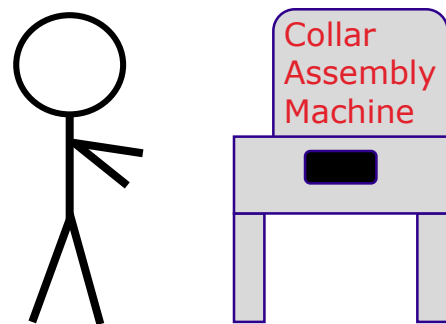


# **CEG-FORM-115 Collar Assembly Check Sheet VISUAL AID**

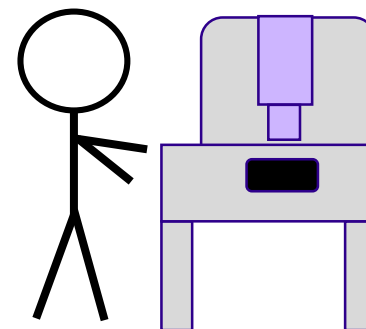
Sumitomo Electric Wiring Systems, Inc.  
Wire Harness Production Management Business Unit  
Quality Assurance Department  
Component Evaluation Group  
4/1/2024

**This document contains only essential  
points. Not all checkpoints are included.**

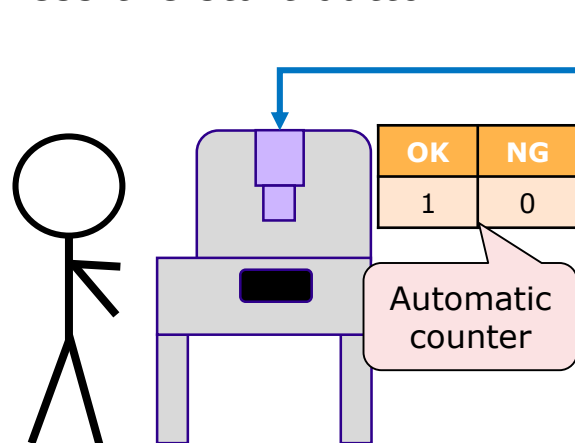
# 1. Basic Process flow of Collar Assembly



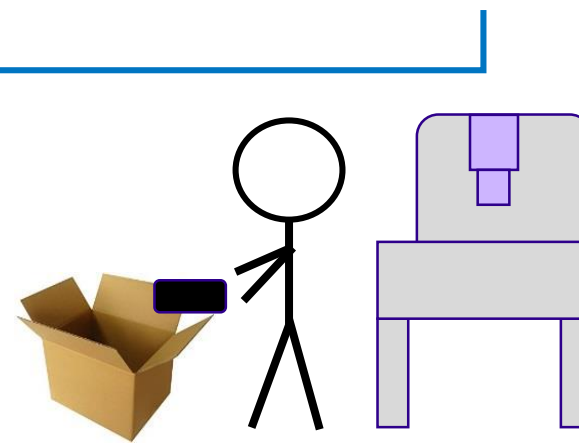
1. Place the collar and component, Press the start button.



2. Collar is clinched or pressed (Automatic)



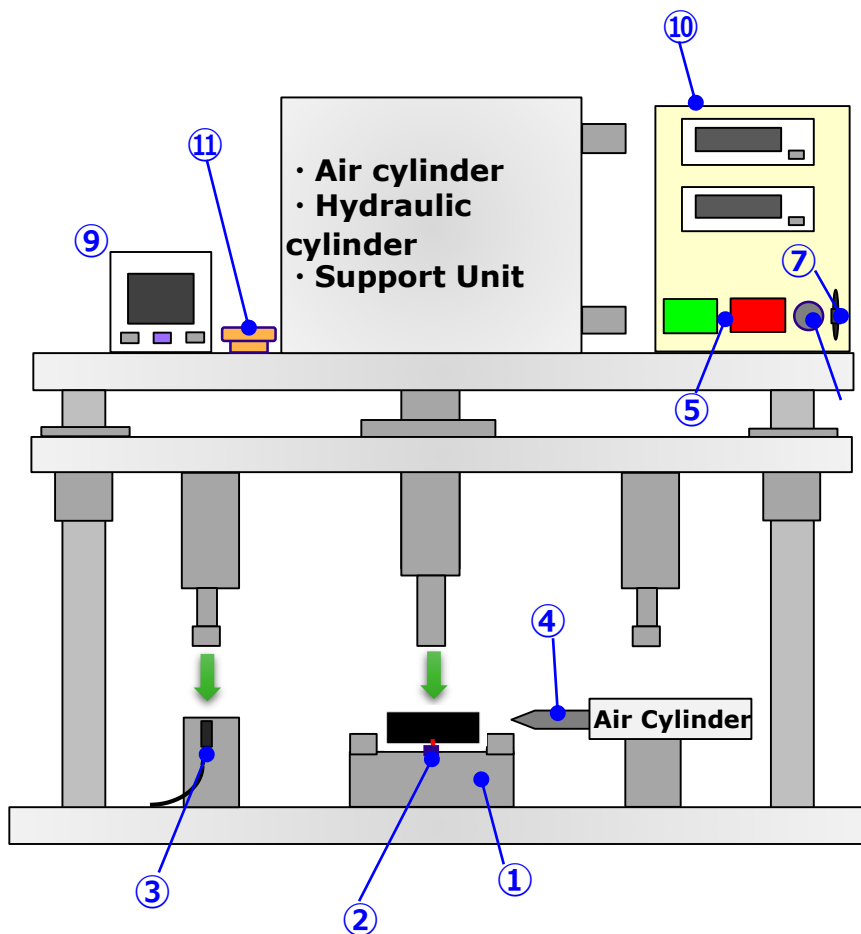
3. OK/NG are counted.



4. Take out the product and put it in the packing box.

## 2. Collar Assembly Machine

The Collar Assembly machine shall have the following equipment or functions



- |   |
|---|
| ① Fixture for fixing components and collar  |
| ② Detection sensor for presence of component and collar   |
| ③ Bottom Dead Center sensor<br>• Judge whether the puncher has reached the bottom   |
| ④ Pass mark<br>• Judging by BDC sensor signal   |
| ⑤ OK / NG lamp  |
| ⑥ Buzzer<br>• Notify operators of NG judgment and abnormalities   |
| ⑦ Key switch or Password<br>• Controls to allow only the process manager to cancel errors   |
| ⑧ OK / NG counter<br>• Judging by BDC sensor signal   |
| ⑨ Pressure gauge<br>• Alarms when air pressure decreases  |
| ⑩ PLC Program<br>• Detects failure of each sensor   |
| ⑪ Start button<br>• Cannot start without component and collar<br>• Cannot start without removing a product that has successfully completed a cycle. |

# 3. Assembly Process

Preparatory stage

- ✓ Verify the best air pressure for each part number.
- ✓ Verify minimum and maximum air pressure.
- ✓ Verify that the air pressure is stable during the operation. Calculate CpK.
- ✓ Verify the accuracy of the BDC sensor.
- ✓ Verify that if it does not reach the bottom, it is judged to be NG.

Before Operation

- ✓ There is a checklist for equipment inspection, and it must be checked according to the rules.
- ✓ Do not forget to check that the air pressure is set to the specified value.



In operation

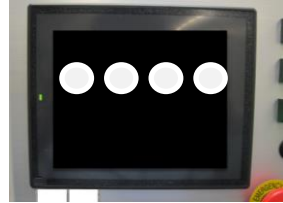
- ✓ The work instructions instruct that the visual inspection should confirm the presence of the pass mark.



Pin (Pass) mark

- ✓ In the case of NG or some other abnormality, only the process manager is allowed to take action.
- ✓ A key switch or password is installed to cancel the error.

Password



Key switch

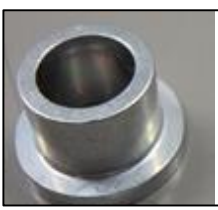


# 3. Assembly Process

After operation

- ✓ Ensure quantity checks are performed. Keep records.
- ✓ Records are checked not only by the floor operators but also by the leader or operation manager.

Quantity of supplied products



100 pcs



100 pcs

Quantity of good products



98 pcs

Quantity of NG products



2 pcs

Compare the counter result against the physical products

Counter	
Good	98
Not Good	2



# SWS WAY

Action principles for all of us in the Sumitomo harness business

## ***PROFESSIONALISM***

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• *Customer satisfaction* • *Honesty & Integrity* • *Pride in what we do*

## ***TEAMWORK***

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• *Mutual communication* • *Accountability & Cooperation* • *Diversity & Inclusion*

## ***CHALLENGE***

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• *Forward thinking* • *Learning from experience* • *Ambition & Perseverance*