



WORK INSTRUCTION
TAPING ASSEMBLY PROCESS



Process Name/Title:				Effectivity Date:	April 22, 2025		
Model code/Part number:	412D / 628127-0001A	Customer:	TRJ	Car Model:	TOYOTA-RAV4		
Purpose:	<input type="checkbox"/> PROTOTYPE <input type="checkbox"/> PRE-LAUNCH <input checked="" type="checkbox"/> MASSPRO			Validity Date:	n/a		
				Document No.:	WI-ENG-PDE-1241B		
				Revision No.:	1	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	<div><p>Safety Instruction</p><p>Be sure to wear prescribed personal protective equipment during operation (gloves, finger cots, etc.)</p><p>Housekeeping</p><p>1. Maintain and always practice 5's. 2. Personal things on the workplace is prohibited. Keep it in your locker.</p><p>Alert level</p><p>For any trouble, inform the Assembly Assistant Supervisor or Line Leader for immediate corrective action.</p></div>	1. No missing parts/tools 2. No excess parts/tools

Revision History

Revision History							Prepared by	Checked by	Reviewed by	Approved by
04/22/25	1	Change Purpose from Pre-launch to Masspro.	M. Ariola	J. Loterte	C. Villanueva	A.Arañes				
04/11/25	0	Initial issue. Inclusion of Measurement from end of tape to end of connector 4A1330 (W).	M. Ariola	J. Loterte	C. Villanueva	A.Arañes				
Eff. Date	Rev. No	Details of Change		Revised	Checked	Reviewed	Approved	Est. Date	April 11, 2025	

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PROTOTYPE



PRE-LAUNCH



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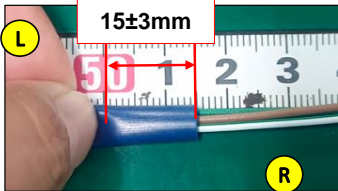
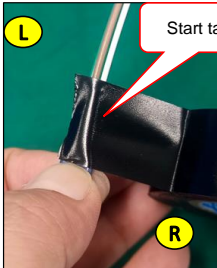



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PARTS:		1. Assy parts 2. Black tape		JIG:	n/a
NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION		TOOLS/PPE	QUALITY POINTERS
2	P2 Taping 1 Blue VM tube (Sunprene) to Wire	<div><p>1. Hold the Blue VM tube (Sunprene) using left hand. Measure from VM tube (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>

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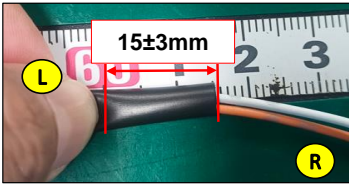
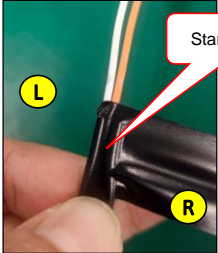
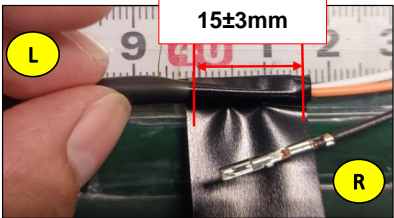

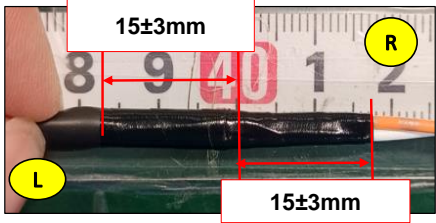

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PARTS:		1. Assy parts 2. Black tape		JIG:	n/a
NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION		TOOLS/PPE	QUALITY POINTERS
3	P2 Taping 2 Black VM tube (Sunprene) to wire near terminal)	<div><p>1. Hold the Black VM tube (Sunprene) using left hand. Measure 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>

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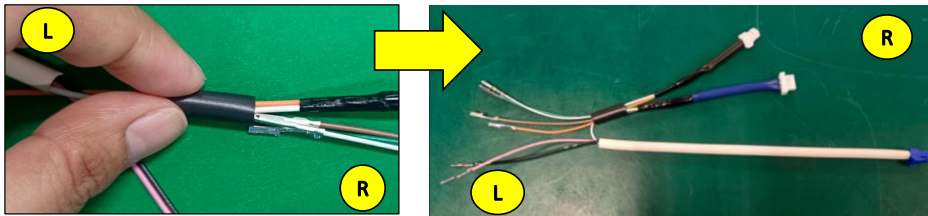
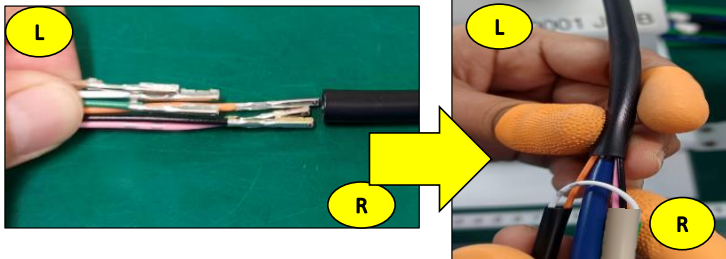
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PARTS:		1. Assy parts 2. Black VM tube (Sunprene) Ø6, L=47±3mm		JIG:	n/a
NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION		TOOLS/PPE	QUALITY POINTERS
4	Wire insertion to Black VM tube (Assy parts)	 <div>1. Hold the Black VM tube (Sunprene) (assy parts) 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.

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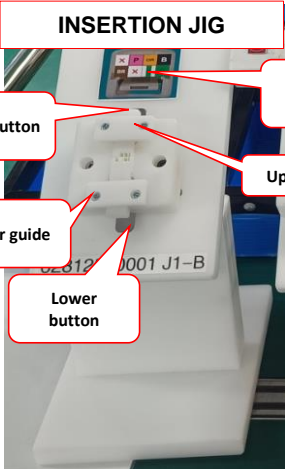
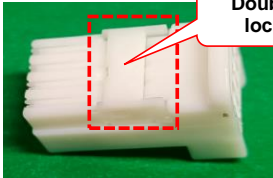
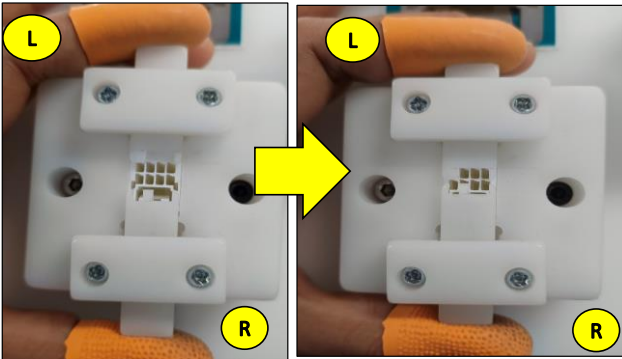
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PARTS:		1. Assy parts 2. Connector 4A1330-0000 (W)		JIG:	1. Insertion jig
NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION		TOOLS/PPE	QUALITY POINTERS
6	P2 Connector setting to insertion jig 4A1330-0000 (W)	<div><div><div>INSERTION JIG</div><div></div></div><div><div></div><div><div>CONNECTOR ORIENTATION</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><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><div>n/a</div><td><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></td></div>		<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>	

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PARTS: 1. Assy parts

JIG:

1. Insertion jig

NO.

PROCESS NAME

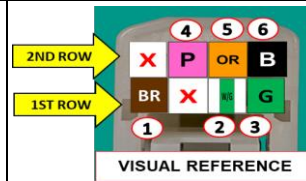
WORK PROCEDURE/ ILLUSTRATION

TOOLS/PPE

QUALITY POINTERS

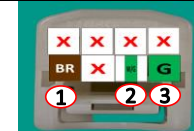
7

P2

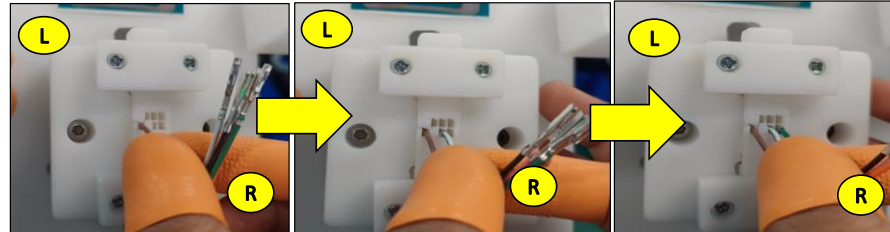
Wire insertion to
Connector
4A1330-0000 (W)

INSERTION SEQUENCE FROM LEFT TO RIGHT

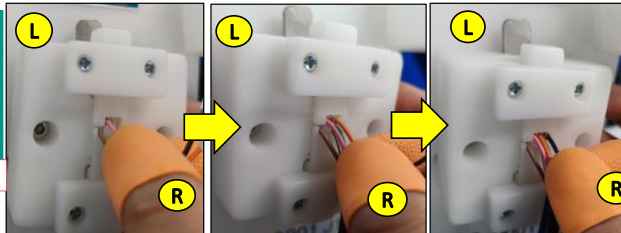
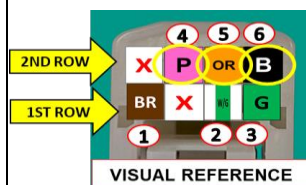
	5	6	7
X	P	OR	B
1	268	162	268
BR	X	2	3
184		W/G	G
		184	184



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.

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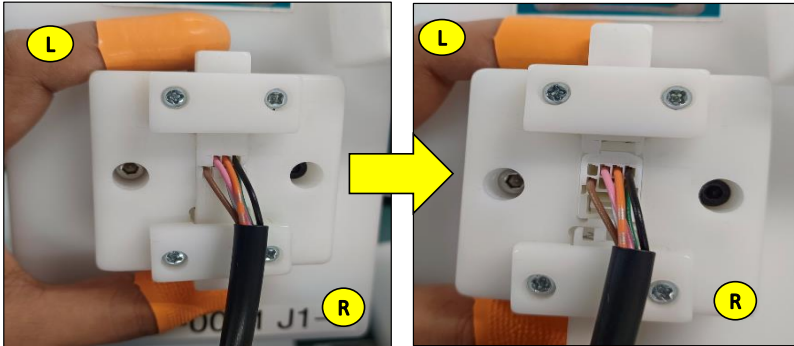
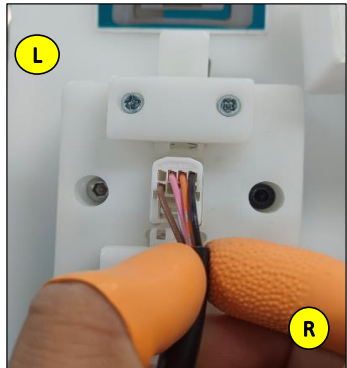
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PARTS:	1. Assy parts		JIG:	1. Insertion jig
NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION	TOOLS/PPE	QUALITY POINTERS
7	P2 Wire insertion to Connector 4A1330-0000 (W) (Continuation)	<div></div> <div>3. Press the upper and lower button (same timing) 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>

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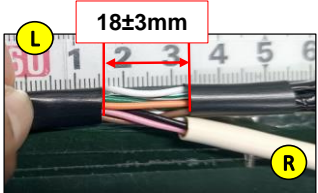

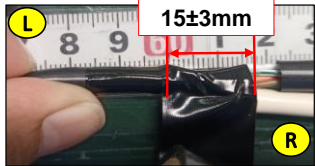
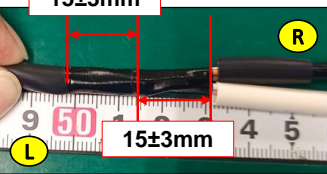


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PARTS:		1. Assy parts 2. Black tape		JIG:	n/a
NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION		TOOLS/PPE	QUALITY POINTERS
8	P2 Taping 3 Black VM tube (Sunprene) to wire near terminal)	<div><p>18±3mm</p></div> <div><p>15±3mm</p></div> <div><p>15±3mm</p></div> <div><p>15±3mm</p></div> <div><p>88 +5mm -2mm</p></div> <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><p>2. Get the black tape then start pre-taping using both hands.</p><p>3. Confirm the measurement from end of tape up to VM tube (Sunprene) 15±3mm then start taping using both hands.</p><p>4. Confirm the measurement from end of tape up to VM tube (Sunprene) 15±3mm then start taping using both hands.</p><p>5. After taping, Check the measurement and taping condition.</p></div> <div><p>MEASURING TAPE</p></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></div>			

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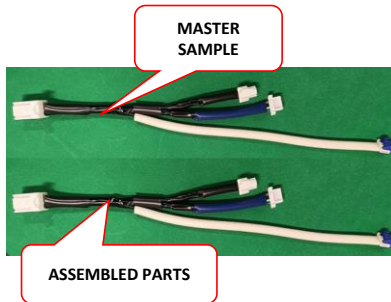

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PARTS:		1. Assembled parts 2. Master sample		JIG:	n/a
NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION		TOOLS/PPE	QUALITY POINTERS
9	P2 Visual/By two's Inspection	<div>1. Check the connector lock. Locking of connector is included in Steering Electrical 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> ACTUAL PRODUCT</div> <div>4. Check the orientation of harness.</div> <div>5. Compare to Master sample by tapping</div> <div> MASTER SAMPLE</div> <div> MASTER SAMPLE ASSEMBLED PARTS</div>		n/a	Document reference/s: 1. Refer to WI-QAD-QAC-252 Steering Electrical Test MASTER SAMPLE 

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1. Assy parts

JIG:

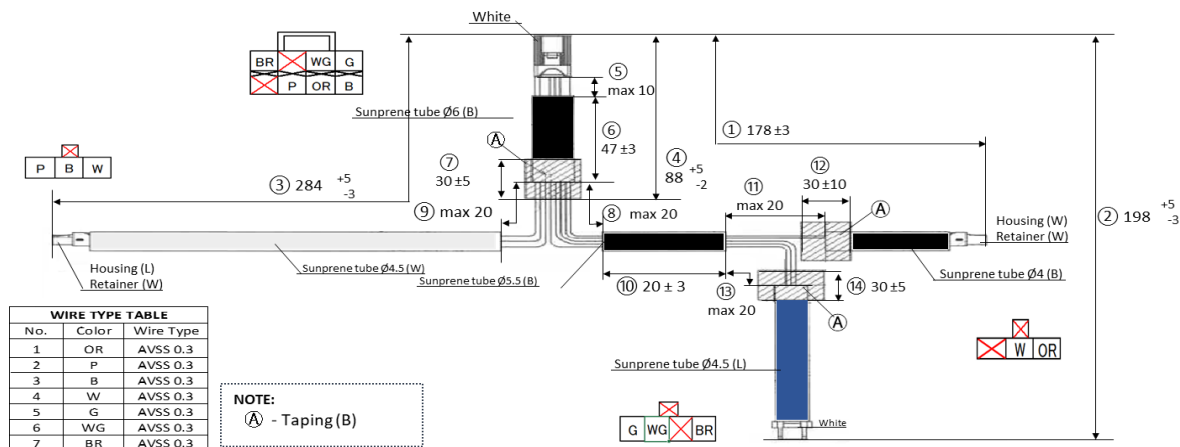
n/a

NO.**PROCESS NAME****WORK PROCEDURE/ ILLUSTRATION****TOOLS/PPE****QUALITY POINTERS**

10

P2

Measurement

**MEASURING TAPE**

1. No wrong dimension

Important Reminder/s and Note/s:

1. Please use calibrated measuring tape when getting the measurement.
2. For Hatsumono, Nakamono and Owarimono.

Document reference/s:

1. Refer to WI-PRO-ASY-056 For assembly Hatsumono, Nakamono and Owarimono Inspection.

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n/a

JIG:

n/a

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

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.

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