



WORK INSTRUCTION

TAPING ASSEMBLY PROCESS

Effectivity Date:

November 4, 2024

Process Name/Title:

Validity Date:

n/a

Model code/Part number:

310B / 7M0521-7021B

Customer: TRJ

Car Model: TOYOTA-RAV4

Document No.:

WI-ENG-PDE-1127A

Purpose:

☐ PROTOTYPE☐ PRE-LAUNCH☒ MASSPRO

Revision No.:

1

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PARTS:		1. Connector 6188-0066 (GR); Black Corrugated tube (no slit) Ø7 L= 45±3mm; Black Corrugated tube (no slit) Ø7 L= 295±3mm; Connector 6189-1161 (B); Black Corrugated tube (no slit) Ø7 L=460±4mm; MRSW CP TVSSf 0.3 G-B/W wires L=658±3mm; AVSSf 0.3 Y/OR wire L=396±2mm; Black tape		JIG:	1. Insertion jig with switch cover 2. Terminal Cover Jig 3. Locking Jig	
NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION		TOOLS/PPE	QUALITY POINTERS	
1	P1	Table Lay-out		<div>Safety Instruction Be sure to wear prescribed personal protective equipment during operation (gloves, finger cots, etc.)</div> <div>Housekeeping 1. Maintain and always practice 5's. 2. Personal things on the workplace is prohibited. Keep it in your locker.</div> <div>Alert level For any trouble, inform the Assembly Assistant Supervisor or Line Leader for immediate corrective action.</div>	<div>Document reference/s: 1. Refer to WI-PRO-CNC-017 for Wire and Strip Length Tolerance</div> <div>1. No missing parts/tools 2. No excess parts/tools</div>	

TABLE LAY-OUT

Black Corrugated tube (no slit) Ø7 L= 45±3mm

Connector 6188-0066 (GR)/ Connector Tray

AVSSf 0.3 Y/OR wire L=396±2mm

Insertion Jig A with flip cover

Insertion Jlg B

Locking Jlg

MRSW CP TVSSf 0.3 G-B/W wires L=658±3mm

Black Corrugated tube (no slit) Ø7 L= 295±3mm

Connector 6189-1161 (B)

Black Corrugated tube (no slit) Ø7 L=460±4mm

Black tape/tape holder

Terminal Cover Jig

Revision History								Prepared by	Reviewed by	Approved by	Noted by
11/04/24	1	Change Purpose from Pre-launch to Masspro.						M. Ariola	C. Villanueva	A. Arañes	n/a
10/30/24	0	Initial issue.						M. Ariola	C. Villanueva	A. Arañes	n/a
Eff. Date	Rev. No	Details of Change						Revised	Reviewed	Approved	Noted

Est. Date: October 30, 2024

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PARTS:	1. Connector 6188-0066 (GR)		JIG:	1. Insertion jig with switch cover
NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION	TOOLS/PPE	QUALITY POINTERS
2	P1 Connector setting to insertion jig 6188-0066 (GR)	<div><div><div>INSERTION JIG WITH SWITCH COVER</div><div><div><div>Insertion jig</div><div>Y-wire</div><div>Switch cover</div><div>OR-wire</div><div>Holes</div><div>Wire guide</div><div>Button</div></div><div><div>CONNECTOR ORIENTATION</div></div></div></div><div><div><div><div>L</div><div>Press</div></div><div>1. Press the lock of insertion jig using left thumb.</div></div><div><div><div>L</div><div>R</div><div>Release</div></div><div>2. Insert the connector 6188-0066 (GR) into jig using right hand and release the lock. <i>Note: Follow the connector orientation</i></div></div><div><div><div>L</div><div>Guide</div></div><div>3. Push the guide using left hand. The slot for Y wire will be opened.</div></div></div></div> <div>n/a</div> <td><div><div>Connector Orientation Illustration</div><div><div><div>I-mark is align</div><div>1 hole is open</div></div><div>GOOD</div></div><div><div><div>I-mark is not align</div><div>2 holes are open</div></div><div>NG</div></div><div><div>1. Use the provided jig per model</div><div>2. No wrong orientation of connector</div><div>3. No wrong use of connector</div><div>4. No damaged connector</div></div></div></td>	<div><div>Connector Orientation Illustration</div><div><div><div>I-mark is align</div><div>1 hole is open</div></div><div>GOOD</div></div><div><div><div>I-mark is not align</div><div>2 holes are open</div></div><div>NG</div></div><div><div>1. Use the provided jig per model</div><div>2. No wrong orientation of connector</div><div>3. No wrong use of connector</div><div>4. No damaged connector</div></div></div>	

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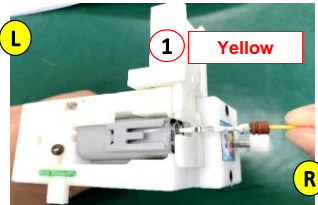
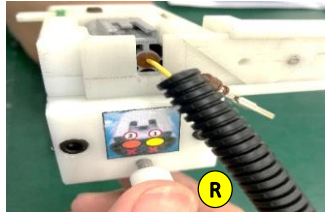
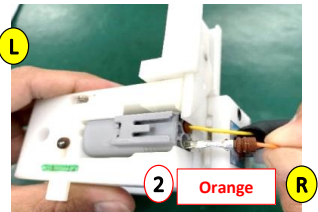

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PARTS:	1. AVSSf 0.3 Y/OR wire L=396±2mm		JIG:	1. Insertion jig with switch cover
NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION	TOOLS/PPE	QUALITY POINTERS
3	P1 Wire insertion to connector 6188-0066 (GR)	<div><p>TERMINAL FACING</p></div> <div><p>1. Get the Y wire then insert to terminal slot 1 using right hand.</p></div> <div><p>2. Press the button using right thumb. Slot for OR wire will be opened.</p></div> <div><p>3. Get the OR wire then insert to terminal slot 2 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	<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 during insertion. 2. Make sure wires are properly inserted. Conduct <u>Pull-Push-Pull-Push</u> after insertion. Do not exert extra force.</div> <div>Document reference/s: 1. Refer to WI-PRO-CNC-017 for Wire and Strip Length Tolerance. 2. Refer to GL-PRO-ASY-029 for Pull-Push procedure.</div>

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PARTS:		1. Black Corrugated tube (no slit) Ø7 L= 45±3mm 2. Black Corrugated tube (no slit) Ø7 L= 295±3mm 3. Assy parts	JIG:	n/a
NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION	TOOLS/PPE	QUALITY POINTERS
4	P1 Wire insertion to Black Corrugated tube (no slit) Ø7 L= 45±3mm Ø7 L= 295±3mm	 <p>1. Get the corrugated tube (no slit) Ø7 L= 45±3mm using right hand then insert the yellow wire and orange wire by using left hand.</p>  <p>2. Get the corrugated tube (no slit) Ø7 L= 295±3mm using right hand then insert the yellow wire and orange wire by using left hand.</p> 	n/a	1. No wrong usage of parts 2. No damaged rubber seal 3. No damaged terminal

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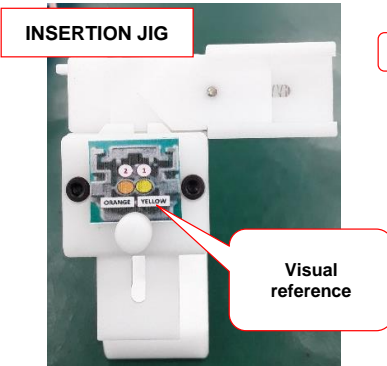
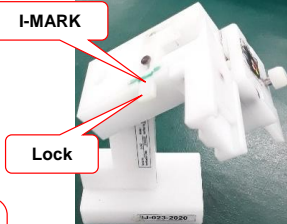
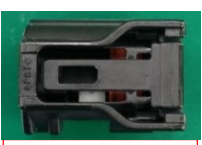
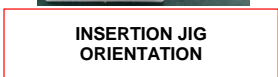
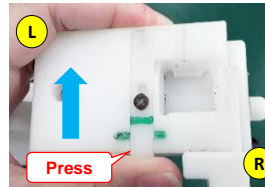
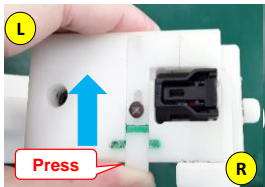
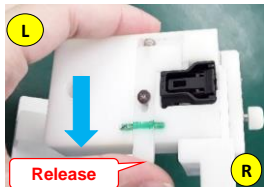
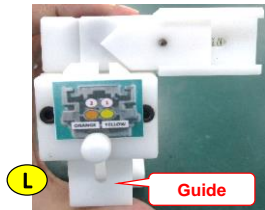
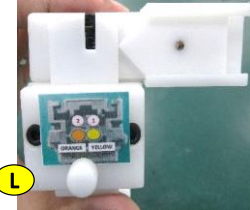
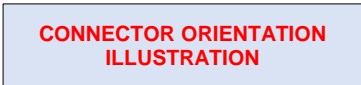

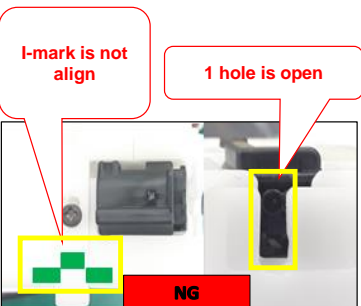
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PARTS:		1. Connector 6189-1161 (B)		JIG:	1. Insertion Jig
NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION		TOOLS/PPE	QUALITY POINTERS
5	P1	<div><div></div><div></div><div></div><div></div></div> <div><div></div><div></div><div></div><div></div><div></div></div>		n/a	<div><div></div><div></div><div></div></div> <div><div>1. Use the provided jig per model</div><div>2. No wrong usage of parts</div><div>3. No wrong orientation of connector</div><div>4. No damaged connector</div></div>

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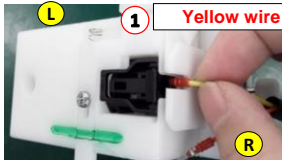
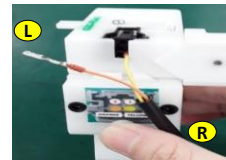

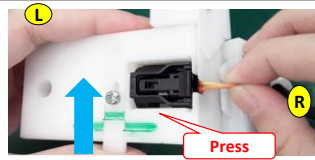
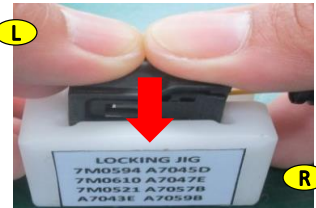


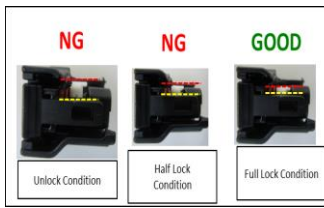

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PARTS:	1. Assy parts		JIG:	1. Insertion jig 2. Locking jig
NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION	TOOLS/PPE	QUALITY POINTERS
6	P1 Wire insertion to connector 6189-1161 (B)	<div>TERMINAL FACING</div> <div>1 Yellow wire</div> <div>2 Press the button using right thumb. slot for OR wire will be open.</div> <div>3 Orange wire</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>	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:</div> <div>1. Please hold the wire near terminal during insertion.</div> <div>2. Make sure wires are properly inserted.</div> <div>Conduct Pull-Push-Pull-Push after insertion. Do not exert extra force.</div> <div>Document reference/s:</div> <div>1. Refer to WI-PRO-CNC-017 for Wire and Strip Length Tolerance.</div> <div>2. Refer to GL-PRO-ASY-029 for Pull-Push procedure.</div>
7	Connector Lock	<div>1. Put the connector into locking jig using right hand then press 2x using both hands. Check the connector if properly locked.</div> <div>BEFORE PRESSING</div> <div>AFTER PRESSING</div> <div>LOCKING JIG</div>		<div>1. Use the provided locking jig per model 2. No unlock/half-locked connector</div> <div>Important reminders/Note/s:</div> <div>1. Manual locking may cause damaged connector lock.</div>

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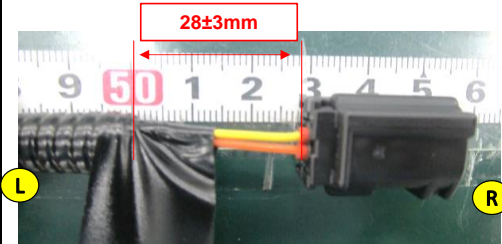
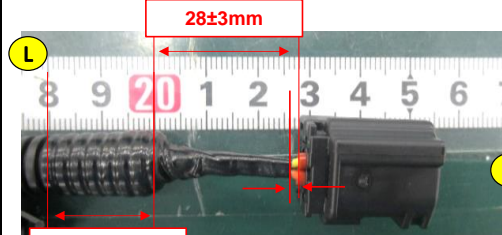

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PARTS:		1. Assy parts 2. Black tape		JIG:	n/a
NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION		TOOLS/PPE	QUALITY POINTERS
8	P1 Taping 1 Black Corrugated tube to wire near connector	<div><p>Start of taping</p><p>1. Hold the corrugated tube using left hand, make 2 windings of pre-taping at the middle of COT and wire using right hand.</p></div> <div><p>28±3mm</p><p>2. Measure from end of the corrugated tube up to connector 28±3mm then continue the taping process.</p></div> <div><p>20±3mm</p><p>28±3mm</p><p>3. After taping, check the measurement and tape condition.</p><p>Note: 3~8mm → End tape up to connector (includes rubber seal)</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 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>

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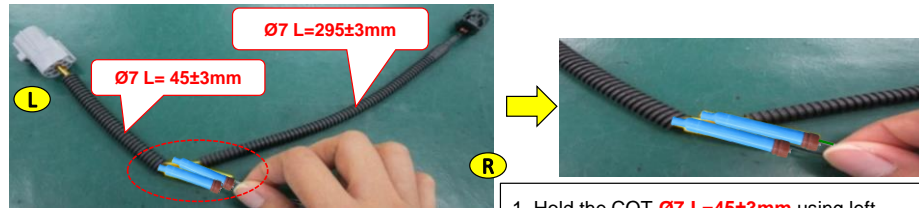

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PARTS:		1. Black Corrugated tube (no slit) Ø7 L=460±4mm 2. MRSW CP TVSSf 0.3 G-B/W wires L=658±3mm 3. Assy parts		JIG:	1. Terminal Cover Jig
NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION		TOOLS/PPE	QUALITY POINTERS
9	Wire insertion to Black Corrugated tube Ø7 L=460±4mm	  <div>1. Get the terminal cover jig using right hand then insert to both terminals (G-B/W wires) using right hand.</div> <div>2. Get the corrugated tube Ø7, L=460±4mm using right hand then insert the G-B/W wires using left hand.</div>		<div>TERMINAL COVER JIG</div> 	1. No wrong usage of parts 2. No damaged rubber seal 3. No exposed rubber seal during insertion
10	P1 Wire insertion to Assy parts	  <div>1. Hold the COT Ø7 L=45±3mm using left hand then insert the G-B/W wires using right hand.</div> <div>2. After insertion, remove the cover jig using right hand.</div>			

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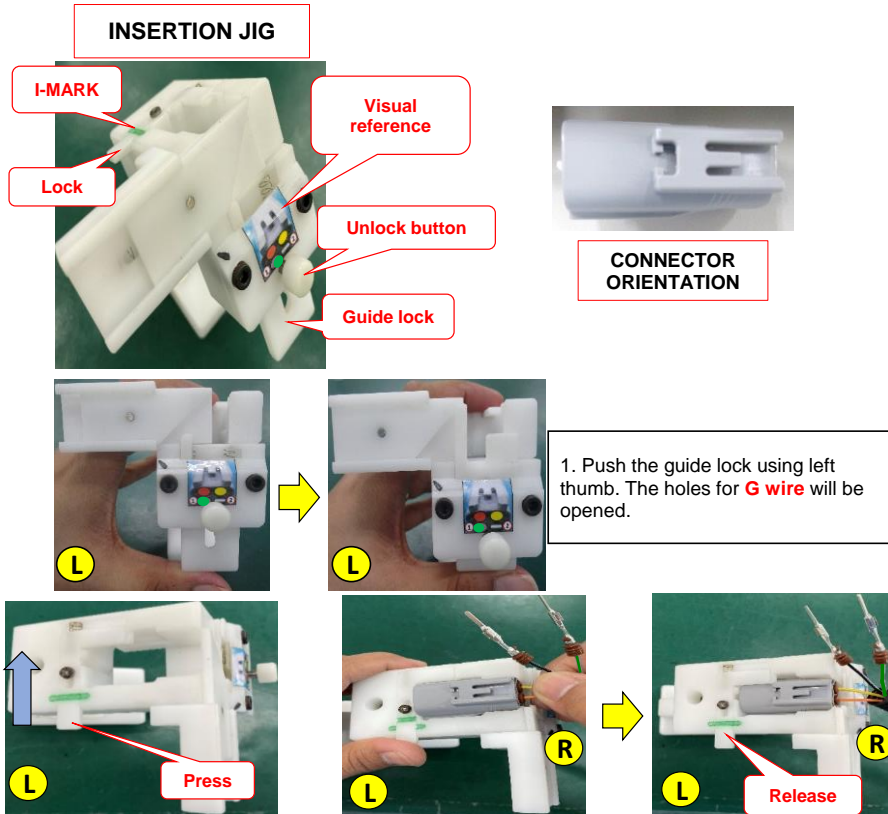
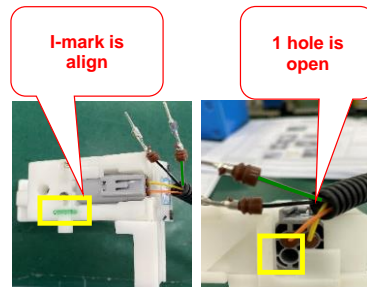
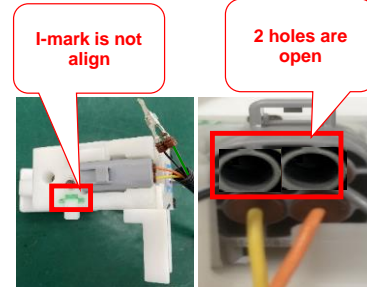
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PARTS:		1. Assy parts		JIG:	1. Insertion Jig
NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION		TOOLS/PPE	QUALITY POINTERS
11	P1	<p>Connector setting to insertion jig (Assy parts) 6188-0066 (GR)</p>  <p>1. Push the guide lock using left thumb. The holes for G wire will be opened.</p> <p>2. Press the lock of insertion jig using left thumb.</p> <p>3. Insert the connector 6188-0066 (GR) into jig using right hand and release the lock. Note: Follow the connector orientation</p>		n/a	<p>Connector Orientation Illustration</p>  <p>GOOD</p>  <p>NG</p> <p>1. Use the provided jig per model 2. No wrong orientation of connector 3. No wrong use of connector 4. No damaged connector</p>

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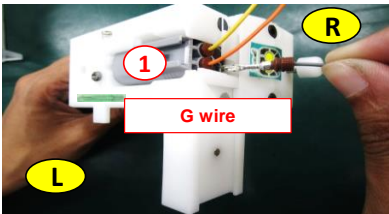
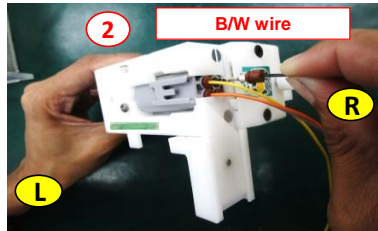
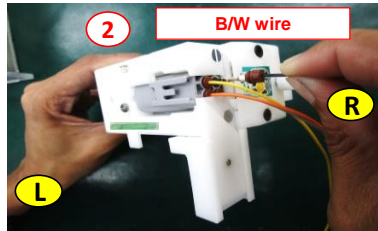
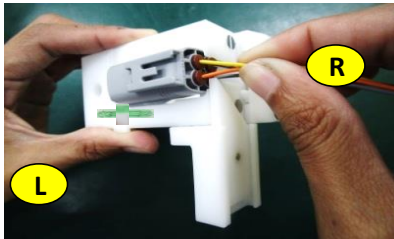
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PARTS:	1. Assy parts			JIG:	1. Insertion jig 2. Locking jig
NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION		TOOLS/PPE	QUALITY POINTERS
12	P1	<div> TERMINAL FACING</div> <div> 1. Hold the G wire then insert to terminal slot ① using right hand.</div> <div> 2. After insertion of G wire press the button using right thumb. The slot for B/W wire will be opened.</div> <div> 3. Hold the B/W wire then insert to terminal slot ② 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>		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 during insertion. 2. Make sure wires are properly inserted. Conduct Pull-Push-Pull-Push after insertion. Do not exert extra force.</div> <div>Document reference/s: 1. Refer to WI-PRO-CNC-017 for Wire and Strip Length Tolerance. 2. Refer to GL-PRO-ASY-029 for Pull-Push procedure.</div>

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**WORK INSTRUCTION****TAPING ASSEMBLY PROCESS**

Effectivity Date:

November 4, 2024

Process Name/Title:

Model code/Part number:

310B / 7M0521-7021BCustomer: **TRJ**

Car Model:

TOYOTA-RAV4

Validity Date:

n/a

Document No.:

WI-ENG-PDE-1127A

Purpose:

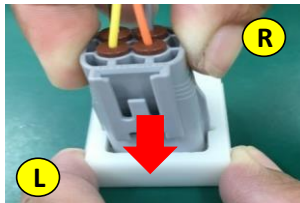



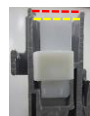


☐ PROTOTYPE☐ PRE-LAUNCH☒ MASSPRO

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PARTS:	1. Assy parts		JIG:	1. Insertion jig 2. Locking jig
NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION	TOOLS/PPE	QUALITY POINTERS
13	P1	Connector Lock <div><div></div><div><div>1. Put the connector into locking jig then press 2x using right hand. Check if properly locked.</div></div><div><div><div>Before pressing</div><div>After pressing</div></div><div><div>Connector Cross Sectional View</div><div><div><div>NG</div></div><div><div>NG</div></div><div><div>GOOD</div></div></div><div><div>Unlock Condition</div><div>Half Lock Condition</div><div>Full Lock Condition</div></div></div></div></div> <div><div>LOCKING JIG</div></div>	<p>Document reference/s:</p> <p>1. Manual locking may cause damaged connector lock.</p> <p>1. Use the provided jig per model 2. No half-lock/unlock connector</p>	

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WORK INSTRUCTION

Process Name/Title:

TAPING ASSEMBLY PROCESS

Effectivity Date:

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Model code/Part number:

310B / 7M0521-7021B

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☐ PROTOTYPE

☐ PRE-LAUNCH

☒ MASSPRO

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PARTS:

1. Assy parts

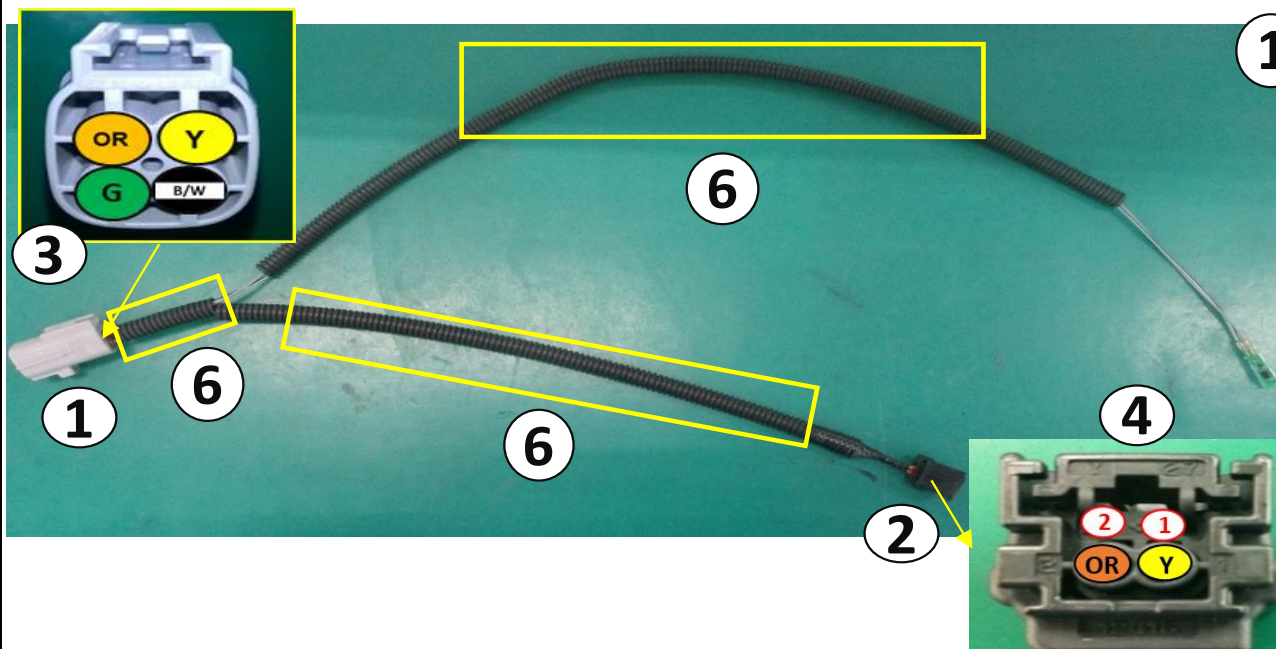
JIG:

n/a

VISUAL INSPECTION/ QUALITY CHECKPOINTS

TAPING - P1

7M0521-7021B



- ① ② No Unlock/Half-locked Connector
- ③ ④ No Wrong Insert
- ⑤ No Deformed terminal
- ⑥ No Terminal Backing Out
- ⑥ No Missing COT

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