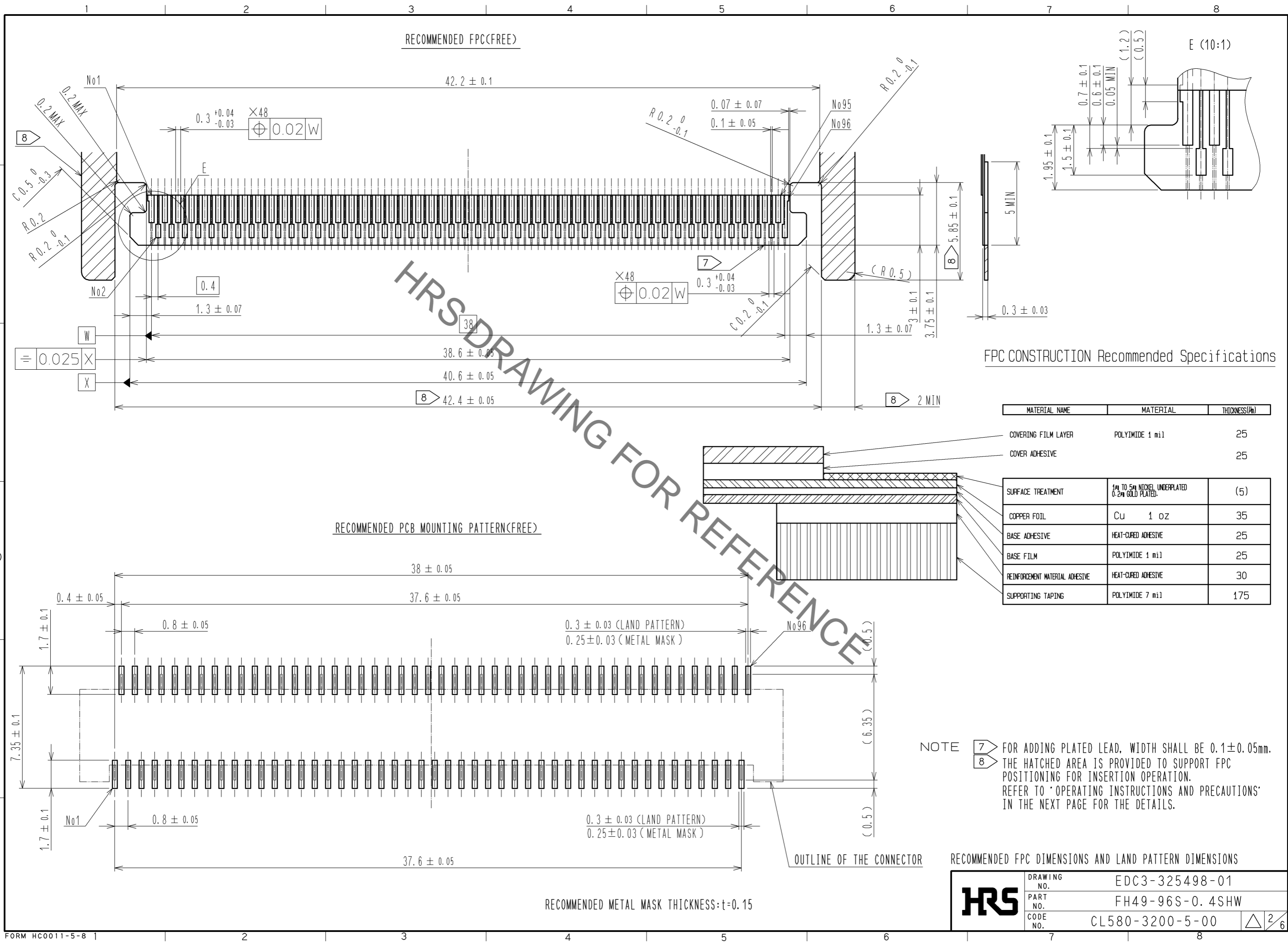




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HRS DRAWING FOR REFERENCE

FPC CONSTRUCTION Recommended Specifications

MATERIAL NAME	MATERIAL	THICKNESS(μm)
COVERING FILM LAYER	POLYIMIDE 1 mil	25
COVER ADHESIVE		25
SURFACE TREATMENT	1μ TO 5μ NICKEL UNDERPLATED 0.2μ GOLD PLATED.	(5)
COPPER FOIL	Cu 1 oz	35
BASE ADHESIVE	HEAT-CURED ADHESIVE	25
BASE FILM	POLYIMIDE 1 mil	25
REINFORCEMENT MATERIAL ADHESIVE	HEAT-CURED ADHESIVE	30
SUPPORTING TAPING	POLYIMIDE 7 mil	175

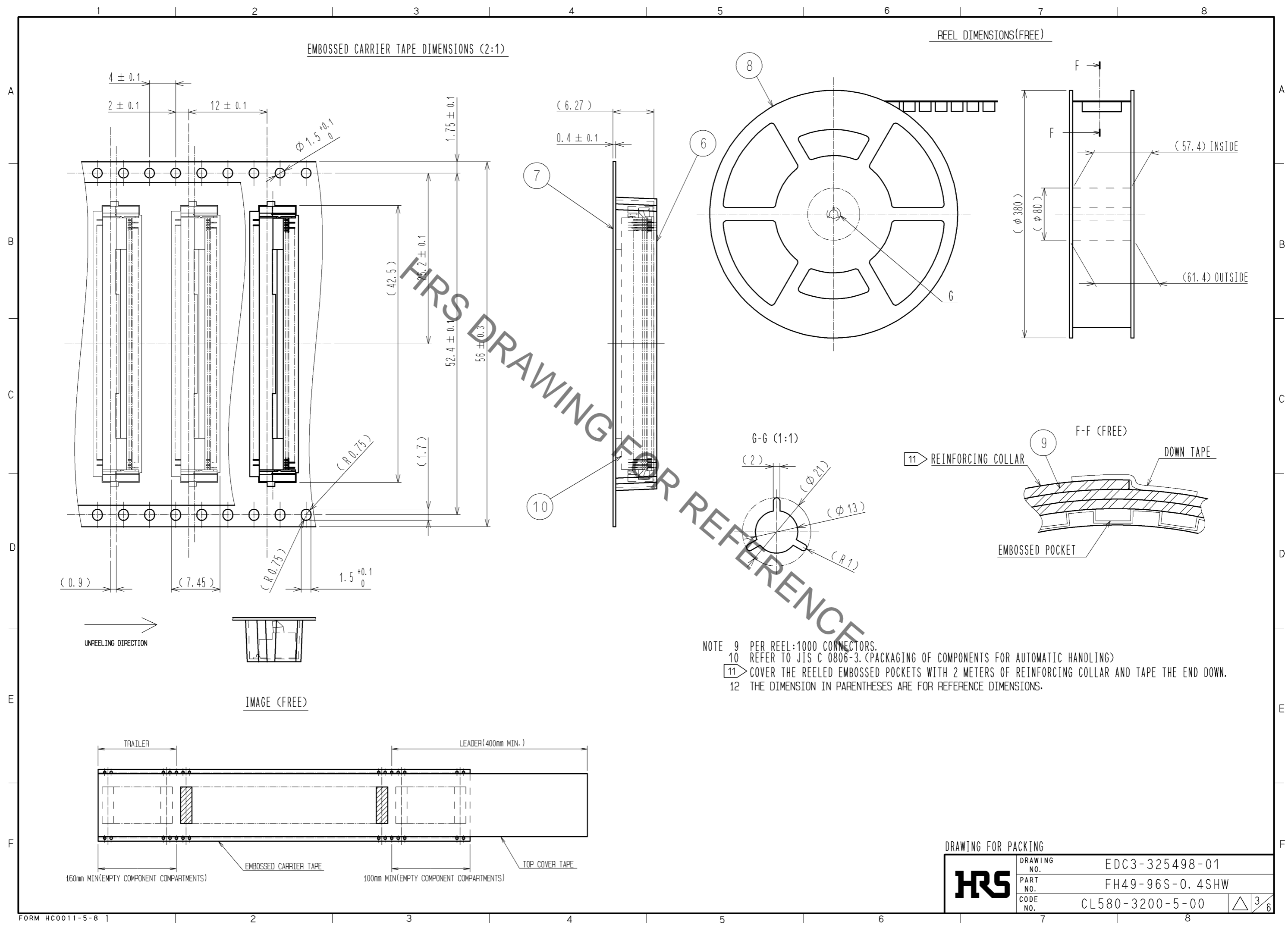
NOTE 7 FOR ADDING PLATED LEAD, WIDTH SHALL BE 0.1±0.05mm.  
8 THE HATCHED AREA IS PROVIDED TO SUPPORT FPC POSITIONING FOR INSERTION OPERATION.  
 REFER TO 'OPERATING INSTRUCTIONS AND PRECAUTIONS' IN THE NEXT PAGE FOR THE DETAILS.

RECOMMENDED FPC DIMENSIONS AND LAND PATTERN DIMENSIONS

<b>HRS</b>	DRAWING NO.	EDC3-325498-01
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RECOMMENDED METAL MASK THICKNESS:t=0.15

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DRAWING FOR PACKING

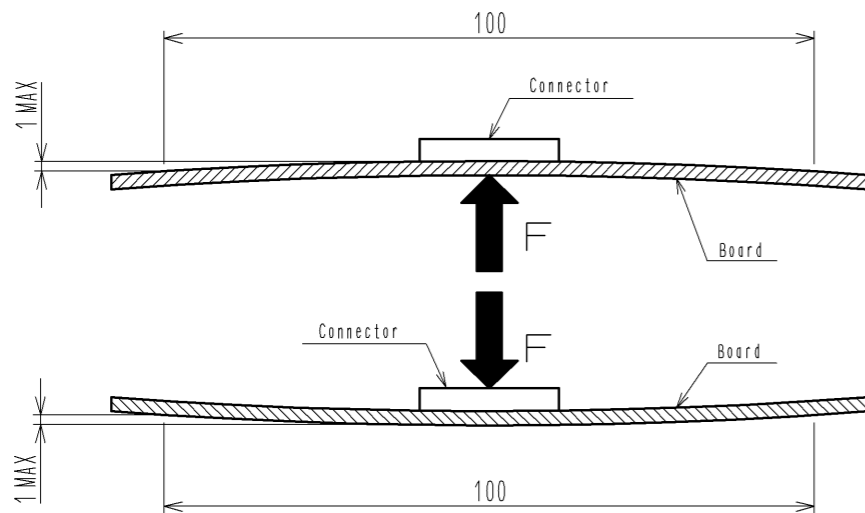
<b>HRS</b>	DRAWING NO.	EDC3-325498-01
	PART NO.	FH49-96S-0.4SHW
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This connector requires careful handling.  
 Follow recommendations given below.  
 The numerical values shown are not part of the connector specification.

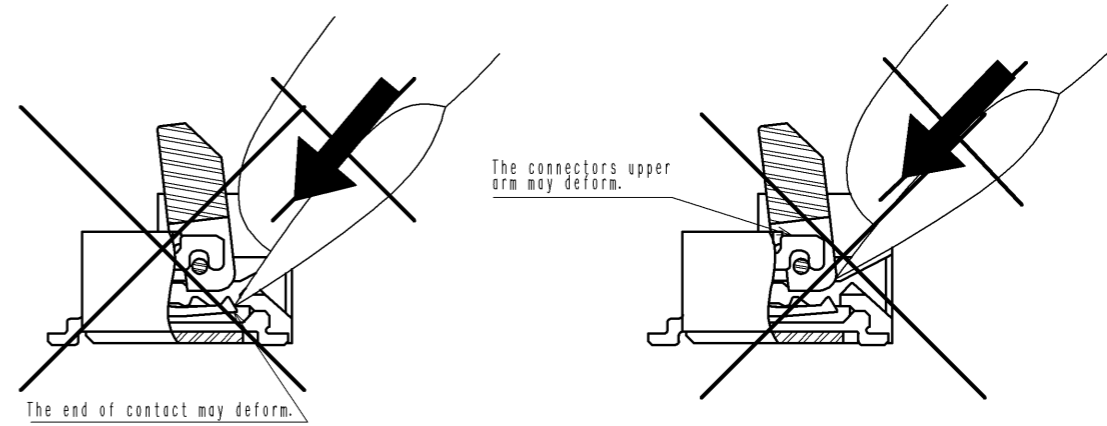
[MOUNTING ON THE PCB]

- ◆Warp of Board  
 Minimize warp of the board as much as possible.  
 Lead co-planarity is 0.1 mm max.  
 Excessive warp of the board may result in solder joint failures.
- ◆ Forces on the connector  
 Do not apply a force of 1 N or more to the connector before mounting it on the board.  
 Do not insert the FPC or operate the connector before mounting it on the board.
- ◆ Forces on the board  
 When breaking-up large board into smaller one exercise caution a NOT to apply forces to the mounted connectors.  
 When mounting the boards in the device with the screws exercise caution as NOT to apply forces to the mounted connectors.
- ◆ Bending of the board  
 The bend of the 100 mm wide board should be 1 mm or less(as shown below).  
 Excessive bending of the board may cause malfunction or damage of the connector.

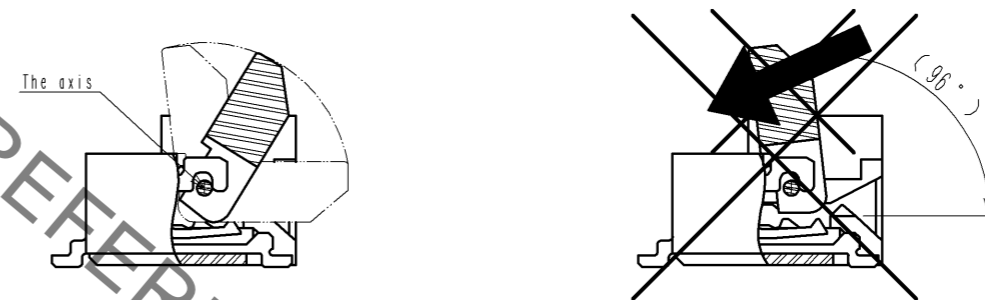


[INSERTION OF THE FPC AND ROCK]

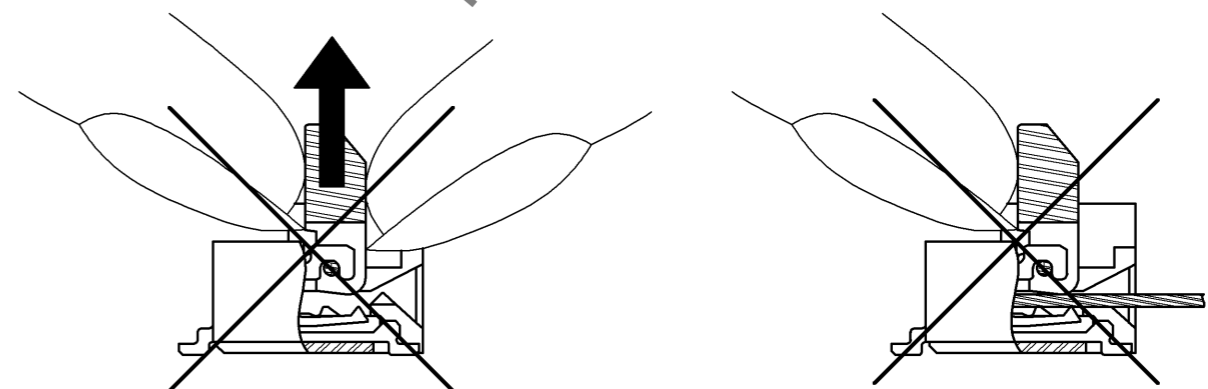
- ◆Use of the actuator  
 When using fingernails to use the actuator exercise caution NOT to damage or deform the contacts.



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

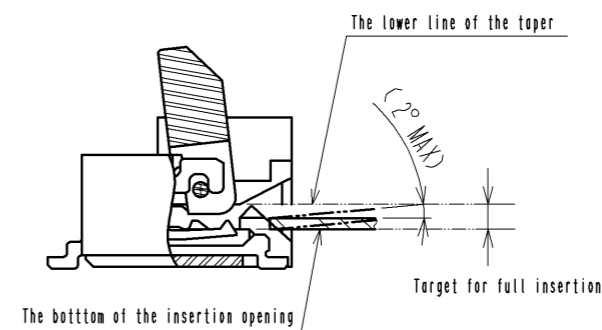
① Pre-insertion

Position the FPC with the actuator fully open, aligning the both FPC ends to connector taper until the FPC end is inserted to the FPC insertion opening.

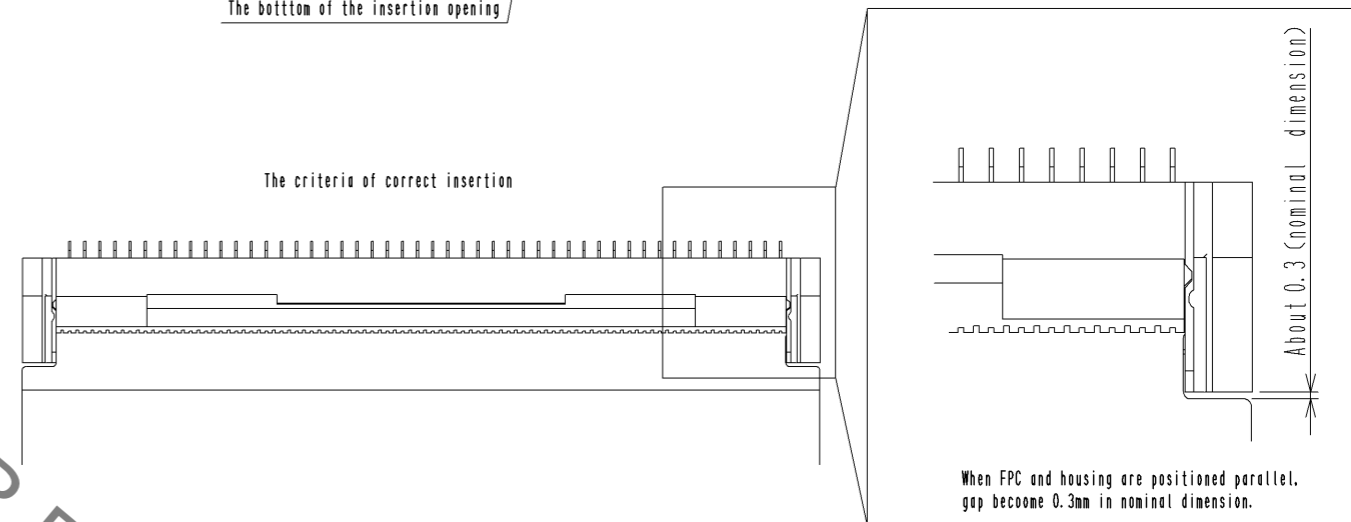
※ If operation or routing condition does not allow straight insertion, optional FPC guide could prevent angled FPC insertion.  
(Refer to the FPC dimensions on page 2 for the details.)

② Full insertion

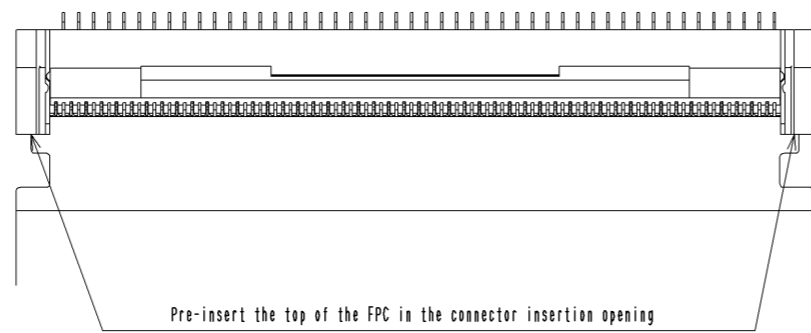
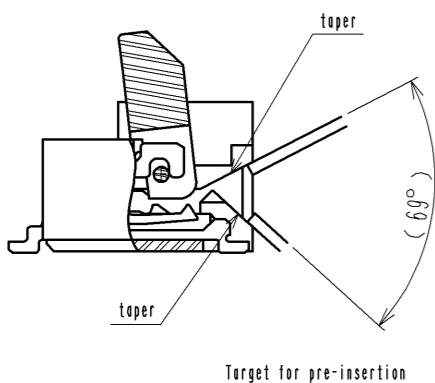
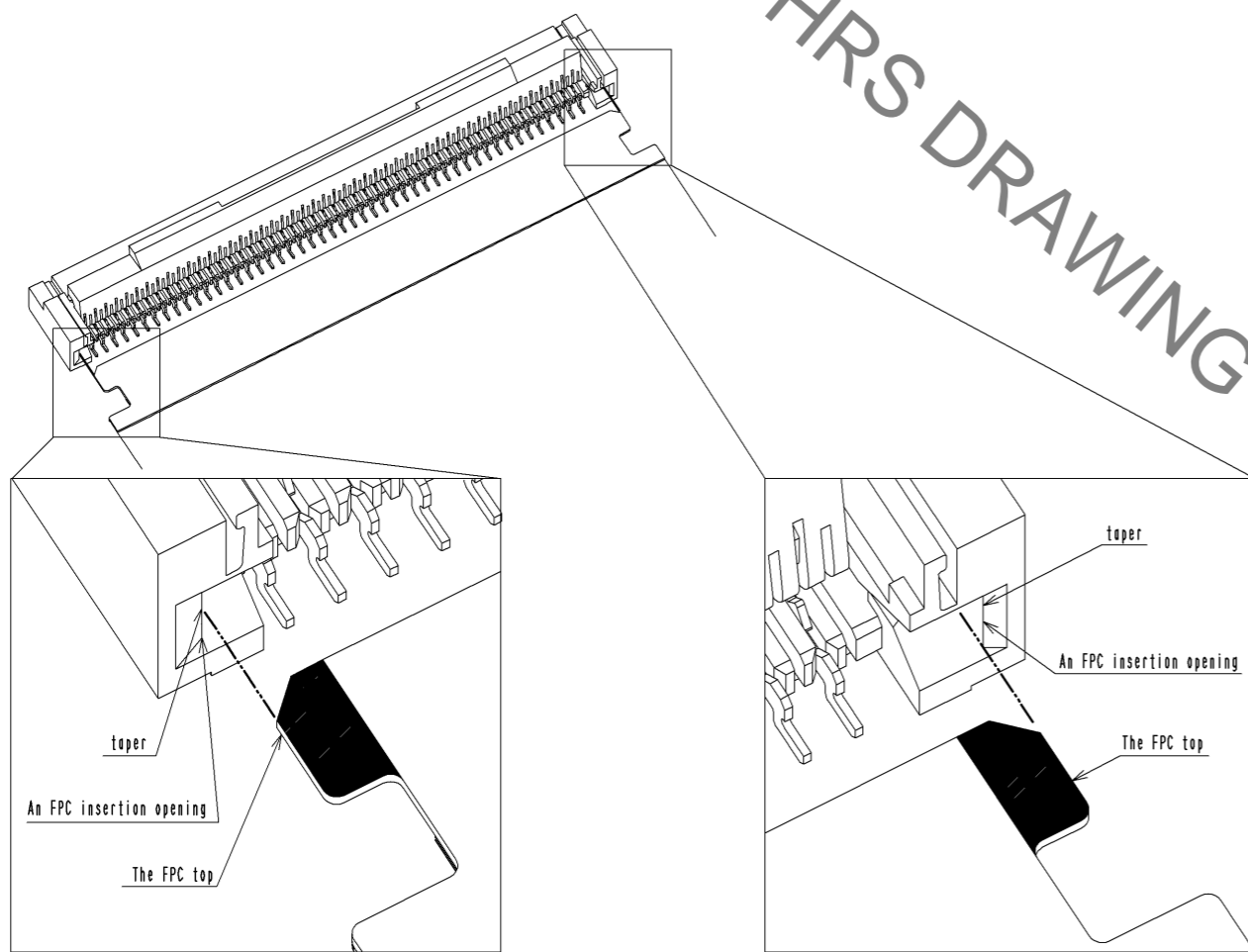
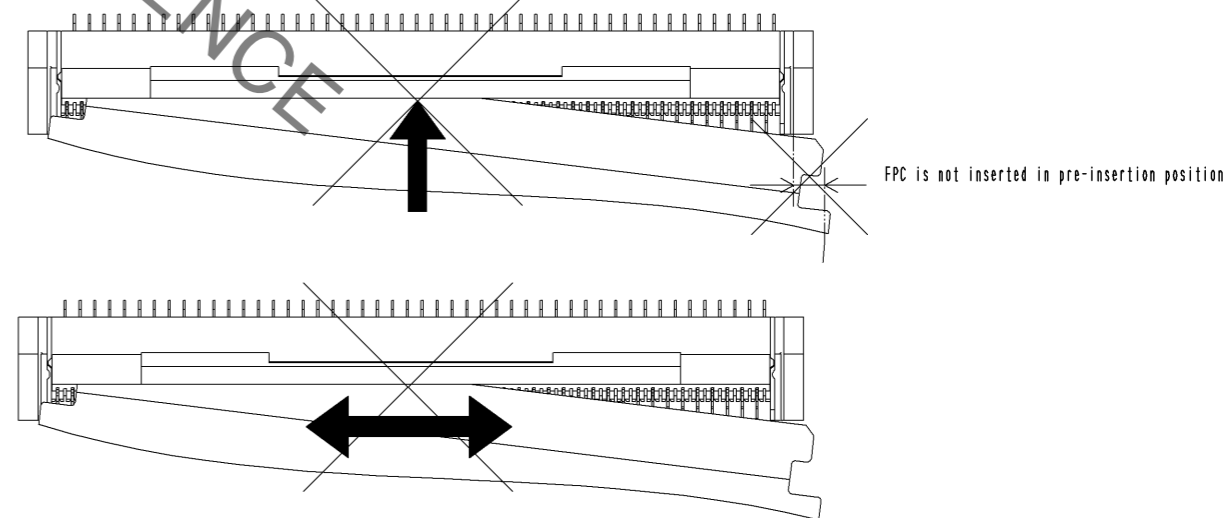
After FPC tops are inserted to FPC opening, insert the FPC in the connector opening, targeting between the lower line of the taper and the bottom of the insertion opening, parallel to the PCB and vertical to FPC insertion opening, until the FPC end reaches to the opening end. Make sure not to bend the FPC during insertion.



The criteria of correct 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.



HRS DRAWING FOR REFERENCE

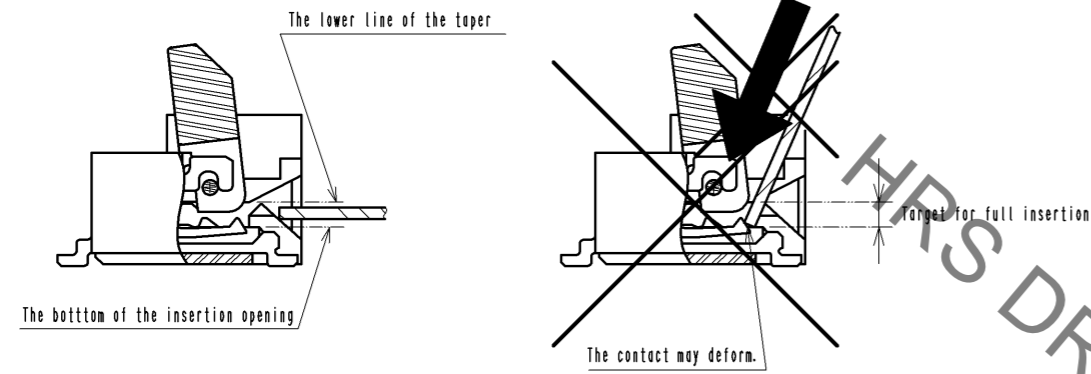
<ADDITIONAL RECOMMENDATIONS 2>

<b>HRS</b>	DRAWING NO.	EDC3-325498-01
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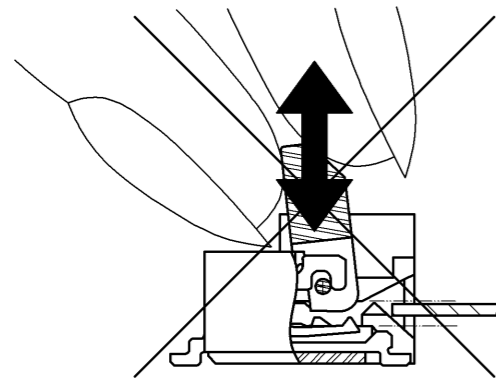
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Do not insert the FPC off the specified angle for full FPC insertion, as this may cause contact deformation and/or FPC damage by FPC end nocking the contacts.  
 Also, this may cause pattern breakage by FPC bent and/or conduction failure by insufficient 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.

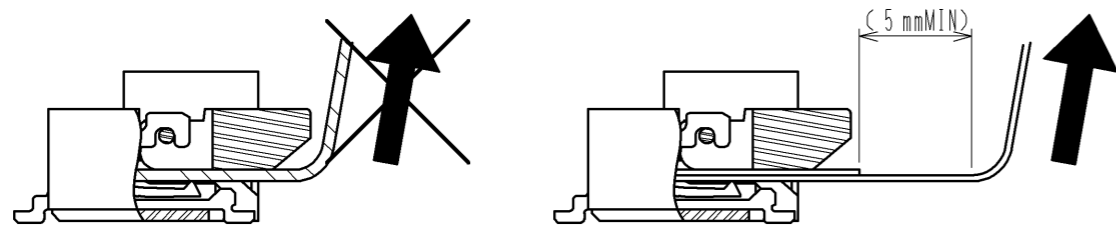


Do not apply force to the actuator during FPC full insertion procedure.  
 FPC insertion could become stiff and/or difficult for wiping.



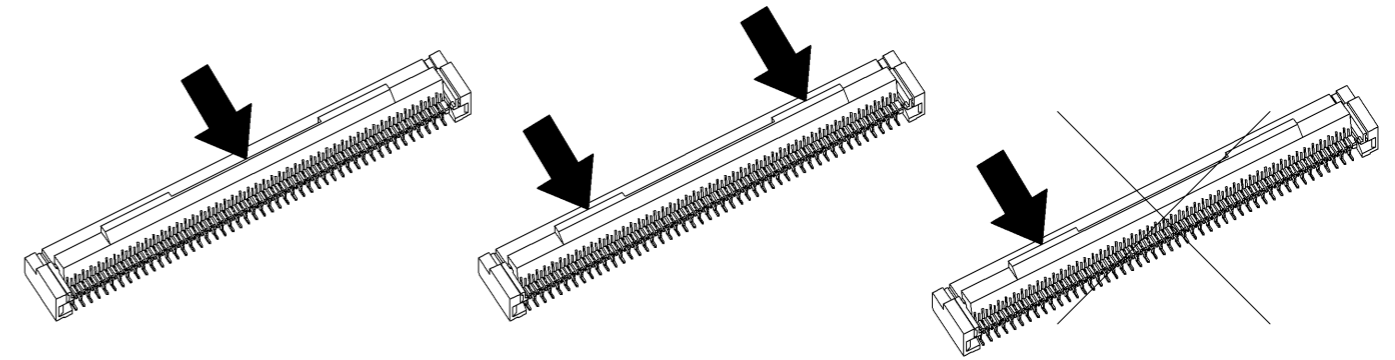
**[INSTRUCTIONS ON FPC LAYOUT AFTER CONNECTION]**

- ◆ 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.

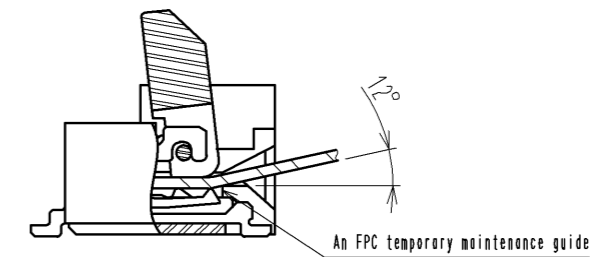


**[Instructions on removing FPC]**

- ◆ 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.



**[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.

HRS DRAWING FOR REFERENCE

<ADDITIONAL RECOMMENDATIONS 3>

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	CODE NO.	CL580-3200-5-00	

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