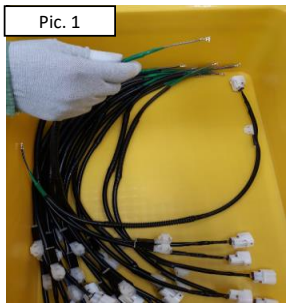
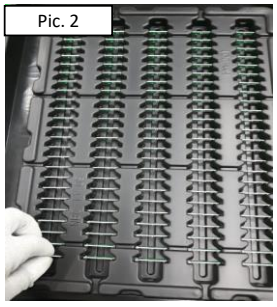
| No. | Work Procedure/ Illustration | Records/Remarks/ Quality Pointers |
|---|---|---|
| 1 | Right Hand: Get the Cord (Pic. 1)<br><br>Left Hand: Get the Pb Free PCB Refer to (Pic. 2) (Refer below Pic 1.1 and 1.2 1.3) | Always wear ESD gloves<br><br>Always conduct checksheet checking<br><br>Always conduct Hatsumono and Owarimono every start up and change model<br><br>Use **only** Pb (Lead) Free PCB<br><br>Ensure to use the correct PCB Refer to cutting ledger for correct usage of PCB. |
| 2 | Left Hand: Hold the PCB Refer to (Pic. 3)<br><br>Right Hand: Insert the cord on left PCB hole (Pic. 4) then other cord on right PCB hole (Pic. 5) Refer to Pic 1.4 for wire color allocation | Ensure that the component is facing to the operator.<br><br>Ensure to check "Pb Lead Free" before soldering<br><br>Ensure to follow the proper color allocation and insert properly.<br><br>Insertion should be done on the PCB Tray to prevent drop parts |
| 3 | Insert the assembled PCB to the soldering jig(Pic. 6) and Push down the clamp (Pic. 7) | **Setting the PCB on jig must be less than 45° Refer below Pic 3.1**<br><br>Ensure to place the wire properly to avoid smashed wire<br><br>Ensure that the probe pin don't stuck up<br><br>Ensure that the B/W is in the left position |

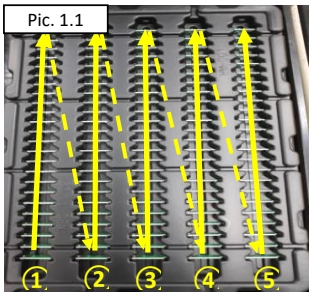
Pic. 1



Pic. 2

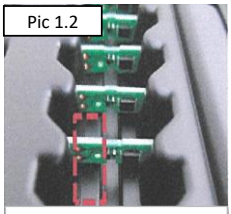


Pic. 1.1



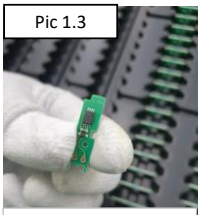

Pick up the PCB from bottom to top start from ① - ⑤

Pic 1.2



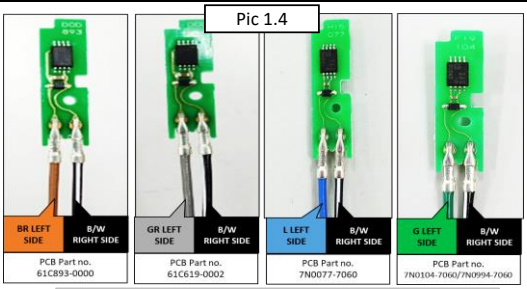
Avoid touching the component (IC) / components

Pic 1.3



Proper handling of PCB prior insertion

Pic 1.4



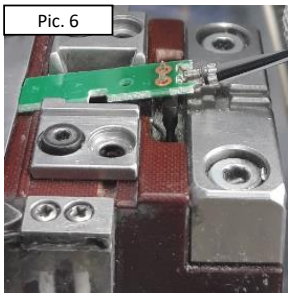

Refer to cutting ledger for correct usage of PCB.

Pic. 3

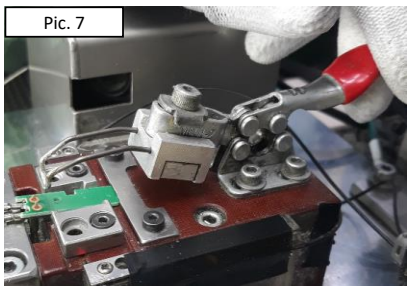
Pic. 4

Pic. 5

Pic. 6

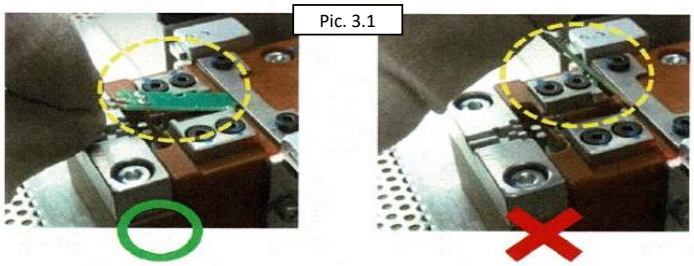


Pic. 7



**Stress** - is a pressure or tension exerted on a material or object.

Pic. 3.1



Categories of Stress

**1. Internal Stress** - are residual stresses during molding such as insertion, removal, etc. In injection molding, due to rapid gradual change in wall thickness or rapid cooling, force will act to try the unstable molecules into its original state, which becomes residual stress

**2. External Stress** - Assembly load, snap fit, spring load, load applied during operation, etc. are available.

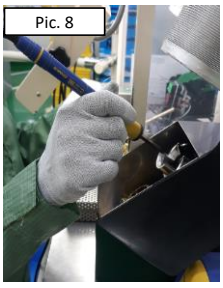
**Effects of Stress on PCB:**

1. Component malfunction
2. Material Deformation
3.Function defect due to component's crack

| Eff./Rev. Date | Rev. No. | Details of change | Revise | Check | Approve | Prepare | Check | Approve |
|---|---|---|---|---|---|---|---|---|
| 10/4/2024 | 6 | Added special character ♦ in the title. | A.Ayop | W. Carbilion | O.Merin | | | |
| 02/14/2022 | 5 | Update wire color, PCB allocation. Additional picture for proper handling of PCB.. Change word Fig. to Pic. | C. Lalican | W. Carbilion | O. Merin | | | |
| 12/2/2021 | 4 | Include proper holding of soldering rack when already consumed, removed PCB allocation per model | L. Famodulan | C. Luna | O.Merin | | | |
| 10/112021 | 3 | Removed left and right Hand at No. 3 and include reminders regarding PCB cover during long break | L. Famodulan | C. Luna | W. Carbillon | | | |
| 05/18/2021 | 2 | Include proper insertion of soldered PCB in soldering rack | A.Ayop | D.Cornero | O.Merin | | | |
| 11/4/2020 | 1 | Added item where assist will transfer the rack with soldered PCB to hotmelt process | A.Ayop | D.Cornero | O.Merin | A.Ayop | W. Carbillon | W. Carbillon |
| | | | | | | Est. date: | 08/17/2020 | |

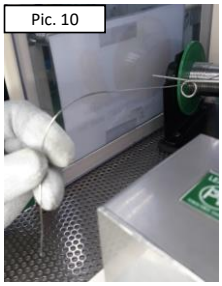
| No. | Work Procedure/ Illustration | Records/Remarks/ Quality Pointers |
|---|---|---|
| 4 | Right Hand: Get the soldering Iron (Pic. 8) and clean the iron tip 2 to 3 times (Pic. 9)<br><br>Left Hand: Hold the PB Free Lead wire(Pic. 10) | Ensure to clean the iron tip 2-3 times<br><br>Ensure to check the iron tip if clean before soldering.<br><br>Ensure to use PB Free Solder Wire |
| 5 | Rigth Hand: Solder the terminal from left (Pic.11) to rigth (Pic.12) refer to Table 1<br><br>Left Hand: Supply the PB free lead wire to the terminal (Pic.13) | **Ensure that the position of the soldering iron is 90 degrees**<br><br>6 ♦ Ensure the soldering temperature is 345±5 degrees<br><br>Ensure to follow the correct application of lead<br>Refer to WI-PRO-SHM-021 |
| 6 | Right Hand: Return the soldering iron to the soldering holder (Pic. 14)<br><br>Right Hand: Get the bamboo stick (Pic. 15) | |
| 7 | **"Wait until the GO lamp is ON"**<br><br>Right Hand: Remove the flux on top from from left to right (1 time) (Pic. 16)<br><br>Right Hand: Clean the bamboo stick using wire cleaner (Pic. 17) | If necessary remove the flux 2-3 times<br><br>Ensure the there is no flux<br>Refer to Pic 7.1 and 7.1 below |
| 8 | Right Hand: Remove the flux between the terminal from top to bottom (1 time) (Fig. 18)<br><br>Right Hand: Return the bamboo stick in designated location (Fig. 19) | If necessary remove the flux 2-3 times<br><br>Ensure the there is no flux<br>Refer to Pic 4 and 5 |

Pic. 8

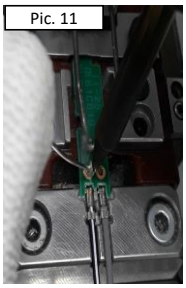


Pic. 9

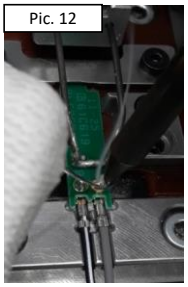
Pic. 10



Pic. 11



Pic. 12



Pic. 13

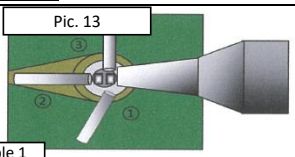
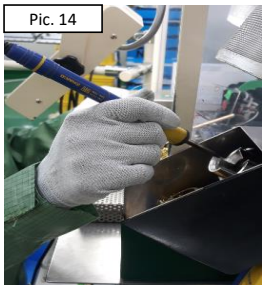


Table 1

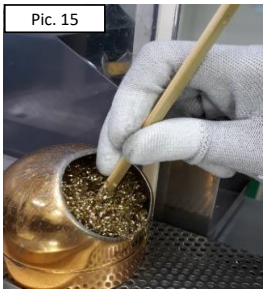
| NO. OF CHIP | PCB | LEFT | RIGTH |
|---|---|---|---|
| 2 | 61C 619 | B / W | GR |
| 2 | 61C 893 | B / W | BR |
| 1 | 7N0077 | B / W | L |
| 1 | 7N0104/ 7N0994 | B / W | G |

Refer to cutting ledger for correct usage of PCB.

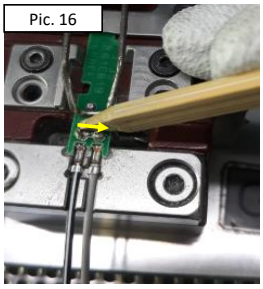
Pic. 14



Pic. 15



Pic. 16



Pic. 17

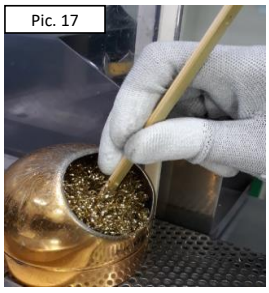


Fig. 18

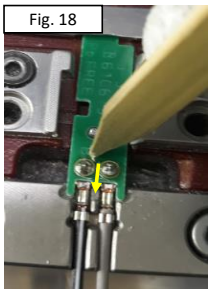
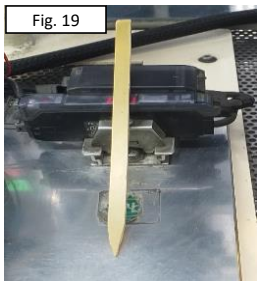


Fig. 19

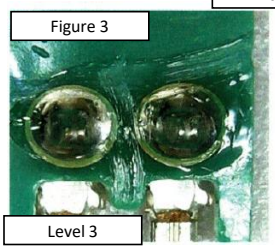


Pic. 7.1

Good

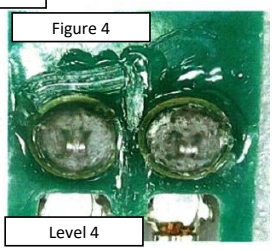
Pic. 7.2

Figure 3



Level 3

Figure 4



Level 4

If encountered level 3 or 4 flux clean the PCB 2 - 3 times
*(Repeat Process 7 and 8 but remove the flux 2 to 3 times)*

Refer IS-PRO-SHM-007 for the Flux Limit Sample



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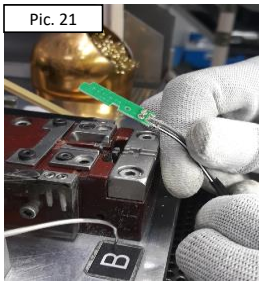
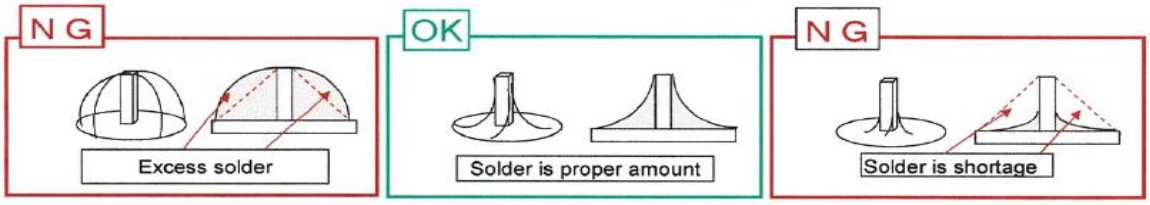
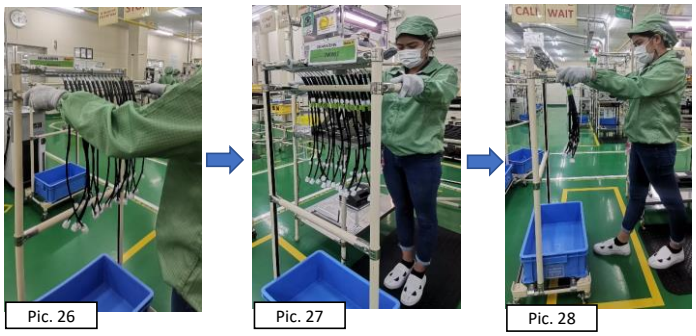
DCC Stamp

| No. | Work Procedure/ Illustration | Records/Remarks/ Quality Pointers |
|---|---|---|
| 9 | Right Hand: Release the clamp (Pic. 20)<br><br>Left Hand: Get the soldered PCB (Pic. 21)<br><br>Pic. 20  <br>Pic. 21  | |
| 10 | 100 % Inspect the soldered PCB Use magnifying glass while inspecting the product (Pic. 22- 23)<br>Refer to IS-PRO-SHM-014 Soldering Visual Inspection<br><br>Pic. 22  <br>Pic. 23  | **Ensure to check the engrave of the PCB.**<br><br>Ensure that the soldered PCB is free from:<br>-Improper soldering quantity ,Poor/ Insufficient Wetting ,Lump or Wrinkles, Wicking Voids, Overheat Etc.<br><br>Refer to Pic 10.1 for the sample of good wetting |
| | Pic 10.1<br>  | |
| 11 | Put the soldered PCB into the Rack (20pcs/rack or depending on the model)<br><br>Insert the PCB carefully, tip first (Pic 24), then fix the harness in to the holder.(Pic 25)<br><br>Repeat Process 1-10<br><br>Pic. 24  <br>Pic. 25  | Do not leave the product on the soldering jig during breaktime or every change shift to prevent unsoldered harness. |
| 12 | After reaching the 20pcs or the allocated no. of soldered PCB hold the rack on both sides and move it forward (Pic. 26-28)<br><br>  <br>Pic. 26 Pic. 27 Pic. 28 | Reminder : Solder are not allowed to transfer the rack to HM Process<br><br>When the Product dropped on the floor STOP- CALL-WAIT do not give the product to ASSIST CALL the LEADER . |
| 13 | Assist will then transfer the rack with soldered PCB to hotmelt process. (Pic.29)<br><br>  <br>Pic. 29 | Note :<br>> During long break cover the remaining PCB with EMPTY PCB Tray to avoid dirt on the PCB .<br><br>> For the remaining for assembly product cover the terminal with Terminal cover. |



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