

QUALITY CONTROL FLOW CHART OF T-CONNECTOR GUMI

QC FLOW CHART : 4-QC-0081

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**I. Purpose**

- To set up the manufacturing processes which are implemented in Fujikura Fiber Optics Vietnam
- To determine Quality control items of each process

II. Application

- This guideline is applied for **T-Connector GUMI**
- This document concerns to Production function, Production engineering function, Quality Assurance function and Planning function.

III. Reference Documents

- Specification:

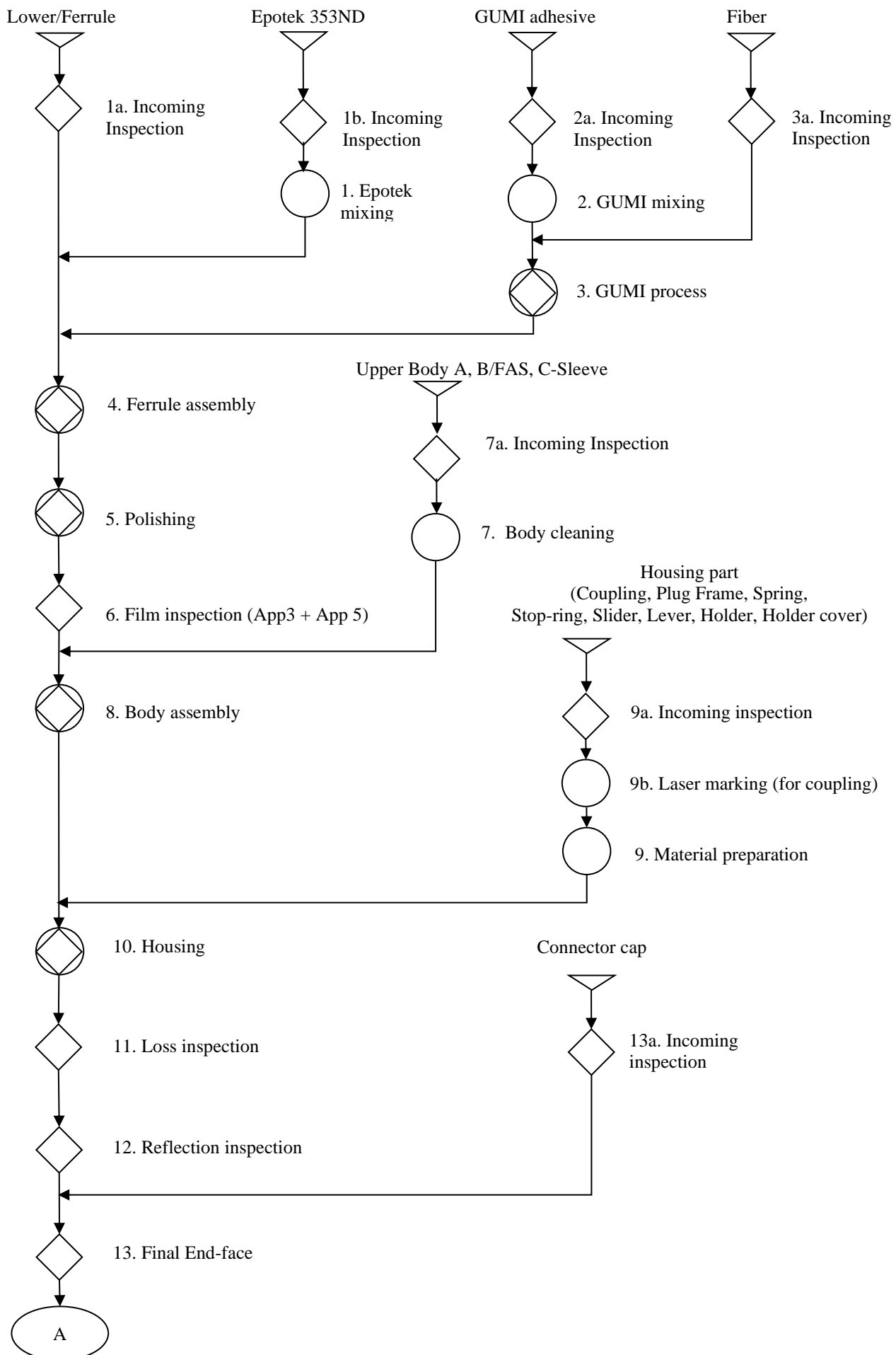
No	Specification	Product Name	Remark
1	S-GAISHI-71-2186-3	KY-T-Connector S-LG	
2	S-GAISHI-71-2186-3	KY-T-connector S-LM-R	

- FMEA No.: 0-PR-012-0-FO-001-4-RC-0070 version 5

IV. Term definition

- FOV: Fujikura Fiber Optics Vietnam Ltd.,
- PRD: Production section
- PRE: Production Engineering
- QAE: Quality Assurance Engineering
- LOG: Logistic section
- PLN: Planning section
- OCAP: Out of Control Action Plan
- T-Connector GUMI: one kind of products which are manufacture in FOV.

Checked by : Dinh Tan Tien Date : Follow DMS	Approved by: Nguyen Trung Kien Date : Follow DMS
Prepared by: Thu DTM + Cross check by: Thu TT Date: 04-Sep-2024	Originator: Tran Cong Minh Date: 14-Sep-2014

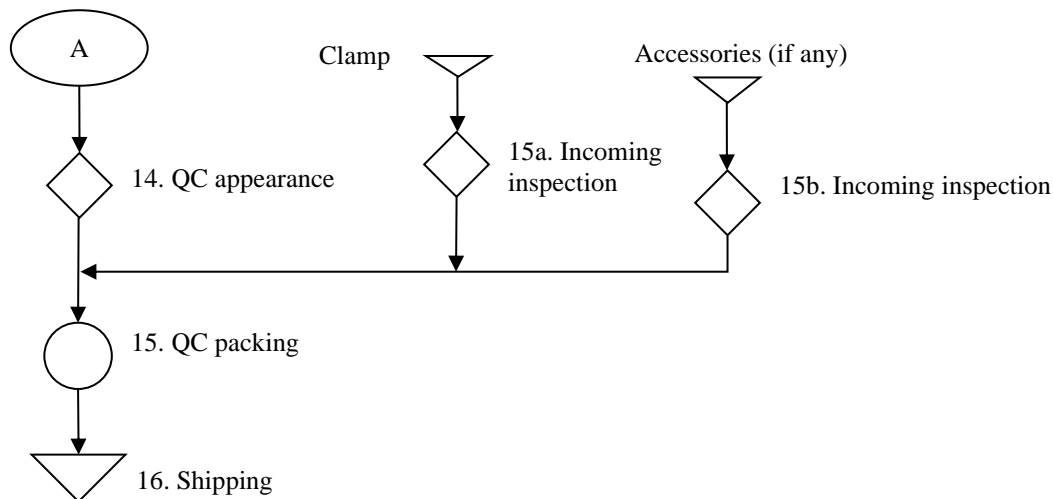
V. Contents**1. QC flow chart**

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2. Process condition and control items


Process		Quality control items	Control equipment	Sampling size	Refer Doc. No	Function incharge
No	Name					
1a	Incoming Inspection (Lower body)	Refer to 9-PR-012: Quality inspection control material				LOG, QAE
1b	Incoming inspection (Epotek 353ND)	Refer to 9-PR-012: Quality inspection control material				LOG, QAE
1	Epotek mixing	- Epotek 353ND Lot No.	Visual	All	4-OP-0081	PRD, PRE
		- Expiry date	Measure software			
		- Type of adhesive				
		- Amount of each part				
		- Mixing time	Clock			
2a	Incoming inspection (Gumi adhesive: FW-L, FW-H)	- Life time of adhesive	Visual	All	4-OP-0081	PRD, PRE
		- Remove air bubble for grease	Centrifugal			
		- Gumi adhesive Lot No.	Visual			
		- Expiry date	Visual			
		- Type of adhesive	Scale			
2	GUMI mixing	- Amount of each part	Clock	All	4-OP-0081	PRD, PRE
		- Mixing time	Visual			
		- Air bubble checking	Visual			
		- Pot time of adhesive	Centrifugal			
		- Centrifugal time	Centrifugal			
3a	Incoming inspection (Fiber FBG)	Refer to 9-PR-012: Quality inspection control material				LOG, QAE
3	Gumi process	- FBG fiber serial number	Visual	All	4-OP-0081	PRD, PRE
		- FBG color				
		- Quantity of fiber				
		- Length of fiber	Length checking jig	All		
		- Fiber screening (if any)	Manual	All		
		- Shape of GUMI	Visual	All		
		- Thickness of GUMI	Nikon	3samples/machine/day		
		- Pot time of mixture	Visual	All		
4	Ferrule assembly	- Curing fiber	Heater, Timer	All	4-OP-0081 9-PR-008-4-WI-0003	PRD, PRE
		- Epotek flow out on tip, cone of ferrule.	Visual	3samples/jig		
4	Ferrule assembly	- Lower body Lot No			4-OP-0081 9-PR-008-4-WI-0003	PRD, PRE
		- Fiber Serial No	Visual	All		
		- Ferrule Assembly tool No.				
4	Ferrule assembly	- Pot life of adhesive			4-OP-0081 9-PR-008-4-WI-0003	PRD, PRE

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		- Assembly tool No (ferrule-lower body)(if any)				
		- Position of bare fiber. - Check adhesive flow out - Shape of GUMI	Microscope			
		- Ferrule checking length (if any)	Dial gauge			
		- Heating Temperature - Heating time	Heater, timer			
		- Ring gauge check	Ring gauge			
5	Polishing	- Polishing condition	Manual	All	4-OP-528 4-OP-0397 9-PR-008-4-WI-0003	PRD, PRE
		- Ferrule and fiber end face	Microscope	All		
		- Interferometer checking	Interferometer	Sampling 2 Jig/shift		
6	Film inspection (App3 + App 5)	- V-Groove surface.	Air gun	All	4-OP-0081 9-PR-008-4-WI-0003	PRD, PRE
7a	Incoming inspection (Upper body A,B/FAS, C-Sleeve)	 Refer to 9-PR-012: Quality inspection control material				LOG, QAE
7	Body cleaning	- Lot, quantity, ID of Upper body A, B/FAS.	Visual	All	4-OP-0081	PRD, PRE
		- Cleaning time	Ultrasonic machine	All		
8	Body assembly	-Lot, quantity, ID of Upper A,B/FAS; C-Sleeve	Manual	All	4-OP-0081	PRD, PRE
		- Assembly tool No. - Sleeve, Upper body: position and direction	Visual	All		
		-Body: No contamination	Vacuum machine, Shimazu	All		
9a	Incoming inspection (Housing part)	Refer to 9-PR-012: Quality inspection control material				LOG, QAE
9b	Laser making (for coupling)	- Marking condition	Laser machine	All	4-OP-577	PRD, PRE
		- Appearance of coupling	Visual	All		
9	Material preparation	- Lot No of housing part. - Appearance.	Visual	All	4-OP-0081	PRD, PRE
10	Housing	- Lot No of Housing part - Quantity - Ferrule cleanness - Housing parts' direction	Visual	All	4-OP-0081 9-PR-008-4-WI-0003	PRD, PRE
		- Laser printing number.	Visual	Sampling 1/12		
		- Spring Movement	Manual	All		
11	Loss inspection	- System control No. - Loss value	Loss system	- Sampling 3wavelengths: 10pcs/PO - 2 wavelengths: All	4-OP-0081 9-PR-008-4-WI-0003 000-5-WI-0688	PRD, PRE, PLN
		- Endface of master cord	Microscope			
		- Appearance of measuring fiber	Microscope	1pc/6 products	4-OP-0081	PRD, PRE
12	Reflect inspection	- FBG position - No fiber broken - FBG high	Reflectometer	Sampling 1pc/shift	4-OP-0081	PRD, PRE
13a	Incoming inspection (Connector cap)	Refer to 9-PR-012: Quality inspection control material				LOG, QAE
13	Final end-face	- Ferrule and fiber endface	Microscope	All	4-OP-0397 9-PR-008-4-WI-0003	PRD, PRE
14	QC appearance	- Product appearance	Visual	All	4-OP-0081	PRD, QAE
15a	Incoming inspection	Refer to 9-PR-012: Quality inspection control material				LOG, QAE

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	(Clamp)					
15b	Incoming inspection (Accessories)	Refer to 9-PR-012: Quality inspection control material				LOG, QAE
15	QC fixing label and packing	- Product quantity - Attachment quantity - Contamination - Packing consumption quality and appearance - Test report - PO No	Visual	All	4-OP-0081	PRD, QAE
16	Shipping	- Quantity of product - PO No. - Invoice No	Visual	All		LOG

VI. Record

No.	Record	Retention time	Responsibility for keeping
-	-	-	-

Identification, storage, protection, retrieval & disposition of these records refer to 0-PR-004 Control of record.

Note: Nonconforming product/material shall be identified & controlled according to relevant procedures: 9-PR-008.

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REVISION HISTORY

Date	Person	Ver	Description		Reason of change	Requester
			Old contents	New contents		
04-Sep-2024	Duong Thi Mong Thu	12	III. Reference documents S-GAISHI-71-2186-2	III. Reference documents S-GAISHI-71-2186-3	Customer release new specification	Nguyen Ba Phuoc
			6. Film inspection: - End face of GUMI - V-Groove surface. - Position of bare fiber in V-Groove. - End of fiber in 4 marks.	6. Film inspection: - V-Groove surface.	Follow 9-PR-0014-9-FO-0001-4-RC-0141	
10-Apr-24	Nguyen Ly Thien Ngan	11	III. Reference documents No.1,2: Specification: S-GAISHI-71-2128-6 V. Content 2. Process condition and control items 9-QC-001 QCE 4-OP-504 4-OP-609	III. Reference documents No.3,4: Specification: S-GAISHI-71-2186-2 V. Content 2. Process condition and control items 9-PR-012 QAE 4-OP-0397 4-OP-577 9-PR-008-4-WI-0003 000-5-WI-0688	Customer release new specification Document review Combine to general OP Apply new template 0-PR-001-0-TEM-003	Pham Dinh Hieu
04-Sep-18	Nguyen Thi Lan Phuong	10	- Item 11: Surface of bare fiber, Check adhesive outflow.	- Item 11: + Remove: Surface of bare fiber, Check adhesive outflow + Add: End of fiber in 4 marks.	- Improvement with 4M: 4-Pr-007-4-Fo-001-4-RC-0512	Deputy Div. Manager Nguyen Trung Kien
24-Jul-18	Duong Xuan Mai	09	- Item 8: wrong order step of checking items: Length of fiber - SIC: PRD1 , QCS	- Item 8: correct the order: Length of fiber - SIC: + Incoming process: PIC is LOG, QAE + Do process: PIC is PRD, PRE + Check process: PIC is PRD, QAE, QAE + Packing process: PRD, QAE, QAE	- Correction - Follow to WI: 000-5-WI-0749	Deputy Div. Manager Nguyen Trung Kien
01-Sep-17	Nguyen Thi Lan Phuong	08	- Item 24,26: QAS; Item 27: PLN.	- Item 24,26: QAS -> QCS; Item 27: PLN -> LOG.	- Update	Dept. Manager Nguyen Trung Kien
22-Dec-16	Nguyen Thi Lan Phuong	07	- Check appearance of measuring fiber 100%	- Check appearance of measuring fiber 1pc/6 products	- Improvement with 4M: 4-PR-007-4-FO-001-4-RC-0097	Dept. Manager Nguyen Trung Kien