



WORK INSTRUCTION

Process Name/Title:

TAPING ASSEMBLY PROCESS

Effectivity Date:

January 16, 2025

Validity Date:

n/a

Model code/Part number:

412D / 628127-0001

Customer: TRJ

Car Model:

TOYOTA-RAV4

Document No.:

WI-ENG-PDE-1156B

Purpose:



PROTOTYPE



PRE-LAUNCH



MASSPRO

Revision No.:

0

Page No.:

1 of 11

PARTS:

1. Assy parts; Connector 4A1330-0000 (W); Black tape; Black VM tube (Sunprene) Ø6, L=47±3mm;

JIG:

1. Insertion jig

NO.

PROCESS NAME

WORK PROCEDURE/ ILLUSTRATION

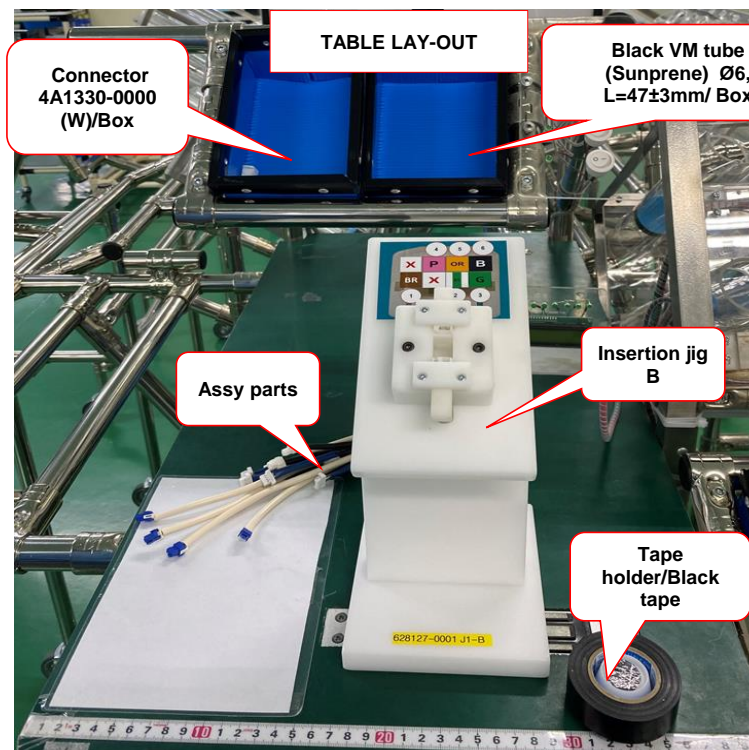
TOOLS/PPE

QUALITY POINTERS

1

P2

Table lay-out

**Safety Instruction**

Be sure to wear prescribed personal protective equipment during operation (gloves, finger cots, etc.)

Housekeeping

1. Maintain and always practice 5's.
2. Personal things on the workplace is prohibited. Keep it in your locker.

Alert level

For any trouble, inform the Assembly Assistant Supervisor or Line Leader for immediate corrective action.

1. No missing parts/tools
2. No excess parts/tools

Important reminders/Note/s:

1. Please hold the wire near terminal.
 2. Make sure wires are properly inserted.
- Conduct Pull-Push-Pull-Push after insertion.
Do not exert extra force.

Document references:

1. Refer to GL-PRO-ASY-029 for Pull-Push procedure.
2. Refer to WI-PRO-CNC-017 for Wire and Strip Length Tolerance

Revision History

Eff. Date	Rev. No	Details of Change	M. Ariola	C. Villanueva	A.Arañes	n/a	Prepared by	Reviewed by	Approved by	Noted by
01/16/25	0	Initial issue. Excluded process from WI-ENG-PDE-1156 due to new process distribution. Change Purpose from Pre-launch to Masspro.					M. Ariola	C. Villanueva	A.Arañes	n/a

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:

January 16, 2025

Process Name/Title:

Validity Date:

n/a

Model code/Part number:

412D / 628127-0001

Customer: TRJ

Car Model: TOYOTA-RAV4

Document No.:

WI-ENG-PDE-1156B

Purpose:



PROTOTYPE



PRE-LAUNCH



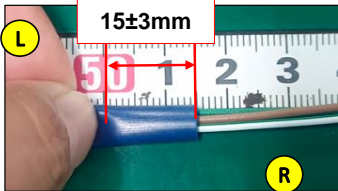
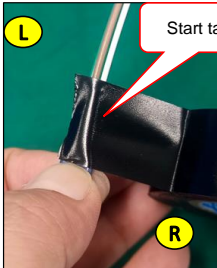



MASSPRO

Revision No.:

0

Page No.:

2 of 11

PARTS:		1. Assy parts 2. Black tape		JIG:	n/a
NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION		TOOLS/PPE	QUALITY POINTERS
2	P2 Taping 1 Blue VM tube (Sunprene) to Wire	<div><p>1. Hold the Blue VM tube (Sunprene) using left hand. Measure from VM tube (Sunprene) 15±3mm using right hand.</p></div> <div><p>2. Hold the Blue VM tube (Sunprene) using left hand. Get the black tape using right hand and start taping process. 15±3mm</p></div> <div><p>3. Confirm the measurement from end of tape up to VM tube (Sunprene) 15±3mm then start taping using both hands.</p></div> <div><p>4. After taping, Check the measurement and taping condition.</p></div>		<div>MEASURING TAPE</div> 	<p>Important Reminders/Note/s:</p> <p>1. Please use calibrated/verified measuring tape when getting the measurement.</p> <p>1. No Peel-off tape 2. No Flip-out tape 3. No loose tape 4. No wrong use of tape 5. No wrong dimension 6. No missing tape</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:

January 16, 2025

Process Name/Title:

Validity Date:

n/a

Model code/Part number:

412D / 628127-0001

Customer: TRJ

Car Model: TOYOTA-RAV4

Document No.:

WI-ENG-PDE-1156B

Purpose:



PROTOTYPE



PRE-LAUNCH



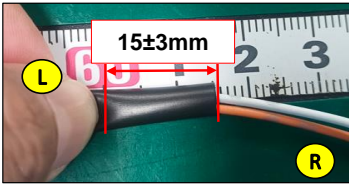
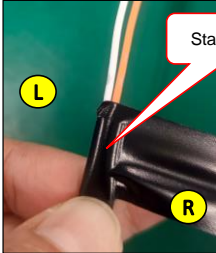
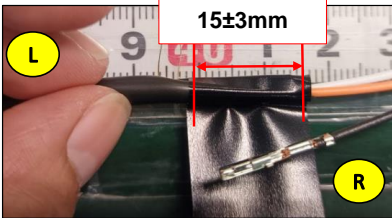

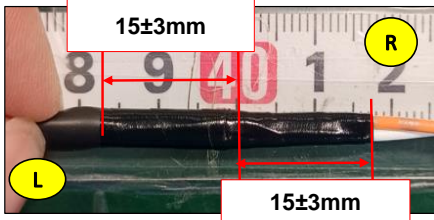

MASSPRO

Revision No.:

0

Page No.:

3 of 11

PARTS:		1. Assy parts 2. Black tape		JIG:	n/a
NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION		TOOLS/PPE	QUALITY POINTERS
3	P2 Taping 2 Black VM tube (Sunprene) to wire near terminal)	<div><p>1. Hold the Black VM tube (Sunprene) using left hand. Measure from VM tube (Sunprene) 18±3mm using right hand.</p></div> <div><p>2. Hold the Black VM tube (Sunprene) using left hand. Get the black tape then start pre-taping using both hands.</p></div> <div><p>3. Measure from end of tape up to VM tube (Sunprene) 15±3mm then start taping using both hands.</p></div> <div><p>4. Confirm the measurement from end of tape up to VM tube (Sunprene) 15±3mm then start taping using both hands.</p></div> <div><p>5. After taping, Check the measurement and taping condition.</p></div>		<div>MEASURING TAPE</div> 	<p>Important Reminders/Note/s:</p> <p>1. Please use calibrated/verified measuring tape when getting the measurement.</p> <p>1. No Peel-off tape 2. No Flip-out tape 3. No loose tape 4. No wrong use of tape 5. No wrong dimension 6. No missing tape</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:

January 16, 2025

Process Name/Title:

Validity Date:

n/a

Model code/Part number:

412D / 628127-0001

Customer: TRJ

Car Model: TOYOTA-RAV4

Document No.:

WI-ENG-PDE-1156B

Purpose:



PROTOTYPE



PRE-LAUNCH



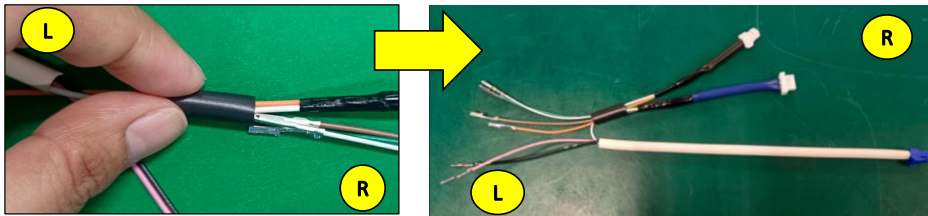
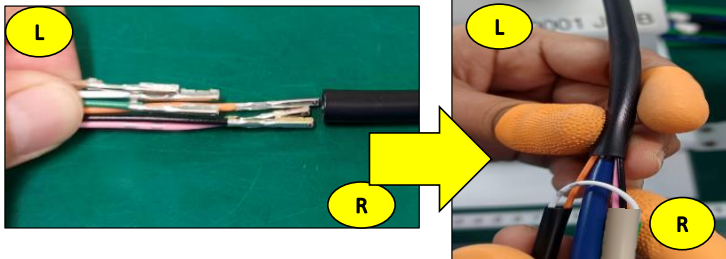
MASSPRO

Revision No.:

0

Page No.:

4 of 11

PARTS:		1. Assy parts 2. Black VM tube (Sunprene) Ø6, L=47±3mm		JIG:	n/a
NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION		TOOLS/PPE	QUALITY POINTERS
4	Wire insertion to Black VM tube (Assy parts)	 <div>1. Hold the Black VM tube (Sunprene) (assy parts) using right hand. Insert the wires from Blue VM tube (Sunprene) using both hands.</div>		n/a	1. No wrong usage of parts 2. No deformed terminal 3. No tangled wires
5	P2 Wire insertion Black VM tube (Sunprene) Ø6, L=47±3mm	 <div>1. Hold the wires using right hand, get the Black VM tube (Sunprene) Ø6, L=47±3mm using left hand then insert the wires (Assy parts) using both hands.</div>		n/a	1. Use provided jig per model. 2. No wrong usage of parts 3. One by one insertion 4. No wrong insertion. 5. No deformed terminal 6. No stuck of terminal tip.

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:

January 16, 2025

Process Name/Title:

Model code/Part number:

412D / 628127-0001

Customer: TRJ

Car Model: TOYOTA-RAV4

Validity Date:

n/a

Document No.:

WI-ENG-PDE-1156B

Purpose:



PROTOTYPE



PRE-LAUNCH



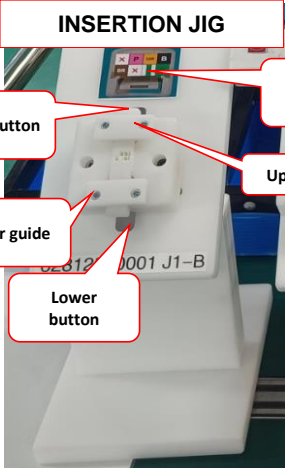
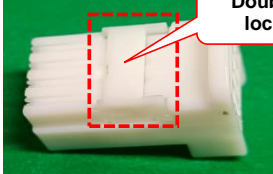
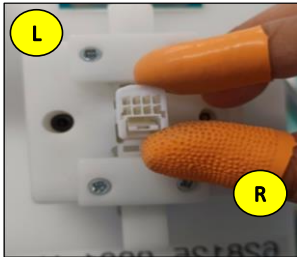
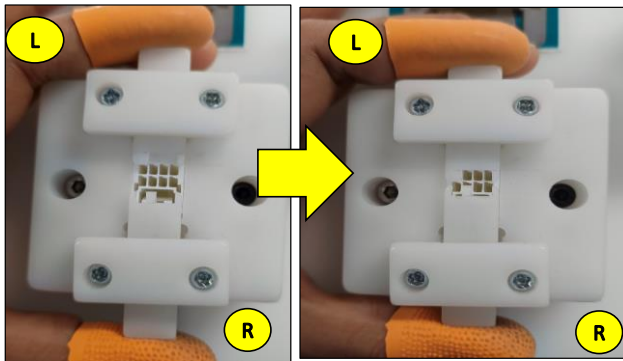
MASSPRO

Revision No.:

0

Page No.:

5 of 11

PARTS:		1. Assy parts 2. Connector 4A1330-0000 (W)		JIG:	1. Insertion jig
NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION		TOOLS/PPE	QUALITY POINTERS
6	P2 Connector setting to insertion jig 4A1330-0000 (W)	<div><div><div>INSERTION JIG</div><div></div></div><div><div></div><div>CONNECTOR ORIENTATION</div><div><div></div><div>1. Get the Connector 4A1330-0000 (W) and insert to insertion jig using right hand. Note: Follow the connector orientation.</div></div><div><div></div><div>2. Press the upper and lower guide (same timing) using left hand. Holes to be insert are only open.</div></div></div></div>		n/a	<div>1. Use the provided jig per model 2. No wrong usage of parts 3. No wrong orientation of connector 4. No damaged connector.</div> <div>Important reminders/Note/s: 1. Automatically dispose and replace the unit if once encountered bend terminal, difficulty of insertion and half-locked connector. 2. Follow the connector orientation 3. Check the Connector before insertion.</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

TAPING ASSEMBLY PROCESS

Process Name/Title:

Model code/Part number:

412D / 628127-0001

Customer: TRJ

Car Model: TOYOTA-RAV4

Purpose:



PROTOTYPE



PRE-LAUNCH



MASSPRO

Effectivity Date:

January 16, 2025

Validity Date:

n/a

Document No.:

WI-ENG-PDE-1156B

Revision No.:

0

Page No.:

6 of 11

PARTS:

1. Assy parts

JIG:

1. Insertion jig

NO.

PROCESS NAME

WORK PROCEDURE/ ILLUSTRATION

TOOLS/PPE

QUALITY POINTERS

7

P2

Wire insertion to
Connector
4A1330-0000 (W)

INSERTION SEQUENCE FROM LEFT TO RIGHT

	5	6	7
X	P	OR	B
1	268	162	268
BR	X	2	3
184		184	184

FIRST ROW (LEFT TO RIGHT)

1. Insert the wires from **Blue VM tube (Sunprene)**. Hold the **BR wire** and insert to terminal **slot no.1** using right hand. Repeat the process for **W/G** and **G** wires.

2. Insert the wires from **Blue VM tube (Sunprene)**. Hold the **P wire** and insert to terminal **slot no.1** using right hand. Repeat the process for **OR** and **B** wires.

n/a

1. Use provided jig per model.
2. No wrong usage of parts
3. One by one insertion
4. No wrong insertion.
5. No deformed terminal
6. No stuck of terminal tip.

Important reminders/Note/s:

1. Make sure wires are properly inserted. Conduct **Pull-Push-Pull-Push** after insertion. Do not exert extra force.
2. Please hold the wires near terminal during insertion.
3. Automatically dispose and replace the unit if once encountered bend terminal, difficulty of insertion and half-locked connector.
4. Insertion of wires must be from left to right.

Document reference/s:

1. Refer to GL-PRO-ASY-029 for Pull-Push procedure.
2. Refer to GL-PRO-ASY-025 for Inspection Standard for connector insertion.

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:

January 16, 2025

Validity Date:

n/a

Model code/Part number:

412D / 628127-0001

Customer:

TRJ

Car Model:

TOYOTA-RAV4

Document No.:

WI-ENG-PDE-1156B

Purpose:



PROTOTYPE



PRE-LAUNCH



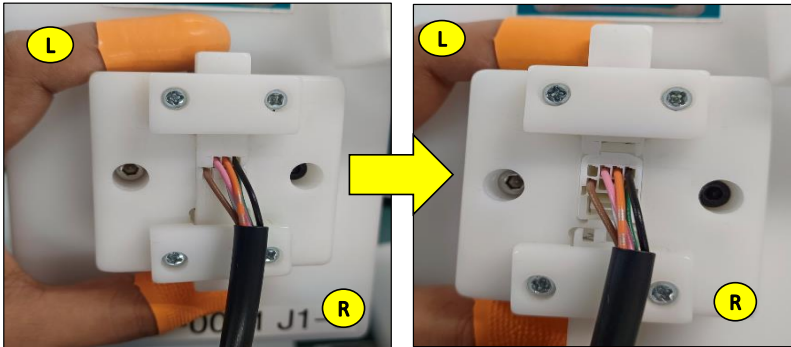
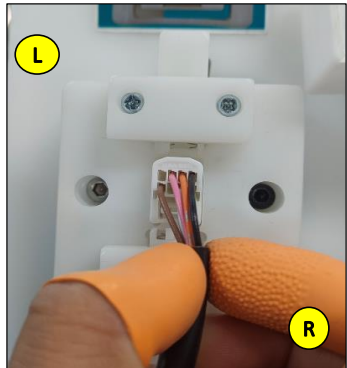
MASSPRO

Revision No.:

0

Page No.:

7 of 11

PARTS:	1. Assy parts		JIG:	1. Insertion jig
NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION	TOOLS/PPE	QUALITY POINTERS
7	P2 Wire insertion to Connector 4A1330-0000 (W) (Continuation)	<div></div> <div>3. Press the upper and lower button (same timing) using both hands.</div> <div></div> <div>4. Remove the assy parts using right hand and check if the connector is totally locked.</div>	n/a	<div>1. Use provided jig per model. 2. No wrong usage of parts 3. One by one insertion 4.No wrong insertion. 5. No deformed terminal 6. No stuck of terminal tip.</div> <div>Important reminders/Note/s: 1. Please hold the wire near terminal. 2. Make sure wires are properly inserted. Conduct Pull-Push-Pull-Push after insertion. Do not exert extra force. 3. Automatically dispose and replace the unit if once encountered bend terminal, difficulty of insertion and half-locked connector. 4. Insertion of wires must be from left to right.</div> <div>Document references: 1. Refer to WI-PRO-CNC-017 2. Refer to WI-ENG-PDE-044 for the Steering Navigation Controller procedure. 3. Refer to GL-PRO-ASY-029 for Pull-Push procedure.</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

TAPING ASSEMBLY PROCESS

Effectivity Date:

January 16, 2025

Process Name/Title:

Model code/Part number:

412D / 628127-0001

Customer: TRJ

Car Model: TOYOTA-RAV4

Validity Date:

n/a

Document No.:

WI-ENG-PDE-1156B

Purpose:



PROTOTYPE



PRE-LAUNCH



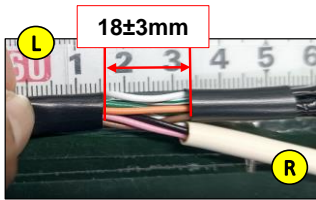
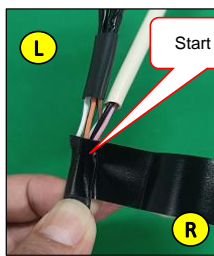

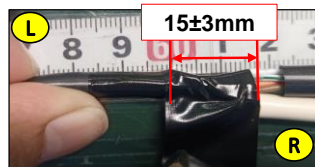
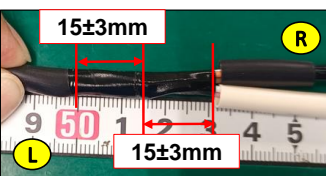

MASSPRO

Revision No.:

0

Page No.:

8 of 11

PARTS:		1. Assy parts 2. Black tape	JIG:	n/a
NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION	TOOLS/PPE	QUALITY POINTERS
8	P2 Taping 3 Black VM tube (Sunprene) to wire near terminal)	<div><p>1. Hold the Black VM tube (Sunprene) using left hand. Measure from VM tube (Sunprene) up to Combined VM tube tubes 18±3mm using right hand.</p></div> <div><p>2. Get the black tape then start pre-taping using both hands.</p></div> <div><p>3. Confirm the measurement from end of tape up to VM tube (Sunprene) 15±3mm then start taping using both hands.</p></div> <div><p>4. Confirm the measurement from end of tape up to VM tube (Sunprene) 15±3mm then start taping using both hands.</p></div> <div><p>5. After taping, Check the measurement and taping condition.</p></div>	<div></div>	<p>Important Reminders/Note/s:</p> <p>1. Please use calibrated/verified measuring tape when getting the measurement.</p> <p>1. No Peel-off tape 2. No Flip-out tape 3. No loose tape 4. No wrong use of tape 5. No wrong dimension 6. No missing tape</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:

January 16, 2025

Validity Date:

n/a

Process Name/Title:

Model code/Part number:

412D / 628127-0001

Customer: TRJ

Car Model: TOYOTA-RAV4

Document No.:

WI-ENG-PDE-1156B

Purpose:



PROTOTYPE



PRE-LAUNCH





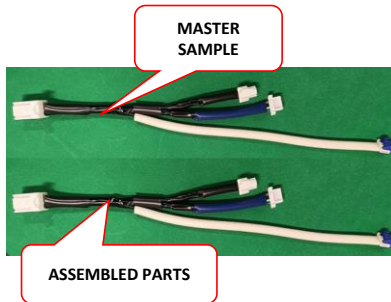

MASSPRO

Revision No.:

0

Page No.:

9 of 11

PARTS:		1. Assembled parts 2. Master sample		JIG:	n/a
NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION		TOOLS/PPE	QUALITY POINTERS
9	P2	Visual/By two's Inspection	<div>1. Check the connector lock. Locking of connector is included in Steering Electrical test.</div> <div>2. Check the wire alignment. Must be no tangled wires.</div> <div>3. Check the Terminal if with Backing out (Not fully inserted) or no deformed terminal.</div> <div><div>ACTUAL PRODUCT</div></div> <div>4. Check the orientation of harness.</div> <div>5. Compare to Master sample by tapping</div> <div><div>MASTER SAMPLE</div></div> <div><div>MASTER SAMPLE</div><div>ASSEMBLED PARTS</div></div>	n/a	<div>Document refence/s: 1. Refer to WI-QAD-QAC-252 Steering Electrical Test</div> <div>MASTER SAMPLE</div> <div></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****TAPING ASSEMBLY PROCESS**

Process Name/Title:

Model code/Part number:

412D / 628127-0001

Customer:

TRJ

Car Model:

TOYOTA-RAV4

Purpose:



PROTOTYPE



PRE-LAUNCH



MASSPRO

Effectivity Date:

January 16, 2025

Validity Date:

n/a

Document No.:

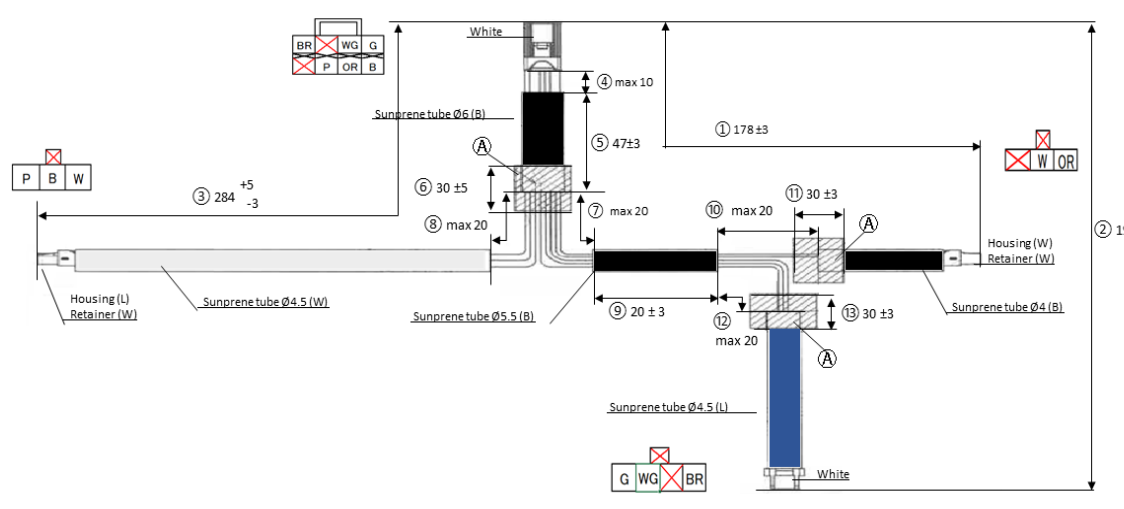

WI-ENG-PDE-1156B

Revision No.:

0

Page No.:

10 of 11

PARTS:		1. Assy parts		JIG:	n/a
NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION		TOOLS/PPE	QUALITY POINTERS
10	P2	Measurement		<div>MEASURING TAPE</div> 	<p>1. No wrong dimension</p> <p>Important Reminder/s and Note/s:</p> <p>1. Please use calibrated measuring tape when getting the measurement.</p> <p>2. For Hatsumono, Nakamono and Owarimono.</p> <p>Document reference/s:</p> <p>1. Refer to WI-PRO-ASY-056 For assembly Hatsumono, Nakamono and Owarimono Inspection.</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**

Process Name/Title:

TAPING ASSEMBLY PROCESS

Effectivity Date:

January 16, 2025

Validity Date:

n/a

Model code/Part number:

412D / 628127-0001

Customer: TRJ

Car Model: TOYOTA-RAV4

Document No.:

WI-ENG-PDE-1156B

Purpose:



PROTOTYPE



PRE-LAUNCH



MASSPRO

Revision No.:

0

Page No.:

11 of 11

PARTS:

n/a

JIG:

n/a

VISUAL INSPECTION/ QUALITY CHECKPOINTS**P2****628127-0001**

1. Check the connector lock. Locking of connector is included in Steering

2. Check the wire alignment. Must be no tangled wires.

3. Check the Terminal if with Backing out (Not fully inserted) or no deformed terminal.

BLACK VM TUBE (SUNPRENE) Ø6

BLACK VM TUBE (SUNPRENE) dia. Ø4

BLACK VM TUBE (SUNPRENE) dia. Ø5

BLUE VM TUBE (SUNPRENE) Ø4.5

WHITE VM TUBE (SUNPRENE) Ø4.5

7. Compare to Master sample by tapping

4. No missing tape (Black tape)

5. Check the orientation of harness.

6. No missing retainer.

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