

## OPERATION PROCEDURE OF MPO FOR AFL PRODUCTS

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**I. Purpose:**

To instruct operation method which implemented in Fujikura Fiber Optics Vietnam.

**II. Application:**

This guideline is applied for MPO for AFL products as processes following:

		Group 1	Group 2	Group 3	Group 4	Group 5	Group 6
1	Cutting/Aging	√	√	√	√	√	√
2	Mark strip			√	√	√	√
3	Branching			√	√		√
4	Part insertion	√	√	√	√	√	√
5	Gathering	√	√	√	√	√	√
6	MT ferrule assembly	√	√	√	√	√	√
7	Single ferrule assembly				√		√
8	Housing single connector				√		√
9	Polishing single connector				√		√
10	Endface single connector				√		√
11	Interferometer single connector				√		√
12	Polishing MT	√	√	√	√	√	√
13	MT length check	√	√	√	√	√	√
14	Endface MT	√	√	√	√	√	√
15	Interferometer MT	√	√	√	√	√	√
16	Housing assembly	√	√	√	√	√	√
17	Length check	√	√	√	√	√	√
18	Identification	√	√	√	√	√	√
19	Endface before Loss	√	√	√	√	√	√
20	Loss inspection	√	√	√	√	√	√
21	QC appearance checking 1	√	√	√	√	√	√
22	QC Endface	√	√	√	√	√	√
23	QC Packing	√	√	√	√	√	√
24	QC Label	√	√	√	√	√	√
25	Shipping	√	√	√	√	√	√

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This document concerns to Production function, Production engineering function, Quality Assurance function and Planning function.

Checked by: DucTNM + BanNT  
Date: Via DMS

Approved by: Nguyen Trung Kien  
Date: Via DMS

Prepared by: HieuTT + TienCTC  
Date: 13-Aug-2024

Cross check by: ThangVD  
Date: NA

Originator: Duong Ngoc Bao Chau  
Date: 28-Sep-2020

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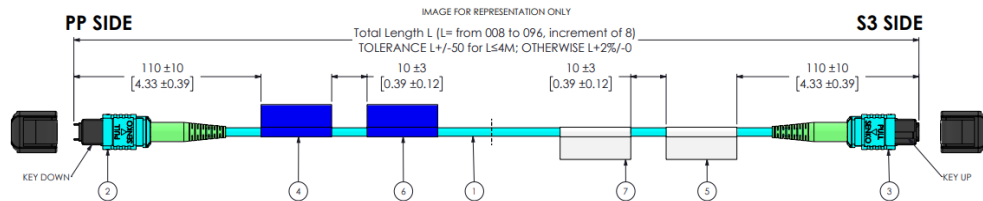
## III. Reference Documents:

- Customer specification:

Group 1: MPO Jumper

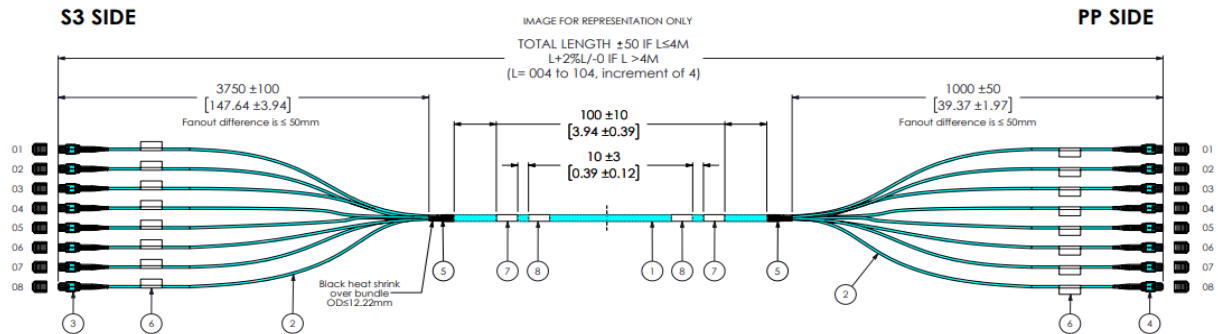
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No.	Specification	Connector type	
		Start side	End side
1	HS-B-2304-0028-09	16MPO	16MPO
2	HS-B-2304-0027-09	16MPO	16MPO



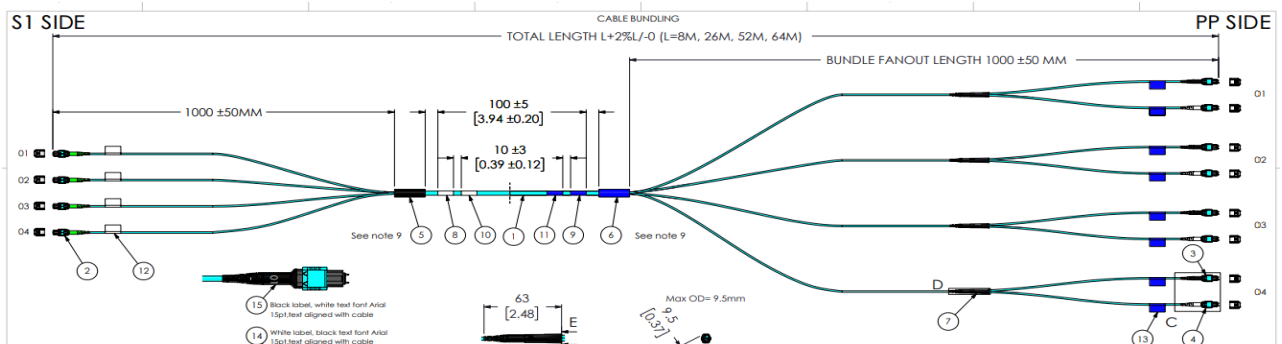
Group 2: n sub cable &amp; expando

No.	Specification	Connector type	
		Start side	End side
1	HS-B-2304-0029-11	16MPO	16MPO
2	HS-B-2304-0037-11	16MPO	16MPO
3	HS-B-2304-0100-10	12MPO	12MPO
4	HS-B-2304-0099-10	12MPO	12MPO



Group 3: n sub cable &amp; expando &amp; Fanout

No.	Specification	No.	Specification
1	HS-B-2304-0031-15	4	HS-B-2301-0691-06
2	HS-B-2304-0103-06		
3	HS-B-2301-0690-03		



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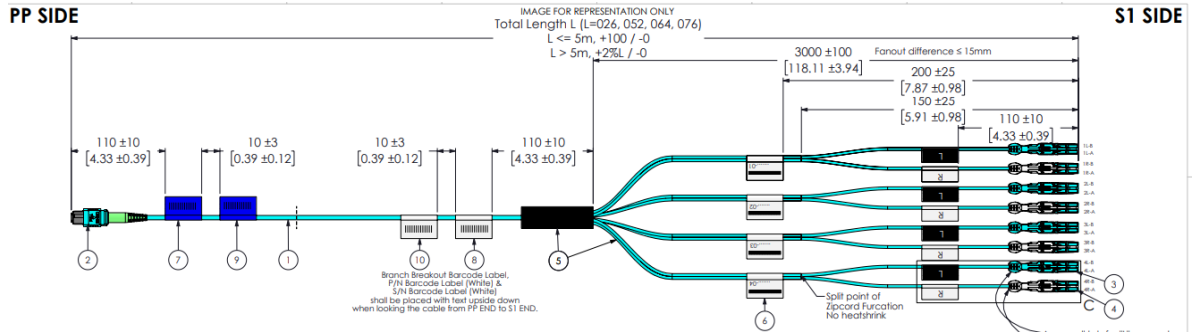
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## Group 4: MPO Fanout

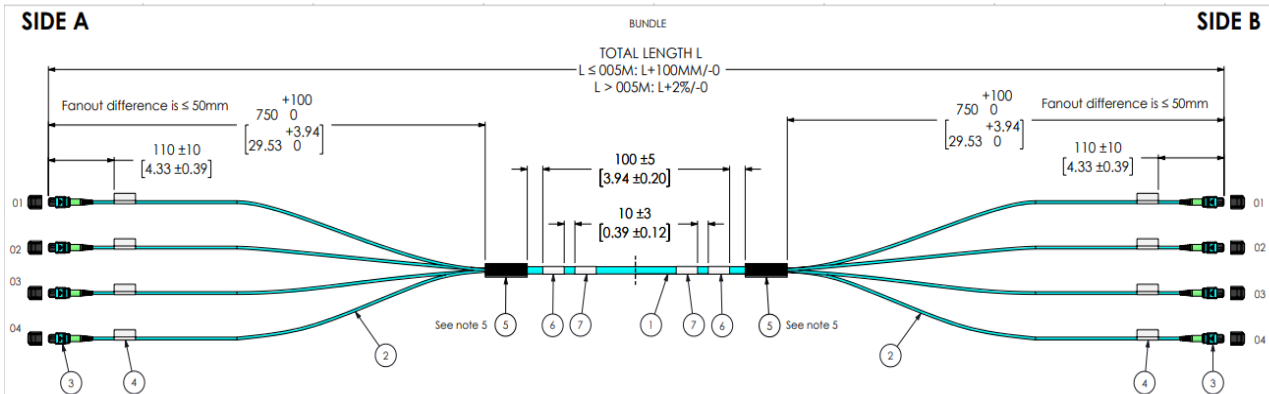


No.	Specification	No.	Specification
1	HS-B-2304-0033-16	4	HS-B-2301-0733-10#2
2	HS-B-2304-0102-05		
3	HS-B-2301-0733-10#1		



## Group 5: MPO trunk cable

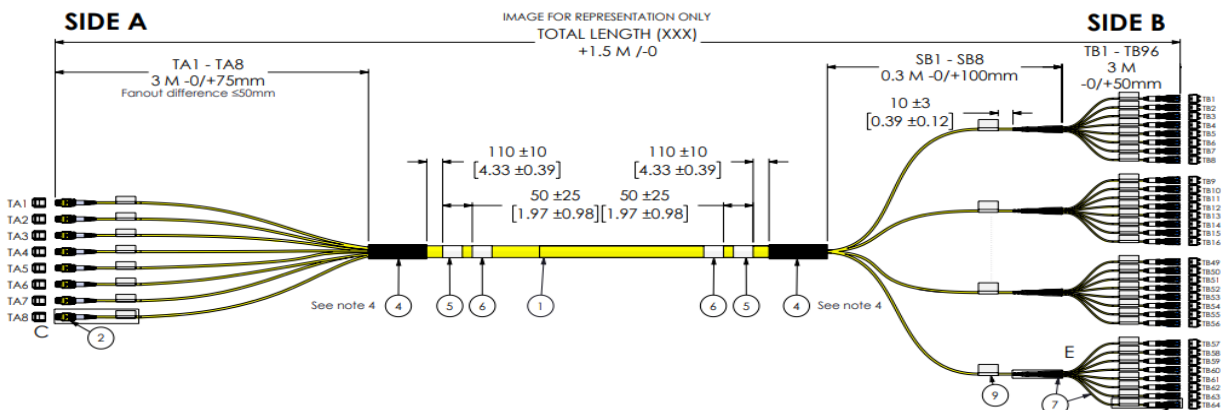
No.	Specification	Connector type	
		Start side	End side
1	HS-B-2304-0035-08	32MPO	32MPO



## Group 6: MPO Trunk Fanout



No.	Specification	No.	Specification
1	HS-B-2301-0733-10#3	4	HS-B-2301-0733-10#6
2	HS-B-2301-0733-10#4		
3	HS-B-2301-0733-10#5		



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- Other reference doc:

QC flow chart: 4-QC-0368

Purchase Specification No for each product.

SOP-D-0014.xx - SST Furcation tubing preparation

SOP-D-0015.xx - SST Universal Breakout Assembly Instructions

SOP-D-0036.xx - Google Pulling Eye Assembly Instructions Approved

SOP-D-0044.xx - Google Expando Bundled Cable SST Assembly

PL171013: AFL General Spec

B-00-FF-0003.xx: End face geometry / Visual / Optical performance for single mode

B-00-FF-0007.xx: End face geometry / Visual / Optical performance for Multimode

B-00-HS-0100.xx: Optical Test Specifications for Single and Multi-Fiber Connectors

P-00-HS-0216.xx: Google CAB Fiber Assemblies Production Specification

P-00-HS-0119.xx: Specification for GEM products

#### IV. Term definition:

FOV: Fujikura Fiber Optics Vietnam Ltd.

xx: Lastest version of spec

#### V. Traceability control:

The requirement of traceability record for each produce shall follow the 9-PR-013 Data traceability procedure.

Type of record	Items	Record
Quality control items	Refer to QC flow chart 4-QC-0368	Related check sheet
Identification & trace-ability record	4M information (if any): -Material lot# -Machine/Tool-Jig control number -Operator code -Manufacturing/inspecting date	

#### VI. Contents:

##### 1. Cutting

##### 1.1. Process specification

##### a. Cable/Cord cutting length:

Refer to 4-OP-0483

##### b. Furcation tube (only apply for Fanout product)

Refer to 4-OP-0483

##### c. Heat shrinkable cutting length:

Refer to 4-OP-0483

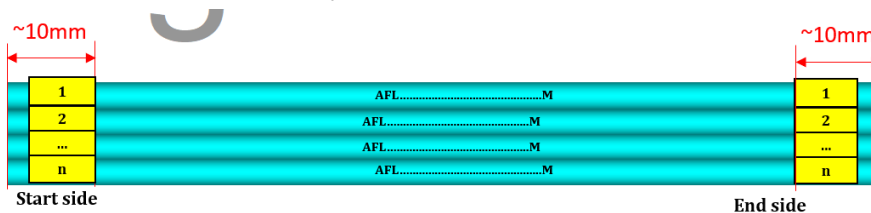
##### d. Expando Flexible Tubing:

Refer to 4-OP-0483

##### e. Insert Expandable Flexible Tubing method:

**Note:** Just apply for product group had expandable tube

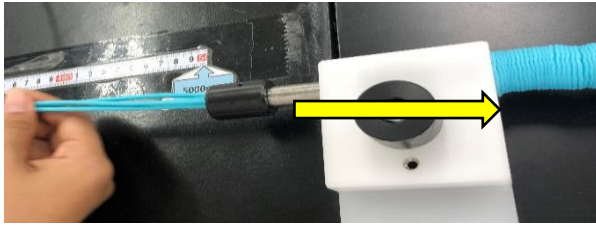
- Use tape with number to identify the cord number.



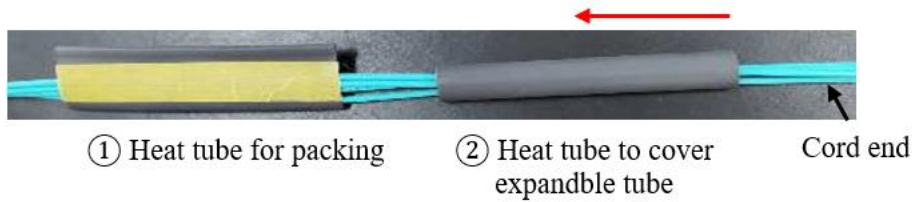
- Insert expandable tube into metal tube



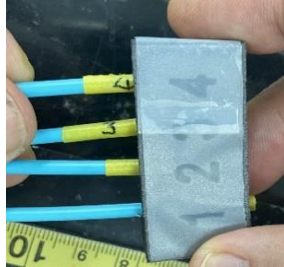
- Insert cord into expandable flexible tube.



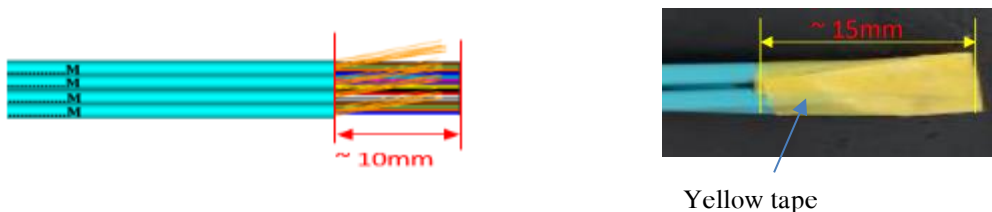
- Insert heat shrinkable tube for each side of cord (1pc for packing & 1pc cover expandable tube). Color of tube follow product spec



- Insert cord into clamp to identify cord number. The number on tape is same with number on clamp

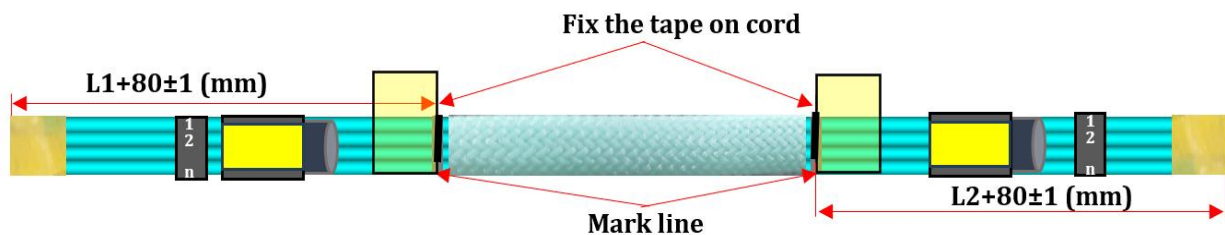


- Stripping the cord ~ 10mm & fix fiber by yellow tape.



Yellow tape

- Marking and use tape to fix the Expandable flexible tubing & the cord at Marking point:



**Note:** L1 & L2 refer to product specification.

**f. Cutting of packing materials:**

Packing materials are cutting follow as table below:

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Specification (* indicated the latest version)	Material	Length (mm)	Tolerance	Q'ty
HS-B-2304-0028-*	Sholex	380	2	2
HS-B-2304-0029- HS-B-2304-0037- HS-B-2304-0100- HS-B-2304-0099- HS-B-2304-0035-*	Heatshrink tube ½"	75	2	2
	Heatshrink tube ¾"	100	10	2
	Mesh tube	Branching length max + 250mm	5	2
	Pull rope	Branching length max + 1050mm	5	2
HS-B-2304-0033-*	Heatshrink tube ½"	75	2	1
	Heatshrink tube ¾"	100	10	1
	Sholex	380	2	1
	Mesh tube	Branching length max + 250mm	5	1
	Pull rope	Branching length max + 1050mm	5	1
HS-B-2304-0031-*	Heatshrink tube ½"	75	2	2
	Heatshrink tube ¾"	100	10	2
	Mesh tube	Branching length max + 250mm	5	2
	Pull rope	Branching length max + 1050mm	5	2

## 1.2. Process conditions:

Items	Conditions
Cable/cord, heat shrinkable tube length	Use Ruler, template or auto cutting machine.
Heat shrinkable tube	Heat shrinkable tube not damaged
Expando Flexible Tube	Use Heat cutter

## 2. Mark Strip

## 2.1. Process specification

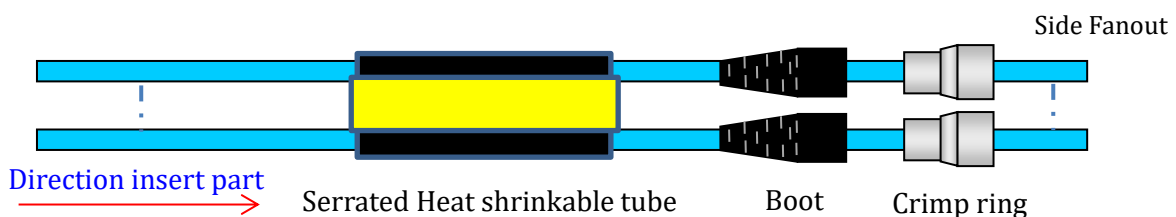
- Refer letter direction on cable/cord to identify start side S and end side E

Side S

Side E

AFL .....M

- Refer 4-OP-0483 for mark strip
  - Insert & heat the shrinkable tube for trunk cable follow 4-OP-0483
  - For Fanout product:  
+Insert Boot, crimp ring and Serrated Heat shrinkable tube on cord at Fanout side.
- Note: Serrated heat shrinkable tube only apply for product require packing pulling eye.



- +Mark strip and remove outer jacket of cord follow 4-OP-0483

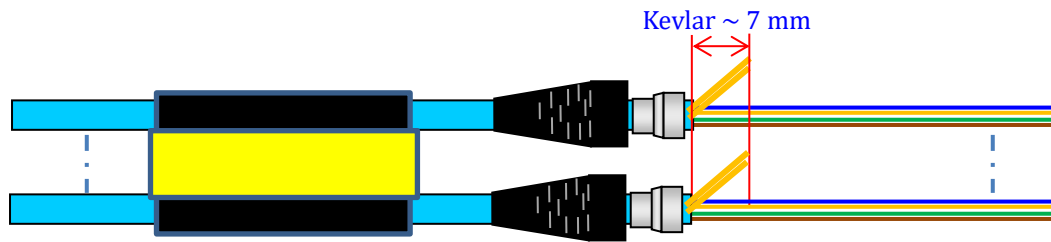
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+Cut Kevlar remain ~7 mm



## 2.2. Process condition

Items	Conditions
Direction of part	Identify side S and E by visual
Position mark strip	Ruler/JIG/template
Strip cable/cord	Stripping tool

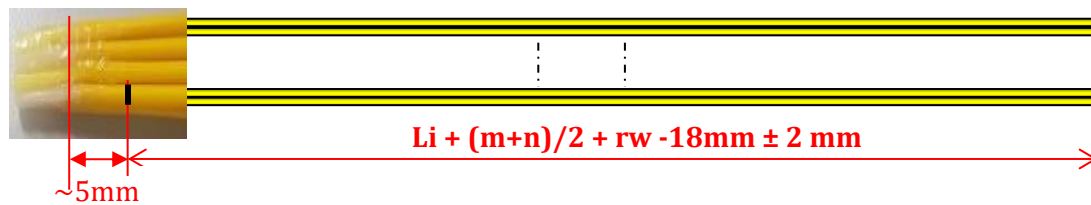
## 3. Branching (Fan out product with SST)

## 3.1. Process specification

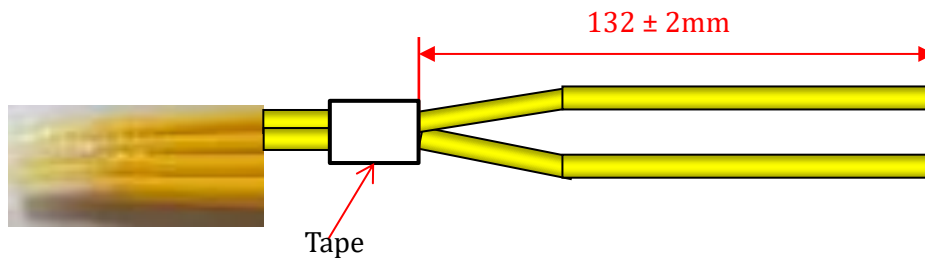
Prepare SST sub assembly: refer document SOP-D-0014-xx.

\* For spec HS-B-2304-0033-xx:

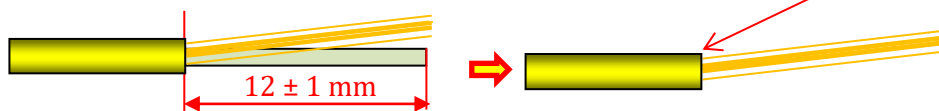
- Mark and cut the SST sub assembly length:



- Fix tape, separate zip cord:



- Remove outer jacket of furcation tube and cut tube inside at stripping point:



- Insert SST



Cable after insert SST

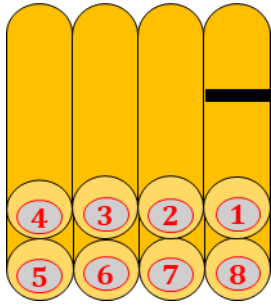
- Insert fiber into SST sub assembly

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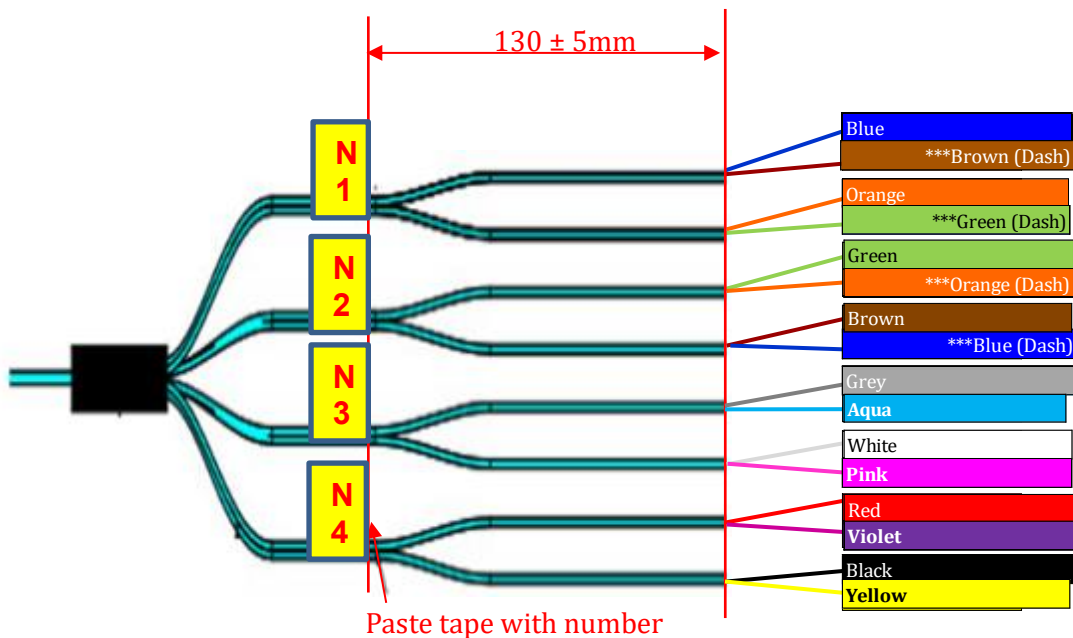
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Insert fiber into SST sub follow  
fiber color shown in the table

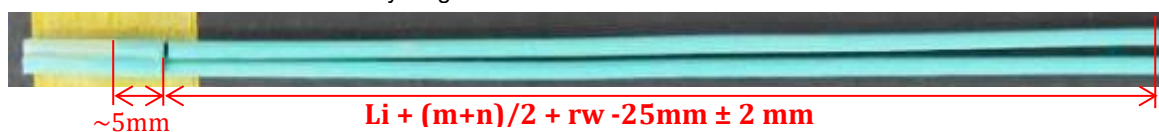
Layer	Tube number	Fiber color
Upper layer	1	Brown
		***Blue (Dash)
	2	Green
		***Orange (Dash)
Lower layer	3	Orange
		***Green (Dash)
	4	Blue
		***Brown (Dash)
Lower layer	5	Grey
		Aqua
	6	White
		Pink
Lower layer	7	Red
		Violet
	8	Black
		Yellow

- Paste the yellow tape to locate the fiber, the excess tape on which side is the green push-pull tap color



\* For spec HS-B-2304-0031-xx, HS-B-2304-0103-xx, HS-B-2304-0102-xx:

- Mark and cut the SST sub assembly length:





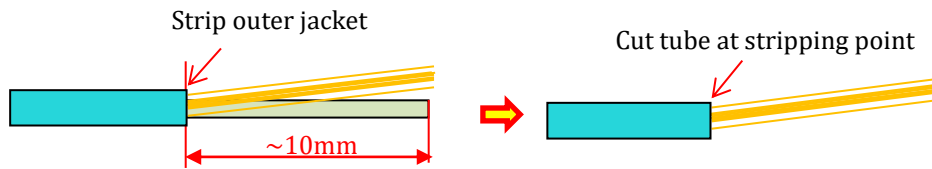
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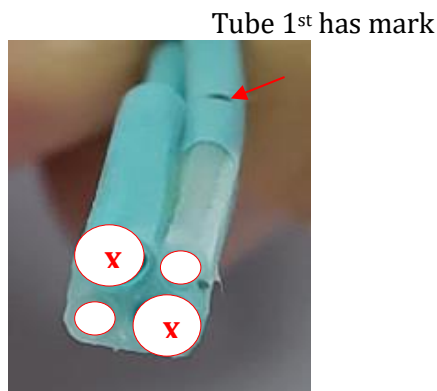
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- Remove the outer jacket and cut tube inside at stripping point



- Insert SST and insert fiber into tube follow color table

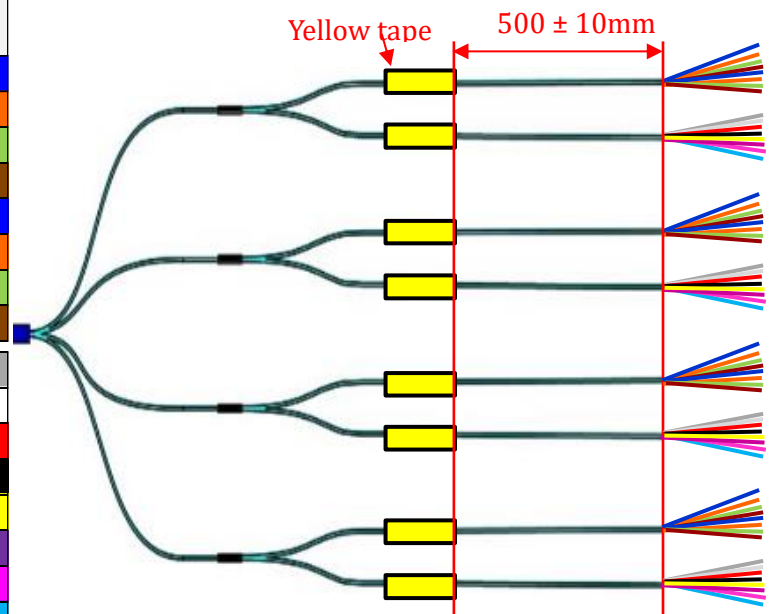


Color table

Tube order	Fiber color
1	Blue
	Orange
	Green
	Brown
	***Blue (Dash)
	***Orange (Dash)
	***Green (Dash)
2	***Brown (Dash)
	Grey
	White
	Red
	Black
	Yellow
	Violet
	Pink
	Aqua

- Paste yellow tape to identify position

Identify tape on tube	Fiber color
01-01 02-01 03-01 04-01	Blue
	Orange
	Green
	Brown
	***Blue (Dash)
	***Orange (Dash)
	***Green (Dash)
01-02 02-02 03-02 04-02	***Brown (Dash)
	Grey
	White
	Red
	Black
	Yellow
	Violet
	Pink
	Aqua



\* For spec HS-B-2301-0690-xx, HS-B-2301-0691-xx:

- Mark and cut the SST sub assembly length:



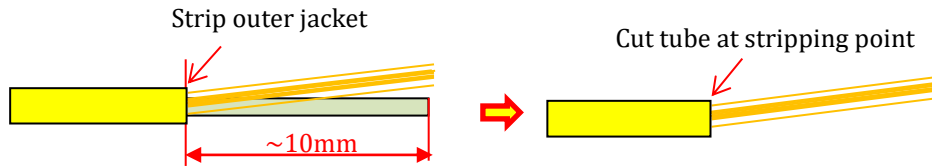
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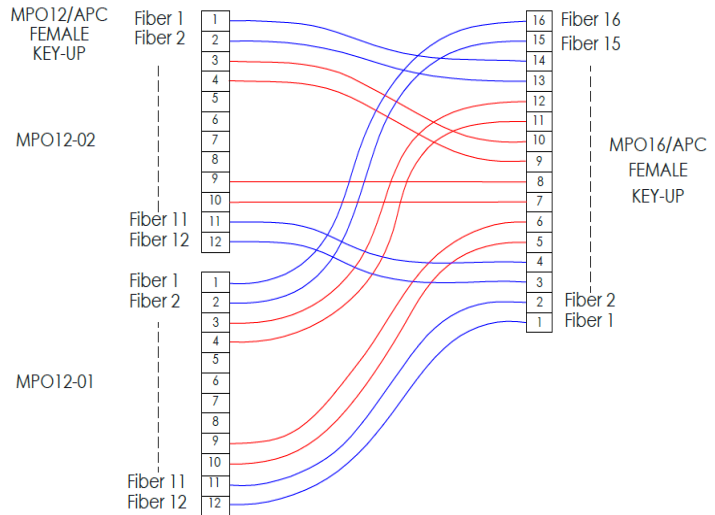
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- Remove the outer jacket and cut tube inside at stripping point



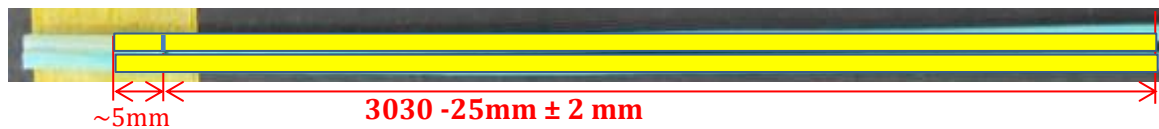
- Paste yellow tape to identify position and insert SST and insert fiber into tube follow color table

Tube order	Fiber color
01-01 02-01 03-01 04-01	Blue
	Orange
	xx*Green (Dash)
	xx*Brown (Dash)
	Grey
	White
	Pink
01-02 02-02 03-02 04-02	Aqua
	xx*Blue (Dash)
	xx*Orange (Dash)
	Yellow
	Violet
	Red
	Black
	Green
	Brown

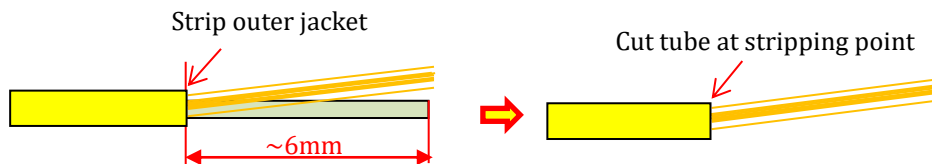


**\* For spec HS-B-2301-0733-xx:**

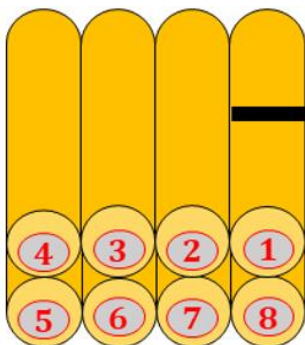
- Mark and cut the SST sub assembly length:



- Remove the outer jacket and cut tube inside at stripping point



Insert fiber into SST sub assembly follow table:



LC Polarity		
Tail Number	Fiber Color	Clip Position
1	Blue	B
	Orange	A
2	Green	B
	Brown	A
3	Slate	B
	White	A
4	Red	B
	Black	A
5	Yellow	B
	Violet	A
6	Rose	B
	Aqua	A
7	Blue/T	B
	Orange/T	A
8	Green/T	B
	Brown/T	A

SST assembly: refer document SOP-D-0015-\*\* (\*\* is the last version)

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## 3.2. Process condition

Items	Conditions
Position of fiber	Visual checking
Crimping ring	Crimping tool

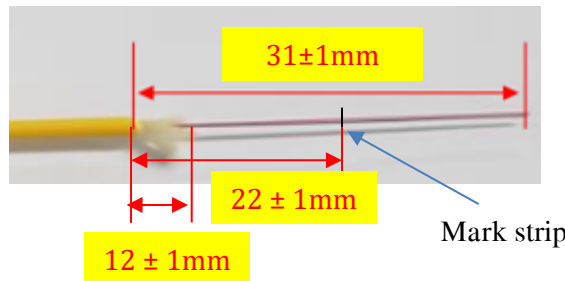
## 4. Part insertion

## 4.1. Process specification

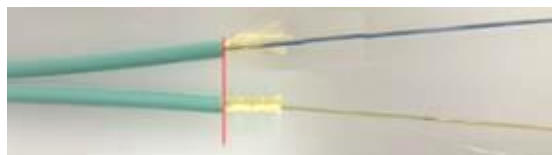
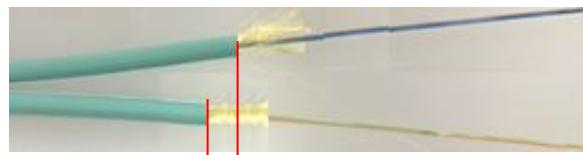
Follow to 4-OP-0392 for part insertion detail.

With Part CS housing &amp; remove cord coating

- Mark and cut fiber



- Check difference length between 2 tube

difference  $\leq 5$  mm: OKdifference  $> 5$  mm: NG.

## 4.2. Process condition

Items	Conditions
Inserting following the order of parts, correct size, direction	Part insertion's Jig
Correct black marking and stripping length	Template

## 5. Gathering

## 5.1. Process specification

Follow to 4-OP-0473 for gathering detail.

- Cut ~10mm of fibers as below table for both end A and end B to let visual for operator.  
Note: Not apply for cable have fiber count <16 fibers.

End A and End B
Blue (1dot)
Orange (1 dot)
Green (1 dot)
Brown (1 dot)



- Fiber arrangement: follow product spec to arrange fiber position.
- Gathering length specification as shown in the picture below:
  - For 16MPO and 12MPO

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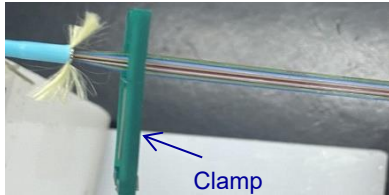
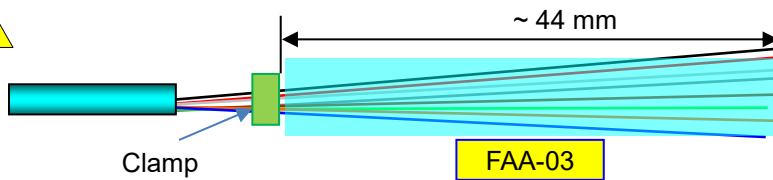
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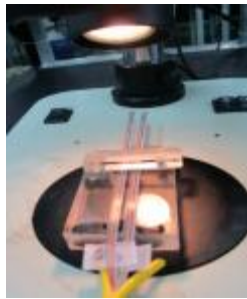
\* Gathering by clamp:



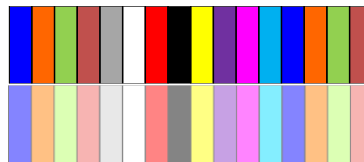
- Use clamp to swipe the adhesive: 2 times
- Use super to swipe the adhesive for 3rd after waiting around 1 minute

## d. Color check

Put fiber under Microscope and check color of fiber  
Template color follow fiber color order



End A &amp; B

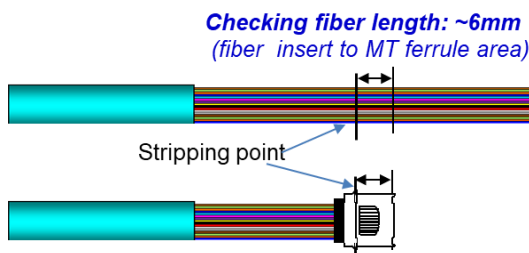


Template

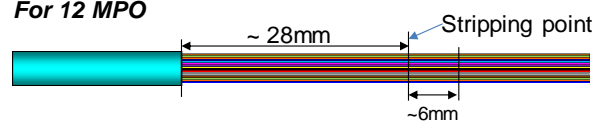
product

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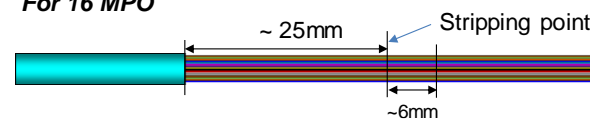
\* Gathering by clamp: Checking fiber length: ~6mm (fiber insert to MT ferrule area)



For 12 MPO



For 16 MPO



## 5.2. Process condition

Items	Condition
Control FAA	Clock
Fiber arrangement	Must in order and correctly position.
Color fiber checking	Magnification camera/Microscope

## 6. MT Ferrule Assembly

## 6.1. Process specification

- Base on customer order; refer to relating procedure for all operations
- Refer to 4-OP-500: Adhesive mixing
- MT ferrule assembly Refer 4-OP-0398



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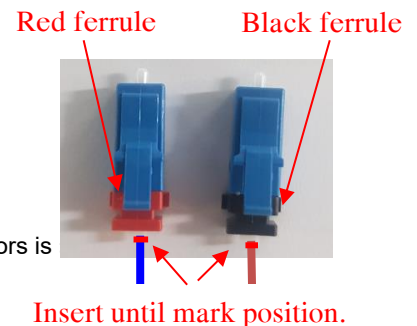
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Difference between 2 connectors &lt;2mm



- When rework CS ferrule, must check fanout different length between 2 connectors is rework CS connector



After injected epotek, insert fiber into ferrule follow the order of fiber color and ferrule color follow specification's requirements.

## 7.2. Process condition.

Items	Condition
Machine aging	Chamber, Oven, Freezer, Thermal shock machine
Temperature aging	Recorder
Time aging	Watch, chamber system

## 7.3. Checking item.

Type of record	Item	Record
Quality control items	Refer to relative QC flow chart	Relative check sheet
Identification & trace-ability record	<ul style="list-style-type: none"> <li>- Material Lot No</li> <li>- Quantity</li> <li>- Operating date</li> <li>- Operator's name.</li> </ul>	

## 8. Housing single connector.

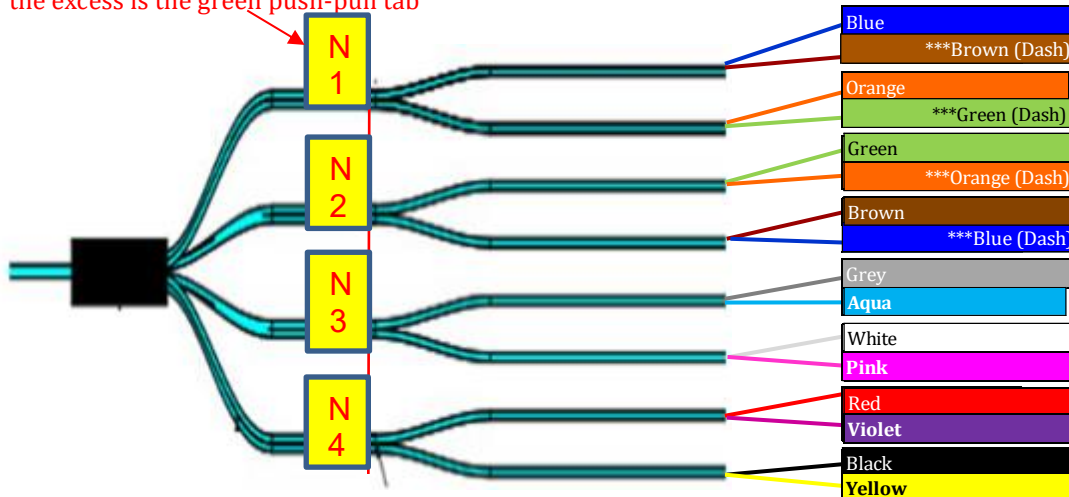
## 8.1. Process specification.

Follow to 4-OP-523 for housing process detail.

## a. For CS connector

- Preparing fiber position before housing follow

the excess is the green push-pull tab



- Assembly push pull tap. Color of push pull tap follow table below:

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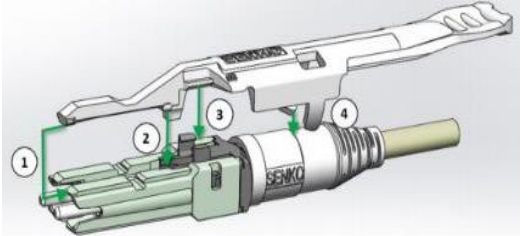
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Number on tube	Label	Fiber color	Fiber position	Push-Pull Tap color
01	L	Blue	Upper	Green
	R	***Brown(Dash)	Lower	
	L	Orange	Upper	White
	R	***Green (Dash)	Lower	
01	L	Green	Upper	Green
	R	Orange(Dash)	Lower	
	L	Brown	Upper	White
	R	***Blue (Dash)	Lower	
01	L	Grey	Upper	Green
	R	Aqua	Lower	
	L	White	Upper	White
	R	Pink	Lower	
01	L	Red	Upper	Green
	R	Violet	Lower	
	L	Black	Upper	White
	R	Yellow	Lower	

Table assembly push pull tap color



Assembly push pull tap follow order

b. For LC Mini Uniboot connector/ LC Uniboot connector:

- Arrange fiber inside Bottom Housing with order like picture:

Tail Number	Fiber Color	Clip Position
1	Blue	B
	Orange	A
2	Green	B
	Brown	A
3	Slate	B
	White	A
4	Red	B
	Black	A
5	Yellow	B
	Violet	A
6	Rose	B
	Aqua	A
7	Blue/T	B
	Orange/T	A
8	Green/T	B
	Brown/T	A

## 8.2. Process condition

Items	Condition
Crimping ring	Crimping die
Color push pull tape	Visual
Heat tube	125 ± 15°C, 100 ± 20 seconds

## 9. Polishing Single

Refer 4-OP-526

## 10. Endface Single

Refer 4-OP-0397

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Refer B-00-HS-0100-xx (lastest verion)

**11. Interferometer Single**

Refer B-00-HS-0100-xx (lastest verion)

**12. Polishing MT**

a. Cut fiber protrusion by machine:

Put MT into the holder  
and tighten by screwClose the cover and cut  
fiber by drill machine.

b. MT Polishing: Refer to 4-OP-571: MPO/MPX

**13. MT LENGTH CHECK**

Follow to 4-OP-584 for measuring MT length.

**14. ENDFACE MT**

Refer B-00-HS-0100-xx (lastest verion)

**15. INTERFEROMETER MT**

Refer B-00-HS-0100-xx (lastest verion)

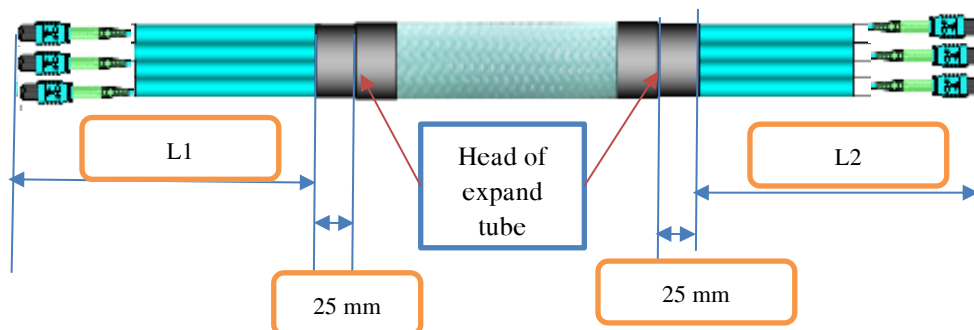
**16. MPO Housing****16.1. Process specification**

a. Connector type apply for product

Follow to 4-OP-0393 for MPO housing.

Connector type for each side follow Customer spec.

b. Measure length of L1, L2 and heat the shrinkable tube as below. L1, L2 follow product spec.



Measure correct position as above drawing and Heat shrink tube by air gun

c. **Winding Bobbin**

- Side start winding cable into the small lot of bobbin follow customer specification.
- Start winding cable into bobbin as direction below

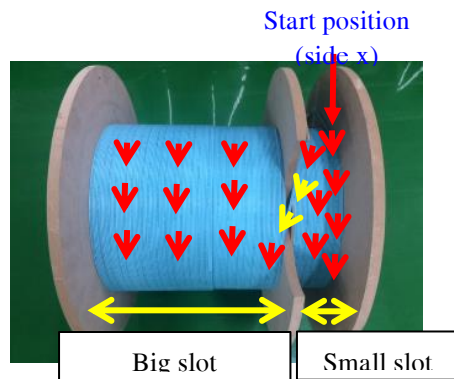


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**d. Attach label**

- Branch barcode label
  - Position and direction attach label follow specification.
  - Content of label follow specification
- Serial barcode label and P/N barcode label
  - Position attached label follow specification
  - Content of label follow specification

**16.2. Process condition**

Items	Condition
Correct position heat tube	Ruler/template
Correct direction of winding	Visual
Crimping ring	Crimping tool

**17. Length check****17.1. Process specification**

Follow customer specification.

**17.2. Process condition**

Items	Conditions
Total Length	Ruler/Machine OTDR
Branching length	Ruler/Template
Difference between 2 connectors	Ruler/Template

**18. Identification****18.1. Process specification**

Polarity type follow specification.

**18.2. Process condition**

- The principle of identification system is used the light source and sensor to check the order of fibers. The configuration is set-up as below

Items	Conditions
ID Checker	Daily check ID checker performance by check sheet
Reference cord/ Polarity cord	Mapping Polarity cord of system to prevent use wrong (Depend on connector should be checked)
Judgment	<ul style="list-style-type: none"> <li>- Identification software</li> <li>- Apply E-check sheet system to detect missing checking product.</li> </ul>

**19. ENDFACE**

Refer to B-00-HS-0100-xx (latest version)

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**20. Loss Inspection:**

- Refer to: 4-OP-506 for Loss measurement.
- Refer to B-00-HS-0100-xx (latest version)
- The specification is shown as below:

Parameters	Connector Type	Loss	Wave Length	Connector loss (A)	Loss Attenuation(*)	Spec setting
Connector	MPO	Insertion Loss	Follow customer spec	Follow customer spec	xdB/Km	A+ xdB/Km*L
		Return Loss			-	Follow customer spec
	CS	Insertion Loss			xdB/Km	A + xdB/Km*L
		Return Loss			-	Follow customer spec

(\*): Product will be added Loss attenuation

X: loss attenuation based on cable specification.

**21. QC Appearance checking 1****21.1. Process specification:**

Items	Specifications
Check product length	Follow customer specification.
Winding direction	Follow customer specification.
Appearance: Ferrule, fiber end face and ferrule surface	Refer to B-00-HS-0100-xx (latest Ver) for all operations.
Appearance: Connector, boot, cord	No crack, no break, no damage, no deformity, no dirty
Appearance of labels	No blur, no wrinkled, no peel off, no dirty.
Check quantity, position, direction, color and content of label, position of heatshrink tube	Follow customer specification.

**21.2. Process condition**

Items	Conditions
- Length check	Ruler and machine
- Winding direction	Visual
- Check Product label's position	Ruler
- Check Appearance of connector, ferrule, boot, cord, labels	Visual, Finger trace
- Check quantity, position, direction, color and content of label, position of heatshrink tube	Visual

**22. QC End face**

- Refer to B-00-HS-0100-xx (latest version)
- After connector end face check, should change all connector caps into clean caps. Do not allow opening clean cap at subsequent process.

**23. QC. Packing/Label****23.1. Label kind and content:**

(SN label)



(PN label)

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	Part Number and Serial Number label	Label Details
1	Barcode	128
2	Barcode height	5.7mm
3	Text font and size	Arial 7pts
4	Distance between text and barcode	1mm
5	Distance between top label edge to barcode	10mm
6	Color label pantone	per spec

## Notes:

1. All #6 and #9 must be underlined
2. Barcode is not reading S/N, P/N and Revision A
3. All P/N and S/N labels are allowed 2 wraps label max.

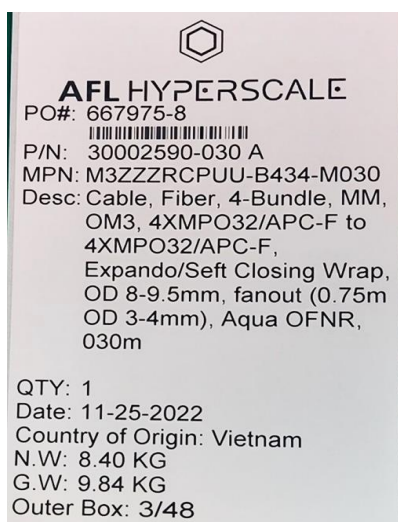


	Bag and Inner Box Label	Label Details
1	Label Printed Orientation	Horizontal
2	Label size	3x5in
3	AFL Hyperscale Logo	Center
4	Barcode	128
5	Barcode height	4mm
6	Text font and size	Arial 12pts
7	Label contains info	P/N w/barcode, MPN, Description, Quantity, Country of Origin

## Notes:

Barcode is not reading P/N and Revision A  
 Country of Origin: No abbreviation.  
 Ex: Vietnam/USA/China/Mexico, etc.

## (Bag label and Inner box label)



	Outer Box Label	Label Details
1	Label Printed Orientation	Vertical
2	Label size	4x6in
3	AFL Hyperscale Logo	Center- Vertical
4	Barcode	128
5	Barcode height	4mm
6	Text font and size	Arial 18pts
7	Label contains info	Logo, PO, Barcode, P/N w/rev A, MPN, Description, Qty, Date, Country of Origin, N.W., G.W., Outer Box

## Notes:

Barcode is not reading P/N and Revision A  
 Country of Origin: No abbreviation.  
 Ex: Vietnam/USA/China/Mexico, etc.

## (Outer box label)

## 23.2. Packing pulling eye method:

- Follow the SOP-D-0036-xx (xx indicated the latest version of spec)

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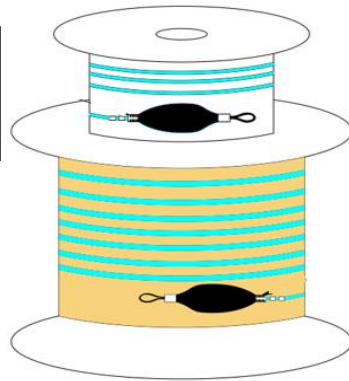
23.3. Coiling or packing product with bobbin:

- For Jumper products, if length of products  $\leq 25\text{m}$  coil the products and use heat sealed PE bag. Otherwise, use bobbin.
- For the rest type of products, If length of products  $\leq 15$  meters, coil the products and use heat sealed PE bag. Otherwise, use bobbin.

Packing bag for all kind of products.

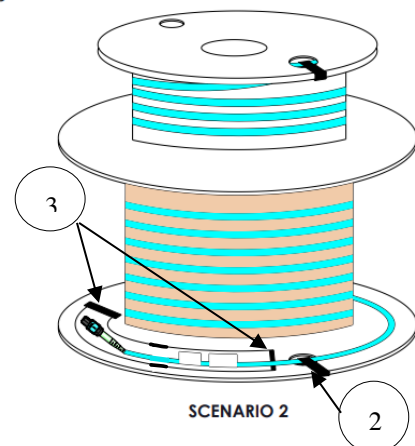
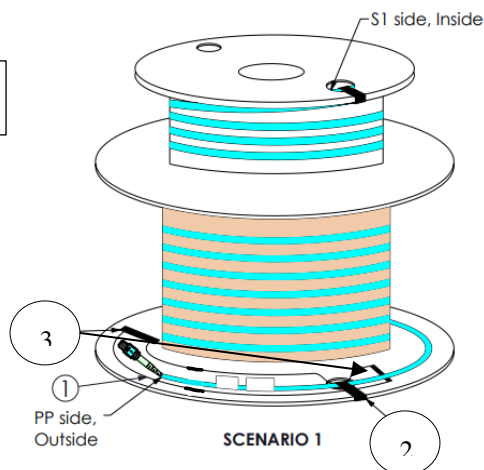


Packing bobbin for bundle, trunk products.



Packing bobbin for jumper products.

- 1) PE bag
- 2) Velcro
- 3) 2x Electrical tape



24. Final packing and labeling

24.1. Put product into carton box and labeling on program.

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(For coiling packing products)



(For bobbin packing products)

**24.2 Checking item:**

Type of record	Item	Condition
Quality control items	-Check content, appearance, letter position of bag/box labels	Label soft and trace-ability record system
	Correct color of mesh tube and pulling rope	Visual
	Appearance of S/N and P/N label	
	Correct position, direction and content of end-side label	
Identification & trace-ability record	-Refer to relative QC flow chart	Relative check sheet
	- Material Lot No - Quantity - Operating date - Operator's name.	

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Check product's appearance after packing completely.	<ul style="list-style-type: none"><li>- Type of packing</li><li>- Appearance of heat tube, mesh/expand tube</li><li>- Identification side A and side B of product</li><li>- Appearance, function of screws bobbin's</li><li>- Do not allow attaching non-packing materials on the product as magic tape, scotch tape, electrical tape, nylon tie, sponge, ....</li></ul>	ECS record
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## **25. Shipping**

### **25.1 Test report:** (Apply for QA)

All test results shall be kept on file and available per AFL request.

### **25.2 First Article Report:** (Apply for QA)

First Article Report will be prepared and send to AFL to get approval before shipping.

Note: this report will be prepared in the first shipping of each Part number (product code)

### **25.3 Apply in logistic function:**

Note: Attach label outside carton box to indicate: Specific of product type, Specification Number, and serial No

### **VI. Record:**

Identification, storage, protection, retrieval, and disposition of these records refer to 0-Pr-004

Note: Nonconforming product, material shall be identified & controlled according to relevant procedures: 5-Pr-001 and 9-Pr-008.



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## REVISION HISTORY

Date	Person	Version	Description		Reason	Requester
			Old content	New content		
13-Aug-24	HieuTT	10	1) Item II. Application item 24. App2 for pulling eyes. 2) Item V. Contents 24. App2 for pulling eyes. 23.3 separate packing method for all kind of product follow total length. L≤15m and L>15m	1) Item II. Application Remove App2 for pulling eyes. 2) Item V. Contents. Remove 24. App2 for pulling eyes. 3) 23.3 add new range for jumper product. L≤25m and L>25m.	1) App 4M: 4-Pr-007-4-Fo-0007-9-RC-0083. Spec revise and apply 4M: 9-PR-0014-9-FO-0001-9-RC-0057	DucTNM
	TienCTC		3) Item II: Reference Documents HS-B-2304-0027-07 5) Item V. 5 Gathering -	4) Item II: Reference Documents HS-B-2304-0027-09 HS-B-2301-0733-10 5) Item V. 5 Gathering Add gathering by clamp, cancel mark for ferrule assembly and apply cyanon for 16MPO connector	4). Update spec  5) Follow: 4-Pr-007-4-Fo-0007-4-RC-0197, 9-PR-0014-9-FO-0001-4-RC-0144, 9-PR-0014-9-FO-0001-4-RC-0145	BanNT
11-Apr-24	TienCTC	9	- Group 1: HS-B-2304-0028-08 - Group 2: HS-B-2304-0029-10 HS-B-2304-0100-08 HS-B-2304-0103-03 HS-B-2304-0099-08 - Group 3: HS-B-2304-0031-13 HS-B-2301-0691-04 - Group 4: HS-B-2304-0102-03 HS-B-2304-0033-13 HS-B-2301-0733-06 - Group 5: HS-B-2304-0035-06 - Group 6: HS-B-2301-0733-06	- Group 1: HS-B-2304-0028-09 - Group 2: HS-B-2304-0029-11 HS-B-2304-0100-10 HS-B-2304-0103-06 HS-B-2304-0099-10 - Group 3: HS-B-2304-0031-15 HS-B-2301-0691-06 - Group 4: HS-B-2304-0102-05 HS-B-2304-0033-16 HS-B-2301-0733-08 - Group 5: HS-B-2304-0035-08 - Group 6: HS-B-2301-0733-08	+ Update new spec version	PhuocNB
			-	- 1. Cutting: + Add 4-OP-0483 + Use clamp to identify cord & insert heat shrinkable tube before insert clamp	+ Add General OP + Reduce adhesives stick on cord at QC-app	
			-	- 2. Mark strip: + Add 4-OP-0483	+ Add General OP	
			- 4.1 Part insertion - Part CS housing & remove cord coating + Cut fiber 50 ±1mm	- 4.1 Part insertion + Add 4-OP-0392 - Part CS housing & remove cord coating + Cut fiber 31 ±1mm	+ Add General OP  + Change order: 4-Pr-007-4-Fo-0007-4-RC-0185	
			- 5. Gathering + length FAA: ~34mm	- 5. Gathering + Add Cut ~10mm of fibers + length FAA: ~44mm + remove red mark	+ Change operation from part process to gathering process to improve productivity + Change order: 4-Pr-007-4-Fo-0007-4-RC-0272	
			-	- 7. Single ferrule assembly + Add 4-OP-524	+ Add General OP	
			-	- 8. Housing single connector + add heat tube by auto machine + Add 4-OP-523	+ Change order: 4-Pr-007-4-Fo-0007-4-RC-0103  + Add General OP	
			- 12. Polishing MT + cut fiber by bar cutter	- 12. Polishing MT + Add cut fiber by machine	+ Update	
			-	- Change to 0-PR-001-0-TEM-0008 ver 1	- Update operation procedure template	
			- III. Reference Documents	- III. Reference Documents: Add Other reference doc		
			- 16. MPO Housing	- 16. MPO Housing + Add 4-OP-0393	+ Add General OP	

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	HieuTT	9	-	25.2 checking item add: - Checking appearance for S/N and P/N label - Checking content, position and direction of End side label. - Checking color of pulling rope and mesh tube.	Apply 4M: 4-Pr-007-4-Fo-0007-9-RC-0083	DucTNM
2	HieuTT	8	Item 1: Cutting	Item 1: Cutting Add cutting table for packing material	Correct mistake of previous version	DucTNM
			Item 21: QC Appearance checking 1 21.1 Process specification	Add: Checking label's appearance Checking direction, color and appearance of heatshrink tube Winding direction	Revise to match with actual application	
	ThanhNC		-	1. Cutting Add: Tolerance at cutting process for each product	- Change process order follow 4M change: 4-Pr-007-4-Fo-0007-4-RC-0043	TienDT
0	HieuTT	7	-  23.2 Packing pulling eyes method.	1. Cutting. f) Cutting of packing material 23.2 Packing pulling eyes method. - Follow the SOP-D-0036-xx (xx indicated the latest version of spec)	- Revise the table of packing material. Make clear the formula to calculate packing material - Customer change the packing method with new spec version.	DucTNM
	ThanhNC		-  II. Application Old Spec: HS-B-2304-0028-06 HS-B-2304-0029-08 HS-B-2304-0037-09 HS-B-2304-0100-06 HS-B-2304-0099-06 HS-B-2304-0035-05 HS-B-2304-0033-11 HS-B-2304-0031-10	Add Group 4, 5, 6  II. Application Update spec: HS-B-2304-0028-08 HS-B-2304-0029-10 HS-B-2304-0037-11 HS-B-2304-0100-08 HS-B-2304-0099-08 HS-B-2304-0035-06 HS-B-2304-0033-13 HS-B-2304-0031-13 Add spec: HS-B-2304-0027-07 HS-B-2304-0103-03 HS-B-2301-0690-03 HS-B-2301-0691-04 HS-B-2304-0102-03 HS-B-2301-0733-06#1 HS-B-2301-0733-06#2 HS-B-2301-0733-06#3 HS-B-2301-0733-06#4 HS-B-2301-0733-06#5 HS-B-2301-0733-06#6 IV. Term definition Xx: Lastest versiomn of spec follow II. Application	- Add Group  - Update new spec version  - Add spec.  - Add mapping	TienDT
2	LinhPG	6	-	1. Qc Appearance checking 1 => QC end face => QC packing-label => QC Appearance checking 2 => F.packing and labelling 2. Add actual pictures of label and packing 3. Change and combine cutting process of packing material with other material	1. Add checking station after packing pulling eye as customer's requirement audit 2. Change pictures of method packing actually 3. Change in order to control easily and unanimously cutting process	DucTNM