# TO

# SPECIFICATION FOR APPROVAL

DESCRIPTION: Pitch 1.0mm Wire To Board Connector, V/T ,SMT Type , Header

CUSTOMER PROD.NO/DWG.NO:

E&T PROD.NO: 3709K-XXXX-XXX

APPROVAL SHEET NO:

E&T DWG. NO./DOCUMENT: 3709K-XXXX-XXX

REV: A2

**PLEASE RETURN TO US ONE COPY OF"SPECIFICATION FOR APPROVAL"WITH YOUR APPROVED SIGNATURES.**

| APPROVED SIGNATURES | | | |
|---|---|---|---|
| | | | |

The Quality Connection

**ENTERY INDUSTRIAL CO., LTD.**
**E&T ELECTRONICS (DONG GUAN) CO., LTD.**
**E&T ELECTRONICS (SU ZHOU) CO., LTD.**

# ENTERY INDUSTRIAL CO., LTD.

**Title :Pitch 1.0mm Wire To Board Connector, R/A,SMT Type Header**

| | | |
|---|---|---|
| RE 201404017 | | **Title: Pitch 1.0mm Wire To Board Connector, V/T,SMT Type,Header** |
| **A2** | 2014/5/7 | This Document Contains Information That Is Proprietary To E&T And Should Not Be Used Without Written Permission |
| **Rev** | **Description** | |

| | | |
|---|---|---|
| Document No. **3709K-XXXX-XXX** | Prepared By: Juno Chen | Date: 12,23'2010 |
| | Checked By: | Date: 05.13.2011 |
| | Approved By: | Date: |

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## GROUP AND TEST SEQUENCE

| Test of Examination | | Test Group | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | H | I | J | K |
| 1 | Examination of Product | 1,9 | 1,6 | 1,5 | 1,5 | 1,5 | 1,3 | 1,3 | 1,3 | 1,5 | 1,5 | |
| 2 | Contact Resistance | 2,6 | 2,5 | 2,4 | 2,4 | 2,4 | | | | 2,4 | 2,4 | |
| 3 | Insulation Resistance | 3,7 | | | | | | | | | | |
| 4 | Dielectric Strength | 4,8 | | | | | | | | | | |
| 5 | Insertion Force And Withdrawal Force | | 3 | | | | | | | | | |
| 6 | Terminal / Housing Retention Force | | | | | | | | | | | 1 |
| 7 | Durability | | 4 | | | | | | | | | |
| 8 | Vibration | | | 3 | | | | | | | | |
| 9 | Heat Resistance | | | | 3 | | | | | | | |
| 10 | Cold Resistance | | | | | 3 | | | | | | |
| 11 | Humidity | 5 | | | | | | | | | | |
| 12 | Solder Ability | | | | | | 2 | | | | | |
| 13 | Resistance To Soldering Heat | | | | | | | 2 | | | | |
| 14 | Steam Aging | | | | | | | | 2 | | | |
| 15 | Salt Spray | | | | | | | | | 3 | | |
| 16 | Temperature Cycling | | | | | | | | | | 3 | |

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## PRODUCT SPECIFICATION

### 1. SCOPE :

**This specification covers the 1.0mm pitch Wire To Board Connector, V/T,SMT Type series.**

### 2. PRODUCT NAME AND PART NUMBER :

| Product Name | E&T Part Number |
|---|---|
| 1.00mm Wire To Board Connector, V/T,SMT Type,Header | 3709K-XXXX-XXX |

### 3. RATINGS :

| Item | Standard | |
|---|---|---|
| Rated Voltage (MAX.) | 125 V | AC/DC |
| Rated Current (MAX.) | 1.0 A (AWG#28) | |
| Ambient Temperature Range | -40℃ ~ +105℃ | |

*Including temperature rise in applying electrical current

### 4.PERFORMANCE :

#### 4- 1 Electrical Performance

| Item | | Test Condition | Requirement |
|---|---|---|---|
| 4-1-1 | Contact Resistance | Test Current: 10 mA Max.<br>Test Voltage: 20mV Max<br>Test Method: MIL-STD-202F, Method 303 | 20 mΩ MAX. |
| 4-1-2 | Insulation Resistance | Test Voltage: 500V DC.<br>Test Duration: 1 minutes.<br>Test Method: MIL-STD-202, method 302 | Initial: 100 MΩ Min.<br>Final: 100 MΩ Min. |
| 4-1-3 | Dielectric Strength | Test Voltage: 500 V AC.<br>Test Time: 60 sec.<br>Test Method: MIL-STD-202, Method 301. | No Breakdown |

**4-2 Mechanical Performance**

| Item | | Test Condition | Requirement |
|---|---|---|---|
| 4-2-1 | Insertion Force And Withdrawal Force | Test Speed: 25±3 mm/min.<br>Test Method: MIL-STD-1344A, (without Lock)<br>Method 2016. | See-5-1 |
| 4-2-2 | Terminal / Housing Retention Force | Test Speed: 25mm/min. | 0.4kgf (Min) |
| 4-2-3 | Fitting Nail / Housing Retention Force | Test Speed: 25mm/min. | 0.2kgf (Min) |

**4-3 Environmental Performance and Others**

| Item | | Test Condition | Requirement | |
|---|---|---|---|---|
| 4-3-1 | Durability | The contacts of connector shall be subject to 30 cycles of mating and unmating.<br>(Housong lock shall be removed before the test.) | Contact Resistance | |
| | | | Initial Value | ≦ 20 mΩ |
| | | | Final Value | ≦ 40 mΩ |
| 4-3-2 | Vibration | Amplitude : 1.5 ㎜<br>Frequency range: 10~55~10 Hz in 1 minute<br>Duration: 2 hours in each X.Y.Z axes<br>Current: 100mA.<br>Test Method: MIL-STD-202F, Method 201 | Appearance | No Damage |
| | | | Contact Resistance | ≦40 mΩ |
| | | | Discontinuity | 1μsec |
| 4-3-3 | Heat Resistance | Temperature: 85±2℃<br>Duration: 96 hours<br>Test Method: MIL-STD-202, Method 108. | Appearance | No Damage |
| | | | Contact Resistance | ≦ 40 mΩ |
| 4-3-4 | Cold Resistance | Temperature: -40±2℃<br>Duration: 96 hours<br>Test Method: JIS C60068-2-1 | Appearance | No Damage |
| | | | Contact Resistance | ≦ 40 mΩ |
| 4-3-5 | Humidity | Temperature: 40±2℃<br>Relative Humidity: 90~95%<br>Duration: 96 hours<br>Test Method: MIL-STD-202F , Method 103 | Appearance | No Damage |
| | | | Contact Resistance | ≦ 40 mΩ |
| | | | Insulation Resistance | ≧100MΩ |
| | | | Dielectric Strength | Must meet 4-1-3 |

| Item | | Test Condition | Requirement | |
|---|---|---|---|---|
| 4-3-6 | Solder Ability | Soldering Time : 3±0.5 sec<br>Solder Temperature : 245±5℃<br>Test Method: MIL-STD-202F , Method 208 | Solder Wetting | 95% Of Immersed Area Must Show No Voids, Pin Holes |
| 4-3-7 | Resistance To Soldering Heat | Soldering Time : 10±0.5 sec<br>Solder Temperature : 260±5℃ | Appearance | No Damage |
| 4-3-8 | Steam Aging | Steam Aging Temperature : 98±2℃<br>Duration: 8 hours<br>Solder Temperature : 245±5℃<br>Soldering Time : 3±0.5 sec<br>Test Method: MIL-STD-202F , Method 208 | Appearance | No Damage |
| | | | Solder Wetting | 95% Of Immersed Area Must Show No Voids, Pin Holes |
| 4-3-9 | Temperature Cycling | 25 cycles of : a) - 40 ±3℃ 30 minutes<br>b) +25 ±3℃ 30 minutes<br>c)+ 85 ±2℃ 30 minutes<br>Test Method: JIS C0025 | Appearance | No Damage |
| | | | Contact Resistance | ≦ 40 mΩ |

5-1

Unit:kgf

| Pin No. | At Initial | | At 30th |
|---|---|---|---|
| | I.F(MAX) | W.F(Min) | W.F(Min) |
| 2 | 2 | 0.2 | 0.2 |
| 3 | 2 | 0.2 | 0.2 |
| 4 | 2 | 0.2 | 0.2 |
| 5 | 3 | 0.3 | 0.3 |
| 6 | 3 | 0.3 | 0.3 |
| 7 | 3 | 0.3 | 0.3 |
| 8 | 4 | 0.4 | 0.4 |
| 9 | 4 | 0.4 | 0.4 |
| 10 | 4 | 0.4 | 0.4 |
| 11 | 5 | 0.5 | 0.5 |
| 12 | 5 | 0.5 | 0.5 |

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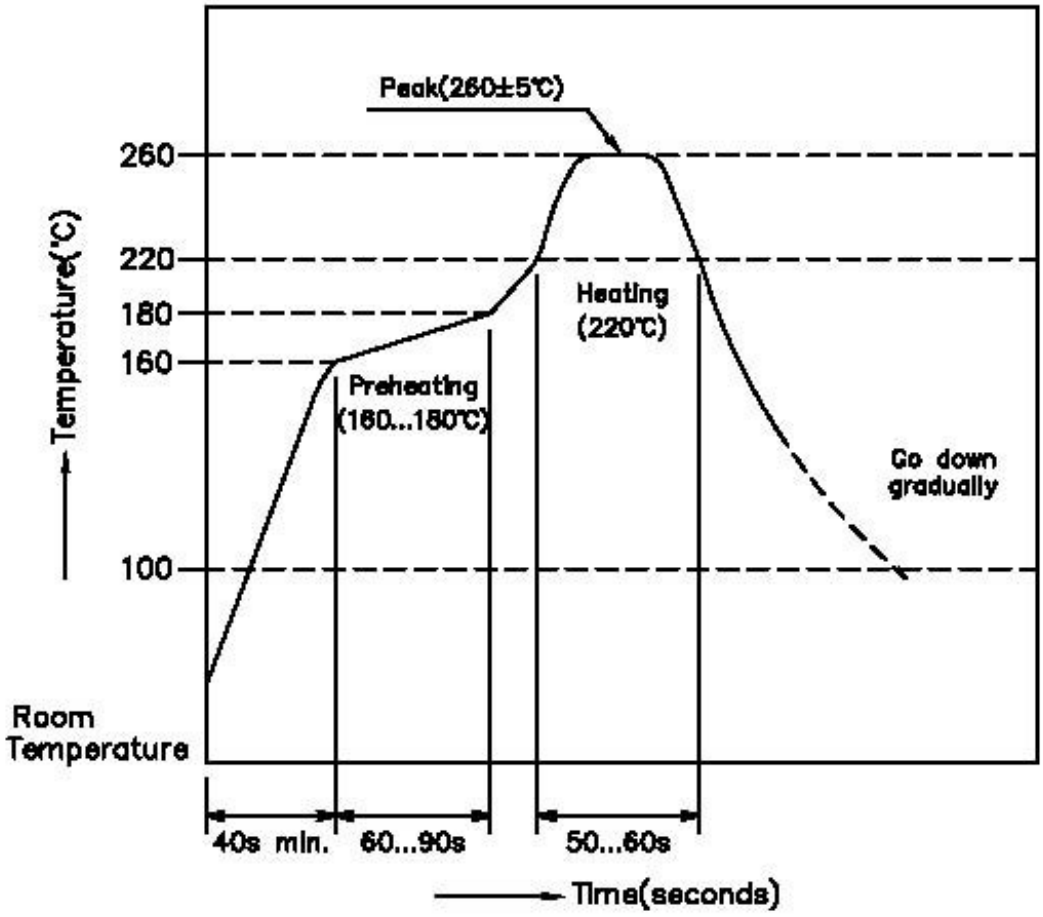
INFRARED REFLOW CONDITION

1) Ascending time to preheating temperature 170℃ shall be 40 seconds minimum.
2) Preheating shall be fixed at 160...180℃ for 60...90 seconds.
3) Heating shall be fixed at 220℃ for 50...60 seconds.
4) At 260±5℃ peak shall be 10 seconds maximum.



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# Wire To Board
# Handling Precautions

**This manual is to describe basic precautions. When there are doubtful points in use of, please contact E&T.**

## 1. Common Handling Precautions

- Do not expose E&T's wire to board connector, processing process product and processing product to corrosive substance, corrosive gas, high temperature and high humidity and direct sunshine. It causes corrosion of contact and deterioration of insulation performance of housing, etc., so that it causes motion defect of appliances.
- Do not apply external load to E&T's wire to board connector, processing process product and processing product . Deformation and breakage, etc. occur, and it causes performance defect of.
- There may be slight differences in the housing coloring, but there will be no influence on the product's performance.
- Please do not conduct any "washing process" on the connector because it may damage the product's function.
- E&T's wire to board connector is not designed for the mating and unmating of the connectors to be performed under the condition of an active electrical circuit. It may cause a spark and product defect if the connectors are mated and unmated in this way.

## 2. PC Board Precautions

- Exercise caution when handling boards with the connectors installed. Do not apply any forces affecting soldered joints. (see figure 1).
- The mounting specification for coplanarity does not include the influence of warpage of the printed circuit board. (see figure 1).
- Changing recommended pattern causes problems.

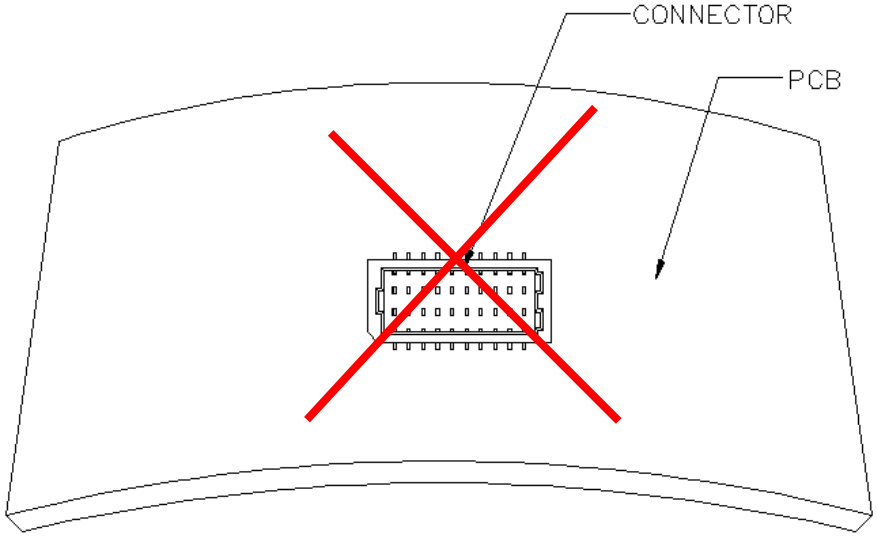


Figure 1.

## 3. Precautions Crimped Terminal Insertion

- Terminal must be inserted horizontally oriented (see figure 2).
- Do not attempt to insert crimped terminal in any other direction. (see figure 2).

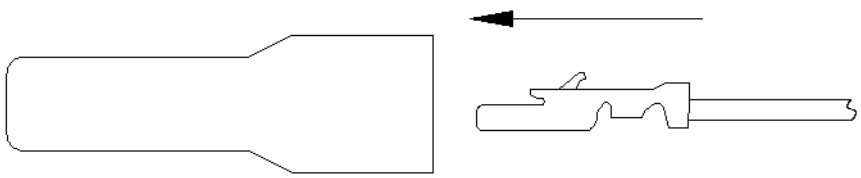

Figure 2.

## 4. Precautions When Inserting or Withdrawal Wire To Board

- Do not insert and remove at an angle of 25° or greater. Doing so will cause contact deformation or case damage. (see figure 3).
- Push the wire side connector until firmly closed. At this time, confirm that the wire side connector is mated securely.
- When mounting of connectors, its slant or aberration shall be 3° max.
- Do not insert and remove the connectors when the board side connector is not mounted on the PC board.
- Used Lock type, when removed to connectors, please released positive locks.

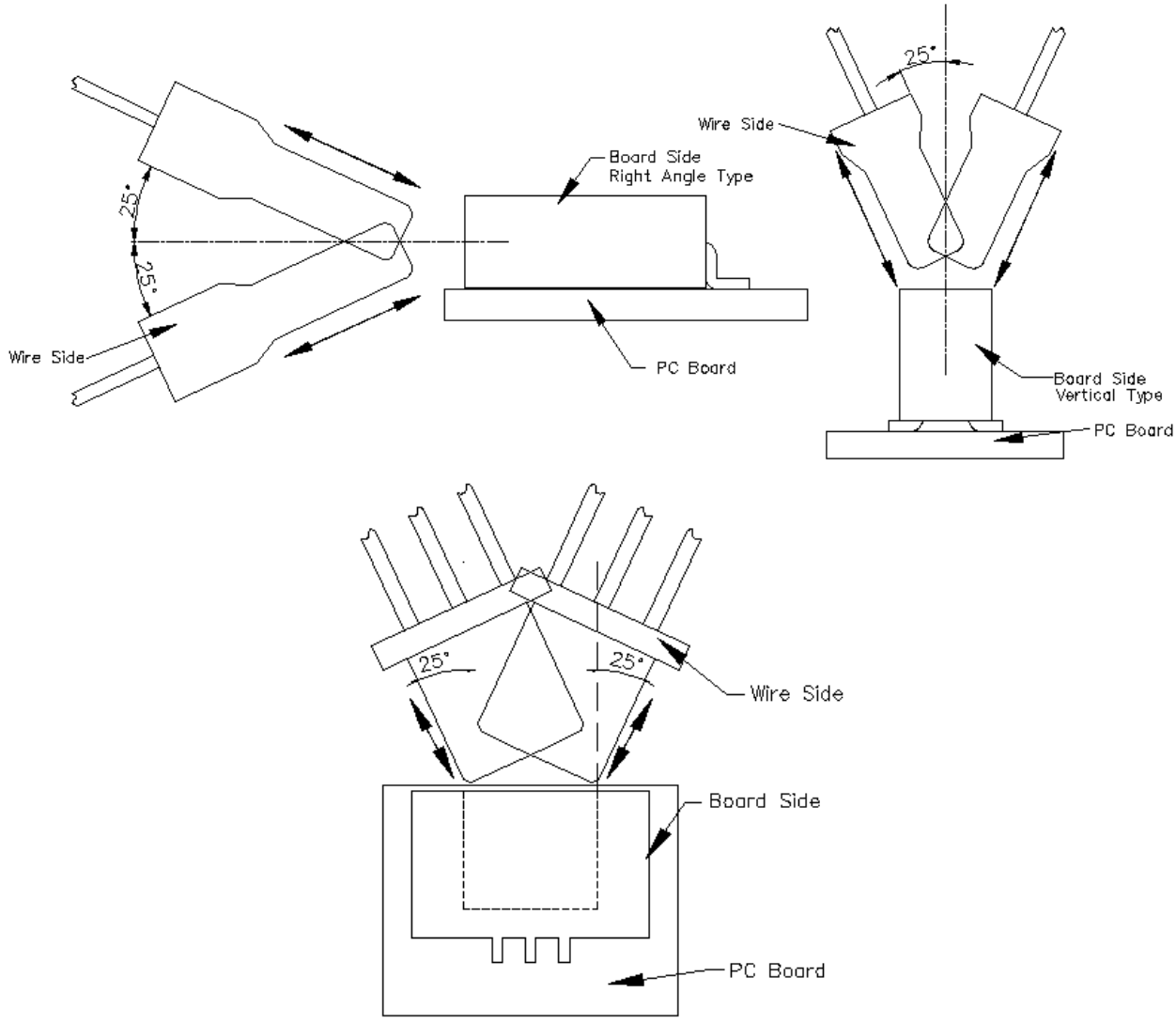


Figure 3.

## 5. Precautions Cable Assembly

- The cable assembly should not have a constant stress or pulling force applied on it when it is in the mated condition. Therefore, when designing the wire positioning, please ensure that there is enough length of wire to avoid stress on the connector. (see figure 4).

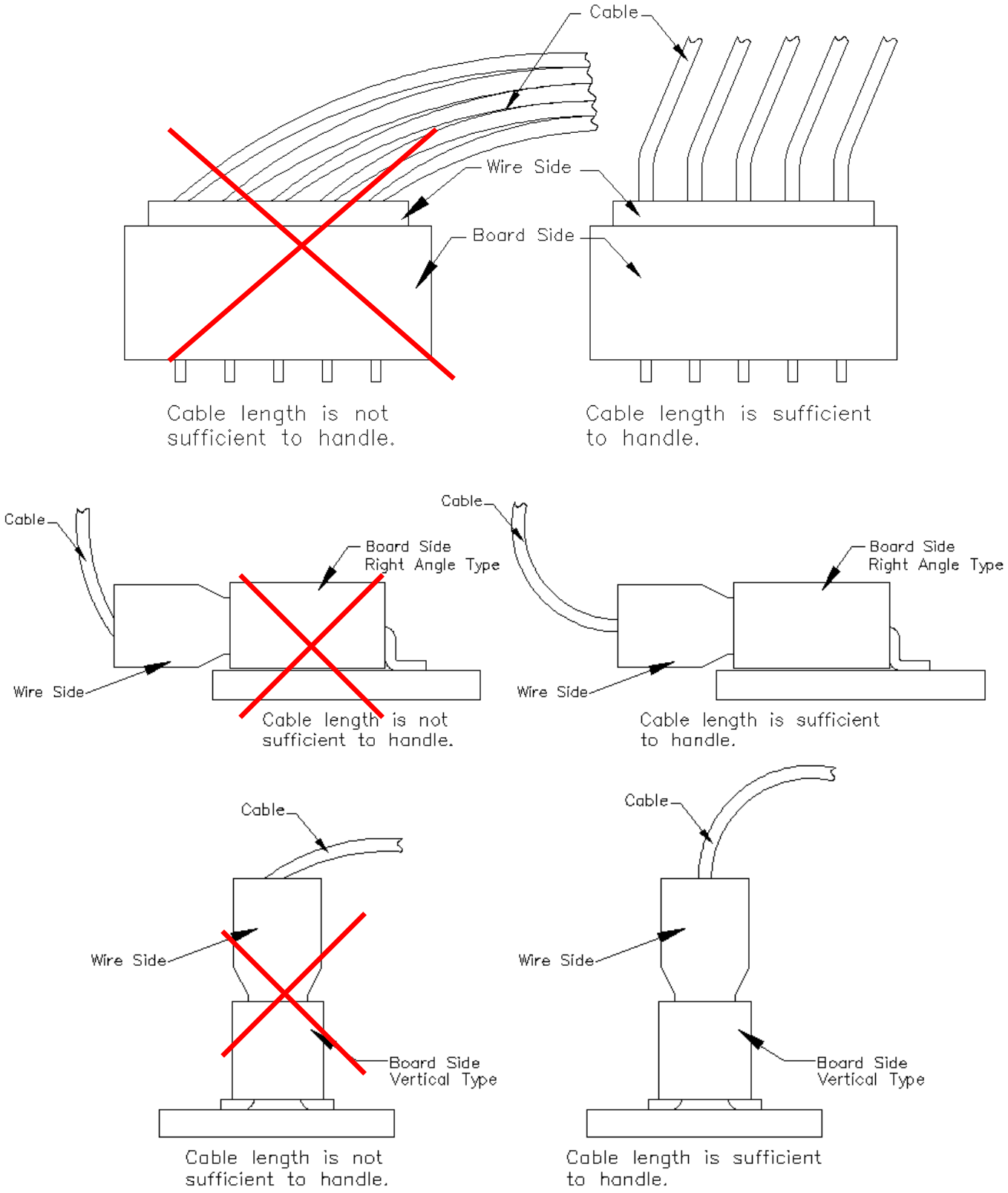


Figure 4.

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## RELEASE HISTORY

| Rev. | Revisions | Date | Executor | Description |
|---|---|---|---|---|
| A0 | First Release | DEC-23-2010 | JUNO | First Release |
| A1 | RE201110012<br>RE201111028 | OCT-31-2011 | JIMMY | ADD Handling Precautions<br>Cancel Packaging Spec |
| A2 | RE201404017 | MAY-07-2014 | Juno | Remove Locking Force SPEC |