LMJ INSTALLATION INSTRUCTIONS

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   - How to route fibres from the mechanical gland.
   - The cable preparation and installation instructions are supplied with the appropriate gland kit.

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   - The cable preparation and installation instructions are supplied with the appropriate gland kit.

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   - How to remove the loop from the storage area and replace it.

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    - The cable preparation and installation instructions are supplied with the appropriate gland kit.

11. Joint Close Down
    - How to close the joint & install the cap and clamp.

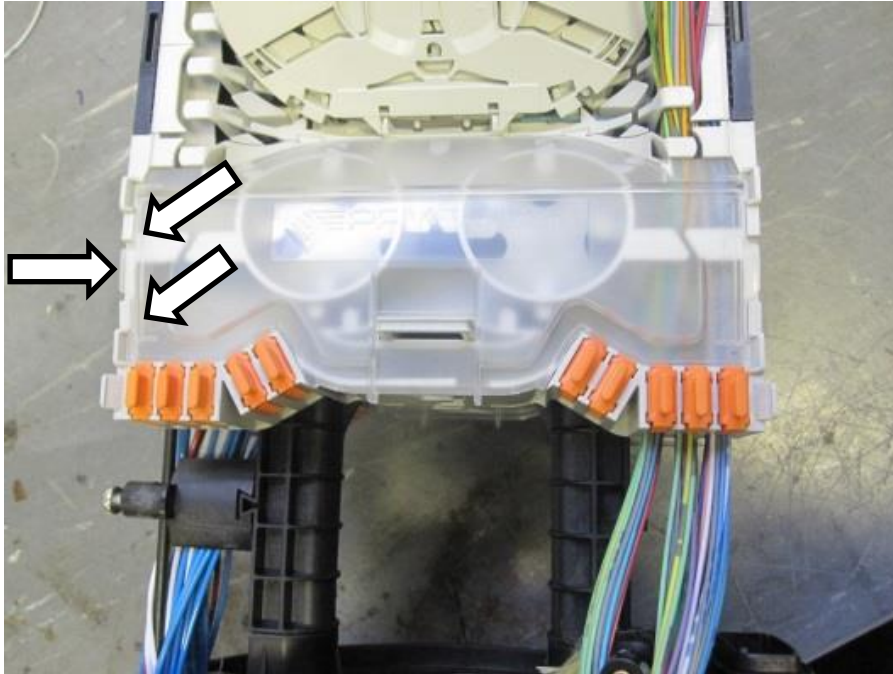## 1.FIBRE ROUTING – LOOSE TUBE

Description

These are the instructions on how to route fibres from the mechanical gland. The cable preparation and installation instructions are supplied with the appropriate gland.

Tools Required

Tools:
Marker Pen & approved Stripping Tool.
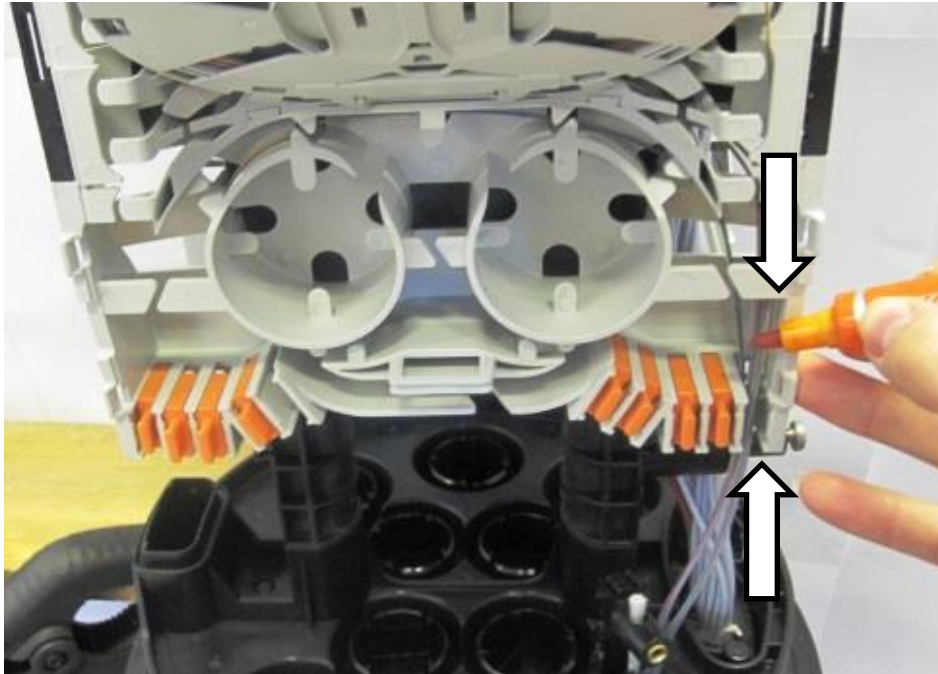
1.FIBRE ROUTING – LOOSE TUBE

Step 1

- Remove manifold cover by releasing the two clips on one side as shown.

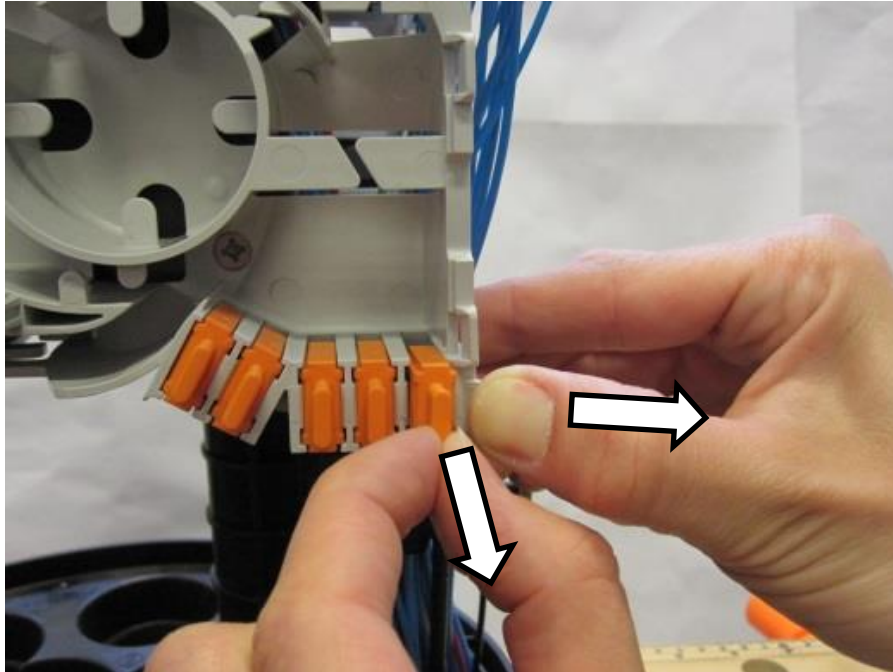- Using a finger release the central cover side tab and remove the cover.

Step 2

- Mark on elements between 10-20mm above the cable retention block.

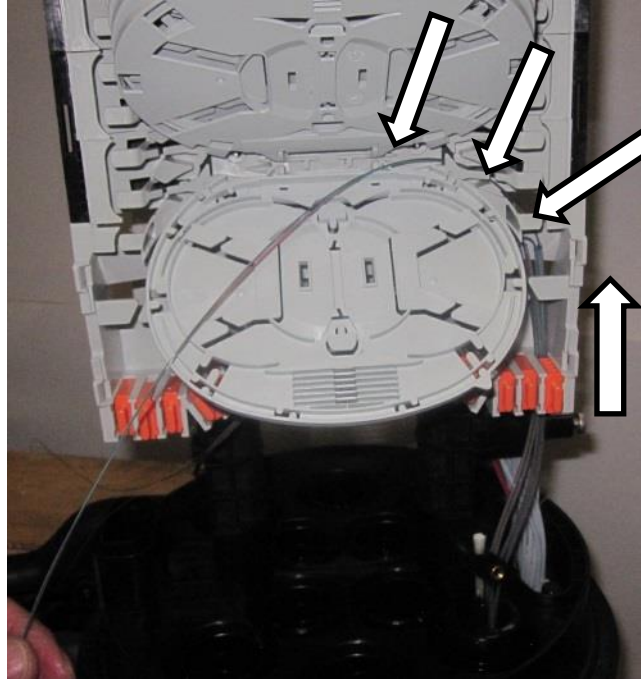- Strip element to expose fibres and degrease fibres using approved practices.

Step 3

- Remove element retention block by releasing the grey clip as shown. This will loosen the area where the blocks can be removed.

Step 4

- Place element into appropriate manifold entry position.

- Replace retention block carefully and secure element into place.

Step 5

Identify the direction the fibres need to be routed.

- Straight Go to Step 6.

- Opposite Track Go to Step 7.
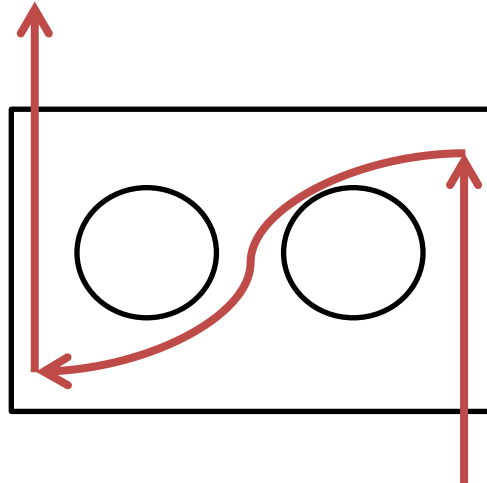
- Opposite Stack Go to Step 8.

Step 6

Straight Fibre Routing

- For fibres going straight up, they will be routed straight up the raceway in line with the entry port of the manifold.

Step 7

Opposite side of track Fibre Routing

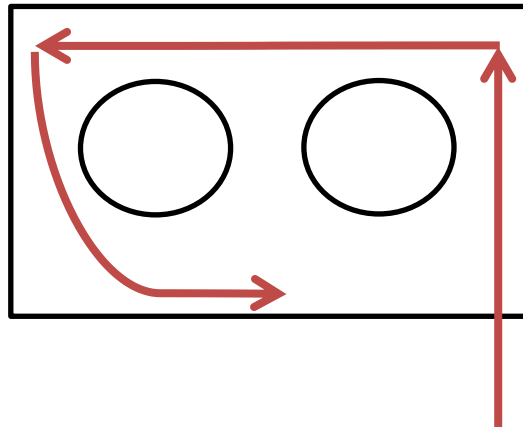- For fibres going up the opposite side of the same stack. The fibres will first go around the mandrels of the input manifold, as shown in the step 7 and directly up the raceway.
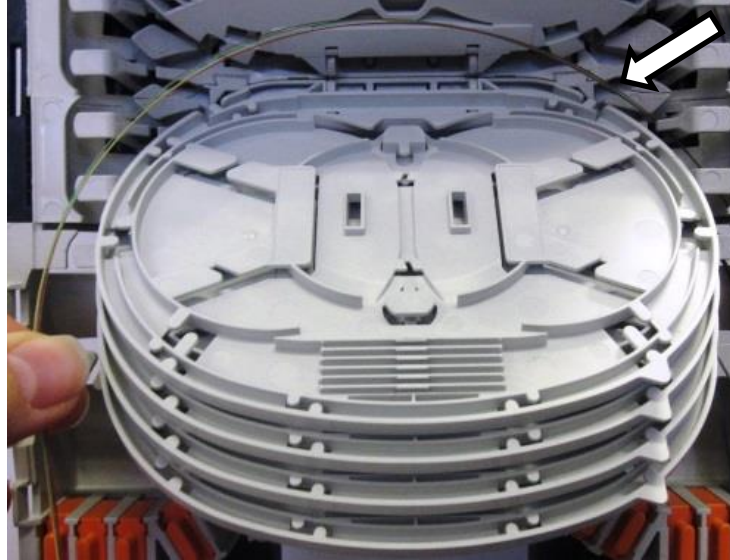
Step 8

Opposite side of tray stack Fibre Routing

- For fibres going to the other tray stack on the opposite side of the joint.

- Refer to section 4 'fibre routing between columns.

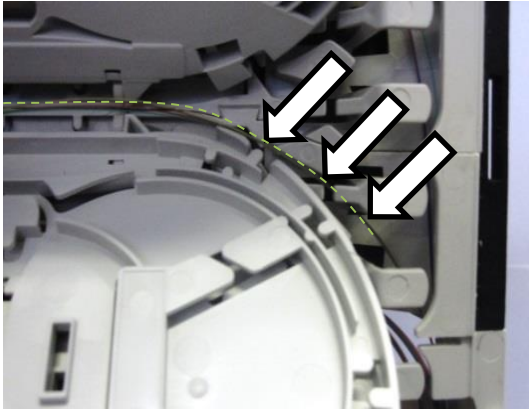## 1.FIBRE ROUTING – LOOSE TUBE

| Step 9 | |

- Identify the required splice tray.

- Route the fibres up the raceway ensuring the fibre is routed beneath the tabs shown.

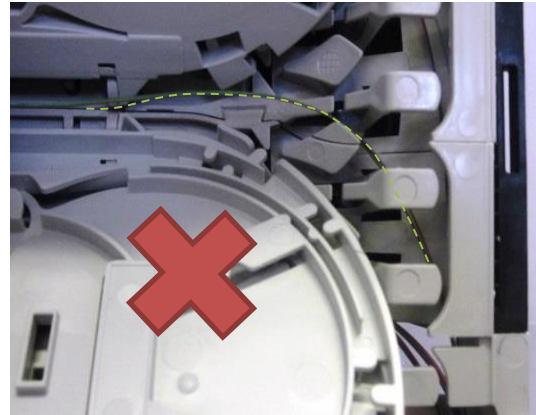- See step 10 for correct routing procedure.
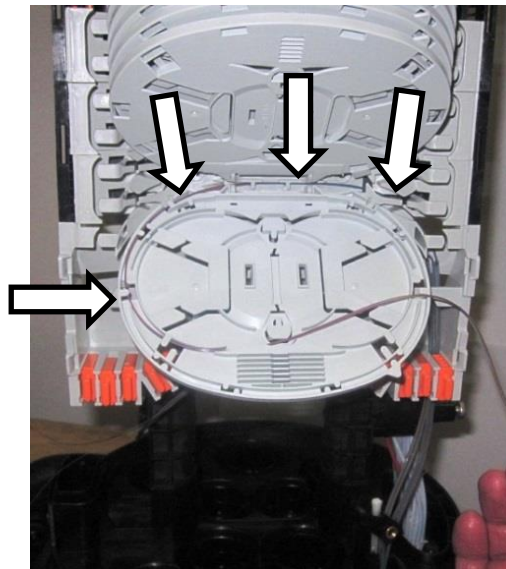
Step 10

CORRECT RACEWAY ROUTING	INCORRECT RACEWAY ROUTING

- Ensure the fibre routing is correct as above.
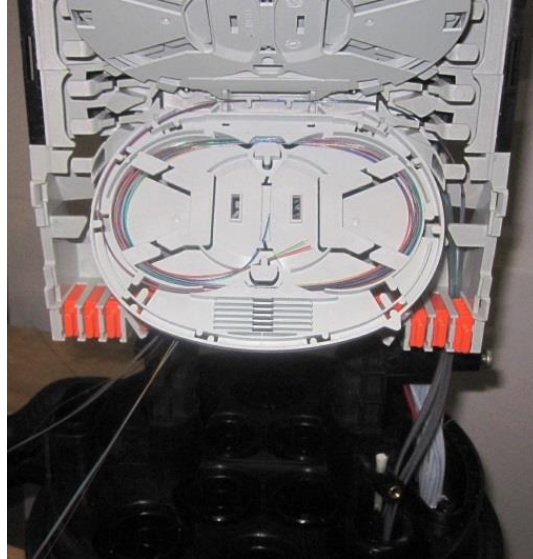
- Below sees incorrect routing of fibre to tray.

Step 11

- Carefully route the fibres onto the back plate and round the tray.

Step 12	

- Store the remainder of the fibre as shown.

2.FIBRE ROUTING – FLEX TUBE

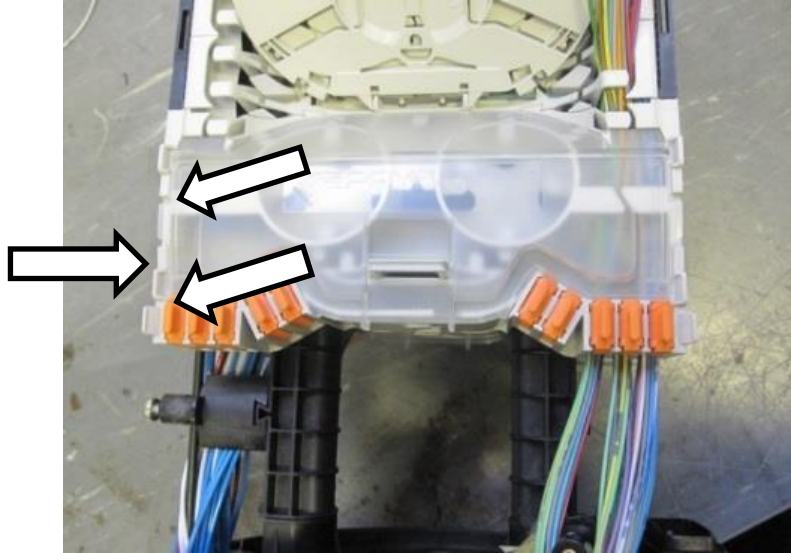| Description	Tools Required

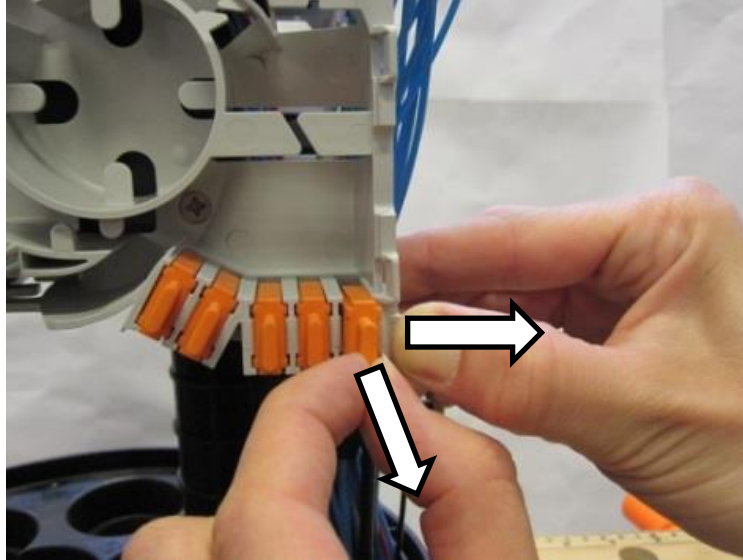| These are the instructions on how to route fibres from the mechanical gland. The cable preparation and installation instructions are supplied with the appropriate gland. | **Tools:**
Marker Pen & approved Stripping Tool. |

Step 1

- Remove manifold cover by releasing the two clips on one side as shown.

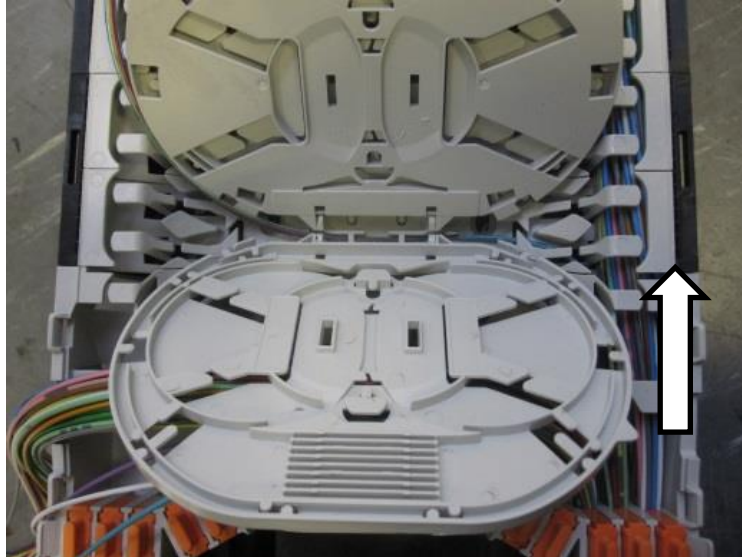- Using a finger release the central cover side tab and remove the cover.

Step 2	

- Remove element retention block by releasing the grey clip as shown. This will loosen the area where the blocks can be removed.
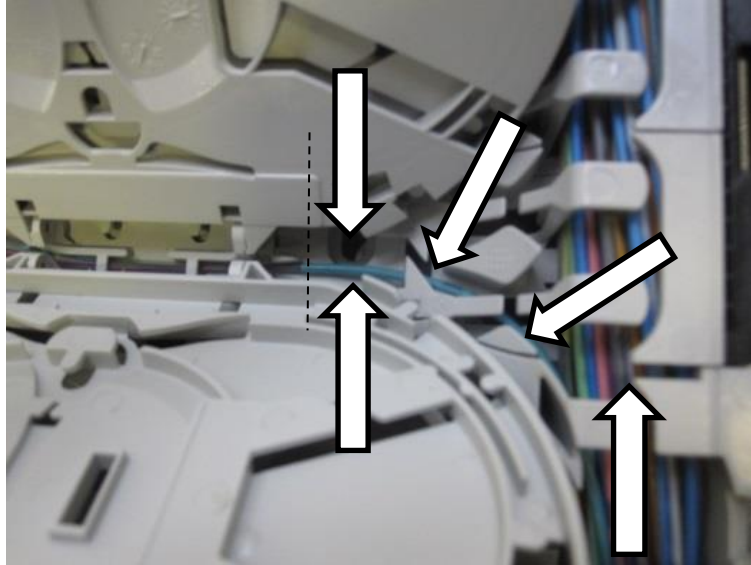
Step 3

- Identify which tray or trays the elements will be routed too.

NOTE: elements will route up the raceway in their coating and stripped on the tray.

Step 4	

- Mark on elements in position shown.

- Strip element to expose fibres and degrease fibres using approved practices.

- Place element into appropriate manifold entry position.

- Replace retention block carefully and secure element into place.

Step 5

Identify the direction the fibres need to be routed.

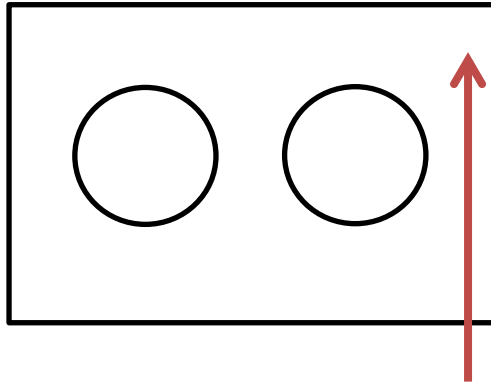

- Straight Go to Step 6.

- Opposite Track Go to Step 7.

- Opposite Stack Go to Step 8.

Step 6

Straight Fibre Routing
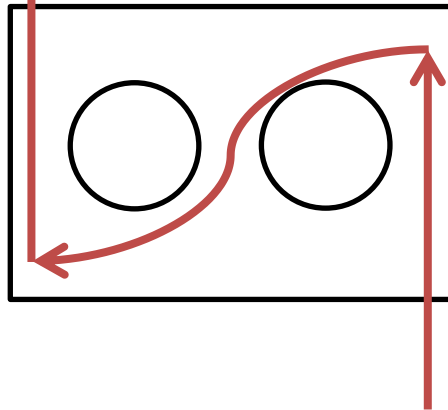
- For fibres going straight up, they will be routed straight up the raceway in line with the entry port of the manifold and stripped on the tray.

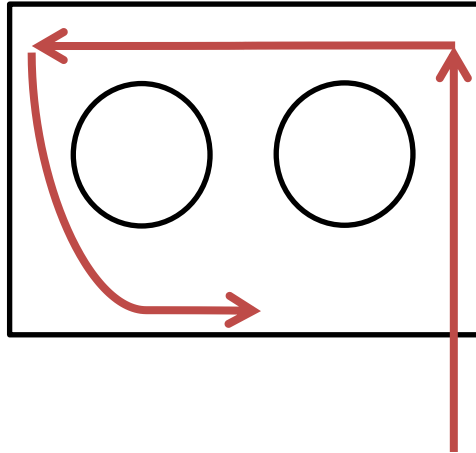|	
Step 7	**Opposite side of track Fibre Routing**

- For fibres going up the opposite side of the same stack. The elements will first be stripped and the fibres will go around the mandrels of the input manifold, as shown in the step7 and directly up the raceway.
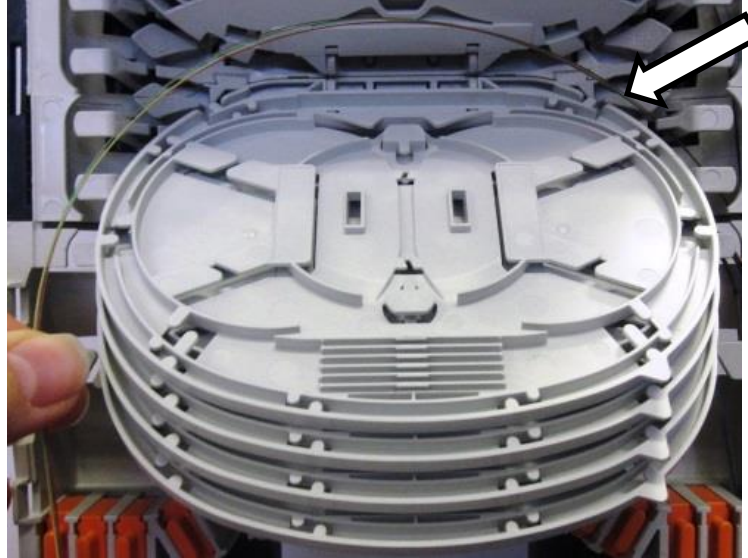
Step 8	**Opposite side of tray stack Fibre Routing**

- For fibres going to the other tray stack the elements will first be stripped and the fibres routed on the opposite side of the joint.

- Refer to section 4 'fibre routing between columns'.
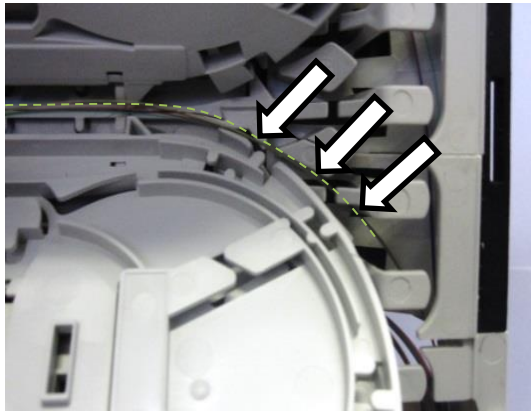
Step 9	

- Identify the required splice tray.

- Route the elements up the raceway ensuring the elements/fibre is routed beneath the tabs shown.

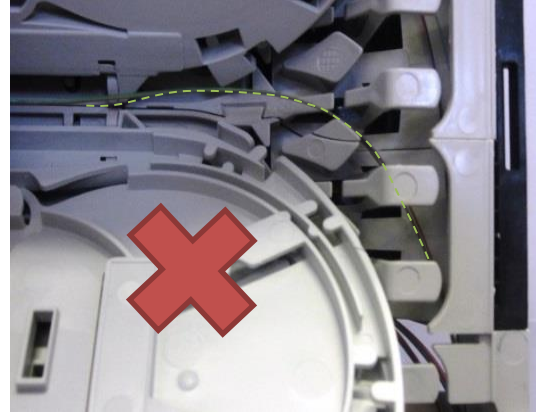- See step 10 for correct routing procedure.

Step 10

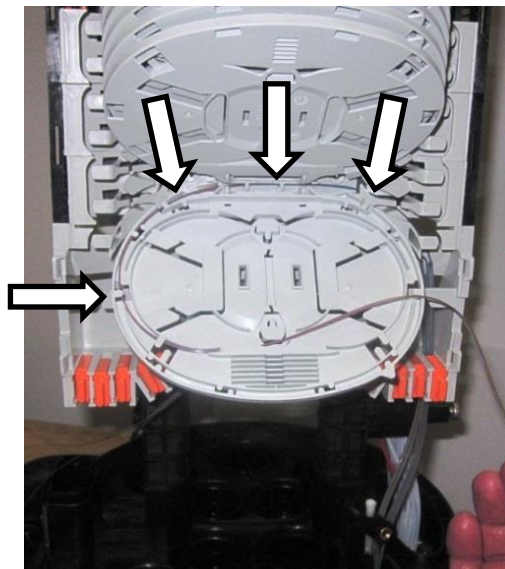| CORRECT RACEWAY ROUTING	INNCORRECT RACEWAY ROUTING

- Ensure the fibre routing is correct as above.

- Below see incorrect routing of fibre to tray.
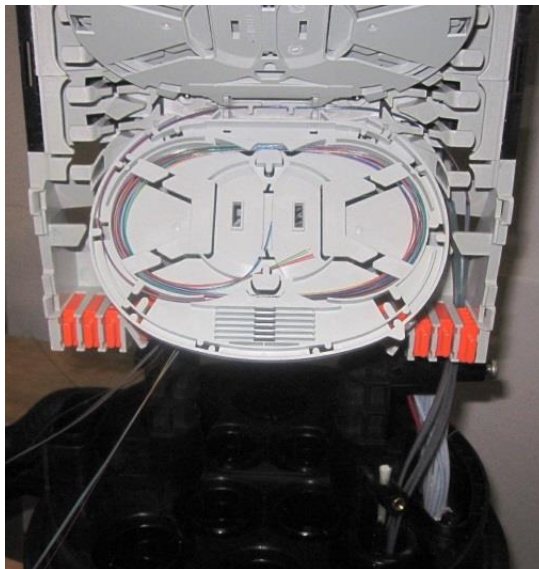
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Step 11

- Carefully route the fibres onto the back plate and round the tray.

Step 12

- Store the remainder of the fibre as shown.

3.ROUTING OF BLOWN FIBRE TUBES

| Description	Tools Required

Description

How to terminate tubes and route fibres from the mechanical gland. The cable preparation and installation instructions are supplied with the appropriate gland. If is recommended that the first two cables enter through port 5 or 6.

Tools Required

Tools:
Measuring Tape, Marker Pen & Tube Cutter.
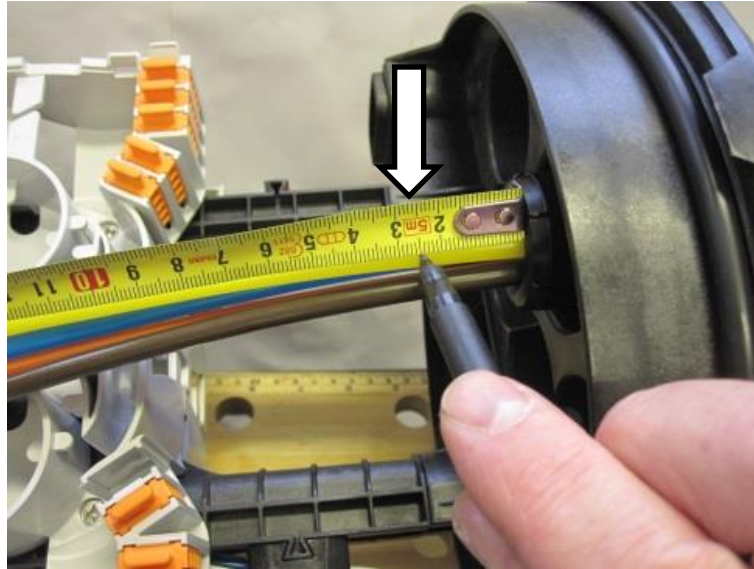
3.ROUTING OF BLOWN FIBRE TUBES

Step 1	
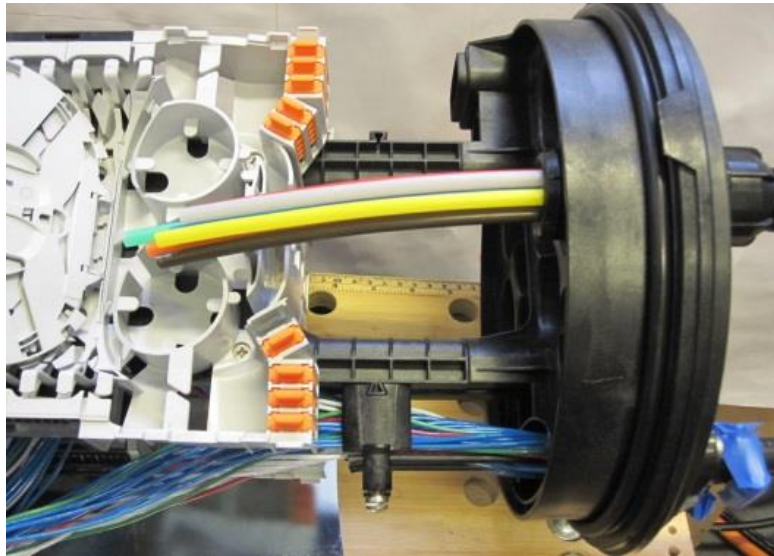
- Remove manifold cover.

- Identify the tube to be used.

Step 2	

- Measure 25mm from gland nut and mark the required tune suing a permanent marker.

3.ROUTING OF BLOWN FIBRE TUBES

Step 3

- Cut back the tube to the mark using an approved Tube Cutter.
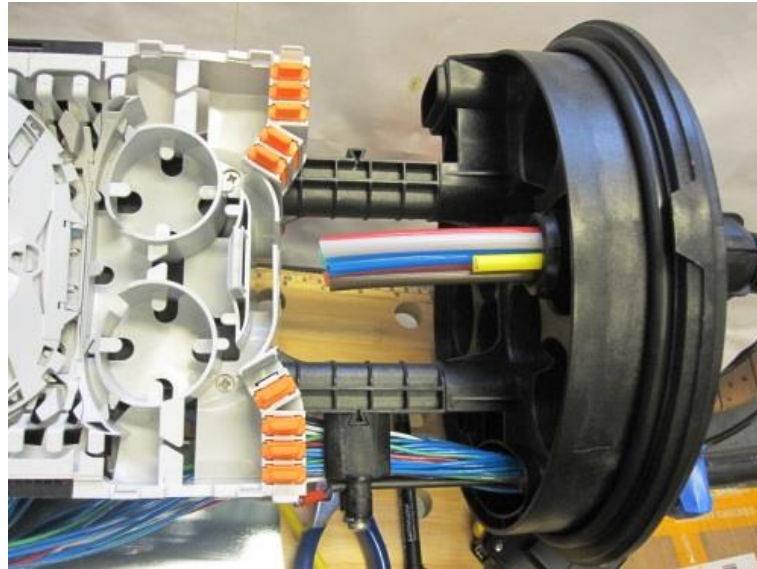
3.ROUTING OF BLOWN FIBRE TUBES

Step 4	
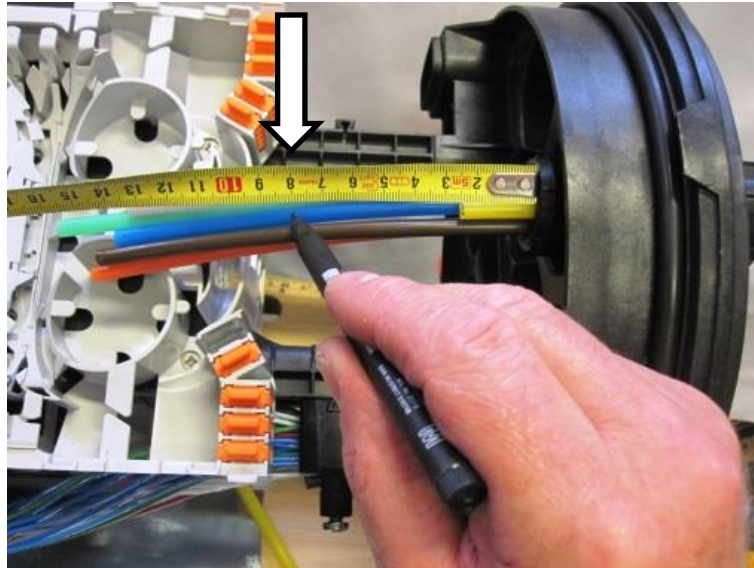
For tubes to be used later:

- Measure 80mm from gland nut.

- Mark a line using a permanent marker.

Step 5

- Cut back the 6 remaining tubes to the mark made in Step 4.

Step 6	
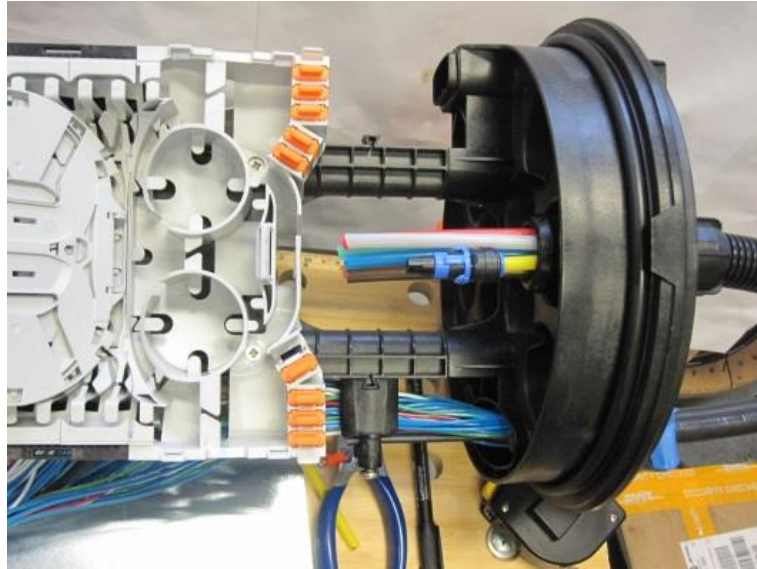
- Install the water block on to the shortest tube (cut in step 3).
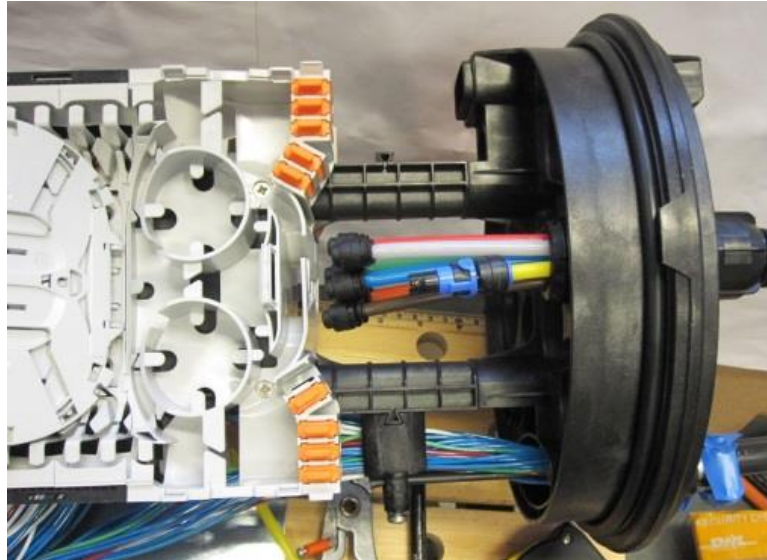
Step 7	
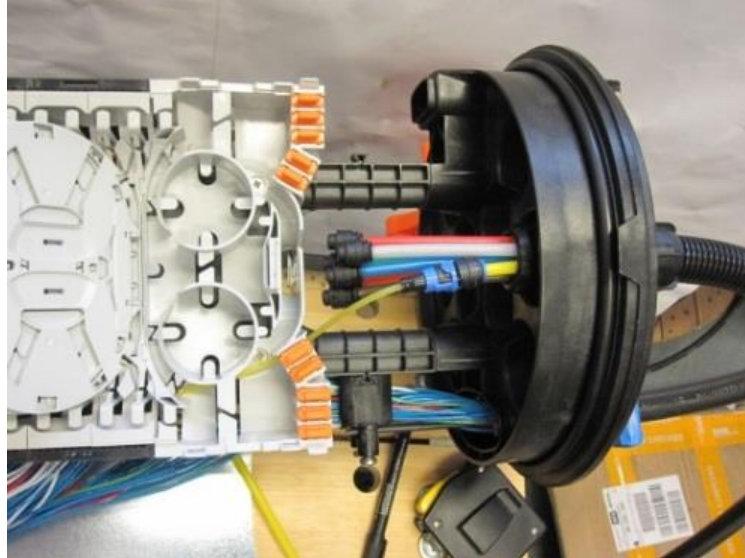
- Install the end caps to the remaining 6 tubes.

3.ROUTING OF BLOWN FIBRE TUBES

| **Step 8** | |

- Blow the fibre into the tube in accordance with local procedures.

- Take a length of 3mm tube and cut length.

- The tube should be long enough to plug into the water block and protect the fibres onto the manifold and remove the orange clip. (see page 2 step 3).

- Select the most natural entry point on the manifold for the tube to enter.
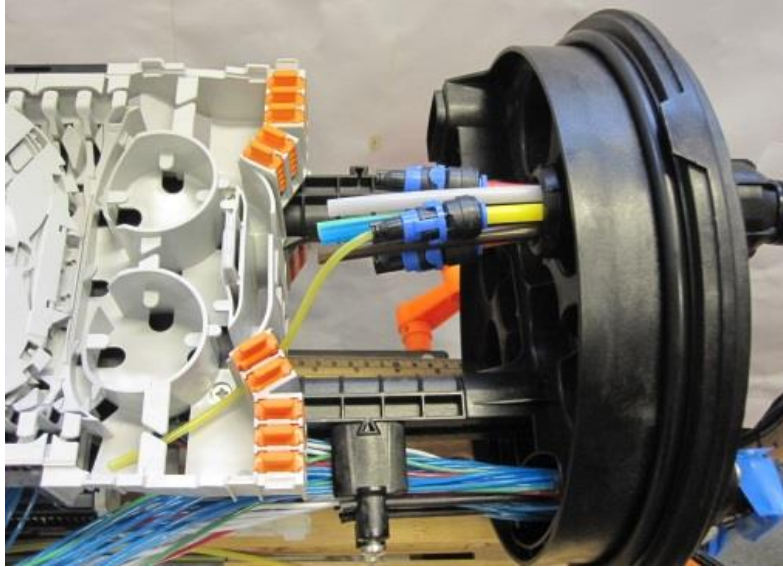
3.ROUTING OF BLOWN FIBRE TUBES

Step 9
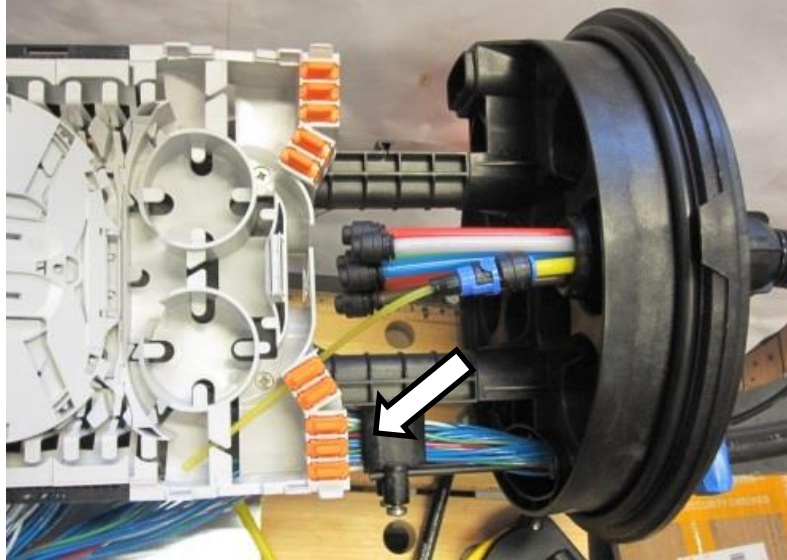
- Feed the tube over the fibre and plug into the water block.

- Install the 3mm tube to the top of the gas block.

- Route the 3mm tube into the empty manifold position.

- Replace the manifold restraint block.

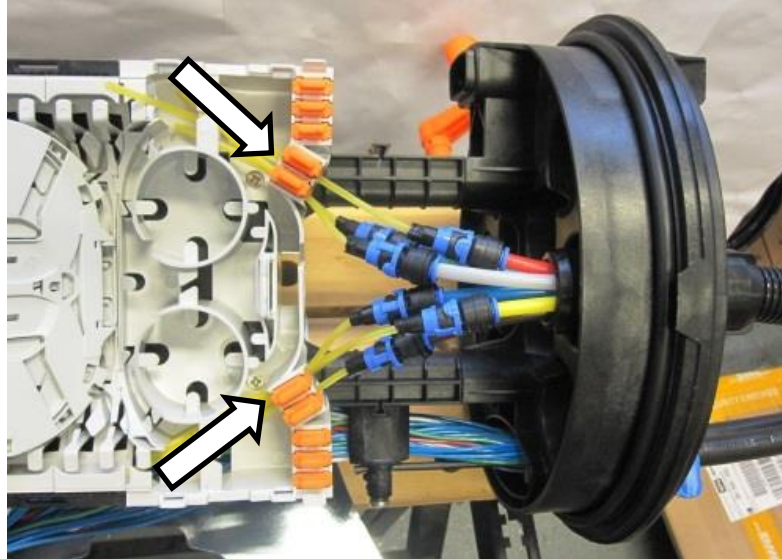- Route the fibres to the designated tray as explained on pages 4 and 5.

Step 10

- When returning to the joint to install fibres in the remaining tubes, remove the end cap and repeat steps 2, 3, 6, 8 & 9.

3.ROUTING OF BLOWN FIBRE TUBES

Step 11

- This is an example of a fully installed 7 tube cable.

- Now refer to Section 2 for the fibre routing.

4.SPLITTER INSTALLATION

Description	Tools Required
How to install the splitters into the top manifold and correct usage to raceway to route input and output.	**Tools:** N/A

Step 1

CAUTION!
PLEASE READ BEFORE CONTINUING

NOTE: **DO NOT USE SPLITTER MANIFOLD IF FURTHER UPGRADE TO NODE IS REQUIRED IN THE FUTURE.**

ONCE SPLITTERS ARE INSTALLED YOU CAN NOT UPGRADE!
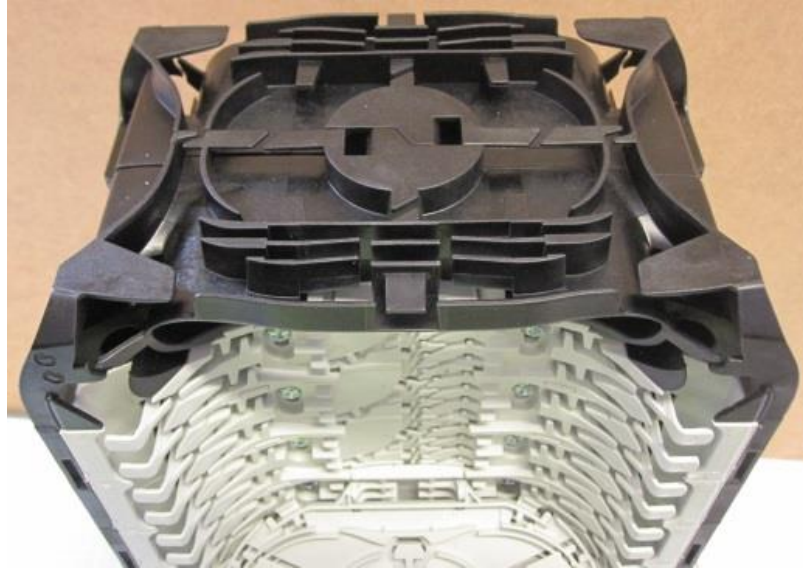
4.SPLITTER INSTALLATION

Step 2	

- Remove the top manifold cover and place to one side.

- Remove by pulling on corners in a vertical direction.
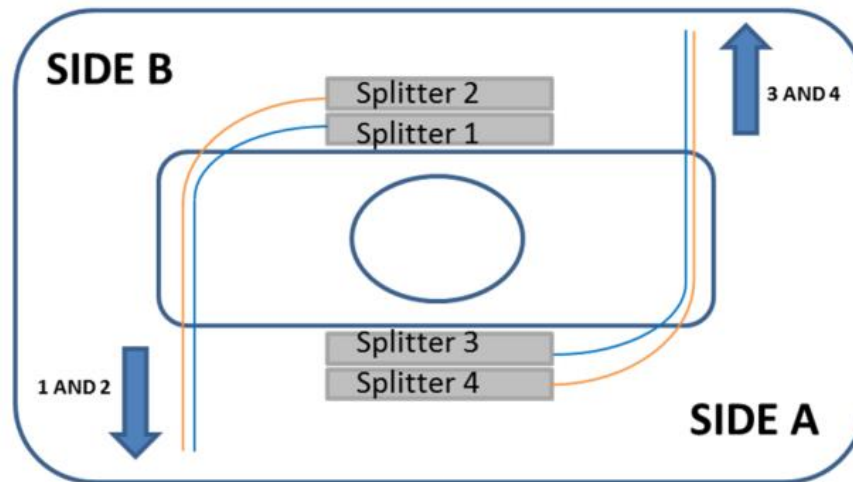
4.SPLITTER INSTALLATION

Step 3

- Now prepare your splitter for installation.

- **SEE STEP 4 FOR INPUT ROUTING CONFIGURATION.**

- **SEE STEP 5 FOR OUTPUT ROUTING CONFIGURATION.**

- Then return to STEP 6 for step by step routing & storage.

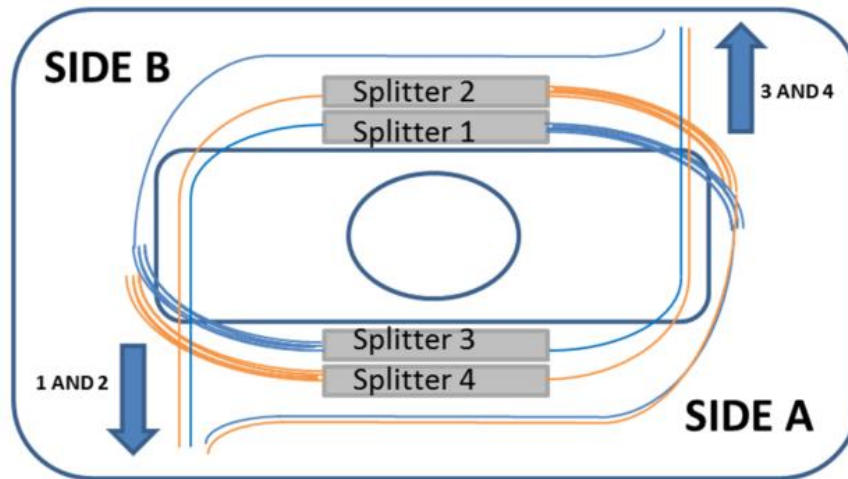| Step 4	ROUTING OF SPLITTER INPUTS

- Splitter inputs are routed along the left side of the top manifold and down the left-hand raceway to the appropriate splice tray.

- **Ensure you identify Side A, Side B & push splitters in pattern as shown only.**
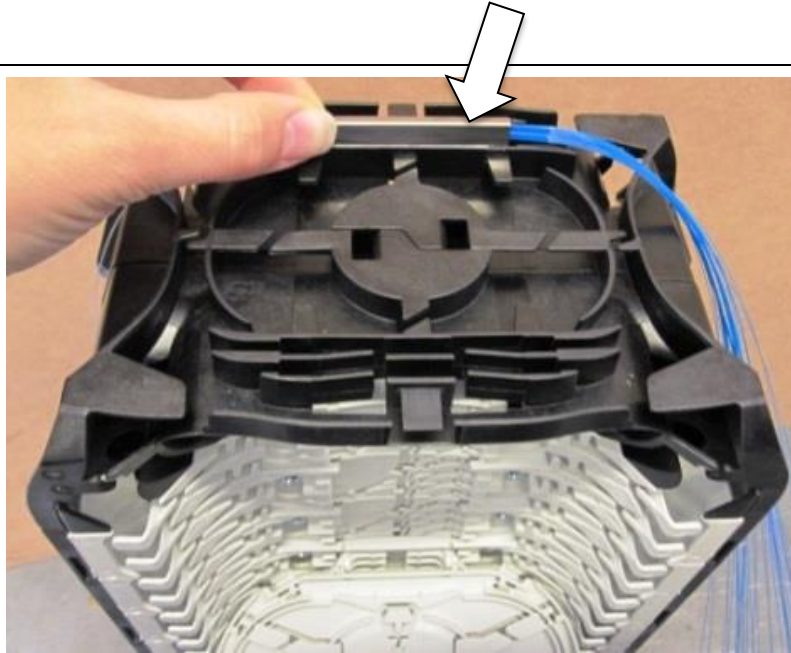
4.SPLITTER INSTALLATION

Step 5

ROUTING OF SPLITTER OUTPUTS

- Splitter outputs are routed and stored in the storage bay of the splitter manifold.

- Fibres to be spliced are extended and routed down the left-hand raceway to the appropriate splice tray as per diagram.

4.SPLITTER INSTALLATION
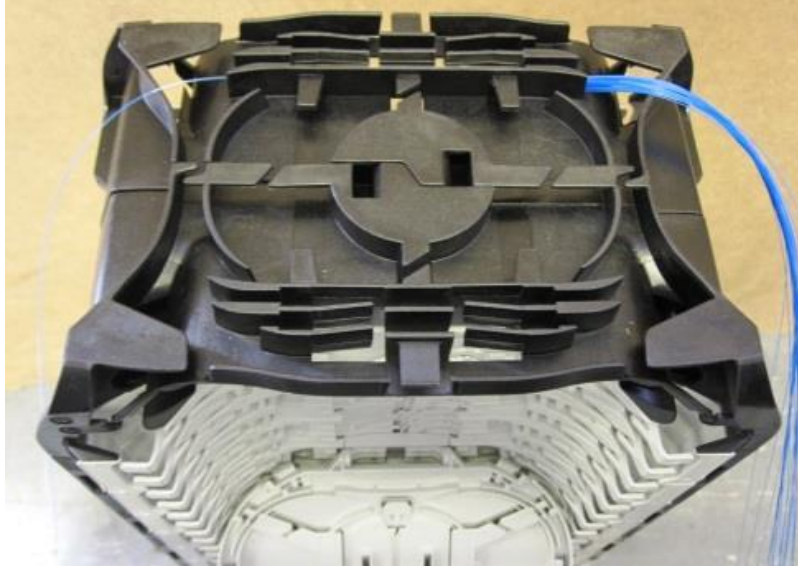
Step 6	

- Insert splitter into position one first.

- Firmly push the splitter in the splitter bay until it reaches the bottom.

NOTE: To identify correct first splitter location, see Step 4.

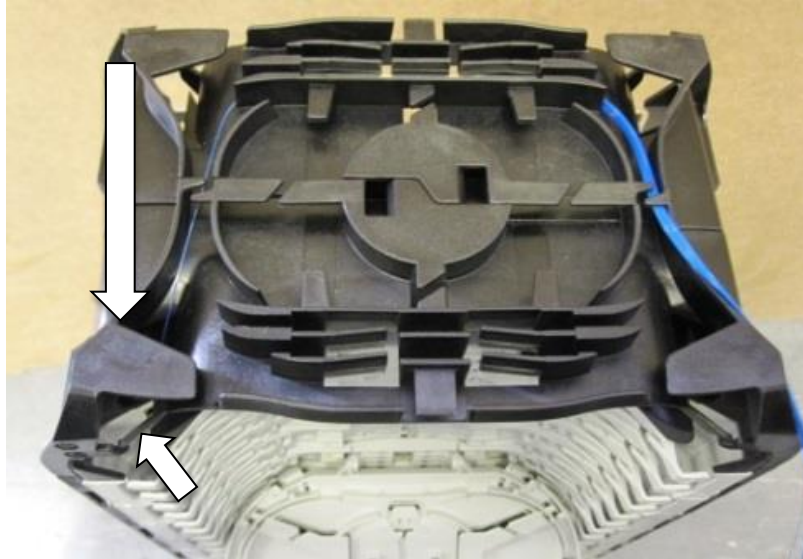| IP350	Issue Number: 06	Date: 13th February 2024

Step 7

- Splitter securely in position.

Step 8

- Take the input fibres and route them towards opposite side along the left-hand side top manifold raceway.

- Route the input fibres down the left-hand side raceway to appropriate splice tray.
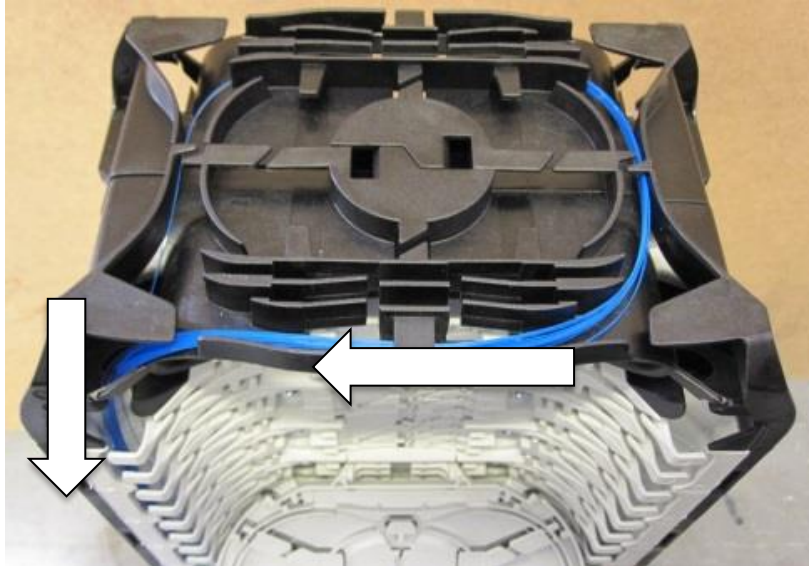
Step 9

- Select the fibre/s you will route to the splice tray.

- Route the fibre/s down the right-hand side top manifold and across the front.

- Route the output fibre/s down the left-hand side raceway to appropriate splice tray.
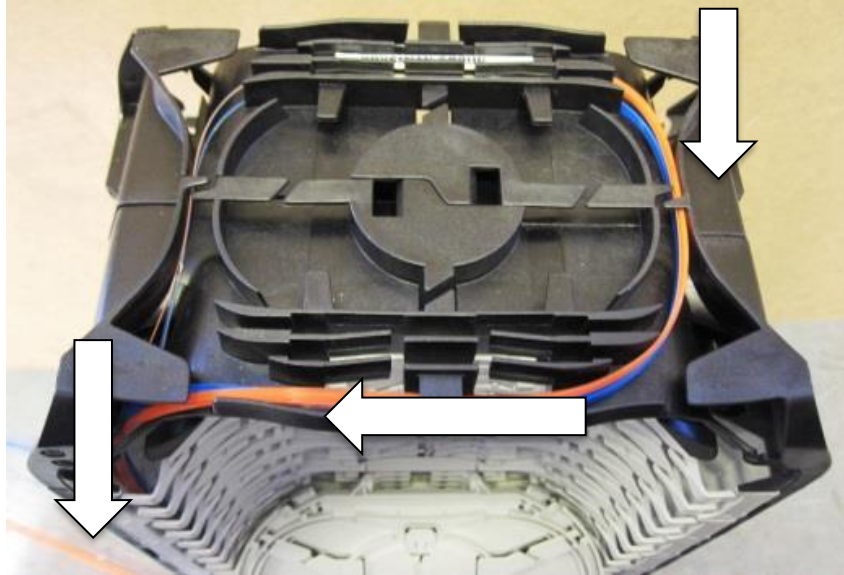
4.SPLITTER INSTALLATION

Step 10

- Replace the top manifold cover. Route the remaining fibres in the same way in Step 6.

- **GO TO STEP 11 TO 13 TO ADD ADDITIONAL SPLITTERS.**

- **GO TO STEP 14 TO REPLACE MANIFOLD COVER.**
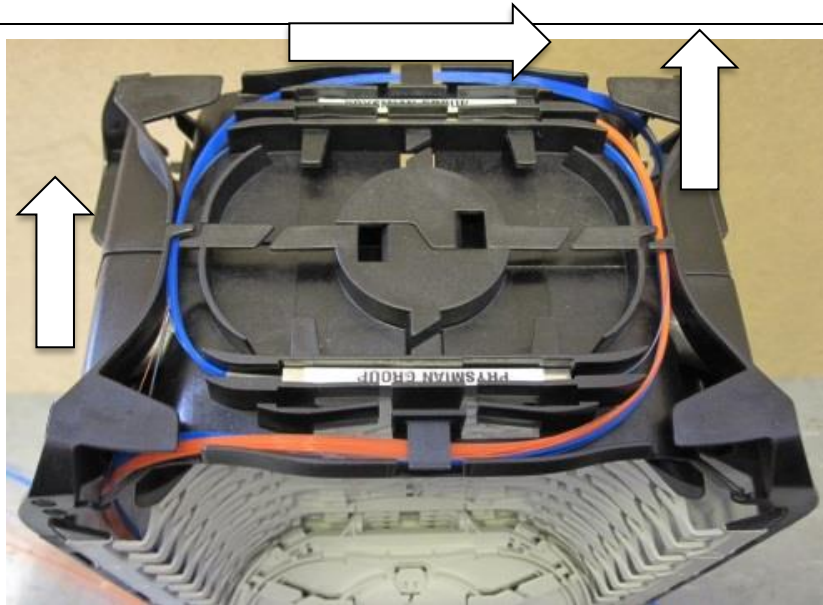
4.SPLITTER INSTALLATION

| Step 11 | |

- Splitter position 2.

- Follow steps 6 to10 ensuring you follow the correct routing of inputs and outputs using step 4 & 5 as your position guide.

Step 12

- Splitter position 3.

- Follow steps 6 to10 ensuring you follow the correct routing of inputs and outputs using step 4 & 5 as your position guide.
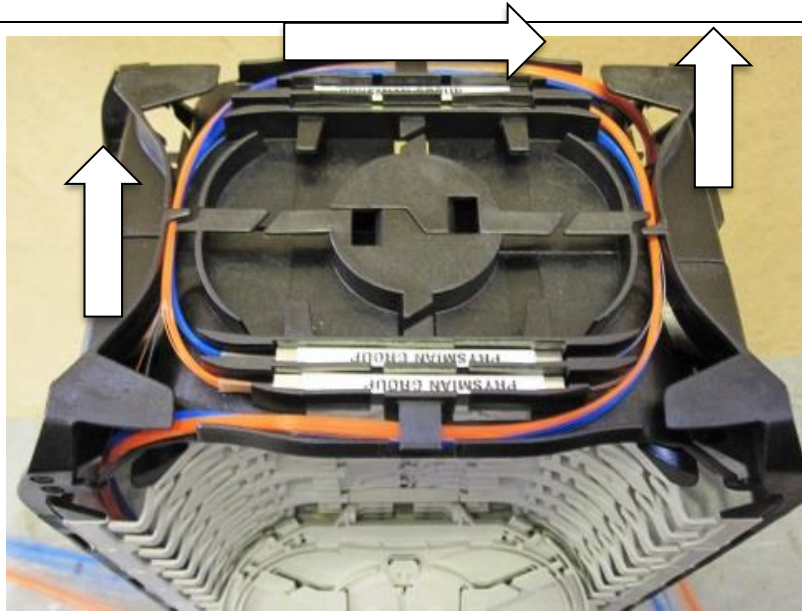
4.SPLITTER INSTALLATION

Step 13

- Splitter position 4.

- Follow steps 6 to10 ensuring you follow the correct routing of inputs and outputs using step 4 & 5 as your position guide.

Step 14

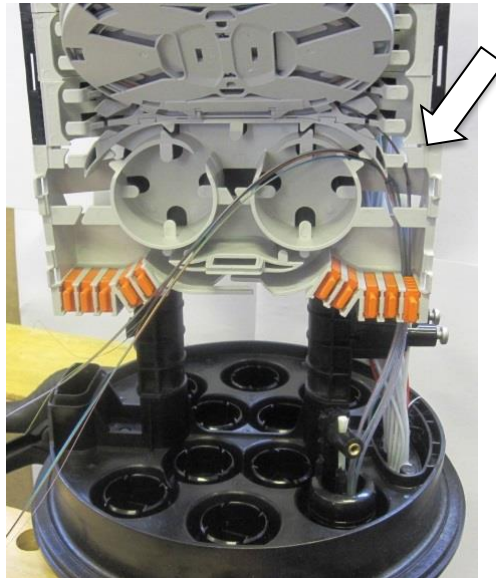- Replace the top manifold cover.

Step 1	

- Route the fibres onto the mandrel.

Step 2
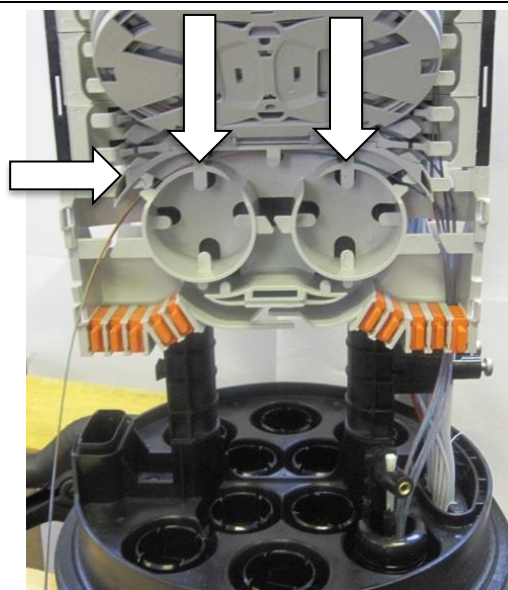
- Feed the fibres around the top of the mandrel.

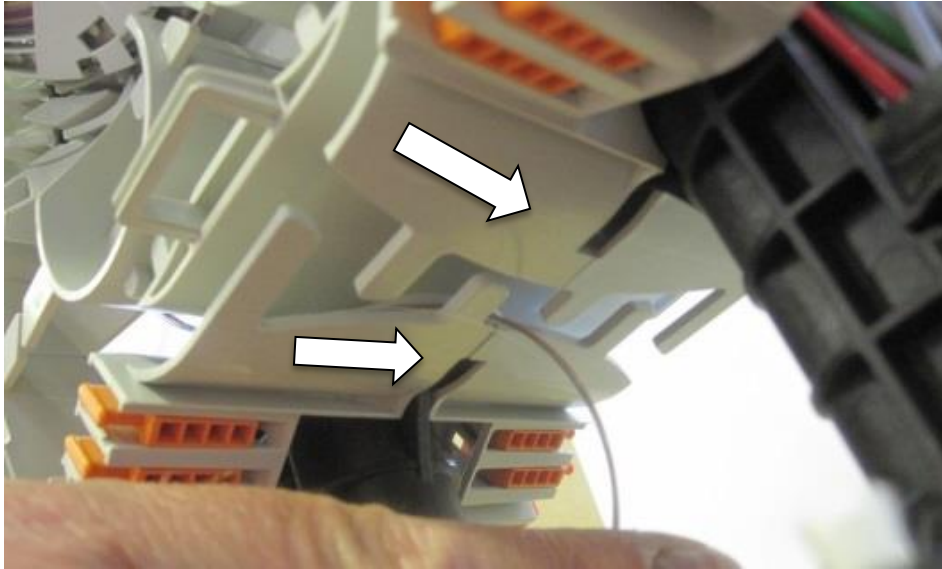IP350   Issue Number: 06   Date: 13th February 2024

Step 3
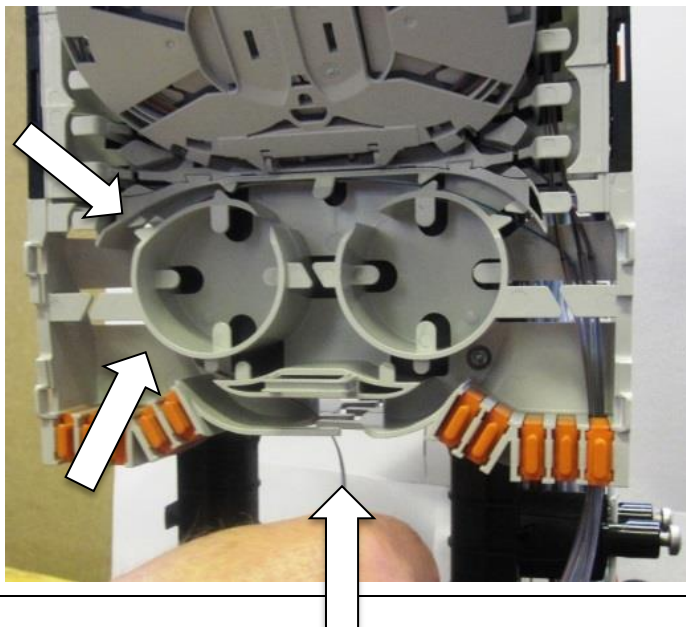
- Carefully feed the fibre to the bottom central tunnel.

Step 4

- Carefully feed the fibres through the tunnel to the other side of the joint.

- Ensure the fibre remains within the tunnel by threading it around the tabs.

Step 5
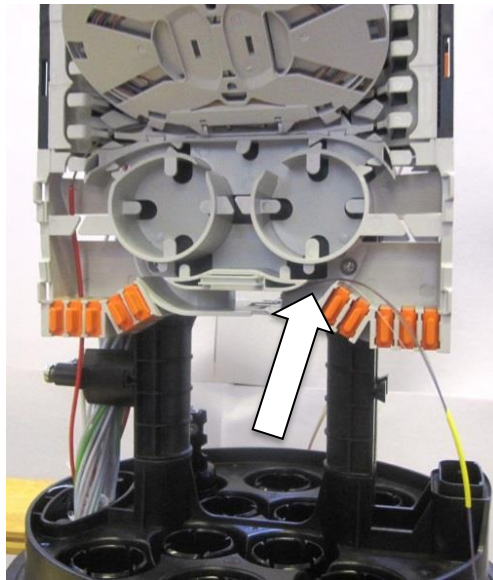
- Bring the fibre through and up onto the opposite mandrel.

Step 6
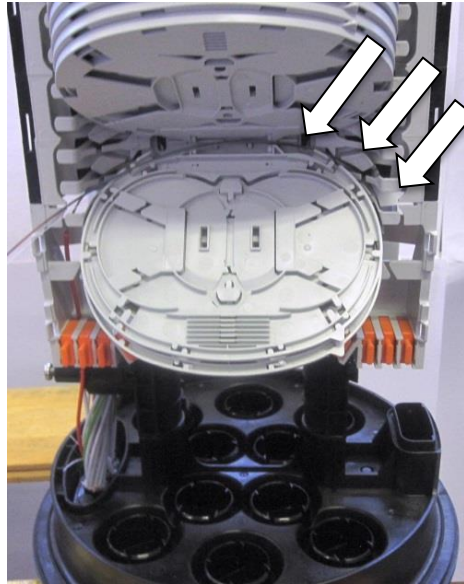
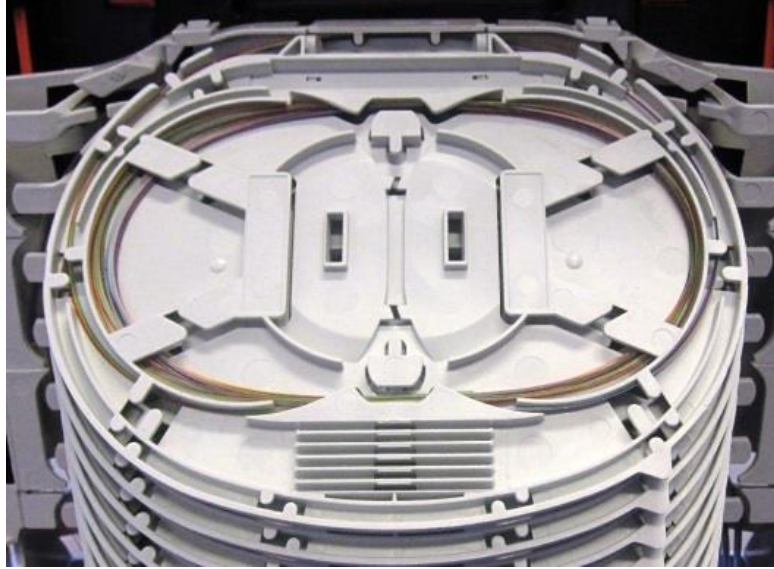- Feed the fibre round the mandrel and into the raceway and onto the appropriate tray as shown in section 2 step 7 to step 2. This will complete the fibre routing between the columns.

6.SPLICING ONTO SE TRAY

Description	Tools Required
How to splice a fibre on a SINGLE ELEMENT tray.	**Tools:** N/A

6.SPLICING ONTO SE TRAY

Step 1

- Locate the tray with fibre you wish to splice.
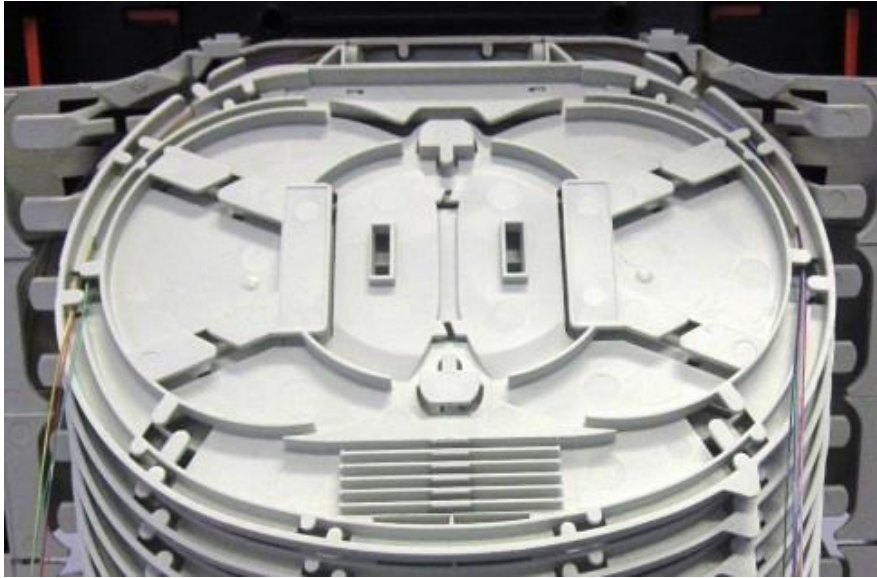
Step 2	

- Carefully unravel the storage loop and prepare your fibres for splicing. Prepare and splice using approved practises.

NOTE: ONLY USE splice protector size 1.3mm x 30mm.

Step 3
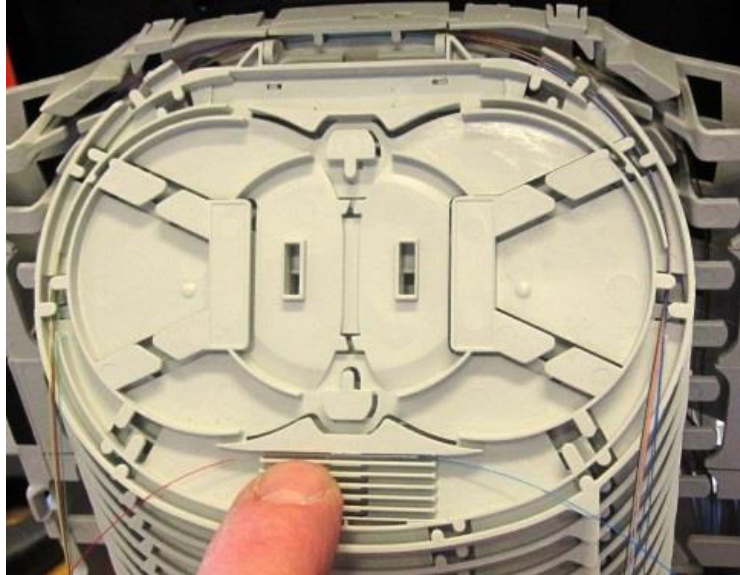
- Carefully push the completed splice into the splice groove in the tray so it is held in place.

| Step 4 | |
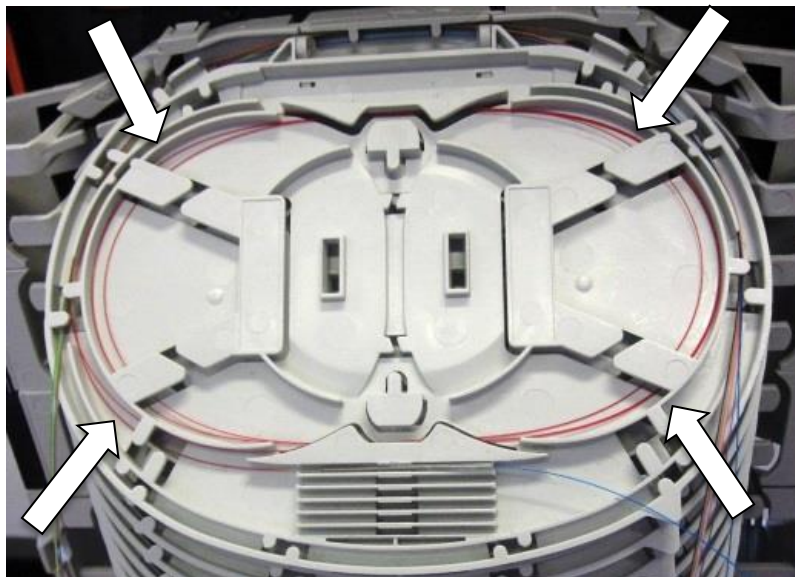
- One side at a time route each side of the spliced fibre around the tracks and into the storage area.

Step 5	
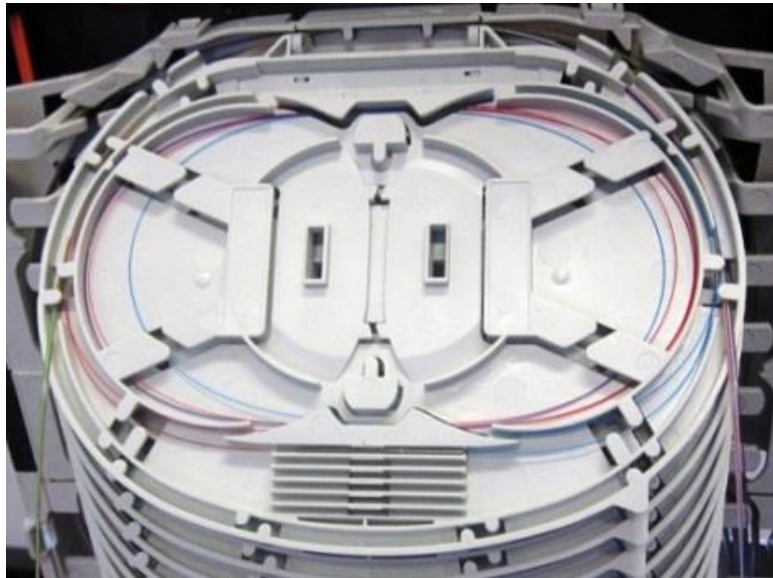
- Coil the loops of the fibre into the central storage area and store beneath the tabs.

Step 6
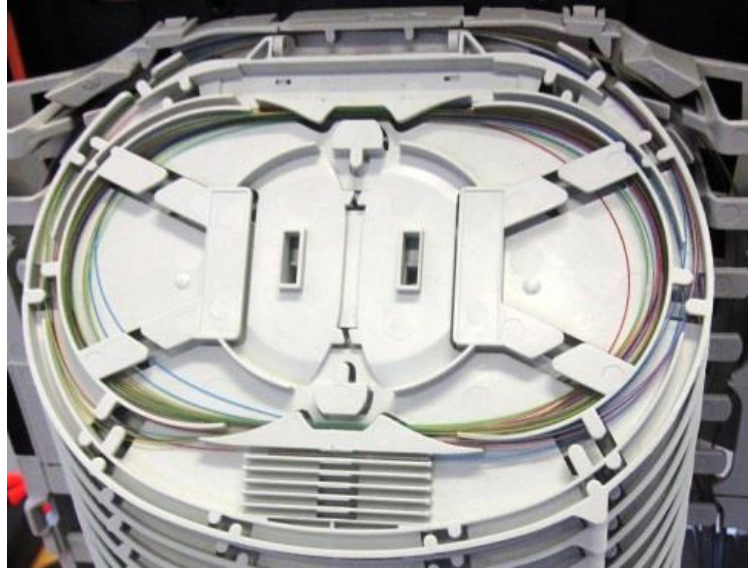
- Ensure all fibres are beneath the tray tabs.

7.SPLICING ONTO SC TRAY

Description	Tools Required
How to splice a fibre on a SINGLE CIRCUIT tray.	**Tools:** N/A

7.SPLICING ONTO SC TRAY

| Step 1 | |
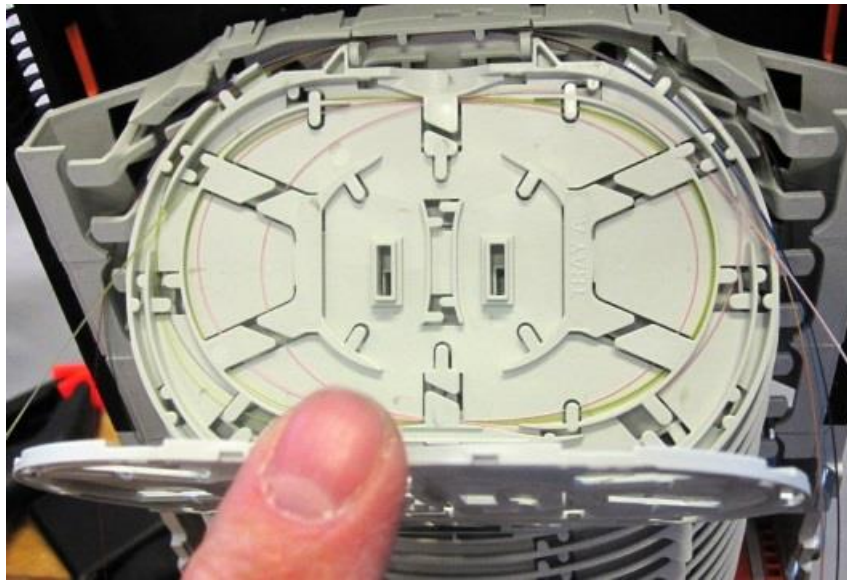
- Open the top tray as shown to locate the fibre that will be spliced if it is not on the front tray.
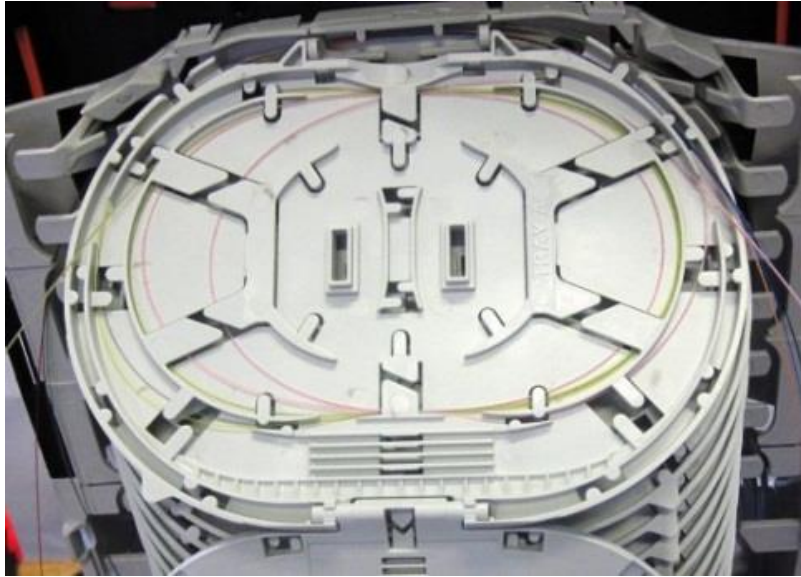
Step 2

- Carefully unravel the storage loop and prepare your fibres for splicing. Prepare and splice using approved practises.

**NOTE: ONLY USE splice protector size 1.3mm x 30mm.**

Step 3
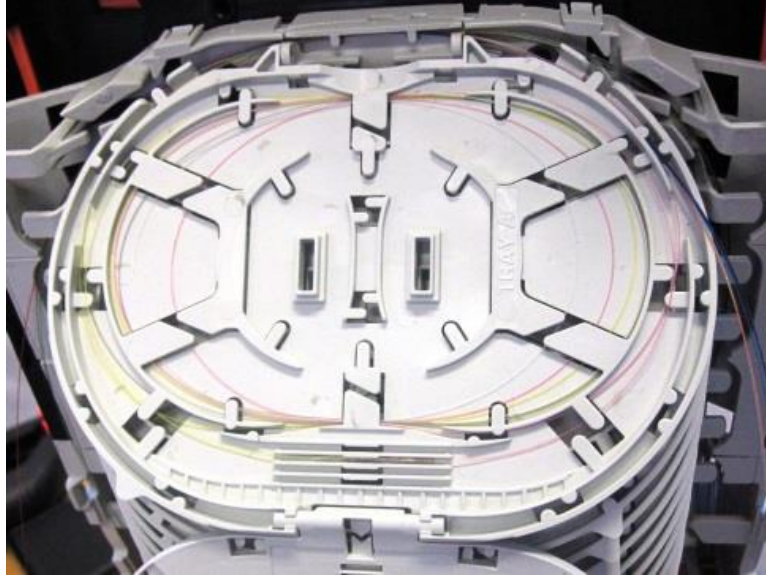
- Carefully push the completed splice into the splice groove in the tray so it is held in place.

- One side at a time route each side of the spliced fibre around the tracks and into the storage area.

- Repeat as necessary.

Step 4
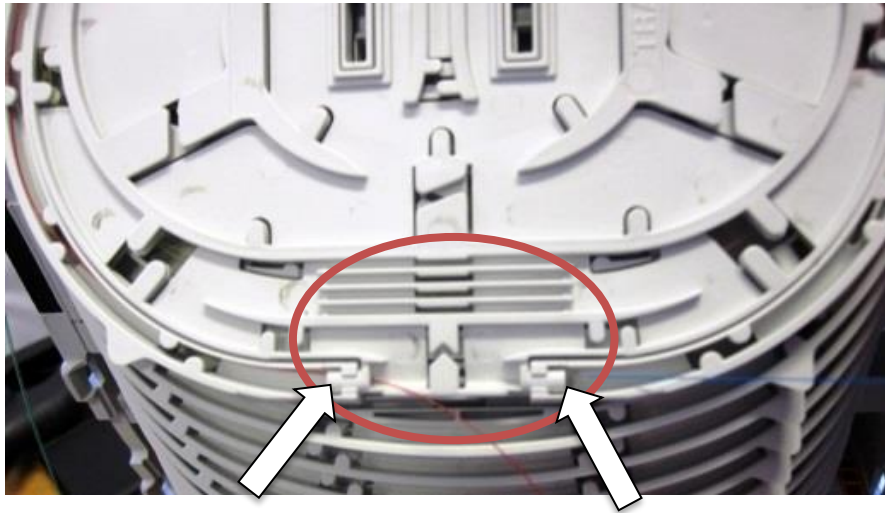
- To feed the fibre from the tray A and onto the tray B to splice, use either tunnel at the bottom of the tray as shown.

Step 5

- Splice as shown in step 3 and push into the tray B splice groove.

- Repeat as necessary.

Step 6
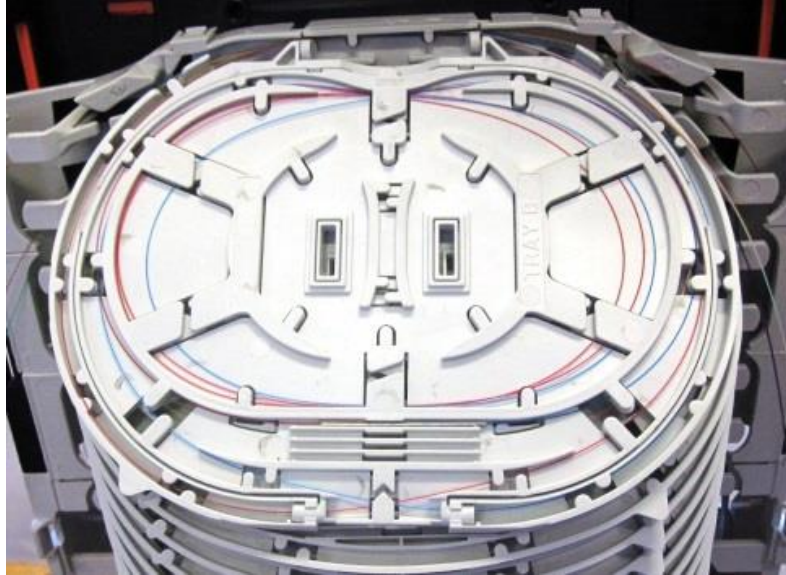
- Store the spliced fibre in the storage area as before.

- Coil the loops of the fibre into the central storage area and store beneath the tabs.

- Ensure all fibres are beneath the tray tabs.

8.MID - SPAN LOOP USAGE – LOOSE TUBE

Description	Tools Required
How to remove the loop from the storage area and replace it.	**Tools:** Measuring Tape.

Step 1
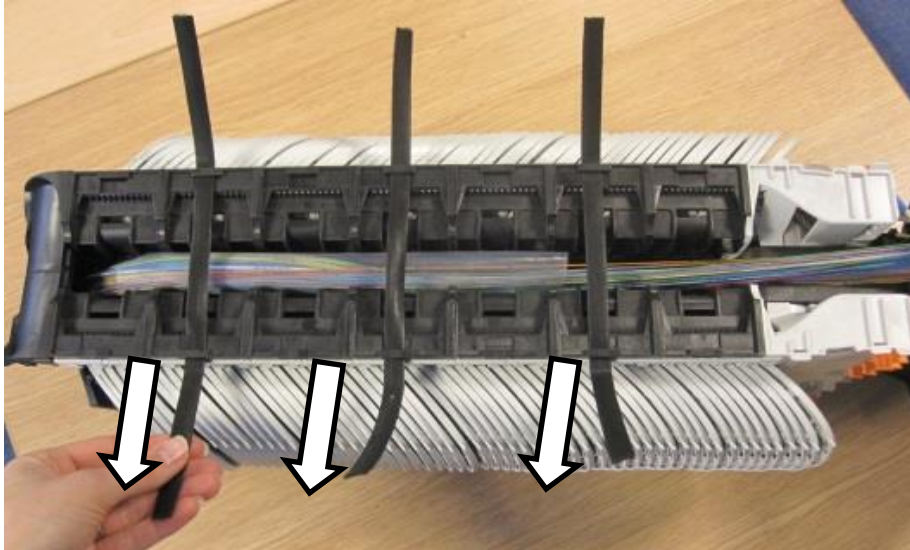
- Remove Velcro straps.

- Undo & pull the velco out of the slots.

NOTE: Do not bin the Velcro; keep in a safe place for securing the loop when it's replaced.

Step 2

- Carefully remove the loop from the storage area.

- Remove the plastic sleeve.

- Identify the element you wish to use and cut it in the centre of the length.

| Step 3 | |

- Firstly, separate the two ends of the loop. Gently straighten the loop away from the LMJ ready to loop into the spine.

NOTE: Take care not to kink the cable elements when installing the loop. Do not rush and follow the instructions precisely. The loop guide is designed to store loose tube elements.

Step 4

- See Table for number of loops to create.

- For the first loop, cross the elements at the top and flip the loop over to gather the elements.

Joint Type	Cable Type	No. di matasse
LMJ Small	LT	6 loops
LMJ Medium	LT	4 loops
LMJ Large	LT	3 loops

Step 5

- Ensure the loop lengths are straight, even and crossed over as shown.

- The loop lengths are not crossed at the joint end, only at the top where you are creating a loop each time.

- **Check each loop looks the same.**

Step 6

- Loosely holding the elements with one hand measure inside the loop diameter.

- See Table to select correct loop measurement for your joint.

- Return to Step 4 to 6 if you do not have the correct dimension.

Joint Type	Cable Type	Loop Measurement
LMJ Small	LT	150mm
LMJ Medium	LT	150mm
LMJ Large	LT	260mm

NOTE: See table and measure carefully the outside diameter loop stated dimensions.

Step 7	

- For the second loop, cross the elements at the top and flip the loop over to gather the elements.

| Step 8 | |

- Make the second loop, but ensure the loop is slightly larger than the first loop as shown in the photo.

NOTE: The loop diameter is now slightly wider than the first loop.

Step 9

- For the third loop, cross the elements at the top and flip the loop over to gather the elements.

Step 10

- Make the third loop, but ensure the loop is slightly larger than the first & second loop as shown in the photo.

NOTE: The loop diameter is now slightly wider than the second loop.

Step 11

- For the fourth (& final) loop, cross the elements at the top and flip the loop over to gather the elements.

NOTE: SEE TABLE STEP 4 FOR EXACT LOOP QUANITIES.
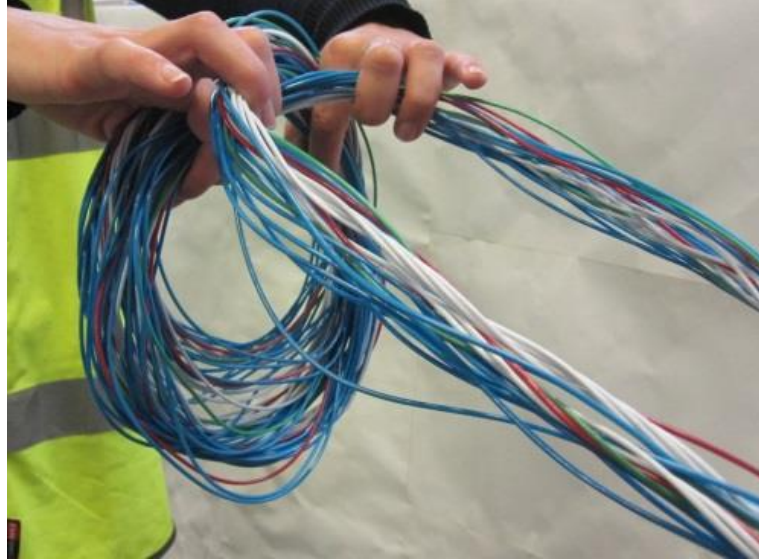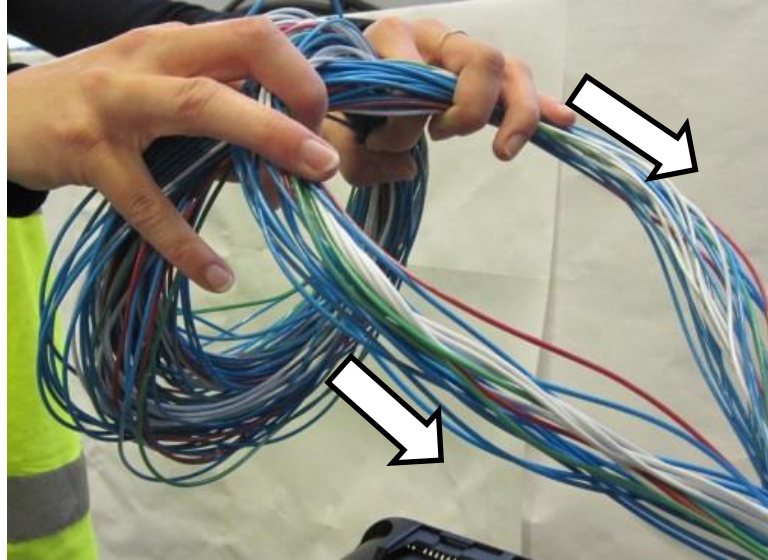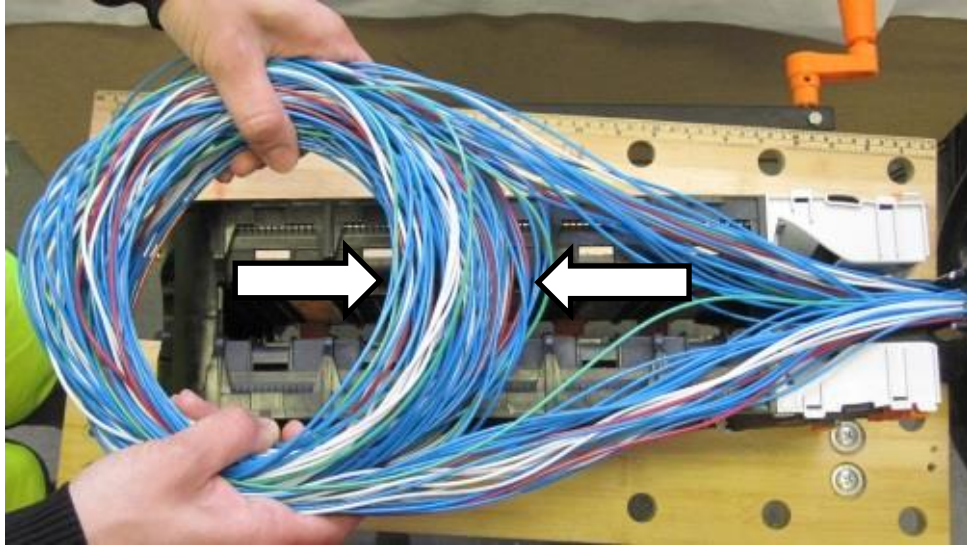
Step 12

- Make the fourth (& final) loop, but ensure the loop is slightly larger than the first, second & third loop as shown in the photo.

NOTE: The loop diameter is now slightly wider than the third loop.

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Step 13

- Gather the loop in place with one hand.

- Locate the plastic sleeve and place your hand through the sleeve and hold onto the loop at the top.

Step 14

- Using your free hand, carefully pull the plastic sleeve over the entire loop until the edge of the sleeve is in line with the top of loop.

Step 15

- Twist the loop 90 degrees ensuring elements are twisted in the natural direction that the element lay in the cable anchor position. See Step 16 & 17 for incorrect and correct twist.

NOTE: Do not twist against the elements.

Step 16

- Incorrect (unnatural) twist loop twist.

NOTE: The elements are twisted and do not sit neatly on top of one another.

Step 17	

- Correct (natural) loop twist.

NOTE: The elements lay flat and neatly on top of one another.

Step 18

- Carefully push the loop into the open side of the loop storage area.

- Ensure to get the entire loop within the side walls of the spine.

NOTE: Ensure the plastic sleeve is pushed through evenly and without it twisting.

Step 19

- Gently hold in place whilst you locate the loop storage cover.

NOTE: Take care not to kink the cable elements when installing the loop. Do not rush and follow the instructions precisely.

Step 20
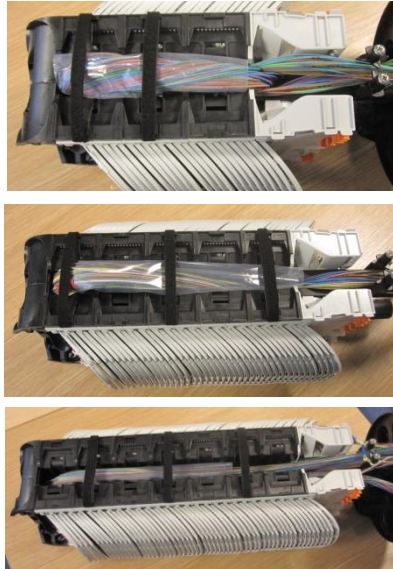
- Replace Velcro straps (see table for how many per LMJ).

- Push the velcro into the slots, soft side down.

- Ensure loop is gently pushed down to ensure the velcro is as tight as possible securing the loop.

Joint Type	Cover Type
LMJ Small	2x Velcro Straps
LMJ Medium	3x Velcro Straps
LMJ Large	3x Velcro Straps

NOTE: Take care not to kink or catch the cable elements when installing the loop. Do not rush and follow the instructions precisely.

9.MID - SPAN LOOP USAGE – FLEX TUBE

Description
How to remove the loop from the storage area and replace it.

Tools Required:
Tools: Flat head screwdriver.

Step 1
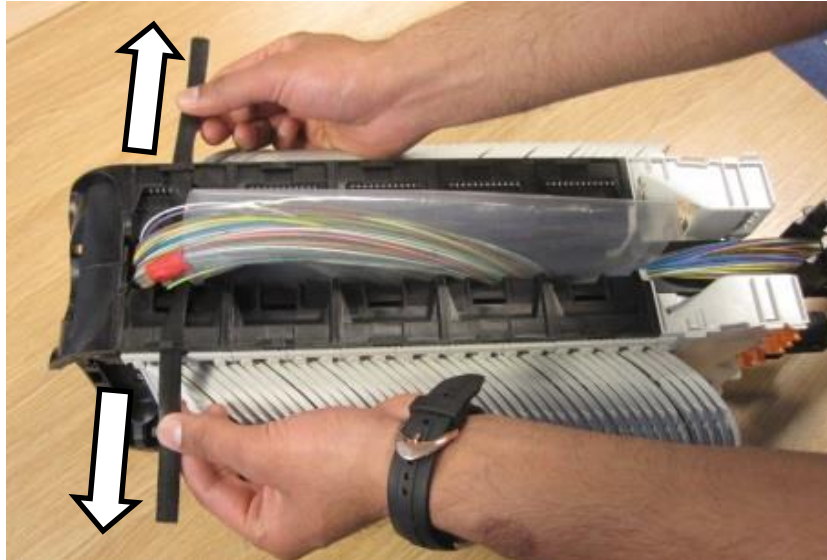
- Remove Velcro straps.

- Undo & pull the velcro out of the slots.

NOTE: Do not bin the Velcro; keep in a safe place for securing the loop when it's replaced.

| Step 2 | |

- Carefully remove the loop from the storage area.

- Remove the plastic sleeve.

- Identify the element you wish to use and cut it in the centre of the length.

Step 3	

- Firstly, separate the two ends of the loop. Gently straighten the loop away from the LMJ ready to loop into the spine.

NOTE: Take care not to kink the cable elements when installing the loop. Do not rush and follow the instructions precisely. The loop guide is designed to store loose tube elements.

Step 4	

- See Table for number of loops to create.

- For the first loop, cross the elements at the top and flip the loop over to gather the elements.

Joint Type	Cable Type	No. of Loops
LMJ Small	FT	6 loops
LMJ Standard	FT	4 loops
LMJ Large	FT	4 loops

Step 5

- Ensure the loop lengths are straight, even and crossed over as shown.

- The loop lengths are not crossed at the joint end, only at the top where you are creating a loop each time.

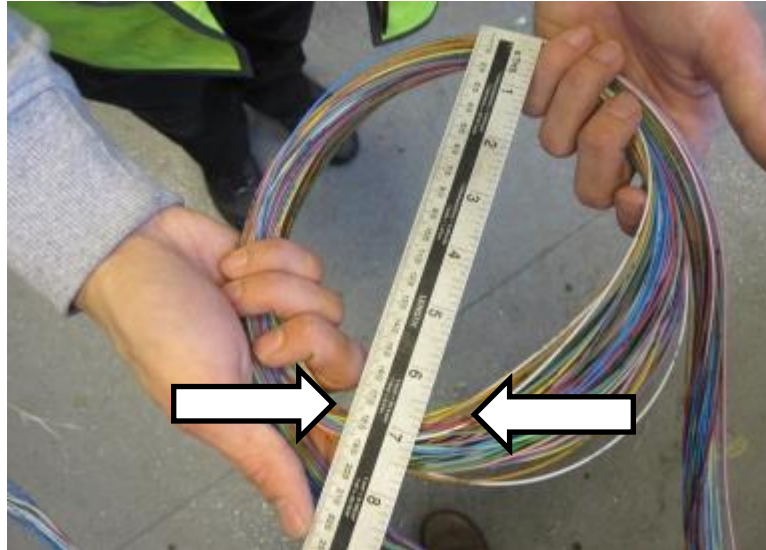- **Check each loop looks the same.**

Step 6	

- Loosely holding the elements with one hand measure inside the loop diameter.

- See Table to select correct loop measurement for your joint.

- Return to Step 24 to 26 if you do not have the correct dimension.

Joint Type	Cable Type	Loop Measurement
LMJ Small	FT	180mm
LMJ Medium	FT	200mm
LMJ Large	FT	200mm

NOTE: See table and measure carefully the outside diameter loop stated dimensions.

Step 7

- For the second loop, cross the elements at the top and flip the loop over to gather the elements.

Step 8	
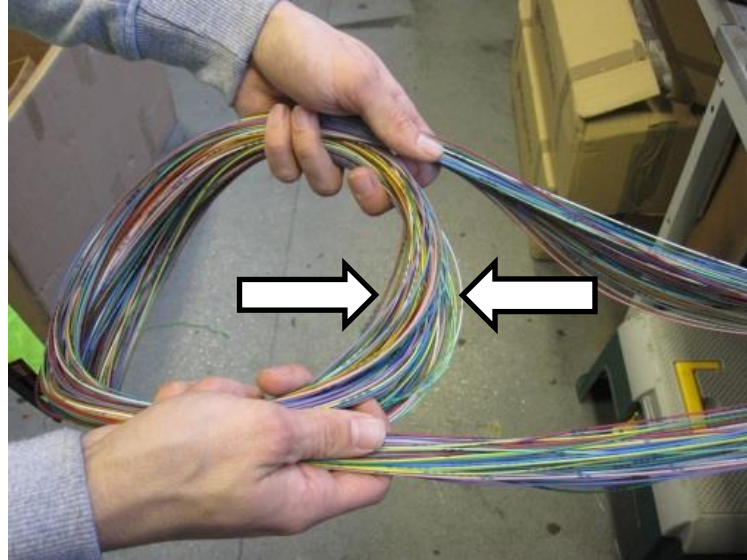
- Make the second loop, but ensure the loop is the same as the first loop as shown in the photo.

NOTE: The loop diameter is now slightly wider than the first loop.

Step 9	

- For the third loop, cross the elements at the top and flip the loop over to gather the elements.
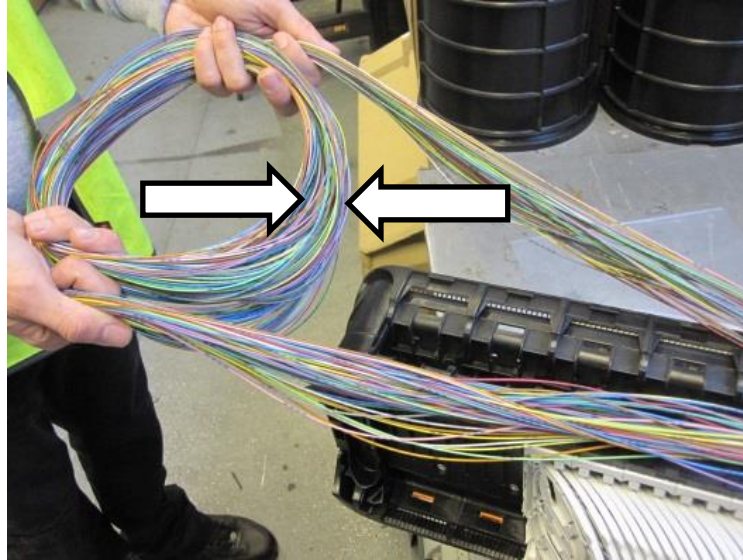
| Step 10 | |

- Make the third loop, but ensure the loop is the same as the first & second loop as shown in the photo.

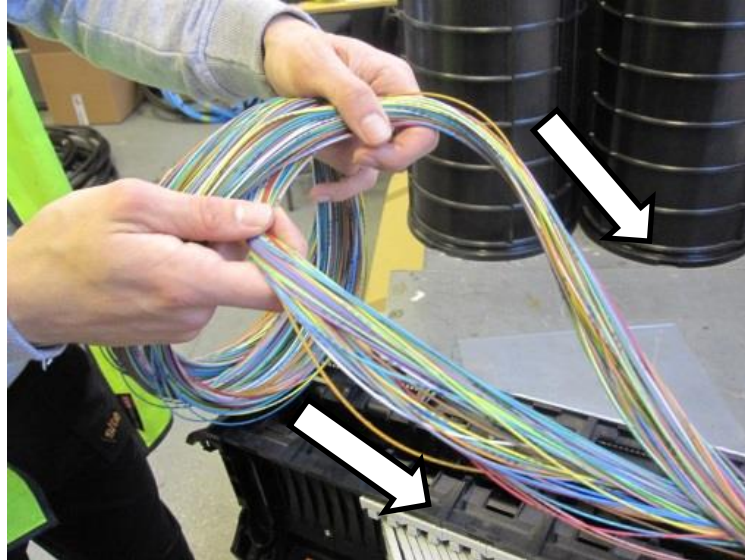**NOTE**: The loop diameter is the same as the second loop.

Step 11	

- For the fourth (& final) loop, cross the elements at the top and flip the loop over to gather the elements.

NOTE: SEE TABLE, STEP 4, FOR EXACT LOOP QUANITIES.
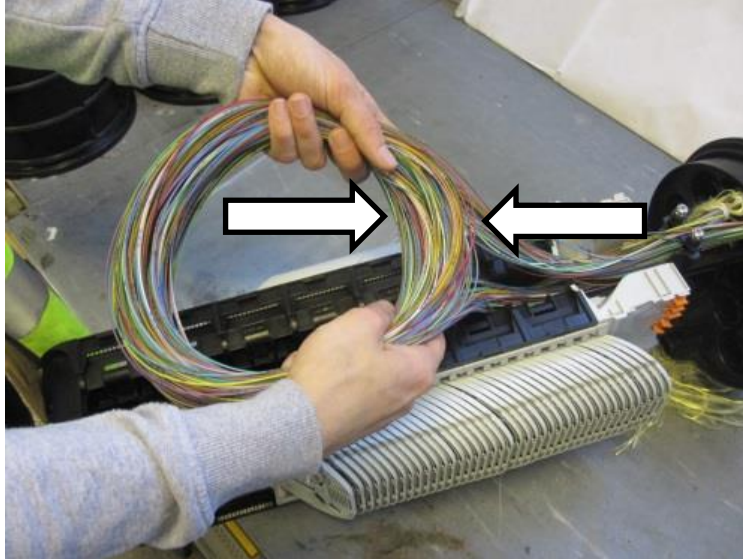
Step 12	

- Make the fourth (& final) loop, but ensure the loop is the same than the first, second & third loop as shown in the photo.

NOTE: The loop diameter is the same as the third loop.
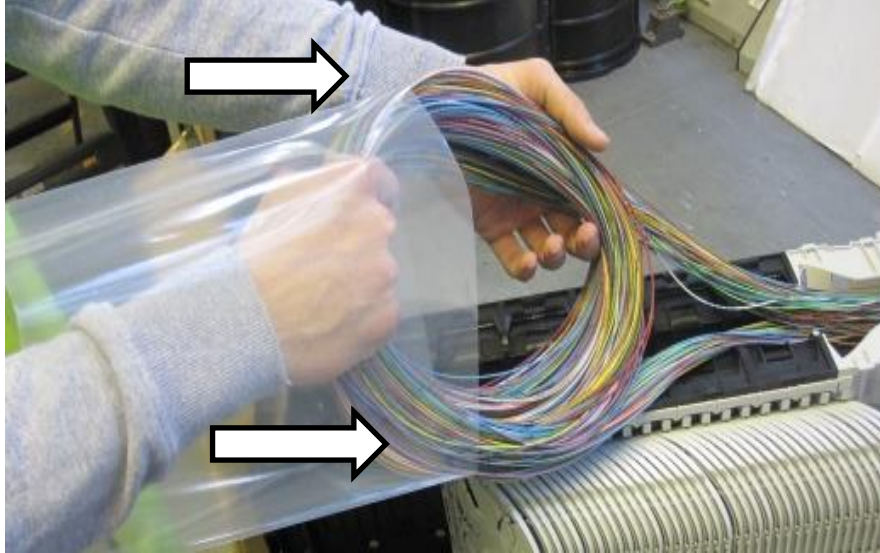
Step 13

- Gather the loop in place with one hand.

- Locate the plastic sleeve and place your hand through the sleeve and hold onto the loop at the top.

Step 14

- Using your free hand, carefully pull the plastic sleeve over the entire loop until the edge of the sleeve is in line with the top of loop.

- Ensure to leave a 40-50mm gap from the top to hang the loop.

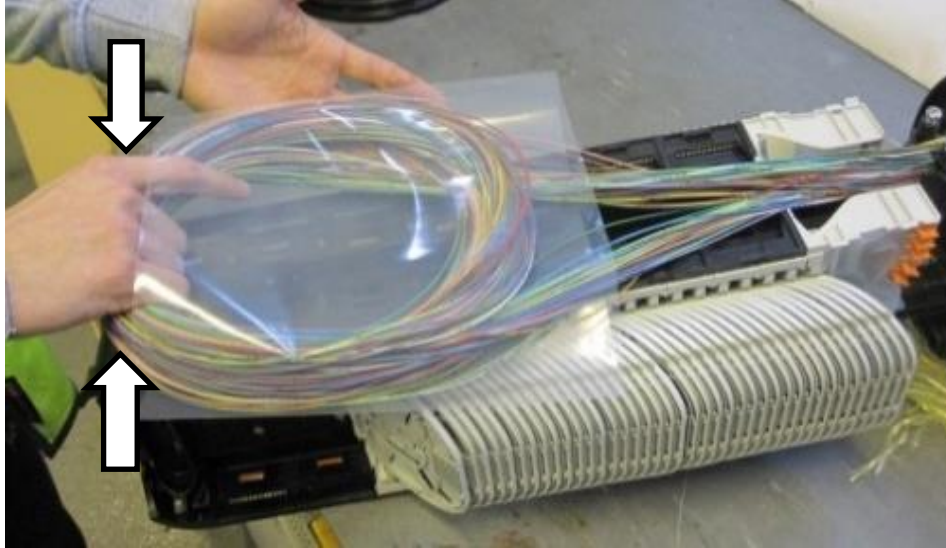|	
Step 15	

- Twist the loop 90 degrees ensuring elements are twisted in the natural direction that the element lay in the cable anchor position. See Step 16 & 17 for incorrect and correct twist.

NOTE: Do not twist against the elements.

Step 16

- Incorrect (unnatural) twist loop twist.

NOTE: The elements are twisted and do not sit neatly on top of one another.

Step 17

- Correct (natural) loop twist.

NOTE: The elements lay flat and neatly on top of one another.

Step 18

- Carefully push the loop into the open side of the loop storage area.

- Ensure to get the entire loop within the side walls of the spine.

NOTE: Ensure the plastic sleeve is pushed through evenly and without it twisting.

Step 19

- Using 1x piece of Velcro push it into one side of the top position slot, soft side down.

- Carefully thread it through the loop.

- Push it into the other side of the slot.

- Ensure the loop is hanging evenly.

- Hang and secure the loop in the top position.

Step 20

<p style="text-align:center">**Locate other pieces of Velcro**</p>

- Gently hold in place whilst you locate the other Velcro pieces.

NOTE: Take care not to kink the cable elements when installing the loop. Do not rush and follow the instructions precisely.

Step 21

- Install Velcro straps.

- Push the velcro into the slots, soft side down.

- Ensure loop is gently pushed down to ensure the vlecro is as tight as possible securing the loop.

Joint Type	Cover Type
LMJ Small	2x Velcro Straps
LMJ Medium	3x Velcro Straps
LMJ Large	3x Velcro Straps

NOTE: Small joint the velcro will be central. Large joint the velcro will be central, and every other position top and bottom.

10. ADDING SECOND CABLE TO DUAL PORT KIT

Description	Tools Required

| How to install the second cable into the dual port mechanical gland. The cable preparation and installation instructions are supplied with the appropriate gland. | **Tools:**
Side cutters, 2mm Allen key. |

10.ADDING SECOND CABLE TO DUAL PORT KIT

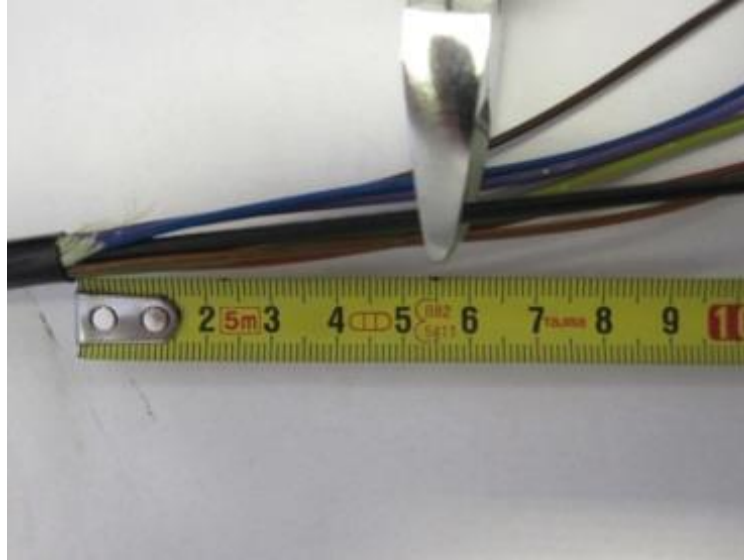|	
Step 1	

- Unscrew the gland nut.

- Remove the blanking plug.

Step 2

- Feed the cable through the gland nut, then through the vacant hole in the torsion piece and the rubber seal.

Step 3	

- Prepare the cable using local procedure.

NOTE: The CSM needs to be cut 50mm from the cable butt.

Step 4	
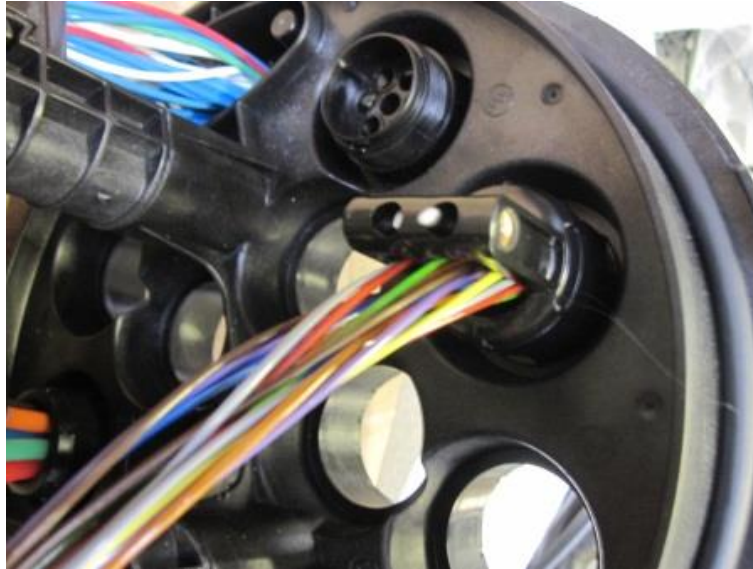
- Pull the cable back then align the CSM with the CSM clamp position.

- Push the cable forward until the CSM can be seen.

- Tighten the M4Grub screw to clamp the CSM.

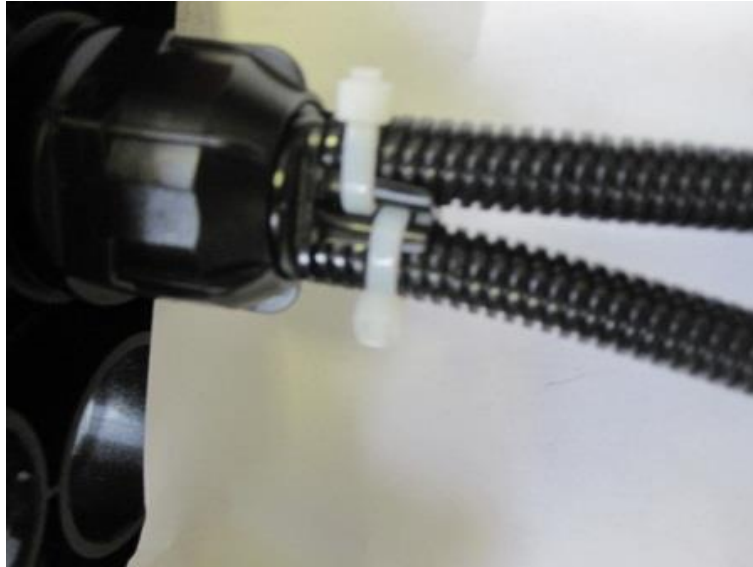**Step 5**

- Slide the Gland nut back up the cable and tighten.

- Feed a cable tie through the centre of the torsion piece and tighten the cable tie.

10.ADDING SECOND CABLE TO DUAL PORT KIT

Step 6

- The pictures show a completed installation.

- Now refer to section 2 for the fibre routing inside the closure.

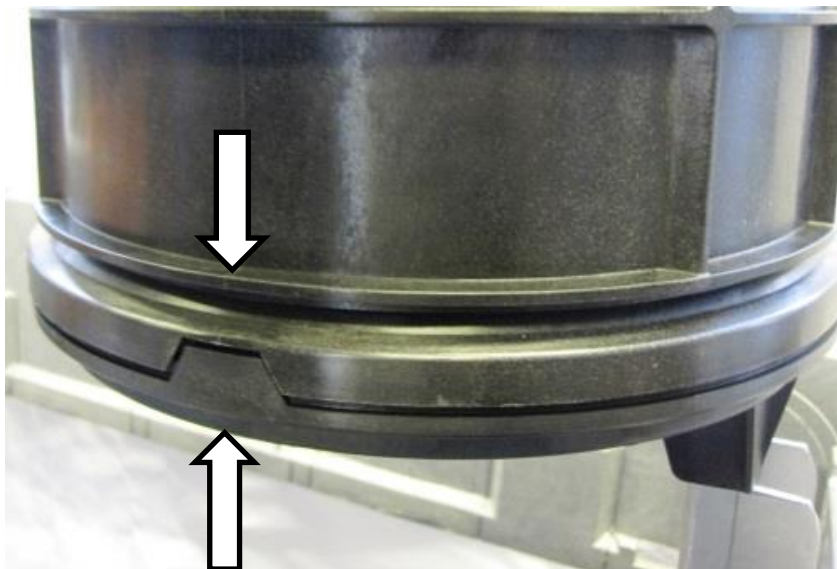| Description	Tools Required
How to close the joint & install the cap and clamp.	**Tools:** N/A.

Step 1

CHECK COMPONENTS

- Ensure that the 'O' seal and adjacent surfaces of the base and cap are clean and in position.

- Ensure the nut on the valve is tight.

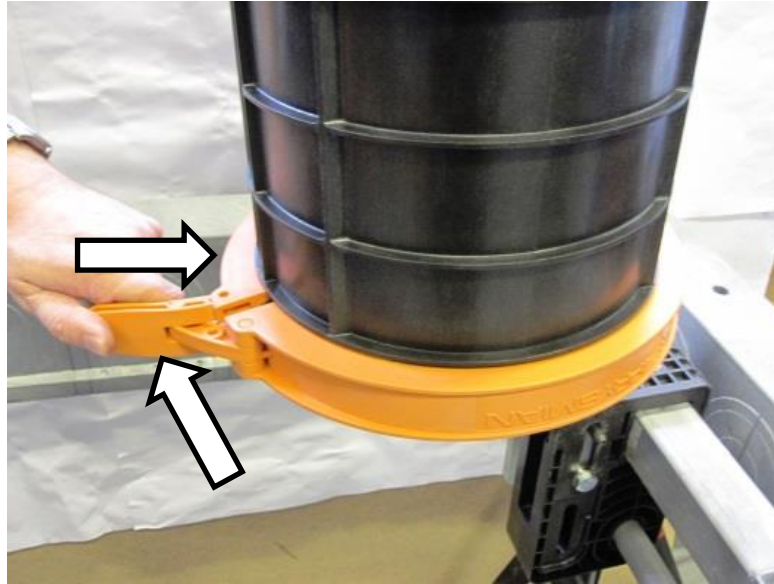## 10. ADDING SECOND CABLE TO DUAL PORT KIT

Step 2

- Ensure the cap is aligned correctly as shown.

Step 3

- Assemble the clamp around the base.

Step 4
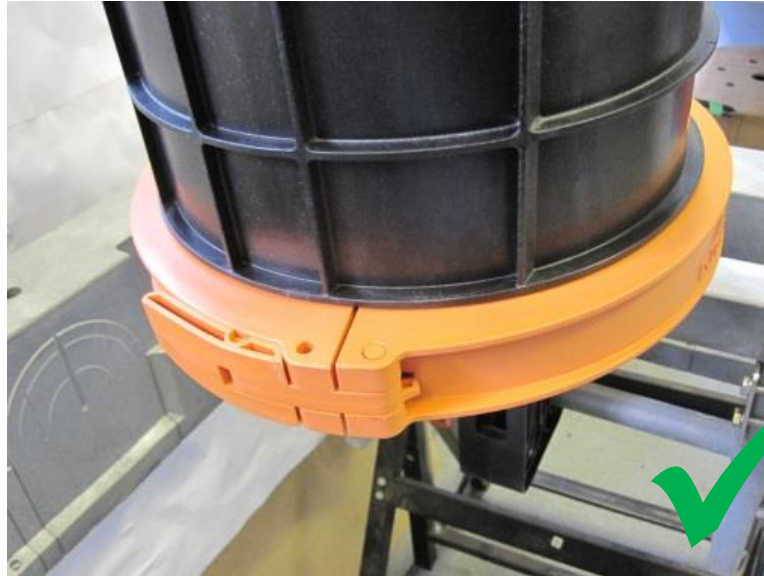
- Squeeze the clamp together and engage the toggle arm. Push the toggle arm into the clamp to lock and seal.

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