

# **SFO-SCLV-220**

Dome Optic Splice Closure

## **Installation Guide**

## **NOTES:**

1. Please read the user's guide before installation.
2. Please pay attention while sealing the cable ports, the inappropriate installation would affect the performance.

# General Introduction

SFO-SCLV-220 splice closure is particularly designed for high fiber counts environment which capacity is up to 288 fiber splice and excellent protection performance. The application is for aerial, underground, pipeline, hand-holes. This Installation guide suits for the Fiber Optic Splice Closure (Hereafter abbreviated as FOSC), as the guidance of proper installation.

## 1 Basic structure and configuration

### 2.1 Dimension and capacity

Outside dimension ( Height×diameter, mm)	488×Φ285 (BC series), 566 xΦ285 (BD series)
Weight (excluding packing box, kg)	4-6
Sealing type	Heat shrink
Number of inlet/out ports	1 oval port and 6 round ports
Diameter of optical loop cable (mm)	Φ30 (max.)
Splicing capacity per splice tray	24
Max. number of trays	12
Max. splice capacity (single fiber)	288
Material	MPP
IP Rank	IP68
Working temperature (°C)	-40 to +65°C
Insulation resistance	≥2X104MΩ

**Notice:**

In case of slightly bigger diameter of optical cable, can apply proper force to squeeze cable into grommet, and for smaller than 15mm diameter cable, using insulation tape to increase the diameter..

### 2.2 Product and accessories illustration

#### 2.2.1 Product illustration



### 2.2.2 Main components

Number	Name	Quantity	Marks
1	Cover	1 piece	Height × Diameter(mm): 450×Φ230
2	Fiber splice tray	1 set	
3	Base	1 set	Fixing internal part
4	Plastic hoop	1 set	Fixing bottom and cover
5	Seal fitting	1 piece	Waterproof and sealing's part
6	Fixing sheet	1 set	Fixing the splice tray and storing non cut cable

### 2.2.3 Main accessories & illustration



Number	Name	Quantity	Application
1	Fiber Splice Protective Tube	Core no. + 10%	Fiber fusion and protection
2	Nylon tie	Tray no.×3	Fixing fiber with protective coat
3	Pole hoop	1 set	Fixing for closure on pole
4	Labeling paper	1 piece	Fiber number mark
5	Insulating tape	1 piece	The fixing part assistant
6	EVA transparent hose	6 piece	Protect fiber

### 2.2.4 Optional Accessories

Number	Name	Quantity	Application
1	Heat shrink tube	6 pieces Φ40×150(mm)	Sealing the inlet of cut cable
2	Dual heat shrink tube	1 piece Φ75×150(mm)	Sealing the inlet of uncut cable
3	Pressure testing valve	1 set	Testing after closure was sealed
4	Silver tape	1 set	Cleaning ,fiber protection and heat shrink
5	Sand paper	1 set	Cleaning ,fiber protection and heat shrink
6	Branching clip	1 set	Heat shrink the inlet of uncut cable
7	Grounding device	1 set	

## 2 Necessary tools for installation

### 3.1 Supplementary materials (to be provided by operator)

Name of materials	Usage
Scotch tape	Labeling, temporarily fixing
Ethyl alcohol	Cleaning
Gauze	Cleaning

### 3.2 Special tools (to be provided by operator)

Name of tools	Usage
Fiber cutter	Cutting off fiber cable
Fiber stripper	Strip off protective coat of fiber cable
Combo tools	Assembling FOXC

### 3.3 Universal tools (to be provided by operator)

Name of tools	Usage and specification
Band tape	Measuring fiber cable
Pipe cutter	Cutting fiber cable
Electrical cutter	Take off protective coat of fiber cable
Combination pliers	Cutting off reinforced core
Screwdriver	Crossing/Paralleling screwdriver
Saws	
Waterproof cover	Waterproof, dustproof
Metal wrench	Tightening nut of reinforced core

### 3.4 Splicing and testing instruments (to be provided by operator)

Name of instruments	Usage and specification
Fusion Splicing Machine	Fiber splicing
OT DR	Splicing testing
Provisional splicing tools	Provisional testing

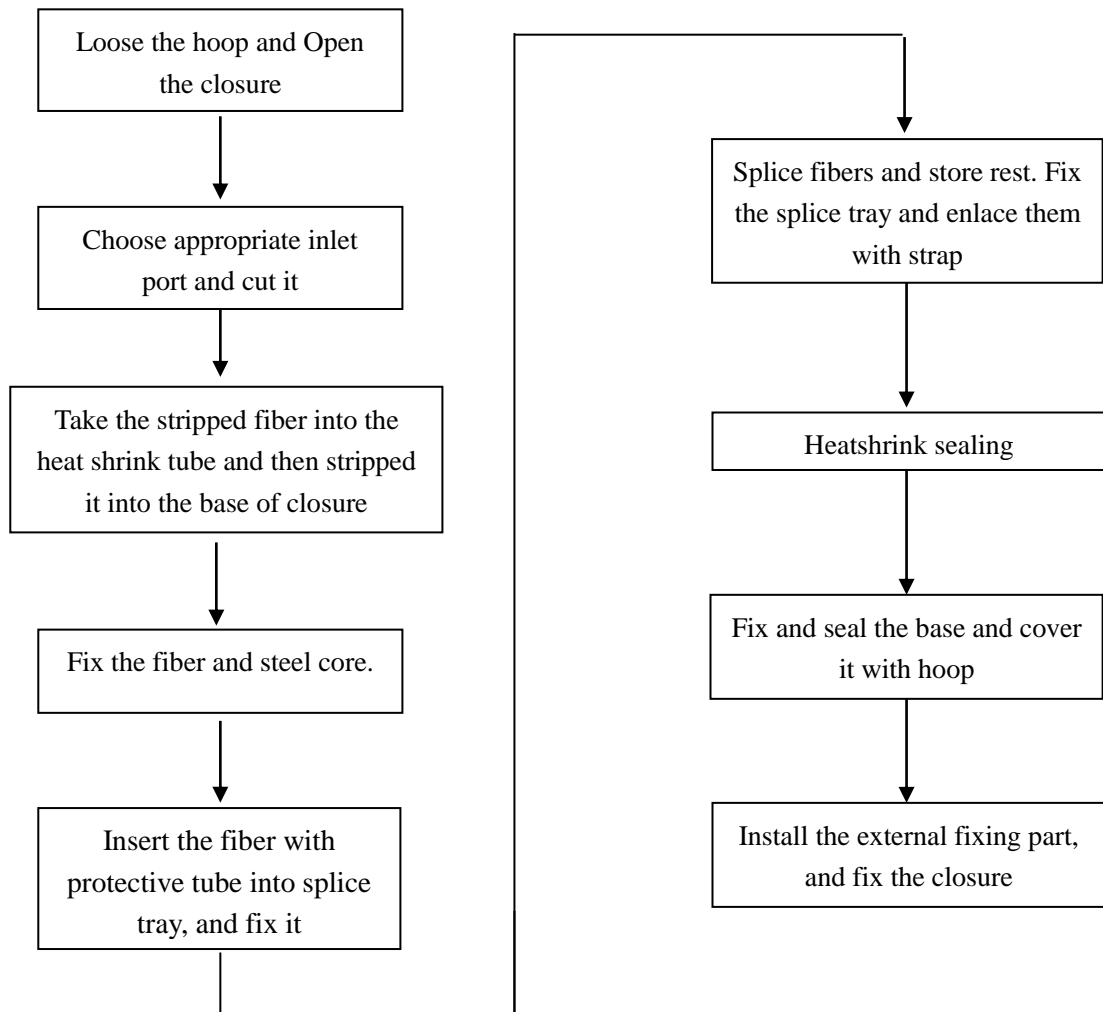
#### Notice:

The above-mentioned tools and testing instruments should be provided by the operators themselves.

## 3 Preparation for installation

- 4.1 Check the splice closure type, cable item, and all components before installation
- 4.2 Keep all components dry and clean for installation.
- 4.3 Keep working environment clean (dry and no dust) and flat for installation.
- 4.4 Standard instruments and tools should be used during installing.

## 4 Installation flow chart



## 6. The process of FOSC installation

## 6.1 Step One - Open the closure

6.1.1 Cleaning the locale and determine where to install the FOSC and then place fiber cables required.

6.1.2 Check whether the main components and accessories have been well prepared inside the package.

6.1.3 Open the closure, demount hoop fixing bolt and pull hoop locking system out, then proceed in demounting the hoop. Pull the FOSC cover upwards out, installation could begin.

### Important issues:

If the weather condition is not good enough, then a tent must be pitched for waterproof and dustproof.

## 6.2 Cable installation

6.2.1 Mark the cutting point on the cable, generally, the length of stripping is about 180cm.



6.2.2 Remove the unnecessary cable sheath from the marked point with a sheath stripper

*Note1. Be sure not to damage the fiber.*

*Note2. Do not use any damaged cable.*

*Note3. While remove the cable sheath, please do not cut, twist or damage fiber coat. Cut the damaged fiber cable and strip the sheath again in case an accident happened.*

6.2.3 Cut off the extra reinforced core about 3-4cm from the removing point on the sheath. The length depends on the distance from fiber fixed press button to steel core fixing pole.

## 6.3 Installation of fiber closure

6.3.1 Check the specified type and all the accessories of the fiber closure

6.3.2 Open the fiber closure

Loose the locked device on plastic hoop, open plastic hoop in order to separate the cover and bottom.

*Note. Because the sealing performance is predominant, please be careful when separating the cover and bottom so as not to damage the case.*

6.3.3 Open the cable port by saw, insert cable into fiber closure, select the appropriate cable inlet ports and cut the end of the fiber cable, insert the removed cable into the heat shrink tube first, then into the inlet port



6.3.4 Fix the reinforced core and fiber cable, place the reinforced core plug in the fixing reinforced core, then using a screwdriver or a wrench to tight the bolts. Rub and clean the inlet ports and the cable with a piece of sandpaper to ensure the heat shrink and sealing performance, wrap 10cm long cable with silver tape to protect cable inlet sheath, then do the heat shrink installation (6cm long cable was covered by heat shrink tube), heating heat shrink tube, push the heat shrink tube to the bottom

of cable inlet port and heat the tube but not let the fire close to the bottom of closure and the cable with sandpaper. (*Branching clip must be used when heat shrink the inlet port of uncut cable.*)



Note:

1. Heat it evenly when it is in heat shrink condition
2. Shrink the heat shrink tube near the joint of inlet and bottom side of the case first, then heat the other parts after it has cooled for some time.

- 6.3.5 Distribute the fiber according to require, and then let the fiber through the buffering tube and fixed at entrance of fiber tray by nylon tie.
- 6.3.6 Splices fibers and coil surplus fibers, Fusion and splice fibers and coil surplus fibers on bracket using an approved splicing method, then cover the splice tray cover after splice fibers.



- 6.3.6 Assembling the closure, after install of cables, put sealing loop on case, then place the dome shaped cover onto the bottom portion. Fasten the dome shaped cover and the bottom portion together with a plastic hoop.



- 6.3.7 Fiber testing and sealing test  
Pressure testing valve is optional
- 6.3.7 Fix the fiber closure

## 7. Fiber Optic Splice Closures (FOSC) inspecting and testing items



Inspecting item	Technical Requirements	Inspecting type	
		Routine test (Before leaving factory)	Type test
Package	Each small package contains one fiber optic splice closure, together with its accessories, tools, installation manual and packing list.	Full	At least 3 sets sampled each time
Appearance	Intact in shape, no burrs, bubbles, chaps, pores, warps, impurities and other defects, all background colors should be even and continual.		
Sign	There is a clear sign on the housing, such as name and model of the product, etc.		
Fiber storage device	The fibers reserved are to be winded in fiber optic splice tray (FOST), the length of fibers housed in FOST is >1.6m, the curved radius is >30mm. During the installation and maintenance, there should be no attenuation on fibers.	At least 3 sets sampled each time	
Electrical jointing device	Inside FOSC: metallic components of fiber cables has the functions of electrical putting through, earthing connection and disconnecting. It is possible to install earthing deriving device outside the housing		
Sealing performance	After sealing according to the stipulated operation procedures, the injected air pressure is 100KPa±5Kpa, when immersed in clean water of normal temperature for 15 minutes, there should be no air bubbles, then observed for 24 hours, there should be no change of air pressure.		
Re-sealing performance	After reopening and resealing according to the stipulated operation procedures, the injected air pressure is 100KPa±5Kpa, when immersed in clean water of normal temperature for 15 minutes, there should be no air bubbles, then observed for 24 hours, there should be no change of air pressure.		
Pull	Bearing pull is $\geq 800\text{N}$ at axle orientation, there should be no breakage on the housing.		
Punching	Bearing pressure of 2000N/10cm for 1 minutes, there should be no breakage on the housing		
Impact	Bearing impact energy of 16N•m, 3 times of impacts there should be not breakage on the housing		

Bending	The spot between the FOSC and seal fitting can bear bending tension of 150N at bending angle of $\pm 45^{\circ}$ for 10 circles, there should be no breakage on the housing	At least 3 sets sampled each time	At least 3 sets sampled each time
Torsion	Bearing torsion 50N•m, 10 circle at torsion angle $\pm 90^{\circ}$ . There should be no breakage on the housing.		
Temperature circle	Injected air pressure of 60KPa $\pm$ 5 KPa, the temperature circle ranging from -40°C~+65°C, 10 times of the circular tests (one circular consists of high temperature for 2 hours + indoor temperature for 2 hours + low temperature for 2 hours + indoor temperature for 2 hours ) when the pressure declines, the amplitude is $\leq$ 5Kpa, immerse the swatch in clean water of normal temperature for 15 minutes, there should be no air bubbles.		
Voltage resistance strength	After sealing the FOSC according to the stipulated operation procedures, immerse it in clean water of normal temperature in 1.5m depth for 24 hours, there should be no breakdown or arc over between the metallic components of the FOSC, between metallic components and the ground at DC 15KV for 1 minutes.		
Isolating resistance	After sealing the FOSC according to stipulated operation procedure, immerse it in clean water in 1.5m depth for 24h, the isolating resistance between the metallic components of the FOSC, between the metallic components and the ground should be $\geq 2 \times 10^4 \text{M}\Omega$ .		

## 8. Service time

Operating lifetime of not less than 20 years is guaranteed for each closure if it properly installed.