



SPECIFICATION

宏致電子股份有限公司

桃園縣中壢市東園路13號

No.13, Dongyuan Rd., Zhongli City,

Taoyuan County 320, Taiwan (R.O.C.)

TEL: +886-3-463-2808

FAX: +886-3-463-1800

SPEC. NO.: PS-51496-xxxxx-xxx REVISION: G

PRODUCT NAME: 0.40mm PITCH LVDS CONNECTOR MANUAL
ASSEMBLY

PRODUCT NO: 51496-xxxxx-xxx

PREPARED: Jia-Hong Xu DATE: 2023/07/21	CHECKED: Yung-Huang Liu DATE: 2023/07/21	APPROVED: Kuo-Hua Huang DATE: 2023/07/21
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1. Revision History

Rev.	ECN No.	Revision Description	Prepared	Date
A	ECN-000416	NEW PRODUCT RELEASE	JH.XU	2020/09/18
B	ECN-003647	ADD NG PHOTO AHTER ASSMBLY	JH.XU	2020/12/10
C	ECN-002948	ADD DISALLOWED ASSEMBLY METHODS	JH.XU	2021/04/12
D	ECN-004267	ADD 1.CABLE ASSEMBLY DIMENSION 2.Plug-SHEEL with U-bar TYPE 3.20PIN INFROMATION	JH.XU	2021/11/16
E	ECN-007686	ADD NEW CAUTION	JH.XU	2022/07/27
F	ECN-012279	ADD AWG#33 cable specification	JH.XU	2023/05/04
G	ECN-013186	ADD 51496-MBxx-xxx type	JH.XU	2023/07/21

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2. Assembly Manual

Purpose :

This manual is to explain the soldering method / process of the ACES 0.4mm pitch LVDS's Plug with cable, and assembly of U-bar & Plug Shell..

Applicable connector :

Name: ACES 0.4 mm pitch LVDS's Plug

Part NO. :

Discrete P/N	Plug Housing	51496-xxxxx-xxx
	Plug-Shell with U-bar	51496-MAxx-xxx
		51496-MBxx-xxx

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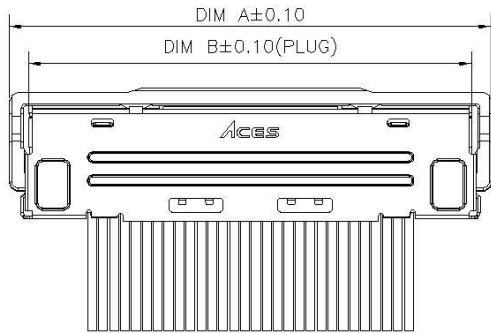
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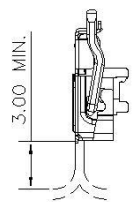
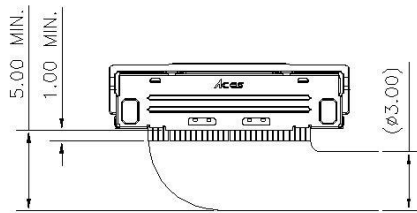
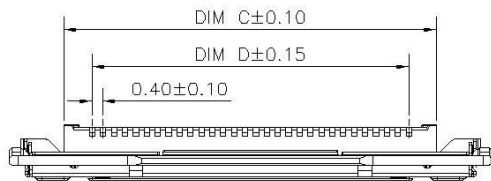
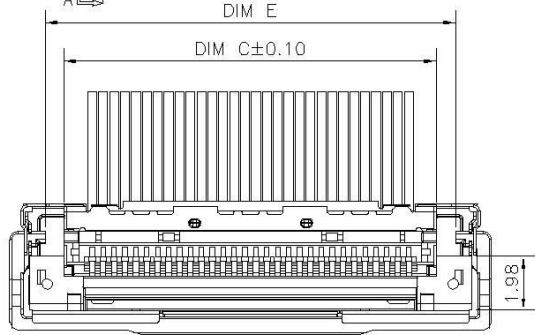
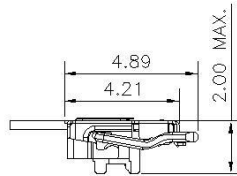
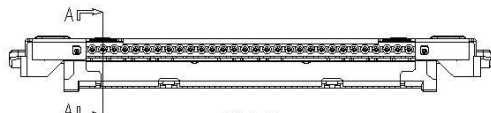
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2.1 Cable assembly dimension



PINS	DIM A	DIM B	DIM C	DIM D	DIM E
20	13.25	12.24	9.65	7.60	11.05
30	17.25	16.24	13.65	11.60	15.05
40	21.25	20.24	17.65	15.60	19.05



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2.2 Components used in the condition confirmation.

2.2.1 Fixtures :

● Heater chip

Positions	20P	30P	40P
Thickness	0.5 ⁺⁰ _{-0.05}	0.5 ⁺⁰ _{-0.05}	0.5 ⁺⁰ _{-0.05}
Width	8.2 ⁺⁰ _{-0.05}	12.2 ⁺⁰ _{-0.05}	16.2 ⁺⁰ _{-0.05}

Unit: mm

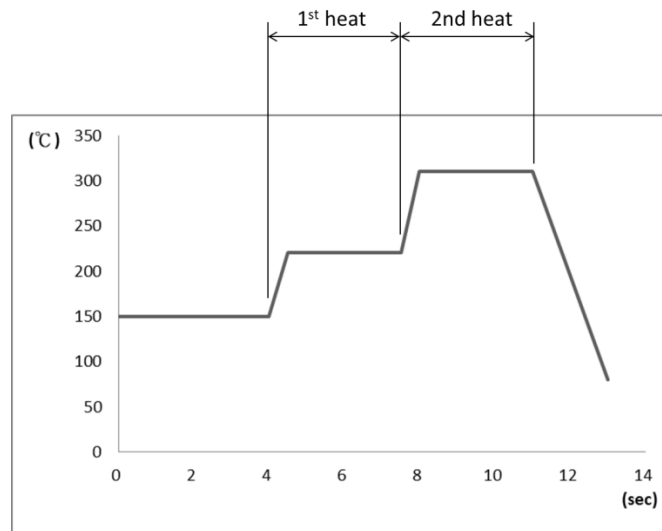
● Recommended solder bar

Positions		20P	30P	40P
Solder size	AWG#33~#38	φ0.14	φ0.14	φ0.14
	AWG#40~#44	φ0.1	φ0.1	φ0.1
Length		8.0mm Ref.	12.0mm Ref.	16.0mm Ref

Unit: mm

2.2.2 Recommended pulse heat condition :

	Micro-Coax
Idle temp.	150°C
1 st heat temp.	220°C
1 st rise time	0.5sec.
1 st holding time	3.0sec
2 nd heat temp.	300~320°C
2 nd rise time	0.5sec
2 nd holding time	3.0sec
Heater tip Pressure	5~10N



This pulse heat condition was evaluated and confirmed by our pulse heat jig and instrument. The most optimum condition may change based on the shapes of pulse heat jig and instruments, the

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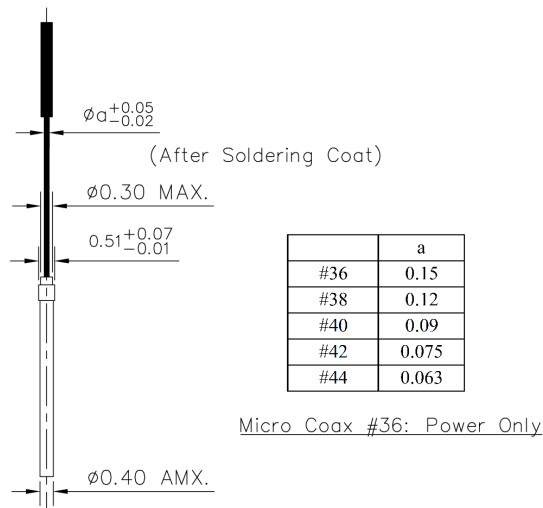
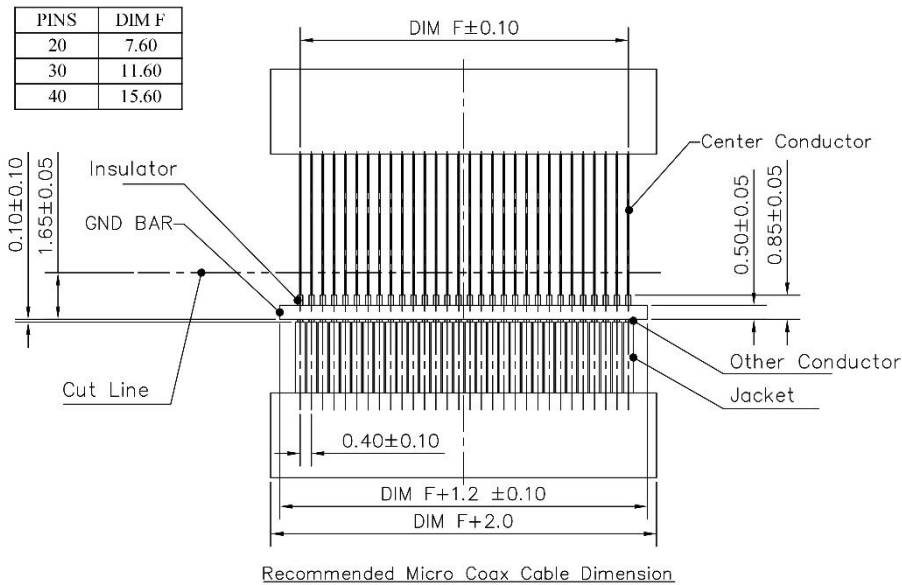
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environment, or other reason. Therefore, please example the pulse heat condition adequately in advance of use.

2.2.3 Solder

Work procedures :

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



Micro-Coax AWG#(SEE TABLE)

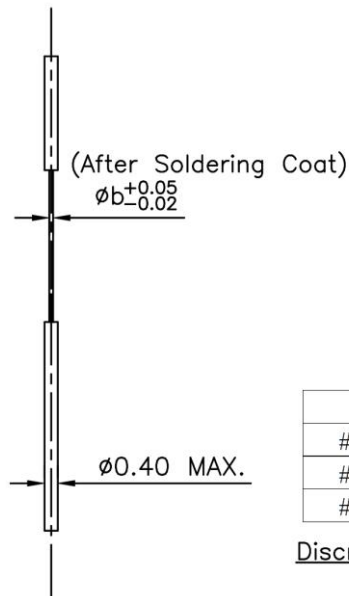
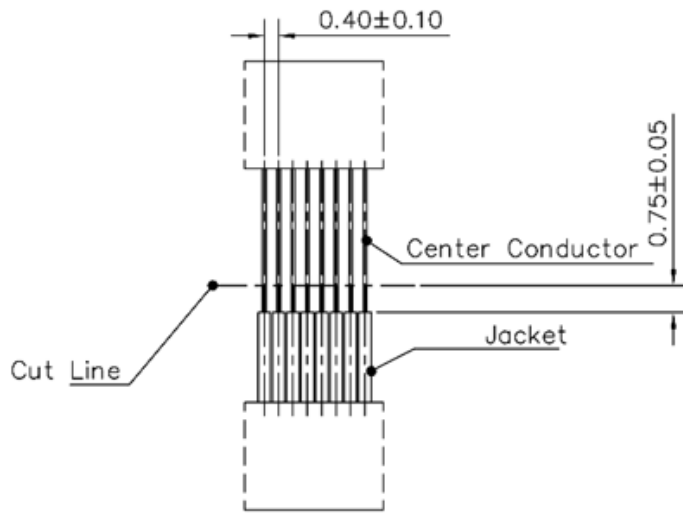
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	b
#33	0.22
#34	0.192
#36	0.15

Discrete Dimension

Discrete AWG#/(SEE TABLE)

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

Applying flux area

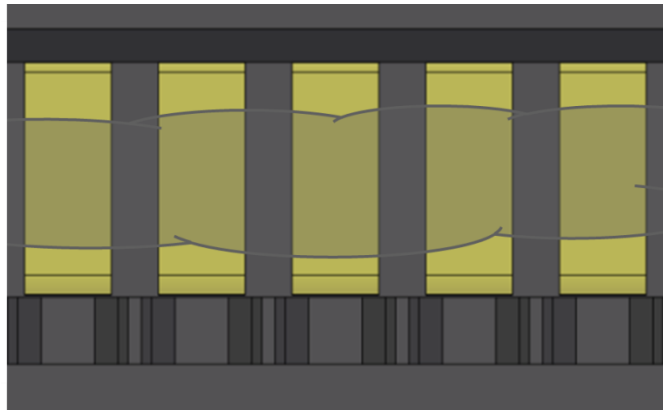
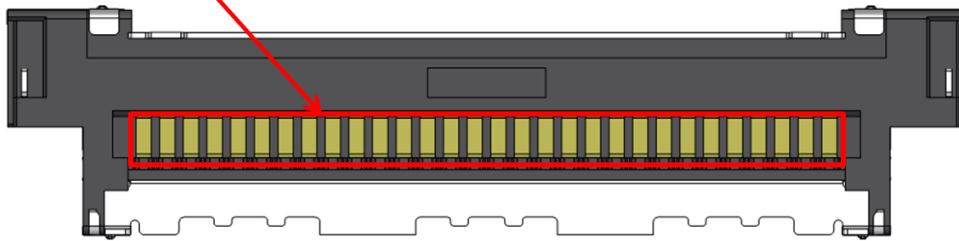


Fig.1 After applying flux

※ Please do not apply flux too much like Fig.2. It can cause flux splash or leak to the mating area.

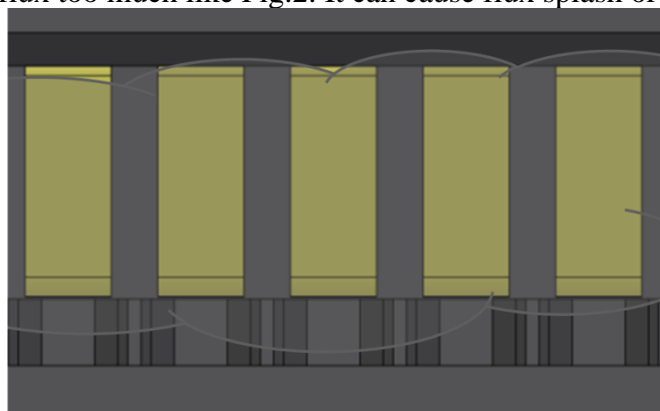


Fig.2 Extra flux

※ Washer must not be used to take flux off because it may cause flux attached to mating area.

③Pre-set and locate solder bar at center of connector (Plug Housing)

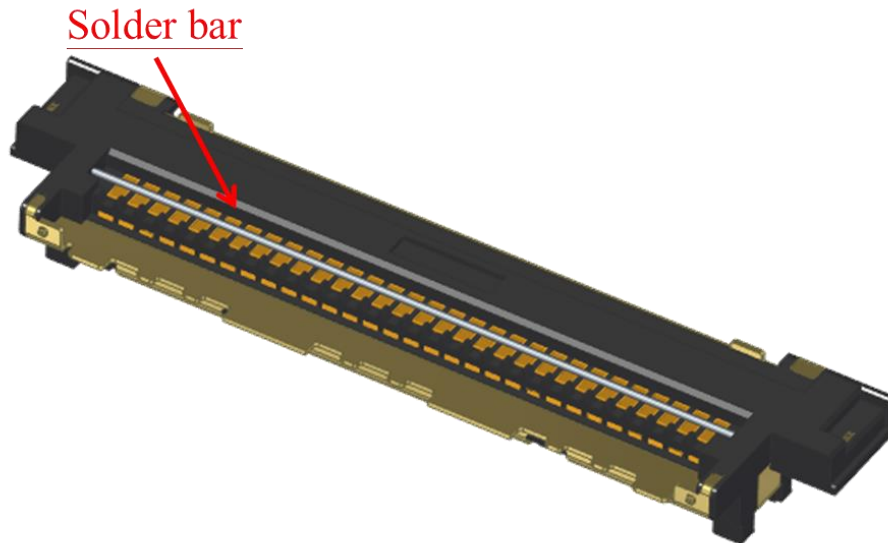


Fig.3 Set of solder bar

④Set the cable

※Setting discrete cable is to protect 0.2MAX. as Fig.5. There is danger that Center Conductor touch shell.

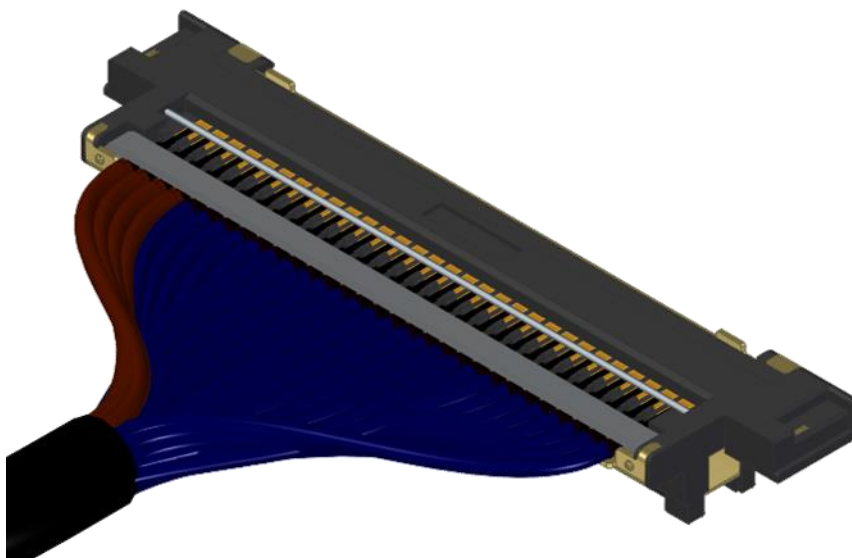


Fig.4 Set of cable

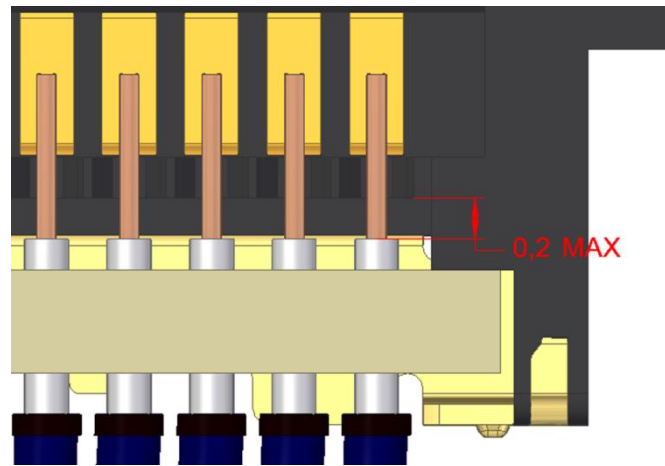


Fig.5 Setting discrete cable

⑤ Center-conductors are soldered with pulse heater. Please make sure both center are complete match. See Fig.6 of bad way soldering condition.

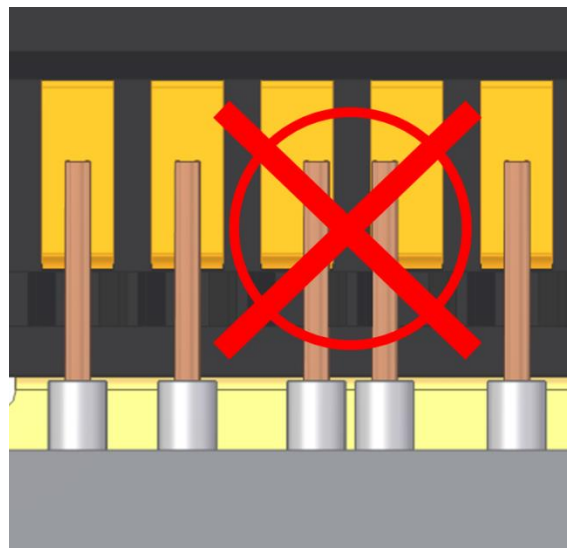


Fig.6 AWG#40

※ When solder bridge is appeared between the terminal, try heating again with pulse heater only one time. If the bridge isn't repaired, use the soldering iron only a NG point.

Condition of soldering iron : 50W

Operating temperature : 350°C

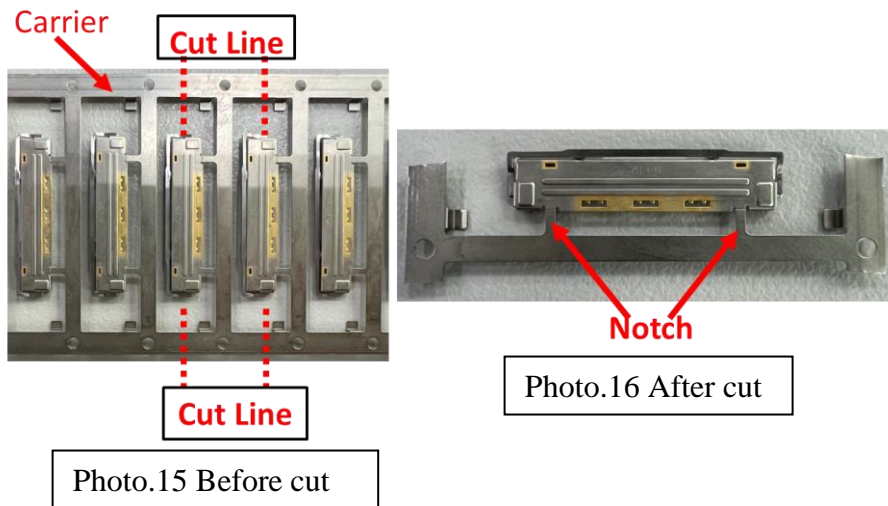
Application time of soldering iron : Within 5sec.

※ Because it might give product damage, please do not instigate a cable after soldering.

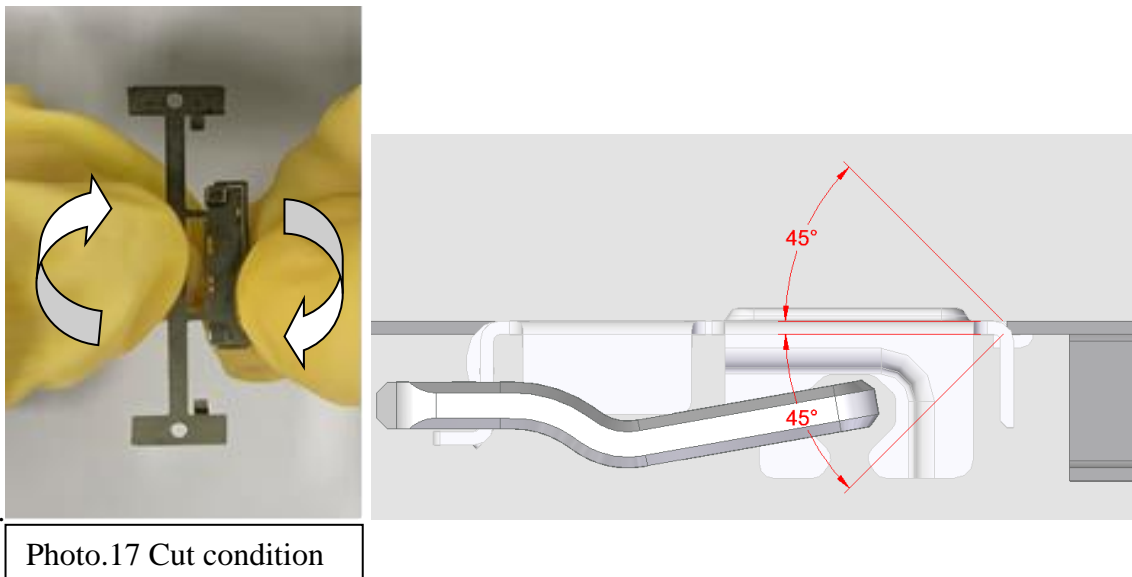
2.3 Cautions in treating Shell with U-bar

Shell WITH U-BAR is delivered in the reel with a carrier. The following is the method to cut Shell WITH U-BAR from Carrier.

①Cut carrier on the cut line of the left below picture (red line) by a scissors for metal.



②Hold the center of Shell WITH U-BAR and cut it off from Notch by $\pm 45^\circ$ deg of reciprocating work. When it does not be cut, try again this reciprocating work. After separated, chek there is no burr around the cut part



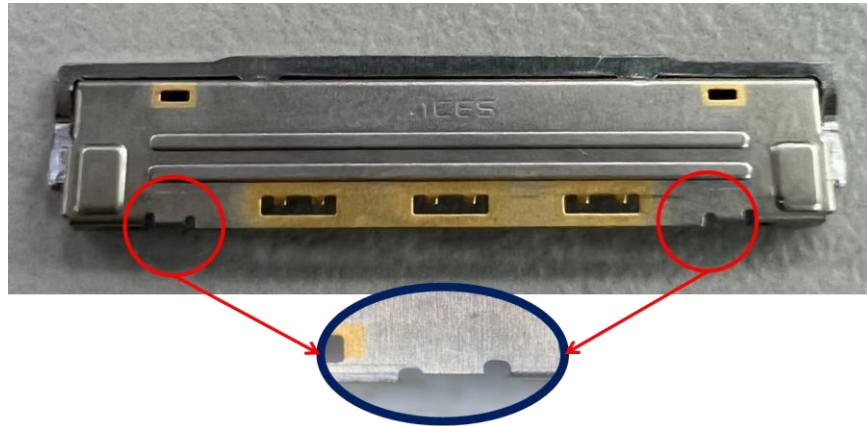
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Without burrs

Photo.18 After cut

Detail of Notch

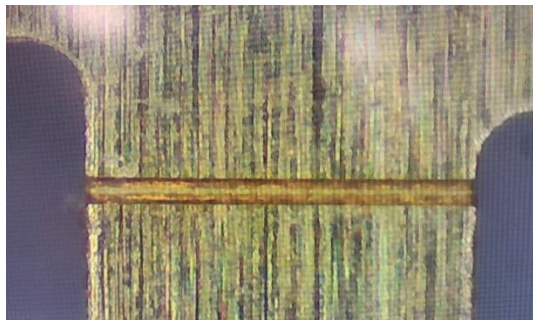


Photo.19 Bottom side view

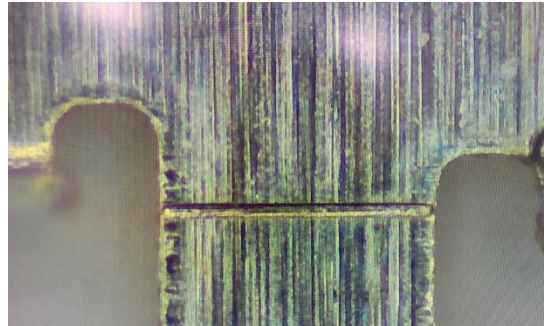


Photo.20 Top side view

CAUTION : BY PULLING LIKE THE PHOTO BELOW TO CUT OFF BY FORCE (RED ARROW DIRECTION), BURRS AND TRANSFORMATION CAN BE CAUSED.

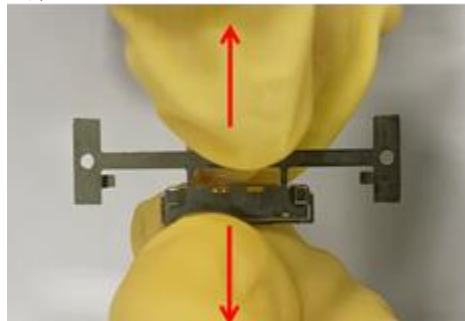


Photo.21 Incorrect cut

2.4 Assembly of Plug-Shell (with U-bar)

① Plug-Shell is assembled from upper side of Plug Housing

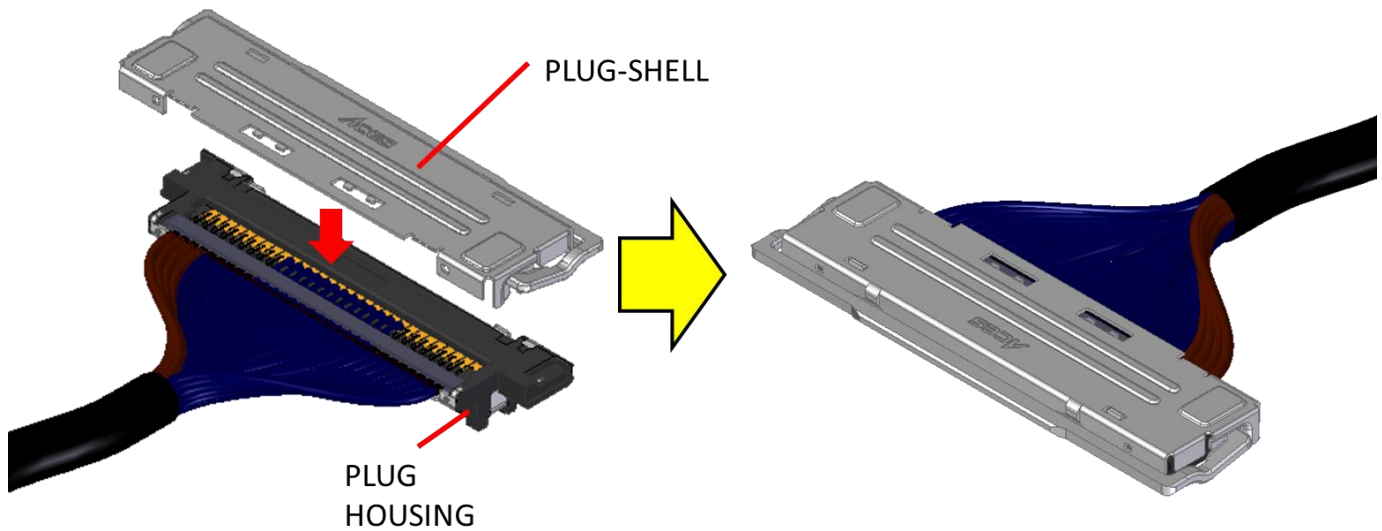


Fig.7 Assembly of Plug-Shell

② Confirms whether Plug-Shell is assembled properly.
Whether shell locks are assembled properly. (Fig.8 ★point)

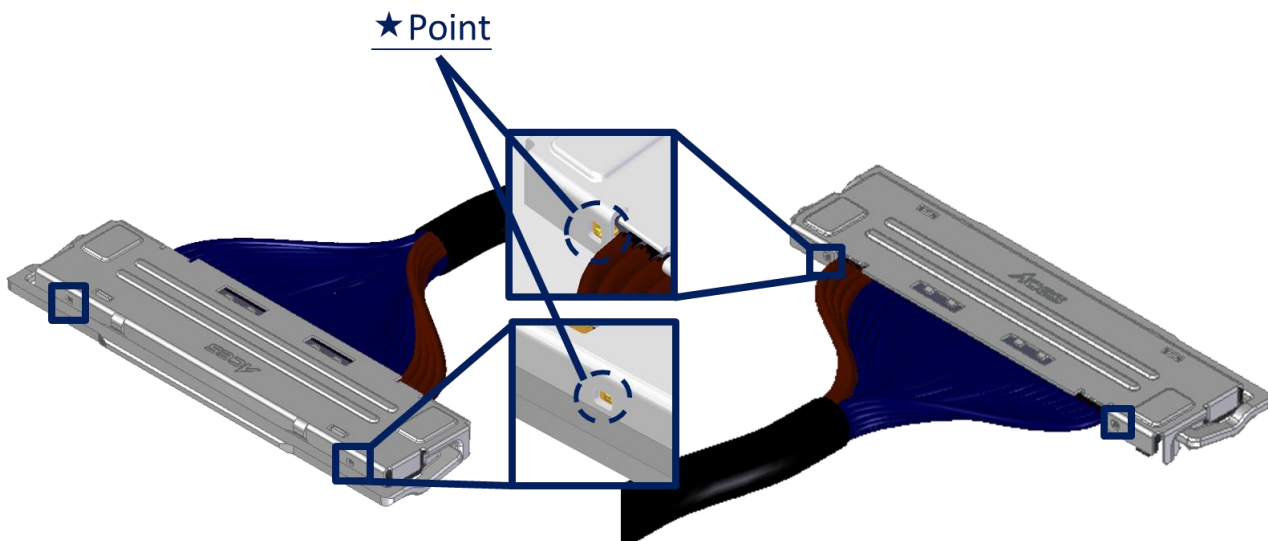


Fig.8 The assembly confirmation of Plug-Shell

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③ Plug-Shell and GND BAR are soldered with the soldering iron at designated point. (Fig.9 ,10◆ point)
 Refer to Fig7 for limit of the solder height, For condition of soldering iron refer to sheet.

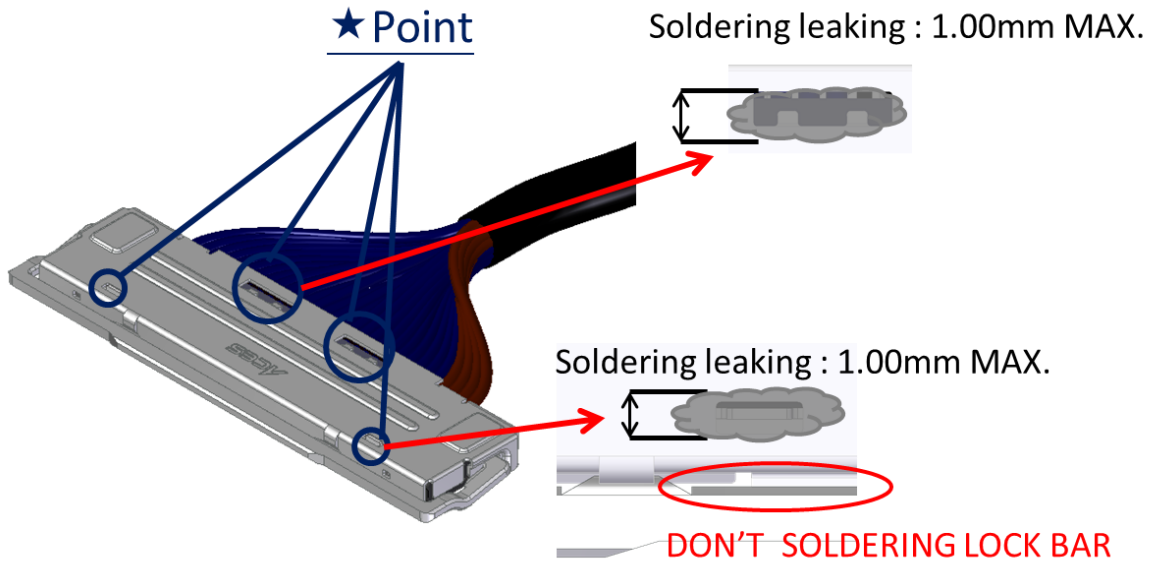


Fig.9 Soldering of SHELL-A and GND BAR

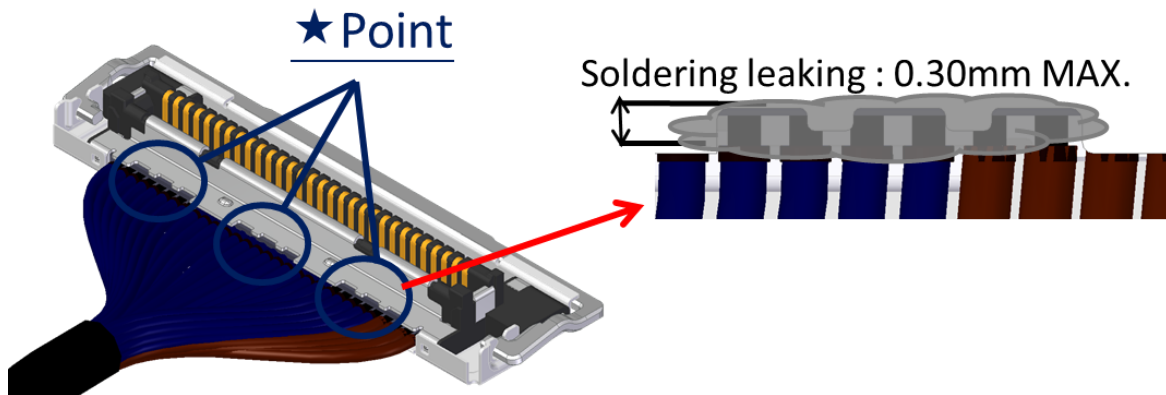


Fig.10 Soldering of SHELL-B and GND BAR

2.5 Cable fixation

Fix the cable terminal part with the bond.

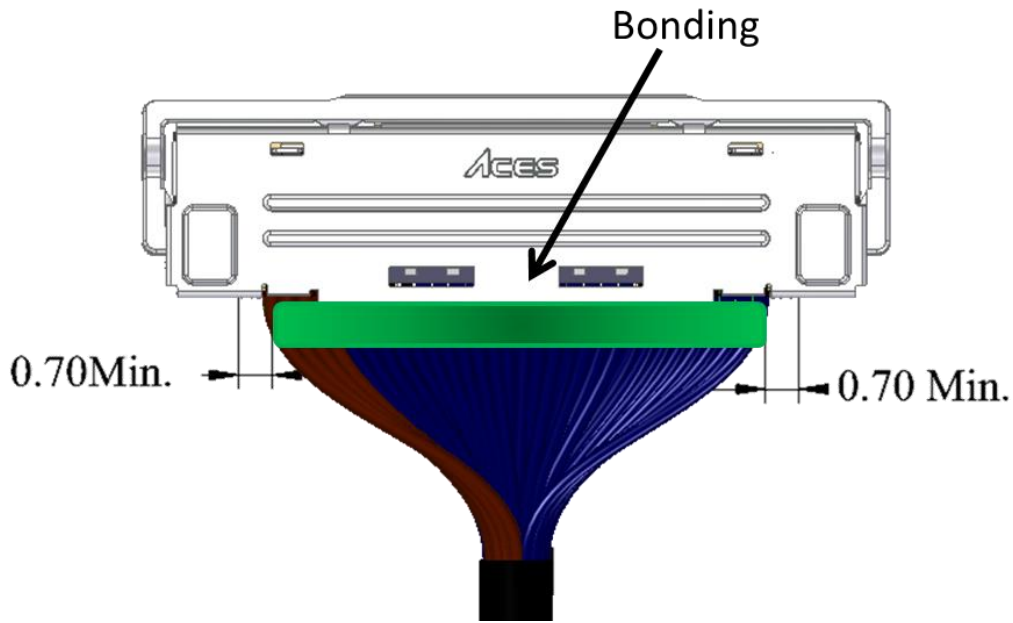


Fig.11 Bonding

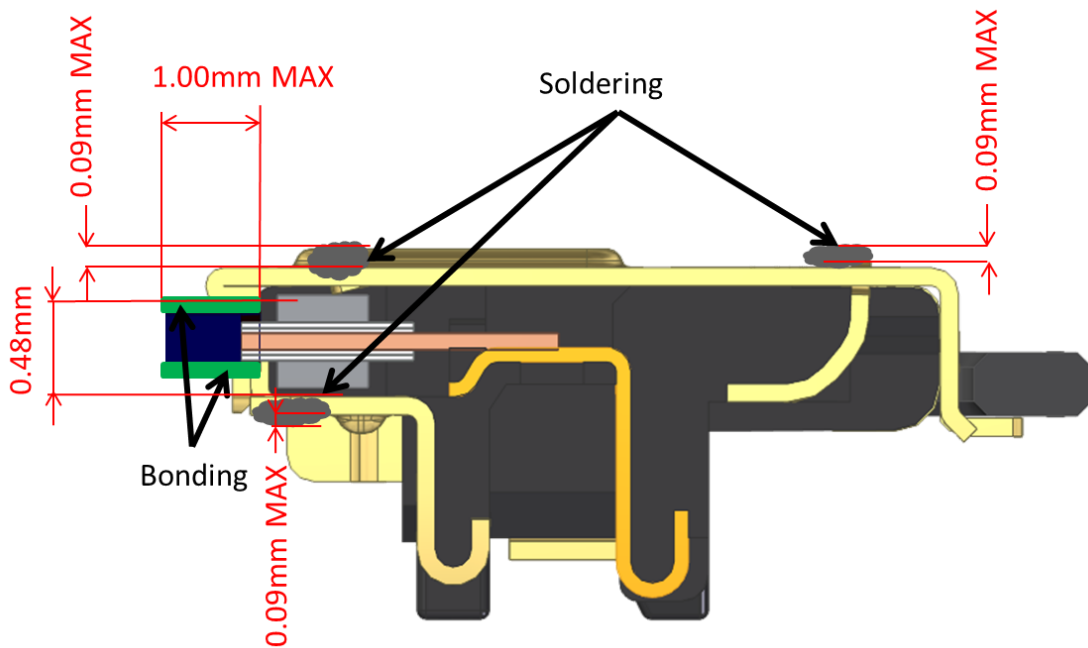
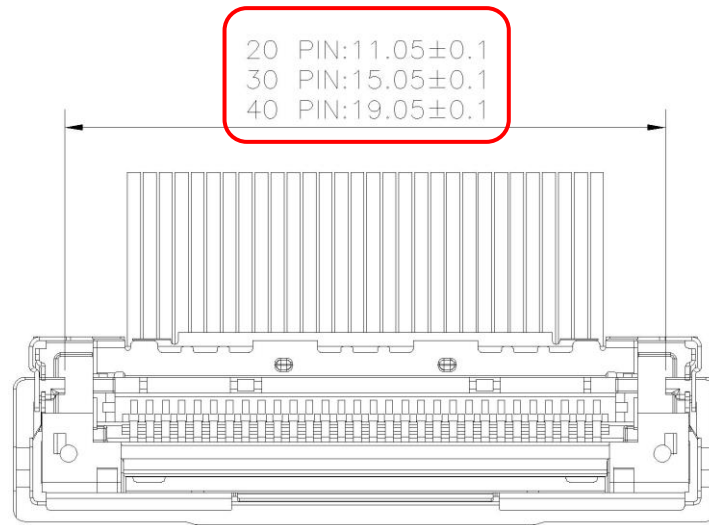


Fig.12 Bonding & soldering

CAUTION

- FOLLOWING U-BAR INNER SIZE SHOULD IN SPEC.



- Do not tape the prohibition area may not work property. Bundle the cable as shown in Figure.13.14.

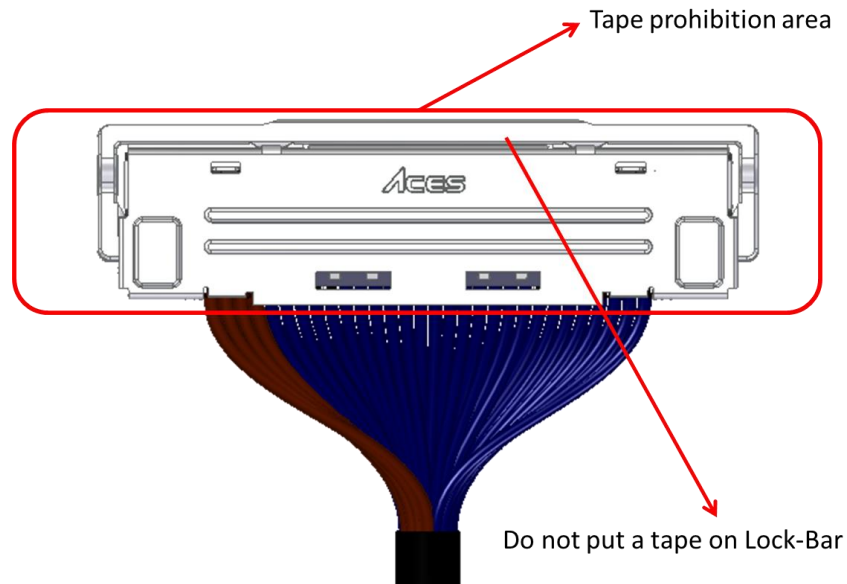


Fig.13 Top surface tape prohibition area

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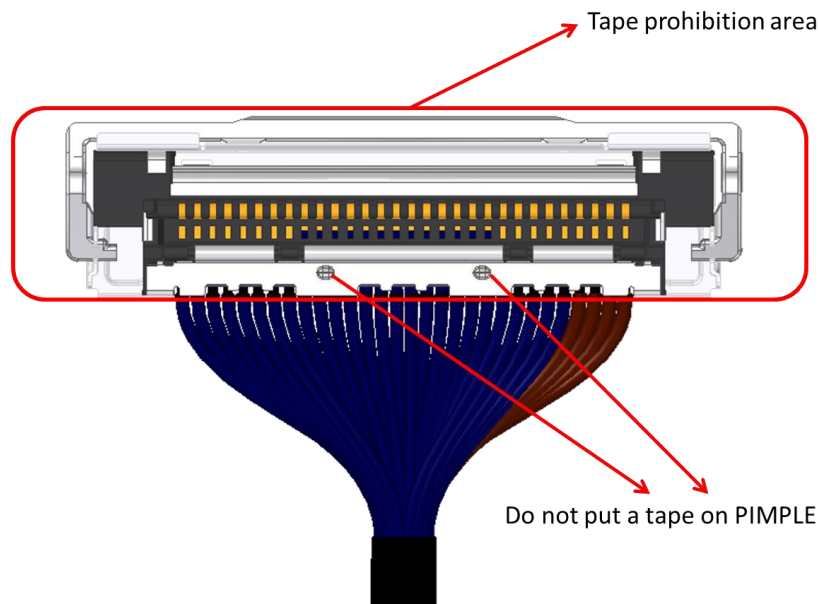


Fig.14 Bottom surface tape prohibition area
Following situation is not allowed after Plug & Plug-Shell & U-bar assembly

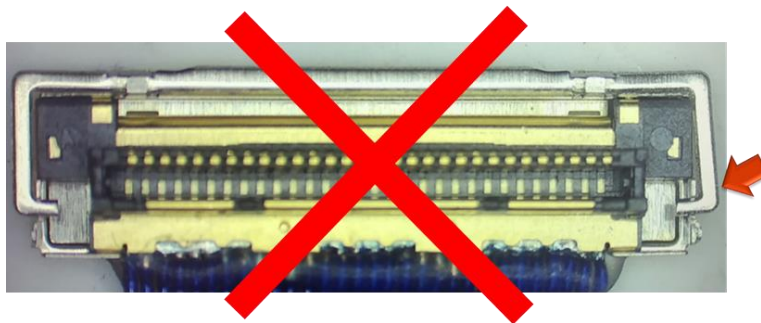


Photo.22 U-BAR deformation

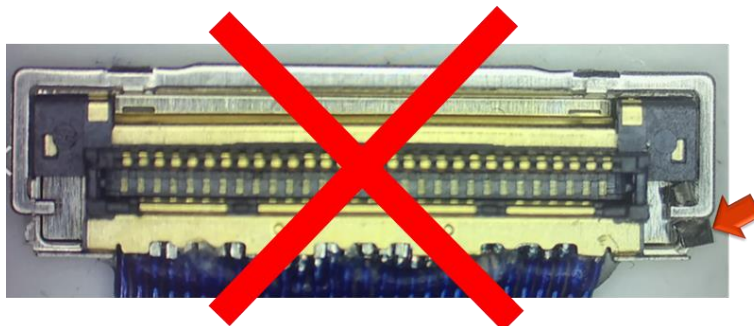


Photo.23 Plug-shell Deformation

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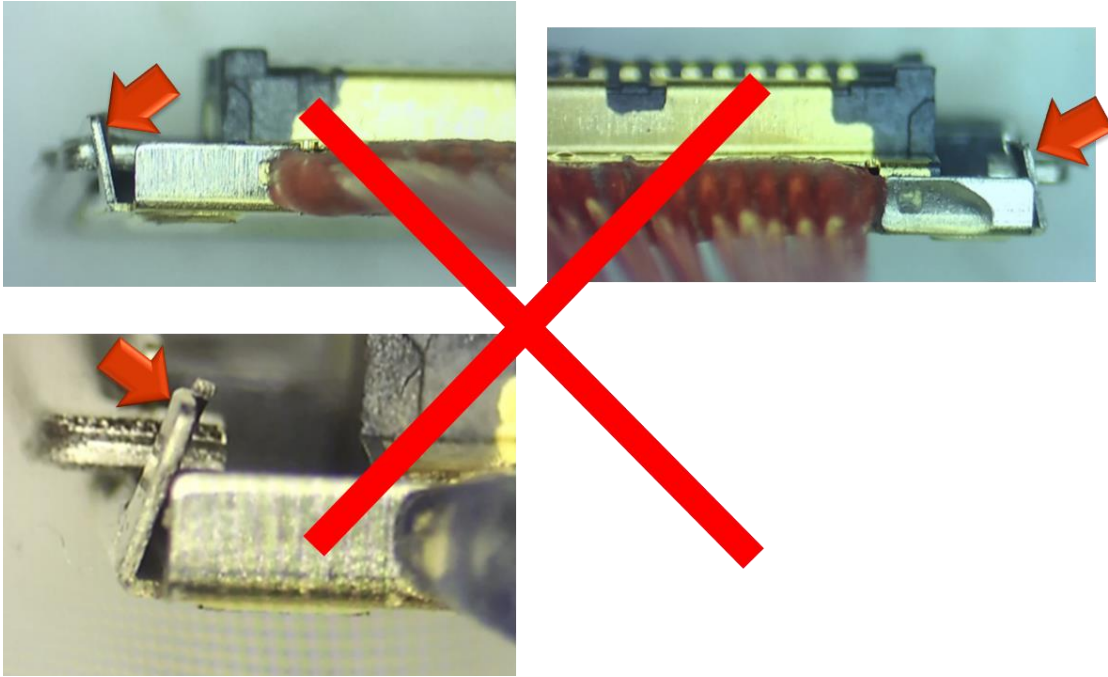


Photo.24 Plug-shell bending deformation

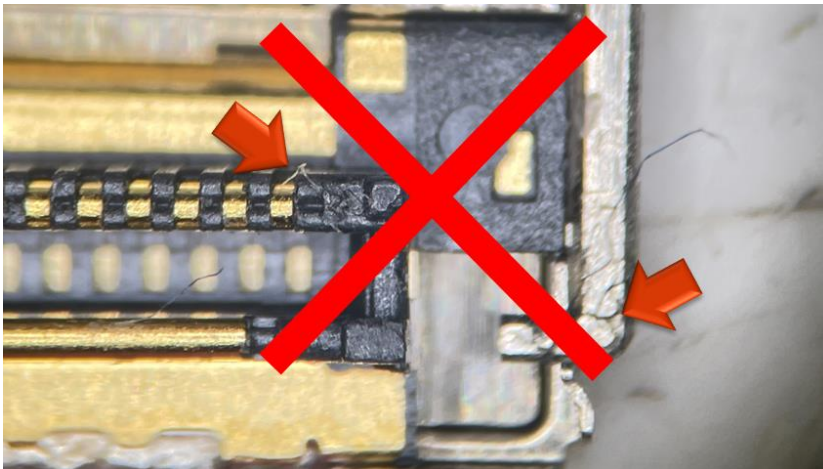


Photo.25 U-BAR with bonding

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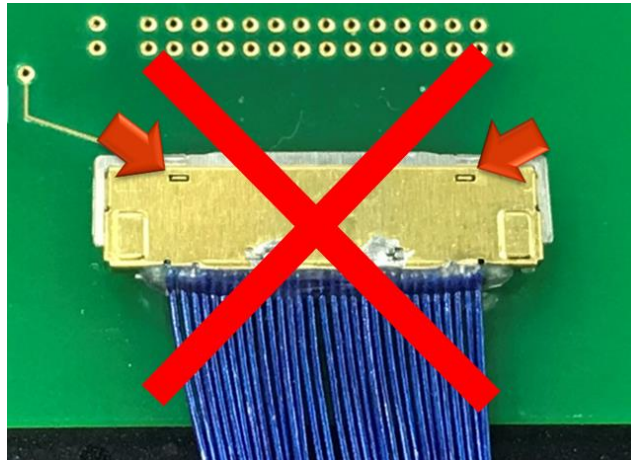


Photo.26 Plug-Shell didn't soldering completing.

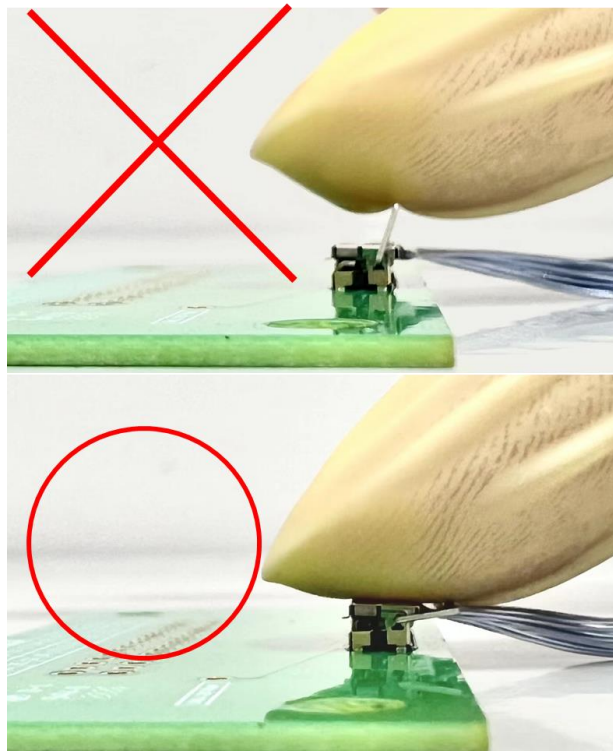


Photo.27 DON'T PRESS THE LATCH WHEN MATING THE PLUG. SHOULD PRESS THE PLUG CONNECTOR CENTER.