

**SUMITOMO RECOMMENDED PROCEDURE****SRP SP-F04-046****FIELD TERMINATION PROCEDURE FOR  
FP72PVx FIBER BUNDLES  
WITH FT72FBK-12SU BREAKOUT KIT**

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## 1.0 General

1.1 This procedure describes the standard techniques for installing the Sumitomo Electric Lightwave (SEL) *FutureFLEX* Air-Blown Fiber (ABF) bundles containing Freeform Ribbon™ into a FT72FBK-12SU Field Termination Kit.

1.2 The Field Termination Kits are used at locations where fiber bundles containing Freeform Ribbon™ are to be terminated to Multi-fiber-Push-On (MPO), Splice-On-Connectors (SOC), Fanout/Pigtails, standard or pliable, terminations.

## 2.0 Safety Precautions

2.1 Wear safety glasses when working with bare optical fibers / fiber ribbons.

2.2 Handle cutting tools with care.

## 3.0 Reference Documents

3.1 Sumitomo Recommended Procedure, *FutureFLEX 72 Fiber Bundle Stripping Procedure*, SRP SP-F04-045.

## 4.0 Equipment / Tools Required

The following equipment, tools, and materials are required to complete this procedure:

### 4.1 Freeform Ribbon™ (Types)

- 72-SM/OS2 Fiber Bundle FP72PVS
- 72-MM/OM3 Fiber Bundle FP72PV3
- 72-MM/OM4 Fiber Bundle FP72PV4

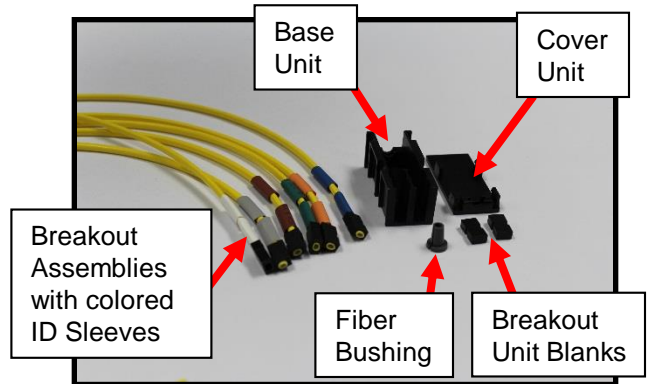
4.2 FT72FBK-12SU Field Termination Kit: Base Unit with Cover, six 3.8mm OD Breakout Assemblies each with two color-coded identifier sleeves/tubes, one 3.8mm Bushing and two breakout unit blanks. **See Figure 1.**

4.3 Adhesive Tape.

4.4 Measuring Tape.

4.5 Clean Work Surface / Table.

4.6 Kevlar Cutting Tool (scissors or shears).



**Figure 1**  
72 Fiber Breakout Kit Assembly Items  
(Yellow = "Single Mode Bundle" Example)

## 5.0 Prepare the Freeform Ribbon™ Fiber Bundle

5.1 Freeform Ribbon™ 72 fiber bundle stripping.

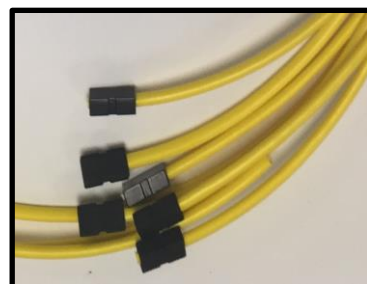
5.1.1 The 72 fiber Freeform Ribbon™ Fiber Bundles consist of 6 X 12f Freeform Ribbon™ ribbons and a ripcord enclosed in a protective lightweight PVDF outer jacket.

5.1.2 Each of the six(6) Freeform Ribbon™ ribbons contain twelve 250µm color coded (Blue, Orange, Green, Brown, Slate, White, Red, Black, Yellow, Violet, Rose and Aqua) buffered fibers.

5.1.3 Remove at minimum 40" of the protective jacket from the Fiber Bundle to expose the 6 Freeform Ribbon™ ribbons.

5.1.4 Each of the kits assembly tubes are 35.5". Since there are multiple applications for this kit, trimming the tubes may be required.

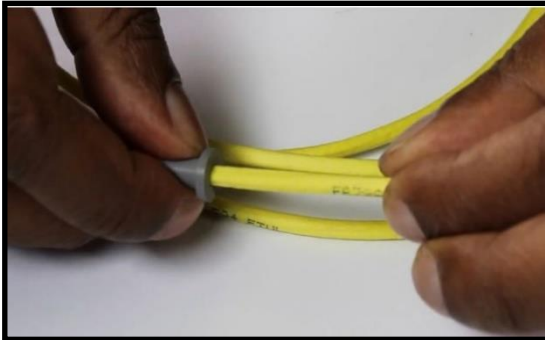
**Note:** Refer to **SRP SP-F04-045** for detailed techniques on PVDF jacket removal.



**Figure 2 - Furcation Tube (Singlemode)**

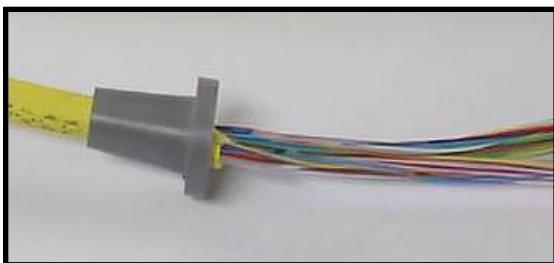
**5.0 Prepare the Fiber Bundle (Continued)**

5.2 Install the 3.8mm bushing on to the fiber bundle allowing it to completely overlap the PVDF jacket. Note: The bushing has a slit for installation without sliding over the bare fibers. See Figure 3



**Figure 3**  
Fiber Bushing overlapping the PVDF jacketing

5.2.1 Move the Bushing towards the edge of the stripped PVDF jacket. The Bushing should be the division point between the exposed ribbons and the PVDF jacket to secure, align and protect the fibers entering the breakout unit assembly. See Figure 4.



**Figure 4**  
3.8mm fiber bushing installed on the edge of the PVDF jacket before the bare fibers.

5.3 The six Freeform Ribbon™ ribbons are Individually numbered, (Block-Coded Marking Pattern) Groups 1-6. See Figure 5 & 6

12-Fiber – Ribbon Marking Pattern			
Number / Value	1	5	Visibility Block
Symbol			
	Bar	Short Block	Long Block

**Figure 5**

Similar to Roman Numerals, fiber bundle ribbons are labeled using 1 bar for the 1<sup>st</sup> ribbon, 2 bars for the 2<sup>nd</sup> ribbon, etc. *(The bars may follow a long block “visibility block” for easier visual identification.)*

5.3.1 Shown below in Figure 6. are the Fiber Group identity marking methods (2-possible methods M1 & M2) for each of the 6 pliable ribbons in a 72 fiber bundle.

	Ribbon 1	Ribbon 2	Ribbon 3	Ribbon 4	Ribbon 5	Ribbon 6
M1						
M2						

**Figure 6**

Manufacturer’s Ribbon Marking Methods may vary and can be identified by the omission of or, the printing of a Long Block to the left of the Identifying Mark(s).

5.3.2 Identify (by Group number) and separate each of the 6 individual 12-fiber ribbons.

5.3.3 Identify (by Color Identifier Sleeves/Tubes) and separate the 6 Breakout Assemblies - (TIA-598-C = Blue/Orange/Green/ Brown/Slate/White)

## 6.0 Install the Freeform Ribbon™ into Field Termination Kit

**Note:** Ensure two identically-colored identifier sleeves/tubes have been installed onto each Breakout Assembly. **See Figure 1.**

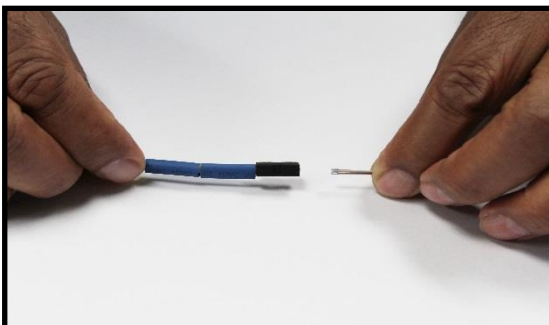
6.1 Install each Freeform Ribbon™ 12f-ribbon in the appropriate Breakout assembly. **See Table in Figure 7.**

Freeform Ribbon™ and Field Termination Assembly Detail	
Ribbon Group #	Identifier Sleeve Color
1	Blue = Strands 1-12
2	Orange = Strands 13-24
3	Green = Strands 25-36
4	Brown = Strands 37-48
5	Slate = Strands 49-60
6	White = Strands 61-72

**Figure 7**

Assembly Breakout Unit Sleeve Color for each ribbon number to aid in organization

6.2 Bunch the ribbon and evenly stack the fiber ends in order to facilitate the insertion of the fiber ribbons into the properly color-coded Breakout Assembly. **See Figure 8**



**Figure 8**

12 Fiber Ribbon Group #1 inserted into the Breakout Assembly Unit that was assembled using the Blue Identifier Sleeves/Tubes specific to Fibers 1-12.

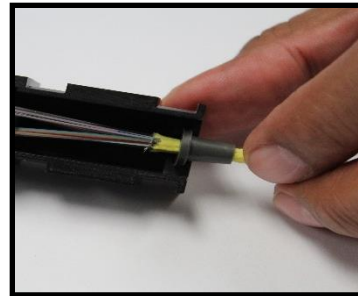
6.3 Feed the ribbon through the Breakout Assembly (from the block through the tubing) 3-4 inches past the end of the tube.

6.4 Repeat steps 6.1 thru 6.3 for all six (6) Breakout Assemblies.

*Note: It is recommended to cut the ends of the fiber in a diagonal fashion in order to facilitate easier fiber insertion.*

## 7.0 Assemble the Field Termination Breakout Kit

7.1 Seat the 3.8mm Bushing and Fiber Bundle PVDF as shown into the Breakout Base. **See Figure 9.**



**Figure 9**

Bushing placed in Breakout Kit Base

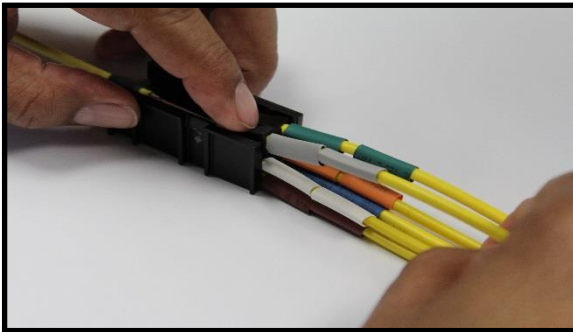
7.2 Install each Breakout Assembly (one at a time) into the Breakout Assembly Base. The Order in which assemblies are placed into the Base Unit does not matter. Any order can be used as long as there are no twists or bends.

7.3 Move the Breakout Assembly towards its seating position into the Breakout "Base".

**Note:** Carefully move the Breakout Assembly while pulling the ribbon.

**Note:** Ensure that any slack ribbon found between the seated Breakout Assembly and the seated Bushing are removed. To remove any visible slack, carefully pull the ends of the fiber from the furcated end of the Breakout Assembly "Tubes" until the fibers become taut at the bushing and the slack is removed.

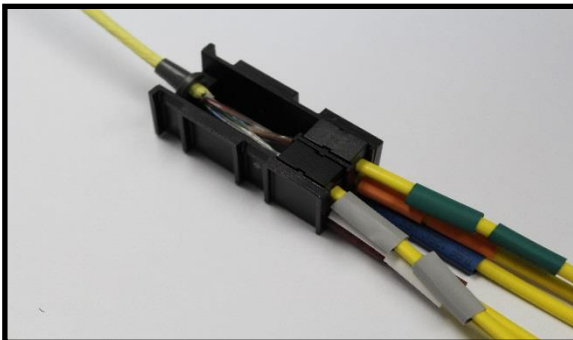
7.4 Repeat steps 7.2 & 7.3 until you have installed all Six (6) of the Breakout Assembly Units. **See Figure 10**



**Figure 10**

This Photo shows each of the Six (6) - 12-Fiber Ribbon Assemblies installed into the Base Unit ready for the final assembly steps.

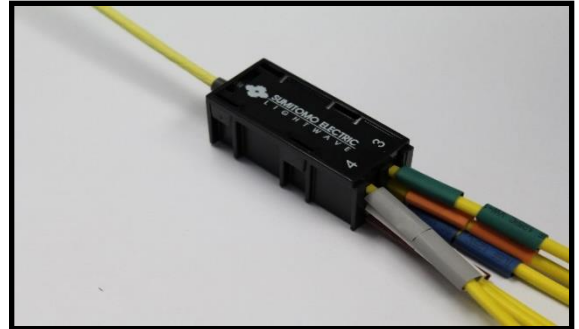
7.5 Install two Breakout Assembly Blanks into the Base Unit by placing each Blank on top of previously installed assemblies. **See Figure 11**



**Figure 11**

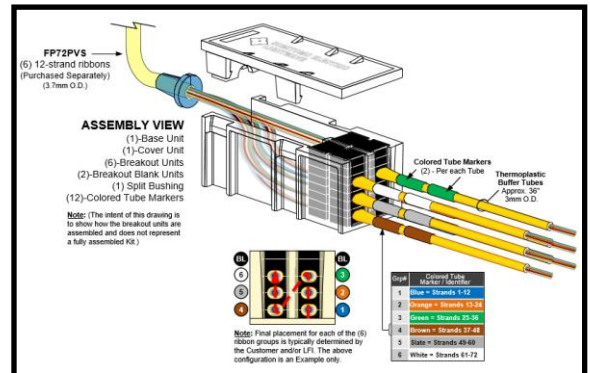
This Photo shows two (2) Blank Units inserted into the Base Unit (top layer) to fill the extra spaces while firmly securing all Units into the Base Unit.

7.6 Snap the Breakout Assembly Cover in place. **See Figure 12**



**Figure 12**

Completed 72 Fiber Breakout Kit



Refer SEL Drawing:  
SD-F04-056\_FT72FBK-12SU -12MU