



WORK INSTRUCTION

Process Name/Title:

TAPING ASSEMBLY PROCESS

Effectivity Date:

January 23, 2025

Model code/Part number:

310D / 75V076-7011

Customer:

TRJ

Car Model:

TOYOTA-RAV 4

Document No.:

WI-ENG-PDE-1181

Purpose:



PROTOTYPE



PRE-LAUNCH



MASSPRO

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PARTS:

1. Assy parts (GR/B wire with White SV tube (Vinyl) Ø3, L=71±3mm, Sky blue tape); Black SV tube (Vinyl) Ø4.5, L=132±3mm; Connector PBVP-10V-S (W); Connector 4A1230-0000 (W); AVSS 0.3 R L=166±2mm; W/G L=168±2mm; BR L=172±2mm.

JIG:

1. Insertion jig
2. Steering Navigation

NO.

PROCESS NAME



WORK PROCEDURE/ ILLUSTRATION

TOOLS/PPE

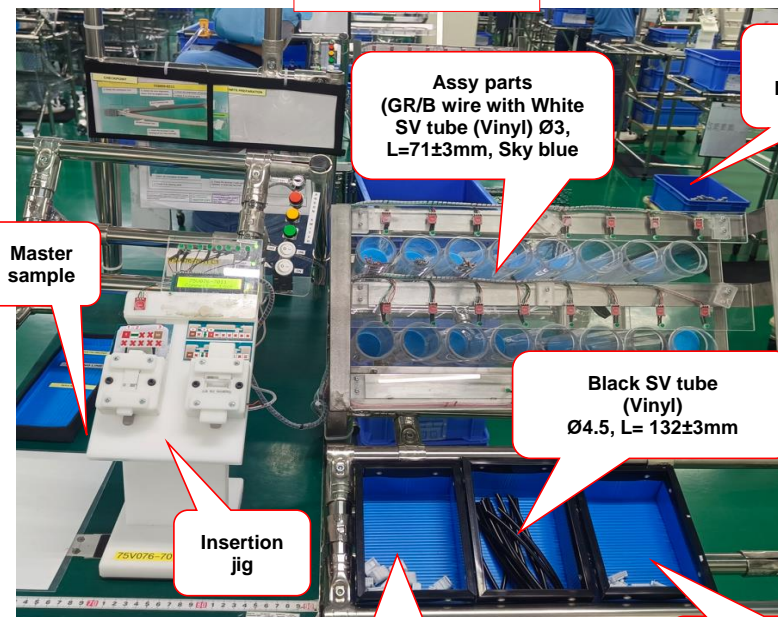
QUALITY POINTERS

1

P1

Table lay-out

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
2. Refer to **WI-ENG-PDE-1151** for Taping assembly process (Pre-assy)

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

Revision History

Prepared by

Reviewed by

Approved by

Noted by

Eff. Date	Rev. No	Details of Change	Revised	Reviewed	Approved	Noted	Est. Date:	December 04, 2024
01/23/25	1	Change from Pre-launch to Masspro. Update the Work Procedure/Illustration (Provide insertion jig and Steering navigation); Additional table lay-out	M. Ariola	C. Villanueva	A. Arañes	n/a		
12/04/24	0	Initial issue.	M. Ariola	C. Villanueva	A. Arañes	n/a		

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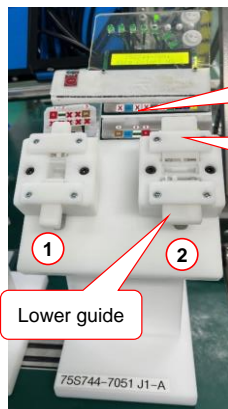
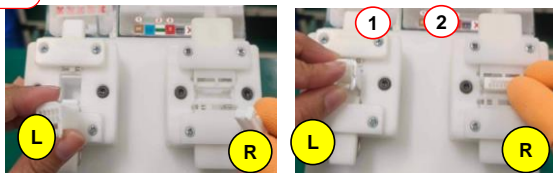
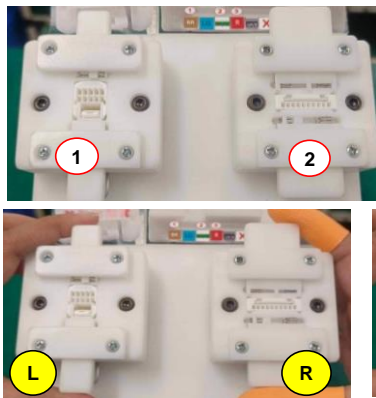


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PARTS:		1. Connector 4A1230-0000 (W) 2. Connector PBVP-10V-S (W)		JIG:	1. Insertion jig 2. Steering Navigation
NO.	PROCESS NAME	1 WORK PROCEDURE/ ILLUSTRATION		TOOLS/PPE	QUALITY POINTERS
2	P1	<div><div>Insertion Jig</div><div><div>Visual reference</div><div>Upper guide</div><div>Lower guide</div></div><div>Connector orientation</div><div><div>1. Get the 1 pc of <u>4A1230-0000 (W)</u> using left hand and 1 pc of <u>PBVP-10V-S (W)</u> connector using right hand then insert to insertion jig. <i>Note: Follow the connector orientation.</i></div></div><div><div><div>Press</div><div>2. Press the upper and lower guide using both hands in same timing. Holes that need to be insert are only open.</div></div></div></div> <div><div>STEERING NAVIGATION (2 layer)</div><div></div><div>CONTROLLER</div><div></div></div>		1. Use the provided jig per model 2. No wrong usage of parts 3. No wrong orientation of connector 4. No damaged connector	

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PARTS: 1. AVSS 0.3 R L=166±2mm; W/G L=168±2mm; BR L=172±2mm

JIG:

1. Insertion jig
2. Steering Navigation

NO.

PROCESS NAME

1

WORK PROCEDURE/ ILLUSTRATION

TOOLS/PPE

QUALITY POINTERS

INSERTION SEQUENCE FROM LEFT TO RIGHT



TERMINAL
FACING

WIRE INSERTION ILLUSTRATION

1	2			3
R	W/G	X	X	BR
166	168			172
X	X	X	X	X

STEERING
NAVIGATION (2 layer)



CONTROLLER



1. Use provided jig per model
2. No wrong usage of parts
3. One by one insertion
4. No wrong insertion
5. No deformed terminal
6. No stuck of terminal tip

Important reminders/Note/s:

1. Make sure wires are properly inserted. Conduct Pull-Push-Pull-Push after insertion. Do not exert extra force.
2. Please hold the wires near terminal during insertion.
3. Automatically dispose and replace the unit if once encountered bend terminal, difficulty of insertion and half-locked connector.
4. Insertion of wires must be from left to right.

Document reference/s:

1. Refer to WI-PRO-CNC-017 for Wire and Strip Length Tolerance.
2. Refer to WI-ENG-PDE-044 for Steering Navigation Controller procedure..
3. Refer to GL-PRO-ASY-029 for Pull-Push procedure.

1. Get the R wire using left hand and transfer to right hand then insert to connector. Repeat the process for W/G and BR wires. Check the wire after insertion.

Note: Follow the insertion sequence based on the illustration.

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PARTS:

1. Assy parts
2. Black SV tube (Vinyl) $\phi 4.5$, L=132 \pm 3mm

JIG:

1. Insertion jig
2. Steering Navigation

NO.

PROCESS NAME

1 WORK PROCEDURE/ ILLUSTRATION

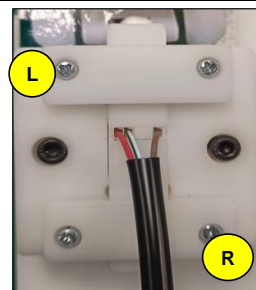
TOOLS/PPE

QUALITY POINTERS

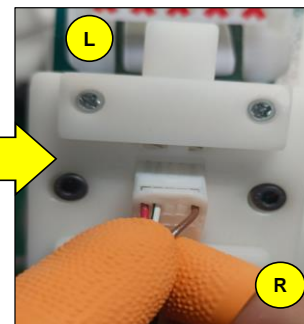
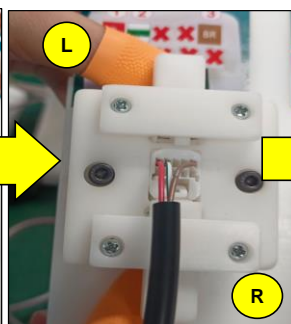
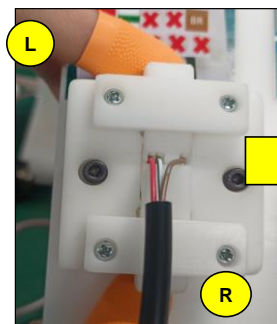
4

P1

Wire insertion to
Black SV tube (Vinyl) $\phi 4.5$,
L=132 \pm 3mm



1. Get the **Black SV tube (Vinyl) $\phi 4.5$, L=132 \pm 3mm** using right hand. Hold the wire using left hand then insert the wires.



2. Press the Upper and lower guide button using both hands . Remove the 1st connector with inserted wires using right hand.

STEERING NAVIGATION
(2 layer)



CONTROLLER



1. Use provided jig per model
2. No wrong usage of parts
3. One by one insertion
4. No wrong insertion
5. No deformed terminal
6. No stuck of terminal tip

Important reminders/Note/s:

1. **Make sure wires are properly inserted. Conduct Pull-Push-Pull-Push after insertion. Do not exert extra force.**
2. **Please hold the wires near terminal during insertion.**
3. **Automatically dispose and replace the unit if once encountered bend terminal, difficulty of insertion and half-locked connector.**
4. **Insertion of wires must be from left to right.**

Document reference/s:

1. Refer to WI-PRO-CNC-017 for Wire and Strip Length Tolerance.
2. Refer to WI-ENG-PDE-044 for Steering Navigation Controller procedure..
3. Refer to GL-PRO-ASY-029 for Pull-Push procedure.

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PARTS: 1. Assy parts

JIG:

1. Insertion jig
2. Steering Navigation

NO.

PROCESS NAME



WORK PROCEDURE/ ILLUSTRATION

TOOLS/PPE

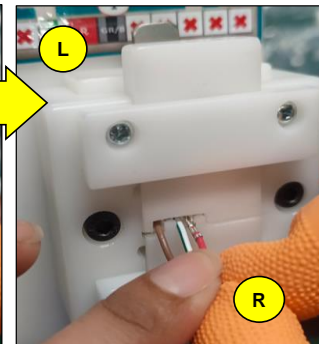
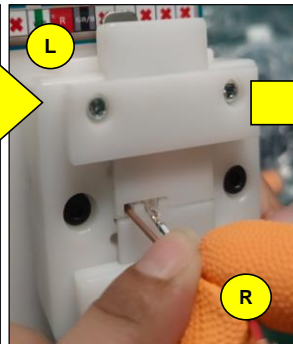
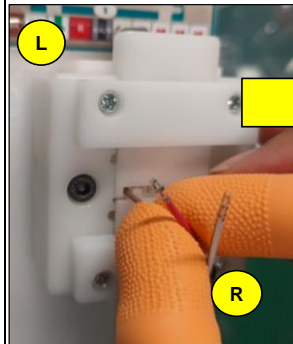
QUALITY POINTERS

INSERTION SEQUENCE FROM LEFT TO RIGHT



WIRE INSERTION ILLUSTRATION

1	2	3	4	5	6	7	8	9	10
BR	X	W/G	R	X	X	X	X	X	X
172	X	168	166	X	X	X	X	X	X



1. Hold the **BR** wire using right hand and support the wire by left index finger then insert to connector slot 1 using right hand. Repeat the process on **W/G** and **R** wires.

Note: Follow the insertion sequence based on the above illustration.

STEERING
NAVIGATION (2 layer)



CONTROLLER



Important reminders/Note/s:

1. Make sure wires are properly inserted. Conduct **Pull-Push-Pull-Push** after insertion. Do not exert extra force.
2. Please hold the wires near terminal during insertion.
3. Automatically dispose and replace the unit if once encountered bend terminal, difficulty of insertion and half-locked connector.
4. Insertion of wires must be from left to right.

Document reference/s:

1. Refer to WI-PRO-CNC-017 for Wire and Strip Length Tolerance.
2. Refer to WI-ENG-PDE-044 for Steering Navigation Controller procedure..
3. Refer to GL-PRO-ASY-029 for Pull-Push procedure.
4. Refer to GL-PRO-ASY-025 for Inspection Standard for connector insertion.

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PARTS:

1. Assy parts (GR/B wire with White SV tube, Sky blue tape)

JIG:

1. Insertion jig
2. Steering Navigation

NO.

PROCESS NAME

1

WORK PROCEDURE/ ILLUSTRATION

TOOLS/PPE

QUALITY POINTERS

5

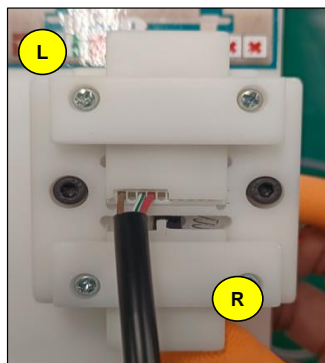
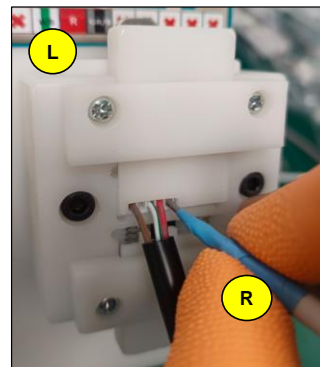
P1

Wire insertion to
Connector
PBVP-10V-S (W)
(Continuation)INSERTION SEQUENCE FROM LEFT TO
RIGHT

TERMINAL FACING

WIRE INSERTION ILLUSTRATION

1	2	3	4	5	6	7	8	9	10
BR	X	W/G	R	GR/B	X	X	X	X	X
172	X	168	166	120	X	X	X	X	X

2. Press the Lower button using
right hand slot for GR/B will be
open.3. Get the assy parts (GR/B wire with White SV tube,
Sky blue tape) using right hand. Position the finger in
the middle of wire and tube, slightly pinch while inserting
to connector. Check the wire after insertion.**Note: Follow the insertion sequence based on the
illustration.**STEERING
NAVIGATION (2 layer)

CONTROLLER

1. Use provided jig per model
2. No wrong usage of parts
3. One by one insertion
4. No wrong insertion
5. No deformed terminal
6. No stuck of terminal tip**Important reminders/Note/s:**

1. **Make sure wires are properly inserted. Conduct Pull-Push-Pull-Push after insertion. Do not exert extra force.**

2. **Please hold the wires near terminal during insertion.**

3. **Automatically dispose and replace the unit if once encountered bend terminal, difficulty of insertion and half-locked connector.**

4. **Insertion of wires must be from left to right.**

Document reference/s:

1. Refer to WI-PRO-CNC-017 for Wire and Strip Length Tolerance.

2. Refer to WI-ENG-PDE-044 for Steering Navigation Controller procedure..

3. Refer to GL-PRO-ASY-029 for Pull-Push procedure.

4. Refer to GL-PRO-ASY-025 for Inspection Standard for connector insertion.

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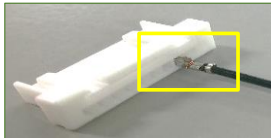
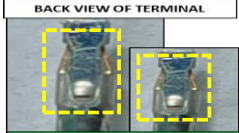


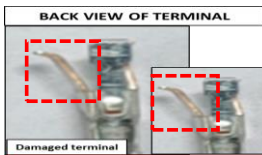
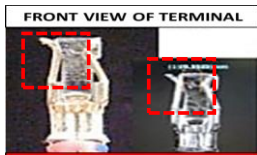
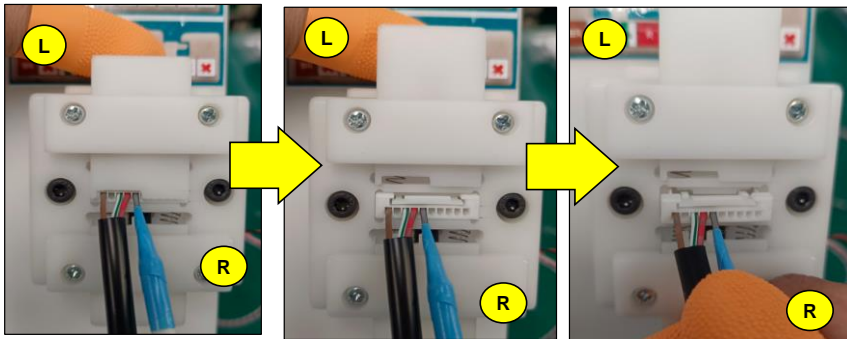
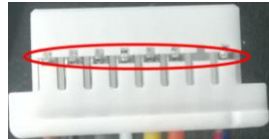
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PARTS:	1. Assy parts		JIG:	1. Insertion jig 2. Steering Navigation
NO.	PROCESS NAME	1 WORK PROCEDURE/ ILLUSTRATION	TOOLS/PPE	QUALITY POINTERS
5	P1 Wire insertion to Connector PBVP-10V-S (W) (Continuation)	<div><div>Proper alignment of terminal to connector</div><div></div><div><div>BACK VIEW OF TERMINAL</div><div></div><div>GOOD Terminal condition</div></div><div><div>FRONT OF TERMINAL</div><div></div><div>GOOD Terminal condition</div></div></div> <div><div>Improper alignment of terminal to connector</div><div></div><div><div>BACK VIEW OF TERMINAL</div><div></div><div>Damaged terminal NO GOOD Terminal condition</div></div><div><div>FRONT VIEW OF TERMINAL</div><div></div><div>NO GOOD Terminal condition</div></div></div> <div>Note: <i>*Make sure the terminal was in proper alignment before insert.</i> <i>*Avoid hitting the terminal into the connector during wire insertion, if encountered abnormality stop the process and call the attention of Immediate superior and Automatically disposed and replace the unit.</i></div> <div><div></div><div>4. Press the upper lock by left hand and hold the assy part using right hand. Check the wire after insertion.</div></div>		<div>1. Use provided jig per model 2. No wrong usage of parts 3. One by one insertion 4. No wrong insertion 5. No deformed terminal 6. No stuck of terminal tip</div> <div>Important reminders/Note/s:</div> <div>1. Make sure wires are properly inserted. Conduct Pull-Push-Pull-Push after insertion. Do not exert extra force. 2. Please hold the wires near terminal during insertion. 3. Automatically dispose and replace the unit if once encountered bend terminal, difficulty of insertion and half-locked connector. 4. Insertion of wires must be from left to right.</div> <div>Document reference/s:</div> <div>1. Refer to WI-PRO-CNC-017 for Wire and Strip Length Tolerance. 2. Refer to WI-ENG-PDE-044 for Steering Navigation Controller procedure.. 3. Refer to GL-PRO-ASY-029 for Pull-Push procedure. 4. Refer to GL-PRO-ASY-025 for Inspection Standard for connector insertion.</div> <div></div> <div>Terminal tip must be visible</div>

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PROTOTYPE



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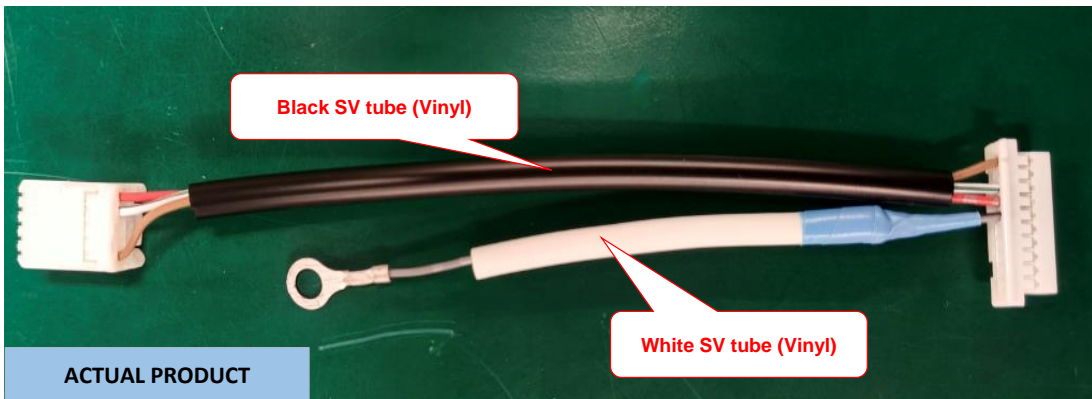

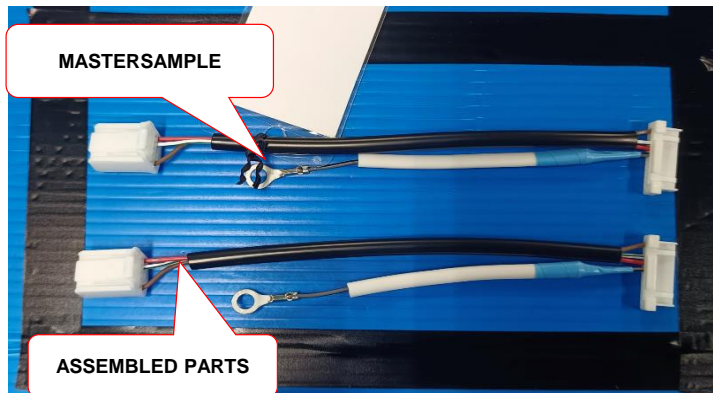
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PARTS:		1. Assy parts 2. Master sample		JIG:	n/a
NO.	PROCESS NAME	1 WORK PROCEDURE/ ILLUSTRATION	TOOLS/PPE	QUALITY POINTERS	
6	P1 Visual/By two's inspection	<div>1. Check the connector lock. Locking of connector is included to Steering electrical test.</div> <div>2. Check the wire alignment. Make sure no tangled wires</div> <div>3. Check the terminal if with backing out (not fully inserted) or no deformed terminal.</div> <div></div> <div>4. Check the orientation of harness.</div> <div>5. Compare to Master sample by tapping.</div> <div></div> <div></div>		<p>Document reference/s:</p> <p>1. Refer to WI-QAD-QAC-252 <i>Steering Electrical Test</i></p> <p>MASTER SAMPLE</p> <p>1. No wrong orientation of connector 2. No wrong use of connector 3. No wrong terminal facing</p>	

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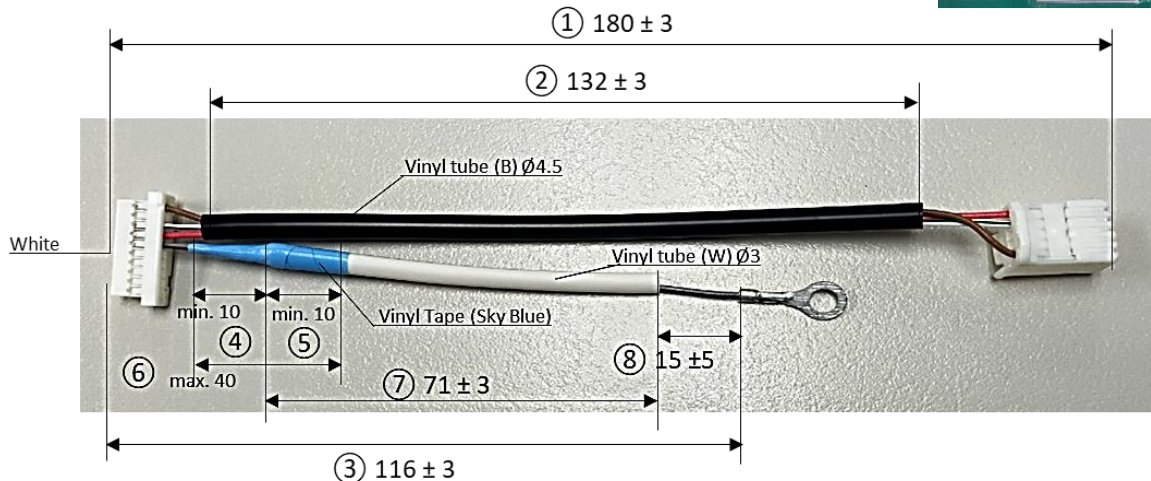
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PARTS:		1. Assy parts		JIG:	n/a
NO.	PROCESS NAME	1 WORK PROCEDURE/ ILLUSTRATION	TOOLS/PPE	QUALITY POINTERS	
7	P1	Measurement	<div>MEASURING TAPE</div> 	<p>1. No wrong dimension.</p> <p>Important reminders and note/s:</p> <p>1. Please use calibrated/verified measuring tape when getting the measurement.</p> <p>2. For Hatsumono, Nakamono and Owarimono.</p> <p>Document reference/s:</p> <p>1. Refer to WI-PRO-ASY-056 for Sub-assembly Hatsumono Nakamono Owarimono Inspection</p>	

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PARTS:

n/a

JIG:

n/a

**VISUAL INSPECTION/ QUALITY CHECKPOINTS****STEERING****75V076-7011**

1. Check the connector lock.
Locking of connector is included in
Steering Electrical test.

2. Check the wire alignment.
Must be no tangled wires.

3. Check the Terminal if with
Backing out (Not fully inserted)
or no deformed terminal.

BLACK VM TUBE
(SUNPRENE) Ø4.5

WHITE VM TUBE
(SUNPRENE) Ø3

5. Compare to **Master
sample** by tapping

4. No missing tape
(Sky Blue tape)

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