Title of Document: **HANDLING MANUAL**	Issue No. CHM-1-2057	Rev. 4
Customer:	Issue date: October 2, 2002	
Title subject: FLZT Connector	Revision date: March 25, 2020	

This manual describes important and required points of handling about FLZT connector.
Be sure to read this manual thoroughly before using FLZT connector.

C O N T E N T S

1. Model Number and Part Name

1-1 Model number

Part name		Model No.
FLZT connector	Normal type	( )FLZT-SM1-$*_1$ (H)(LF)(SN) $*_2$
	Reverse type	( )FLZT-RSM1-$*_1$ (H)(LF)(SN) $*_2$
Embossed-taping product		( )FLZT-SM1-$*_1$-TF (H)(LF)(SN) $*_2$
		( )FLZT-RSM1-$*_1$-TF (H)(LF)(SN) $*_2$

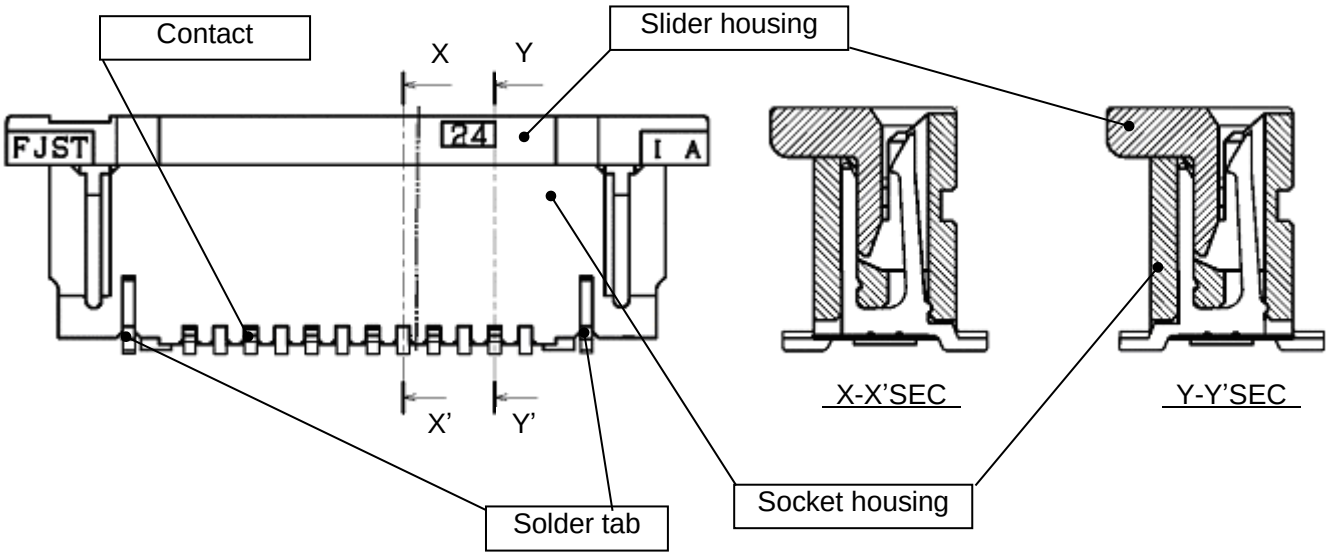
Note 1: Number of circuits by two-digit figure is indicated in ( ).
e.g.) 40FLZT-RSM1-GB-TF (LF)(SN)
40-circuit FLZT connector reverse type with selective gold-plated and lead-free (embossed-taping product)

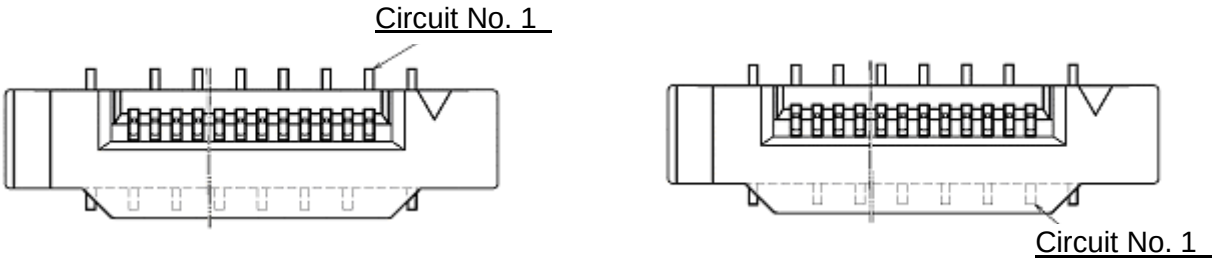
Note 2: Plating specification of contact is indicated in "∗1".
Blank: Tin plating
G: Gold plating
GB: Selective gold plating (Contacting part: Gold plating/ Solder tail: Tin plating)

Note 3: Water repellent of connector is indicated in "∗2".
Blank: Without water repellent
(H): With water repellent

Note 4: Lead-free surface finish is indicated in "∗2".
(LF)(SN) is identification part number indicating lead-free product.

1-2 Part name





Normal type Reverse type

2. Storage

2-1 Connector storage

Recommended storage condition: Temperature: 5 – 35 ˚C, Relative humidity 60 % or less
(Under packaging like the state of JST shipment)

Keep off direct sunlight, places exposing to such corrosive gas as industrial gas (generate from a stove and whatnot) and ammonia gas (generate from a toilet and whatnot), dusty place and condensation.

Note that the resin molding part may break due to transportation and handling, such as processing and mating, under dry or low temperature condition.

2-2 Storage of processed connectors

Not leaving the processed connectors to stand in a place exposed to high humidity and direct sunshine, and not placing them directly on the ground, keep them in a clean storage room,

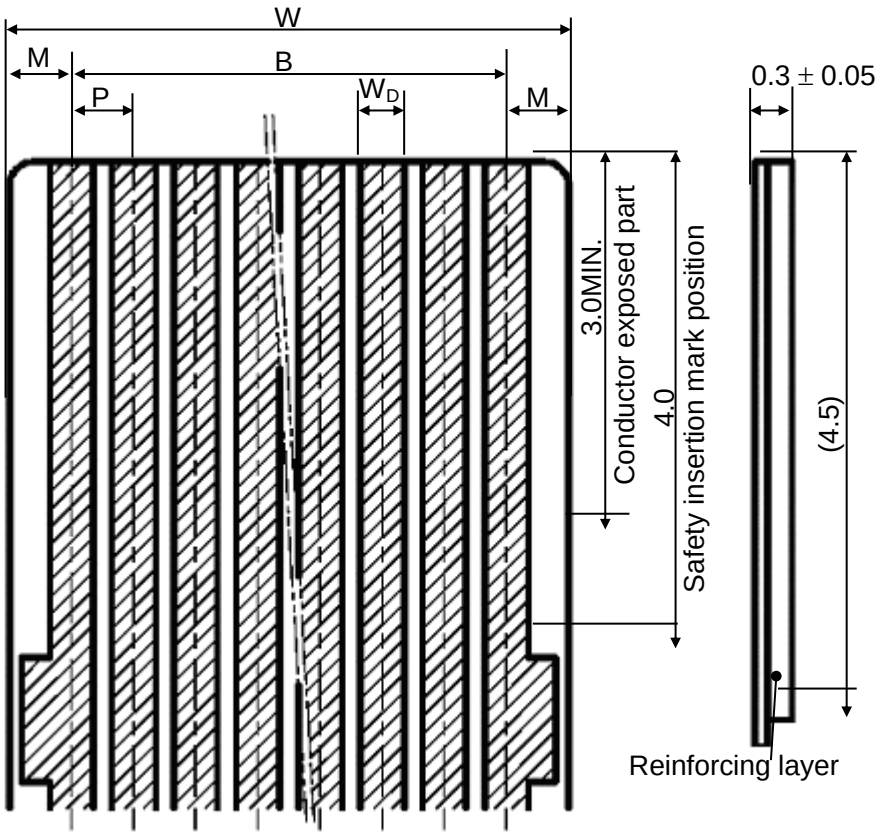
3. Applicable FPC

Item	Rated value	
Applicable FPC	Conductor:	Tin-plated (or Tin/lead alloy-plated) copper foil/ Gold-plated copper foil
	Conductor pitch:	0.5 mm
	Conductor width:	0.35 mm
	Mating part thickness:	0.3 ± 0.05 mm
	(See the attached drawing for details.)	

Note 1: Dimensions of FPC greatly affect to the contacting reliability with connector.
Conform the dimensions of FPC with those of applicable ones described in drawing.

Note 2: Especially, narrow pitch connector has a high possibility to come off from contact point due to warpage, deformation, slant insertion, insufficient insertion and so on of FPC.
In order to reduce these risks, manage that the important dimensions shall be satisfied with the given tolerances, considering the variations of those dimensions.

Note 3: Confirm the applicability of the connector with the FPC used, before use. FPC, which applicability is not confirmed, might not be able to guarantee the performance.



Dimension of applicable FPC (For reference)

	FPC
M	0.5 ± 0.1
P	0.5 ± 0.03
B	0.5 (N - 1) ± 0.03
W	0.5 (N + 1) ± 0.05
W_D	0.35 ± 0.04

N: Circuits

FPC construction

1.Base: Polyimide（25μm）
2.Copper foil: 35μm
3.Cover lay: Polyimide（25μm）
4.Reinforcing plate: Polyimide（188μm）
5.Adhesive area:
Thermosetting adhesives （45μm）
6.Plating: Tin/lead alloy-plated
Nickel-underplated gold-plated

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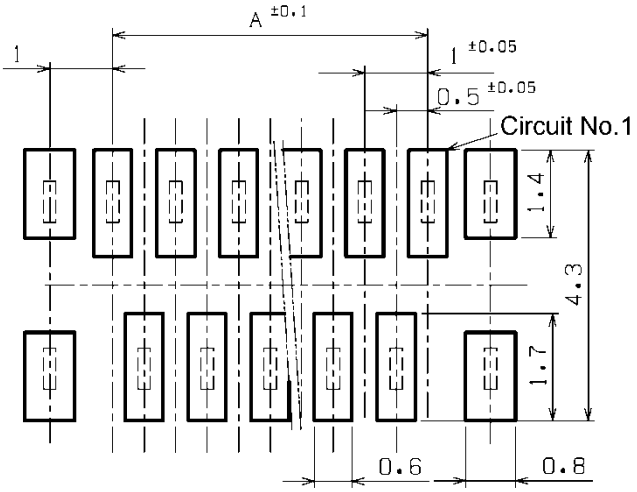
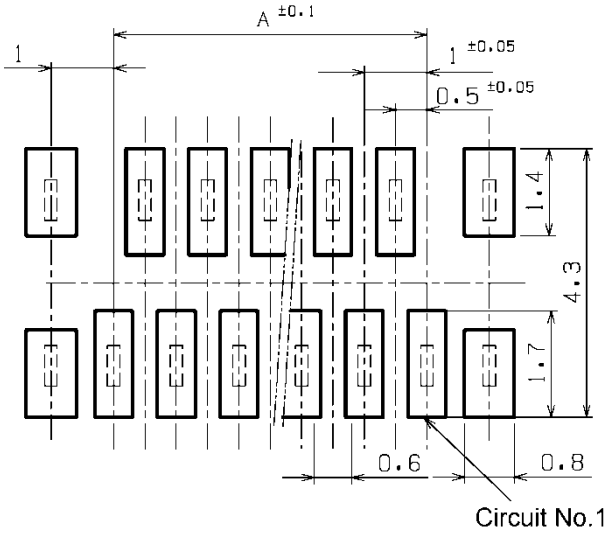
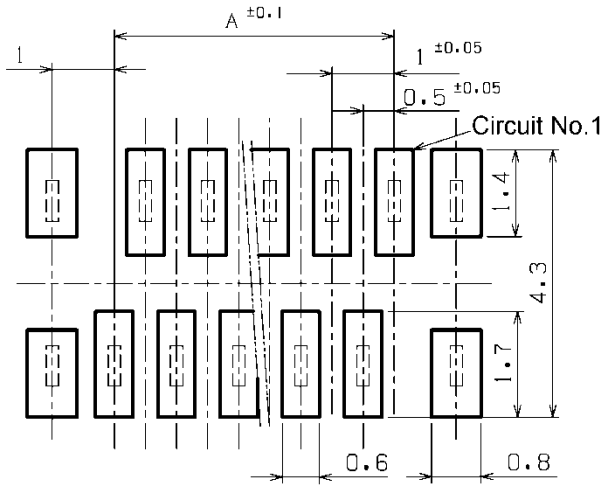
4. PC Board Pattern Layout



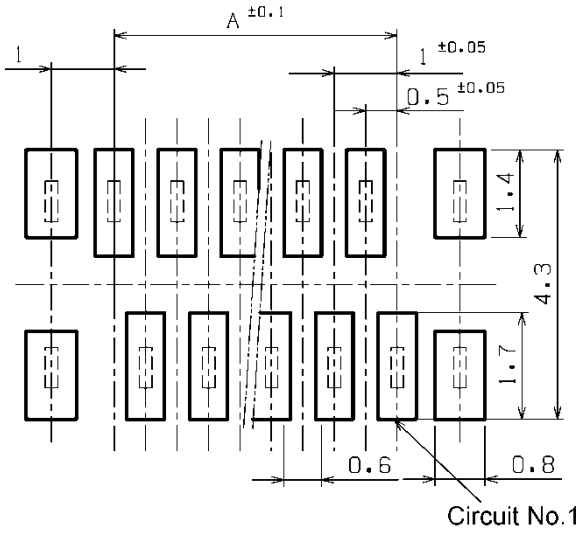
Odd number circuits



Odd number circuits



Even number circuits



Even number circuits

A=0.5 (N-1), N: Circuits

Normal type

Reverse type

5. Handling Precautions

5-1 Precautions for mounting connector on PC board

Pay careful attention to the following points for mounting connector on PC board.

5-1-1 Reflow soldering method

Soldering should be conducted at the temperature below the temperature profile shown in Product Specification as item of “Resistance to soldering heat”.
Though recommended reflow temperature condition varies depending on solder paste to be used, evaluate and find adequate condition before production.

Depending on the soldering condition, solder and flux wicking may occur on this connector.
Check no problem in customer soldering condition before the use.

When bridge trouble appears in process of reflow soldering and repair is conducted by hand, strictly conduct item 5-1-2 “Solder iron method.”

Following configuration of metal mask is recommended for mounting operation;

- Blanking part: same area as pad area on PC board
- Thickness: 0.10 to 0.15 mm

When metal mask more than 0.15 mm thickness is used, area of blanking part should be smaller than pad area on PC board, and amount of solder should be properly adjusted.

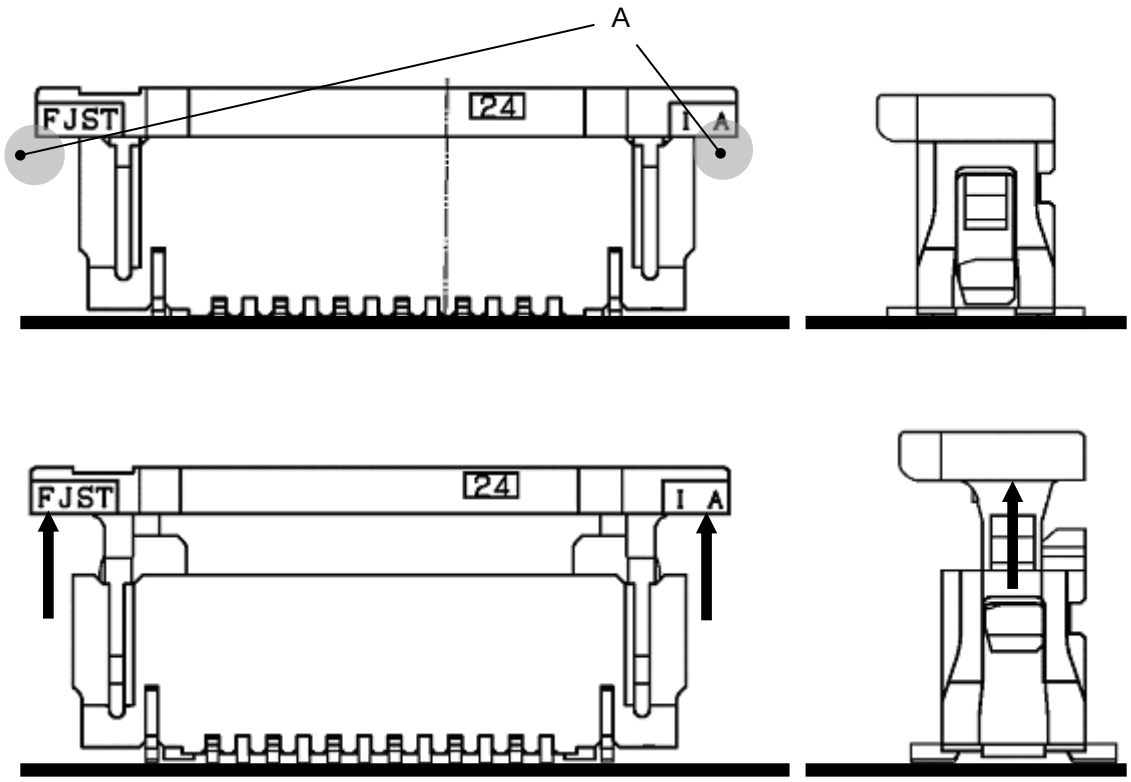
5-1-2 Solder iron method

When soldering or resoldering connector on PC board, use a soldering iron with temperature of 350°C at the tip of soldering iron quickly within 3 seconds.
Do not apply external force by pressing soldering iron tip on contact solder tail part.
If done, dismount and exchange connector.
Do not reuse dismounted connector.

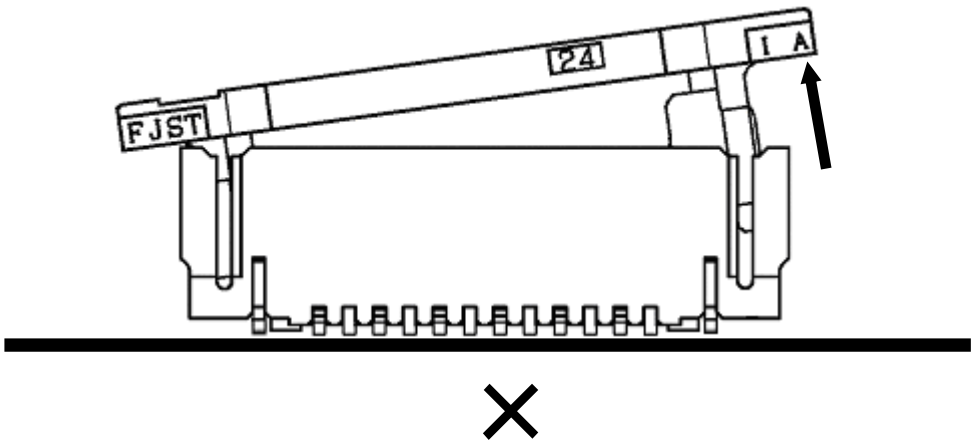
5-2 FPC inserting operation

5-2-1 Releasing slider

In case of manual operation

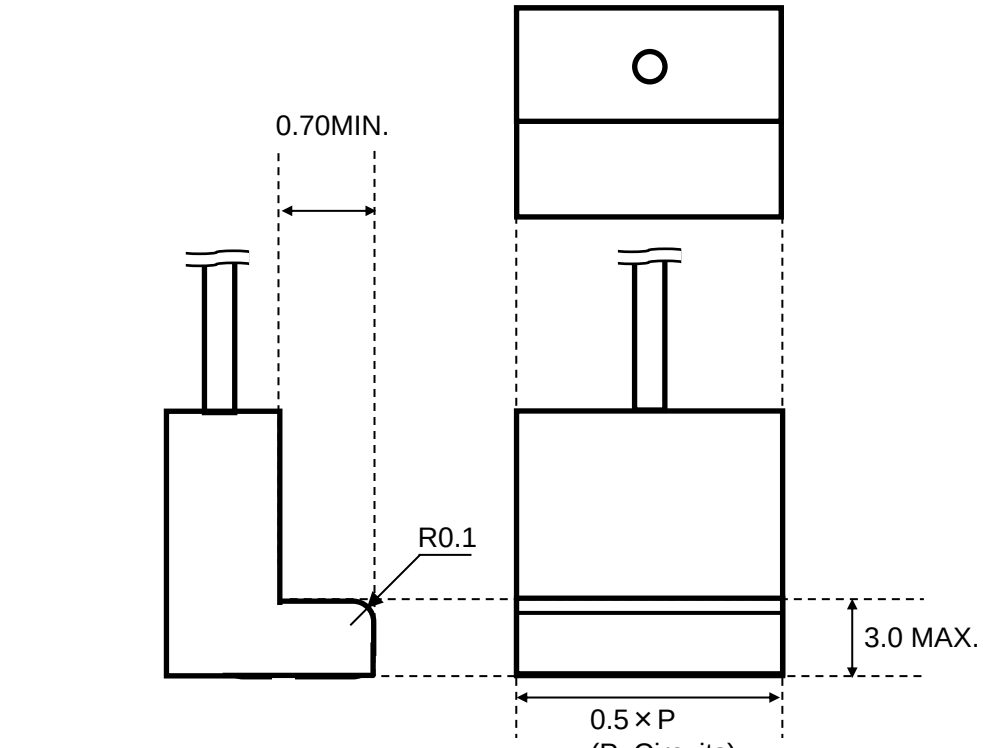


Hook “A” part of slider shown in the figure above and release slider straight with even force at both ends in the direction of the arrow.
When releasing slider, do not apply excessive force or release only one end of slider, because such handling may lead to breakage of connector.

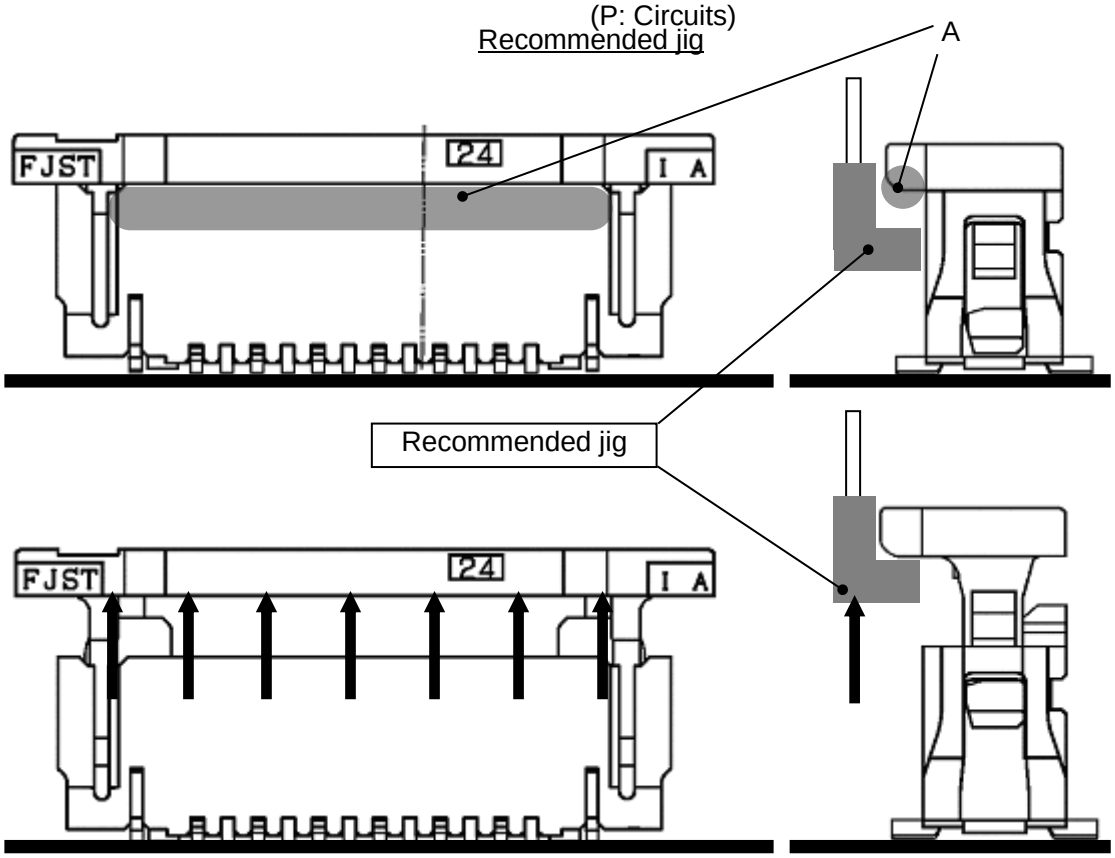


In case of using recommended jig

When releasing slider, jig as shown in the figure below is recommended.

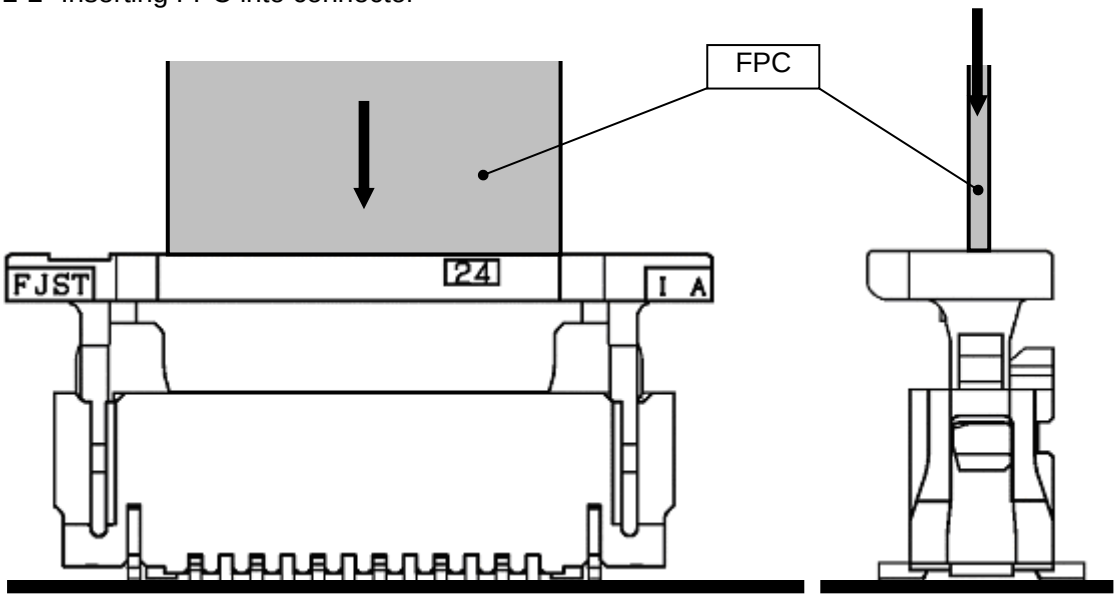


Recommended jig



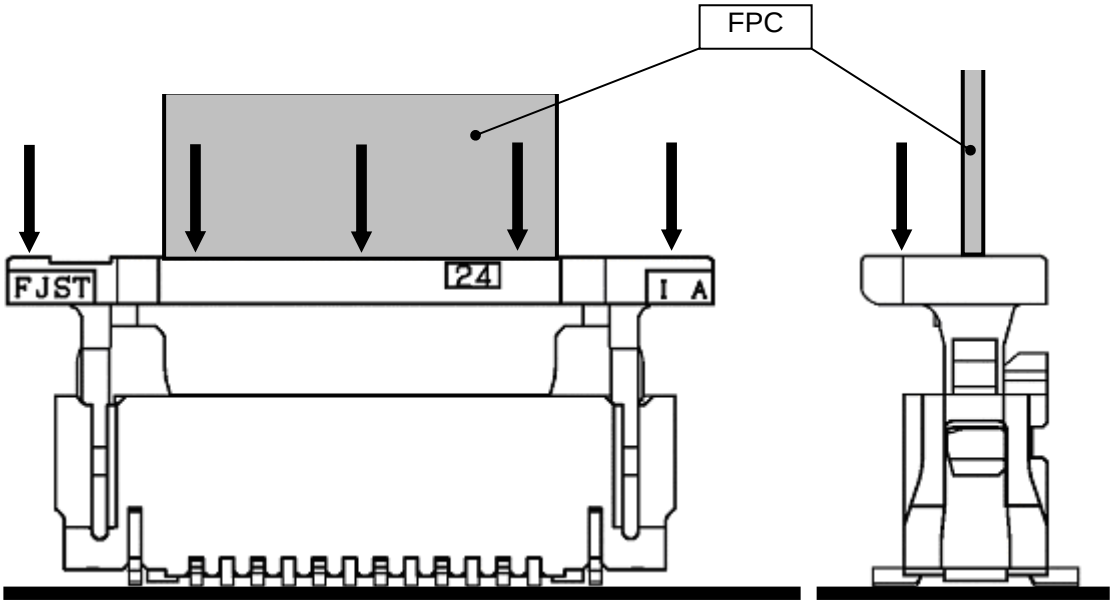
Hook “A” part of slider and release slider straight by using recommended jig.
When releasing slider, do not apply excessive force or release only one end of slider but release the whole of slider with even force, because such handling may lead to breakage of connector.

5-2-2 Inserting FPC into connector



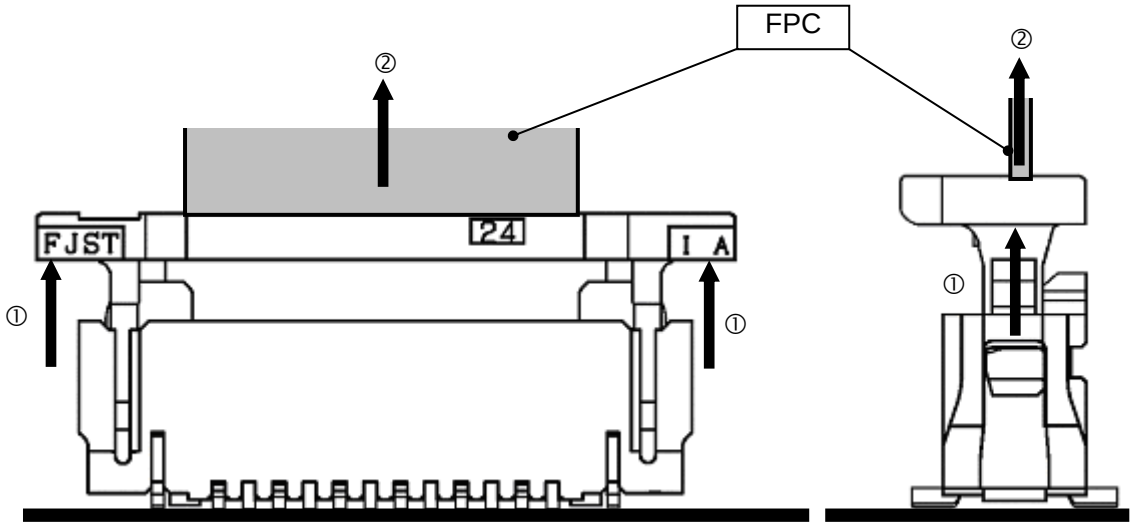
Insert FPC into connector up to backmost straight against m ting axis.
When FPC is inserted into connector, FPC may knock slider of connector and slider may be inserted together. In this case, FPC may have a possibility of insufficient inserting condition. In such a case when slider is inserted together at FPC insertion, release slider again and do it over to insert FPC into connector.

5-2-3 Fitting slider

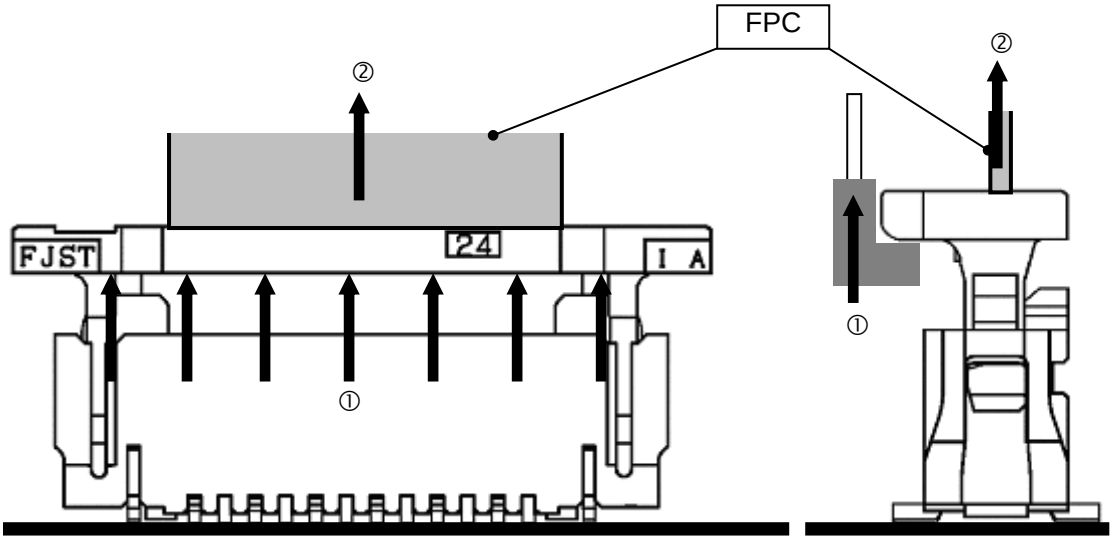


After checking that FPC is inserted up to backmost of conn ctor, press the whole of slider in connector straight with even force.
At this time, do not press in only one end of slider, but press in both ends of slider at once.

5-3 Releasing FPC



In the case of manual operation



In the case of using recommended jig

① Releasing slider

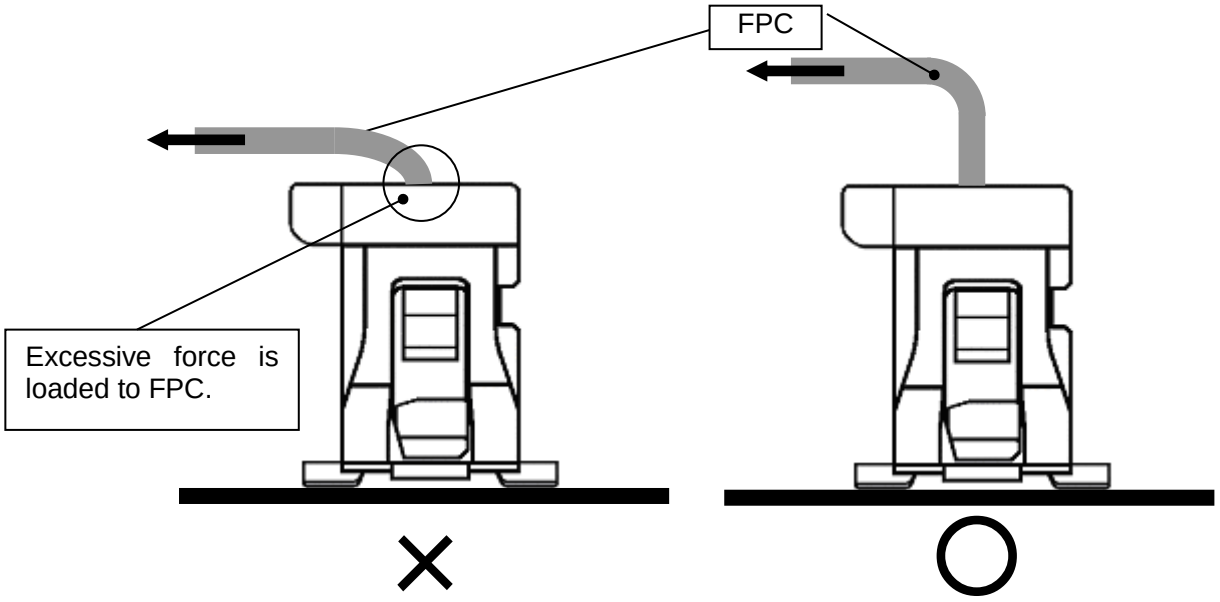
Release slider so as not to apply excessive force as mentioned in item 5-2-1.
When releasing slider, do not apply excessive force or do not pull out only one end of slider at once but pull out the whole of slider with even force, because such handling may lead to breakage of connector.

② Pulling out FPC

After releasing slider, pull out FPC straight on the same axis.
Do not pry FPC to pull out or pull out to lateral direction, because such handling may cause damage of FPC and breakage of connector.

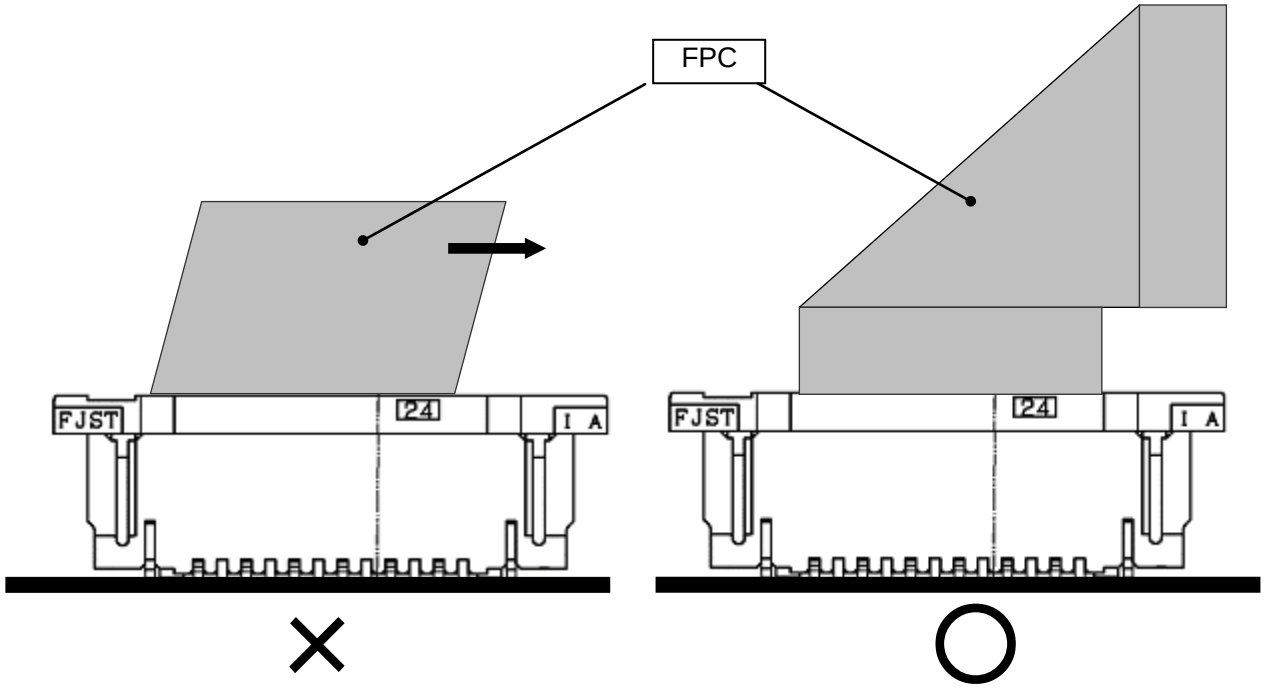
5-4 Handling of FPC after mounting connector on PC Board

When inserted FPC is handled, provide sufficient FPC length so that force is not loaded to FLZT connector, because such loading may cause damage and discontinuity of connector.



※ FPC length is not sufficient to handle.

※ FPC length is sufficient to handle.



※ Force is loaded to FPC.

※ Forming processing is conducted to FPC not so as to load force to connector.

5-5 Other precautions

① The parts that make up each part of this connector are designed very delicately. In slider operation and FPC mating operation, be sure to read aforementioned precautions before conducting operation.

② After inserting FPC into connector, do not pull out FPC with inserted slider or do not apply load to FPC, because such handling may cause breakage of FPC and connector or discontinuity of connector, etc.