










## CMJ / MMJ – OVAL PORT KIT FOR CABLES WITH STEEL CSM

Description	Tools Required
<p>The CMJ / MMJ Oval Port Mechanical Seal kit is used to prepare and install a mid-span loop of cable into the oval port of the closure.</p>	<p><b>Tools:</b> Large Screwdriver, File, Torque Wrench.</p>

### Component Parts (pictures not to scale)

<p><b>1 Rubber Seal</b> (7-9mm &amp; 9-11mm) <b>Qty 2</b></p> 	<p><b>2 External Plate</b> <b>Qty 1</b></p> 	<p><b>3 Internal Plate</b> <b>Qty 1</b></p> 	<p><b>4 Screw M6x20</b> <b>Qty 2</b></p> 
<p><b>5 Washer M6</b> <b>Qty 2</b></p> 	<p><b>6 Cable Tie</b> <b>Qty 1</b></p> 	<p><b>7 Grease Sachet</b> <b>Qty 1</b></p> 	<p><b>8 Cable Anchor Plate</b> <b>Qty 1</b></p> 
<p><b>9 Metal Boss</b> <b>Qty 2</b></p> 	<p><b>10 Screw Set M4 x 16</b> <b>Qty 2</b></p> 		

## Joint and Cable Preparation – Oval port

### Step 1



- Knock out the oval port end plate of the Joint from the inside using a large screwdriver and remove any burrs using a file.

## Joint and Cable Preparation – Oval port

### Step 2

### Mark centre point of mid span window

- Remove the cables from the footway box and apply a reference mark to the cable where the centre of the window cut will be made.

## Joint and Cable Preparation – Oval port

### Step 3

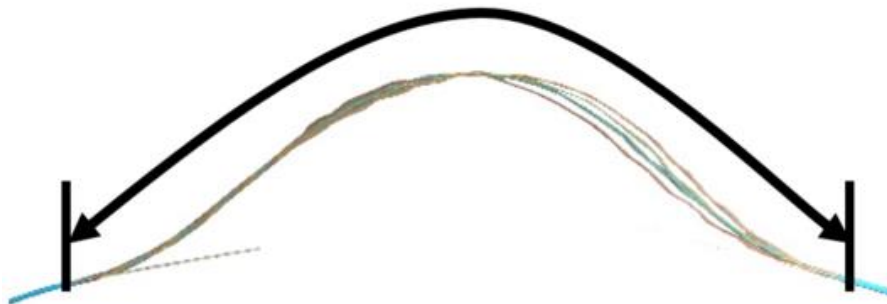
Joint Type	Cable Type	Loop Length
CMJ	Loose Tube	Not recommended
CMJ	Flex tube	2500 mm
MMJ	Loose Tube	2700 mm
MMJ	ex tube	2700 mm

- Identify the length of the mid span window required by identifying the joint and cable type from the table above.

## Joint and Cable Preparation – Oval port

### Step 4

Loop Length mm



Remove a window of cable sheath

- Apply two butt marks back either side of the mid span mark half the distance of the overall loop length. Before removing the sheath double check the two butt marks are the correct distance apart referring to the table in step 4.
- Remove the cable sheath between the two butt marks using approved practices.

## Joint and Cable Preparation – Oval port

### Step 5

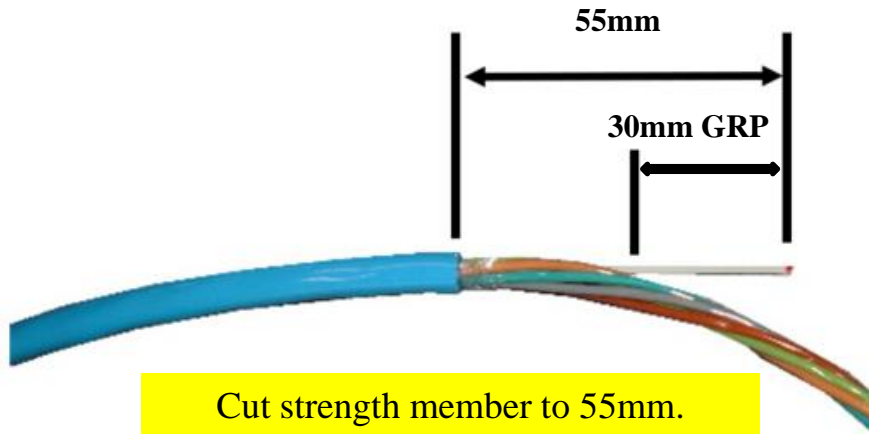
**Go to Step 6 if your cable has GRP or STEEL WIRE**

**Go to Step 7 if your cable has Aramid Yarn**

- Identify if your cable is using GRP or Aramid Yarn.
- Go to the relevant step for the preparation process.

## Joint and Cable Preparation – Oval port

### Step 6

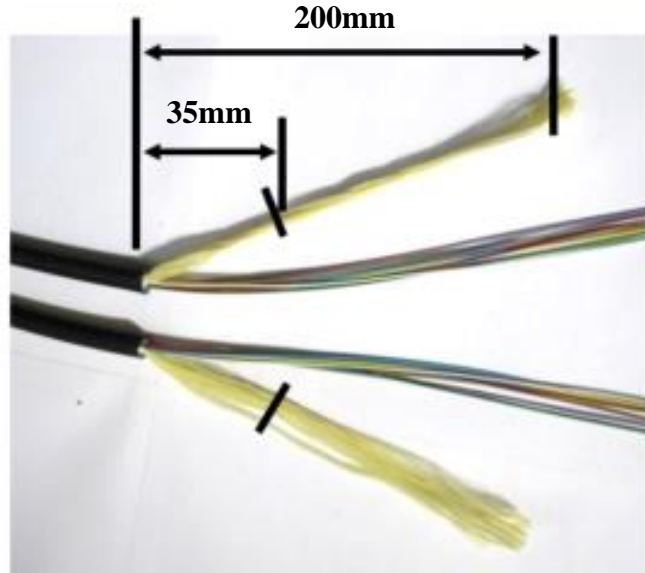


Cut strength member to 55mm.  
Remove 30mm of sheath from GRP.  
No sheath on STEEL WIRE.

- Remove all tapes and binders.
- Access the central strength member and cut it in the centre.
- Cut each end back to 55mm from the cable butt as shown.
- Remove 30mm of sheath from GRP if the CSM diameter is greater than 5mm.
- **GO TO STEP 8**

## Joint and Cable Preparation – Oval port

### Step 7



- Remove all tapes and binders.
- Access the aramid yarns and cut it in the centre.
- Cut each end back to 200mm from the cable butt as shown.
- Mark the aramid yarns with permanent marker 35mm from the cable butt.
- **GO TO STEP 8**



## Joint and Cable Preparation – Oval port

### Step 8

#### **WARNING!**

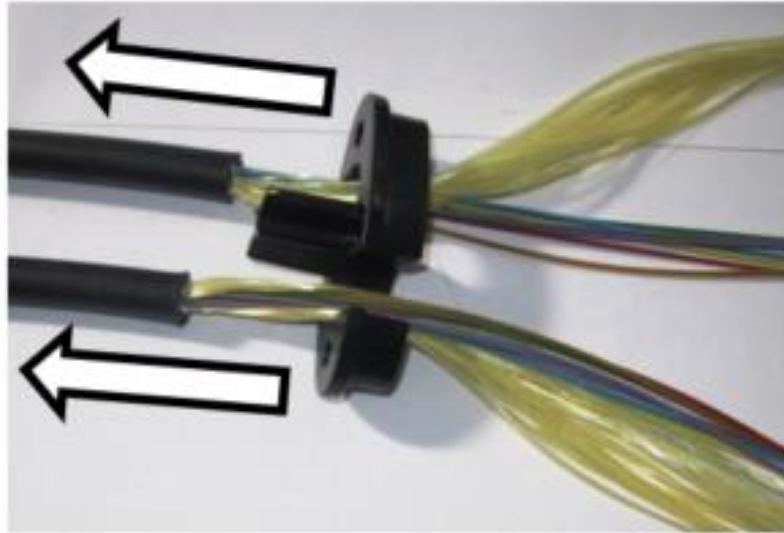
**DOUBLE CHECK THE CABLE DIAMETER BEFORE  
INSTALLING THE MECHANICAL SEAL.**

- It is important to check again at this point the nominal CABLE diameter.
- Use the lower tolerance to measure the appropriate oval seal size to install.

**Note: Cable identification numbers are written on flat surface of rubber seals.**

## Joint and Cable Preparation – Oval port

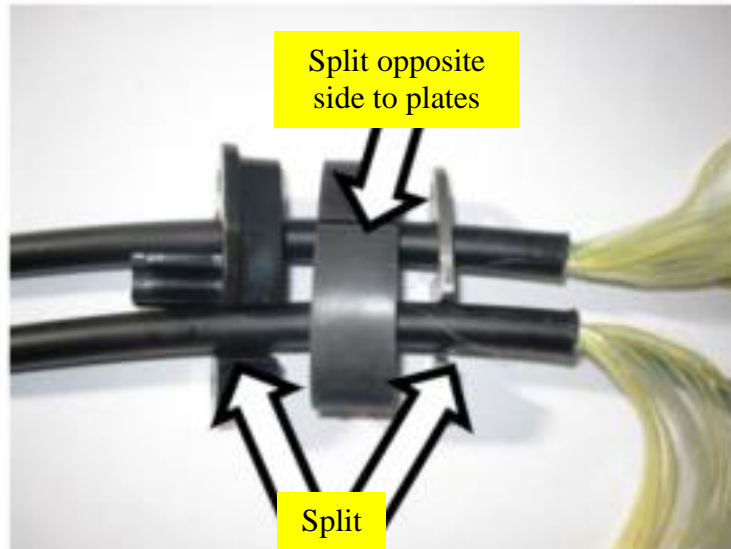
### Step 9



- Thread external plate over the elements and slide down onto cable.
- Ensure correct orientation, as in picture.

## Joint and Cable Preparation – Oval port

### Step 10



- Select the rubber seal suitable for your cable diameter. Cable identification numbers are written on flat surface of seal.
- Add the rubber seal and internal plate to the assembly on the cable.
- Ensure correct orientation of plate and rubber seal. The plates must conceal the split line in the rubber seal.

## Joint and Cable Preparation – Oval port

### Step 11



- Insert washers and screws and lightly screw together.

## Joint and Cable Preparation – Oval port

### Step 12



- Insert loop into the oval.
- Ensure aramids or strength members are pulled through carefully.
- Insert Mechanical Seal Oval Port assembly into the port fully.

## Joint and Cable Preparation – Oval port

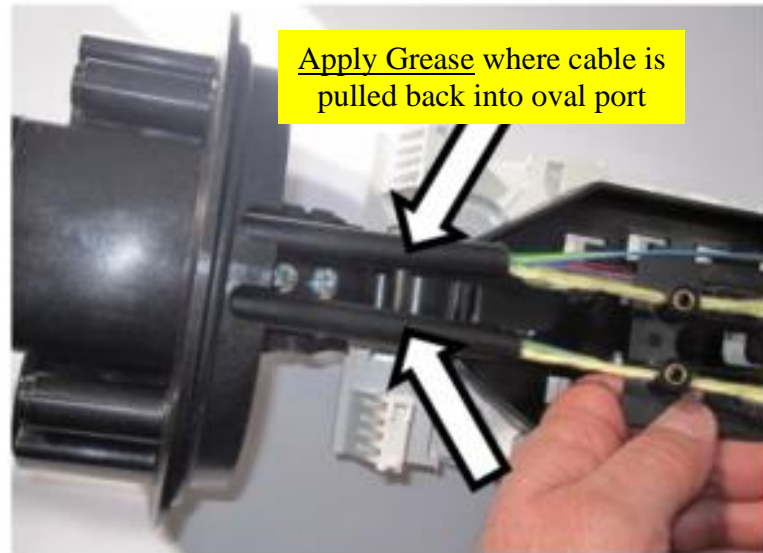
### Step 13



- **IF INSTALLING ARAMID OR GRP GO TO STEP 14.**
- **IF INSTALLING STEEL WIRE FOLLOW STEP 13.**
- Take the metal boss and place over the plastic boss in the orientation showed above.
- Ensure the vertical holes align.
- Repeat for both bosses.

## Joint and Cable Preparation – Oval port

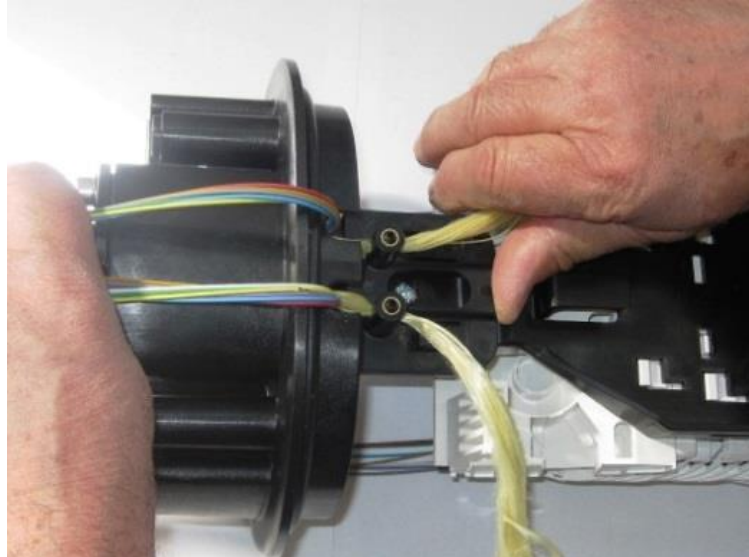
### Step 14



- Insert the GRP or ARAMID into the slots of the Cable Anchor Plate.
- **GO TO STEP 15 if installing STEEL WIRES.**
- Ensure you twist the aramid together before threading through the slot.
- Apply grease to this area of the cable before pulling the cable back into position.

## Joint and Cable Preparation – Oval port

### Step 15



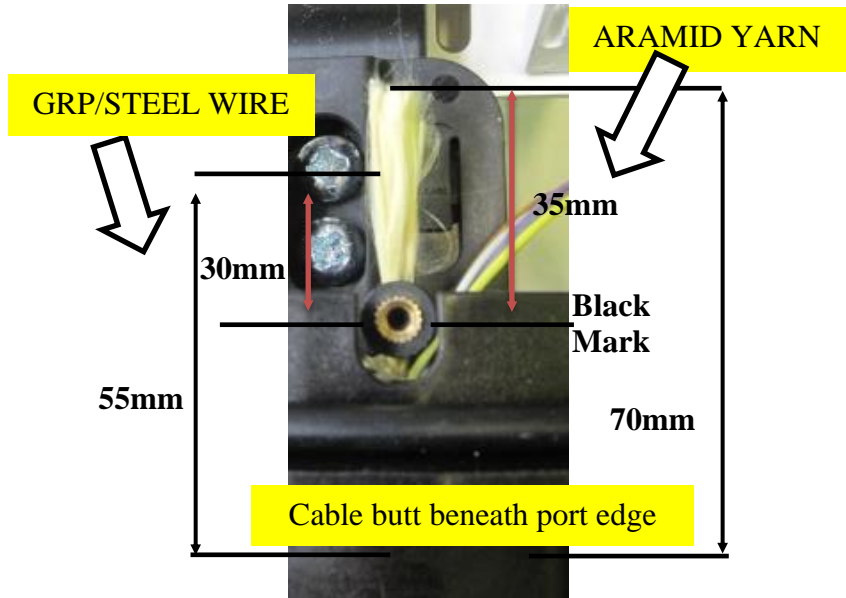
- Once cable anchor plate is in this position, if installing steel wires, insert them into slots at this point.
- Carefully move the elements out of the way and secure with one hand.

**NOTE: Ensure to wear protective gloves when installing steel wires.**



## Joint and Cable Preparation – Oval port

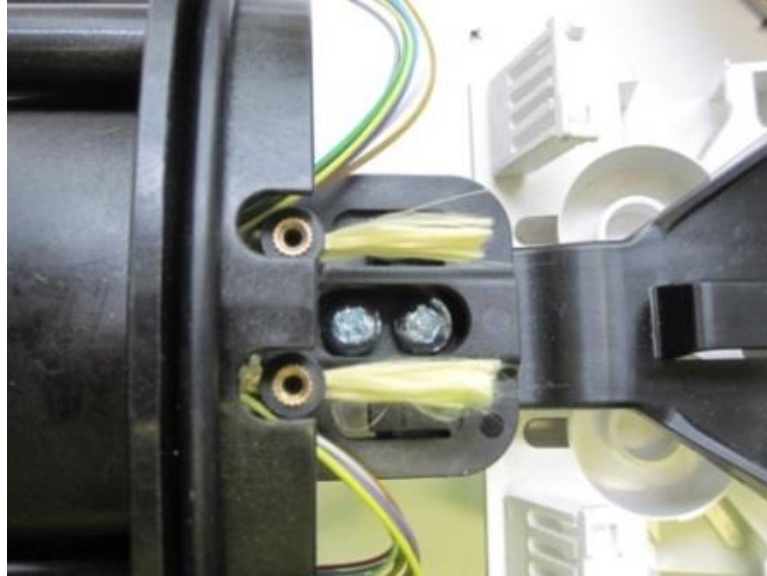
### Step 16



- Use the dimensions to ensure you have placed the cable butt in the correct position before securing the GRP or ARAMID.
- **Go to STEP 17 for ARAMID**
- **Go to STEP 18 for GRP or STEEL WIRE**

## Joint and Cable Preparation – Oval port

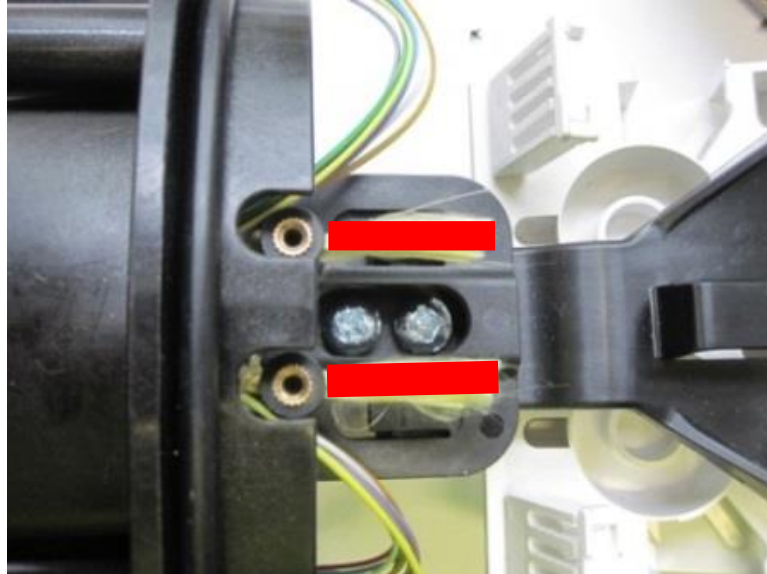
### Step 17



- Trim the aramid to 35mm as per diagram in STEP 16.
- Ensure aramid is taught and cables are pulled back into position.
- Use the 2mm Allen key to anchor the grub screw into the ARAMID.
- Go to Step 19.

## Joint and Cable Preparation – Oval port

### Step 18



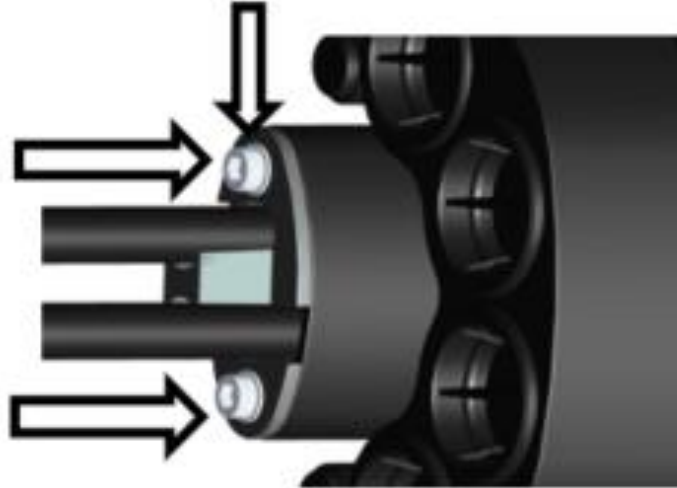
- Trim the GRP or STEEL WIRE as per diagram in STEP 16.
- Use the 2mm Allen key to anchor the grub screw into the GRP or STEEL WIRE.

**NOTE: If using STEEL WIRE ensure the wire bites into the metal boss.**

## Joint and Cable Preparation – Oval port

### Step 19

IF USING CONDUIT, SLIDE TO THIS POINT



- Ensure mechanical seal is fully inserted.
- Tighten screws to **3.5 N/m** using a Torque Wrench.
- Ensure you tighten each screw evenly and in small increments, a few turns at a time, until Torque value is reached.
- If using conduit slide it up to bottom of the port and secure using 2 cable ties.

## Joint and Cable Preparation – Oval port

### Step 20

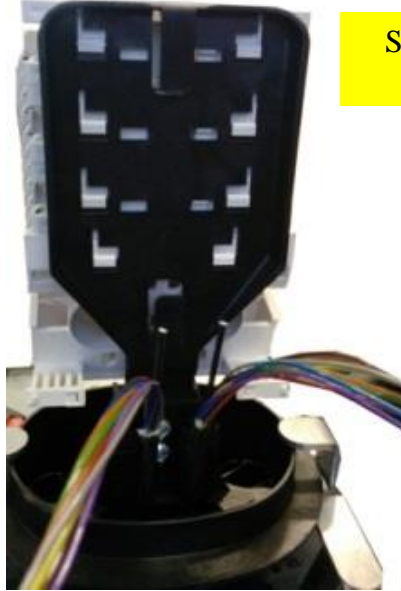
**Go to step 20 for CMJ**

**Go to step 23 for MMJ**

- For CMJ loop installation follow steps 20 to 22.
- For MMJ loop installations go to step 23.

## Joint and Cable Preparation – Oval port

### Step 21



Separate the two  
ends of loop

- Firstly, separate the two ends of the loop. Gently straighten the loop away from the CMJ 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 flexible fibre elements. It is not recommended for installing loose tube elements.

## Joint and Cable Preparation – Oval port

### Step 22



- Roughly make a loop the same diameter as the loop storage area.
- Cross the elements at the top and flip the loop over to gather the elements into a second loop.
- Repeat and alternate top and bottom until all the elements have been gathered into one circle.

## Joint and Cable Preparation – Oval port

### Step 23



A single loop should be remaining after several coils have been installed.

- Carefully push the loop under the top and bottom loop storage tabs.
- Ensure to get most of the loop within the side walls of the spine and secure carefully using the plastic strap.



## Joint and Cable Preparation – Oval port

### Step 24



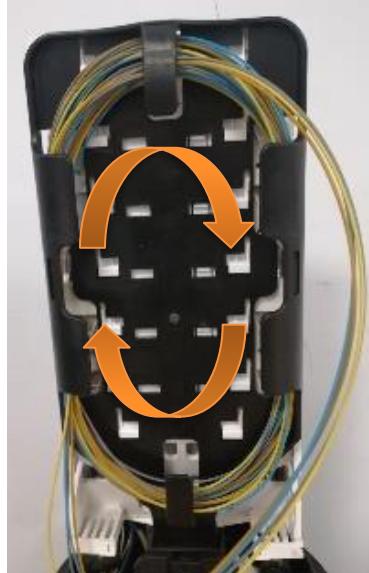
Separate the two  
ends of loop

- Firstly, separate the two ends of the loop. Gently straighten the loop away from the MMJ 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.

## Joint and Cable Preparation – Oval port

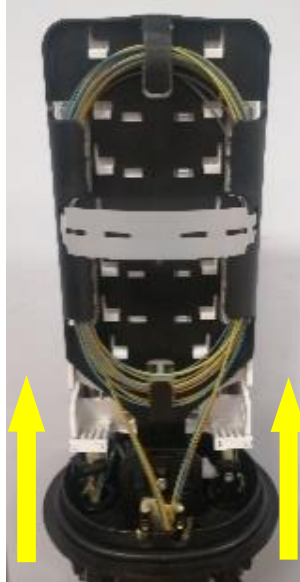
### Step 25



- Line up the left-hand side cable elements with the left side of the spine.
- Feed the tubes around in a clockwise direction beneath the tabs for one turn.
- Line up the right-hand side cable elements with the right side of the spine.
- Feed the tubes around in an anti-clockwise direction for one turn.

## Joint and Cable Preparation – Oval port

### Step 26



A single loop should be remaining after several coils have been installed.

- Repeat the process until one loop is left.
- Twist the remaining loop over and store beneath the tabs of the loop guide.
- Ensure the loop ends are vertical.
- Ensure to get most of the loop within the side walls of the spine and secure carefully using the plastic strap.