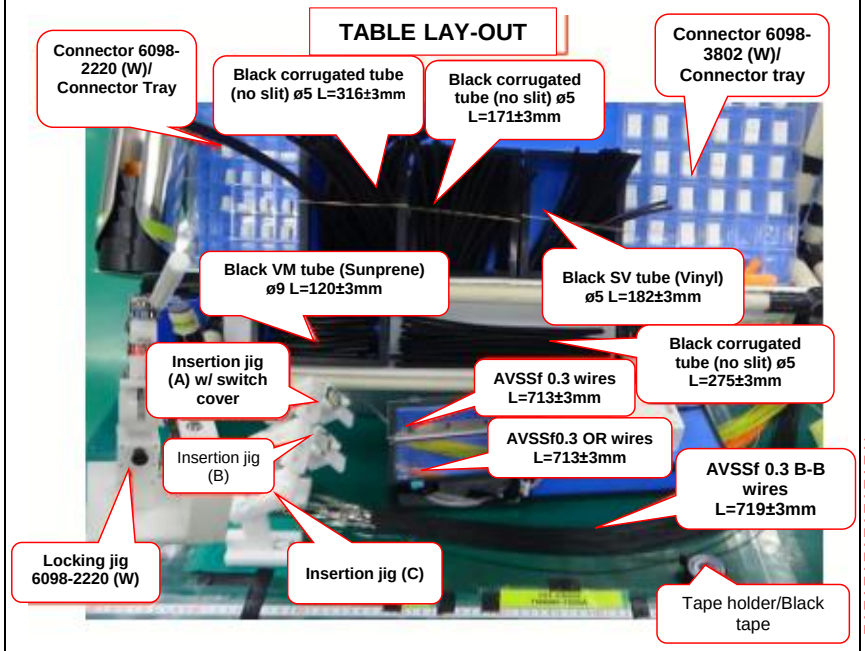
	WORK INSTRUCTION			Effectivity Date:	May 20, 2024		
	Process Name/Title:	TAPING ASSEMBLY PROCESS		Validity Date:	n/a		
	Model code/Part number: 101D / 7N0096-7020A	Customer: TRJ	Car Model: TOYOTA-RAV4	Document No.:	WI-ENG-PDE-535A		
	Purpose: ☐ PROTOTYPE ☐ PRE-LAUNCH ■ MASSPRO			Revision No.:	4	Page No.:	1 of 13

PARTS:	1. All parts: Connector 6098-2220 (W); Connector 6098-3802 (W); AVSSf 0.3 B wires L=791±3mm; AVSSf 0.3 Y-OR wires L=713±3mm; Black corrugated tube ø5 L=316±3mm; Black corrugated tube ø5 L=171±3mm; Black corrugated tube ø5 L=275±3mm; Black SV tube (Vinyl) ø5 L=182±3mm; Black VM tube (Sunprene) ø9 L=120±3mm;Black tape	JIG:	1. Insertion jig with switch cover 2. Locking jig

NO.	PROCESS NAME		WORK PROCEDURE/ ILLUSTRATION	TOOLS/PPE	QUALITY POINTERS
1	P1	Table Lay-out		**Safety Instruction** Be sure to wear required 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.	***Document reference/s:*** ***1. Refer to WI-PRO-CNC-017 for Wire and Strip Length Tolerance*** 1. No missing parts/tools 2. No excess parts/tools

Revision History

Eff. Date	Rev. No	Details of Change	Revised	Reviewed	Approved	Noted	Prepared by	Reviewed by	Approved by	Noted by
5/20/24	4	Transfer to new format and inclusion of Car model " TOYOTA-RAV4". Additional Work procedure/Illustration and notes on page 4~5 as countermeasure for the customer claim (Broken lock of Connector 6098-2220 (W).	A.Hernandez	C. Villanueva	A. Arañes	n/a				
8/15/23	3	Change Table lay-out; Change Quality Checkpoints; Inclusion of Locking process of Connector 6098-2220 (W);Transferred process no. 13,14,15,16 and 17 from P1 to P2 due to new process distribution; Standardized tube desciption: SV tube (Vinyl)and VM tube (Sunprene). Improve Quality pointers/Note/s and reference/s (pg.4 and 5-process 4)	M. Ariola	J. Loterte	C. Villanueva	A. Arañes				
12/3/22	2	Improve quality ponters.Reminders/notes and references in proces no.4 for the improvement and countermeasures of connector locking process:Work procedure /illustration in process no.8 - visual/by two's inspection process no.1,3,4,7,8,10,12,16 and 17 as document improvement .Inclusion of Quality check points	M. Catapang	J. Loterte	C. Villanueva	A. Arañes	A.Hernandez	C. Villanueva	A. Arañes	n/a
							Est. Date:	June 1, 2022		

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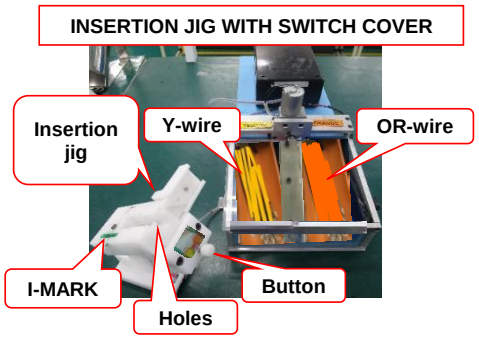
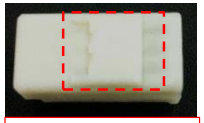
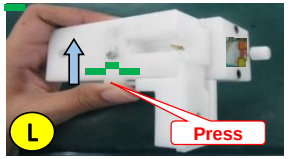
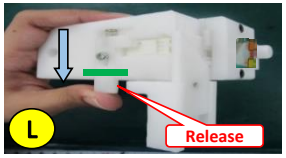
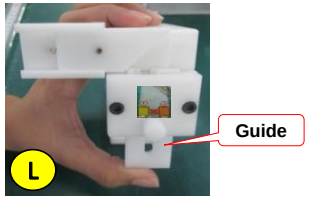
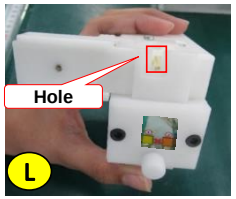
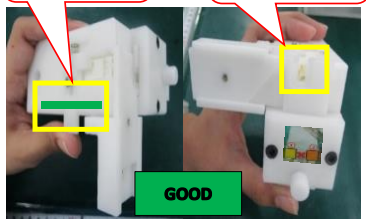
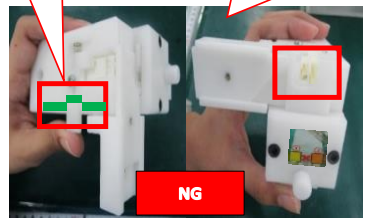
PARTS:	1. Connector 6098-2220 (W)	JIG:	1. Insertion jig with switch cover

NO.	PROCESS NAME		WORK PROCEDURE/ ILLUSTRATION	TOOLS/PPE	QUALITY POINTERS
2	P1	Connector setting to insertion jig 6098-2220 (W)	  CONNECTOR ORIENTATION  1. Press the lock of insertion jig using left thumb.  2. Insert the connector **6098-2220 (W)** into jig using right hand and release the lock. ***Note: Follow the connector orientation.***   3. Push the guide using left hand. The slot for **Y wire** will be opened.	n/a	**Connector Orientation Illustration**   1. Use the provided jig per model 2. No wrong orientation of connector 3. No wrong use of connector 4. No damaged connector

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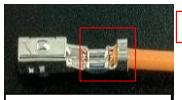
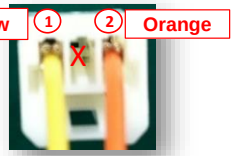
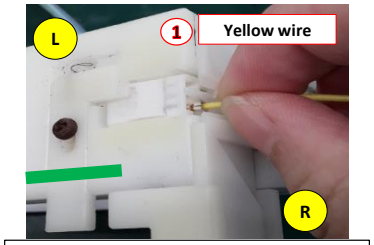
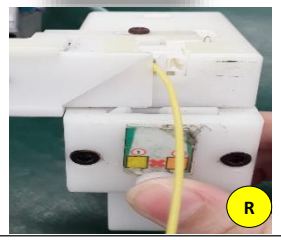
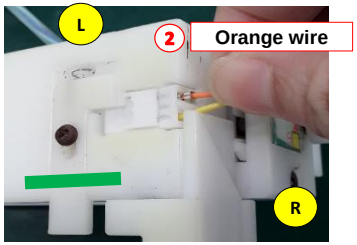
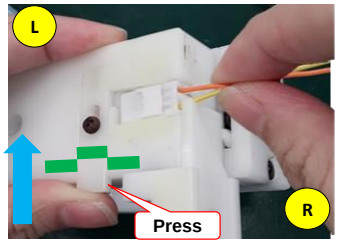
NBC	WORK INSTRUCTION			Effectivity Date:	May 20, 2024
	Process Name/Title:	TAPING ASSEMBLY PROCESS		Validity Date:	n/a
	Model code/Part number: 101D / 7N0096-7020A	Customer: TRJ	Car Model: TOYOTA-RAV4	Document No.:	WI-ENG-PDE-535A
	Purpose: ☐ PROTOTYPE ☐ PRE-LAUNCH ■ MASSPRO			Revision No.:	4 — Page No.: 3 of 13

PARTS:	1. AVSSf 0.3 Y/OR wires L=713±3mm	JIG:	1. Insertion jig with switch cover

NO.	PROCESS NAME		WORK PROCEDURE/ ILLUSTRATION	TOOLS/PPE	QUALITY POINTERS
3	P1	Wire insertion to connector 6098-2220 (W)	   1. Hold the insertion jig using left hand. Get the **Y wire** and insert to connector using right hand.  2. Press the button using right thumb the slot for **OR wire** will be opened.  3. Get the **OR wire** and insert to connector using right hand.  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.	n/a	1. No loose insertion 2. No wrong insertion 3. One by one insertion 4. No deform terminal 5. No wrong wire facing ***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***

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	Process Name/Title:	TAPING ASSEMBLY PROCESS		Validity Date:	n/a		
	Model code/Part number: 101D / 7N0096-7020A	Customer: TRJ	Car Model: TOYOTA-RAV4	Document No.:	WI-ENG-PDE-535A		
	Purpose: ☐ PROTOTYPE	☐ PRE-LAUNCH	■ MASSPRO	Revision No.:	4	Page No.:	4 of 13

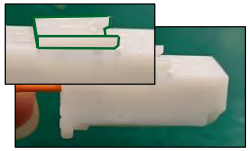
PARTS:	1. Assy parts	JIG:	1. Locking jig Connector 6098-2220 (W)

NO.	PROCESS NAME		WORK PROCEDURE/ ILLUSTRATION 4	TOOLS/PPE	QUALITY POINTERS 4
4	P1	Connector lock			1. Please ensure that Connector lock/retainer will not touch or hit by any object prior insertion into locking jig to avoid half-lock connector. 2. Maintain 10mm proper holding of wire to connector 3.Connector must be fully inserted to connector slot. 4. Make sure no offset setting before locking process. 5.No wrong setting of connector. 6. No damaged connector lock 7. No unlocked/ half-locked connector. 4 ***Important reminders/Note/s:*** *1. Incomplete locking process will alarm the jig.* *2. No retainer in connector cannot proceed.* *3. If encountered abnomality, **STOP** and immediately **CALL** the attention of the leader. **WAIT** for further instruction and continue the process.*

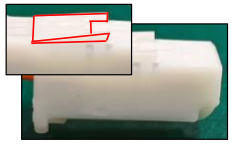
4

CONNECTOR RETAINER ILLUSTRATION

SIDE VIEW

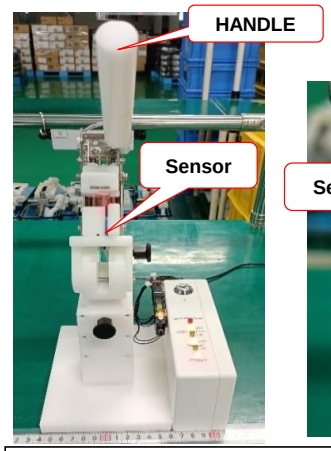


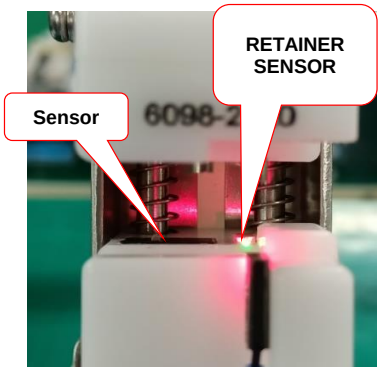
GOOD

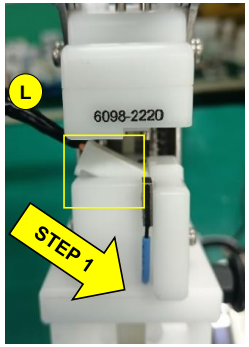


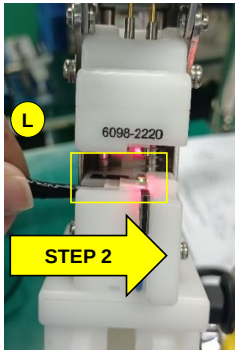
NG

1.Check the Retainer lock of connector before insertion to locking jig.
*Note: Must be **NO** half-locked condition prior connector locking.*









2. Hold the assy parts using left hand and insert into connector locking jig based on the direction of arrow. Make sure the connector touch the sensor. Sound will be heard if properly lock.
NOTE: CONNECTOR LOCKING JIG WILL NOT FUNCTION IF CONNECTOR NOT REACH THE SENSOR.

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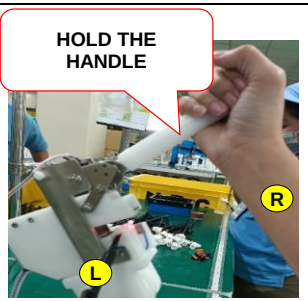
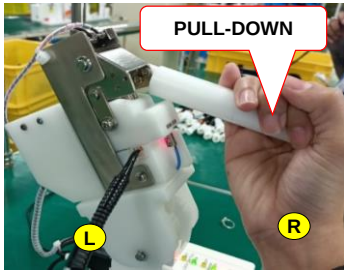
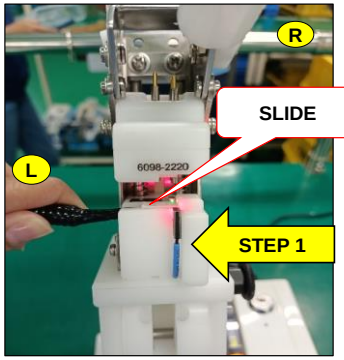
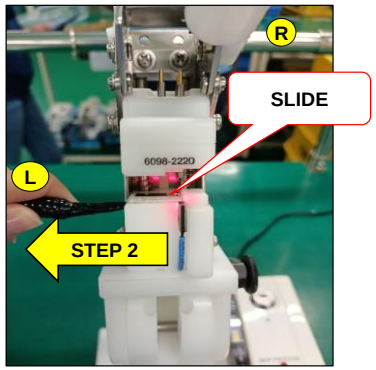
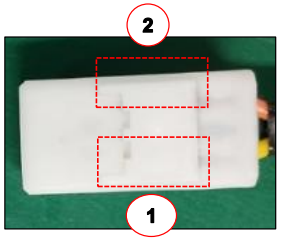
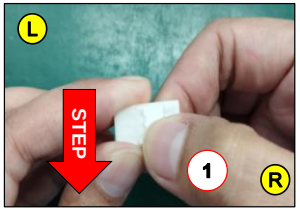
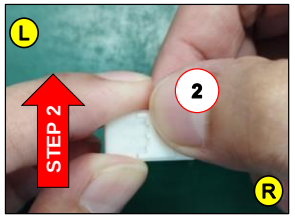
	Model code/Part number: 101D / 7N0096-7020A	Customer: TRJ	Car Model: TOYOTA-RAV4	Document No.:	WI-ENG-PDE-535A
	Purpose: ☐ PROTOTYPE ☐ PRE-LAUNCH ■ MASSPRO			Revision No.: 4	Page No.: 5 of 13

PARTS:	1. Assy parts	JIG:	1. Locking jig Connector 6098-2220 (W)

NO.	PROCESS NAME		WORK PROCEDURE/ ILLUSTRATION 4	TOOLS/PPE	QUALITY POINTERS 4
5	P1	Connnector lock (Continuation)	  3. Hold the handle of the connector locking jig using right hand then gently pull down and bring back to original position after locking. Note: Pull down one time only.   4. Remove the locked connector using left hand based on the illustration, follow the direction of arrow.    5. Ensure that connector is in locked condition by slide touching the connector lock based on the sequence illustrated.		1. Please ensure that Connector lock/retainer will not touch or hit by any object prior insertion into locking jig to avoid half-lock connector. 2. Maintain 10mm proper holding of wire to connector 3.Connector must be fully inserted to connector slot. 4. Make sure no offset setting before locking process. 5.No wrong setting of connector. 6. No damaged connector lock 7. No unlocked/ half-locked connector 4 ***Important reminders/Note/s:*** *1. Incomplete locking process will alarm the jig.* *2. No retainer in connector cannot proceed.* *3. If encountered abnomality, **STOP** and immediately **CALL** the attention of the leader. **WAIT** for further instruction and continue the process.*

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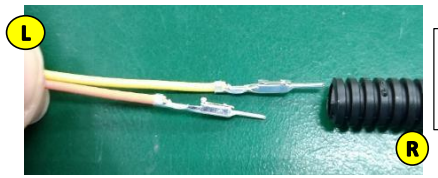
	Model code/Part number: 101D / 7N0096-7020A	Customer: TRJ	Car Model: TOYOTA-RAV4	Document No.:	WI-ENG-PDE-535A		
	Purpose: ☐ PROTOTYPE	☐ PRE-LAUNCH	■ MASSPRO	Revision No.:	4	Page No.:	6 of 13

PARTS:	1. Assy parts 2. Black corrugated tube (no slit) ø5 L=316±3mm 3. Black corrugated tube (no slit) ø5 L=171±3mm 4. Black vinyl tube ø5 L=182±3mm	JIG:	n/a

NO.	PROCESS NAME		WORK PROCEDURE/ ILLUSTRATION	TOOLS/PPE	QUALITY POINTERS
6	P1	Wire insertion to Black corrugated tube (no slit) ø5 L=316±3mm ø5 L=171±3mm	 1. Get the corrugated tube **ø5 L=316±3mm** using right hand then insert the **Y-OR wires** using left hand.  1. Get the corrugated tube **ø5 L=171±3mm** using right hand then insert the **Y-OR wires** using left hand.	n/a	1. No wrong use of parts 2. No deformed terminal
7		Wire insertion to Black vinyl tube ø5 L=182±3mm	 1. Get the vinyl tube **ø5 L=182±3mm** using right hand then insert the **Y-OR wires** using left hand.	n/a	1. No wrong use of parts 2. No deformed terminal

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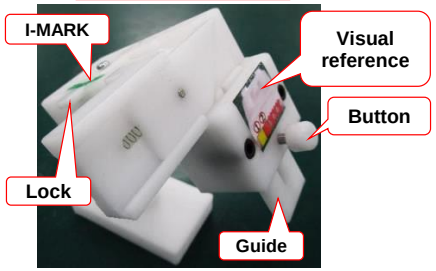
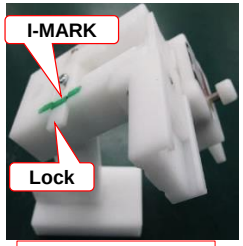
	Model code/Part number:	101D / 7N0096-7020A	Customer: TRJ / Car Model: TOYOTA-RAV4	Document No.:	WI-ENG-PDE-535A
	Purpose:	☐ PROTOTYPE ☐ PRE-LAUNCH ■ MASSPRO		Revision No.:	4
				Page No.:	7 of 13

PARTS:	1. Connector 6098-3802 (W)	JIG:	1.Insertion jig

NO.	PROCESS NAME		WORK PROCEDURE/ ILLUSTRATION	TOOLS/PPE	QUALITY POINTERS
8	P1	Connector setting to insertion jig 6098-3802 (W)		n/a	

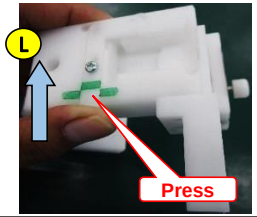
INSERTION JIG



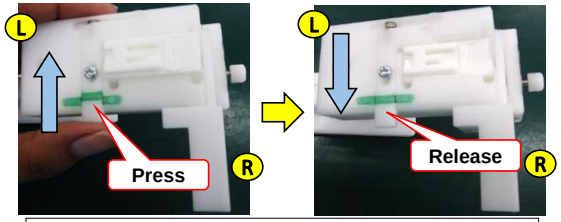


INSERTION JIG ORIENTATION

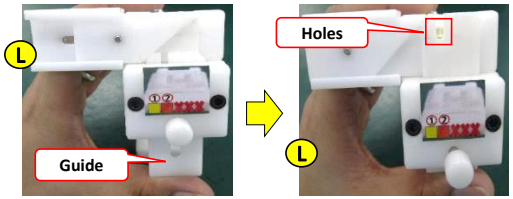
CONNECTOR ORIENTATION



1. Press the lock of insertion jig using left thumb.

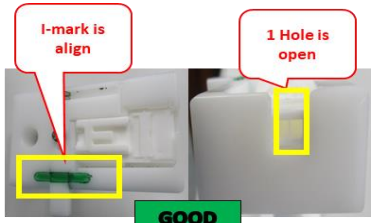


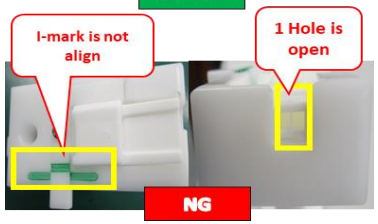
2. Insert the connector **6098-3802 (W)** into jig using right hand and release the lock.
Note: Follow the connector orientation.



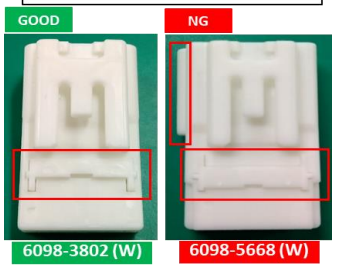
3. Push the guide using left hand.
The slot for **Y wire** will be opened.

Connector Orientation Illustration





CONNECTOR ILLUSTRATION



1. Use the provided jig per model
2. No wrong orientation of connector
3. No wrong use of connector
4. No damaged connector

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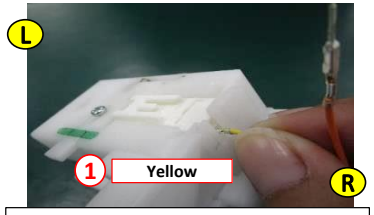
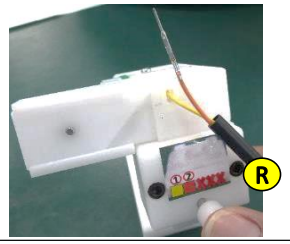
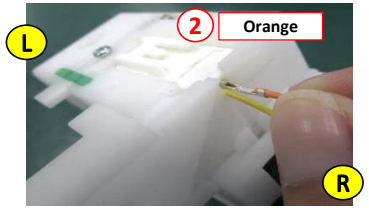
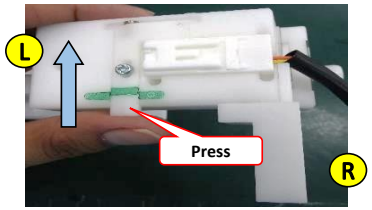
NBC	WORK INSTRUCTION			Effectivity Date:	May 20, 2024
	Process Name/Title:	TAPING ASSEMBLY PROCESS		Validity Date:	n/a
	Model code/Part number:	101D / 7N0096-7020A	Customer: TRJ / Car Model: TOYOTA-RAV4	Document No.:	WI-ENG-PDE-535A
	Purpose:	☐ PROTOTYPE ☐ PRE-LAUNCH ■ MASSPRO		Revision No.:	4 / Page No.: 8 of 13

PARTS:	1.Assy parts	JIG:	1.Insetion jig

NO.	PROCESS NAME		WORK PROCEDURE/ ILLUSTRATION	TOOLS/PPE	QUALITY POINTERS
9	P1	Wire insertion to connector 6098-3802 (W)	WIRE FACING  1. Get the assy part and hold the **Y wire** then insert to terminal slot **1** using right hand.  2. After insertion of **Y wire** press the button using right thumb. Slot for **OR wire** will be opened.  3. Get the **OR wire** then insert to terminal slot **2** using right hand.  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. **NOTE: Set aside the assy parts.**	n/a	1. No loose insertion 2. No wrong insertion 3. One by one insertion 4. No deform terminal 5. No wrong wire facing ***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. Insertion of wires must be from left to right*** ***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***

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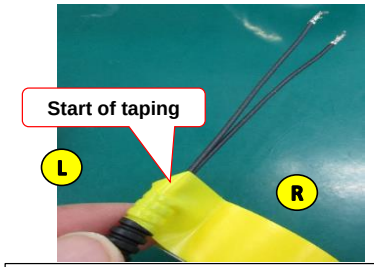
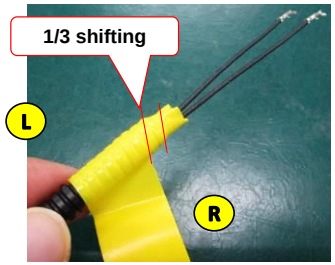
	Process Name/Title:	TAPING ASSEMBLY PROCESS		Validity Date:	n/a
	Model code/Part number: 101D / 7N0096-7020A	Customer: TRJ	Car Model: TOYOTA-RAV4	Document No.:	WI-ENG-PDE-535A
	Purpose: ☐ PROTOTYPE	☐ PRE-LAUNCH	■ MASSPRO	Revision No.: 4	Page No.: 9 of 13

PARTS:	1. Assy parts 2. AVSSf 0.3 B-B wires L=791±3mm [2pcs.] 3. Black corrugated tube (no slit) ø5 L=275±3mm 4. Black tape	JIG:	n/a

NO.	PROCESS NAME		WORK PROCEDURE/ ILLUSTRATION	TOOLS/PPE	QUALITY POINTERS
10	P1	Wire insertion to Black Corrugated tube (no slit) ø5 L=275±3mm	 1.Get the black corrugated tube (no slit) **ø5 L=275±3mm** using right hand and insert **Black wires L=791mm (n=2)** using left hand.	n/a	1. No wrong usage of parts 2. No deformed terminal
11		Taping 1 Black corrugated tube to wire near terminal	 1. Get the **Black tape** using right hand then make **2 windings** of tape at the middle of COT and wire using both hands.  2. Make **1/3 shifting** using both hands going to the side of COT until it reach **25mm** then make **2 windings** of tape before shifting to other side.	**MEASURING TAPE** 	1. No flip-out tape 2. No peel-off tape 3. No loose tape 4. No missing tape 5. No wrong use of tape 6. No wrong dimension ***Important reminders/Note/s:*** ***1. Use YELLOW TAPE for easy visualization of shifting lines, but actual should be BLACK TAPE.*** ***2. Please use calibrated/verified measuring tape when getting the measurement.***

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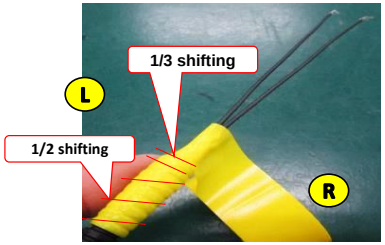
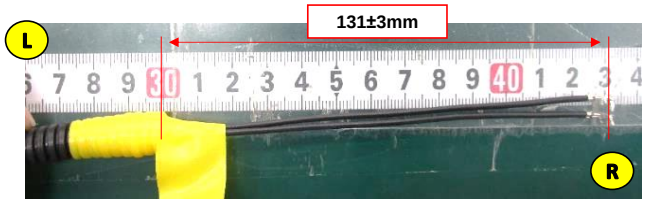
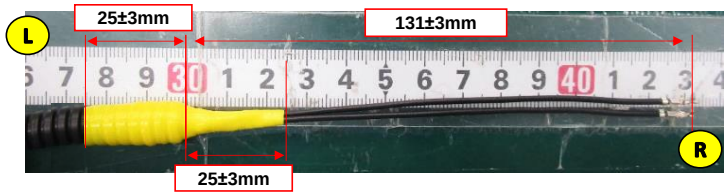
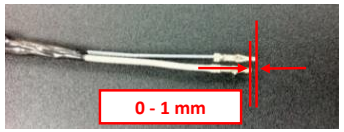
	Model code/Part number:	101D / 7N0096-7020A	Customer: TRJ / Car Model: TOYOTA-RAV4	Document No.:	WI-ENG-PDE-535A		
	Purpose:	☐ PROTOTYPE ☐ PRE-LAUNCH ■ MASSPRO		Revision No.:	4	Page No.:	10 of 13

PARTS:	1. Assy parts 2. Black tape	JIG:	n/a

NO.	PROCESS NAME		WORK PROCEDURE/ ILLUSTRATION	TOOLS/PPE	QUALITY POINTERS
12	P1	Taping 1 Black corrugated tube to wire near terminal (Continuation)	 3. Make **1/2 shifting** using both hands going to other side of COT and **1/3 shifting** going to wires.  4. Measure from end of COT up to terminal pointed tip **131mm** then continue the taping process using both hands.  5. After taping, check the taping condition, measurement and wire alignment.	**MEASURING TAPE** 	***Important reminders/Note/s:*** ***1. Use YELLOW TAPE for easy visualization of shifting lines, but actual should be BLACK TAPE.*** ***2. Please use calibrated/verified measuring tape when getting the measurement.*** 1. No flip-out tape 2. No peel-off tape 3. No loose tape 4. No missing tape 5. No wrong use of tape 6. No wrong dimension **Wire alignment tolerance** 

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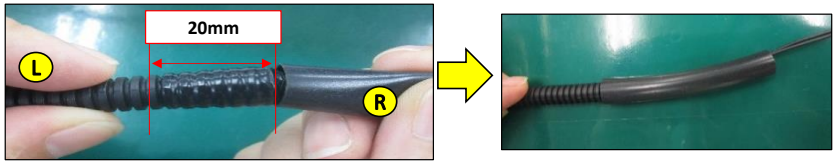
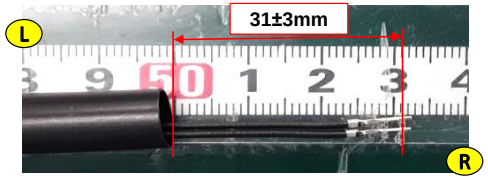
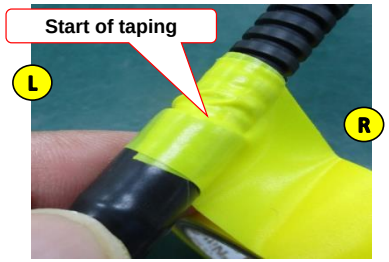
	WORK INSTRUCTION			Effectivity Date:	May 20, 2024		
	Process Name/Title:	TAPING ASSEMBLY PROCESS		Validity Date:	n/a		
	Model code/Part number: 101D / 7N0096-7020A	Customer: TRJ	Car Model: TOYOTA-RAV4	Document No.:	WI-ENG-PDE-535A		
	Purpose: ☐ PROTOTYPE ☐ PRE-LAUNCH ■ MASSPRO			Revision No.:	4	Page No.:	11 of 13

PARTS:	1. Assy parts 2. Black sunprene tube ø9 L=120±3mm 3. Black tape	JIG:	n/a

NO.	PROCESS NAME		WORK PROCEDURE/ ILLUSTRATION	TOOLS/PPE	QUALITY POINTERS
13	P1	Wire insertion to Black sunprene tube ø9 L=120±3mm	 1. Get the black sunprene tube **ø9 L=120±3mm** using right hand then insert the assy parts using left hand.  2. Insert the Sunprene tube to COT 20mm (Tape width)	n/a	1. No wrong use of parts 2. No deformed terminal
14		Taping 2 Black sunprene tube to Black corrugated tube (no slit) near terminal	 1. Measure from end of sunprene tube up to terminal pointed tip **31±3mm** using both hands.  2. Get the **Black tape** using right hand then make **2 windings** of tape at the middle of sunprene and COT using both hands.	MEASURING TAPE 	***Important reminders/Note/s:*** ***1. Use YELLOW TAPE for easy visualization of shifting lines, but actual should be BLACK TAPE.*** ***2. Please use calibrated/verified measuring tape when getting the measurement.*** 1. No flip-out tape 2. No peel-off tape 3. No loose tape 4. No missing tape 5. No wrong use of tape 6. No wrong dimension

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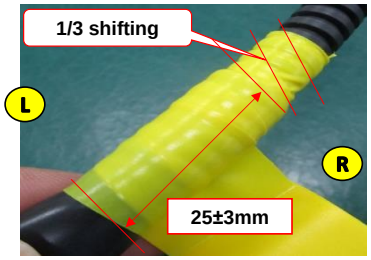
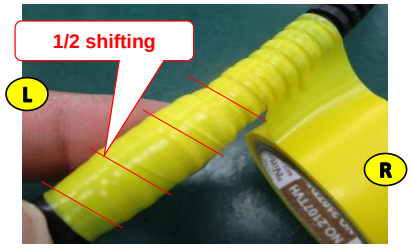
	WORK INSTRUCTION			Effectivity Date:	May 20, 2024	
	Process Name/Title:	TAPING ASSEMBLY PROCESS		Validity Date:	n/a	
	Model code/Part number: 101D / 7N0096-7020A	Customer: TRJ	Car Model: TOYOTA-RAV4	Document No.:	WI-ENG-PDE-535A	
	Purpose: ☐ PROTOTYPE ☐ PRE-LAUNCH ■ MASSPRO			Revision No.:	4	Page No.: 12 of 13

PARTS:	1. Assy parts 2. Black tape	JIG:	n/a

NO.	PROCESS NAME		WORK PROCEDURE/ ILLUSTRATION	TOOLS/PPE	QUALITY POINTERS
15	P1	Taping 2 Black sunprene tube to Black corrugated tube (no slit) near terminal (Continuation)	 3. Make **1/3 shifting** using both hands going to the side of sunprene until it reach **25±3mm** then make **2 windings** of tape before shifting to other side.  4. Make **1/2 shifting** using both hands going to other side of COT then make **3 windings** of tape and cut the tape. 5. After taping, check the taping condition and measurement.	**MEASURING TAPE** 	***Important reminders/Note/s:*** ***1. Use YELLOW TAPE for easy visualization of shifting lines, but actual should be BLACK TAPE.*** ***2. Please use calibrated/verified measuring tape when getting the measurement.*** 1. No flip-out tape 2. No peel-off tape 3. No loose tape 4. No missing tape 5. No wrong use of tape 6. No wrong dimension

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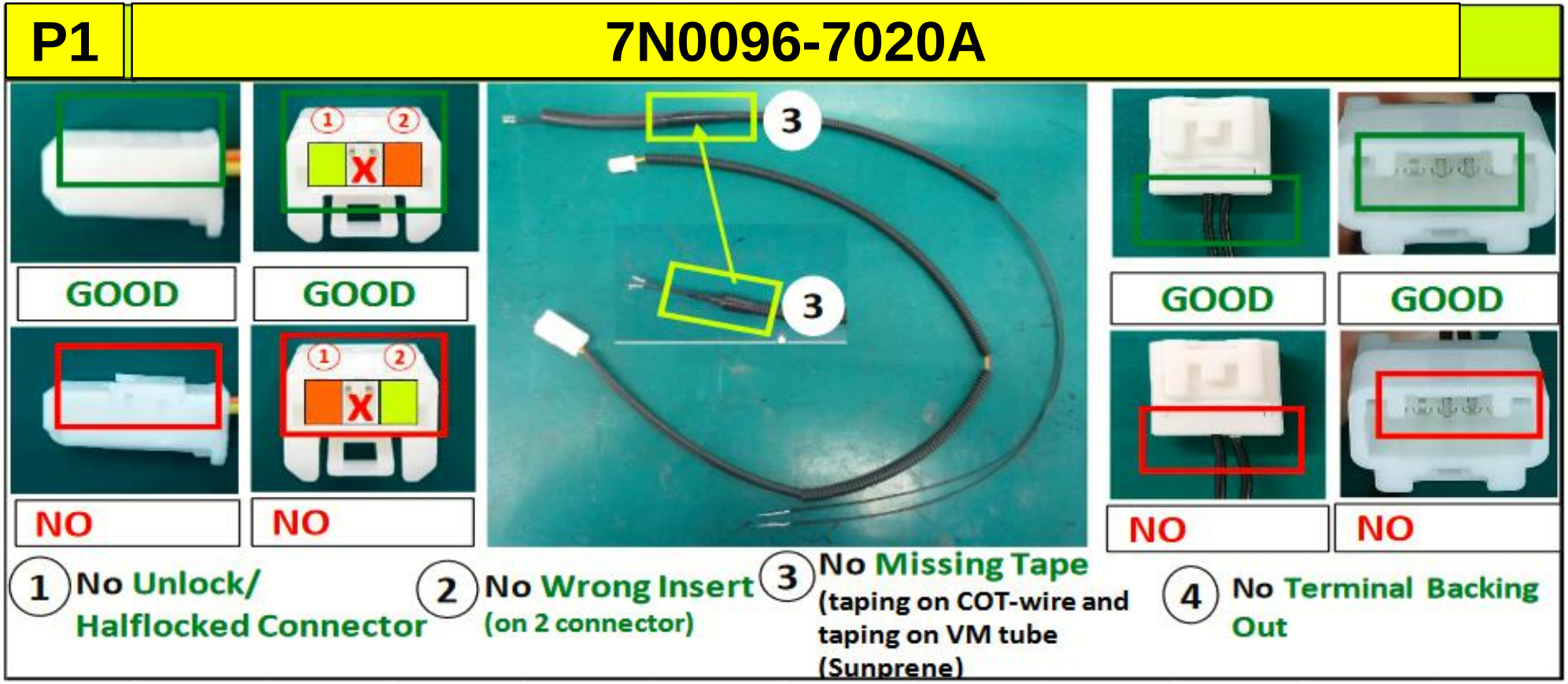
PARTS:	n/a	JIG:	n/a

VISUAL INSPECTION/QUALITY CHECKPOINTS



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