

# **CABLINE-CBL PLUG**

Part No. 20472

## Assembly Manual

4	S23270	September 26, 2023	H.Uchida	M.Nakamura	T.Masunaga
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#### 1.Purpose :

This manual explains the soldering method and assembly processes of the CABLINE-CBL PLUG with shell A, and latch bar.

#### 2. Applicable Connector:

Name : CABLINE-CBL PLUG

Parts No. :

Set P/N	Cable Assembly	20472-#**T-10*
	Housing Assembly	20473-0**T-10*
Discrete P/N	Shell A	2618-0**#
	Latch Bar	2619-#**0

#### 3. Fixtures :

- · Pulse Heater
- Heater Tip

Pressure: 9.8N (1.0 kgf)

[Size]Thickness : 0.5 mm

Width: (30P) 12.2 mm, (40P) 16.2 mm

Solder Bar

(Recommended)  $\phi$ 0.1 mm (resin-cored solder) is used.

Positions	Length
30P	12.0 <sup>±0.2</sup>
40P	16.0 <sup>±0.2</sup>

Soldering Iron: 50W

#### 4. Recommended Pulse Heat Condition:

①Idle Temp.	150 ℃	(°C)∱	lat boot	and heat	
②1st Heat Temp.	220 °C		- 15t Heat 		>
③ // Rise Time	0.5sec.	(5) (2)			
④ " Holding Time	3.0sec.				
⑤2 <sup>nd</sup> Heat Temp.	300 ℃				
6 " Rise Time	0.5sec.		3 4		
⑦ // Holding Time	3.0sec.			**	>

5. Work Procedures :

5-1. Soldering of Center-Conductor

 $(\ensuremath{\underline{1}})$  The cables have to be fabricated as shown below in advance of soldering.



Micro-Coaxial Cable AWG#\*\*

Discrete Wire AWG#36

②Set the solder bar on the connector.



Fig.1 Set of Solder Bar

③Set the cable.



Fig.2 Set of Cable

(4)Center-conductors are soldered with pulse heater. See Photo.1 of soldering condition.

Wicking to the mating side is 0.15MAX. (See Photo.1)



Photo.1 AWG#42

\*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 the failure point.

Recommended Iron : UNIX JBC DI 2860 (JAPAN UNIX Co.,Ltd.) Recommended Tip Shape : UNIX JBC 2245-036 (JAPAN UNIX Co.,Ltd.) Condition of Soldering Iron : 50W Operating Temperature : 350 ℃ Application Time of Soldering Iron : Within 5sec.



Recommended Tip Shape (UNIX JBC 2245-036)

5-2. Cautions in Treating Plug Cover

Plug cover is delivered in the reel with a career.

The following is the method to cut plug cover from career.

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



Photo 2. Before Cut



Photo 3. After Cut

 Hold the center of plug cover and bend it 45 deg back and forth to cut it from notch. When it does not be cut, try again.
After separated, check there is no burr around the cut part.(Photo.5)





Photo 4.Cut Condition



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Photo 5. After Cut

Plug Cover Detail of Notch



Photo 6. Bottom Side View



Photo 7. Upper Side View

Caution: By pulling like a lower photo to cut off by force (red arrow direction), burrs and transformation can be caused.



Photo 8. Cut by Force (Bad Example)



5-3. Cautions in Treating Latch Bar

Latch bar plug cover is delivered in the reel with a career.

The following is the method to cut latch bar from career.

① Hold the end of latch bar and bend it 45 deg back and forth to cut it from notch. When it does not be cut, try again.



Photo 9. Cut Condition



② Hold the end of latch bar and bend it 45 deg back and forth to cut it from notch. After separated, check there is no burr around the cut part. (Photo.12)



Photo 10.Cut Condition



Photo 11.Cut Condition (Bad Example)



Photo 12. After Cut

Caution: By pulling like a lower photo to cut off by force (red arrow direction), burrs and transformation can be caused.



Photo 13. Cut by Force (Bad Example)

#### 5-4. Assembly of Latch bar

Latch bar is placed to specific area on housing ass'y. (See Fig.3.)





#### \*Please make sure to attach Insulation-tape.

#### Insulation-Tape Recommended Dimensions

Tape Thickness: 0.05 mm

Position	30P	40P
А	13.0	17.0

Unit:mm



Insulation-Tape Recommended Dimension

#### 5-5. Assembly of Shell A

① Shell A is assembled along the guide of housing from the cable side. (See Fig.4.)



Fig.4 Assembly of Shell A

② It confirms whether Shell A is being assembled normally.
Whether shell locks are being assembled normally. (Fig.5★ Point)



Fig.5 The Assembly Confirmation of Shell A

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③ Shell A, B and ground bar are soldered with the pulse heat. (Fig.6,7 ◆ Point) Refer to Fig.7 for a limit of the solder height. (Connector Height: 0.95 mm MAX.)

Conditions of Soldering iron: refer to sheet 5.

According to study at I-PEX lab, soldering 4points on top shell and 0point on bottom shell is adequate for LVDS application.

• Recommended Shell A, B Pulse Heat Condition :

①ldle Temp.	150℃
②1st Heat Temp.	220℃
③ // Rise Time	1.0sec.
④ // Holding Time	2.0sec.
⑤2 <sup>nd</sup> Heat Temp.	320℃
6 " Rise Time	1.0sec.
⑦ // Holding Time	2.0sec.



•Recommended Heater Tip Pressure : 8N





Fig.6 Soldering of Shell A and Ground Bar



Recommended Solder Size

Platy solder (width:0.4mm, thickness: 0.1mm) is used or  $\phi$ 0.23mm (resin-cored solder) is pressed and used. Pre-set and locate solder bar of width A at both of shell soldering holes (2 places), and pre-set and locate solder bar of width B at center of shell soldering holes (2 place).



Recommended Heater Tip



Positions	А	В	С	D
30P	1.0	6.2	7.9	11.9
40P	3.0	8.2	11.9	15.9



Recommended Solder Size

Platy solder (width:0.4 mm, thickness: 0.1 mm) is used or  $\phi$ 0.23 mm (resin-cored solder) is pressed and used. Pre-set and locate solder bar of width A at shell soldering holes (3 places)

	А
Length (mm)	2.0





#### Recommended Heater Tip



Position	А	В	С
30P	2.6	6.4	11.6
40P	2.6	10.4	15.6

\*In case the connector is applied overheat, the solder on cable will melt and solder avulsion will occur.

Please check the pales heat condition and these.





\*When shell A and shell B are soldered by iron, please follow the procedure in below.

- · Soldering order is at random.
- ·Soldering Condition: Refer to 5 sheet. Recommended tip shape is as shown following.
- •Solder Bar : φ0.2mm (resin-cored solder)
- Cut the recommend solder bar size, and solder by iron after putting solder bar on the shell soldering hole.
- •All soldering holes must be soldered.

Recommended Solder Bar Size

	Shell A	Shell B
Solder Bar	φ0.2	φ0.2
Length (mm)	A:1.4 B:2.0	1.0



\*Not soldering is occurred in association with solder extending shell surface.

Please push the soldering iron not to prevent misalignment to the soldering hole.



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(5) Shell A and shell B are soldered by the soldering iron. (Fig.8 ♦ Point)

Conditions of Soldering iron refer to sheet 5. Recommended tip shape is as shown following.

Put the appropriate amount of solder, notice the solder protrudes. (See below photo.)



Recommended Tip Shape (UNIX JBC 2245-036)

♦ Point Solder protrudes area Incorrect Correct

Fig.8 Soldering of Shell A and Shell B





Incorrect

#### \*Attention

There is possibilities to cause latch bar dropping out from the connector, if shell A and shell B are not soldered.





\*Caution in Soldering

When using latch-bar, Please be careful the soldering iron dose not touch to the insulation-tape.

The heat of the soldering iron can melt them and there is possibility to cause short when mating with receptacle.