# Designing and Handling Guidline for CX60-24S-1000-CD/CS

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## 1. Revision History

| Revision History | Date | Handled by | Remarks |
|---|---|---|---|
| 1.0 | Feburary. 04. 2020 | SK.JANG | Draft version |
| 2.0 | September. 23. 2020 | SK.JANG | Revised |
| | | | |
| | | | |

## 2. Introduction

2.1 Purpose

This document defines the guidelines to design a product with CX60-24S-1000-CD and CX60-24S-1000-CS. And it is intended to provide reference information but do not limit the design of user and gurantee the result from the reference information herein.

2.2 Scope

This guideline is intended as a supplement to the existing the product specification.

2.3 Reference Specification

Universal Serial Bus Type-C Connectors and Cable Assemblies Compliance Document Revision 1.1 May 28, 2016

Universal Serial Bus Type-C Cable and Connector Specification Revision 1.3 July 14, 2016

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# 3. Connector Information

## 3.1 Conncetor Feature

| | |
|---|---|
| No. of Contacts | 24 |
| P.C.B Mounting type | Paddle Card |
| Soldering type | SMT |

## 3.2 Specification

| | |
|---|---|
| Current rating | DC 1.25 A max. for each power pin<br>(i.e. A1, A4, A9, A12, B1, B4, B5, B9, B12)<br>DC 0.25A for the other pins |
| Voltage rating | 20V AC |
| Operating Temperature | -30℃ to +85℃ |
| Storage Condition | -10℃ ~ +60℃ (With Packing), 15% ~ 70% RH |
| Contact Resistance | 40mΩ Max. (Initial) |
| Withstanding Voltage | 100V AC for 1 minute |
| Insulation Resistance | 100MΩ Min. (500V DC) |
| Mating Cycles | 10,000 times |
| Insertion/ Extraction Force | Insertion: 5~20N, Extraction: 8~20N |

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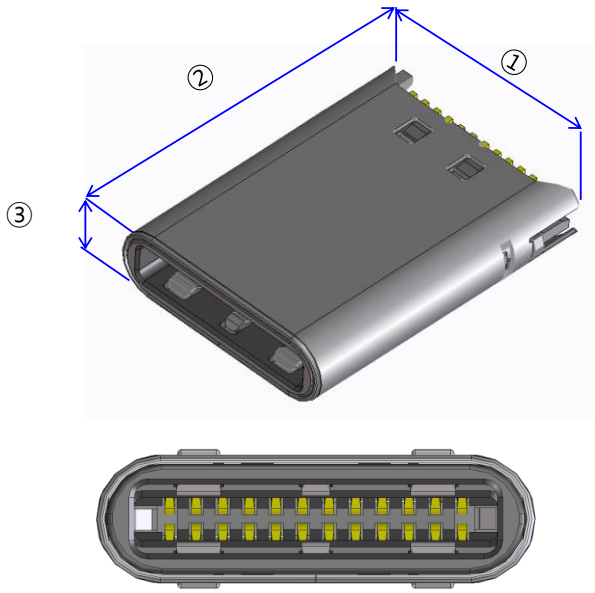
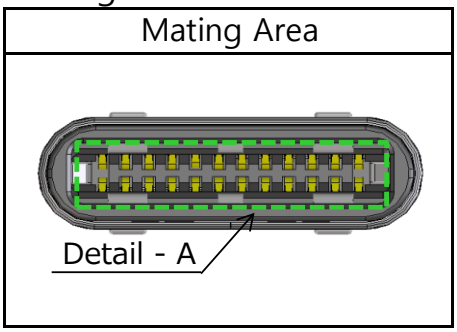
## 3.3 Size

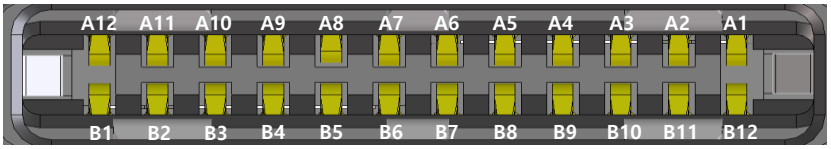



| | | |
|---|---|---|
| ① | Width | 8.25 |
| ② | Length | 11.10 |
| ③ | Height | 2.40 |

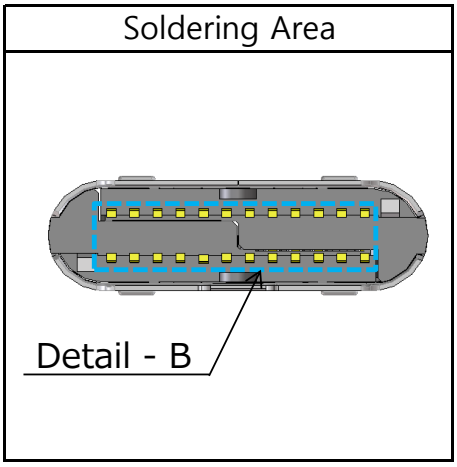
## 3.4 Pin Assignment

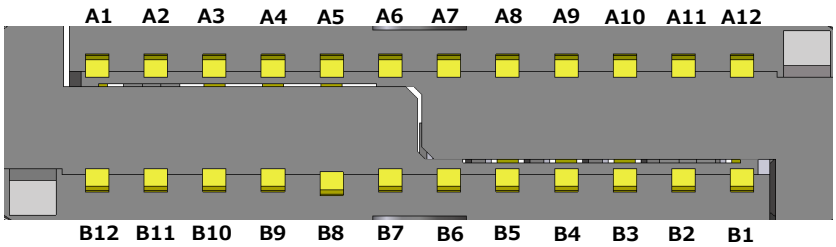



| A1 | A2 | A3 | A4 | A5 | A6 | A7 | A8 | A9 | A10 | A11 | A12 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| GND | TX1+ | TX1- | Vbus | CC1 | D+ | D- | SBU1 | Vbus | RX2- | RX2+ | GND |
| GND | RX1+ | RX1- | Vbus | SBU2 | D- | D+ | CC2 | Vbus | TX2- | TX2+ | GND |
| B12 | B11 | B10 | B9 | B8 | B7 | B6 | B5 | B4 | B3 | B2 | B1 |




**Detail A**




**Detail B**

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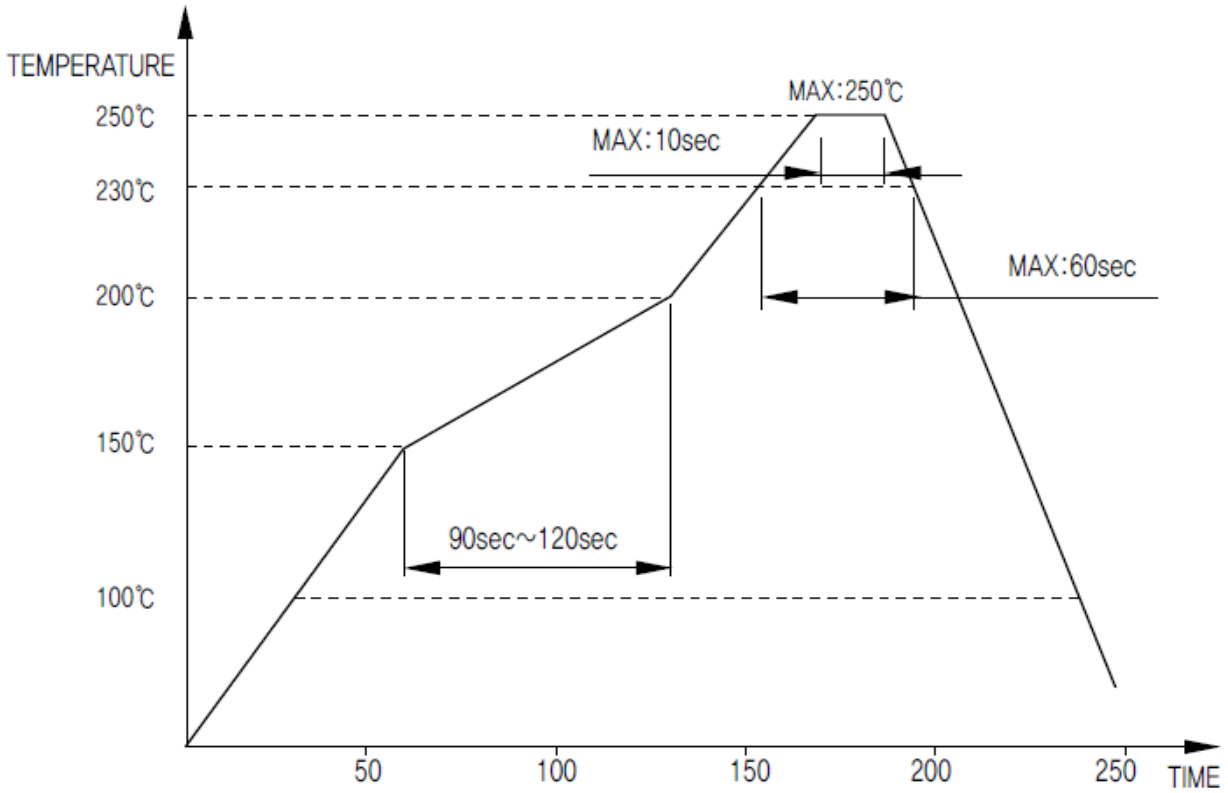
## 4. Notice for Soldering

### 4.1 Recommended Reflow Temperature Profile




• Profile measuring point
The temperature profile indicates the board surface temperature at the point of contacts with the connector terminals.

• Reflow cycles
Up to 2 cycles of reflow soldering are possible under the same conditions.
* Temperature between 1st and 2nd reflow must be cooled down to room temperature

• Reflow heating method and condition
Far-infrared heater and hot convective blowers used in combination, normal atmosphere, or nitrogen atmosphere..

• Top surface of the contact leads may not covered by solder depending on reflow condition

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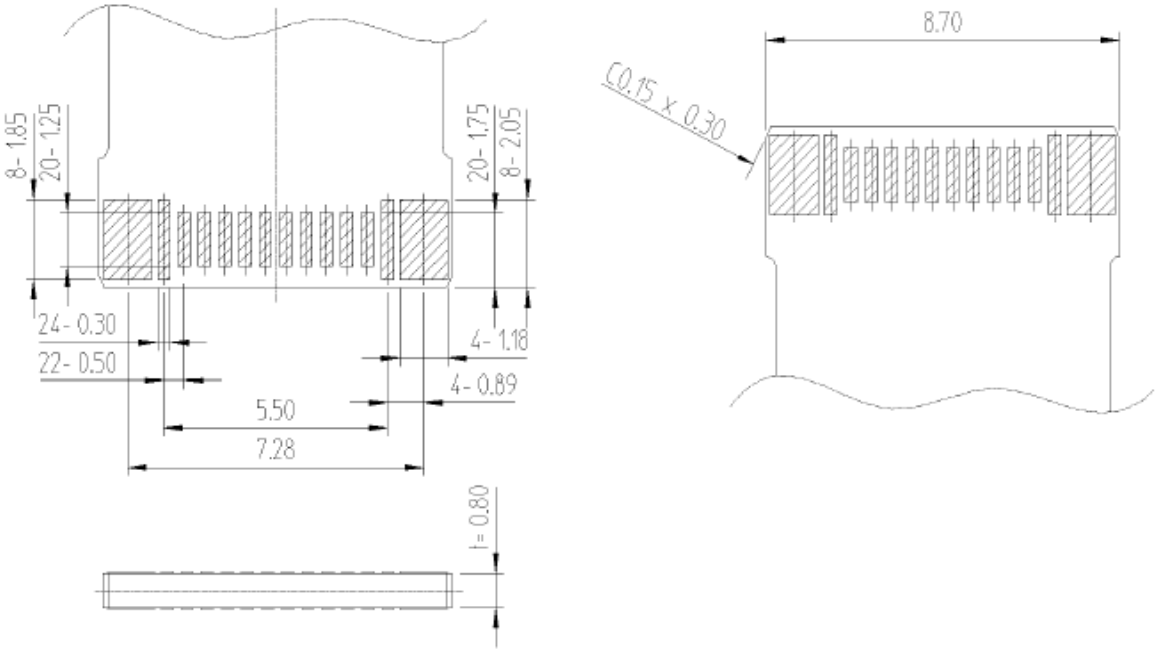
## 4.2 PCB Designing

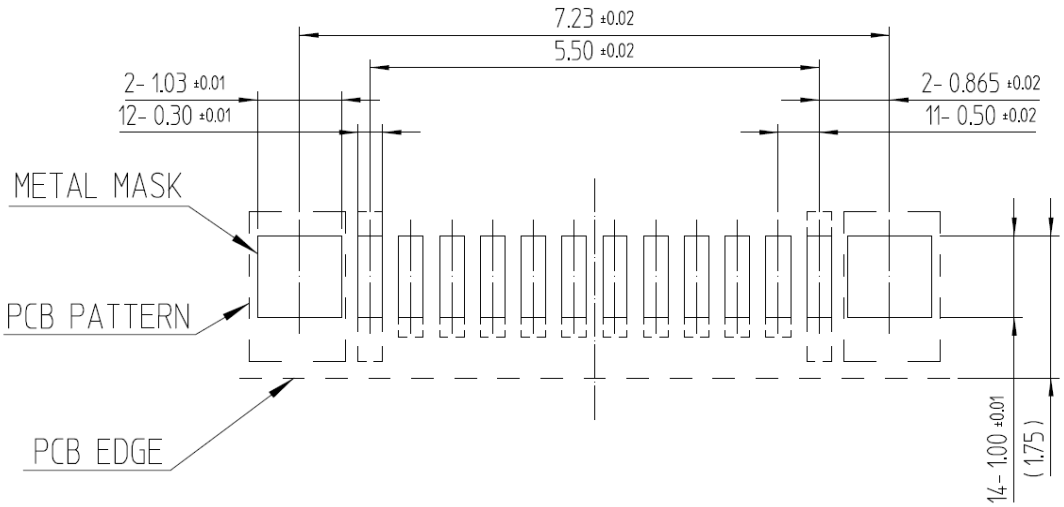
RECOMMENDED PCB LAYOUT

(General Tolerance : ±0.05)




## 4.3 Metal Mask Designing

t=0.10 / Aperture Ratio 80%



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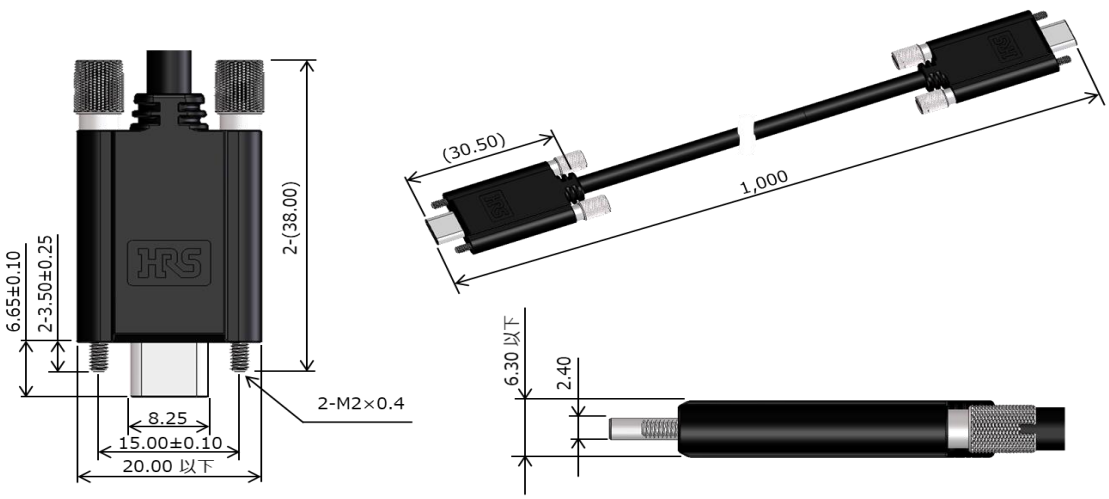
# 5. Cable Assembly Information

## 5.1 Specification

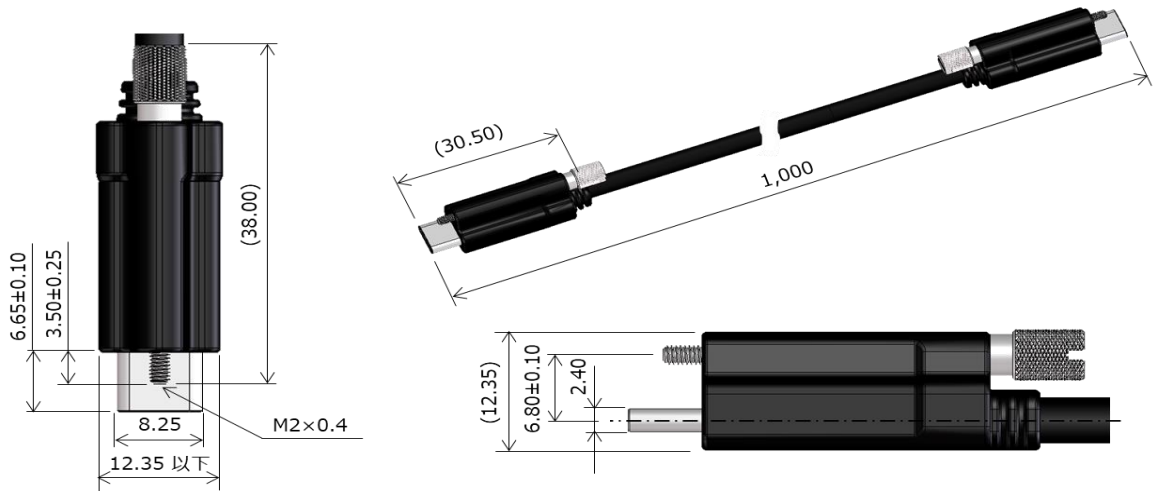
| | |
|---|---|
| Current rating | DC 1.25 A max. for each power pin<br>(i.e. A1, A4, A9, A12, B1, B4, B5, B9, B12)<br>DC 0.25A for the other pins |
| Voltage rating | 20V AC |
| Operating Temperature | -20℃ to +80℃ |
| Storage Condition | -30℃ ~ +80℃ (With Packing), 15% ~ 70% RH |
| Mating Cycles | 10,000 times |
| Insertion/ Extraction Force | Insertion: 5~20N, Extraction: 8~20N |

## 5.2 Size

① CX60-24S-1000-CD




② CX60-24S-1000-CS



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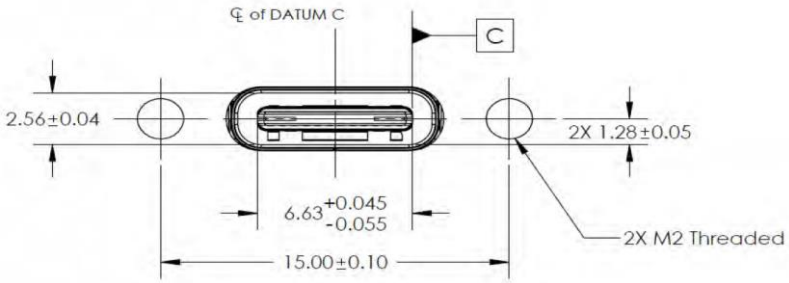
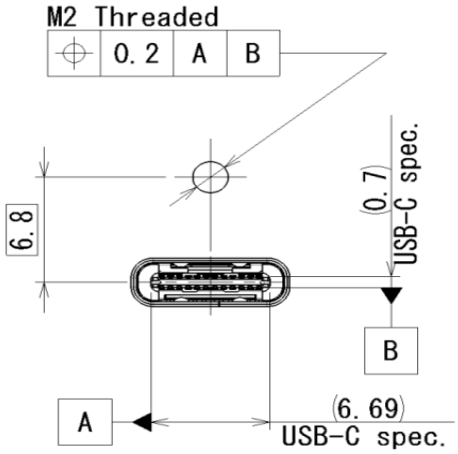
## 5.3 Mating Object Information

① Threaded Hole Location Relative Information

(from USB Type-C Locking Connector Revision 1.0)

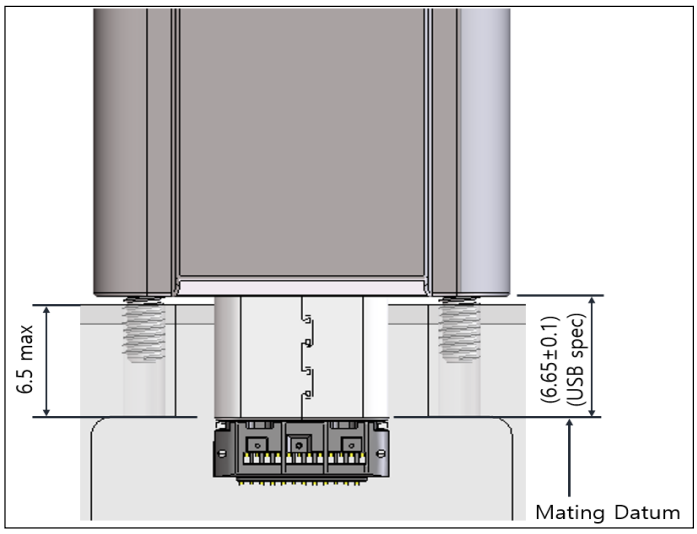



Dual Screw Specification
(For CX60-24S-1000-CD)

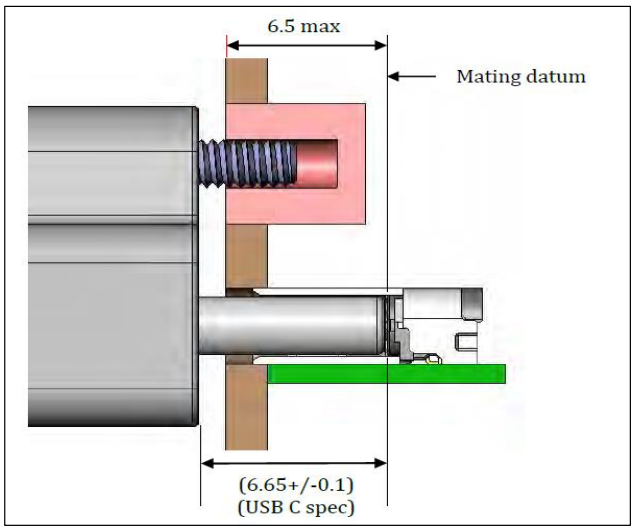



Single Screw Specification
(For CX60-24S-1000-CD)

② Type-C Receptacle Positioning




CX60-24S-1000-CD




CX60-24S-1000-CD

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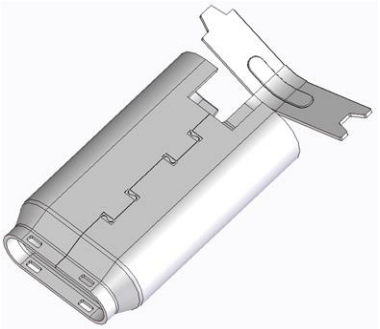
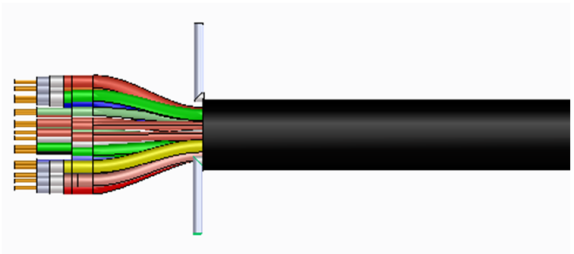
## 5.4 Applicable Connector

| HRS CODE | Connector | Use Cable |
|---|---|---|
| CL6240-0001-9 | CX60-24S-UNIT | - |
| CL6240-0007-5 | CX60-SLDA | Φ4.8 |

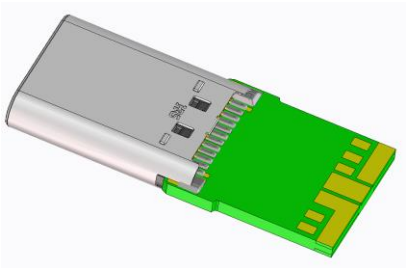
| | |
|---|---|
| |  |
| CX60-24S-UNIT | CX60-SLDA |

## 5.5 Cable Assembly Method

① Cable strip processing/Connector pcb mount



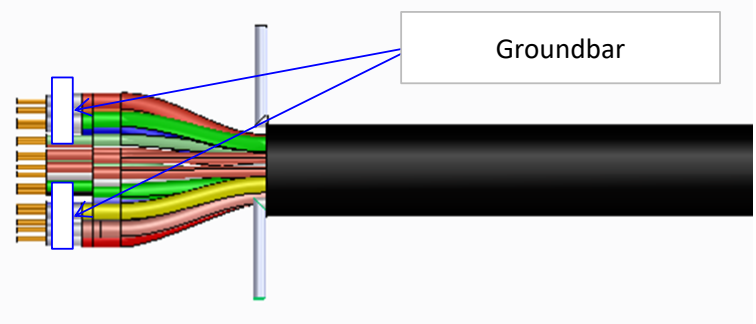
Cable



Paddle Card+Connector SMT

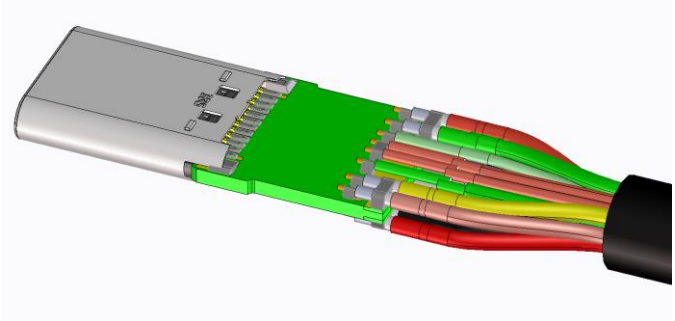
※The cable and paddle card are not provided separately.

② Groundbar attachment

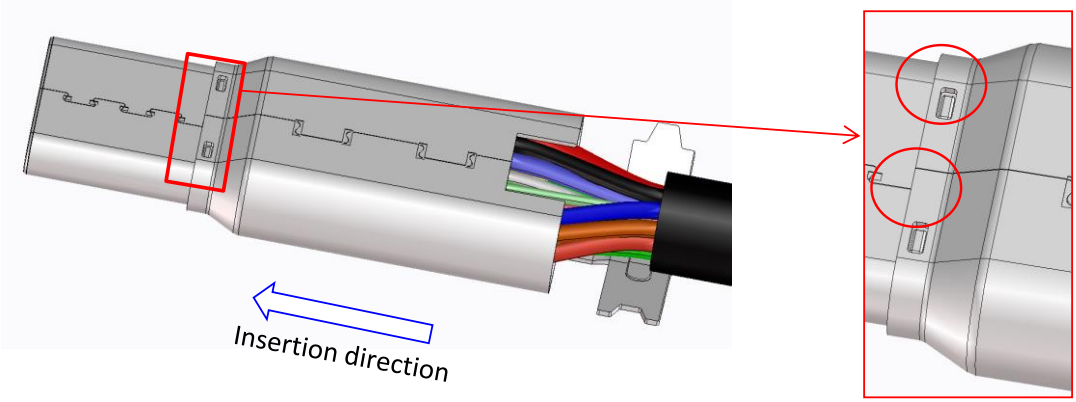



※The ground bar is not provided separately.

③ Paddle card+cable



④ Back shell assembly




※The back shell should be locked securely after inserted.

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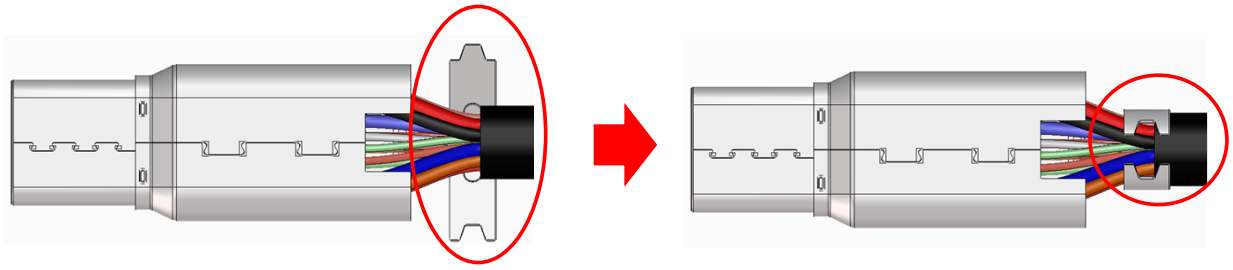
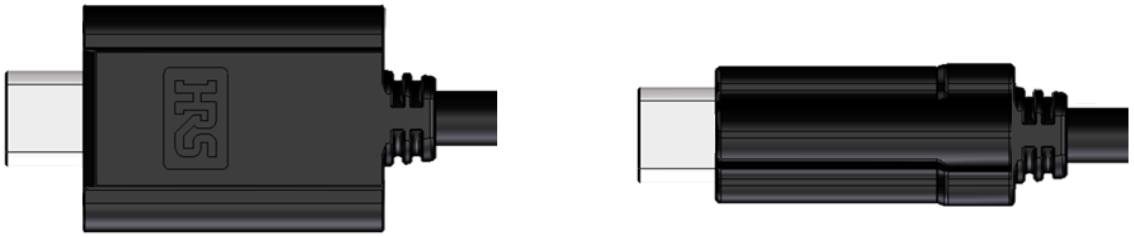
⑤ Back shell clamping



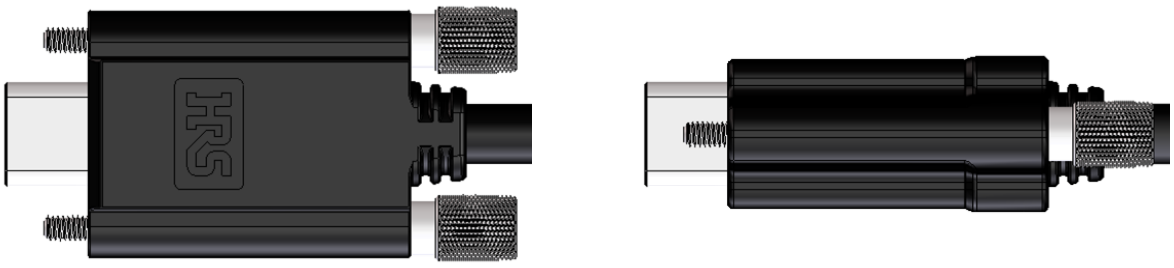
Before clamping

After clamping

⑥ Over molding



⑦ Assembly Screw



CX60-24S-1000-CD

CX60-24S-1000-CS

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