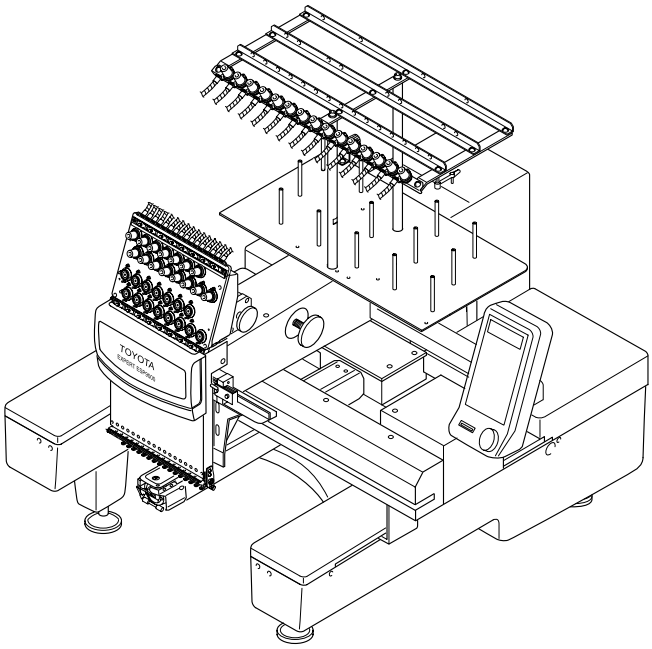
TOYOTA

TOYOTA COMPUTERIZED EMBROIDERY SYSTEM

EXPERT ESP9000

INSTRUCTION MANUAL



Before using the embroidery machine, please read through this manual carefully for proper use of the machine.

After reading the manual, keep it at a safe place near the machine so that you can consult it whenever it is necessary.

When you turn over the machine to somebody, make sure to attach this manual to the machine.

Since this is a business use machine, it should be operated by operators who are well versed in the basic operations.

AISIN

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SAFETY PRECAUTIONS (Make sure to read the following before use)

Safety precautions are provided to prevent risks and losses which could result from incorrect handling.

Please read carefully and comply strictly with them.

Meaning of " ⚠ DANGER", " ⚠ WARNING" and " ⚠ CAUTION"

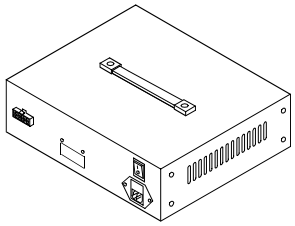
⚠ **DANGER**	Indicates there could be imminent risk of situation resulting in fatal or serious injury from incorrect handling.
⚠ **WARNING**	Indicates there could be possible accident of fatal or serious injury resulting from incorrect handling.
⚠ **CAUTION**	Indicates incorrect handling could cause physical injury or damage on goods.

Meaning of Pictographs

	**Prohibition of touching**
	**Prohibited action**
	**Mandatory action**
	**Disconnection of the power cord plug from receptacle**
	**Caution on finger injury**
	**Caution on high temperature**
	**Caution on electric shock**

DANGER

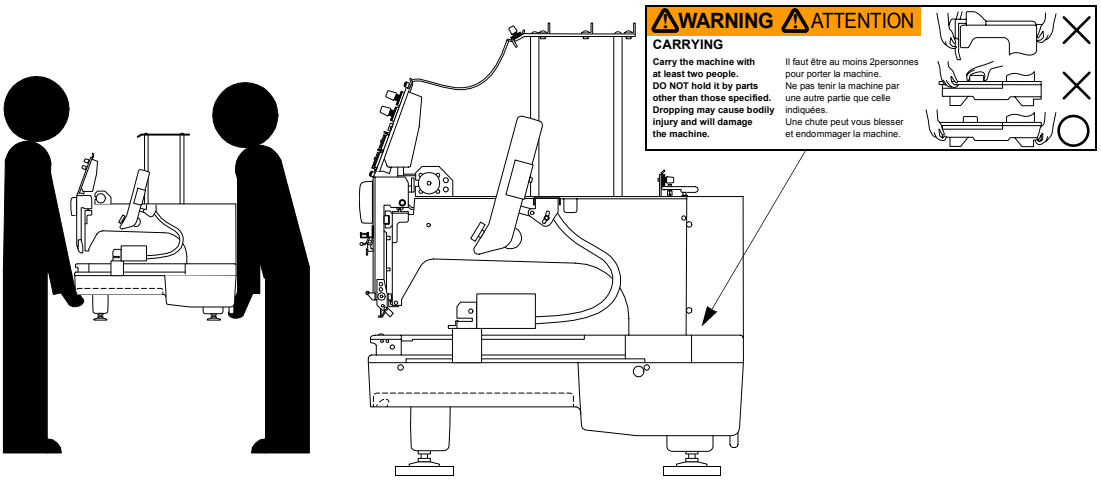
Do not open the power supply box.
Otherwise, you may sustain electric shock.



WARNING

Carry the machine by two or more persons.
Falling the machine may cause injury as well as breakdown of the machine.

When carrying the machine, hold the machine at the positions specified by the label.
Falling the machine may cause injury as well as breakdown of the machine.



When installing the machine, make sure to place it on the attached vibration-preventive rubbers (H).
Falling the machine may cause injury as well as breakdown of the machine.

Do not damage, modify, heat or apply undue force to the power cords and other connection cables.
Otherwise the cables may be damaged causing fire and electric shock.

Insert the power cord plug fully.
Incomplete insertion could cause fire or electric shock.

Keep away electric and electronic units from water and oils.
Exposure them to water or oils leads to short circuits, causing fire and electric shock.
If water or oils enter the electric/electronic units, shut off the power by the power switch, shut off the source of power supply and contact your TOYOTA dealer.

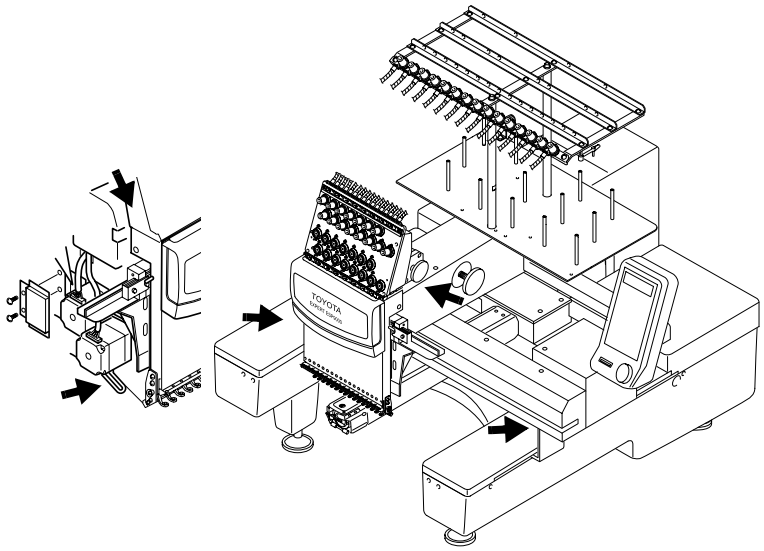
When disconnecting the power cord from the receptacle, pull the cord while holding the plug.
Pulling the power cord by holding the cord may damage the cord and the plug, causing fire and electric shock.

The machine must be switched off at the mains switch on the power supply or by unplugging it from the incoming mains supply, when:

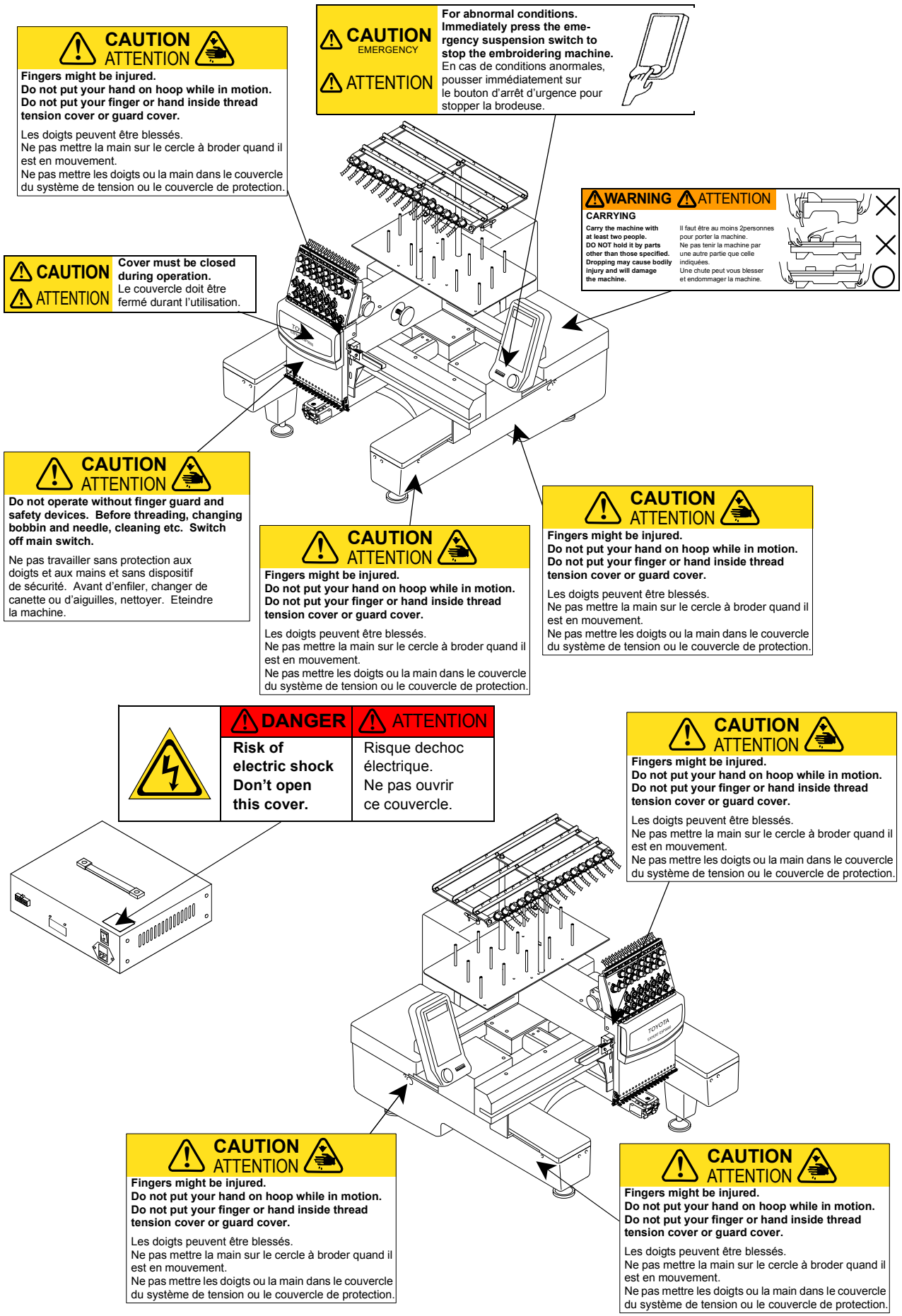
- Sewing implements (thread, needle, bobbin, etc) have to be replaced or adjusted
- Threading a needle, bobbin, etc
- If the workplace is left unattended
- Maintenance work has to be performed

⚠ CAUTION

- Do not use the machine in areas where strong electric field or magnetic field is generated by a high-power high-frequency motor generator or high-frequency welder.
  Otherwise the machine will malfunction to cause injury or machine trouble.
- Place the machine on a sturdy base.
  Otherwise the machine may fall to cause injury or machine trouble.
- Ground the grounding wire of the power cord.
  There is the danger of electric shock due to leak current if the machine is used without grounding.
- Do not touch the parts (➡) of the machine that move during embroidery.
  Otherwise you will sustain injury.



- Take care to attire properly for operations of the embroidery machine.
  You could get hurt if you wear clothes likely being arrested by the embroidery machine.
- Do not step on the embroidery machine.
  Otherwise you will sustain injury.
- Do not operate the machine without the take-up lever guard or the covers of the moving parts.
  Otherwise you will sustain injury.



Positions and Contents of the Warning Labels

CAUTION
ATTENTION

Fingers might be injured.
Do not put your hand on hoop while in motion.
Do not put your finger or hand inside thread tension cover or guard cover.

Les doigts peuvent être blessés.
Ne pas mettre la main sur le cercle à broder quand il est en mouvement.
Ne pas mettre les doigts ou la main dans le couvercle du système de tension ou le couvercle de protection.

CAUTION
EMERGENCY
ATTENTION

For abnormal conditions.
Immediately press the emergency suspension switch to stop the embroidering machine.
En cas de conditions anormales, pousser immédiatement sur le bouton d'arrêt d'urgence pour stopper la brodeuse.

WARNING ATTENTION

CARRYING

Carry the machine with at least two people.
DO NOT hold it by parts other than those specified.
Dropping may cause bodily injury and will damage the machine.

Il faut être au moins 2personnes pour porter la machine.
Ne pas tenir la machine par une autre partie que celle indiquées.
Une chute peut vous blesser et endommager la machine.

CAUTION
ATTENTION

Cover must be closed during operation.
Le couvercle doit être fermé durant l'utilisation.

CAUTION
ATTENTION

Do not operate without finger guard and safety devices. Before threading, changing bobbin and needle, cleaning etc. Switch off main switch.

Ne pas travailler sans protection aux doigts et aux mains et sans dispositif de sécurité. Avant d'enfiler, changer de canette ou d'aiguilles, nettoyer. Eteindre la machine.

CAUTION
ATTENTION

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DANGER	ATTENTION
Risk of electric shock Don't open this cover.	Risque dechoc électrique. Ne pas ouvrir ce couvercle.

CAUTION
ATTENTION

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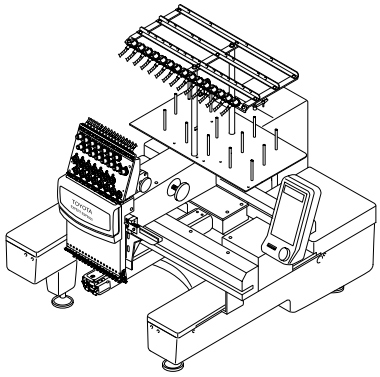
PART NAMES

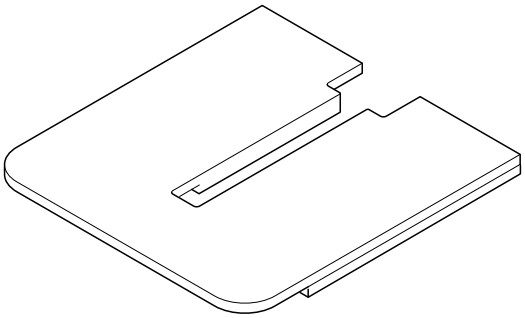
CHECKING THE PARTS

After unpacking the machine, check to be sure that all of the items below have been delivered.

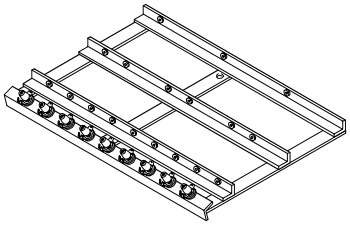
● Embroidery machine (1 set)



● Table (1 pc.)

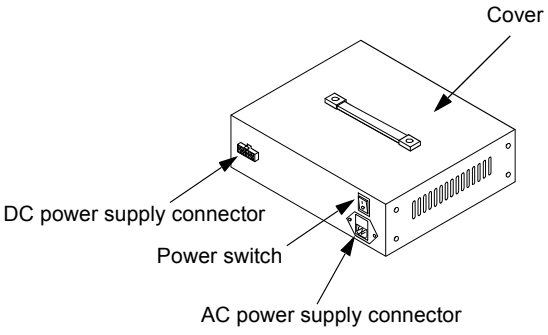


● Thread guide (1 pc.)



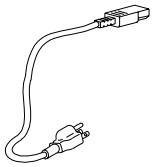
● Thread stand shaft and hexagon socket head cap screw (2 pcs. each)

● Power supply box (1 pc.)

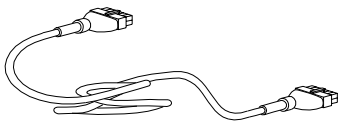


● Power cord

AC power cord (1 pc.)



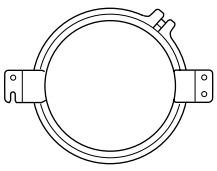
DC power cord (1 pc.)



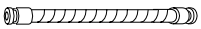
* An additional AC power cord and plug for 250 V are included only for USA/Canada spec.

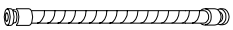
● Embroidery hoop (1 pc.)

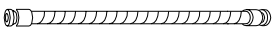
<Tubular frame>



● Spiral tube

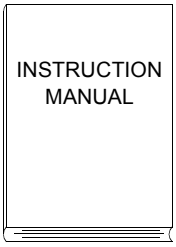
Small  ---------- (5 pcs.)

Medium  ---------- (4 pcs.)

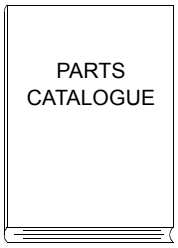
Large  ---------- (6 pcs.)

ACCESSORIES

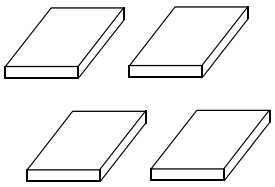
● Instruction manual
(1 copy)
(This book)



● Parts catalogue
(1 copy)



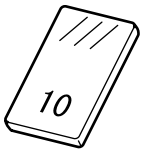
● Vibration-preventive rubber (H)



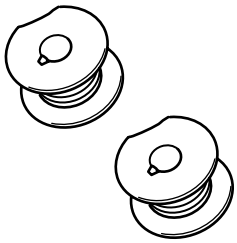
* We reserve the right to change the contents of this instruction manual without prior notice.

● Tools

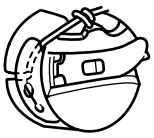
(1) Needle (#11) 10 pcs.



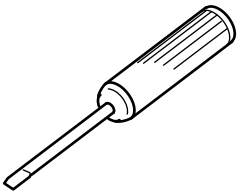
(2) Aluminum bobbin 2 pcs.



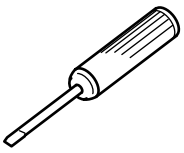
(3) Bobbin case 1 pc.



(4) Minus screwdriver (large) 1 pc.

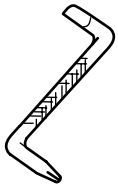


(5) Minus screwdriver (small) 1 pc.

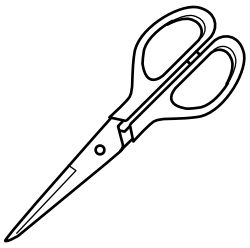


(6) Offset screwdriver 1 pc.

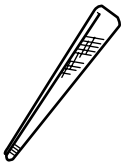
(7) L-shaped screwdriver (plus/minus) 1 pc.



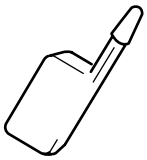
(8) Scissors 1 pc.



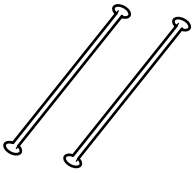
(9) Small pincers 1 pc.



(10) Oiler 1 pc.

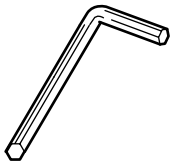


(11) Threader 2 pcs.

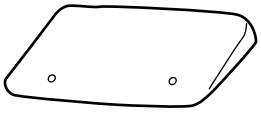


(12) L wrench (3 mm) 1 pc.

(13) Allen wrench (4 mm) 1 pc.

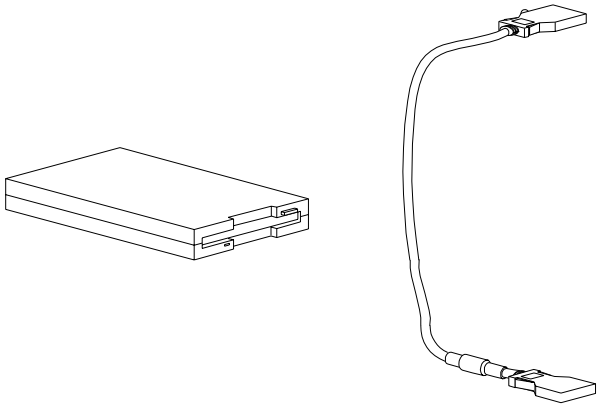


(14) Tool bag 1 pc.



AMC335: FLOPPY DISK DRIVE (TO BE PURCHASED SEPARATELY)

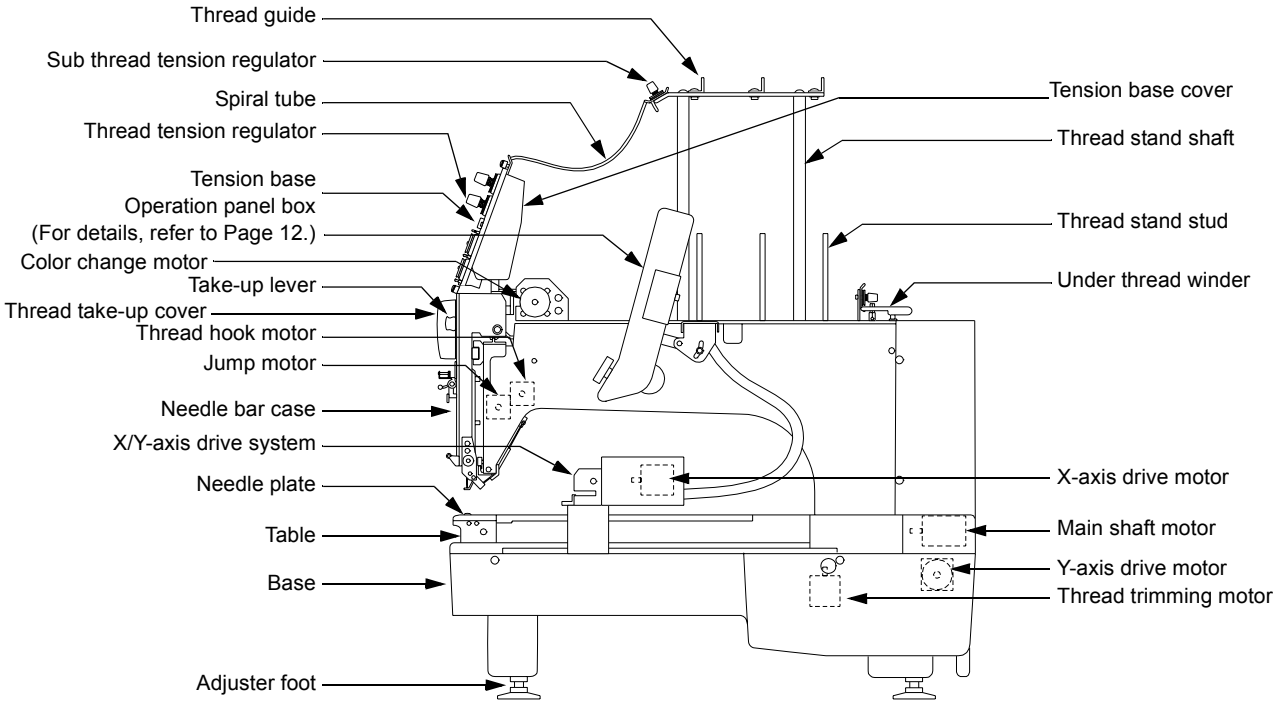
● FDD (floppy disk drive) and FDD connection cable

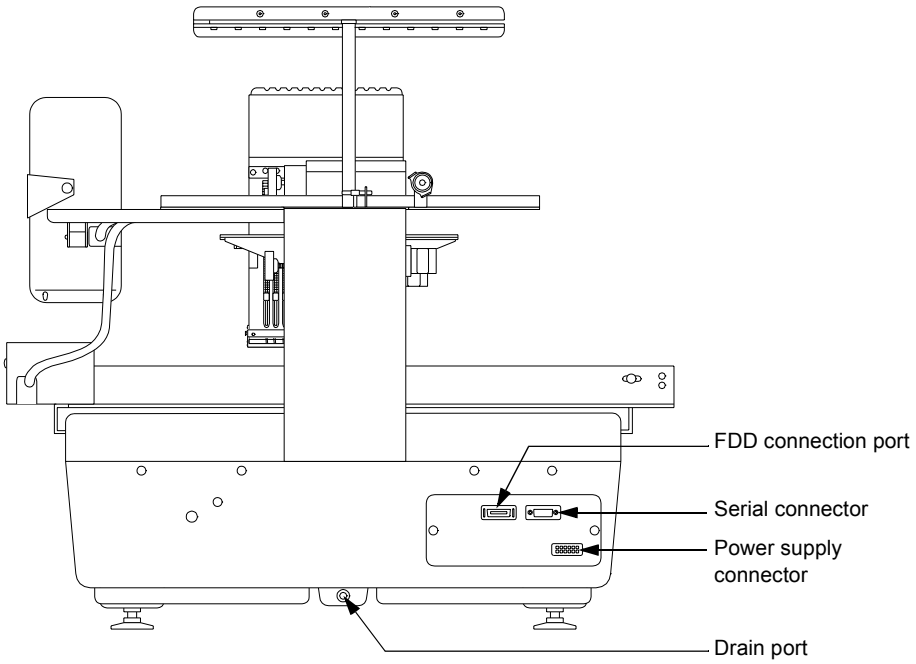


Various kinds of embroidery hoop are available.

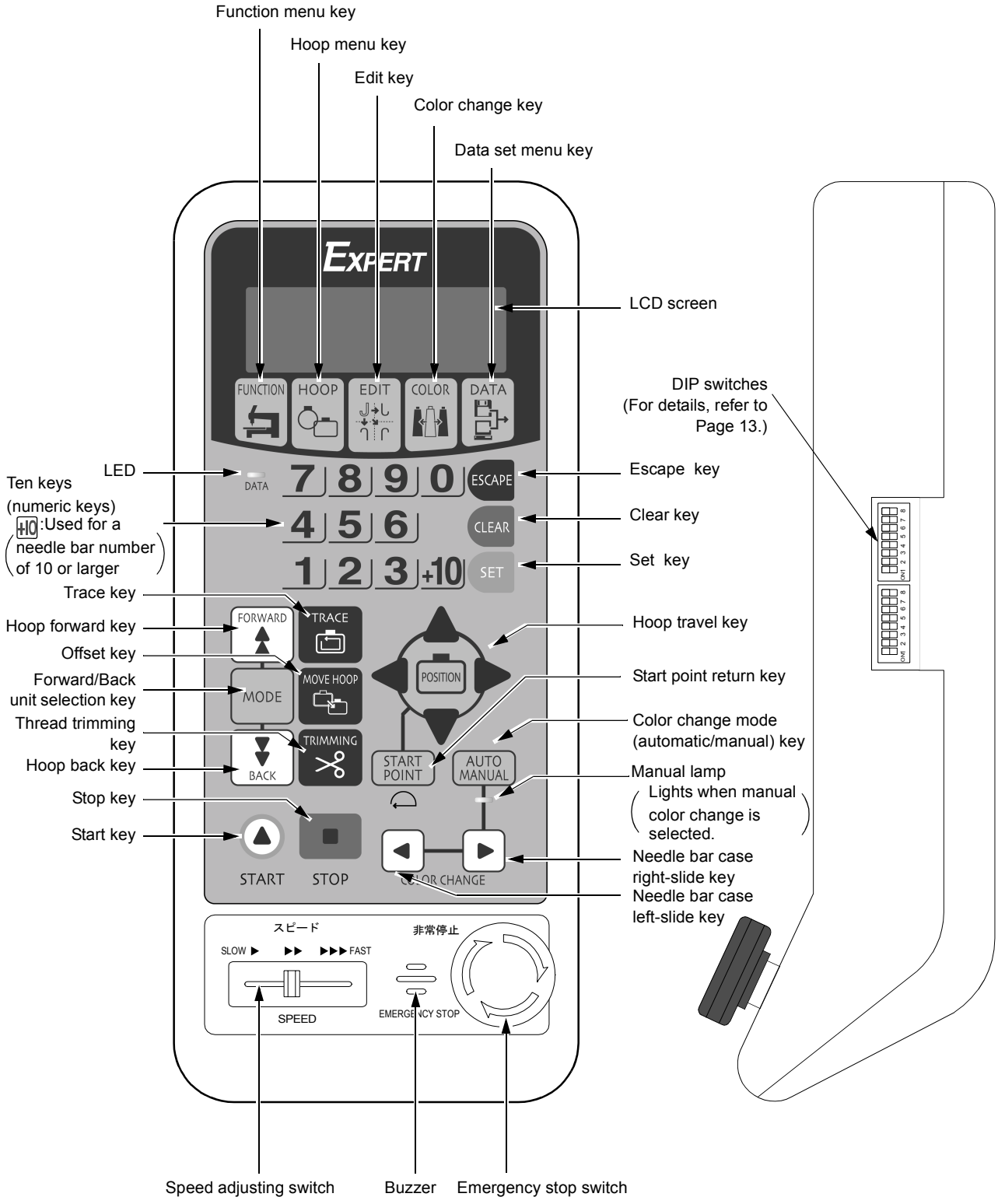
Consult your TOYOTA dealer for details.

EMBROIDERY MACHINE



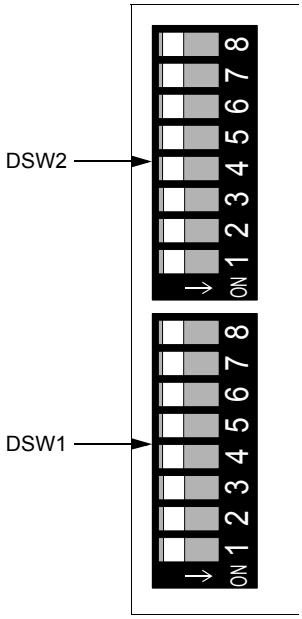


OPERATION PANEL BOX



DIP SWITCHES

DIP switch ON or OFF is set as follows:



DSW 2

No.	Function	OFF	ON
8	PC connection	*Standard	Two-way communications
7	Not used	*Select OFF.	–
6	Not used	*Select OFF.	–
5	Not used	*Select OFF.	–
4	Satin stitch width adjustment	*Adjustment for stitch width of 1.5 mm or larger	Adjustment for stitch width of 0.6 mm or larger
3	Satin stitch adjustment mode selection	*Collective adjustment for X- and Y-axis	Independent adjustment for X- and Y-axis
2	Program install device selection	*FD	PC
1	Installation mode	*Normal mode	Installation mode if DSW1-1 is ON.

DSW 1

No.	Function	OFF	ON
8	Start-up speed	*Standard	High speed
7	Not used	*Select OFF.	–
6	Not used	*Select OFF.	–
5	Not used	*Select OFF.	–
4	Hoop travel direction: Arrow symbols and actual travel direction	*Same direction as indicated by the arrow symbol	Opposite to the direction indicated by the arrow symbol
3	Buzzer sounds	*10 times	1 time
2	Language in LCD display	*English	Japanese
1	Test mode	*Normal operation	Test mode

📖 After changing the setting of a DIP switch, turn the power switch off once and then turn it back on.

📖 *: Factory-setting made before shipping

Access to the Embroidery Information

In the test mode, you can access to the following information:

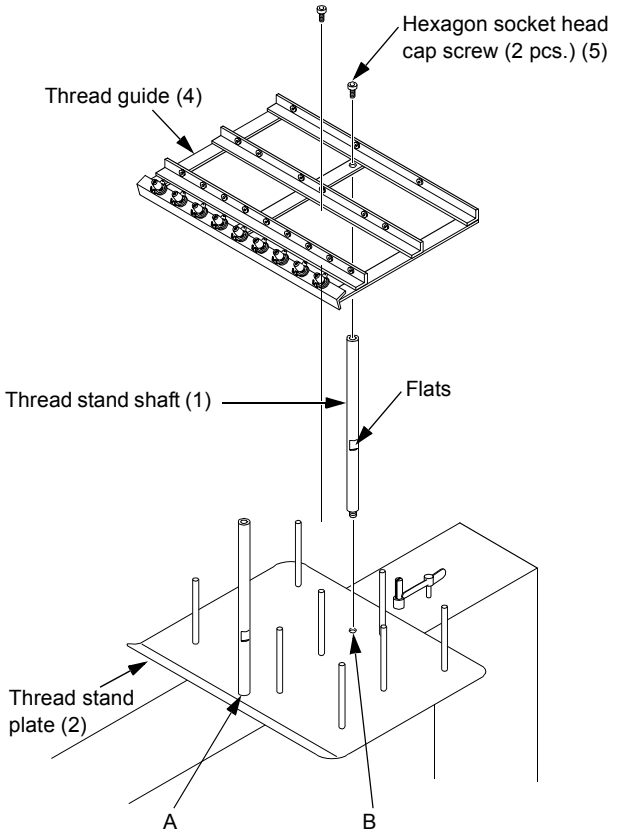
- Accumulated number of embroidered pieces of cloth
- Accumulated number of stitches
- Accumulated number of error displays and others

Consult your TOYOTA dealer for more details.

ASSEMBLING

● Attaching the thread guide

1. Stand the thread stand shafts (1) (2 pcs. in total) on the thread stand plate (2) perpendicular to it by screwing in the shaft at positions A and B on the plate (2). Securely tighten the thread stand shafts (1) by the spanner set on the flats at the middle of the thread stand shaft (1) to fix them on the thread stand plate (2).
2. Place the thread guide (4) on top ends of two thread stand shafts (1), and align the two holes at the center of the thread guide (4) with the thread stand shafts (1). Insert then hexagon socket head cap screws (5) in the holes and securely tighten the screws to lock the guide and the shafts.



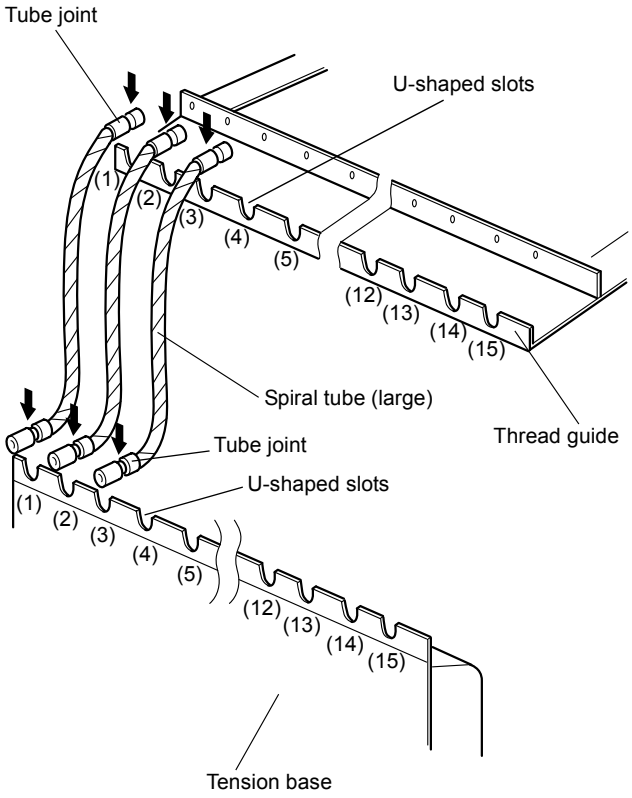
● Mounting the spiral tubes

1. Place the joint on the one end of spiral tube (large) in the U-shaped slot on the thread guide and fix it in the slot by pressing in the arrow direction. Set and fix the joint on the other end of spiral tube in the U-shaped slot on the tension base in the same way. Repeat the same steps on the U-shaped slots as numbered (1) to (3) and (13) to (15) in the figure shown at right.

   Spiral tube (large): No. 1 to No. 3/ No. 13 to No. 15
2. In the similar manner, fit the spiral tube B (medium) into the U-shaped slots.

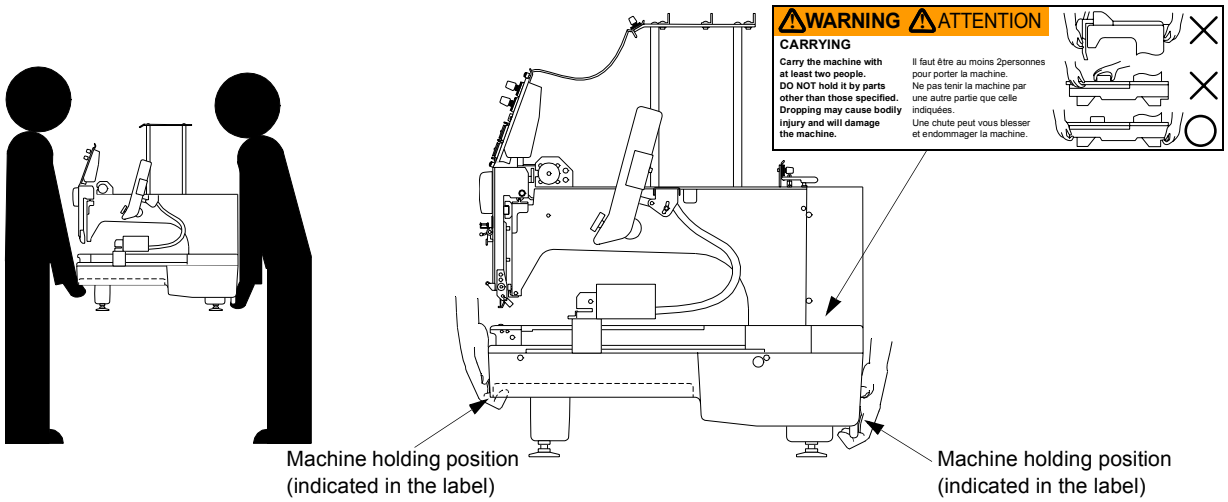
   Spiral tube (medium): No. 4, No. 5, No. 11 and No. 12
3. In the similar manner, fit the spiral tube (small) into the U-shaped slots.

   Spiral tube (small): No. 6 to No. 10



CARRYING

As shown in the illustration below, hold the machine at the positions indicated in the label by two or more persons to carry the machine.

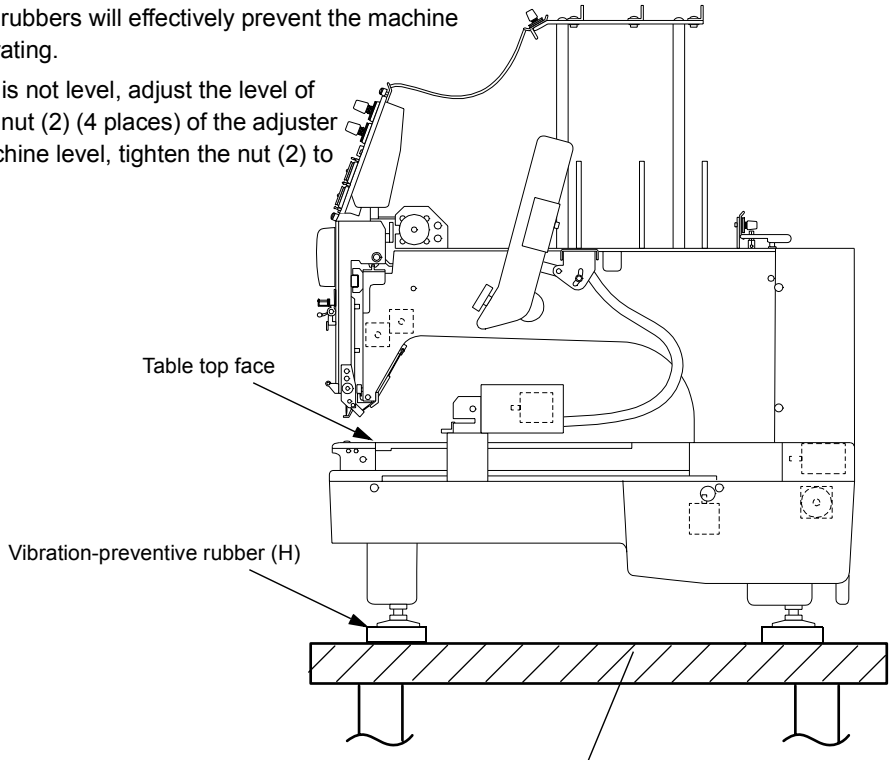


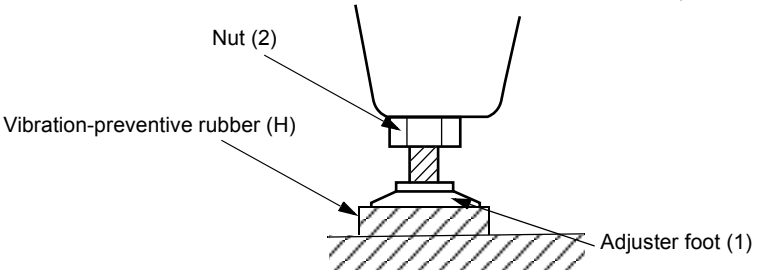
INSTALLATION

Place the embroidery machine on a rugged base so that the table will be level.

At this time, make sure to place attached vibration-preventive rubbers (H) under the adjuster foot (1). The rubbers will effectively prevent the machine from moving on the table or vibrating.

If the machine is not stable or it is not level, adjust the level of the machine after loosening the nut (2) (4 places) of the adjuster foot (1). After adjusting the machine level, tighten the nut (2) to lock the adjuster foot.



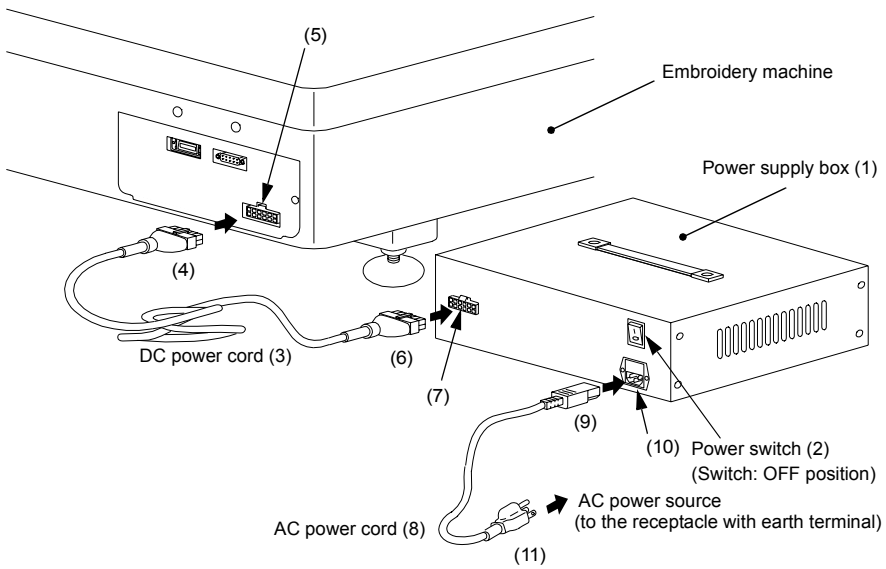


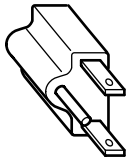
WIRING

1. Make sure that the power switch (2) of the power supply box (1) is OFF.
2. Insert the plug (4) of the DC power cord (3) securely into the power supply connector (5) of the embroidery machine.
3. Insert the other plug (6) of the DC power cord (3) securely into the DC power supply connector (7) of the power supply box (1).
4. Insert the plug (9) of the AC power cord (8) securely into the AC power supply connector (10) of the power supply box.
5. Insert the plug (11) at the other end of the AC power cord (8) securely into the single-phase 100 to 240 V power supply.

⚠ WARNING

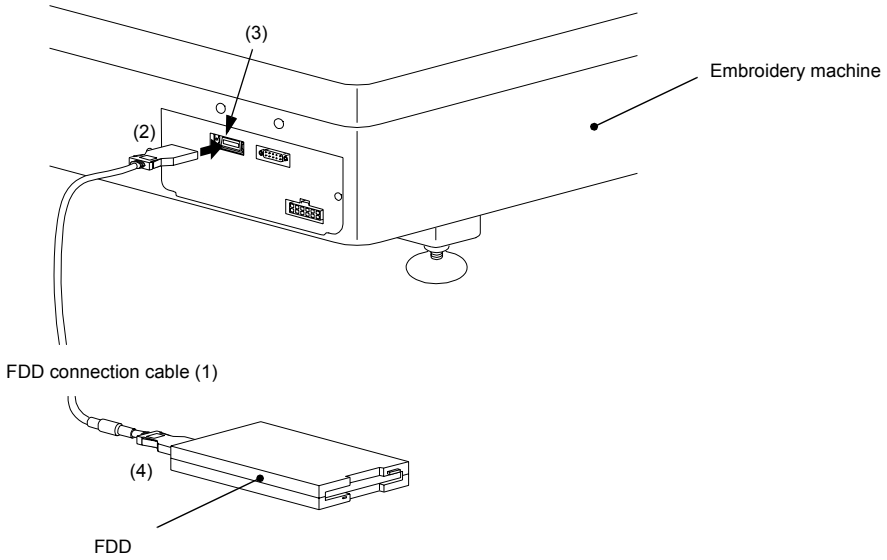
- Connect the earth wire of the AC power cord to the earth terminal
  It could cause electric shock unless the machine is grounded properly.
- The mains plug must be accessible after it is connected to the supply socket, so that it can easily be disconnected in an emergency.



Types of AC Power Cord		
Plug		
Spec.	USA and Canada	EU
Voltage Rating	125 V	250 V

CONNECTING THE FDD (FLOPPY DISK DRIVE) (TO BE PURCHASED SEPARATELY)

1. Insert the plug (2) of the FDD connection cable (1) securely into the FDD connector (3).
2. Insert the plug (4) at the other end of the FDD connection cable (1) securely into the connector of the FDD.



FDD connection cable (1)

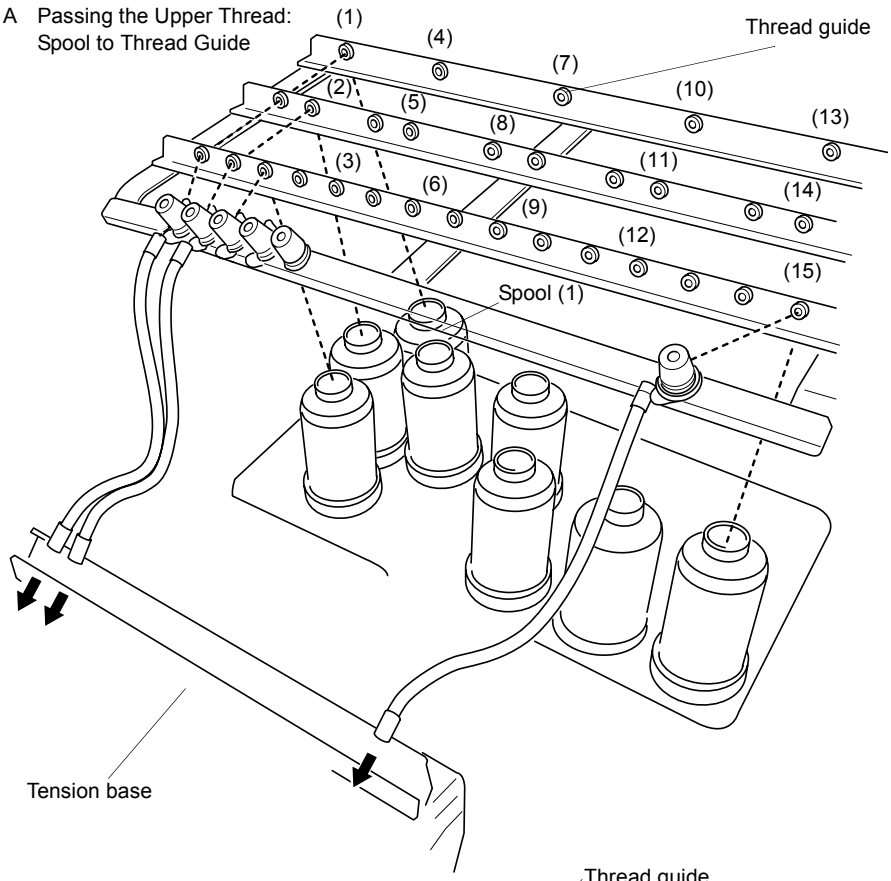
FDD

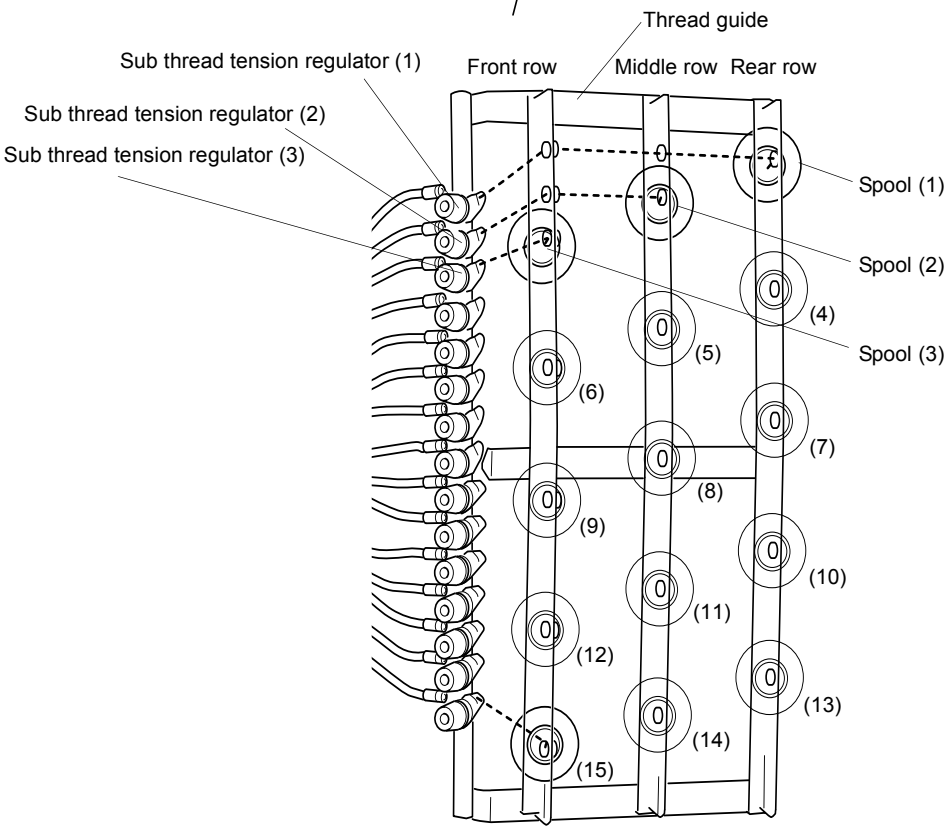
SETTING THE UPPER THREAD

Upper Thread Setting Procedure

1. Pass the thread from the spool (1) through the hole on the thread guide (1) just above the spool (1) and further pass it through thread guides at the middle and front rows.
2. Pass next the thread through the sub thread tension regulator (1).
3. For spools (4), (7), (10) and (13), set the thread in the same manner up to the sub thread tension regulators of the same number.
4. Pass the thread from the spool (2), at the middle row, through the hole on the thread guide (2) just above the spool (2) and further pass it through the thread guide at the front row.
5. Pass the thread through the sub thread tension regulator (2).
6. For spools (5), (8), (11) and (14), set the thread in the same manner up to the sub thread tension regulators of the same number.
7. Pass the thread from the spool (3), at the front row, through the hole on the thread guide (3) just above the spool (3).
8. Pass next the thread directly through the sub thread tension regulator (3).
9. For spools (6), (9), (12) and (15), set the thread in the same manner up to the sub thread tension regulators of the same number.

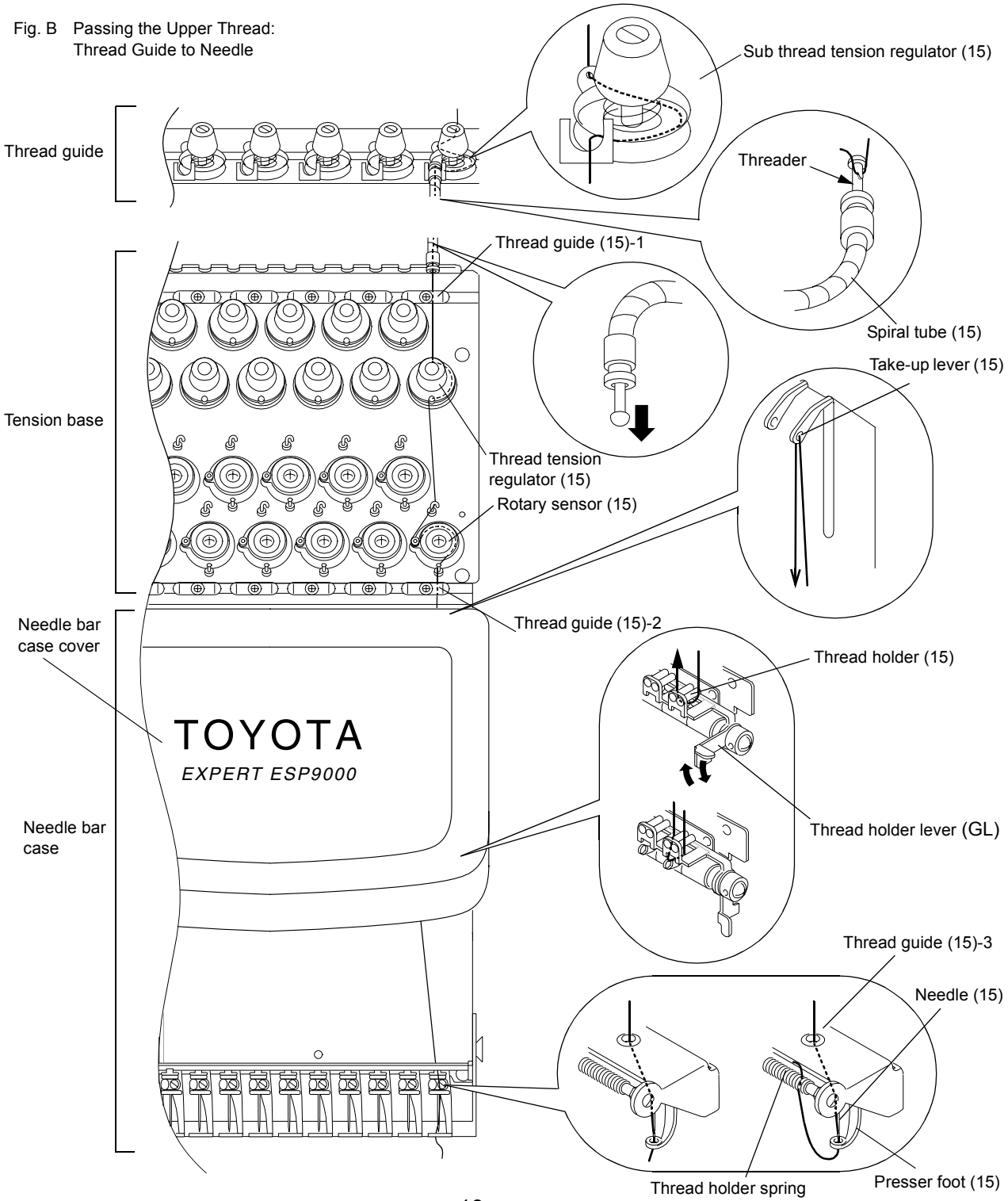
Fig. A Passing the Upper Thread: Spool to Thread Guide





10. Run the thread from the sub thread tension regulator (15) through the spiral tube (15).
11. Run the thread further through the thread guide (15)-1, thread tension regulator (15) rotary sensor (15) and thread guide (15)-2.
12. Open next the needle bar case cover.
13. Raise the thread holder lever (GL), hook the upper thread on the thread holder (15) from right to bottom and pass the thread through the hole of take-up lever (15) at the top.
14. After that, run the thread down and through the thread guide (15)-3, then through the hole of the needle (15) and finally through the hole in the presser foot (15).
15. Hook next the thread end on the thread holding spring.
16. Set the thread of spools (14) to (1) in the same manner. Finally, push down the thread holder lever (GL) down to finish the setting of upper thread.

Fig. B Passing the Upper Thread:
Thread Guide to Needle



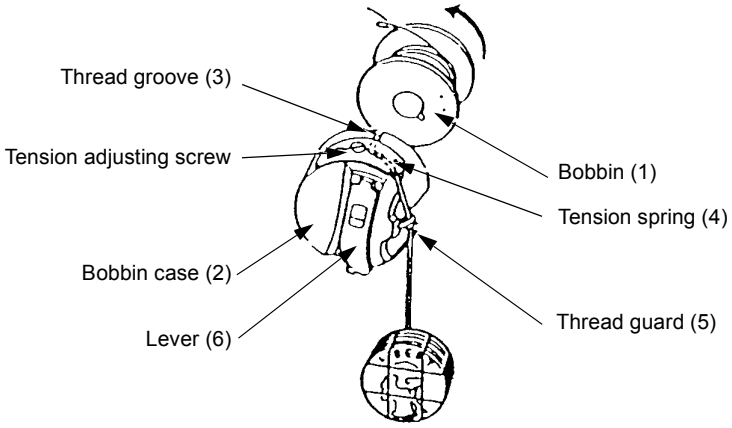
SETTING THE UNDER THREAD

1. Orient the bobbin (1) with its thread facing in the direction, specified by the arrow symbol, and put it in the bobbin case (2).
2. Route the thread through the thread groove (3) in the bobbin case, under the thread tension spring (4) and the thread guard (5).
3. Raise the "lever" (6) on the bobbin case and then install it in the rotary hook.

NOTE: The standard under thread tension is 25 to 30 g (0.25 to 0.3 N) for the carbonized yarn #120.

The thread tension can be adjusted with the tension adjusting screw of the bobbin case. Turning the screw clockwise tightens the thread and turning it counterclockwise loosens the thread tension.

For adjustment, suspend three 25-cent coins from the bobbin case by taping them to the thread as shown in the illustration below. If thread is pulled out slightly when the bobbin case is gently shaken up and down, the thread tension is between 25 and 30 g (0.25 and 0.3 N).



⚠ CAUTION

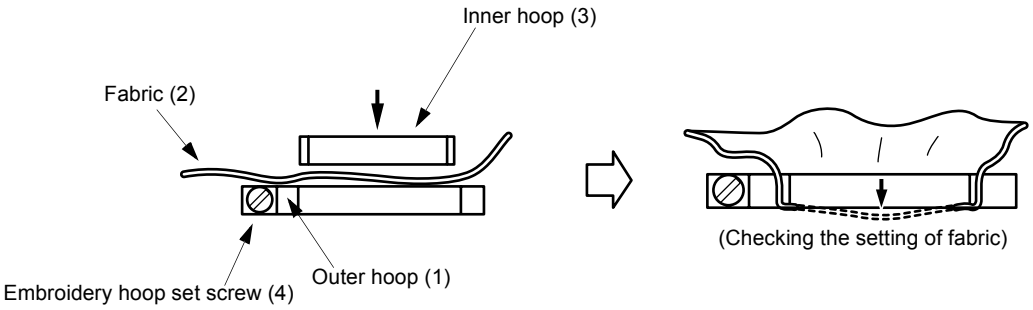
Before setting or removing the bobbin, be sure to turn OFF the power switch. Otherwise, the embroidery machine may start causing injury of operators.

SETTING THE FABRIC ON THE HOOP

1. Place the fabric (2) on the outer hoop (1) and press the inner hoop (3) into the outer hoop (1).

   If the inner hoop (3) cannot be pressed into the outer hoop (1) smoothly, loosen the hoop set screw (4).

2. Check if the fabric is correctly set in the hoop by pressing the center of the fabric gently with the finger as shown in the illustration below. The fabric should be stretched so that it returns to the state as before when the finger is released.



⚠ CAUTION

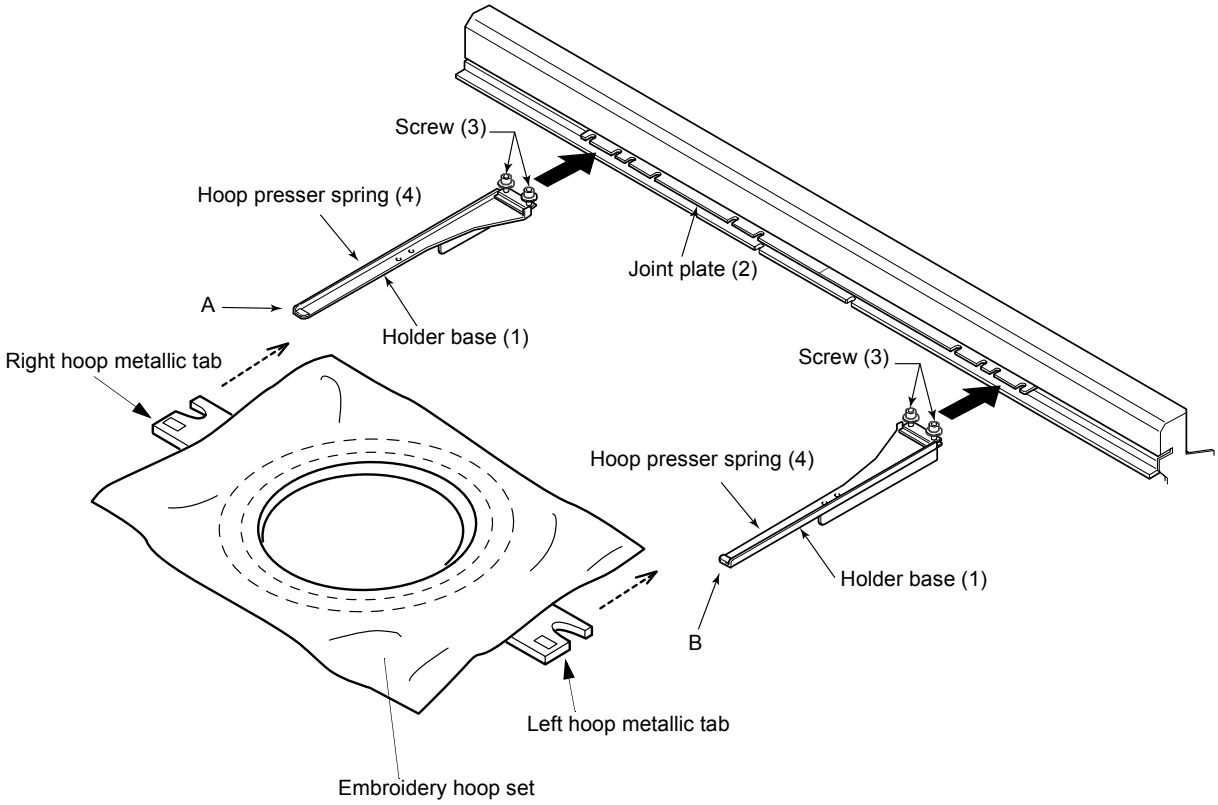
Make sure there is no hard item such as a button in the embroidery range.
Otherwise, the needle may be broken causing injury of operators.

SETTING THE HOOP TO THE EMBROIDERY MACHINE

1. Attach two holder bases (1) to the joint plate (2) in the direction indicated by ➡ symbol and secure them in place with screws (3).

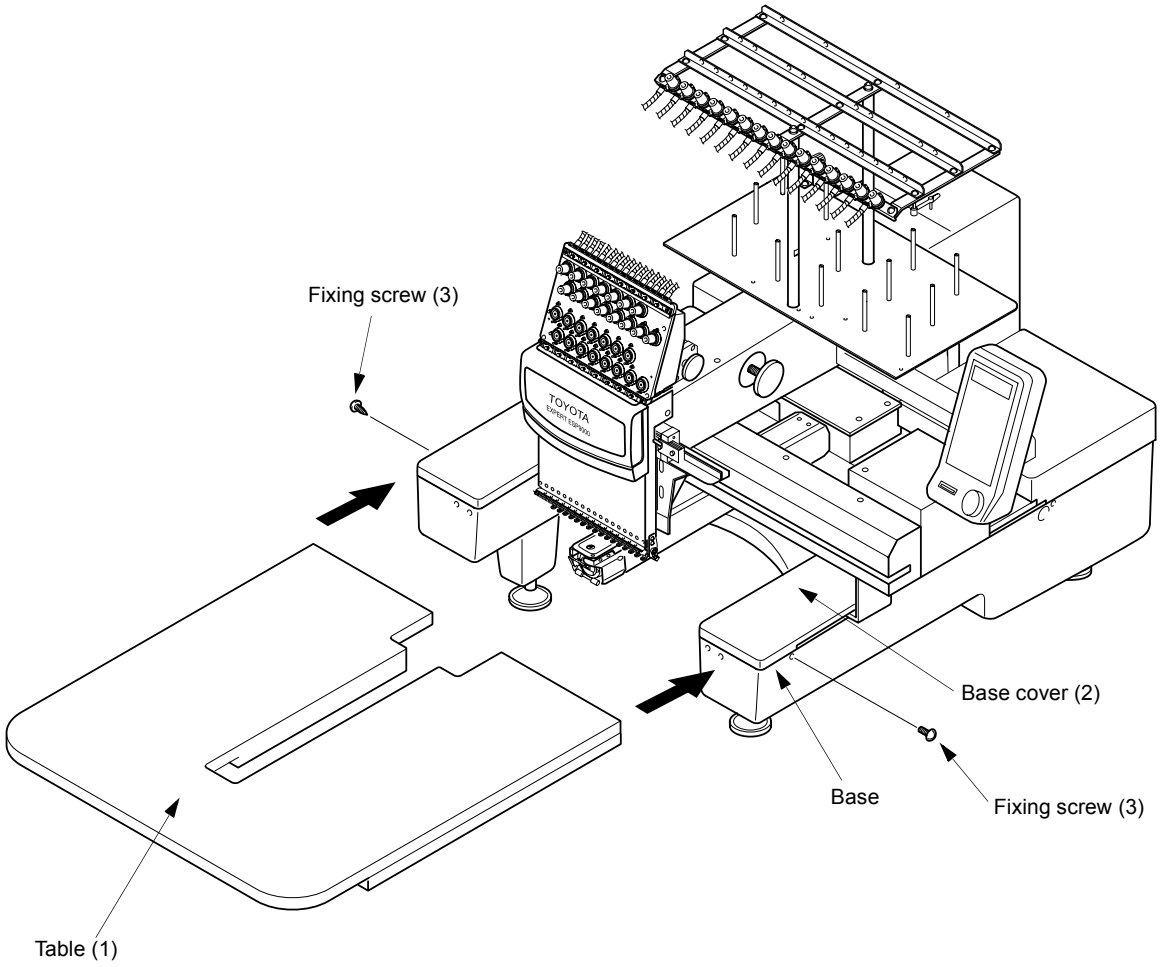
   Determine the holder base (1) attaching position meeting the size of the hoop.

2. Insert the right and left metallic tabs of the embroidery hoop set in the sections A and B in the direction of dashed line arrows - → and fix the tabs by engaging the hoop presser springs (4) of the holder bases (1) in the tabs.



ATTACHING THE TABLE

1. Push in the table (1) till it hits the bottom with care to maintain equally at both right and left of top of the base cover (2) on the embroidery machine.
2. Tighten the right and left fixing screws (3). This completes the attaching of the table.

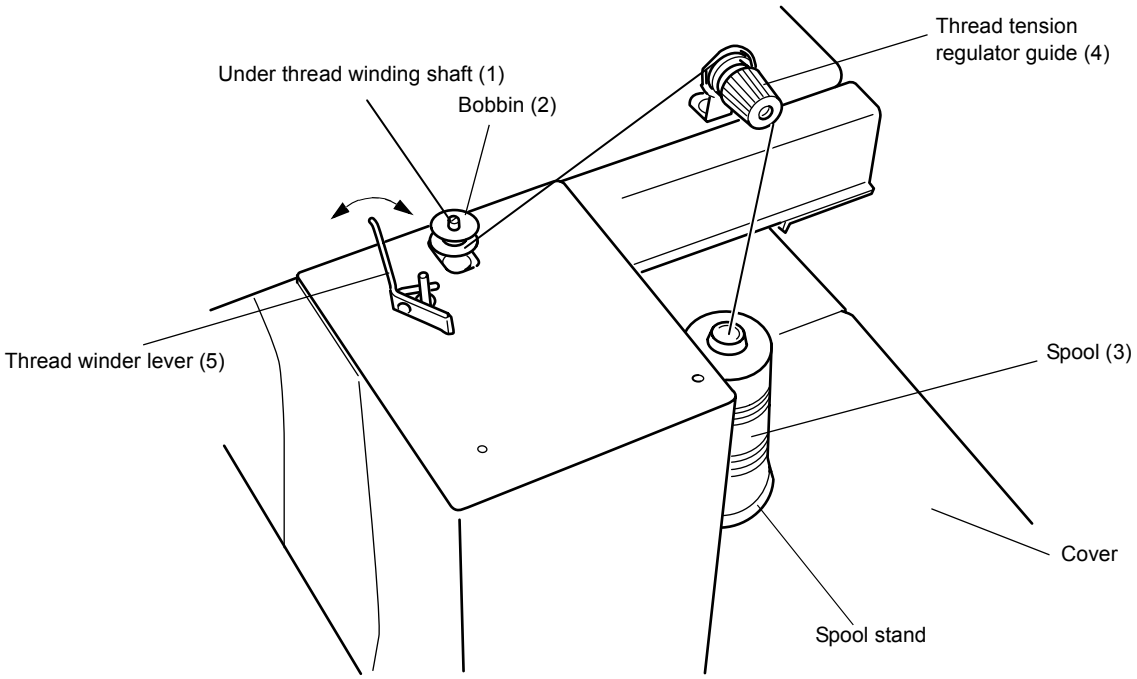


DIP SWITCH SETTING

Set DSW1-2 at ON to change the LCD indicator on the operation panel box to the display in Japanese.

WINDING THE UNDER THREAD

1. Set a bobbin (2) on the under thread winding shaft (1).
2. Place the spool (3) on the spool stand on the cover, pass the thread end through the thread tension regulator guide (4) and wind the thread round the bobbin (2).
3. Press the thread winder lever (5) to the right so that it touches the inner face of the bobbin (2).
4. Thread is wound on the bobbin as the machine operates and the lever automatically returns back (turning to the left) when a certain amount of thread is wound on the bobbin to stop winding of the under thread.



Under thread may be used up during embroidery. In this case, set the under thread in the same manner as explained above.

CHECKUPS BEFORE STARTING OPERATION

Before starting the machine, carry out checkups as indicated below.

⚠ CAUTION

Turn the main switch OFF before checking the machine prior to starting the operation.
If you check the machine without turning the main switch OFF, you could sustain injury.

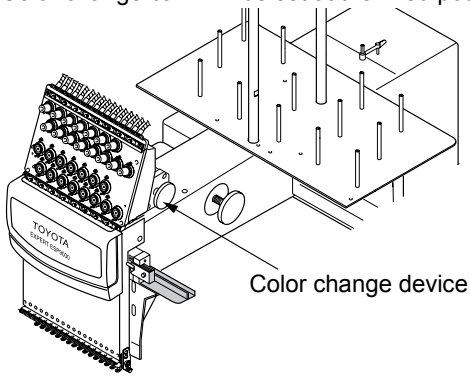
Check Point	Description	Action
Covers	Check for disengagement.	Install if disengaged.
Thread	Check for disengagement.	Set if disengaged.
	Check for breakage.	Set if broken.
Needle	Check for bend.	Replace if bent.
	Check for breakage.	Replace if broken.
Rotary hook rail	Check if appropriate amount of oil applied.	Lubricate as required.

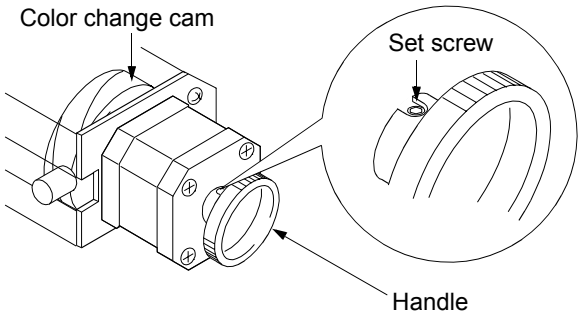
CHECKING THE EMBROIDERY HEAD

Check of the Color Change Device and Set Screw

The color change device selects needle bars. The machine will fail to operate if the color change cam is off the predetermined position (set screw is positioned right above or right below).

1. Turn the handle of the color change device to bring the set screw to the top position.
   Color change cam will be set at the fixed position.



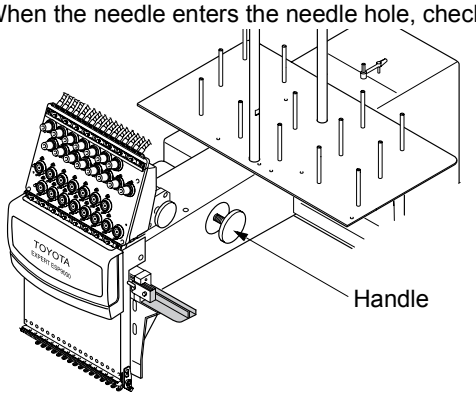


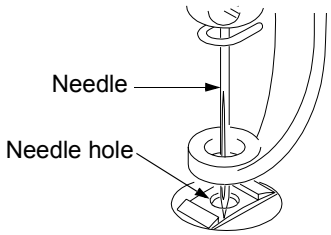
When the set screw of the handle is at the top position, an odd-numbered needle bar is selected.

Check of Needle Lowered Position

Check the needle lowered position only after checking the set screw position.

1. Turn the main shaft handle counterclockwise while pressing it against the arm.
2. When the needle enters the needle hole, check the needle location.





3. Make sure that the needle is located at the center of the needle hole.

If the needle is not positioned at the center, the needle could be bent. Replace it if necessary.

《OPERATION BASICS》

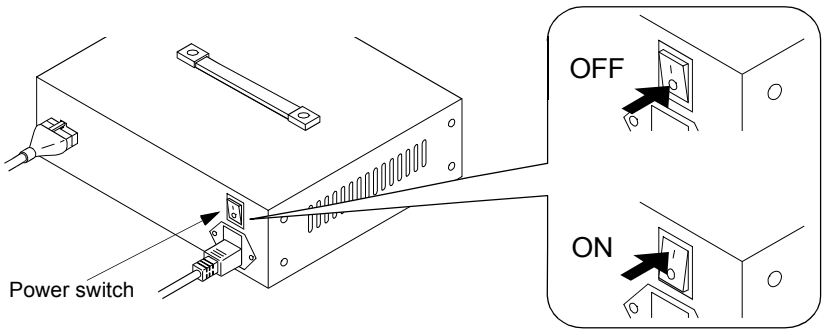
STARTING AND STOPPING THE MACHINE

Power Switch

The power switch is provided on the power supply box.

Press the power switch at "O" side to turn the power OFF or at "I" to turn the power ON.

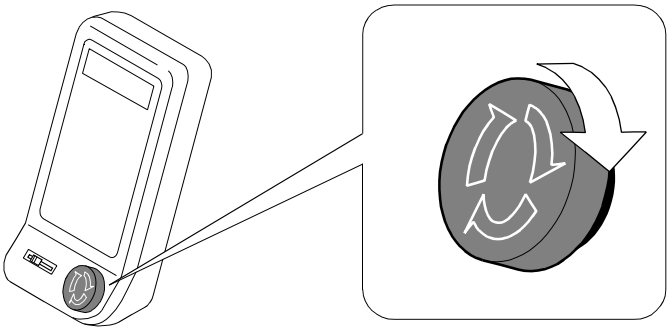
When reapplying the power, turn the switch OFF and then turn it back ON after several seconds.



EMERGENCY STOP Switch

Use the EMERGENCY STOP switch to stop the machine in an emergency. When the EMERGENCY STOP switch is pressed, the main shaft stops rotating and the EMERGENCY STOP switch is locked in the pressed state.

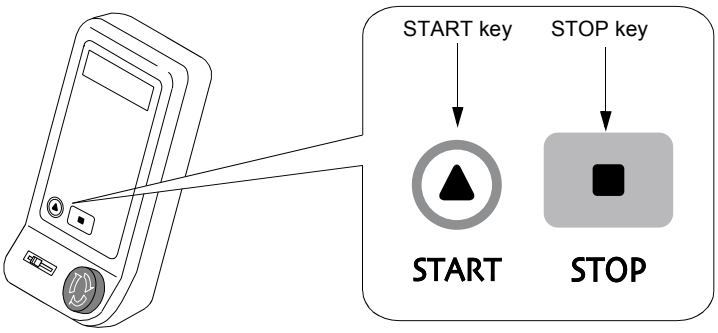
Turn the switch in the arrow direction to release the lock.



START and STOP Keys

The START key, when pressed, starts machine operation and the STOP key, when pressed, stops the machine.

The needle bar stops at the upper dead point when the STOP key is pressed.



STEPS TO START EMBRODIERY

Example: To input the hoop data using the flat hoop from FDD (floppy disk drive) (to be purchased separately)

1 Turn ON the power switch at the power supply box.

2 Select "FLAT" for "HOOP" using ◀ and ▶ (hoop travel keys).

3 Select "ON" for "INITIAL" using ◀ and ▶ (hoop travel keys).

4 Press the SET key.

```
** ESP9000 series **

 HOOP     → FLAT
 INITIAL  → ON     <D>
```

☞ Press SET.

5 The screen displays "EMB START". Press the DATA set menu key.

```
***** EMB START ****
 AISIN 123.10O ▲▼1
          0/  1027
01/15:123-456789A<D>
```

☞ Press DATA.

6 For "INPUT DATA", select "335" using ◀ and ▶ (hoop travel keys).

📖 "335" is a model name of FDD.

7 Press the SET key.

```
***** DATA MENU ****
1.INPUT DATA → 335
2.SELECT DATA
3.DELETE DATA
```

☞ Press SET.

8 Set the floppy disk in which the hoop data is stored to the FDD.

9 Select the hoop data using ◀ and ▶ (hoop travel keys).

Example: AISIN123

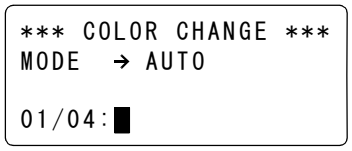
10 Press the SET key.

```
**** SELECT FILE ***
1     → AISIN123.10O
STITCH→  10713 ST
MEMORY→ 180876 ST
```

☞ Press SET.

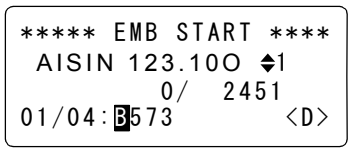
11 Input the needle numbers in the order of needle change using the numeric keys.

12 Press the SET key.



☞ Press SET .

13 The screen will display the information as shown below when the hoop data setting is completed.



14 Set the fabric in the embroidery hoop.

15 Set the embroidery hoop in the embroidery machine.

16 Set the upper and under threads.

17 Press the TRACE key to check if the range of embroidery fits the size and position of the embroidery hoop.

18 If the hoop position does not fit the range of embroidery, adjust the position of the hoop using the hoop travel keys and repeat step 17 again.
If the hoop size does not fit the range of embroidery, change the hoop (to be purchased separately) to the one that fits the range of embroidery.

19 After confirming that the hoop is set in the correct position, press the START key.

Embroidering starts up.

📖 Various kinds of setting can be made after completing the setting of hoop data.

SCREENS

The LCD screen displays variety of information to navigate the operation.
The information displayed on the LCD screen is briefly explained below.

● Basic Menu

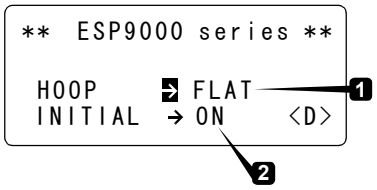
Power ON

1 Hoop mode (FLAT / CAP / SLEEVE)

Change the selection with the hoop travel keys ◀ and ▶.

2 Start point return motion and initializing at the power switch "ON" (ON: Operated / OFF: Not)

Change the selection with the hoop travel keys ◀ and ▶.



At the Start of Embroidery

* In automatic color change mode:

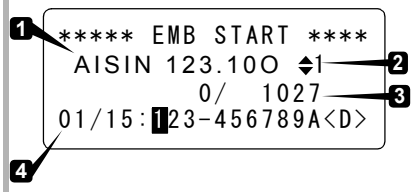
Use AUTO MANUAL to change the color change mode between automatic and manual.

1 File name

2 Forward/Back travel unit (1/10/100/C/n-ST)

3 Present number of stitches / Total number of stitches

4 Present step / Total number of steps:
Needle bar numbers in the order of color change

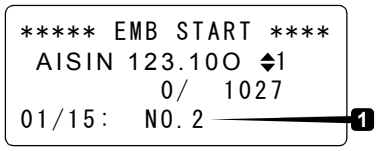


* In manual color change mode:

Use AUTO MANUAL to change the color change mode between automatic and manual.

1 Needle bar No.

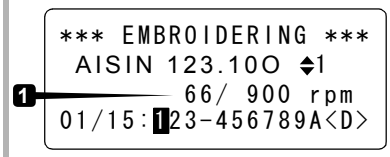
Change the selection with the hoop travel keys ◀ and ▶.



During Embroidering

1 Present number of stitches / Total number of stitches (ST)
↔ Present number of stitches / Maximum speed (RPM)

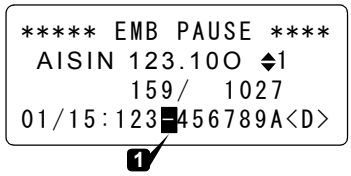
🕮 Set for "1. DISPLAY" of FUNCTION MENU (Machine Setting).



During Machine Stop

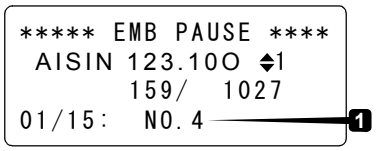
1 Stop due to pause code

🕮 Insert "-" : Pause in the needle bar setting.



1 Needle bar No.

🕮 If "MANUAL" is selected for color change, the machine stops at each color change operation.



OPERATION PROCEDURE

● Function Menu: Pressing FUNCTION in "EMB START" mode.

Machine Setting

1 Stitch / RPM

Change the selection with the hoop travel keys ◀ and ▶.

2 Thread breakage sensor (OFF / 1 - 5)

Change the selection with the hoop travel keys ◀ and ▶.

3 Press the SET key SET to set the bobbin counter.

* Bobbin counter setting

a Counter data (Actual accumrated value): Max. 999999 stitches

CLEAR (Can be cleared)

b Preset data (Preset accumrated value): Max. 999999 stitches by Numeric keys

4 Lock stitch (So: Yes at start / S-: No at start; Eo : Yes at end / E-: No at end)

Change the selection with the hoop travel keys ◀ and ▶.

5 Satin stitch adjustment
(-: No adjustment / 1 - 5: Adjustment in 0.1 mm units)

Change the selection with the hoop travel keys ◀ and ▶.

6 Slow start (2 - 9 stitches)

Change the selection with the hoop travel keys ◀ and ▶.

7 Trimming in jump (0 - 9 stitches)

Change the selection with the hoop travel keys ◀ and ▶.

8 Jump length (OFF / 4.0 - 9.9 mm)

Change the selection with the hoop travel keys ◀ and ▶.

9 Trimming length (1 - 17)

Change the selection with the hoop travel keys ◀ and ▶.

Machine Setting

A Trimming timing (–10 - +10)

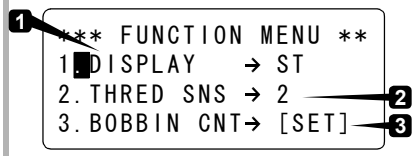
Change the selection with the hoop travel keys ◀ and ▶.

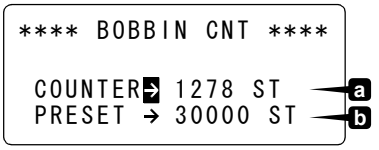
B Communication speed (9600 / 19200 / 38400)

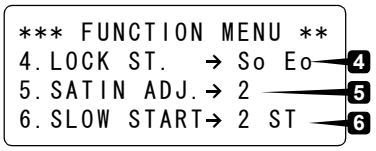
Change the selection with the hoop travel keys ◀ and ▶.

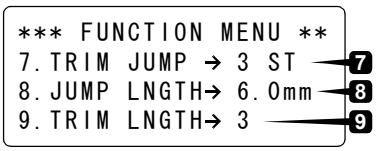
C Machine No. (0 - 3)

Change the selection with the hoop travel keys ◀ and ▶.









OPERATION PROCEDURE

● Hoop Menu: Pressing HOOP in "EMB START" mode.

Frame Setting

1 Hoop type (FLAT / CAP / SLEEVE)

Change the selection with the hoop travel keys ◀ and ▶.

2 Initialization (ON / OFF)

Change the selection with the hoop travel keys ◀ and ▶.

3 Start point return after embroidering (AUTO / MANUAL)

Change the selection with the hoop travel keys ◀ and ▶.

4 Hoop travel speeds (1 - 3) in the manual mode

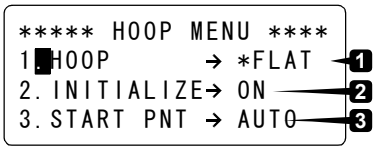
Change the selection with the hoop travel keys ◀ and ▶.

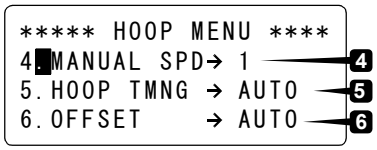
5 Hoop drive start timing (AUTO / 250°)

Change the selection with the hoop travel keys ◀ and ▶.

6 Offset at the completion of embroidering (AUTO / MANUAL)

Change the selection with the hoop travel keys ◀ and ▶.





● Edit Menu: Pressing EDIT in "EMB START" mode.

Data Setting

1 Rotation (90° units)

Change the selection with the hoop travel keys ◀ and ▶.

2 Mirror (OFF / X (X-axis mirror) / Y (Y-axis mirror))

Change the selection with the hoop travel keys ◀ and ▶.

3 Repeat SET

* Repeat setting

a Direction of repeat (HORIZONTAL / VERTICAL)

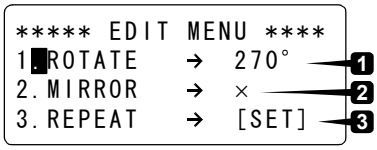
Change the selection with the hoop travel keys ◀ and ▶.

b Number of repetition times (01 - 99)

Change the selection with the hoop travel keys ◀ and ▶.

c Repeat space (0 - 255 mm)

Change the selection with the hoop travel keys ◀ and ▶.



● Data Set Menu: Pressing DATA in "EMB START" mode.

Data Input

1 Data input device (PC: Serial port / 335: FDD)

Select with the hoop travel keys ◀ and ▶ , and confirm the selection by pressing the SET key SET .

*Input from PC

a Label name

b Available memory size

*Input from 335 (floppy disk drive)

c Design No.→ Design name

Change the selection with the hoop travel keys ◀ and ▶.

d Number of stitches of FD stored design

e Available memory size

Selecting Design

2 Memory-stored design selection (Data selection)

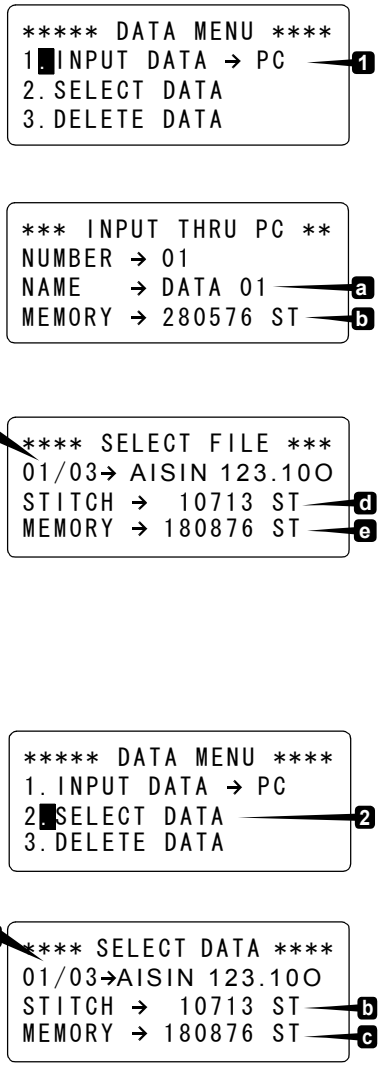
When the SET key SET is pressed

a Memory No. / Number of registered designs → Design name

Change the selection with the hoop travel keys ◀ and ▶.

b Number of stitches of memory stored design

c Available memory size



Deleting Design

3 Memory-stored design deletion

When the SET key [SET] is pressed

*Selecting the design

a Memory No. / Number of registered designs → Design name

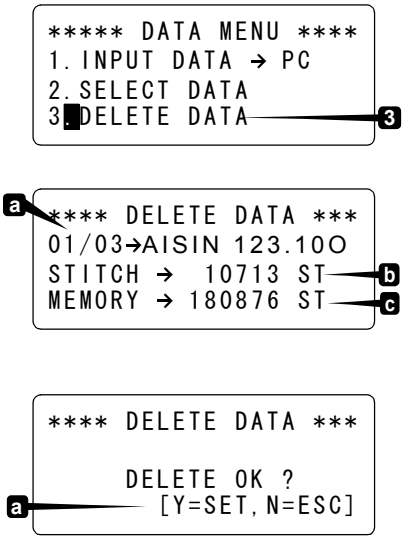
Change the selection with the CLEAR key [CLEAR] after pressing the hoop travel key ▲ and ▼.

b Number of stitches of memory stored design

c Available memory size

*Confirmation for deletion

a Press the SET key [SET] when Y (yes) or the ESCAPE key [ESCAPE] when N (no).



Input Mode

4 Design input mode

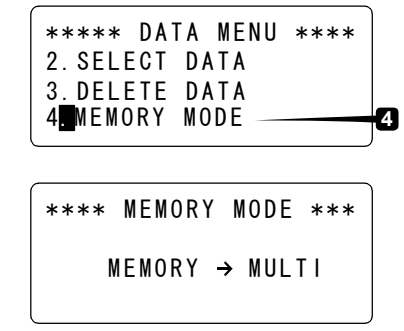
When the SET key [SET] is pressed

a Mode selection (SINGLE / MULTI)

Change the selection with the hoop travel keys ◀ and ▶.

SINGLE: Embroidery is possible without storing the design in memory

MULTI: Design is input to memory.

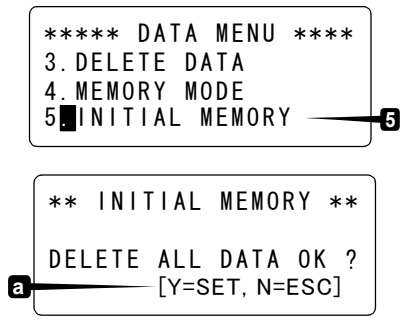


Memory Initialization

5 Memory initialization

When the SET key [SET] is pressed

a Press the SET key [SET] when Y (yes) or the ESCAPE key [ESCAPE] when N (no).



● Color Change Setting: Pressing COLOR in "EMB START" mode.

Needle Bar Selection

*In automatic color change mode

1 Color change mode (AUTO / MANUAL)

Press the color change mode key AUTO MANUAL to select.

The lamp lights if manual mode is set.

2 Present step / Total number of steps: Color change sequence

Select with the hoop travel keys ◀ and ▶ and ten keys.

"-" : Pause may be inserted by ■ STOP.

a Needle bar operation is suspended temporarily.

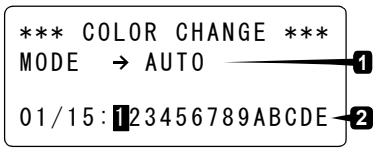
*In manual color change mode

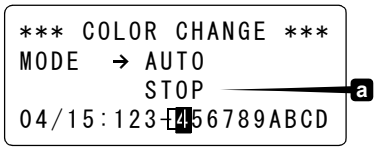
1 Color change mode (AUTO / MANUAL)

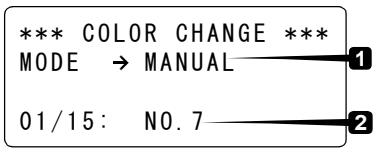
Press the color change mode key AUTO MANUAL to select.

2 Present step / Total number of steps:

Present needle bar No. ◀ ▶ COLOR CHANGE





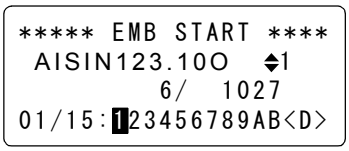


《FUNCTION MENU》

CHANGING DISPLAY

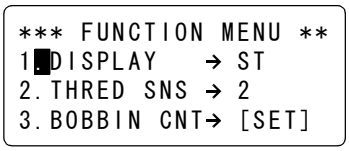
Sets the information to be displayed during embroidering - number of stitches or main shaft speed [*1].

1 Change the display to FUNCTION MENU.



☞ Press FUNCTION .

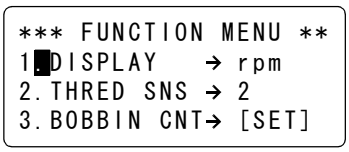
2 Select the desired display mode.



☞ Select "ST: stitch" or "rpm: number of revolutions" for "DISPLAY" using the following keys:

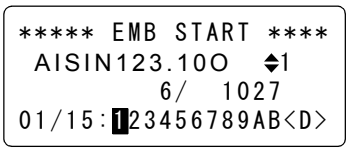
◀ and ▶ (hoop travel keys)

3 Press [SET] to confirm the selection.



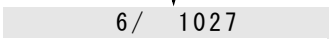
☞ Press SET .

4 End of operation



📖 DISPLAY: ST / rpm

Total number of stitches of the design data set for embroidery



Present main shaft speed

*1: Even if you select "rpm", the number of stitches of the design data set for embroidery is displayed while the machine stops.

THREAD BREAK SENSOR

Sets the thread break detection sensing level.

1 Change the display to FUNCTION MENU.

```
***** EMB START ****
 AISIN123.10O ◆1
         0/  1027
01/15:123456789AB<D>
```

☞ Press FUNCTION .

2 Select "2. THRED SNS" (thread break detection sensor).

```
*** FUNCTION MENU **
1.DISPLAY    → ST
2.THRED SNS → OFF
3.BOBBIN CNT→ [SET]
```

☞ Move the cursor using ▼ (hoop travel key).

3 Select the desired setting.

```
*** FUNCTION MENU **
1.DISPLAY    → ST
2.THRED SNS → OFF
3.BOBBIN CNT→ [SET]
```

☞ Select "OFF", "1", "2", "3", "4" or "5" for "THRED SENS" using the following keys:

◀ and ▶ (hoop travel keys)

4 Press [SET] to confirm the setting.

```
*** FUNCTION MENU **
1.DISPLAY    → ST
2.THRED SNS → 3
3.BOBBIN CNT→ [SET]
```

☞ Press SET .

5 End of operation

```
***** EMB START ****
 AISIN123.10O ◆1
         0/  1027
01/15:123456789AB<D>
```

📖 Setting: OFF / 1 / 2 / 3 / 4 / 5
- OFF: Does not detect break of thread.
- 1 - 5: Detects break of thread at the set number of stitches.

* Sensitivity gets higher when a smaller number is set.

BOBBIN COUNTER (SET)

Sets the number of stitches for stopping the machine automatically.

When the counted number of stitches reaches the preset number, the machine stops automatically.

1 Change the display to FUNCTION MENU.

```
***** EMB START ****
 AISIN123.10O ◆1
         0/  1027
01/15:123456789AB<D>
```

☞ Press FUNCTION .

2 Select "3. BOBBIN CNT" (bobbin counter).

```
*** FUNCTION MENU **
1.DISPLAY   → ST
2.THRED SNS → 2
3.BOBBIN CNT→ [SET]
```

☞ Move the cursor using ▼ (hoop travel key).

3 Press [SET] to confirm the selection.

```
*** FUNCTION MENU **
1.DISPLAY   → ST
2.THRED SNS → 2
3.BOBBIN CNT→ [SET]
```

☞ Press SET .

4 Select "PRESET".

```
**** BOBBIN CNT ****

 COUNTER →      0 ST
 PRESET  →      0 ST
```

☞ Move the cursor using ▼ (hoop travel key).

5 Input the preset number of stitches.

```
**** BOBBIN CNT ****

 COUNTER →      0 ST
 PRESET  →      0 ST
```

☞ 7 8 9 0 / 4 5 6 / 1 2 3

Input the preset number using the numeric keys.

6 Press [SET] to confirm your input.

```
**** BOBBIN CNT ****

 COUNTER →      0 ST
 PRESET  → 30000 ST
```

☞ Press SET .

7 End of operation

```
***** EMB START ****
 AISIN123.10O ◆1
         0/  1027
01/15:123456789AB<D>
```

📖 Determine the number of stitches to be set for bobbin counter so that the machine will stop before lower thread is used up.

📖 If you make a mistake, clear the value you have input by pressing the CLEAR key and then input the correct value again.

📖 When the number of stitches set by the counter is reached, the machine automatically stops, by buzzer sounds and the message below is displayed.

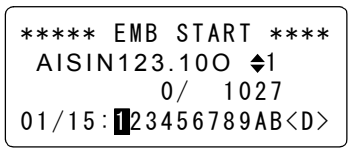
`LOWER THREAD RUN OUT`

Press the STOP key to reset the alarm message, and then perform the necessary work to restore operation.

BOBBIN COUNTER (COUNTER)

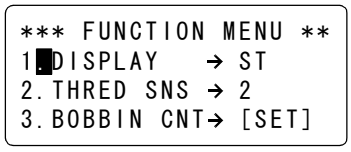
Clears the counted number of stitches [*1].

1 Change the display to FUNCTION MENU.



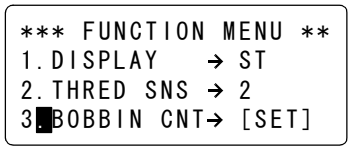
Press FUNCTION.

2 Select "3. BOBBIN CNT" (bobbin counter).



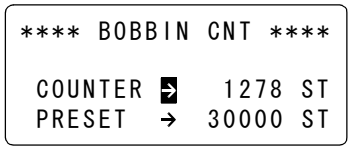
Move the cursor using ▼ (hoop travel key).

3 Press [SET] to confirm the selection.



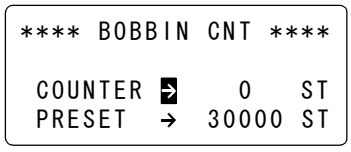
Press SET.

4 Clear the COUNTER data.



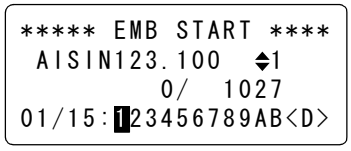
Press CLEAR.

5 Press [SET] to confirm the operation.



Press SET.

6 End of operation



PRESET data can also be cleared by pressing the CLEAR key after selecting the SET key for BOBBIN CNT.

*1: The bobbin counter (COUNTER) functions only when the PRESET data is set.

LOCK STITCH

Sets "lock stitch" at the start and end of sewing.

1 Change the display to FUNCTION MENU.

```
***** EMB START ****
 AISIN123.10O ◆1
         0/  1027
01/15:123456789AB<D>
```

☞ Press FUNCTION.

2 Change the displayed items.

```
*** FUNCTION MENU **
1.DISPLAY    → ST
2.THRED SNS → 2
3.BOBBIN CNT→ [SET]
```

☞ Press FUNCTION.

3 Select the setting.

```
*** FUNCTION MENU **
4.LOCK ST.   → So Eo
5.SATIN ADJ.→ OFF
6.SLOW START→ 2 ST
```

☞ Select the setting using the following keys:

◀ and ▶ (hoop travel keys)

4 Press [SET] to confirm the setting.

```
*** FUNCTION MENU **
4.LOCK ST.   → S- Eo
5.SATIN ADJ.→ OFF
6.SLOW START→ 2 ST
```

☞ Press SET.

5 End of operation

```
***** EMB START ****
 AISIN123.10O ◆1
         0/  1027
01/15:123456789AB<D>
```

📖 ◀ : So / S-

▶ : Eo / E-

So: Lock stitch at the start of sewing

Eo: Lock stitch at the start of sewing

S-, E-: No lock stitching

📖 Lock stitch: Back and forth stitching by one stitch

SATIN ADJUSTMENT

Sets adjustment of satin stitch width.

1 Change the display to FUNCTION MENU.

```
***** EMB START ****
 AISIN123.10O ◆1
         0/  1027
01/15:123456789AB<D>
```

☞ Press FUNCTION.

2 Change the displayed items.

```
*** FUNCTION MENU **
1.DISPLAY    → ST
2.THRED SNS → 2
3.BOBBIN CNT→ [SET]
```

☞ Press FUNCTION.

3 Select "4. SATIN ADJ." (satin stitch width adjustment).

```
*** FUNCTION MENU **
4.LOCK ST.   → So Eo
5.SATIN ADJ.→ OFF
6.SLOW START→ 2 ST
```

☞ Move the cursor using ▼ (hoop travel key).

4 Select the setting.

```
*** FUNCTION MENU **
4.LOCK ST.   → So Eo
5.SATIN ADJ.→ OFF
6.SLOW START→ 2 ST
```

☞ Select "OFF" "1", "2", "3", "4" or "5" of SATIN AJD. using the following keys:
◀ and ▶ (hoop travel keys)

5 Press [SET] to confirm the setting.

```
*** FUNCTION MENU **
4.LOCK ST.   → So Eo
5.SATIN ADJ.→ 1
6.SLOW START→ 2 ST
```

☞ Press SET.

6 End of operation

```
***** EMB START ****
 AISIN123.10O ◆1
         0/  1027
01/15:123456789AB<D>
```

📖 Setting: OFF / 1 / 2 / 3 / 4 / 5
- OFF: Satin stitch width is not adjusted.
- 1 - 5: 0.1 - 0.5 mm

📖 Satin stitch width is extended on both sides by the set adjustment amount.

SLOW START

Sets the number of main shaft rotations for which the main shaft rotates at a slow speed when starting sewing after thread trimming.

1 Change the display to FUNCTION MENU.

```
***** EMB START ****
 AISIN123.10O ◆1
         0/  1027
01/15:123456789AB<D>
```

☞ Press FUNCTION .

2 Change the displayed items.

```
*** FUNCTION MENU **
1.DISPLAY   → ST
2.THRED SNS → 2
3.BOBBIN CNT→ [SET]
```

☞ Press FUNCTION .

3 Select "5. SLOW START" (slow start).

```
*** FUNCTION MENU **
4.LOCK ST.  → So Eo
5.SATIN ADJ.→ OFF
6.SLOW START→ 2 ST
```

☞ Move the cursor using ▼ (hoop travel key).

4 Select the setting.

```
*** FUNCTION MENU **
4.LOCK ST.   → So Eo
5.SATIN ADJ. → OFF
6.SLOW START → 2 ST
```

☞ Select "2"... or "9"using the following keys:

◀ and ▶ (hoop travel keys)

📖 Setting: 2 - 9 stitches
The number of stitches for slow start

5 Press [SET] to confirm the setting.

```
*** FUNCTION MENU **
4.LOCK ST.   → So Eo
5.SATIN ADJ. → OFF
6.SLOW START → 2 ST
```

☞ Press SET .

6 End of operation

```
***** EMB START ****
 AISIN123.10O ◆1
         0/  1027
01/15:123456789AB<D>
```

TRIMMING IN JUMP

Inserts thread trimming to stitches of consecutive jumps.

1 Change the display to FUNCTION MENU.

```
***** EMB START ****
 AISIN123.10O  ◆1
         0/  1027
01/15:123456789AB<D>
```

☞ Press FUNCTION .

2 Change the displayed items.

```
*** FUNCTION MENU **
1.DISPLAY    → ST
2.THRED SNS → 2
3.BOBBIN CNT→ [SET]
```

☞ FUNCTION + FUNCTION

Press the FUNCTION menu key two times.

3 Select the setting.

```
*** FUNCTION MENU **
7.TRIM JUMP → 3 ST
8.JUMP LNGTH→ 6.0mm
9.TRIM LNGTH→ 3
```

☞ Select "0", "1"... or "9" using the following keys:

◀ and ▶ (hoop travel keys)

4 Press [SET] to confirm the setting.

```
*** FUNCTION MENU **
7.TRIM JUMP → 3 ST
8.JUMP LNGTH→ 6.0mm
9.TRIM LNGTH→ 3
```

☞ Press SET .

5 End of operation

```
***** EMB START ****
 AISIN123.10O  ◆1
         0/  1027
01/15:123456789AB<D>
```

📖 Thread is trimmed using the continuous jump signals.

📖 Setting: 0 / 1 / 2 / ... / 8 / 9 (ST)
- 0: Does not insert.

📖 Keep pressing ◀ or ▶, and the value changes quickly.

📖 When the number of jump signals appearing in succession reaches the set value, thread trimming is inserted.

JUMP LENGTH

Sets the condition (length) for converting stitches into jump. Stitches longer than the set length are converted into jump.

1 Change the display to FUNCTION MENU.

```
***** EMB START ****
 AISIN123.10O  ◆1
          0/  1027
01/15:123456789AB<D>
```

☞ Press FUNCTION .

2 Change the displayed items.

```
*** FUNCTION MENU **
1.DISPLAY    → ST
2.THRED SNS → 2
3.BOBBIN CNT→ [SET]
```

☞ FUNCTION + FUNCTION

Press the FUNCTION menu key twice.

3 Select "8. JUMP LNGTH" (length of stitch).

```
*** FUNCTION MENU **
7.TRIM JUMP → 3 ST
8.JUMP LNGTH→ 6.0mm
9.TRIM LNGTH→ 3
```

☞ Move the cursor using ▼ (hoop travel key).

4 Select the setting.

```
*** FUNCTION MENU **
7.TRIM JUMP → 3 ST
8.JUMP LNGTH→ 6.0mm
9.TRIM LNGTH→ 3
```

☞ Select "OFF", "4.0"... or "9.9" using the following keys:

◀ and ▶ (hoop travel keys)

📖 Setting: OFF, 4.0 ... 9.9 (ST)
- OFF: Does not insert.

📖 Keep pressing ◀ or ▶, and the value changes quickly.

5 Press [SET] to confirm the setting.

```
*** FUNCTION MENU **
7.TRIM JUMP → 3 ST
8.JUMP LNGTH→ 6.0mm
9.TRIM LNGTH→ 3
```

☞ Press SET .

6 End of operation

```
***** EMB START ****
 AISIN123.10O  ◆1
          0/  1027
01/15:123456789AB<D>
```

TRIMMING LENGTH

Sets the length of thread to be trimmed.

1 Change the display to FUNCTION MENU.

```
***** EMB START ****
 AISIN123.10O ◆1
         0/  1027
01/15:123456789AB<D>
```

Press FUNCTION.

2 Change the displayed items.

```
*** FUNCTION MENU **
1.DISPLAY    → ST
2.THRED SNS → 2
3.BOBBIN CNT→ [SET]
```

Press the FUNCTION menu key twice.

3 Select "9. TRIM LNGTH" (trimming length).

```
*** FUNCTION MENU **
7.TRIM JUMP → 3 ST
8.JUMP LNGTH→ 6.0mm
9.TRIM LNGTH→ 3
```

Move the cursor using ▼ (hoop travel key).

4 Select the setting.

```
*** FUNCTION MENU **
7.TRIM JUMP → 3 ST
8.JUMP LNGTH→ 6.0mm
9.TRIM LNGTH→ 3
```

Select "1"... or "17" using the following keys:

◀ and ▶ (hoop travel keys)

Setting: 1 / 2 / 3 / ... / 17

Shorter ← 1 — 8 — 17 → Longer

A smaller number sets a shorter thread trimming length and a larger number sets a longer thread trimming length.

5 Press [SET] to confirm the setting.

```
*** FUNCTION MENU **
7.TRIM JUMP → 3 ST
8.JUMP LNGTH→ 6.0mm
9.TRIM LNGTH→ 3
```

Press SET.

6 End of operation

```
***** EMB START ****
 AISIN123.10O ◆1
         0/  1027
01/15:123456789AB<D>
```

TRIMMING TIMING

Adjusts the timing for starting trimming.

1 Change the display to FUNCTION MENU.

```
***** EMB START ****
 AISIN123.10O  ◆1
          0/  1027
01/15:123456789AB<D>
```

☞ Press FUNCTION .

2 Change the displayed items.

```
*** FUNCTION MENU **
1.DISPLAY    → ST
2.THRED SNS → 2
3.BOBBIN CNT→ [SET]
```

☞ FUNCTION + FUNCTION + FUNCTION

Press the FUNCTION menu key three times.

3 Select the setting.

```
*** FUNCTION MENU **
A.TRIM TMNG → + 3
B.COM SPEED → 9600
C.MACHINE    → 1
```

☞ Select "-10"... or "+10" using the following keys:

◀ and ▶ (hoop travel keys)

📖 Setting: -10 / ... / -1 / 0 / +1 / ... / +10

Earlier ← -10 ——— 0 ——— +10 → Later

Adjust the timing meeting the thread length after trimming the kind of thread being used.

4 Press [SET] to confirm the setting.

```
*** FUNCTION MENU **
A.TRIM TMNG → + 3
B.COM SPEED → 9600
C.MACHINE    → 1
```

☞ Press SET .

5 End of operation

```
***** EMB START ****
 AISIN123.10O  ◆1
          0/  1027
01/15:123456789AB<D>
```

COMMUNICATION SPEED

Sets data transmission speed (bps) for serial communication.

1 Change the display to FUNCTION MENU.

```
***** EMB START ****
 AISIN123.10O  ◆1
          0/  1027
01/15:123456789AB<D>
```

☞ Press FUNCTION .

2 Change the displayed items.

```
*** FUNCTION MENU **
1.DISPLAY    → ST
2.THRED SNS → 2
3.BOBBIN CNT→ [SET]
```

☞ FUNCTION + FUNCTION + FUNCTION

Press the FUNCTION menu key three times.

3 Select "B. COM SPEED" (communication speed).

```
*** FUNCTION MENU **
A.TRIM TMNG → + 0
B.COM SPEED → 38400
C.MACHINE    → 1
```

☞ Move the cursor using ▼ (hoop travel key).

4 Select the setting.

```
*** FUNCTION MENU **
A.TRIM TMNG → + 0
B.COM SPEED → 38400
C.MACHINE    → 1
```

☞ Select "9600", "19200" or "38400" (bps) according to the transmission speed on the P/C at the transmitting side using the following keys:

◀ and ▶ (hoop travel keys)

5 Press [SET] to confirm the setting.

```
*** FUNCTION MENU **
A.TRIM TMNG → + 0
B.COM SPEED → 38400
C.MACHINE    → 1
```

☞ Press SET .

6 End of operation

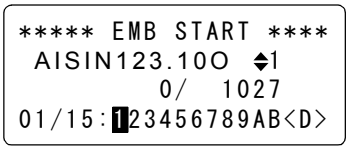
```
***** EMB START ****
 AISIN123.10O  ◆1
          0/  1027
01/15:123456789AB<D>
```

《HOOP MENU》

HOOP MODE

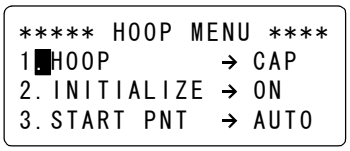
Sets the embroidery hoop type - flat / cap / sleeve.

1 Change the display to HOOP MENU.



☞ Press HOOP .

2 Select the type of embroidery hoop.

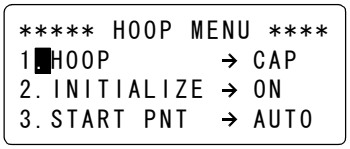


☞ Select "FLAT", "CAP" or "SLEEVE" using the following keys:

◀ and ▶ (hoop travel keys)

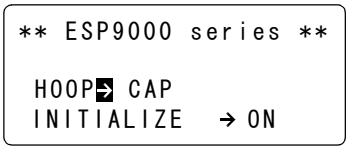
📖 Setting: FLAT / CAP / SLEEVE

3 Press [SET] to confirm the selection.



☞ Press SET .

4 End of operation



📖 The screen returns to the start-up screen (the initial screen displayed when the power is turned ON) when the hoop mode is set. Press the SET key to display the EMB START screen.

INITIALIZATION

Sets if initial point is searched for when the power is turned ON.

1 Change the display to HOOP MENU.

```
***** EMB START ****
 AISIN123.10O  ◆1
         0/  1027
01/15:123456789AB<D>
```

☞ Press HOOP .

2 Select "2. INITIALIZE" (initialization).

```
***** HOOP MENU ****
1.HOOP       → FLAT
2.INITIALIZE→ ON
3.START PNT → MANUAL
```

☞ Move the cursor using ▼ (hoop travel key).

3 Select the setting.

```
***** HOOP MENU ****
1.HOOP       → FLAT
2.INITIALIZE→ ON
3.START PNT → MANUAL
```

☞ Select "ON" or "OFF" using the following keys:

◀ and ▶ (hoop travel keys)

4 Press [SET] to confirm the selection.

```
***** HOOP MENU ****
1.HOOP       → FLAT
2.INITIALIZE→ ON
3.START PNT → MANUAL
```

☞ Press SET .

5 End of operation

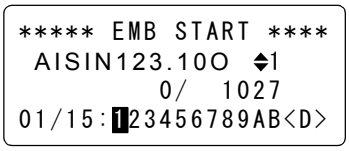
```
***** EMB START ****
 AISIN123.10O  ◆1
         0/  1027
01/15:123456789AB<D>
```

📖 Setting: ON / OFF
- ON: When the SET key is pressed after turning the power ON, the hoop automatically travels to the start point.
- OFF: The hoop does not travel automatically.

START POINT RETURN MODE

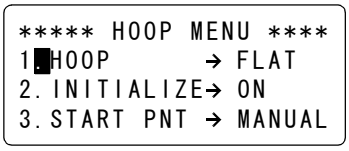
Sets the mode (automatic/manual) to move the hoop to the start point when the power is turned ON.

1 Change the display to HOOP MENU.



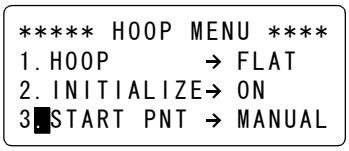
☞ Press HOOP .

2 Select "3. START PNT" (start point return mode).



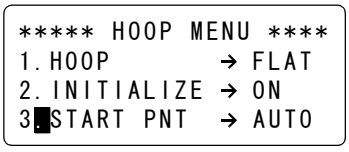
☞ Move the cursor using ▼ (hoop travel key).

3 Select the setting.



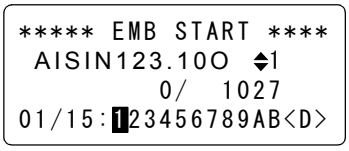
☞ Select "AUTO" or "MANUAL" using the following keys:
◀ and ▶ (hoop travel keys)

4 Press [SET] to confirm the selection.



☞ Press SET .

5 End of operation

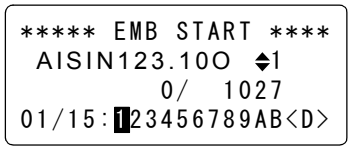


📖 Setting: AUTO / MANUAL
- AUTO: The hoop automatically travels to the start point at the completion of embroidery.
- MANUAL: The hoop stops at the position where embroidery is completed. To return the hoop to the start point, press the start point return key.

MANUAL SPEED

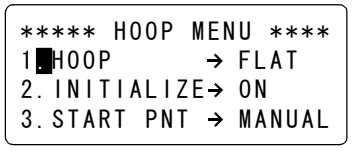
Sets hoop travel speed.

1 Change the display to HOOP MENU.



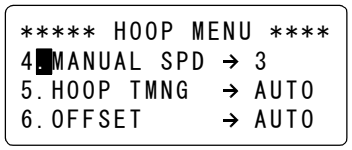
Press HOOP .

2 Change the displayed items.



Press HOOP .

3 Select the setting.



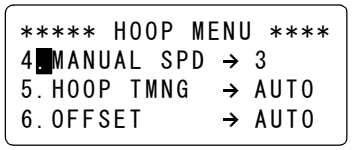
Select "1", "2" or "3" using the following keys:

and (hoop travel keys)

Setting: 1 / 2 / 3

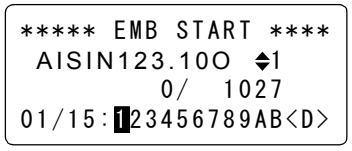
1	2	3
High speed	Medium speed	Low speed

4 Press [SET] to confirm the selection.



Press SET .

5 End of operation



HOOP TIMING

Sets the hoop drive start timing.

1 Change the display to HOOP MENU.

```
***** EMB START ****
 AISIN123.10O ◆1
         0/  1027
01/15:123456789AB<D>
```

☞ Press HOOP.

2 Change the displayed items.

```
***** HOOP MENU ****
1.HOOP       → FLAT
2.INITIALIZE→ ON
3.START PNT → MANUAL
```

☞ Press HOOP.

3 Select "5. HOOP TMNG" (hoop drive start timing).

```
***** HOOP MENU ****
4.MANUAL SPD→ 1
5.HOOP TMNG → AUTO
6.OFFSET    → MANUAL
```

☞ Move the cursor using ▼ (hoop travel key).

4 Select the setting.

```
***** HOOP MENU ****
4.MANUAL SPD→ 1
5.HOOP TMNG → AUTO
6.OFFSET    → MANUAL
```

☞ Select "AUTO" or "250°" using the following keys: ◀ and ▶ (hoop travel keys)

5 Press [SET] to confirm the selection.

```
***** HOOP MENU ****
4.MANUAL SPD → 1
5.HOOP TMNG  → 250°
6.OFFSET     → 2
```

☞ Press SET.

6 End of operation

```
***** EMB START ****
 AISIN123.10O ◆1
         0/  1027
01/15:123456789AB<D>
```

📖 Setting: AUTO / 250°
- AUTO: Automatically adjusted
- 250°: The hoop drive starts always at 250°.

OFFSET

Sets if the hoop automatically travels to the offset position.

For details of offset, refer to Pages 73 and 74.

1 Change the display to HOOP MENU.

```
***** EMB START ****
 AISIN123.10O ◆1
         0/  1027
01/15:123456789AB<D>
```

Press HOOP.

2 Change the displayed items.

```
***** HOOP MENU ****
1.HOOP       → FLAT
2.INITIALIZE→ ON
3.START PNT → MANUAL
```

Press HOOP.

3 Select "6. OFFSET" (hoop offset).

```
***** HOOP MENU ****
4.MANUAL SPD  → 1
5.HOOP TMNG   → AUTO
6.OFFSET      → AUTO
```

Move the cursor using ▼ (hoop travel key).

4 Select the setting.

```
***** HOOP MENU ****
4.MANUAL SPD → 1
5.HOOP TMNG  → AUTO
6.OFFSET     → AUTO
```

Select "AUTO" or "MANUAL" using the following keys:
◀ and ▶ (hoop travel keys)

Setting: AUTO / MANUAL
- AUTO: The hoop travels automatically to the offset position upon completion of embroidering.
- MANUAL: The hoop does not travel automatically. When OFFSET is pressed, the hoop automatically travels to the preset offset position.

5 Press [SET] to confirm the selection.

```
***** HOOP MENU ****
4.MANUAL SPD→ 1
5.HOOP TMNG → AUTO
6.OFFSET    → MANUAL
```

Press SET.

6 End of operation

```
***** EMB START ****
 AISIN123.10O ◆1
         0/  1027
01/15:123456789AB<D>
```

《EDIT》

DESIGN ROTATION

Sets the angle through which the input design data is rotated.

📖 For details of design rotation, refer to Page 80.

1 Change the display to EDIT MENU.

```
***** EMB START ****
 AISIN123.10O ◆1
         0/  1027
01/15:123456789AB<D>
```

☞ Press EDIT .

2 Select the angle.

```
***** EDIT MENU ****
1.ROTATE    → 0°
2.MIRROR    → OFF
3.REPEAT    → [SET]
```

☞ Select "0°", "90°", "180°" or "270°" using the following keys:

◀ and ▶ (hoop travel keys)

📖 Rotation angle can be set in 90° units.

3 Press [SET] to confirm the setting.

```
***** EDIT MENU ****
1.ROTATE    → 180°
2.MIRROR    → OFF
3.REPEAT    → [SET]
```

☞ Press SET .

📖 To edit the design data continuously, move the cursor to "MIRROR" or "REPEAT" using ▼ (hoop travel key) and input the data for "MIRROR" or "REPEAT" before pressing the SET key.

4 End of operation

```
***** EMB START ****
 AISIN123.10O ◆1
         0/  1027
01/15:123456789AB<D>
```

MIRROR

Sets the axis of symmetry for reversing the design data.

1 Change the display to EDIT MENU.

```
***** EMB START ****
 AISIN123.10O ◆1
         0/  1027
01/15:123456789AB<D>
```

☞ Press EDIT .

2 Select "2. MIRROR" (reversal of design data).

```
***** EDIT MENU ****
1.ROTATE    →  0°
2.MIRROR    →  OFF
3.REPEAT    →  [SET]
```

☞ Move the cursor using ▼ (hoop travel key).

3 Select the axis as the base line for reversing the design data.

```
***** EDIT MENU ****
1.ROTATE    →  0°
2.MIRROR    →  OFF
3.REPEAT    →  [SET]
```

☞ Select "OFF", "X", "Y" or "XY" using the following keys:
◀ and ▶ (hoop travel keys)

4 Press [SET] to confirm the selection.

```
***** EDIT MENU ****
1.ROTATE    →  0°
2.MIRROR    →  Y
3.REPEAT    →  [SET]
```

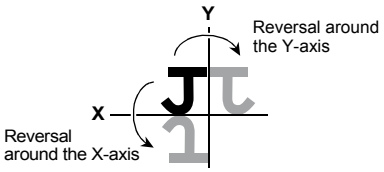
☞ Press SET .

5 End of operation

```
***** EMB START ****
 AISIN123.10O ◆1
         0/  1027
01/15:123456789AB<D>
```

📖 For details of mirror, refer to Page 80.

📖 Data is reversed symmetrically around the X-/Y-axis.



📖 To edit the design data continuously, move the cursor to "ROTATE" or "REPEAT" using ▼ (hoop travel key) and input the data for "ROTATE" or "REPEAT" before pressing the SET key.

DESIGN REPEAT

Sets the data for defining the pattern to arrange the input design data repeatedly.

📖 For details of design repeat, refer to Page 81.

1 Change the display to EDIT MENU.

```
***** EMB START ****
 AISIN123.10O ▲1
        0/  1027
01/15:123456789AB<D>
```

☞ Press EDIT .

2 Select "3. REPEAT" (repeat design data).

```
***** EDIT MENU ****
1.ROTATE    → 0°
2.MIRROR    → OFF
3.REPEAT    → [SET]
```

☞ Move the cursor using ▼ (hoop travel key).

3 Press [SET] to confirm the selection.

```
***** EDIT MENU ****
1.ROTATE    → 0°
2.MIRROR    → OFF
3.REPEAT    → [SET]
```

☞ Press SET .

4 Set the direction.

```
** REPEAT SETTING **
 DIR    → HORIZONTAL
 TIMES  → 01
 SPACE  →   0 mm
```

☞ Select "HORIZONTAL" or "VERTICAL" using the following keys: ◀ and ▶ (hoop travel keys)

📖 Setting: HORIZONTAL / VERTICAL

5 Select "TIMES" (number of repeat times).

```
** REPEAT SETTING **
 DIR    → VERTICAL
 TIMES  → 01
 SPACE  →   0 mm
```

☞ Move the cursor using ▼ (hoop travel key).

6 Set the number of repeat times

```
** REPEAT SETTING **
 DIR    → VERTICAL
 TIMES  → 01
 SPACE  →   0 mm
```

☞ Select "01" ... or "99" using the following keys: ◀ and ▶ (hoop travel keys)

📖 Setting: 01 - 99

7 Select "SPACE" (design to design space).

```
** REPEAT SETTING **
 DIR    → VERTICAL
 TIMES  → 04
 SPACE  →   0 mm
```

☞ Move the cursor using ▼ (hoop travel key).

8 Set the space.

```
** REPEAT SETTING **
 DIR    → VERTICAL
 TIMES  → 04
 SPACE  →   0 mm
```

☞ Select "0" ... or "255" using the following keys:
◀ and ▶ (hoop travel keys)

9 Press [SET] confirm the setting.

```
** REPEAT SETTING **
 DIR    → VERTICAL
 TIMES  → 04
 SPACE  →  88 mm
```

☞ Press SET .

10 Press [SET] to return to the EDIT MENU screen.

```
***** EDIT MENU ****
1.ROTATE    →  0°
2.MIRROR    →  OFF
3.REPEAT    →  [SET]
```

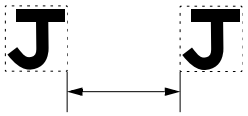
☞ Press SET .

11 End of operation

```
***** EMB START ****
 AISIN123.10O  ⬍1
         0/  1027
01/15:123456789AB<D>
```

🕮 Setting: 0 - 255 mm

🕮 SPACE indicates the spacing between the design data arranged adjacently.



🕮 To edit the design data continuously, set "ROTATE" or "MIRROR" before pressing the SET key.

《COLOR CHANGE SETTING》

COLOR CHANGE MODE

Sets the color change mode - automatic or manual.

1 Change the display to COLOR CHANGE.

```
***** EMB START ****
 AISIN123.10O  ⇕1
          0/  1027
01/15:123456789AB<D>
```

☞ Press COLOR .

2 Select the desired mode.

```
*** COLOR CHANGE ***
MODE  → AUTO

01/15:123456789ABCDE
```

☞ Press AUTO MANUAL .

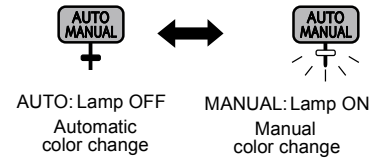
3 Press [SET] to confirm the selection.

```
*** COLOR CHANGE ***
MODE  → MANUAL

01/15:  NO.D
```

☞ Press SET .

4 End of operation

```
***** EMB START ****
 AISIN123.10O  ⇕1
          0/  1027
01/15:  NO.D
```



AUTO: Lamp OFF
Automatic color change

MANUAL: Lamp ON
Manual color change

When the manual mode is set, the presently used needle number is displayed as shown below.

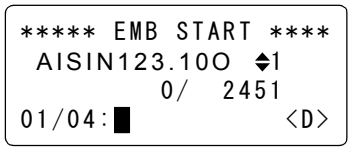
```
01/15:  NO.D
```

To change the needle bar, refer to the manual operation step explained in Page 59.

NEEDLE BAR SETTING (INPUT)

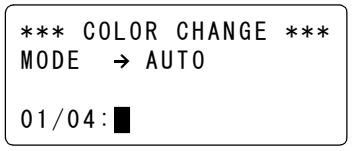
Sets the needle bar step at the screen.

1 Change the display to COLOR CHANGE.



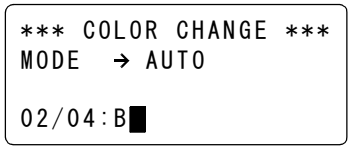
☞ Press COLOR .

2 Input the needle bar number (Example: Needle bar No. 11).



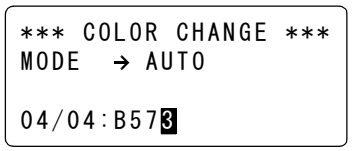
☞ Press the keys in the order of +10 + 1 .

3 Input the needle bar number for the next step.



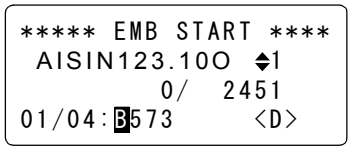
☞ 7 8 9 0
4 5 6
1 2 3 +10
Select the needle bar number by pressing the numeric keys.

4 Press [SET] to confirm the setting of needle bar numbers.



☞ Press SET .

5 End of operation



📖 To input needle bar numbers consecutively, repeat the operation of "Input the needle number" → "Input the needle number for the next step". Press the SET key after inputting needle number for all desired steps.

Needle bar No.	No. 1	···	No. 10	No. 11
Operation	1		+10 + 0	+10 + 1
Indication	1	···	A	B

📖 Needle bar Nos. 10, 11, 12, 13, 14 and 15 are indicated as A, B, C, D, E and F with the LCD on the operation panel box.

📖 Set the needle bar number for all steps.

NEEDLE BAR SETTING (CHANGE)

Changes the needle bar number of a desired step.

1 Change the display to COLOR CHANGE.

```
***** EMB START ****
 AISIN123.10O  ▲1
          0/  1027
01/99:123456789AB<D>
```

☞ Press COLOR .

2 Select the step.

```
*** COLOR CHANGE ***
MODE  → AUTO

01/15:326485179ABCDE
```

☞ Move the cursor to the step where you want to change the needle bar number using the following keys:

◀ and ▶ (hoop travel keys)

3 Input the needle bar number (Example: Changing needle bar No. 2 to needle bar No. 11)

```
*** COLOR CHANGE ***
MODE  → AUTO

02/15:326485179ABCDE
```

☞ Press the keys in the order of

+10 + 1 .

📖 To change needle bar number for other steps, repeat the operation of "Select the step" → "Input the needle number". Press the SET key after changing the needle number for all desired steps.

Needle bar No.	No. 1	…	No. 10	No. 11
Operation	1		+10 + 0	+10 + 1
Indication	1	…	A	B

📖 Needle bar Nos. 10, 11, 12, 13, 14 and 15 are indicated as A, B, C, D, E and F with the LCD on the operation panel box.

4 Press [SET] to confirm the setting of needle bar numbers.

```
*** COLOR CHANGE ***
MODE  → AUTO

03/15:32▮485179ABDE
```

☞ Press SET .

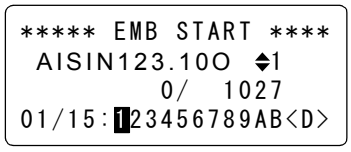
5 End of operation

```
***** EMB START ****
 AISIN123.10O  ▲1
          0/  1027
01/15:326485179AB<D>
```

PAUSE SETTING

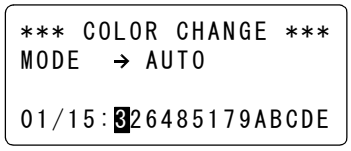
Sets for pausing of sewing after color change.

1 Change the display to COLOR CHANGE.



Press COLOR .

2 Select the step.



Select the step using the following keys:

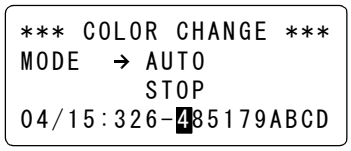
and (hoop travel keys)

3 Select the needle bar (Example: Setting pause in needle step 4).

Press ■ .

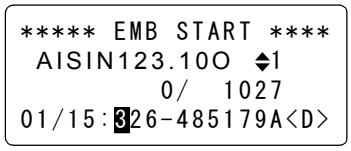
STOP

4 Press [SET] to confirm the setting.



Press SET .

5 End of operation



To set the pause for other needle bar steps, repeat the operation of "Select the step" → "Select the needle bar". Press the SET key after setting the pause for all desired steps.

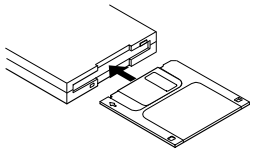
When the pause is set, "-" is inserted before the set step.

《DATA SET MENU》

DATA INPUT (FLOPPY DISK)

The following explains the procedure for inputting the design data from floppy disk to the machine. The input design data is set as the embroidery data.

1 Insert the floppy disk to floppy disk drive.



2 Change the display to DATA MENU.

```
***** EMB START ****
 AISIN123.10O  ⬍1
        0/  1027
01/15:123-456789A<D>
```

☞ Press DATA .

Needle bar No.	1 … 9	10	11	12	13	14	15
Indication	1 … 9	A	B	C	D	E	F

3 Select "335 (FDD)" for "1. INPUT DATA".

```
***** DATA MENU ****
1.INPUT DATA → PC
2.SELECT DATA
3.DELETE DATA
```

☞ Select "335" using the following keys:
◀ and ▶ (hoop travel keys)

📖 The black square symbol, blinking on the screen, indicates the selected item.

```
1.INPUT DATA → PC
```

📖 "335" is a model name of FDD.

4 Read the floppy disk.

```
***** DATA MENU ****
1.INPUT DATA → 335
2.SELECT DATA
3.DELETE DATA
```

☞ Press SET .

📖 While the floppy disk is being read, the screen displays the message as shown below.

```
FILE SEARCHING
```

5 Select the design data (Example: AISIN 123).

```
**** SELECT FILE ***
1     → AISIN900.10O
STITCH→  10713 ST
MEMORY→ 180876 ST
```

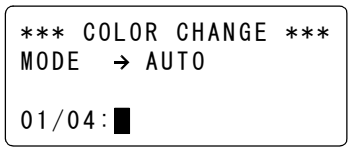
☞ Select the design data using the following keys:
◀ and ▶ (hoop travel keys)

6 Input the selected design data.

```
**** SELECT FILE ***
09/23 → AISIN123.10O
STITCH→   2451 ST
MEMORY→ 180876 ST
```

☞ Press SET .

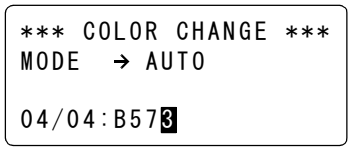
7 Set the needle bar steps (Example: 11 (B), 5, 7, 3).



☞ 7 8 9 0 / 4 5 6 / 1 2 3 +10

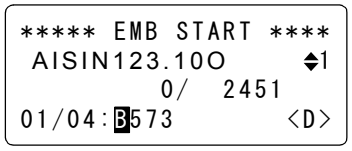
Set the number at which the needle bar is changed by pressing the ten keys.

8 Press [SET] to confirm the setting.



☞ Press SET .

9 End of operation

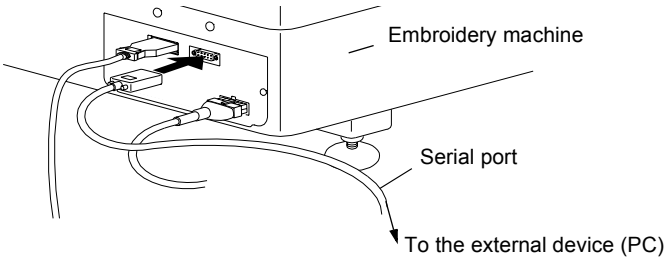


📖 The input design data is set as the embroidery data.

DATA INPUT (PC)

The following explains the procedure for inputting the design data from an external device connected to the serial port to the machine (PC). The input data is set as the embroidery data.

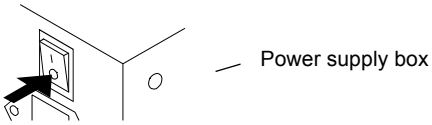
1 Connect the external device to the serial port of the machine.



Before connecting an external device (PC) to the machine (serial port), turn OFF the power supply to the external device and the machine.

Use the special cable (to be purchased separately) for connecting an external device (PC) to the serial port of the machine.

2 Turn ON the power switch of the machine.



3 After making sure that the power is supplied to the machine, turn ON the power switch of the external device.

4 Send the design data from the external device.

5 Change the display to DATA MENU.

```
***** EMB START *****
 AISIN123.10O  ▲▼1
          0/  1027
01/99:123-56789AB<D>
```

☞ Press DATA .

6 Select "PC" for "1. INPUT DATA".

```
***** DATA MENU ****
1. INPUT DATA ➔ 335
2. SELECT DATA
3. DELETE DATA
```

☞ Select "PC" using the following keys: ◀ and ▶ (hoop travel keys)

7 Read the data from the external device.

```
***** DATA MENU ****
1. INPUT DATA ➔ PC
2. SELECT DATA
3. DELETE DATA
```

☞ Press SET .

8 Press [SET] (Example: In case of design No. 1).

```
*** INPUT THRU PC **
NUMBER → 01
NAME   → DATA 01
MEMORY → 280576 ST
```

☞ Press the keys in the order of [1] + [SET].

📖 When you press the SET key after inputting the design number registered in the external device, data reading starts.

9 End of data setting of the embroidery data

```
***** EMB START ****
 DATA 01     ▲▼1
          0/ 280576
01/12:123456789AB<D>
```

📖 When the data is read, the screen will show the color change mode screen as shown below after the input of the design data.

```
*** COLOR CHANGE ***
MODE   → AUTO

01/12:
```

Input the needle bar No. at the cursor position.
Refer to Page 59.

DATA SELECT

The following explains the procedure for setting the memory stored design data as the data for embroidery.

1 Change the display to DATA MENU.

```
***** EMB START ****
 AISIN123.10O  ◆1
          0/  1027
01/15:123-456789A<D>
```

☞ Press DATA .

2 Select "2. SELECT DATA".

```
***** DATA MENU ****
1.INPUT DATA → PC
2.SELECT DATA
3.DELETE DATA
```

☞ Move the cursor using ▼ (hoop travel key).

3 Press [SET] to confirm the selection.

```
***** DATA MENU ****
1.INPUT DATA → PC
2.SELECT DATA
3.DELETE DATA
```

☞ Press SET .

4 Select the design data (Example: FLOWER).

```
**** SELECT DATA ***
01/03 → AISIN123.10O
STITCH→  10713 ST
MEMORY→ 180876 ST
```

☞ Select the design data using the following keys:
◀ and ▶ (hoop travel keys)

5 Set the data as the embroidery data.

```
**** SELECT DATA ***
03/03 → FLOWER.10O
STITCH→   3972 ST
MEMORY→ 180876 ST
```

☞ Press SET .

6 End of operation

```
***** EMB START ****
 FLOWER.10O   ◆1
          0/  3972
01/05:159AB       <D>
```

DATA DELETION

The following explains the procedure for deleting the design data stored in memory of the machine.

1 Change the display to DATA MENU.

```
***** EMB START ****
 AISIN123.10O  ◆1
         0/  1027
01/15:123-456789A<D>
```

☞ Press DATA .

2 Select "3. DELETE DATA".

```
***** DATA MENU ****
1.INPUT DATA → PC
2.SELECT DATA
3.DELETE DATA
```

☞ Move the cursor using ▼ (hoop travel key).

3 Press [SET] to confirm the selection.

```
***** DATA MENU ****
1.INPUT DATA → PC
2.SELECT DATA
3.DELETE DATA
```

☞ Press SET .

4 Select the design data to be deleted (Example: FLOWER).

```
**** DELETE DATA ****
01/12 →AISIN123.10O
STITCH→ 1027 ST
MEMORY→ 180876 ST
```

☞ Select the design using the following keys:
◀ and ▶ (hoop travel keys)

5 Press [CLEAR] to delete the selected design data.

```
**** DELETE DATA ****
07/12  →FLOWER.10O
STITCH  → 3972 ST
MEMORY  → 180876 ST
```

☞ Press CLEAR .

6 Press [SET] to confirm the operation.

```
**** DELETE DATA ****

     DELETE OK ?
       [Y=SET,N=ESC]
```

☞ Press SET .

7 End of operation

```
**** DELETE DATA ****
07/11  DOG.10O
STITCH  → 5098 ST
MEMORY  → 184848 ST
```

To restore the EMB START screen, press the ESCAPE key twice.

📖 Design data can be deleted continuously. Repeat steps 4, 5, 6 and 7.

MEMORY MODE

Sets if the design data is stored in memory or not when inputting design data.

1 Change the display to DATA MENU.

```
***** EMB START ****
 AISIN123.10O  ◆1
         0/  1027
01/15:123-456789A<D>
```

☞ Press DATA .

2 Change the displayed items.

```
***** DATA MENU ****
1.INPUT DATA → PC
2.SELECT DATA
3.DELETE DATA
```

☞ Press DATA .

3 Select "4. MEMORY MODE".

```
***** DATA MENU ****
4.MEMORY MODE
5.INITIAL MEMORY
```

☞ Press SET .

4 Confirm the selection.

```
***** DATA MENU ****
4.MEMORY MODE
5.INITIAL MEMORY
```

☞ Press SET .

5 Select the mode.

```
**** MEMORY MODE ***

   MEMORY → MULTI
```

☞ Select "MULTI" or "SINGLE" using the following keys:
◀ and ▶ (hoop travel keys)

📖 MULTI: For storing more than one design data in memory.
SINGLE: When one embroidery data is saved in the memory, previous embroidery data is deleted.

6 Press [SET] to confirm the selection.

```
**** MEMORY MODE ***

   MEMORY → SINGLE
```

☞ Press SET .

7 End of operation

```
***** DATA MENU ****
1.INPUT DATA → PC
2.SELECT DATA
3.DELETE DATA
```

📖 If "SINGLE" is set for MEMORY, input the data from PC or 335.

📖 To restore the EMB START screen, press the ESCAPE key.

MEMORY INITIALIZATION

Clears all memory-stored design data.

1 Change the display to DATA MENU.

```
***** EMB START ****
 AISIN123.10O  ◆1
         0/  1027
01/15:123-456789A<D>
```

☞ Press DATA .

2 Change the displayed items.

```
***** DATA MENU ****
1.INPUT DATA → PC
2.SELECT DATA
3.DELETE DATA
```

☞ Press DATA .

3 Select "5. INITIAL MEMORY".

```
***** DATA MENU ****
4.MEMORY MODE
5.INITIAL MEMORY
```

☞ Move the cursor using ▼ (hoop travel key).

4 Press [SET] to initialize the memory.

```
***** DATA MENU ****
4.MEMORY MODE
5.INITIAL MEMORY
```

☞ Press SET .

5 Press [SET] to confirm the operation.

```
** INITIAL MEMORY **

 DELETE ALL DATA OK ?
       [Y=SET,N=ESC]
```

☞ Press SET .

📖 The message below is displayed during memory initialization.

```
*** INITIALIZING ***
```

6 End of operation

```
***** DATA MENU ****
1.INPUT DATA → PC
2.SELECT DATA
3.DELETE DATA
```

📖 Since all design data has been deleted, input the design data at this step.
To restore the EMB START screen without inputting the design data, press the ESC key. The EMB START screen will be as shown below if there is no data set as the embroidery data.

```
***** EMB START ****
 .              ◆1
         0/     0
01/00:                (D)
```

《MANUAL OPERATION》

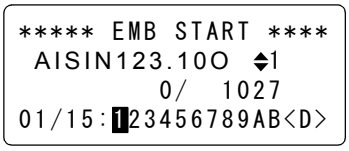
COLOR CHANGE

This operation slides the needle bar case to change color.

⚠ CAUTION

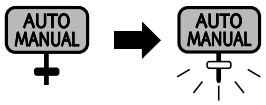
⃠ When performing this operation, do not put your hands or others under the needle or on the table.
Otherwise, you could get hurt when the needle or hoop has moved.

1 Select manual color change operation.

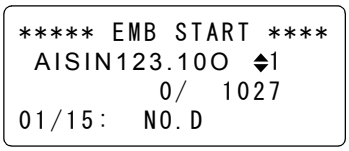


☞ Press AUTO MANUAL .

📖 When the operation mode is changed from automatic to manual, the lamp is lit.



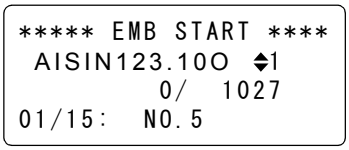
2 Select the needle bar.



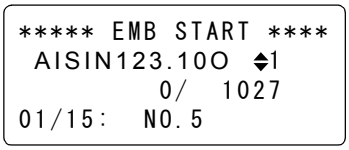
☞ Press ◀ ▶ COLOR CHANGE .

📖 One press of the key slides the needle bar case by one needle.

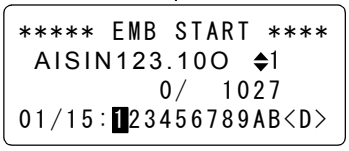
3 End of operation



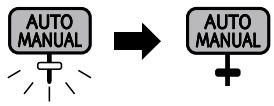
4 Return the mode from manual to automatic.



☞ Press AUTO MANUAL .



📖 When the operation mode is changed back from manual to automatic, the lamp is turned OFF.



START POINT RETURN MODE

This operation moves the embroidery hoop to the start point [*1]

⚠ CAUTION

When performing this operation, do not put your hands or others under the needle or on the table.
Otherwise, you could get hurt when the needle or hoop has moved.

1 Select the start point return operation.

```
***** EMB PAUSE ****
 AISIN123.10O  ▲▼1
         58/  1027
01/15:123456789AB<D>
```

☞ Press START POINT .

2 Press [SET] to confirm the selection.

```
***** EMB PAUSE ****

     CANCEL EMB ?
       [Y=SET,N=ESC]
```

☞ Press SET .

3 End of operation

```
***** EMB START ****
 AISIN123.10O  ▲▼1
          0/  1027
01/15:123456789AB<D>
```

📖 If the hoop is returned to the start point during embroidering, embroidery cannot be continued.

📖 The hoop moves to the start point position when the SET key is pressed.

*1: Start point is the start point of design. If automatic offset is set, the offset start position is taken as the start point.

TRACE

This operation moves the hoop along the embroidery range (maximum dimension: vertical × horizontal) of the design data.

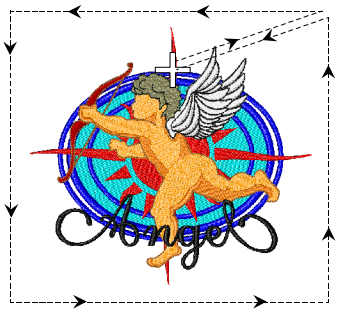
⚠ CAUTION

When performing this operation, do not put your hands or others under the needle or on the table.
Otherwise, you could get hurt when the needle or hoop has moved.

1 Select TRACE.

```
***** EMB START ****
 AISIN123.10O  ▲▼1
         0/  1027
01/15:123456789AB<D>
```

Press TRACE .



For details of trace operation, refer to Page 85.

Trace operation is not allowed during embroidering.

If you press the TRACE key during tracing, the hoop stops traveling at the nearest corner in the direction of present traveling.
Tracing restarts when the TRACE key is pressed again.

OFFSET (POSITION SETTING)

This operation sets the offset position, which is taken as the start point of a design.

⚠ CAUTION

⃠ When performing this operation, do not put your hands under the needle or on the table.
Otherwise, you could get hurt when the needle or hoop has moved.

1 Select OFFSET.

```
***** EMB START ****
 AISIN123.10O  ▲▼1
         0/  1027
01/15:123456789AB<D>
```

☞ Press MOVE HOOP .

2 Set the offset position.

```
***** EMB START ****
                OFFSET
Dx → +  0.0 (+  0.0)
Dy → +  0.0 (+  0.0)
```

☞ Set the desired offset position by pressing the hoop travel keys.

3 Press [SET] to confirm the position.

```
***** EMB START ****
                OFFSET
Dx → + 27.1 (+  0.0)
Dy → - 56.4 (+  0.0)
```

☞ Press SET .

4 End of operation

```
***** EMB START ****
                OFFSET
Dx → + 27.1 (+ 27.1)
Dy → - 56.4 (- 56.4)
```

5 Return the hoop back to the previously located position.

```
***** EMB START ****
                OFFSET
Dx → + 27.1 (+ 27.1)
Dy → - 56.4 (- 56.4)
```

⇩

```
***** EMB START ****
 AISIN123.10O  ▲▼1
         0/  1027
01/15:123456789AB<D>
```

☞ Press MOVE HOOP .

🕮 Set the offset position by actually moving the hoop to the desired position using the hoop travel keys. The coordinate values of the hoop position are displayed in the screen.

🕮 Pressing the SET key registers the setting position on the embroidery machine so that it can be used on all design data.

🕮 If you set "AUTO" for "6. OFFSET" of HOOP MENU, the hoop travels to and stops at the offset position after the completion of embroidery. The screen as shown to the left is displayed. This indicates that the hoop has stopped at the offset position.

🕮 The hoop travels back to the position before offsetting when you press the offset key.

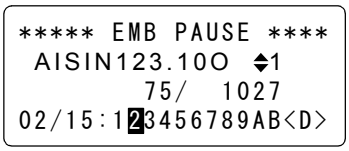
OFFSET (HOOP TRAVELING)

This operation moves the hoop to the offset position and back to the position located before offsetting.

⚠ CAUTION

When performing this operation, do not put your hands or others under the needle or on the table.
Otherwise, you could get hurt when the needle or hoop has moved.

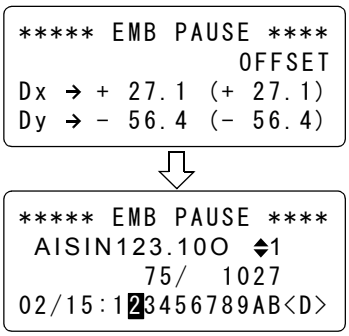
1 Select OFFSET.



Press MOVE HOOP.

Press the offset key and the hoop moves to the registered offset position.

2 Return the hoop back to the previously located position.



Press MOVE HOOP.

The hoop travels back to the position before offsetting when you press the offset key.

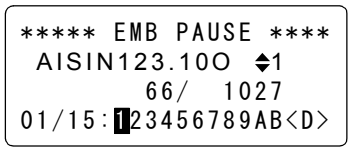
TRIMMING

This operation trims thread.

⚠ CAUTION

⃠ When performing this operation, do not put your hands or others under the needle or on the table.
Otherwise, you could get hurt when the needle or hoop has moved.

1 Select TRIMMING.



☞ Press TRIMMING .

📖 If you select trimming, the main shaft rotates. When lock stitch is selected (Page 40), one stitch is sewn before trimming.

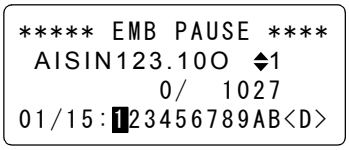
HOOP FORWARD/BACK (TRAVEL UNITS)

This operation moves the hoop forward or backward in increments of set unit of travel.

⚠ CAUTION

When performing this operation, do not put your hands or others under the needle or on the table.
Otherwise, you could get hurt when the needle or hoop has moved.

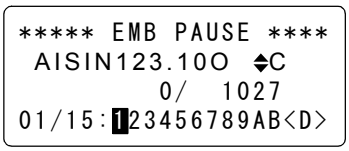
1 Select MODE (Example: Color-change unit).



Press MODE repeatedly to select "C", representing the color-change unit.

Setting: 1 / 10 / 100 / C / n-ST
- 1 : 1-stitch unit
- 10 : 10-stitch unit
- 100 : 100-stitch unit
- C : Color-change unit
- n-ST : Numeric-key input stitch position

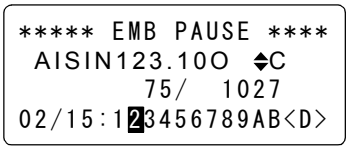
2 Hoop forward in color-change units (Example)



Press FORWARD.

When you press the FORWARD key, the hoop travels to the color-change stitch position.
Each pressing of the FORWARD key makes the hoop to travel to the next color change position.

3 End of operation



When you press the BACK key, the hoop travels to the color change stitch position.
Each pressing of the BACK key causes the hoop to travel to the previous color change position.

HOOP FORWARD/BACK (n-STITCH FEED)

This operation moves the hoop forward or backward to the input stitch position.

⚠ CAUTION

⃠ When performing this operation, do not put your hands or others under the needle or on the table.
Otherwise, you could get hurt when the needle or hoop has moved.

1 Select MODE (n ST).

```
***** EMB PAUSE ****
 AISIN123.10O  ≑C
        75/  1027
02/15:123456789AB<D>
```

☞ Press MODE repeatedly to select "n", representing the numeric-key input stitch position.

🕮 Setting: 1 / 10 / 100 / C / n-ST
- 1 : 1-stitch unit
- 10 : 10-stitch unit
- 100 : 100-stitch unit
- C : Color-change unit
- n-ST : Numeric-key input stitch position

2 Input the number of stitches (Example: 356).

```
***** EMB PAUSE ****
 AISIN123.10O  ≑n ST
        75/  1027
02/15:123456789AB<D>
```

☞ 7 8 9 0
4 5 6
1 2 3
Input the number of stitches using the numeric keys.

🕮 If the input number of stitches is larger than the present number of stitches, the hoop travels forward and if it is smaller than the present number of stitches, the hoop travels back.

3 Move the hoop to the input stitch position.

```
*** FORWARD/BACK ***
 AISIN123.10O  ≑n ST
   *    356/  1027
02/15:123456789AB<D>
```

☞ Press SET .

🕮 Pressing the SET key makes it traveling forward or backward (hoop travel) to the input stitch position.

4 End of operation

```
***** EMB PAUSE ****
 AISIN123.10O  ≑n ST
        356/  1027
06/15:123456789AB<D>
```

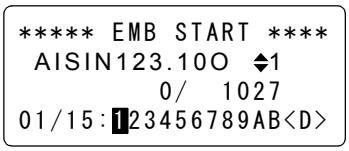
HOOP FORWARD

This operation moves the hoop forward.

CAUTION

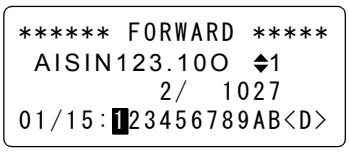
When performing this operation, do not put your hands or others under the needle or on the table.
Otherwise, you could get hurt when the needle or hoop has moved.

1 Select FORWARD.



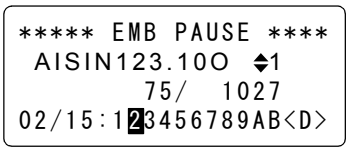
Press FORWARD.

2 Keep pressing [FORWARD].



Press FORWARD.

3 The hoop stops traveling at the color change position.



When the setting is "1-stich unit", pressing the FORWARD key once makes the hoop to travel forward by a single stitch.

If you keep the FORWARD key pressed for more than one second, the hoop keeps traveling forward even if you release the FORWARD key.
Press the STOP key to stop the hoop from traveling.

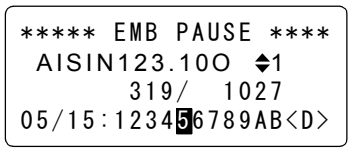
HOOP BACK

This operation moves the hoop backward.

⚠ CAUTION

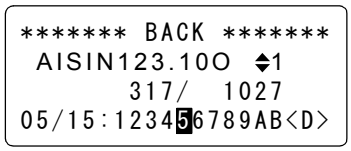
When performing this operation, do not put your hands or others under the needle or on the table.
Otherwise, you could get hurt when the needle or hoop has moved.

1 Select BACK.



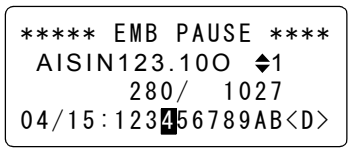
Press BACK.

2 Keep pressing [BACK].



Press BACK.

3 The hoop stops traveling at the color change position.



When the setting is "1-stich unit", pressing the BACK key once makes the hoop to travel backward by a single stitch.

If you keep the BACK key pressed for more than one second, the hoop keeps traveling backward even if you release the BACK key. Press the STOP key to stop the hoop from traveling.

The hoop keeps traveling backward up to the color change position.

《OUTLINE OF FUNCTIONS》

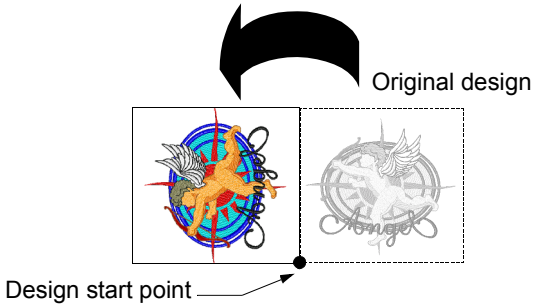
ROTATION

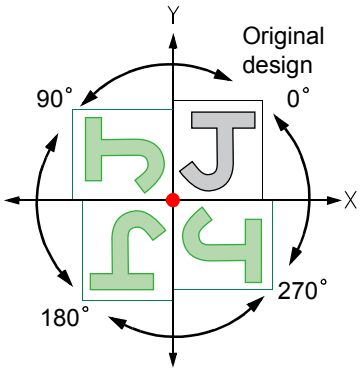
This function rotates the design data which is set as the embroidery data.

The design data is rotated around the start position of the design.

Unit of rotation : 90˚

<Example: 90˚ rotation>





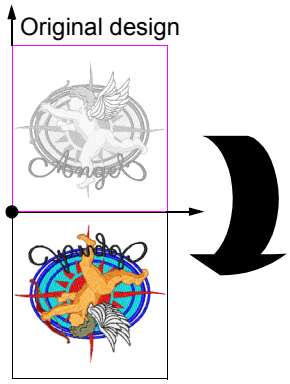
MIRROR

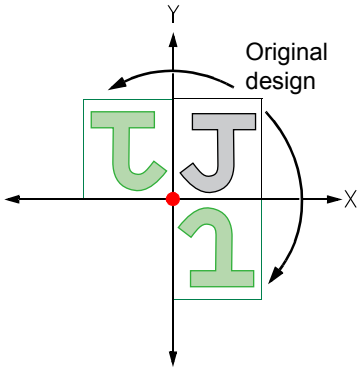
This function reverses the design data which is set as the embroidery data.

The design data is reversed around the X-/Y-axis that passes the start point of the design.

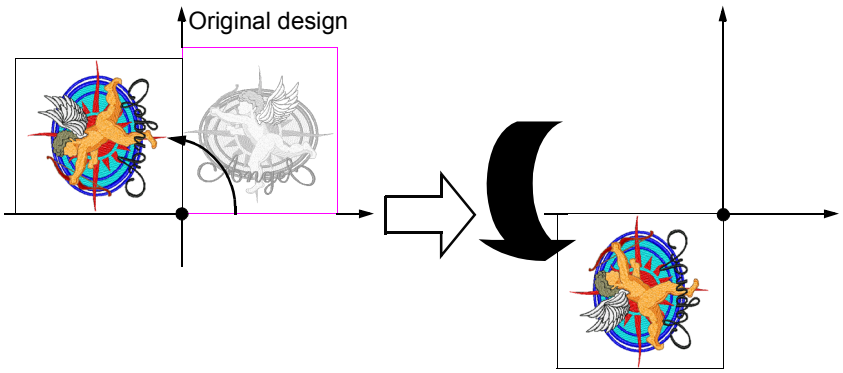
Mirror axis: X (reversal around the X-axis) / Y (reversal around the Y-axis)

<Example: Mirror X-axis>





<Example: 90˚ rotation and mirror X-axis>

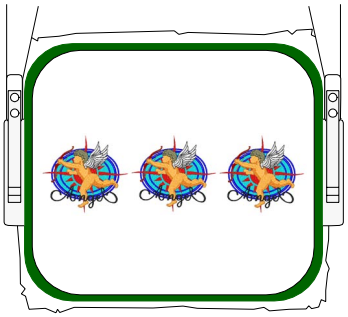


If both ROTATION and MIRROR are set, design data is first rotated and then reversed.

REPEAT

This function repeatedly embroiders the design data which is set as the embroidery data.

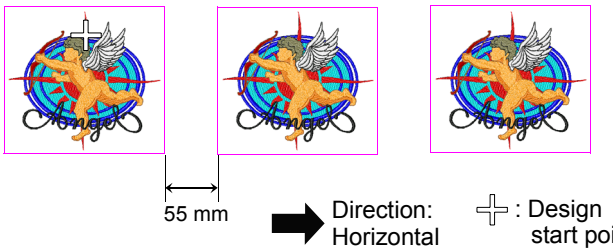
The function allows the setting of direction of repeat, the number of repetition times and the spacing between designs.



📖 The design arranged using the repeat function may be rotated and reversed.

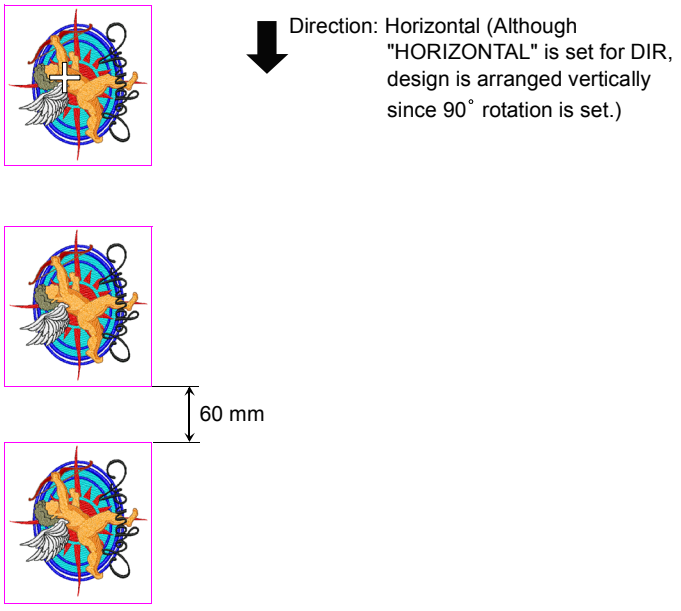
Priority: Repeat → Rotation → Mirror

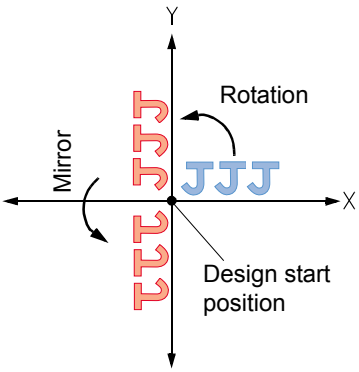
<Example: Direction: → Horizontal, Times: → 3, Space: → 55 mm>



📖 You can check the entire embroidery range by executing trace after setting the repeat data. Adjust the start point, number of repetition times and spacing so that the embroidery range will not exceed beyond the hoop.

<Example: Direction: → Horizontal, Times: → 3, Space: → 60 mm,
Rotation: → 90˚, Mirror: → X>





OFFSET

This function moves the hoop to the position set as the offset position and returns the hoop to the originally located position after finishing the work.

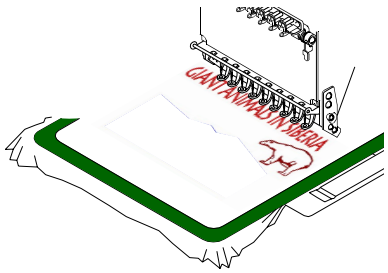
For offset, automatic/manual setting is possible (hoop setting).

1. Manual Offset

Pressing the MOVE HOOP key (offset key) while the machine is at a still causes the hoop to travel to the offset position. Pressing the offset key again returns the hoop to the previously located position.

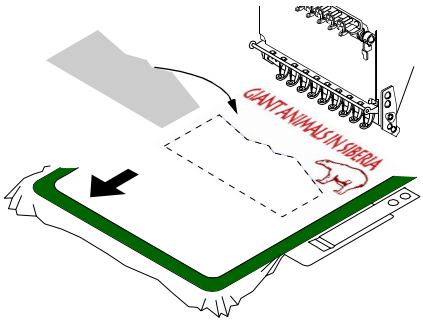
<Example: Arranging applique>

(1) Stop the machine.

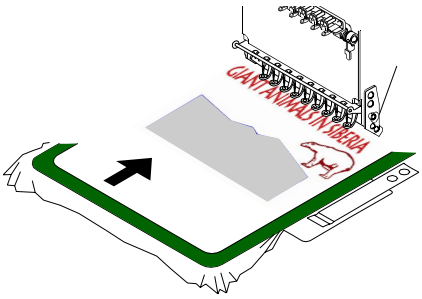


(2) Move the hoop to the offset position.

(3) Arrange the applique.



(4) Return the hoop to the previously located position.



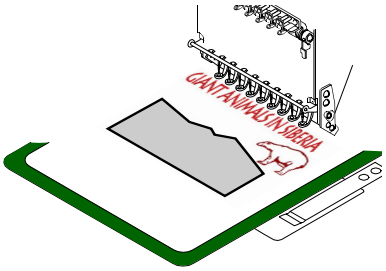
Setting a pause at color change (Page 61) will facilitate arranging such as applique.

2. Automatic Offset

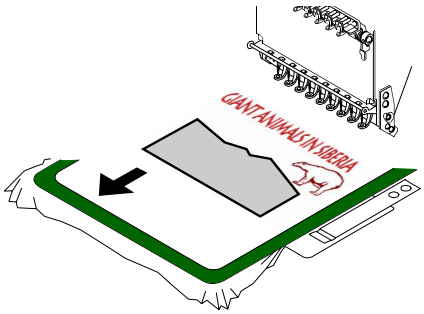
Set "AUTO" for "OFFSET" in hoop setting with the offset position set, and the hoop travels to and stops at the offset position after the completion of embroidery.

<Example: Changing the hoop>

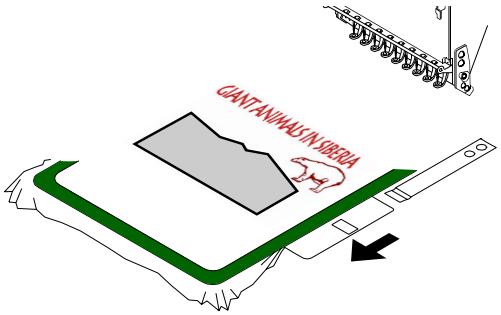
(1) End of embroidery



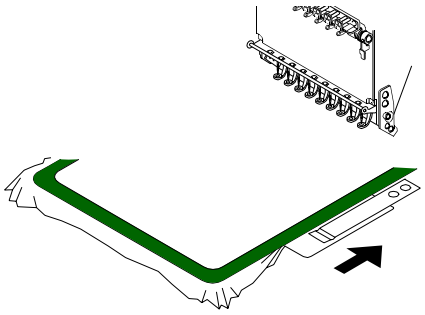
(2) The hoop travels to the offset position automatically.



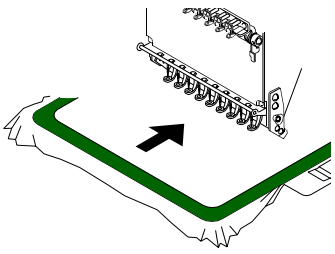
(3) Remove the hoop.



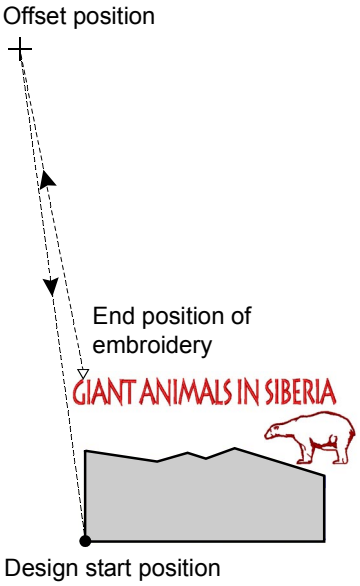
(4) Attach the new hoop.



(5) Press the START key. The hoop travels to the design start position and embroidery starts.

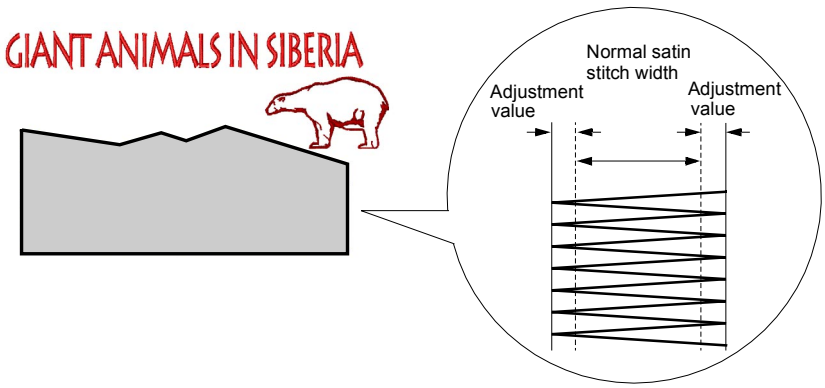


When embroidering the same design, set "AUTO" for START PNT (Page 50) to embroider the design from the same start point.



SATIN ADJUSTMENT

This function expands satin stitch width.



To expand satin stitch width, set an adjustment value for "SATIN ADJ." of FUNCTION MENU.

Setting: OFF, 1 to 5 (+0.1 to +0.5 mm)

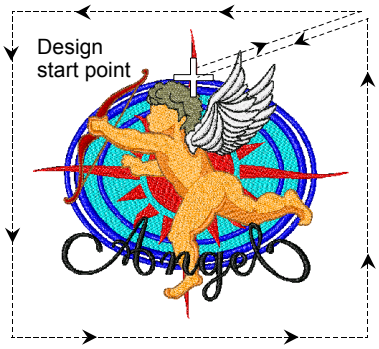
If "2" is set, +0.2 mm is added on both sides of the normal satin stitch width.

Satin stitch adjustment is made according to the set adjustment value for stitch width of 1.5 mm or larger. For satin stitch width less than this limit, satin stitch width is adjusted with a value smaller than the set value.
By changing the setting of DIP switch (DSW2-4) at the operation panel, this limit width can be changed so that satin stitch adjustment is possible for 0.6 mm or larger stitch width.

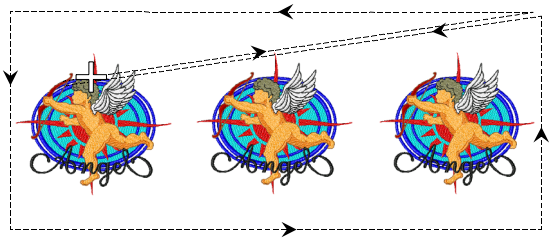
TRACE

This function makes the hoop travel along the rectangle that surrounds the embroidery range of the design data that has been set as the embroidery data.

Tracing will start from the design start point and move to the rear right, rear left, front left and front right corners of the embroidery range, then return to the design start point.



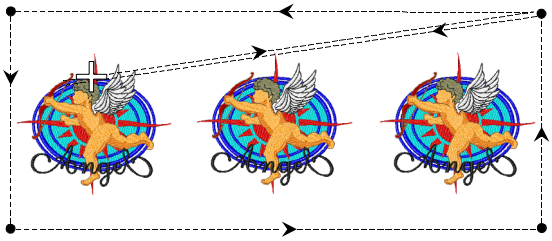
If repeat is set, the function traces the entire embroidery range.



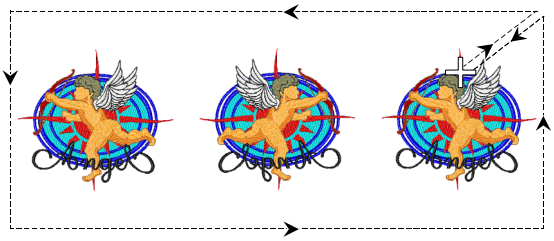
If the TRACE key is pressed during tracing, tracing stops at the nearest corner in the trace advancing direction.

Tracing restarts when the TRACE key is pressed again.

It is possible to stop tracing at each corner by repeating this.



If "Mirror: Y" is set, trace is made in the manner as shown below.



DAILY MAINTENANCE

⚠ WARNING

- Turn OFF the power switch before starting maintenance work.
  Otherwise, you may sustain electric shock or injury caused by being caught by the embroidery machine.
- Only properly trained personnel are allowed to perform maintenance work.
  Otherwise, a worker may sustain electric shock or injury.
- Before starting the machine after maintenance work, attach all covers and other parts detached for maintenance work correctly as before.
  Otherwise, a worker may sustain electric shock or injury.
- Do not attempt to repair by yourself.
  Otherwise, a worker may sustain electric shock or injury.
- Do not modify the machine.
  Otherwise, a worker may sustain electric shock or injury.

Consult your TOYOTA dealer when you need a repair on the machine.

Maintenance Stop

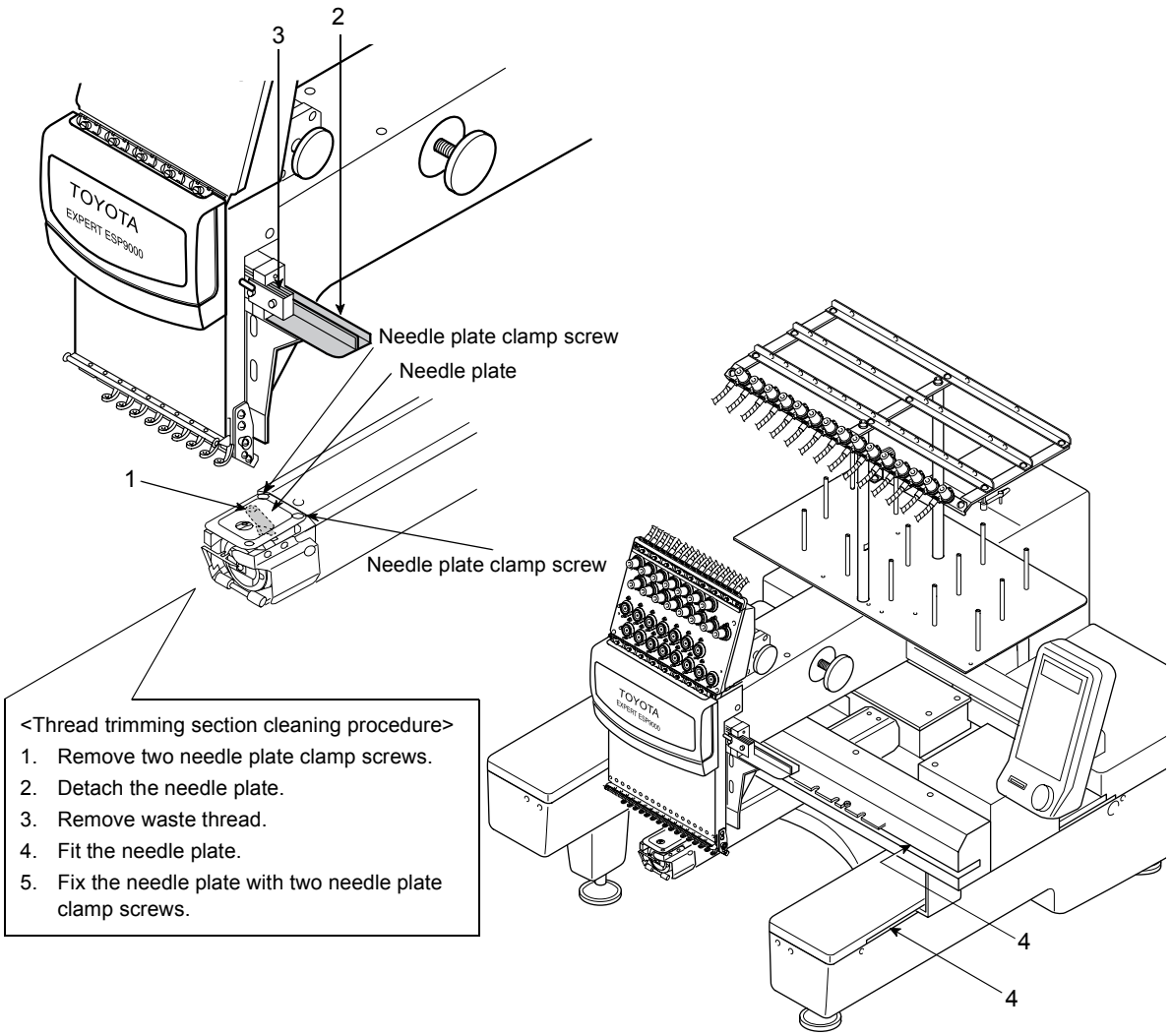
Maintenance stop requests some kind of maintenance work and it is not the stop due to the occurrence of an error.

📖 Maintenance stop message is displayed at the start of embroidery (after the pressing of the START key).

If the message shown in the right appears at the start of embroidery, supply lubricating oil to the rail on rotary hook (Page 88). After supplying lubricating oil as instructed, press the STOP key to exit the maintenance mode and continue normal embroidery work.	** MAINT. REQUIRED ** One drop of oil → As per Inst. Manual
If the message shown in the right appears at the start of embroidery, supply grease to the presser foot cam, take-up lever drive cam and take-up lever roller (Page 89). After supplying grease as instructed, press the STOP key to exit the maintenance mode and continue normal embroidery work.	** MAINT. REQUIRED ** !CAUTION:Grease Cams →Take-up, Presser → As per Inst. Manual
If the message shown in the right appears at the start of embroidery, supply grease to the presser foot cam, take-up lever drive cam, take-up lever roller, needle case linear section and X-/Y-axis drive system (Page 89). After supplying grease as instructed, press the STOP key to exit the maintenance mode and continue normal embroidery work.	** MAINT. REQUIRED ** !CAUTION:Grease Cams →Take-up,Presser,Trim Needle Case Linear → As per Inst. Manual

Cleaning

Cleaning Area	Interval
1 Thread trimming section	Every day
2 Take-up lever guide, 3 Needle case guide	Once/week
4 X-/Y-axis drive system (2 places)	Once/2 weeks



Lubrication

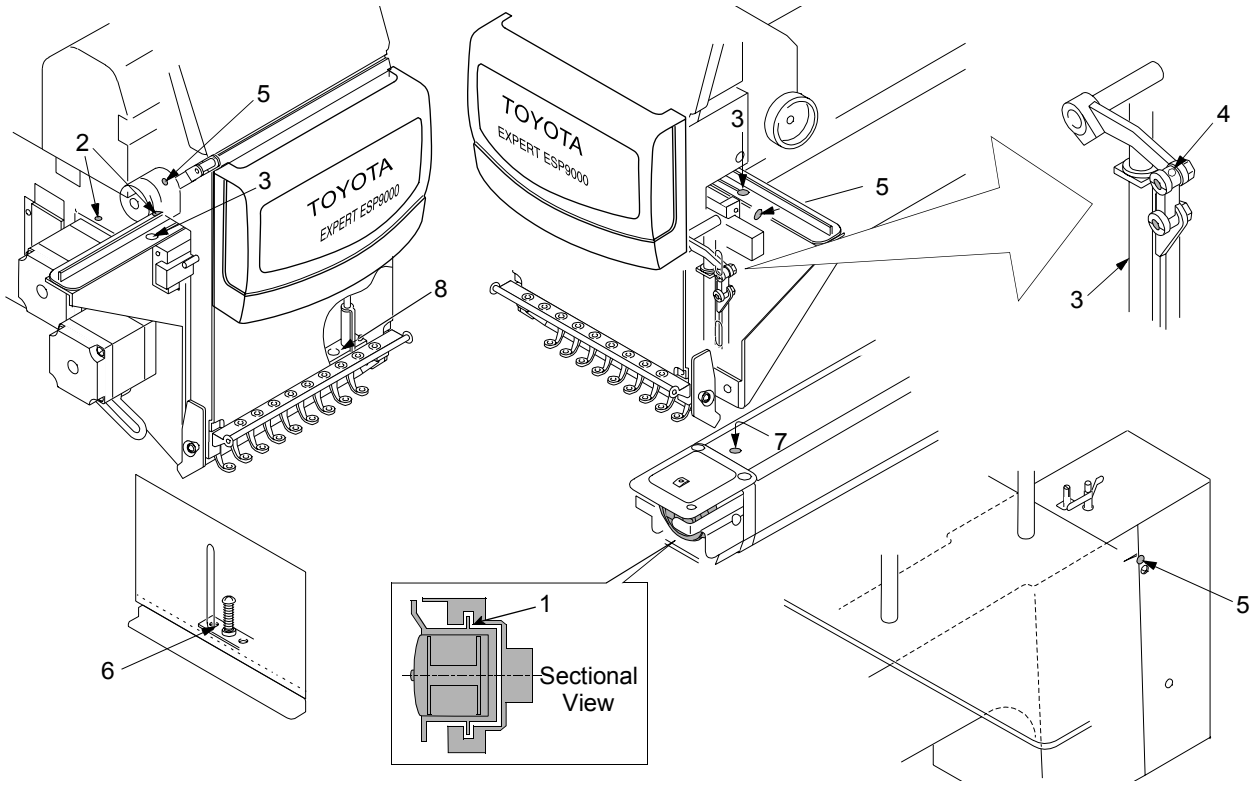
Keep the specified lubrication intervals.

If the machine is not lubricated as specified, thread breakage could take place.

Use only Toyota genuine SF oil or equivalent (#150 spindle oil: ISO viscosity grade = VG18).

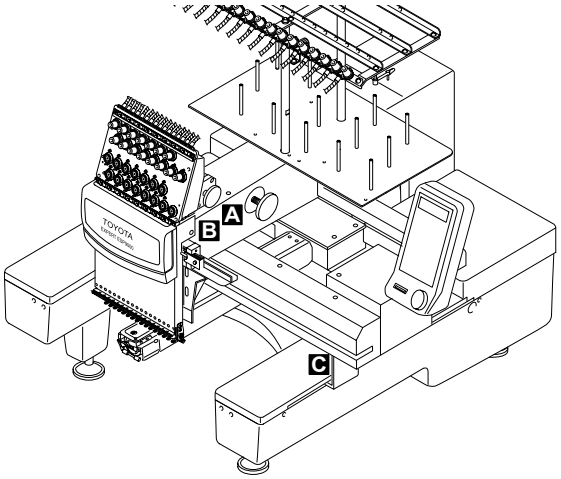
Lubrication Points	Interval
1 Rail on rotary hook	Every 3 to 4 hours of operation
2 Drive shaft of presser foot parts (2 places) 3 Needle bar drive shaft (2 places)	Every day
4 Needle bar drive shaft of presser foot 5 Inside the arm (3 places) 6 Needle bar	Once/week
7 Inside the cylinder bed 8 Felt packing (needle bar)	Once/3 months

For the lubrication of rotary hook rails, the maintenance information is displayed on the LCD screen in the operation panel (Page 86).
If the maintenance information is displayed, turn the power switch OFF and supply lubricating oil to the rotary hook rails.
For other lubrication cycles, refer to the table in the left.



Greasing

Greasing Point	Interval
1 Presser foot cam 2 Take-up lever drive cam 3 Take-up lever roller	Once/3 months
4 Needle case linear section 5 X-/Y-axis drive system (3 places)	Once/6 months

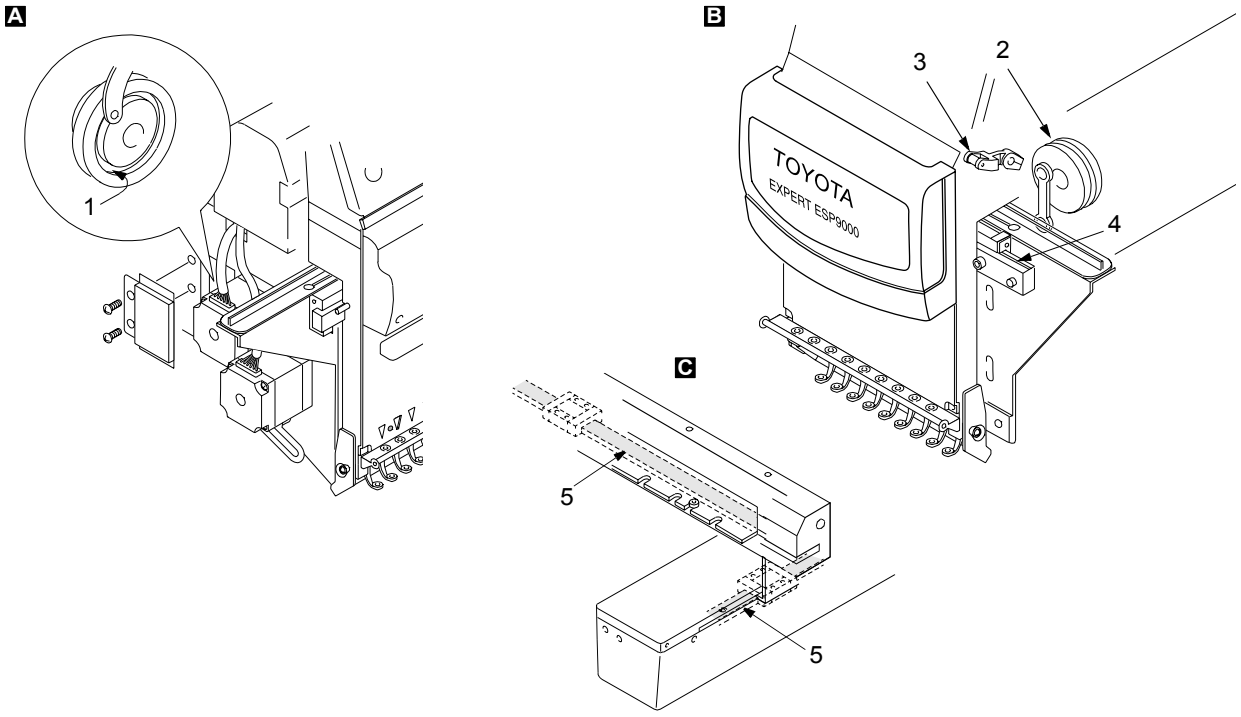


You need to consult your TOYOTA dealer about the greasing because it requires removal of covers, or others.

When greasing, use recommended grease (mineral-oil based lithium grease).

Please ask your distributor for the details.

For the guide of greasing, the maintenance information is displayed in the operation panel (Page 86).
If the maintenance information is displayed, turn off the power switch and supply grease to the specified points.



PROGRAM INSTALLATION

Program installation includes main program, XY program, and operation program. It is possible to install these programs through a personal computer or the floppy disk drive (FDD) (to be purchased separately).

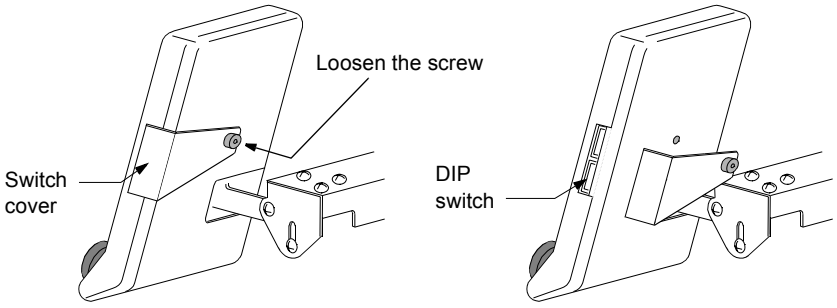
Program installation becomes necessary when upgrading your software version.

Perform the program installation after turing "OFF" the power switch.

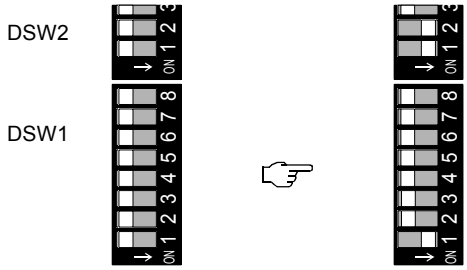
Consult your local TOYOTA dealer for the detail of program installation.

[When installing from personal computer]

1 Detach the switch cover by loosening the screw.



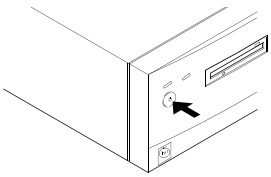
2 Turn ON the DSW2-1, 2-2, and DSW1-1.



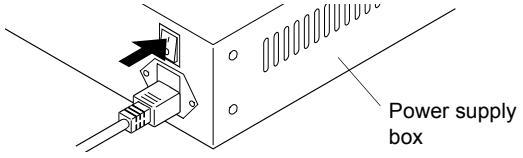
3 Connect the personal computer and the machine with the serial cable.

Use an off-the-shelf cross cable [D-SUB9 pin] for the serial connector.
You need a personal computer compatible with Windows 95, 98, Me or XP.

4 Turn ON the power of the personal computer.



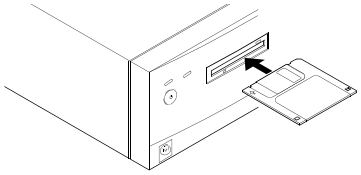
5 Turn ON the power switch at the power supply box.



After turning ON the power switch, the screen as shown below will be displayed.

```
****** INSTALL *****

      FROM PC
```

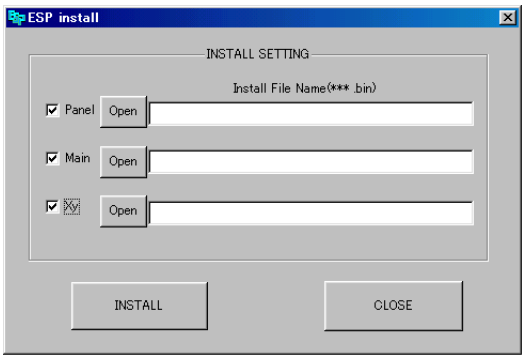
6 Insert the program disk in the computer.



TROUBLESHOOTING AND MAINTENANCE

7 Execute "ESP_inst.exe" to display the screen for installation.

8 Select the program file to be installed.



Pressing the program name key will display the file selection screen. Select the program file which you want to install.

Panel: Program related to panel
Main: Program related to CPU
Xy: Program related to drive system

9 Press  **key to start installation.**

Installation will proceed automatically in response to pressing of the Install key.

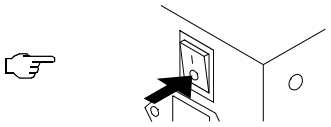
Following message appears.

```
****** INSTALL *****

      INSTALLING
```

10 Completion of program installation

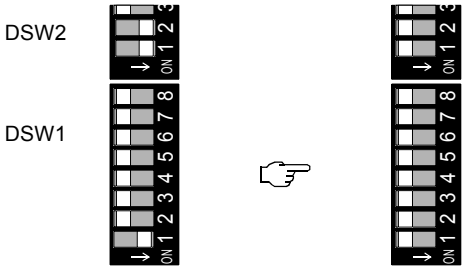
```
****** INSTALL *****

   INSTALL FINISH
        [POWER OFF]
```

At the completion of installation, the screen will be as shown in the left.

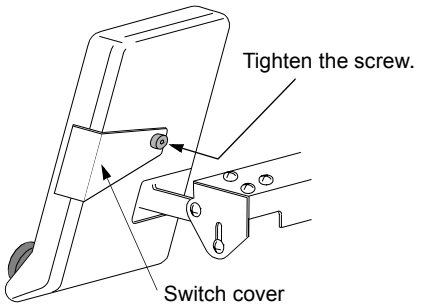


Turn OFF the power switch at the power supply box.

11 Turn OFF the DSW2-1, 2-2, and DSW1-1.

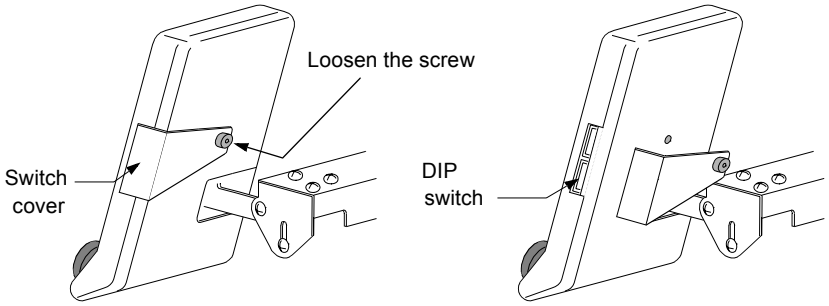


12 Attach the switch cover and tighten the screw.

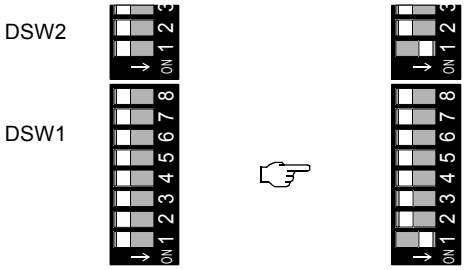


[When installation from FDD]

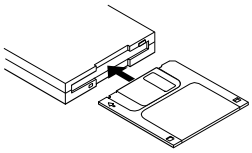
1 Detach the switch cover by loosening the screw.



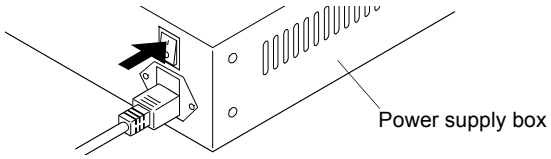
2 Turn ON the DSW2-1 and DSW1-1.



3 Set the program disk.



4 Turn ON the power switch at the power supply box.



5 Select the program to be installed.

```
****** INSTALL *****
1.MAIN        →  -
2.XY          →  -
3.PANEL       →  -
```

Select the program using the following keys:

▲ and ▼ (hoop travel keys)

Example: Select PANEL.

If step 4 is performed before step 3
If you insert the program disk after turning the power switch ON, the screen as shown below will be displayed. If this screen is displayed, press the SET key and continue operation from step 5.

```
****** INSTALL *****

SET KEY → FILE SEARCH
```

MAIN: Program related to CPU
XY: Program related to drive system
PANEL: Program for operation

6 Select "INSTALL".

```
****** INSTALL *****
1.MAIN        →  -
2.XY          →  -
3.PANEL       →  -
```

Select "INSTALL" by changing "-" to "INSTALL" for the program to be installed using the following keys:
◀ and ▶ (hoop travel keys)

7 Press [SET] to start installation of the selected program.

```
****** INSTALL *****
1.MAIN        →  -
2.XY          →  -
3.PANEL       →INSTALL
```

Press SET .

Following message appears.

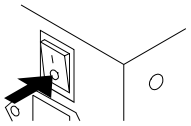
```
****** INSTALL *****
                PANEL
     INSTALLING
 [〉〉〉              ]
```

The symbol ">" shows the progress of installation.

8 Completion of program installation

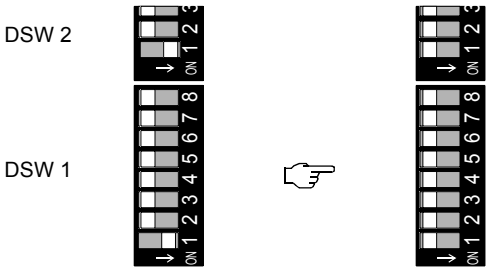
```
****** INSTALL *****

   INSTALL FINISH
         [POWER OFF]
```

At the completion of installation, the screen will be as shown in the left.

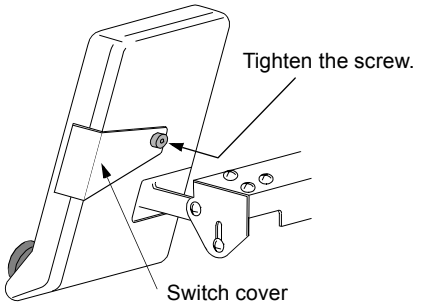


Turn OFF the power switch at the power supply box.

9 Turn OFF the DSW2-1 and DSW1-1.



10 Attach the switch cover and tighten the screw.



To install more than one program, repeat steps "Select the program" and select "INSTALL".

```
****** INSTALL *****
1.MAIN        →INSTALL
2.XY          →INSTALL
3.PANEL       →INSTALL
```

IF MACHINE OPERATION IS INTERRUPTED

The machine stops to operate when any one of the following messages is shown on the LCD screen of the operation panel box. Simultaneously, the LED flickers, and the buzzer starts to sound. In such occasion, check the error message first and then press the EMERGENCY STOP button. Take necessary steps referring to the following table.

Press the STOP key to silence the buzzer.

No.	Error Message	Description	Cause	Corrective Action	Refer to
1	EMERGENCY STOP	The EMERGENCY STOP button was pressed.	1) The switch was pressed by mistake.	• Reset the switch if it was pressed by mistake.	27
			2) The switch was pressed as an error had been detected.	• When there was an error, remove the cause of error and then reset the switch.	—
2	check! SEWING MOTOR	Machine motor is locked.	1) Thread is entangling on the rotary hook.	• Remove thread from the rotary hook.	87
			2) Not lubricated appropriately.	• Supply lubricating oil to the lubricating points.	88
			3) Interference of the needle with the hoop hindered machine movements.	• Press the TRACE key and check the relationship between the size of design and that of embroidery hoop.	72
				• Set the start point of the design correctly.	29
			4) The needle hit a hard object such as a button, and further movements were disabled.	• Change the embroidery position. Remove the hard object.	21
			[Note] If the cause is 3) or 4), check the needle if it has been bent or needle tip has been collapsed. If any defect is found, replace the needle.		—
			5) Foreign matter is caught by take-up lever, needle bar, presser foot or upper shaft pulley.	• Remove foreign matter.	—
3	check! X MOTOR	X-axis motor was locked. (Longitudinal direction)	1) The embroidery hoop holder reached the right/left travel end position, causing motor overload.	• Set the start point of the design correctly.	29
			2) The material is caught by such as the edge of the table, disabling embroidery hoop movements any more.	• Release the material and start embroidery from the beginning again.	—
			3) The embroidery hoop has been hit against such as the wall and cannot move any more.	• Remove object that disables embroidery hoop movements and start embroidery from the beginning again.	—

No.	Error Message	Description	Cause	Corrective Action	Refer to
4	check! Y MOTOR	Y-axis motor was locked. (Crosswise direction)	1) The embroidery hoop holder reached the forward/backward travel end position, causing motor overload.	• Set the start point of the design correctly.	29
			2) The material is caught by such as the edge of the table, disabling embroidery hoop movements any more.	• Release the material and start embroidery from the start again.	—
			3) The embroidery hoop has been hit against such as the wall and cannot move any more.	• Remove object that disables embroidery hoop movements and start embroidery from the start again.	—
5	NEEDLE CASE ERROR	Needle case position error	1) An error occurred with the needle case drive system.	• Please contact your local TOYOTA dealer.	—
6	THREAD BREAK	Breakage of thread	1) Upper thread was broken.	• Thread the upper thread again.	18
				• Remove the cause of upper thread breakage.	—
			2) Threading is not correct.	• Thread the upper thread correctly.	18
			3) Lower thread has been used up.	• Set lower thread.	20
			4) The machine stops due to detection of thread breakage although lower thread is not broken.	• Change the preset value of bobbin counter.	38
			5) Lower thread was broken.	• Set the lower thread again.	20
7	RS232C COM ERROR	Communication error	1) Serial cable or FDD connection cable has disconnected during communication.	• Securely tighten the cable.	17
			2) Power supply to the floppy disk drive or external device was turned OFF during communication.	• Keep the power supply ON to the floppy disk drive or external device during communication.	—
8	RS232C CONNECT ERROR	Communication error	1) Serial cable or FDD connection cable is disconnected.	• Securely tighten the cable.	17
			2) The external device is not in the data sending state.	• Set the external device in the data sending state. For details, refer to the instruction manual of the external device.	—
9	TRIMING ERROR	Thread trimming error	1) Thread is entangling on the bobbin.	• Remove the entangling thread from the bobbin.	—
			2) Thread tension is too tense or thread is too thick.	• Adjust the thread tension.	—

No.	Error Message	Description	Cause	Corrective Action	Refer to
10	RAM CHECK ERROR	Memory check error	1) Memory error	• Please contact your local TOYOTA dealer.	—
11	INTERNAL COM ERROR	Internal communication error	1) Communication error in the embroidery machine (ESP9000)	• If this error occurs frequently, contact your local TOYOTA dealer.	—
12	INTERNAL CONNECT ERR	Internal connection error	1) Connection error in the embroidery machine (ESP9000)	• Please contact your local TOYOTA dealer.	—
13	THERMAL ERROR	High temperature error	1) Temperature in the embroidery machine (ESP9000) exceeded the allowable limit.	• Keep the power supply OFF for more than 30 minutes.	—
14	LIMIT ERROR	Limit error	1) The embroidery hoop has reached the travel limit in the X- or Y-axis direction.	• Set the start point of design correctly.	29
15	BAD NUMBER	Wrong design number	1) When reading the design data from the external device, a wrong design data number was designated.	• Designate a correct design data number.	62, 64
16	INSERT DISK	Floppy disk was not inserted.	1) When reading the design data from the floppy disk drive, floppy disk was not set in the floppy disk drive.	• Insert the floppy disk in the floppy disk drive.	62
17	CANNOT READ DISK	Floppy disk read error	1) When reading the design data from the floppy disk drive, reading of the set floppy disk was not possible.	• Set the floppy disk (Toyota, Tajima, or ZSK format) correctly. The floppy disk or the floppy disk drive may be faulty.	—
18	FILE NOT FOUND	Designated file could not be found	1) When reading the design data from the floppy disk drive, the designated data was not found in the set floppy disk.	• Write the desired data to the floppy disk using the external device.	—

IF MACHINE STOPS DUE TO OCCURRENCE OF A TROUBLE

⚠ CAUTION

Do not attempt corrective action marked with * by yourself.
Otherwise, you could sustain injury. Consult your local TOYOTA dealer for adjustment or other corrective work.

The table below shows examples of machine trouble, its cause and required corrective action.

	Cause	Corrective Action
Machine failed to start	Loose or broken belt	Adjust belt tension, or replace the belt.*
	Needle position signal not detected	Adjust the needle position so that the normal needle position signal is displayed at the needle position display column in the LED screen at the operation panel.
	Loose connection of connectors	Insert the connector securely.*
Stop position error	Loose or soiled belt	Adjust belt tension or clean the belt.*
	Seizure of driving parts	Adjust or replace the rotary hooks and/or needle bar drive system.*
Incorrect color change	Incorrect needle bar position at stop	Adjust the stop position.
	Incorrect take-up lever position at stop.	Adjust the take-up lever so that it stops at the same position as other take-up levers. Needle position signal not detected
	Needle position signal not detected	Adjust the needle position so that the normal needle position signal is displayed at the needle position display column in the LED screen at the operation panel.
Jump error	Incorrect positioning of parts related to the needle bar drive system	Adjust the needle bar drive part set position with the upper dead point stopper.*
Design displacement	Incorrect tensioning of the hoop drive belt	Adjust belt tension.*
	Faulty hoop drive parts	Replace/adjust the parts.*
	Overall hoop weight is too heavy.	Lower the main shaft rotating speed (r.p.m.) using the speed adjusting switch.
	Faulty drive unit (X-/Y-axis)	Replace the drive unit.*
		Replace the X-or Y-axis motor.*
Thread breakage	Incorrect needle - rotary hook timing, or improper gap	Adjust the timing or gap.
	Incorrect needle bar lower dead point	Adjust the lower dead point.*
	Scratches on thread passage	Remove scratches by polishing.
	Incorrect upper/lower thread tension	Adjust the tension.*
	Repeated stitching at the same point	Correct the embroidery data.
	Incorrect take-up lever timing	Adjust the take-up lever drive cam timing.*
Thread trimming	Thread is not trimmed.	Adjust the thread trimming knife position.*

SPECIFICATION

Item	Specifications
Type of sewing	Lock stitch machine (specially designed for automatic embroidery)
Rotary hook	Vertical rotating shuttle
Take-up lever	Cam driven type take-up lever
Needle bar stroke	50 ± 0.2 mm
Number of needle bars	15
Needle to be used	ORGAN DB × K5Z #11
Presser foot	Operated with upper shaft
Thread trimming device	Horizontal reciprocating type (motor driven)
Thread ejector	Sliding type (with thread holding function, motor driven)
Picker device	At the start/end of stitching and at thread trimming
Number of revolutions	Max. 1200 rpm (normal speed: 800 rpm)
Embroidery range	Max.: 500 mm (X direction) × 360 mm (Y direction)
Width of stitching	0.1 to 12.7 mm
Embroidery operation and display	Operation using touch switches, LED and LCD display
Weight	82 kg
Upper shaft drive motor	AC servomotor
X/Y control motor	AC servomotor
Upper/under thread breakage detection	Rotary detection type (photo-sensor)
Power source	100 to 240V AC, 50/60 Hz (automatic selection type)
Hoop driving range	Max.: 500 mm (X direction) × 360 mm (Y direction)
Power consumption	220 W
Size	745 × 720 × 820 mm (width × depth × height)
Lubrication	Hand lubrication

INDEX

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