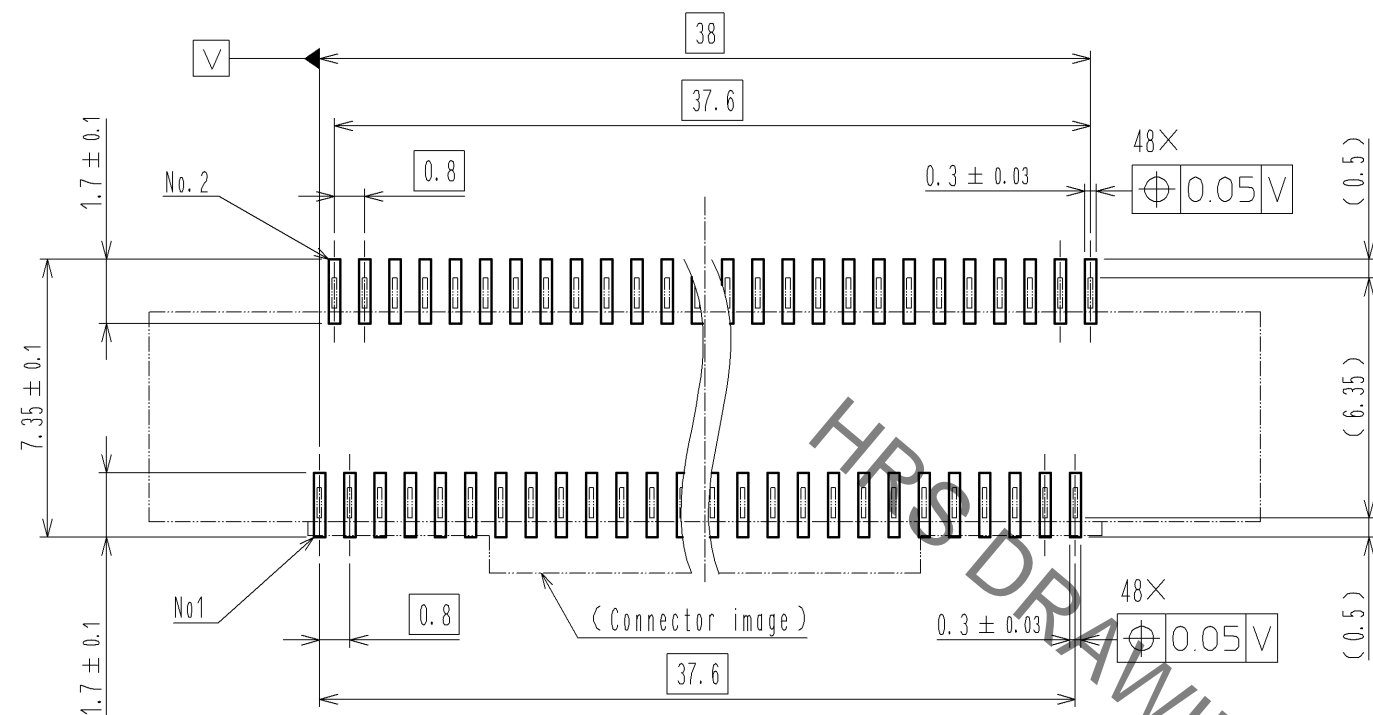


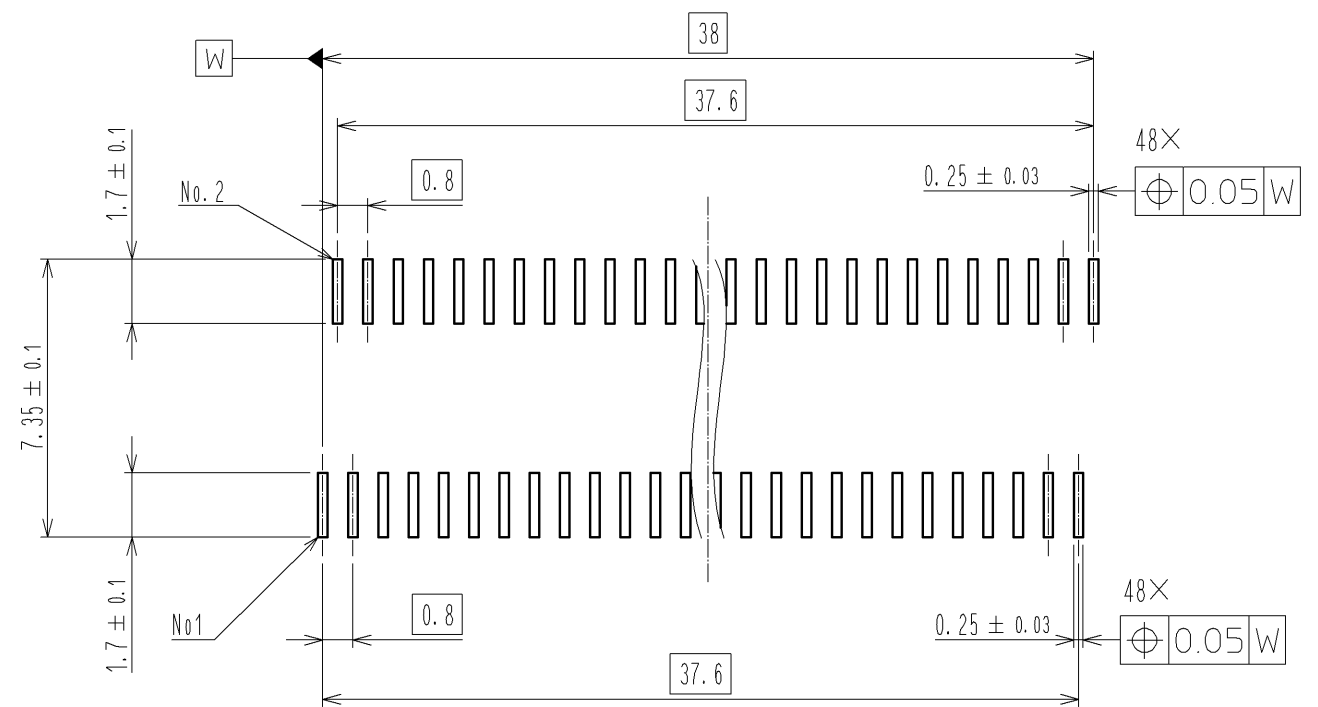


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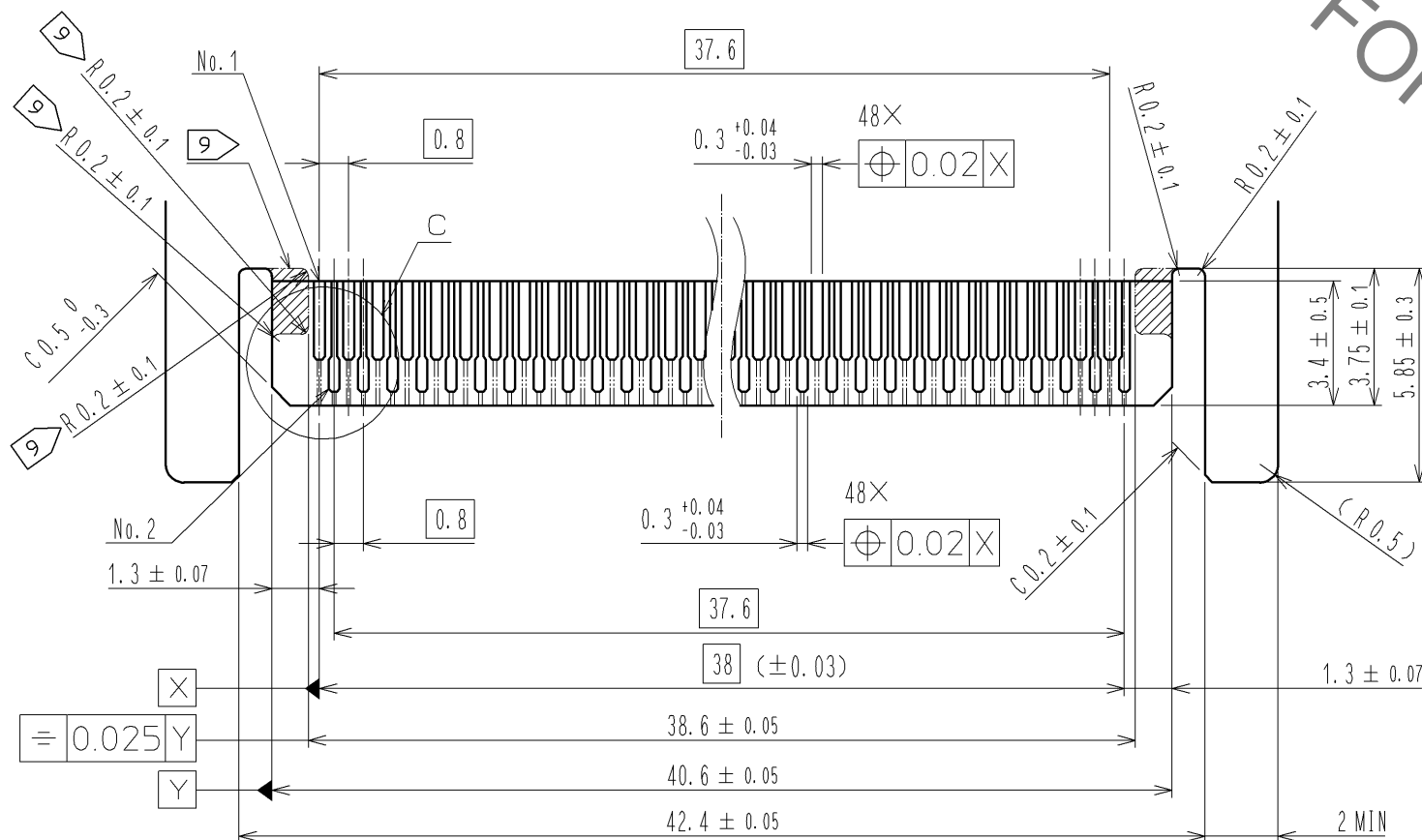
RECOMMENDED PCB MOUNTING PATTERN(5:1)



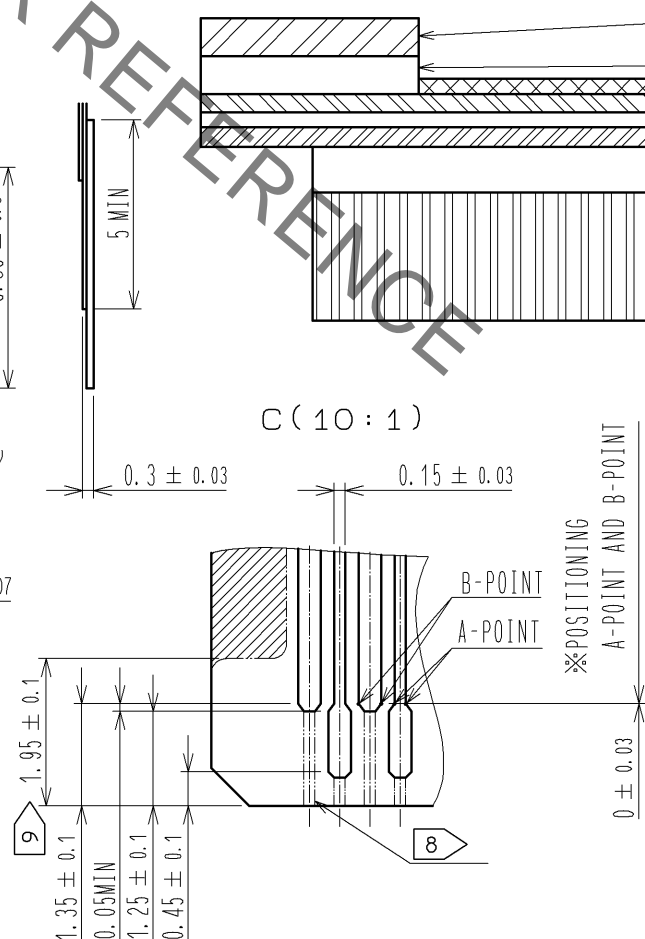
RECOMMENDED STENCIL PATTERN(5 : 1)  
(RECOMMENDED STENCIL THICKNESS : t=0.15)



RECOMMENDED FPC (5:1)



FPC CONFIGURATION (REFERENCE EXAMPLE) (SCALE:FREE)



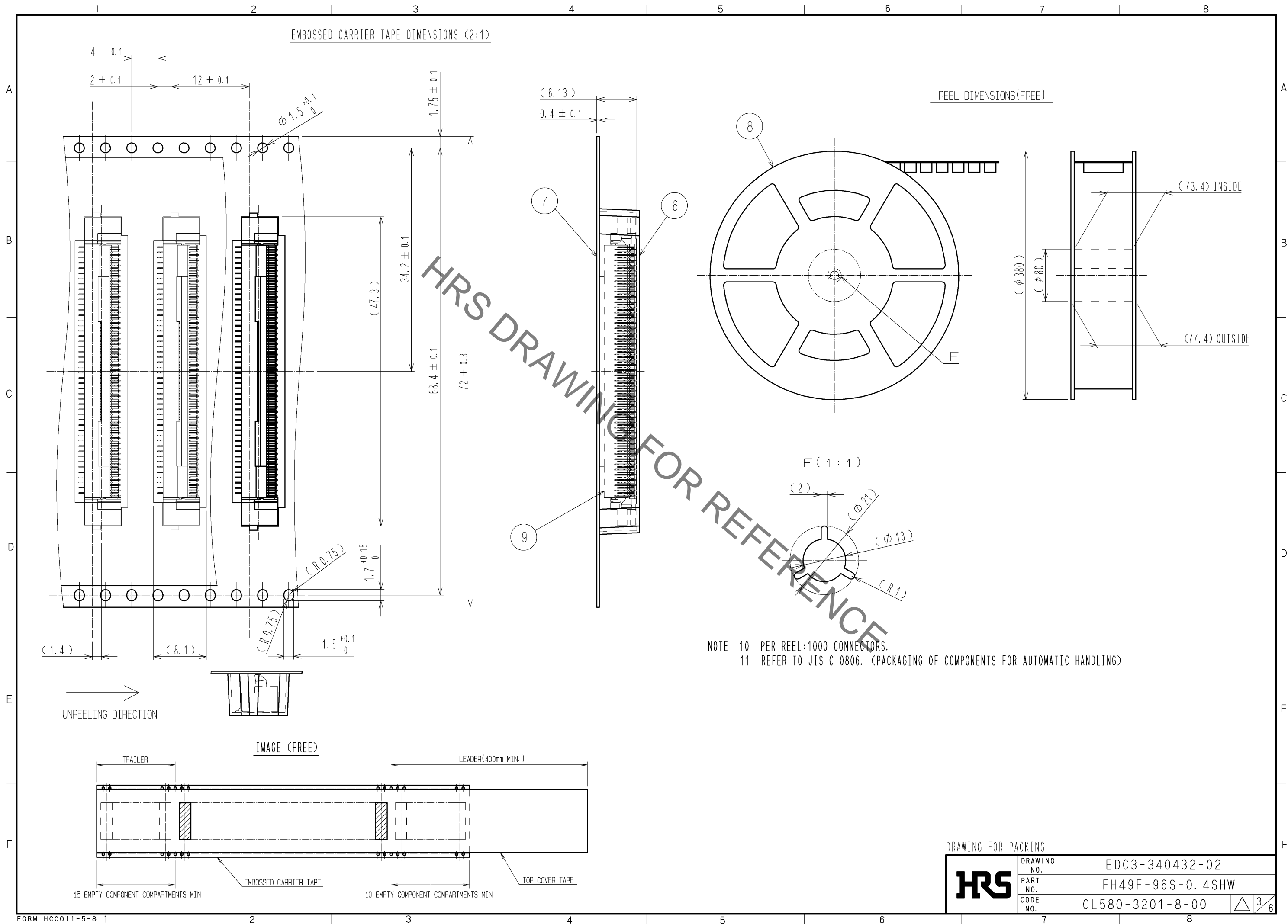
MATERIAL NAME	MATERIAL	THICKNESS(μm)
COVERING FILM LAYER	POLYIMIDE 1mil thick.	(25)
COVER ADHESIVE		(25)
SURFACE TREATMENT	Nickel undercoat 1 to 5μm + Gold plating 0.2μm	(5)
COPPER FOIL	Cu 1 oz	35
BASE ADHESIVE	HEAT-HARDENED ADHESIVE	25
BASE FILM	POLYIMIDE 1mil thick	25
REINFORCEMENT MATERIAL ADHESIVE	HEAT-HARDENED ADHESIVE	30
STIFFENER FILM	POLYIMIDE 7 mil thick	175

- NOTE 8 FOR ADDING PLATED LEAD, WIDTH SHALL BE 0.15±0.03mm.
- 9 THE RECOMMENDED FPC DESIGN FOR FH49F WITHOUT HATCHING AREA CAN BE USED FOR FH49. THE RECOMMENDED FPC DESIGN FOR FH49 CAN BE USED FOR FH49F WITHOUT ANY CHANGE.

HR5

DRAWING NO.	EDC3-340432-02
PART NO.	FH49F-96S-0.4SHW
CODE NO.	CL580-3201-8-00

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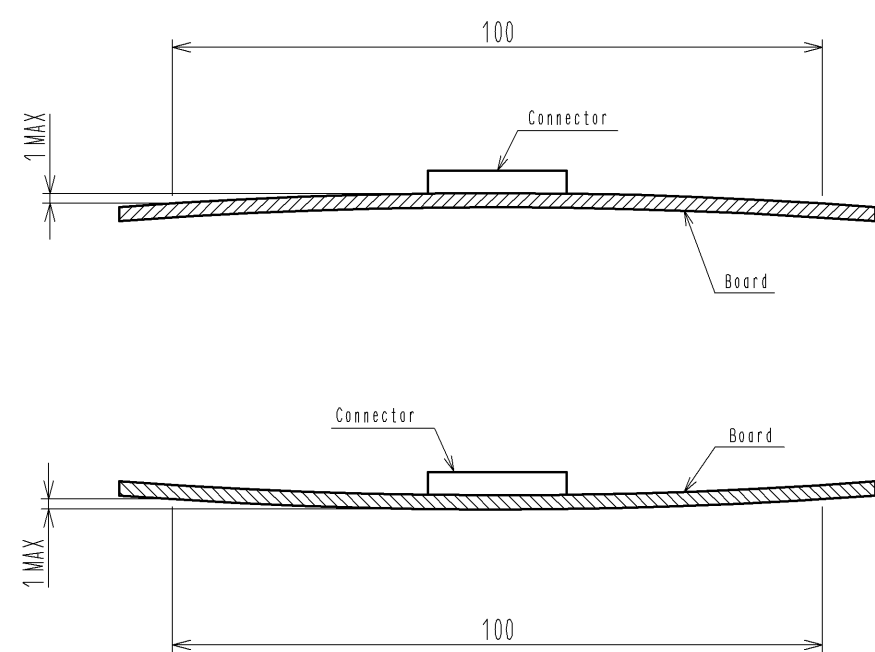
This connector requires careful handling.  
Follow recommendations given below.  
The numerical values shown are not part of the connector specification.

[INSTRUCTIONS FOR MOUNTING ON THE BOARD]

- ◆Warp of Board  
Minimize warp of the board as much as possible.  
Lead co-planarity is 0.1 mm or less.  
Too much warp of the board may result in a soldering failure.
- ◆Flexible board design  
Please make sure to put a stiffener on the backside of the flexible board.  
We recommend a glass epoxy material with the thickness of 0.3mm MIN.
- ◆Load to Connector  
Do not add 1N or greater external force when unreel or pick and place the connector etc.  
or it may get broken.  
In addition, do not insert the FPC or operate the connector before mounting it.

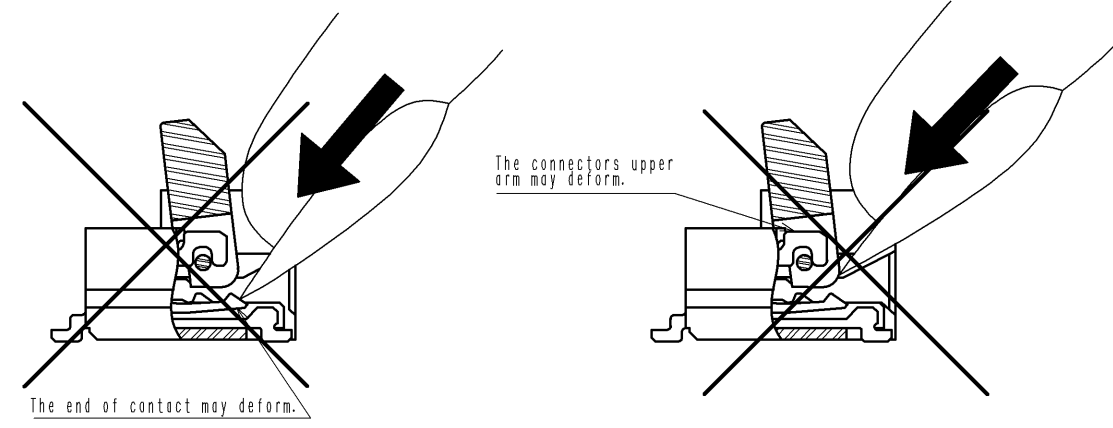
[INSTRUCTIONS FOR PCB HANDLING AFTER MOUNTING THE CONNECTOR]

- ◆Load to Board
  - Splitting a large board into several pieces
  - Screwing the boardAvoid the handling described above so that no force is exerted on the board during the assembly process.  
Otherwise, the connector may become defective.
- ◆Amount of Warp  
The warp of a 100 mm wide board should be 1 mm or less.  
The warp of board suffers stress on connector and the connector may become defective.

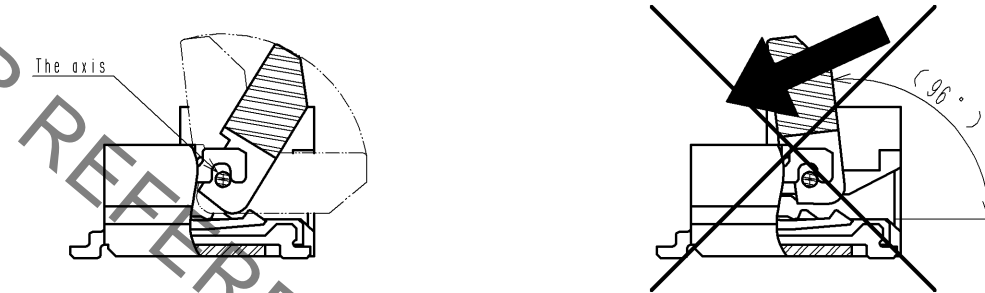


[INSERTION OF THE FPC AND ROCK]

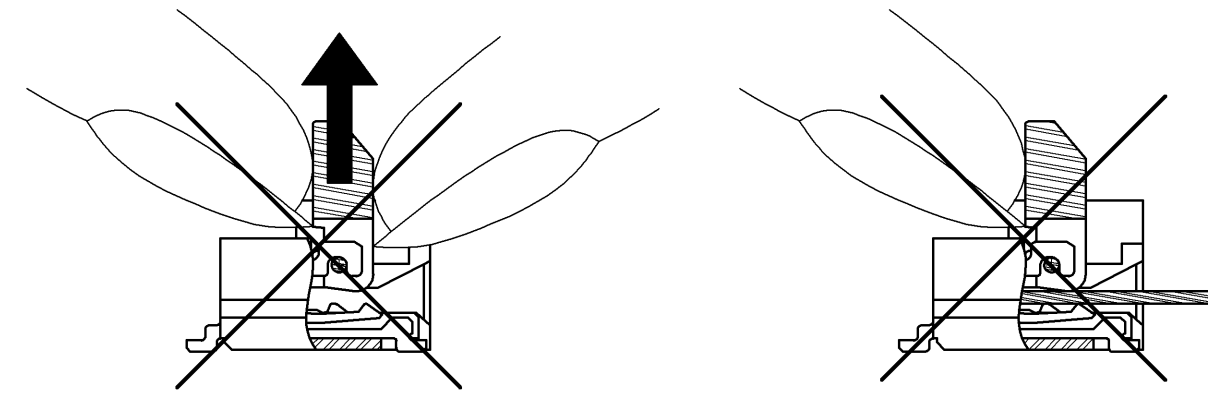
- ◆Use of the actuator  
When using fingernails to use the actuator exercise caution NOT to damage or deform the contacts.



The actuator is designed to rotate on its axis as shown in the figure below.  
Make sure to use rotating motion when operating it.  
The actuator is designed to open 96 degrees max.  
Do not push it back further than this.  
This may deform contacts, break-off the actuator or damage the connector.



Operate the actuator only as instructed.  
Do not attempt to dislodge the open actuator as shown below.



<ADDITIONAL RECOMMENDATIONS 1>

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◆Contact point orientation

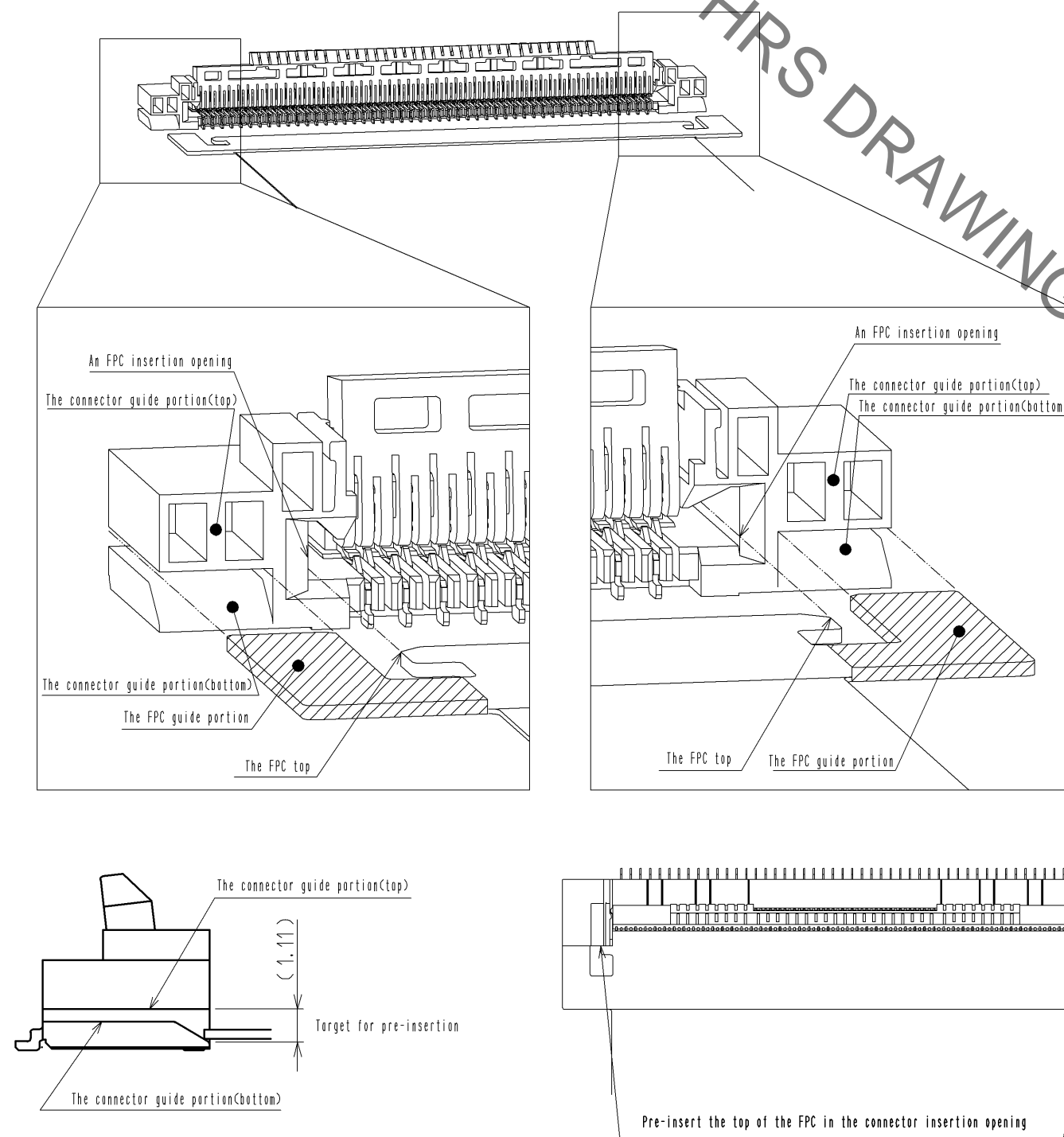
This is a bottom contact point connector.

FPC must be inserted with the exposed contact surfaces facing down.

◆Insertion of FPC

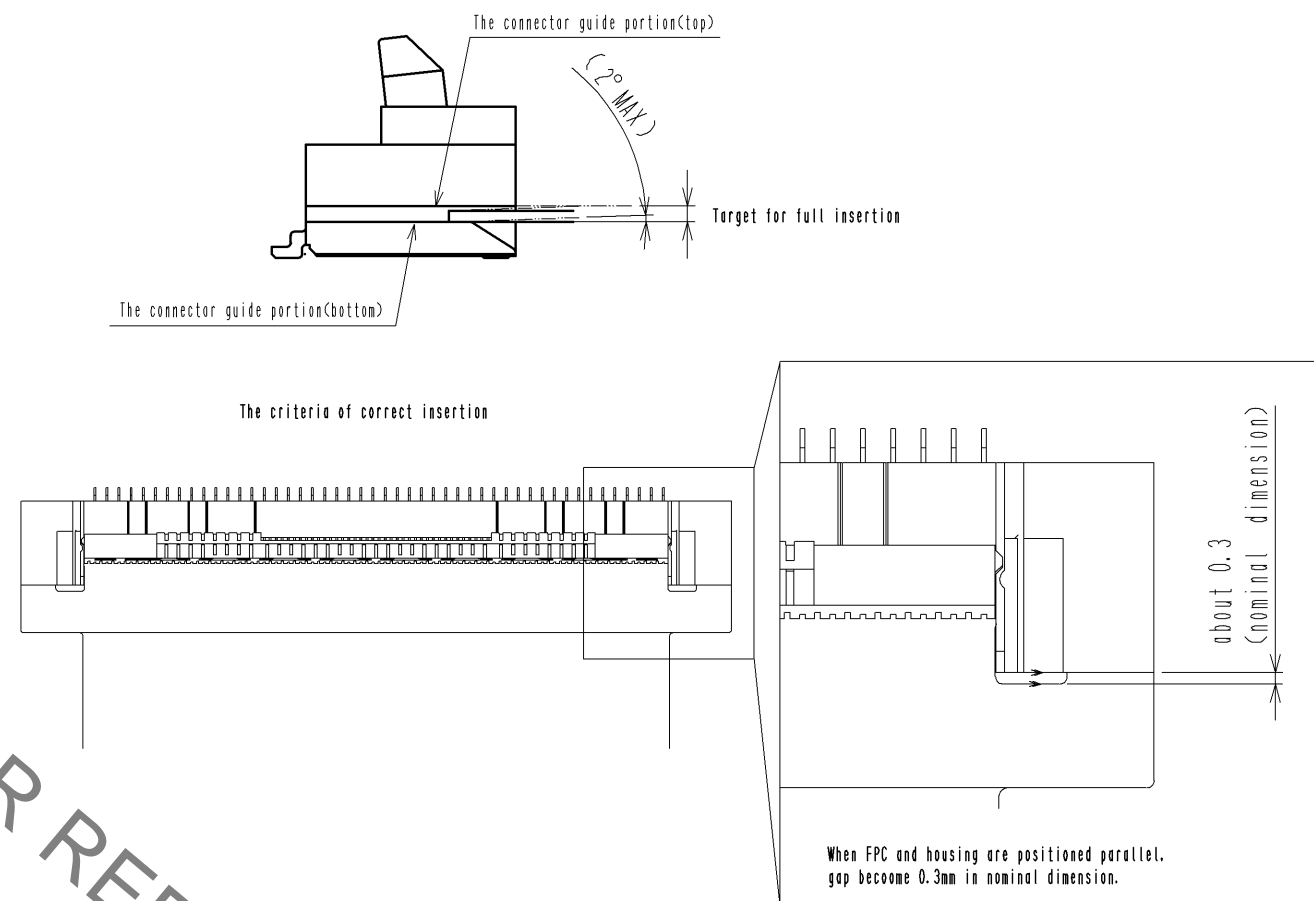
① Pre-insertion

Position the FPC with the actuator fully open, horizontalize the FPC guide portion and insert into the gap of top and bottom connector guide portions, until the FPC top is inserted to the FPC insertion opening.

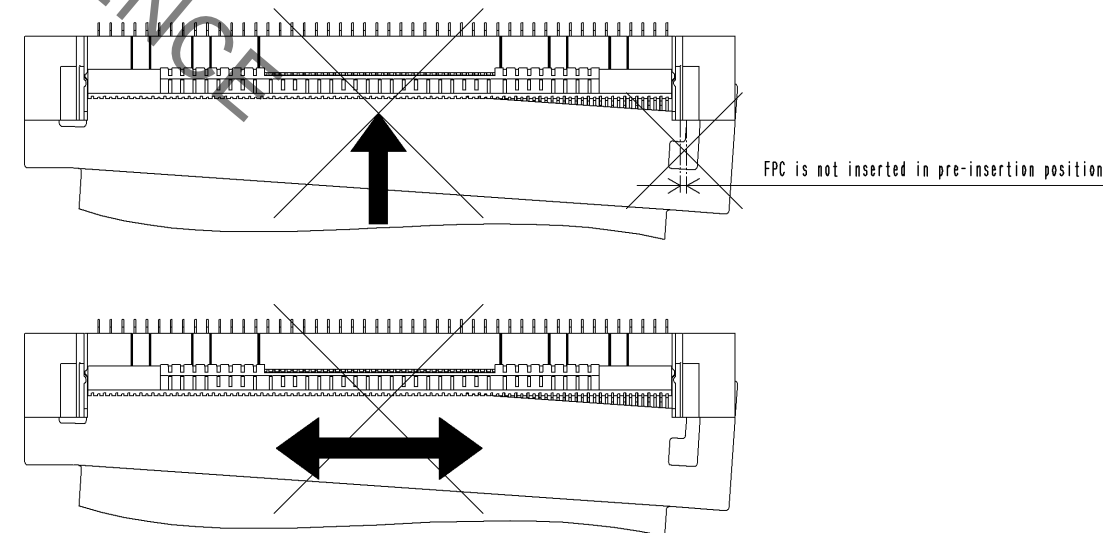


② Full insertion

After FPC tops are inserted to FPC opening, insert the FPC in the connector opening, targeting gap of top and bottom connector guide portions, parallel to the PCB and vertical to FPC insertion opening, until the FPC end reaches to the opening end. Make sure not to bend the FPC during insertion.

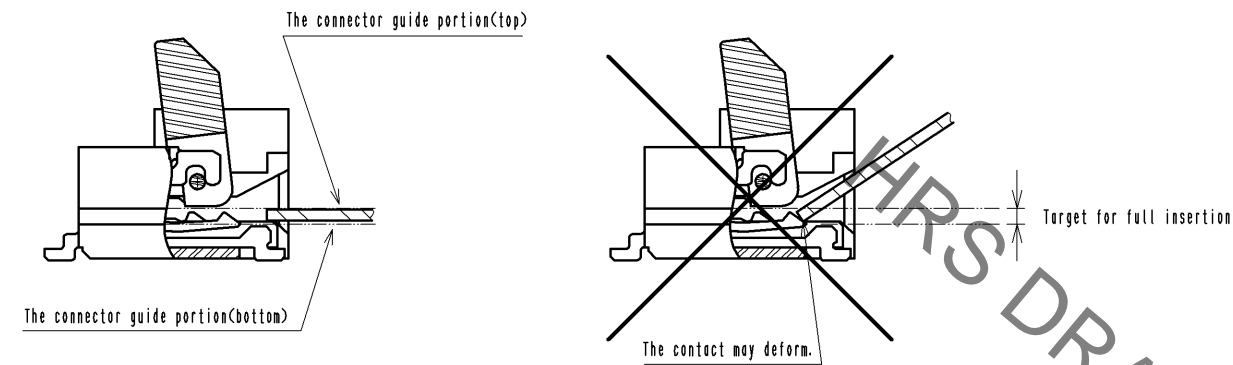


Do not move the FPC to the side direction when above operation is not achieved.  
Remove the FPC at first, confirm there is no damage on the FPC and connector, and then start the insertion operation from the beginning.

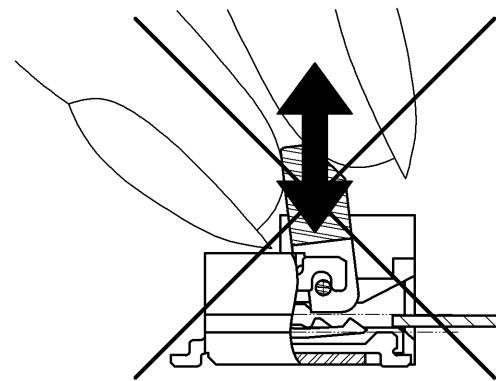


Do not insert the FPC off the specified angle for full FPC insertion, as this may cause contact deformation and/or FPC damage by FPC end nocking the contacts.  
Also, this may cause pattern breakage by FPC bent and/or conduction failure by insufficient insertion.

- ※Keep a sufficient FPC insertion space in the stage of the layout in order to avoid incorrect FPC insertion.  
Besides, it is not difficult to insert FPC correctly all the way to the end.  
Design the proper layout of parts.
- ※Make adjustments with the FPC manufacturer for FPC bending performance and wire breakage.

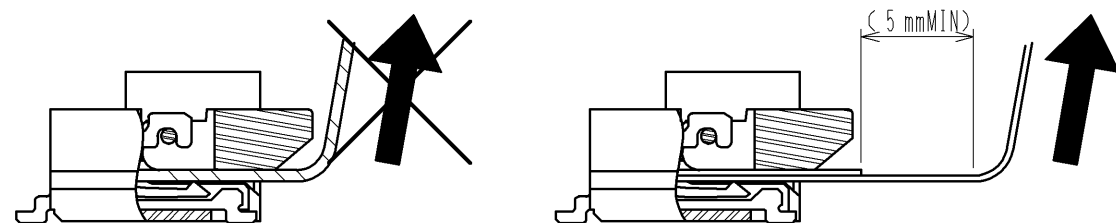


Do not apply force to the actuator during FPC full insertion procedure.  
FPC insertion could become stiff and/or difficult for wiping.



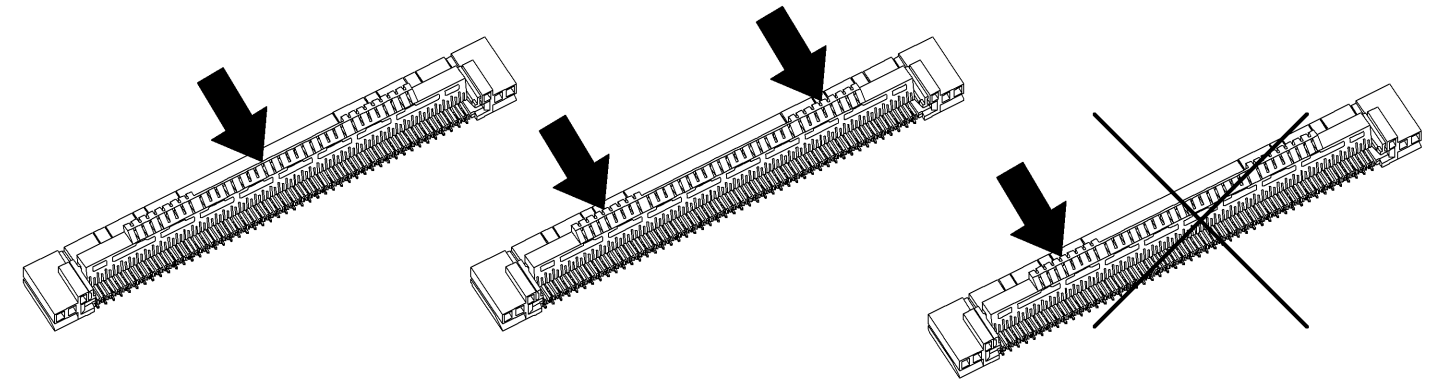
#### [INSTRUCTIONS ON FPC LAYOUT AFTER CONNECTION]

- ◆ Load to FPC  
Be very careful not to apply any force to the FPC after inserting it.  
Otherwise, the connector may become unlocked or the FPC may break.  
Fix the FPC, in particular, when loads are applied to it continuously.  
Design the FPC layout with care not to bend it sharply near the insertion opening.  
Please take 5mm MIN from the reinforcement taping.



#### [Instructions on removing FPC]

- ◆ Do not apply forces only at one end(right figure below) as this may cause damage to the actuator.



- ◆ Release the actuator to remove the FPC.

Figure of released the actuator

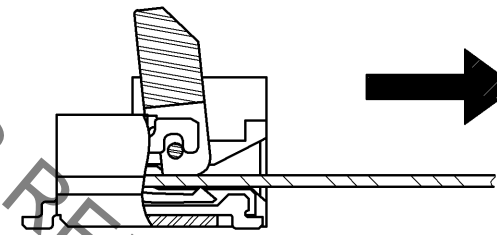
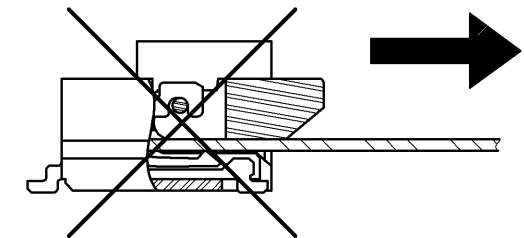


Figure of locked the actuator



#### [Other recommendations]

- ◆ Manual soldering
  1. Do not perform soldering operations with the FPC inserted in the connector.
  2. The soldering iron must contact only the terminals.  
Do not touch any other part of the connector with the soldering iron.
  3. Do not apply excessive solder (or flux).  
If excessive solder (or flux) is applied on the terminals, solder (or flux) may adhere to the contacts or rotating parts of the actuator resulting in the poor contact or rotation failure of the actuator.

<ADDITIONAL RECOMMENDATIONS 3>

**HRS**

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