SPECIFICATION

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SPEC. NO.: PS-51496-xxxxx-xxx **REVISION:** D

PRODUCT NAME: 0.40mm PITCH LVDS CONNECTOR MANUAL ASSEMBLY

PRODUCT NO: 51496-xxxxx-xxx

PREPARED:	CHECKED:	APPROVED:
Jia-hong Xu	**Yung-Huang Liu**	**Huang-Kuo Hua**
DATE: **2021/11/16**	DATE: **2021/11/16**	DATE: **2021/11/16**

1. Revision History

Rev.	ECN #	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

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..

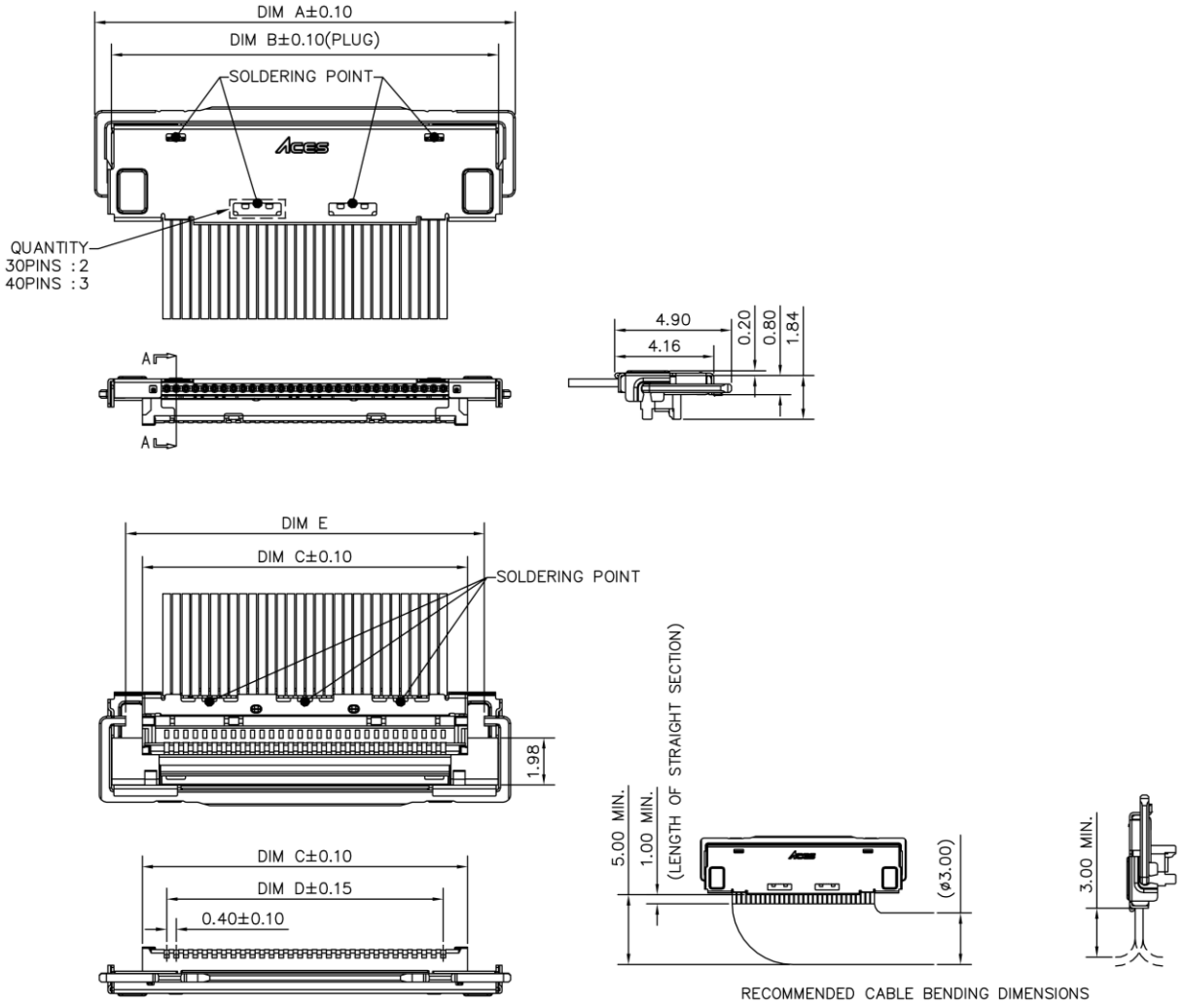
Applicable connector :

Name: ACES 0.4 mm pitch LVDS's Plug
Part NO. :

Discrete P/N (Manual Ass'y U-bar & Plug-shell)	Plug Housing	51496-xxxxx-xxx
	Plug-Shell	51496-M0xx-xxx
	U-bar	51496-M1xx-xxx
Discrete P/N	Plug Housing	51496-xxxxx-xxx
	Plug-Shell with U-bar	51496-MAxx-xxx

2.1 Cable assembly dimension

PINS	DIM A		DIM B	DIM C	DIM D	DIM E
	MA	M1				
20	13.65	13.25	12.24	9.65	7.60	11.05
30	17.65	17.25	16.24	13.65	11.60	15.05
40	21.65	21.25	20.24	17.65	15.60	19.05



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

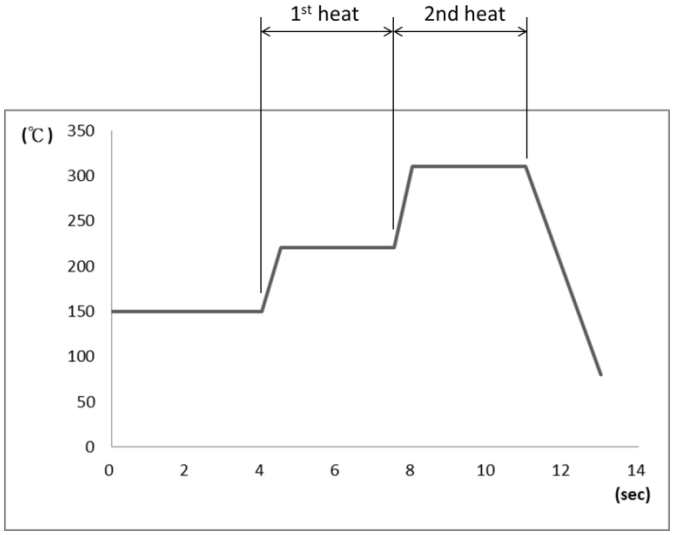
● Recommended solder bar

Positions		20P	30P	40P
Solder size	AWG#34~#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℃
1st heat temp.	220℃
1st rise time	0.5sec.
1st holding time	3.0sec
2ndheat temp.	300~320℃
2ndris time	0.5sec
2nd holding time	3.0sec
Heater tip Presure	5~10N



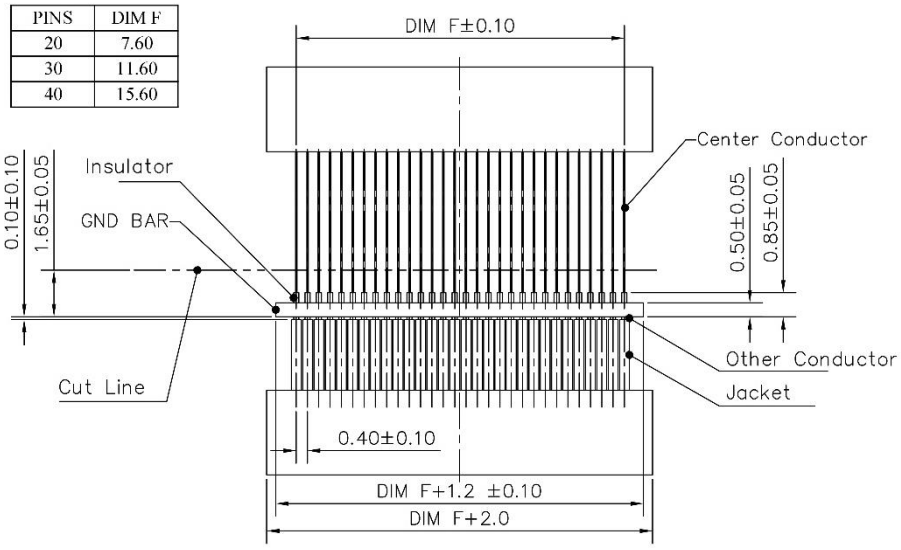
This pulse heat condition was evaluated and confirmed by our pulse heat jig and instrument. The most optimum condition may change based on the shapes of pulse heat jig and instruments, the environment, or other reason. Therefore, please example the pulse heat condition adequately in advance of use.

2.2.3 Solder

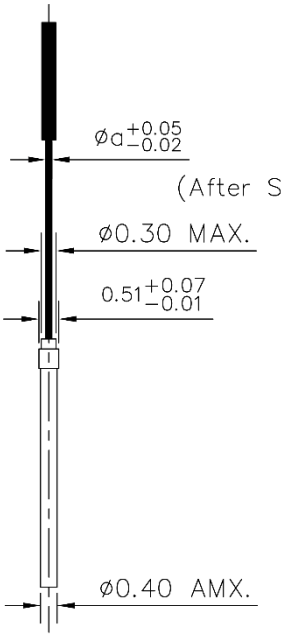
Work procedures :

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

PINS	DIM F
20	7.60
30	11.60
40	15.60



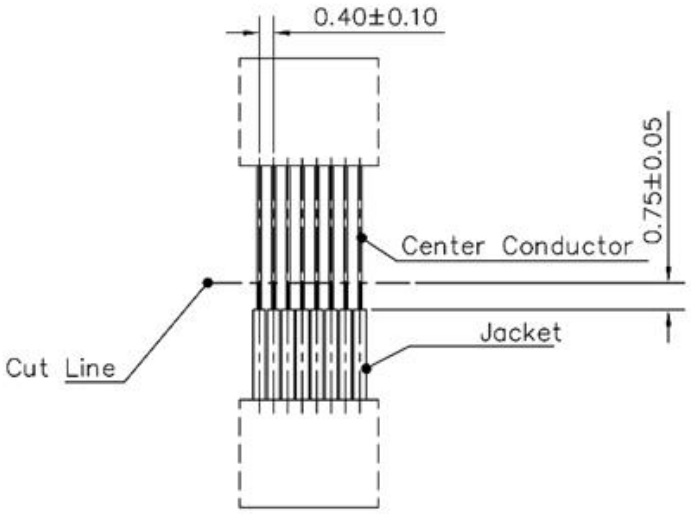
Recommended Micro Coax Cable Dimension



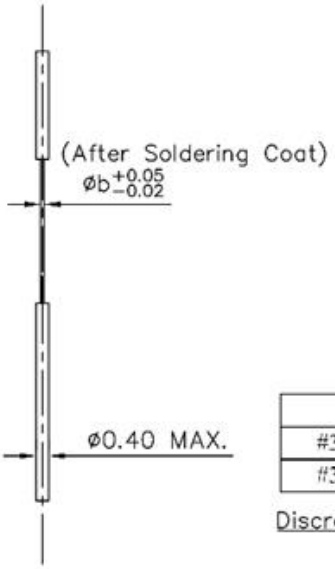
	a
#36	0.15
#38	0.12
#40	0.09
#42	0.075
#44	0.063

**Micro Coax Cable Dimension

Micro-Coax AWG#(SEE TABLE)



Recommended Discrete Cable Dimension

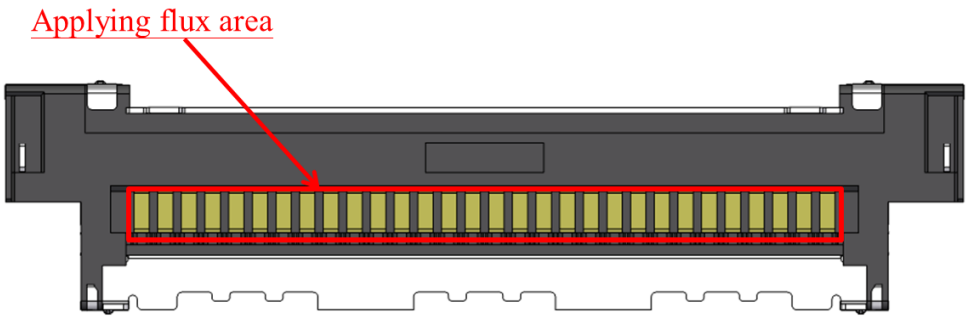


	b
#34	0.192
#36	0.15

Discrete Dimension

Discrete AWG#(SEE TABLE)

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



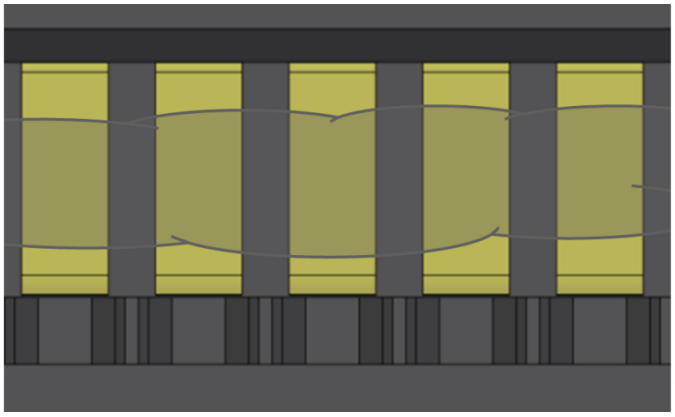


Fig.1 After applying flux

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

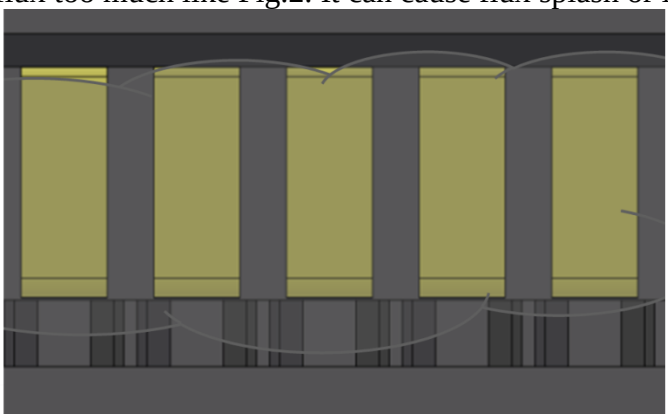


Fig.2 Extra flux

※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)

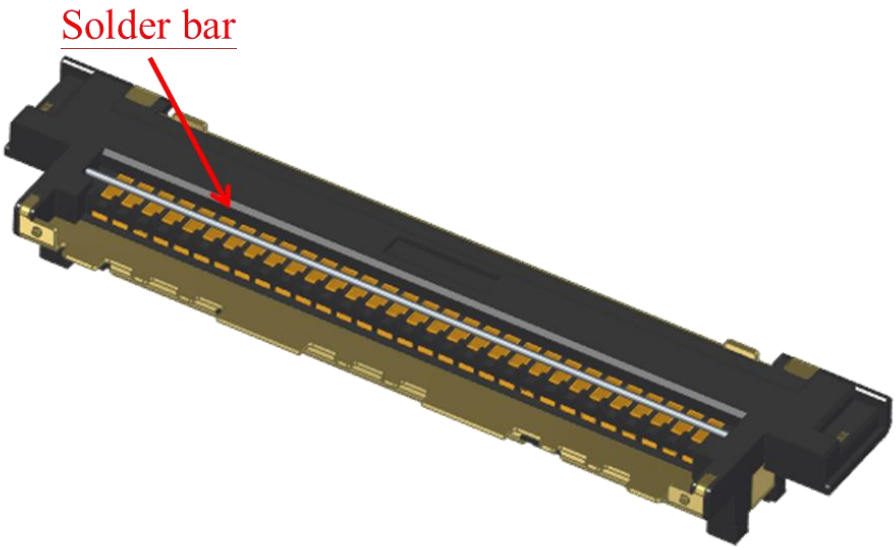


Fig.3 Set of solder bar

④Set the cable

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

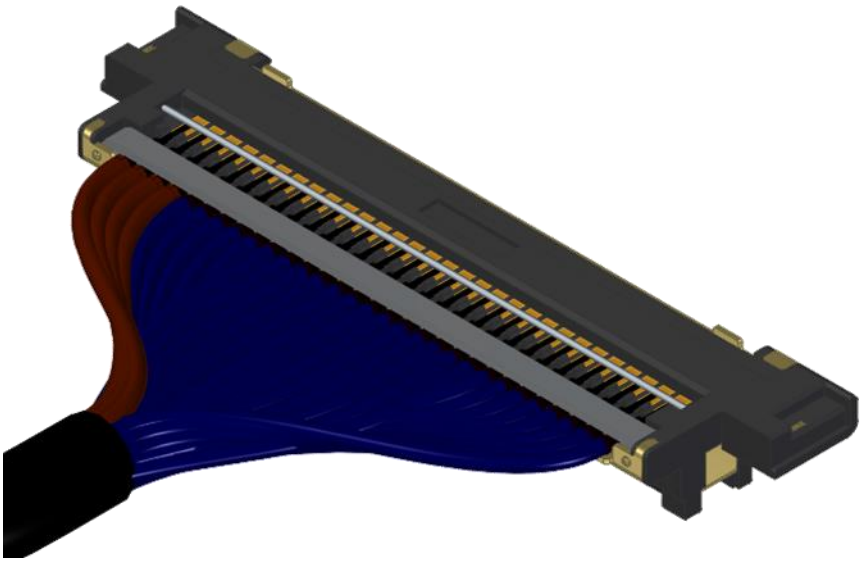


Fig.4 Set of cable

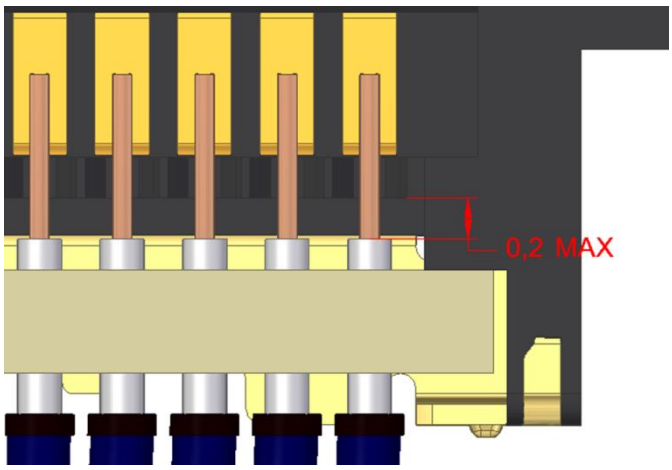


Fig.5 Setting discrete cable

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

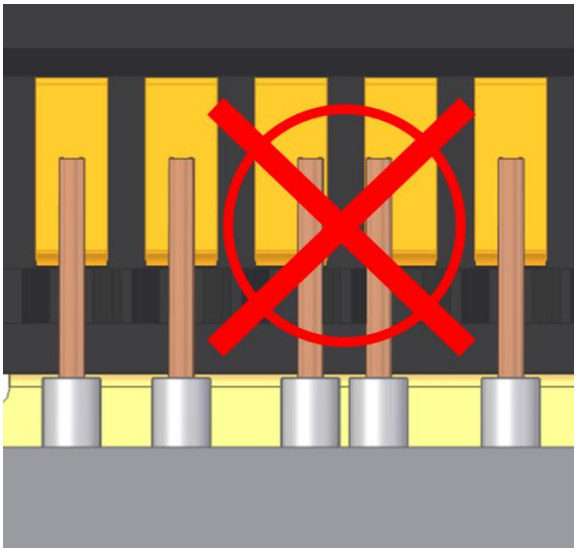


Fig.6 AWG#40

※When solder bridge is appeared between the termianl, 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℃

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 U-bar

Follow the methods shown below to cut U-bar from carrier tape

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

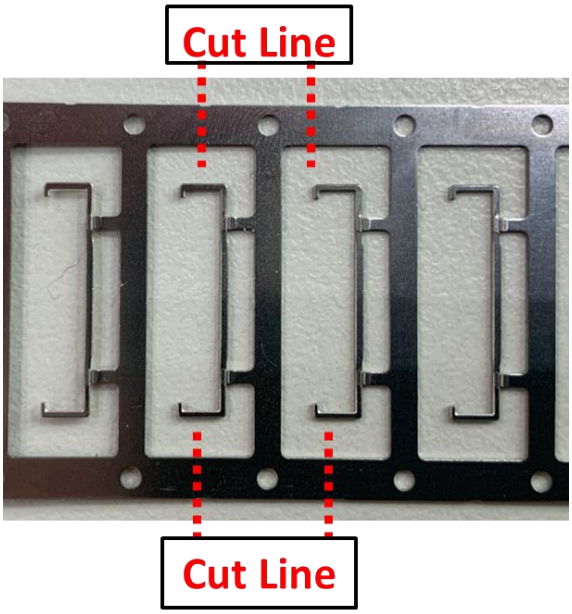


Photo.1 Before cut

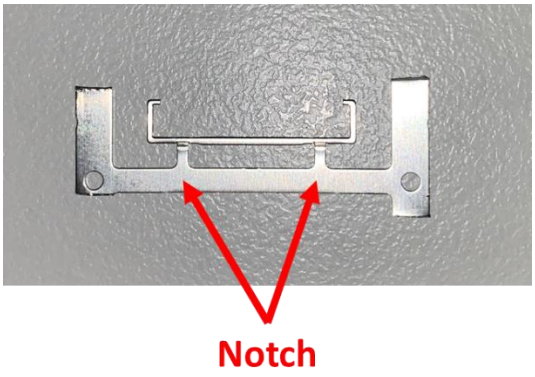


Photo.2 After cut

②Hold the center of U-bar and cut it off from Notch by ±45 deg 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.4)

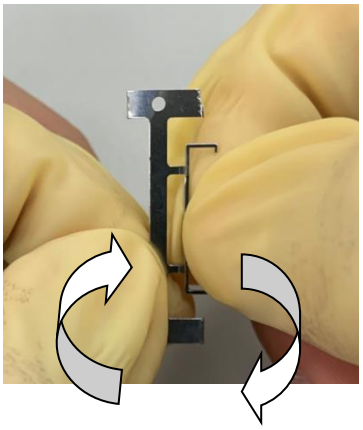
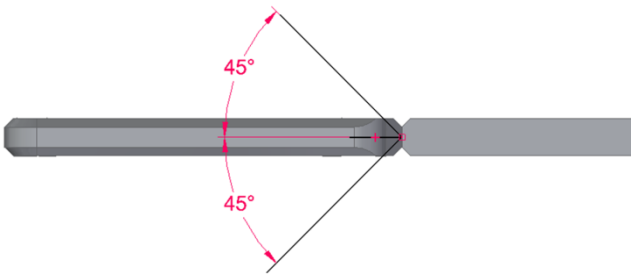


Photo.3 Cut condition



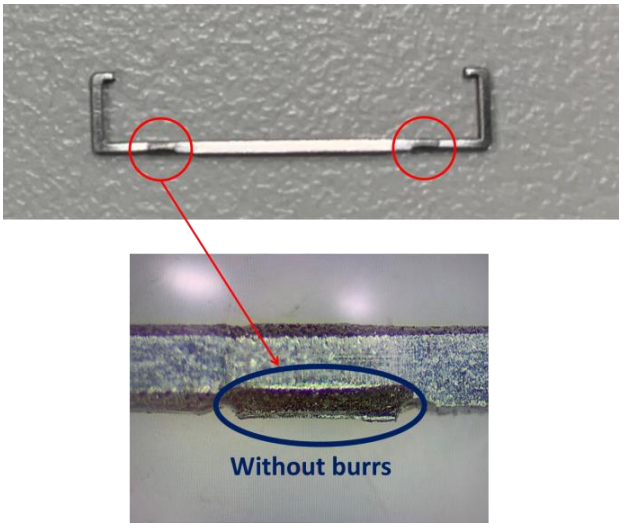


Photo.4 After cut

Detail of Notch

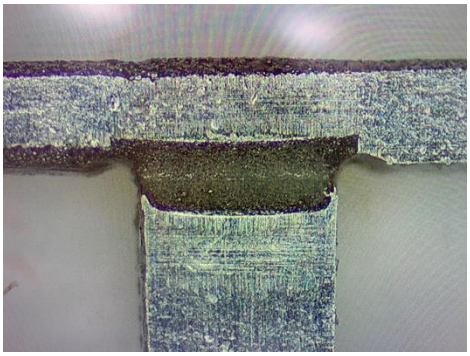


Photo.5 Bottom side view

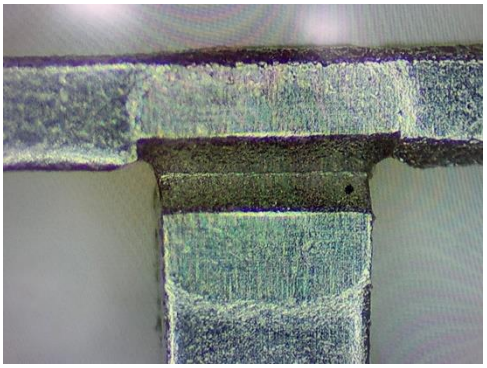


Photo.6 Upper side view

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

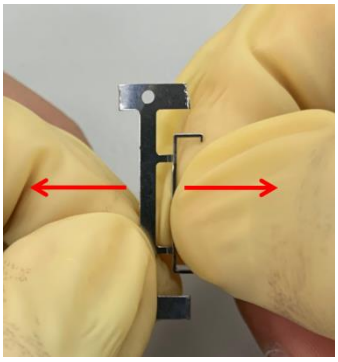


Photo.7 Cut by force (Bad example)

2.4 Cautions in treating Plug-Shell

Plug-Shell is delivered in the reel with a carrier. The following is the method to cut Plug-Shell from carrier.

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

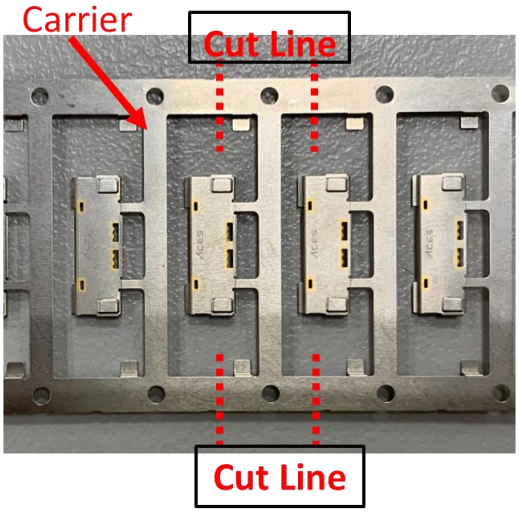


Photo.8 Before cut

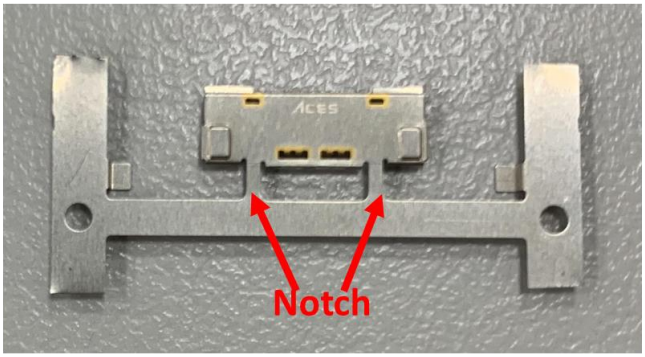


Photo.9 After cut

②Hold the center of Plug-Shell and cut it off from Notch by ±45 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

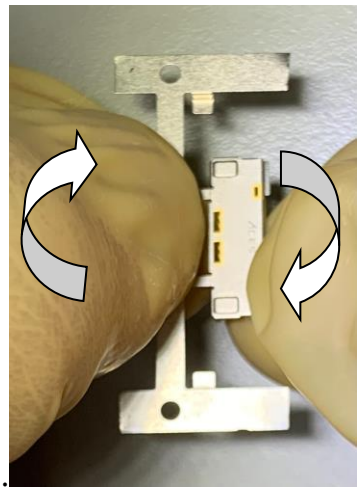
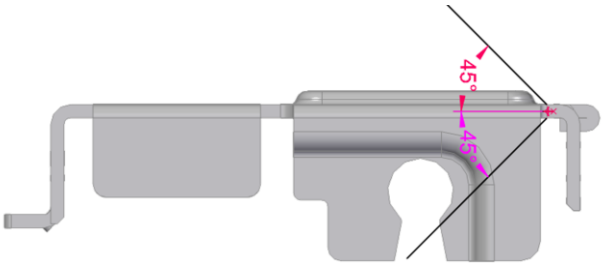


Photo.10 Cut condition



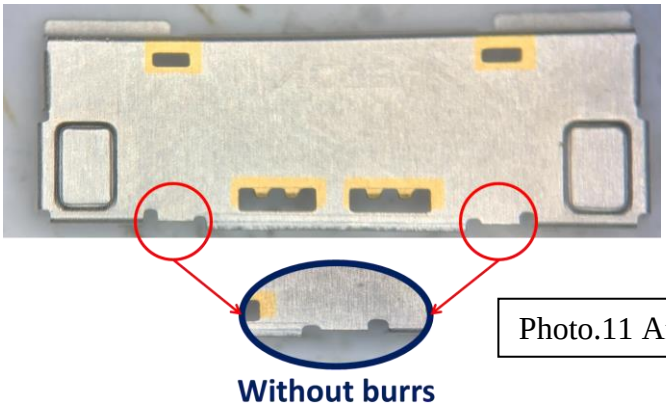


Photo.11 After cut

Detail of Notch

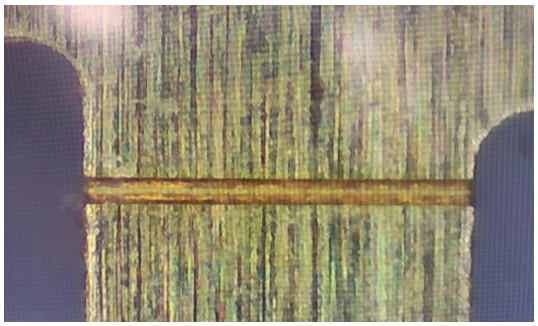


Photo.12 Bottom side view

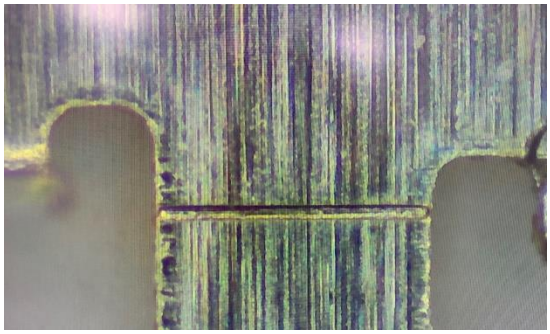


Photo.13 Top side view

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

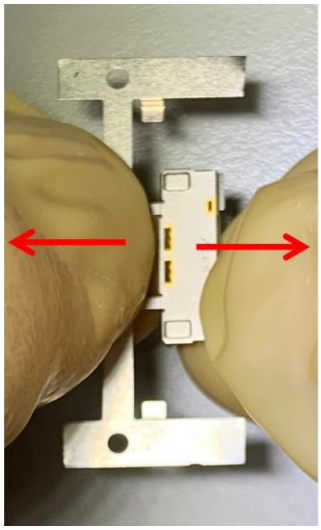
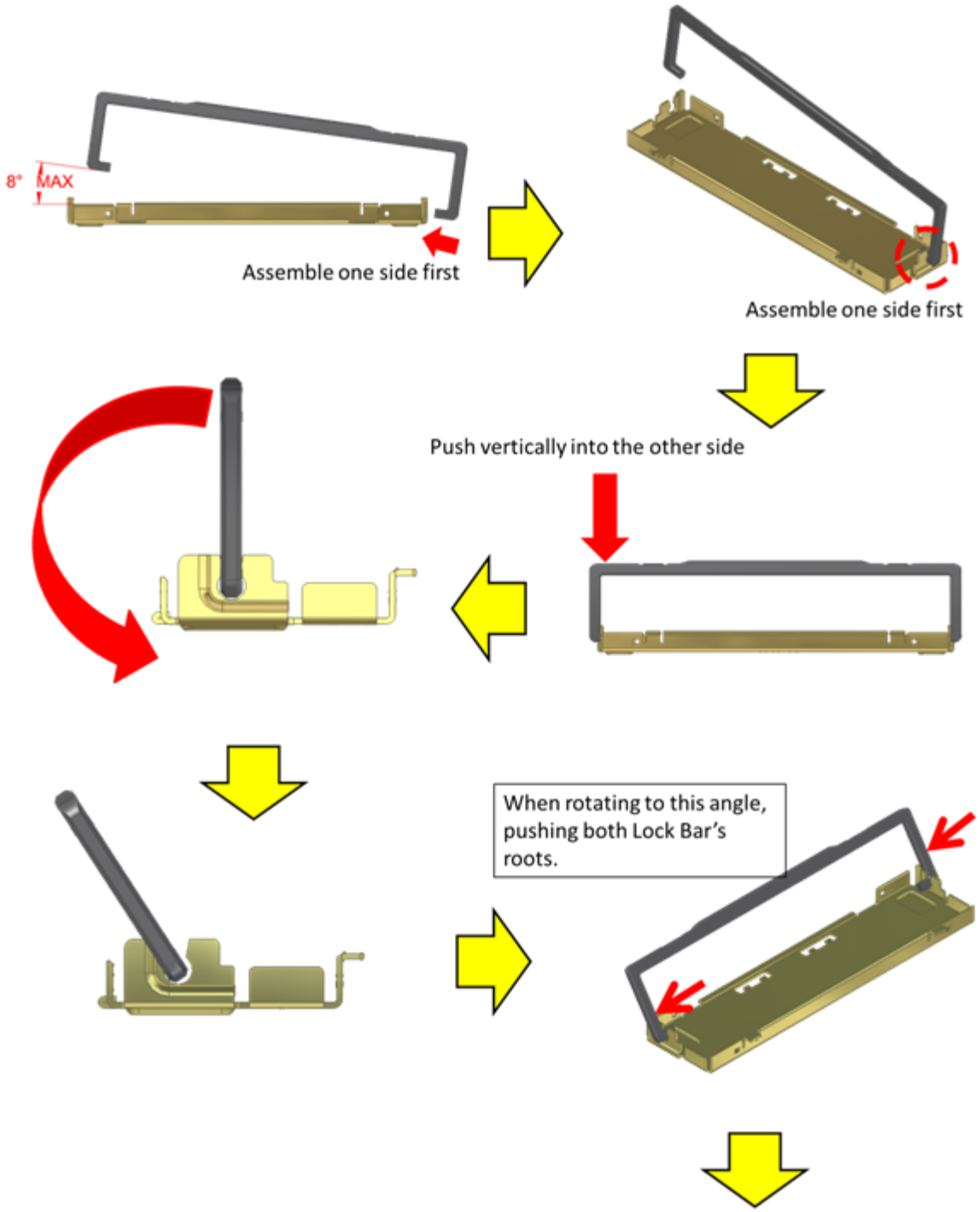
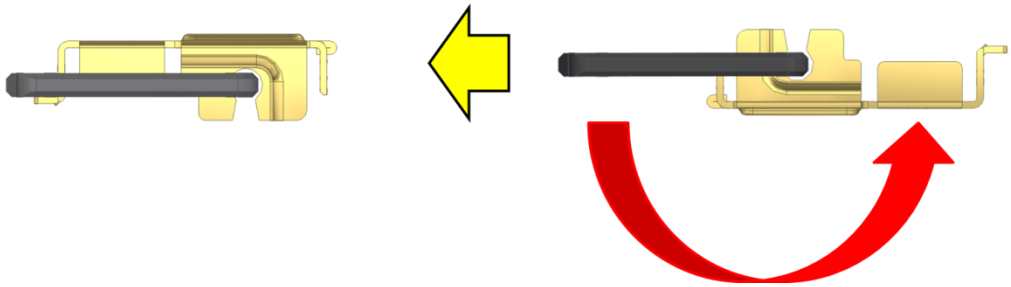


Photo.14 Incorrect cut

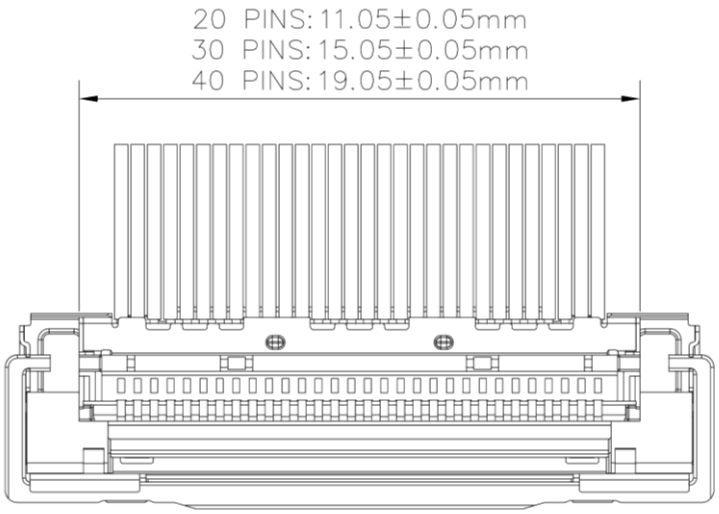
2.5 Assembly of U-bar (Only applied M0 and M1)



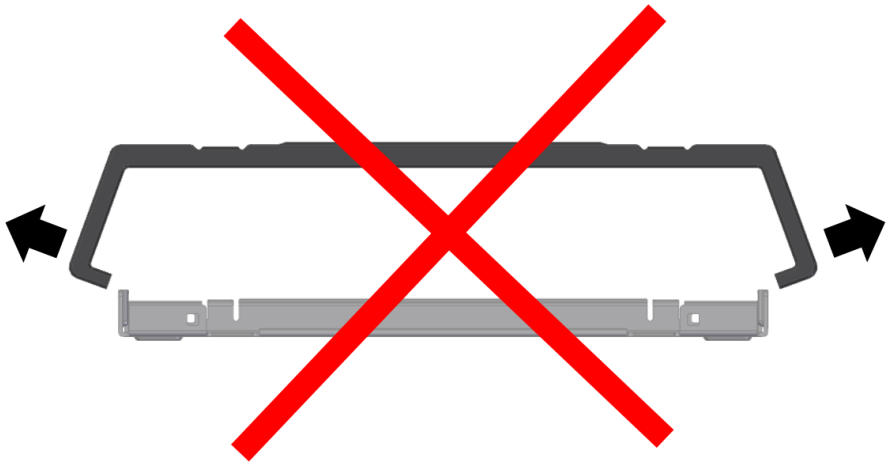


CAUTION

1. THE DIM E(PLEASE SEE 51496-xxxxx-xxx-aces) MUST MEASURE AFTER ASSEMBLE U-bar..



2. DON'T PULL AWAY LOCK-BEAR'S TAIL WHEN ASSEMBLED



2.6 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.

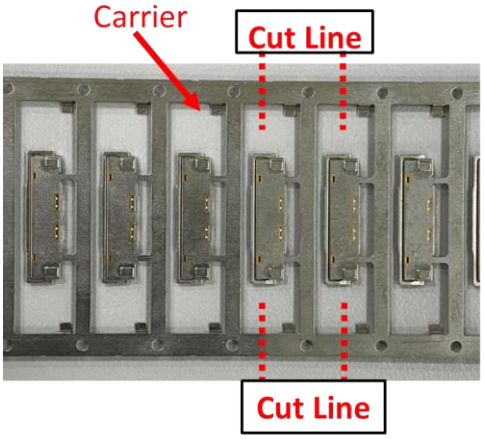


Photo.15 Before cut

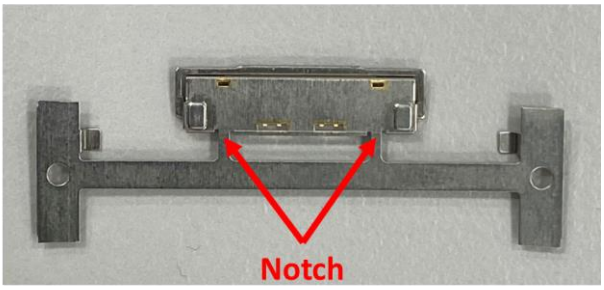


Photo.16 After cut

②Hold the center of Shell WITH U-BAR and cut it off from Notch by ±45 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

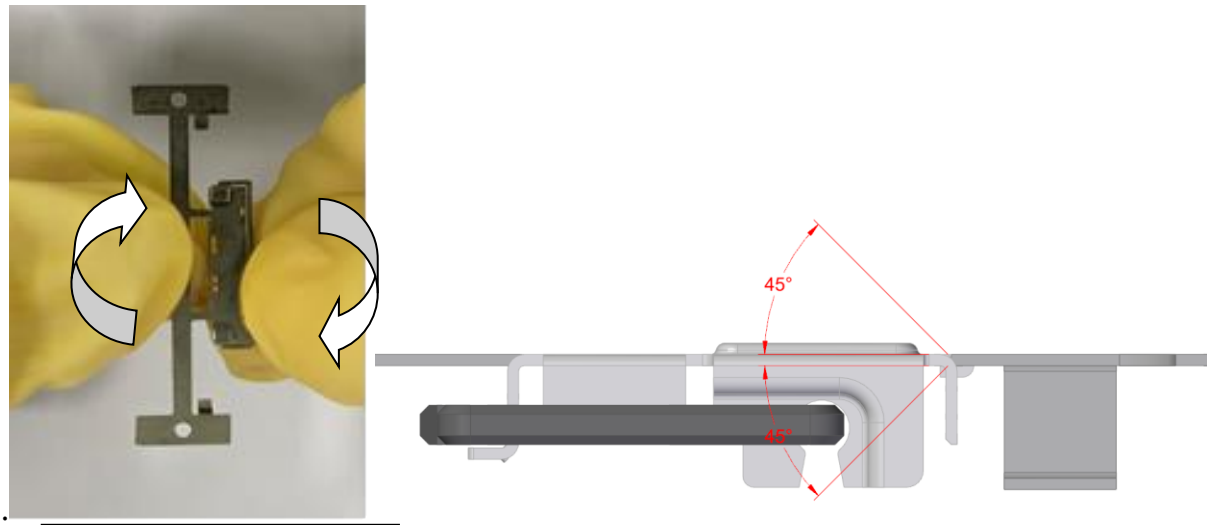


Photo.17 Cut condition

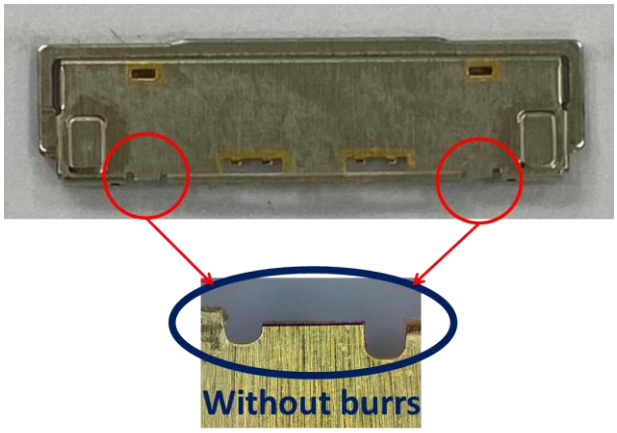


Photo.18 After cut

Detail of Notch

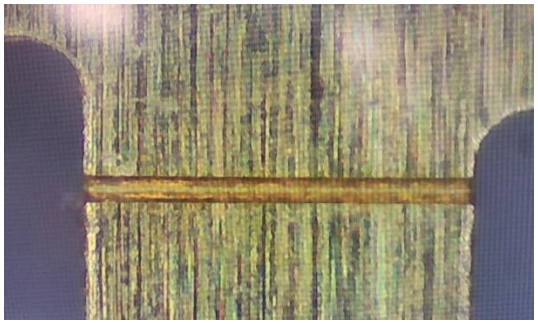


Photo.19 Bottom side view

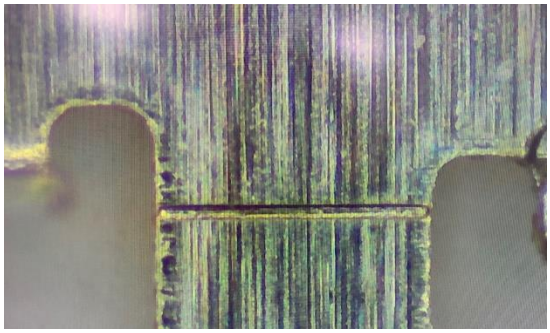


Photo.20 Top side view

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

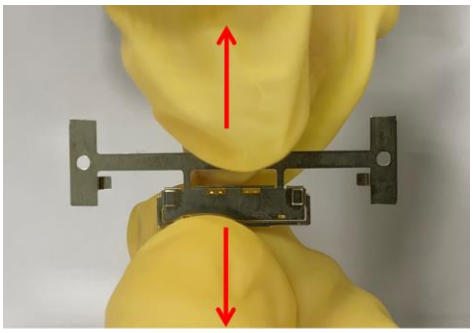


Photo.21 Incorrect cut

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

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

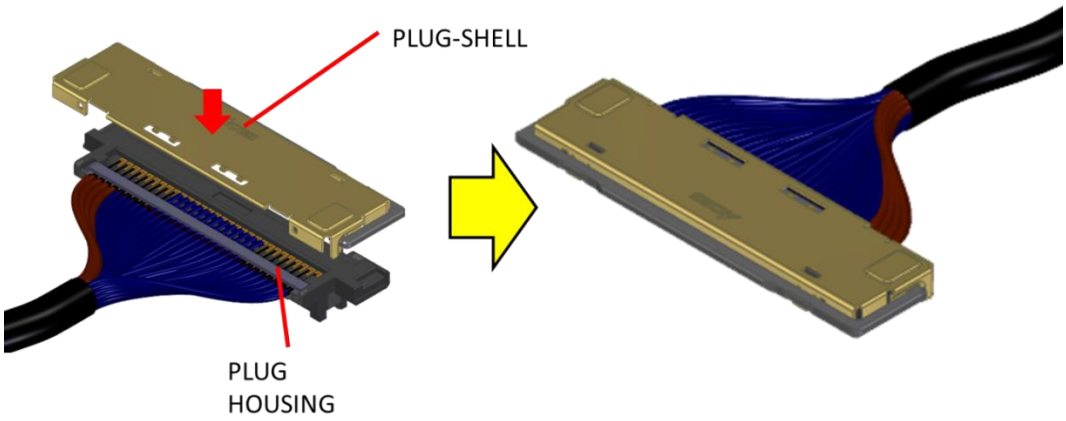


Fig.7 Assembly of Plug-Shell

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

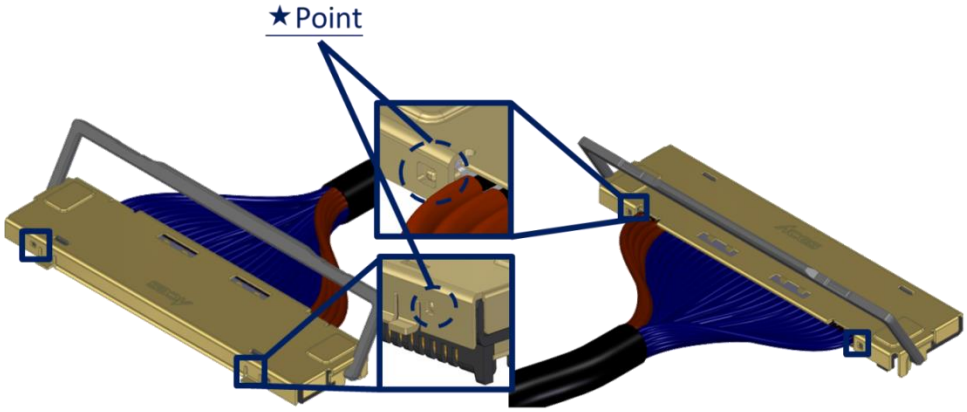


Fig.8 The assembly confirmation of Plug-Shell

③Plug-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.

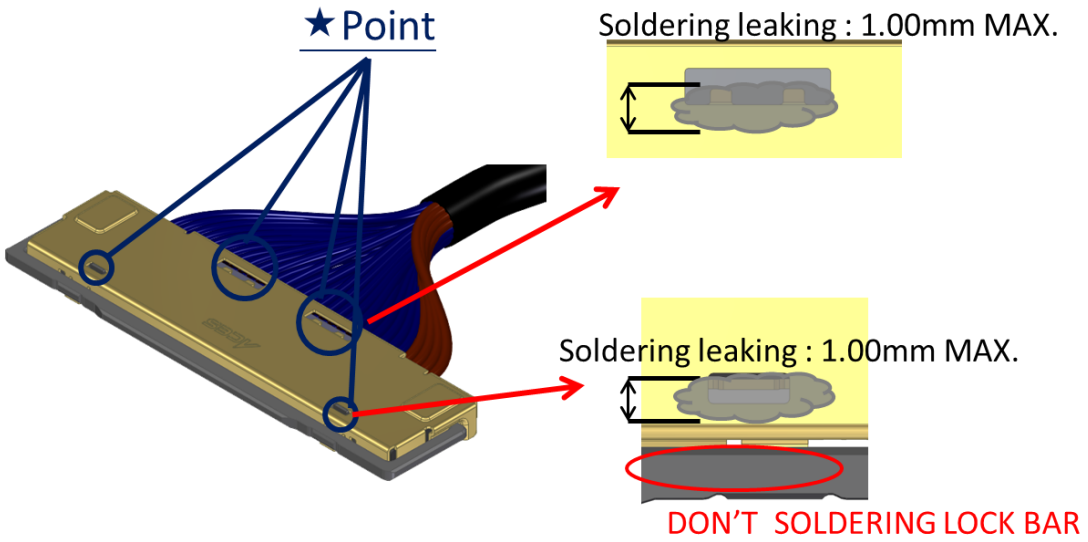


Fig.9 Soldering of SHELL-A and GND BAR

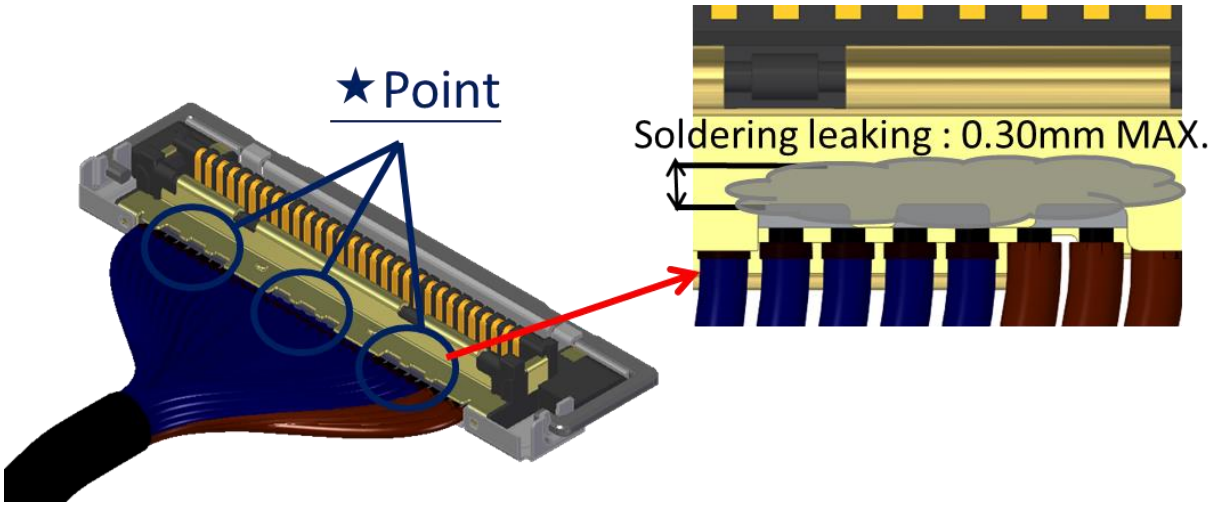


Fig.10 Soldering of SHELL-B and GND BAR

2.8 Cable fixation

Fix the cable termianl part with the bond.

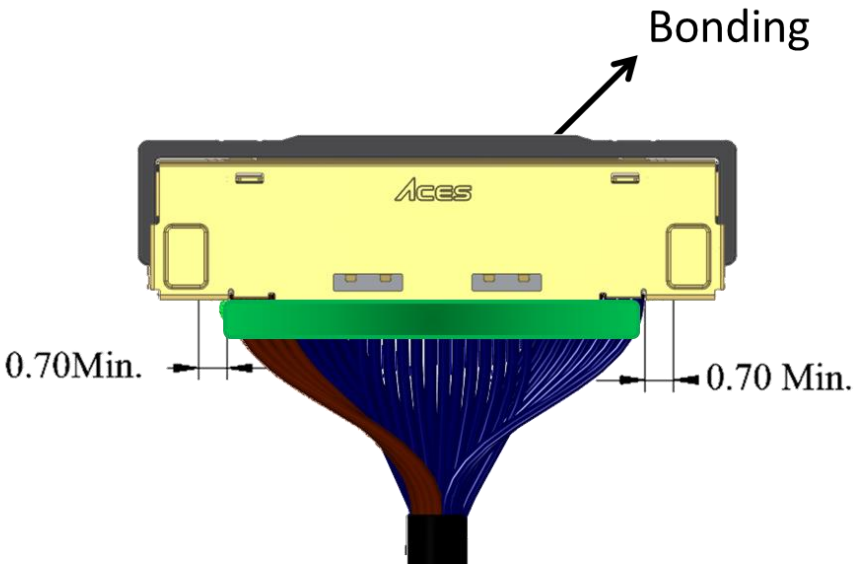


Fig.11 Bonding

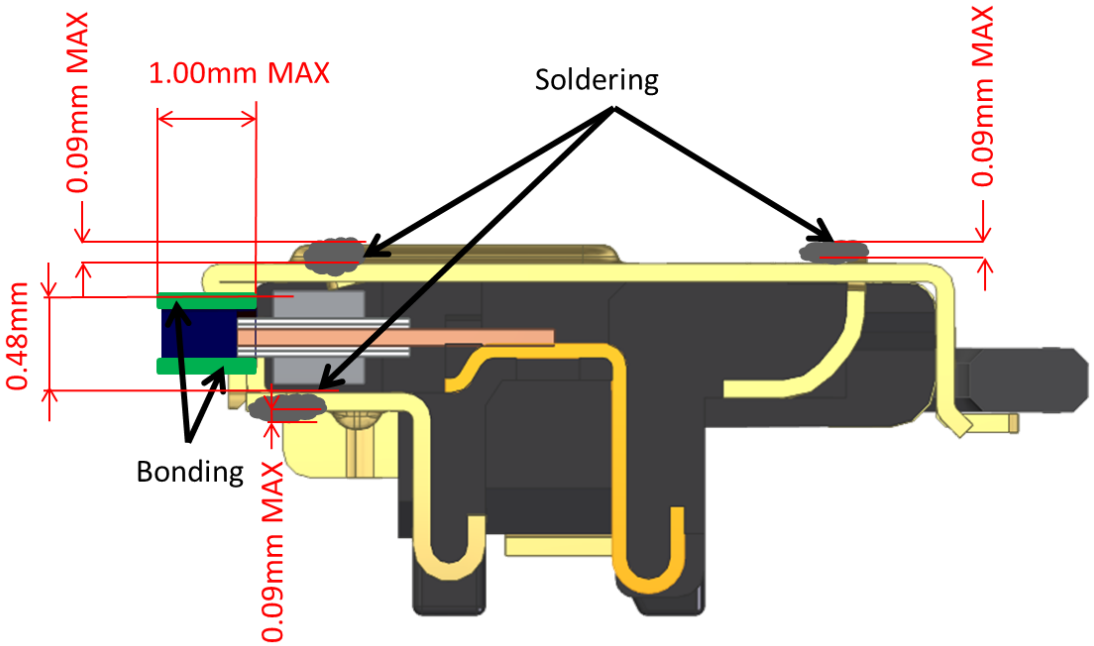


Fig.12 Bonding & soldering

CAUTION

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

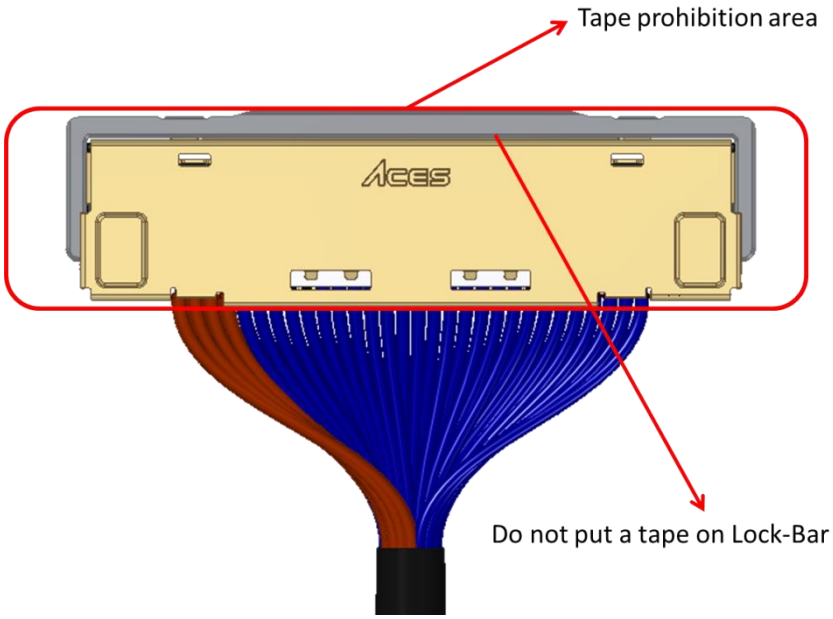


Fig.13 Top surface tape prohibition area

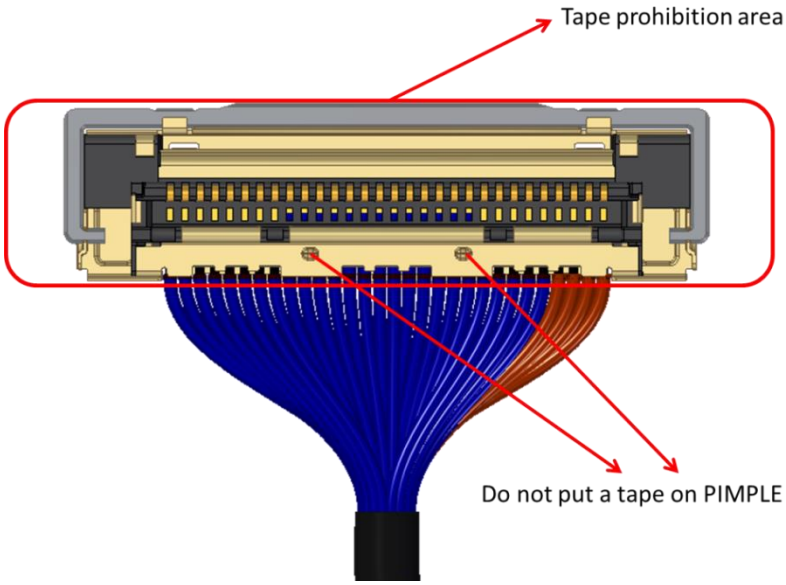


Fig.14 Bottom surface tape prohibition area

Following situation is not allowed after Plug & Plug-Shell & U-bar assembly

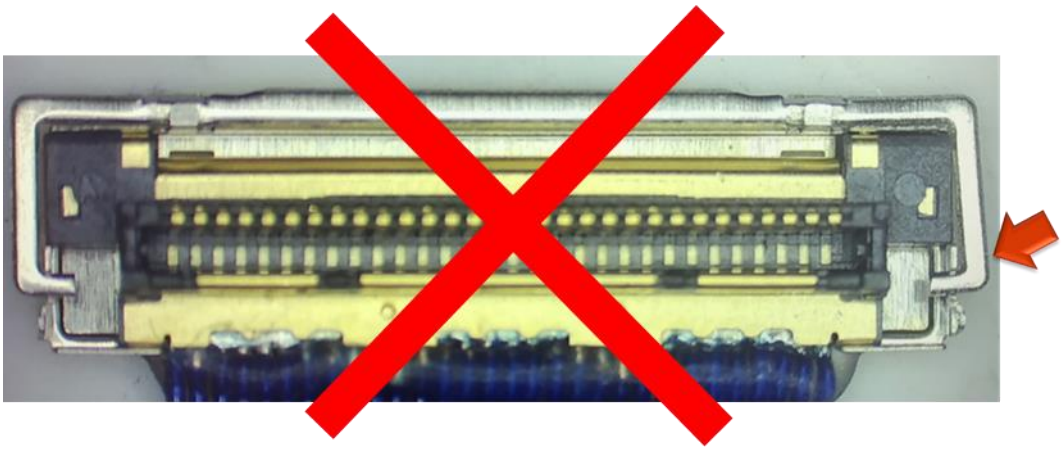


Photo.22 U-BAR deformation

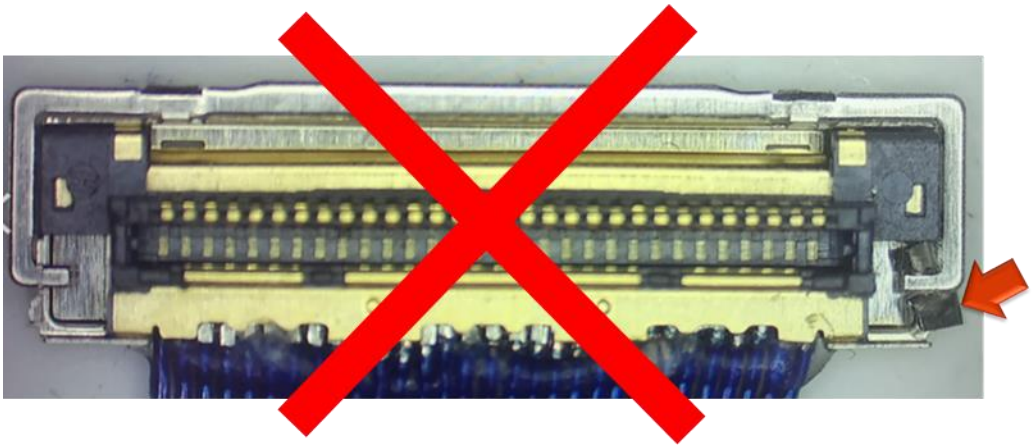


Photo.23 Plug-shell Deformation

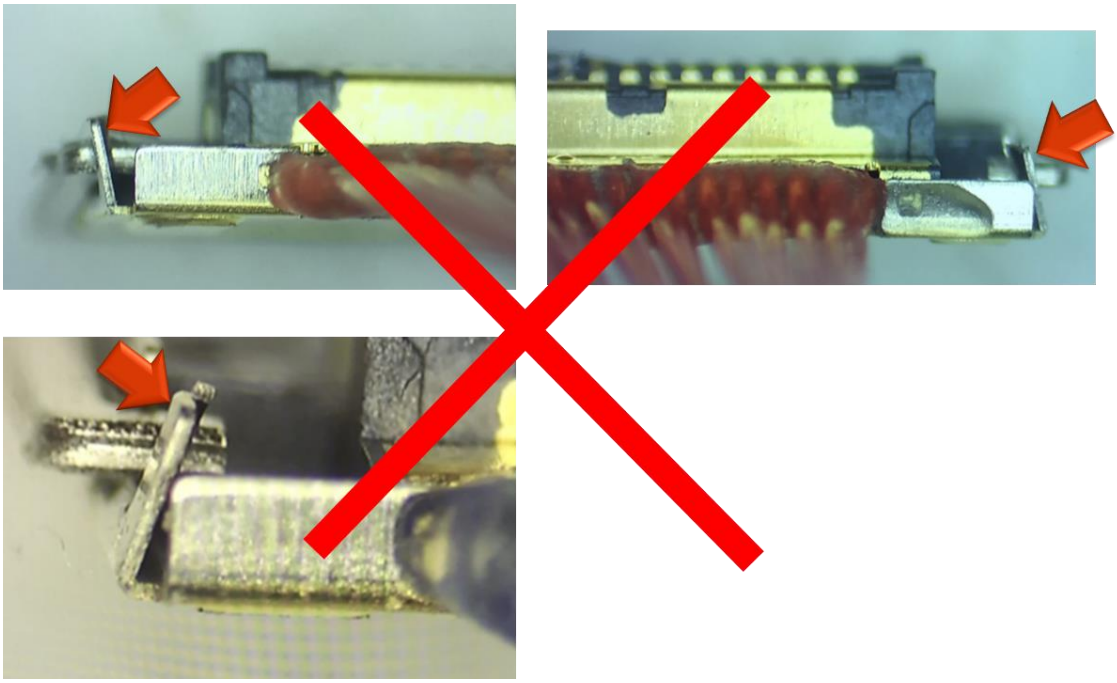


Photo.24 Plug-shell bending deformation

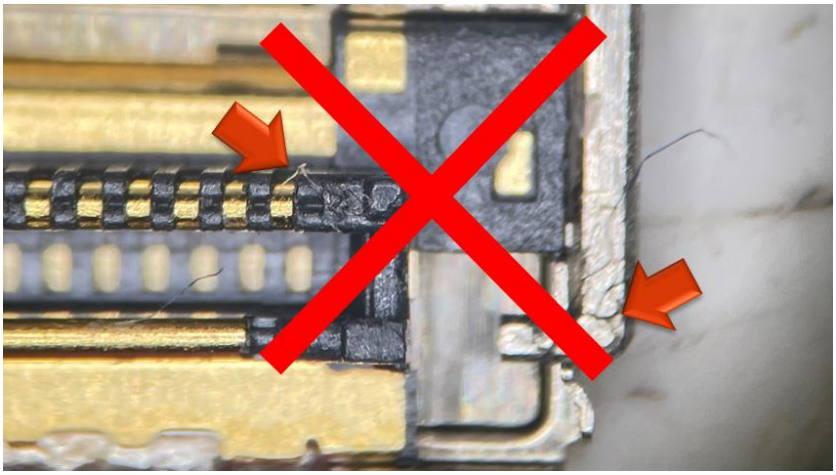


Photo.25 U-BAR with bonding

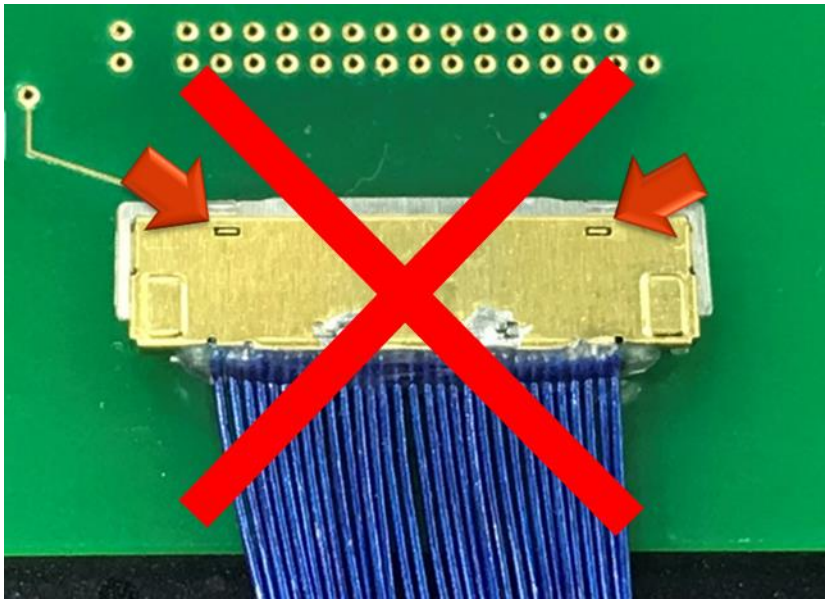


Photo.26 Plug-Shell didn't soldering completing.