Title of Document:	HANDLING MANUAL	Issue No. CHM-1-2785	Rev. 0
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Title subject:	BAB 2P Connector	Revision date: R0	

This handling manual describes points of the usage and the contact crimping operation of the BAB2P connector. Refer to the handling manuals, DSP-05965 and DSP-06956 for the handling of the female terminal and the male one respectively.

C O N T E N T S

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JST	Title subject: BAB 2P Connector	No. CHM-1-2785

1. Introduction

This manual provides information and requirements for the handling of BAB 2P connector components.

2. Components

Part Name	Part Number	Color
Male Connector	BABPB-02-1A-Y( )	
Male Housing		Yellow
Male Retainer		Natural
Female Connector	BABRB-02-1A-Y( )	
Female Housing		Yellow
Spring		
Slider		Natural
Female Retainer		Natural
Male Terminal	SAITW-A03GF-064	
Female Terminal	SAIT-A03GF-M064	

2-1 Parts Identification

Before handling and processing the terminals and housings, carefully read this manual to understand every component features and its names as illustrated below:

1. BAB Male Connector

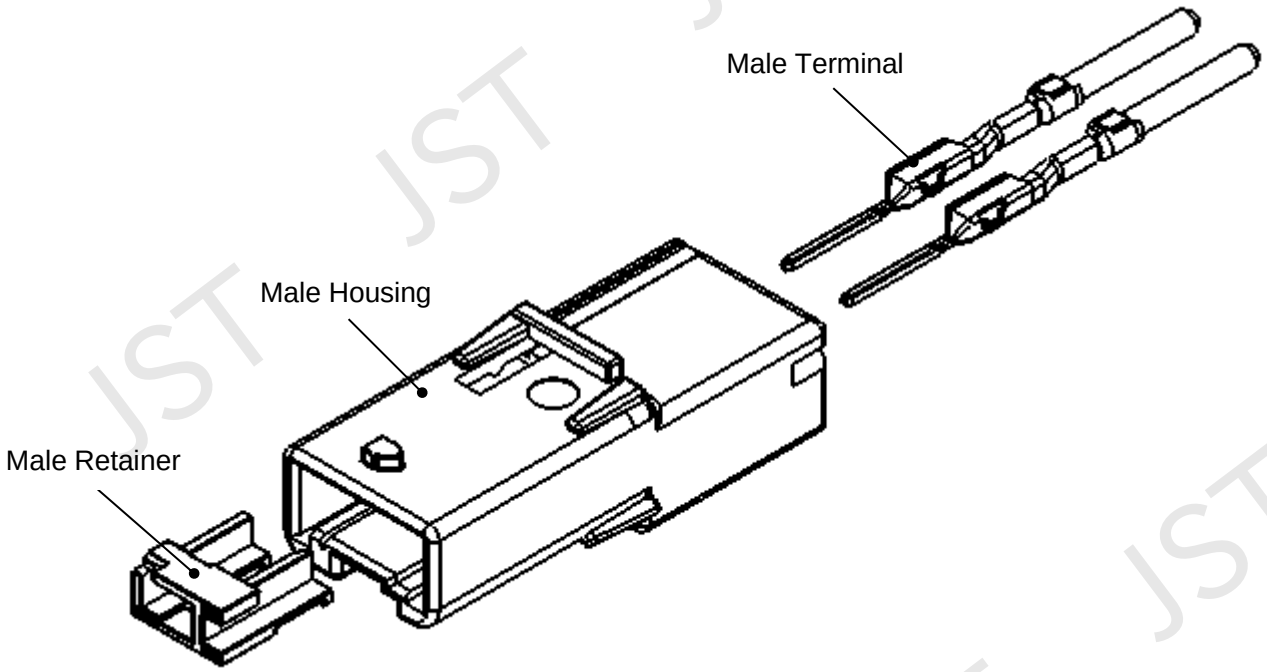


Fig. 1: Male Connector

2. BAB Female Connector

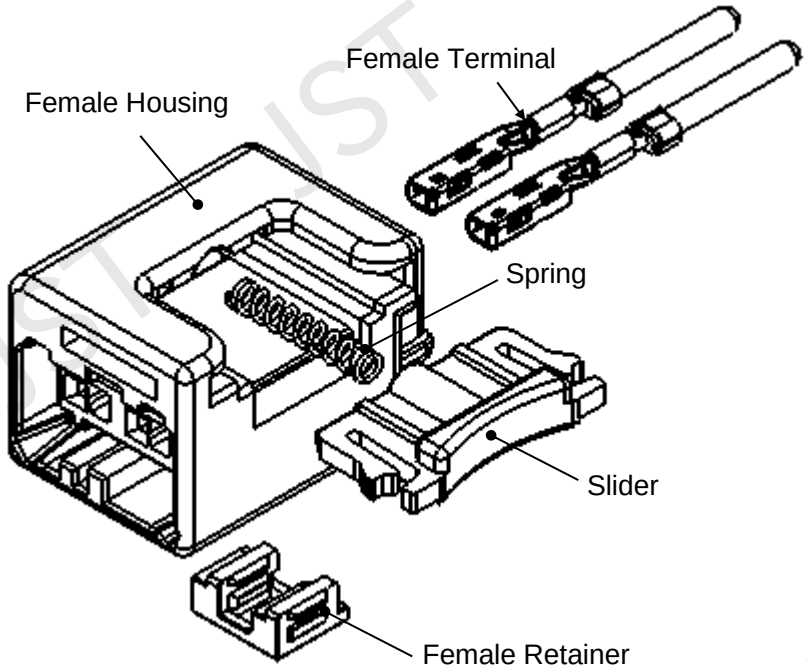


Fig. 2: Female Connector

3. Male Terminal

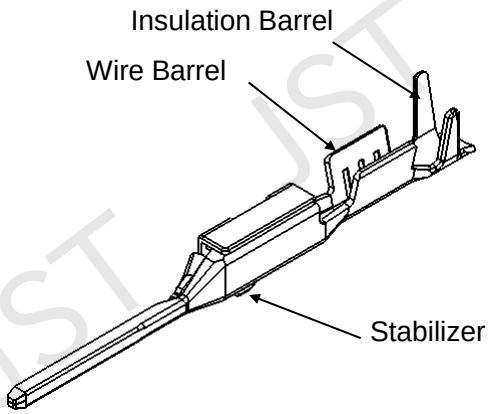


Fig. 3: Male Terminal

4. Female Terminal

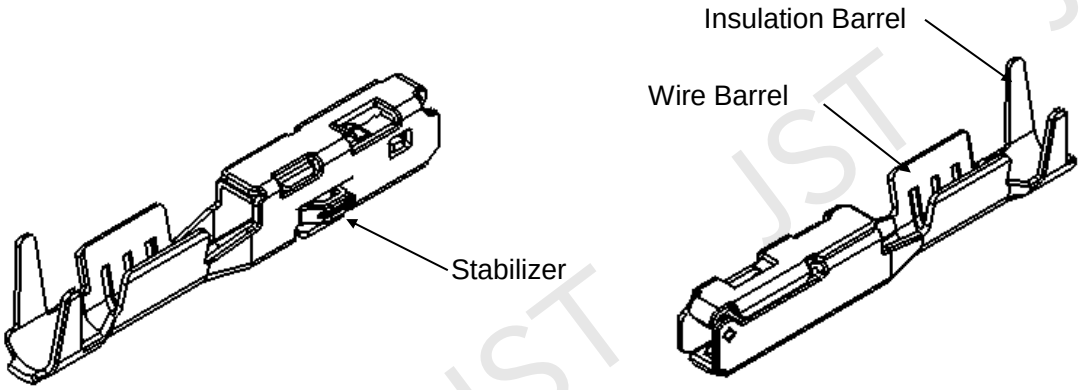


Fig. 4: Female Terminal

3. Inspection of Housings and Terminal

It is recommended that inspection of each housings and terminals be conducted by the following procedures using drawing as the acceptance inspection at customer.

3-1 Male Connector

Item	Methods	Measure
Appearance	Burr/flash, deformation, discoloration or pit	Visual inspection
	Cracks, chips and nicks	
	Position of Male retainer	
Performance	Mating check • Insertion check of Male Terminal • Check that Retainer can be inserted into Male Housing completely	Visual inspection by Hand

3-2 Female Connector

Item	Methods	Measure
Appearance	Burr/flash, deformation, discoloration or pit	Visual inspection
	Cracks, chips and nicks	
	Position of Slider and Female retainer	
Performance	Mating check • Insertion check of Female Terminal • Check that Retainer can be inserted into Female Housing completely • Check and see that Slider is properly installed into Female Housing	Visual inspection by Hand

3-3 Male / Female Terminal

Item	Methods	Measure
Appearance	• Appearance configuration	Visual inspection
	• Plating	
	• Reel winding condition	
Dimension	• Width and height of Wire Barrel and Insulation Barrel	Micrometer

4. Storage

All JST products are produced and delivered according to JST quality control regulation. As JST quality control measures, all manufacturing, inspection and delivery records, and other required procedures are traceable.

All parts must be stored in a clean room at normal environmental conditions (Recommended conditions: 5°C ~ 35°C, 40%RH ~ 60%RH).

4-1 Male / Female Connector

Connectors are shipped in a box. The connectors should be kept in the box off the floor and in an area where no damage can be inflicted upon the Housings until time to assemble the Harness.

4-2 Male / Female Terminal

Terminals should be stored on a reel with paper covering. The paper ensures that the terminals remain secure and clean inside the reel (see Fig. 5). The reels are then stored in the appropriate container for transportation and should then remain stored inside the container until needed for the crimping operation.

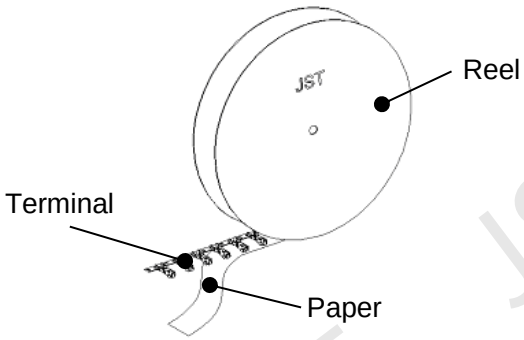


Fig. 5a: Reel

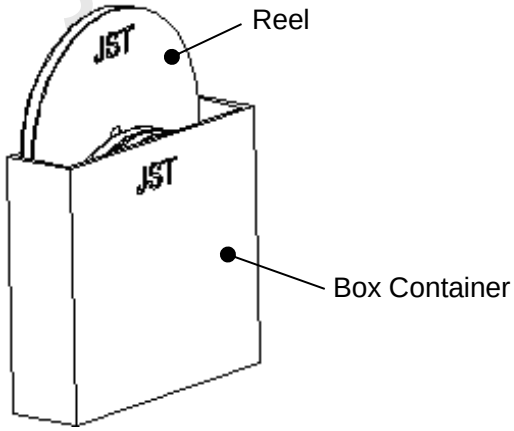


Fig. 5b: Container for Reels

5. Applicable Cables

Cables	Cable Size
AVSS	0.3 SQ

Note: Special wires other than the above wires cannot be used in principle.
When using special wires, please contact JST.

6. Harness Assembly Operation of Female Connector

Harness assembly operation is a very important process to decide the connector performance and the harness quality. Careful operation is required for the harness assembly.

6-1 Precautions in assembling the female terminal

① Use the proper crimped contact specified in the handling manual, DSP-06956.
Do not use the poorly crimping terminal and the deformed one
② Do not place other things on or near working table and do not conduct any other works on the same working table to prevent from operation mistake.
③ Do not stain the contact with household goods such as oils, detergent, seasoning and fruit juice. If stained, never use the stained contact.
④ When a bundle of the crimped contacts is loosened, do not pull the crimped contacts forcibly even if they get entangled.

6-2 Precautions for storage and handling of crimped terminal

As the crimped terminal before inserting into the housing is subject to deformation by external forces, pay careful attention to storage and handling as below points.

① The number of the crimped female terminals for one bundle should be 100 pcs. max.
Protect the terminals by wrapping with paper, etc. in order to prevent from deformation and adhesion of foreign substances, and keep them in an adequate box.
② Do not place the terminals in humid area, under direct sunshine and directly on the floor.
Store them in a clean room with ordinary temperature and humidity.
③ Do not stack too much quantity of the crimped terminals nor place anything on them, since the weight of themselves may cause the deformation of the terminal and troubles such as defective contacting.
④ When the crimped contact is taken out of bundle, do not pull a wire but hold it near the crimped section and take it out.

6-3 Inserting the female terminal into the female housing

① Check that the retainer is in the pre-locking position. (Fig.6)
Note: If the retainer has been inserted in the locking position, the female terminal cannot be inserted. Return the retainer to the pre-locking position by using an jig (Fig.12) (Refer to item 6-6 Releasing the retainer.)

② Check that the direction of the female terminal is proper before the insertion. (Fig.6)
③ Hold the wire part of the female terminal and insert the female terminal without prying straightly into the housing until stopping with a click. (Fig.6 and 7) At that time, pay attention not to bend the wire.
④ Pull the wire softly to check that the female terminals are fully inserted.
Insert the female terminals in each cavity according to the procedures shown below:

Precautions in inserting the terminal

- Be sure to insert the terminal straightly into the housing.
- The housing may be damaged and deformed during the mating/unmating operation before fulling inserting the terminal, so make sure that the vicinity of the housing mating entrance is not deformed and the lance does not sink. Only when there is no such a trouble, reuse the terminal.
  Never use the housing which has damages and deformation.

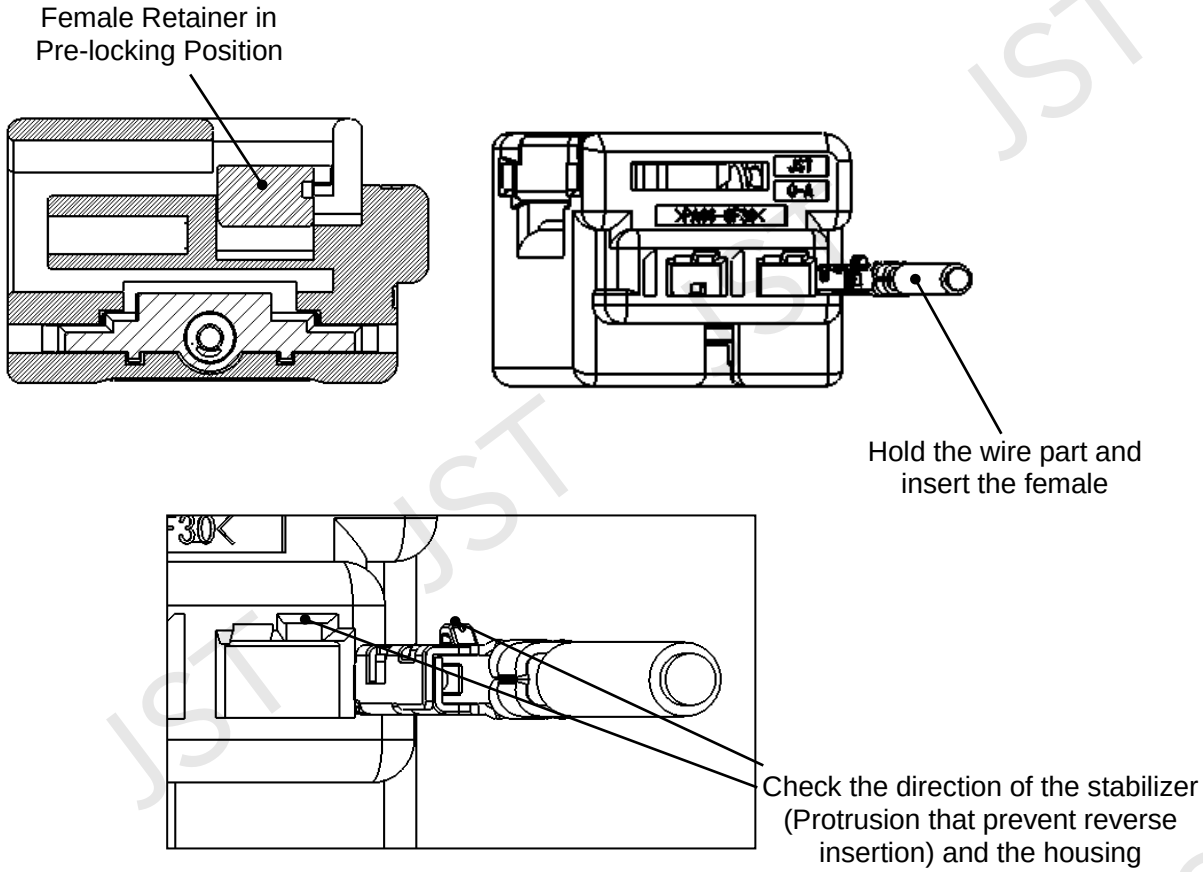


Fig. 6

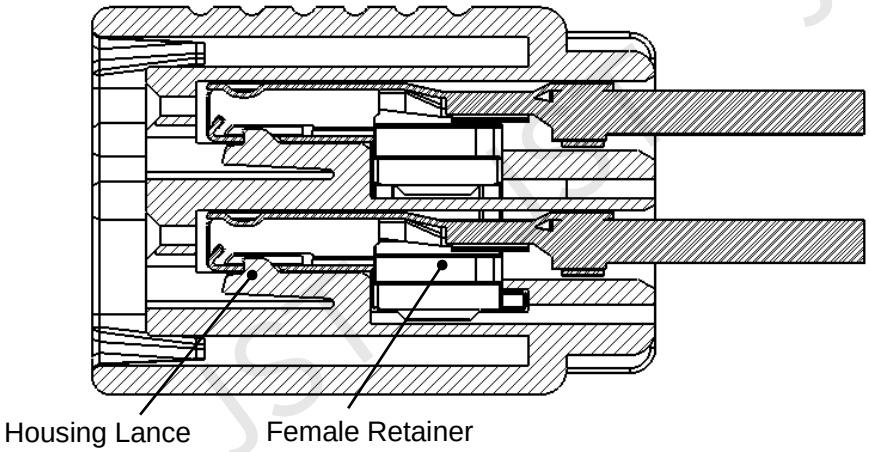


Fig. 7

6-4 Inserting the retainer (from the pre-locking position to the locking position)

To seat the Female Retainer into its locking position, apply pressure with female retainer insertion jig (Fig.8) to the Female Retainer..
Then, push the retainer in the locking position with secure until clicking. (Fig.9)

Precautions in inserting the retainer

- The connector is designed so that the retainer cannot be inserted up to the locking position if even only 1 wire is not inserted fully.
  In case that the retainer cannot be pushed in, do not push the retainer by force but check that the terminal is fully inserted into the housing again and insert the retainer in the locking position.

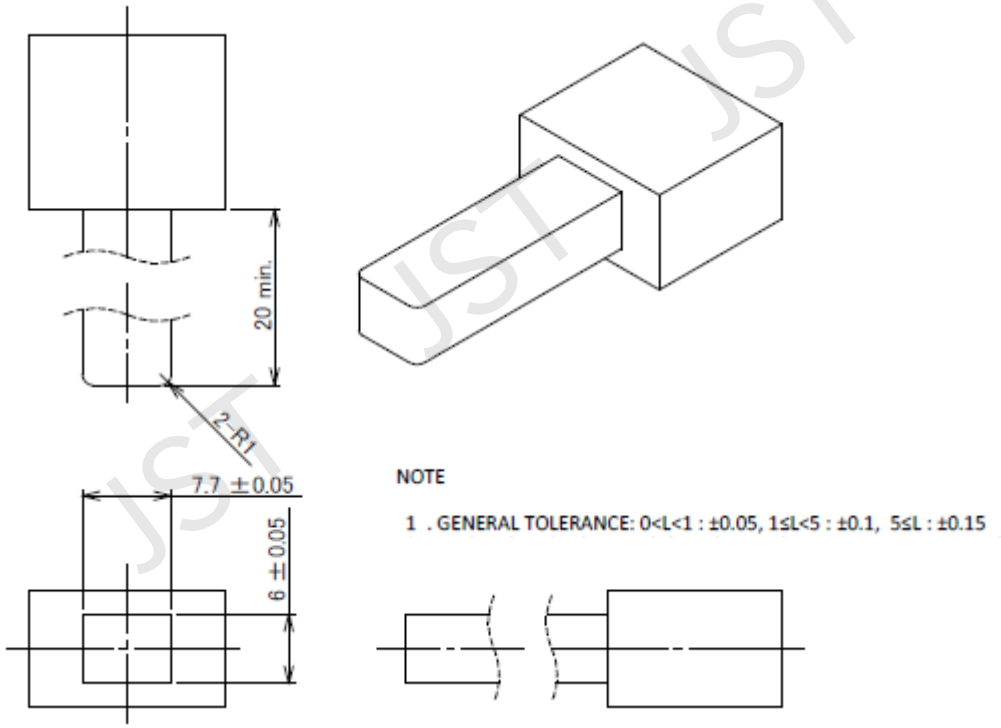


Fig. 8: Female retainer insertion jig

Push the Female Retainer with a jig

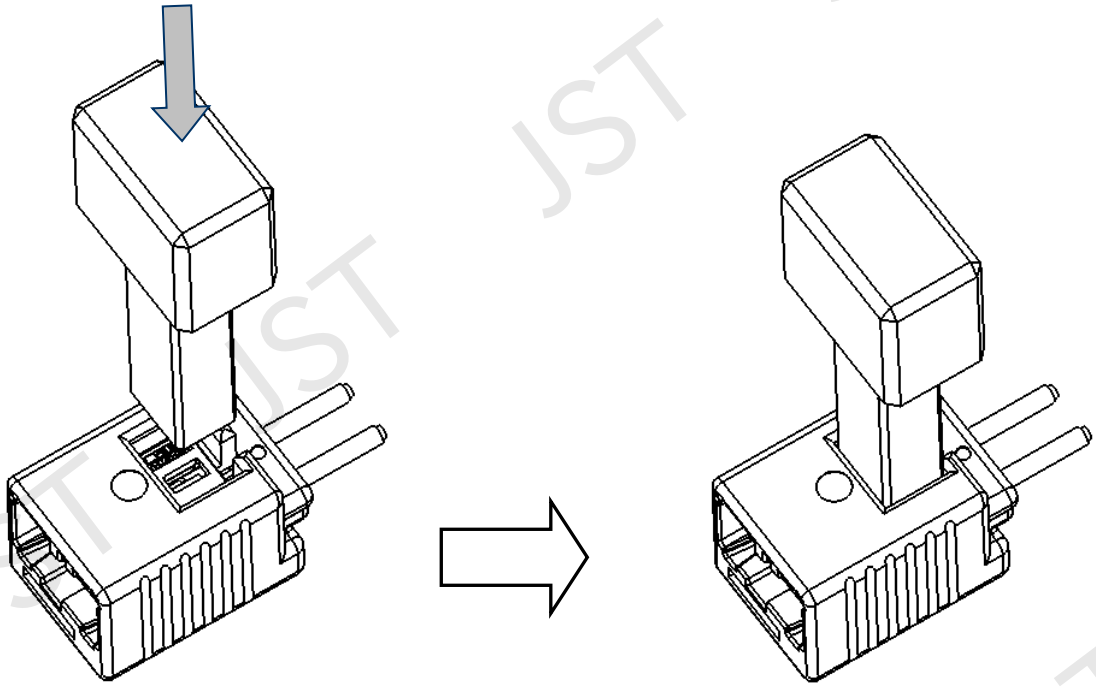


Fig. 9

6-4-1 The pre-locking position and the locking position

As shown in Fig.10, in case of pre-locking condition, the housing core bottom surface is not even with the retainer bottom surface from the mating side of the male housing. On the other hand, in case of locking condition, the housing core bottom surface is even with the retainer bottom surface.

Be sure to check that the retainer bottom surface is even with the housing core bottom surface.

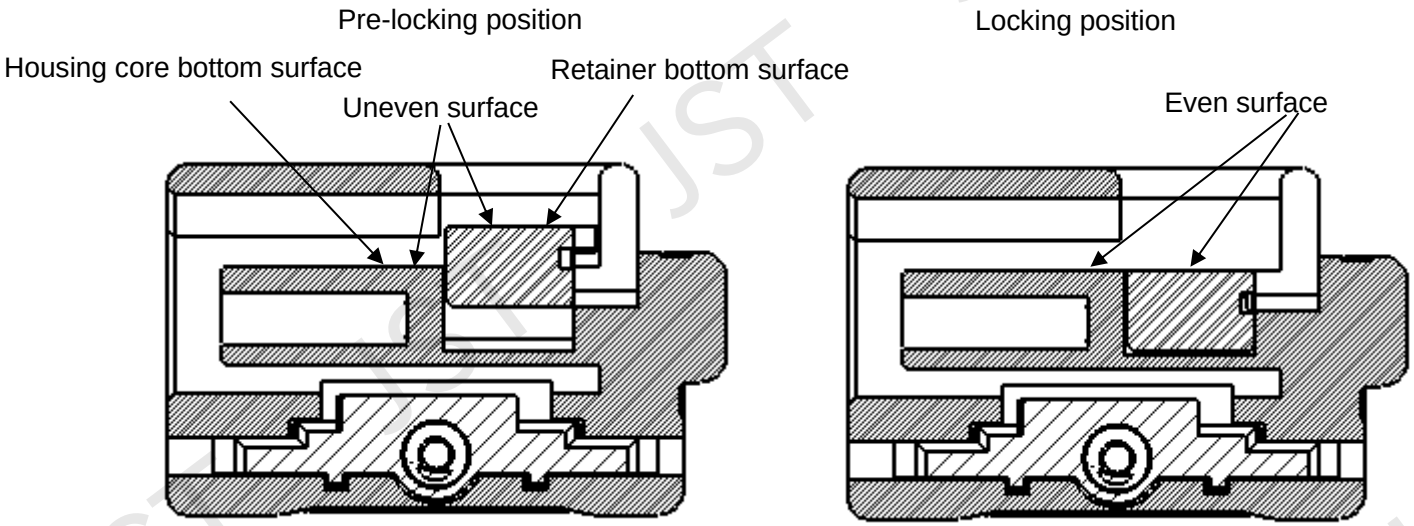


Fig. 10

6-4-2 Retainer position when the insertion of the terminal is insufficient or reverse

When the insertion of the female terminal is insufficient or reverse, the retainer stops before the locking position and it is not locked at the locking position.
Be sure to check the retainer positions shown in Fig.10 If the retainer is not in the locking position, check the inserting condition of the terminal and reinsert the retainer.

Half insertion or reverse insertion of the terminal:
Even though the retainer is pushed in, the retainer is not inserted into the locking position.

6-5 Electrical continuity inspection

In electrical continuity inspection, use the male connector (refer to item 2 .Components) or contact the inspection probe with the outer wall of the female terminal (fig11). Do not insert the inspection probe and the like separately inside the female terminal.

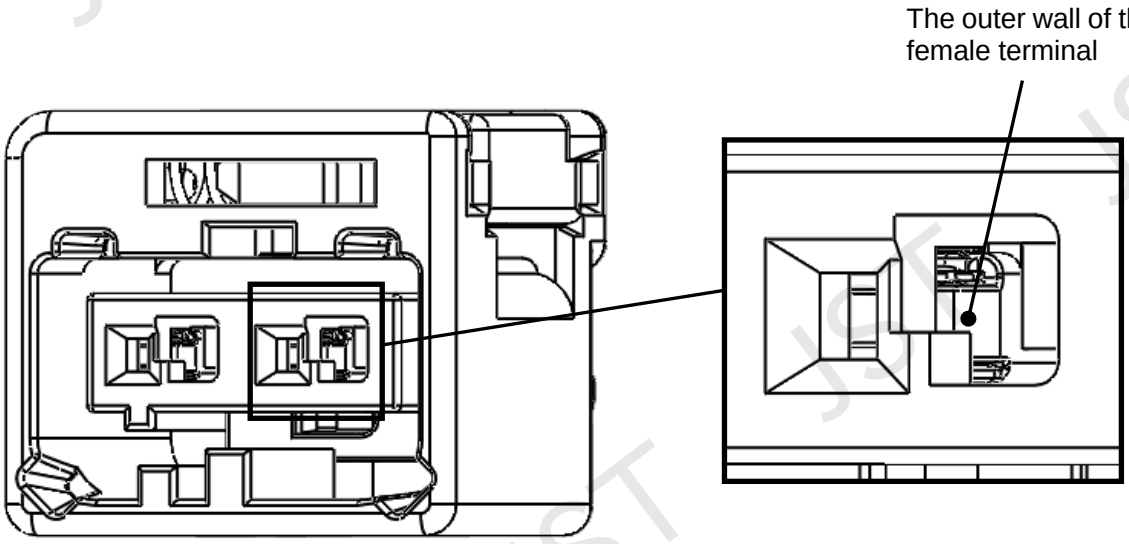


Fig.11

6-6 Releasing the retainer (from the locking position to the pre-locking position)

When the female terminal is necessary to extract from the housing, release the retainer from the locking position to the pre-locking position, first.
Insert the jig (Fig.12) into the circled area as shown in Fig.13, and raise the retainer due to leverage until it snaps out of position. (Fig.14)

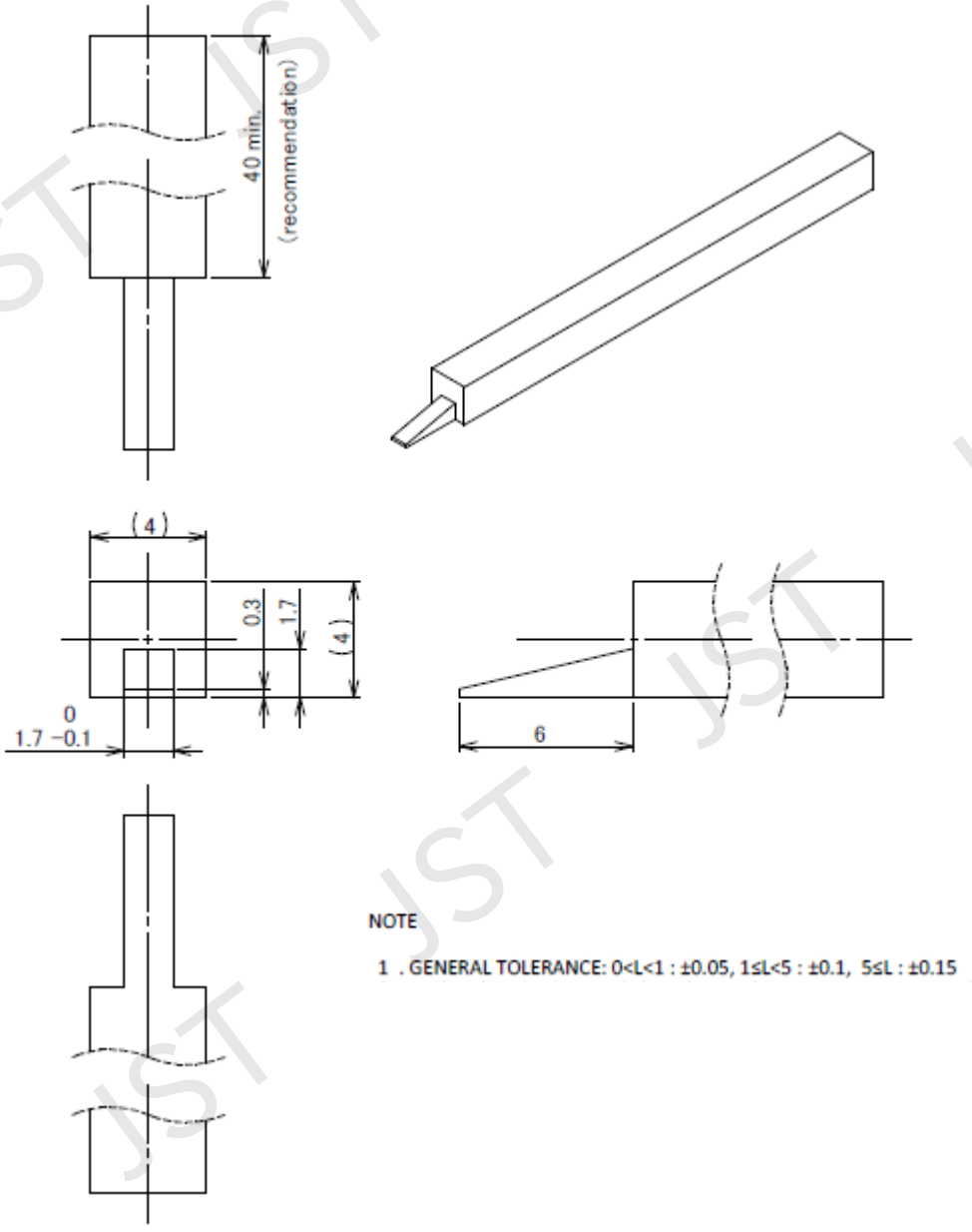


Fig.12: Female retainer release jig

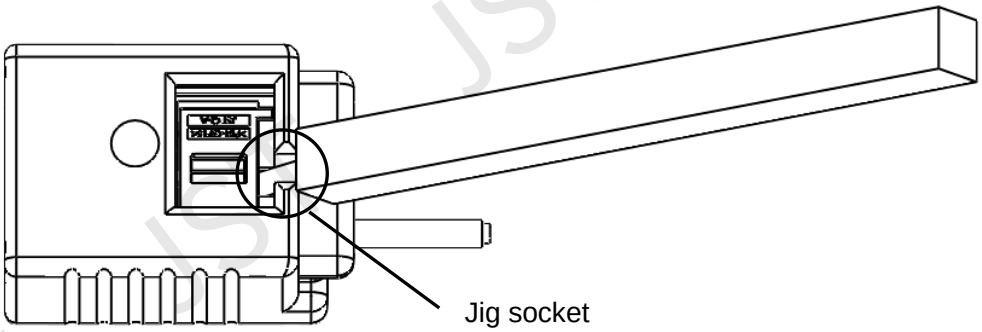


Fig. 13

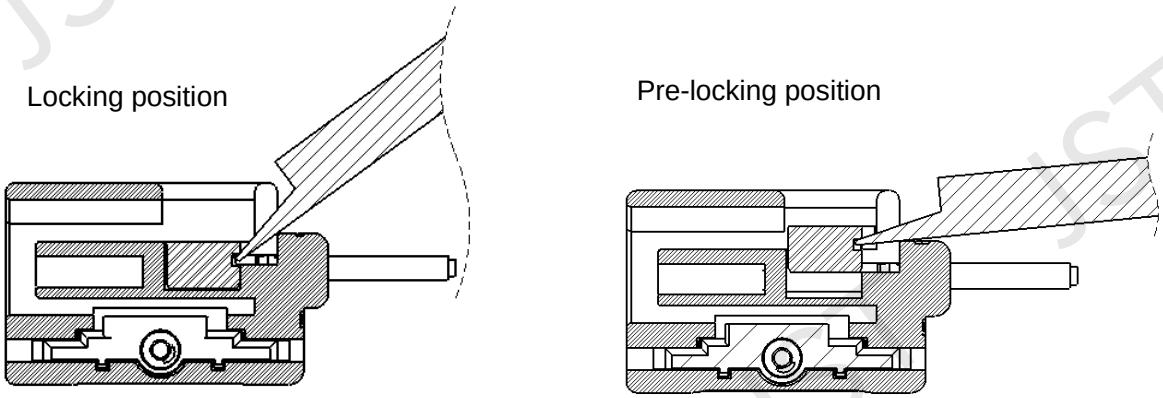


Fig. 14

6-7 Extracting Female Terminal from the Female Housing

① Check to make sure the Female Retainer is released into its pre lock position before attempting the extraction of the female terminals.

② To extract the female terminal from the housing, the operator can use a 1.2mm flat screwdriver and insert the screwdriver into the position to release the housing lance as shown in Fig.15

③ Gently pry the housing lance so it is lifted just enough to release the terminal and apply enough force to remove the terminal from the housing. (See Fig. 15)

Precautions in extracting the female terminal

- Unless the retainer is released to the pre-locking position, the female terminal cannot be extracted out.
- Do the extraction operation with care so as not to damage the female terminal.
  After the extraction, check that there is no damage on the female terminal. When the female terminal is extracted from the housing, check no damages, no deformation and no sinking lance around the mating entrance of the housing. Only when they are not found, reuse it. When reusing, check that the crimped terminal is hooked on the lance and the retainer is at the locking position. Never use the female terminal and the housing which have damages and deformation.

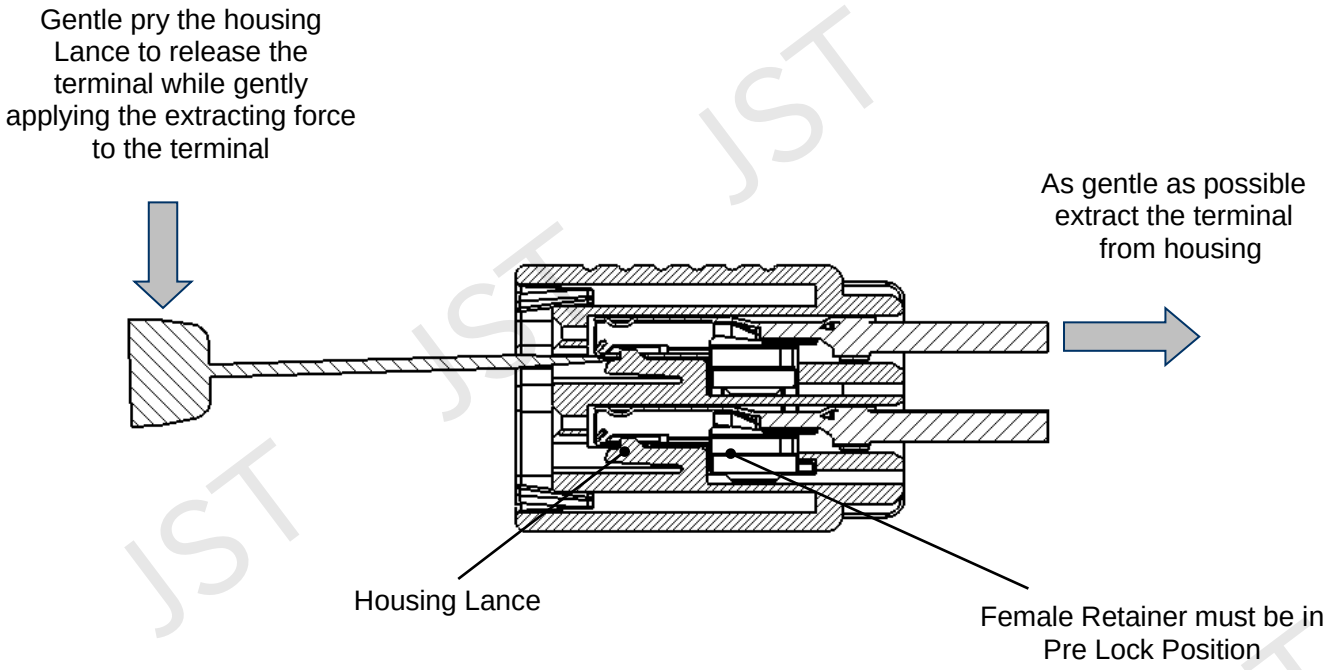


Fig. 15

7. Harness Assembly Operation of Male Connector

Harness assembly operation is a very important process to decide the connector performance and the harness quality. Careful operation is required for the harness assembly.

7-1 Precautions in assembling the male terminal

① Use the proper crimped contact specified in the handling manual, DSP-05965.
Do not use the poorly crimping terminal and the deformed one.

② Do not place other things on or near working table and do not conduct any other works on the same working table to prevent from operation mistake.

③ Do not stain the contact with household goods such as oils, detergent, seasoning and fruit juice. If stained, never use the stained contact.

④ When a bundle of the crimped contacts is loosened, do not pull the crimped contacts forcibly even if they get entangled.

7-2 Insertion of the Male Terminal into the Male Housing

① Check that the retainer is in the pre-locking position. (Fig.16)
Note: If the retainer has been inserted in the locking position, the male terminal cannot be inserted. Return the retainer to the pre-locking position by using an jig (Fig.21). (Refer to item 7-4 Releasing the retainer.)

② Check that the direction of the male terminal is proper before the insertion. (Fig.16)
③ Hold the wire part of the male terminal and insert the male terminal without prying straightly into the housing until stopping with a click. (Fig.16 and 17) At that time, pay attention not to bend the wire.
④ Pull the wire softly to check that the male terminals are fully inserted.
Insert the male terminals in each cavity according to the procedures shown below:

Precautions in inserting the terminal
- Be sure to insert the terminal straightly into the housing.
- The housing may be damaged and deformed during the mating/unmating operation before fulling inserting the terminal, so make sure that the vicinity of the housing mating entrance is not deformed and the lance does not sink. Only when there is no such a trouble, reuse the terminal.
  Never use the housing which has damages and deformation.

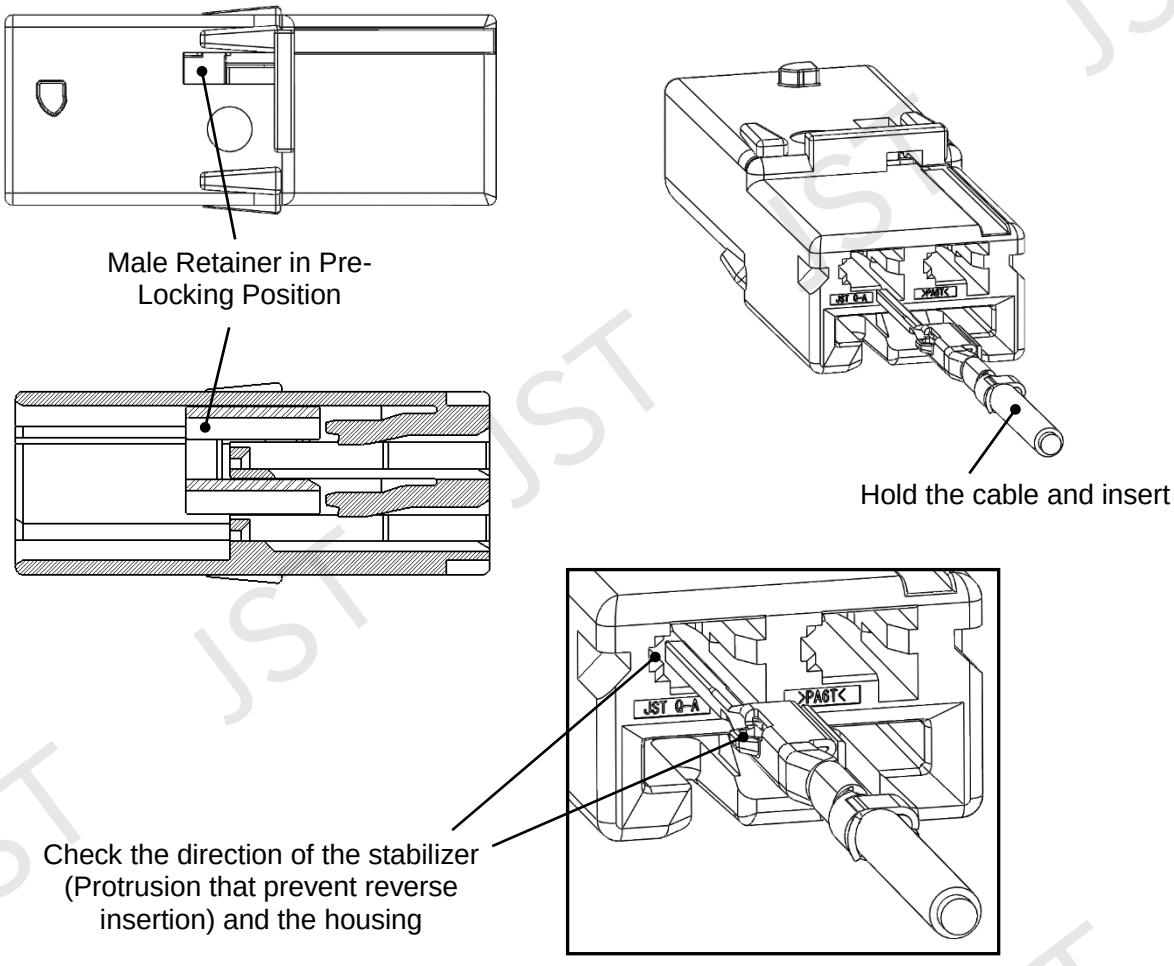


Fig. 16

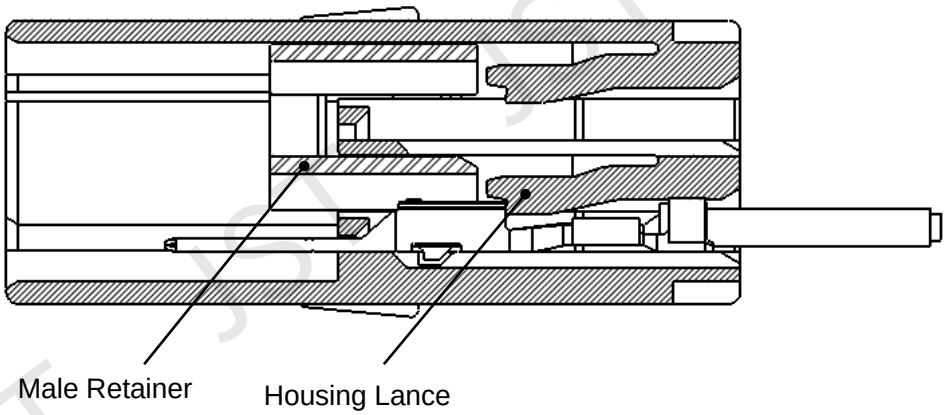


Fig. 17

7-3 Inserting the retainer (from the pre-locking position to the locking position)

After all terminals are inserted, push the retainer with jig (Fig.18) from the mating side of the housing. Then, push the retainer in the locking position with secure until clicking. (Fig.19)

Precautions in inserting the retainer

- The connector is designed so that the retainer cannot be inserted up to the locking position if even only 1 wire is not inserted fully.
  In case that the retainer cannot be pushed in, check again that the terminal is fully inserted and insert the retainer in the locking position.
  - Handle with care not to damage the male terminal. If damaged, do not use it but replace it with the new one.

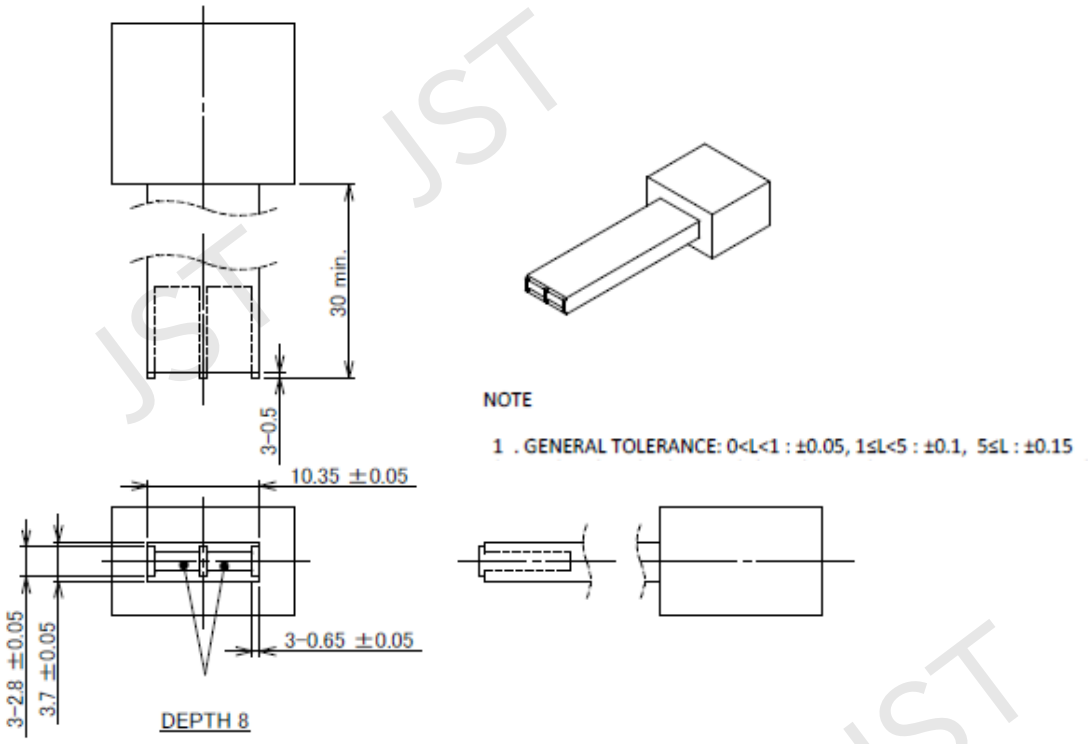


Fig. 18: Male retainer insertion jig

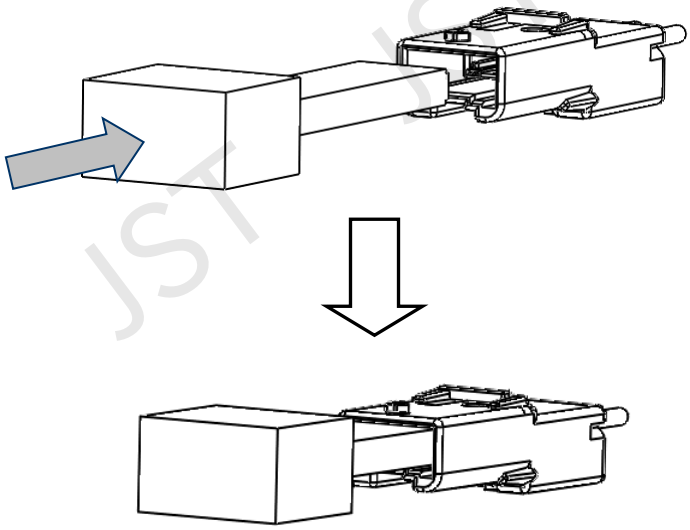
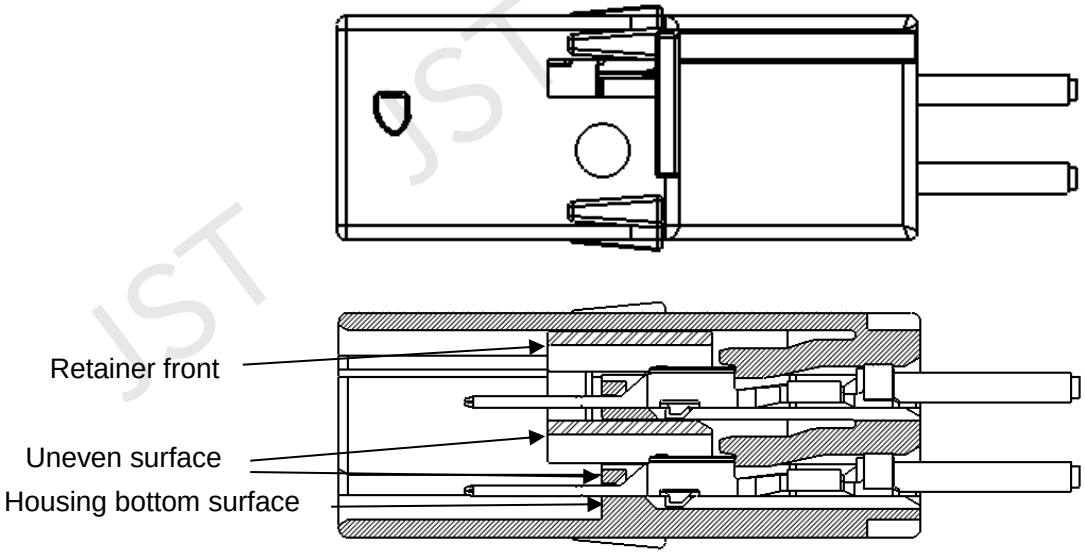


Fig. 19

7-3-1 The pre-locking position and the locking position

As shown in Fig.20, in case of pre-locking condition, the housing bottom surface is not even with the retainer front viewing from the mating side of the male housing. On the other hand, in case of locking condition, the housing bottom surface is even with the retainer surface.
Be sure to check that the retainer front is even with the housing bottom surface.

Pre-locking position



Locking position

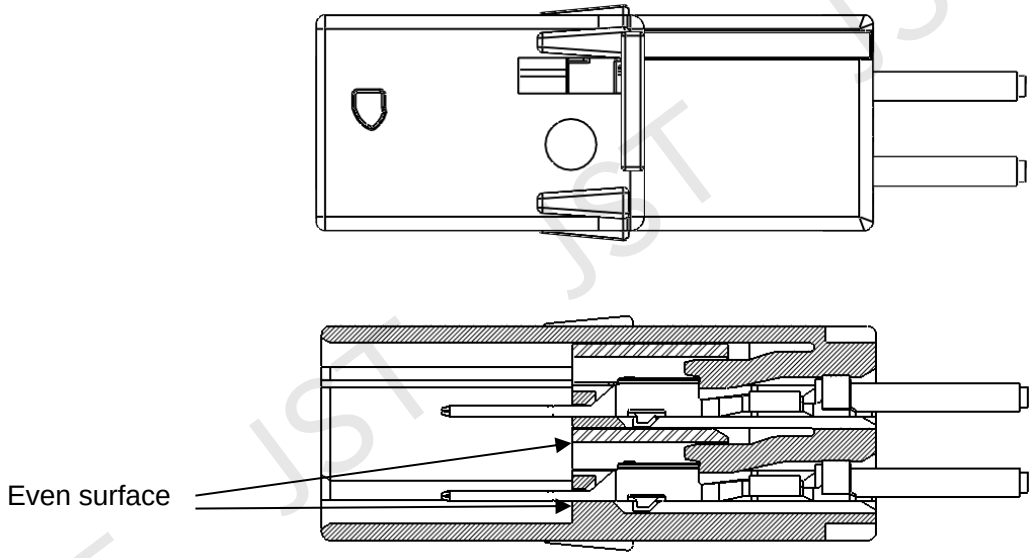


Fig. 20

7-3-2 Retainer position when the insertion of the terminal is insufficient or reverse

When the insertion of the male terminal is insufficient or reverse, the retainer stops before the locking position and it is not locked at the locking position.
Be sure to check the retainer position shown in Fig.20 If the retainer is not in the locking position, check the inserting condition of the terminal and reinsert the retainer.

Half insertion or reverse insertion of the terminal
Even though the retainer is pushed in, the retainer is not inserted into the locking position.

7-4 Releasing the retainer (from the locking position to the pre-locking position)

When the male terminal is necessary to extract from the housing, release the retainer from the locking position to the pre-locking position, first.
Insert the jig (Fig.21) into the slot as shown below. (Fig.22) At that time, insert the jig along the housing wall (Fig.22) and push it in until the jig end hits male housing. Gently push the retainer with the wall as the fulcrum until the operator hears and feel the Male retainer release.(Fig.23)
Do the release operation with care so as not to damage the male terminal.

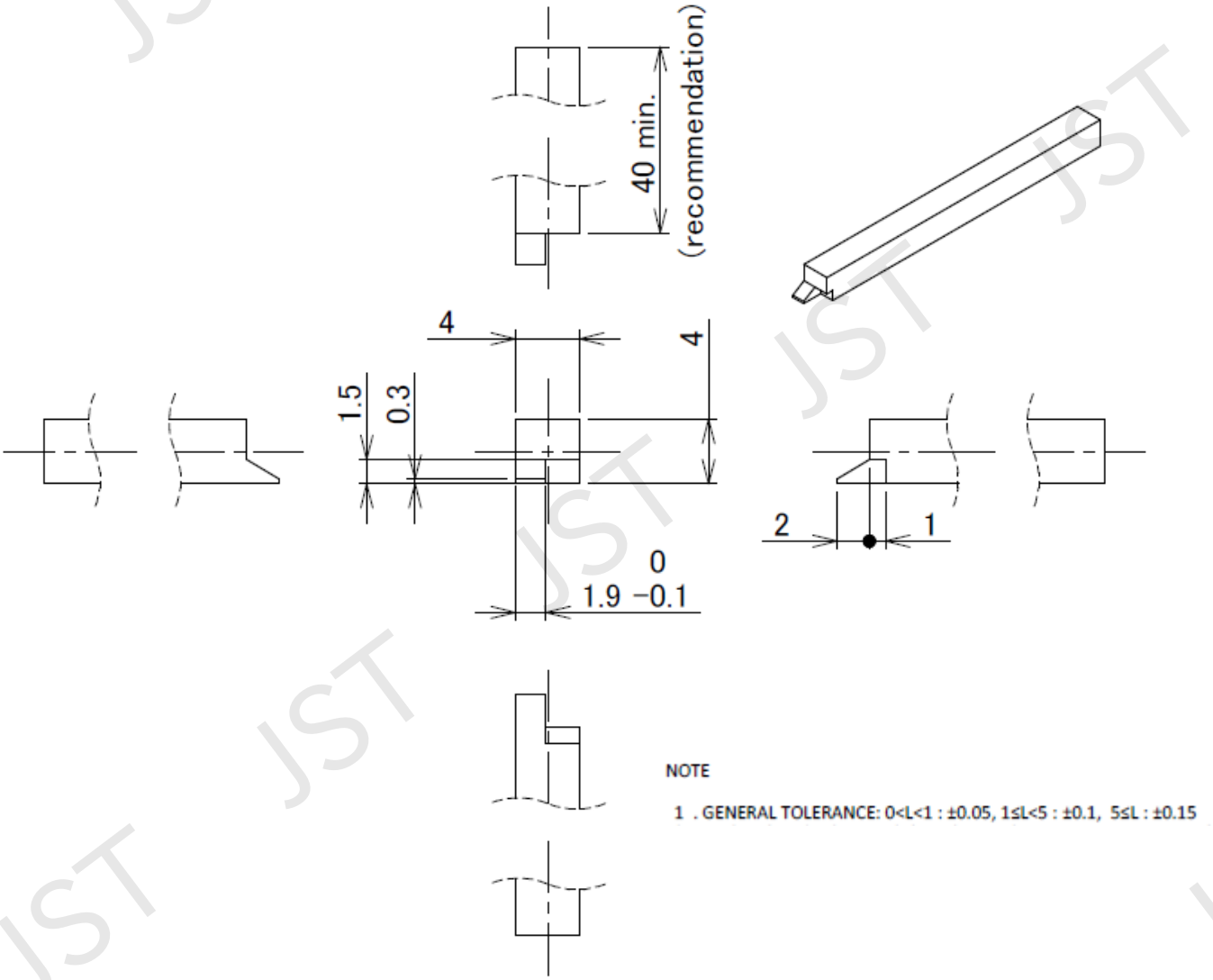


Fig. 21: Male retainer release jig

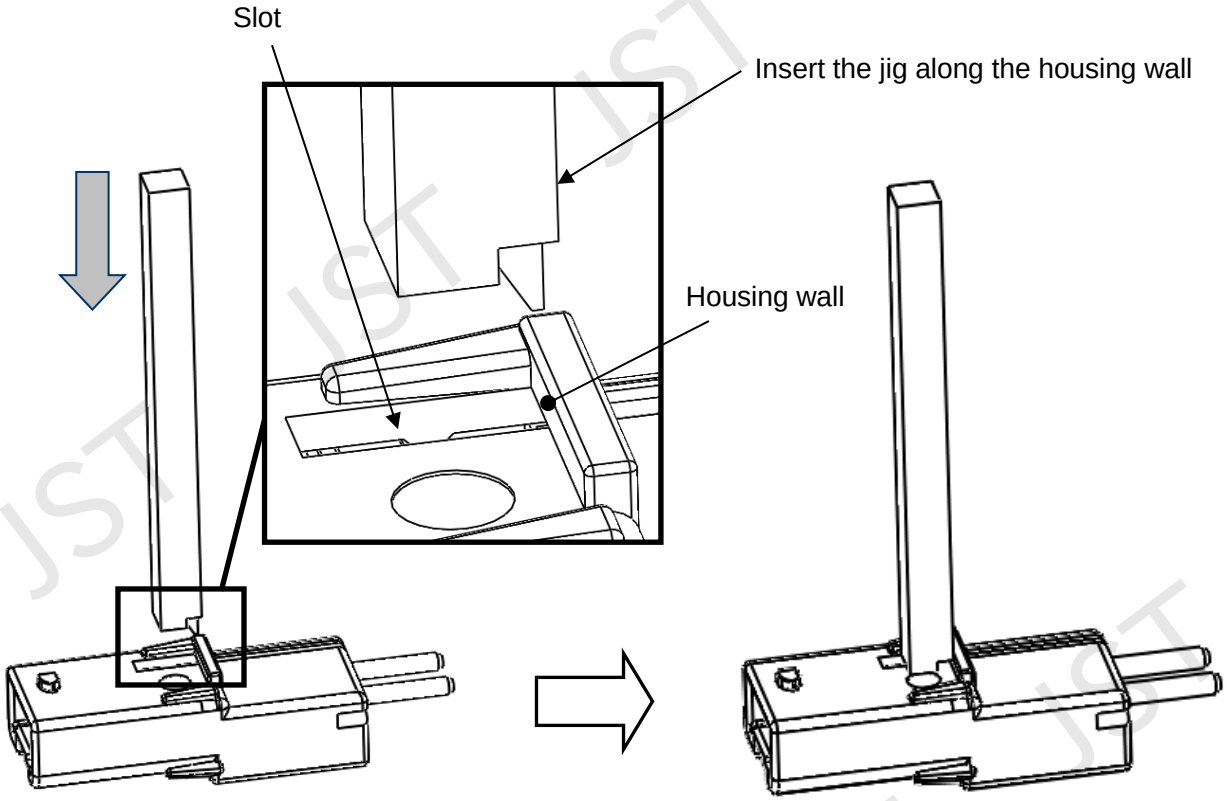


Fig. 22

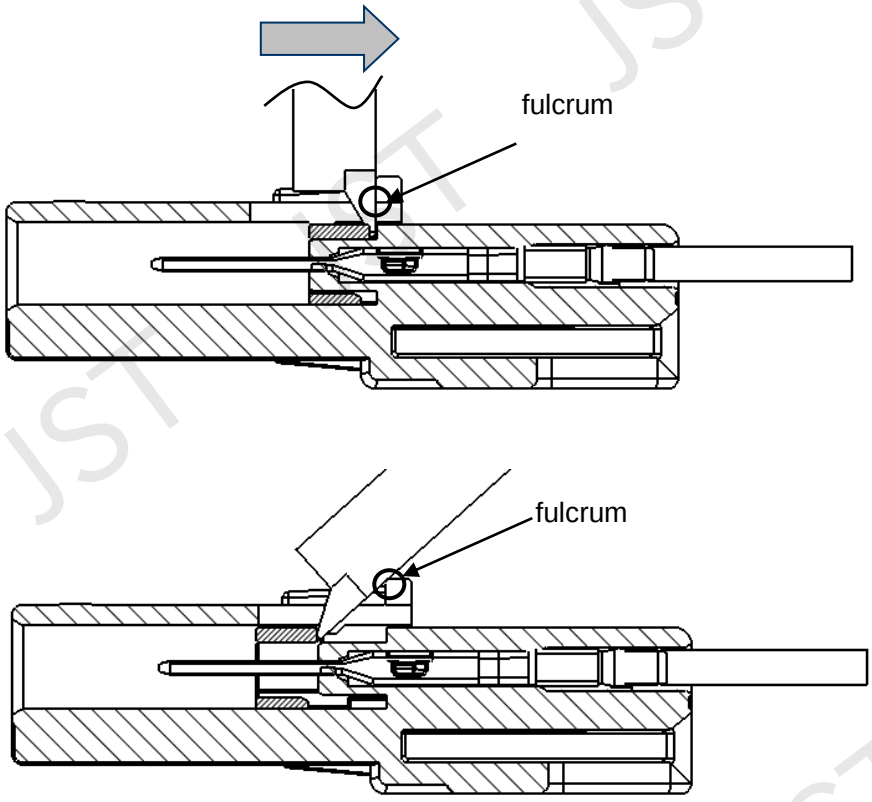


Fig. 23

7-5 Extracting Male Terminal from the Male Housing

① Check to make sure the male Retainer is released into its pre lock position before attempting the extraction of the male terminals.

② To extract the male terminal from the housing, the operator can use a 0.8mm flat screwdriver and insert the screwdriver into the position to release the housing lance as shown in Fig.24

③ Gently pry the housing lance so it is lifted just enough to release the terminal and apply enough force to remove the terminal from the housing. (See Fig. 24)

Precautions in extracting the male terminal

- Unless the retainer is released to the pre-locking position, the male terminal cannot be extracted out.
- Do the extraction operation with care so as not to damage the male terminal.
  After the extraction, check that there is no damage on the male terminal. When the male terminal is extracted from the housing, check no damages, no deformation and no sinking lance around the mating entrance of the housing . Only when they are not found, reuse it. When reusing, check that the crimped terminal is hooked on the lance and the retainer is at the locking position.
  Never use the male terminal and the housing which have damages and deformation.

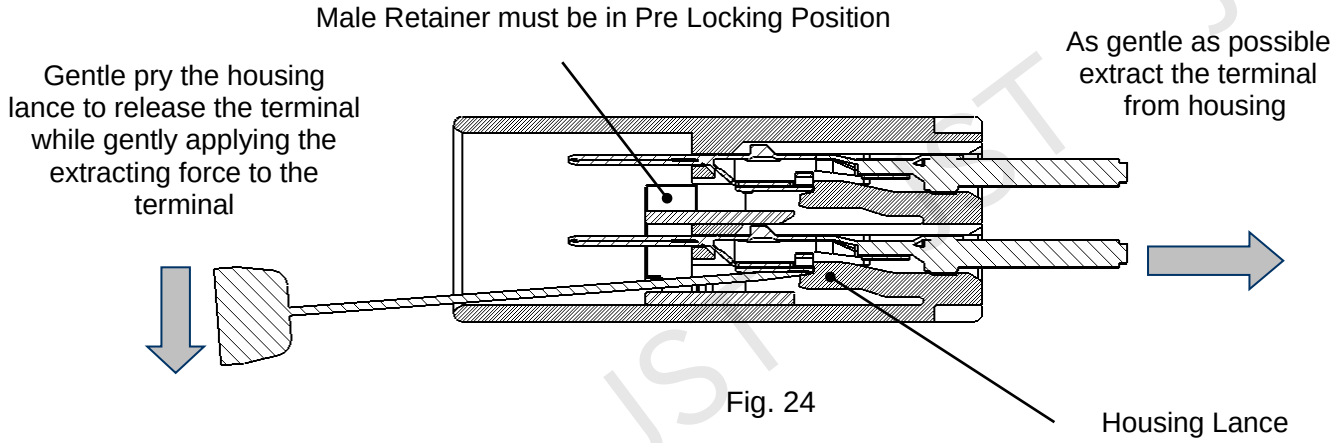


Fig. 24

8. Mating and extracting the Female and the Male Connector

8-1 Mating the Female Connector to the Male Connector

① Check to see if the Male/Female Retainer is in the proper position before mating the assemblies. See Fig. 10 and 20 for the Male/Female Retainer's final position.

② Before mating the male and female connector, make sure that there are no foreign objects in the male housing assembly. This could cause damage to the male pins or jam the male and the female assemblies together.

③ Orientate the female connector to the proper direction and mate with the male connector. There is no need to release the slider for mating (Fig. 25).

④ When mating the male and female connector, the operator will hear and feel a click after the mating is complete.

⑤ Female connector must be completely mated to male housing assembly as shown in Fig. 26.

⑥ Check to see if slider is in the proper position (Fig.27).

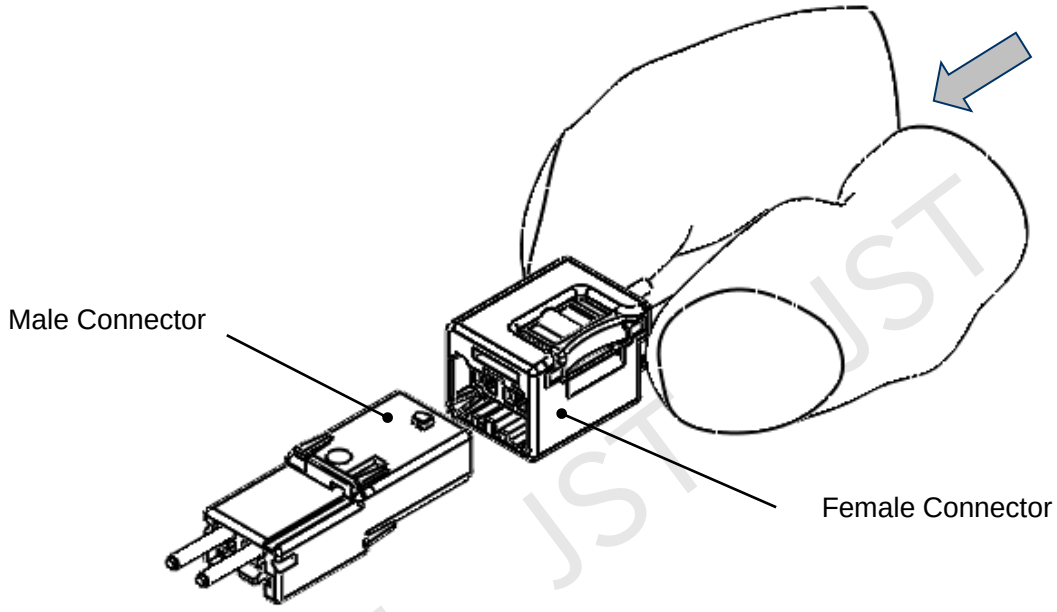


Fig. 25

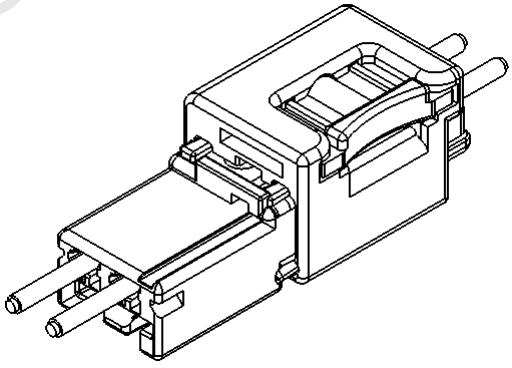
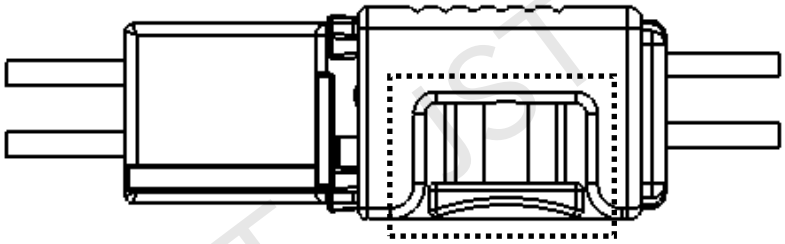
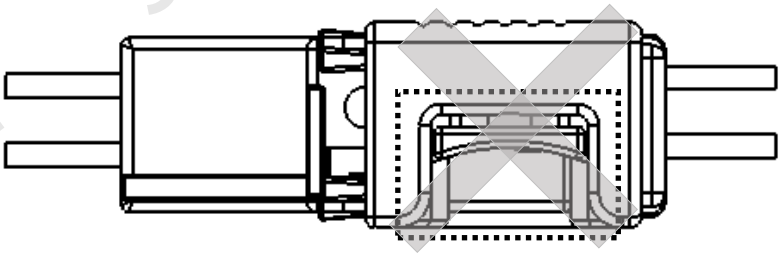


Fig. 26



Slider position

Good



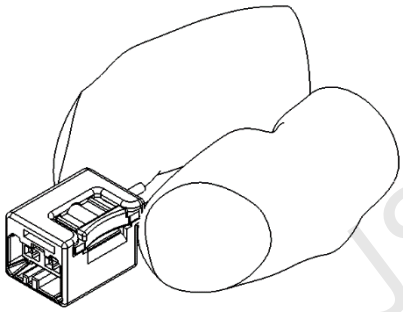
Slider position

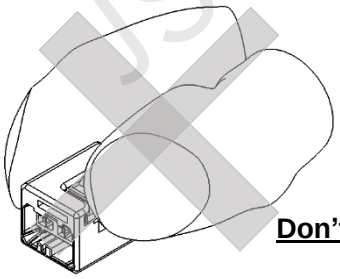
No Good

Fig. 27

Notes:

Catch the housing part without pushing the part Slider of Female housing Assembly when mating.





Don't push the Slider for mating

Good

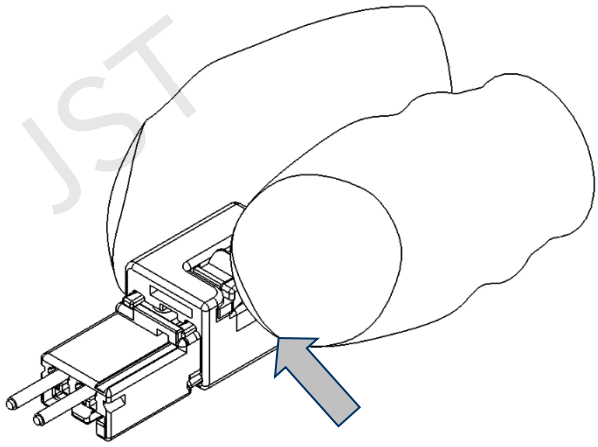
No Good

Fig. 28

8-2 Extracting the Female Housing Assembly from the Male Housing Assembly

① To release the locking mechanism, slide the female housing assembly's slider to disengage the female housing assembly (Fig. 29).

② After releasing the lock gently, extract the female housing assembly from the male housing assembly. Reminder, do not pull on the harnesses as it could damage the system.



(Step1)

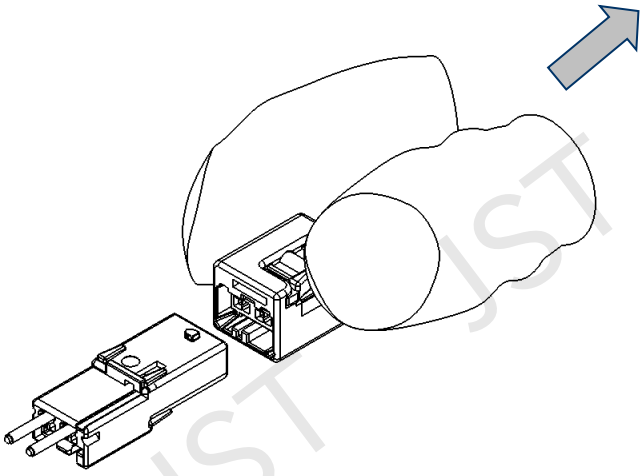


Fig. 29

9. Control of the Female and Male Assembly Harnesses

9-1 Harness handling

Be careful not to damage and put unnecessary pressure on the connector and wire.

9-2 Method of wire fixing

When it is necessary to bend wire, provide straight part that is more than 10 mm away from housing end (Fig. 30).

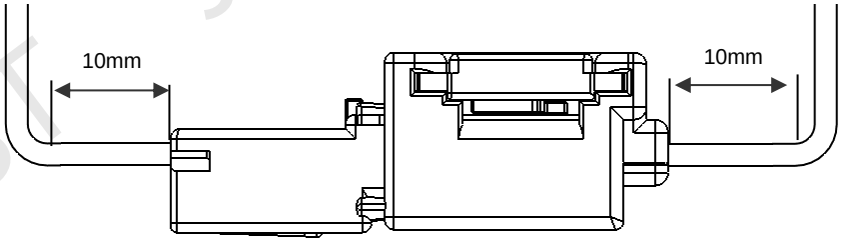


Fig. 30

10. Fixed to the Case, Body

10-1 Recommended bracket layout

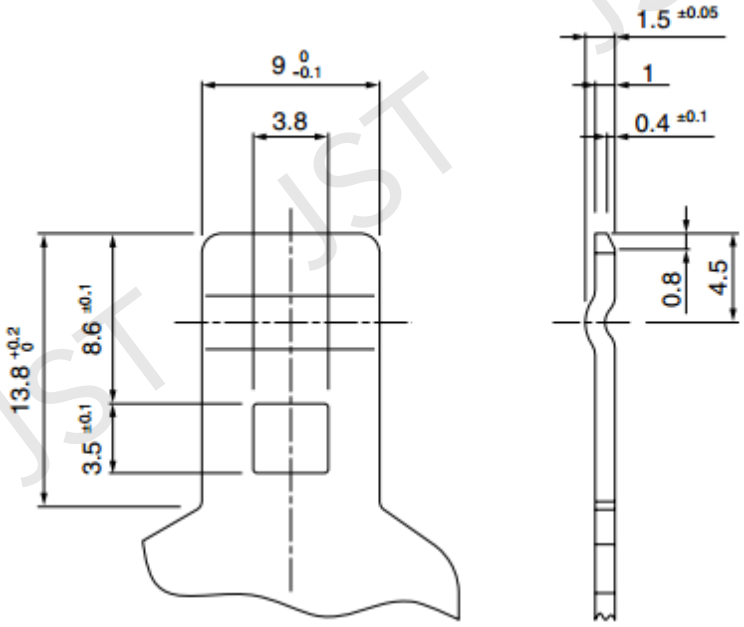


Fig. 31

10-2 Mounting the bracket

① Before the operation, check no foreign substances on the bracket.
② Check the mounting direction and insert the bracket. (Fig.32)
③ Insert the bracket until clicking and the operation completes at the condition of Fig.33.

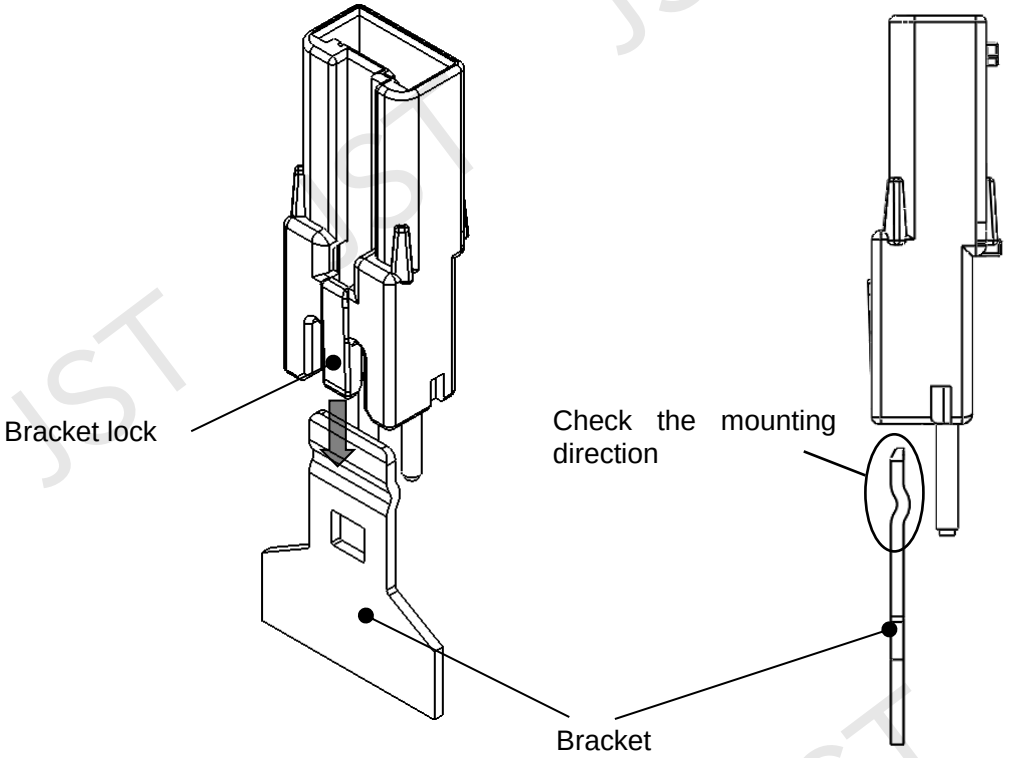


Fig. 32

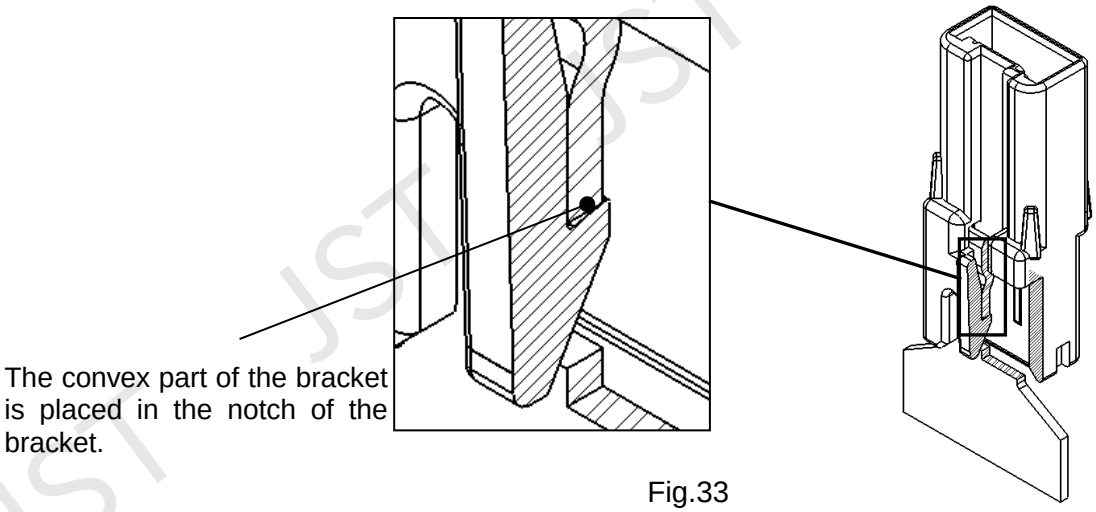


Fig.33

10-3 Removing the male assembly form the bracket

④ Insert a flathead screwdriver of approx.1.5mm from the end of the bracket lock and lift the bracket by applying a load in the unlocking direction shown by the arrow of Fig.34.
① With lifting the bracket lock, pull up the male assembly in a straight and remove it from the bracket.

Precautions in removing the bracket
Never reuse the male assembly which has been removed once.

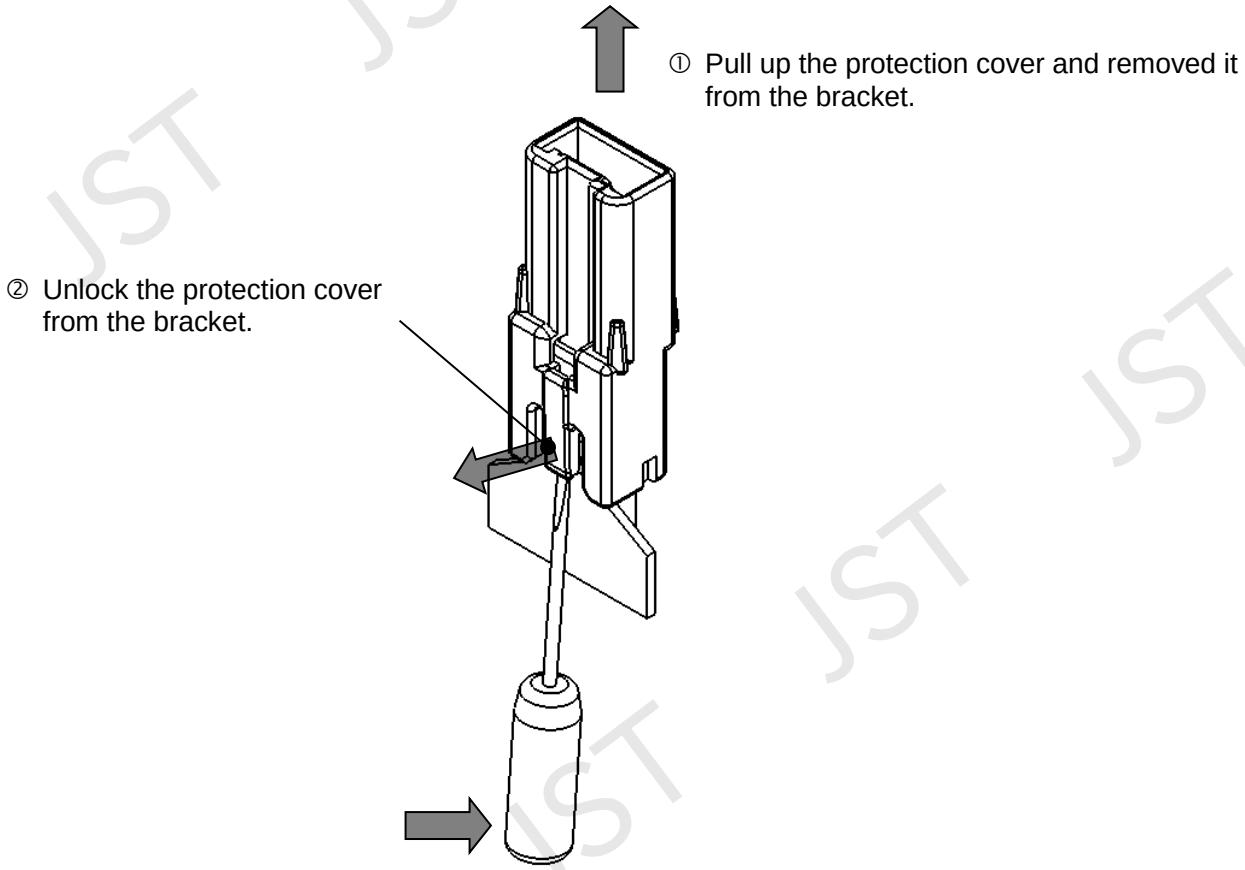


Fig.34