



## USER'S MANUAL

# Basics

This manual describes the basic knowledge and procedures that are common to all the models and required to use the machine.

If you are a novice to or unfamiliar with the machine, be sure to read this manual first.

# For embroidery machines



## Foreword

This manual is aimed at customers who are using a TAJIMA embroidery machine for the first time, and it introduces basic handling of each part. The customer who is already an owner of a TAJIMA embroidery machine is also requested to read this manual, understand the contents, and then use the machine.

This manual may contain discrepancies in detailed specification when compared with actual production. If you have any questions about this manual, consult your TAJIMA distributor.

**TISM Co.,Ltd.**

## SAFETY PRECAUTIONS

Items that require your special attention on operation are specified below.



Indicates that there is a high danger of death or serious injuries [\*1].




Indicates that there is a likelihood of death or serious injuries [\*1].





Indicates a potentially hazardous situation which may result in minor or moderate injury [\*2] or physical damage.

\*1: A condition caused by electric shock, injury, fracture of a bone etc. that leads to aftereffects, or an injury that necessitates hospitalization or visits to a hospital over a long period.

\*2: An injury that does not necessitate hospitalization or visit to a hospital over a long period.

 : Prohibited items

 : Items that could cause electric shock

 : Items that must be followed carefully to ensure safe operation

<b>Chapter 1</b>	Normal embroidery .....	6
<b>1.</b>	Machine needle .....	6
1-1.	Name of each part .....	6
1-2.	Standard needle DB-K5 .....	7
1-3.	Relationship between the needle and the thread .....	7
1-4.	Changing a needle .....	8
<b>2.</b>	Rotary hook .....	9
2-1.	Rotary hook .....	9
2-2.	Bobbin case .....	10
2-3.	Bobbin .....	13
<b>3.</b>	Thread .....	14
<b>4.</b>	Fabric stretching .....	15
<b>5.</b>	Threading .....	17
5-1.	TFMX-II .....	17
5-2.	TFMX-IIC, TMBP2-SC, TMBP2-XC and FM head (TCMX and TLMX) .....	19
5-3.	TMCP-VF and TMCS-VF .....	20
<b>6.</b>	Adjusting Thread Tension .....	22
6-1.	Under thread tension .....	22
6-2.	Upper thread tension .....	24
<b>7.</b>	Relation between needle and rotary hook .....	25
7-1.	Needle bar lower dead point .....	25
7-2.	Timing between needle and rotary hook .....	27
<b>8.</b>	Role of each part .....	28
8-1.	Presser foot .....	28
8-2.	Thread breakage detector .....	30
8-3.	Middle thread guide with thread take-up spring .....	30
8-4.	Upper thread lock device .....	30

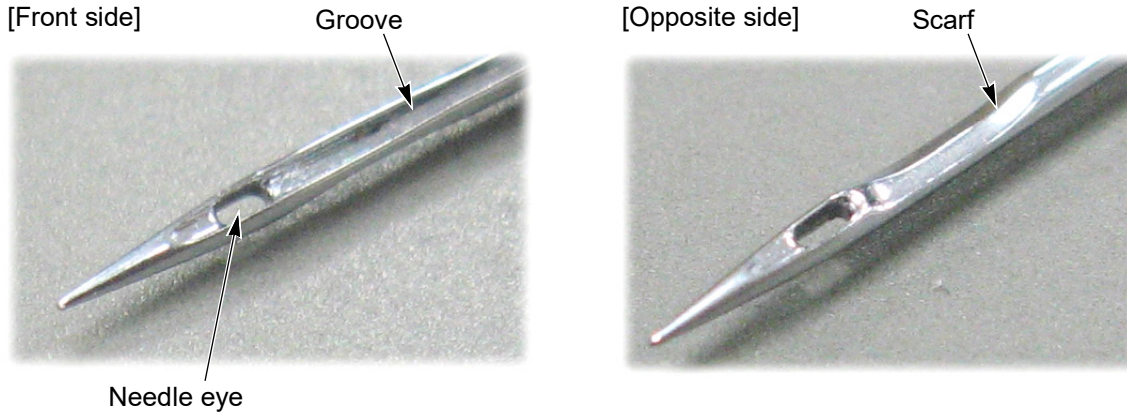
<b>Chapter 2</b>	Chenille stitches embroidery .....	31
1.	Chenille stitches .....	31
1-1.	Stitch type .....	31
1-2.	Needle for chenille stitch.....	32
1-3.	Combination of needle, N-Pipe and needle plate .....	33
1-4.	Looper.....	34
2.	Threading .....	35
2-1.	Threading.....	35
2-2.	Adjusting Thread Tension.....	38
<b>Chapter 3</b>	Embroidery frame.....	41
1.	Frame spec. ....	41
2.	How to use the middle sash stay (accessory).....	42
2-1.	About stays .....	42
2-2.	Installation method (when using the one-touch frames) .....	44
2-3.	Installation method (when not using the one-touch frames).....	47
2-4.	Quantity of stays and breakdown of accessories .....	50

## Chapter 1 Normal embroidery

### 1. Machine needle

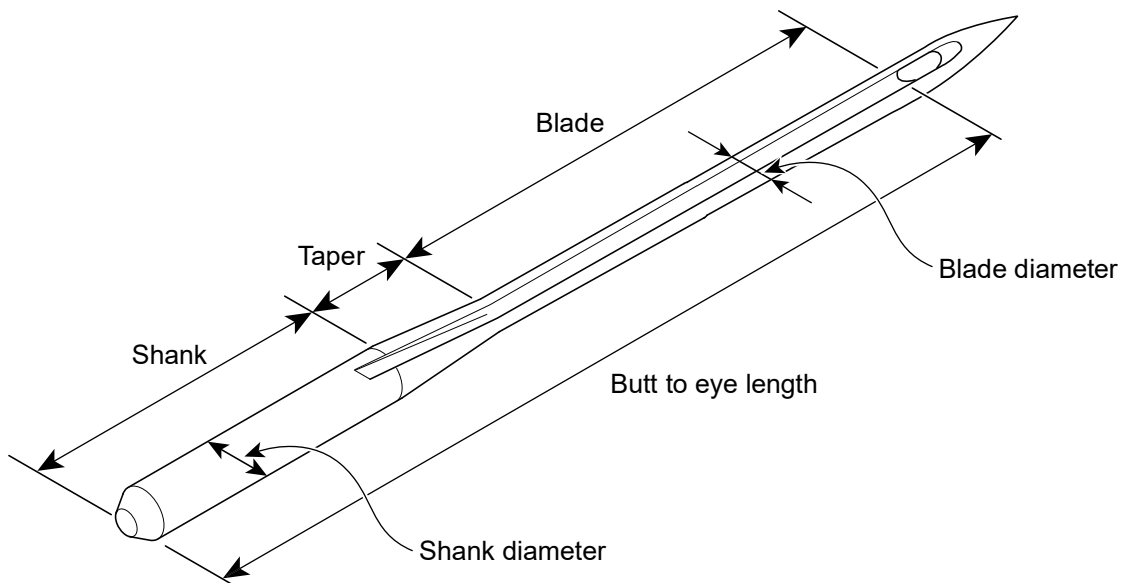
Use needles developed exclusively for embroidery machines.

#### 1-1. Name of each part



Usable needles for the TAJIMA machines

Shank diameter	1.62 to 1.63 mm
Butt to eye length	33.8 to 33.9 mm
Blade diameter	It means the needle count number (the following value is an example). 11: Japanese notation 75: German notation



## 1-2. Standard needle DB-K5


Standard needles (the chart below) adopted by Tajima have the following merits.

- (1) The tip of the needle is spherical and has excellent durability.
- (2) It can be used for various purposes such as thin to thick fabric, knit materials.
- (3) It is effective to prevent the breakage of the thread and the needle.

Name	Application	Needle size	Length of shank (Refer to the figure of page 6)
DBxK5RG <sup>[*1]</sup>	Border frame, Tubular goods frame, Cap frame	11 (75)	16 mm
DBxK5Z1 <sup>[*2]</sup>			
DBxK5Z2 <sup>[*7]</sup>	Cylindrical frame		13.5 mm

\*1:Manufactured by GROZ-BECKERT

\*2:Manufactured by ORGAN

 It is possible to select the needle for items in chart above according to the application. For details, consult your distributor.


## 1-3. Relationship between the needle and the thread

Select the needle according to the thread to be used. The chart below indicates applicable sizes of needles and threads (rough standard) that are generally used.

Needles and threads generally used are shown as below.

Needle (Size): No.11 (No.75)

Thread: Rayon 120 d/2, Polyester 120 d/2

 The indication of the thread count differs depending on country, area, or manufacturer.

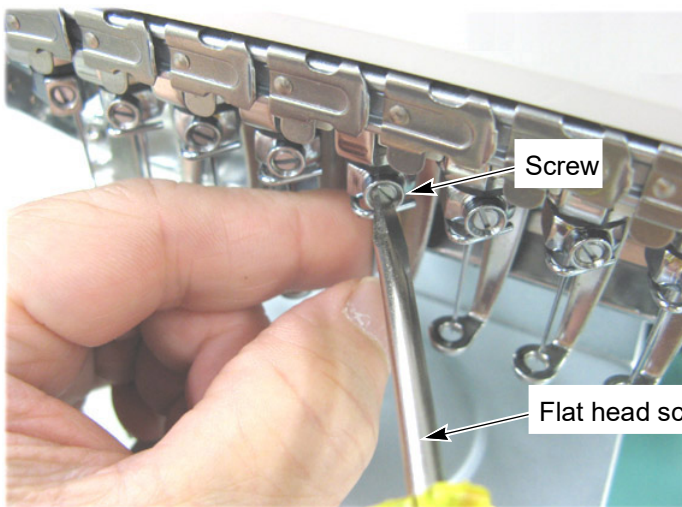
Needle size		Thread			
Japan	Germany	Cotton	Silk	Polyester	Rayon
9	65	70 to 80	100 to 120	130 to 150	70 to 100
10	70				
11	75	50 to 60	80 to 100	100 to 130	100 to 130
12	80				
13	85	36 to 40	60 to 70	80 to 100	130 to 150
14	90				

### 1-4. Changing a needle

The needle is consumable. When trouble occurs, check the following points. If a corresponding point is found, change the needle.

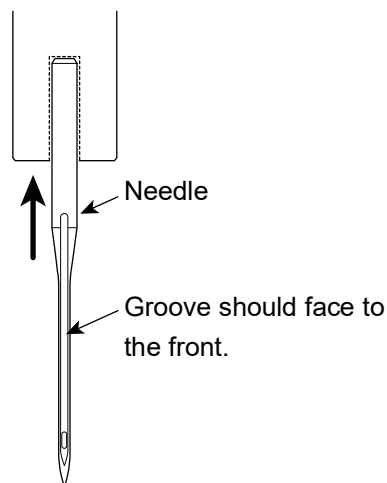
- (1) The tip of the needle might be damaged.
- (2) The blade might be bent.
- (3) Adhesive material such as a glue might be stuck to the needle.
- (4) The needle may not be suitable for the thread or the fabric being used.

[How to change a needle]



Loosen the screw to remove the needle.

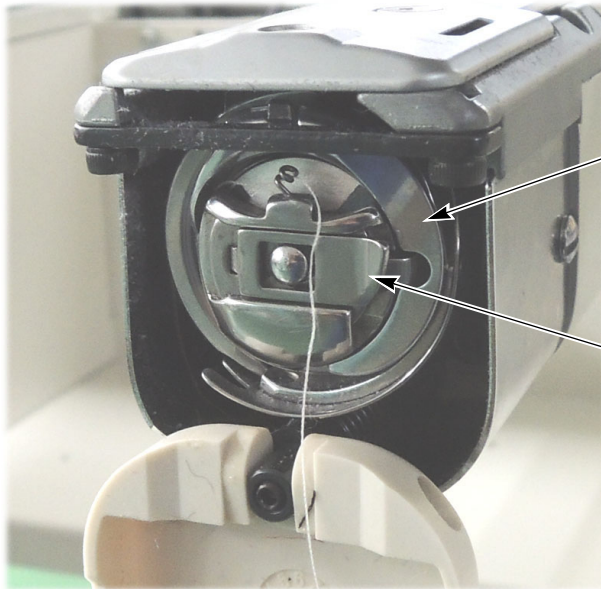
When inserting the needle, lift the needle and tighten the screw with the groove facing to the front.



Rotary hook

## 2. Rotary hook

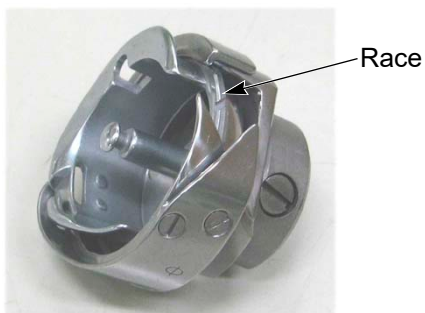
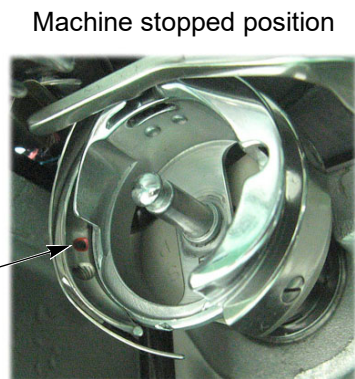
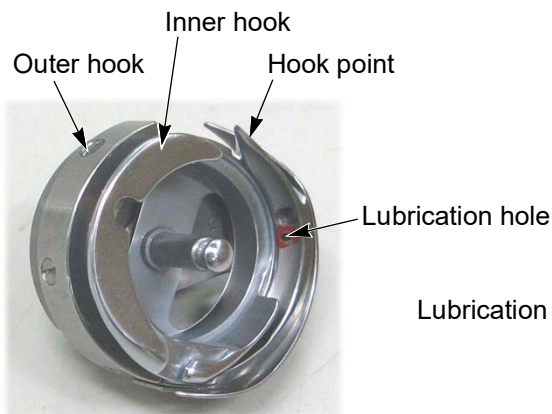
### 2-1. Rotary hook



Rotary hook

Bobbin case



Two types are available depending on the machine model. (Refer to p.10)



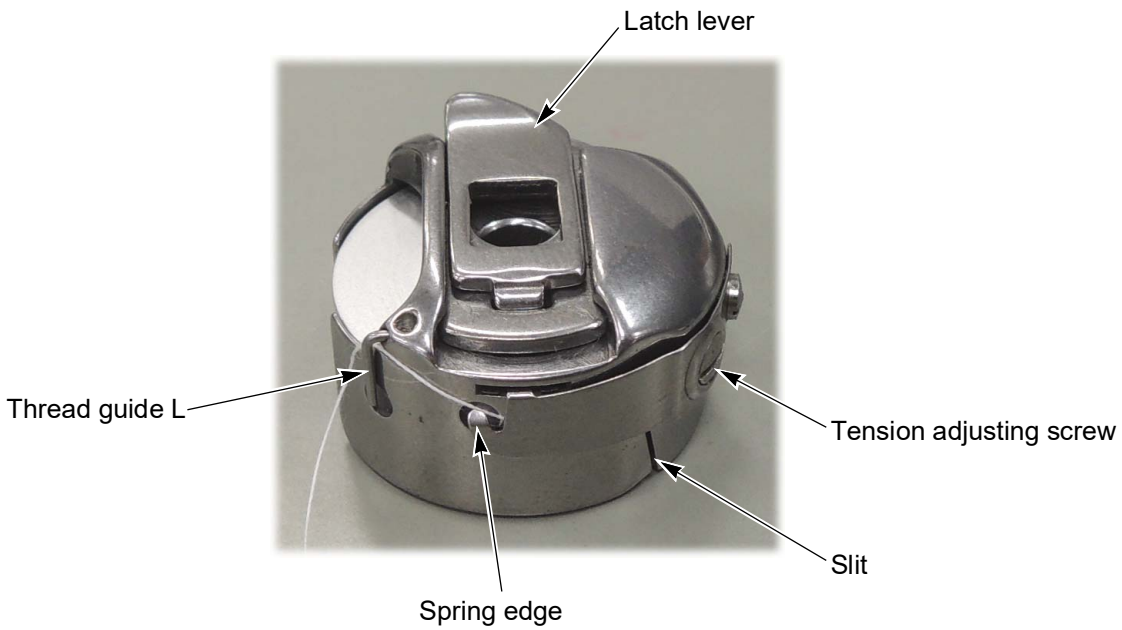
**2-2. Bobbin case**

Either of the following 2 types of bobbin cases are equipped with the machine when shipped.

The type of bobbin case differs depending on the destination or specification.

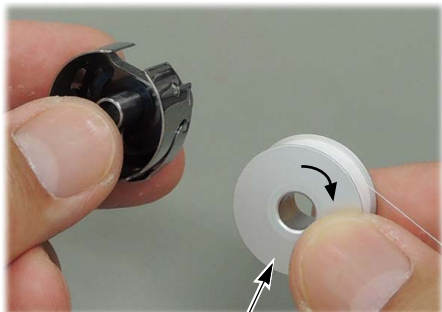
Bobbin case	
Thread guide L type	Thread guide coil type
	

[Thread guide L type]



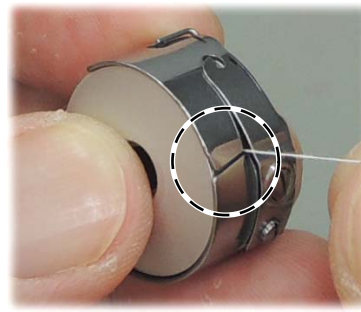
[How to set a bobbin, L type]

(a) Set the bobbin in the bobbin case.

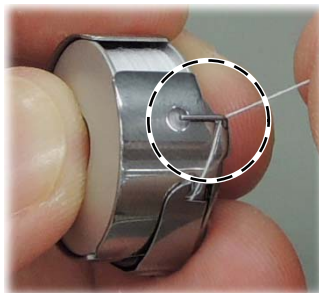
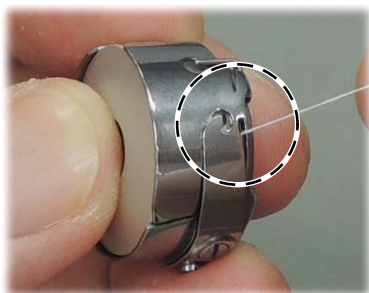


Pay attention to the direction of the bobbin.

(b) Put the thread into the slit.

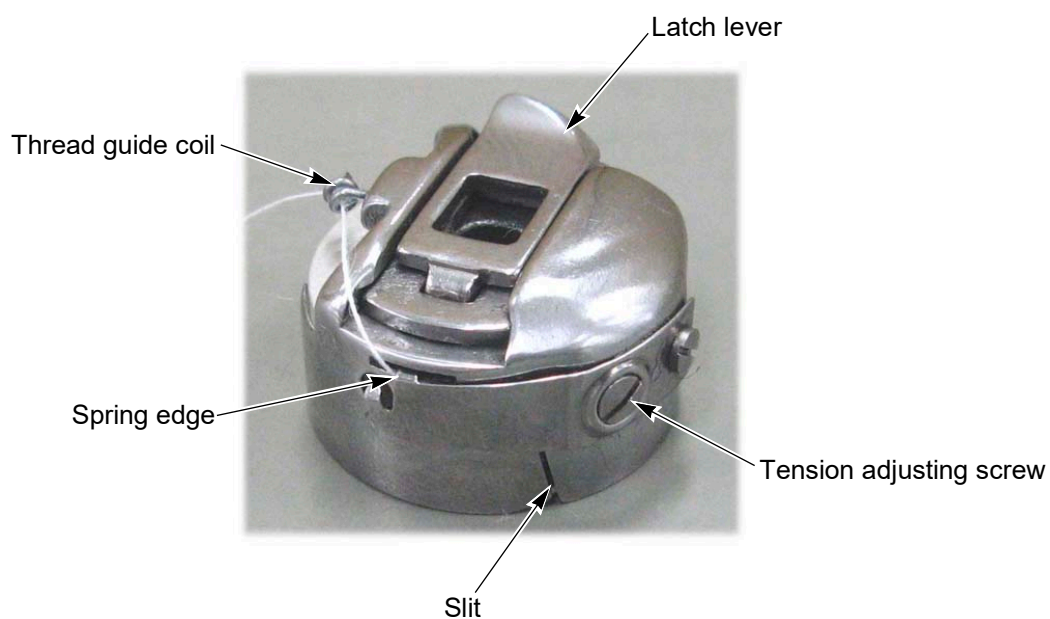


(c) Lead the thread to the spring edge. (d) Hook the thread under the thread guide L.



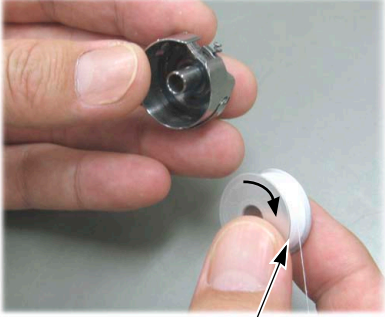
(e) After that, adjust the tension. (Refer to p.22)

[Thread guide coil type]



[How to set a bobbin, Coil type]

**(a)** Set the bobbin in the bobbin case.

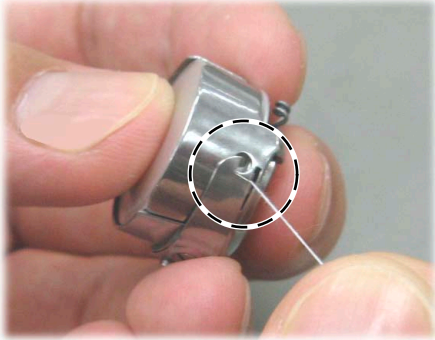


**(b)** Put the thread into the slit.



Pay attention to the direction of the bobbin.

**(c)** Lead the thread to the spring edge. **(d)** Wind the thread into the thread guide coil.



Enlarged



**(e)** After that, adjust the tension. (Refer to p.22)

[How to insert a bobbin case]

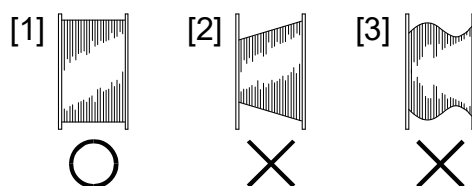
Insert the bobbin case into the rotary hook, until it clicks into place.



Pull the thread out about 5 cm.

## 2-3. Bobbin

Winding amount of the under thread [1] is adequate. When under thread is not wound evenly like [2] or [3], the thread breakage, biting or bad embroidery finish will occur.



When the winding condition of the under thread is like above figure [2] or [3], the adjustment of the under thread winder is necessary. For details, refer to the separate volume UNDER THREAD WINDER .

When you wind the under thread to the bobbin adequately, the volume should be close to what is as shown below (an example).

Bobbin for regular rotary hook	Bobbin for jumbo rotary hook
100 m	180m

Adequate amount

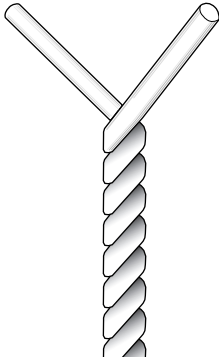


Overwound



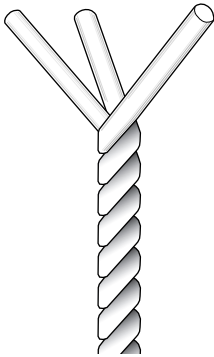
### 3. Thread

Use two-strand twisted thread for embroidery.



Embroidery thread (two-strand twisted)

It is frequently used for decoration. It has softness to emphasize brilliance even if it overlaps.

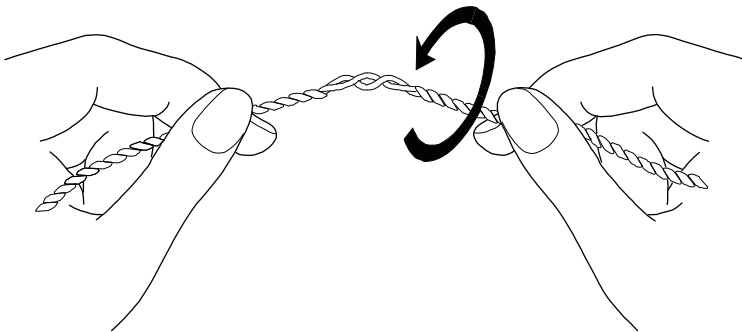


Sewing thread (three-strand twisted)

Its purpose is to sew the fabric together and it has enough strength.

#### [Upper thread]

Use left-twisted upper thread that coincides with the rotating direction (counterclockwise) of the rotary hook.



Twist the thread in the direction (indicated by arrow) with your right hand. It is left-twisted if the thread twisting becomes looser, but it is right-twisted if the thread twisting becomes tighter.

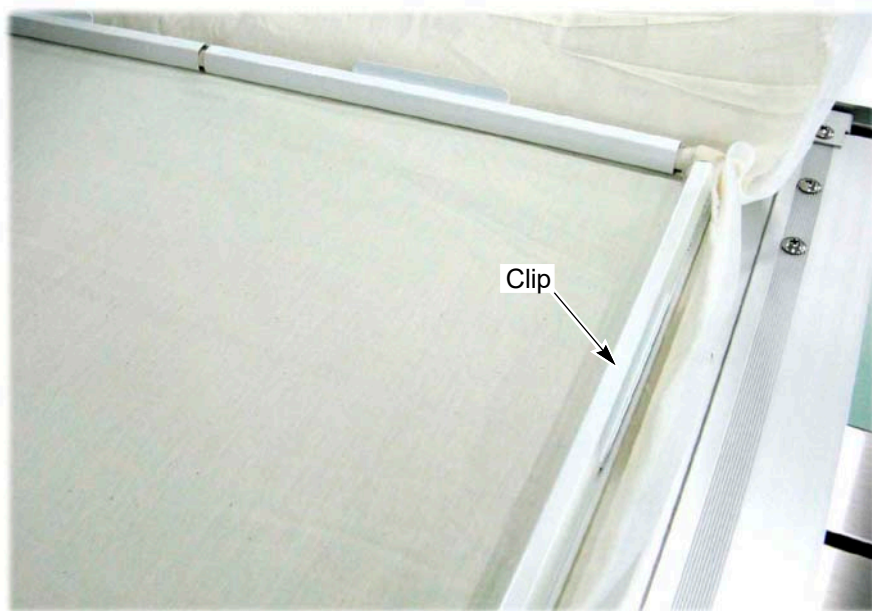
#### [Under thread]

Cotton thread or the polyester spun thread is popular (differs depending on application). Select thinner thread when possible (equivalent to 120 count number) for embroidery (the back of the fabric will be finished softly).

#### 4. Fabric stretching

To make the embroidery finish beautiful or to perform efficient production by reducing the thread breakage, it is important to stretch the fabric correctly on the embroidery frame. Stretch the fabric so there are no wrinkles.

The number of clips and their length differ depending on the frame size. Attach the clips evenly, minimizing the interval between clips.



When you attach the frame holder or the square frame, detach the border frame sash. There are two types (Figure A and B below) of the border frame sashes, and they differ in fitting methods.

Figure A

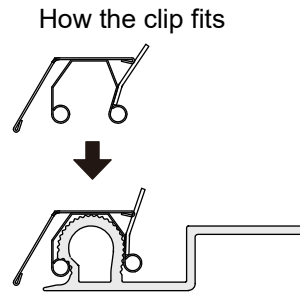
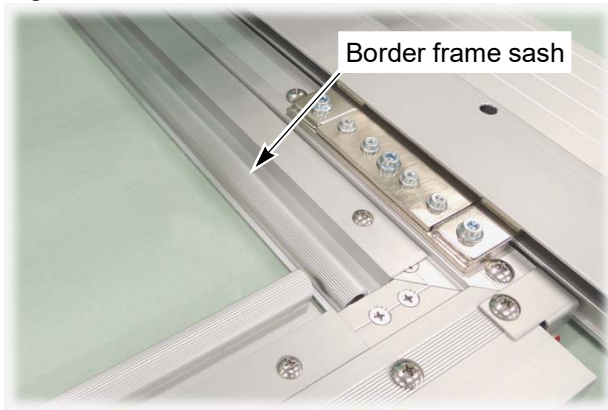
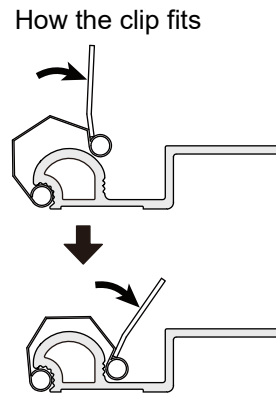
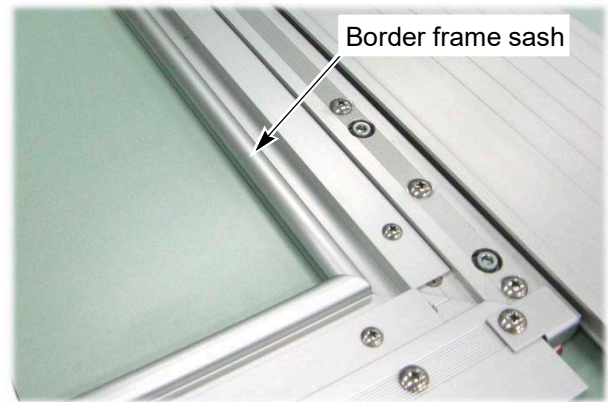


Figure B



About the border frame sash in the figure B

Do not attach the clips to the border frame sash at the cut section of a machine with table cut spec. The clip may be attached incorrectly as shown in the figure C. If the frame is moved in this condition, the table could be damaged.

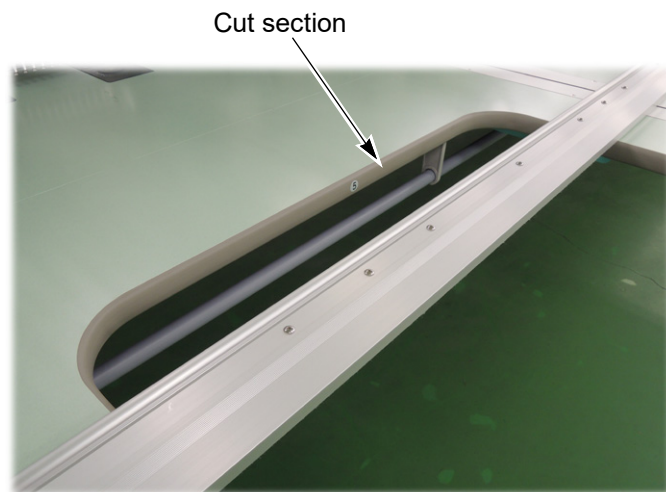
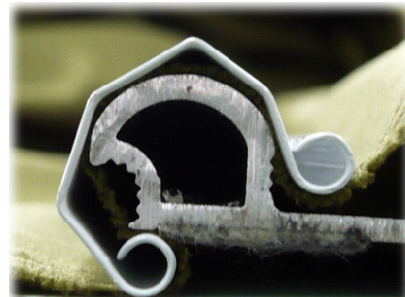


Figure C

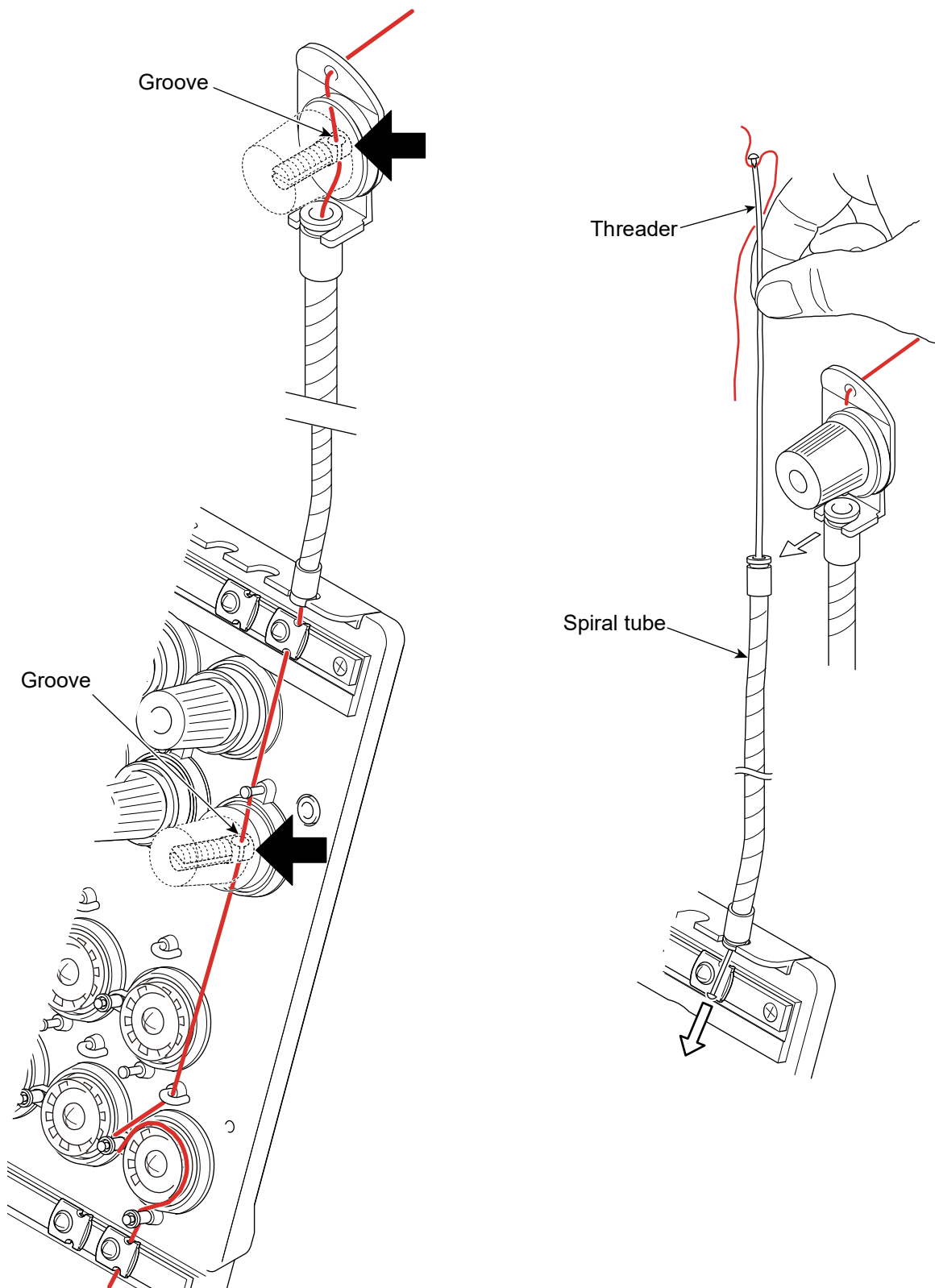


## 5. Threading

### 5-1. TFMX-II

(1) Pass the thread through the groove of the tension stud. (Indicated by the arrows)

(2) To perform threading through the spiral tube, use the threader (accessory).

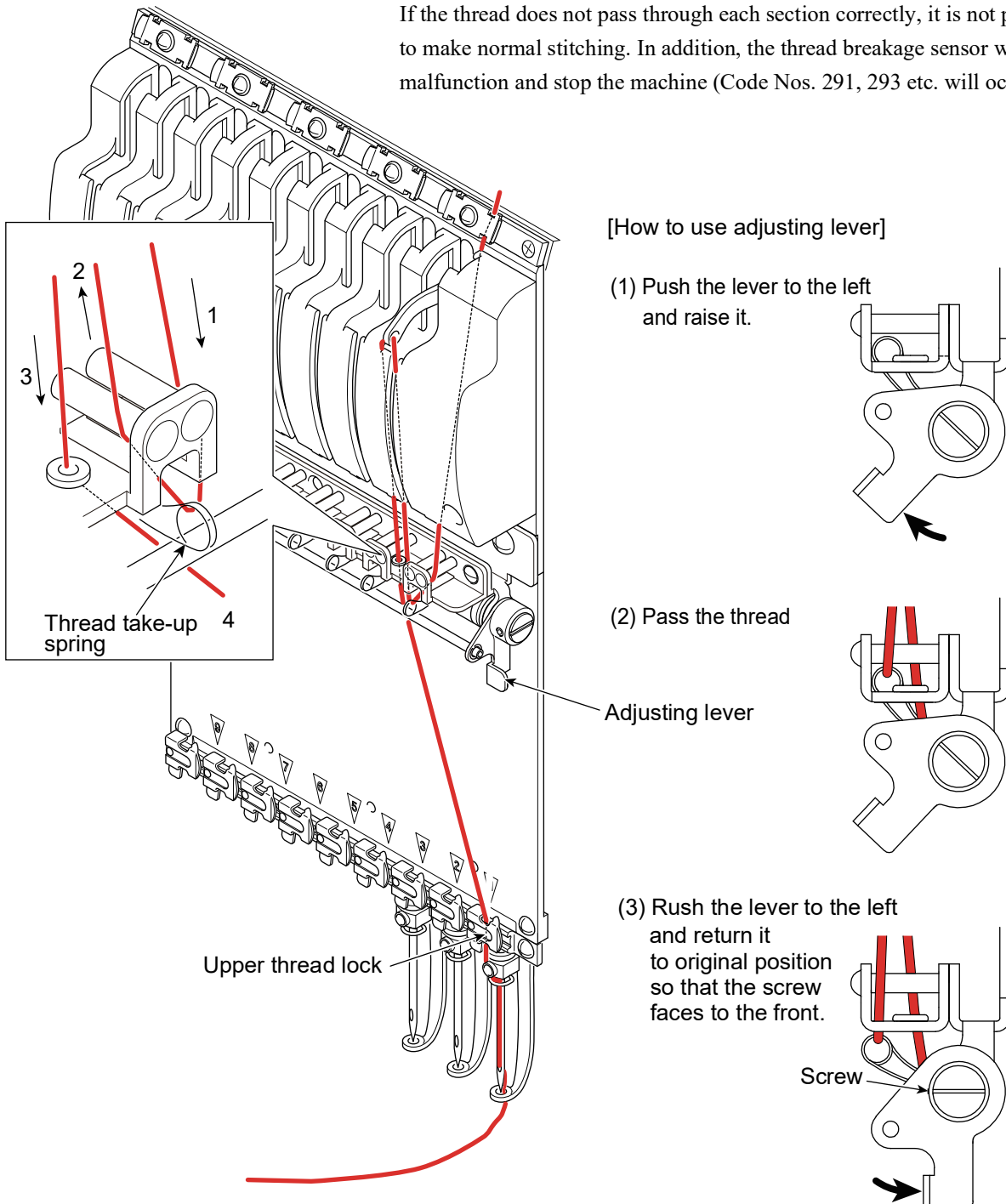


## ! CAUTION

**!** Make sure you pass the thread through the thread take-up spring and the upper thread lock. Otherwise it will cause thread breakage or it will affect the thread tension.



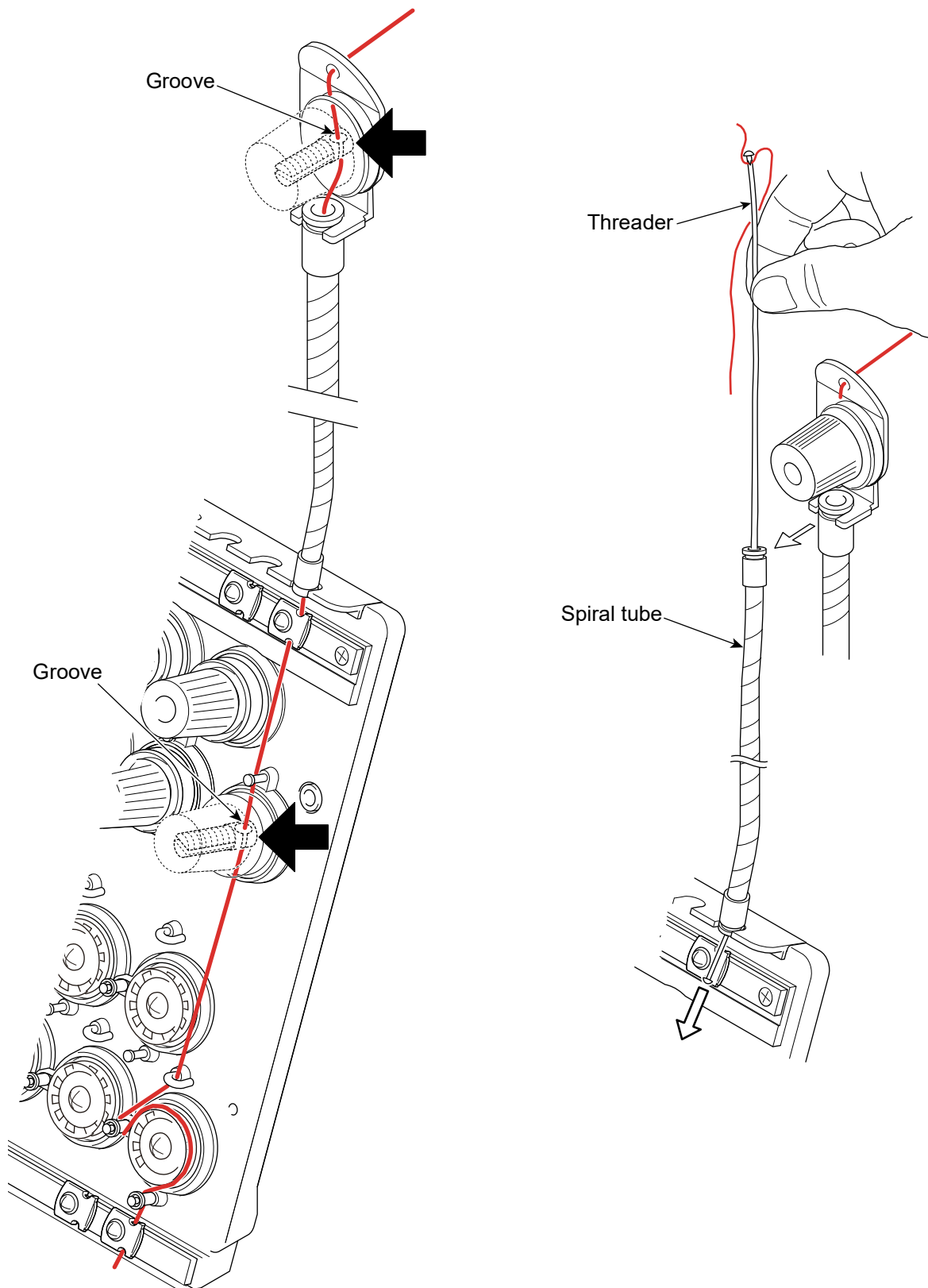
If the thread does not pass through each section correctly, it is not possible to make normal stitching. In addition, the thread breakage sensor will malfunction and stop the machine (Code Nos. 291, 293 etc. will occur).



**5-2. TFMX-IIC, TMBP2-SC, TMBP2-XC and FM head (TCMX and TLMX)**

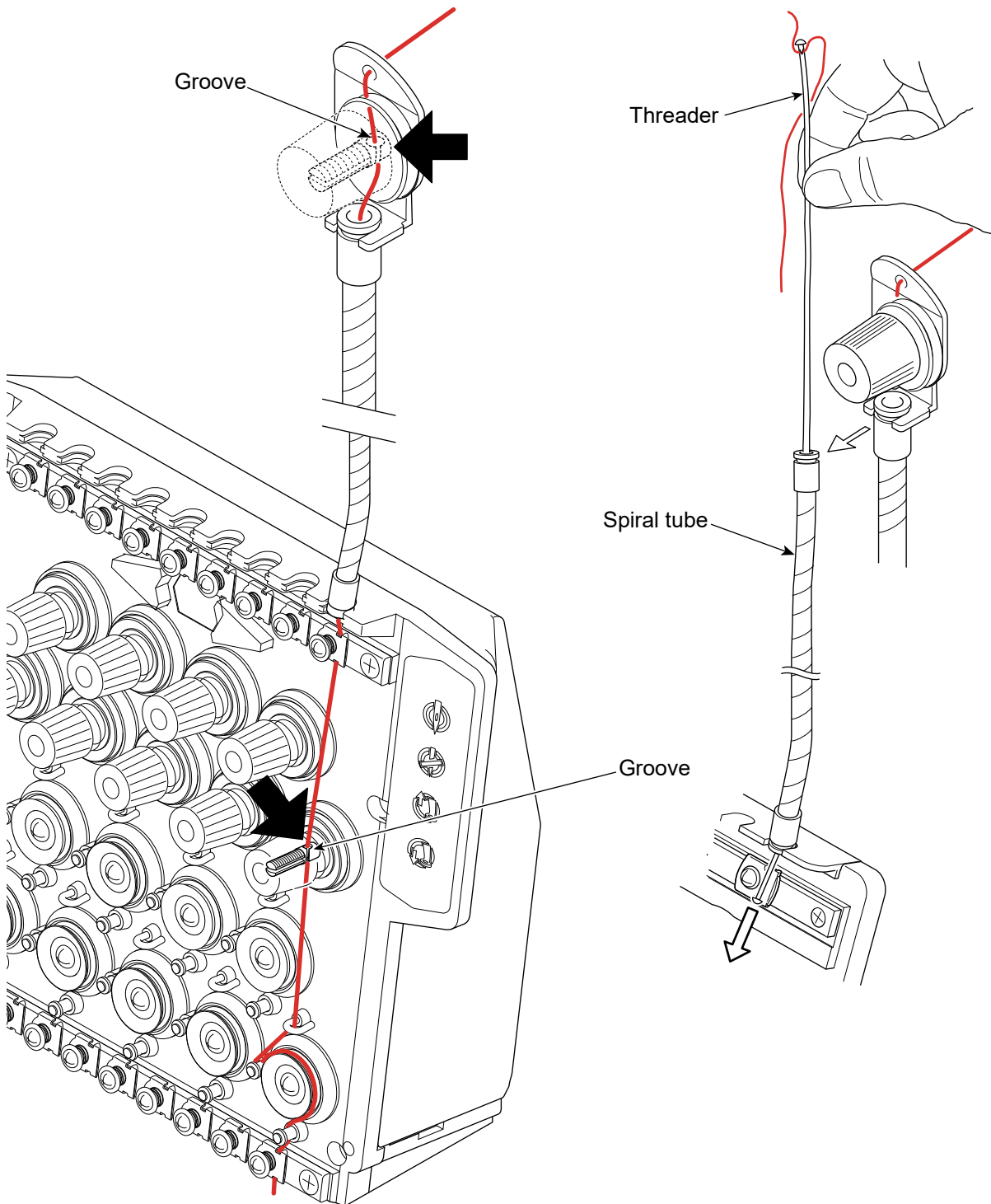
(1) Pass the thread through the groove of the tension stud (indicated by an arrow).

(2) For threading through the spiral tube, use the threader (accessory).



### 5-3. TMCP-VF and TMCS-VF

- (1) Pass the thread through the groove of the tension stud (indicated by an arrow).
- (2) For threading through the spiral tube, use the threader (accessory).





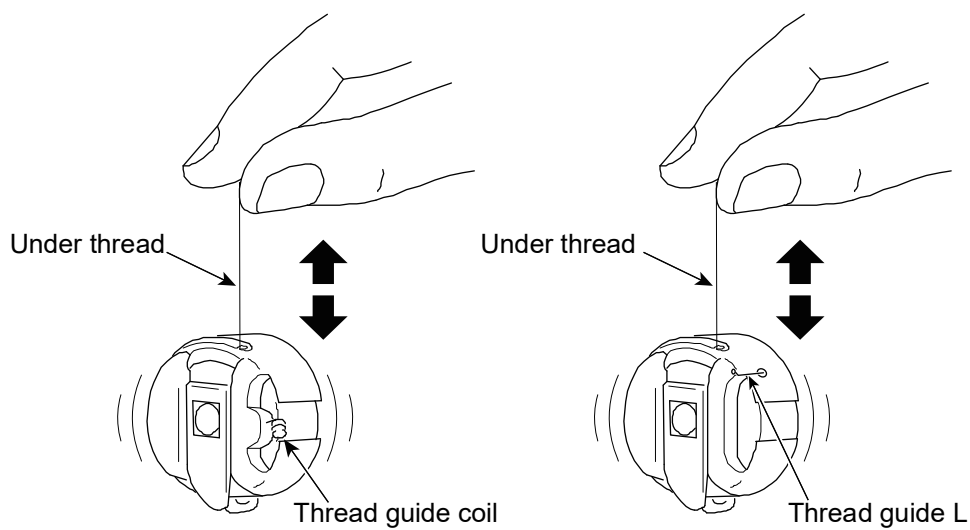
## 6. Adjusting Thread Tension

To make the embroidery finish beautiful or to perform efficient production by reducing the thread breakage, adjust the tension (tensile strength) of upper/under thread adequately.

### 6-1. Under thread tension

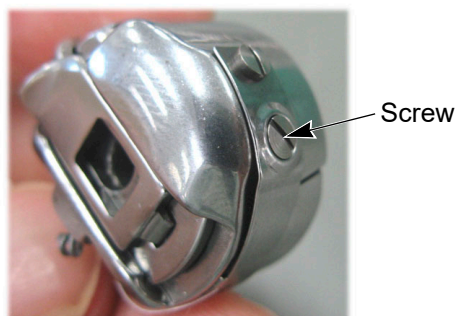
#### (1) When not using a measuring gauge

When the bobbin case is pulled up and down lightly with the under thread hooked to neither the thread guide coil nor the thread guide L, the standard tension should allow the bobbin to slide down slowly.



[When adjusting]

Loosening the screw will make the tension looser. Tightening it will make the tension tighter.



## Adjusting Thread Tension

### (2) When using a measuring gauge

Introduced hereunder are gauges to measure the tension of the upper/under thread. Please make good use of them (sold separately).

The standard under thread tension is 20 to 35 g.



Upper/under thread tension measuring gauge

Part name: UTG



Under thread tension measuring gauge

Part name: BTG (common use for jumbo/regular rotary hook)

## 6-2. Upper thread tension

Adjust the upper thread tension while the upper thread lock is open.

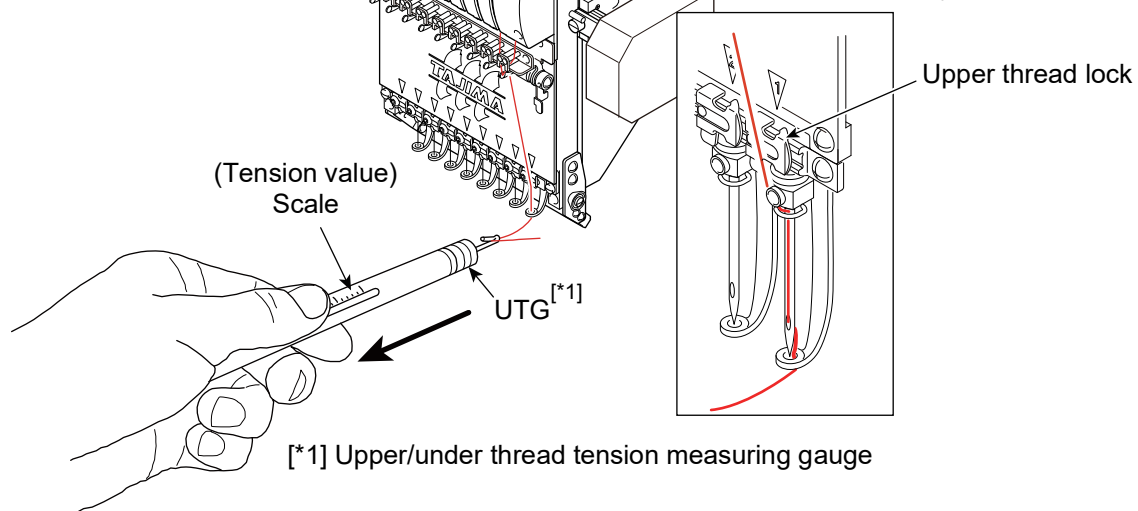
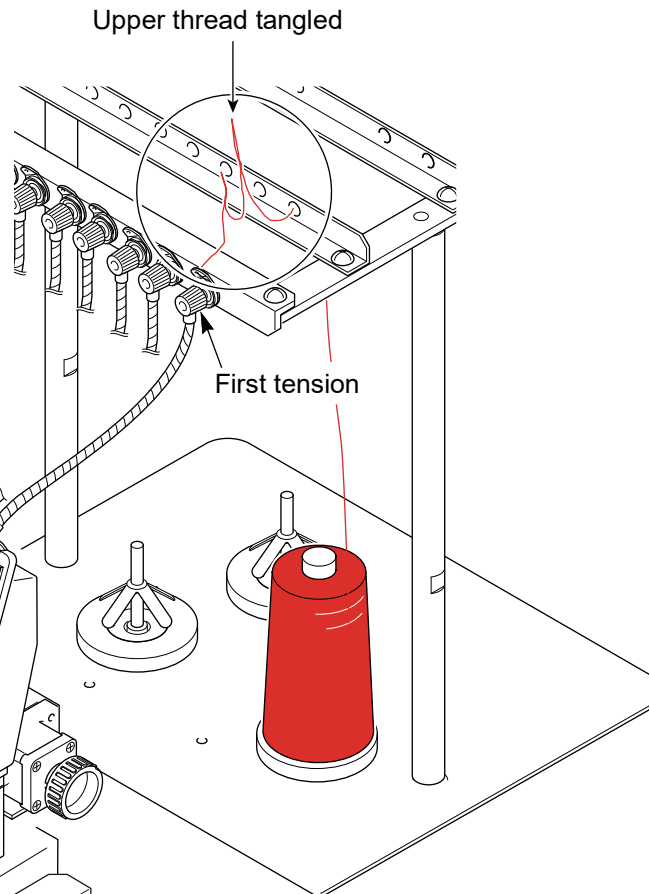
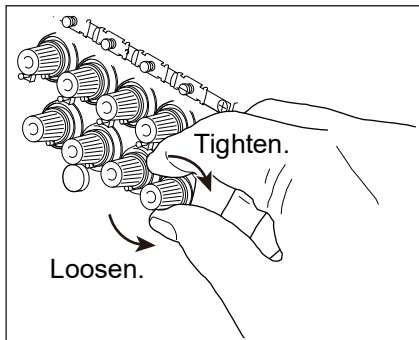
- (1) Remove thread tangles before they enter the 1st tension. It is all right that only light tension is applied here.
- (2) Adjust at the 2nd tension while pulling on the thread so that the tension becomes 100 to 130 g.

Standard values

Thread (d/2)	Tension value (g)
Rayon 120	110 to 130
Polyester 120	100 to 110

The tension values above are rough standards.  
Perform fine adjustment according to the embroidery finish.

Second tension



[\*1] Upper/under thread tension measuring gauge

## 7. Relation between needle and rotary hook

### 7-1. Needle bar lower dead point

Machines have been designed so that the needle comes to the lowest point (Needle bar lower dead point) when the main shaft angle is "178°". An incorrect needle bar lower dead point may cause troubles such as thread breakage or a bad sewing finish. In this case, check the condition of the machine by using the accessory lower dead point gauge.

When the needle comes to the lowest point.



There are two types of lower dead point gauges. Either one is included according to your machine model.

Lower dead point gauge



Engraved mark  
TAJIMA B



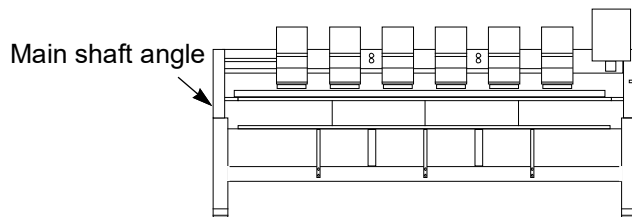
Engraved mark  
TAJIMA

Engraved mark	Use	Model
TAJIMA B	For flat bed type machines	TFMX-II, TMCP-VF and FM head (TCMX and TLMX)
TAJIMA	For small diameter cylinder type machines	TFMX-IIC, TMBP2-SC and TMBP2-XC

## Relation between needle and rotary hook

[How to use]

- (1) Turn the main shaft, and set the main shaft angle to 178°. Lower the needle bar by hand.

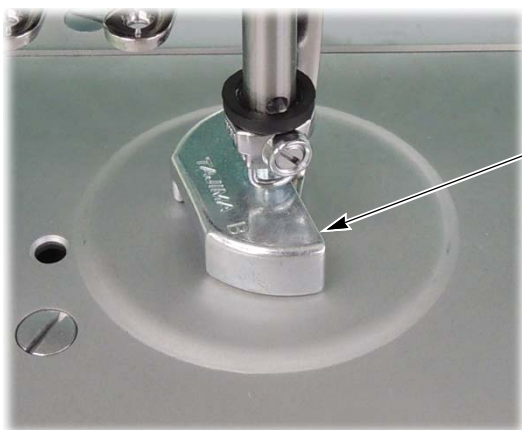


There are also the machine models which indicate the main shaft angle on the operation panel.

For details, refer to the user's manual of your machine.

- (2) Insert the lower dead point gauge (as shown below) so that the needle goes through the groove of the gauge. If the gauge cannot be inserted or has play in the up/down direction, please consult your distributor as there is a possibility that the lower dead point is incorrect.

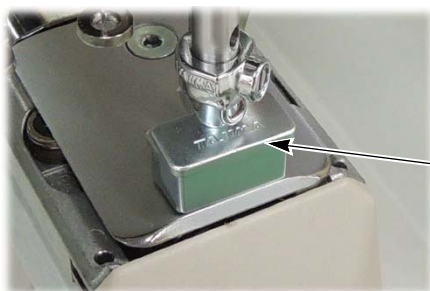
[Example of using the lower dead point gauge on a flat bed type machine]



Lower dead point gauge

Make sure there is no play in the up and down direction.

[Example of using the lower dead point gauge on a small diameter cylinder type machine]



As for the method of lowering the needle bar, refer to the "Machine setup instructions".


Lower dead point gauge

Make sure there is no play in the up and down direction.

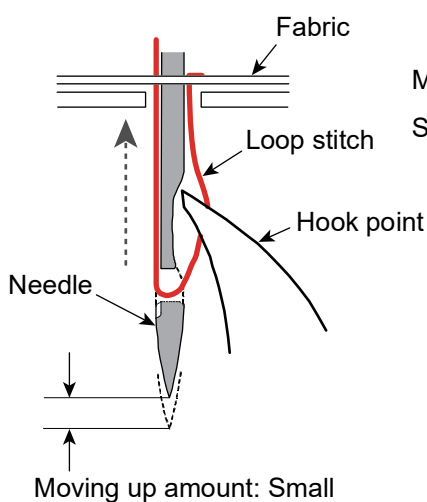
## 7-2. Timing between needle and rotary hook

The timing (figure A) when the needle meets the hook point of the rotary hook is very important.

When the needle moves up, the loop generated under the fabric affects the sewing finish. The loop size changes according to the timing between the needle and the rotary hook.

 The explanation here only shows the relation between a needle and a rotary hook. This does not indicate the timing between the needle and a rotary hook needs adjustment. Regarding timing adjustment between the needle and a rotary hook, consult your distributor.

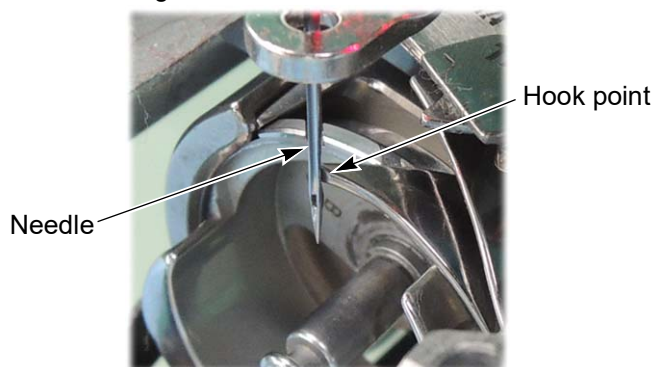
[When timing is early]



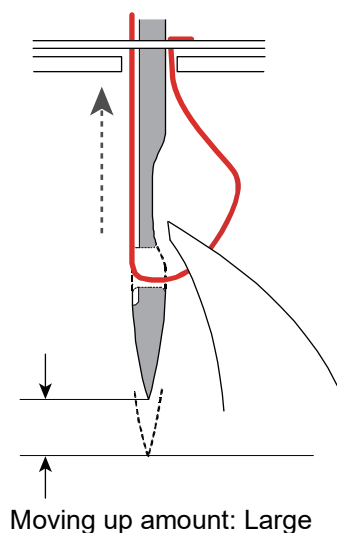
Main shaft angle:  $198^\circ$

Small looping is apt to generate skip stitches.

Figure A



[When timing is late]



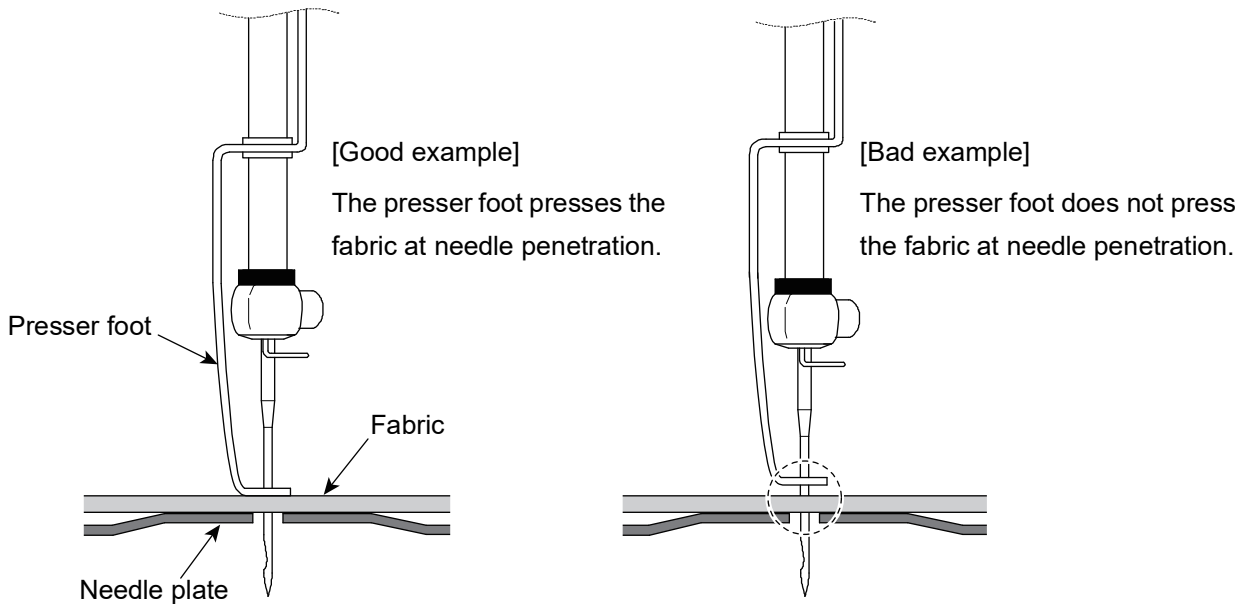
Main shaft angle:  $204^\circ$

Large loops are not apt to generate skip stitches.

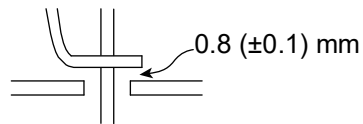
## 8. Role of each part

### 8-1. Presser foot

When the presser foot height relative to the fabric is improper, a gap will present between the fabric and the needle plate. That will cause the thread breakage, skip stitches, or bad thread tension. Adjust the height of the presser foot according to the fabric thickness.



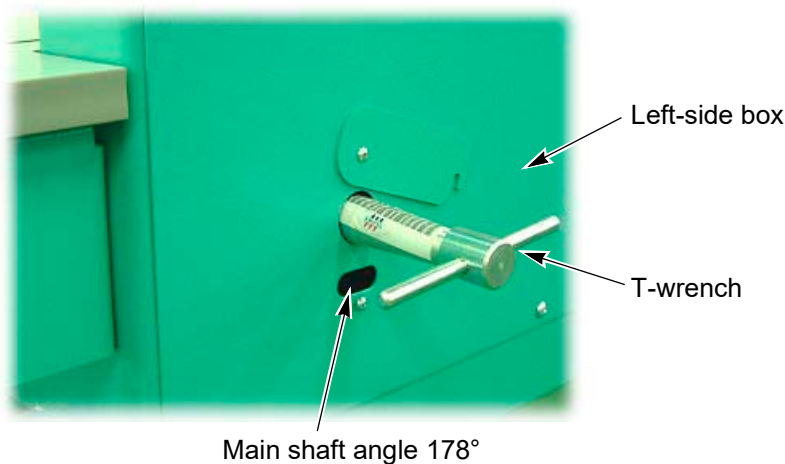
Standard height (interval between the upper surface of the needle plate and the bottom of the presser foot) of the presser foot is  $0.8 (\pm 0.1)$  mm when shipped from the factory.



#### [How to adjust]

Perform the following procedure from the 1st to the last needle after turning OFF the power switch.

- (1) Insert the T-wrench (accessory) into the hole of the left-side box. Turn the T-wrench counterclockwise and set the main shaft angle to  $178^\circ$  while checking the descension of the needle bar.

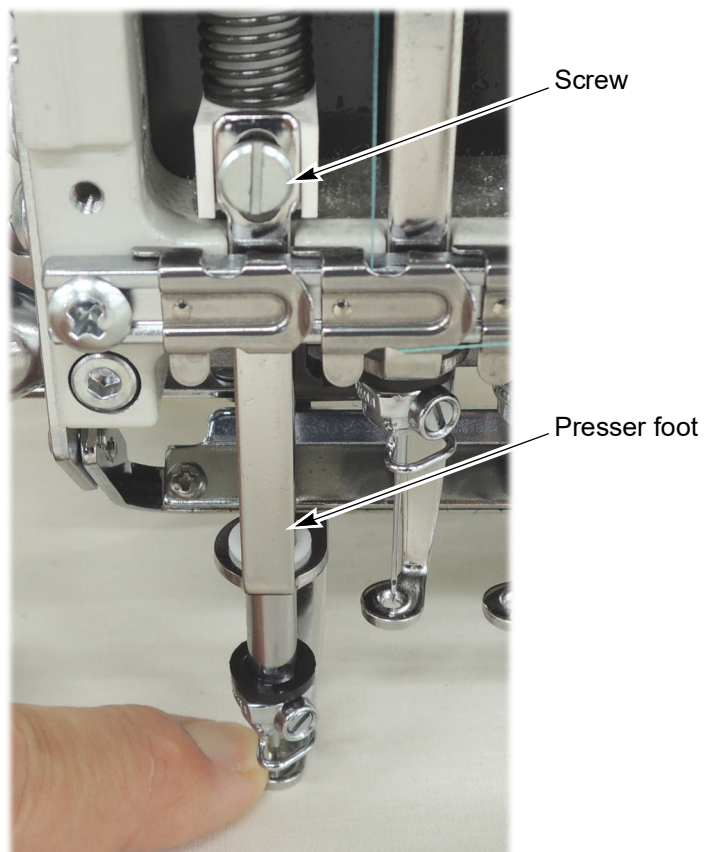


## Role of each part

(2) Loosen the screws and remove the cover.

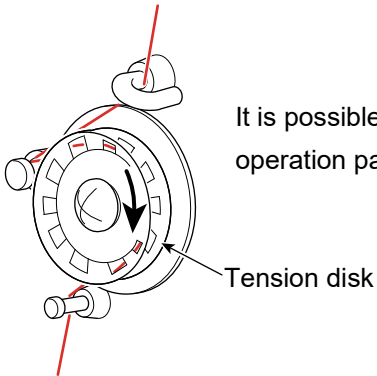
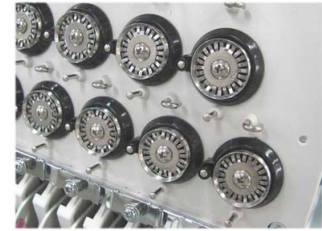


(3) Loosen and re-tighten the screw with the bottom of the presser foot touching the fabric lightly pressing with your finger.



## 8-2. Thread breakage detector

The tension disk detects the flow of the upper thread/under thread. When the thread breakage occurs, the machine will stop.



It is possible to change the sensitivity of the thread breakage detection on the operation panel. For details, read the "User's manual" of your machine.

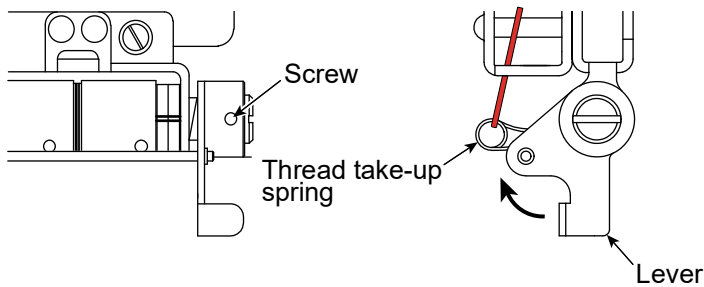
## 8-3. Middle thread guide with thread take-up spring

The thread take-up spring constantly maintains the balance of the upper/under threads at high-speed rotation, which provides stable embroidery.



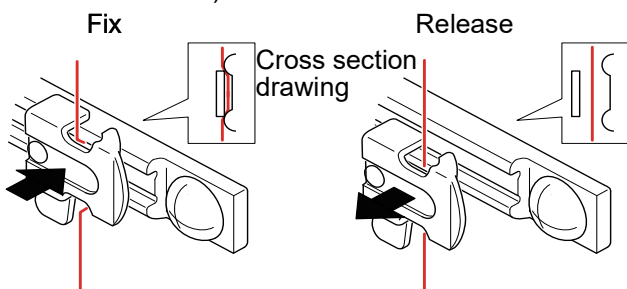
[How to use a lever]

The position where the screw slot faces forward is the basic position. Most embroidery can be performed using this position. When you move the lever to the front two or three steps, the embroidery finish will change. Perform adjustments according to your needs.



## 8-4. Upper thread lock device

The upper thread will be held/released according to operational condition of the machine. Changing this motion timing will improve initial stitching (not applicable to some models).



It is possible to change the motion timing on the operation panel. For details, read the "USER'S MANUAL" of your machine.

## Chapter 2 Chenille stitches embroidery

This chapter explains about a TCMX chenille stitching head.



TCMX chenille stitching head  
Option (MT-1) is equipped on the machine  
in this picture.

### 1. Chenille stitches

#### 1-1. Stitch type

There are two types of stitches (loop stitches and chain stitches).

Loop stitches



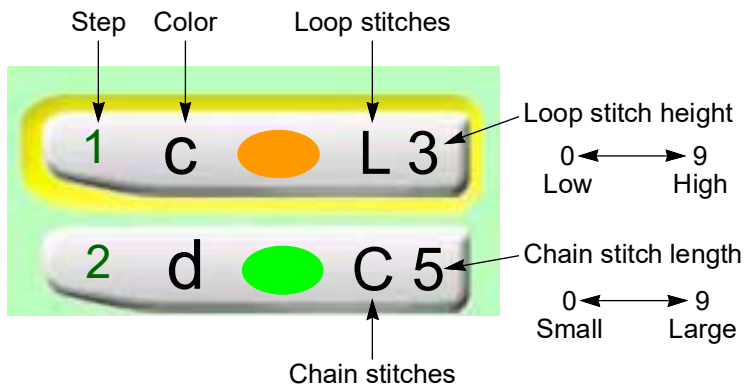
Chain stitches



It is possible to switch the loop stitch height and the chain stitch size automatically in every step.

The following is an example for setting Step 1, Color c for loop stitches and Step 2, Color d for chain stitches.



For details, read the "User s manual" of your machine.



## 1-2. Needle for chenille stitch

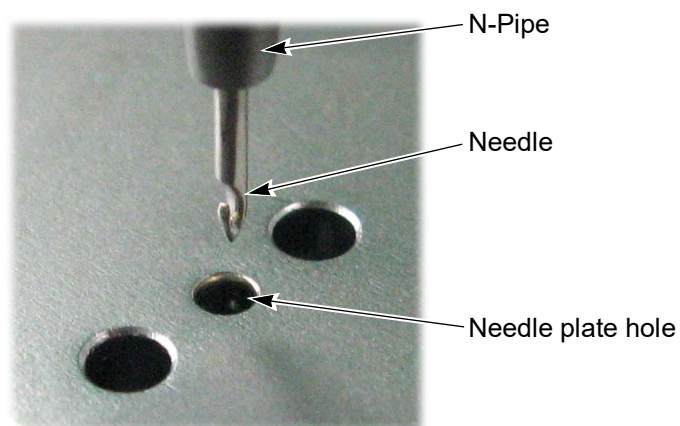
Typical needles are shown in the chart below.

When a product includes many loop stitches, use PH-C70. When a product includes chain stitches only or you use thin fabric that tends to be caught by the hook part of the needle, use PH-C120.

	PH-C70 (#11, #14, #16)	PH-C120 (#16)
		
Application	Dual use for loop/chain stitch	Exclusive for chain stitch
Suitable fabric	Thick fabric such as felt Stretch the fabric in normal or hard condition.	Thin fabric or fine mesh knit fabric Stretch the fabric more firmly.
Thread tension	Loop: About 25 g Chain: About 35 to 50 g	Make it a little stronger than the value to the left.
Inner diameter of the N-Pipe	About +0.4 mm larger than the needle diameter	About +0.2 to 0.4 mm larger than the needle diameter
Position of the N-Pipe	Perform adjustment so that the N-Pipe touches the needle plate in the following condition.	
	Needle height "0" Main shaft angle: 215 to 250°	Needle height "0" Main shaft angle: 215°

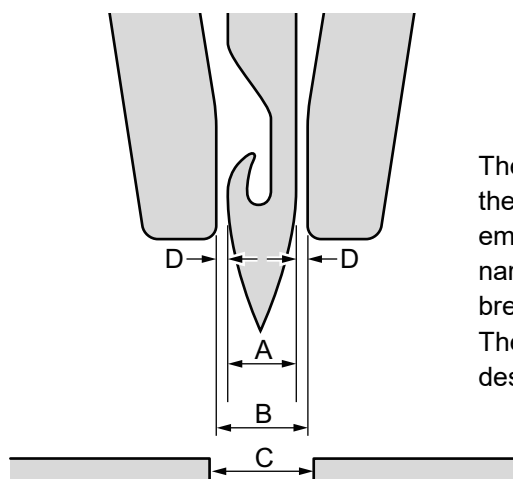
### 1-3. Combination of needle, N-Pipe and needle plate

In chenille embroidery, an improper combination of needle, N-Pipe, needle plate and thread will cause embroidery quality issues. When you change needles, also change the combination by referring to the chart below as a rough standard.



Use proper N-Pipe, needle plate and thread according to the needle size.

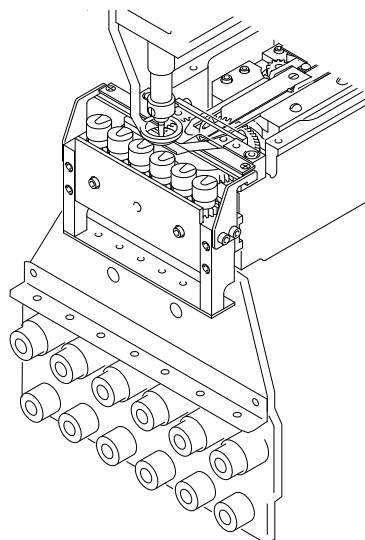
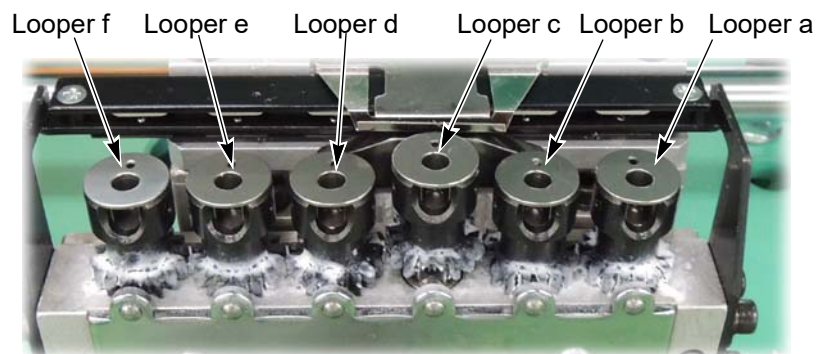
Needle size	Needle dia. (mm) (A in the figure below)	Inner dia. of N-Pipe (mm) (B in the figure below)	Needle plate hole dia. (mm) (C in the figure below)	Rayon thread count number (d)
11	0.75	1.0 to 1.2	1.4	120
14	0.9	1.1 to 1.3	1.4 or 1.6	120/300
16	1	1.2 to 1.4	1.6 or 1.8	300



The smaller the difference between A and B, the smaller the gap (D) in the left figure will be and the better the embroidery finish will be. However, if the gap (D) is too narrow, dust will pile up in the N-Pipe, causing needle breakage and/or damage to parts inside the head. Therefore, do not use N-Pipes thinner than those described in the chart above.

## 1-4. Looper

It is possible to perform six color chenille embroidery by using six individual loopers. These loopers are called Looper a, Looper b, Looper c, Looper d, Looper e and Looper f (from right to left) .

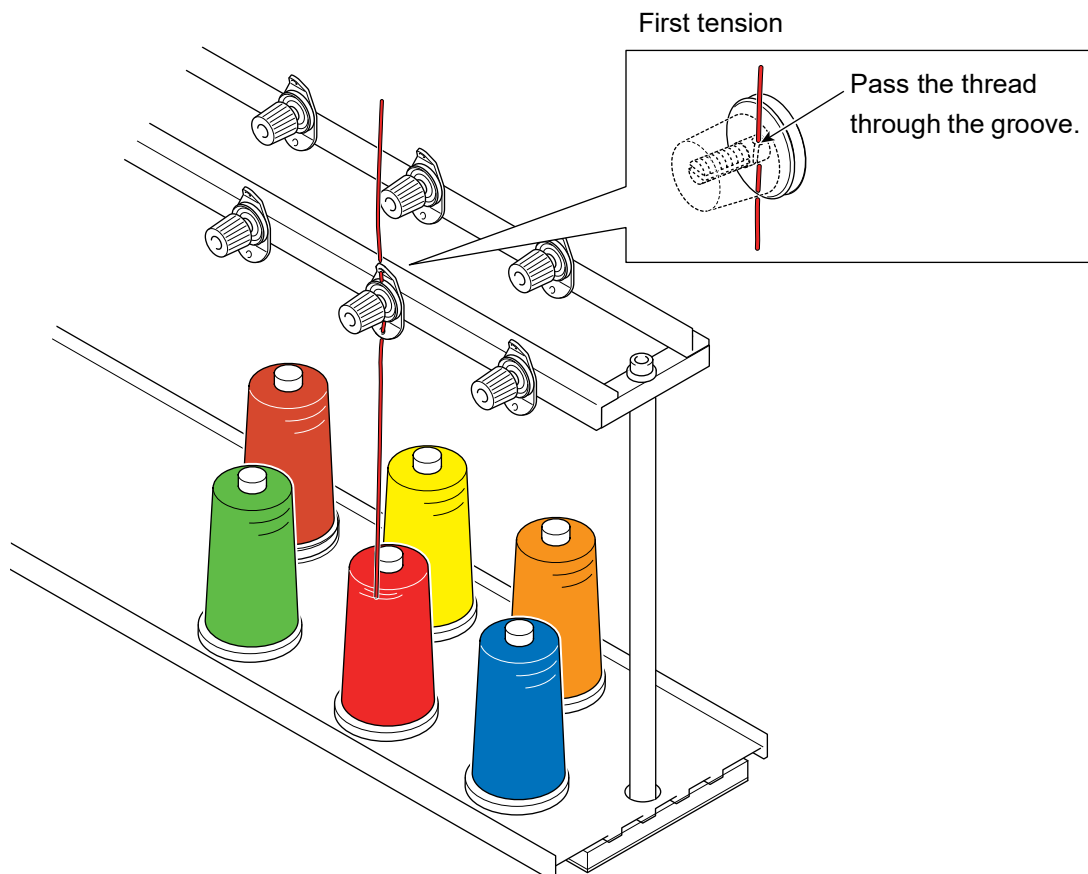


## Threading

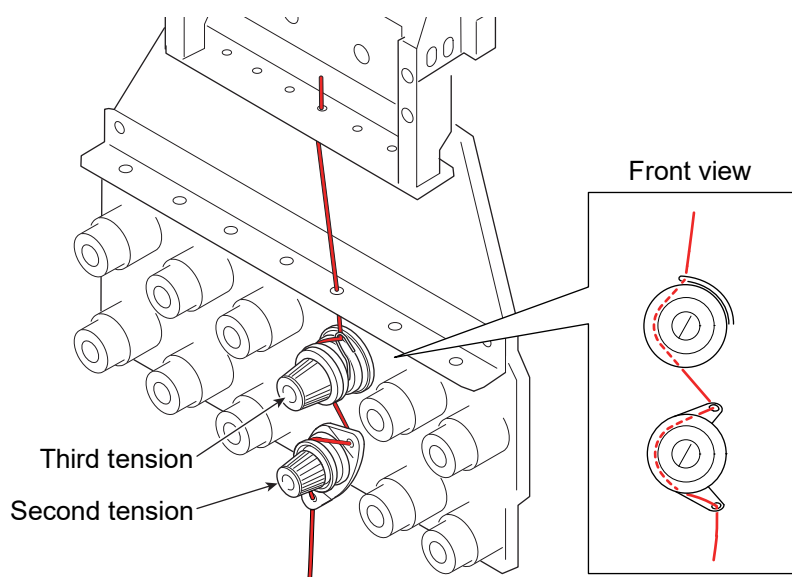
### 2. Threading

#### 2-1. Threading

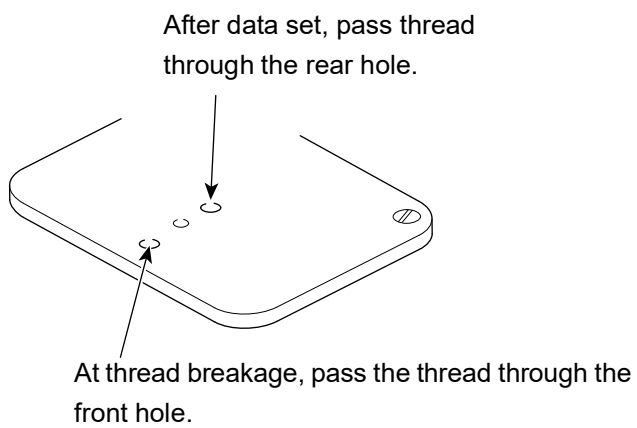
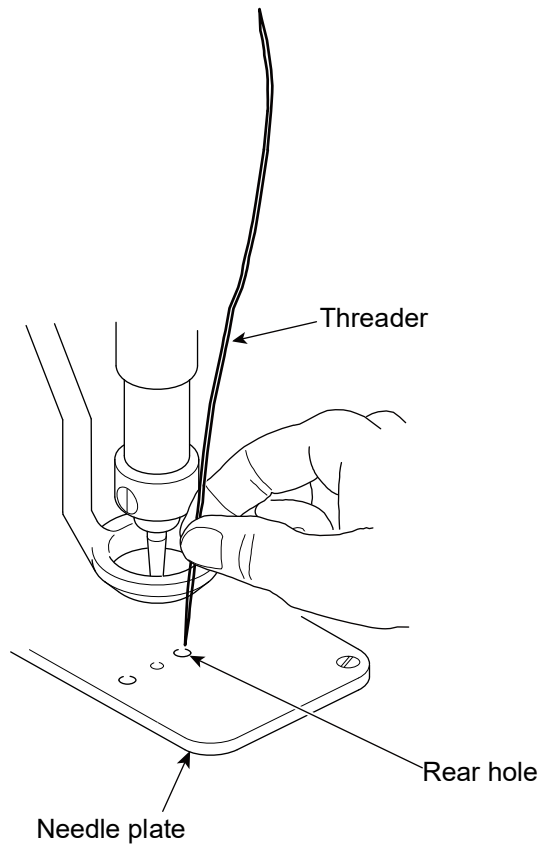
(1) Pass the thread through the first tension.



(2) Pass the thread through the second tension and the 3rd tension.

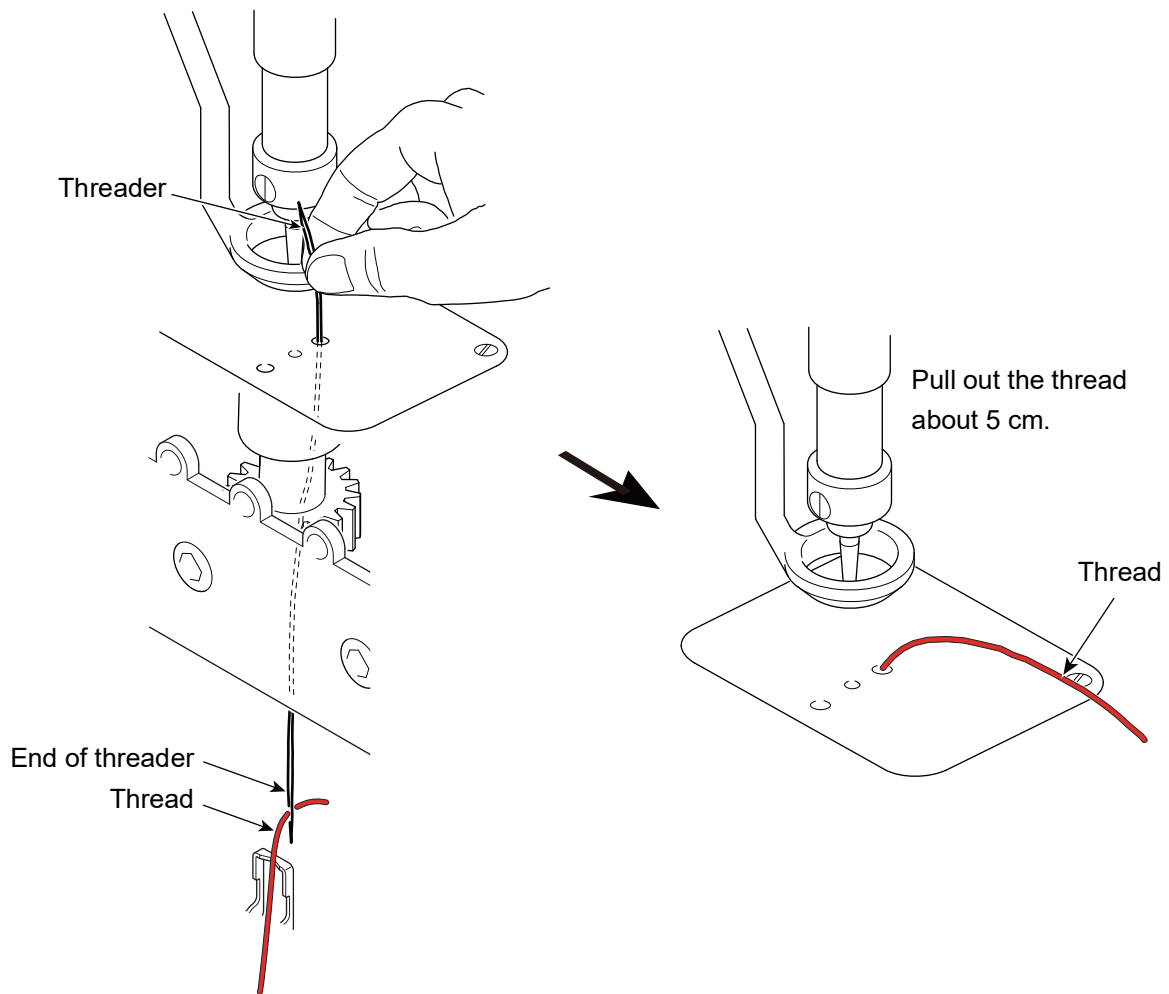


(3) Put the threader (accessory) into the hole at the back of the needle plate.



## Threading

- (4) Pass the thread through the end of the threader, and pull up the threader. The threader can also be passed from the bottom to the top.



## 2-2. Adjusting Thread Tension

Pull the thread up through the needle plate, and measure the tension by using a UTG (Upper/under thread tension measuring gauge).

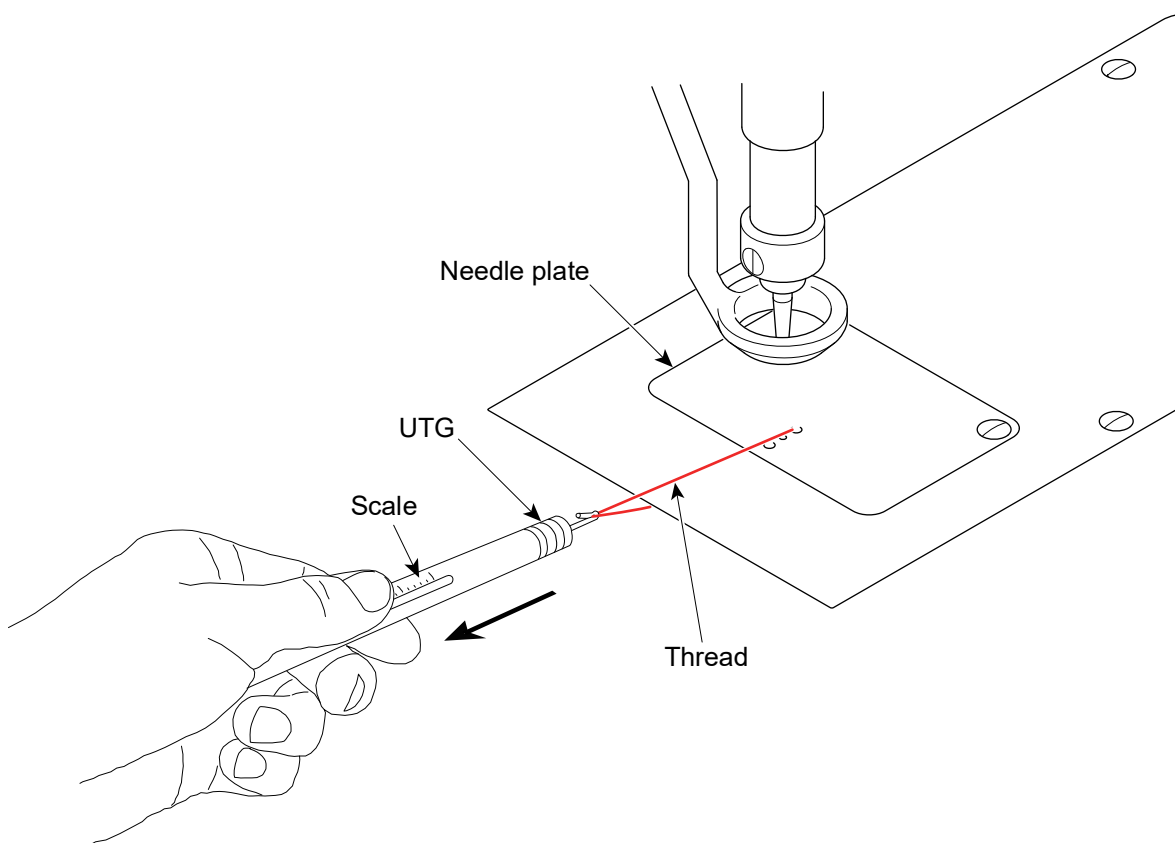
Measure it before applying fabric to the machine. Measuring cannot be performed correctly after applying the fabric.

The standard values are shown in the list below.

Standard value

Stitch type	Tension value (g)
Chain stitch	35 to 50 g
Loop stitch	About 25 g

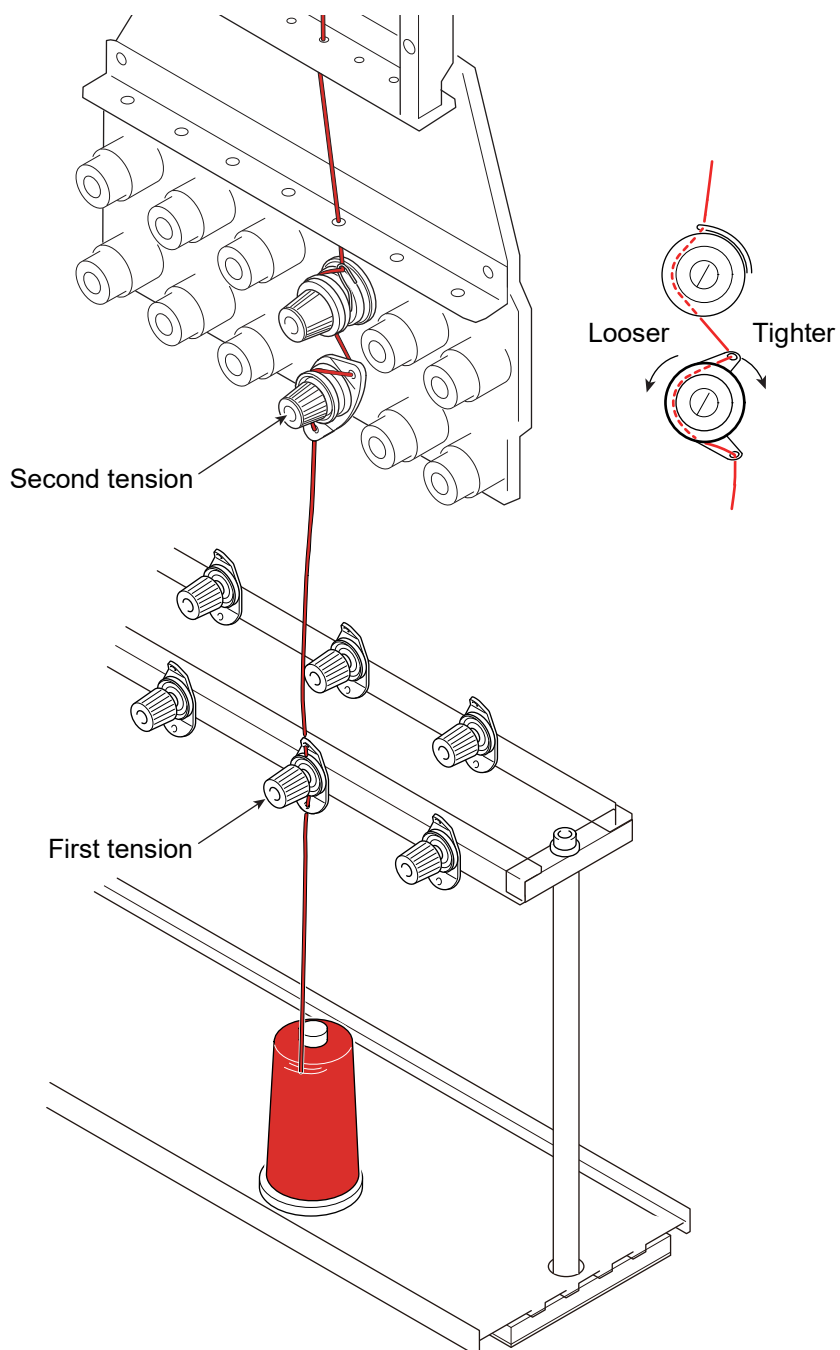
The tension values above are rough standards. Perform fine adjustment according to the desired embroidery finish.



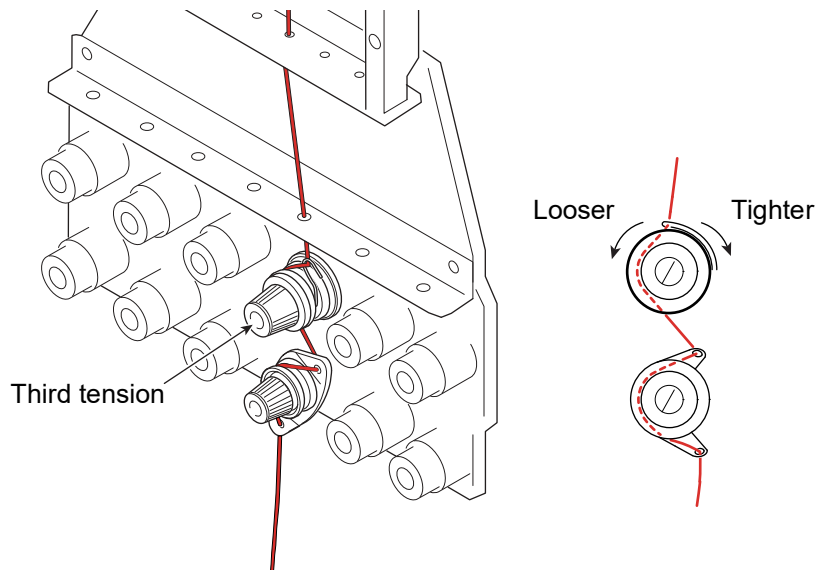
## Threading

[How to adjust]

- (1) Select L (Loop stitches) for the operation (Manual Stitch Type Selection: F5-3) on the operation panel.
- (2) Apply tension lightly to the thread using the first tension, and adjust the second tension so that the thread tension will be about 25 g.






- (3) Select C (Chain stitches) for the operation (Manual Stitch Type Selection: F5-3) on the operation panel.
- (4) Adjust the third tension so that the thread tension will be from 35 to 50 g.



## Chapter 3 Embroidery frame

### 1. Frame spec.

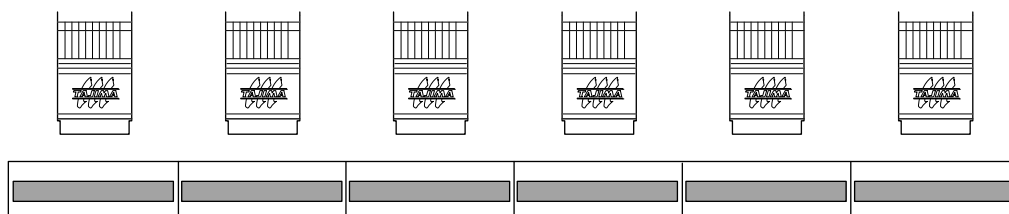
Explanation is given taking representative frame spec. as an example.

In the figure,  indicates a border frame,  indicates a crosswise embroidery space and  indicates a suspended head.

Some frame specifications that are not applicable to some models, are also included.

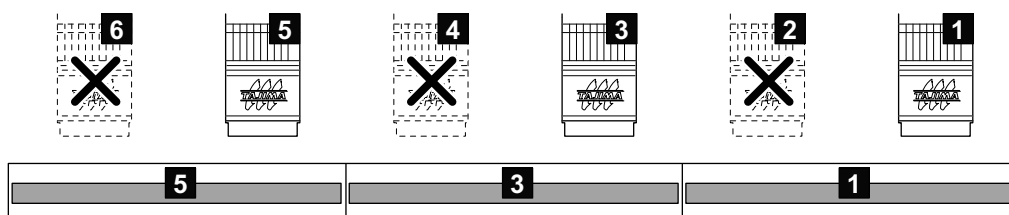
#### (1) S spec.

This is a standard frame spec.



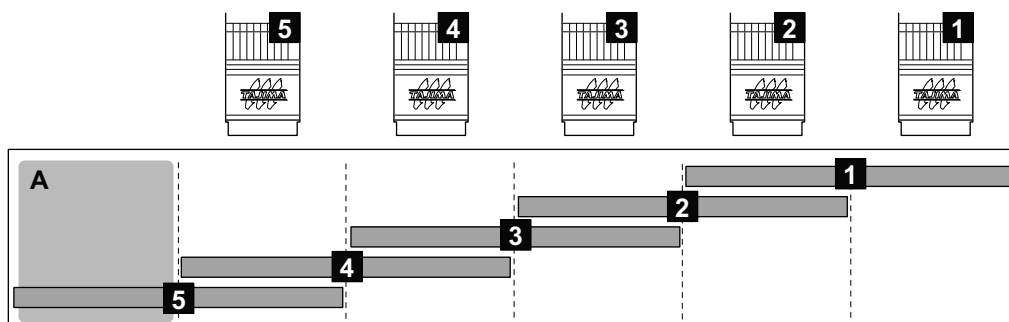
#### (2) W (D) spec.

Activating only odd-numbered heads, will allow one head to use a two head field.



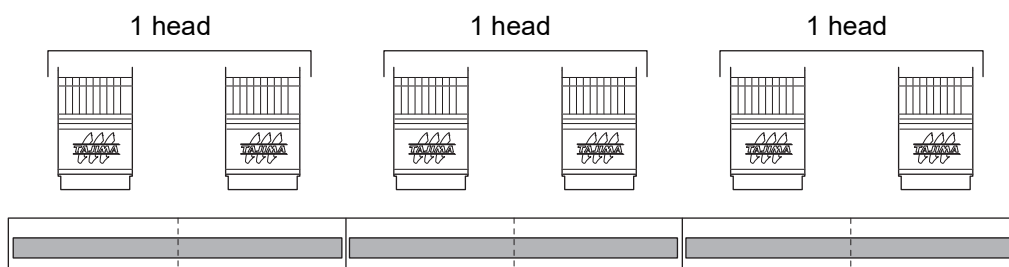
#### (3) WE (DE) spec.

This spec. performs the embroidery to a W space by activating all heads (the embroidery space is for two heads). X-axis embroidery space is added by one head (part A in below illustration).




#### (4) WJ (TE) spec.

The machine will assume two heads are one head and embroider in the field for two heads by grouping.

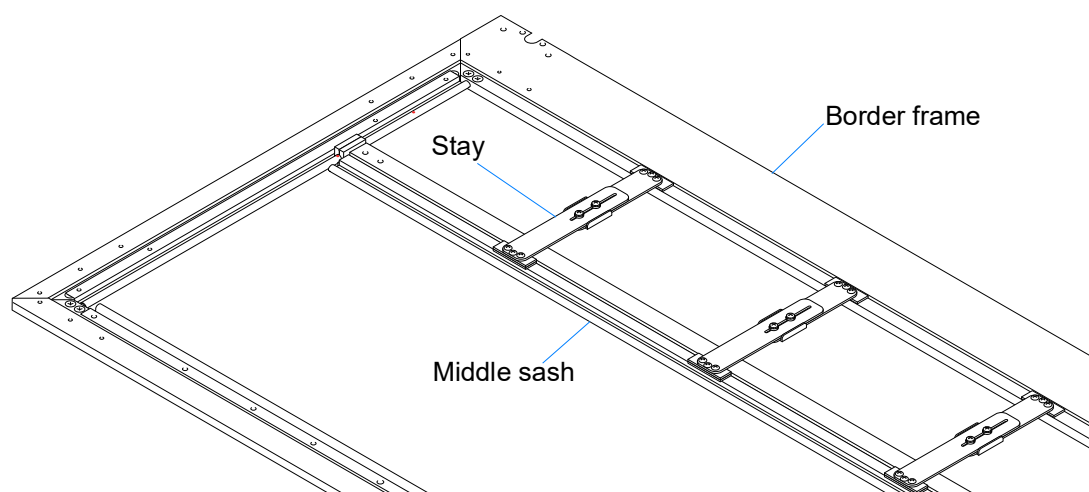


## 2. How to use the middle sash stay (accessory)

Attaching the middle sash to the border frame allows you to change the border frame spacing in the depthwise direction (the Y direction) according to the width of the fabric, the embroidery space, and the type of the frame. When using the middle sash, install the middle sash stays (hereinafter “stays”) between the border frame and the middle sash to prevent the middle sash from warping.


 The middle sash does not come with some models.

[Example of Usage]



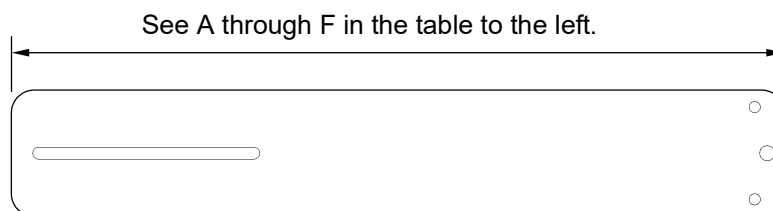
### 2-1. About stays

Stays are available in six types, A to F, which differ in overall length. In addition, you can combine different stay types to change the overall length. Use them appropriately according to the embroidery space in the Y direction and the type of the frame.

 The number and type of the stays that come with the machine differ depending on the spec. of the machine and the number of drives in the Y direction.

For more information, refer to 『2-4. Quantity of stays and breakdown of accessories』 >> P.50

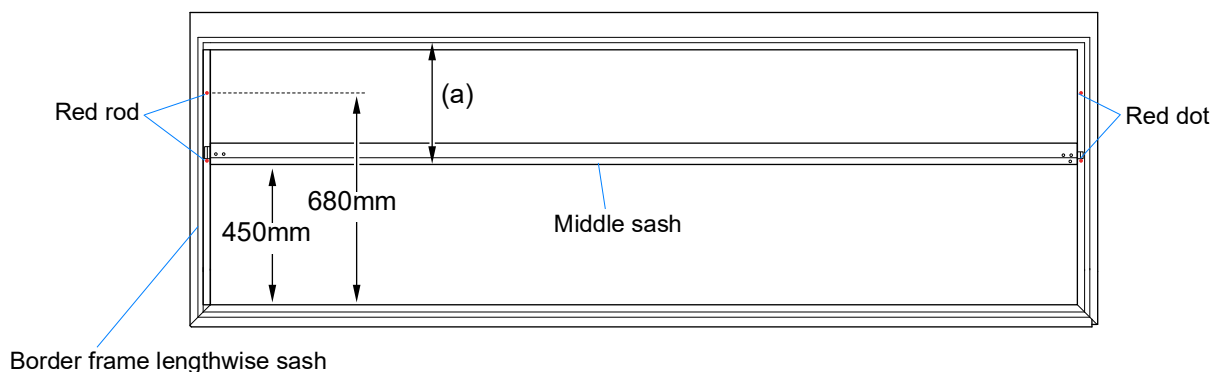
A	162mm
B	249mm
C	326mm
D	420mm
E	545mm
F	715mm




## How to use the middle sash stay (accessory)

### 2-1-1. Selecting the stay type(s)

Based on the dimension (a) in the figure above, select the stay type (A through F). When using combinations of two stay types, combine stay types (A through F) referring to the table below.



Stay	Dimension (a)	Stay	Dimension (a)	Stay	Dimension (a)
A+A	164-264mm	B+C	415-515mm	C+F	861-981mm
A+B	251-351mm	B+D	509-609mm	D+D	680-780mm
A+C	328-428mm	B+E	634-734mm	D+E	805-905mm
A+D	422-522mm	B+F	784-904mm	D+F	955-1075mm
A+E	547-647mm	C+C	492-592mm	E+E	930-1030mm
A+F	697-817mm	C+D	586-686mm	E+F	1080-1200mm
B+B	338-438mm	C+E	711-811mm	F+F	1230-1370mm

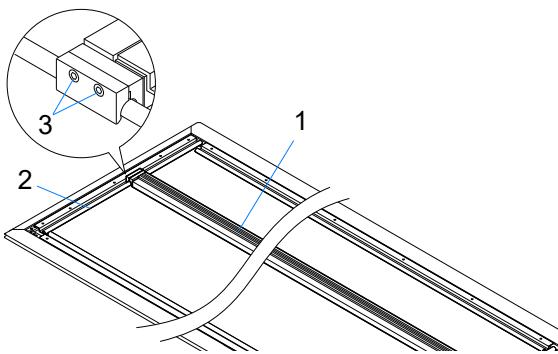
 For the machines with a Y-directional embroidery space of 750 mm or greater, there are two red dots on the border frame lengthwise sash. If you install the middle sash in the position marked by one of the two red dots, the Y-directional embroidery space will be 680 mm or 450 mm. Use the red dots as rough guidelines when installing the middle sash.

## 2-2. Installation method (when using the one-touch frames)

### ⚠ Caution

! To prevent an accident due to an unexpected startup, be sure to turn OFF the power before accessing the machine.

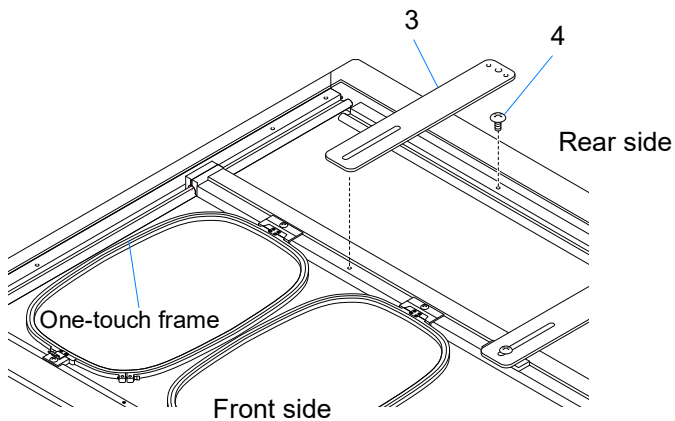
- (1) Install the middle sash 1 lengthwise across the border frame lengthwise sash 2 in the position that matches the size of the one-touch frame you will use, and tighten the screws 3.



The procedure after this differs depending on whether you use one-piece or two-piece stays.

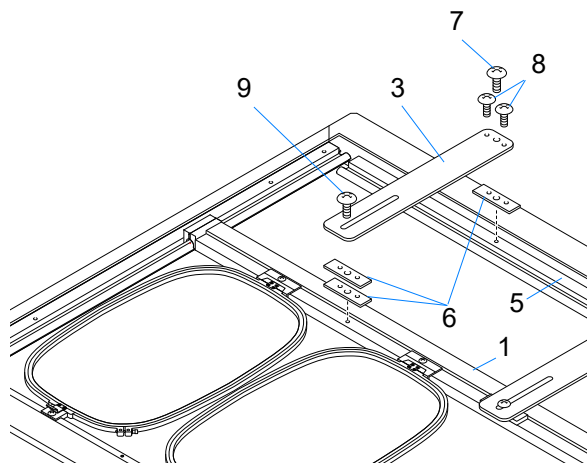
### 2-2-1. When using one stay

- (1) Remove the border frame screw 4 in the installation position of the stay 3.



## How to use the middle sash stay (accessory)

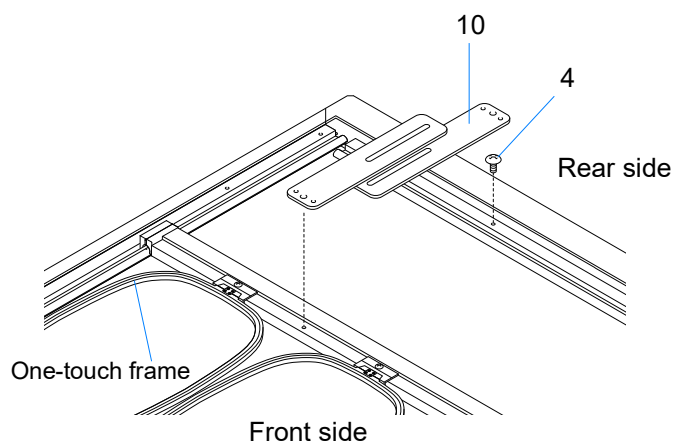
- (2) Place the specified number of spacers 6 (two for the front side and one for the rear side) on the face on which the border frame crosswise sash 5 is installed and the upper face of the middle sash 1.
- (3) Install the stay 3 over the spacers 6 on both sides and fasten the rear side of the stay 3 with the truss head screw 7 (JIS M4x12) and the truss head screws 8 (M3x5).
- (4) Fasten the front side of the stay 3 with the truss head screw 9 (JIS M4x12).



You may pull the stay front end toward you to the extent that it does not interfere with the one-touch frame or does not hinder embroidery.

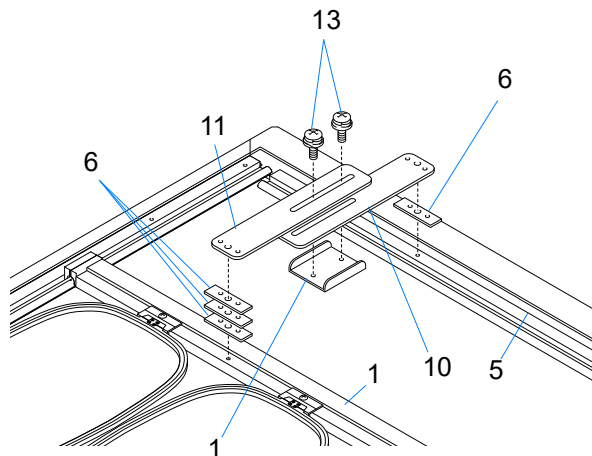
### 2-2-2. When using two stays as a set

- (1) Remove the border frame screw 4 in the installation position of the stay 10 (rear side).

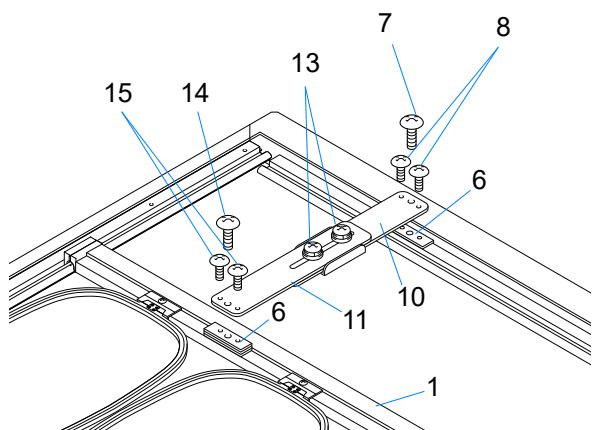


## How to use the middle sash stay (accessory)

- (2) Place the specified number of spacers 6 (three for the front side and one for the rear side) on the face on which the border frame crosswise sash 5 is installed and the upper face of the middle sash 1.
- (3) Place the stay 11 (front-side) over the stay 10 (rear side), couple them using the joint 12, and temporarily tighten the screws with washers 13 (M4x12).




- (4) Install the coupled stays 10 and 11 over the spacers 6 on both sides and fasten the stay 10 (rear side) with the truss head screw 7 (JIS M4x12) and the truss head screws 8 (JIS M3x5).
- (5) Slide lengthwise the stay 11 (front-side) to align it to the middle sash 1 and fasten it with the truss head screw 14 (JIS M4x12) and the truss head screws 15 (M3x5).
- (6) Fasten the screws with washers 13 (M4x12) you temporarily tightened in step 3.

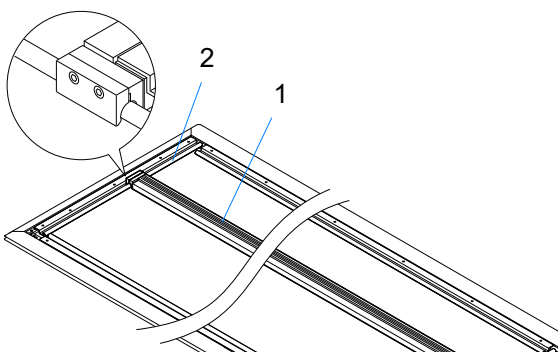


**2-3.** Installation method (when not using the one-touch frames)

**Caution**

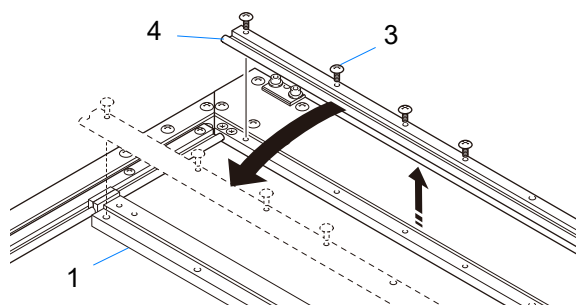
 To prevent an accident due to an unexpected startup, be sure to turn OFF the power before accessing the machine.


- (1) Install the middle sash 1 lengthwise across the border frame lengthwise sash 2 in the position that matches the size of the embroidery design.



- (2) Remove the screws 3 on the rear side and detach the border frame crosswise sash 4.

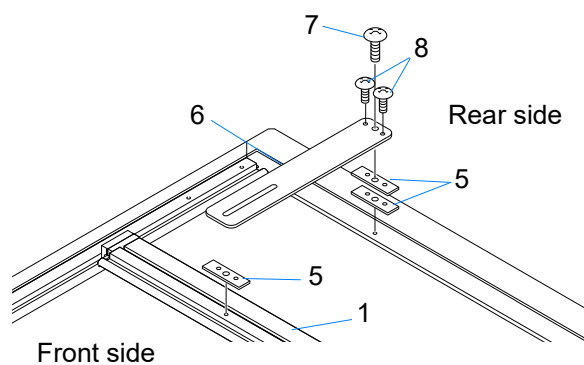
- (3) Install the border frame crosswise sash 4 to the middle sash 1 and fasten them with the screws 3 removed in step 2.



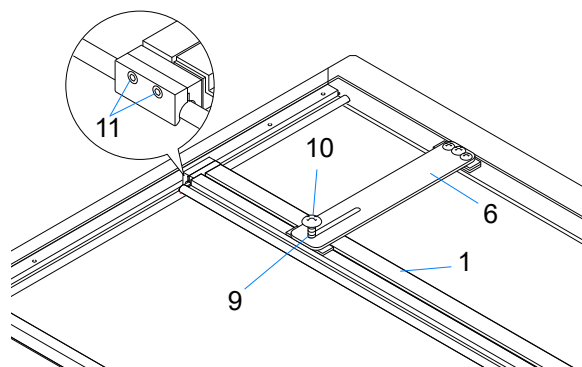
 The procedure after this differs depending on whether you use one-piece or two-piece stays.

## 2-3-1. When using one stay

- (1) Place the specified number of spacers 5 (one for the front side and two for the rear side) on the face from which you removed the border frame crosswise sash 4 and the upper face of the middle sash 1.
- (2) Install the stay 6 over the spacers 5 on both sides and fasten the rear side of the stay 6 with the truss head screw 7 (JIS M4x12) and the truss head screws 8 (M3x5).



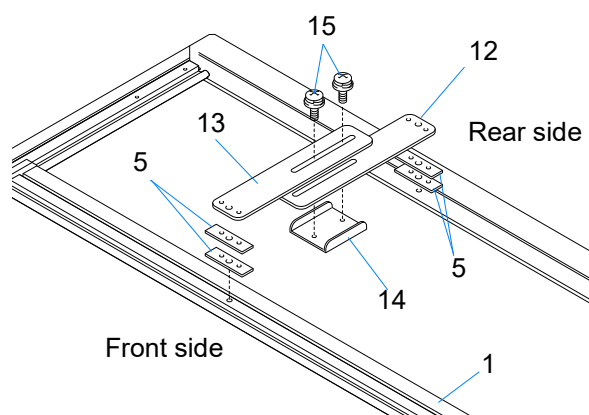
- (3) Align the middle sash 1 to the end 9 of the slotted hole on the stay 6 front side and fasten it with the truss head screw 10 (JIS M4x12).
- (4) Fasten the screws 11 on the both sides of the middle sash 1.



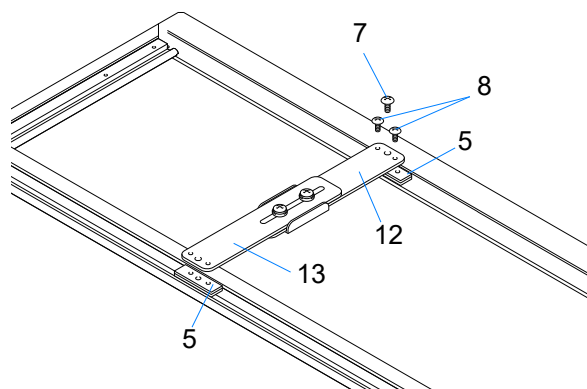
## How to use the middle sash stay (accessory)

### 2-3-2. When using two stays in set

- (1) Place the specified number of spacers 5 (two for the front side and two for the rear side) on the face from which you removed the border frame crosswise sash 4 and the upper face of the middle sash 1.
- (2) Place the stay 13 (front-side) over the stay 12 (rear-side), couple them using the joint 14, and temporarily tighten the screws with washers 15 (M4x12).

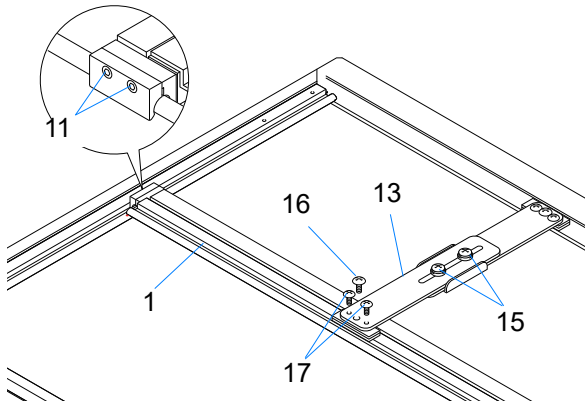


- (3) Install the coupled stays 12 and 13 over the spacers 5 on both sides and fasten the stay 12 (rear side) with the truss head screw 7 (JIS M4x12) and the truss head screws 8 (JIS M3x5).



## How to use the middle sash stay (accessory)

- (4) Slide lengthwise the stay 13 (front-side) to align it to the middle sash 1 and fasten it with the truss head screw 16 (JIS M4x12) and the truss head screws 17 (JIS M3x5).
- (5) Fasten the screws with washers 15 (M4x12) you temporarily tightened in step 2 and fasten the screws 11 on the both ends of the middle sash 1.




## 2-4. Quantity of stays and breakdown of accessories

The following tables show the quantity and types of stays that come with the machine.

### 2-4-1. Breakdown of stays for each spec.

Machine spec., model	Part name (stay type)	Part No.
Y axis length: 450 mm	STAY :MIDDLE SASH :A	0G031005A001
	STAY :MIDDLE SASH :B	0G031005B001
Y axis length: 450 mm (For TCMX)	STAY :MIDDLE SASH :B	0G031005B001
	STAY :MIDDLE SASH :C	0G031005C001
Y axis length: 550mm (Also used on TCMX)	STAY :MIDDLE SASH :A	0G031005A001
	STAY :MIDDLE SASH :C	0G031005C001
Y axis length: 680 mm, 850 mm (Also used on TCMX)	STAY :MIDDLE SASH :B	0G031005B001
	STAY :MIDDLE SASH :C	0G031005C001
	STAY :MIDDLE SASH :D	0G031005D001
Y axis length: 750 mm, 800 mm (Also used on TCMX)	STAY :MIDDLE SASH :A	0G031005A001
	STAY :MIDDLE SASH :B	0G031005B001
	STAY :MIDDLE SASH :D	0G031005D001


 How to use the middle sash stay (accessory)

Machine spec., model	Part name (stay type)	Part No.
Y axis length: 950 mm, 1000 mm (Also used on TCMX)	STAY :MIDDLE SASH :A	0G031005A001
	STAY :MIDDLE SASH :B	0G031005B001
	STAY :MIDDLE SASH :C	0G031005C001
	STAY :MIDDLE SASH :D	0G031005D001
Y axis length: 1200 mm, 1300 mm (Also used on TCMX)	STAY :MIDDLE SASH :A	0G031005A001
	STAY :MIDDLE SASH :B	0G031005B001
	STAY :MIDDLE SASH :C	0G031005C001
	STAY :MIDDLE SASH :E	0G031005E001
Y axis length: 1400 mm, 1500 mm (Also used on TCMX)	STAY :MIDDLE SASH :A	0G031005A001
	STAY :MIDDLE SASH :B	0G031005B001
	STAY :MIDDLE SASH :C	0G031005C001
	STAY :MIDDLE SASH :D	0G031005D001
	STAY :MIDDLE SASH :F	0G031005F001
Y axis length: 1600mm	STAY :MIDDLE SASH :A	0G031005A001
	STAY :MIDDLE SASH :B	0G031005B001
	STAY :MIDDLE SASH :C	0G031005C001
	STAY :MIDDLE SASH :D <sup>[*1]</sup>	0G031005D001
	STAY :MIDDLE SASH :F	0G031005F001

\*1:Two pieces are used.

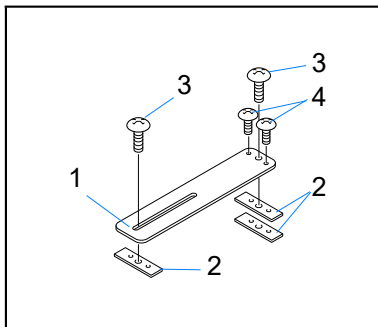
## How to use the middle sash stay (accessory)

### 2-4-2. Number of stay sets per one machine

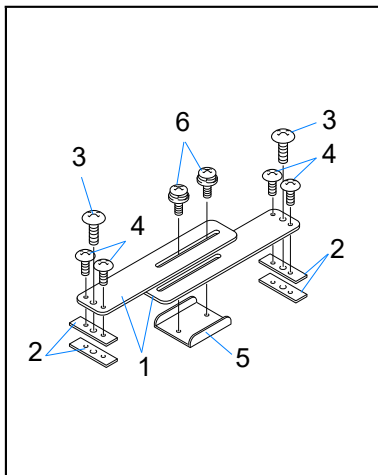
Cross-type Z-spec. frame		Excluding cross-type Z-spec. frame	
The number of shafts for Y-axis drive system	Number of sets	The number of shafts for Y-axis drive system	Number of sets
3	3	2	3
4	3	3	5
5	5	4	7
6	7	5	9

### 2-4-3. Breakdown of accessories per set

Stay: one-piece

		Part name	Item No.	Q'ty
		1	STAY: MIDDLE SASH	0G031005@000
2	SPACER: MIDDLE SASH: 2t	0G0310070000	3	
3	TRUSS HEAD SCREW: JIS M4 x 12	S130041202SD	2	
4	TRUSS HEAD SCREW: M3 x 5	S130030501MZ	2	

Stay: two-piece

		Part name	Item No.	Q'ty
		1	STAY: MIDDLE SASH	0G031005@000
2	SPACER: MIDDLE SASH: 2t	0G0310070000	4	
3	TRUSS HEAD SCREW: JIS M4 x 12	S130041202SD	2	
4	TRUSS HEAD SCREW: M3 x 5	S130030501MZ	4	
5	JOINT: MIDDLE SASH	0G0310060000	1	
6	SCREW WITH WASHER: M4 x 12	S660041201MZ	2	

## How to use the middle sash stay (accessory)

---

1st Edition June, 1994

27th Edition May, 2025

■ **Manufactured by:**  
**TISM Co.,Ltd.**

Address : NO.1800, Ushiyama-cho, Kasugai, Aichi-pref., 486-0901, Japan

■ **Distributed by:**  
**Tajima Industries Ltd.**

Address : NO.1800, Ushiyama-cho, Kasugai, Aichi-pref., 486-0901, Japan

●**Copy, reprint, or reform of a part or whole of this manual without permission is prohibited.**