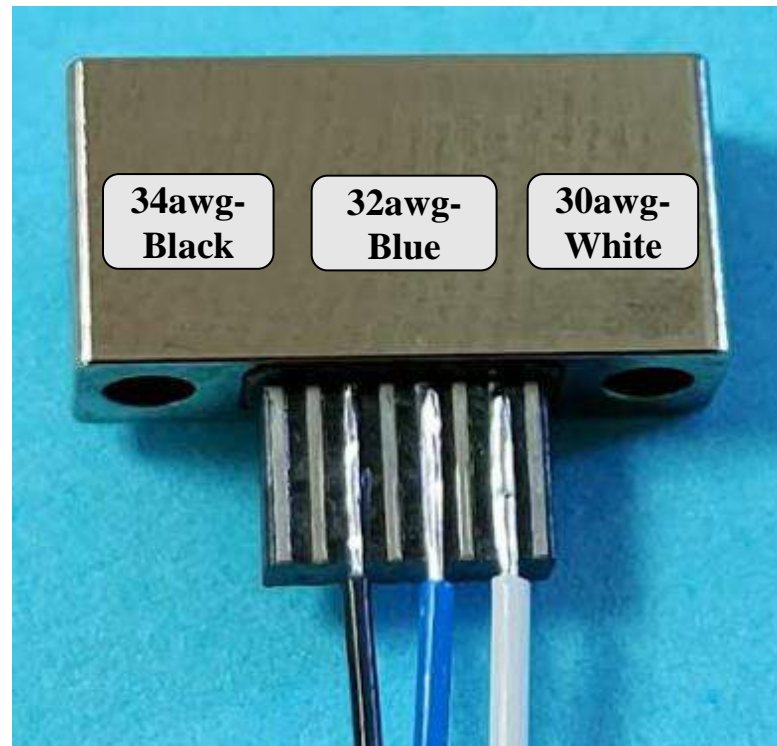
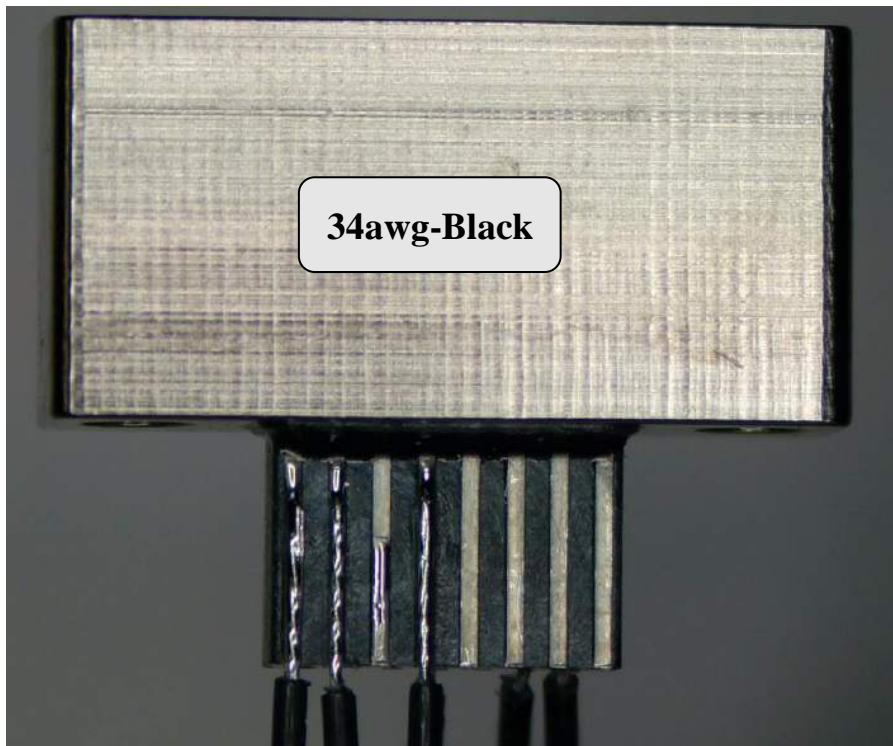


**I/ PURPOSE:**

Provide a procedure on how to solder 34, 32, 30awg wire to the “Nano Field Attachable Dual Row Metal Shell Connectors”

*Rev (06.10.2022)*



## II/ PROCEDURE

### 2.1/ Nano Field Attachable Dual Row Metal Shell Connectors

**Sample p/n:** 833421011    NML15-2T011-S01

**Description:** Nano Dual Row, Female, Solder Tails, Size 15

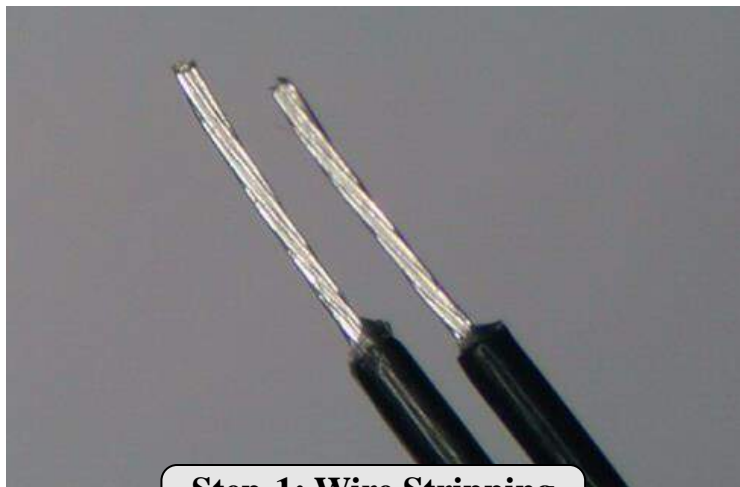
Use solder TIN LEAD 63/37.



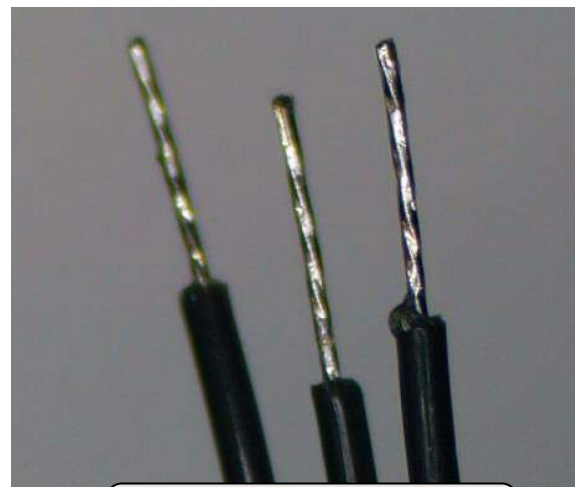
## II/ PROCEDURE

### 2.2/ Preparation – Wire Stripping/Dipping

**Wire Description:** 34, 32, 30awg 7 strands “F” wire, Black



**Step-1: Wire Stripping**  
Strip-Length = .12” ± .01



**Step-2: Wire Tinning**

- **DIP :** TIN LEAD 63/37  
**Temp:** 600°F ± 30°F
- **Or Hand Soldering:**  
TIN LEAD 63/37 (smaller DIA .15”)  
**Temp:** 600°F to 650°F
- Use **FLUX:** Kester - 186

**Wire needs to keep its shape cannot be frayed.**

**II/ PROCEDURE**

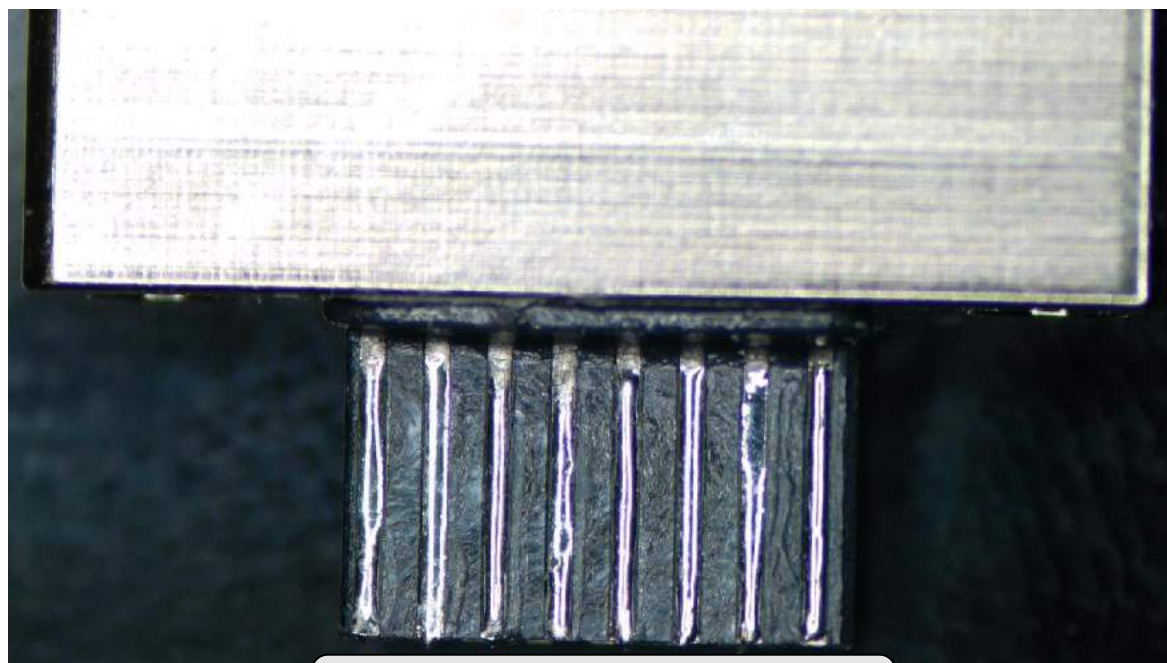
**2.3/ Solder process**

Apply Flux, then solder wires to connector per *J-STD-001* standard.

➤ **Hand Soldering:**

- TIN LEAD 63/37 (small DIA .15")

- Use **FLUX**: Kester - 186



**Step-3: Pre-tin connector's leads**

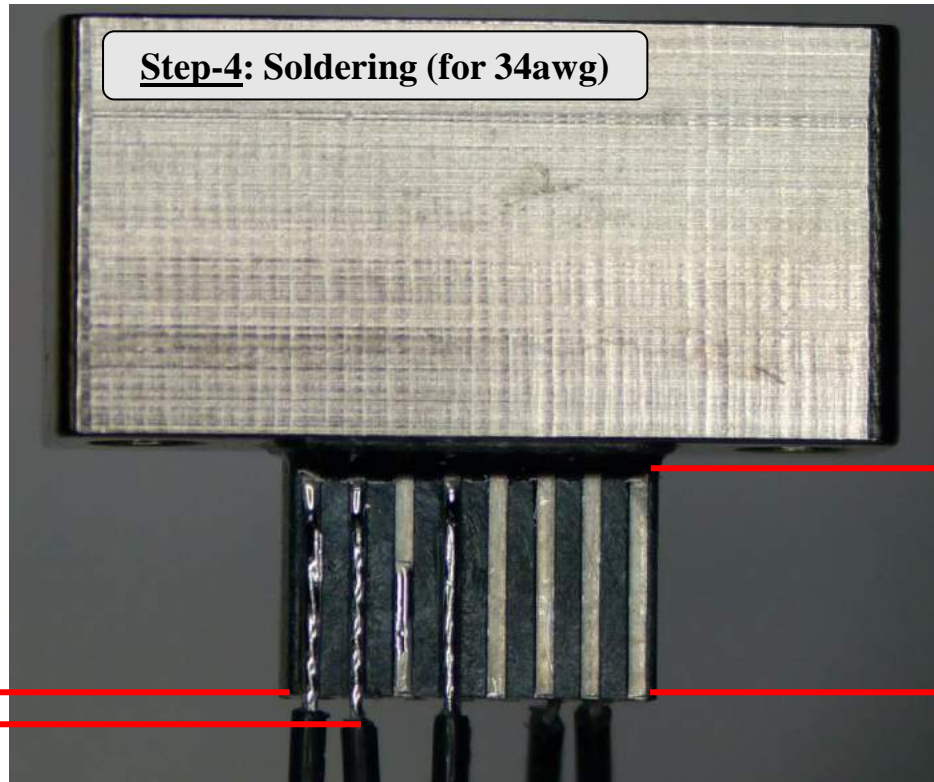
**Temp Setting: 600°F to 650°F**

**II/ PROCEDURE**

**2.3/ Solder process**

Apply Flux, then solder wires to connector per *J-STD-001* standard.

- **Hand Soldering:**
  - TIN LEAD 63/37 (small DIA .15")
- Use **FLUX:** Kester - 186



**Step-4: Soldering (for 34awg)**

**Insulation Clearance (C):** Per *J-STD-001*  
(no more than two wire diameters)

Tinning Wire Length shall be at least **50%** over solder connection area per *J-STD-001*

Wires have to line up with leads when performing soldering to prevent shorting or violating minimum electrical clearance.

**Temp Setting: 600°F to 650°F**

**II/ PROCEDURE**

**2.3/ Solder process**

Apply Flux, then solder wires to connector per *J-STD-001* standard.

- **Hand Soldering:**
  - TIN LEAD 63/37 (small DIA .15")
- Use **FLUX:** Kester - 186

**Step-4: Soldering (for 34-Black, 32-Blue, 30-White awg)**



**34awg-  
Black**

**32awg-  
Blue**

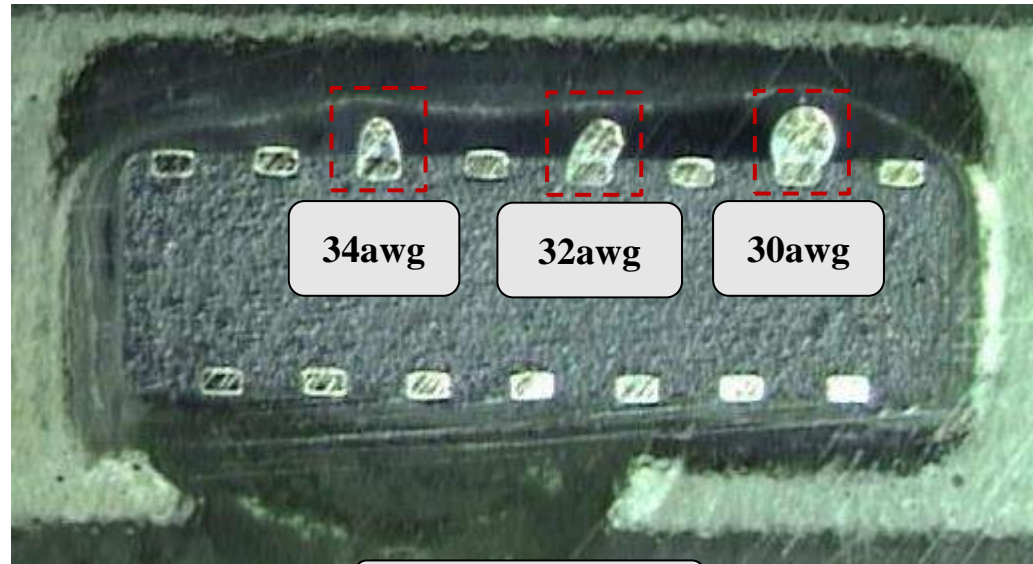
**30awg-  
White**

Wires have to line up with leads when performing soldering to prevent shorting or violating minimum electrical clearance.

**Temp Setting: 600°F to 650°F**

## II/ PROCEDURE

### 2.4/ Cross-section analysis for 3 wires size

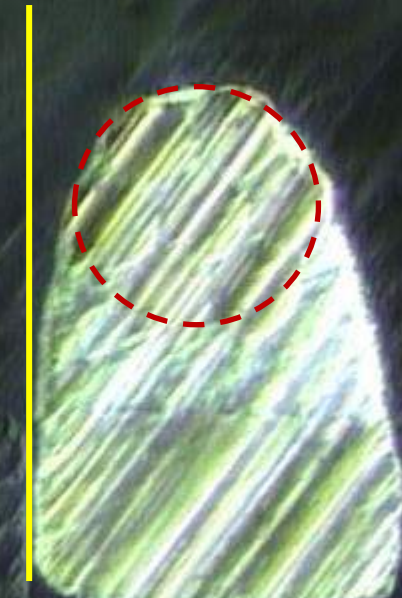


**Cross section**

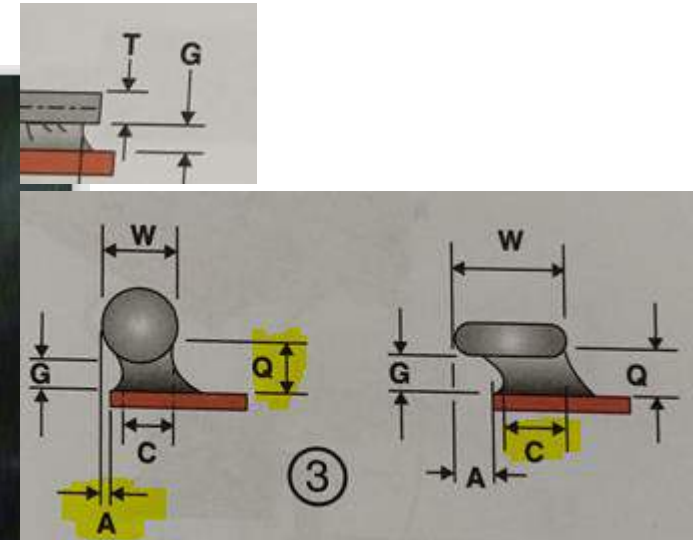
**II/ PROCEDURE**

**2.4/ Cross-section analysis for 3 wires size**

34awg



The solder joint is acceptable per IPC Standard



**Main feature:**

- C:** – minimum end joint width - at least 75% W
- A:** - side overhang - max 25% W
- Q:** - minimum side joint height –  $G + 50\% T$

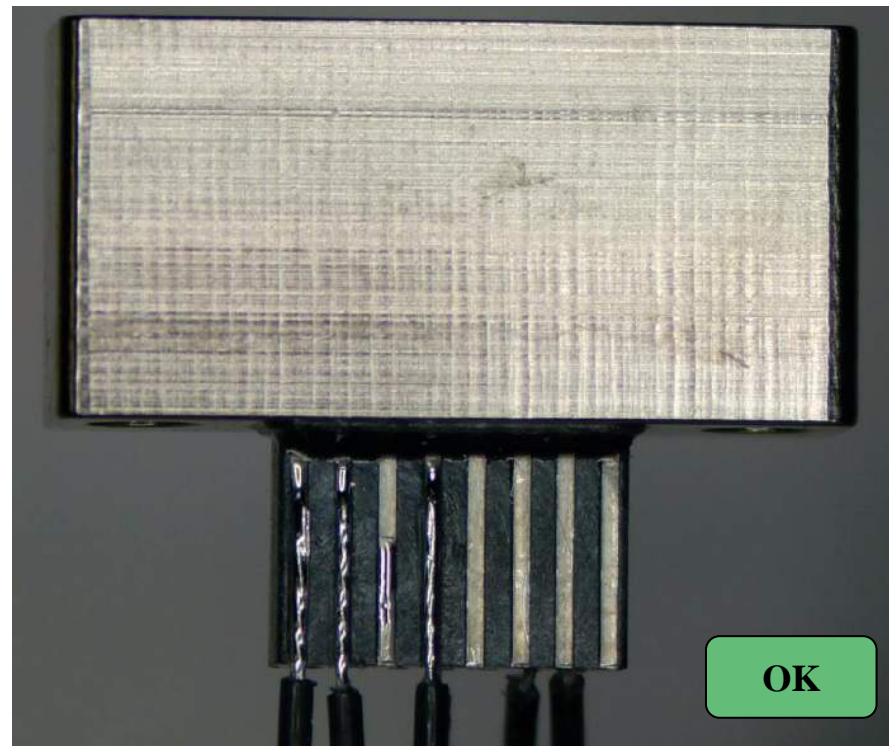
*\*\*\* It's reasonable to assume that Tinned Wire as Round/Coined Lead for Cross-Section Analysis \*\*\**



## II/ PROCEDURE

### 2.4/ Cross-section analysis for 3 wires size

How do **34awg** wires look when they are soldered side by side?



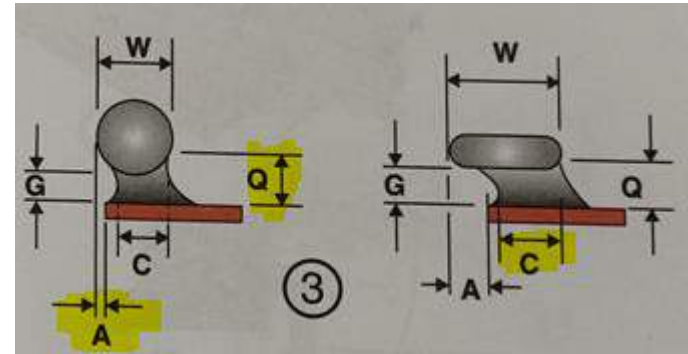
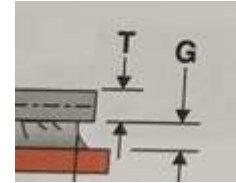
OK

**II/ PROCEDURE**

**2.4/ Cross-section analysis for 3 wires size**



For this 32awg solder joint, even it is shifted to the Right side a little, but **The solder joint is still acceptable per IPC Standard** (The solder joint will be aligned in the center for the next solder)



**Main feature:**

**C:** – minimum end joint width - at least 75% W

**A:** - side overhang - max 25% W

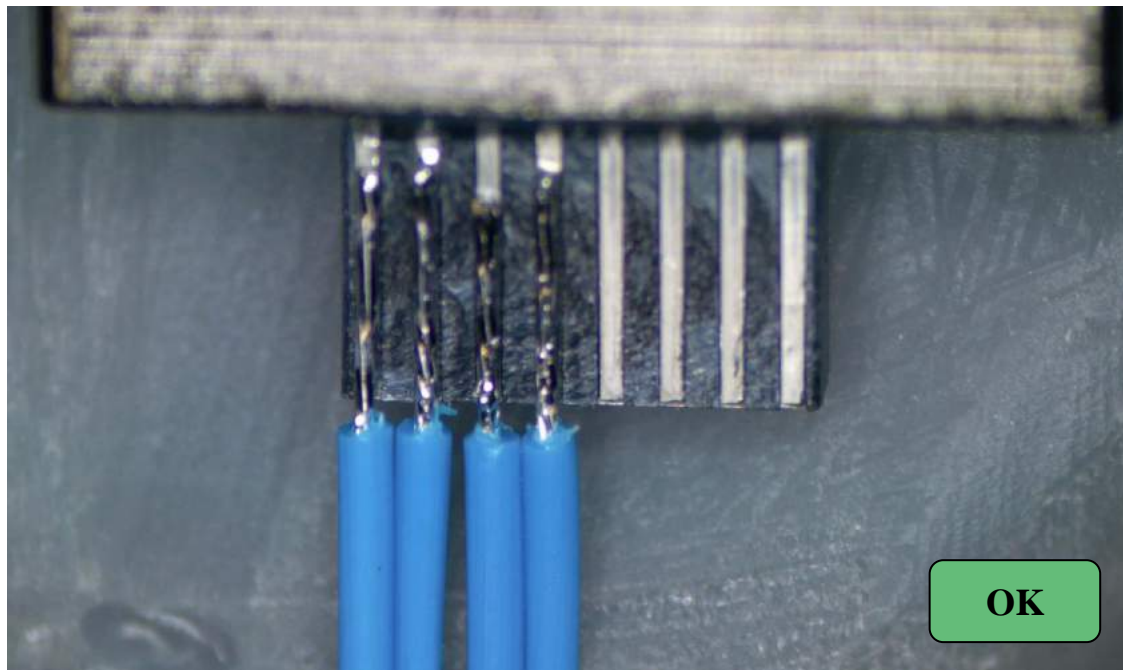
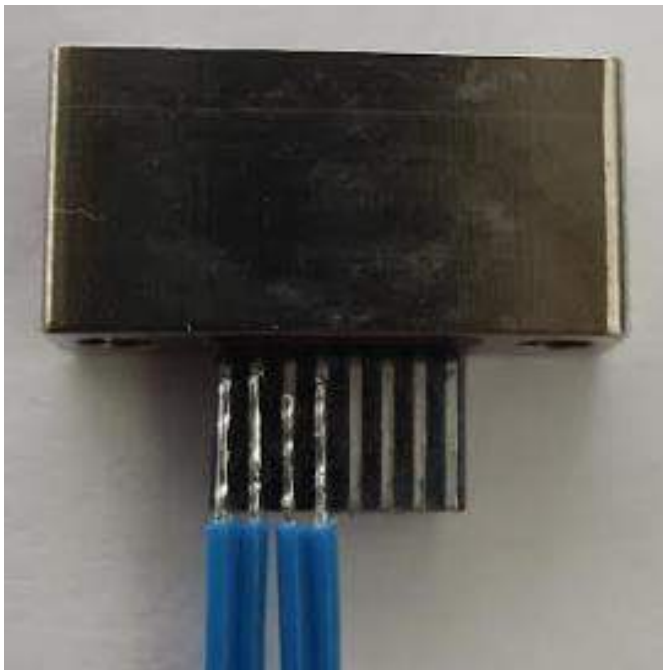
**Q:** - minimum side joint height – G + 50% T

*\*\*\* It's reasonable to assume that Tinned Wire as Round/Coined Lead for Cross-Section Analysis \*\*\**

## II/ PROCEDURE

### 2.4/ Cross-section analysis for 3 wires size

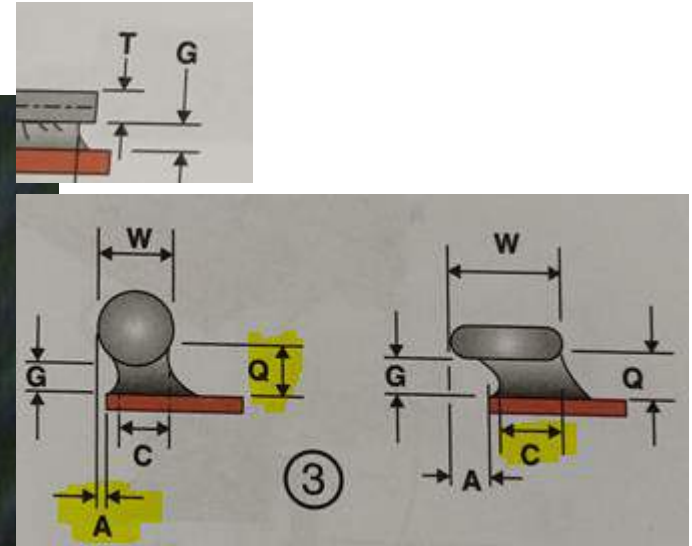
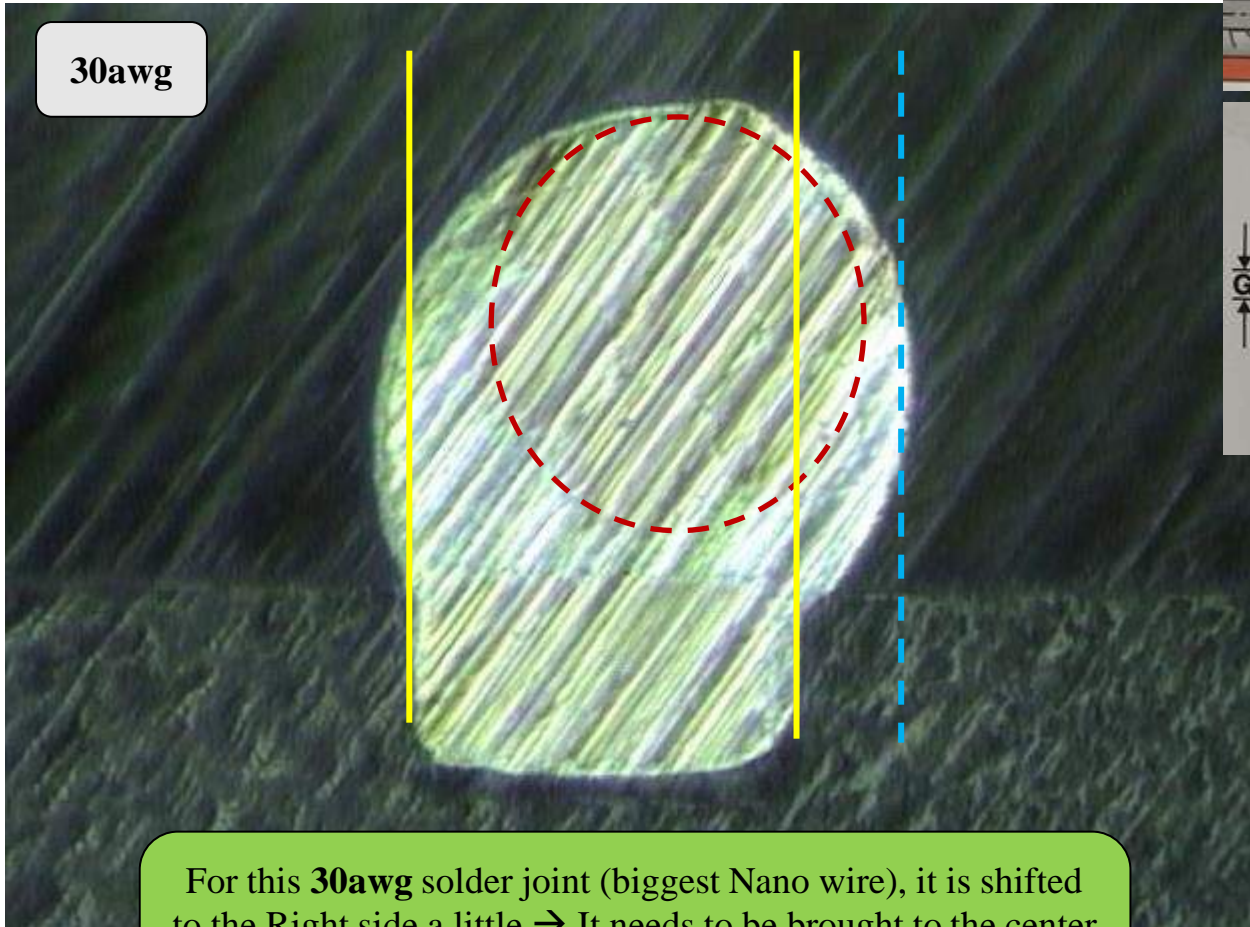
How do **32awg** wires look when they are soldered side by side?



OK

**II/ PROCEDURE**

**2.4/ Cross-section analysis for 3 wires size**



**Main feature:**

- C:** – minimum end joint width - at least 75% W
- A:** - side overhang - max 25% W
- Q:** - minimum side joint height –  $G + 50\% T$

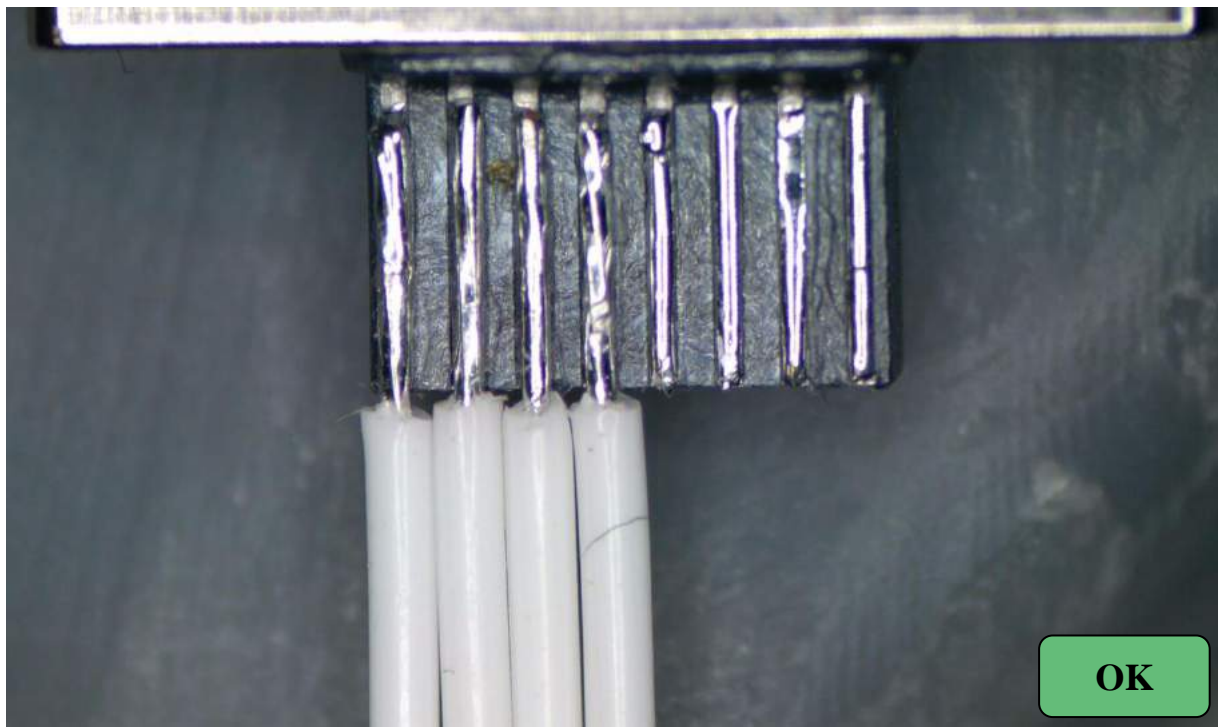
For this **30awg** solder joint (biggest Nano wire), it is shifted to the Right side a little → It needs to be brought to the center to meet **IPC Standard**, but it will take more labor time (The solder joint will be aligned in the center for the next solder)

*\*\*\* It's reasonable to assume that Tinned Wire as Round/Coined Lead for Cross-Section Analysis \*\*\**

## II/ PROCEDURE

### 2.4/ Cross-section analysis for 3 wires size

How do **30awg** wires look when they are soldered side by side?



OK

## II/ PROCEDURE

### 2.5/ Cleaning process & Inspection

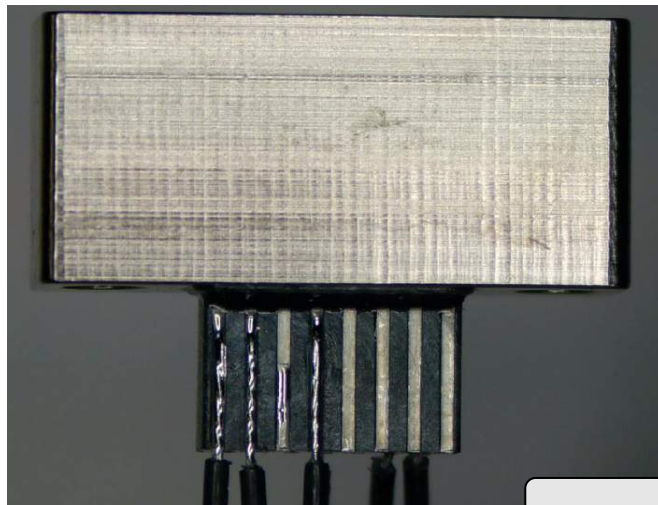
➤ **Cleaning process:**

- After soldering, use MicroCare Flux Remover-SuprClean or Alcohol 99% /Brush, then air blow to clean the solder connection.

**Note:** Assemblies shall be free of visible residues & flux *per J-STD-001*.

➤ **Inspection:** Per *J-STD-001*

- Solder connections shall indicate evidence of wetting and adherence where the solder blends to the soldered surface.
- Wires have to line up with leads to prevent shorting or violating minimum electrical clearance.
- Apply **10x magnification** for inspection wires and connections.



Cleaning



Inspection

Done