



## WORK INSTRUCTION

## TAPING ASSEMBLY PROCESS

Effectivity Date:

December 12, 2023

Process Name/Title:

Model code/Part number:

930B / 7N0202-7020

Customer: TRJ

Car Model: TOYOTA 4RUNNER

Validity Date:

n/a

Document No.:

WI-ENG-PDE-777

Purpose:




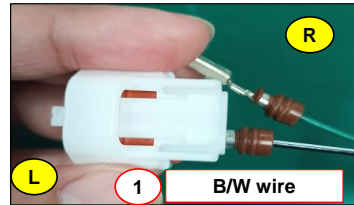
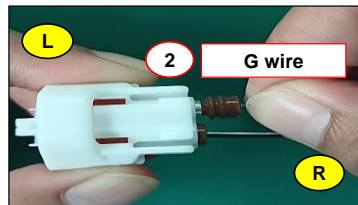
☐ PROTOTYPE☒ PRE-LAUNCH☐ MASSPRO

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NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION	TOOLS/PPE	QUALITY POINTERS		
1	Wire insertion to Black Corrugated tube (No Slit) $\phi 7$ , L=520 $\pm$ 5mm	 1. Get the <b>Black Corrugated tube (No slit) <math>\phi 7</math>, L=520<math>\pm</math>5mm</b> using right hand then insert the wire using left hand.	<b>Safety Instruction</b> Be sure to wear required personal protective equipment during operation (gloves, finger cots, etc.)	1. No wrong usage of parts 2. No deformed terminal		
2	Wire insertion to Connector 6189-0451 (W)	 <b>CONNECTOR ORIENTATION</b>  <b>WIRE FACING</b>  1. Hold the connector using left hand. Get the <b>Black/White wire</b> then insert to terminal <b>slot 1</b> using right hand.  2. Get the <b>Green wire</b> and insert to terminal <b>slot 2</b> .	<b>Housekeeping</b> 1. Maintain and always practice 5's. 2. Personal things on the workplace is prohibited. Keep it in your locker.  <b>Alert level</b> For any trouble, inform the Assembly Assistant Supervisor or Line Leader for immediate corrective action.	1. No wrong use of connector 2. No damaged connector 3. No wrong insertion 4. One by one insertion 5. No deformed terminal 6. No wrong wire facing  <b>Important reminder/Notes/:</b> <b>1. Please hold the wire near terminal during insertion.</b> <b>2. Make sure wires are properly inserted. Conduct Pull-Push-Pull-Push after insertion.</b> <b>Do not exert extra force.</b>  <b>Document reference/s:</b> <b>1. Please refer to WI-PRO-CNC-017 for Wire and Strip length tolerance.</b> <b>2. Please refer to GL-PRO-ASY-029 for Pull-Push procedure.</b>		
Revision History			Prepared by	Reviewed by	Approved by	Noted by
12/12/23	0	Initial issue.	A.Hernandez	C.Villanueva	A. Arañes	n/a
Eff. Date	Rev. No	Details of Change	Revised	Reviewed	Approved	Noted

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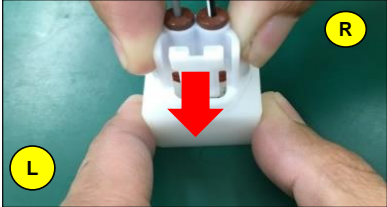
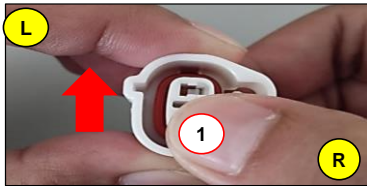





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PARTS:		1. Assy parts		JIG:	1. Locking jig
NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION		TOOLS/PPE	QUALITY POINTERS
3	n/a	<div><div>1. Put the connector into locking jig using right hand. Then press to lock 2x using both hands.</div></div> <div><div>2. Ensure that connector is in locked condition by slide touching the connector lock based on the sequence illustrated.</div></div> <div><div>BEFORE PRESSING</div><div>AFTER PRESSING</div><div><div>GOOD</div><div>NG</div><div>Check the double lock deformation</div></div></div>		<div>LOCKING JIG</div> 	<p><b>Important reminders/Notes</b></p> <p>1. Manual locking may cause damaged connector lock</p> <p>1. Use the provided jig per model 2. No unclocked/half-locked connector.</p>

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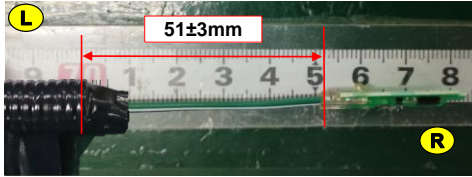
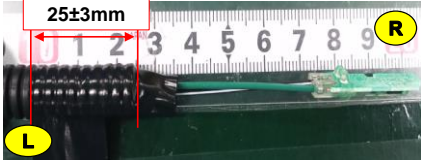
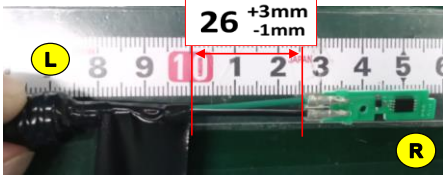
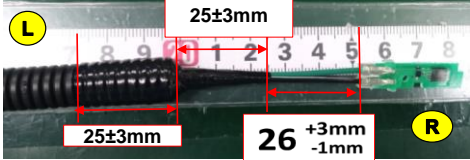

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PARTS:		1. Assy parts 2. Black tape		JIG:	n/a
NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION		TOOLS/PPE	QUALITY POINTERS
4	n/a Taping 1 Black Corrugated tube to Wire near PCB	<div><p>Start of taping</p></div> <div><p>51±3mm</p></div> <div><p>1. Hold the assy parts using left hand, get <b>Black tape</b> then conduct pre-taping using both hands.</p></div> <div><p>2. Measure from end of COT up to edge of hotmelted wires <b>51±3mm</b> then continue the taping process using both hands</p></div> <div><p>25±3mm</p></div> <div><p>3. Confirm measurement of <b>25±3mm</b> from end of tape up to end of COT then continue the taping process using both hands.</p></div> <div><p>26 +3mm -1mm</p></div> <div><p>4. Confirm measurement of <b>26+3/-1mm</b> from end of tape up to edge of PCB then continue the taping process using both hands.</p></div> <div><p>25±3mm 26 +3mm -1mm</p></div> <div><p>5. After taping, check the measurement and taping condition.</p></div>		<div><p>MEASURING TAPE</p></div>	<p><b>Important reminders/Notes</b></p> <p>1. Please use calibrated/verified measuring tape when fetting 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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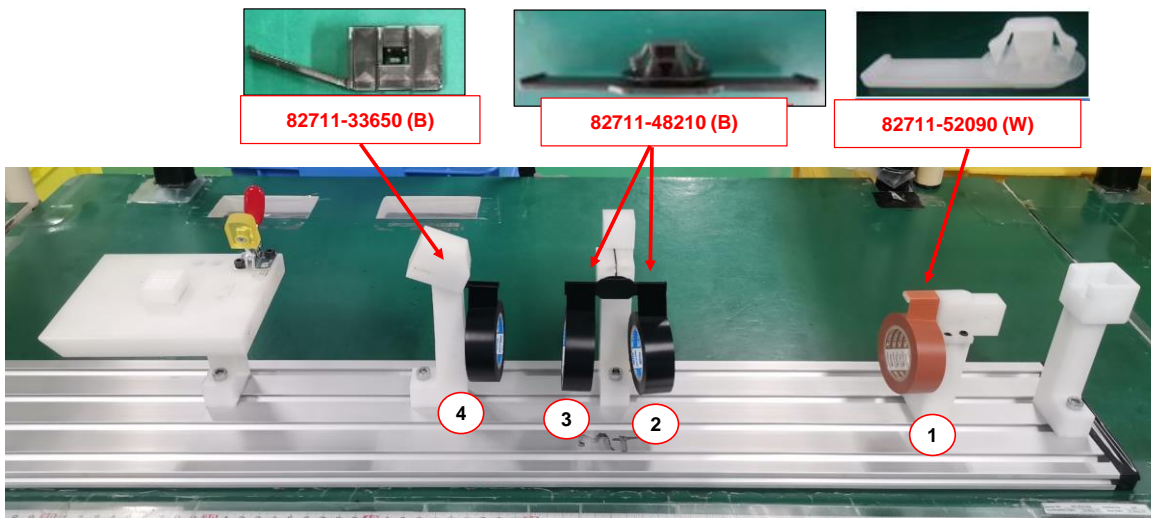

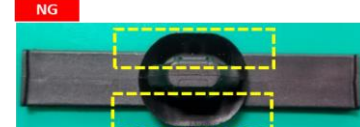
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PARTS:		1. Assy parts		JIG:	1. Temporary jig
NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION		TOOLS/PPE	QUALITY POINTERS
5	n/a	Clamp Setting	<div><div><p>82711-33650 (B)</p><p>82711-48210 (B)</p><p>82711-52090 (W)</p></div></div> <div><p>1. Get <b>1pc</b> of clamp <b>82711-33650 (B)</b> using right hand then set to Clamp location no. <b>4</b> using both hands.</p><p>2. Get <b>1pc</b> of clamp <b>82711-48210 (B)</b> using right hand then set to Clamp location no. <b>2 and 3</b> using both hands.</p><p>3. Get <b>1pc</b> of clamp <b>82711- 52090 (W)</b> using right hand then set to Clamp location no. <b>1</b> using both hands.</p><p>4. Initially attach <b>BROWN TAPE</b> to <b>location 1</b> using both hands.</p><p>5. Initially attach <b>BLACK TAPE</b> to <b>location 3,2, and 4</b> using both hands.</p></div>		<p><b>Important reminders/Notes</b></p> <p><b>1. Please check the clamp first before start of clamp assembly to avoid wrong use of clamp.</b></p> <p>1. No wrong use of parts 2. No wrong use of tape 3. No damaged clamp 4. No wrong clamp position</p> <p><b>CLAMP ILLUSTRATION</b></p> <p><b>GOOD</b></p>  <p>82711-48210 (B)</p> <p><b>NG</b></p>  <p>82711-3F290 (B)</p>

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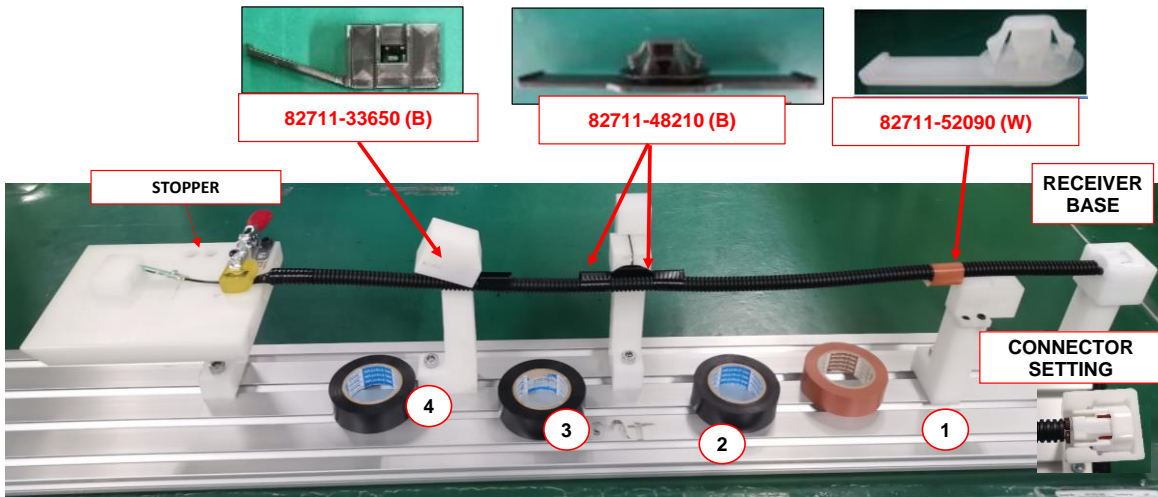
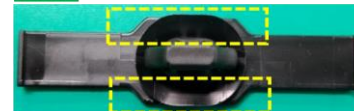
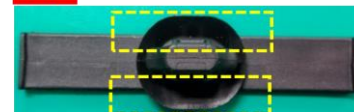
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PARTS:		1. Assy parts		JIG:	1. Temporary jig
NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION		TOOLS/PPE	QUALITY POINTERS
6	n/a	Clamp Assembly	<div></div> <div><p>1. Put the assy into jig. <b>(See above picture for the correct setting)</b>. First, set the connector <b>6189-0451 (W)</b> to <b>Receiver base 1</b>. Continue to set the harness in jig. Last, set <b>B/W-G wires</b> together within stopper then press by toggle clamp.</p><p>2. Hold the tape on clamp location <b>1</b>, make <b>3 windings</b> of tape then cut the tape using both hands. Continue to clamp location <b>2</b>.</p><p>3. Hold the tape on clamp location <b>2 and 3</b>, make <b>3 windings</b> of tape then cut the tape using both hands. Continue to clamp location <b>4</b>.</p><p>4. Hold the tape on clamp location <b>4</b>, make <b>3 windings</b> of tape then cut the tape using both hands.</p><p>5. Conduct <b>POINT CHECKING</b> before removing the harness from jig.</p></div>		<p><b>Important reminders/Notes</b></p> <p><b>1. Please check the clamp first before start of clamp assembly to avoid wrong use of clamp.</b></p> <p>1. No wrong use of parts 2. No wrong use of tape 3. No damaged clamp 4. No wrong clamp position</p> <p><b>CLAMP ILLUSTRATION</b></p> <p><b>GOOD</b></p>  <p><b>82711-48210 (B)</b></p> <p><b>NG</b></p>  <p><b>82711-3F290 (B)</b></p>

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<b>PARTS:</b>		1. Assy parts 2. Engineering sample	JIG:	n/a
<b>NO.</b>	<b>PROCESS NAME</b>	<b>WORK PROCEDURE/ ILLUSTRATION</b>	<b>TOOLS/PPE</b>	<b>QUALITY POINTERS</b>
7	n/a	<p>Visual/ By two's inspection</p> <p>ASSEMBLED PARTS</p> <p>ENGINEERING SAMPLE</p> <p>1. Conduct alignment of harness (<b>Master sample vs. Assembled parts</b>) using both hands.</p> <p>2. Check the <b>connector lock condition, insertion, and terminal.</b></p> <p>3. Check the <b>presence of all clamp attachment and taping condition.</b> Conduct <b>slightly bending of parts with wing-type clamp.</b></p> <p>4. Check the <b>taping condition.</b></p> <p>5. Check the <b>hotmelted wires (B/W-G) appearance.</b> Must be <b>no deformed terminal.</b></p> <p><b>ACTUAL PRODUCTS</b></p>		<p>1. No skip checking during inspection.</p> <p><b>ENGINEERING SAMPLE</b></p> <p>MASTER SAMPLE</p> <p><b>CLIP CLAMP ILLUSTRATION</b></p> <p><b>GOOD</b></p> <p>82711-1E360 (W)</p> <p><b>NG</b></p> <p>82711-12B10 (W)</p> <p><b>CLAMP ILLUSTRATION</b></p> <p><b>GOOD</b></p> <p>82711-48210 (B)</p> <p><b>NG</b></p> <p>82711-3F290 (B)</p>

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<b>PARTS:</b>	1. Assy parts			JIG:	n/a
<b>NO.</b>	<b>PROCESS NAME</b>	<b>WORK PROCEDURE/ ILLUSTRATION</b>		<b>TOOLS/PPE</b>	<b>QUALITY POINTERS</b>
8	n/a	Measurement			1. No wrong dimension  <i>Important reminders/Note/s:</i>  <b>1. Please use calibrated/verified measuring tape when getting the measurement.</b> <b>2. For Hatsumono and Owarimono.</b>  <i>Document reference/s:</i>  <b>1. Refer to WI-PRO-ASY-056 for Sub assembly Hatsumono, Nakamono, and Owarimono Inspection.</b>

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PARTS:

n/a

JIG:

n/a

### QUALITY CHECKPOINTS

n/a

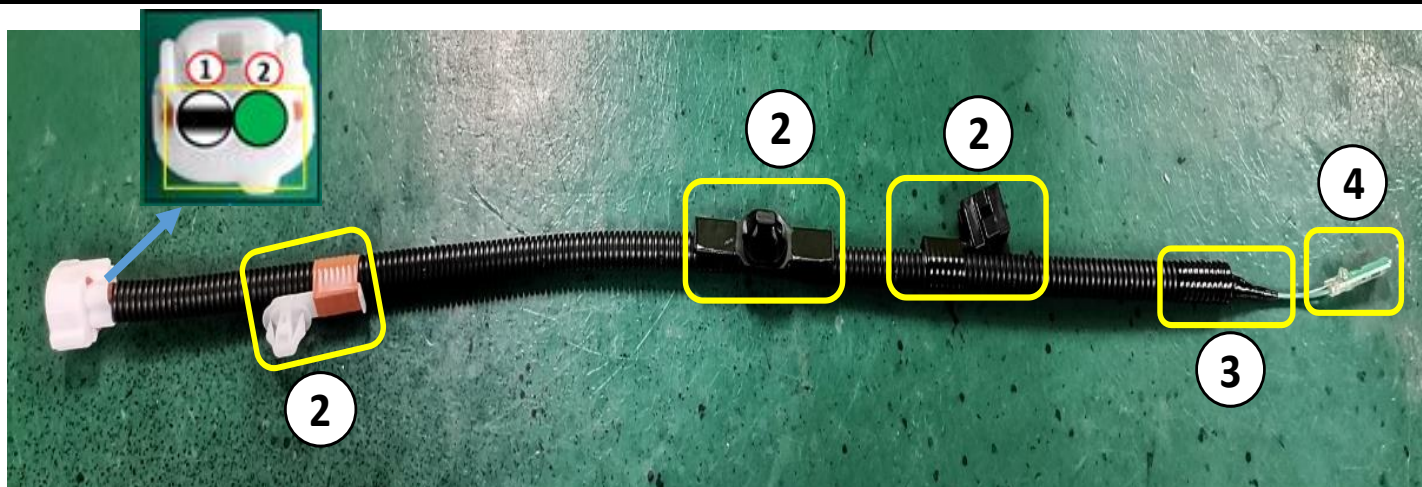
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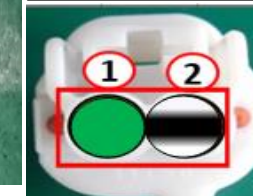
GOOD



NO GOOD



GOOD



NO GOOD

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

2 No **Missing Clamp**  
No **Wrong color of tape**

3 No **Missing Tape**

4 No **DEFORMED**  
**TERMINAL/PCB**

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