I. Purpose

- This document guides for manufacturing of **PUMP COMBINER** products.

II. Application

- The content of operation procedure is applied for **PUMP COMBINER** products following Fujikura standard. The content is shown as bellow:

No	Process
1	Fiber cutting& bunding
2	Fiber stripping
3	Bare fiber wiping & cleaving
4	Fiber stacking
5	FBG fiber preparation
6	Bundle fusion splicing
7	Reinforcement
8	Resin dispensing
9	Thermal inspection
10	Assembly
11	Optical measurement
12	Final Inspection
13	Label & Packing
14	Test Report & Shipping

This procedure has a connection with Production, Quality assurance and planning function.
All process (except No 13, 14) will apply clean room condition.

III. Reference Documents

- Refer to 4-QC-0507
- Product Specification

Product Name	Specification	Maker model
Cezanne Forward Pump CMB	SPC3-10747(2)	MPC-I-006-H
Cezanne Backward Pump CMB	SPC3-10747(2)	MPC-I-006-C
Cezanne Forward Pump CMB	SPC3-10766(1)	MPC-I-007-H
Cezanne Backward Pump CMB	SPC3-10766(1)	MPC-I-007-C

IV. Term Definition

- FOV: Fujikura Fiber Optics Vietnam Ltd.
- [Length]: The length of product.

V. Content

1. Fiber cutting & bunding

1.1 Process specification

- Cutting

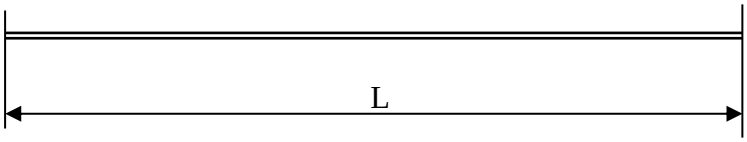
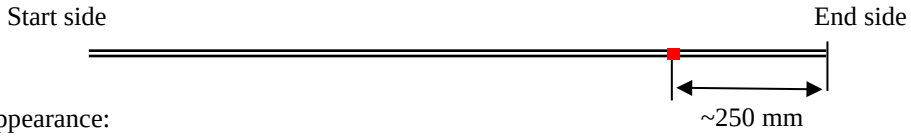


Table 1: Cutting length for Pump combiner

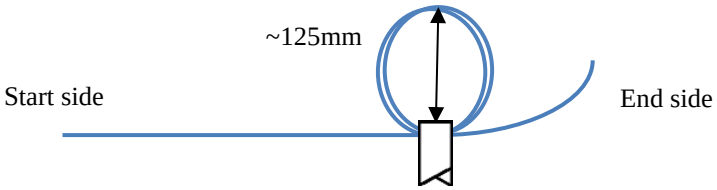
Type	Cutting length (mm)	Quantity
Pump fiber	L1= 1930 ± 20mm	6 pcs
Signal fiber	L2= 1930 ± 20mm	1 pcs

- Marking (apply only for signal fiber) : distance from marking point to end of fiber ~250mm
  Marking length: ~5mm , red color

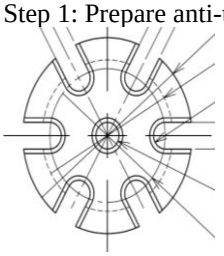


- Appearance:
  Fiber no damaged, broken

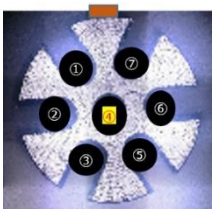
- Bunding:
  Bunding for 6 Pump fibers / 1 time
  Bunding for 1 Signal fiber / 1 time
  Bunding diameter: ~125mm



- Fiber arrangement
  Step 1: Prepare anti-tangle jig : clean dust by air gun



  Step 2: Insert fiber to anti-tangle jig follow group:
  + 6 Pump fiber (Position 1,2,3,5,6,7)
  + 1 Signal fiber (Position 4)



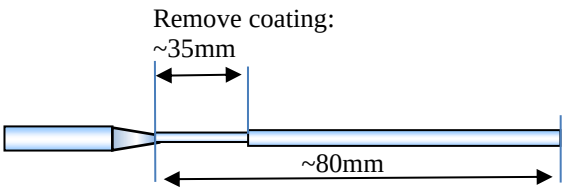
1.2 Process condition

Items	Conditions
Cutting length	Ruler
Fiber appearance	Visual
Marking signal fiber	Ruler and pen
Marking pen	Artline maker
Fiber bundling diameter	Jig
Fiber arrangement	Anti-tangle jig

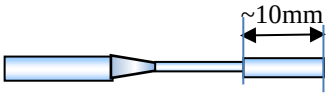
2. Fiber stripping

2.1 Process specification

- Stripping length :
  Apply PCS-100 to remove coating at end side , follow below figure :

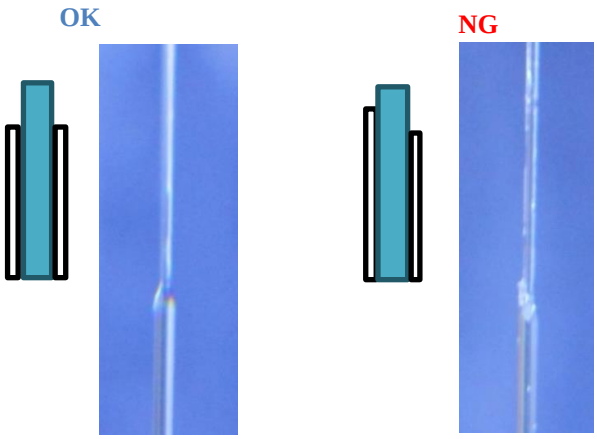


- Cleaning :
  Cut surplus fiber & keep remain ~10mm fiber at end side



Apply clean wipe (dry) to remove all coating

- Appearance for stripping point : need cone shape



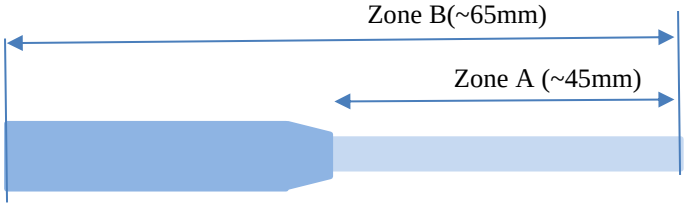
2.2 Process condition

Items	Conditions
Fiber stripping	Stripper PCS-100
Cut surplus fiber	Tweezer
Coating removing	Clean wipe
Stripping point shape	Magnifier

3. Bare fiber wiping & cleaving

3.1 Process specification

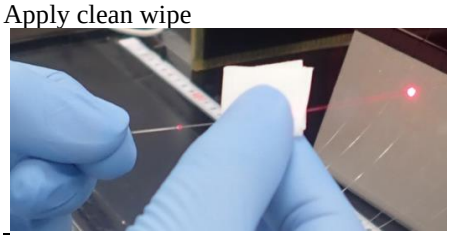
- Wiping fiber :
  Apply red light during cleaning process



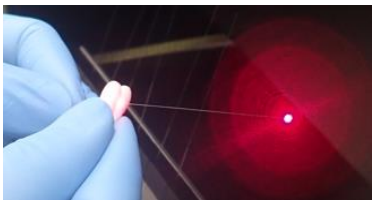
Wiping follow table below:

Step	Wiping	Equipment
1	Clean zone A 40 times	Clean wipe with Ethanol
2	Clean zone B 10 times	Clean wipe with SOLBLE
3	Clean zone A 30 times	Clean wipe with SOLBLE
4	Clean zone A 20 times	Swab-fold in half with Ethanol
5	Clean zone A until cleanness	Swab-fold in half with SOLBLE

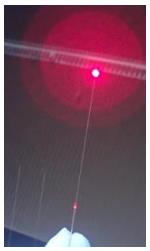
Apply clean wipe



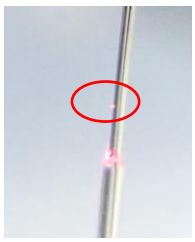
Apply swab-fold in half



Check bare fiber (zone A) by magnifier
No red dot : OK , if found any dot , continue step 5 until cleanness



OK



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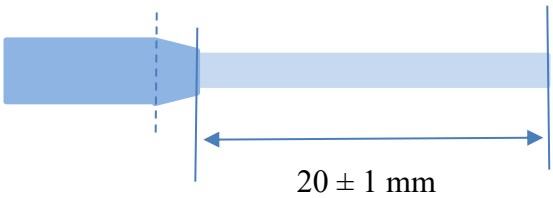
- Cleaving :
  Apply CT-101, fiber length after cleaving : 20 ± 1 mm



Apply splicer 70S to check fiber angle cut after cleaving (< 0.5deg: OK)

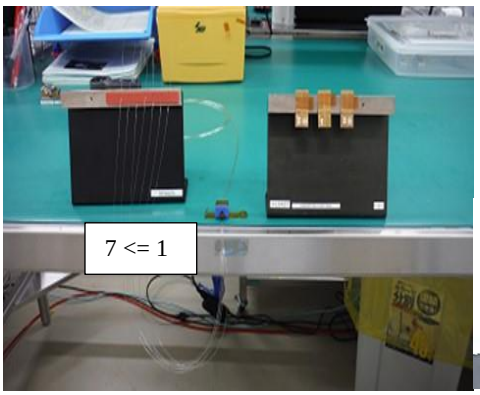
3.2 Process condition

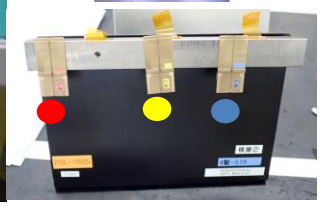
Items	Conditions
Bare fiber cleanness	Red light, magnifier
Fiber length after cleaving	Cleaver
Fiber angle cut	Splicer

4. Fiber stacking

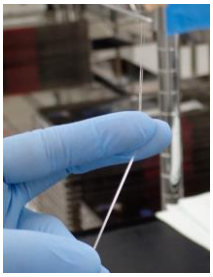
4.1 Process specification

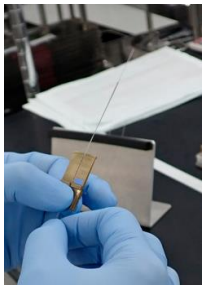
- Preparation :
  Prepare stacking plate (Red, yellow, blue)
  Fix anti-tangle jig with arrange fiber order as picture below
  Open ion fan when working to easy split bundle fiber



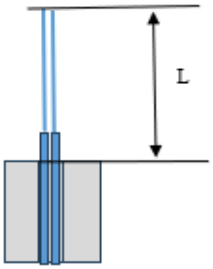


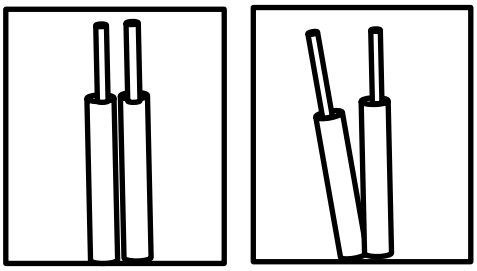
➢ Fix fiber position on stacking plate :
Pull fiber straight & put to plate (Need focus to arrange correct fiber order on correct color plate)





Adjust fiber length & fiber direction





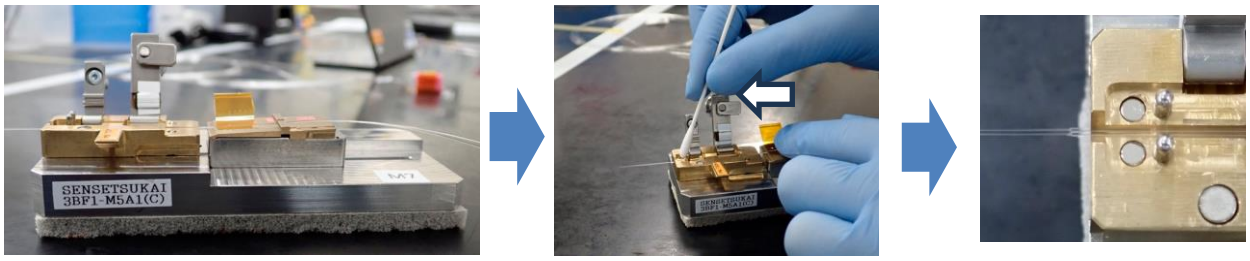
OK **NG**

Check fiber no twist after adjust
Apply tape to fix fiber position on plate

Table 4.1: Length & fiber position on plate

Step	Stacking plate	Fiber position on plate					
		Left side	Length (L)	Center	Length (L)	Right side	Length (L)
1	Blue color	Fiber 7th	~60mm	**x**	**x**	Fiber 1st	~60mm
2	Yellow color	Fiber 6th	~60mm	Fiber 4th	~60.5mm	Fiber 2nd	~60mm
3	Red color	Fiber 5th	~60mm	**x**	**x**	Fiber 3rd	~60mm

- Arrange stacking plate on stacking jig :
  Put stacking plate follow order (Red -> Yellow –> Blue)
  Adjust fiber straight inside groove by swab for each stacking plate

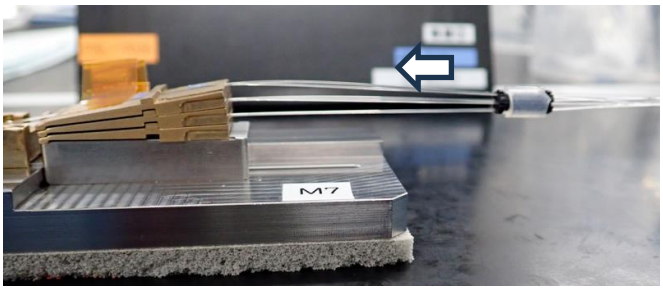


Fiber after stacking (Fix by clamp)

Check bundle fiber shape: should be hexagon & signal fiber in center

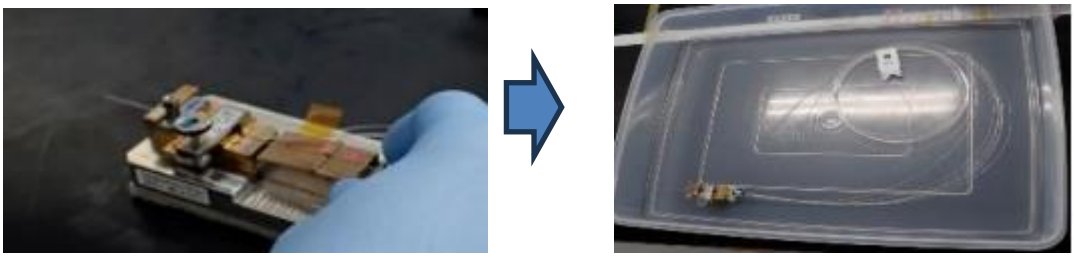
Bundle fiber with hexagon

Check fiber order swap



Check fiber swap by move anti-tangle jig
(Fiber parallel & no twist: OK)

Release stacking plate out of bundle fiber



Remove tape on plate
Remove plate out of fiber

Put stacking jig to tray

4.2 Process condition

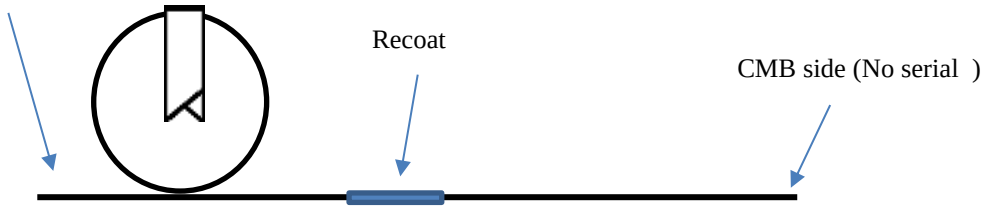
Items	Conditions
Fiber bundle order	Visual
Fiber length after stacking	Ruler/template
Fiber twist	Visual, Ion fan
Fixing fiber order with stacking plate	Manual
Stacking plate order	Manual
Fiber bundle shape	Magnifier

5. FBG fiber preparation

5.1 Process specification

- Check FBG type & identify side

Yb side (Attached FBG serial)



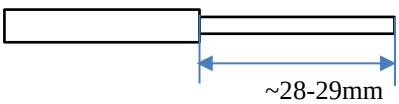
No	FBG serial type	Product apply
1	CCKxxxx	Cezanne Backward Pump CMB
2	CHKxxxx	Cezanne Forward Pump CMB

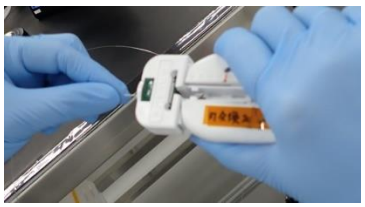
- Preparation for 2 side of FBG fiber follow table below :

No	Item	CMB side	Yb side	Equipment
1	Stripping	28-29 mm	28-29 mm	Microstrip
2	Wiping	Clean zone A 20 times	Clean zone A 10 times	Clean wipe with Ethanol
		Clean zone B 20 times	Clean zone B 10 times	Clean wipe with SOLBLE
		Clean zone A 10 times	-	Swab-fold in half with Ethanol
		Clean zone A until cleanness	Clean zone A until cleanness	Swab-fold in half with SOLBLE
3	Cleaving	10 ± 1 mm	10 ± 1 mm	CT-105
		Soak FBG bare fiber	-	Ultrasonic (100Hz, 1min)

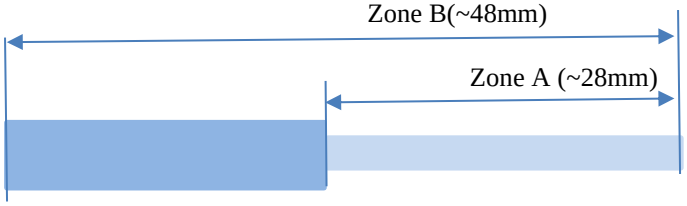
Description:

- Strip FBG: stripping length ~28-29 mm, use microstrip

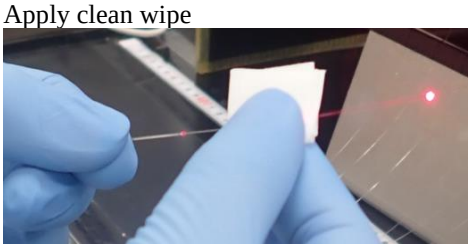




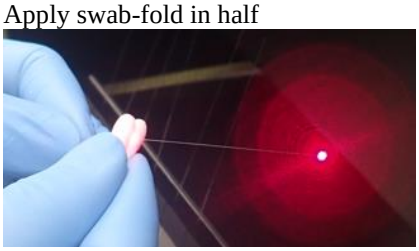
- Wiping FBG fiber :
  Apply Red light during cleaning process



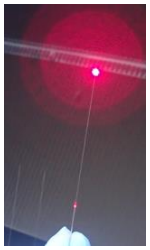
Apply clean wipe



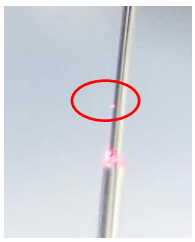
Apply swab-fold in half



Check bare fiber (zone A) by magnifier
No red dot: OK, if found any dot, return final cleaning step until cleanness
Appearance of stripping point: no burr



OK



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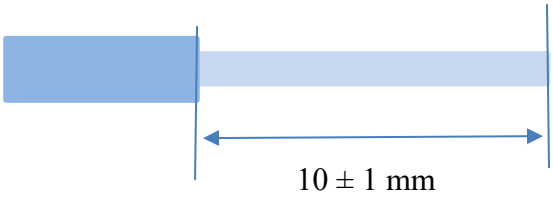
- Cleaving :
  Apply CT-105, fiber length after cleaving: 10 ± 1 mm



- Cleaning after cutting :
  Use Ultrasonic with SOLBLE to soak FBG bare fiber (100Hz, 1 min)
  Bare fiber length inside cleaning solution ~5mm

5.2 Process condition

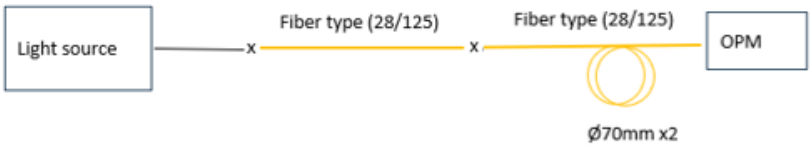
Items	**Conditions**
FBG fiber type, side	Visual
Fiber stripping	Stripper
Stripping point shape	Magnifier
Bare fiber cleanness	Red light, magnifier, Ultrasonic
Fiber length after cleaving	Cleaver

6. Bundle fusion splicing

6.1 Process specification

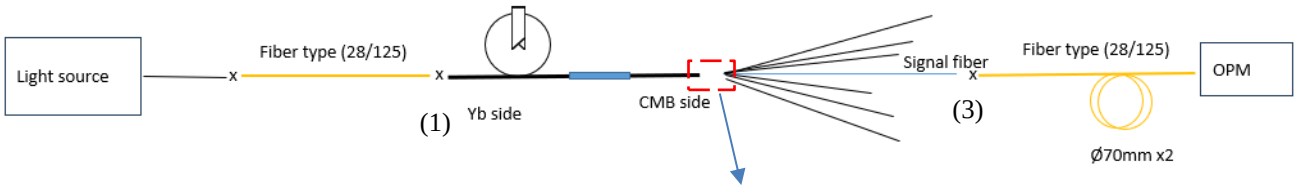
P0 diagram:

Apply this step when change new lead fiber (for Input – Output side)



Input side Output side

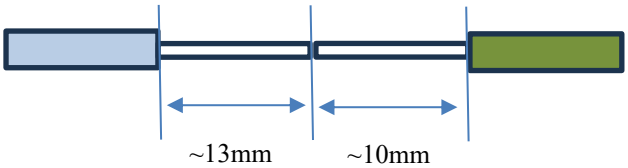
Connection product diagram:



(2) : fusion for bundle side & FBG side

- Splicing for FBG fiber (Yb side) & connection fiber – position (1) by splicer 100M+ :
  Angle cut of 2 side (< 1 deg : OK)

Connecting fiber FBG fiber (Yb side)

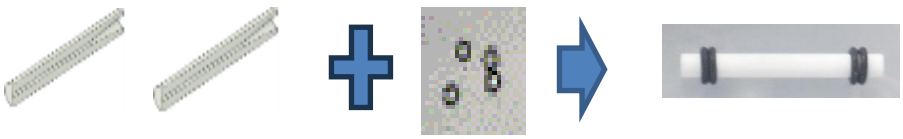


- Prepare for bundle fiber :

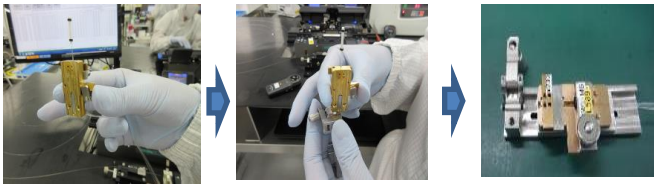
+ Insert bundle fiber into half split pipe

Assembly for half split pipe & O ring

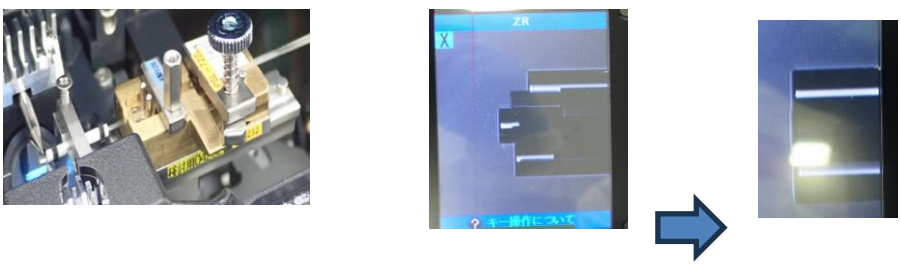
Half split pipe need cleaning by cotton swab and cover by oil repellent 1 time/ week



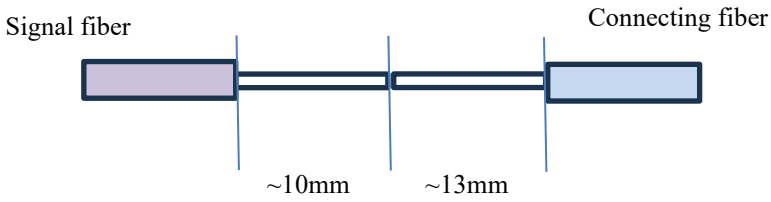
+ Insert bundle fiber to assembly tool



+ Fix bundle fiber on splicer 100M+ & adjust all fiber same alignment surface

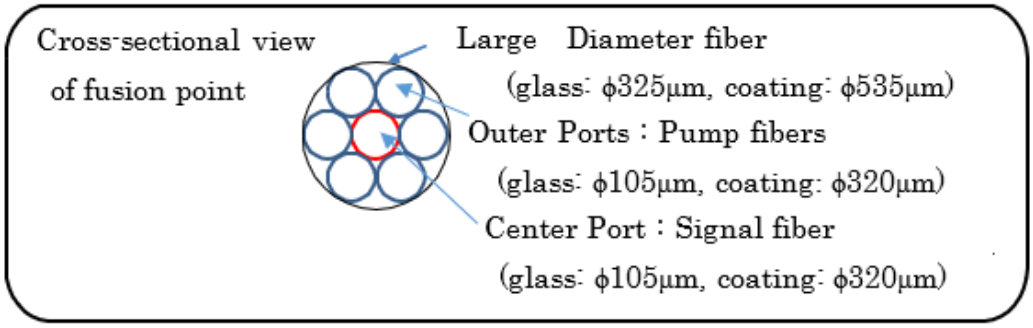


- Splicing for signal fiber & connection fiber – position (3) by splicer 70S
  Angle cut of 2 side (< 1 deg: OK)



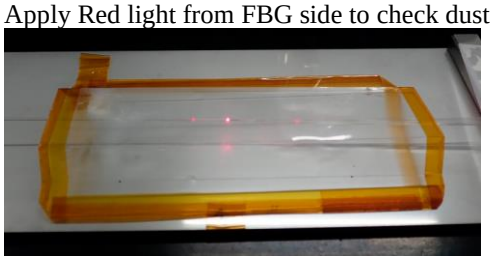
- Splicing for FBG fiber & bundle fiber – position (2) by splicer 100M+
  + Angle cut of FBG < 0.5 deg , bundle side < 1.3 deg
  + Check power on OPM after splicing need higher than before splicing

Splicing position between FBG side & bundle side:



- Release splicing point
  Stretch fiber from 2 side during releasing on tool

Apply Red light from FBG side to check dust on bare fiber zone



6.2 Process condition

Items	Conditions
P0 measure	OPM
FBG fiber position	Manual
Bundle fiber position	Manual
Bare fiber cleanness	Red light, Ultrasonic
FBG fiber angle cut	Splicer
Bundle bare fiber angle cut	Splicer
Bundle fiber alignment, diameter	Splicer, software
Splicing condition	Splicer
Power before & after splicing	OPM
Splicing point no broken	Visual
Fiber stretch when remove out of tool	Fixing tool
Dust on bare fiber	Red light, Visual

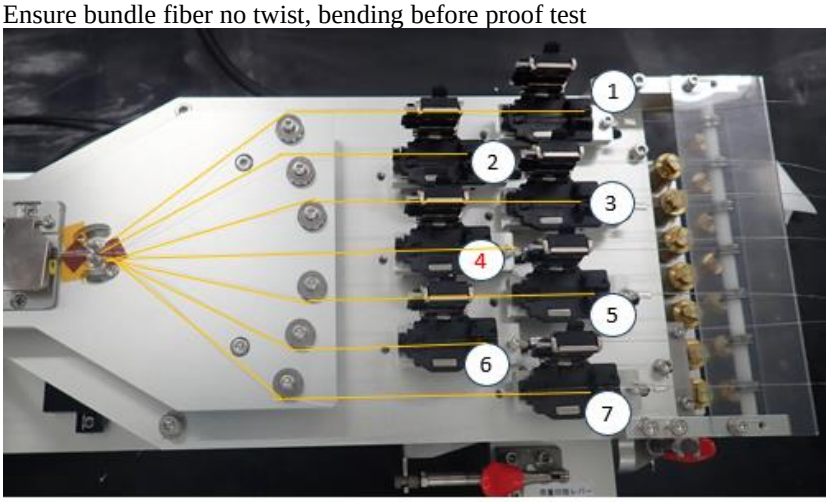
7. Reinforcement

7.1 Process specification

- Proof test :

Fix FBG fiber, fiber bundle on holder

Ensure bundle fiber no twist, bending before proof test



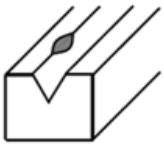
Apply by condition 280 ± 10 gf (Time: 4±1 s)

No fiber broken at splicing point after proof test: OK

- Preparation :

Use SOLBLE for cleaning Neoceram

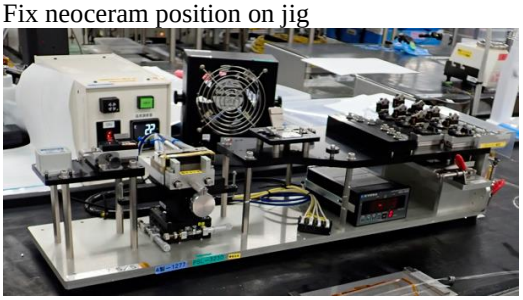
Check appearance of neoceram (Refer criteria at item 12)



- Apply KE3466 resin:

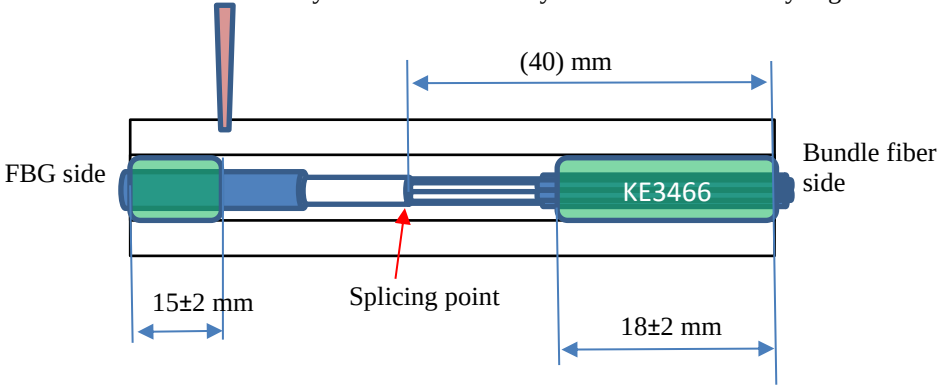
Apply tension by condition 35±5 gf (Time: during resin heat curing)

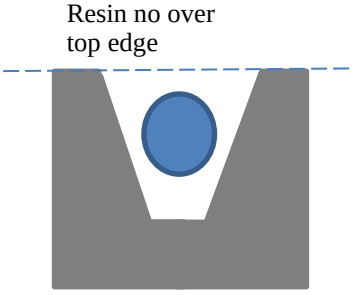
Fix neoceram position on jig



Apply KE3466 resin follow criteria as below:

KE3466 resin can only be used within 2 days of transfer from to syringe

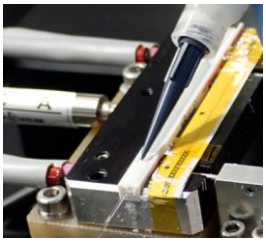


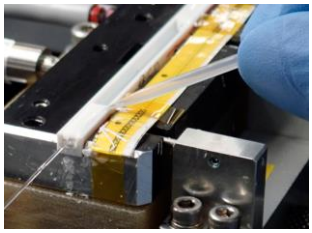


Splicing point: fix at position ~40mm from neoceram edge- bundle fiber side

FBG side:
Resin cover all fiber & cover length in 15±2 mm
No flow out on edge of neoceram, no touch to bare fiber

Bundle fiber side:
Resin cover all fiber & cover length in 18±2 mm
No flow out on edge of neoceram, no touch to bare fiber
Apply resin until cover all fiber, remove remain resin over on top neoceram





- Curing for resin :
  Apply condition 60±5 deg during 2h20min
  Waiting for resin harden (At room temperature, min 10h) before go to next process

7.2 Process condition

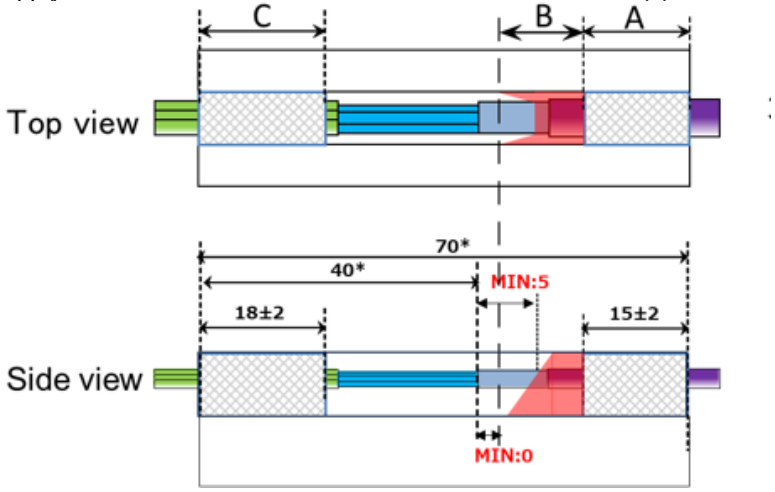
Items	Conditions
Fiber position	Fixing tool, holder
Proof test force	Weight, force gauge
Proof test time	Clock
Neoceram position	Fixing tool
Resin position	Template
Splicing point position	
Curing temperature	Heater
Curing time	Clock

8. Resin dispensing

8.1 Process specification

- Preparation:
  Mixing for OF600A & OF600B with ratio 1:1 (Resin amount calculated base on input quantity)
  After mixing, resin can only be used 24 hours
  Soak inside Ethanol & clean cover of OF600 jig daily before using

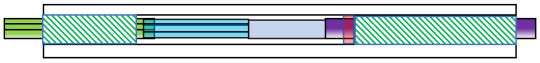
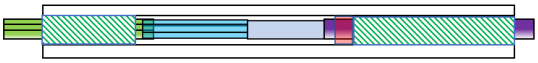
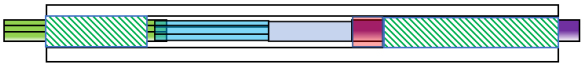
- Apply OF600 resin to neoceram at FBG side follow criteria (*):

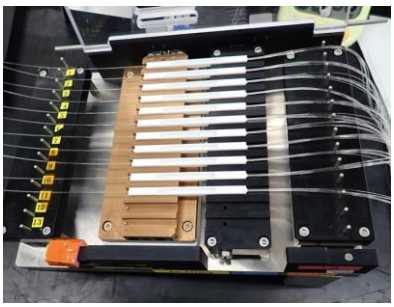
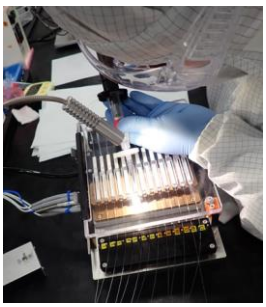
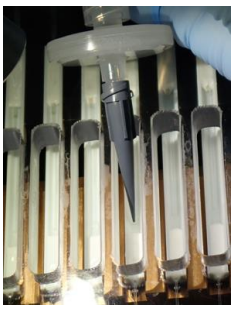


Resin need cover all coating & bare fiber of FBG
No gap between A & B resin
Resin edge on the upper side of the fiber and the splicing point must be longer than 5 mm.
Resin flow into the bottom corner of neoceram not over splicing point
No flow out on edge of neoceram

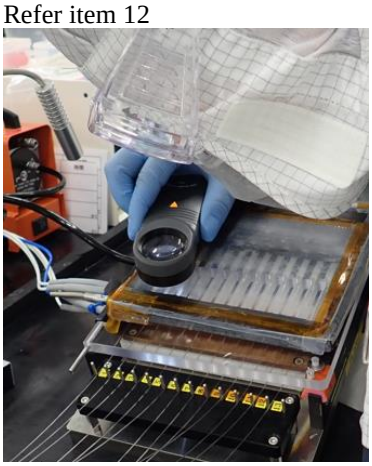
- Operation method:
  Open heater, apply temperature 135~142 deg during process
  We apply resin at least 3 times, waiting 6 minutes between 2 time applying
  1 st time: apply resin, wait 6 min
  2nd time: apply resin, wait 6 min
  3 rd time: apply resin, wait 6 min
  …
  Last time: apply resin, wait 6 min, turn off heater

Demo figure for resin amount between each time:

Apply resin time	**Figure**
1st time	Resin not cover to FBG bare fiber 
2nd time	Add more resin -not cover to FBG bare fiber 
3rd time	Add more resin -check resin with criteria (*) – if pass : finished , if no : continue next time 
…	…
Last time	Add more resin -check resin need pass with criteria (*) 

- Check appearance of neoceram
  Refer item 12



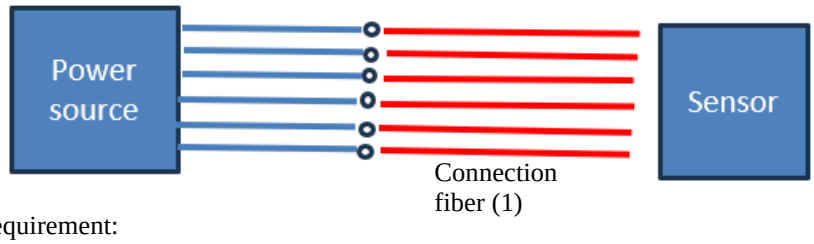
8.2 Process condition

Items	**Conditions**
Neoceram position	Dispensing / Vacuum machine
Curing temperature	Heater
Resin amount	Manual
Resin length inside neoceram	Magnifier
Curing time	Clock
Number of resin injection	Manual

9. Thermal Inspection

9.1 Process specification

- Set P0:



Requirement:

+ If connection fiber (1) shortern (Not enough length when connect to Pump fiber on cart) – need change new type

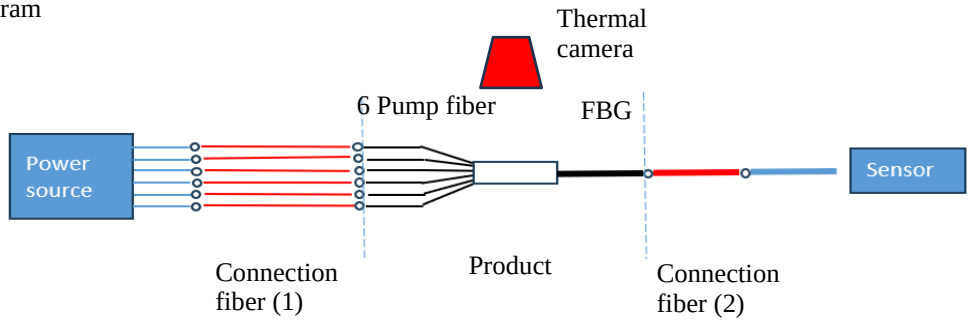
+ Re-measure P0 when change new lead fiber (1) of each cart

- Preparation:

Check appearance of neoceram (Refer criteria at item 12)

Set up product on cart

Diagram



Splicing 6 Pump fiber with 6 connection fiber (1)
Splicing FBG fiber with connection fiber (2)

- Measurement:

Measure item following condition as below:

Item	Position	unit	Specification	Comment
Temperature rise rate	Large diameter fiber Coating, Resin	˚C/kW	≤53.2	[1]
	Fiber glass area	˚C/kW	≤56.8	[1]
	Bundle Fiber Coating, Resin	˚C/kW	≤54.5	[1]
	Large diameter fiber outside the reinforcement structure	˚C/kW	≤16.0	[1]
	Bundle fiber outside the reinforcement structure	˚C/kW	≤21.5	[1]
Temperature	Fibers	˚C	≤80.0	[1] However, local temperature rise at the location of abnormal appearance must be judged as fail. See SPC3-10749
	FBG recoat	˚C	≤110.0	[1]
Pump Transmittance	-	%	≥ 97.5	[1]

[1] Measurements value shall be record at a current of 24.5A and power of 1437W or more

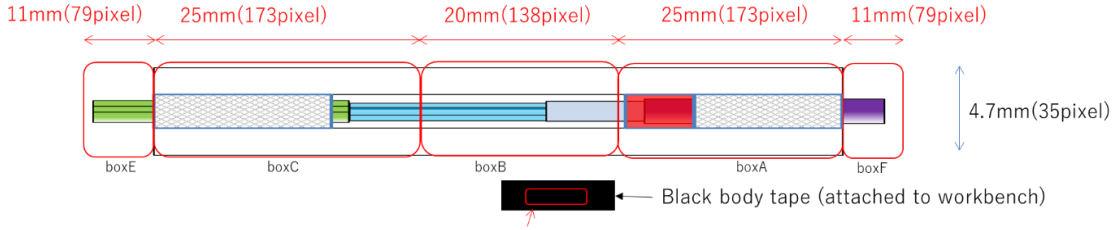


Fig. 12-2-1 Diagram of thermal measurement position

Box A：Large diameter fiber coating, resin area
Box B：Fiber glass area
Box C：Bundle fiber coating, resin area
Box D：(reference) Black body tape attached to workbench area
Box E：Bundle fiber outside the reinforcement structure area
Box F：Large diameter fiber outside the reinforcement structure area

Temperature rise rate: (temperature at box X-temperature at box D)/ Power measured by thermal sensor

9.2 Process condition

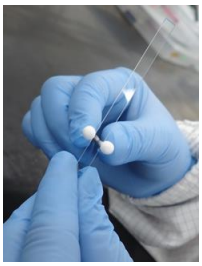
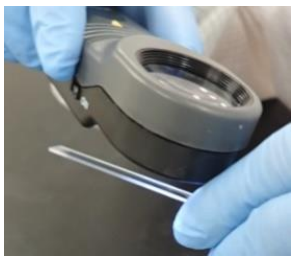
Items	**Conditions**
Apppearance inside neoceram	Magnifier
Connection of product on cart	Splicer Cleaver Fixing area
Cleanness after splicing	Cotton swab, Redlight
P0 measure	Sensor, Cart
Temperature of product	Thermal camera
Pump Transmittance	Sensor

10. Assembly

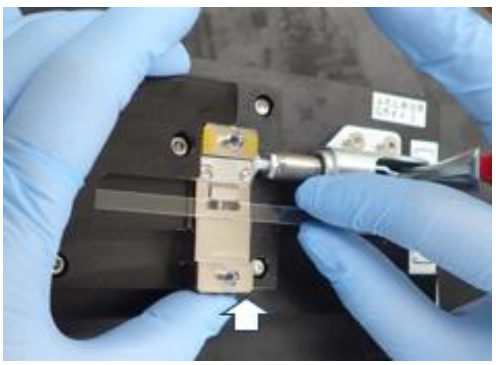
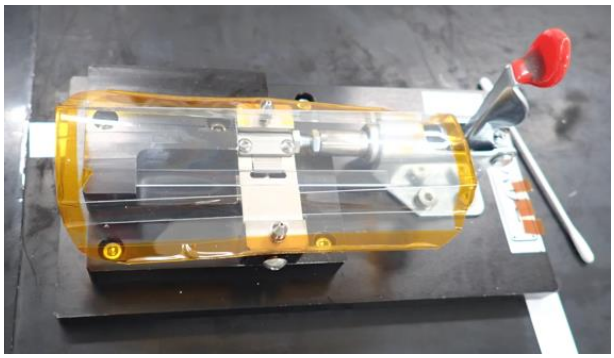
10.1 Process specification

- Appearance for product
  Check appearance neoceram (Refer criteria at item 12)

- Prepare lid crystal
  Use cotton swab to clean all surface lid
  Appearance for lid before using (No chipping larger than 0.5 mm x 0.5 mm)

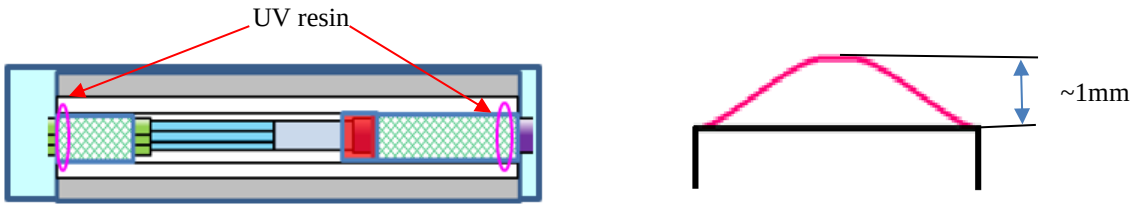
Fix lid crystal by jig

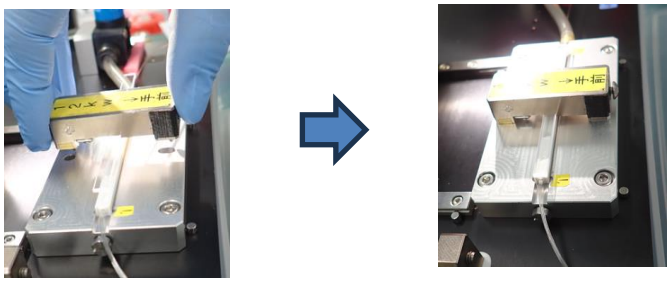



- Lid closing

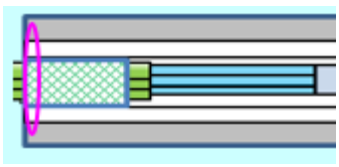
Fix neoceram on UV jig

Apply UV resin at 2 side of neoceram (This resin must not be attached to bare fiber, coating)

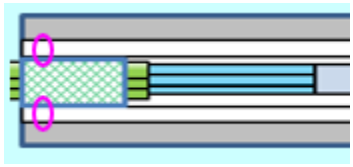




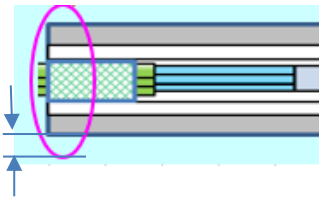
Check UV resin appearance (Cover all side edge & not flow out over 1mm : OK)



Cover all side edge: OK



Not cover all edge: NG



UV flow out- length< 1mm: OK

Check gap of lid & neoceram (<0.5mm: OK)

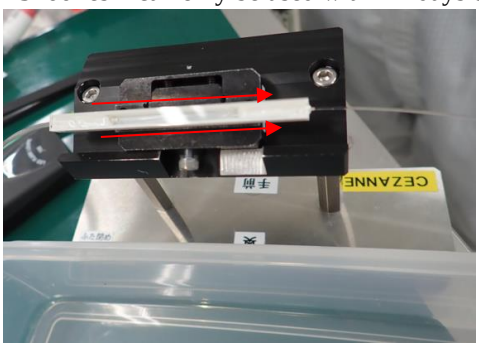
Apply UV curing:

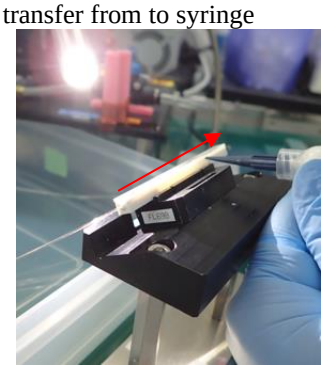
Power: 56000～68000μw/cm² (measure at distance 3cm- check power daily)

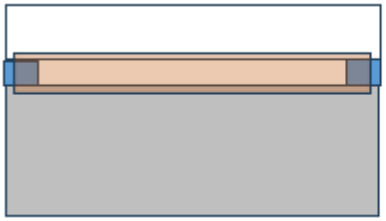
Time: 60 ± 1 s

Apply KE3466 as up- downside

KE3466 resin can only be used within 7 days of transfer from to syringe







KE3466 need cover all gap between lid & neoceram, overlap on UV resin

- Curing for KE3466 resin :
  Waiting for resin harden (At room temperature, min 4h) before go to next process

10.2Process condition

Items	**Conditions**
Appearance inside neoceram	Magnifier
Cleanness of lid crystal	Cotton swab, Magnifier
Position of neoceram, lid crystal	Fixing jig
UV curing power	UV light source
Resin cover appearance	Magnifier
KE3466 resin curing time	Clock

11. Optical measurement

11.1 Process specification

- Measure follow requirement below:

Item	Condition	Product type		Comment
		MPC-I-006-H MPC-I-007-H	MPC-I-006-C MPC-I-007-C	
Clad and Core transmitted light ΔM2	at room temperature	≤0.20	≤0.13	[3]
	at 100 °C at front edge of the bundle-side KE3466	No measure	≤0.13	[3]
Core transmitted light ΔM2	-	No measure	≤0.13	[3]
Signal Transmittance	-	No measure	≥ 97.0%	[3]

[3] Wideband SLD light source with specified fiber optics with M2 1.05 or less, power of 270μW or more, and center wavelength of 1170nm

- Measuring step:

Measure M2 data by M2 system (MS0):

Fig. 11.1 Measuring of MS0 by M2 measurement system (M2MS)

Measure P0 by OPM:

Fig. 11.2 Measuring of P0 by Power meter

Measure M2 of CMB product (for cladding & core transmitted light):

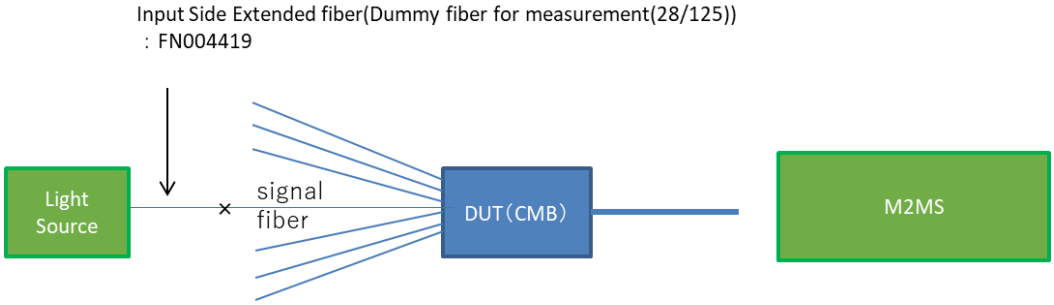
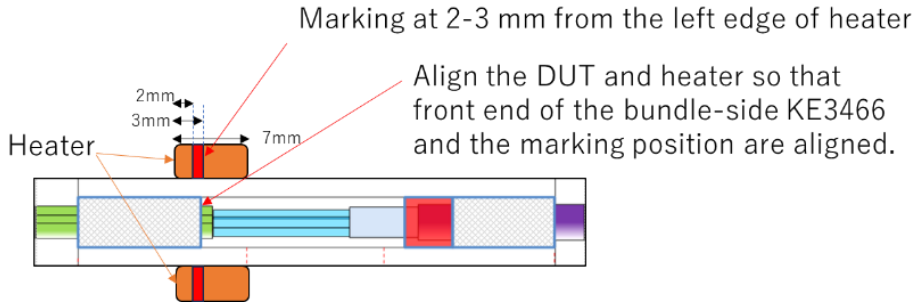


Fig. 11.3 Measuring of MS1 by M2 measurement system (M2MS)

Measure M2 of CMB product (for cladding & core transmitted light at 100 °C at front edge of the bundle-side KE3466) :

Heating at front edge of the bundle-side KE3466 to 100 deg



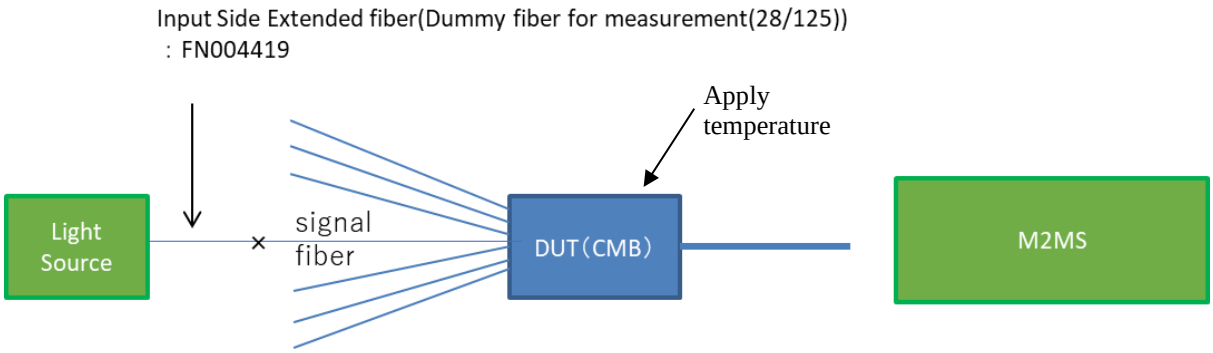


Fig. 11.4 Measuring of MS2 by M2 measurement system (M2MS)

Measure M2 of CMB product (only core transmitted light) :

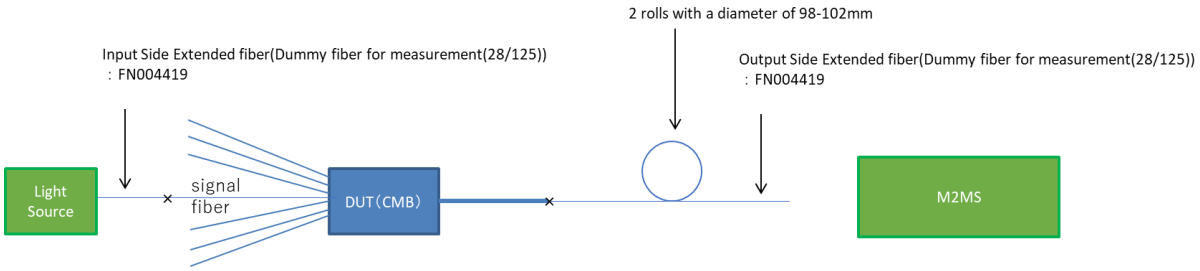


Fig. 11.5 Measuring of MS3 by M2 measurement system (M2MS)

Measure power of CMB product:

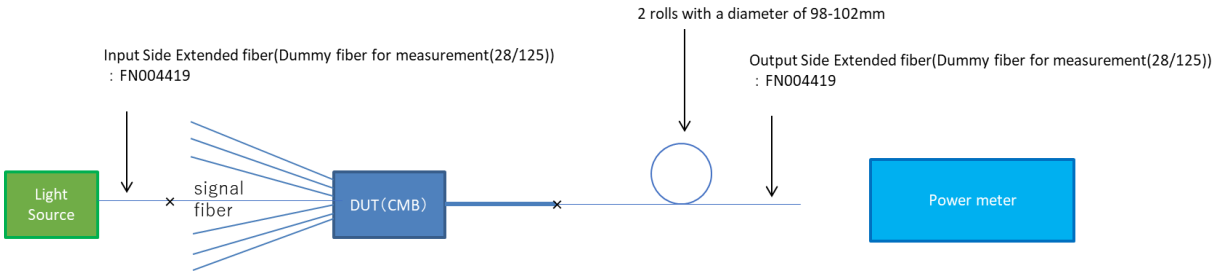


Fig. 12.6 Measuring of P1 by Power meter

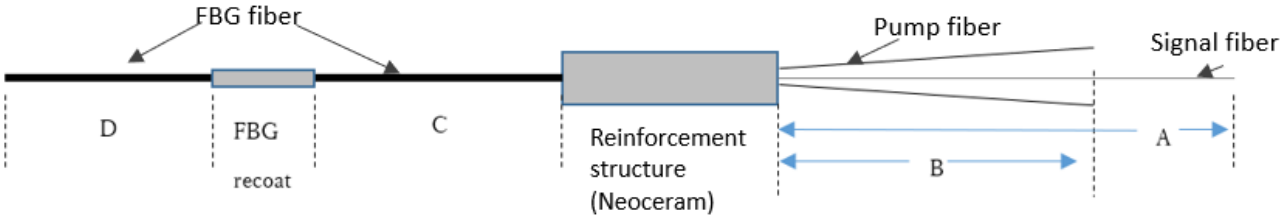
11.2 Process condition.

Items	Conditions
Wavelength	OPM
P0 measure	OPM
Alignment adjustment	Manual
M2 measure	M2 system
Temperature apply on product when measurement	Heater box
Signal Transmittance	OPM

12. Final Inspection

12.1Process specification

Fig 12.1: Structure of product



Items	Specification	Remark
Color & appearance of Fiber (Pump, Signal, FBG)	Clear color, refer appearance criteria follow: SPC3-10749 (latest version)	
Color & appearance of Recoat area	Clear color, refer appearance criteria follow: SPC3-10749 (latest version)	
Color & appearance of Neoceram	White & clear color, refer appearance criteria follow: SPC3-10747 & SPC3-10766 (latest version)	
Appearance of FBG label (QR label)	No scratch, damage, blurr, …	
Correct position of yellow tape & red tape on fiber	Yellow tape is attached on Pump fiber. Red tape is attached Signal Fiber.	
Signal fiber length (A)	Forward Pump: 1390-1410mm Backward Pump: 570-590mm	Cut pigtail for this length
Pump fiber length (B)	1060-1260mm	Cut pigtail for this length
FBG fiber length between reinforcement structure and FBG recoat ©	Forward Pump: 970-1110mm Backward Pump: 920-1060mm	Measure length
FBG fiber length between FBG recoat and fiber end (D)	1400-1600mm	Cut pigtail for this length

12.2Process condition

Items	Condition
Color & appearance of Fiber (Pump, Signal, FBG)	Green light, Magnifier
Color & appearance of Recoat area	Visual, Magnifier
Color & appearance of Neoceram	Loupe 10X, Magnifier
Appearance of FBG label (QR label)	Visual
Correct position of yellow tape & red tape on fiber	Visual
Signal fiber length (A)	Ruler
Pump fiber length (B)	Ruler
FBG fiber length between reinforcement structure and FBG recoat (C)	Ruler
FBG fiber length between FBG recoat and fiber end (D)	Ruler

13. Label & Packing

13.1 Process specification

- Pack into individual case:

- Remove the old yellow tape & coil Pump fiber by Pump winding tool, appropriate 30 mm from Neoceram. And attached by new yellow tape. (Fig. 13.1)
- Remove the old red tape & coil Signal fiber by Signal winding tool, appropriate 50 mm from Neoceram. And attached by new red tape. (Fig. 13.1)
- Remove the QR tape & coil FBG fiber by FBG winding tool, appropriate 70 mm from Recoat. And re-attached QR tape. (Fig. 13.1)
- Fix the Recoat in the Pink sponge. (Fig13.2)
- Re-use FBG case for packing & use tool to control the quantity of black sponge in each product case.
- Check appearance of FBG case, sponge.
- Open the FBG case (body).
- Fix the Neoceram in the FBG case by big black sponge.
- Put the Pump coils & Signal coils at correct position (Fig13.3)
- Coil the FBG fiber which is C area, at correct position. (Fig13.3)
- Put the Recoat area & pink sponge into case & fix by 2 pcs of small black sponges. (Fig13.3)
- Coil the remain FBG fiber following the case circle. The content on FBG label needs to upwards. (Fig13.4)
- Insert 6pcs of small black sponges at correct position. (Fig13.4)
- Close the cover of product case into product case (main body).
- Attached the scotch tape & product label into the cover of product case with correct position as photo (Fig. 13.5)

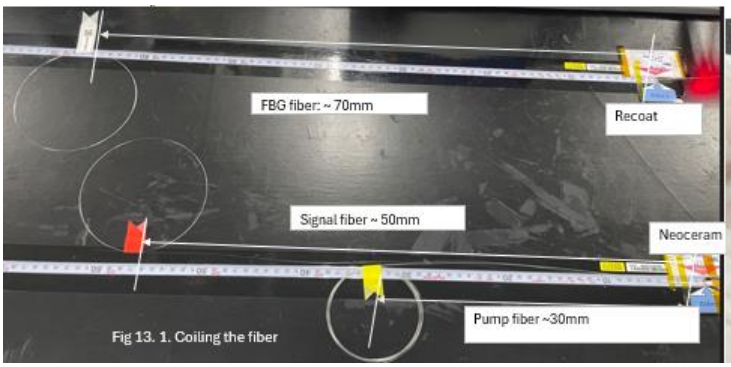


Fig 13. 1. Coiling the fiber


Fig 13. 2. Insert the recoat in the pink

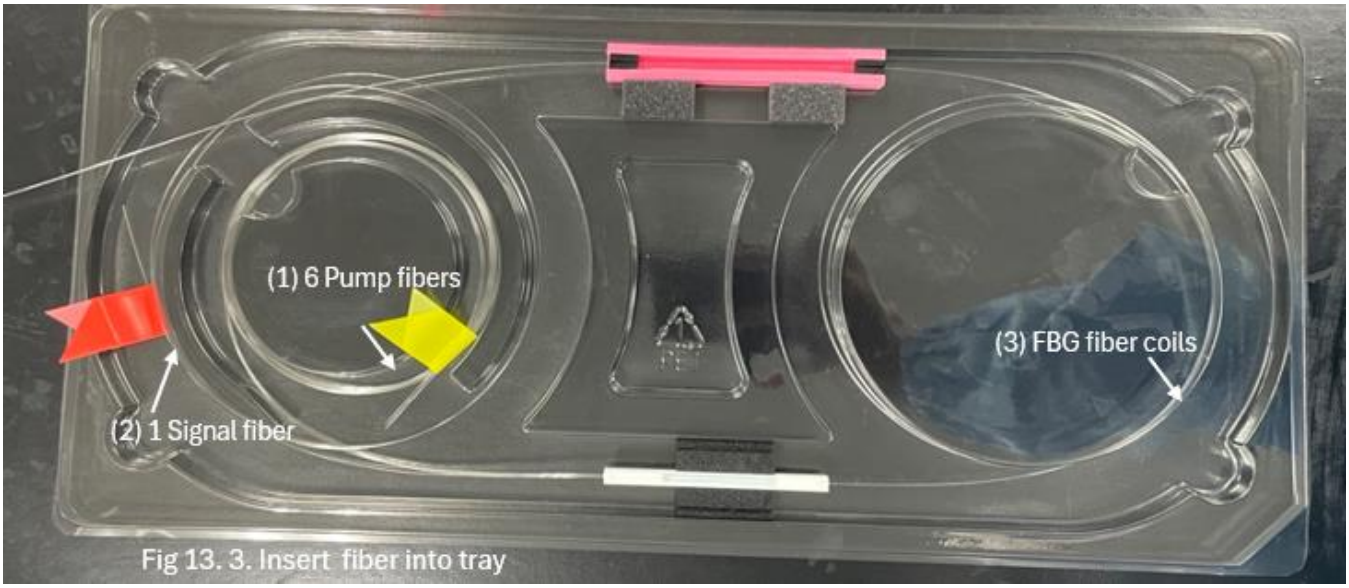
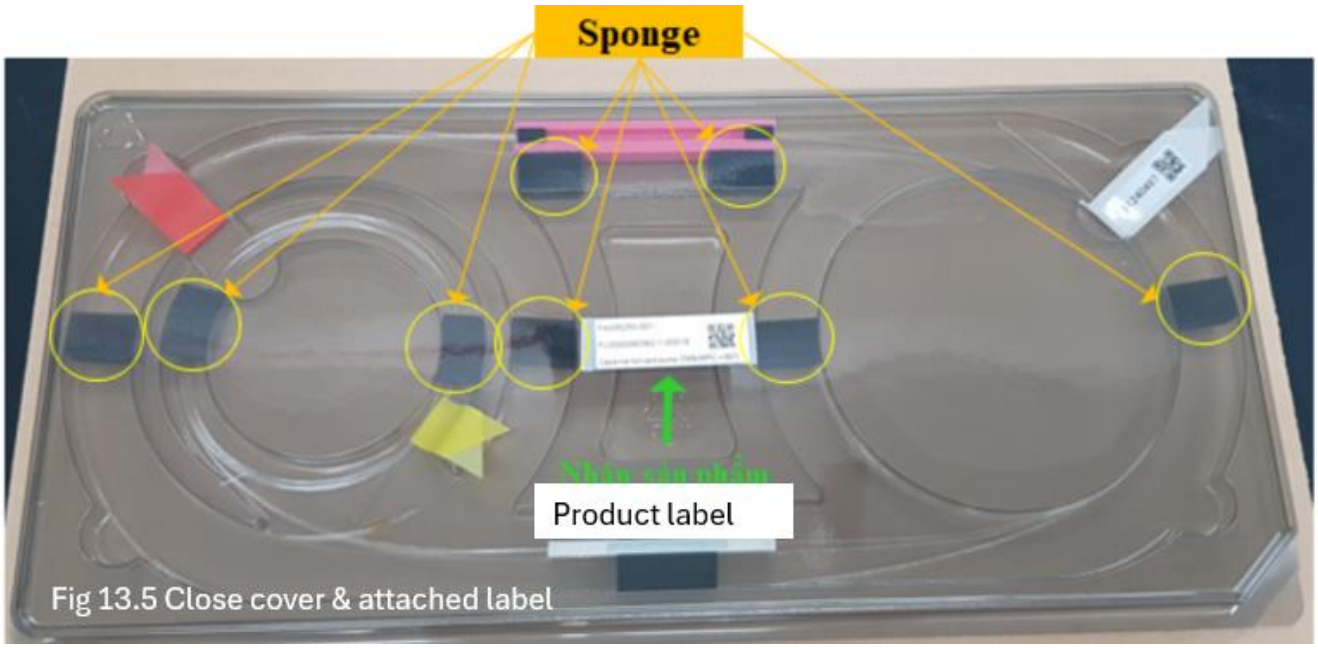


Fig 13. 3. Insert fiber into tray



➢ Pack into outer box:

- Use the outer box (drawing: 7-DWM-0074 latest version)
- Products are stacked vertically and packed in cardboard boxes.
- A maximum of two rows of 20 products can be stacked.
- The empty is filled by Air bubble.

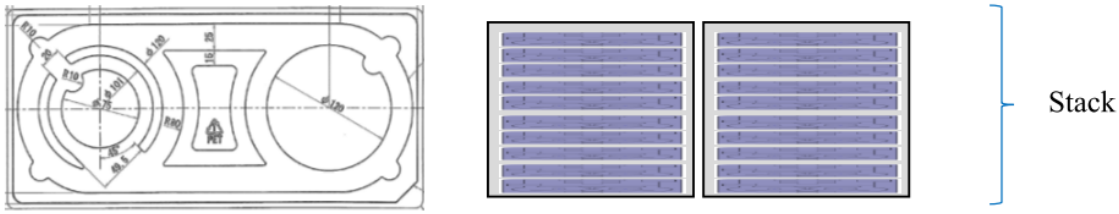


Fig 13.2: Outer box packing

- Environmental specification for storage & expired date for product as table:

Item	**Criteria**
Storage temperature	18-32 degree C
Storage humidity	30-85%
Expired date for product	Less than 1 year from Inspection date to Shipping date

13.2 Process conditions

Items	Condition
Appearance of product case (re-use FBG case)	Visual
Appearance of sponge	Visual
Appearance of QR label of FBG fiber, product case's label, outer box's label	Visual
Content of product case's label, outer box's label	Visual
Correct position of Neoceram, Recoat area, FBG fiber, Pump fiber, Signal fiber on packing case	Visual
Correct position of Yellow tape, Red tape, QR label of FBG fiber, product case's label on packing case	Visual
Correct Qty sponges of each tray	Tool
Correct Qty product cases of each outer box	Software
Correct outer box size	Software
Storage condition	Thermal & humidity recorder
Expired date of product	Software

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14. Test Report & Shippingp

- Send the electronic test report using a separately specified method. Refer SPC3-10748 (latest version).
- Shipping quantity and product name must be confirmed correct with P/O from Customer.

REVISION HISTORY

Date	Person in charge	Ver	Content		Reason	Change Requester
			Old description	New description		
30-Sep-24	ChauVNB	03	13.2 Process conditions - Control by Software & Visual for product case's label, outer box's label - Correct position of Neoceram, Recoat area, FBG fiber, Pump fiber, Signal fiber, Yellow tape, Red tape, QR label of FBG fiber, product case's label	13.2 Process conditions - Only Control by Visual for product case's label, outer box's label - Add position of Neo, ... on packing case	-Update control item -Make clear position on packing case	Manager DucTNM
27 Sep 2024	Nam HA	02	V.3.Bare fiber wiping - Wiping with IPA - Apply splicer 70S to check fiber angle cut after cleaving (< 1deg: OK)	V.3.Bare fiber wiping - Wiping with SOLBLE - Apply splicer 70S to check fiber angle cut after cleaving (< 0.5deg: OK)	Update for correction	Mng Trung DN
			V.4. Fiber stacking	V.4. Fiber stacking Add step: Release stacking plate out of bundle fiber	Make clear control item	
			V.5.FBG fiber preparation Wiping with IPA	V.5.FBG fiber preparation Wiping with SOLBLE	Update follow spec	
			V.6.Bundle fusion splicing	V.6.Bundle fusion splicing Add P0 diagram	Make clear control item	
			V.8. Resin dispensing - -Open heater, apply temperature 140 deg during process	V.8. Resin dispensing -Preparation: Soak & clean cover of OF600 jig daily before using -Open heater, apply temperature 135~142 deg during process	-Move from QC flow chart Make clear tolerance	
	ChauVNB		-	V.Content Item 12. Final Inspection Item 13. Label & Packing Item 14. Test Report & Shipping Additional control items for these process	Add more control items for QC processes	MNG DucTNM
12 Jan 2024	Nam HA	01	-	Established	-	Mng Trung DN