

# INSTALLATION MANUAL

## (Fiber Optic Splice Closure)

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### TECHNICAL INFORMATION SAM 6 CM (Fiber optic splice closure)



Changes from previous revision	
0.0	Initial

### NOTES:

1. Please read this instruction manual carefully before installation.
2. Please pay special attention to the notes listed especially when the operator seal the cable ports, as seal performance of the closure might be affected if operation is not appropriate.
3. Please pay attention to the bold items "Note" in this instruction manual.

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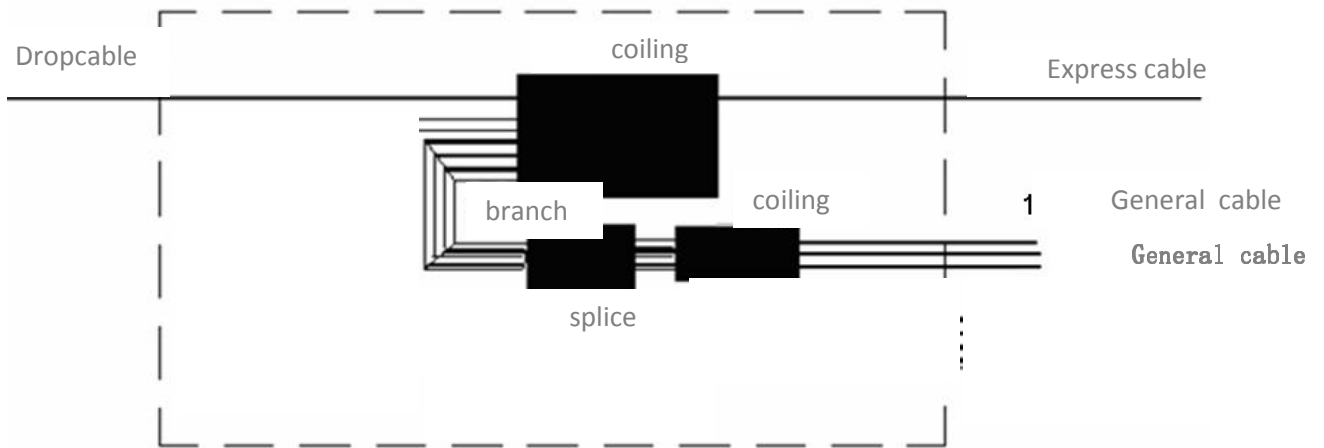
# 1.- GENERAL INTRODUCTION

## 1.1.- GENERAL



**SAM 6 MC** type of Fiber Optic Splice Closure (FOSC) is a member in dome series of optical fiber cable splice closures. This model has four small circular cable entry ports plus one big circular port for express (looped) cable. The sealing component is made from silicon. The cables and the closure are sealed in a mechanical way with the help of compacting pressure from the plastic screws (nuts) and the circular plastic hoop. This model is suitable for different methods of branch connection, including branching and splicing of uncut cables. It could be used for aerial, pole-mounting, wall-mounting and underground applications. This model is excellent in sealing performance, easy for installation, wide applications and is prior choice of fiber connection equipment.

## 1.2.- STRUCTURE AND COMPONENTS

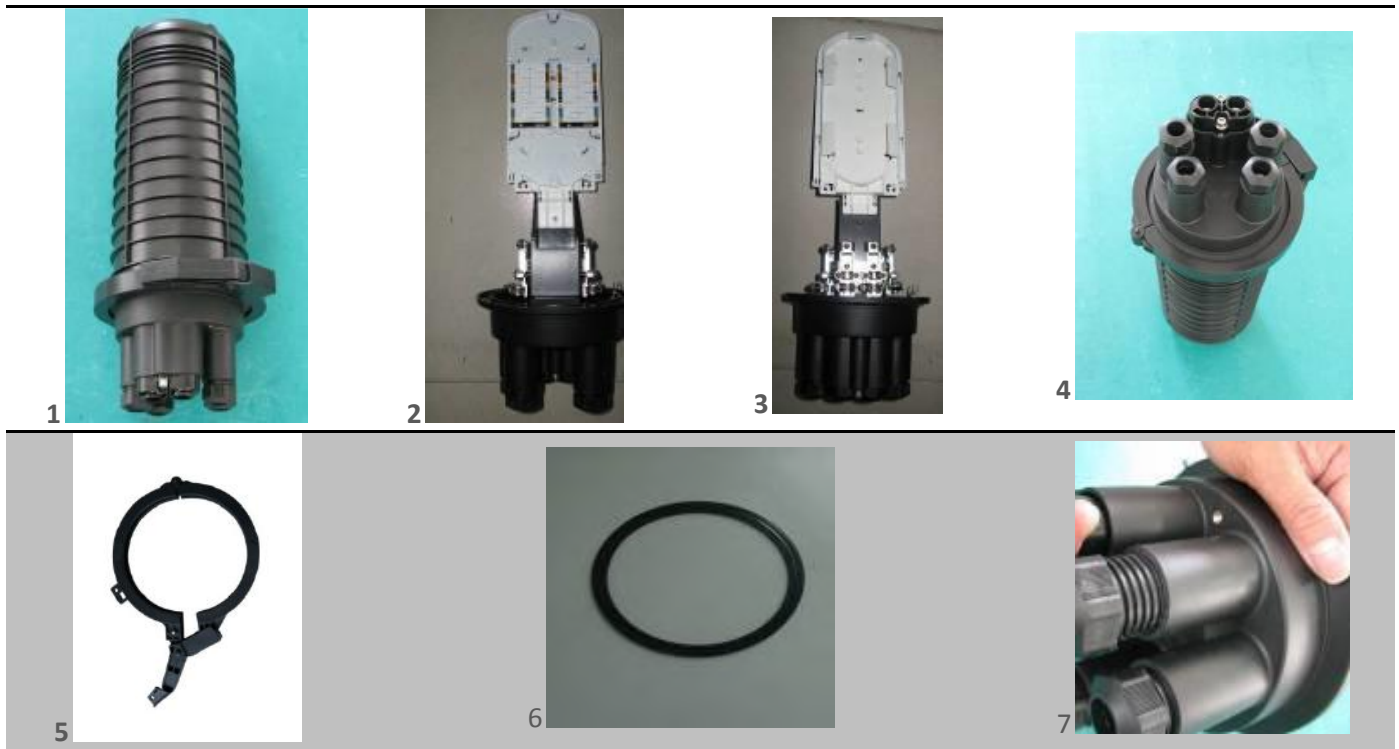


Picture 1 the inner element picture of the fiber closure

## 1.3.- SPECIFICATIONS

External Dimension (mm)	450×φ230	Max. Capacity	144
Weight (kg)	4.2~4.8	Sealing type	Mechanical
Cable Entrances	5 (4 Drop & 1 Express cable)	Capacity per Tray	24
Suitable cable diameter (mm)	Pinholeφ5~φ7 express cableφ10~φ17		
number of Splice trays	6		

## 1.4.- PICTURES OF FIBER CLOSURE



1、Splice Closure cover ; 2、Fiber Splice Trays ; 3、Splice Tray Fixing Plate ; 4、Splice Closure Base ; 5、Plastic Hoop ; 6、Circular Seal Gasket ; 7、Earthing Device

Number	Part No	Name & description	Quantity	Usage	Remark
1	GPJ09L4-B-01	Splice Closure Cover	1	Protect Closure	H=350mm D=175mm
2	GPJ09L5-BJ-10	Fiber splice tray	2sets	Protect Fiber	Fiber splice & storage ;
3	GPJ09-5601-01NEW	Splice Closure Base	1pcs	Fixing inner components	
4	GPJ09L4-B-08	Circular seal gasket	1pc	Airproof & Waterproof	
5	GPJ09L5-BR-05-0	Plastic hoop	1set	Fixing dome cover and base	
6	GPJ09L5-BJ-13	Splice tray bracket	1pcs	For holding splice tray	
7	GW-0	Earthing device	1set	For inner metal components grounding	Optional
8	TR414	Air Valve	1pcs	Testing that air pressure and seal performance	Optional

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## 2.- INSTALL INSTRUCTIONS

### 2.1.- PREPARATION

- Please check the type and accessories of optic fiber closure and fiber cable.
- Keep dry and clean of all accessories.
- Keep work environment clean (dry and non dust) and even.
- Use the specified and standard instrument during the peeling and installation.
- No over bend and too much fiber cable.
- Application tool

Accessories Tools (self supply)

Material	Application
Tape	Mark and temp fixation
Alcohol	Clean
Gauze	Clean

Accessories Tools (self supply)

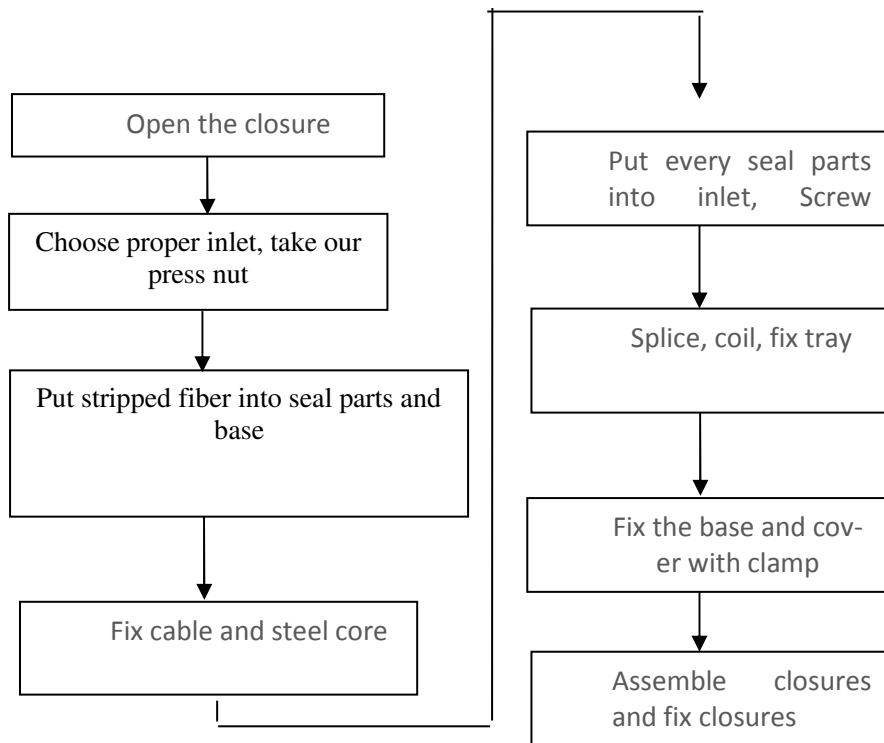
Tools	Application
Optical cable radial wire stripper	Ring peeling cable skin
Optical cable portrait wire stripper	Straight portrait peeling cable skin
Beam wire stripper	peeling beam wire skin
Bare wire stripper	peeling cable coating
Tapeline	Measure length
Tube cutting knife	Beam wire peeling
Electrician's knife	
Wire-cutter	Cut metal core
Cross screwdriver	Screw down bolts
Across screwdriver	Screw down the cable fixing hoop tight
Scissors	
Splice operations area	Place products or tools

Connection and test instrument (self-supply)

Instrument	Application
Heat sealing machine	Fiber connection
Optical time domain reflectometer (OTDR)	Test for connection result

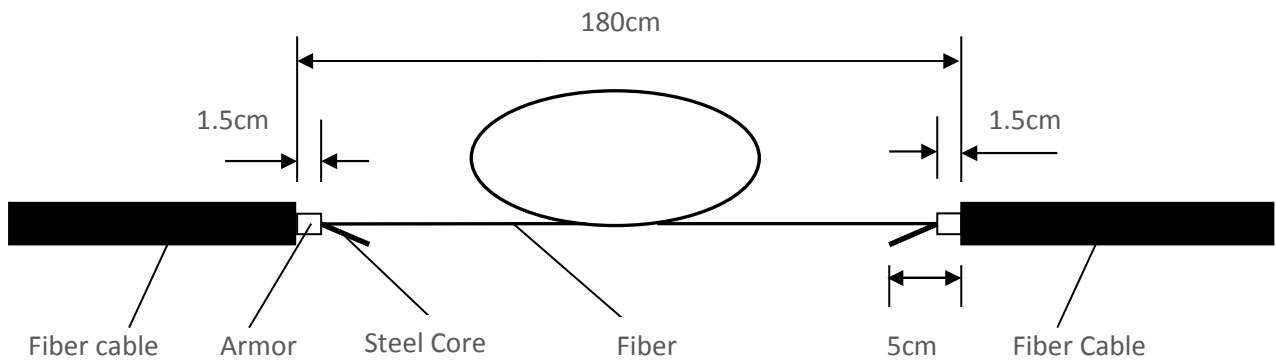
## 2.2.- INSTALLATION FLOW

### 2.2.1.- INSTALLATION FLOW CHART

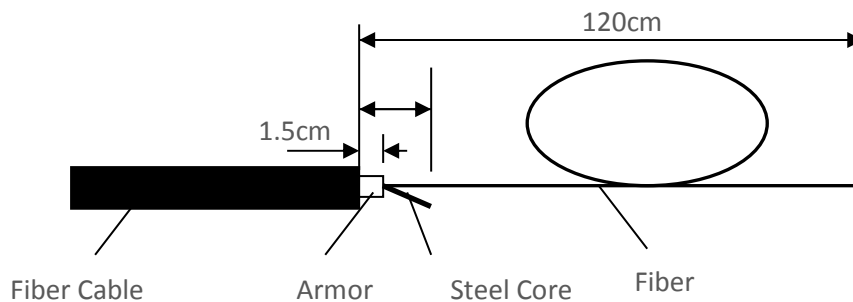


### 2.2.2.- CABLE INSTALLATION

Mark the cutting point on the cable, the length of stripping being about 180cm or as per the requirement.



The drawing of uncut armor cable ("Express/looped" cable)



The drawing of branch armor cable (Cut cable)

		
Cable(tube)Cutter	Cable Sheath Cutter	Steel core cut clamp

Strip the cable with above tools, and keep appropriate length as drawing.

**Note:** To ensure not to damage the optical fiber

Do not use a damaged optical fiber cable

Remove cable jacket without cutting, and kink or damage internal tube. In case of accident, can be cut down the subsequent cable coating to protect the cable inspection and maintain

### 2.2.3.- INSTALLATION

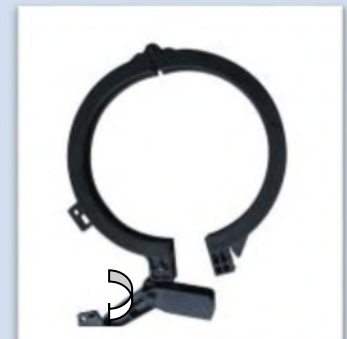
1. Check the amount of the closure specification and accessories.
2. Place the closure on the application cable.
3. Open the closure. Unlatch the locked device on the plastic hoop, open the plastic hoop to separate the cover and base, and take out the sealing gasket.



① Pull out the handle



② Withstand the lock block with lock plate



③ Open the hoop

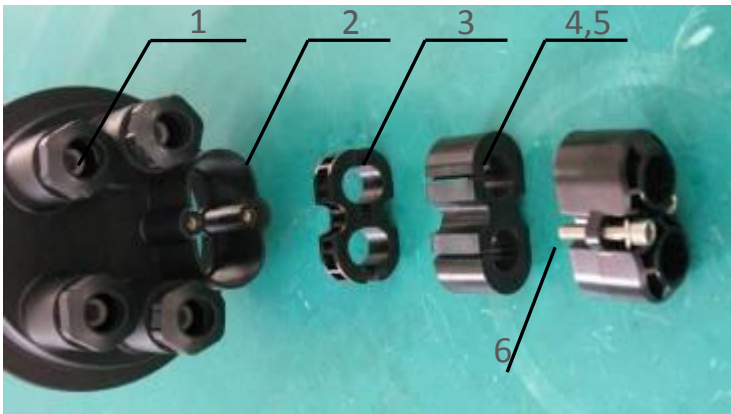
**Note:** For the good sealing performance of the box, please be care when separate the box.

**Important:** All ports are sealed well, please open the inlet first when using.

4. Lead "Express/looped" fiber cable into closure.

Make the striped cable through components in order and then enter into closure according to following pictures

The pictures of components for "Express/looped" cable entrance



Components list for "Express/looped" cable entrance

No.	Item	Name	Quantity	Usage
1	GPJ09-5601-01	Base	1 set	Fixing internal structures
2	GPJ09-5601-05-0	Double sealing block	1set	For sealing uncut cable ( <i>Dia φ10~φ17</i> )
3	GPJ09-5601-04	Double sealing	1 pcs	
4	GPJ09-5601-03-1	Double press block	1 pcs	
5	GPJ09-5601-03-2	Double press insert block	2 pcs	
6	GB/823-88	M6*30 stainless steel inner hexagonal bolt	2 pcs	
7	GB97.1-85	Stainless steel washer 6	2 pcs	

### 2.2.3.1.- "Express/looped" cable installation procedure



Figura

1. Screw down the double press block of base, take out the cable sealing plug, sealing block. Put the uncut cable through into entrance



Figura

2. Loose the cable fixing hoop with straight screwdriver, and loose the armor and steel core press with crossing screwdriver

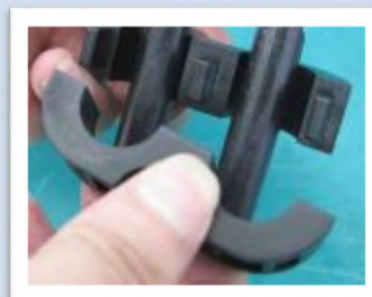
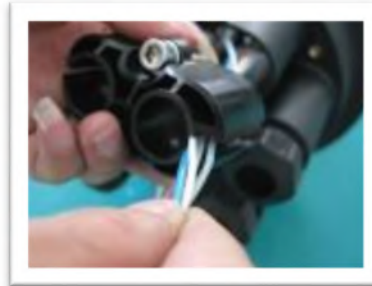




3. Fixing the cable with hoop and fixing cable armor with press patch. Fixing the steel core as picture



4. Fix the uncut cable in the tray basket, refer to the pictures, fix with nylon tie, then coil and fix in the tray.



### Cable sealing

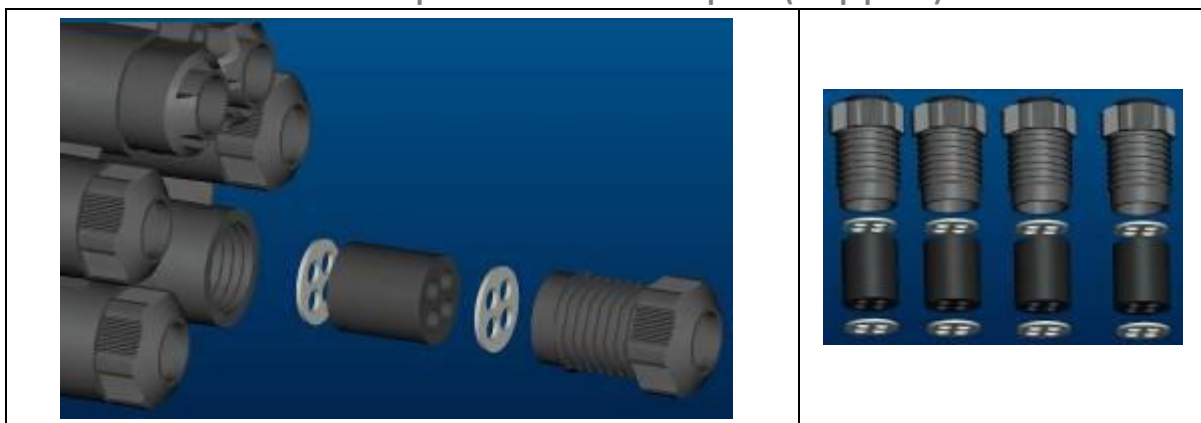
Through double seal ring blocker, double seal ring, double seal ring presser into the closure base. Screw down screws with the inner hexagon spanner.



*Note: For the seal ring is made of rubber, so the double holes presser is made of plastic. So when application, please use the appropriate force. ( $F \leq 5N \cdot M$ ). On the base of not out of shape.*

Small port cable (drop cable) introducing to box. There are 4 small ports for the uncut cables in the bottom box.

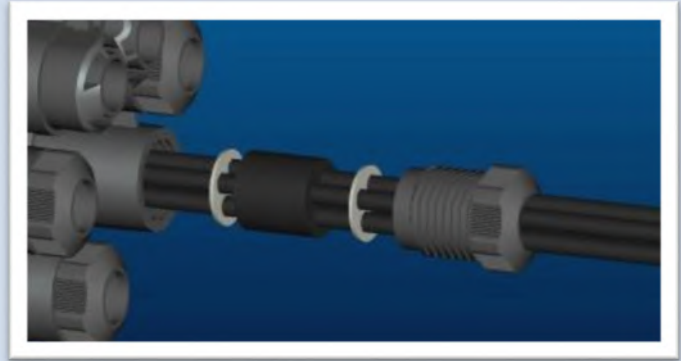
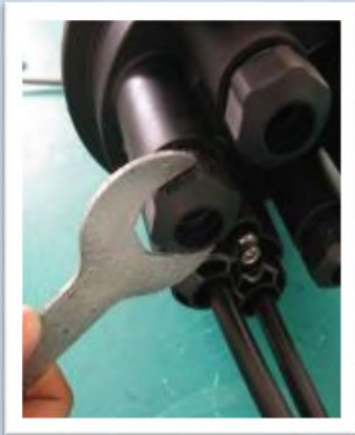
**2.2.3.2.- Pictures of components for the small ports (drop ports)**



**2.2.3.3.- Accessories list for small port (OF branch cable Port)**

s.n.	Name	QTY	Application
1	Box base	1 set	Fix the inside and outside parts
2	20# sealing	4 pcs	For sealing the OF cables. <b>(Dia meter is <math>\varphi 5 \sim 7mm</math>)</b>
3	20# washer	8 pcs	
6	M31 nut	4 pcs	

**2.2.4.- Installation steps for small port( OF branch cable port**



1. Back out the nuts with spanner, take out sealing, take out the hoops, armour tableting and steel core fixing with special tools step by step(Picture 1)

2. Pass the peeled OF fiber to M31 nut (plastic), washer (stainless steel),sealing, and washer(stainless steel) step by step.(Picture 2).

3. Through the cable into small port to closure

4. Fixing the cable with hoop, then fixing the steel core to press patch (Like 2.2.3.4.3 ☞)




5. The seal for cable. Press the seal gasket (liner only for necessary) and plastic washer to small port. Screw the M31 nut with spanner tightly for perfect seal.

6. Conduct the drop cable to tray. Measure the distance from cable fixing place to second or third tray port, strip the fiber tube, fix them to inlet of tray with nylon ties.

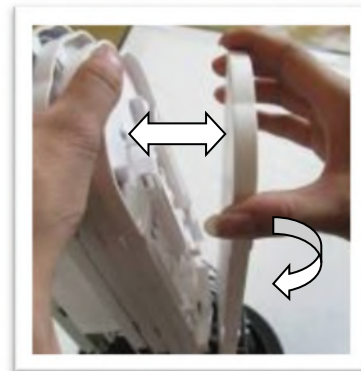
**2.2.5.- FIBER SPLICE AND MARK**

1. Remove that sheath of cable by stripper, and clean it with gauze and alcohol. Then cut the fiber by cutter (Length according to the coiling)

2. Protect the fiber with tube, fixing the fiber to entrance of tray with tie when fiber into tray.

<p>Z</p> 		
<p>Tube Stripper</p>	<p>Naked Fiber Stripper</p>	<p>Fiber Cutter</p>

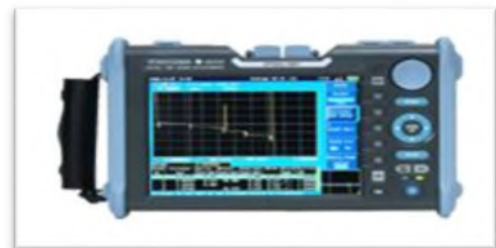
1. The cable ports and splice trays are as following picture. It's strongly recommended to install fibers from cable ports to the corresponding splice trays



2. General fiber splice, recording the parameter after the spliced and making the cable marking, in order to the upper maintenance and management



Fiber splice machine (example)



OTDR (example)

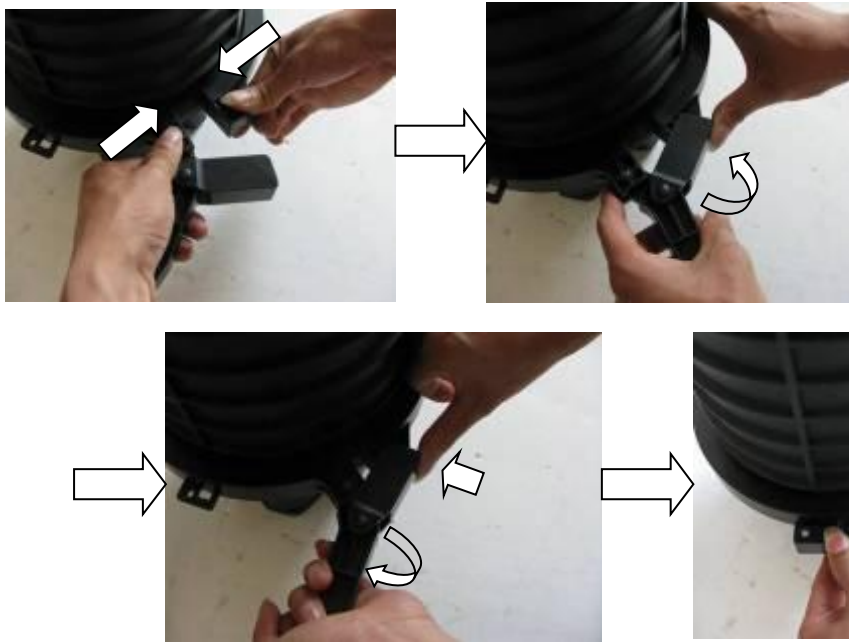
3. Put the splice protect pipe clamp in the bracket, and put the fiber spiral storage in the splice tray ,cover the transparent cover or plastic cover

**Note :** ①In the process of the fiber splice and storage ,the bend radius should be less than 30 mm. If the radius is too small, the fiber attenuation and the optical scatter will expand. Also, the fiber will be break after long time.

②In the process of the fiber splice and storage, please notice the direction of twist, generally ,it is "8" .Notice should not break the fiber cable ; after the process, put all the optical fiber below the board of the storage fiber tray.

**2.2.6.- BOX ENCAPSULATION**

After application, load the cable sealing into the box, put the top box and the base together, seal the total box with plastic hoop



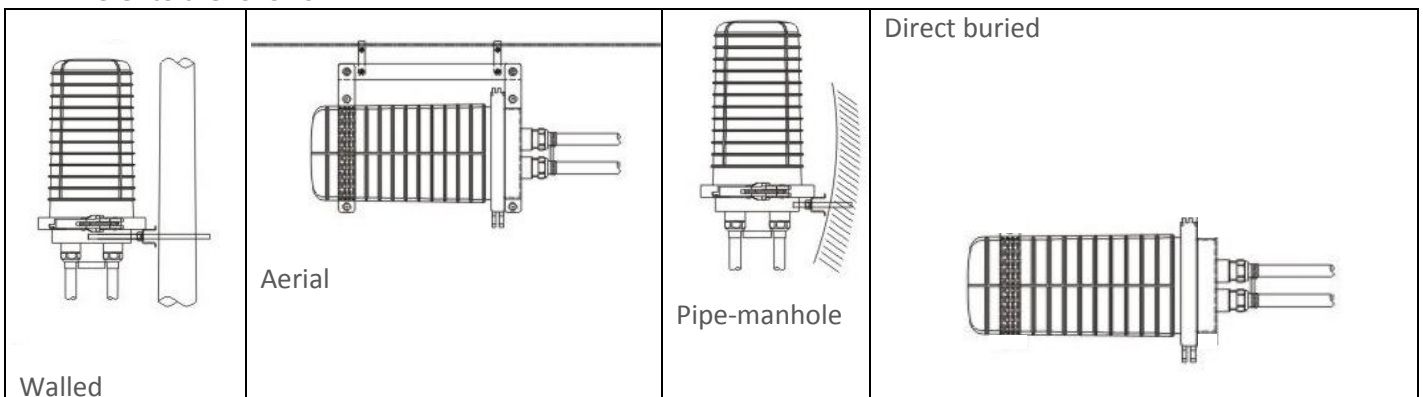
**2.2.7.- SEALING TEST**

Suggest test after being filled air in the closure and filled other inertia air according to the user application. Be sure of the safety of the out grounding. Then inspection of the all fibers inside, to confirm that no harm to any the fibers.



**2.3.- INSTALATION OF THE CLOSURE**

Refer to the follows



## 3.- REOPEN AND MAINTAIN

### 3.1.- Reopen

Please open the box according the 2.2.3.3 of the manual instruction

*Note: Please release the air of the closure if the protective air or other air is filled before.*

### 3.2.- Maintain and fiber expansion

- Open the tray as 2.2.4.5, choose and find fiber which need maintain and maintain it
- When need fiber expansion, choose the spare uncut cable entrance, loose the nut using the spanner, take out the sealing plug and the sealing elements. If the nut is tight to take it out, could pull the nut using the screwdriver
- Introduce the need fibers to expand fibers refer to the Chapter Two.

### 3.3.- Box re-encapsulation

After maintain and fiber expansion, check every elements if they are in good condition. Then re-encapsulation refer to 2.2.5