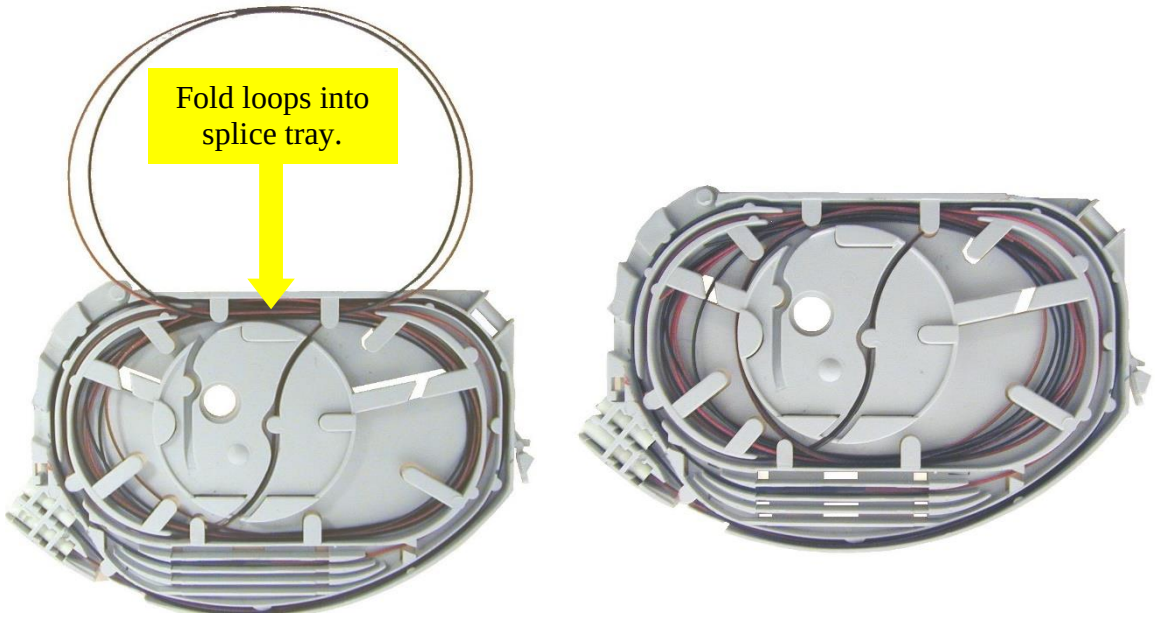
- Carefully uncoil all fibres from the storage area.
- Separate the primary coated fibres from the secondary coated fibres and safely store fibres for splicing.
- Splice fibres.

Step 59



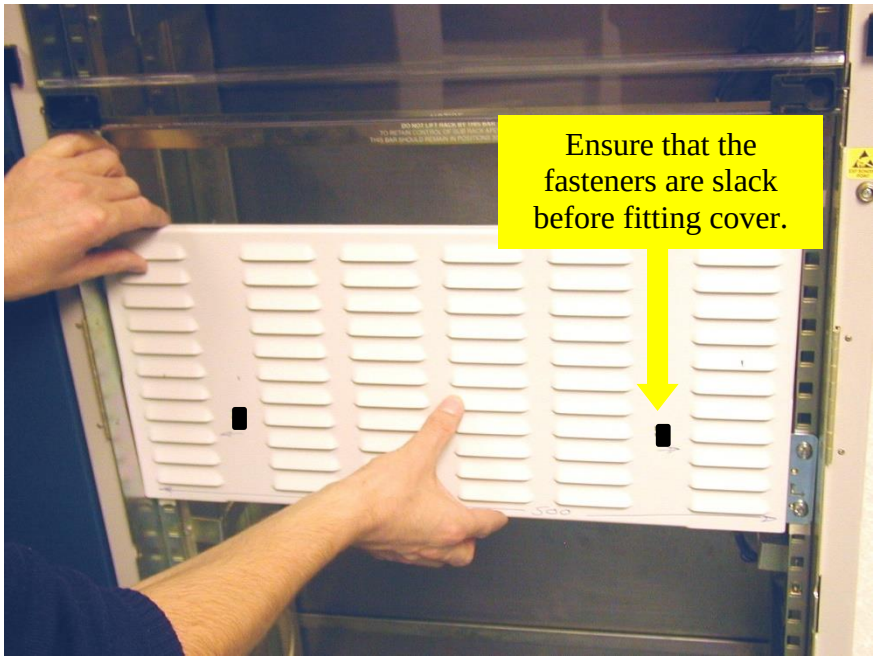
- Place the splice protector in storage bay.
- Ensure the splice protector has been pushed down to the lowest available position in the storage bay. Repeat for remaining fibre.

Step 60



- Put loops of fibre away as shown. Ensure fibre is stored below tabs.
- Expand the fibre coils using light finger pressure and close splice tray cover.
- Install the remaining components of the Rack Splicing Module.
- Complete the fibre circuit record sheet (on the instruction sheet) and locate in the document holder fixed to the underside of the Base Plate **(3)**.

Step 61



Fitting the Optional Front Cover

- Secure the Cover to the front face of the Sub Rack using the two push fit fasteners. To remove, use a screwdriver or small coin to release the quarter turn fasteners.

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GENERIC SUB-RACK 3A RECORD SHEET

OAsys GENERIC SUB- RACK RECORD SHEET			
Floor…… Suite….. ……. Rack……			
Splice Module No.	Splice Tray No.	Circuit/Cable/Routing Information to/from Terminal Equipment	Circuit/Cable/Routing Information to/from Line
12	2		
	1		
11	2		
	1		
10	2		
	1		
9	2		
	1		
8	2		
	1		
7	2		
	1		
6	2		
	1		
5	2		
	1		
4	2		
	1		
3	2		
	1		
2	2		
	1		
1	2		
	1		