



RLH-OFSC-48-1 Splice Closure User Guide

48 Fiber In Line OSP Splice Closure

RLH Industries Outside Plant Fiber Splice Closure provides reliable and flexible installation for outdoor in-line and/or butt end applications. The compact size and high quality construction allows for installation in both underground and aerial environments.

General Information

This Splice Closure model has four cable ports and can be used for different applications of optical fiber cable splicing & branching and is suitable for aerial, pipe-lined and direct-buried applications..

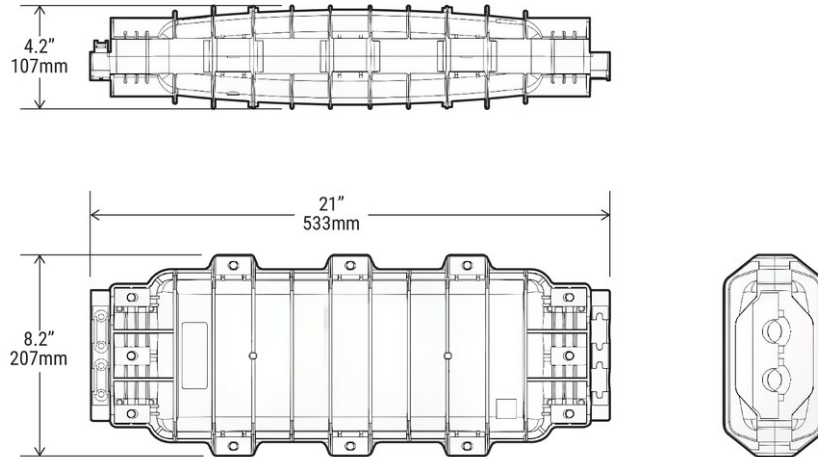


48 Fiber OSP Splice Closure

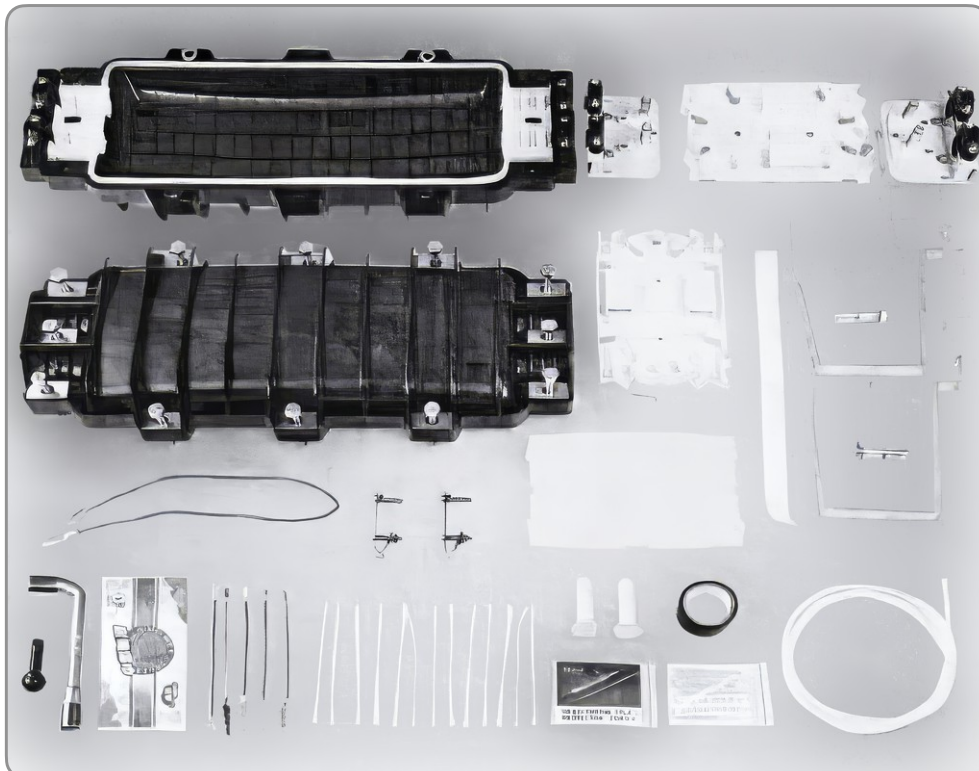
General Specifications

Color	Black
Material	PP & GF
Dimensions (mm)	533 (L) × 207 (W) × 107 (H)
Fiber Splice Capacity	48 Fibers
Number of Fibers Per Tray	24
Cable Ports	4
Cable Diameter	10 - 21mm Diameter
Weight (Kg)	3.3 - 3.6
Protection Level	IP68
Installation Style	Outdoor underground, direct bury, or aerial, inline or butt end

Dimensional Information



Fiber Closure Components



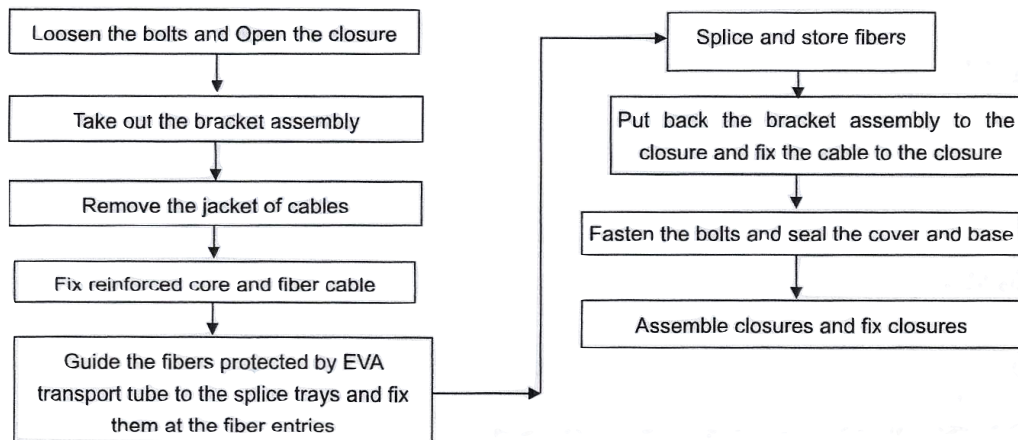
Main Components

Quantity	Description	Notes
1	Splice Closure Cover	LxWxH (mm): 533 x 207 x 54 (Special material)
1	Splice Closure Base	Fixing internal structures (Special material)
1	Circular seal gasket	Waterproof and sealing (Patented)
1	Bracket assembly	Fix cables and store fibers
4	Fiber splice tray	Fiber splicing & storage
1	Splice tray bracket	For holding splice tray and store spare fibers
1	Hook & Loop Tape	Holding splice trays together
12	Fasteners	Sealing the cover and base

Accessories

Quantity	Description	Notes
1 Set	Hoop	For under ground indoor installation
12	Cable Ties	Fixing fibers with protective jacket
48	Splice Sleeves	Fiber splice protection
2	Pastic Dummy Plug	For ports unused ports
1 Roll	Insulation Tape	Fixing fibers
1 meter	EVA Transport Tubes	For protection of loose tube if required

Installation Flow Chart

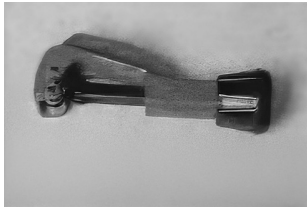


Installation

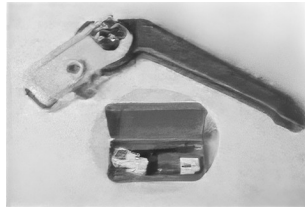
Note: If the closure would be used for pipe-lined application, please use a pipe-lined hoop.

Prior to Installation

- Please check the structure and type of OF cables before installation.
- Keep all components and accessories of closure clean and dry.
- Keep the working place clean for easy installation.
- Use appropriate tools according to the approved standard of fiber optic splicing equipment when remove the jackets of OF cables and assemble the closure. (Recommended tools as follows for reference)



Cable Jacket Cutter



Cable Jacket Stripper

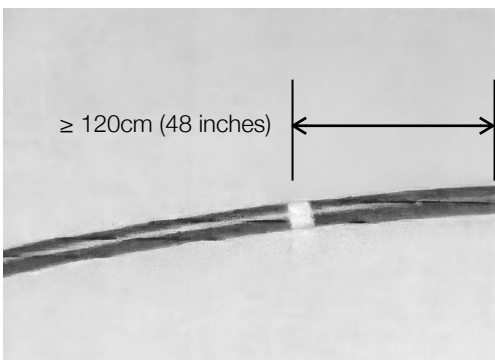


Strength Member Cutter

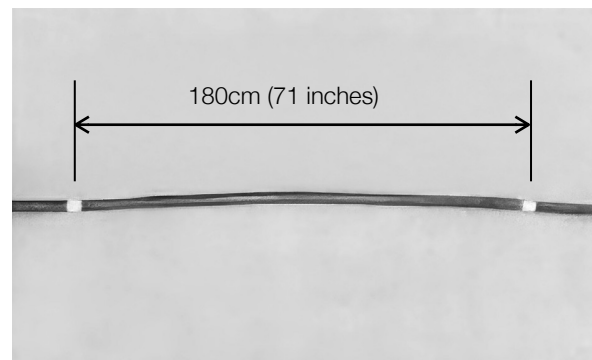
Note: If the closure would be used for pipe-lined application, please use a pipe-lined hoop.

Prepare the Fiber Cable

Mark the cut point on the cable. Strip the branching cable. Refer to the following pictures.



Stripping the branching cable



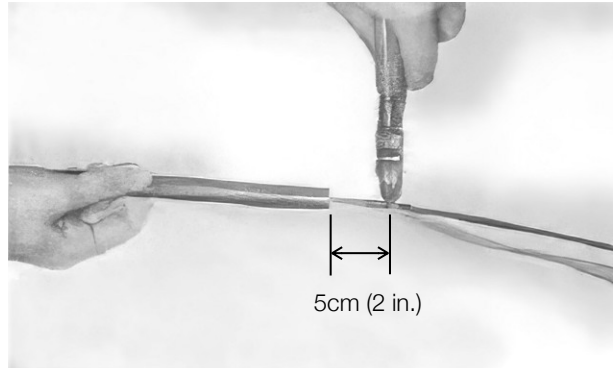
Length to strip uncut cable

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

NOTE:

- Be sure not to damage fiber
- Do not use any damaged cable
- While removing the cable sheath, please do not cut, twist or damage the cable jacket. Cut away any damaged cable and re-strip in case any cable is damaged.

Cut off the extra reinforced core about 5cm (2 inches) from the end of the removed sheath.



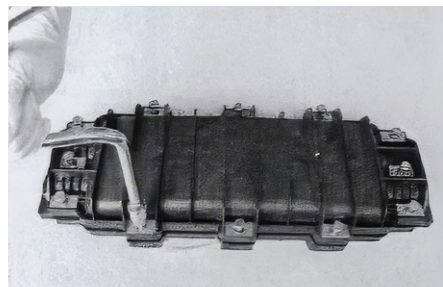
Cut away the steel core

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

Installation

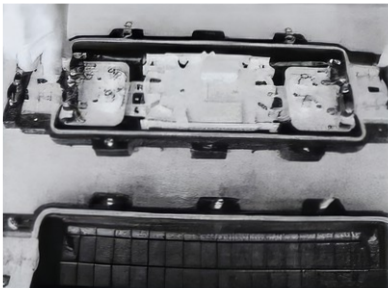
- Make sure that all accessories are included.
- Loosen the M8 bolts using the included 14mm hex wrench.

Note: When loosening the bolts, keep the wrench straight so that the bolts come out easily and don't bind on the housing.

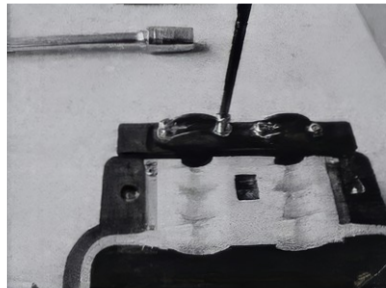


Loosen the bolts

Remove the cable clamp retaining screws and clamping base.



Remove the bracket

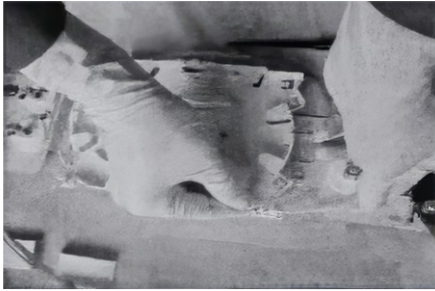


Remove cable clamps

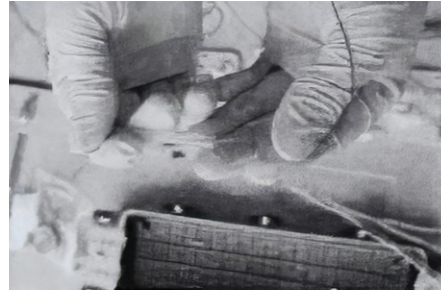


Remove clamps from bracket

Depending on the fiber being used, insert the fiber into the EVA tube for protection.



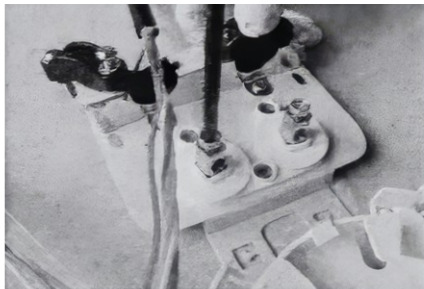
Measure the length of the EV tube



Insert the fiber into the tube

Note: Make sure the length of the fiber is appropriate and handle with care to avoid damaging the fiber.

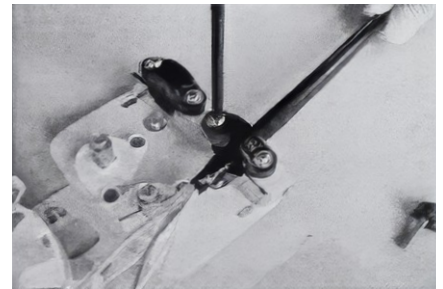
Insert the steel strength member of the cable through the string relief clamp and tighten the retaining screw. Place the cable into the cable clamp and tighten the M5 retaining bolts to secure the cable in place.



Loosen the strength member clamp



Tighten the strength member clamp



Tighten the cable clamp

If needed, carefully cut the cable the cable shield approximately 1cm (.4 in.) in an L shape. Fold the shield over and clip and wrap the metallic part with electrical tape.

Install monitor pigtail (optional)

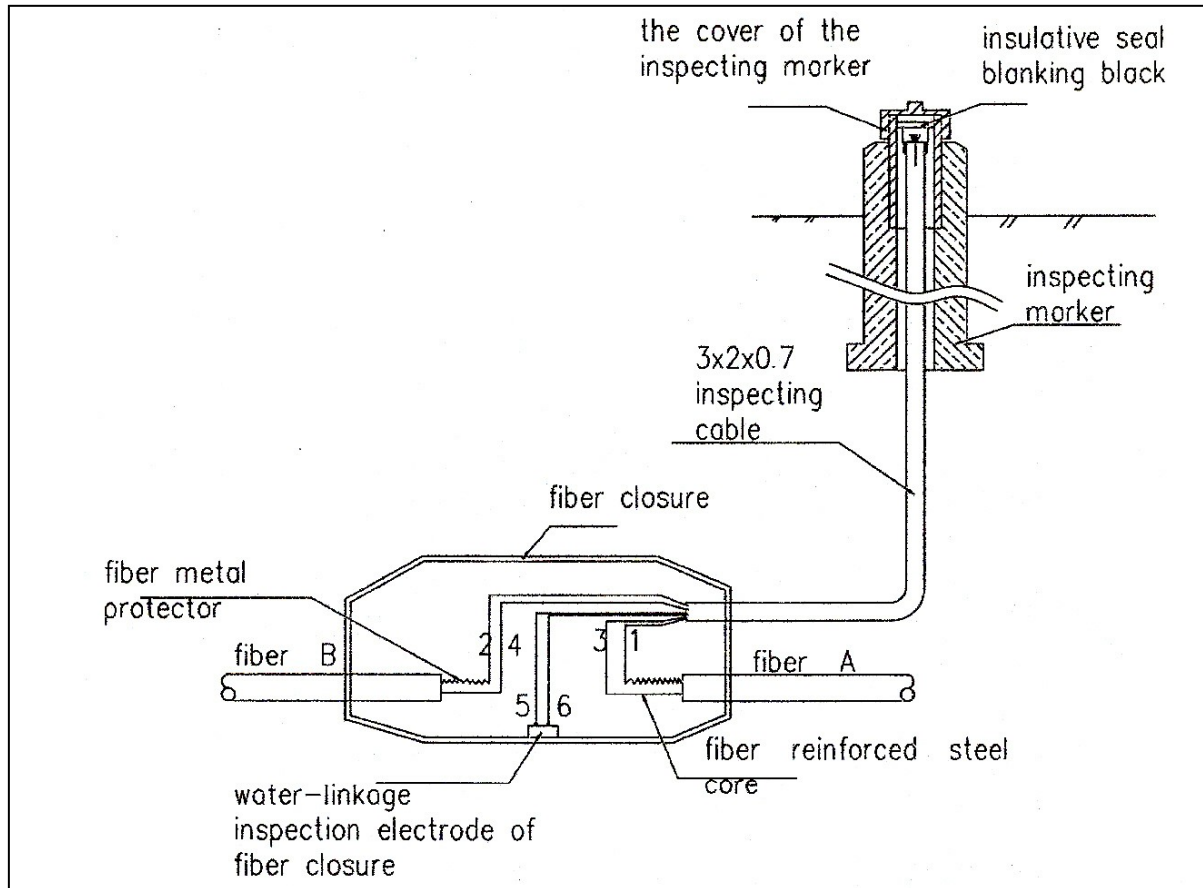
When direct-buried, optionally install a sensor to monitor the insulation of fiber cable and grounding. This typically consists of a pigtail cable, insulation block and a water monitor electrode. The pigtail cable and inspection marker are installed at every splice point. Refer to the diagram below.

The sensing electrode is installed to the inner bottom wall of the closure to detect water leakage. If no electrode is used, separate the 2 pieces of spare wire (5,6) of monitor wire and attach them to closure bottom.

Note:

- Ensure a good connection between the core of pigtail cable and cable metal jacket.
- Secure the electrode to inner and bottom wall of closure with PVC plastic glue. The position of attachment can not interfere with the use of closure
- When using the non-metallic reinforcement core cable, use the spare 3,4 wire of of the pigtail cable and insulate the top of the wire.
- Leave enough slack in the pigtail cable to reduce any tension on the marker.

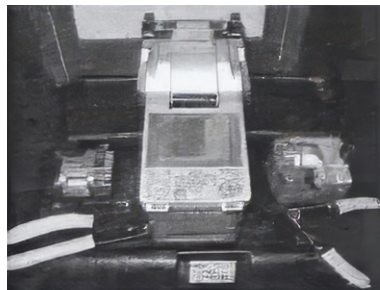
Connecting cable when using monitoring equipment



Connection of monitoring equipment insulated against ground

Splicing Fiber

Stripping out the fiber coated layer according to requirements, make sure that the stripping clamp does not scratch the fiber and clean the bare fiber. Use the cutting knife to cut the fiber, then insert into protective sleeve. Perform the fiber splice using appropriate splice equipment.



Fiber Splicer

Heat shrink the protective sleeve, snap into the slot and cover it.

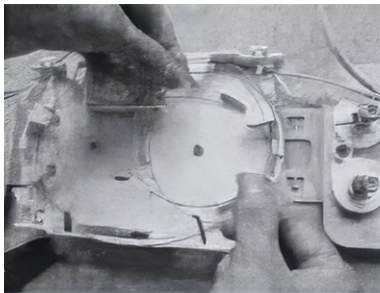
Note: Take care not to damage the fiber in this process.



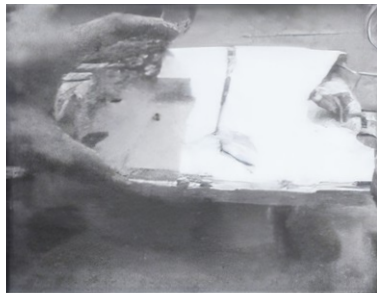
Cover the holder

Coiling the fibers

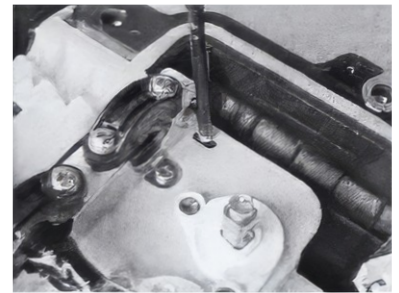
Note the twist and direction of the fiber while coiling the fiber. Pay close attention not to twist off or damage the splice. Make sure all fibers can under the tray cover so that they are protected. Make the bend radius longer if possible while coiling the fiber which will avoid unnecessary refraction losses and dispersion because of small radius. Then cover the tray once the fibers are properly coiled.



Coil the fiber



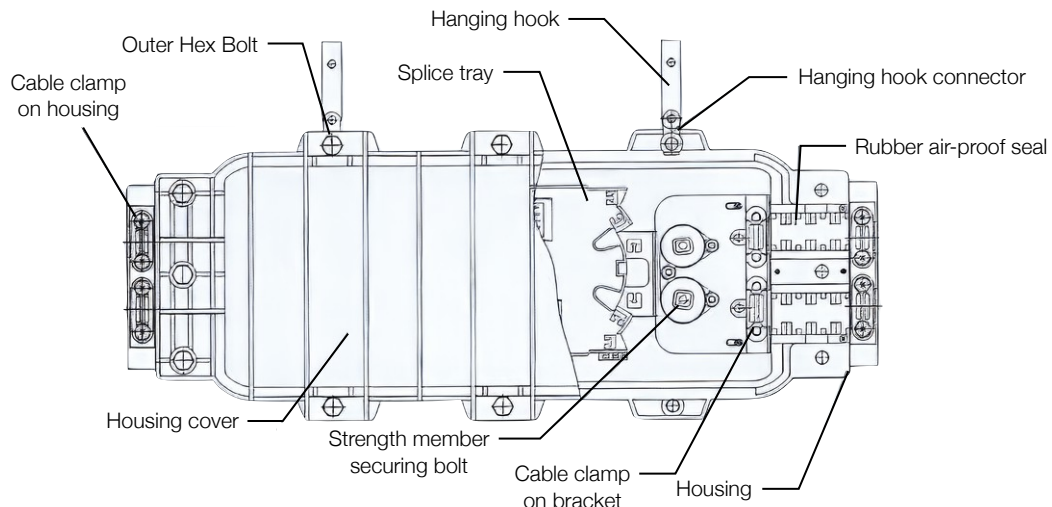
Install the tray cover

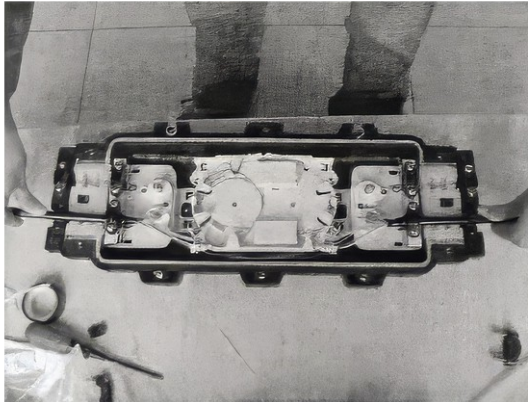


Install the bracket

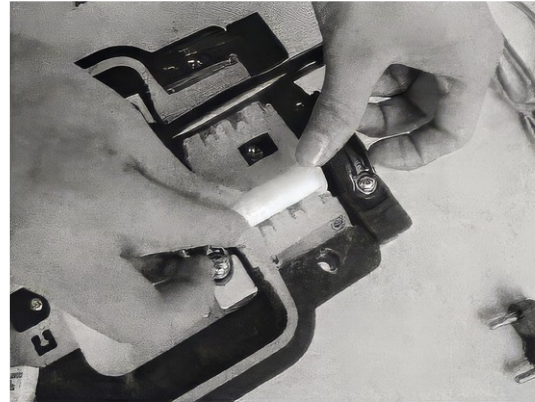
Installing the cable bracket and sealing the housing

Once the pricing is complete the cable may be fixed to the housing. Make sure the gasket seal is in place on the housing and the the optical cable is positioned in the airtight seal in the end of the enclosure. The cable will be aligned with the seal on the bracket. Insert the plug into the unused cable port, paying attention to the alignment. If installing in an aerial environment, note the installation of the hanging hooks prior to installation.

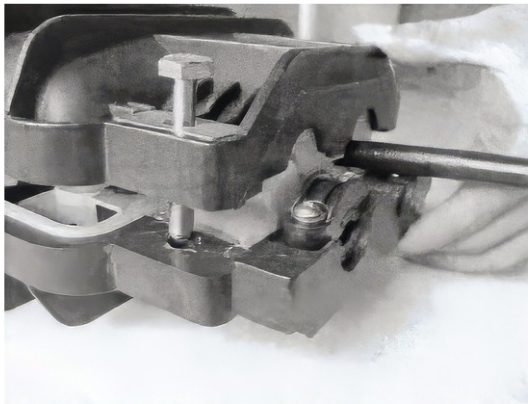




Align cable with sealing gasket



Plug the used cable ports



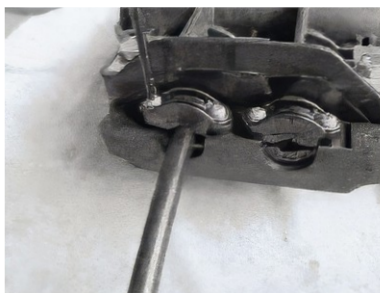
Align the upper and lower gasket seal



Tighten the fastening bolts

After checking that everything is aligned, install the housing cable clamps and tighten the clamping screws. If aerial mounting, attach the aerial hanging hook.

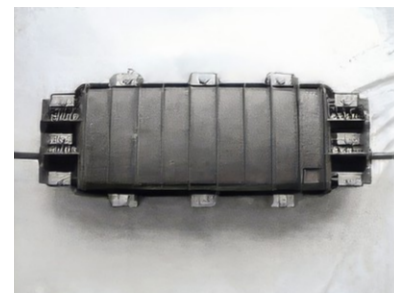
Place the cover on the housing and tighten the bolts. After ten minutes, re-tighten the bolts.



Tighten the cable clamps



The side of the closure after sealing



After installation

Repetitive opening and re-closing

Open the closure when maintenance is necessary by loosening all of the bolts and opening the cover carefully to avoid damaging the fiber. If all the seals are undamaged, then the cover may be re-attached and the bolts tightened, otherwise the closure will need to be replaced.

Main Technical Data

Environment Temperature	-40°C to +55°C
Application Life	25 years
Optical Performance	No apparent additional attenuation
Temperature Recycle	When the closure is pressurized to (60±5) KPa 10 times, the drop of air pressure is less than 5 KPa, no air bubbles visible after 15 minutes when placed under water.
Seal Performance	When the closure is pressurized up to 100 KPa, no air bubbles visible after 15 minutes under water, or no change of air pressure after 24 hours.
Re-entry Performance	The sealing performance could still meet the standard after three times of re-entry
Insulation Resistance	≥2x104MΩ
Voltage Resistance	No arc-over or penetration under 15KVDC/1min

Precautions

- The diameter of steel core inside of fiber splice protective tube is 1.5mm. If using ribbon fiber, please contact us first.
- The acceptable cable diameter is 10-22mm. When cable is less than 12mm, please use unvulcanized rubber sealing elements.
- When using the plastic plug to seal the cable port, the plastic plug should be placed in level. Make sure to align the groove of seal when installing the cover, check to see that the seal loop is flat, then tighten the bolts. It requires 2 operators to complete this step.
- Please be careful when threading and tightening the bolts so as not to damage the closure. In order to attain proper sealing performance, we recommend a torque force ≤8Nm when tightening the bolts.

Packing, transportation and storage

This equipment packaging is moisture-proof and shock-proof. The accessories are packed first into plastic bags, then into the boxes with plastic bags for sealing. There are moisture-proof storage and handling symbols on the outside of the boxes.

Transport the equipment in an upright position, free from damage caused by rolling or shifting in transit. Please load carefully and prevent damage from mishandling. The closure must remain dry prior to installation. The temperature for storing or transporting should be controlled between -35°C to +55°C (-31°F to +131°F).

Any excessive accumulation of accessories should be stored on the cartons. Keep stored components dry and out of corrosive environments.