
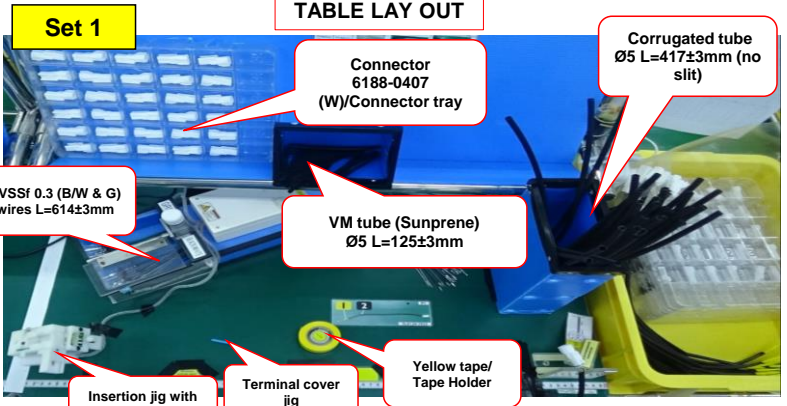
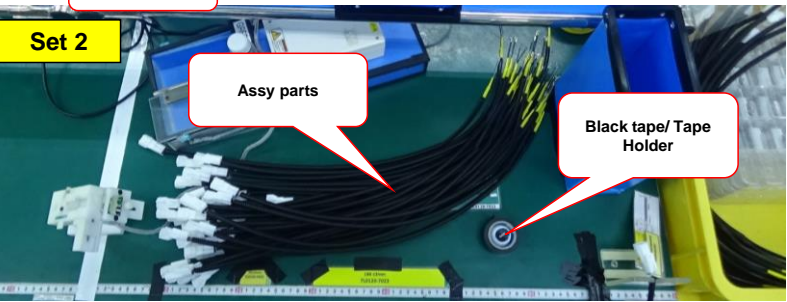











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|---|---|--|------------------------|------------------------|---|-------------------------|
|  | WORK INSTRUCTION | | | | Effectivity Date: October 18, 2024 | |
| | Process Name/Title: TAPING ASSEMBLY PROCESS | | | | Validity Date: n/a | |
| | Model code/Part number: 096D / 7L0120-7023 | | Customer: TRQSS | | Car Model: TOYOTA-HIGHLANDER | |
| | Purpose: <input type="checkbox"/> PROTOTYPE <input type="checkbox"/> PRE-LAUNCH <input checked="" type="checkbox"/> MASSPRO | | | | Document No.: WI-ENG-PDE-243 | |
| | | | | Revision No.: 5 | | Page No.: 1 of 8 |

| PARTS: 1. All parts: Connector 6188-0407 (W); TVSSf 0.3 G-B/W L=614mm±3mm; Black corrugated tube Ø5 L= 417±3mm (no slit); Yellow tape [1pc]; VM tube (Sunprene) Ø5 L=125±3mm | | Black | | JIG: 1. Insertion jig with switch cover | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---------------------|--|---|---|---|-----------|--|--|--|----------|----------|-------|-------------|-------------|-------------|----------|----------|---|--|------------|--------------|-----------|-----|--|--|--|-----|----------|---|--|-------------|------------|--------------|-----------|----------|---|---|------------|--------------|-----------|-----|
| NO. | PROCESS NAME | WORK PROCEDURE/ ILLUSTRATION | TOOLS/PPE | | QUALITY POINTERS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | P1 | <div> <div> Set 1  </div> <div> Set 2  </div> </div> | <div> Safety Instruction Be sure to wear required 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> | | Document reference/s: 1. Refer to WI-PRO-CNC-017 for Wire and Strip Length Tolerance. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div> <div> Revision History <table border="1"> <thead> <tr> <th>Eff. Date</th> <th>Rev. No</th> <th>Details of Change</th> <th>Revised</th> <th>Reviewed</th> <th>Approved</th> <th>Noted</th> <th>Prepared by</th> <th>Reviewed by</th> <th>Approved by</th> <th>Noted by</th> </tr> </thead> <tbody> <tr> <td>10/18/24</td> <td>5</td> <td>Inclusion of Car model "TOYOTA-HIGHLANDER" and Measurement. Update Table lay-out and Visual inspection/Quality pointers.</td> <td>D.Castillo</td> <td>C.Villanueva</td> <td>A. Arañes</td> <td>N/A</td> <td rowspan="3">  D. Castillo </td> <td rowspan="3">  C. Villanueva </td> <td rowspan="3">  A. Arañes </td> <td rowspan="3"> n/a </td> </tr> <tr> <td>06/07/23</td> <td>4</td> <td>Removal of connector lock process, improvement due to QC claim (Unlock connector). Integrate the locking jig to Assembly jig. Change the wire color location from B/W-G to G-B/W. Change document control number from WI-ENG-PDE-243A to WI-ENG-PDE-243. Transfer Taping 2 Black COT to Black VM tube (Sunprene) process from WI-ENG-PDE-243B to WI-ENG-PDE-243. Update table lay-out (Page 1) and Quality checkpoints (Page 7).</td> <td>D. Castillo</td> <td>J. Loterte</td> <td>C.Villanueva</td> <td>A. Arañes</td> </tr> <tr> <td>05/12/23</td> <td>3</td> <td>Inclusion of quality checkpoints; improve the important reminders/note/s and document references; standardize the VM tube (Sunprene) term</td> <td>J. Loterte</td> <td>C.Villanueva</td> <td>A. Arañes</td> <td>n/a</td> </tr> </tbody> </table> </div> <div> February 25, 2021 </div> </div> | | | | | | Eff. Date | Rev. No | Details of Change | Revised | Reviewed | Approved | Noted | Prepared by | Reviewed by | Approved by | Noted by | 10/18/24 | 5 | Inclusion of Car model "TOYOTA-HIGHLANDER" and Measurement. Update Table lay-out and Visual inspection/Quality pointers. | D.Castillo | C.Villanueva | A. Arañes | N/A |  D. Castillo |  C. Villanueva |  A. Arañes | n/a | 06/07/23 | 4 | Removal of connector lock process, improvement due to QC claim (Unlock connector). Integrate the locking jig to Assembly jig. Change the wire color location from B/W-G to G-B/W. Change document control number from WI-ENG-PDE-243A to WI-ENG-PDE-243. Transfer Taping 2 Black COT to Black VM tube (Sunprene) process from WI-ENG-PDE-243B to WI-ENG-PDE-243. Update table lay-out (Page 1) and Quality checkpoints (Page 7). | D. Castillo | J. Loterte | C.Villanueva | A. Arañes | 05/12/23 | 3 | Inclusion of quality checkpoints; improve the important reminders/note/s and document references; standardize the VM tube (Sunprene) term | J. Loterte | C.Villanueva | A. Arañes | n/a |
| Eff. Date | Rev. No | Details of Change | Revised | Reviewed | Approved | Noted | Prepared by | Reviewed by | Approved by | Noted by | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10/18/24 | 5 | Inclusion of Car model "TOYOTA-HIGHLANDER" and Measurement. Update Table lay-out and Visual inspection/Quality pointers. | D.Castillo | C.Villanueva | A. Arañes | N/A |  D. Castillo |  C. Villanueva |  A. Arañes | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 05/12/23 | 3 | Inclusion of quality checkpoints; improve the important reminders/note/s and document references; standardize the VM tube (Sunprene) term | J. Loterte | C.Villanueva | A. Arañes | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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WORK INSTRUCTION

TAPING ASSEMBLY PROCESS

Effectivity Date:

October 18, 2024

Process Name/Title:

Validity Date:

n/a

Model code/Part number:

096D / 7L0120-7023

Customer:

TRQSS

Car Model:

TOYOTA-HIGHLANDER

Document No.:

WI-ENG-PDE-243

Purpose:

☐ PROTOTYPE

☐ PRE-LAUNCH

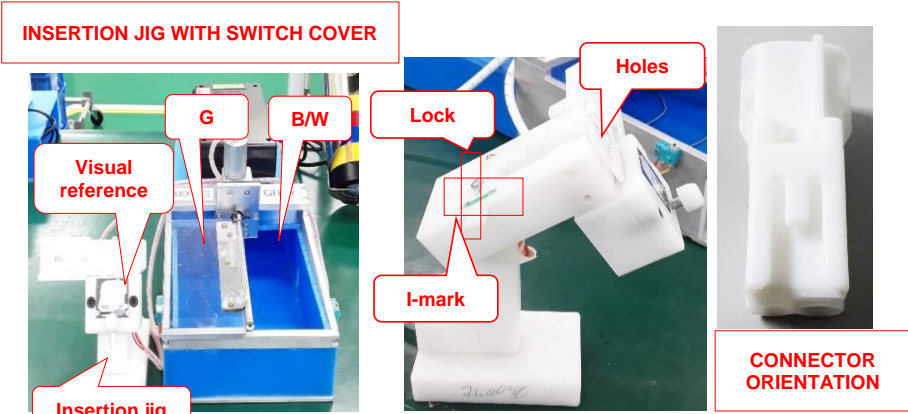

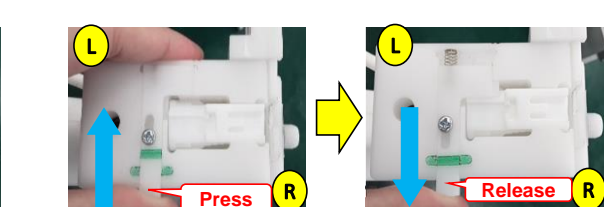
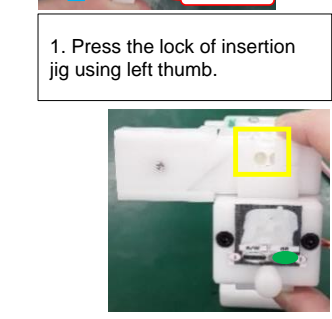




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5

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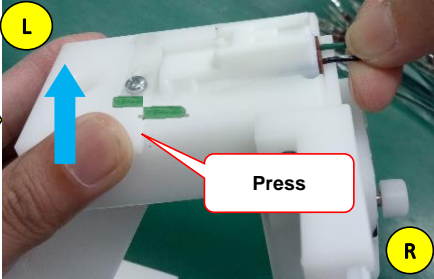
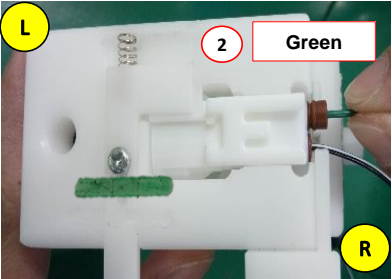
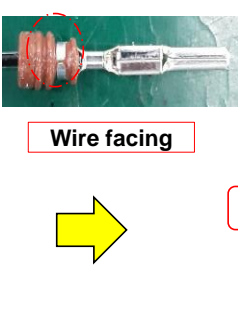
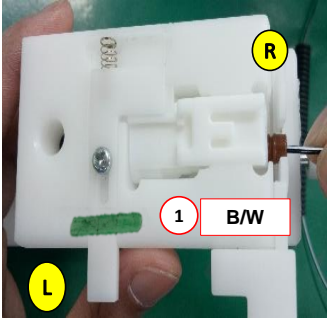
| | | | | |
|--------|--|---|--|------------------------------------|
| PARTS: | 1. Connector 6188-0407 (W) | | JIG: | 1. Insertion jig with switch cover |
| NO. | PROCESS NAME | WORK PROCEDURE/ ILLUSTRATION | TOOLS/PPE | QUALITY POINTERS |
| 2 | P1 Connector setting to Insertion jig 6188-0407 (W) | <div><div>INSERTION JIG WITH SWITCH COVER</div><div></div><div><p>1. Press the lock of insertion jig using left thumb.</p></div><div><p>2. Insert the connector 6188-0407 (W) into jig using right hand and release the lock. <i>Note: Refer to above illustration for correct setting.</i></p></div><div><p>3. Check the holes/terminal slot for B/W wire.</p></div></div> <div>n/a</div> <td><div>Connector Orientation Illustration</div><div></div><div></div><div>1. Use the provided jig per model 2. No wrong orientation of connector 3. No wrong use of connector 4. No damaged connector</div></td> | <div>Connector Orientation Illustration</div> <div></div> <div></div> <div>1. Use the provided jig per model 2. No wrong orientation of connector 3. No wrong use of connector 4. No damaged connector</div> | |

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|  | WORK INSTRUCTION | | | | Effectivity Date: | | October 18, 2024 | |
| | Process Name/Title: TAPING ASSEMBLY PROCESS | | | | Validity Date: | | n/a | |
| | Model code/Part number: 096D / 7L0120-7023 | | Customer: TRQSS | Car Model: TOYOTA-HIGHLANDER | Document No.: | | WI-ENG-PDE-243 | |
| | Purpose: <input type="checkbox"/> PROTOTYPE <input type="checkbox"/> PRE-LAUNCH <input checked="" type="checkbox"/> MASSPRO | | | | Revision No.: | | 5 | Page No.: 3 of 8 |


| | | | | | |
|---------------|---|---|--|------------------|---|
| PARTS: | | 1. TVSSf 0.3 wires B/W-G L=614±3mm | | JIG: | 1. Insertion jig with switch cover |
| NO. | PROCESS NAME | WORK PROCEDURE/ ILLUSTRATION | | TOOLS/PPE | QUALITY POINTERS |
| 3 | P1 Wire Insertion to Connector 6188-0407 (W) | <div></div> <div>1. Hold the Insertion jig using left hand. Get Black /White wire then insert to terminal slot 1 using right hand.</div> <div>2. Push the button using right hand. The slot for Green wire will be opened.</div> <div>3. Get Green 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 | <p>Document reference/s:</p> <p>1. Refer to WI-PRO-CNC-017 for Wire and Strip Length Tolerance.</p> <p>2. Please refer to GL-PRO-ASSY-029 for Pull-Push procedure.</p> <p>Important reminders/Note/s:</p> <p>1. Make sure wires are properly inserted.</p> <p>Conduct Pull-Push-Pull-Push after insertion.</p> <p>Do not exert extra force.</p> <p>1. No loose insertion</p> <p>2. No wrong insertion</p> <p>3. One by one insertion</p> <p>4. No deformed terminal</p> <p>5. No wrong wire facing</p> |






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| | Purpose: | | <input type="checkbox"/> PROTOTYPE | | <input type="checkbox"/> PRE-LAUNCH | <input checked="" type="checkbox"/> MASSPRO | Revision No.: | | 5 | Page No.: |


| | | | | | | | |
|---------------|---------------------|--|--|--|--|---|--|
| PARTS: | | 1. Assy parts 2. Black Corrugated tube Ø5 L=417±3mm (no slit) | | | JIG: | 1. Terminal cover jig | |
| NO. | PROCESS NAME | WORK PROCEDURE/ ILLUSTRATION | | | TOOLS/PPE | QUALITY POINTERS | |
| 4 | P1 | <div><div><p>1. Get the terminal cover jig using right hand then insert the G and B/W wires.</p></div><div><p>2. Get the Corrugated Ø5 L=417±3mm (no slit) using right hand and insert the G and B/W wires</p></div><div><p>3. After insertion, remove the terminal cover jig using right hand.</p></div></div> | | | <div><div>TERMINAL COVER JIG</div></div> | 1. No wrong use of parts 2. No deformed terminal | |
| 5 | | <div><div><p>1. Get the Black VM tube (Sunprene) Ø5 L=125±3mm using right hand and insert the G and B/W wires using left hand.</p></div></div> | | | n/a | 1. No wrong use of parts | |

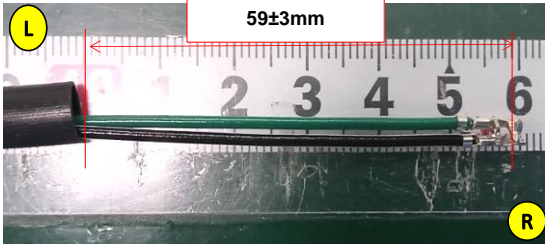
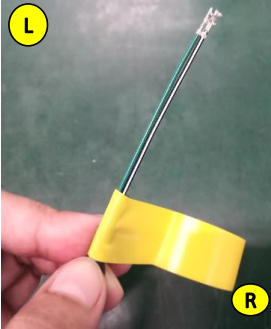
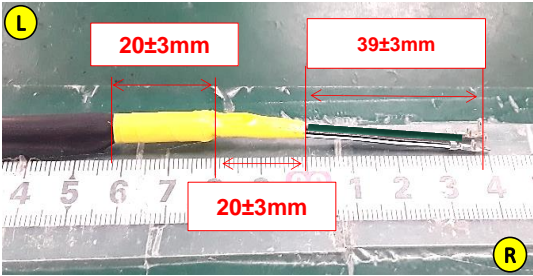

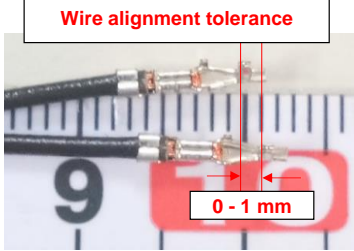
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| | Process Name/Title: | | | Model code/Part number: | 096D / 7L0120-7023 | Customer: | TRQSS | Car Model: | TOYOTA-HIGHLANDER | Document No.: | WI-ENG-PDE-243 | |
| | Purpose: | | <input type="checkbox"/> PROTOTYPE <input type="checkbox"/> PRE-LAUNCH <input checked="" type="checkbox"/> MASSPRO | | Revision No.: | | 5 | Page No.: | 5 of 8 | | | |


| | | | | | |
|---------------|---|--|--|--|-----|
| PARTS: | | 1. Assy parts 2. Black VM tube (Sunprene) Ø5 L=125±3mm 3. Yellow tape | | JIG: | n/a |
| NO. | PROCESS NAME | WORK PROCEDURE/ ILLUSTRATION | TOOLS/PPE | QUALITY POINTERS | |
| 6 | P1 Taping COT to wire near terminal | <div><p>1. Measure from end of VM tube (Sunprene) to terminal tip 59mm using both hands.</p></div> <div><p>2. Hold the sunprene tube using left hand, get yellow tape using right hand and start taping process.</p></div> <div><p>3. After taping, check the dimension, taping condition and wire alignment.</p></div> | <div><p>MEASURING TAPE</p></div> | <div><p>Wire alignment tolerance 0 - 1 mm</p></div> <p>Important reminders/Note/s: 1. Please use calibrated/verified measuring tape when getting the measurement.</p> <p>Document reference/s: 1. Refer to WI-PRO-ASY-001 for taping procedure.</p> <ul 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 | |

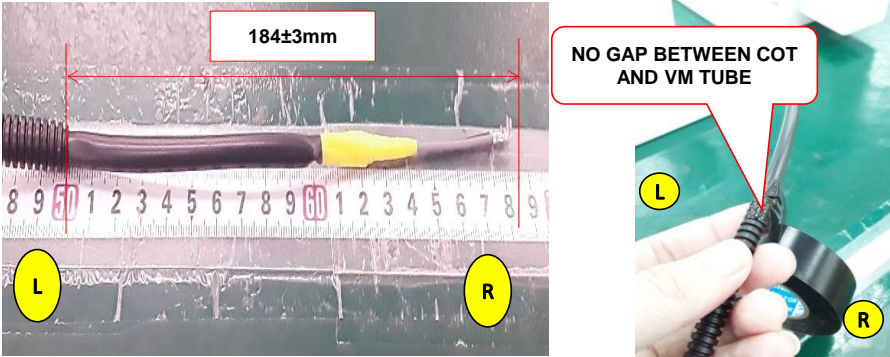
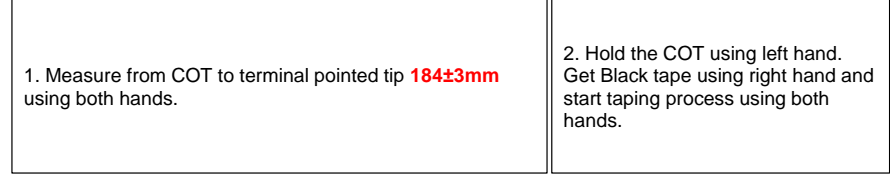
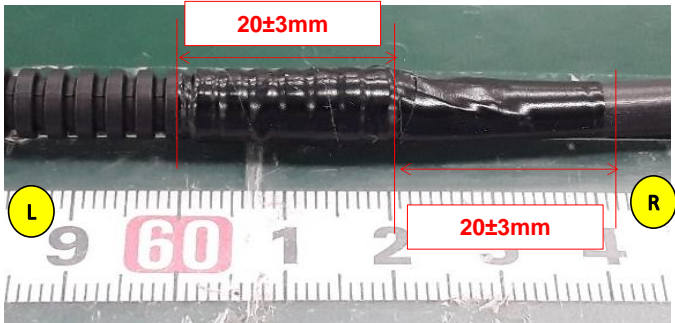

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| | Model code/Part number: 096D / 7L0120-7023 | | Customer: TRQSS | Car Model: TOYOTA-HIGHLANDER | Revision No.: 5 Page No.: 6 of 8 | | |
| Purpose: <input type="checkbox"/> PROTOTYPE <input type="checkbox"/> PRE-LAUNCH <input checked="" type="checkbox"/> MASSPRO | | | | | | | |

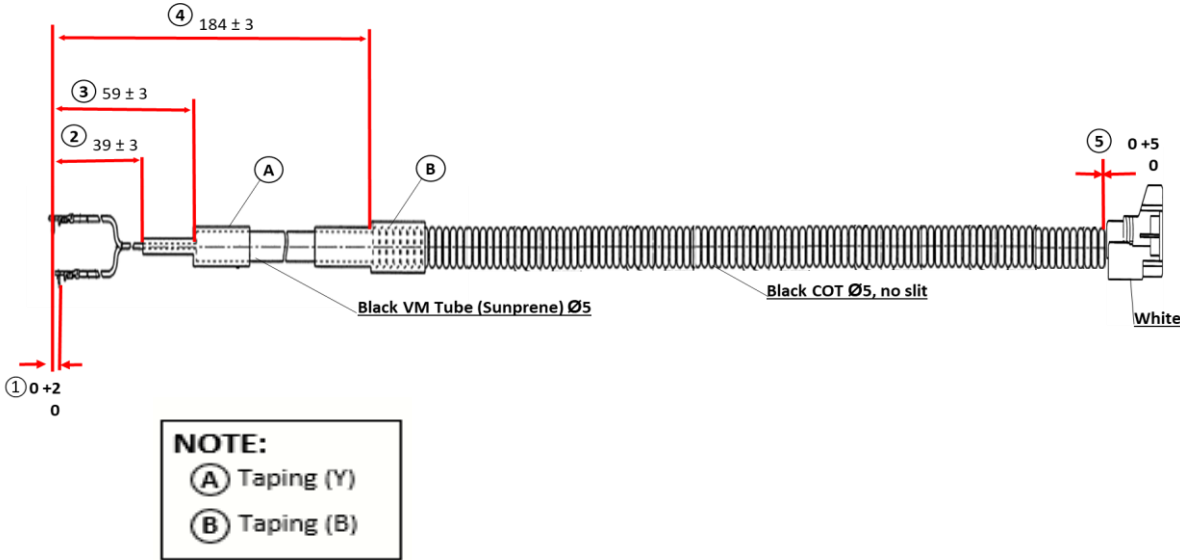
| | | | | | | |
|---------------|--|--|--|--|--|--|
| PARTS: | | 1. Assy parts 2. Black tape | | JIG: | n/a | |
| NO. | PROCESS NAME | WORK PROCEDURE/ ILLUSTRATION | | TOOLS/PPE | QUALITY POINTERS | |
| 7 | P1 Taping 2 Black COT to Black VM tube (Sunprene) | <div></div> <div><p>1. Measure from COT to terminal pointed tip 184±3mm using both hands.</p></div> <div></div> <div><p>2. Hold the COT using left hand. Get Black tape using right hand and start taping process using both hands.</p><p>3. After taping, check the dimension and taping condition.</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>Document reference/s:</p> <p>1. Refer to WI-PRO-ASY-001 for taping procedure.</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> | |

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| | TAPING ASSEMBLY PROCESS | | | Validity Date: | n/a | | | | | | | |
| | Process Name/Title: | | | Model code/Part number: | 096D / 7L0120-7023 | Customer: | TRQSS | Car Model: | TOYOTA-HIGHLANDER | Document No.: | WI-ENG-PDE-243 | |
| | Purpose: | | <input type="checkbox"/> PROTOTYPE | <input type="checkbox"/> PRE-LAUNCH | <input checked="" type="checkbox"/> MASSPRO | Revision No.: | 5 | Page No.: | 7 of 8 | | | |

| | | | | | | | | | |
|---------------|---------------------|-------------------------------------|---|------|------------------|---|-----------------------|--|--|
| PARTS: | 1.Assy parts | | | JIG: | n/a | | | | |
| NO. | PROCESS NAME | WORK PROCEDURE/ ILLUSTRATION | | | TOOLS/PPE | QUALITY POINTERS | | | |
| 8 | P1 | Measurement | <div><div>MEASURING TAPE</div><div>NOTE: A Taping (Y) B Taping (B)</div></div> | | | <div>Important reminders and note/s: 1.Please use calibrated /verified measuring tape when getting the measurement. 2. For Hatsumono,Nakamono and Owarimono. Document reference/s: 1. Refer to WI-PRO-ASY-056 for Sub-assembly Hatsumono Nakamono Owarimono Inspection.</div> | 1. No wrong deminsion | | |

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WORK INSTRUCTION

Process Name/Title:

TAPING ASSEMBLY PROCESS

Effectivity Date:

October 18, 2024

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Model code/Part number:

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Car Model:

TOYOTA-HIGHLANDER

Document No.:

WI-ENG-PDE-243

Purpose:

☐ PROTOTYPE

☐ PRE-LAUNCH

☒ MASSPRO

Revision No.:

4

Page No.:

8 of 8

PARTS:

1. Assy parts

JIG:

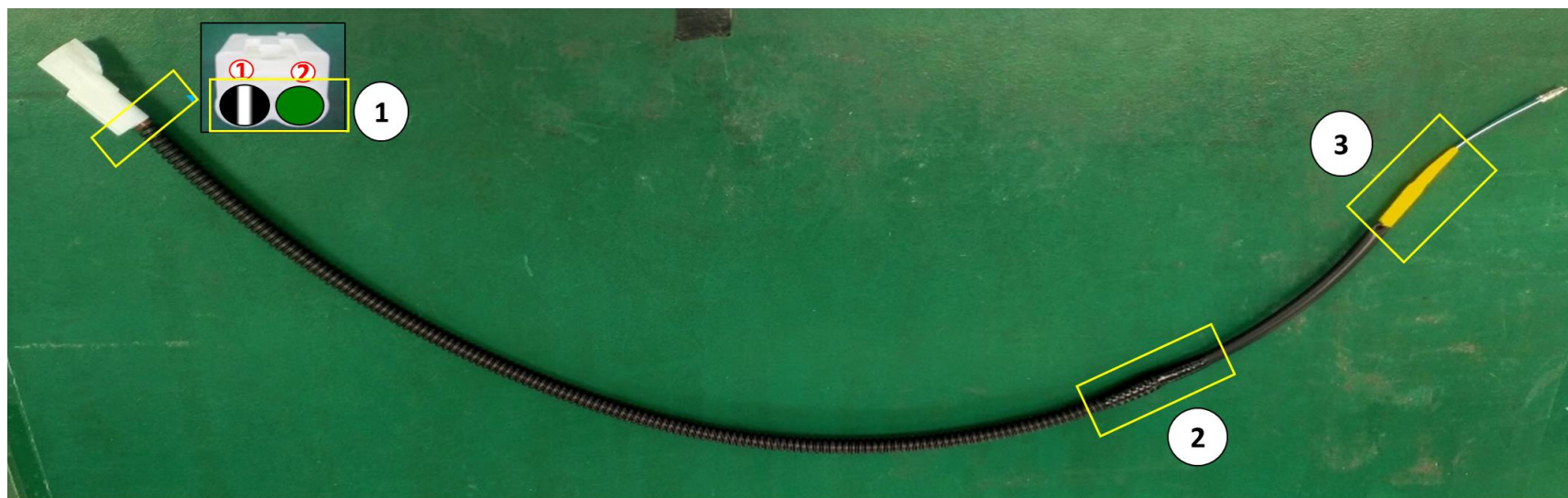
n/a



VISUAL INSPECTION/ QUALITY CHECKPOINTS

P1

7L0120-7023



4



GOOD



NO GOOD

1 No Wrong Insert

2 No Missing tape (Black tape)

3 No Wrong used of tape (yellow tape)

4 No Terminal Backing out

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