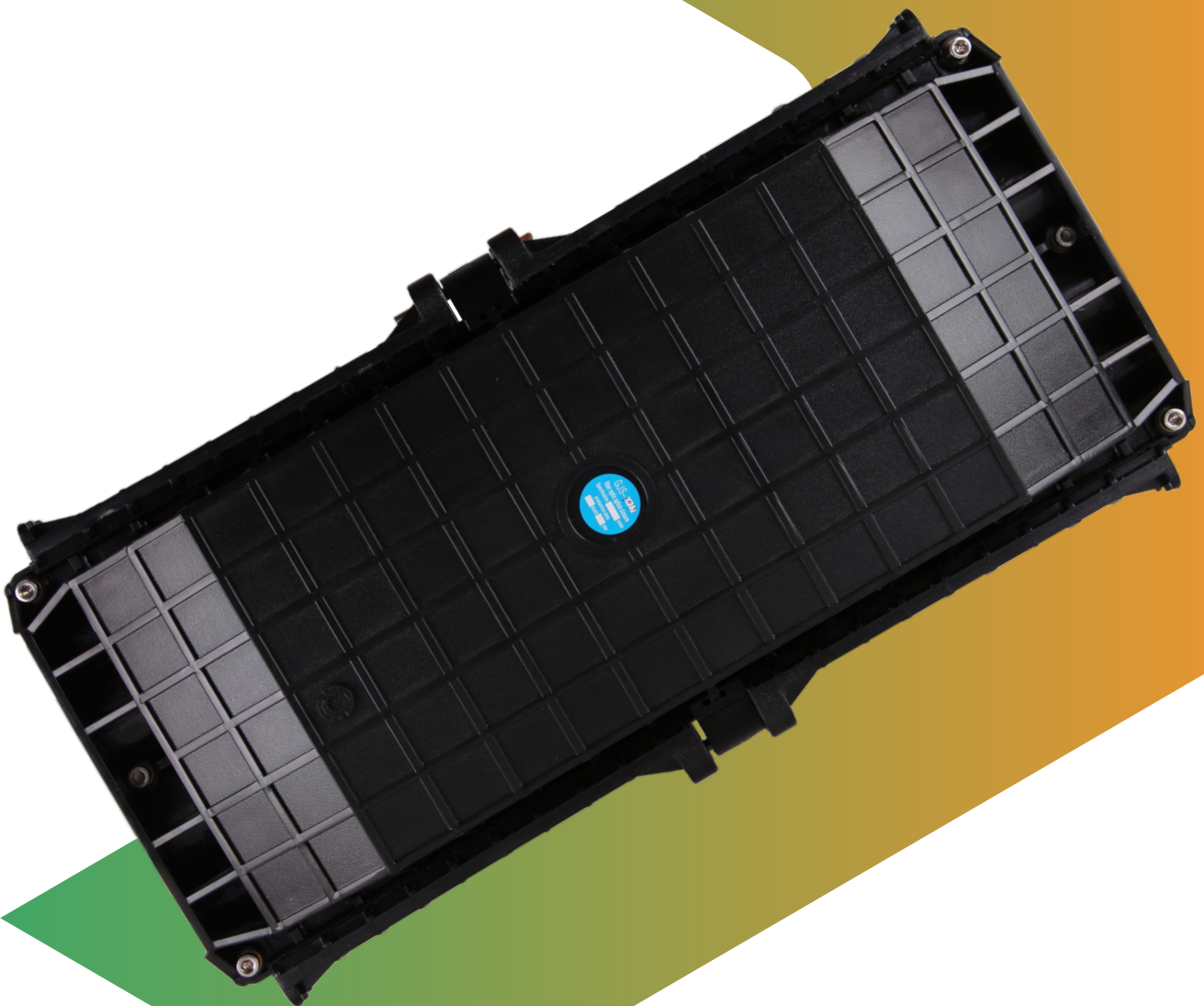


GJS-III-6013 Fiber Optical Splice Closure Installation Manual

Version:1.0



1. Scope of application

This Installation Manual suits for the Fiber Optic Splice Closure (Hereafter abbreviated as FOSC), as the guidance of proper installation.

The scope of application is: aerial, underground, pipeline, handhole. The ambient temperature ranges from -40 to 65°C.

2. Basic structure and configuration

2.1 Dimension and capacity

Outside dimension (LxWxH)	590x320x215 (mm)
Weight (excluding outside box)	7300g-9600g
Number of inlet/outlet ports	4 (pieces) on each side (total 8 pieces)
Diameter of fiber cable	Φ12—Φ41 (mm)
Capacity of FOSC	Bunchy: 24—648 (Cores) Ribbon: up to 1944 (Cores)

2.2 Main components

No.	Name of components	Quantity	Usage	Remarks
1	Housing	1 set	Protecting fiber cable splices in whole	Internal diameter: 500x205 (mm)
2	Insert plate	2 pairs	Fixing the housing	220x80x35(mm)
3	Fiber optic splice tray (FOST)	Max 10 pcs (bunchy) Max 9 pcs (ribbon)	Fixing heat shrinkable protective sleeve and holding fibers	Suitable for: Bunchy:24,36,48,72(cores) Ribbon:6,12,18 (pieces)
4	Fixing bracket	1 set	Fixing fiber cable and reinforced core	
5	Foundation	1 set	Fixing FOST	
6	Seal fitting	1 set	Sealing between FOSC cover and FOSC bottom	
7	Port plug	8 pieces	Sealing empty ports	
8	Pressure testing valve	1 set	After injecting air, it is used for pressure testing and sealing testing	Configuration as per requirement
9	Earthing	1 set	Deriving metallic components of	Configuration as per

	deriving device		fiber cable in FOSC for earthing connection	requirement
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2.3 Main accessories and special tools

No.	Name of accessories	Quantity	Usage	Remarks
1	Heat shrinkable protective sleeve		Protecting fiber splices	Configuration as per capacity
2	Nylon tie		Fixing fiber with protective coat	Configuration as per capacity
3	Insulation tape	1 roll	Enlarging diameter of fiber cable for easy fixing	
4	Seal tape	1 roll	Enlarging diameter of fiber cable which fits in with seal fitting	Configuration as per specification
5	Hanging hook	1 set	For aerial use	
6	Earthing wire	1 piece	Putting through between earthing devices	To put through as per actual requirement
7	Abrasive cloth	1 piece	Scratching fiber cable	
8	Labeling paper	1 piece	Labeling fiber	
9	Special wrench	3 pieces	Fixing bolts, tightening nut of reinforced core	
10	Measuring paper	1 piece	To measure perimeter, of which the diameter is enlarged with seal tape	To measure perimeter with the corresponding measuring paper
11	Buffer tube	decided by customers	Hitched to fibers and fixed with FOST, managing buffer	Configuration as per requirement
12	Desiccant	1 bag	Put into FOSC before sealing for desiccating air.	
13	Rubber hammer	1piece	Knocking in or knocking out inset plate	

3. 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 fibers
Fiber stripper	Strip off protective coat of fiber cable
Combo tools	Assembling FOSC

3.3 Universal tools (to be provided by operator)

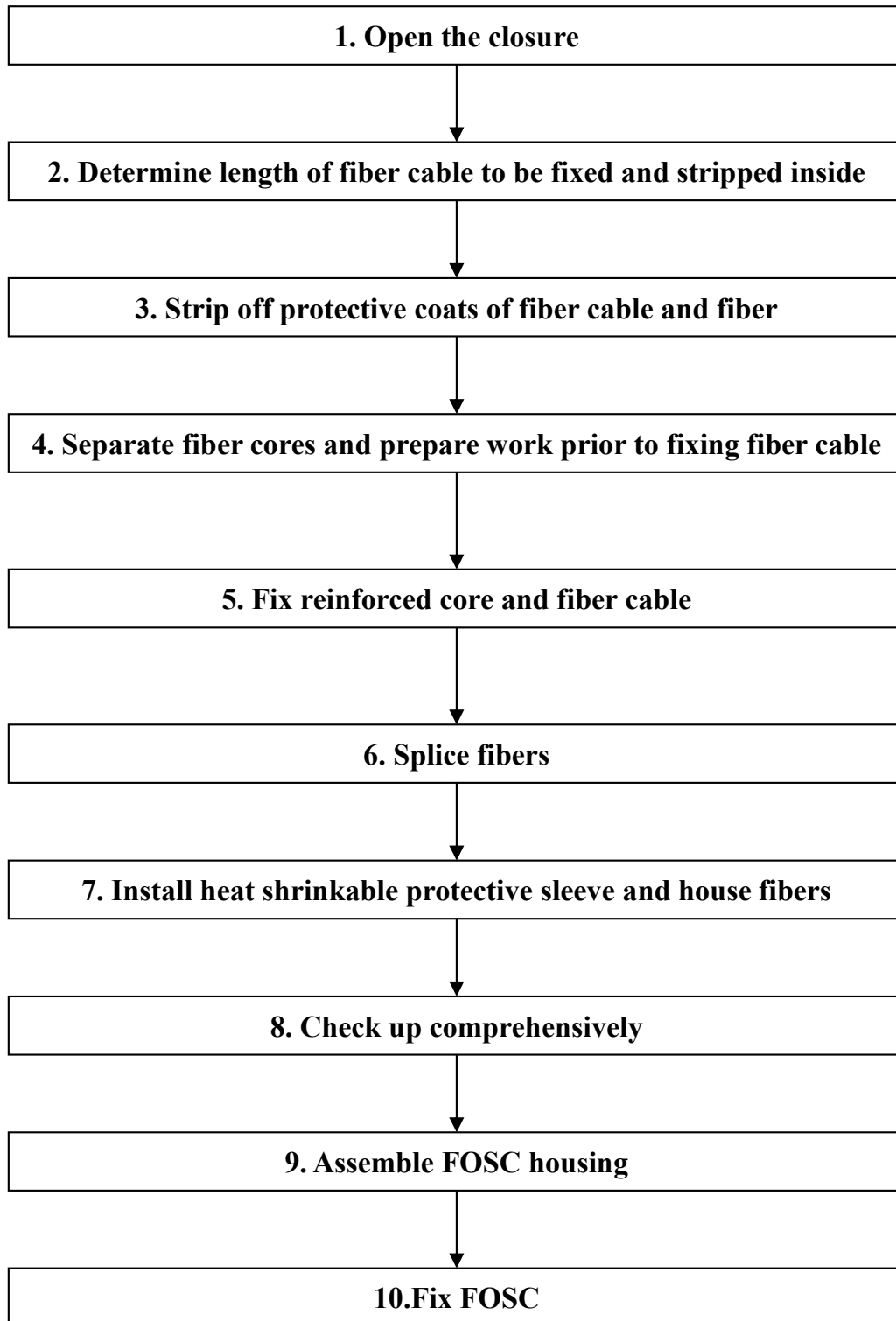
Name of tools	Usage and specification
Band tape	Measuring fiber cable
Pipe cutter	Cutting fiber cable
Electrical cutter	Take off protective coat of fiber cable
Combination pliers	Cutting off reinforced core
Screwdriver	Crossing/Paralleling screwdriver
Scissor	
Waterproof cover	Waterproof, dustproof
Metal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

4. Installation flow chart



5. The process of installing FOSC

Step One - Open the closure

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

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

Open the closure

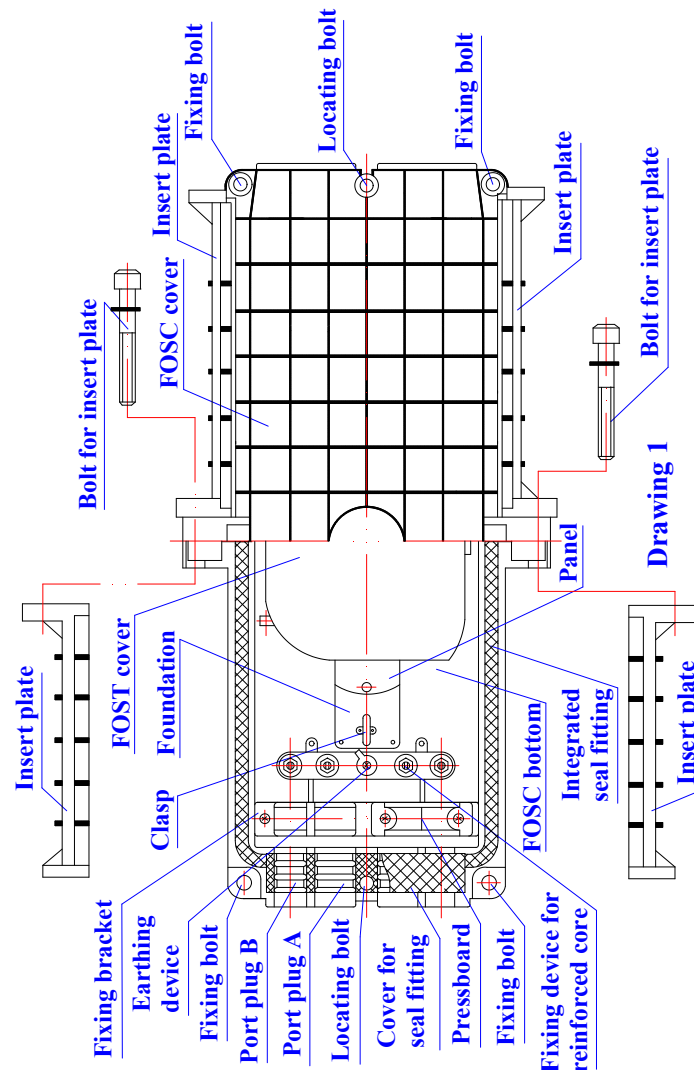
① Demount the fixing bolt of insert plate with a special wrench. Put out the fixing bolt, Use the special wrench and stroke on the other side of the insert plate . The insert plate will be unloading.

② Open the closure

Unscrew fixing bolts and open the closure by lifting the unscrewed bolts with no need completely unbolting to avoid loosing.

See Drawing 1

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



Step Two -Determine length of fiber cable to be fixed and stripped inside FOSC

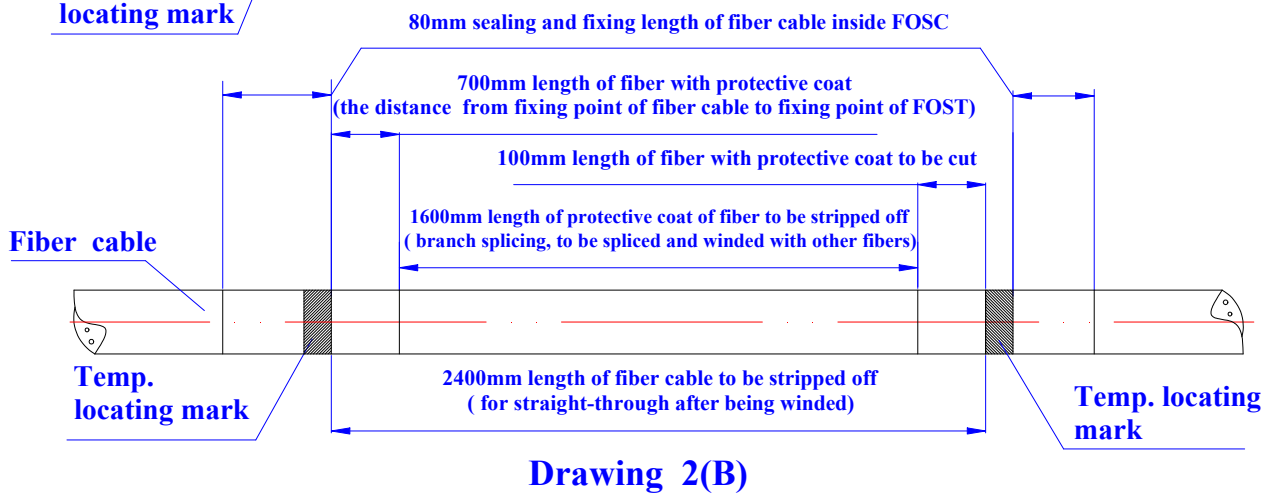
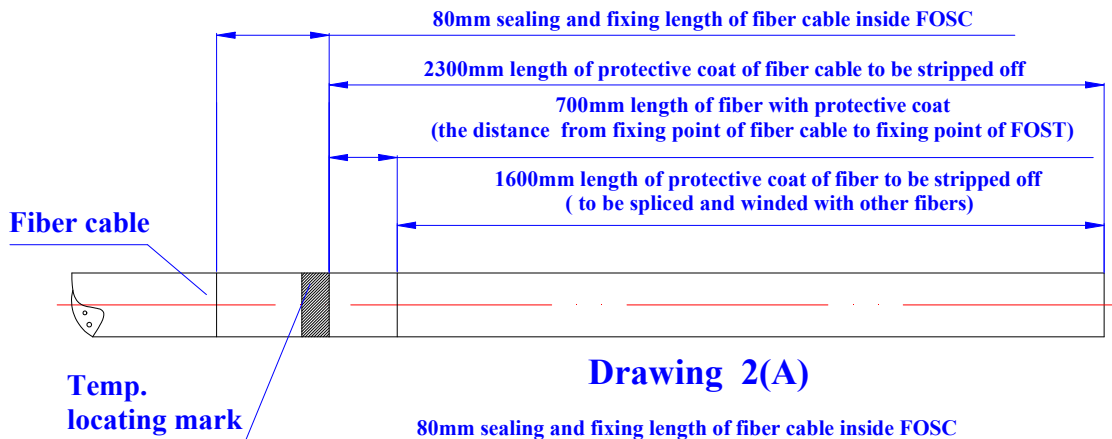
The following two types of fiber cable stripping are available according to actual installation requirement.

- ① If all fibers are for branch splicing, please refer to Drawing 2(A) for stripping length.
- ② If some fibers are for straight-through, while others are for branch splicing, please refer to Drawing 2(B) for stripping length.

5.2.2 See Drawing 2.

Important issues:

1. Reserve enough length of fiber cable to be spliced.
2. Stripping length also could be decided by customers according to installation requirement.

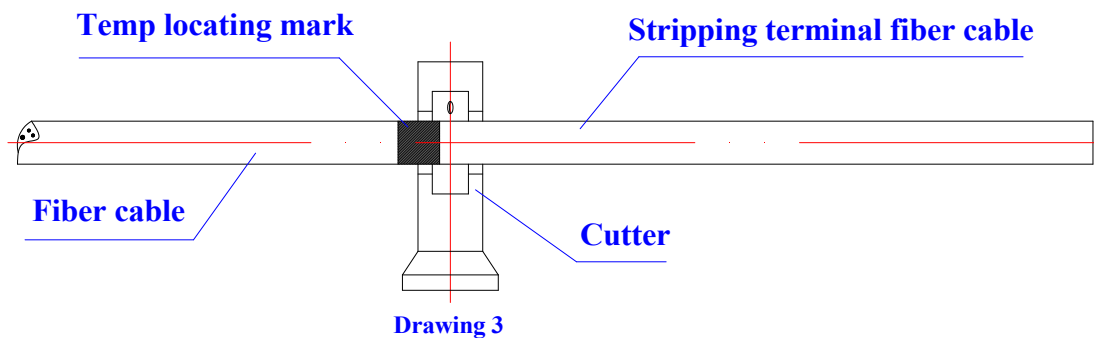


5.3 Step Three – Strip off fiber protective coat of fiber cable and fiber

5.3.1 Strip off protective coat of fiber cable from the temp. locating mark with the cutter and the stripper, please refer to Drawing 2 for stripping length. Stripping length also could be decided according to installation requirement

5.3.2 See Drawing 3.

Important issues: If it is difficult to pull all the protective coat of fiber cable at one time, strip it off section by section to avoid fiber breakage.



5.4 Step Four – Separate fiber cores and prepare work prior to fixing fiber.

5.4.1 Wind 2 layers of insulation tape on protective coat of fiber core. Meanwhile, get rid of the stuffing to separate fiber core and clean them. Form a ring with the diameter of

100mm or so and fix it on the fiber cable temporarily by adhesive tape.

5.4.2 This FOOSC is provided with 8 inlet/outlet ports. The inlet/outlet ports could be decided according to number and diameters of fiber cables to be actually installed, then the corresponding number of port plugs should be taken out.

5.4.3 This FOOSC is suitable for the following two types of seal fittings:

①. One type of seal fitting with the following two ports

Port A: suitable for fiber cable with max. diameter $\phi 41\text{mm}$

Port B: suitable for fiber cable with max. diameter $\phi 20\text{mm}$

②. The other type of seal fitting with the following two ports:

Port A: suitable for fiber cable with max. diameter $\phi 26\text{mm}$

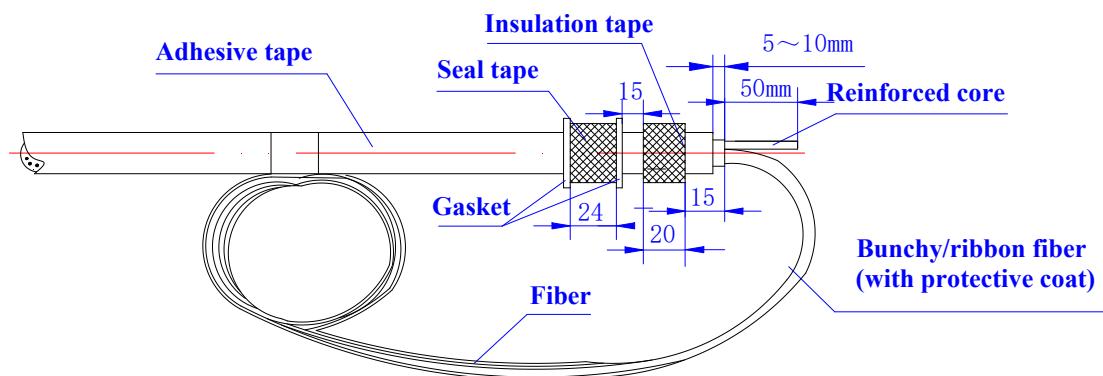
Port B: suitable for fiber cable with max. diameter $\phi 20\text{mm}$

5.4.4 The corresponding inlet/outlet ports are to be selected according to fiber cables and gasket to be actually installed. When the diameter of fiber cable is smaller than that of the inlet/outlet port, then the seal tape should be used to enlarge the diameter of fiber cable at fiber cable inlet/outlet position, of which the perimeter could be measured by the corresponding measuring paper (marked with Hole A, Hole B).

5.4.5 Reserve reinforced core in 50mm length and cut off the unnecessary ones.

5.4.6 See Drawing 4

- Important Issues:**
1. Before the seal tape is used for enlarging the fiber cable diameter, it should be scratched and to be cleaned with abrasive cloth and ethyl alcohol.
 2. Cut off reinforced core with a special cutting plier.



Drawing 4

5.5 Step Five - Fix reinforced core and fiber cable

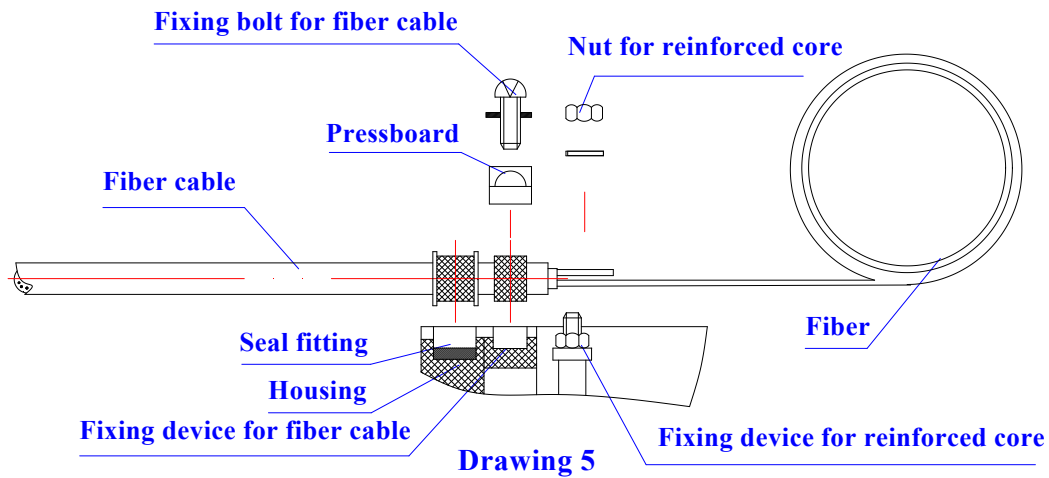
5.5.1 Upon finishing the above steps, then demount port plugs, pressboard and fixing nut of reinforced core. Make sure to check whether the fiber cable stripped fits in with the fixing ports or not. If not, the adjustment should be done in time. Otherwise it will affect installation quality.

5.5.2 Tighten fiber cable pressboard. If the diameter of fiber cable is not big enough, then enlarge it with insulation tape.

5.5.3 Tighten nut of reinforced core with the special wrench (plastic) and then retighten it

with the metal wrench.(the metal wrench should be provided by operator).

5.5.4 See Drawing 5



5.6 Step Six - Splice fibers

5.6.1 Follow user manual of fusion splicing machine to splice fiber.

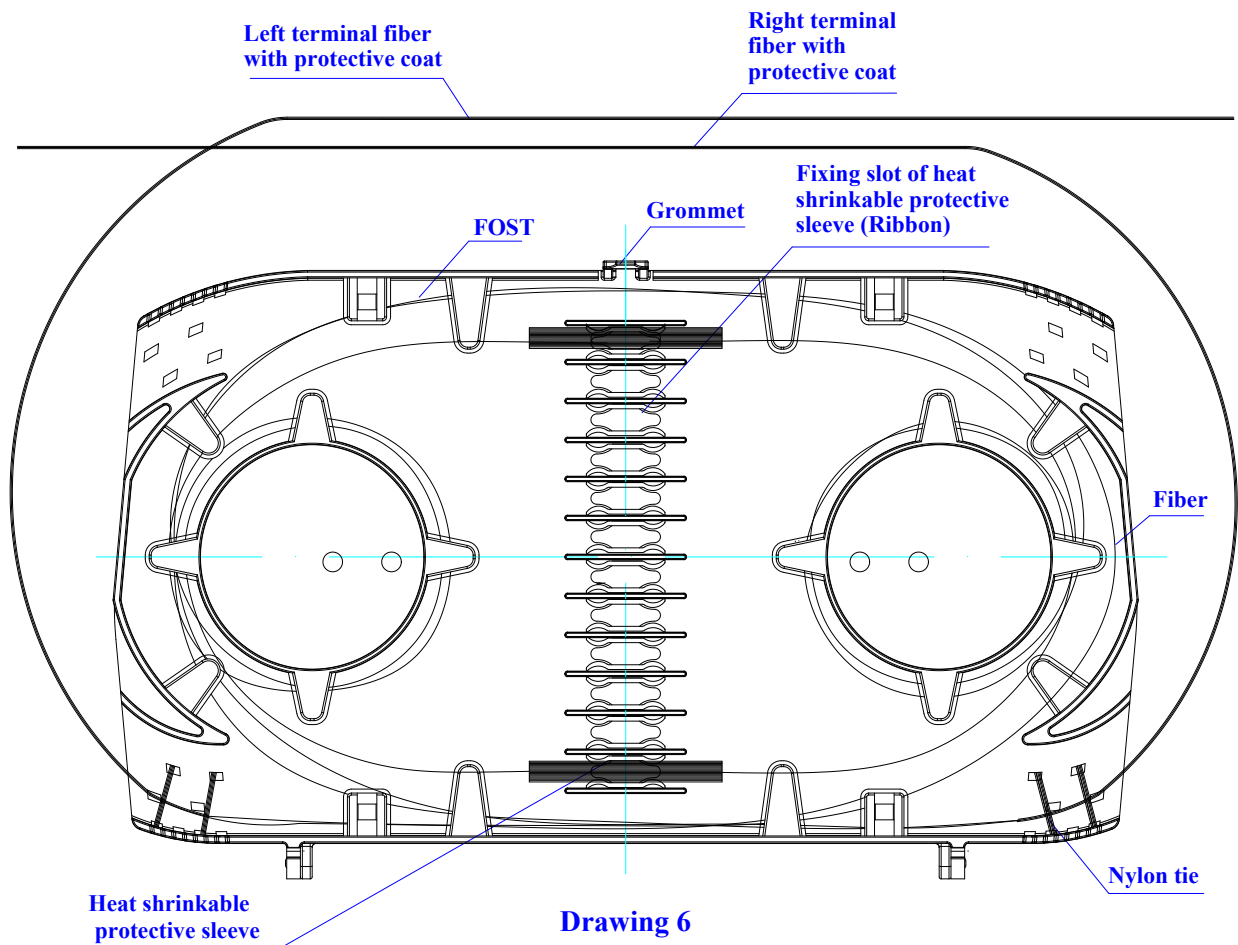
Important issue: pay attention to the twist and bend of fiber.

5.7 Step Seven -Install heat shrinkable protective sleeve and house fibers

5.7.1 When having completed splicing the fibers, the first fiber ring should be housed on the farthest side of FOST, the remaining fiber should be winded, forming a ring with diameter not less than 80mm. then put it into FOST (Fiber Optic Splice Tray) together with heat shrinkable protective sleeve. (Firstly fix heat shrinkable protective sleeve into the slot, then enlarge the diameter of fiber ring properly.)

5.7.2 see Drawing 6

Important issue: pay attention to the twist and bend of fiber.

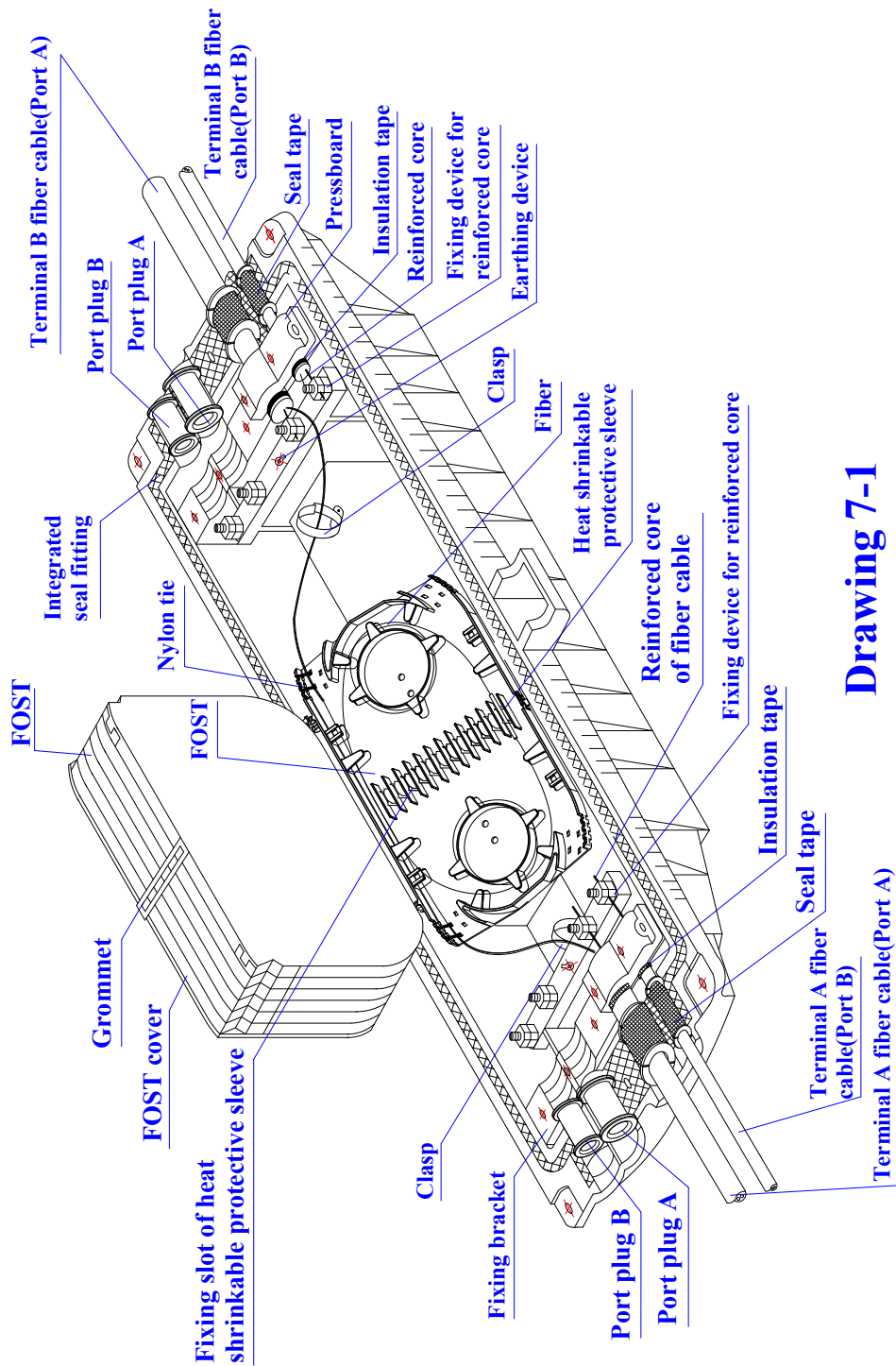


Drawing 6

5.8 Step Eight - Check up comprehensively

To ensure the technical requirements, the following instructions must be followed:

- 5.8.1 The fibers in the FOST are spliced and installed orderly. The curved diameter of fiber meets with the technical requirements.
- 5.8.2 The internal tighteners are tightened.
- 5.8.3 The inlet/outlet ports without fiber cables installed must be blocked up with the port plugs.
- 5.8.4 Control the amount of seal tape within a proper range.
- 5.8.5 Seal fitting is installed neatly and smoothly.
- 5.8.6 Seal the cover of seal fitting
- 5.8.7 See Drawing 7-1

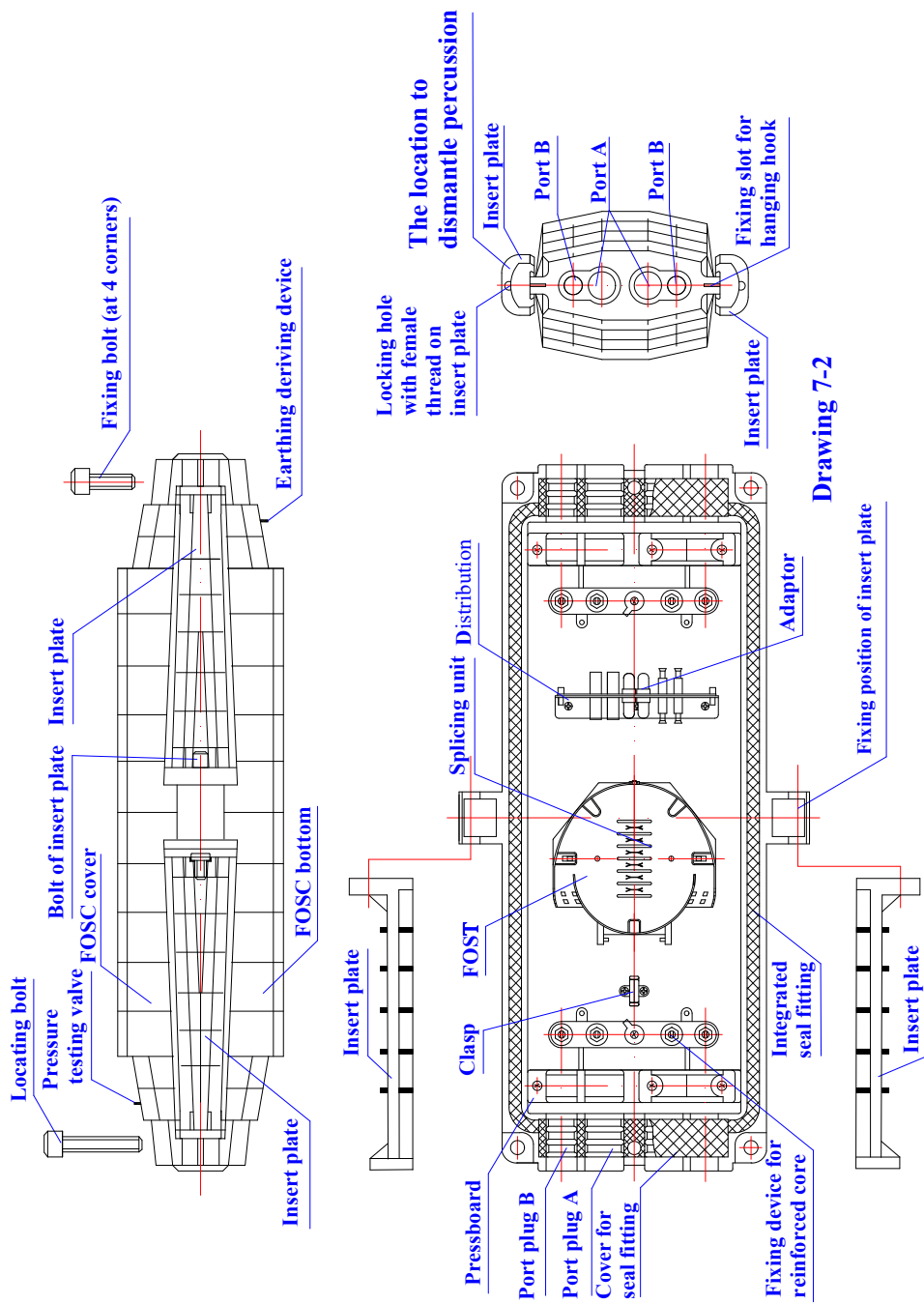


Drawing 7-1

5.9 Characteristics

- 5.9.1 The closure is used for splicing part of main fiber cable with branching fiber cable, and meanwhile splicing its rest part with pigtail or drop cable, connecting optical exchange equipment via patchcord. Therefore it saves costs by eliminating splicing unit, distribution unit, distribution box and all the work between fiber optic splice closure and distribution box.
- 5.9.2 It is easy and fast to increase FOST. The SLIDE-IN-LOCK design of FOST with the opening angle 90° makes expansion and maintenance convenient.

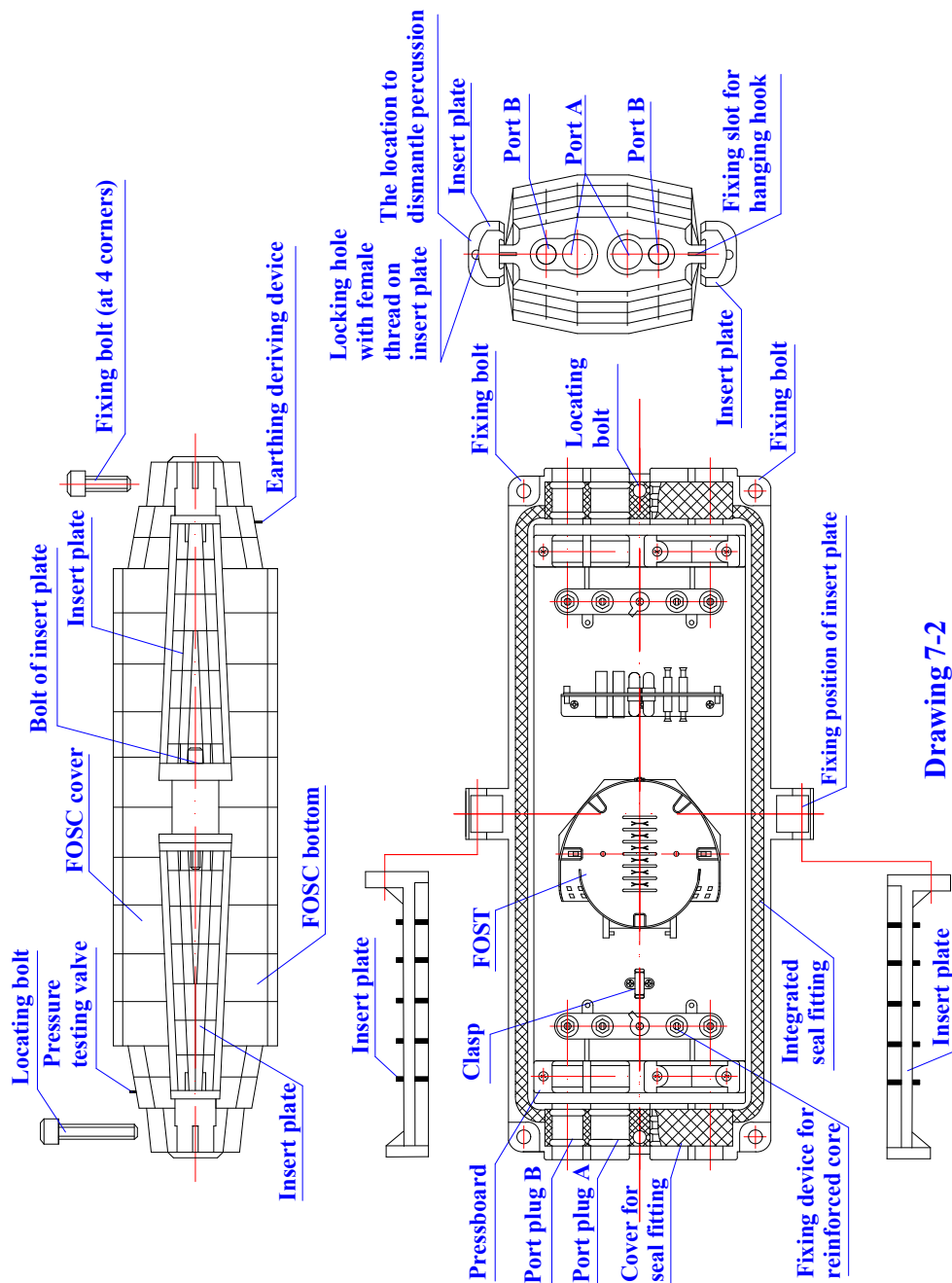
- 5.9.3 The distribution unit can have FC, SC, ST, LC adapter front panel to meet with customers various needs. The installation is very easy.
- 5.9.4 Inovative design, easy installation. Based on the advanced formula, the plastic part is made of injection-molded, high-strength engineering plastic PC. It ensures long-term reliability and usage under ambient temperature $-40^{\circ}\text{C} - +65^{\circ}\text{C}$.
- 5.9.5 The elastic intergrated seal fitting, our patented product, can be reused for many times, it ensures good-resealing performance
- 5.9.6 Multi-functional fiber optic splice closure can be used for wall-mounting and pole-mounting application. It saves the cost for FTTH application and improve quality of telecommunication.
- 5.9.7 See Drawing 7-2



5.10 Step Nine – Assemble FOSC housing

- 5.10.1 Put the FOSC cover on the FOSC bottom directly.
- 5.10.2 Insert locating bolt of FOSC and tighten it with the special wrench.
- 5.10.3 Insert plate installation method: buckle the insert plates, then knock in the insert plates with rubber hammer, then properly tighten the bolts of insert plates.
- 5.10.4 If the FOSC is for aerial application, then put the hanging hook on one side of the closure and then tighten fixing bolts on both sides. Otherwise tighten the four fixing bolts on four corners respectively.
- 5.10.5 See drawing 8

Important issues: cleaning the housing and pay attention to the above sequence.



5.11 Step Ten - Fix FOSC.

5.11.1 Fixing the FOSC and tighten bolts in sequence as per drawing 9.

Important issues: Retighten in five minutes

Tighten properly to avoid the closure to be out of shape.

