

**WORK INSTRUCTION**Process Name/Title: **TAPING ASSEMBLY PROCESS**

Effectivity Date:

December 16, 2022Model Code/Part Number: **100B / 7M0592-7021**Customer: **TRJ**

Validity Date:

n/aPurpose: ☐ PROTOTYPE☐ PRE-LAUNCH☒ MASSPRO

Document No.:


WI-ENG-PDE-423D

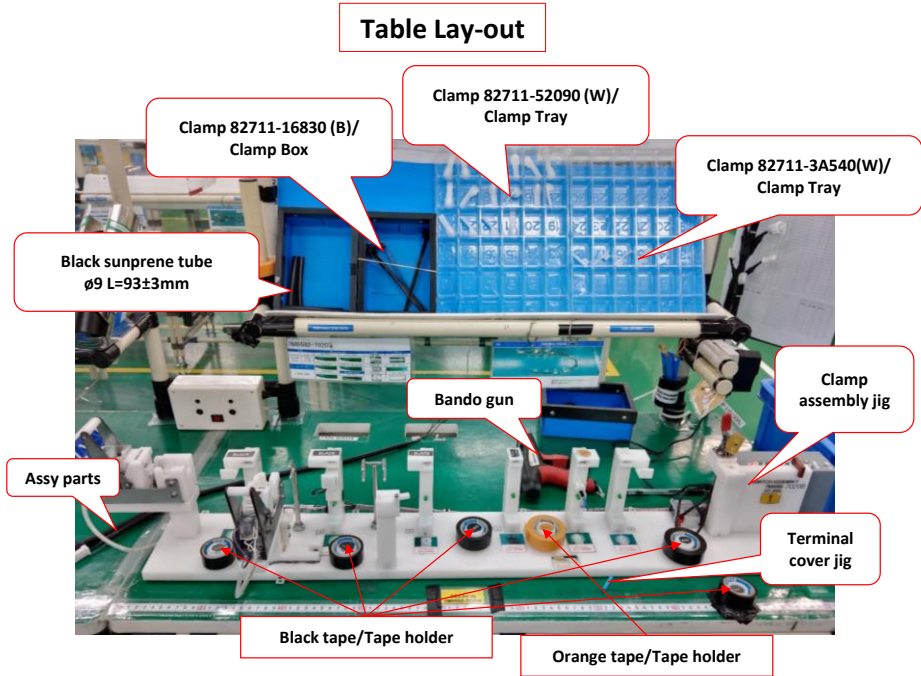
Revision No.:




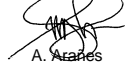
2

Page No.:

1 of 15

PARTS:		1. Assy parts: Clamp 82711-16830 (B); Clamp 82711-52090 (W); Clamp 82711-3A540(W); Black sunprene tube $\varnothing 9$ L=93 \pm 3mm; Black tape [5pcs.]; Orange tape [1pc.]		JIG:	1. Clamp assembly jig 2. Terminal cover jig	
NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION		TOOLS/PPE	QUALITY POINTERS	
1	P4	Table Lay-out		<div>Safety Instruction Be sure to wear prescribed personal protective equipment during operation (gloves, finger cots, etc.)</div> <div>Housekeeping 1. Maintain and always practice 5's. 2. Personal things on the workplace is prohibited. Keep it in your locker.</div> <div>Alert level For any trouble, inform the Assembly Assistant Supervisor or Line Leader for immediate corrective action.</div> <div>BANDO GUN</div>	1. No missing parts/tools 2. No excess parts/tools	



Revision History								Prepared by	Reviewed by	Approved by	Noted by		
12/16/22	2	Improve quality pointers: Reminders/notes, references and by two's inspection. Inclusion of Quality checkpoints				M. Catapang	J. Loterte	C. Villanueva	A. Arañes				
03/09/22	1	Correction of measurement from Sunprene to wire near terminal (66 \pm 3mm to 65 \pm 3mm) in Process 4, procedure 1 and 3				M. Catapang	J. Loterte	C. Villanueva	A. Arañes				
02/24/22	0	Initial issue				M. Catapang	J. Loterte	C. Villanueva	A. Arañes				
Eff. Date	Rev. No	Details of Change				Revised	Reviewed	Approved	Noted	Est. Date:	Feb 24, 2022		

CONFIDENTIAL: Any misuse or misappropriation, including unauthorized copying, reproduction in any form, disclosure or publishing of this document or any information herein is strictly prohibited.

NBC (Philippines)
MASTER COPY

DCC Stamp



WORK INSTRUCTION

Process Name/Title:

TAPING ASSEMBLY PROCESS

Effectivity Date:

December 16, 2022

Model Code/Part Number:

100B / 7M0592-7021

Customer:

TRJ

Validity Date:

n/a

Purpose:

☐ PROTOTYPE

☐ PRE-LAUNCH

☒ MASSPRO

Document No.:

WI-ENG-PDE-423D

Revision No.:

2

Page No.:

2 of 15

PARTS:

1. Clamp 82711-52090 (W) [4pcs.]
2. Clamp 82711-3A540 (B) [1pc.]

3. Black tape [4pcs.]
4. Orange tape [1pc.]

JIG

1. Clamp Assembly Jig

NO.

PROCESS NAME

WORK PROCEDURE/ ILLUSTRATION

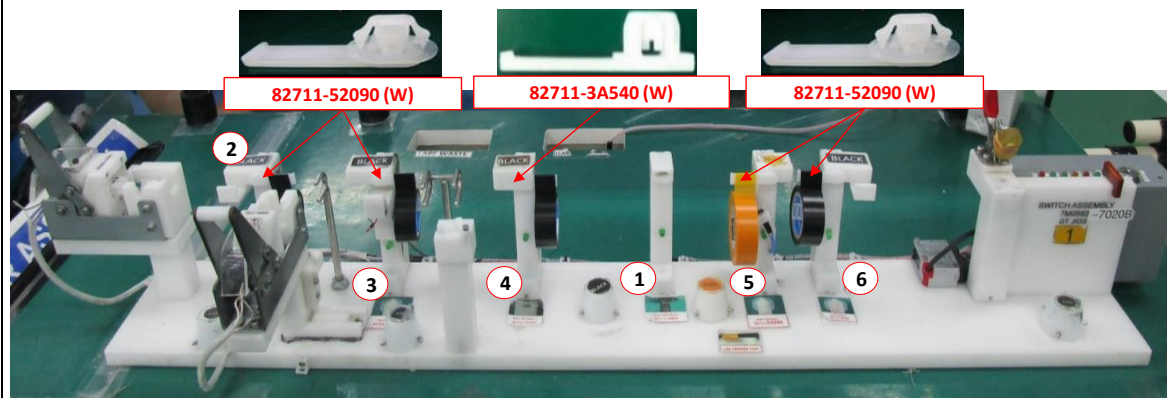
TOOLS/PPE

2 QUALITY POINTERS

2

P4

Clamp setting



1. Get 2pcs. of clamp **82711-52090 (W)** using both hands then set to clamp location **2 and 3** using both hands.

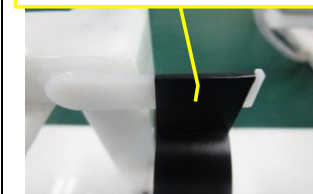
2. Get 2pcs. of clamp **82711-52090 (W)** using both hands then set to clamp location **5 and 6** using both hands.

3. Get 1pc. of clamp **82711-3A540 (W)** using right hand then set to clamp location **4** using both hands.

4. Get the **Orange tape** then initially attach to clamp location **5** using both hands.

STANDARD TAPING FOR CLAMP

One side tape under clamp

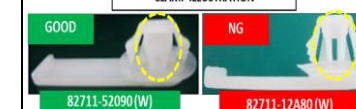


1. No damaged clamp
2. No wrong use of parts
3. No wrong use of tape
4. No wrong insertion of clamp

Important reminders/Note/s:

1. Please check the Clamp first before start of assembly to avoid wrong use of clamp.

CLAMP ILLUSTRATION



CONFIDENTIAL: Any misuse or misappropriation, including unauthorized copying, reproduction in any form, disclosure or publishing of this document or any information herein is strictly prohibited.

NBC (Philippines)
MASTER COPY

DCC Stamp



WORK INSTRUCTION

TAPING ASSEMBLY PROCESS

Effectivity Date:

December 16, 2022

Process Name/Title:

Model Code/Part Number: **100B / 7M0592-7021**

Customer: **TRJ**

Validity Date:

n/a

Document No.:

WI-ENG-PDE-423D

Purpose:

☐ PROTOTYPE

☐ PRE-LAUNCH

☒ MASSPRO

Revision No.:

2

Page No.:

3 of 15

PARTS:

1. Assy parts
2. Black tape

JIG

1. Clamp Assembly Jig

NO.

PROCESS NAME

WORK PROCEDURE/ ILLUSTRATION

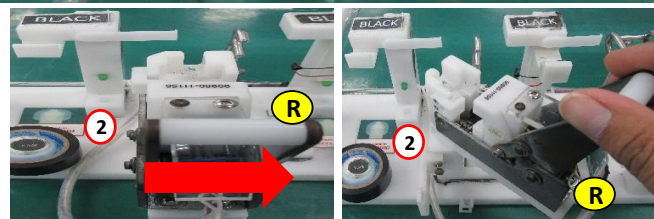
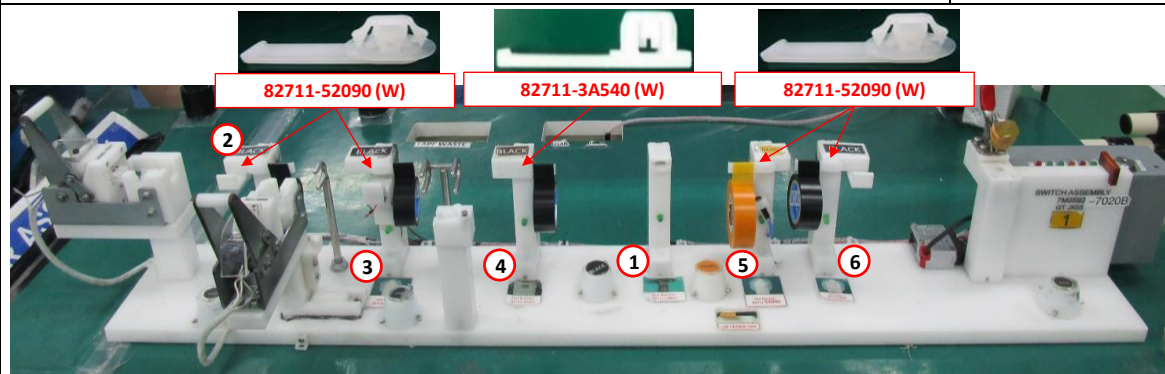
TOOLS/PPE

QUALITY POINTERS

2

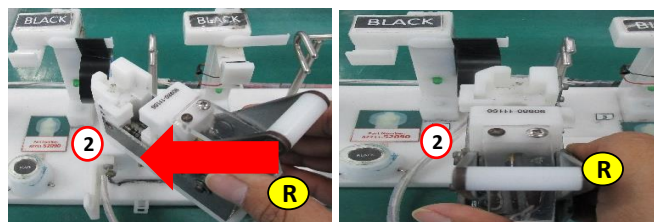
P4

Clamp setting
(Continuation)



For the attachment of tape on clamp location 2.

5. Hold the checker handle using right then slide to right side.

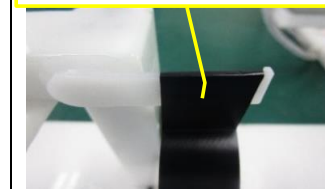


6. Initially attach **Black tape** on clamp location **2** using both hands then slide the checker handle back to its position.

7. Initially attach Black tape on clamp location **3, 4, and 6** using both hands.

STANDARD TAPING FOR CLAMP

One side tape under clamp



1. No damaged clamp
2. No wrong use of parts
3. No wrong use of tape
4. No wrong insertion of clamp

CONFIDENTIAL: Any misuse or misappropriation, including unauthorized copying, reproduction in any form, disclosure or publishing of this document or any information herein is strictly prohibited.

NBC (Philippines)
MASTER COPY

DCC Stamp



WORK INSTRUCTION

Process Name/Title: **TAPING ASSEMBLY PROCESS**

Model Code/Part Number: **100B / 7M0592-7021**

Customer: **TRJ**

Purpose: ☐ PROTOTYPE

☐ PRE-LAUNCH

☒ MASSPRO

Effectivity Date:

December 16, 2022

Validity Date:

n/a

Document No.:

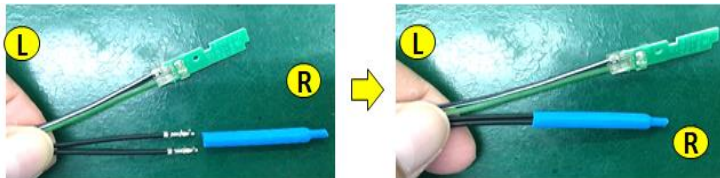
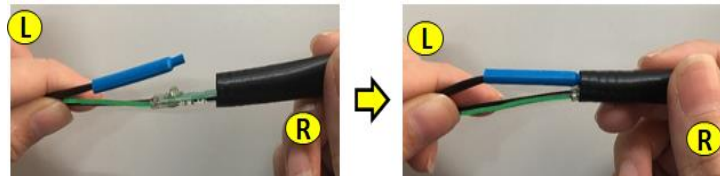
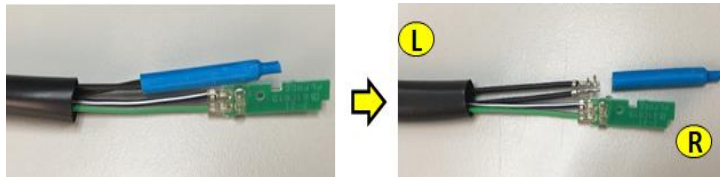

WI-ENG-PDE-423D

Revision No.:

2

Page No.:

4 of 15

PARTS:		1. Assy parts 2. Black sunprene tube $\varnothing 9$ L=93 \pm 3mm	JIG	1. Terminal cover jig
NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION	TOOLS/PPE	QUALITY POINTERS
3	P4	<p>Wire insertion to Black sunprene tube $\varnothing 9$ L=93\pm3mm</p> <div><p>1. Get the terminal cover jig using right hand then insert the terminal B-B wires using left hand.</p></div> <div><p>2. Hold the Black Sunprene tube $\varnothing 9$ L=93\pm3mm using right hand then Insert first the hotmelted wires and then next the B-B wires with cover jig using left hand.</p></div> <div><p>3. After insertion, remove the terminal cover jig using right hand.</p></div>	<div>TERMINAL COVER JIG</div> 	1. No wrong usage of parts 2. No deformed terminal

CONFIDENTIAL: Any misuse or misappropriation, including unauthorized copying, reproduction in any form, disclosure or publishing of this document or any information herein is strictly prohibited.

NBC (Philippines)
MASTER COPY

DCC Stamp



WORK INSTRUCTION

TAPING ASSEMBLY PROCESS

Effectivity Date:

December 16, 2022

Process Name/Title:

Model Code/Part Number: 100B / 7M0592-7021

Customer: TRJ

Validity Date:

n/a

Document No.:

WI-ENG-PDE-423D

Purpose:

☐ PROTOTYPE

☐ PRE-LAUNCH

☒ MASSPRO

Revision No.:

2

Page No.:

5 of 15

PARTS:

1. Assy parts
2. Black tape

JIG

n/a

NO.

PROCESS NAME

WORK PROCEDURE/ ILLUSTRATION

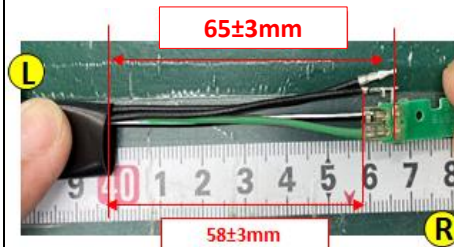
TOOLS/PPE

2 QUALITY POINTERS

4

P4

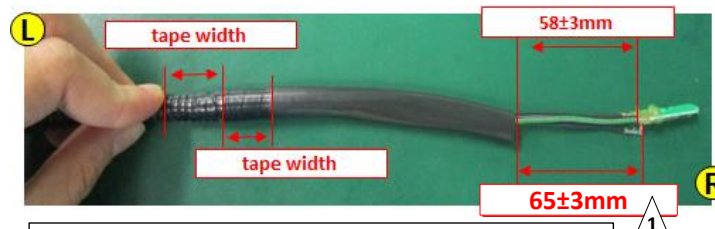
Taping 1
Black sunprene tube to
Black corrugated tube
near PCB and terminal
pointed tip



1. Measure from end of the sunprene tube up to the edge of hotmelt 58±3mm and sunprene tube up to terminal tip 65±3mm using both hands.



2. Hold the sunprene tube using left hand then start taping using both hands.



3. After taping, check the measurement, terminal appearance and taping condition.

MEASURING TAPE



Important reminders/Note/s:
1. Please use calibrated/verified measuring tape when getting the measurement.

1. No flip-out tape
2. No peel-off tape
3. No loose tape
4. No missing tape
5. No wrong dimension
6. No wrong use of tape

CONFIDENTIAL: Any misuse or misappropriation, including unauthorized copying, reproduction in any form, disclosure or publishing of this document or any information herein is strictly prohibited.

NBC (Philippines)
MASTER COPY

DCC Stamp



WORK INSTRUCTION

TAPING ASSEMBLY PROCESS

Effectivity Date:

December 16, 2022

Process Name/Title:

Model Code/Part Number: **100B / 7M0592-7021**

Customer: **TRJ**

Validity Date:

n/a

Document No.:

WI-ENG-PDE-423D

Purpose:

☐ PROTOTYPE

☐ PRE-LAUNCH

☒ MASSPRO

Revision No.:

2

Page No.:

6 of 15

PARTS:

1. Assy parts
2. Clamp 82711-16830 (B)

JIG

1. Clamp Assembly Jig

NO.

PROCESS NAME

WORK PROCEDURE/ ILLUSTRATION

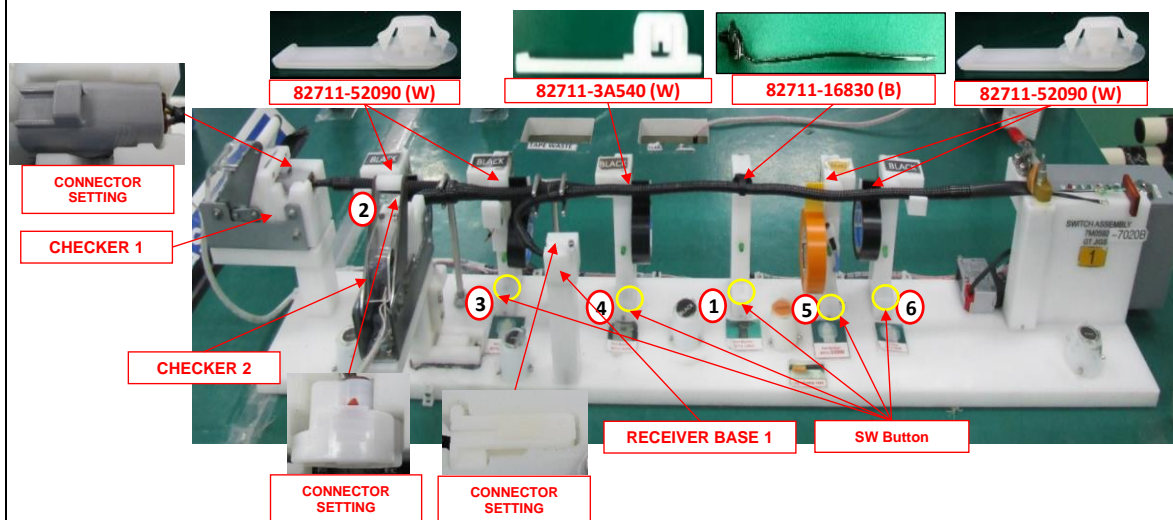
TOOLS/PPE

2 QUALITY POINTERS

5

P4

Clamp assembly



1. Put the assy into jig. (See above picture for the correct setting). First, set the connector **6188-0066 (GR)** to **Checker 1** then pull the checker fixture for continuity checking. Second, set the connector **6189-0451 (W)** to **Checker 2** then pull the checker fixture for continuity checking.. Third, set the connector **6098-3810 (W)** to **Receiver base 1** then lock. Last, set the hotmelted wire and **B-B wires** together within stopper then press by toggle clamp. Continue if the sequence light on clamp location **1** was **ON**.

2. Check if all **LED light** for **POWER ON, WIRE1, WIRE2, and CLAMP ON** was **ON**. If encountered abnormality, **STOP** and immediately **CALL** the attention of the leader. **WAIT** for further instruction and continue the process.

3. Get 1pc. of clamp **82711-16830 (B)** using right hand then set to clamp location **1** using both hands.

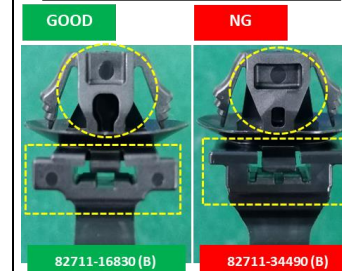


Important reminders/Note/s:

1. Make sure no gap between stopper and PCB

1. No loose/tight clamp attached
2. No damage clamp
3. No missed tape
4. No missing parts
5. Make sure no clearance between PCB and stopper jig

BAND CLAMP ILLUSTRATION



CONFIDENTIAL: Any misuse or misappropriation, including unauthorized copying, reproduction in any form, disclosure or publishing of this document or any information herein is strictly prohibited.

NBC (Philippines)
MASTER COPY

DCC Stamp



WORK INSTRUCTION

TAPING ASSEMBLY PROCESS

Effectivity Date:

December 16, 2022

Process Name/Title:

Model Code/Part Number: **100B / 7M0592-7021**

Customer: **TRJ**

Validity Date:

n/a

Document No.:

WI-ENG-PDE-423D

Purpose:

☐ PROTOTYPE

☐ PRE-LAUNCH

☒ MASSPRO

Revision No.:

2

Page No.:

7 of 15

PARTS:		1. Assy parts 2. Black tape		JIG	1. Clamp Assembly Jig
NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION		TOOLS/PPE	2 QUALITY POINTERS
5	P4	Clamp assembly (Continuation)	<div><p>4. Initially tighten the band clamp on clamp location 1 using right hand.</p><p>5. Get the bando gun using right hand then cut the band clamp on location 1. Press the SW button after taping. Continue if the sequence light on clamp location 2 was ON.</p><p>BANDO GUN ALIGNMENT</p><p>VERTICAL OK NG</p><p>Note: Setting of band clamp cutter depends on the size of the COT/Vinyl tube. For: ø5 - 1~2, ø7 - 3~4</p></div>	<div><p>BANDO GUN</p></div>	<div><p>1. Make sure no gap between stopper and PCB</p><p>1. No loose/tight clamp attached 2. No damage clamp 3. No missed tape 4. No missing parts 5. Make sure no clearance between PCB and stopper jig</p><p>BANDO GUN ILLUSTRATION</p><p>GOOD NG</p><p>FLAT NOSEPIECE EXTENDED NOSEPIECE</p></div>

CONFIDENTIAL: Any misuse or misappropriation, including unauthorized copying, reproduction in any form, disclosure or publishing of this document or any information herein is strictly prohibited.

NBC (Philippines)
MASTER COPY

DCC Stamp



WORK INSTRUCTION

Process Name/Title:

TAPING ASSEMBLY PROCESS

Effectivity Date:

December 16, 2022

Model Code/Part Number:

100B

/

7M0592-7021

Customer:

TRJ

Validity Date:

n/a

Purpose:

☐ PROTOTYPE

☐ PRE-LAUNCH

☒ MASSPRO

Document No.:

WI-ENG-PDE-423D

Revision No.:

2

Page No.:

8 of 15

PARTS:

1. Assy parts
2. Black tape

JIG

1. Clamp Assembly Jig

NO.

PROCESS NAME

WORK PROCEDURE/ ILLUSTRATION

TOOLS/PPE

2 QUALITY POINTERS

5

P4

Clamp assembly
(Continuation)

For the clamp taping on location 2.

6. Hold the checker handle using right then slide to right side.
Note: Follow the illustration on left side.

7. Hold the **Black tape** using right hand then start taping using both hands on clamp location **2. Make 3 windings** of tape then cut the tape. Press the **SW button** after taping.
Note: Follow the illustration on left side.

8. After taping, hold the checker handle using right hand then slide to left side position.



Important reminders/Note/s:

1. **Make sure no gap between stopper and PCB**

1. No loose/tight clamp attached
2. No damage clamp
3. No missed tape
4. No missing parts
5. Make sure no clearance between PCB and stopper jig

CONFIDENTIAL: Any misuse or misappropriation, including unauthorized copying, reproduction in any form, disclosure or publishing of this document or any information herein is strictly prohibited.

NBC (Philippines)
MASTER COPY

DCC Stamp



WORK INSTRUCTION

TAPING ASSEMBLY PROCESS

Effectivity Date:

December 16, 2022

Process Name/Title:

Model Code/Part Number: 100B / 7M0592-7021

Customer: TRJ

Validity Date:

n/a

Purpose:

☐ PROTOTYPE☐ PRE-LAUNCH☒ MASSPRO

Document No.:

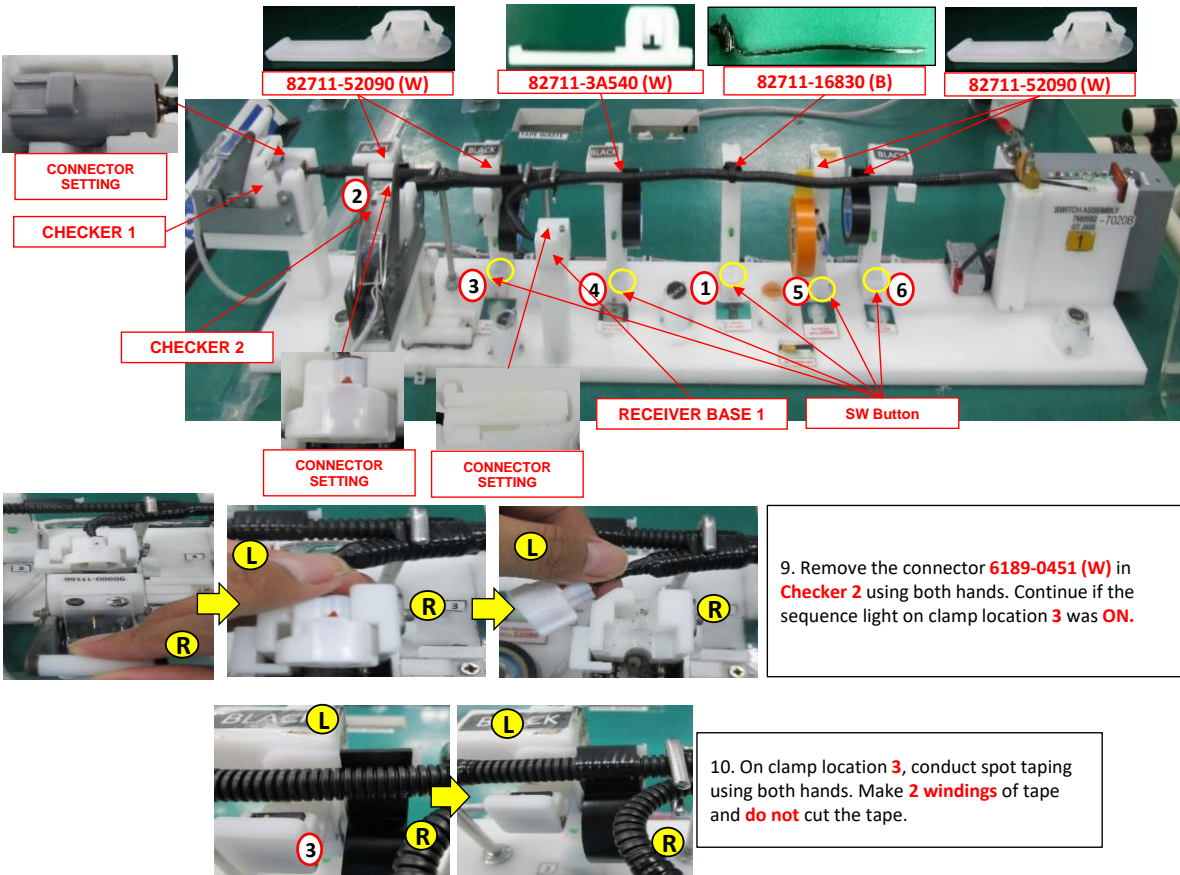

WI-ENG-PDE-423D

Revision No.:

2

Page No.:

9 of 15

PARTS:		1. Assy parts 2. Black tape	JIG	1. Clamp Assembly Jig
NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION	TOOLS/PPE	2 QUALITY POINTERS
5	P4	Clamp assembly (Continuation)	 <p>9. Remove the connector 6189-0451 (W) in Checker 2 using both hands. Continue if the sequence light on clamp location 3 was ON.</p> <p>10. On clamp location 3, conduct spot taping using both hands. Make 2 windings of tape and do not cut the tape.</p>	 <p>Important reminders/Note/s: 1. Make sure no gap between stopper and PCB</p> <p>1. No loose/tight clamp attached 2. No damage clamp 3. No missed tape 4. No missing parts 5. Make sure no clearance between PCB and stopper jig</p>

CONFIDENTIAL: Any misuse or misappropriation, including unauthorized copying, reproduction in any form, disclosure or publishing of this document or any information herein is strictly prohibited.

NBC (Philippines)
MASTER COPY

DCC Stamp



WORK INSTRUCTION

TAPING ASSEMBLY PROCESS

Effectivity Date:

December 16, 2022

Process Name/Title:

Model Code/Part Number: 100B / 7M0592-7021

Customer: TRJ

Validity Date:

n/a

Purpose:

☐ PROTOTYPE☐ PRE-LAUNCH☒ MASSPRO

Document No.:

WI-ENG-PDE-423D

Revision No.:

2

Page No.:

10 of 15

PARTS:

1. Assy parts
2. Black tape

JIG

1. Clamp Assembly Jig

NO.

PROCESS NAME

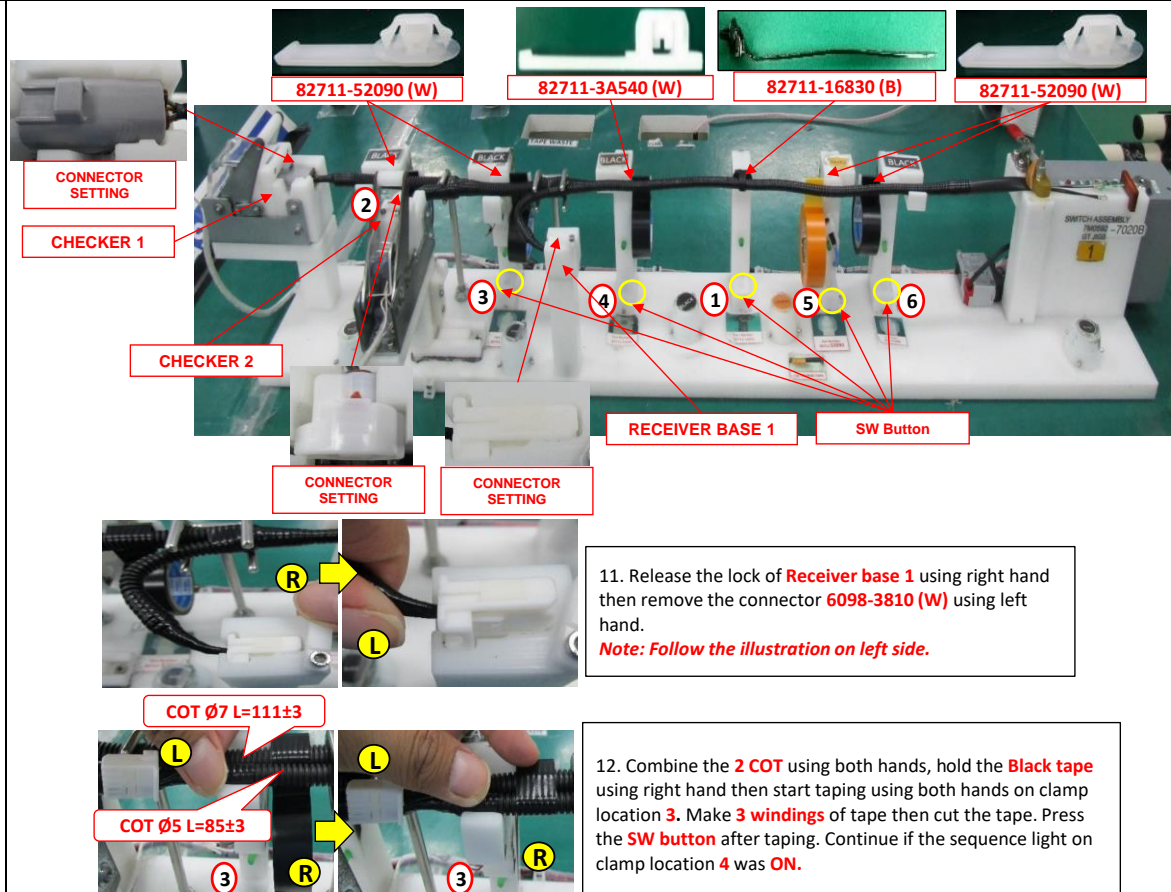
WORK PROCEDURE/ ILLUSTRATION

TOOLS/PPE

2 QUALITY POINTERS

5

P4

Clamp assembly
(Continuation)

Important reminders/Note/s:

1. Make sure no gap between stopper and PCB

1. No loose/tight clamp attached
2. No damage clamp
3. No missed tape
4. No missing parts
5. Make sure no clearance between PCB and stopper jig

CONFIDENTIAL: Any misuse or misappropriation, including unauthorized copying, reproduction in any form, disclosure or publishing of this document or any information herein is strictly prohibited.

NBC (Philippines)
MASTER COPY

DCC Stamp



WORK INSTRUCTION

TAPING ASSEMBLY PROCESS

Effectivity Date:

December 16, 2022

Process Name/Title:

Model Code/Part Number: **100B / 7M0592-7021**

Customer: **TRJ**

Validity Date:

n/a

Document No.:

WI-ENG-PDE-423D

Purpose:

☐ PROTOTYPE

☐ PRE-LAUNCH

☒ MASSPRO

Revision No.:

2

Page No.:

11 of 15

PARTS:		1. Assy parts 2. Black tape 3. Orange tape		JIG	1. Clamp Assembly Jig
NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION		TOOLS/PPE	2 QUALITY POINTERS
5	P4 Clamp assembly (Continuation)	<div></div> <div>13. Hold the Black tape using right hand then start taping using both hands on clamp location 4. Make 3 windings of tape then cut the tape. Press the SW button after taping. Continue if the sequence light on clamp location 5 was ON.</div> <div>14. Hold the Orange tape using right hand then start taping using both hands on clamp location 5. Make 3 windings of tape then cut the tape. Color sensor light will beep/buzz if sensor detects Orange tape during taping. Press the SW button after taping. Continue if the sequence light on clamp location 6 was ON.</div> <div>15. Hold the Black tape using right hand then start taping using both hands on clamp location 6. Make 3 windings of tape then cut the tape. Press the SW button after taping. Go sound will be heard.</div> <div>16. After taping, CONDUCT POINT CHECKING before removing the harness from jig.</div>			<div></div> <div>Important reminders/Note/s: 1. Make sure no gap between stopper and PCB</div> <div>1. No loose/tight clamp attached 2. No damage clamp 3. No missed tape 4. No missing parts 5. Make sure no clearance between PCB and stopper jig</div>

CONFIDENTIAL: Any misuse or misappropriation, including unauthorized copying, reproduction in any form, disclosure or publishing of this document or any information herein is strictly prohibited.

NBC (Philippines)
MASTER COPY

DCC Stamp



WORK INSTRUCTION

Effectivity Date:

December 16, 2022

Process Name/Title:

TAPING ASSEMBLY PROCESS

Validity Date:

n/a

Model Code/Part Number: **100B / 7M0592-7021**

Customer:

TRJ

Document No.:

WI-ENG-PDE-423D

Purpose:

☐ PROTOTYPE

☐ PRE-LAUNCH

☒ MASSPRO

Revision No.:

2

Page No.:

12 of 15

PARTS:

1. Assy parts

JIG

n/a

NO.

PROCESS NAME

2

WORK PROCEDURE/ ILLUSTRATION

TOOLS/PPE

2

QUALITY POINTERS

6

P4

Visual/By Two's Inspection

2

ACTUAL PRODUCT

Master sample

Assembled parts

1. Conduct **alignment of harness (Master sample vs. assembled parts)** using both hands.

2. Check the **connector lock, terminal, insertion and taping condition.**

3. Check the **presence of clamp tube and taping condition.**

4. Check the **connector lock, terminal, insertion and taping condition.**

MASTER SAMPLE

1. No skip checking during inspection

CONFIDENTIAL: Any misuse or misappropriation, including unauthorized copying, reproduction in any form, disclosure or publishing of this document or any information herein is strictly prohibited.

NBC (Philippines)
MASTER COPY

DCC Stamp



WORK INSTRUCTION

Process Name/Title:

TAPING ASSEMBLY PROCESS

Effectivity Date:

December 16, 2022

Model Code/Part Number:

100B

/

7M0592-7021

Customer:

TRJ

Document No.:

WI-ENG-PDE-423D

Purpose:


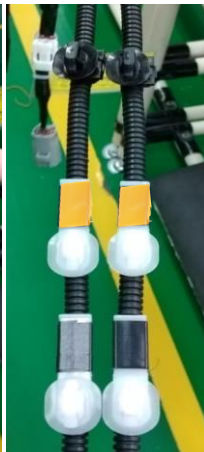
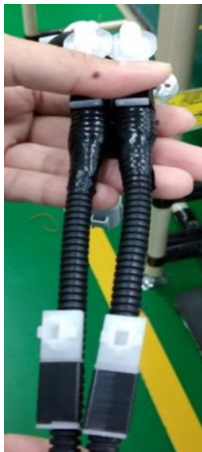

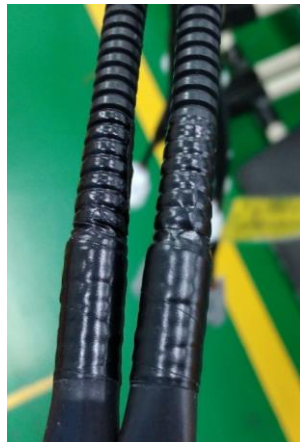

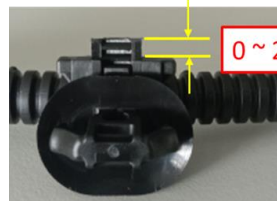
☐ PROTOTYPE☐ PRE-LAUNCH☒ MASSPRO

Revision No.:

2

Page No.:

13 of 15

PARTS:		1. Assy parts		JIG	n/a
NO.	PROCESS NAME	2 WORK PROCEDURE/ ILLUSTRATION		TOOLS/PPE	2 QUALITY POINTERS
6	P4 <div>2</div> Visual/By Two's Inspection (Continuation)	<div><div>5. Check the connector lock, terminal, insertion and taping condition.</div></div> <div><div>6. Check the Y-Taping condition, presence of all clamp attachment, taping condition and band clamp cut condition.</div></div> <div><div>8. Check the terminal and PDB appearance. Must be no deformed terminal.</div></div> <div><div>7. Conduct bending of COT and tube then check the taping condition.</div></div>			<div>MASTER SAMPLE</div>  <div>1. No skip checking during inspection</div> <div><div>0 ~ 2mm</div></div> <div>Important reminders/Note/s: 1. Using a steel rule, check if the band cut measurement is within the required dimension (0~2mm) and should not exceed the maximum value.</div>

CONFIDENTIAL: Any misuse or misappropriation, including unauthorized copying, reproduction in any form, disclosure or publishing of this document or any information herein is strictly prohibited.

NBC (Philippines)
MASTER COPY

DCC Stamp



WORK INSTRUCTION

Process Name/Title:

TAPING ASSEMBLY PROCESS

Effectivity Date:

December 16, 2022

Model Code/Part Number:

100B

/

7M0592-7021

Customer:

TRJ

Document No.:

WI-ENG-PDE-423D

Purpose:

☐ PROTOTYPE

☐ PRE-LAUNCH

☒ MASSPRO

Revision No.:

2

Page No.:

14 of 15

PARTS:

n/a

JIG

n/a

NO.

PROCESS NAME

WORK PROCEDURE/ ILLUSTRATION

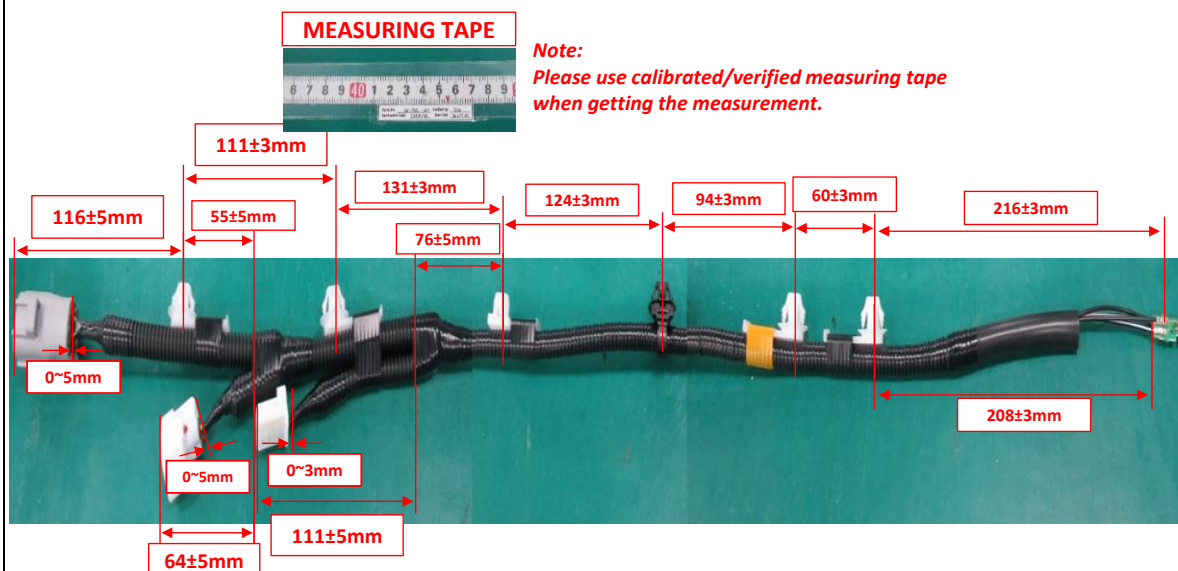
TOOLS/PPE

2 QUALITY POINTERS

7

P4

Measurement



Important reminders/Note/s:
1. FOR HATSUMONO AND
OWARIMONO

1. No wrong dimension

CONFIDENTIAL: Any misuse or misappropriation, including unauthorized copying, reproduction in any form, disclosure or publishing of this document or any information herein is strictly prohibited.

NBC (Philippines)
MASTER COPY

DCC Stamp



WORK INSTRUCTION

Process Name/Title: **TAPING ASSEMBLY PROCESS**

Effectivity Date:

December 16, 2022

Model Code/Part Number: **100B / 7M0592-7021**

Customer: **TRJ**

Validity Date:

n/a

Document No.:

WI-ENG-PDE-423D

Purpose: ☐ PROTOTYPE

☐ PRE-LAUNCH

☒ MASSPRO

Revision No.:

2

Page No.:

15 of 15

PARTS:

n/a

JIG

n/a

2 QUALITY CHECKPOINTS

P4

7M0592-7021



NO GOOD



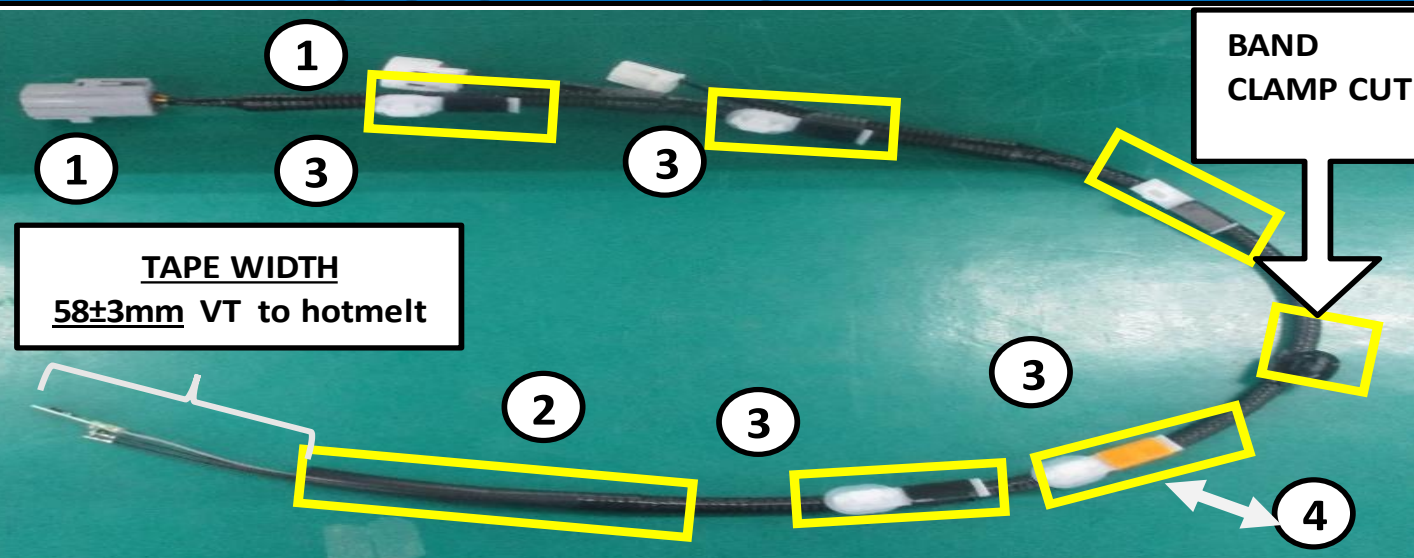
GOOD



GOOD



NO GOOD



- ① **No WRONG INSERT**
No UNLOCKED/HALFLOCKED
NO TBO

- ② **NO Missing VT**
③ **NO Missing Clamp**

- ④ **NO Wrong Used of Tape(orange)**

CONFIDENTIAL: Any misuse or misappropriation, including unauthorized copying, reproduction in any form, disclosure or publishing of this document or any information herein is strictly prohibited.

NBC (Philippines)
MASTER COPY

DCC Stamp