

CABLINE®-UY PLUG

Part No. 20857

Assembly Manual

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Rev.	ECN	Date	Prepared by	Checked by	Approved by

1. Purpose :

This manual is to explain the soldering method / process of the CABLINE-UY PLUG with cable, and assembly of SHELL A.

2. Applicable connector :

Name: CABLINE-UY PLUG

Parts No. :

Set P/N	CABLE ASS'Y	20857-0**T-##
Discrete P/N	HOUSING ASS'Y	20907-0**E-##
	SHELL A	3568-0**1

** : 05 = 5P , 10 = 10P ## : variation

3. Fixtures :

3.1 Components and Instruments used in the condition confirmation

• Pulse heater

Name	P/N	Manufacturer
Reflow head	NA-66	Nippon Avionics Co., Ltd
Pulse heat power supply	TCW-215	Nippon Avionics Co., Ltd

• Heater chip

Unit: mm

Positions	5P	10P
Thickness	0.3±0.05	0.3±0.05
Width	2.0±0.05	4.0±0.05

• Recommended solder bar

Resin-free solder is used.

Unit: mm

Positions	5P	10P
Solder size	φ0.06	φ0.06
Length	1.6mm Ref.	3.4mm Ref.

• Recommended solder flux

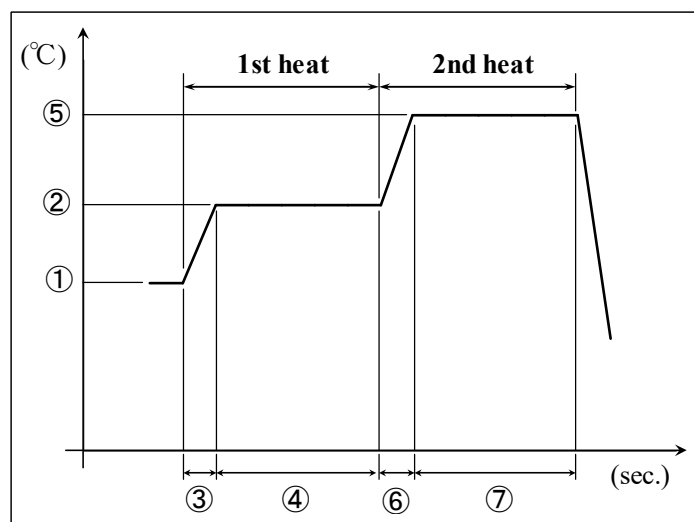
ES-Z-15 / Senju Metal Industry Co., Ltd.

※ • UV irradiator

※ • bond: LOCTITE 352 (UV glue)

4. Recommended pulse heat condition

	MICRO-COAX
① Idle temp.	150°C
② 1 st heat temp.	220°C
③ " rise time	0.5sec.
④ " holding time	3.0sec.
⑤ 2 nd heat temp.	240°C
⑥ " rise time	0.5sec.
⑦ " holding time	1.5sec.
Heater tip Pressure	0N



※ This pulse heat condition was evaluated and confirmed by our pulse heat jig and instruments.

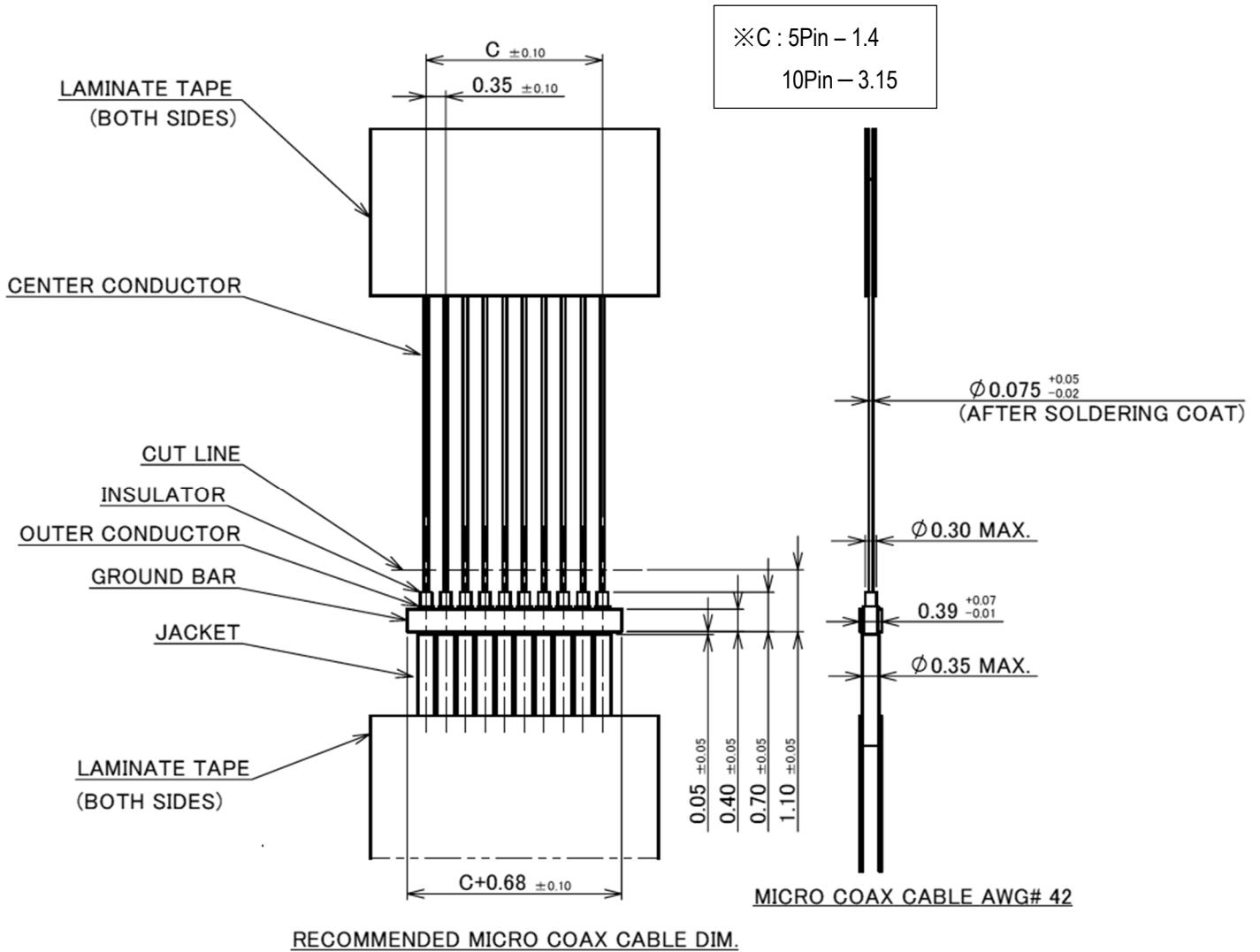
The most optimum condition may change based on the shapes of pulse heat jig and instruments, the environments, or other reason.

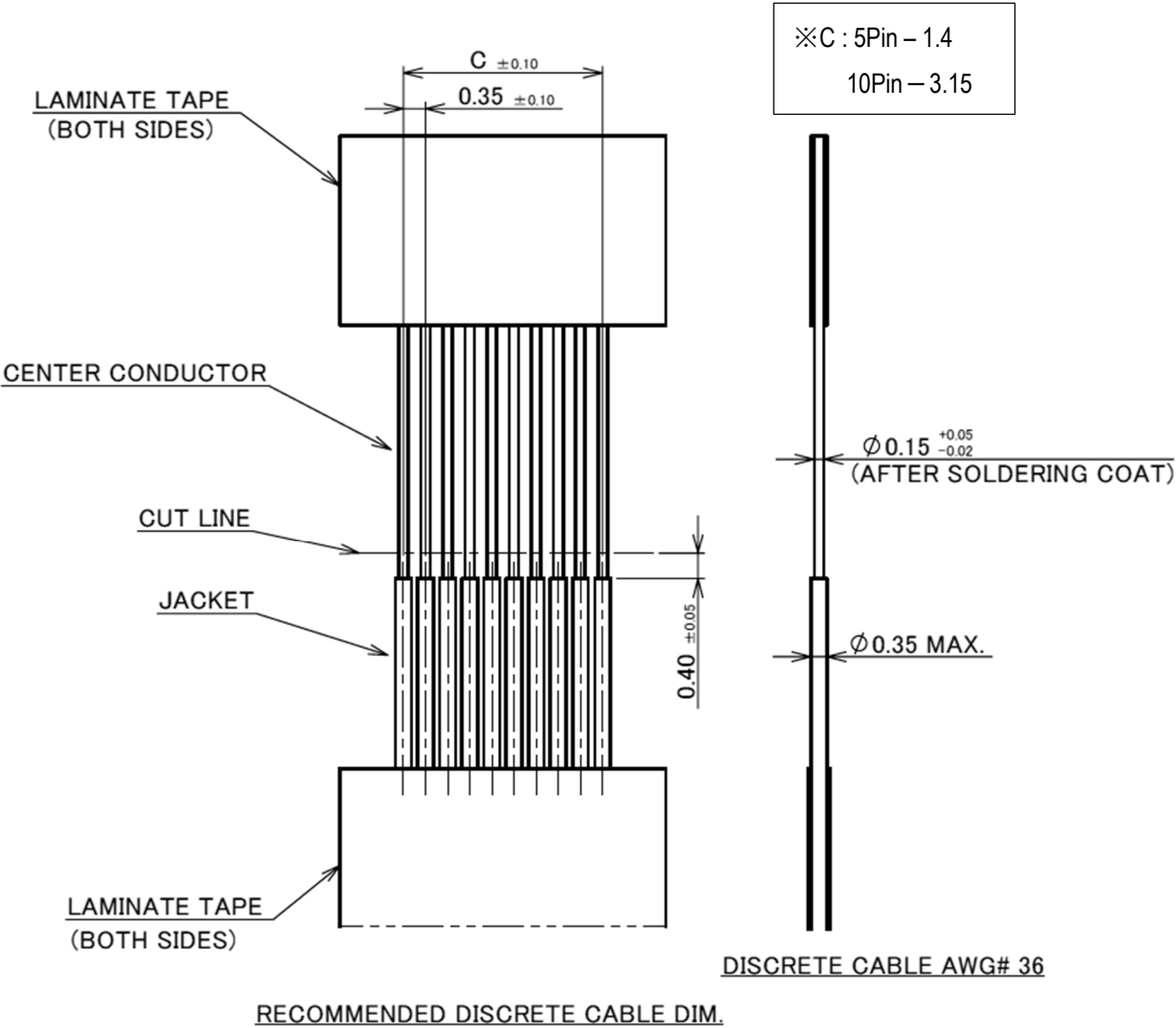
Therefore, please examine the pulse heat condition adequately in advance of use.

5. Work procedures :

5-1. Soldering of center-conductor

- ① The cables have to be fabricated as shown below in advance of soldering.





② Apply flux to contact by the dispenser etc., and please confirm all contacts were applied flux.

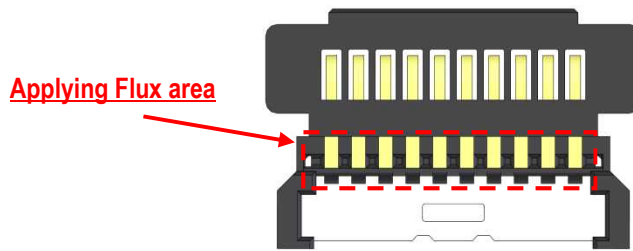


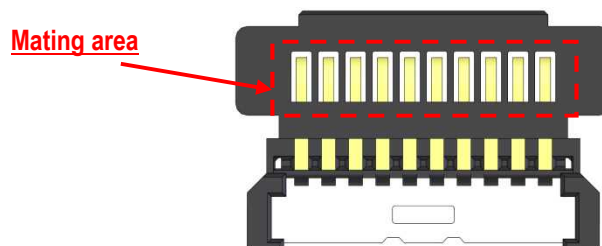
Photo. 1 After applying flux

※ Please do not apply flux too much as shown in Photo.2. It may cause flux splash or leak to the mating area.



Photo. 2 Extra flux

※ If flux applied too much and modification is needed, please remove excessive flux so that flux does not adhere to mating area.



- ③ Pre-set and locate solder bar at center of connector (HOUSING ASS'Y).

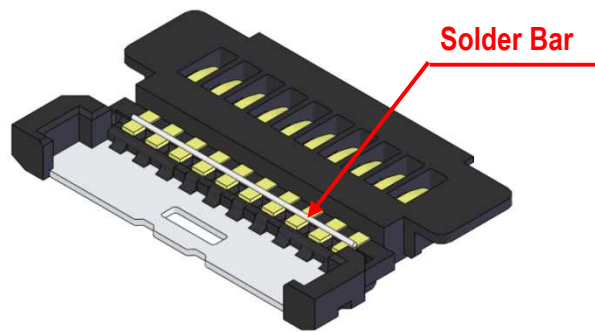


Fig. 1 Set of solder bar

- ④ Set the cable.

<Caution>

Center conductor must be fit on Pad. (The tip of cable should be exceed the center of pad)

Ground Bar should be contained in housing part.

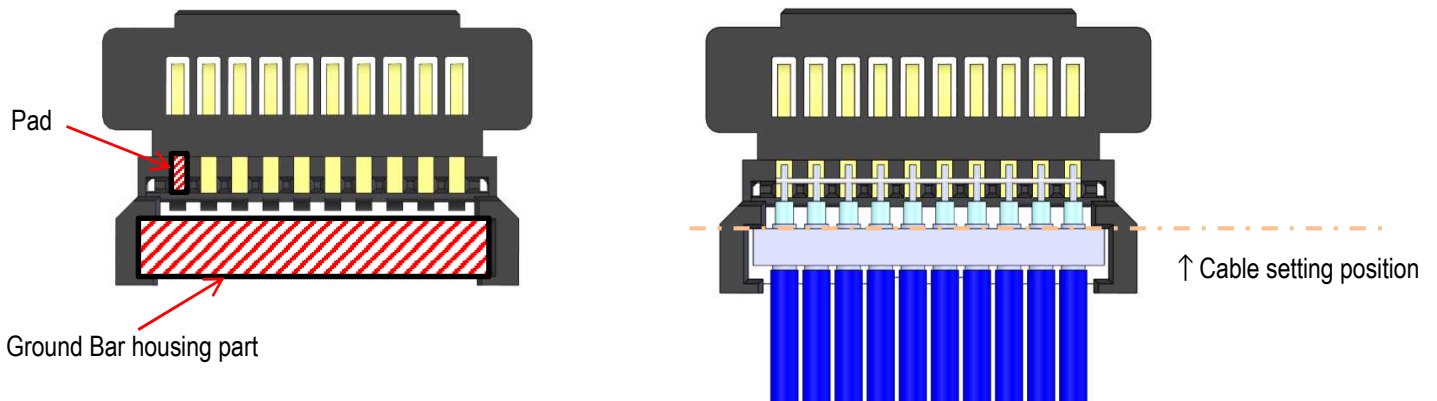


Fig. 2-1 Set of cable (Micro coax cable)

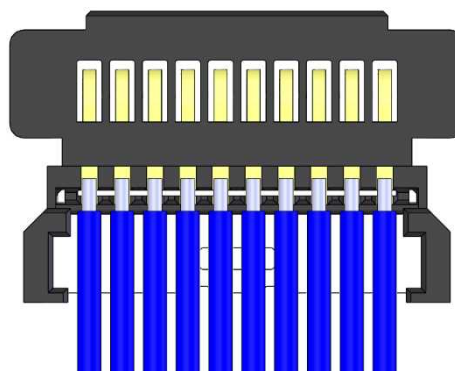


Fig. 2-2 Set of cable (Discrete cable)

If the length of center conductor is not the length indicated in 5-1, pulse heat may not be performed normally.

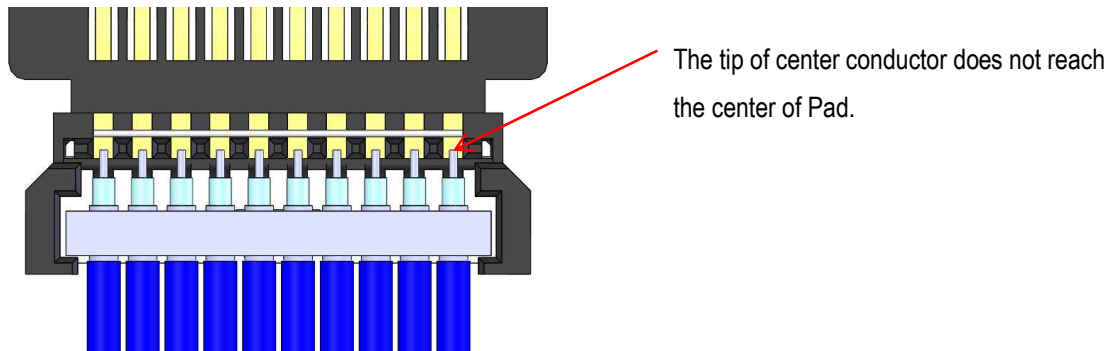


Fig. 3 The length of center conductor NG

⑤Center-conductors are soldered with pulse heater. See Photo.3 for soldering condition.

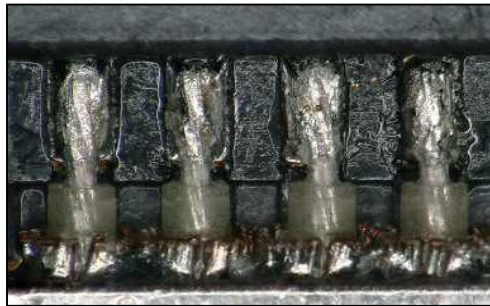


Photo. 3 AWG#42

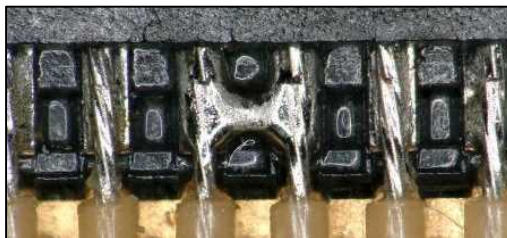


Photo. Short-circuit NG

※When solder bridge is appeared between the terminal, try heating again with pulse heater only one time.

Do not rework more than two times to avoid causing damage on product.

If the bridge isn't repaired, use the soldering iron only for error points.

Condition of Soldering iron : 50W

Operating temperature : 350℃

Application time of soldering iron : Within 5sec.

※Moving cable with excessive force after soldering, center conductor may peel soldering part.

⑥For Discrete cable specifications, it is recommended to apply UV resin to the soldered part



Photo.5 Discrete UV Apply resin

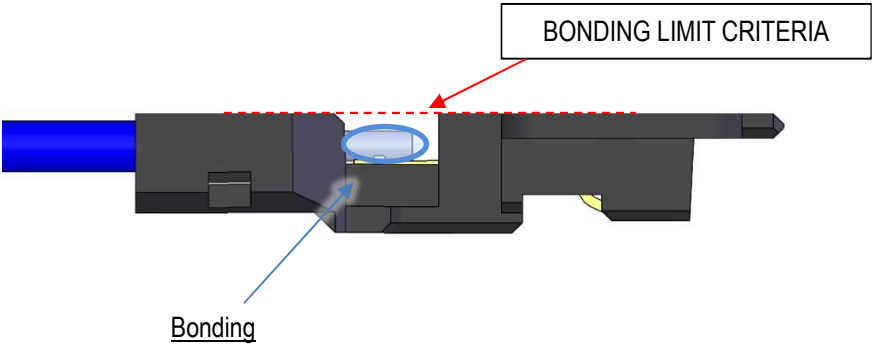
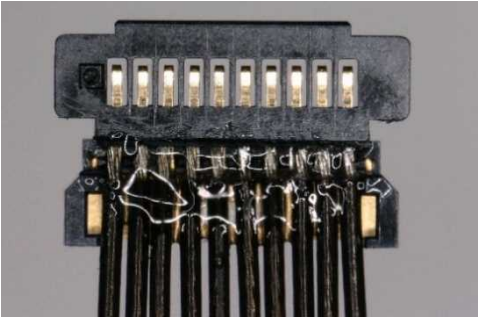

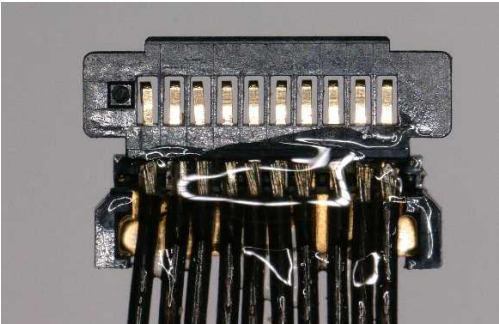



Fig.4 Bonding

OK		NG	
			
Photo.6 UV Apply resin appearance OK		Photo.7 UV Apply resin appearance NG	

6. SHELL A crimping procedure

6-1. Cautions in treating SHELL A

SHELL A is delivered in the reel with a carrier. The following is the method to cut SHELL A from Carrier.

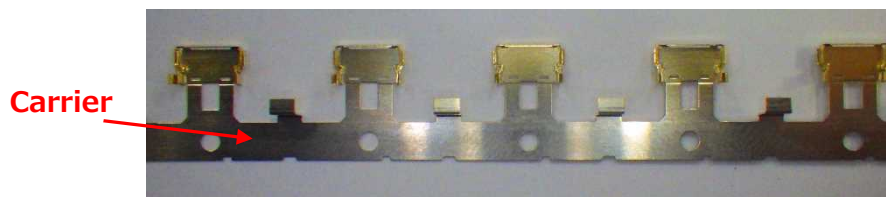


Photo. 8 SHELL A from Carrier.

Hold the center of SHELL A and cut it off from Notch by $\pm 45^\circ$ of reciprocating work.

When it does not be cut, try again this reciprocating work. After separated, check there is no burr around the cut part. (Photo.10)

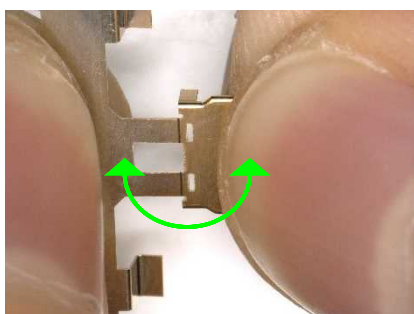


Photo. 9 Cut condition

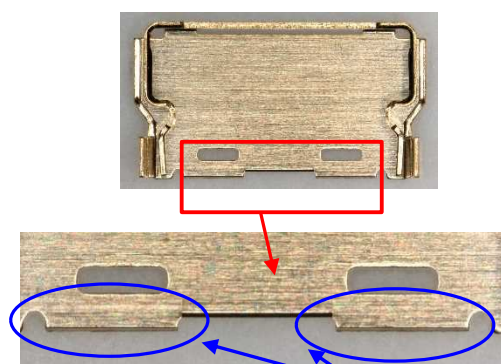
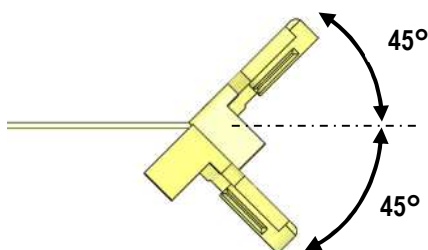


Photo.10 After cut

Details of Notch

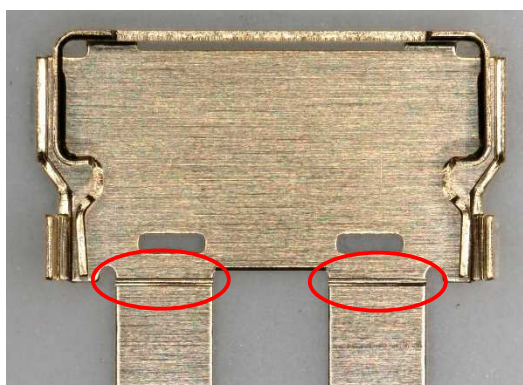


Photo.11 背面側

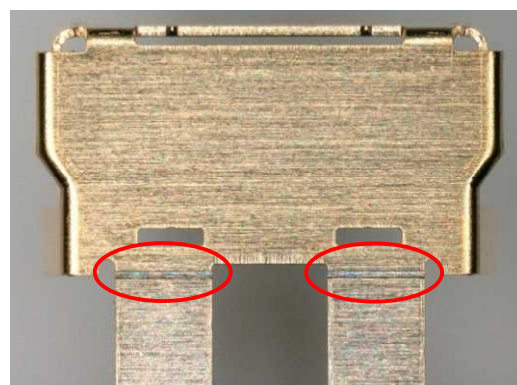


Photo.12 上面側

Caution: By pulling like the photo below to cut off by force (Red arrow direction), burrs and transformation can be caused.

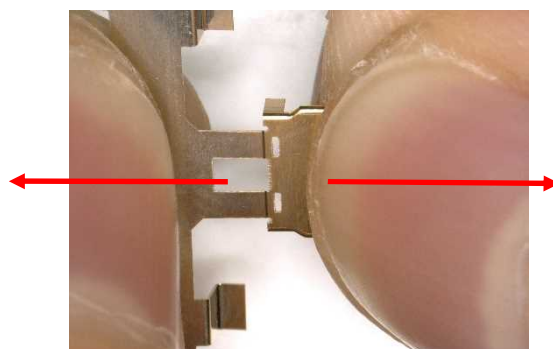


Photo. 13 Cut by force (Bad example)

6-2 SHELL A Crimping JIG



Photo. 14 Crimping JIG

JIG P/N	91159-005 ... 5pin 91159-010 ... 10pin
Outline dimension	: (W) 150[mm] × (D) 180[mm] × (H) 310[mm]
Weight	約 6.8[kg]

6-3. SHELL A crimping procedure

- ① Set the SHELL A that cut it off in 6-1 on receive JIG of crimping Jig as shown in photo15.
Back surface side (Refer to photo.12) shall be below and carrier cut side shall be front.

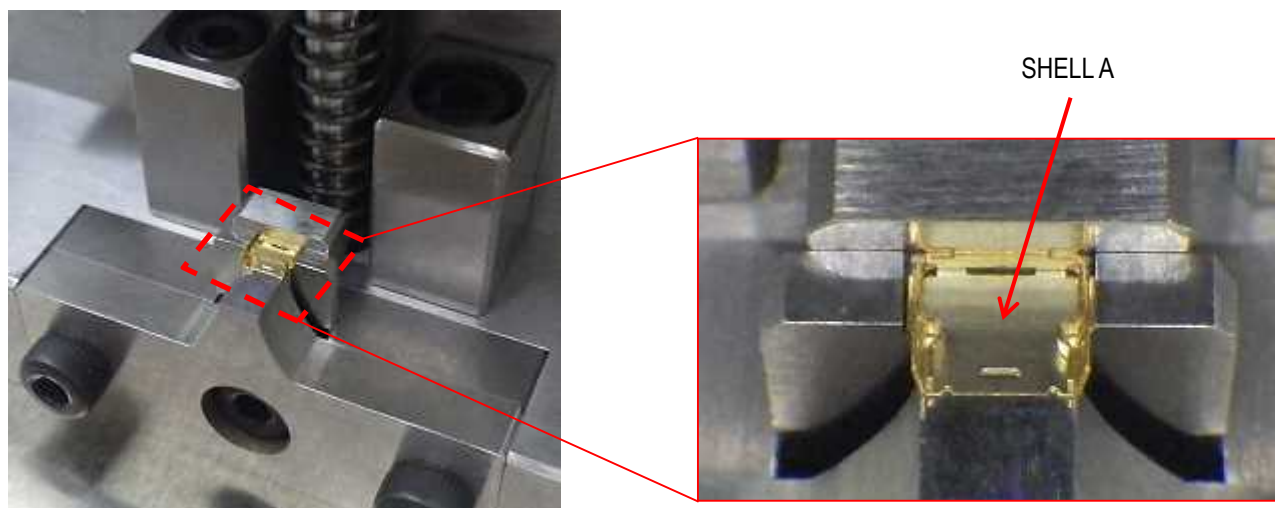


Photo. 15 Setting SHELL A

- ② Assemble the HSG ASS'Y to SHELL A so that crimping side shall be below and cable shall be front. (Photo 16)

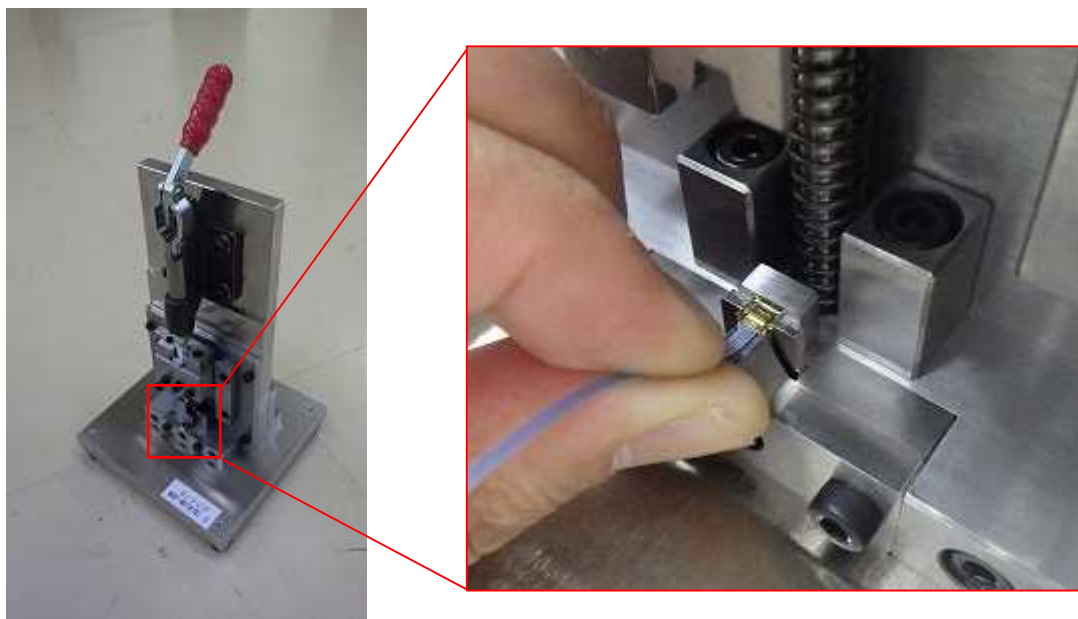


Photo. 16 Setting HSG ASS'Y

Insert the HSG ASS'Y TO the slit part of SHELL A.

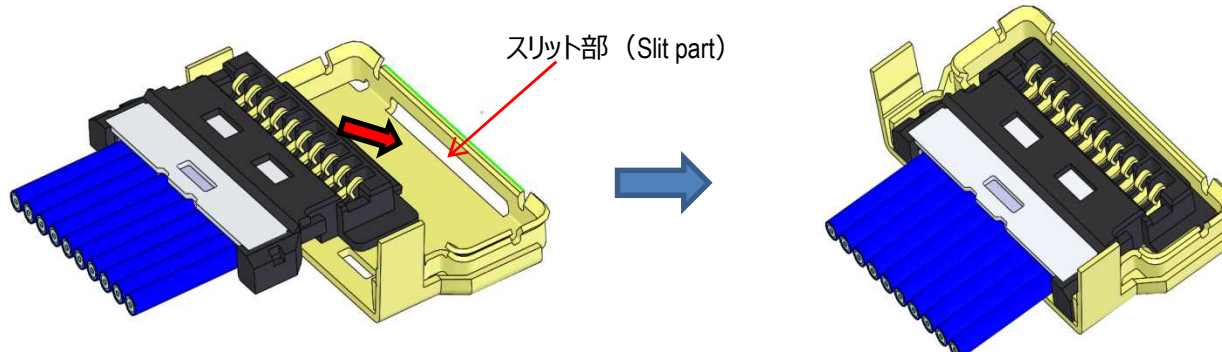
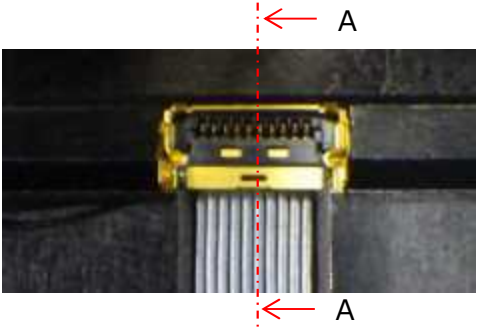
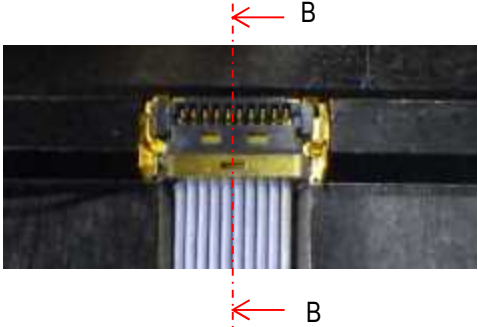
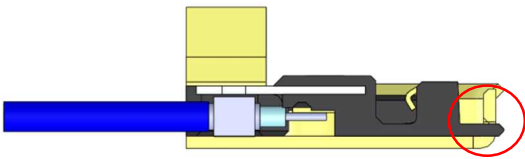
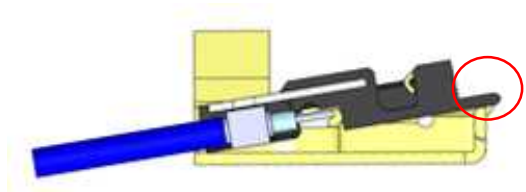


Fig.5 Setting HSG ASS'Y

Setting position OK	Setting position NG
 <p>Photo. 17 Setting position OK</p>	 <p>Photo. 18 Setting position NG</p>
 <p>Fig.6 SECT A-A</p> <p>HSG ASS'Y is set in the slit part of SHELL A.</p>	 <p>Fig.7 SECT B-B</p> <p>HSG ASS'Y is mounting on the SHELL A. Be caution if crimp in this condition, HSG will be broken. (Refer to photo. 18)</p>

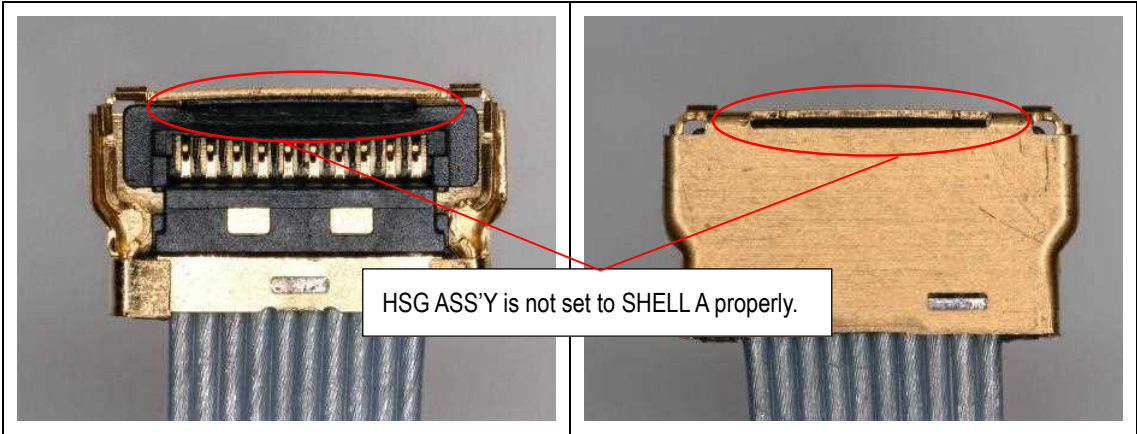


Photo. 19 crimping NG

③ Pull down the lever of crimping machine and crimp the product.(Photo.20)

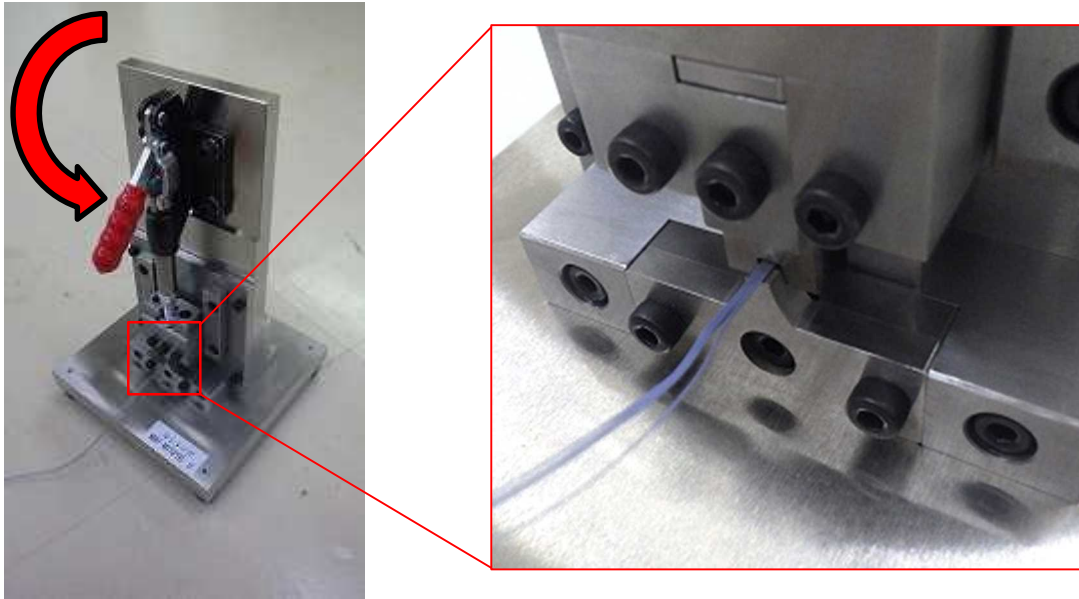


Photo.20 Crimping

④ Up the lever and pull out the product.

6-4. Cautions and Maintenances

- This Semi Auto machine is a jig for harnessing I-PEX CABLINE-UY(P/N:3568-0**1) to a specially processed coaxial cable. Therefore, non-specified connectors and cables are not allowed. Failure to do so may damage the jig.
- With the exception of the specified replacement area, loosen or removing bolts are prohibited. Modifying is prohibited to avoid the defect of the jig. Failure to do so may affect the quality of the product.
- For the jig maintenance, use brushes and air pressure regularly to remove cable chips and dusts on the jig. Apply sewing machine oil or the rust preventing oil (store-bought) to the sliding surfaces regularly.

7. Appearance inspection

Make sure that the product is properly wired and crimped.

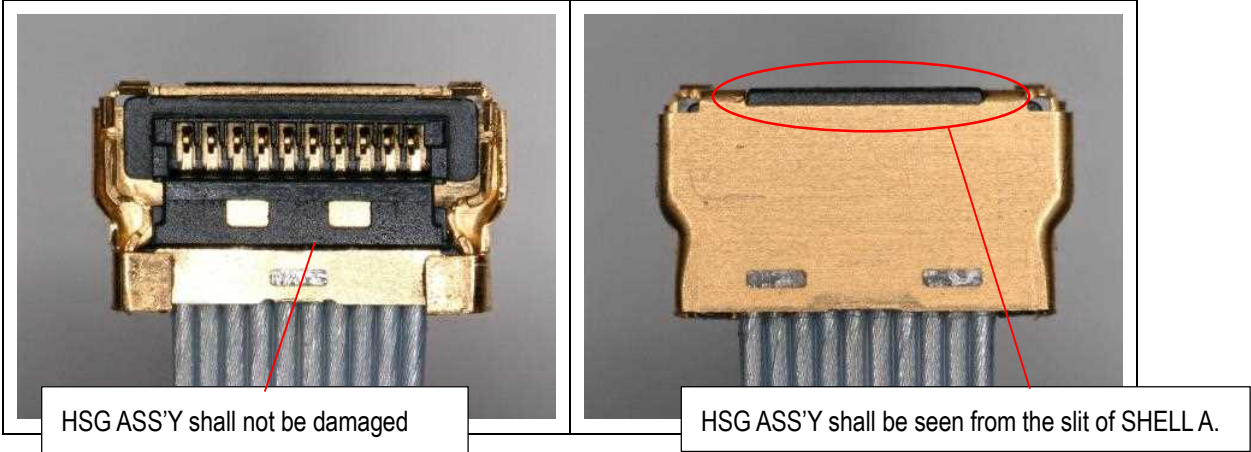
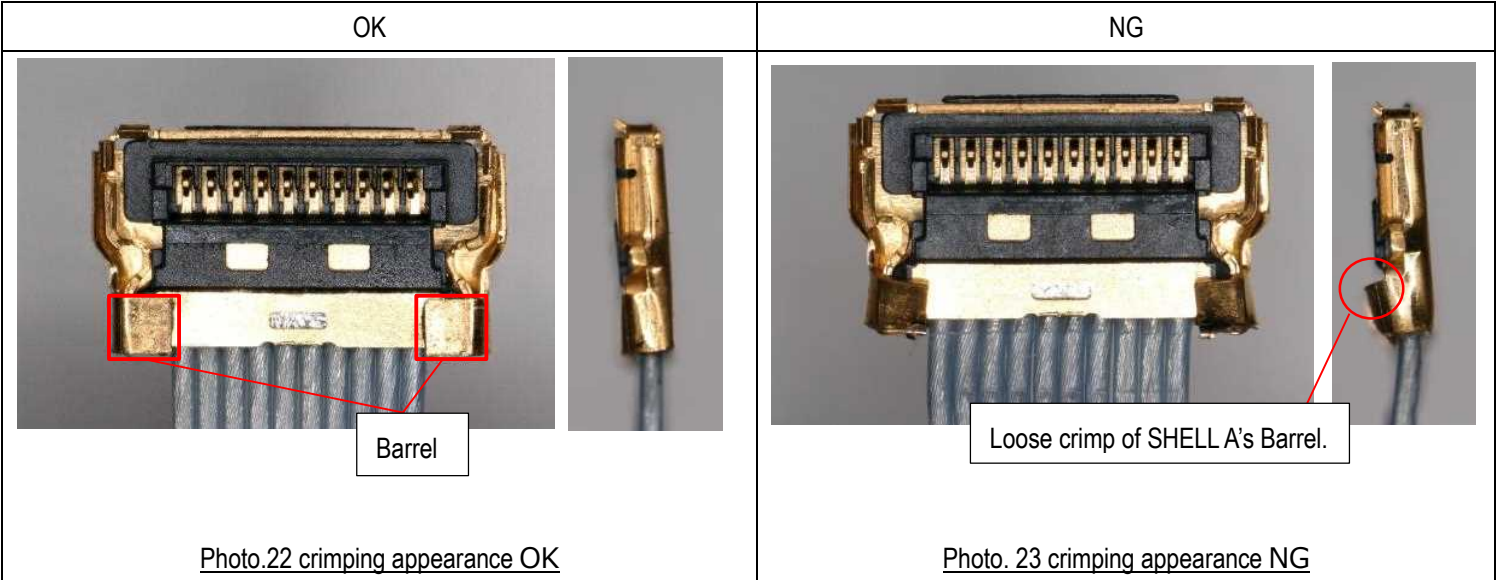


Photo.21 crimping appearance OK

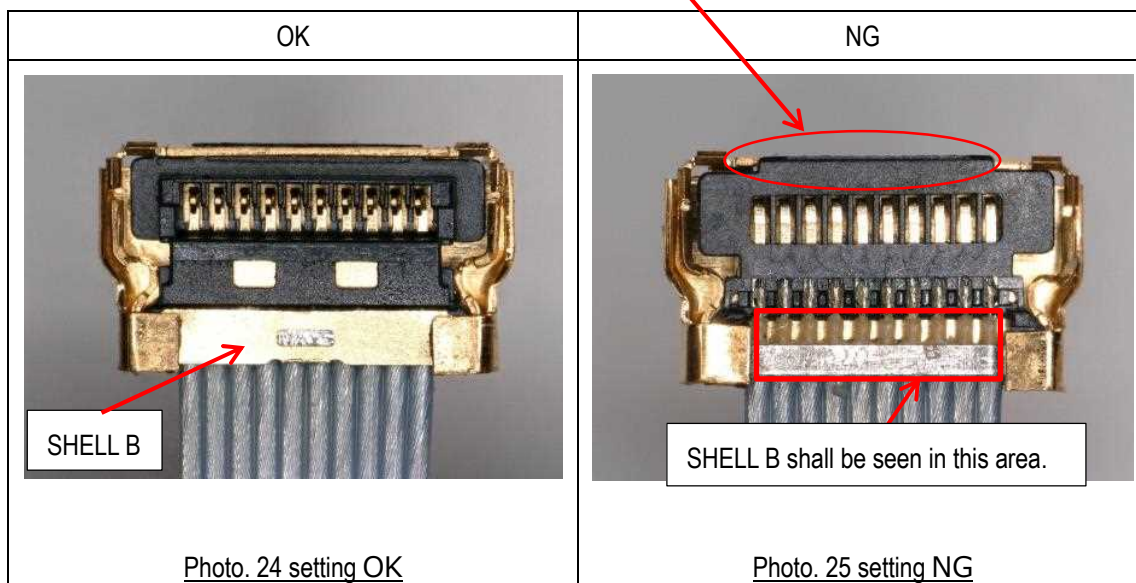
7-1. SHELL A crimping appearance OK/NG



7-2. HSG ASS'Y Setting NG

Crimped in the condition that crimping side of HSG ASS'Y was set to top.

HSG ASS'Y shall be seen from the slit of SHELL A.



7-3 Dimension of crimping height

Measure both end of the barrel at a time.

Crimp height: 0.69~0.73mm

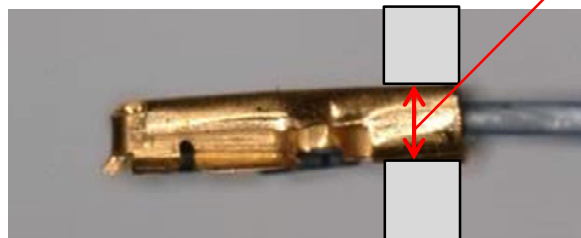


Photo. 26 Dimension of crimping height

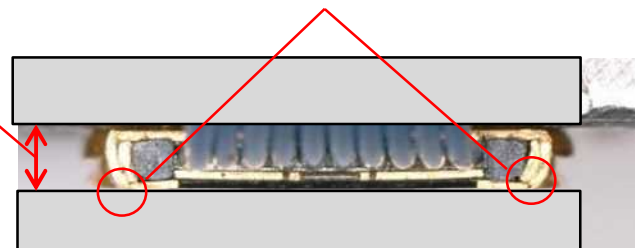


Photo. 27 View A

If the crimp height is not appropriate, it may not be able to mate normally with Receptacle

<Crimping height OK>

<Crimping height NG>



Photo. 28 Crimping height OK

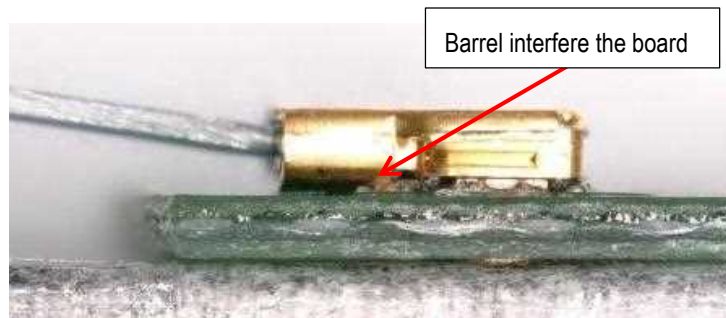


Photo. 29 Crimping height NG

8. Soldering SHELL A and GND BAR with the soldering iron at all designated points is recommended. (Fig.8◆point)

For conditions of Soldering iron refer to sheet 8.

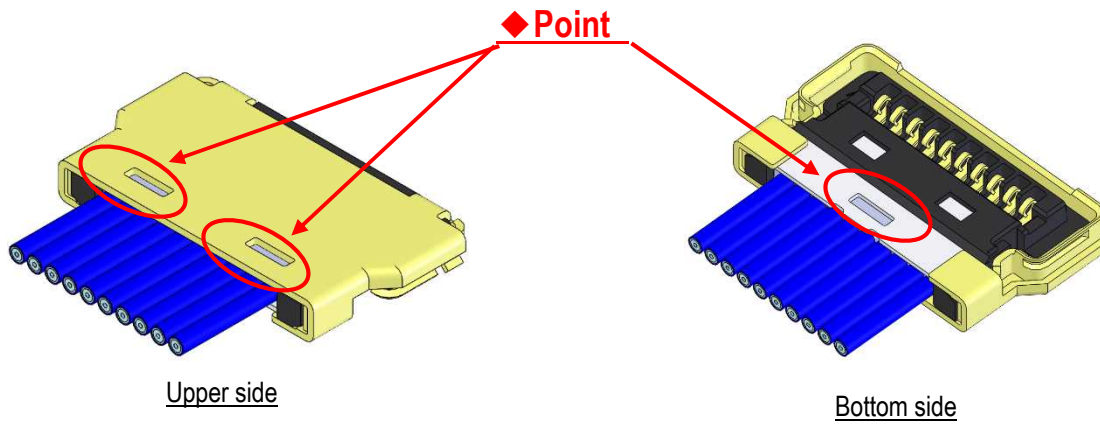


Fig. 8 Soldering of SHELL A and GND BAR

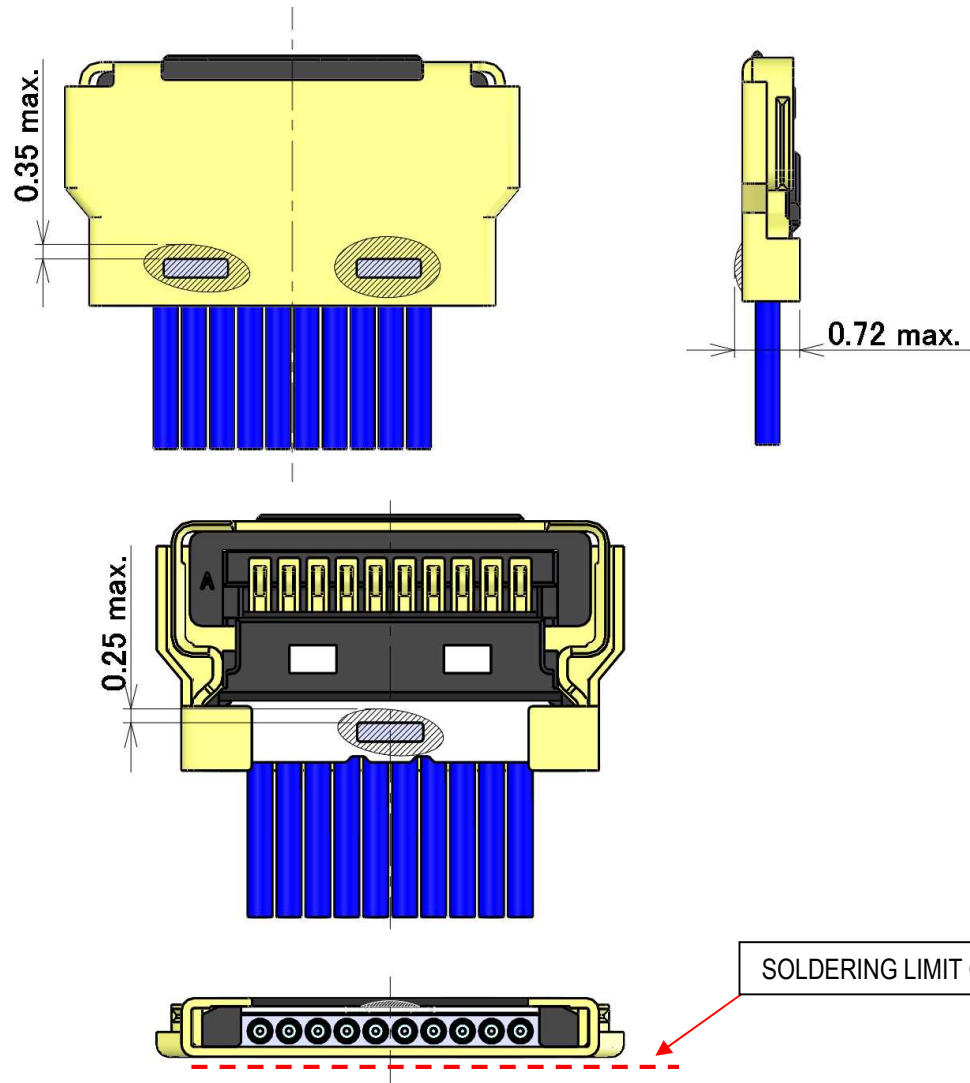


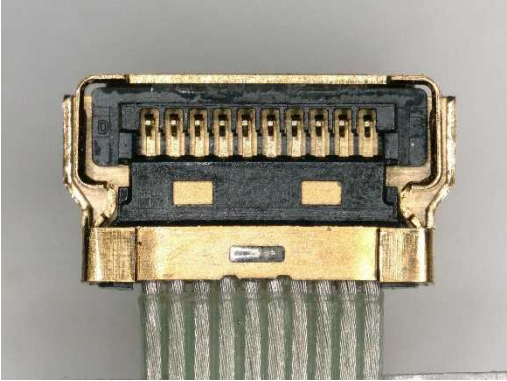
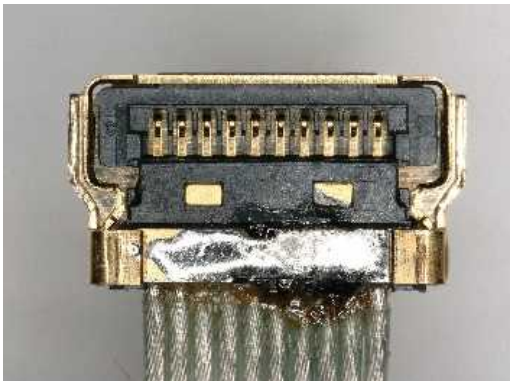


Fig. 9 Soldering of SHELL A and GND BAR

8-1. Soldering of SHELL A and GND BAR appearance OK/NG

OK	NG
	
<p><u>Photo. 30 Soldering of SHELL A and GND BAR appearance OK</u></p>	<p><u>Photo. 31 Soldering of SHELL A and GND BAR appearance NG</u></p>
	
<p><u>Photo. 32 Soldering of SHELL A and GND BAR appearance OK</u></p>	<p><u>Photo. 33 Soldering of SHELL A and GND BAR appearance NG</u></p>

9. Cable fixation

Fixing the cable terminal part with the bond is recommended.

Bond : LOCTITE 352

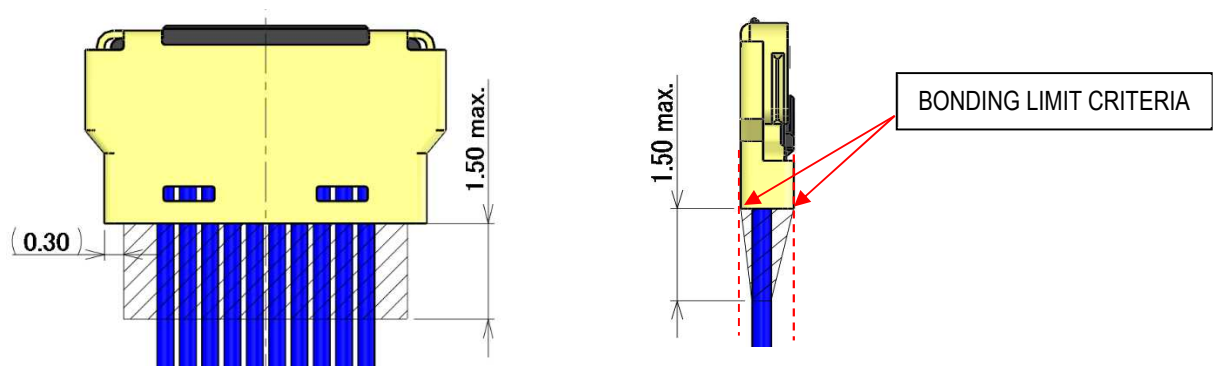


Fig.10 Bonding

- Bonding shall not exceed the limit criteria.
 - Immediately after application of Bonding, expose and solidify.
- If left unattended, the adhesive will penetrate into the connector and cause malfunctions.

OK		NG	
Photo. 34 Bonding appearance OK		Photo. 35 Bonding appearance NG	
Photo. 36 Bonding appearance OK		Photo. 37 Bonding appearance NG	

10. Finished product appearance example.

MICRO-COAX CABLE


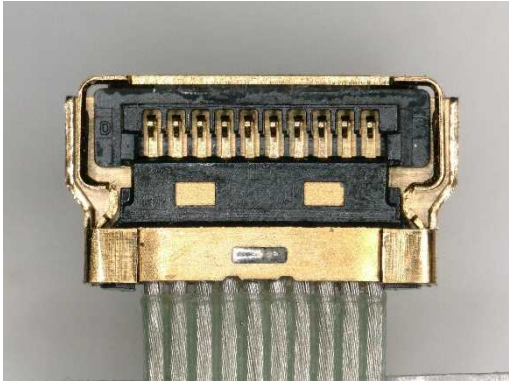



Photo. 38 Finished product appearance OK

DISCRETE CABLE


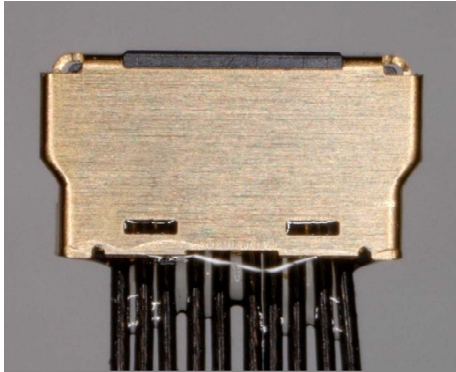
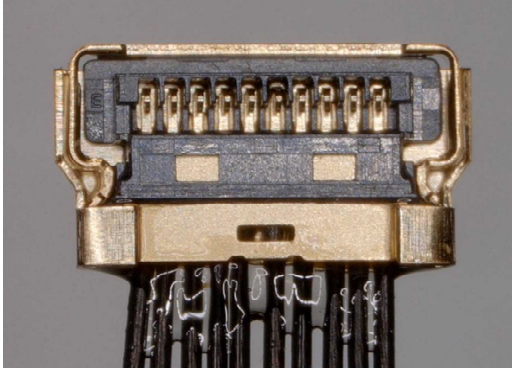


Photo. 39 Finished product appearance OK