



Title of Document:	<b>HANDLING MANUAL</b>	Issue No. CHM-1-2210	Rev. 2
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This manual describes important and required points of handling about FMS Connector (Embossed-Taping Product).

Be sure to read this manual thoroughly before using FMS connector.

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Prepared by: <i>M. Ueda</i>	Checked by: <i>M. Arai</i>	Reviewed by: -	Approved by: <i>H. Tomimoto</i>
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## 1. Model Number and Part Name

### (1) Model number

	Part name	Model No.
FMS connector	Embossed-taping product	※FMS-1.0SP-TF (* <sub>1</sub> )
	Loose piece product	※FMS-1.0SP (* <sub>1</sub> )

Note<sub>1</sub>: Number of circuits is indicated in ※  
e.g.) 10FMS-1.0SP-TF: 10 circuit

Note<sub>2</sub>: FMS connector is supplied on embossed-tape.

Note<sub>3</sub>: In case of lead-free product, an identification mark for lead-free product, "(LF)(SN)" is indicated in (\*<sub>1</sub>).

### (2) Part name

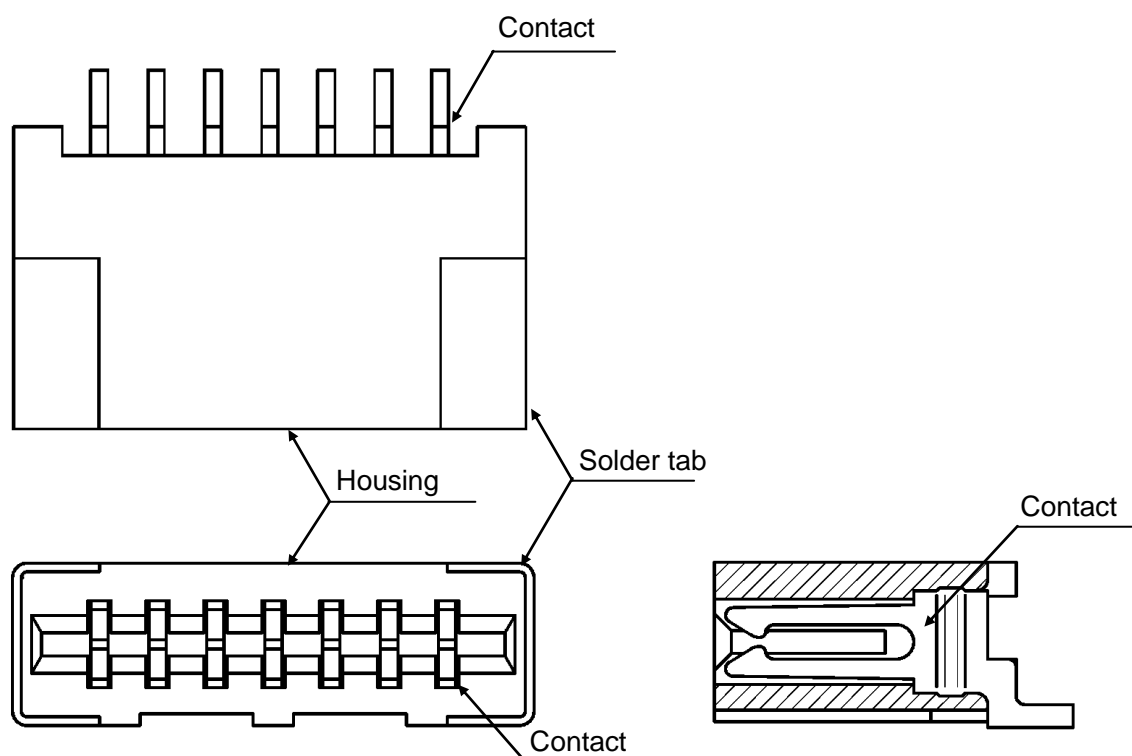


Fig.1: Each part name (Connector)

**2. Applicable FFC**

Item	Rated value
Applicable FFC	Lead: Tin-plated flat copper conductor
	Lead pitch: 1.0 mm
	Lead width: 0.7 mm
	Mating part thickness: $0.3 \pm 0.05$ mm

Note<sub>4</sub>: Dimensions of FFC greatly affect to the contacting reliability with connector.

Conform the dimensions of FFC with those of applicable ones described in Fig.2.

Note<sub>5</sub>: As above dimensions and construction are general conditions, FFC to be actually used should be checked for applicability with connector.

FFC, which applicability is not confirmed, might not be able to guarantee the performance.

UNIT: mm

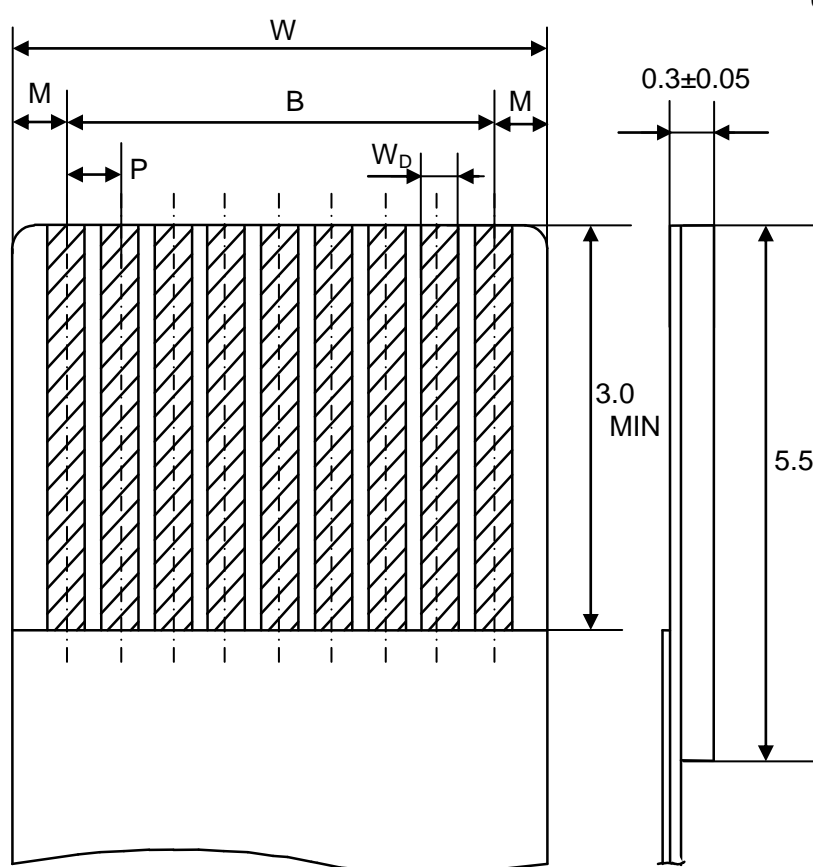


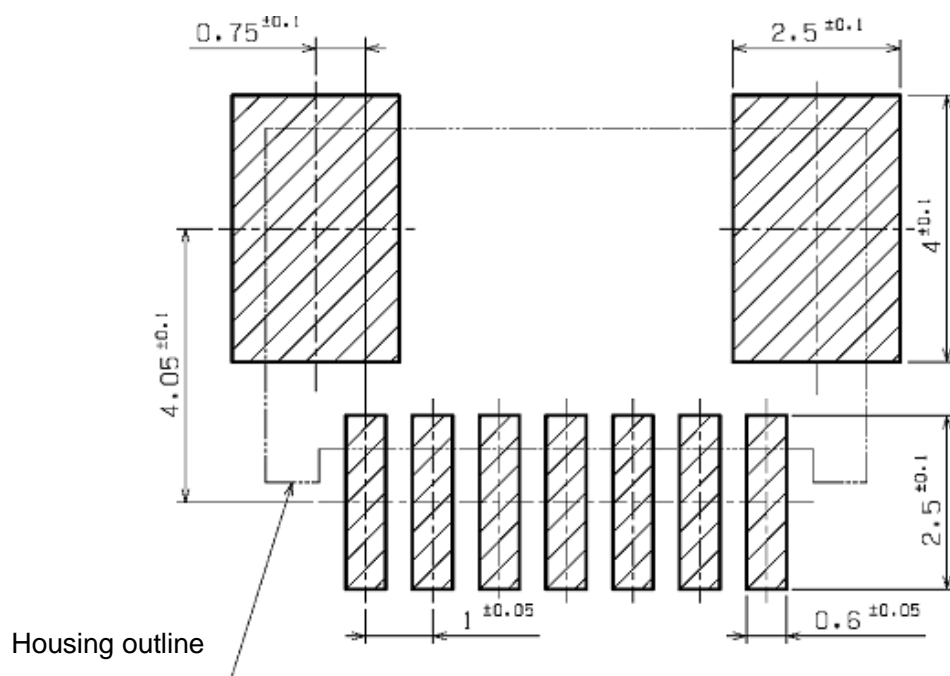
Fig.2: Applicable FFC

	FFC
M	$1 \pm 0.15$
P	$1 \pm 0.1$
B	$(N-1) \pm 0.1$
W	$(N+1) \pm 0.12$
$W_D$	$0.7 \pm 0.1$

N = No. of circuits

### 3. PC Board Pattern Layout

The following PC board pattern layout is recommended.



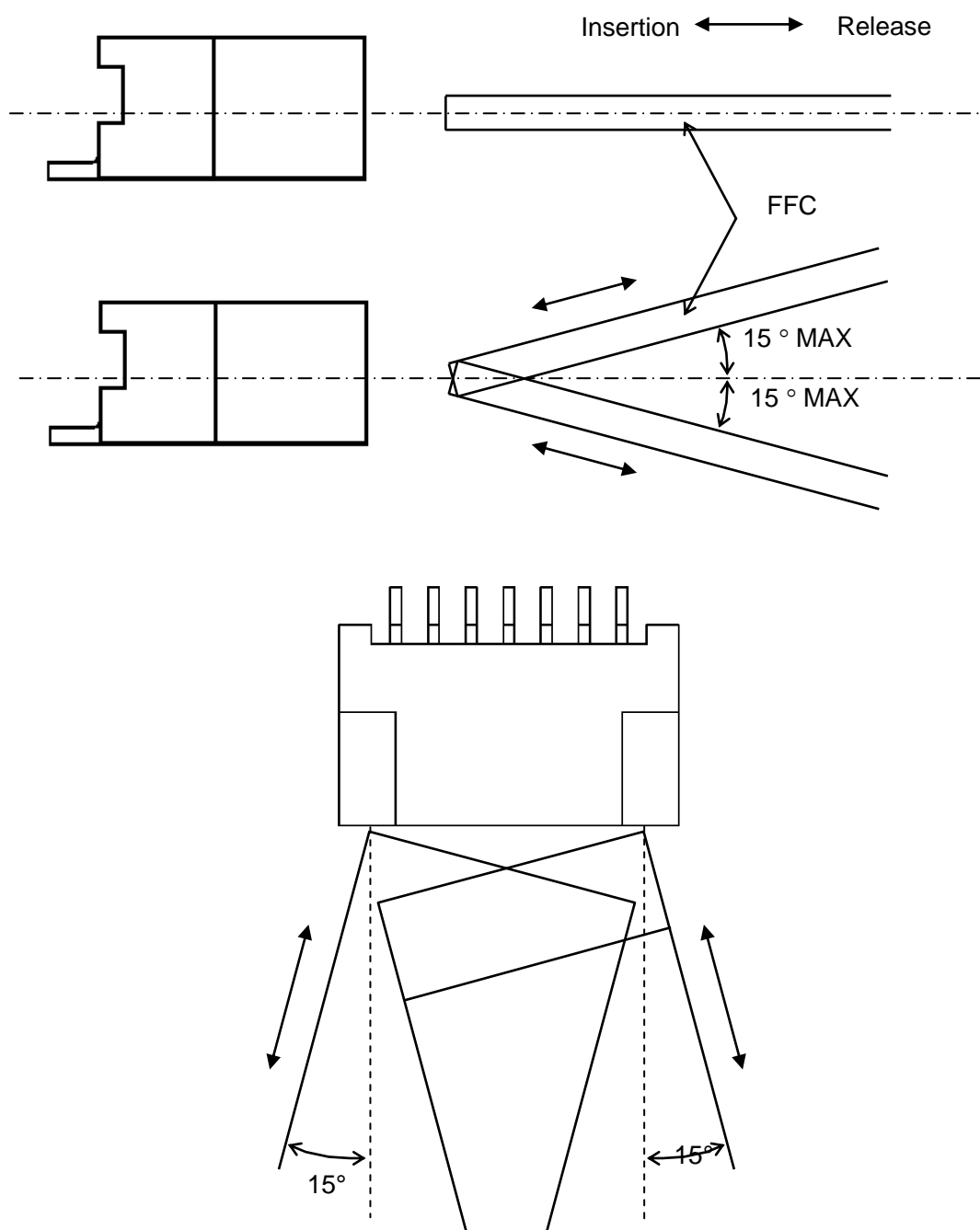
※Tolerances are non-cumulative for all centers.

Fig.3: PC board pattern layout

## 4. Handling Precautions

### 4.1 Inserting and releasing FFC

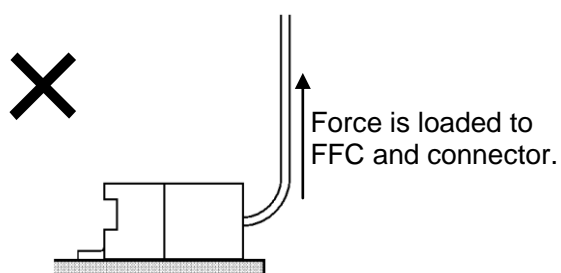
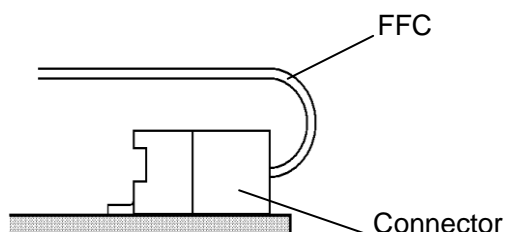
Inserting and releasing operations with FMS connector and FFC shall be conducted on the same axis. When the operation on same axis is difficult, conduct smooth operation within 15 degrees to each direction as below.



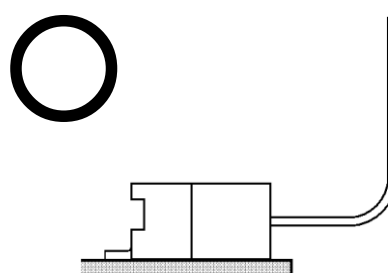
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## 5. Handling of FFC after Mounting on PC Board

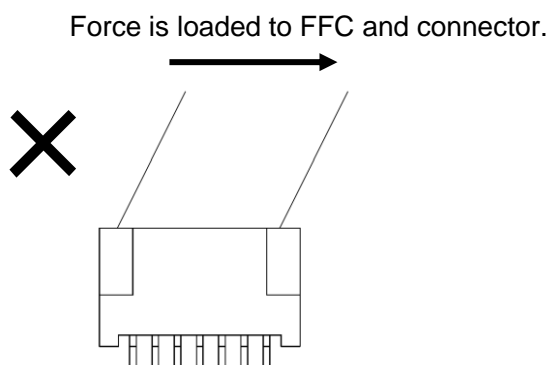
When inserted FFC is handled, provide sufficient FFC length so that force is not loaded to FMS connector, because such loading may cause damage and discontinuity of connector.



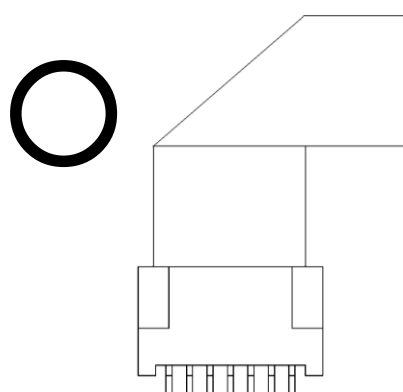
※ FFC length is not sufficient to handle.



※ FFC length is sufficient to handle.



※ Force is loaded to FFC and connector.



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

In the case that load is applied to mating part of connector and FFC due to operation of rotation part of device, etc. when using connector, such condition may cause defective contacting at connector mating part due to abrasion.

In such case, some treatment such as fixing FFC around mating part should be conducted.

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## 6. Precautions for Soldering Operation

### 6.1 Soldering iron method

Solder a connector mounted on PC board using a soldering iron with temperature of 350°C at the tip of soldering iron quickly within 3 seconds, and check appearance visually.  
When soldering, strictly conduct the following points.

Do not press soldering iron tip on connector contact lead part nor apply abnormal force such as lateral load, etc. If done, dismount and exchange connector, and conduct soldering again.  
Do not reuse dismounted connector.

### 6.2 Reflow soldering method

Soldering by following the less temperature profile of reflow soldering, which is mentioned in Product Specification as item of "Resistance to soldering heat", is recommended.  
As recommended reflow temperature condition varies depending on solder paste to be used, follow each condition.

When bridge trouble appears in process of reflow soldering method and modification is conducted by hand, strictly conduct item 6.1 "Soldering iron method."

## 7. Storage

Keep FMS connector (embossed-taping product) in the following ambience.

Storage temperature	5 to 35°C
Relative humidity	60% max.