



WORK INSTRUCTION

Process Name/Title:

TAPING ASSEMBLY PROCESS

Effectivity Date:

March 10, 2023

Model Code/Part Number:

380D / 7L0141-7020A

Customer:

TRQSS

Validity Date:

n/a

Purpose:

☐ PROTOTYPE☒ PRE-LAUNCH☐ MASSPRO

Document No.:

WI-ENG-PDE-647

Revision No.:

0

Page No.:


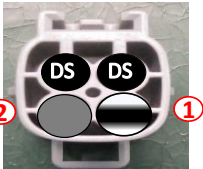

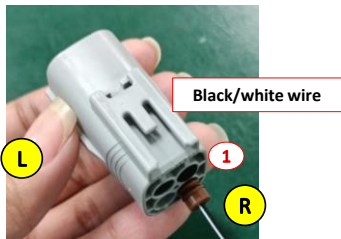
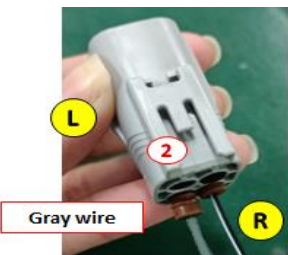
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PARTS:

1. Pre-insertion: Connector 6188-0066 (GR) ; Dummy seal 7160-9465 (B) (2pcs.)
2. TVSSf 0.3 wires GR-B/W L=678±3mm

JIG:

n/a

NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION	TOOLS/PPE	QUALITY POINTERS
1	n/a Wire Insertion to Connector 6188-0066 (GR)	<div><p>CONNECTOR ORIENTATION</p></div> <div><p>VISUAL REFERENCE</p></div> <div><p>WIRE FACING</p></div> <div><p>Black/white wire</p></div> <div><p>Gray wire</p></div> <div><p>1. Get the connector 6188-0066 (GR) then hold the Black/White wire and insert to terminal slot 1 of connector using right hand. Conduct 2x push pull after wire insertion.</p></div> <div><p>2. Hold the connector 6188-0066 (GR) then get the Gray wire and insert to terminal slot 2 of connector using right hand. Conduct 2x push pull after wire insertion.</p></div>	<div><p>Safety Instruction</p><p>Be sure to wear required personal protective equipment during operation (gloves, finger cots, etc.)</p></div> <div><p>Housekeeping</p><ol style="list-style-type: none">1. Maintain and always practice 5's.2. Personal things on the workplace is prohibited. Keep it in your locker.</div> <div><p>Alert level</p><p>For any trouble, inform the Assembly Assistant Supervisor or Line Leader for immediate corrective action.</p></div>	<ol style="list-style-type: none">1. No wrong orientation of connector2. No wrong use of connector3. No damaged connector4. No wrong insertion of wires5. No loose insertion6. No wrong insertion7. One by one insertion8. No deformed terminal9. No wrong wire facing <p>Important reminders/Note/s:</p> <ol style="list-style-type: none">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>Document references:</p> <ol style="list-style-type: none">1. Refer to GL-PRO-ASY-029 for Pull-Push procedure.2. Refer to WI-PRO-CNC-017 for Wire and Strip Length Tolerance

Revision History

Eff. Date	Rev. No	Details of Change	Prepared	Reviewed	Approved	Noted	Est. Date:	Prepared by	Reviewed by	Approved by	Noted by
03/10/23	0	Initial issue	M. Catapang	J. Loterte	C. Villanueva	A. Arañes		M. Catapang	J. Loterte	C. Villanueva	A. Arañes
								March 10, 2023			

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PROTOTYPE



PRE-LAUNCH



MASSPRO

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PARTS:

1. Assy parts

2. Black Corrugated tube Ø5 L=481±3mm (no slit)

JIG

1. Locking jig

2. Terminal cover jig

NO.**PROCESS NAME****WORK PROCEDURE/ ILLUSTRATION****TOOLS/PPE****QUALITY POINTERS**

2

Connector Lock



1. Put the connector into locking jig using right hand then press **2x**. Check if properly locked.



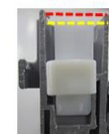
Before pressing



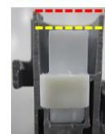
After pressing

Connector Cross Sectional View**NG****NG****GOOD**

Unlock Condition



Half Lock Condition



Full Lock Condition

Locking Jig



1. Use the provided locking jig per model
2. No unlock/half-locked connector

3

n/a

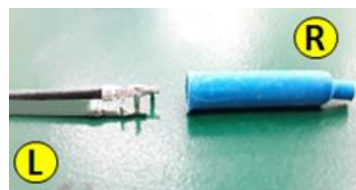
Wire Insertion to
Black Corrugated tube
Ø5 L=481±3mm
(no slit)



1. Get the terminal cover jig using right hand then insert the **GR-B/W wires** using left hand.



2. Get the corrugated tube (no slit) **Ø5 L=481±3mm** using right hand and then insert the **GR-B/W wires** using left hand.



3. After insertion, remove the terminal cover jig using right hand.

TERMINAL COVER JIG

1. No wrong use of parts
2. No deformed terminal

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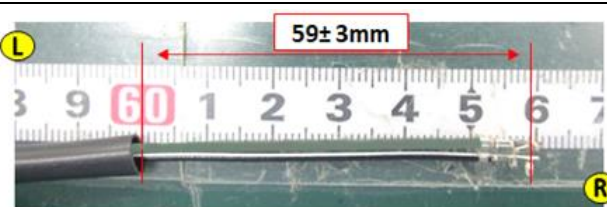
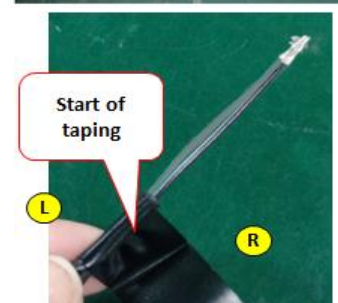

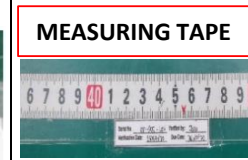
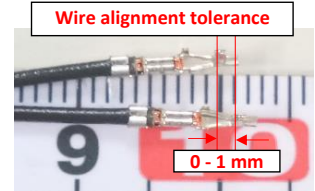
1. Assy parts

2. Black VM tube (Sunprene) Ø5 L=125±3mm

3. Black tape

JIG

n/a

NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION	TOOLS/PPE	QUALITY POINTERS
4	Wire insertion to Black VM tube (Sunprene) Ø5 L=125±3mm	 <p>1. Get the VM tube (Sunprene) Ø5 L=125±3mm using right hand then insert the GR-B/W wires using left hand.</p>	n/a	1. No wrong use of parts 2. No deformed terminal
5	Taping 1 Black sunprene tube to wire near terminal	 <p>1. Measure from end of sunprene tube up to end of the terminal pointed tip 59±3mm using both hands.</p>  <p>2. Hold the tube using left hand, get the Black tape using right hand then start taping process using both hands.</p>  <p>3. After taping, check the taping condition, measurement and wire alignment.</p>	 <p>MEASURING TAPE</p>	 <p>Wire alignment tolerance</p> <p>0 - 1 mm</p> <p>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</p> <p>Important reminders/Note/s: Please use calibrated/verified measuring tape when getting the measurement.</p>

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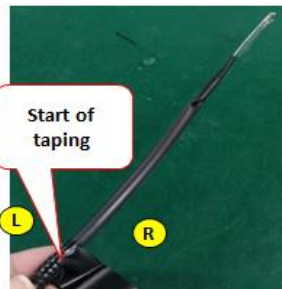


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PARTS:

1. Assy parts
2. Black tape

JIG

n/a

NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION	TOOLS/PPE	QUALITY POINTERS
6	n/a Taping 2 Black COT to Black VM tube (Sunprene) near terminal	 <p>1. Measure from end of corrugated tube up to terminal pointed tip 184±3mm using both hands.</p>  <p>2. Hold the corrugated tube and sunprene tube using left hand, get the Black tape then start taping process using both hands.</p>  <p>3. After taping, check the taping condition, measurement and wire alignment.</p>	MEASURING TAPE 	Important reminders/Note/s: <i>Please use calibrated/verified measuring tape when getting the measurement.</i> <ol style="list-style-type: none">1. No flip-out tape2. No peel-off tape3. No loose tape4. No missing tape5. No wrong use of tape6. No wrong dimension

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PARTS:

1. Clamp 82711-16820 (BR) [2pcs.]
2. Clamp 82711-5200 (W) [2pcs.]

3. Black tape [2pcs.]

JIG

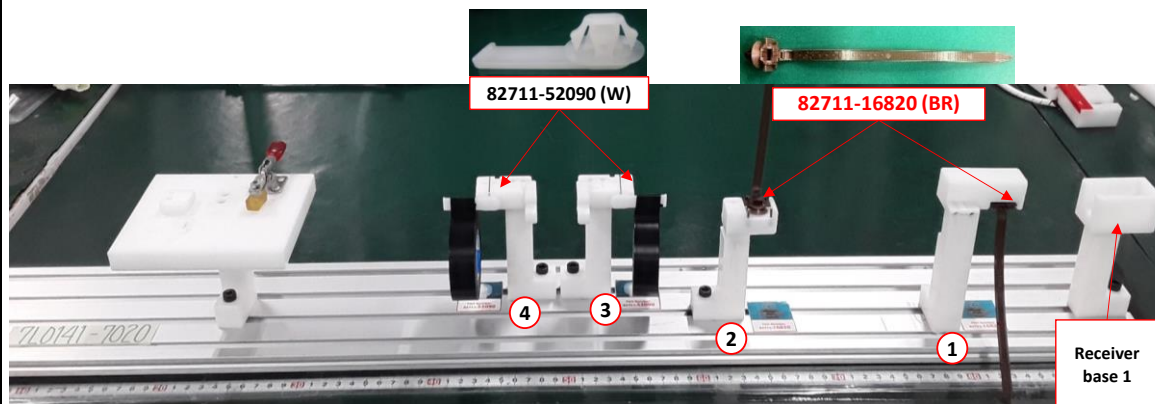
1. Temporary clamp assembly jig

NO.**PROCESS NAME****WORK PROCEDURE/ ILLUSTRATION****TOOLS/PPE****QUALITY POINTERS**

7

n/a

Clamp setting



1. Get 2pcs. of clamp **82711-52090 (W)** using both hands then set to clamp location **4 and 3** using both hands.

2. Get 2pcs. of clamp **82711-16820 (BR)** using both hands then set to clamp location **2 and 1** using both hands.

3. Initially attach **Black tape** on clamp location **3 and 4** using both hands.

STANDARD TAPING FOR CLAMP

One side tape under clamp

Important reminders/Note/s:

1. Please check the Clamp first before start of assembly to avoid wrong use of clamp.

1. No wrong use of clamp
2. No damaged clamp
3. No missing clamp
4. No wrong use of tape
5. No missing tape

CLAMP ILLUSTRATION**BAND CLAMP ILLUSTRATION**

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PARTS:

1. Assy parts

JIG

1. Temporary clamp assembly jig

NO.

PROCESS NAME

WORK PROCEDURE/ ILLUSTRATION

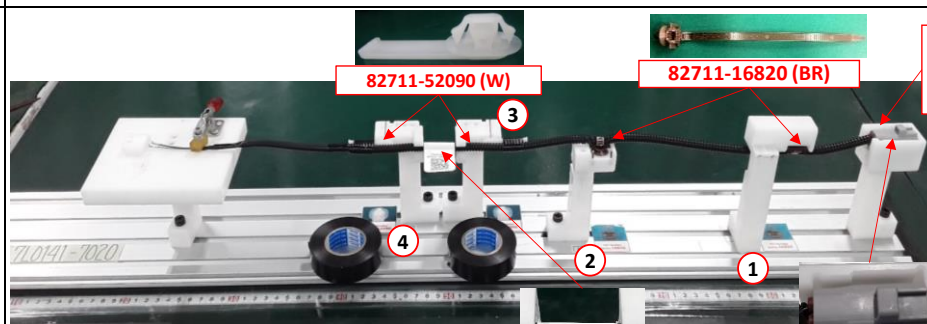
TOOLS/PPE

QUALITY POINTERS

8

n/a

Clamp assembly



1. Get the assy parts then set into jig. (*See above illustration*). First, set the connector **6188-0066 (GR)** to **Receiver base 1**. Continue to set the harness in jig. Last, set the **GR-B/W wires** to stopper then press by toggle clamp.

2. Initially tighten the band clamp on location **1** and **2** using both hands.

3. Get the bando gun using right hand then cut the band clamp on location **1** using both hands. Continue on clamp location **2**.

Note: Setting of band clamp cutter depends on the size of the COT/Vinyl tube.
For: $\phi 5 - 1 \sim 2$, $\phi 7 - 3 \sim 4$

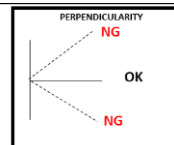
QR Code label facing

CONNECTOR SETTING

BANDO GUN POSITION ON CLAMP LOCATION 1

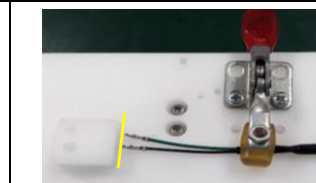


BANDO GUN ALIGNMENT



Fixed setting of band clamp cutter: 3 ~ 4

BANDO GUN

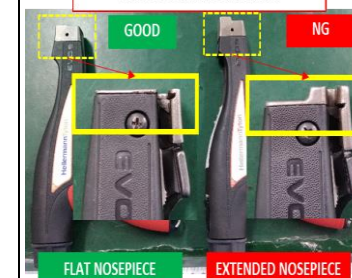


Important reminders/Note/s:

1. Make sure no gap between stopper and terminals

1. No wrong use of clamp
2. No damaged clamp
3. No missing clamp

BANDO GUN ILLUSTRATION



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PARTS:

1. Assy parts

JIG

1. Temporary clamp assembly jig

NO.

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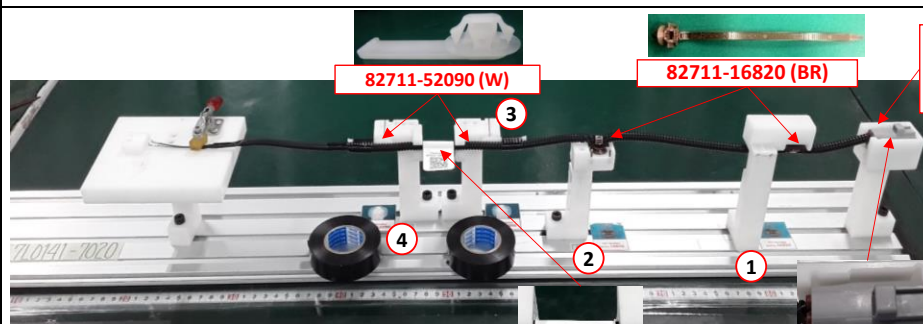
TOOLS/PPE

QUALITY POINTERS

8

n/a

Clamp assembly
(Continuation)



4. Cut the band clamp on location **2** using both hands. Continue on clamp location **3**.

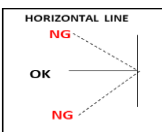
CONNECTOR SETTING

QR Code label facing

BANDO GUN POSITION ON CLAMP LOCATION 2



Fixed setting of
band clamp
cutter: 3 ~ 4



5. Hold the tape on clamp location **3**. Make **3 windings** of tape then cut the tape using both hands. Continue the process on clamp location **4**.

6. Hold the tape on clamp location **4**. Make **3 windings** of tape then cut the tape using both hands. Continue the process on label attachment

7. For label attachment, get the QR code label then attach using both hands. (Refer to the next page for label attachment).

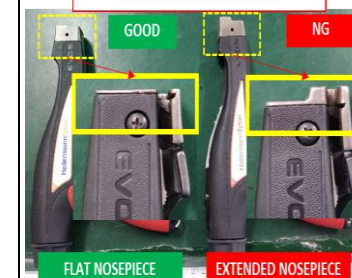
8. Conduct **POINT CHECKING** before removing the harness from jig.

BANDO GUN



1. No wrong use of clamp
2. No damaged clamp
3. No missing clamp

BANDO GUN ILLUSTRATION



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PARTS:

1. Assy parts
2. Label 7V8120-0020

JIG

1. Temporary clamp assembly jig

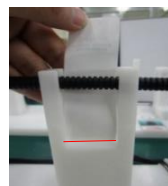
NO.**PROCESS NAME****WORK PROCEDURE/ ILLUSTRATION****TOOLS/PPE****QUALITY POINTERS**

9

n/a

Label attachment

SWITCH ASSY P/N	SWITCH ASSY PART NUMBER REFERENCE	PART NO.	TOYOTA PART NO.	SEAT POSITION	SEAT TYPE
7L0141-702	41	7V8120-0020	73230-AQ020	DRIVER	POWER
7L0140-702	40	7V8110-0020	73230-AQ010	DRIVER	PWR + MEM
7L0139-702	39	7V8130-0020	73230-AQ040	DRIVER	MANUAL



2. Align the end part of label in the jig.



3. Fold the center part of the label



Model code

Item no. & name

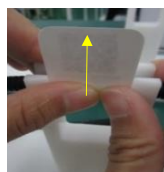
1. Get the label.
Note: Check the model code, item no. & name



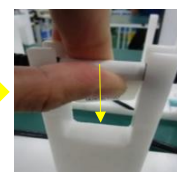
4. Align both end part of label .



5. After alignment , Press the label with both fingers .



6. Press the label upside down using finger.



Acceptable overlap

NG**GOOD**

1. No bubbles
2. No damage
3. No peel off
4. No wrong use of label
5. No missing parts
6. No loose attachment
7. No wrong usage of label



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PARTS:

1. Assy parts

JIG

n/a

NO.

PROCESS NAME

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TOOLS/PPE

QUALITY POINTERS

10

n/a

Visual/By two's inspection

Engineering sample

Assembled parts

ACTUAL PRODUCT

1. Conduct alignment of harness (Engineering sample vs. assembled parts) using both hands.

2. Check the connector lock, terminal, insertion.

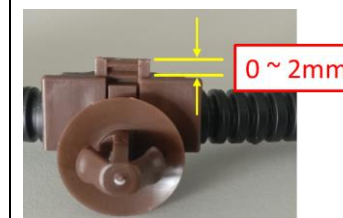
3. Check the Y-Taping condition, presence of all clamp attachment, taping condition and band clamp cut condition.

4. Check the presence of QR code and its part number.

5. Check the taping condition.

6. Check the terminal appearance and taping condition. Must be no deformed terminal.

1. No skip checking during inspection.



Important reminders/Note/s:

1. Using a steel rule, check if the band cut measurement is within the required dimension (0~2mm) and should not exceed the maximum value.

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1. Assy parts

JIG

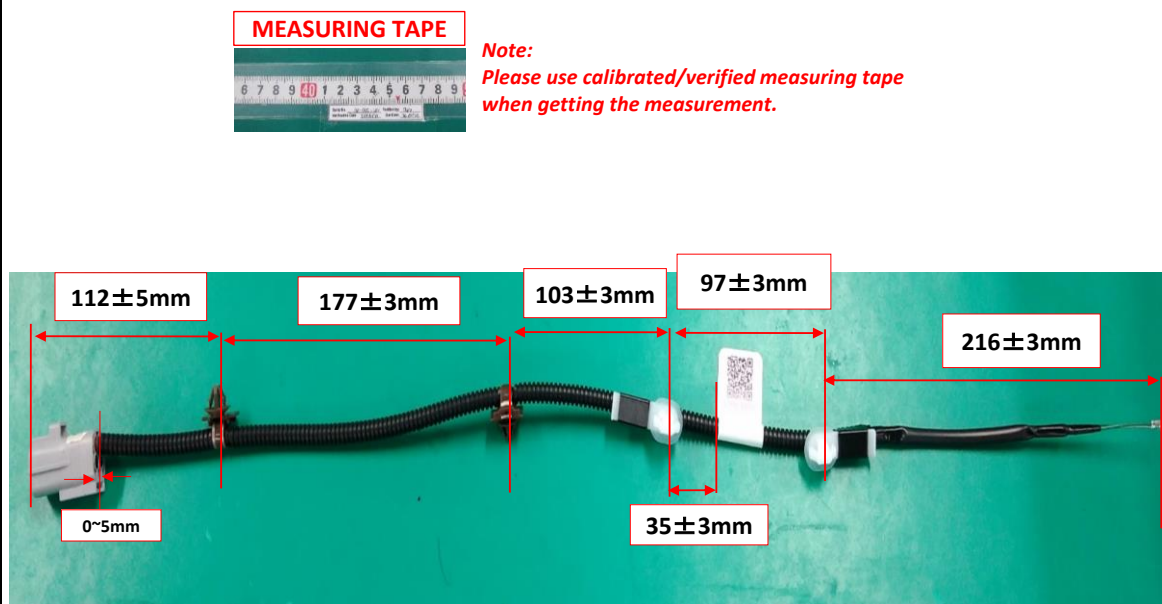
n/a

NO.**PROCESS NAME****WORK PROCEDURE/ ILLUSTRATION****TOOLS/PPE****QUALITY POINTERS**

11

n/a

Measurement



Important reminders/Note/s:
1. FOR HATSUMONO AND OWARIMONO

1. No wrong dimension

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PARTS:

1. Assy parts

JIG

n/a

QUALITY CHECKPOINTS**7L0141-7020A****NO GOOD****GOOD****3****6****6****6****7****6****5****9****GOOD****GOOD****NO GOOD****NO GOOD****1 No Unlock/ Half Lock Connector****4 No Terminal Backing out****7 No QR code label****2 No Wrong Insert****5 No Missing Tape****8 Checking of Clamp Alignment****3 No Missing Dummy Seal****6 No Missing Clamp (4pcs)****9 No Deformed Terminal**

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