



WORK INSTRUCTION

TAPING ASSEMBLY PROCESS

Effectivity Date:

November 15, 2023

Process Name/Title:

Model code/Part number:

310D / 7N0193-7020

Customer: TRJ

Car Model: TOYOTA RAV4

Validity Date:

n/a

Document No.:

WI-ENG-PDE-756

Purpose:

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Revision No.:

0

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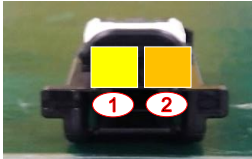

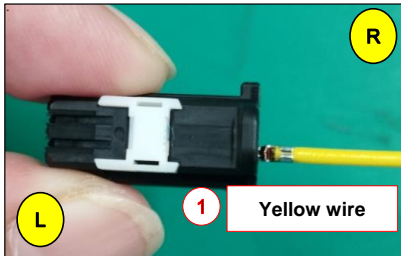
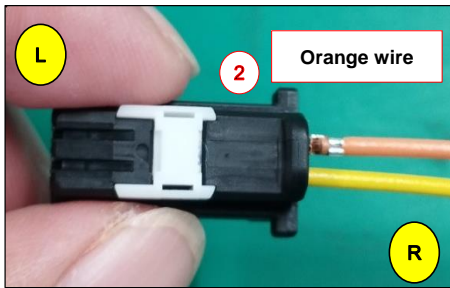
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PARTS:

- Connector 6098-6663(B)
- AVSSf 0.3 wires Y-OR L=480±2mm

JIG:

n/a

NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION	TOOLS/PPE	QUALITY POINTERS
1	n/a Wire Insertion to Connector 6098-6663 (B)	<div><p>CONNECTOR ORIENTATION</p></div> <div><p>VISUAL REFERENCE</p></div> <div><p>Wire facing</p></div> <div><p>Yellow wire</p></div> <div><p>Orange wire</p></div> <div><p>1. Hold the connector 6098-6663 (B) then get the Yellow wire and insert to terminal slot 1 using right hand. Conduct 2x push-pull after wire insertion.</p></div> <div><p>2. Get the Orange wire and insert to terminal slot 2 using right hand. Conduct 2x push-pull after wire insertion.</p></div>	<div><p>Safety Instruction Be sure to wear required personal protective equipment during operation (gloves, finger cots, etc.)</p></div> <div><p>Housekeeping 1. Maintain and always practice 5's. 2. Personal things on the workplace is prohibited. Keep it in your locker.</p></div> <div><p>Alert level For any trouble, inform the Assembly Assistant Supervisor or Line Leader for immediate corrective action.</p></div>	<p>1. No loose insertion 2. No wrong insertion 3. One by one insertion 4. No deformed terminal 5. No wrong wire facing</p> <p>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.</p> <p>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</p>

Revision History

Eff. Date	Rev. No	Details of Change	Revised	Reviewed	Approved	Noted	Prepared by	Reviewed by	Approved by	Noted by
11/15/23	0	Initial issue	A.Hernandez	C.Villanueva	A. Arañes	n/a	A.Hernandez	C.Villanueva	A.Arañes	n/a
Est. Date:							November 15, 2023			

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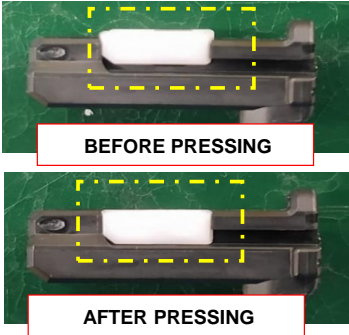
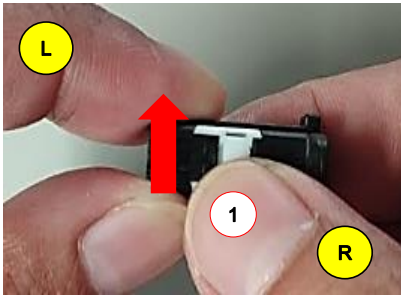
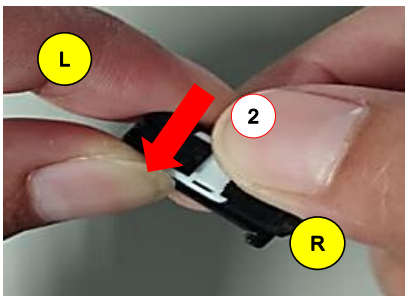

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PARTS:	1. Assy parts			JIG:	1. Locking jig
NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION		TOOLS/PPE	QUALITY POINTERS
2	n/a Connector Lock	<div></div> <div></div> <div></div> <div></div> <div>1. Put the connector into locking jig using right hand then press to lock 2x using both hands.</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>LOCKING JIG</div>	<div>1. Use the provided jig per connector 2. No unlock/half-locked connector</div> <div>Important reminders/Note/s: 1. MANUAL LOCKING MAY CAUSE DAMAGED CONNECTOR</div>

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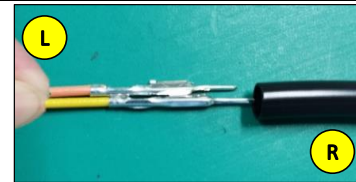
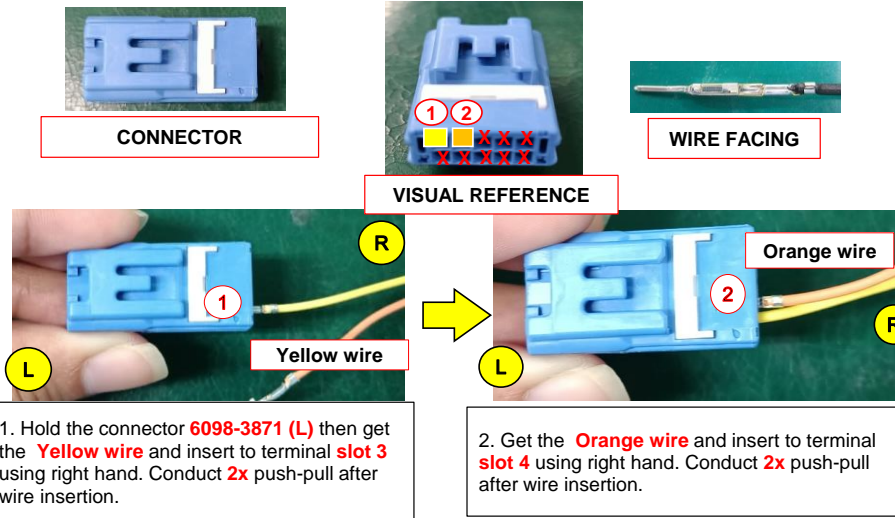
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PARTS:		1. Assy parts 2. Black Corrugated tube $\phi 5$ L=399 \pm 3mm (no slit) 3. Black SV tube (vinyl) $\phi 5$ L=27 \pm 3mm		3. Connector 6098-3871 (L)		JIG:	n/a
NO.	PROCESS NAME		WORK PROCEDURE/ ILLUSTRATION			TOOLS/PPE	QUALITY POINTERS
3	Wire Insertion to Black Corrugated tube $\phi 5$ L=399 \pm 3mm (no slit)		<div></div> <div>1. Get the Black Corrugated tube $\phi 5$ L=399\pm3mm (no slit) using right hand theb insert the Y-OR wires.</div>			n/a	1. No wrong use of parts
4	Wire Insertion to Black SV tube (vinyl) $\phi 5$ L=27 \pm 3mm		<div></div> <div>1. Get the Black Vinyl tube $\phi 5$ L=27\pm3mm using right hand theb insert the Y-OR wires.</div>			n/a	1. No wrong use of parts
5	n/a Wire insertion to connector 6098-3871 (L)		<div></div> <div>1. Hold the connector 6098-3871 (L) then get the Yellow wire and insert to terminal slot 3 using right hand. Conduct 2x push-pull after wire insertion.</div> <div>2. Get the Orange wire and insert to terminal slot 4 using right hand. Conduct 2x push-pull after wire insertion.</div>			n/a	<div>1. No loose insertion 2. No wrong insertion 3. One by one insertion 4. No deformed terminal 5. No wrong wire facing</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.</div> <div>Document references: 1. Refer to GL-PRO-ASY-029 for Pull-Push procedure.</div>

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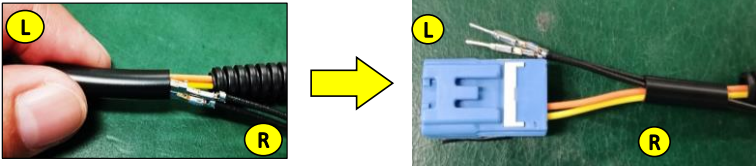
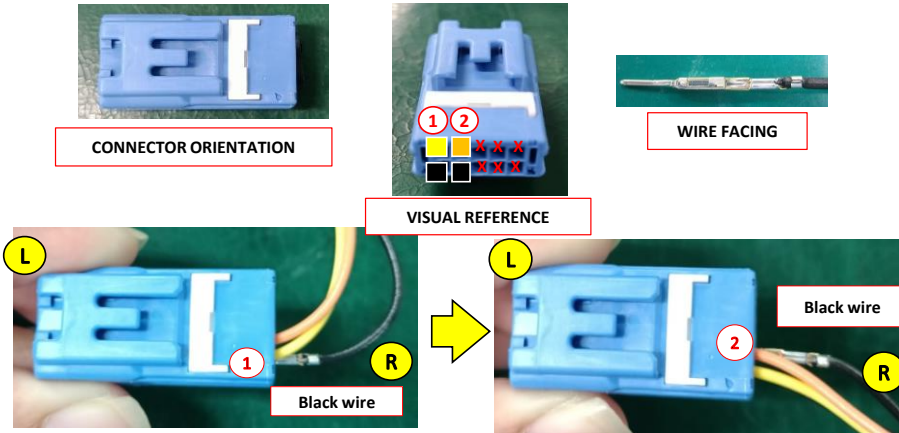
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PARTS:		1. Assy parts 2. AVSSf 0.3 wires B L=223±2mm [2pcs]		3. Connector 6098-3871 (L)	JIG:	n/a
NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION			TOOLS/PPE	QUALITY POINTERS
6	n/a	<div></div> <div>1. Get the B-B wires and insert to Black SV tube (vinyl) ø5 L=27±3mm (Assy parts) using right hand.</div>			n/a	1. No wrong use of parts
	Wire insertion to connector 6098-3871 (L) (Assy parts)	<div></div> <div>1. Hold the connector 6098-3871 (L) then get the 1st Black wire and insert to terminal slot 1 using right hand. Conduct 2x push-pull after</div> <div>2. Get the 2nd Black wire and insert to terminal slot 2 using right hand. Conduct 2x push-pull after wire insertion.</div>			n/a	<div>1. No loose insertion 2. No wrong insertion 3. One by one insertion 4. No deformed terminal 5. No wrong wire facing</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.</div> <div>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.</div>

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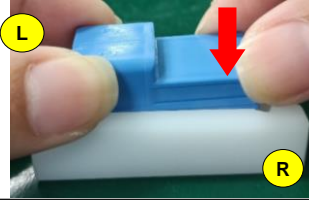
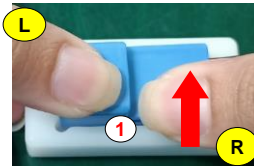


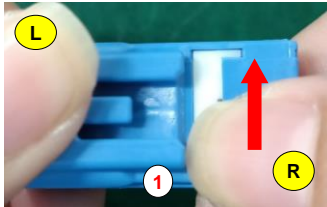
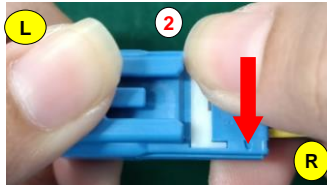

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PARTS:	1. Assy parts		JIG:	1. Locking jig
NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION	TOOLS/PPE	QUALITY POINTERS
7	n/a	<div><div><p>1. Load the connector into the jig holding both side of the connector, tip first.</p></div><div><p>2. Press the lower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

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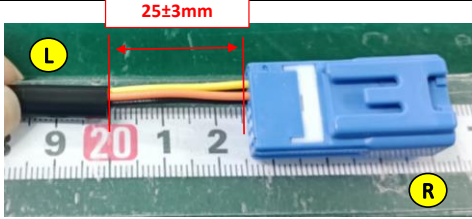
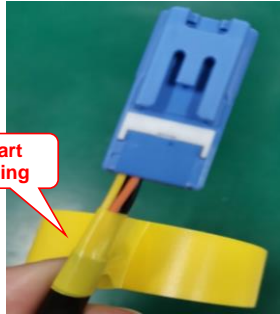
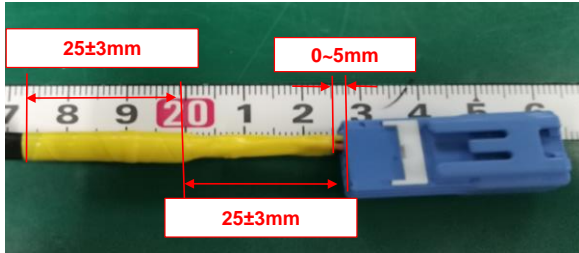
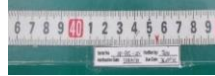
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PARTS:		1. Assy parts 2. Yellow tape		JIG:	n/a
NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION		TOOLS/PPE	QUALITY POINTERS
8	n/a Taping 1 Black SV tube (vinyl) to Wire near connector	<div></div> <div><p>1. Hold the Black vinyl tube using left hand and measure from end of vinyl tube up to connector 25±3mm. (Note: Without folding in Vinyl tube)</p></div> <div></div> <div><p>2. Get the Yellow tape using right hand then start taping process using both hands.</p></div> <div></div> <div><p>3. After taping, check the measurement and taping condition.</p></div>		<div><p>MEASURING TAPE</p></div>	<p>1. No flip-out tape 2.No peel-off tape 3. No loose tape 4. No wrong dimension 5. No wrong use of tape 6. No missing tape</p> <p>Important reminders/Note/s: 1. Use <u>YELLOW TAPE</u> only 2. Please use calibrated/verified measuring tape when getting the measurement.</p>

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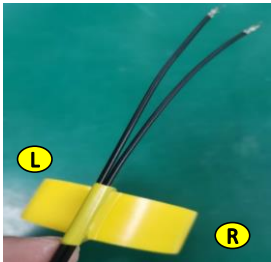
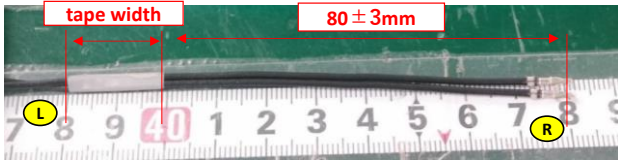

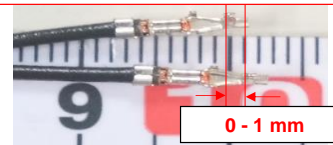

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PARTS:		1. Assy parts 2. Yellow tape 3. Black SV tube (vinyl) $\varnothing 5$ L=119 \pm 3mm		JIG:	n/a
NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION		TOOLS/PPE	QUALITY POINTERS
9	Spot taping 1 n/a	<div><p>1. Hold the wires using left hand and measure from wire up to terminal pointed tip 100\pm3mm.</p></div> <div><p>2. Get the Yellow tape and start taping on the Black wires. Conduct 2x windings of tape before cutting using both hands.</p></div> <div><p>3. After taping, check the measurement and taping condition.</p></div>		<div>MEASURING TAPE</div> 	<div>Wire alignment tolerance</div>  <p>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</p> <p>Important reminders/Note/s: 1. Use Yellow TAPE only 2. Please use calibrated/verified measuring tape when getting the measurement.</p>
10	Wire insertion to Black SV tube (vinyl) $\varnothing 5$ L=119 \pm 3mm	<div><p>1. Get the SV tube (vinyl) $\varnothing 5$ L=119\pm3mm using right hand then insert the B-B wire using left hand.</p></div>		n/a	1. No wrong use of parts

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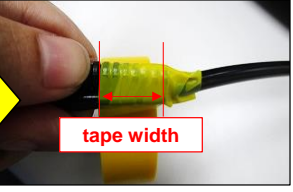
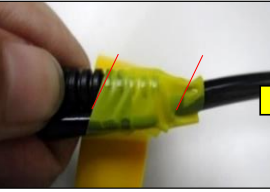
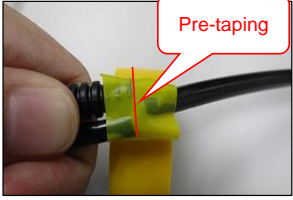
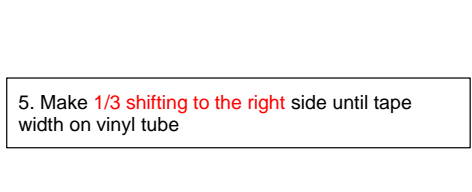


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PARTS:		1. Assy parts 2. Blue tape		JIG:	n/a
NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION		TOOLS/PPE	QUALITY POINTERS
11	n/a	Y-Taping	<div><p>1. Fix the COT and vinyl tube. Make sure no gap in between.</p><p>2. Measurement from end of Vinyl tube up to terminal tip. Must be 40±3mm.</p></div> <div><p>3. Get the tape and fix the COT to vinyl tube. Make 1 wind pre-taping before shifting.</p><p>4. Make 1 shifting to the left until tape width then wind the tape 2x.</p></div> <div><p>5. Make 1/3 shifting to the right side until tape width on vinyl tube</p></div>		<p>1. No loose tape 2. No flip-out tape 3. No peel-off tape 4. No wrong use of tape 5. No wrong dimension 6. No wide interval between the COT 7. No exposed wire</p> <p>Important reminders/Note/s: 1. Please use calibrated/verified measuring tape when getting the measurement. 2. Use <u>YELLOW</u> tape to easily visualize the tape shifting. But actual should be <u>BLUE TAPE</u>.</p>

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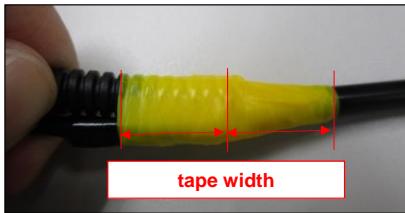
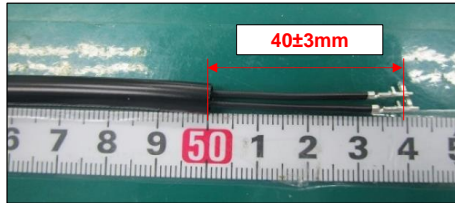

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NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION		TOOLS/PPE	QUALITY POINTERS
11	n/a Y-Taping (Continuation)	<div><div><p>1/2 shifting</p></div><div><p>1/2 shifting</p></div><div><p>tape width</p></div><div><p>40±3mm</p></div><div>6. Make 1/2 shifting to the left until tape width then wind the tape 2x.</div><div>7. Make 1/2 shifting to the right until tape width on vinyl tube, wind the tape 2x then cut the tape.</div><div>8. After taping, check the measurement from vinyl tube up to terminal pointed 40±3mm and taping condition.</div></div>		<div>MEASURING TAPE</div> 	<div>1. No loose tape 2. No flip-out tape 3. No peel-off tape 4. No wrong use of tape 5. No wrong dimension 6. No wide interval between the COT 7. No exposed wire</div> <div>Important reminders/Note/s: 1. Please use calibrated/verified measuring tape when getting the measurement. 2. Use <u>YELLOW</u> tape to easily visualize the tape shifting. But actual should be <u>BLUE TAPE</u>.</div>

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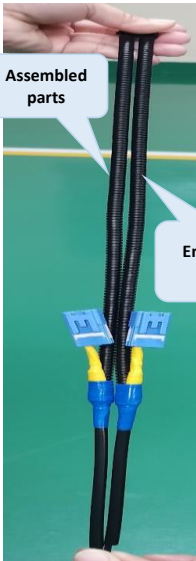
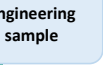

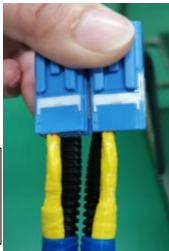



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PARTS:		1. Assembled parts 2. Engineering sample	JIG:	n/a
NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION	TOOLS/PPE	QUALITY POINTERS
12	n/a	<div>Visual/By two's inspection</div> <div><p>ACTUAL PRODUCT</p><p>Assembled parts</p><p>Engineering sample</p><p>2. Check the terminal, connector lock, insertion and taping condition.</p><p>3. Check the Y-taping condition.</p><p>4. Check the connector lock and insertion</p><p>4. Check the terminal appearance. Must be no deformed terminal.</p><p>1. Conduct alignment of harness(Engineering sample vs. Assembled parts) using both hands</p></div>		<div>ENGINEERING SAMPLE</div>  <p>1. No skip checking during inspection</p>

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**WORK INSTRUCTION**

Process Name/Title:

TAPING ASSEMBLY PROCESS

Effectivity Date:

November 15, 2023

Validity Date:

n/a

Model code/Part number:

310D / 7N0193-7020Customer: **TRJ**Car Model: **TOYOTA RAV4**

Document No.:

WI-ENG-PDE-756

Purpose:


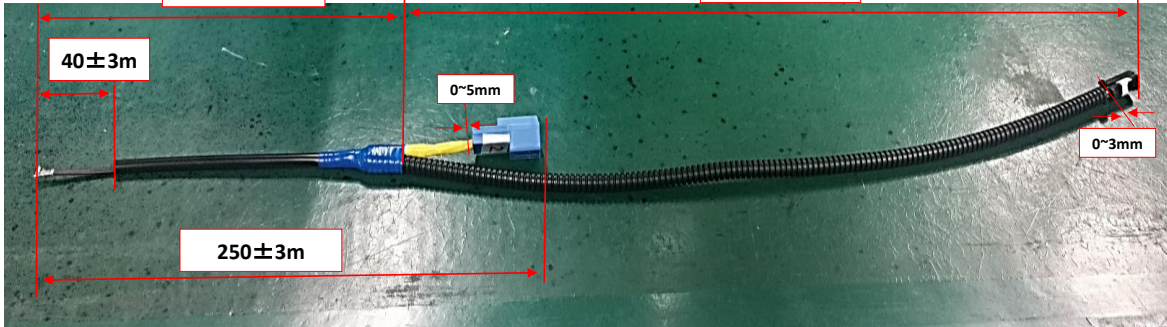
☐ PROTOTYPE☒ PRE-LAUNCH☐ MASSPRO

Revision No.:

0

Page No.:

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

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WORK INSTRUCTION

TAPING ASSEMBLY PROCESS

Process Name/Title:

Model code/Part number:

310D / 7N0193-7020

Customer: TRJ

Car Model: TOYOTA RAV4

Purpose:

☐ PROTOTYPE

☒ PRE-LAUNCH

☐ MASSPRO

Effectivity Date:

November 15, 2023

Validity Date:

n/a

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WI-ENG-PDE-756

Revision No.:

0

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PARTS:

n/a

JIG:

QUALITY CHECKPOINTS

n/a

7N0193-7020



GOOD



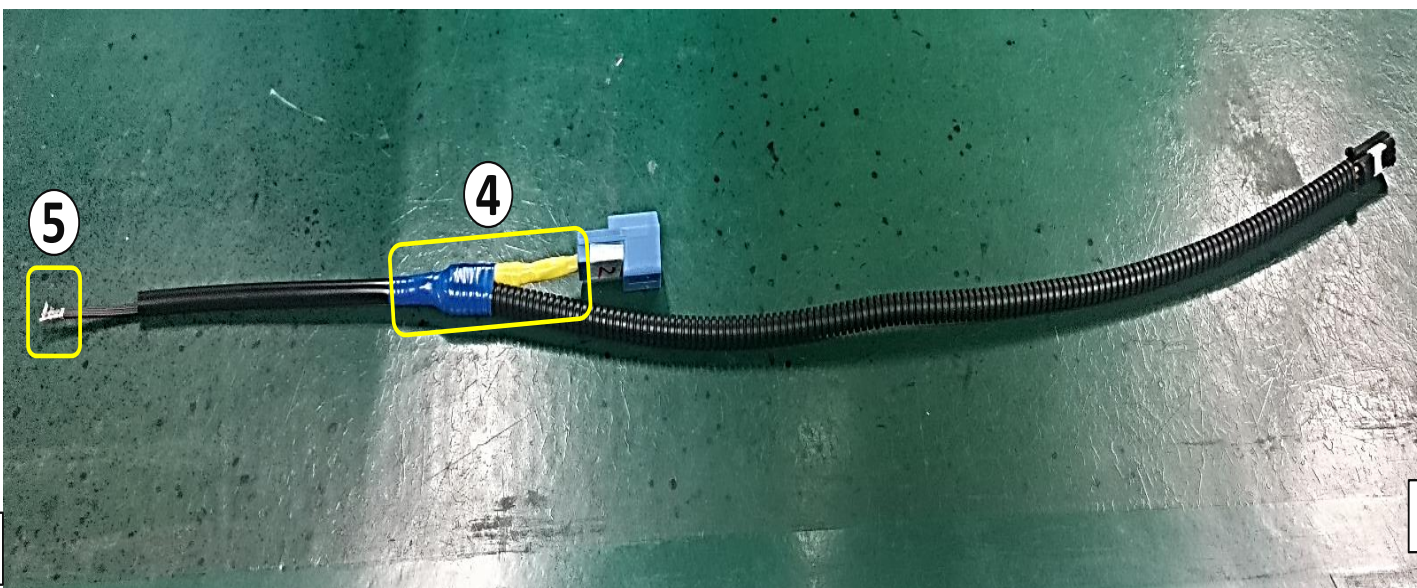
GOOD



NO GOOD



NO GOOD



GOOD



NO GOOD

① No Unlock/Halflock Connector (2 connector)

② No Wrong Insert

③ No Terminal Backing Out

④ No Missing Tape (for Y-Taping)

⑤ No Deformed Terminal

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