

SUMITOMO RECOMMENDED PROCEDURE

SRP SP-F05-004

Assembling Optical Distribution Cabinet (HSX)

<u>PARA.</u>	<u>CONTENTS</u>
1.0	General
2.0	Safety Precautions
3.0	Reference Documents
4.0	Tools Required
5.0	Installation of cabinet
6.0	Assembling the Break Out Kit (1152f or 1728f)
7.0	Installation of the Breakout Kit (1152f or 1728f Upstream side)
8.0	Installation of Transportation Tube and Splicing



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1.0 General

Please read and understand thoroughly the contents of this procedure before use. After reading, keep this procedure for future reference.

2.0 Safety Precautions

2.1 This manual describes items that must be observed for safe use of the cabinet to avoid injury to people and damage to property. The meanings of indications and symbols are listed below. Read the text after understanding the contents of these labels.

DANGER:

Improper handling and ignoring the precautions is very likely to cause serious injury or even death.

WARNING:

Improper handling and ignoring the precautions below may cause death injury or even death.

- Do not fix on unstable place.
- Placing on unstable place such as a rickety stand or inclined place while carrying / mounting may cause injury by falling. Firmly clamp the product on a stable place to prevent it from falling.
- Do not drop parts and / or tools.
- Take care not to drop parts and / or tools while working at height.

CAUTION:

Improper handling and ignoring the precautions below may cause injury or damage to equipment and property.

- Use added caution when opening / shutting the door or cover to avoid pinching hands or fingers.
- Watch out for protruding objects when bending down or standing up near cabinet.
- Take care when handling cable. Rigid cable may jump suddenly.

- Use only parts provided for the product. Follow tightening torque values where specified.

REQUEST:

Improper handling and ignoring the precautions below may prevent utilization of the closure or cause the suspension of functions.

- Always maintain minimum cable bend radius.
- For the optical fibers, do not exceed the minimum bend radius of 30 mm.
- For splicing of optical fiber, it is important to refer to the instruction manual provided with the splicing machine.
- For mechanical splice and field assembly connectors, refer to the instruction manual provided with each items.

3.0 Reference Documents

SP-F02-029 1728f Ribbon Slotted Core Cable Preparation

SP-F02-032 1152f Ribbon Slotted Core Cable Preparation

4.0 Tools Required

The following is a list of tools and materials required to complete this procedure.

1. Ball Point Hex Key Wrench (5mm)
2. Philips head screw driver
3. Cutting Pliers
4. Utility Knife
5. Pliers
6. Tape Measure
7. IDEAL Wire Marker Booklet (#44-101)
8. Sumitomo Ribbon Separator Jig
9. 6 – 8ft. Table
10. Cable clamps
11. Cable Cutter
12. Scissors
13. Gloves
14. Safety Glasses

5.0 Installation of Cabinet

5.1 Securing the Cabinet to the Floor

Attach the cabinet on the floor with anchor-bolts M12. Die center distance of the anchor-bolts are shown below. **Figure 1**

Die center distance of the anchor-bolts M12

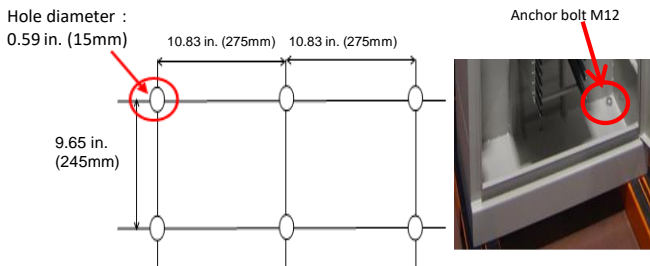


Figure 1

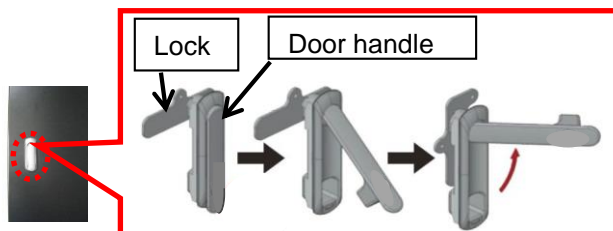
Note: Attach the cabinet on the floor surface tightly to prevent any movement. (Anchor-bolts are not included. Please specify proper anchor bolts for fixing.)

Attach on proper surface such as concrete. Do not attach on unstable surface.

5.2 Opening / Closing Method of the Door

5.2.1 Opening the Door

Press the push-button to pull out the door handle and turn the door handle counter-clock wise direction as shown in photo and figure. Then open the door. **Figure 2**



- ① Turn in anti-clockwise to open.
- ② Turn in clockwise direction to close.

Figure 2

5.2.2 Closing the Door

Turn the door handle in clockwise direction with pushing the door gently.

Fit and fix the door with pushing lower side of the door gently.

5.3 Removing / Attaching the Side Panel

5.3.1 Removing the Side Panel

Pull down the lever to release the lock with holding the grip of the panel. Draw out the upper side of the panel and release the panel with drawing lower side. **Figure 3**

5.3.2 Attaching the Panel

To attach the panel fix the lower side, then fix upper side pulling down the lever. Place lever to the lock position..

Note: Hold tightly to prevent the panel from falling.

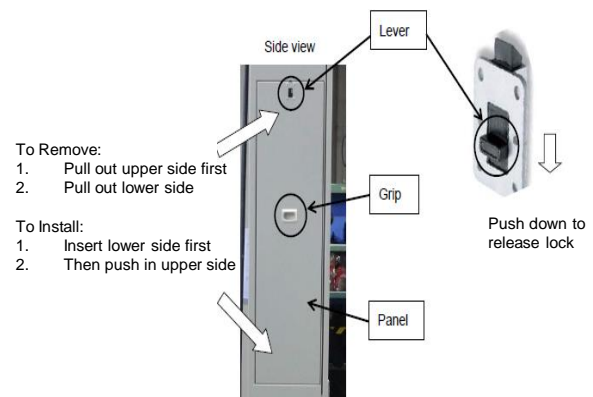


Figure 3

6.0 Assembling the Break Out Kit

6.1 Cable Preparation

6.1.1 Ring cut the outer cable sheath with sheath knife or utility knife at the required length (from breakout kit to termination unit).

See Figure 4

Note: Be careful not to score entirely through the jacket material which could cut the ripcords.



Figure 4

6.1.2 Gently bend the cable around the cut portion until the jacket material separates. Cut with a sheath splitter and remove the jacket material with pliers from the cable end to expose the ripcords. **Figure 5**

Note: Cut small slit on the cable sheath with a utility knife to easily start the ripcord.



Figure 5

6.1.3 Pull ripcord to the measured distance from the cable end. Separate the sheath from the cable core and remove. **Figure 6**



Figure 6

6.1.4 Remove water-blocking tapes and binder strings.

Note: Trim off tape and strings. Be careful not to cut fiber ribbons. **Figure 7**



Figure 7

6.1.5 Remove ribbon fibers from the slotted-core one slot at a time. Secure with vinyl tape or Velcro at opposite end of the cable. This will keep the ribbon order correct and protected while preparing slotted-core and strength member. **Figure 8**



Figure 8

6.1.6 Cut the slotted core length specified in **Appendix 1**.

6.1.7 Make a cut on the slotted core material with utility knife and remove with pliers to expose the strength member. **Figure 9**

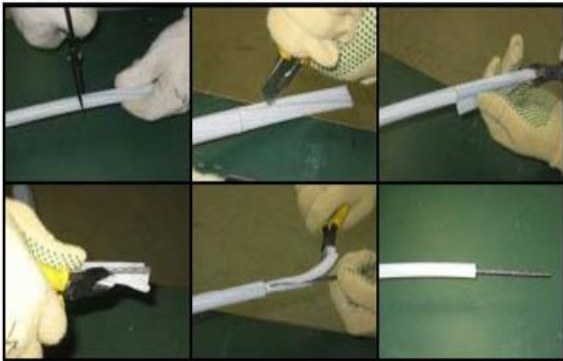


Figure 9

6.2 Installation of the Cable

Note: Installation procedure is similar for both 1152 and 1728 fiber cables.

6.2.1 Remove tension member bracket from base.

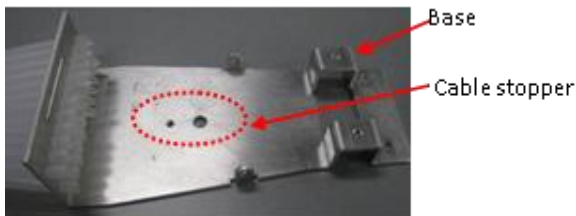
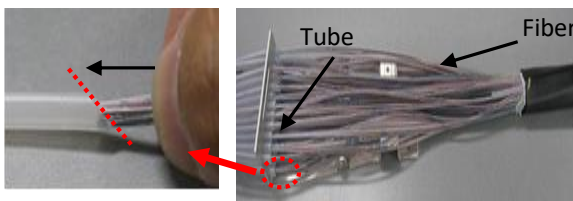


Figure 10

6.2.1 Remove tension member bracket from base.

6.2.2 Cut transportation tube at the length of 4.5ft (1370mm).

6.2.3 Install fibers in tubes as shown below.



Insert 4pcs of fiber ribbons at a time into tube with angled end

Keep tube as straight as possible for smooth insertion of fiber ribbons

Figure 11

Note: Assist ribbon/tube identification by grouping ribbons in 4 tubes per slot for UHFC 1152 fiber.

ex: Tube 1: Ribbons 1-4, Tube 2: Ribbons 5-8, Tube 3: Ribbons 9 -12, Tube 4: Ribbons 13-16 for each slot.

Ribbon Codes					
Ribbon#			Ribbon#		
1	1-bar		9	1-block+4-bar	■
2	2-bar		10	2-block	■ ■
3	3-bar		11	2-block+1-bar	■ ■
4	4-bar		12	2-block+2-bar	■ ■
5	1-block	■	13	2-block+3-bar	■ ■
6	1-block+1-bar	■	14	2-block+4-bar	■ ■
7	1-block+2-bar	■	15	3-block	■ ■ ■
8	1-block+3-bar	■	16	3-block+1-bar	■ ■ ■

Figure 12

Note: Assist ribbon/tube identification by grouping ribbons in 4 tubes per slot for UHFC 1728 fiber.

ex: Tube 1: Ribbons 1-4, Tube 2: Ribbons 5-8, Tube 3: Ribbons 9 -12, Tube 4: Ribbons 13-16, Tube 5: Ribbons 17-20, Tube 6: Ribbons 21-24 for each slot.

Ribbon Codes					
Ribbon#			Ribbon#		
1	1-bar		13	2-long block+3-bars	■ ■ ■
2	2-bar		14	1-long block+4-bars	■ ■ ■ ■
3	3-bar		15	1-long block+	■ ■ ■
4	4-bar		16	1-long block+1-short block+1-bar	■ ■ ■
5	1-short block	■	17	1-long block+1-short block+2-bars	■ ■ ■
6	1-short block+1-bar	■	18	1-long block+1-short block+3-bars	■ ■ ■ ■
7	1-short block+2-bars	■	19	1-long block+1-short block+4-bars	■ ■ ■ ■ ■
8	1-short block+3-bars	■	20	2-long blocks	■ ■ ■ ■
9	1-short block+4-bars	■	21	2-long blocks+1-bar	■ ■ ■ ■
10	1-Long block	■	22	2-long blocks+2-bars	■ ■ ■ ■ ■
11	1-Long block+1-bar	■	23	2-long blocks+3-bars	■ ■ ■ ■ ■ ■
12	2-Long block+2-bars	■ ■	24	2-long blocks+4-bars	■ ■ ■ ■ ■ ■ ■

Figure 13

For 1152 Breakout number all tubes consecutively 1 – 24 at both end of the tubes. Insert ribbons into each tube that matches the diagram below.

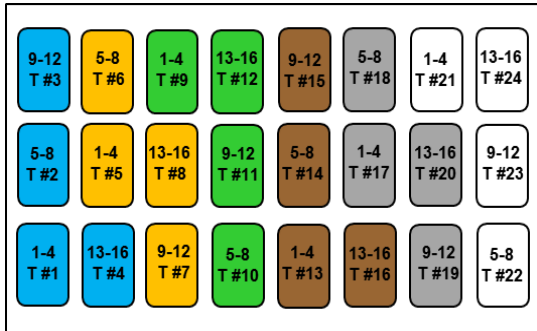


Figure 14

For 1728 Breakout number all tubes consecutively 1 – 36 at both end of the tubes. Insert ribbons into each tube that matches the diagram below.



Figure 15

6.2.4 Separate fibers in half (slots 1-3 on the left side and slots 4-6 on the right side of the housing) and put tension member bracket on base. **Figure 16**

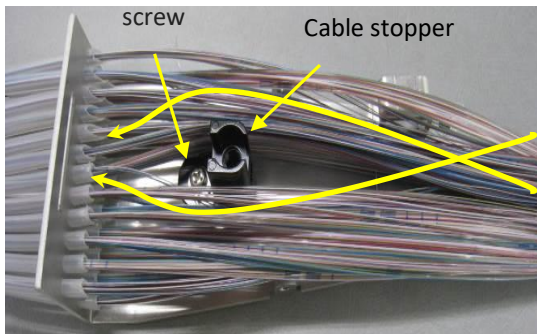


Figure 16

6.2.5 (When routing fibers through tubes) Touch the slotted core against the cable stopper and, install strength member in the cable stopper.

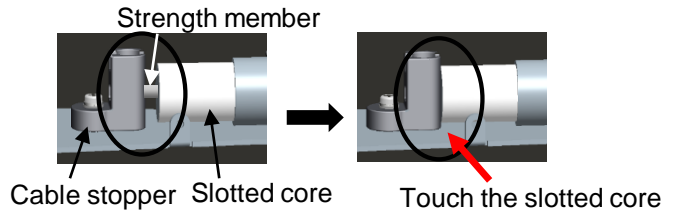


Figure 17

6.3 Fastening the Cable

6.3.1 Tighten both screws of cable sheath clamp evenly to secure the cable on bracket.

NOTE: Do not deform the cable by over-tightening. (2 Nm is recommended) **Figure 18**

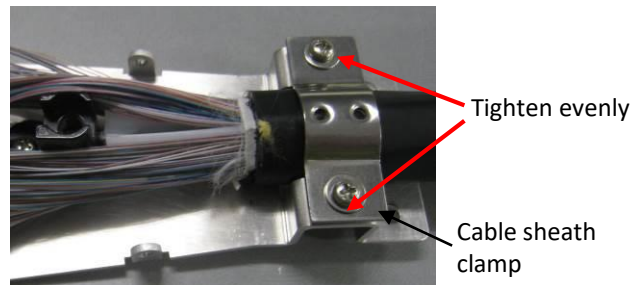


Figure 18

6.4 Installation of the Cover

6.4.1 Install the raised lip on the main unit into the slit of the cover then tighten the two screws and secure the cover as shown below.

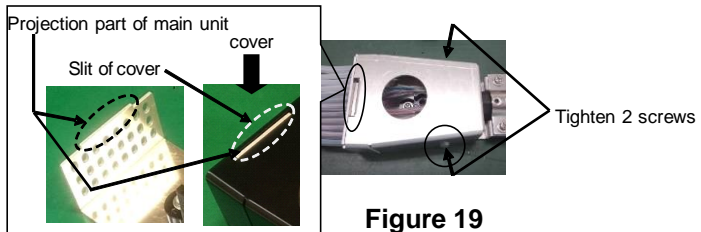


Figure 19

7.0 Installation of the Breakout Kit (Upstream side)

Installation procedure for HSX (1728) with Breakout kit (1728-F) is similar to the procedure for HSX (1152).

**In case of HSX(1152), 24 tubes / unit x6 splice units (3 tubes / trayx8 trays, or 4 tubes / trayx6 trays).

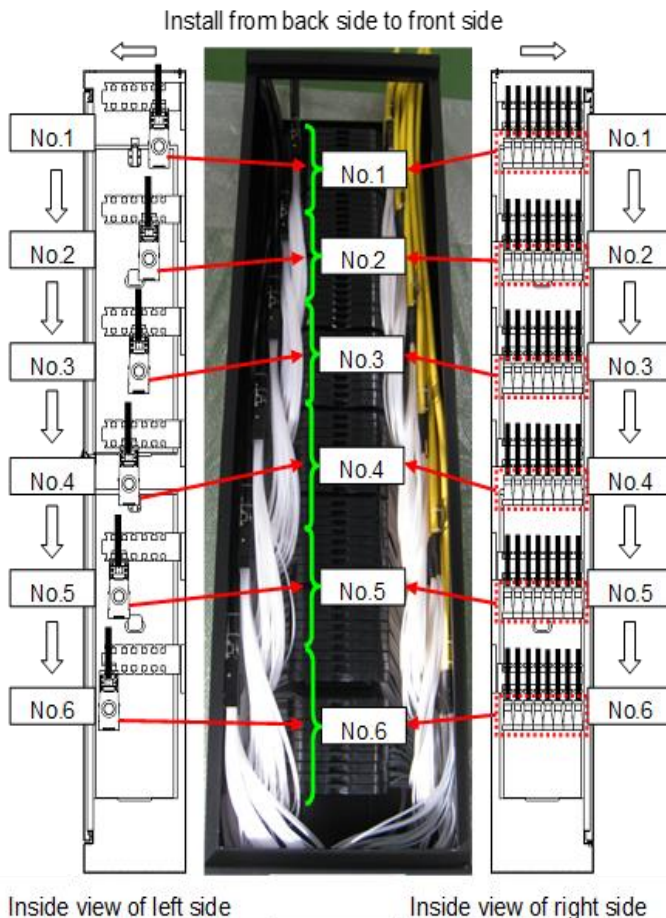
***In case of HSX(1728), 36 tubes / unit x5 splice units (4 tubes / trayx9 trays). Unit No.6 is not used for HSX(1728).

Install the breakout kit for the top step first No.1) at the left side. Install other break out kits in the order shown below.

Secure the breakout kit (1152f) on the cable fixing bracket with two cable ties which has enough strength to secure as shown in Figure 16.

Note: Route the tubes without twisting as much as possible.

Figure 20 shows upstream side, Route downstream side the same.



Install from No.1 to No.6.

Figure 20

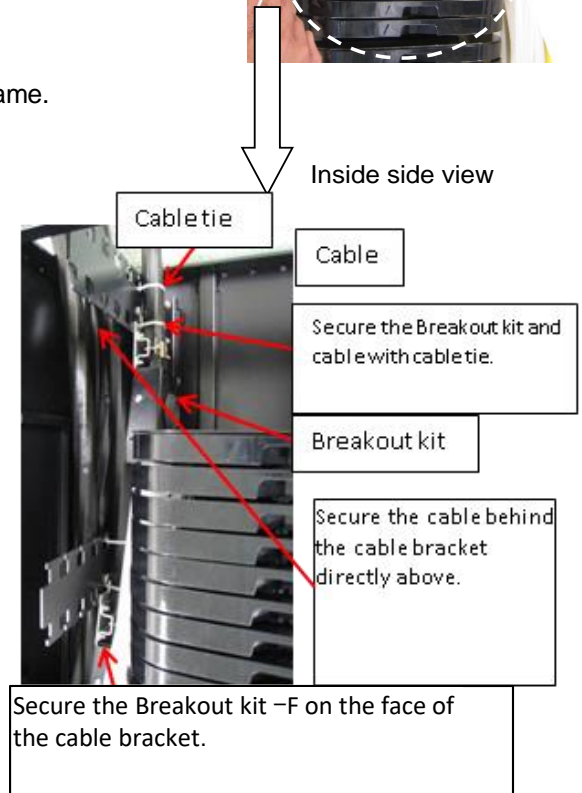
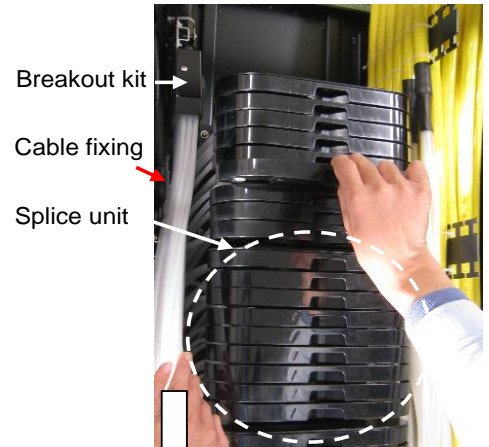


Figure 21

8.0 Installation of Transportation Tube and Splicing

8.1 Removing the Splice Tray

8.1.1 Remove the splice tray and put it on the workbench approx. 3.28ft. (1m).



Figure 22



Figure 23

8.2 Distribute and Secure the Tube

8.2.1 Distribute the tubes in the order from the bottom of the unit to the top of the unit.

8.2.2 Secure the tubes at the hole on both the left side or right side of the tray with cable ties.

NOTE: Each tray (3 tubes) / X 8 trays per section for total of 24 tubes (1152) or each tray (4 tubes) / X 9 trays for a total of 36 tubes (1728).

To prevent the congestion of the transportation tubes, turn the tube to back side and then turn right at 90 degree angle. Secure the tube at the distance of 0.39in (10mm) from the tube end on the tray as shown below in Figure 24.

For the minimum congestion of the transportation tube, secure tube fixed in each Break out kit on the splice tray in the order of back side to front side.

Latch of the cable tie shall be down side to prevent from disturbing the stack of the splice tray. Place the latch of the cable tie mutually positioned longitudinally.

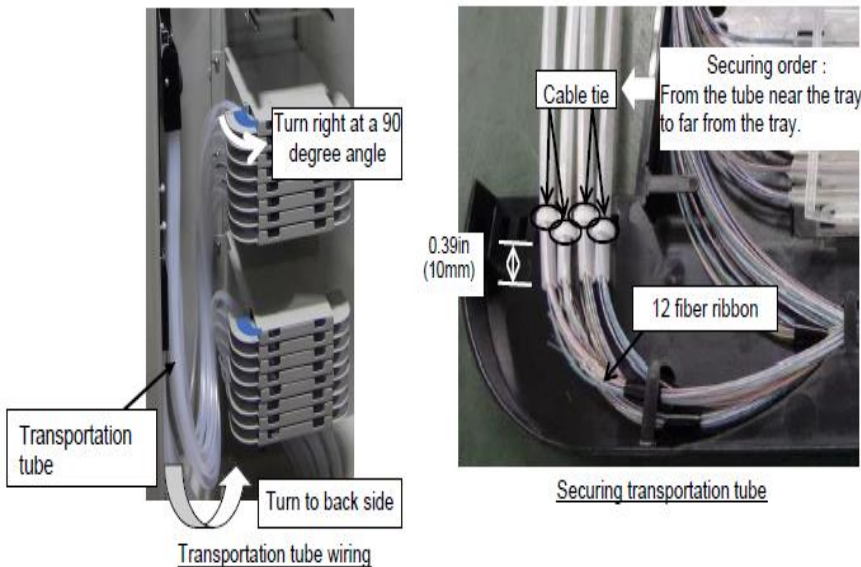


Figure 24

8.3 Splicing and Fiber Management

8.3.1 Fusion splice each ribbon. Maximum number of fibers to be spliced is 192 fibers (Max. 16 splices:12f ribbon).

Note: Refer to the splice manufacturer's instructions for directions on fiber splicing.

8.3.2 Secure fiber protection sleeve in splice holder and coil fiber slack as shown in photo.

NOTE: Prevent fibers from twisting.

Keep slot at end of the splice holder empty and use inner 8 slots for securing fiber protection sleeves (2 sleeves / slot).

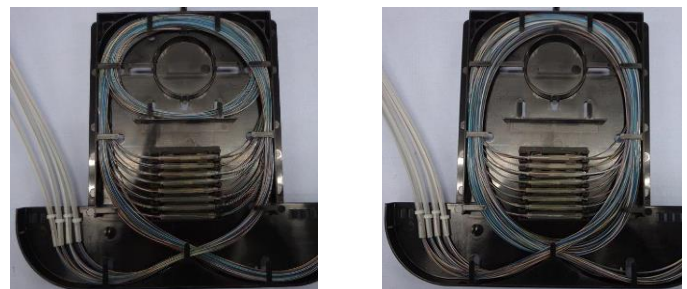
Secure fiber protection sleeves in the slot so that 12f ribbon will be vertical.

Length of the fiber slack at each side shall be approx. 31.5in (800mm) for re-splicing.

Keep minimum bending radius more than 1.18in (30mm).

Fibers are to be kept in fiber guides, otherwise it may cause attenuation by pinching fibers.

8.3.3 After managing fibers, assemble splice tray in the unit.

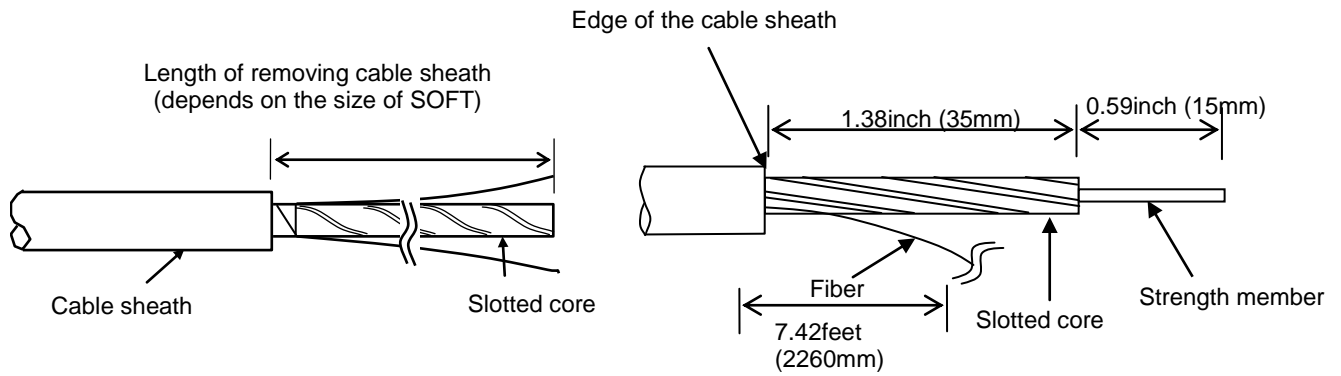


Place 2 fiber protection sleeves, one on top of the other, in each of the inner 8 slots. Keep the slots at each end empty.

Wiring diagram of the splice tray

Appendix 1

Ring cut and remove outer cable sheath at the length of HSX (Splice box).
Cut the slotted core as below.



In case of grounding connection to the cabinet, use the screw of the top plate to secure the ground wire between toothed washer and nut.

