



## WORK INSTRUCTION

Process Name/Title:

## TAPING ASSEMBLY PROCESS

Model code/Part number:

373D / 7N0173-7020

Customer:

TRJ

Car Model:

TOYOTA-RAV4

Purpose:

☐ PROTOTYPE☐ PRE-LAUNCH☒ MASSPRO

Effectivity Date:

September 25, 2024

Validity Date:

n/a

Document No.:

W-ENG-PDE-606A

Revision No.:

3

Page No.:

1 of 9

## PARTS:

1. Assy parts; Connector 6098-3871 (L); Black SV tube (Vinyl)  $\phi 5$  L=24 $\pm$ 2mm; Black Corrugated tube  $\phi 5$  L=391 $\pm$ 3mm (no slit); Black Tape 20mm; AVSSf 0.3 wires B L=220 $\pm$ 2mm

JIG:

1. Locking jig  
2. Insertion jig

NO.

PROCESS NAME

WORK PROCEDURE/ ILLUSTRATION

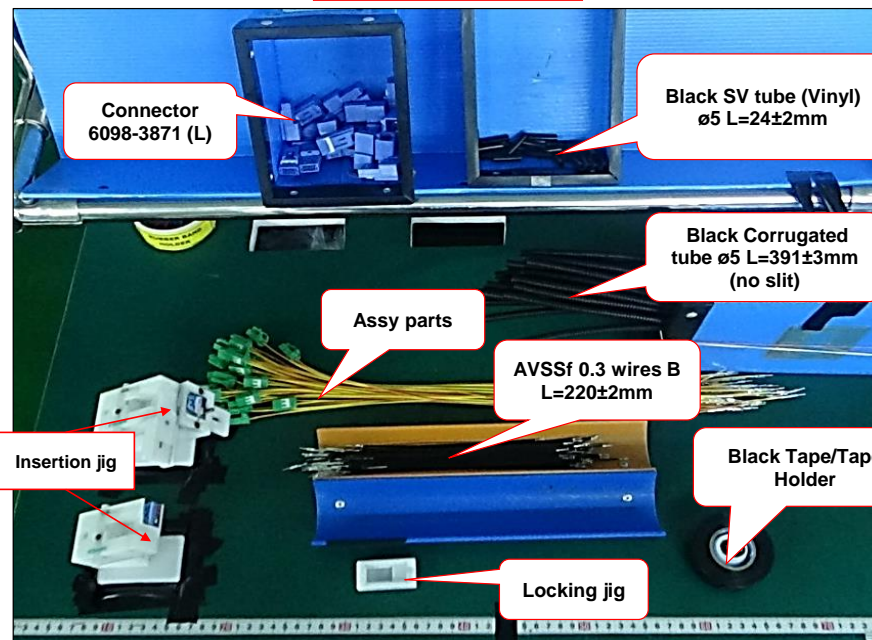
TOOLS/PPE

QUALITY POINTERS

1

P1

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

**Document reference/s:**

1. Refer to WI-PRO-CNC-017 for Wire and Strip Length Tolerance
2. Refer to WI-ENG-PDE-630 for 7N0173-7020 Offline Assembly Process

## Revision History

Eff. Date	Rev. No	Details of Change	Revised	Reviewed	Approved	Noted	Prepared by	Reviewed by	Approved by	Noted by
09/25/24	3	Change table lay-out illustration. Inclusion of Wire insertion to black corrugated tube process. Change process sequence from no. 2 to no. 4. Transfer Spot taping process to P2. Improvement of Visual inspection/Quality pointers.	A. Hernandez	C. Villanueva	A. Arañes	n/a				
05/20/23	2	Work instruction improvement from Genba check audit. Inclusion of Wire Insertion to Black SV tube (Vinyl) $\phi 5$ L=24 $\pm$ 2mm process from Offline process to prevent missing SV tube (Vinyl).	D.Castillo	J. Loterte	C. Villanueva	A. Arañes				
01/31/23	1	Change from Pre-launch to Masspro. Inclusion of Table lay-out (Page 1), Insertion jig (Page 2-5) and Quality pointers (Page 9).	D.Castillo	J. Loterte	C. Villanueva	A. Arañes				
12/16/22	0	Initial issue.	D.Castillo	J. Loterte	C. Villanueva	A. Arañes	A. Hernandez	C. Villanueva	A. Arañes	n/a
							Est. Date:	December 16, 2022		

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Car Model: TOYOTA-RAV4

Purpose:

☐ PROTOTYPE

☐ PRE-LAUNCH

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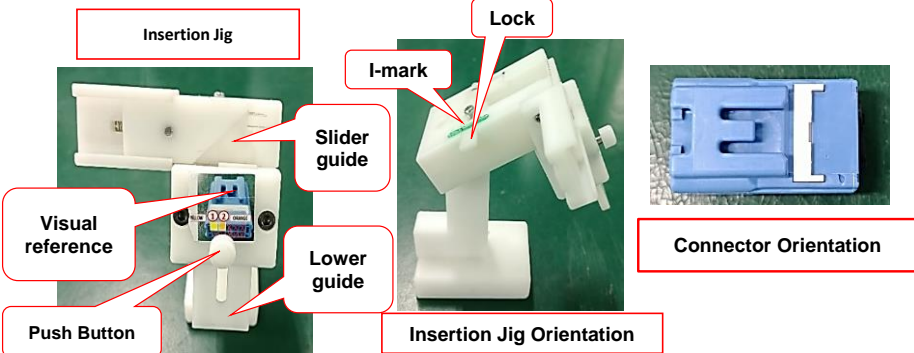
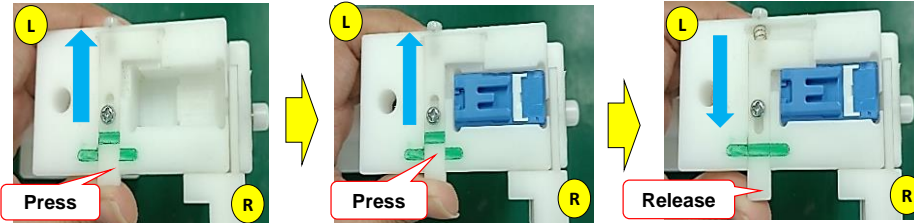
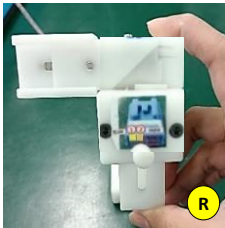
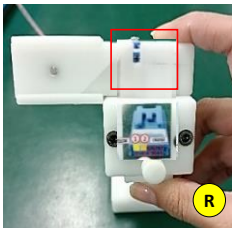
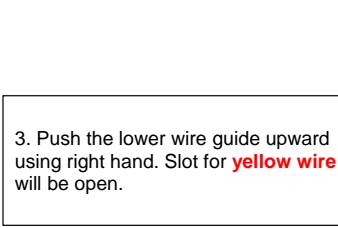
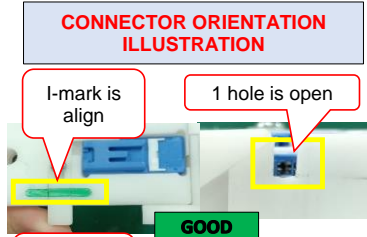
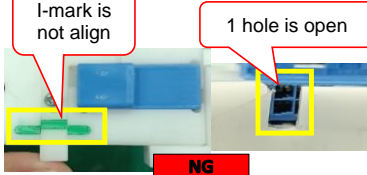
W-ENG-PDE-606A

Revision No.:

3

Page No.:

2 of 9

PARTS:	1. Connector 6098-3871 (L)		JIG:	1. Insertion jig
NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION	TOOLS/PPE	QUALITY POINTERS
2	P1  Connector setting to insertion jig 6098-3871 (L)	<div><div></div><div></div><div><p>1. Press the insertion jig lock using left hand.</p></div><div><p>2. Get the connector 6098-3871 (L) using right hand and insert to insertion jig. Release the lock after insertion.</p></div><div><p>3. Push the lower wire guide upward using right hand. Slot for yellow wire will be open.</p></div></div> <div>n/a</div> <div><div></div><div></div></div>		

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**373D / 7N0173-7020**Customer: **TRJ**

Car Model:

**TOYOTA-RAV4**

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Purpose:

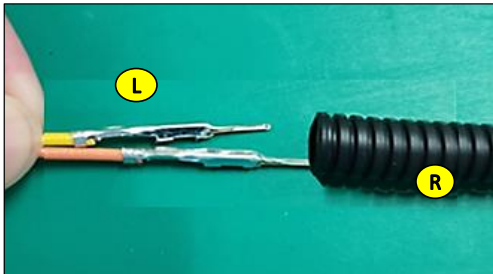
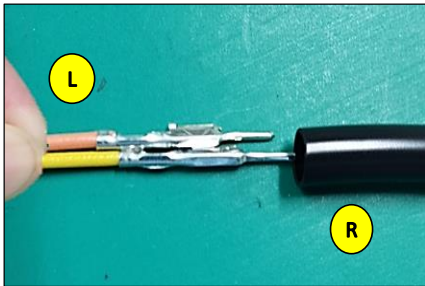
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Revision No.:

**3**

Page No.:

**3 of 9**

<b>PARTS:</b>		1. Assy parts	3. Black SV tube (Vinyl) ø5 L=24±2mm	JIG:	n/a
		2. Black Corrugated tube ø5 L=391±3mm (no slit)			
<b>NO.</b>	<b>PROCESS NAME</b>	<b>WORK PROCEDURE/ ILLUSTRATION</b>		<b>TOOLS/PPE</b>	<b>QUALITY POINTERS</b>
3	Wire Insertion to Black Corrugated tube ø5 L=391±3mm (no slit)	<div><div>3</div><div>1. Get the Black Corrugated tube <b>ø5 L=391±3mm (no slit)</b> using right hand then insert the <b>Y-OR wires</b>.</div></div>		n/a	1. No wrong use of parts
4	Wire Insertion to Black SV tube (Vinyl) ø5 L=24±2mm	<div><div>3</div><div>1. Get the Black SV tube (Vinyl) <b>ø5 L=24±2mm</b> using right hand theb insert the <b>Y-OR wires</b>.</div></div>		n/a	1. No wrong use of parts 2. No Deformed terminal

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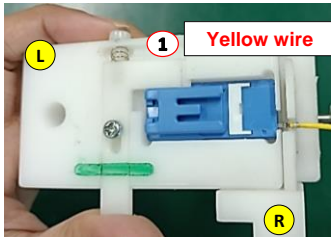
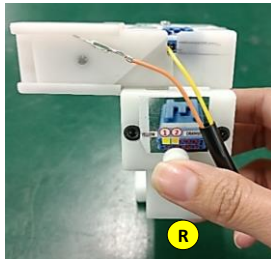
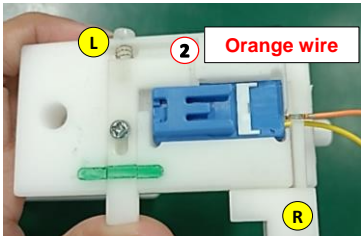
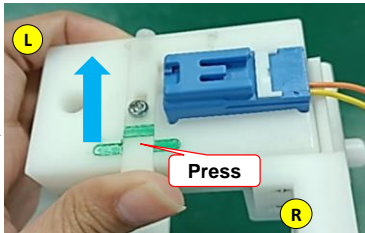
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Revision No.:

3

Page No.:

4 of 9

PARTS:		1. Assy parts		JIG:	1. Insertion jig
NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION		TOOLS/PPE	QUALITY POINTERS
5	P1	<div><p>Wire Facing</p></div> <div><p>1. Hold the insertion jig using left hand. Get the assy part and hold the <b>Yellow wire</b> then insert to connector using right hand.</p></div> <div><p>2. Press the button using right thumb. slot for <b>Orange wire</b> will be open.</p></div> <div><p>3. Hold the <b>Orange wire</b> and insert to connector using right hand.</p></div> <div><p>4. After insertion, push the lock using left thumb and then hold the wires and gently pull out the connector from jig using right hand.</p></div>		n/a	<p>1. No loose insertion 2. No wrong insertion 3. One by one insertion 4. No deform terminal 5. No wrong wire facing.</p> <p><b>Important reminders/Note/s:</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 References:</b> <b>1. Refer to WI-PRO-CNC-017 for Wire and Strip Length Tolerance</b> <b>2. Refer to GL-PRO-ASY-028 for Pull-Push procedure.</b></p>

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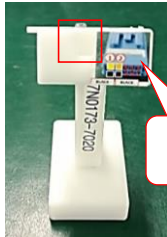

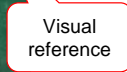




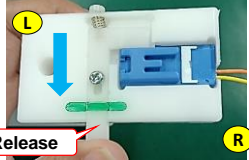
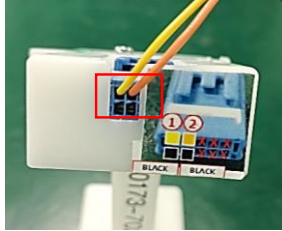




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Revision No.:

3

Page No.:

5 of 9

PARTS:		1. Assy parts		JIG:	1. Insertion jig
NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION		TOOLS/PPE	QUALITY POINTERS
6	P1	<div><div><div><p>Insertion Jig</p></div><div><p>I-mark</p></div><div><p>Visual reference</p></div><div><p>Connector Orientation</p></div><div><p>Insertion Jig Orientation</p></div><div><div><p>Press</p></div><div><p>Press</p></div><div><p>Release</p></div></div><div><p>1. Press the insertion jig lock using left hand.</p><p>2. Get the connector <b>6098-3871 (L)</b> using right hand and insert to insertion jig. Release the lock after insertion.</p><div><p>3. Slot for <b>Black-Black wire</b> are open.</p></div></div></div></div>		n/a	<div><div><p>CONNECTOR ORIENTATION ILLUSTRATION</p><div><p>I-mark is align</p></div><div><p>1 hole is open</p></div><p>GOOD</p><div><p>I-mark is not align</p></div><div><p>2 holes are open</p></div><p>NG</p></div><p>1. Use the provided jig per model 2. No wrong orientation of connector</p></div>

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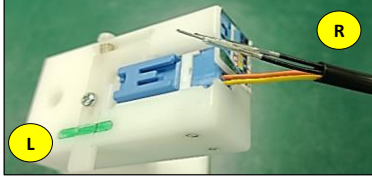

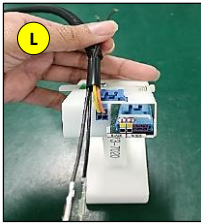

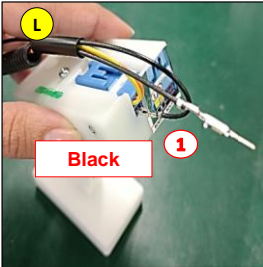
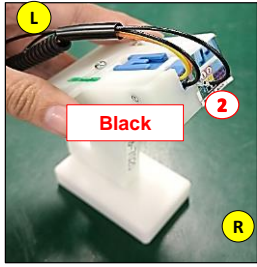
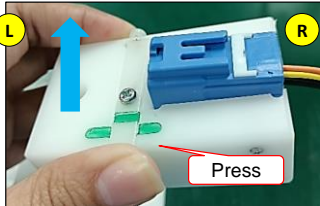
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Revision No.:

3

Page No.:

6 of 9

PARTS:		1. Assy parts 2. AVSSf 0.3 wires B L=220±2mm [2pcs]		JIG:	1. Insertion jig
NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION		TOOLS/PPE	QUALITY POINTERS
7		<div><div></div><div></div><div>1. Get the <b>Black wire [2pcs]</b> and insert to <b>Black SV tube (Vinyl) ø5 L=24±2mm</b> using right hand.</div></div>		n/a	1. No wrong use of parts
8	P1	<div><div></div><div></div><div></div><div>1. Lift up the wires to see the slot for <b>Black-Black wire</b>.</div><div></div><div></div><div></div><div>2. hold the <b>1st Black wire</b> then insert to terminal slot <b>1</b> of connector using right hand.</div><div>3. Hold the <b>2nd Black wire</b> then insert to terminal slot <b>2</b> of connector using right hand.</div><div>4. After insertion, push the lock using left thumb and then hold the wires and gently pull out the connector from jig using right hand.</div></div>		n/a	<div>1. No loose insertion 2. No wrong insertion 3. One by one insertion 4. No deform terminal 5. No wrong wire facing.</div> <div><b>Important reminders/Note/s:</b> <b>1. Please hold the wire near terminal during insertion.</b> <b>2. Make sure wires are properly inserted. Conduct <u>Pull-Push-Pull-Push</u> after insertion. Do not exert extra force.</b> <b>Document References:</b> <b>1. Refer to WI-PRO-CNC-017 for Wire and Strip Length Tolerance</b> <b>2. Refer to GL-PRO-ASY-028 for <u>Pull-Push</u> procedure.</b></div>

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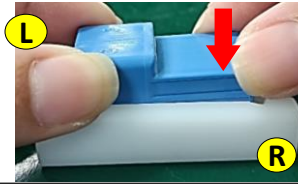



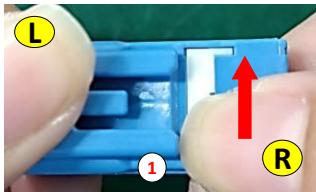

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Revision No.:

3

Page No.:

7 of 9

PARTS:		1. Assy parts		JIG:	1. Locking jig
NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION		TOOLS/PPE	QUALITY POINTERS
9	P1 Connector lock	<div><p>1. Load the connector into the jig holding both side of the connector, tip first.</p></div> <div><p>2. Press the lower part of connector to fully insert into the locking jig.</p></div> <div><p>Right thumb-Lower Left thumb-middle</p><p>3. Press the lower parts of connector using right hand while left hand holding the middle.</p></div> <div><p>Right thumb-upper Left thumb-middle</p><p>4. Press the upper part of connector using right hand while left hand holding the middle.</p></div> <div><p>Right thumb-middle Left thumb-middle</p><p>5. Lift then press the connector in the middle using left and right hand.</p></div> <div><p>6. Ensure that connector is in locked condition by touching the connector lock based on the sequence illustrated.</p></div>		<div><b>LOCKING JIG</b></div> 	<p>1. No Unlock and half-locked 2. Use provided jig tools per model to avoid damaged lock.</p> <p><b>Important reminders/Note/s:</b> <b>1. Manual locking may cause damaged connector</b></p>

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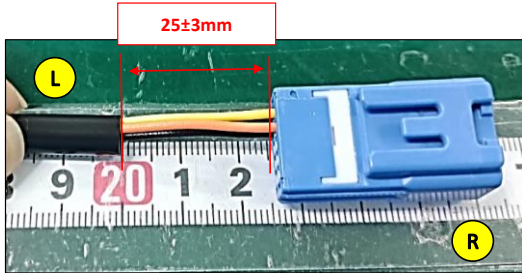
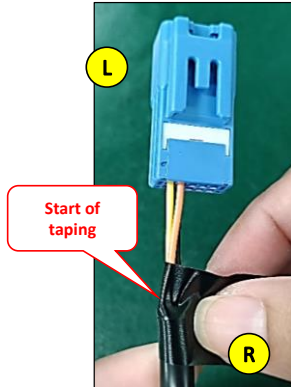
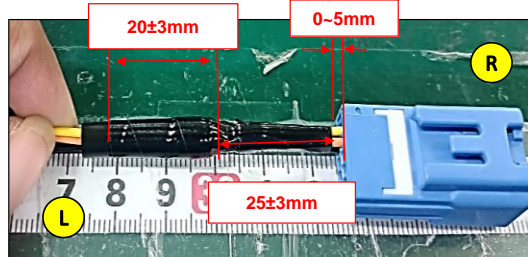

☐ PROTOTYPE☐ PRE-LAUNCH☒ MASSPRO

Revision No.:

3

Page No.:

8 of 9

PARTS:		1. Assy parts 2. Black tape 20mm		JIG:	n/a
NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION		TOOLS/PPE	QUALITY POINTERS
10	P1	<p>Taping 1 Black SV tube(vinyl) to Wire near connector</p>  <p>1. Hold the Black SV tube(vinyl) using left hand and measure from end of vinyl tube up to connector <b>25±3mm</b>. (Note: Without folding in Vinyl tube)</p>  <p>2. Get the <b>Black tape</b> using right hand then start taping process using both hands.</p>  <p>3. After taping, check the measurement and taping condition.</p>		<p><b>MEASURING TAPE</b></p> 	<p><b>Important reminders/Note/s:</b> <b>1. Please use calibrated/verified measuring tape when getting the measurement.</b></p> <ol style="list-style-type: none"><li>1.No flip-out tape</li><li>2.No peel-off tape</li><li>3. No loose tape</li><li>4. No wrong dimension</li><li>5. No wrong use of tape</li><li>6. No missing tape</li></ol>

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9 of 9

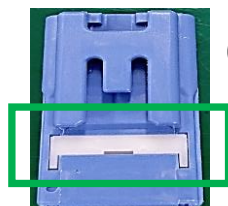
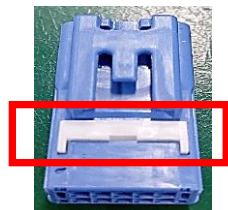
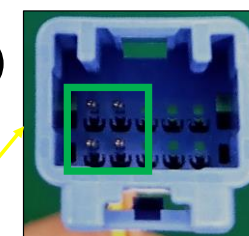
**PARTS:**

1. Assy parts

JIG:

n/a

3

**VISUAL INSPECTION/QUALITY CHECKPOINTS****P1****7N0173-7020****GOOD****NG****GOOD****NG****1 No Unlock/Half-Lock Connector****2 No Missing Tape (Black tape)****3 No Wrong Insertion****4 No Deformed Terminal****5 No Wrong Dimension**

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