

**WORK INSTRUCTION**Process Name/Title: **TAPING ASSEMBLY PROCESS**Model Code/Product Number: **241B / 7L0048-7023**Customer: **TRQSS**Purpose: ☐ PROTOTYPE☐ PRE-LAUNCH☒ MASSPRO

Effectivity Date:

**April 26, 2023**

Validity Date:

**n/a**

Document No.:

**WI-ENG-PDE-452B**

Revision No.:

**4**


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**1 of 11****PARTS:**




1. Assy parts; Clamp 82711-48240 (W); Clamp 82711-16820 (BR); Clamp 82711-34490 (B); Clamp 82711-52090 (W); Black tape [2pcs.]

JIG:

1. Clamp assembly jig  
2. Clamp attachment holder jig

NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION	TOOLS/PPE	QUALITY POINTERS
1	P2	Table-Lay-out	<div><b>Safety Instruction</b> Be sure to wear prescribed personal protective equipment during operation (gloves, finger cots, etc.)</div> <div><b>Housekeeping</b> 1. Maintain and always practice 5s. 2. Personal things on the work place is prohibited. Keep it in your locker.</div> <div><b>Alert level</b> For any trouble, inform the Assembly Assistant Supervisor or Line Leader for immediate corrective action.</div> <div><b>Bando Gun</b></div>	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
04/26/23	4	Inclusion of quality checkpoints	J. Loterte	C. Villanueva	A. Arañes	n/a				
11/04/22	3	Improve quality pointers, notes reference in process no.2,3,4,6,7 and 8 as document improvement. Work procedure and illustration in process no.7 - visual/by two's inspection	M. Catapang	J. Loterte	C. Villanueva	A. Arañes				
07/08/22	2	Change of table lay-out illustration. Improve work procedure. Transferring of process no. 3 and 4 from P2 as process improvement for 3MP to 2MP. Additional quality pointers.	M. Catapang	C. Villanueva	A. Arañes	n/a				
03/11/22	1	Change Pre-launch to Masspro.	K. Doria	J. Loterte	C. Villanueva	A. Arañes	J. Loterte	C. Villanueva	A. Arañes	n/a

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PARTS:		1. Clamp 82711-16820 (BR) 2. Clamp 82711-34490 (B)	3. Clamp 82711-52090 (W) 4. Black tape	JIG	1. Clamp assembly jig
NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION		TOOLS/PPE	QUALITY POINTERS
2	P2	Clamp Assembly setting	<div><p>82711-16820 (BR)</p><p>82711-34490 (B)</p><p>82711-52090 (W)</p></div> <div><p>1. Get 1pc of Band clamp <b>82711-16820 (BR)</b> using right hand and set to clamp location <b>1</b> using both hands.</p><p>2. Get 1pc of Band clamp <b>82711-34490 (B)</b> using right hand and set to clamp location <b>2</b> using both hands.</p><p>3. Get 1pc of clamp <b>82711-52090 (W)</b> using right hand and set to clamp location <b>3</b> using both hands.</p><p>4. Initially attached the black tape on clamp location <b>3</b> using both hands..</p></div> <div><p><b>STANDARD TAPING FOR CLAMP</b></p><p>One side tape under clamp</p></div>		<p><b>Important reminders/Note/s:</b></p> <p><b>1. Please check the Clamp first before start of assembly to avoid wrong use of clamp.</b></p> <p>1. No loose attachment of clamp 2. No damaged clamp 3. No missing parts 4. No wrong use of tape</p> <p><b>CLAMP ILLUSTRATION</b></p> <p><b>GOOD</b> <b>NG</b> </p> <p>82711-52090 (W) 82711-12A80 (W)</p> <p><b>BAND CLAMP ILLUSTRATION</b></p> <p><b>GOOD</b> <b>NG</b> </p> <p>82711-34490 (B) 82711-16830 (B)</p> <p><b>BAND CLAMP ILLUSTRATION</b></p> <p><b>GOOD</b> <b>NG</b> </p> <p>82711-16820 (BR) 82711-26380 (BR)</p>

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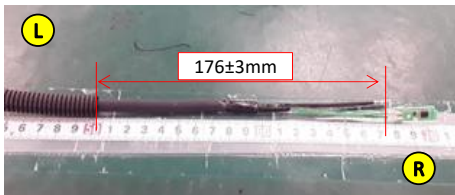

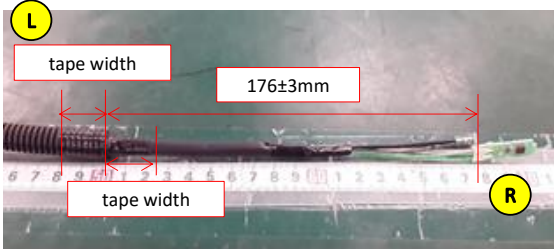

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PARTS:		1. Assy parts 2. Black tape		JIG	n/a
NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION		TOOLS/PPE	QUALITY POINTERS
3	P2 Taping COT to Sunprene tube near PCB and terminal	<div><p>1. Hold the COT using left hand. Measure from end of COT to terminal pointed tip and edge of Hot melted wire <b>176±3mm</b>.</p></div> <div><p>2. Hold the COT using left hand. Get the Black tape using right hand and start taping using both hands.</p></div> <div><p>3. After taping, check the measurements and taping condition.</p></div>		<p><b>MEASURING TAPE</b></p> 	<p><b>Important reminders/Note/s:</b></p> <p><b>1. Please use calibrated/verified measuring tape when getting the measurement.</b></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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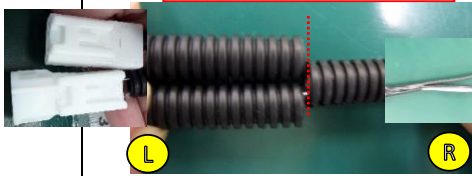
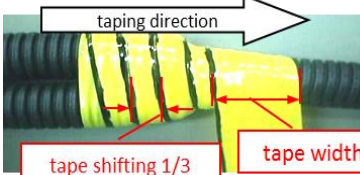

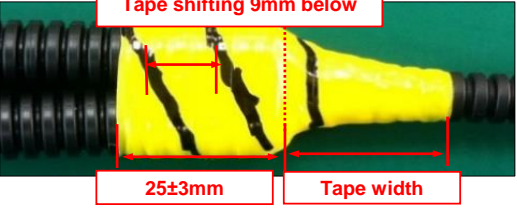


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PARTS:		1. Assy parts 2. Black tape	JIG	n/a
NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION	TOOLS/PPE	QUALITY POINTERS
4	P2 Y-Taping	<div><p><b>No gap in between tubes</b></p><p>1. Fix the corrugated tube .</p><p><b>taping direction</b></p><p><b>tape shifting 1/3 below</b></p><p><b>tape width</b></p><p><b>taping direction</b></p><p><b>tape shifting 1/2</b></p><p>4. Wind the tape backward 1/2 shifting.</p><p><b>Tape shifting 9mm below</b></p><p><b>25±3mm</b></p><p><b>Tape width</b></p><p>5. Wind the tape 1/2 shifting going to other side of corrugated tube then cut the tape. After taping, check the condition of tape.</p><p><b>Note:</b> Do not exert excessive force during pulling &amp; winding of tape</p><p><b>25±3mm</b></p><p>2. Start taping at the middle of combined Corrugated tubes, then wind the tape going to 2 corrugated tubes, width must be <b>25mm</b>.</p><p>3. Wind the tape 1/3 shifting until it reach the other side of corrugated tube (must be tape width)</p></div>	<p><b>MEASURING TAPE</b></p> 	<p><b>Important reminders/Note/s:</b></p> <ol style="list-style-type: none"><li>1. Use <b>YELLOW TAPE</b> for easy visualization of shifting lines, but actual should be <b>BLACK TAPE</b>.</li><li>2. Please use calibrated/verified measuring tape when getting the measurement.</li></ol> <ol style="list-style-type: none"><li>1. No flip-out tape</li><li>2. No peel-off tape</li><li>3. No loose tape</li><li>4. No missing tape</li><li>5. No wrong dimension</li><li>6. No wrong use of tape</li></ol>  <p><b>Connector Orientation</b></p>

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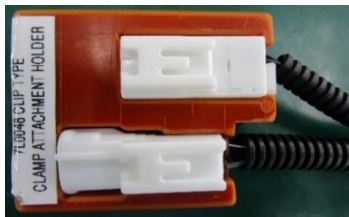

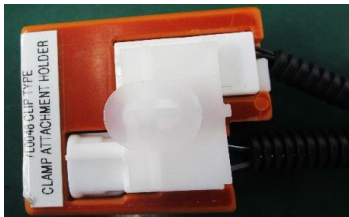

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PARTS:					JIG	1. Clamp attachment holder jig
NO.	PROCESS NAME	WORK PROCEDURE/ ILLUSTRATION			TOOLS/PPE	QUALITY POINTERS
5	P2 Clamp Attachment	<div><div>CONNECTOR SETTING</div><div>1. Set the 2 connectors into clamp holder jig using both hands. <i>Follow the above illustration for the correct setting.</i></div><div>2. Hold the clamp using right hand, strongly push the clamp, sound will be heard if fully inserted.</div><div>3. After inserting the clamp, remove the 2 connectors from clamp holder jig using both hands. Check the clamp attachment.</div></div> <div>Pushing direction</div> <div>Clamp Attachment Holder jig</div> 				1. No wrong attachment of clamp 2. No damage on parts 3. No unlock attachment

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### PARTS:

1. Assy parts

### JIG

1. Clamp Assembly jig

### NO.

### PROCESS NAME

### WORK PROCEDURE/ ILLUSTRATION

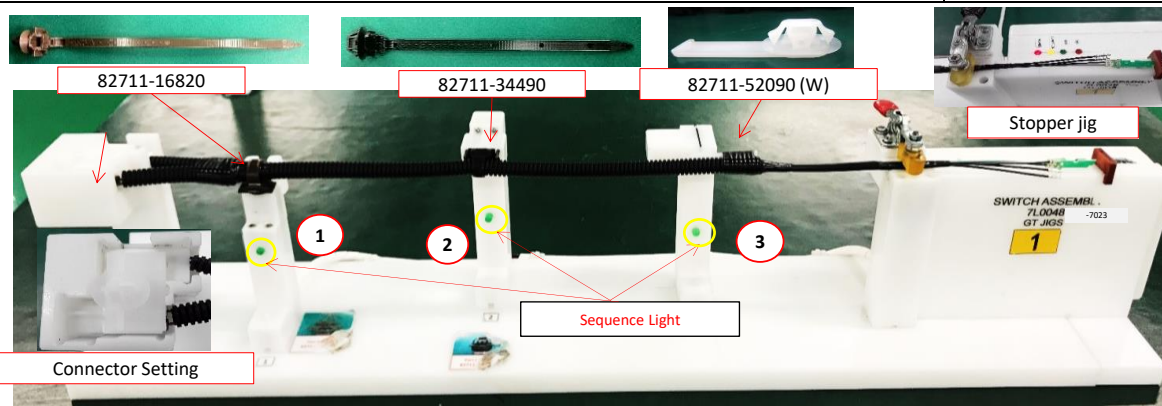
### TOOLS/PPE

### QUALITY POINTERS

6

P2

Clamp Assembly



1. Get the assy parts and set to jig using both hands. *(See above picture for correct setting)*. First, set the connector **6098-38020 (W) : 6188-0407 (W)** to **Receiver base 1**. Continue to set the harness in jig. Set the end of terminal/PCB within the stopper jig then press the toggle clamp. Continue if the sequence light in location **1** was **ON**.

2. Check if all LED light for **Power On, Clamp On, Wire1 & Wire2** was **ON**. If encountered abnormality, **STOP** and immediately **CALL** the attention of the leader. **WAIT** for further instruction then continue the process.



3. Initially tighten the band clamp from location **1~2** using both hands.



### Important reminders/Note/s:

**1. Make sure no gap between stopper and PCB**

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

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## PARTS:

1. Assy parts

## JIG

1. Clamp Assembly jig

## NO.

## PROCESS NAME

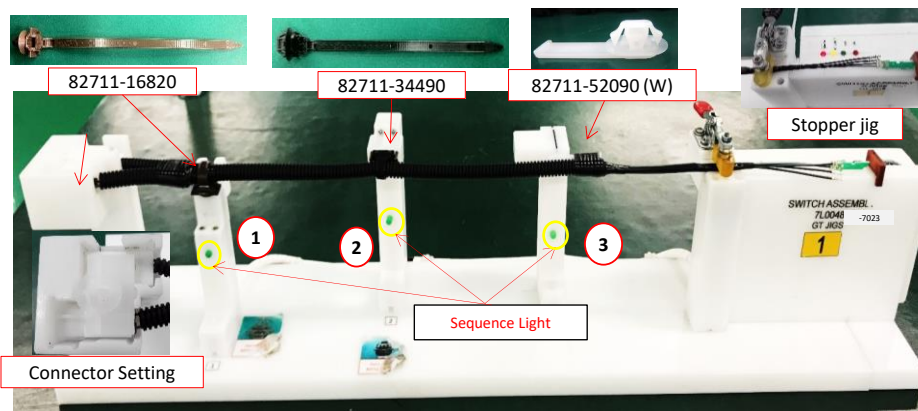
## WORK PROCEDURE/ ILLUSTRATION

## TOOLS/PPE

## QUALITY POINTERS

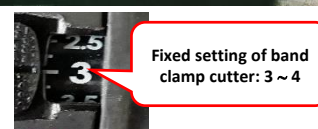
6

P2

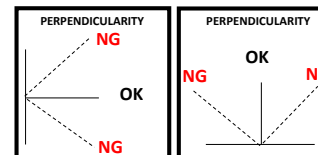
Clamp Assembly  
(Continuation)

4. Get the bando gun and cut the band clamp on location **1** using both hands. Press the **SW button** after cut. Continue to location **2** if sequence light was **ON**.

5. Cut the band clamp on location **2** using both hands. Press the **SW button** after cut. Continue to location **3** if sequence light was **ON**.



## BANDO GUN ALIGNMENT



6. Hold the tape on clamp location **6** then start taping using both hands. Make **3 windings** of tape then cut the tape. Press the **SW button** after taping. **GO** sound will be heard.

7. Conduct **POINT CHECKING** before removing from clamp assembly jig.

## BANDO GUN

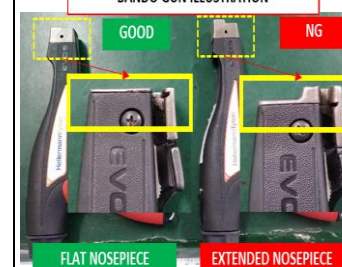


## Important reminders/Note/s:

1. Make sure no gap between stopper and PCB

1. No damaged clamp
2. No wrong use of clamp
3. No missing clamp
4. No wrong use of bando gun

## BANDO GUN ILLUSTRATION



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PARTS:

n/a

JIG

n/a

NO.

PROCESS NAME

WORK PROCEDURE/ ILLUSTRATION


TOOLS/PPE

QUALITY POINTERS

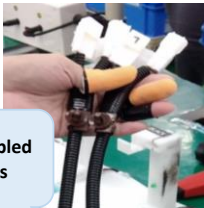
7

P2

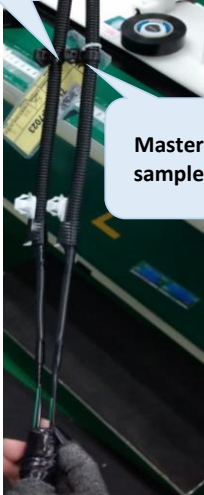
Visual/By two's inspection



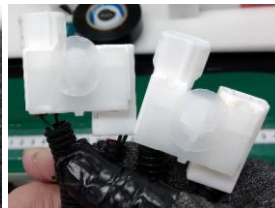


ACTUAL PRODUCT




Assembled parts



Master sample



2. Check the **connector lock, terminal, insertion** and **presence of clip-clamp attachment.**



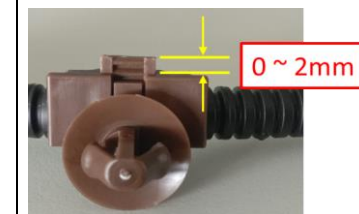
3. Check the **presence of clamp attachment, taping condition** and **band clamp cut condition.**

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



MASTER SAMPLE

1. No skip checking during inspection



0 ~ 2mm

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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PARTS:

n/a

JIG

n/a

NO.

PROCESS NAME

WORK PROCEDURE/ ILLUSTRATION

TOOLS/PPE

QUALITY POINTERS

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P2

Visual/By two's inspection  
(Continuation)



4. Check the **presence of all clamp attachment, taping condition and band clamp cut condition.**



5. Conduct **bending of COT and tube** then check the **taping condition.**



6. Check the **taping condition.**

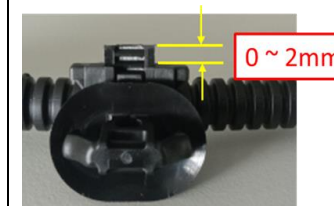


7. Check the **terminal and PCB appearance.** Must be **no deformed terminal.**

MASTER SAMPLE



1. No skip checking during inspection



**Important reminders/Note/s:**

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**PARTS:**

n/a

**JIG**

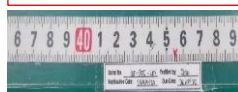
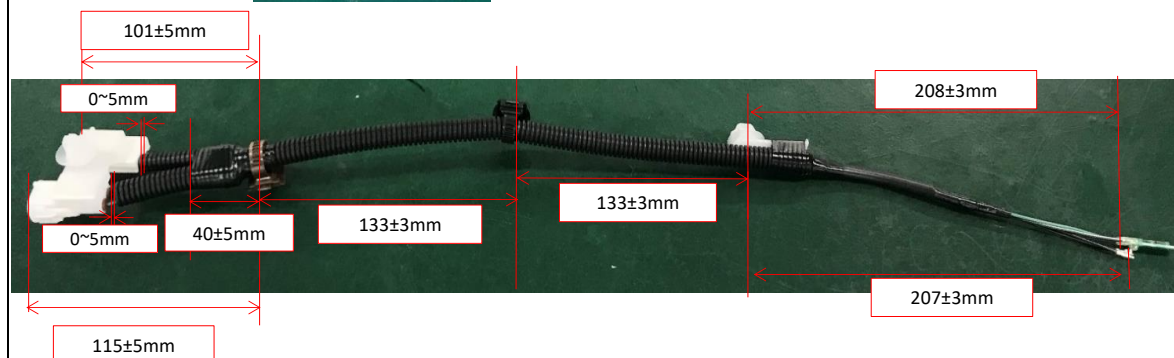
n/a

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

8

P2

Measurement

**MEASURING TAPE***Note:**Please use calibrated/verified measuring tape when getting the measurement.***Important reminders/Note/s:****1. FOR HATSUMONO AND OWARIMONO**

1. No wrong dimension

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1. Assy parts

JIG

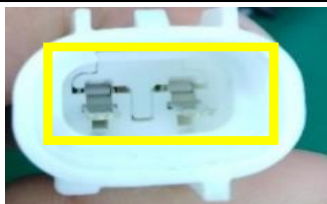
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## QUALITY CHECKPOINTS

**P2**

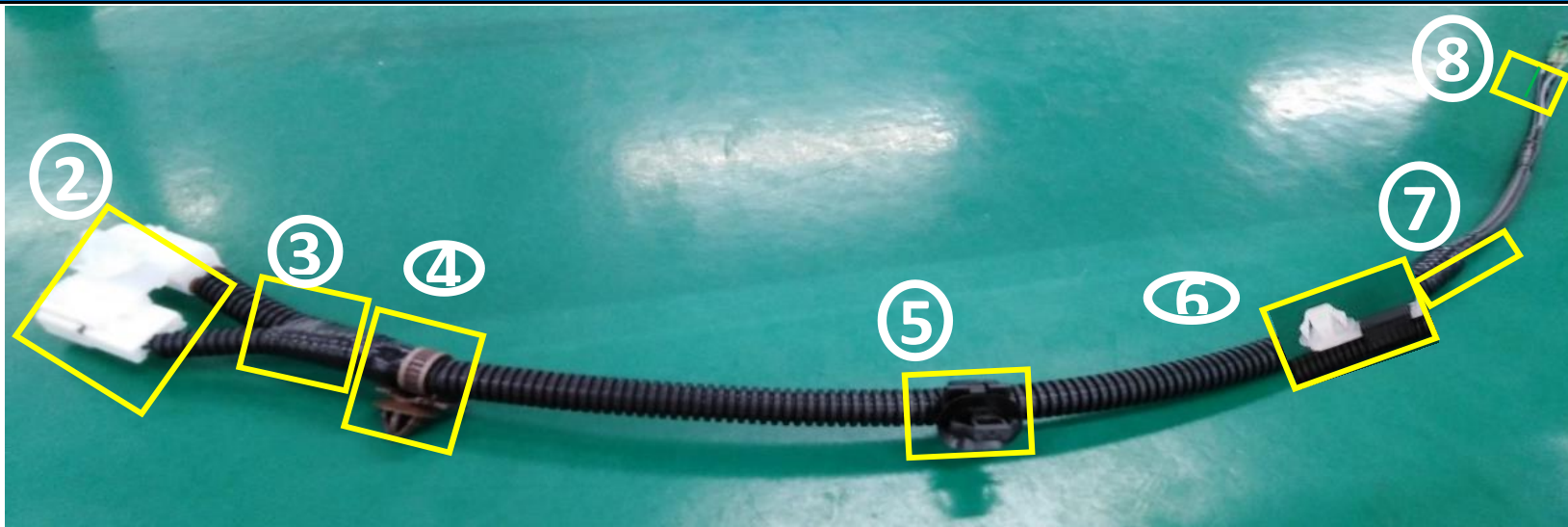
**7L0048-7023**



**GOOD**



**NO GOOD**



① No **Unlocked Coupler**

③④⑤⑥ No **LOOSE/MISSING CLAMP**

② No **MISSING Clip Clamp**

⑦ No **Missing Tape**

⑧ No **Deformed Terminal**

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