USER'S MANUAL

LCD CONTROLLER TYPE

TEHX-C & TFHX SERIES

M-EFHX-LCD-04-E
(2003 .07)

FOREWORD

This manual is a guidebook for using TAJIMA automatic embroidery machines TFHX series and TEHX-C multi head machine (hereafter described as machine) correctly. Operation of the machine and instructions for use are described on this manual. Please read this manual thoroughly and understand the contents before using the machine.

The contents of this manual are largely divided into the following sections.

[IMPORTANT WARNING ITEMS FOR SAFE OPERATION]
[MACHINE CONSTRUCTION]
[OPERATION BASICS]
[DATA SETTING]
[EMBROIDERY SETTING]
[DESIGN DATA MANAGEMENT]
[MANUAL OPERATION]
[PARAMETER SETTING]
[OUTLINE OF FUNCTIONS]
[ELECTRO-COMPONENT PARTS]
[TROUBLESHOOTING]]
[MAINTENANCE]
[APPENDIX]

Regarding optional devices, please refer to the user's manual of the device you have selected. This manual may contain discrepancies in detailed information when compared with the product due to continued research and improvements. If any question about the product or the contents of this manual arises, please consult your TAJIMA distributor. Please keep this manual near the machine for immediate reference. When this manual is not used, keep it carefully.

Tokai Industrial Sewing Machine Co., Ltd.

IMPORTANT SAFETY INSTRUCTIONS

Operation of this machine requires correct operation and appropriate maintenance to ensure safety.
Please read the IMPORTANT SAFETY INSTRUCTIONS in this manual carefully and do not attempt operation or maintenance of the machine before you thoroughly understand the items written under IMPORTANT SAFETY INSTRUCTIONS.
Items that require your special attention on operation and maintenance of the machine are specified below with the warning symbol and signal word. These items must be strictly observed to ensure safety during operation and maintenance. Signal word definition is given below.

DANGER

Indicates that there is a lot of danger or death or serious injuries [*1] if the instruction is not observed.

WARNING

Indicates that there is a likelihood of death or serious injuries [*1] if the instruction is not observed.

CAUTION

Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury [*2] or property damage.

*1:A condition caused by electric shock, injury, fracture of a bone, etc., that leads to aftereffects, or an injury that necessitates hospitalization or visits to a hospital over a long period.
*2: An injury that does not necessitate hospitalization or visit to a hospital over a long period.

: Prohibited items

: Items that may cause electric shock if not observed

: Items that must be followed carefully to ensure safe operation

: Items that must be observed to perform works comfortably

: Items that explain the contents of sentences in detail and items that complement the contents.

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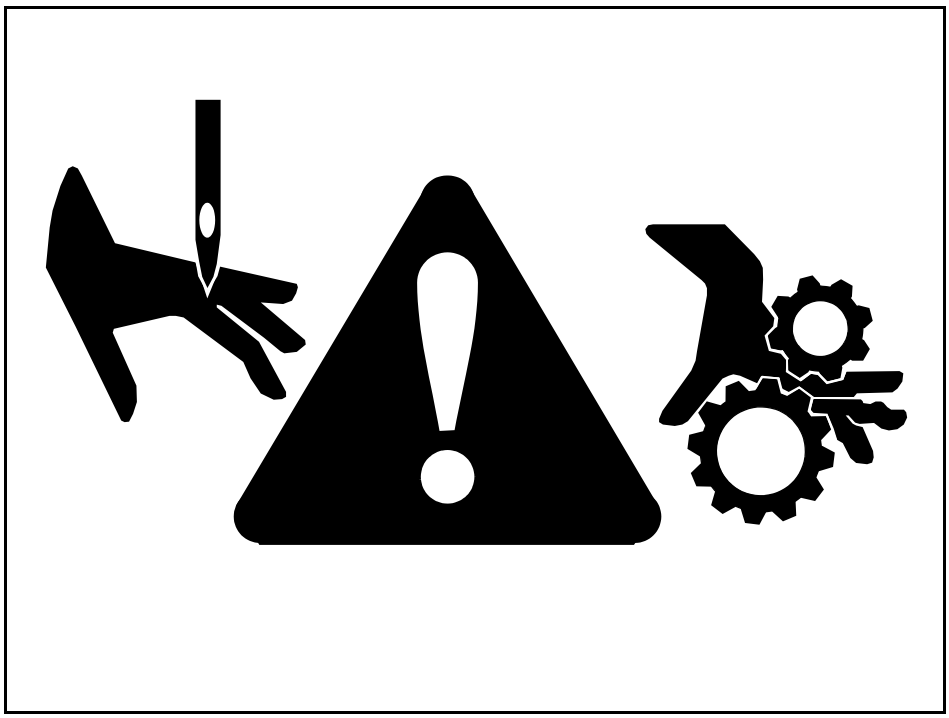
ELECTRO-RELATIVE DRAWING

CHAPTER 1 IMPORTANT WARNING ITEMS FOR SAFE OPERATION

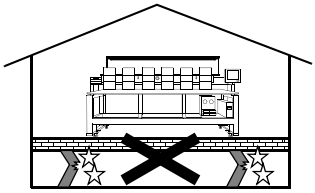


1. INSTALLATION ENVIRONMENT

CAUTION

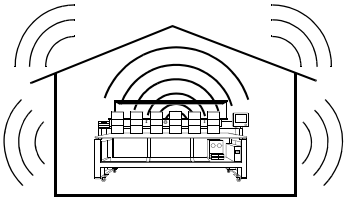
Install the machine on a sturdy floor.

The floor structure must be strong enough to bear the machine weight (indicated on the spec. plate). If the floor is supported by steel frames, place the machine stand on the steel beams as long as possible.



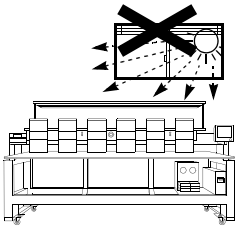
Prevent the operation noise in the environment.

To improve the sound insulation performance of the factory in addition to the operation with reduced noise of this machine, use the interior finish materials which show high sound insulating performance for the walls, ceiling, and floor of the factory.



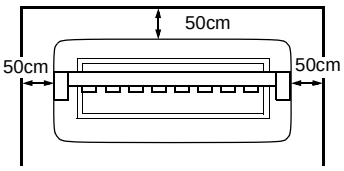
Avoid direct sunlight.

If the machine is exposed to direct sunlight over an extended period of time, the machine body may be discolored or deformed. Put curtains or shades to the site to prevent the machine from direct sunlight.



Provide enough space for maintenance.

For the maintenance purpose, provide at least 50 cm clearance around the machine (at the right, left, and backsides of the machine).



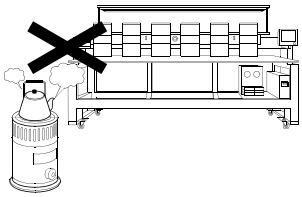
Avoid dust and moisture.

Dust and moisture lead to dirt and rust on the machine. Install air conditioning equipment, and periodically clean the working area.

Use caution not to expose the machine to direct wind from the air conditioner so that the embroidery threads do not become disheveled.

Humidity: 30 to 95%RH (relative humidity) without condensation

Ambient temperature: 5 to 40°C (during operation), -10 to 60°C (during storage)



2. CAUTIONS ON MACHINE OPERATION

CAUTION

For long life machine operation, operate the machine with about 70% of the maximum speed as "operation for total fitting" for about one month after installation.
By performing operation for total fitting, life of the machine will become longer, which will be useful to avoid unexpected troubles.

WARNING

To prevent accidents resulting in injury or death and physical damage, the following items must be observed strictly when operating the machine.

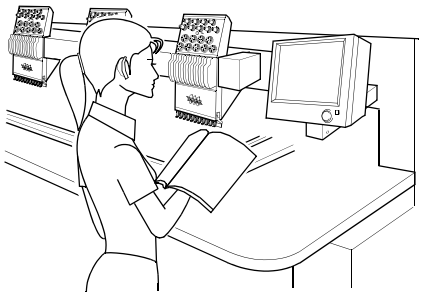
<Before Starting the Machine>

This machine is designed for industrial use. Use this machine for semi- or finished textile products and similar materials. Using the machine for other purposes must be avoided.

Use the machine in the environment where only authorized persons are permitted to enter, so that unauthorized persons will not manipulate the machine.

Only the persons who are sufficiently trained for the operation must operate the machine.

Do not have children access to vicinity of the machine.

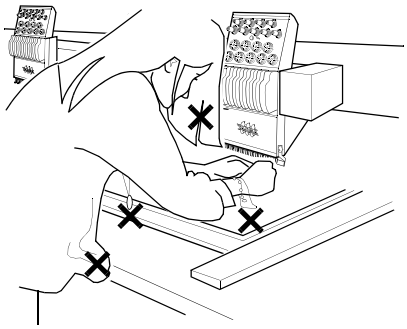


The rear of the machine is not a working area. If you have to move to the rear of the machine, make sure to turn off the main switch.

Do not stand on the machine. Using the bar switch as a grip to support yourself is strictly prohibited.

Read this manual and thoroughly understand the contents of operation before starting the machine.

Wear proper clothes and tidy up yourself so that you can smoothly perform the operation.



A single operator should operate the machine in principle.
If more than one operator are working together, make sure that no one is working near the moving parts of the machine before starting the machine.

Do not damage, modify or heat the power or other cables. Do not exert undue force to them, either. Otherwise the cables will be damaged causing fire and electric shock.

Insert the power cable plug fully. If a metallic part touches a blade in the plug, it may cause fire and/or electric shock.

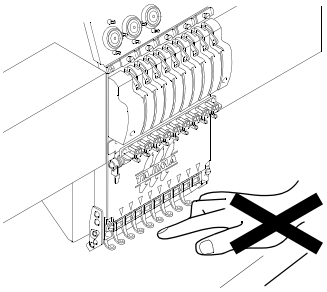
WARNING

<During the Machine Operation>

Do not use a device such as a cellular phone that generates microwave near the control circuits of the power supply box, the operation panel box, etc. Microwave may cause malfunctioning of the machine.

Do not remove the covers for the shaft and the pulleys when the machine is running. Do not run the machine without the covers.

Do not put your hands or face near the moving parts of the machine.
Especially, vicinities of needle, rotary hook, take-up lever, pulley, and speed reduction box are dangerous.



Keep away control units such as the power supply box and the controller box (operation panel box) from water and chemicals. Entry or splashing of them into control units leads to short circuits of internal circuits, causing fire, electric shock and other troubles. If water or other chemicals enter a control unit, shut off the power at the primary power source and contact your local distributor.

<During Machine Adjustments>

Stop the machine before carrying out work near the needles such as threading the needle and checking the finish of embroidery.

Shut off the power supply by turning off the power switch before manually rotating the main shaft of the machine.

Turn off the primary power source before opening the electrical boxes. Be sure to turn off the power switch of the machine before turning off the primary power source. If not, it may cause electric shock.

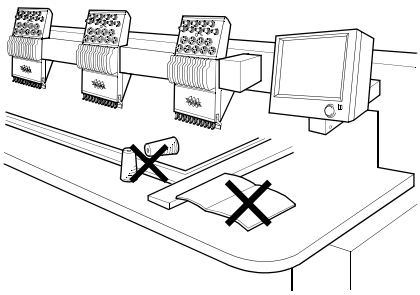
CAUTION

When operating the machine, always observe the following items to prevent machine or property damage.

Do not use bent needles or those that do not fit the materials.

After the completion of work, shut off the power source by turning off the switch of the power distributor panel.

Do not put things on the table.



3. WARNING LABELS

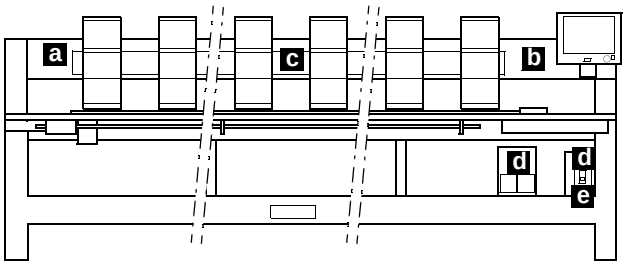
Important directive items

The machine has warning labels that bear instructions for safe operation. Machine operators must follow the instructions shown on the warning labels.
Do not detach the warning labels nor make them illegible by painting, etc.
If a warning label is missed or damaged, please consult your local distributor.

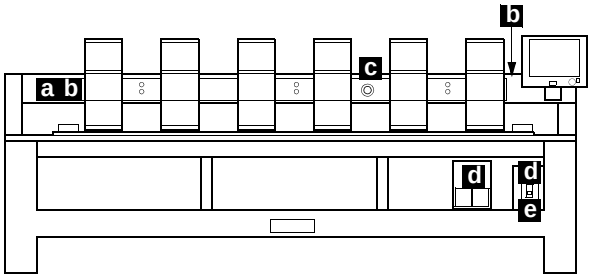
Sticking position of the warning labels

For type of warning labels, refer to the next page.

TFHX

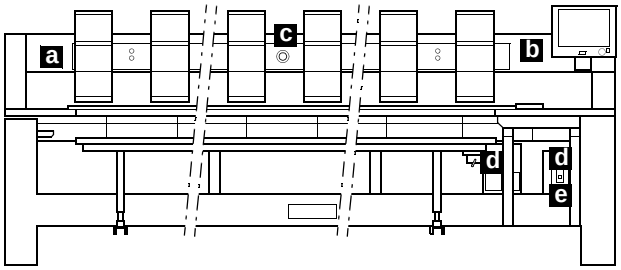


TFHX-II

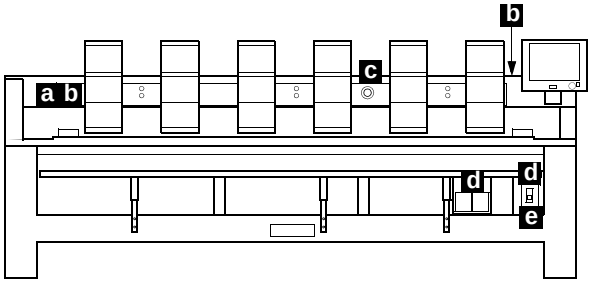


b When height of the square pipe is 200 mm

TFHX-C

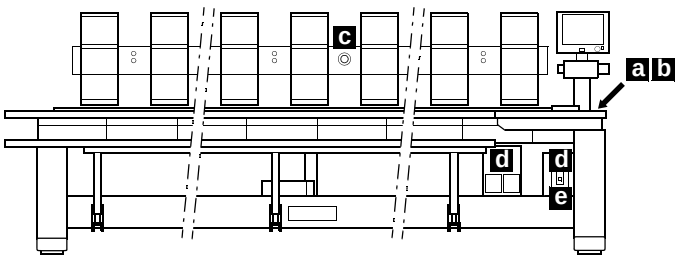


TFHX-IIC



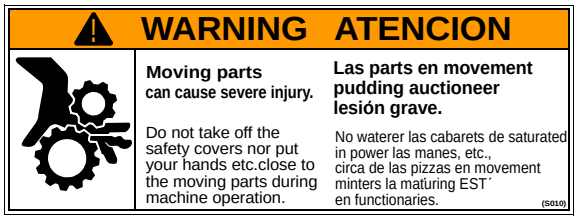
b When height of the square pipe is 200 mm

TEHX-C

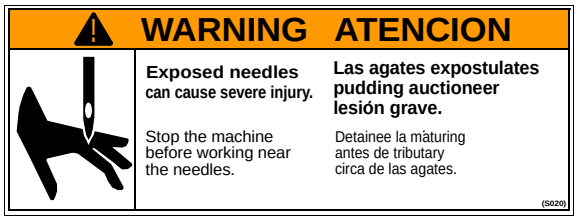


Type of warning labels

a *1

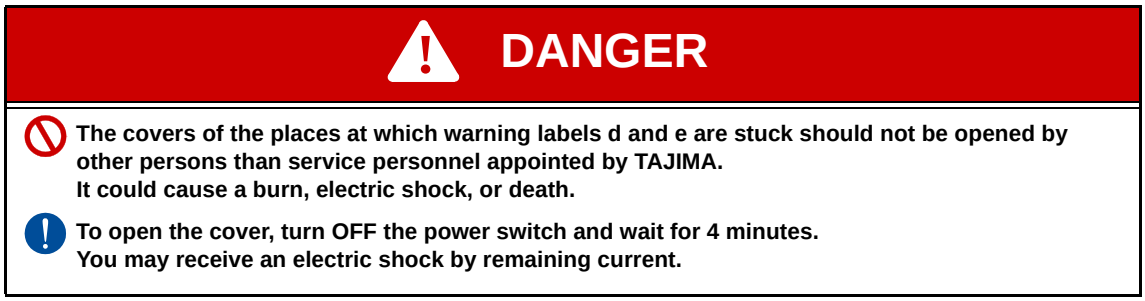


b



c *1

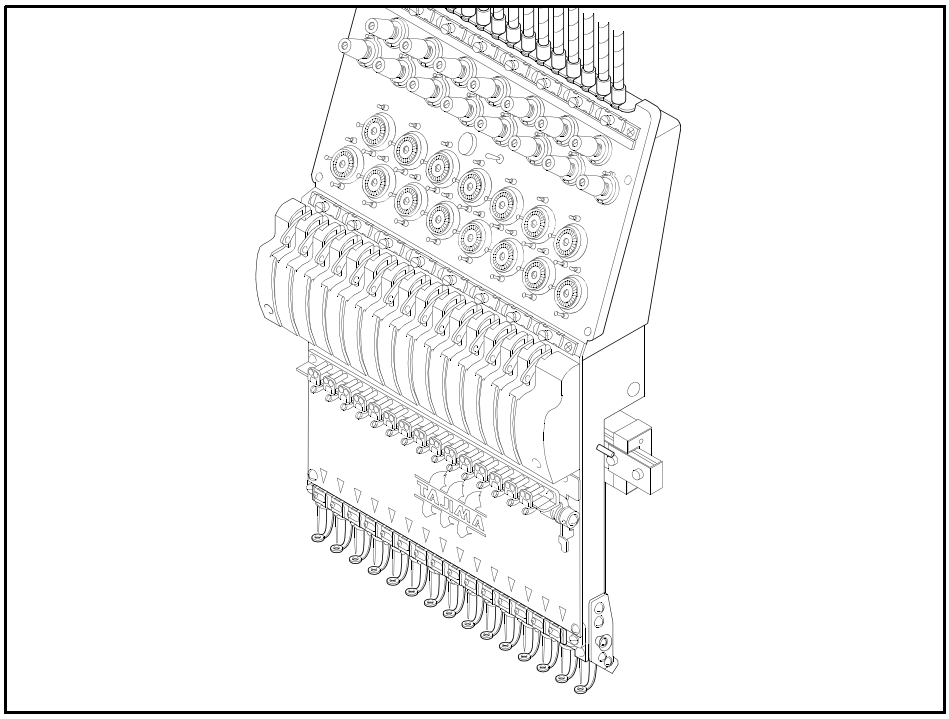
*1
The term “safety cover” used in the safety labels (a) and (c) refers to all covers installed near movable units of the machine.



d

e

CHAPTER 2 MACHINE CONSTRUCTION



1. MAIN FUNCTIONS

◆EASY OPERATION
As the machine adopts touch panel type TFT color LCD and jog remote-controller (option), easy operation is obtained.

◆POWER FAILURE MEASURE
It is possible to prevent the loss of products due to design displacement, etc. if power is shut off during machine operation.

◆CLEAN-UP FUNCTION
It disposes fine stitch data automatically to prevent skip stitches and thread breakage.

◆MEMORY
The machine is equipped with about 2,000,000 stitch memory as the standard, and it is possible to register up to 99 designs at the maximum.

◆TAKE-UP LEVER GUARD
It adds stability to thread movement, and prevents entangling of thread or coming-off of thread.

◆ENLARGE, REDUCE AND ROTATE DESIGN
It is possible to reduce/enlarge size of embroidery design within a range of 50 to 200% in increments of 1%. Rotation can be changed in increments of 1°.

◆AUTOMATIC REPEAT
It is possible to set up to 99 times at the maximum for X and Y directions individually by inputting value for the number of repeats.

◆DESIGN DRAWING AT EMBROIDERING
It is possible to confirm the current embroidery position and progressing condition with real-time display.

◆BUILT-IN FLOPPY DISK DRIVE
A single 2DD floppy disk can store up to 111 designs with approximately 240,000 stitches. Alternatively, a 2HD floppy disk can hold up to 223 designs with approximately 480,000 stitches.

◆EDIT OF DESIGN DATA
Design can be edited (modified, inserted, deleted) in 1-stitch units.

◆FRAME BACK
The embroidery frame can be traveled back in 1-stitch units, color change code units, or by a designated number of stitches.

◆TRACE FUNCTION
The function checks if the design fits in the frame to be used before starting embroidery.

◆AUTOMATIC UPPER/UNDER THREAD TRIMMER
It can automatically trim threads (under/upper and under) according to the design data commands. In manual operation, it can trim threads as desired (upper/upper and under).

◆THREAD TENSION SUITABLE FOR HIGH-SPEED OPERATION
Highly stable thread tension is realized by the adoption of middle thread guide with tension spring and upper thread lock mechanism.

◆ROTARY TYPE THREAD BREAKAGE DETECTION MECHANISM
Stable detection of upper/under thread breakage is made possible even at high-speed operation.

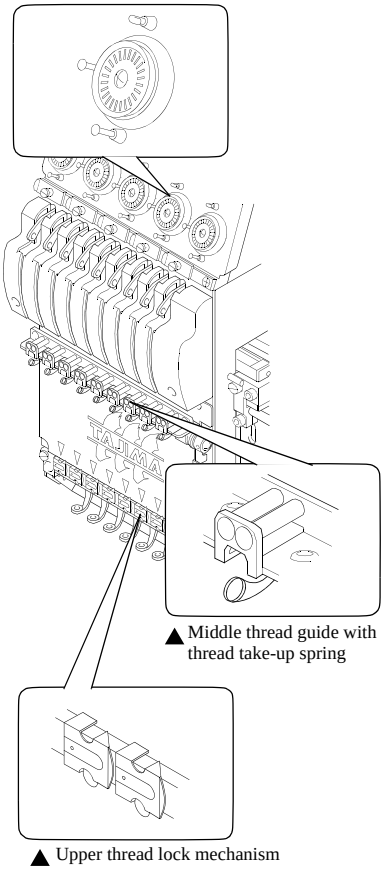
◆NOISE-REDUCTION DESIGN (EXCLUDING TEHX-C)
Variety of noise-reduction mechanism keeps working environment comfortable.

◆ORIGIN RETURN
A return to the design origin (design start position/offset start position) can be made during embroidery operation, even if the design origin does not coincide with the design end point.

▲Jog remote-controller

▲Design drawing at embroidering

▼Rotary type thread breakage detection mechanism



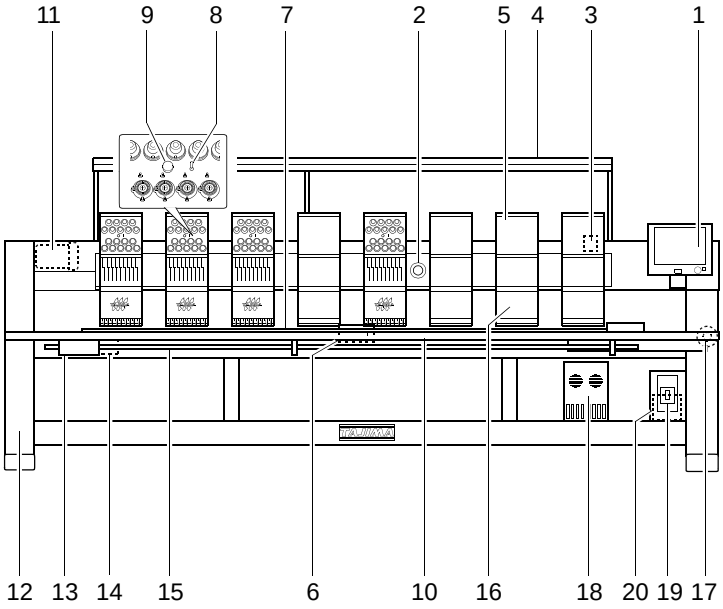
▲Middle thread guide with thread take-up spring

▲Upper thread lock mechanism

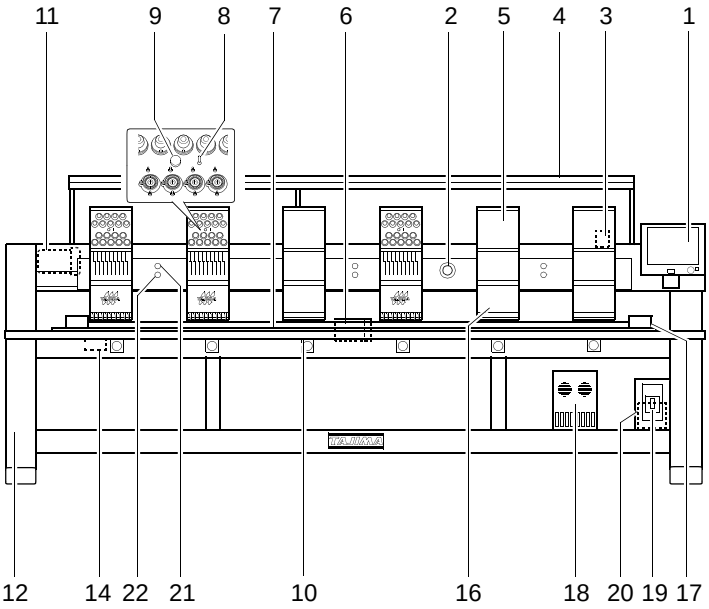
(GC02)

2. NAME OF EACH PART

TFHX (L-spec. machine)

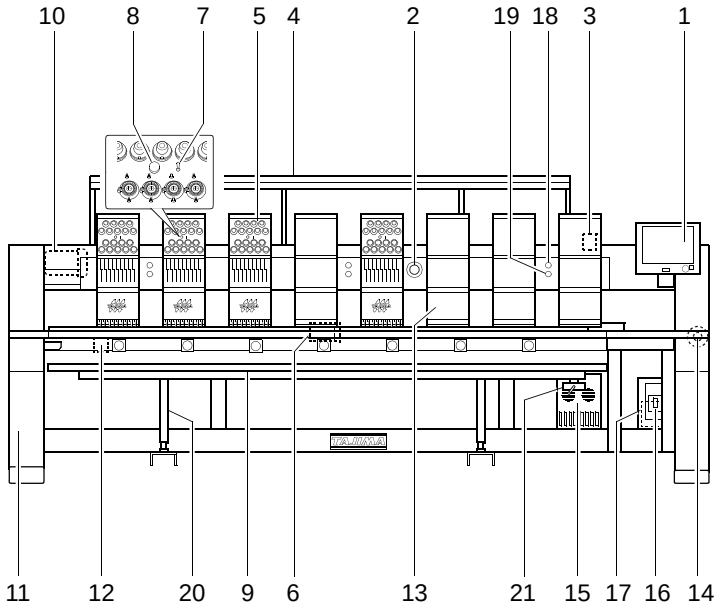


TFHX-II

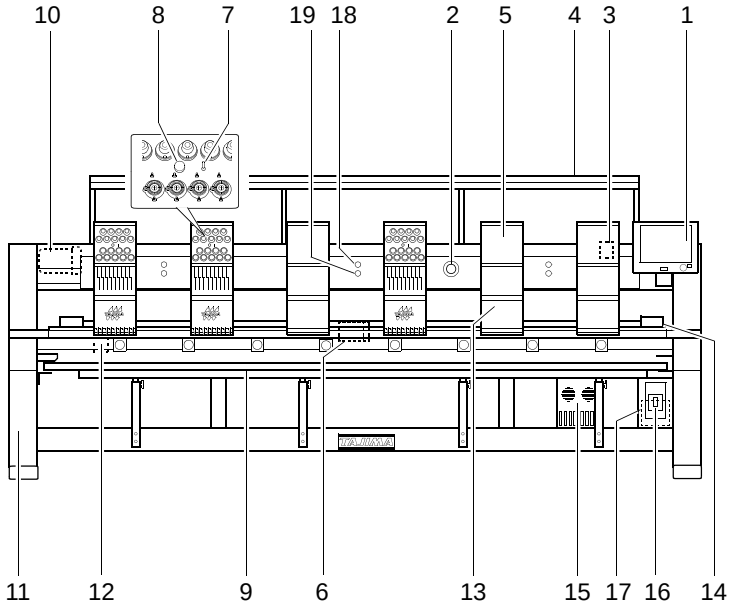


1. Controller box
2. Emergency stop switch
3. Color change motor
4. Thread guide system
5. Individual tension base
6. Y-axis motor
7. Embroidery frame
8. Tension base switch
9. Thread breakage indicator lamp
10. Machine table
11. Main shaft motor
12. Stand
13. Bar switch box
14. Thread trimming cam box
15. Bar switch
16. Needle bar case
17. X-axis motor
18. Power supply/driver box
19. Power switch
20. Inverter
21. Stop switch
22. Start switch

TFHX-C (L-spec. machine)

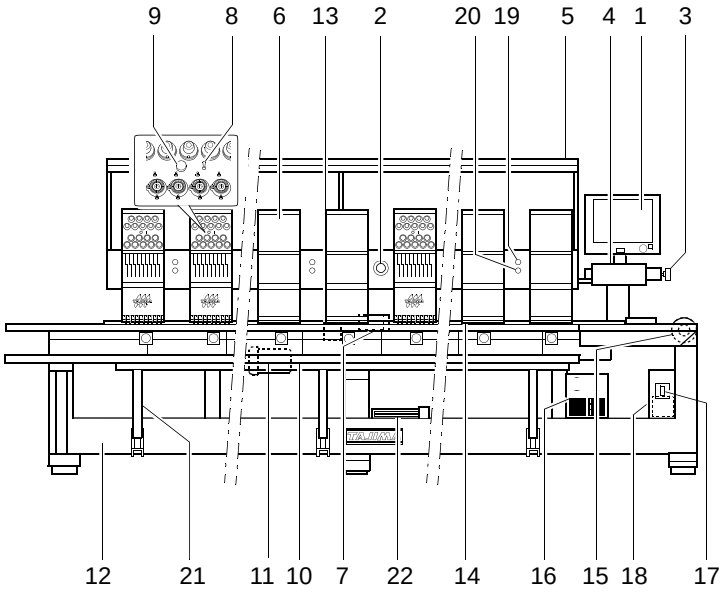


TFHX-IIC



1. Controller box
2. Emergency stop switch
3. Color change motor
4. Thread guide system
5. Individual tension base
6. Y-axis motor
7. Tension base switch
8. Thread breakage indicator lamp
9. Machine table
10. Main shaft motor
11. Stand
12. Thread trimming cam box
13. Needle bar case
14. X-axis motor
15. Power supply/driver box
16. Power switch
17. Inverter
18. Stop switch
19. Start switch
20. Hydraulic cylinder
21. Manual pump
22. Start switch

TEHX-C



1. Controller box
2. Emergency stop switch
3. Color change motor
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5. Thread guide system
6. Individual tension base
7. Y-axis motor
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9. Thread breakage indicator lamp
10. Machine table
11. Main shaft motor
12. Stand
13. Thread trimming cam box
14. Needle bar case
15. X-axis motor
16. Power supply/driver box
17. Power switch
18. Inverter
19. Stop switch
20. Start switch
21. Hydraulic cylinder
22. Hydraulic pump

3. ELECTRICAL SPECIFICATIONS

Electrical specifications of this machine are described below. Please use the machine complying with the condition.

CAUTION

If using the machine deviating from the conditions, trouble may occur.

Power supply

Model	Superficial electrical power	Electricity
TFHX-II TFHX-IIC	1.3kVA	700W
TFHX TFHX-C	1.7kVA	920W
TEHX-C	2.5kVA	1.5kW

Voltage/allowable voltage range	Within ±10% of the rated voltage
Frequency	50/60Hz

Insulating resistor

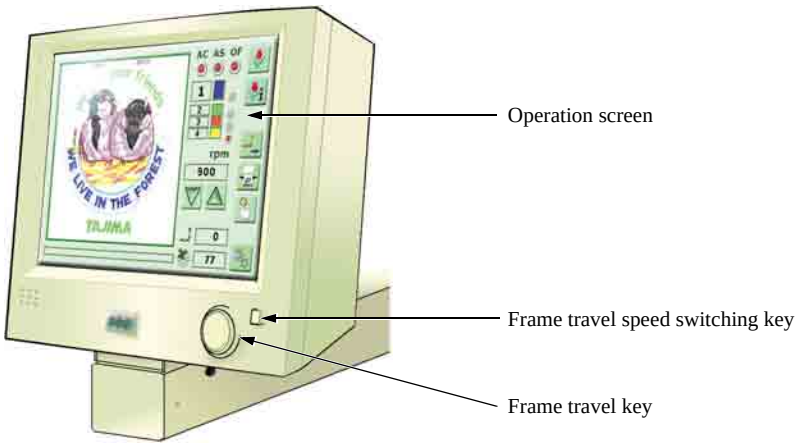
10M ohms or larger (measured with a 500 V insulation tester)

WARNING

Since there is possibility of electric shock due to leak current, be sure to connect the grounding wire of the machine to the ground. Grounding resistance must be 100 ohms or less.

4. OPERATION PANEL BOX

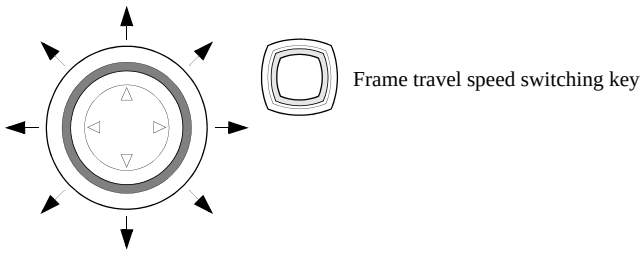
Operation screen (Touch panel)



For the protection of the screen, use the touch panel screen with protection film stuck.

⚠ Do not touch the screen with sharp-pointed goods such as pen and pencil.

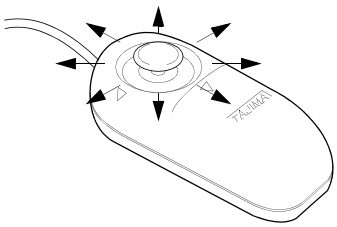
FRAME TRAVEL KEY AND FRAME TRAVEL SPEED SWITCHING KEY



Move the embroidery frame to 4 directions/8 directions. P.92
When pressing the center of the key at middle speed → The frame travel speed will switch to high speed.

Frame travel speed switching key switches manual frame travel speed to low speed/middle speed.
When pressing the key at high speed, speed will become low speed.

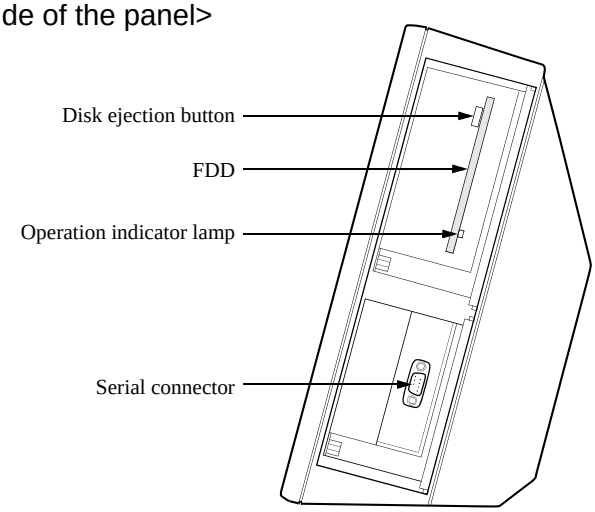
JOG REMOTE-CONTROLLER



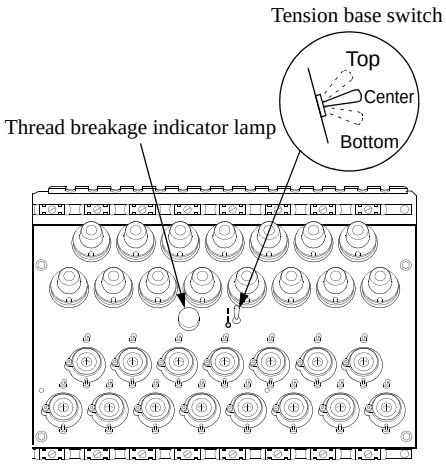
It moves the embroidery frame rapidly with manual operation. Frame travel speed varies depending on tilting angle of the stick.

When you do not use the jog remote-controller, store it in a jog remote-controller pocket, etc. not to move the frame carelessly.

<Right side of the panel>



5. TENSION BASE



- Switch at the top: To perform embroidery from the position where frame back started, set the switch to the “Top”. When the switch is released, it will return to the “Center” position.
- Switch at the center: During normal embroidering operation, the switch must be kept in the “center” position. If the machine detects thread breakage and when performing frame back to the position where thread breakage occurred, only the head where thread breakage occurred will restart embroidery. When “12. Overlap Frame Back” (P.83) is set to “Yes”, embroidery will start with all heads.
- Switch at the bottom: Needle bar does not move. (Embroidery is not performed.)

- Thread breakage indicator lamp
  During normal operation: Green (lit)
  When upper thread breakage is detected: Red (lit)
  When under thread breakage is detected: Red (blinking)

6. NEEDLE BAR SUSPENSION LEVER

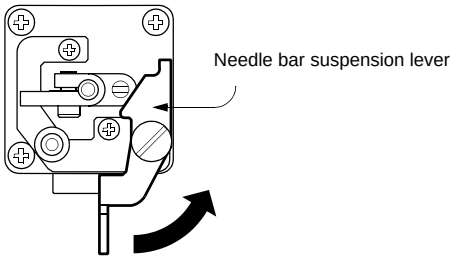
WARNING

Do not perform changing thread, etc. at the suspended head during operation.

Even if you suspend needle bars by operating the needle bar suspension lever, take-up levers and automatic thread trimming device will activate and you may be injured.

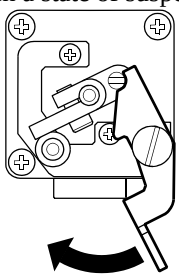
[Viewing from side]

• In a state of operation possible

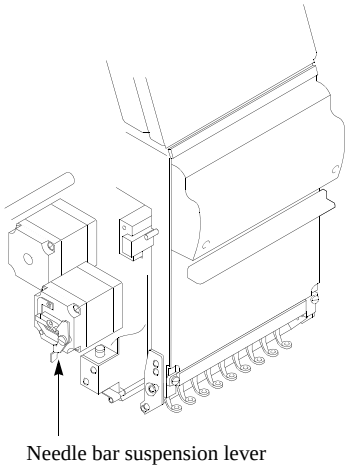


To suspend

• In a state of suspension

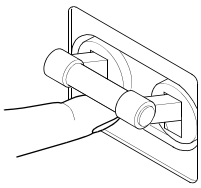


When making operation possible

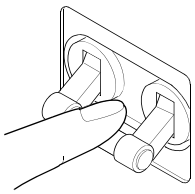


CHAPTER 3 OPERATION BASICS

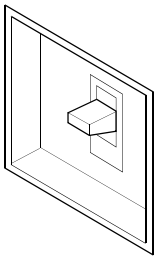
1. POWER SWITCH



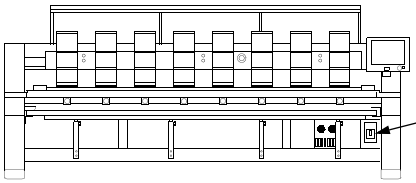
Turning "ON" the power



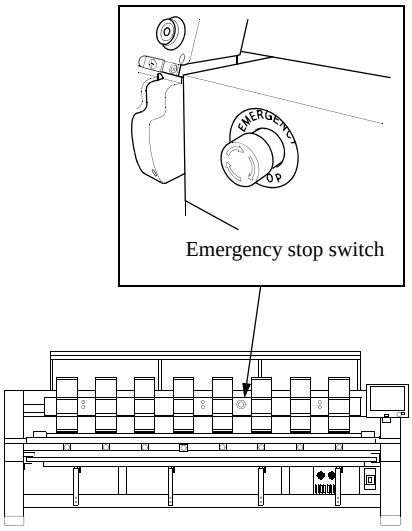
Turning "OFF" the power



TEHX-C
When the power is shut off



2. EMERGENCY STOP SWITCH



Emergency stop switch

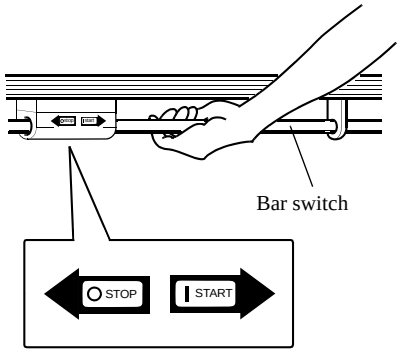
- When turning ON the power again, turn “OFF” the switch once and turn it “ON” after about 5 or 6 seconds.
- When the power is shut off such as power failure, emergency stop, etc., the switch will be turned “OFF”. Since the switch of TEHX-C will position at the middle, turn it “OFF” once, and then turn it “ON”.

- Pressing the emergency stop switch will cause the machine to stop at the fixed position to turn OFF the power.
- To perform cancellation, follow the next procedure.

1. Rotate the switch knob to the direction indicated by arrow to release the lock.
2. Turn “ON” the power switch.
3. Perform “Power resume”.
   Power resume p.76

- Turn “OFF” the power supply of TEHX-C once, and then turn it “ON”.

3. BAR SWITCH



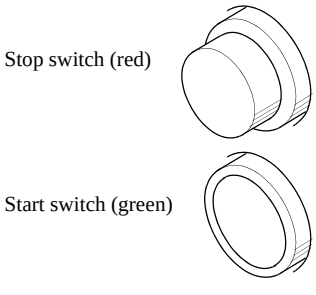
📖 FB/FF is the abbreviation of frame back/forward. p.76

During stop

Move it to the left ⇦	⇨ Move it to the right
Move it to the left and release. FB/FF for 1 stitch	Move it to the right and release. • Operation starts
Hold it to the left. FB/FF by 1 stitch unit • If it is released within 10 stitches, the motion stops at that point. • If it is released with 11 stitches and more, the motion still continues and stops when moving it to the left again.	Hold it to the right Operation starts with inching ↓ • Usual operation is performed when releasing it

📖 During operation
Left: stop
Right: invalid

4. START/STOP SWITCH



During stop

Stop switch (red)	Start switch (green)
Press the switch and release it. FB/FF for 1 stitch is performed.	Press the switch and release it. Operation starts
Keep pressing the switch. FB/FF for 1 stitch is performed. • If it is released within 10 feeds, the motion stops at that point. • If it is released with 11 feeds and more, the motion still continues and stops when it is pressed again.	Keep pressing the switch. Operation starts with inching ↓ Usual operation is performed when releasing it

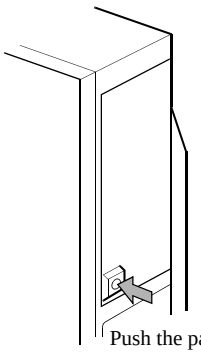
📖 During operation
Stop switch: stop
Start switch: invalid

5. FLOPPY DISK AND FDD

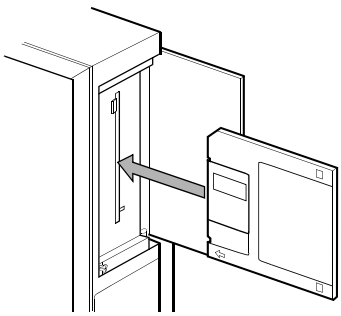
CAUTION

Observe the items indicated below when handling floppy disks.

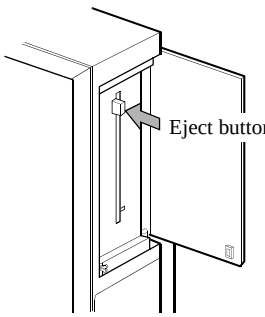
- **Do not put the floppy disk near magnets or a TV.**
- **Do not expose it to excessive heat, humidity, or direct sunlight.**
- **Do not place heavy objects on the floppy disk.**
- **Floppy disks do not last eternally. Data must be copied to backup floppy disks for storage.**
- **Do not use damaged or deformed floppy disk, otherwise the floppy disk drive could be damaged.**
- **Clean the head of the FDD (the part where data is read or written) about once a month using a cleaning disk sold in the market. If the head is dirty, it could cause bad movement of reading/writing of floppy disk.**
- **Do not open the shutter.**
- **To prevent the stored data from being erased, slide the tab of the write protect switch to open the write protect window of a floppy disk (write protect state).**
- **Insert a floppy disk slowly and carefully.**
  If a floppy disk is inserted impetuously, it may become difficult to eject the floppy disk, or the machine may be damaged.
- **Do not eject a floppy disk forcefully. The floppy disk or the FDD may be damaged.**
- **Do not eject a floppy disk during data writing/reading. Data in the floppy disk may be damaged.**



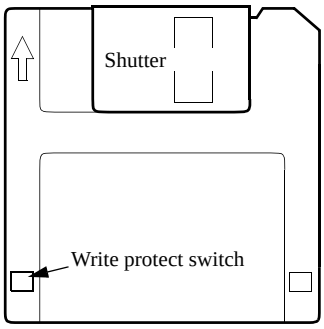
Push the part indicated by the arrow to open the cover.



Insert it as the illustration so that the arrow mark faces the front.



Press the button to eject the disk.



FDD (Floppy Disk Drive) is the abbreviation of floppy disk drive.

Formatting p.63

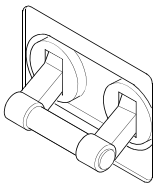
6. CPU SOFTWARE INSTALLATION

CAUTION

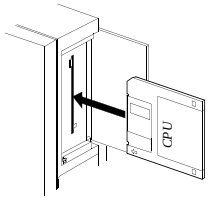
Before installing the CPU software, save the design data currently registered in the memory to a floppy disk. Design data may be damaged by unexpected causes during installation.

This operation is necessary when setting up machine and/or upgrading the software.

1. Set the CPU software with the power turned OFF

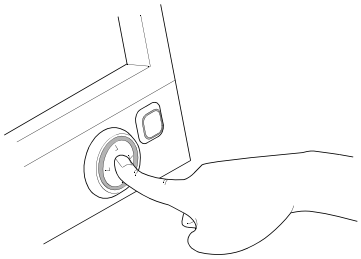


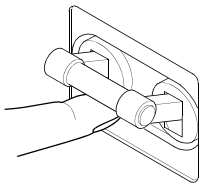
Turning "OFF" the power



Insert the CPU software to the floppy disk drive of the operation panel with the power switch turned OFF.

2. Turn ON the power while keeping on pressing the center of frame travel key



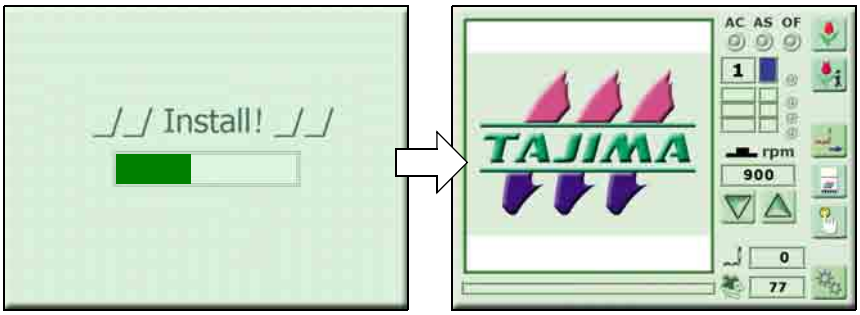


Turning "ON" the power

If the frame travel key is pushed slantly, “Error: Check FDD” will be displayed. In this case, do the operation again from the beginning.

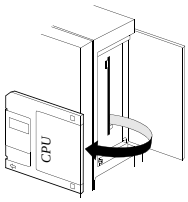
When turning ON the power, separate your finger from the frame travel key.

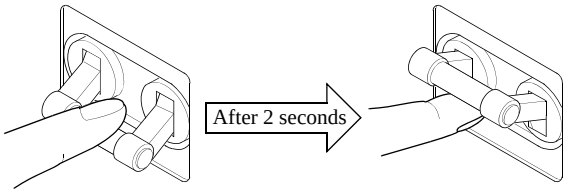
3. Installation



Installation will start automatically, and the screen for installation will appear.
When installation is completed, it will switch to the screen for operation.

4. Take out the floppy disk, and turn on the power again.





Turning "OFF" the power

Turning "ON" the power

After the installation, perform frame origin memory.
Frame origin memory p.69, p.70

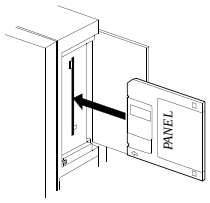
7. PANEL SOFTWARE INSTALLATION

CAUTION

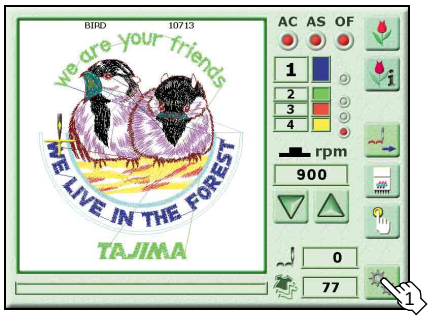
Before installing the PANEL software, save the design data currently registered in the memory to a floppy disk. Design data may be damaged by unexpected causes during installation.

This operation is necessary when setting up machine and/or upgrading the software. Start the operation from a state of turning "ON" the power.

1. Insert the PANEL software to the FDD

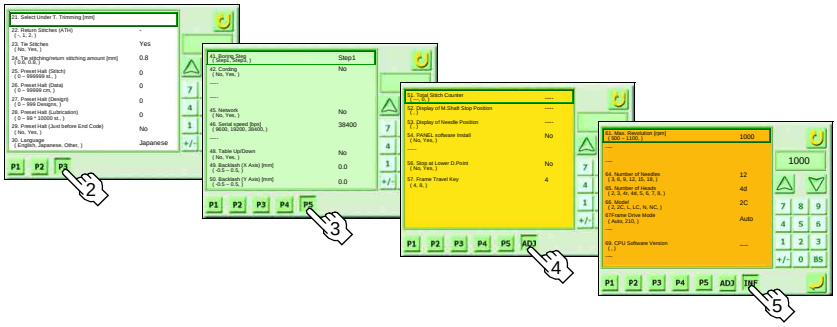


2. Switch to the screen 3000



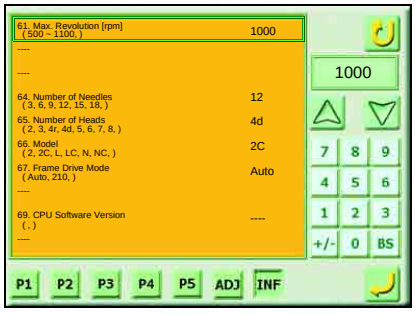
◀ Screen 1000

3. Display switching of the screen 3000



Press each of P3, P5, and ADJ two times, and then press INF.

4. Take note of setting value



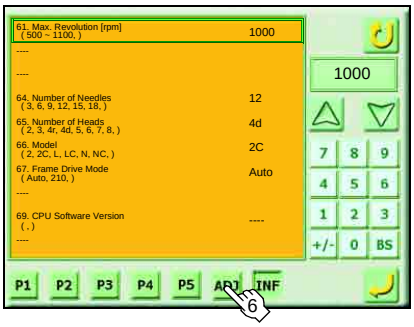
◀ Screen 3000

Take note of the contents of the following parameter setting.

61. Max. Revolution [rpm]
64. Number of Needles
65. Number of Heads
66. Model (TEHX-C is invalid)

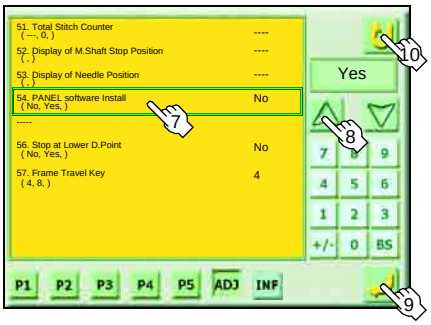
It will become necessary to set parameters as described above when confirming them after installation of the software.

5. Switching to the ADJ screen



◀ Screen 3000

6. Installing PANEL software



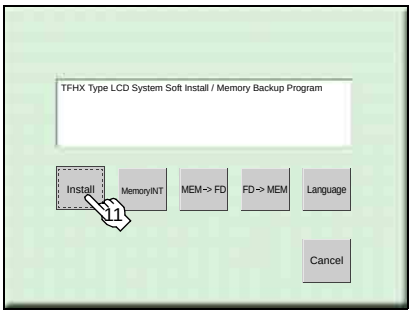
◀ Screen 3000

📖 Select PANEL software installation, and perform registration with “Yes”. Pressing “Return” will abort the screen after a few seconds and the screen for installation will appear.

CAUTION

During reading of floppy disk, the operation panel will be in a state as if it stopped for a few seconds. Do not operate the panel in this moment. Otherwise, installation may not be performed normally.

7. PANEL software installation



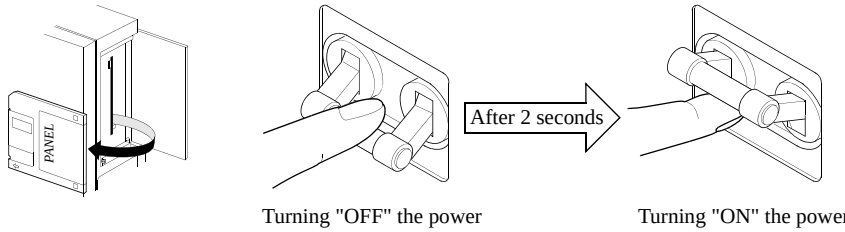
Install	Install the PANEL software
MemoryINT	To initialize memory
MEM -> FD	Backup memory contents to floppy disk
FD -> MEM	Restore backup memory of floppy disk
Language	Switching of language display
Cancel	To cancel installation

📖 Contents of display differ depending on model.

📖 When performing backup of data and/or switching language display, consult the distributor.

📖 When cancellation was performed, turn on the power again.

8. Turn on the power again



Turning "OFF" the power　　Turning "ON" the power

📖 When the installation is completed, “System Reboot!” will appear on the screen. Take out the floppy disk, and turn on the power again.

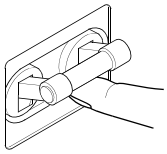
📖 Check the following parameters.
61. Max. Revolution [rpm]
64. Number of Needles
65. Number of Heads
66. Model (TEHX-C is invalid)

8. OPERATION FLOW

Primary power supply ON

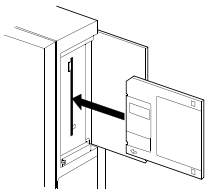
When inputting data from an external device

Set the serial cable.



Power switchON

Screen 1000



When inputting data from a floppy disk

Set a floppy disk.

Screen 2000

Data input from floppy disk (p.29)

Data input from serial connection (p.30)

Select the memory design.

Data set (p.31)

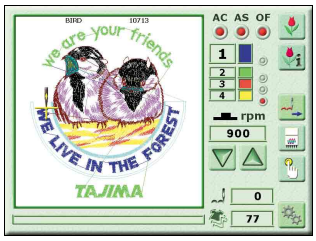
Needle bar selection (p.34)

Data conversion/repeat/offset (p.41)

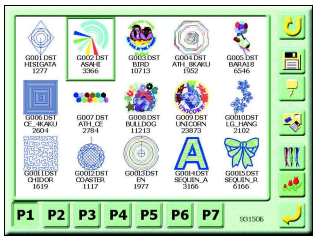
Frame travel (automatic/manual)

Bar switch ON/start switch ON

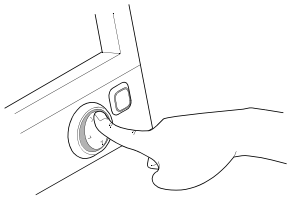
Embroidery starts.



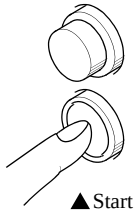
▲Screen 1000



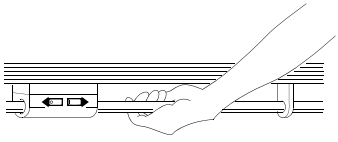
▲Screen 2000



▲Frame travel key



▲Start switch

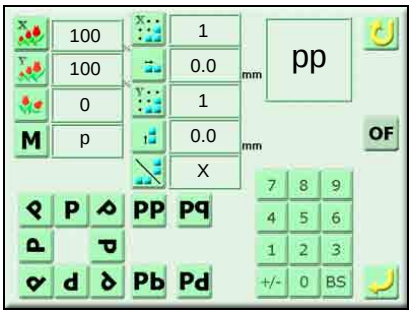


▲Bar switch

(GC07)

9. VALUE INPUT

1. Input by numerical key



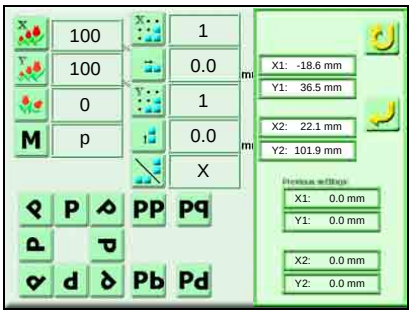
◀ Screen 6000

Numerical key ▶

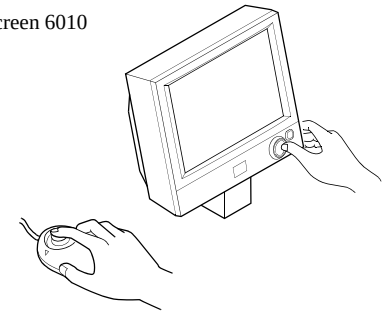
📖 Select the input column and input value by numerical key.
To perform correction press “BS” to delete the value, and input value again.


Press this icon to register all input values.

2. Value input by frame travel

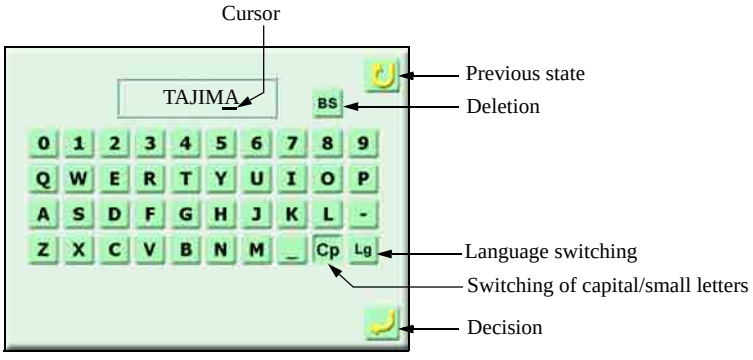


◀ Screen 6010



📖 When moving the embroidery frame to an arbitrary position by frame travel key or jog remote-controller, that coordinate position will be displayed as value.

10. INPUT OF CHARACTERS



▲ Screen A000

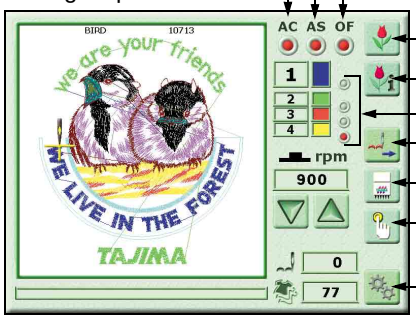
📖 Treat it the same as key board.


Press this icon to register input characters.

📖 It is not possible to input space.

11. EXPLANATION ON THE SCREEN (SCREEN 1000)

During stop

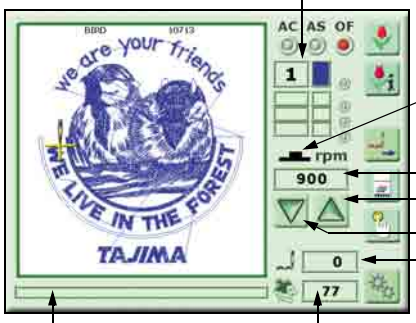


- Automatic color change
- Automatic start
- Automatic offset
- Screen 2000 (Embroidery setting)
- Screen 1100 (Design information)
- Display of setting for offsetting at automatic co
- Screen 1200 (FB/FF)
- Screen 1300 (Color change)
- Screen 1400 (Manual operation)
- Screen 3000 (Parameter)

📖 When setting is made on AC, AS, and/or OF, it will be displayed in red.

📖 The position where offsetting at automatic color change is set will be displayed in red.

During operation

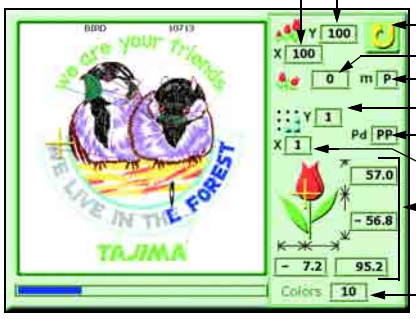


- Display of setting for needle bar
- Position of needle
  - Fixed position
  - Lower dead point
  - Other posiion than that described above
- r.p.m.
- Change of rpm (to increase)
- Change of rpm (to decease)
- Stitch counter during embroidery
- Embroidery progress indicating meter
- Total of designs, which have been embroidered

📖 Needle bar numbers and colors set in needle bar setting will be displayed. When automatic color change is not set, only the needle bar number and color being currently used will be displayed.

📖 r.p.m.
It display the maximum r.p.m. during stop, and it is not possible to change the rotating speed.
It displays the r.p.m. during operation. Pressing the icon for changing r.p.m. will cause the r.p.m. to be changed.

12. EXPLANATION ON THE SCREEN (SCREEN 1100)



- Scale ratio in X direction
- Scale ratio in Y direction
- Screen 1100
- Rotating angle
- Mirror image reversion
- The number of repeats in Y direction
- Repeating direction
- The number of repeats in X direction
- +/-X and +/-Y size from the origin
- The number of design steps

📖 It display the information of design of which data was converted.
Data conversion p.41

13. INSPECTION BEFORE STARTING WORK

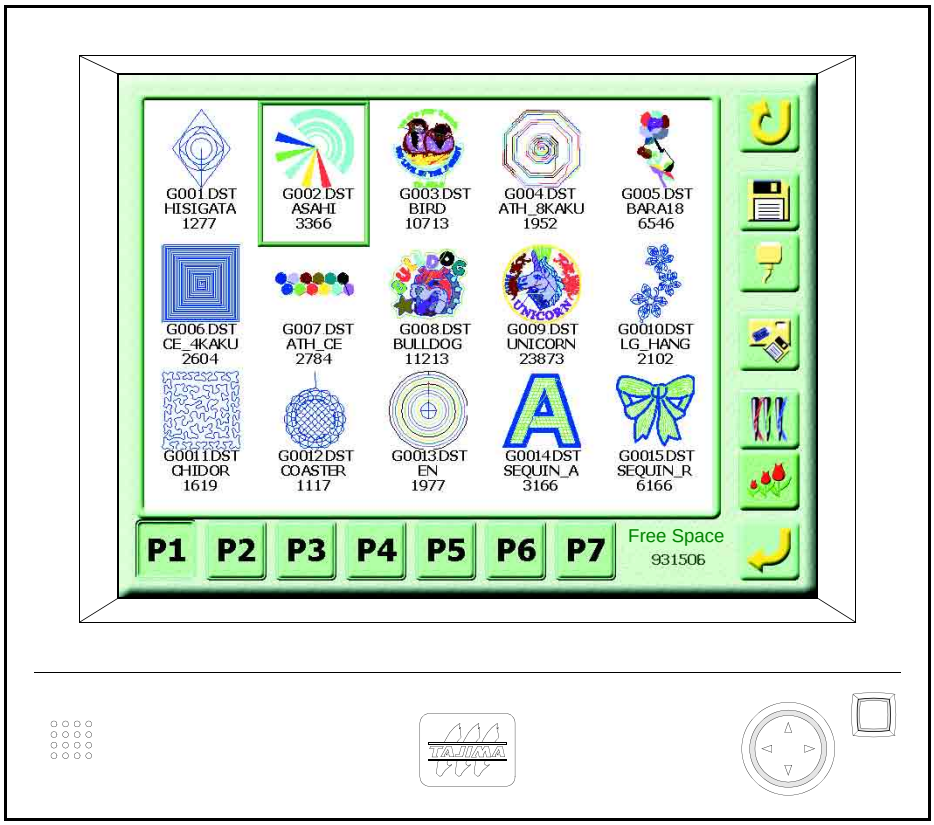
WARNING

When performing inspection before starting work, be sure to turn off the power.
You may be caught by the machine or sticking needle may cause severe injury.

Inspecting item	Condition	Action to take
Cover	Cover(s) depart from the machine.	Attach to the machine
Thread	Thread comes off	Set thread
	Thread is broken	
Needle	Needle(s) are bent.	Change the needle(s).
	Needle(s) are broken.	
Rail on rotary hook	Appropriate quantity of oil is not supplied to the rail section.	Supply oil

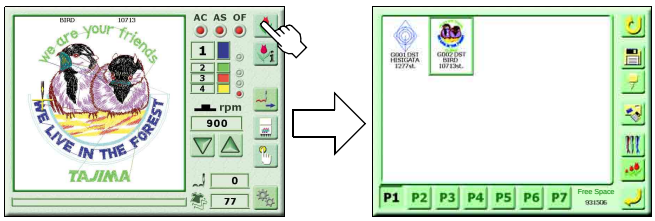
When the automatic lubrication system (option) has oil leakage, contact the distributor.

CHAPTER 4 DATA SET

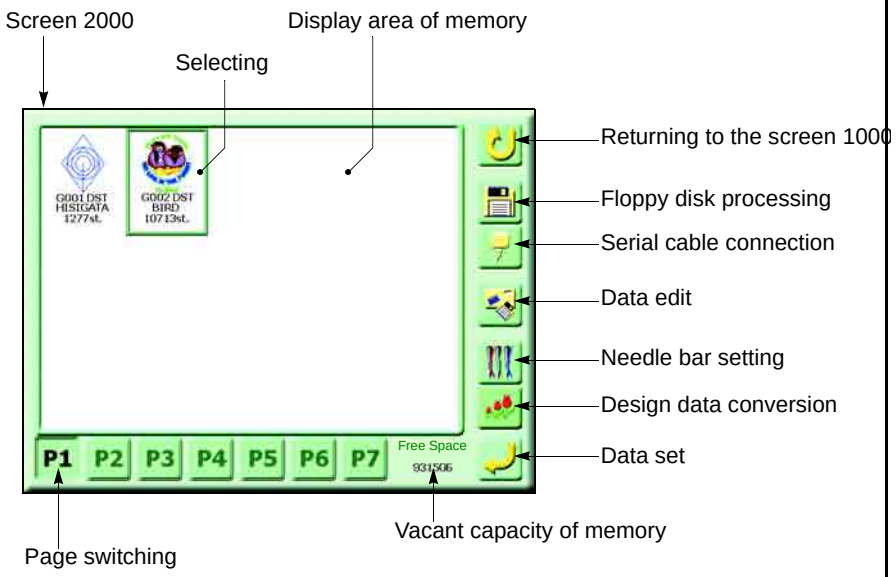


1. EXPLANATION ON THE SCREEN (SCREEN 2000)

<How to call the screen>



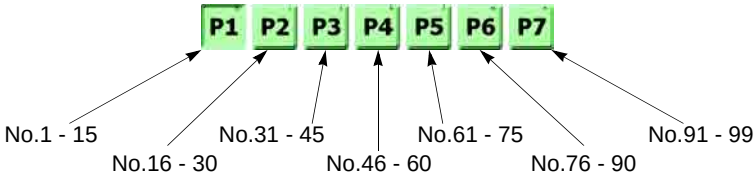
Embroidery setting screen



When there is no design data in the memory, icons of “data edit, needle bar setting, design data conversion, data set, page switching” will not be displayed.

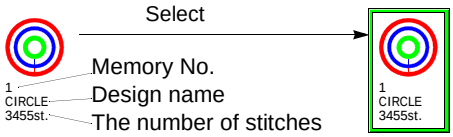
Vacant capacity of the memory displays the number of remaining stitches of design data that can be registered in the memory.
When the memory has no vacant capacity, the icons that enable data input of “floppy disk processing, serial cable connection” will disappear.

Page switching



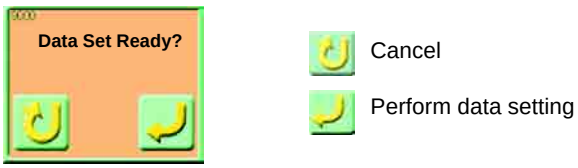
Up to 15 designs are displayed at the display area of memory designs, and 16 and after designs are displayed at the next page.
16 and after designs are stored at “P2”. Page switching icons will be added by the number of designs stored in memory.
It is possible to register up to 99 designs in the memory.

Design data information



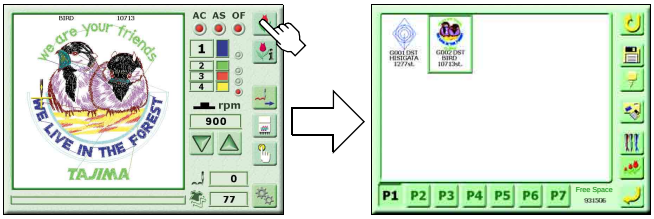
The selected design will be surrounded by a frame.

Pop-up window

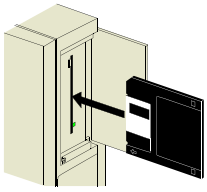


2. DATA INPUT FROM FLOPPY DISK

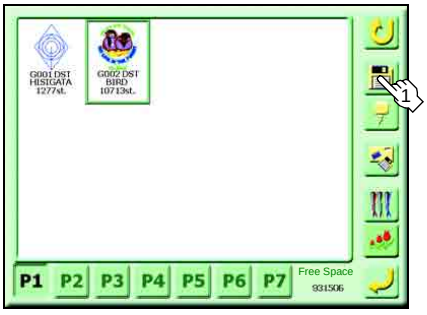
<How to call the screen>



1. Insert the floppy disk.

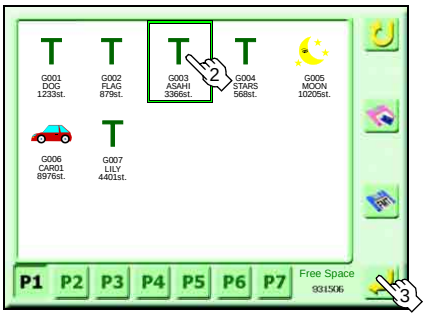


2. Reading of floppy disk



◀ Screen 2000

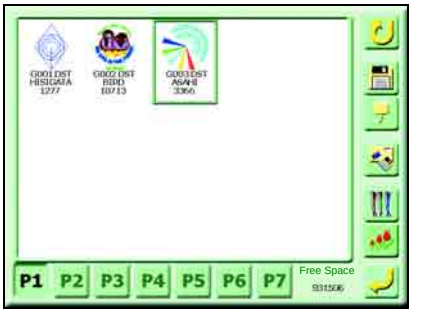
3. Selection of design and input



◀ Screen 4000

📖 Pressing the design being selected once more will cause the design to be displayed.

4. Completion of input

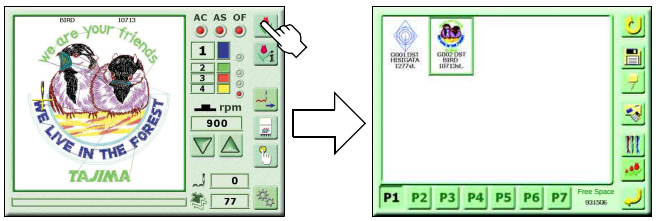


◀ Screen 2000

📖 After the input, the data will be stored in the smallest value among vacant memory numbers of the screen 2000.

3. DATA INPUT FROM SERIAL CONNECTION

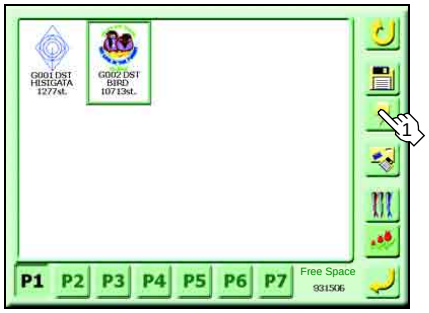
<How to call the screen>



CAUTION

Turn ON the switch of the external device before turning ON the switch of the machine.

1. Start serial connection



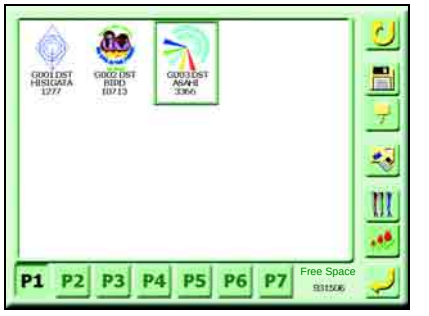
◀ Screen 2000

2. Inputting design name

◀ Screen 4000

Input of characters p.23

3. Completion of input

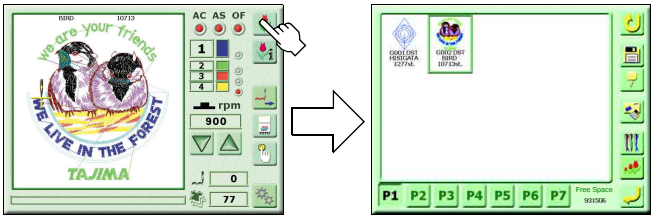


◀ Screen 2000

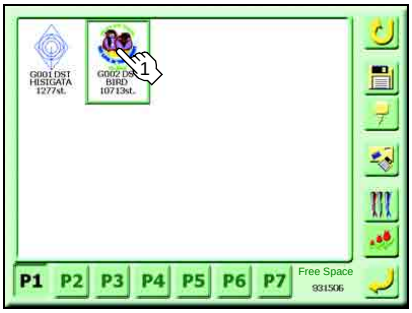
After the input, the data will be stored in the smallest value among vacant memory numbers of the screen 2000.

4. DATA SET

<How to call the screen>



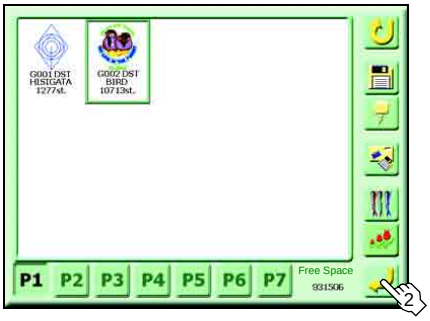
1. Selection of design



◀ Screen 2000

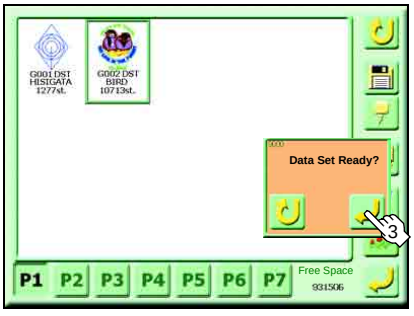
When setting embroidery conditions, press needle bar setting and data conversion to make setting.
Needle bar setting p.34
Data conversion p.41

2. Data set



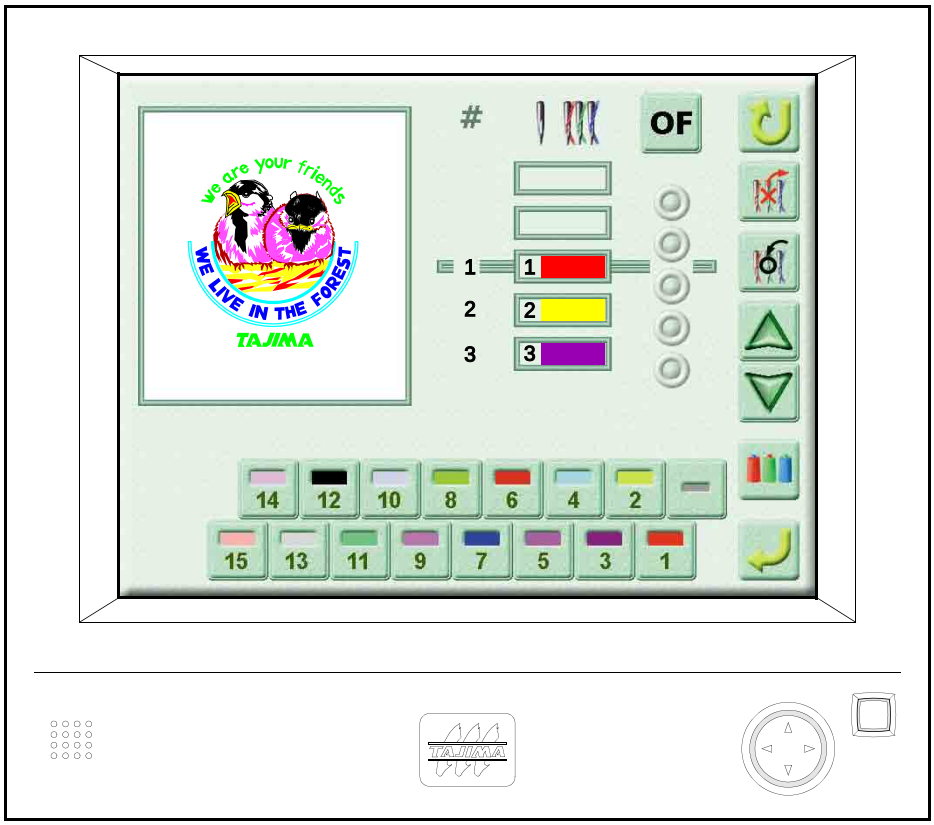
◀ Screen 2000

3. Confirm



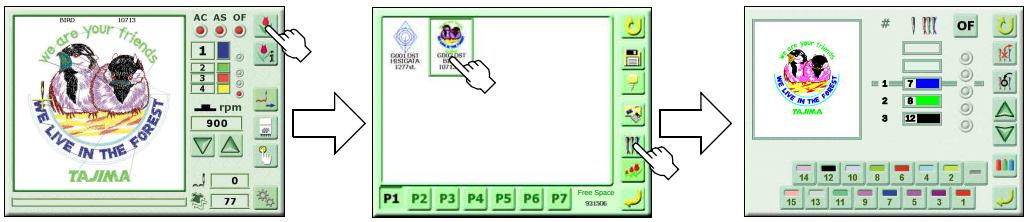
◀ Screen 2000

CHAPTER 5 EMBROIDERY SETTING



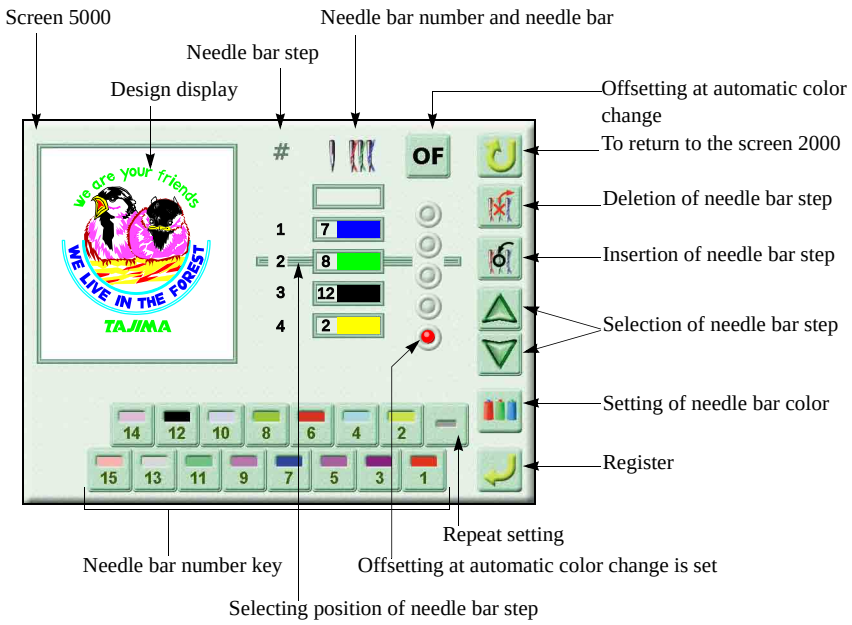
1. EXPLANATION ON THE SCREEN (SCREEN 5000)

<How to call the screen>



Select the design to be set

Needle bar setting screen

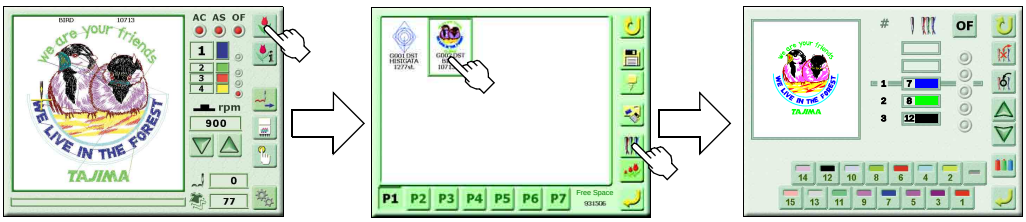


Changing the needle bar will also cause color of design display to be changed.

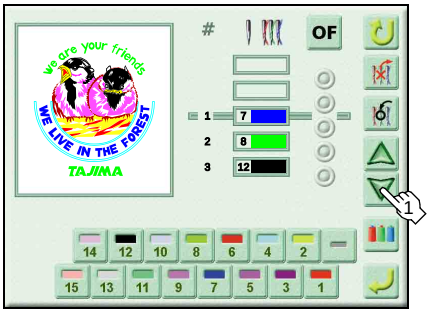
Registering the setting for needle bars will cause the screen to return to the screen 2000.

2. CHANGE OF NEEDLE BAR

<How to call the screen>



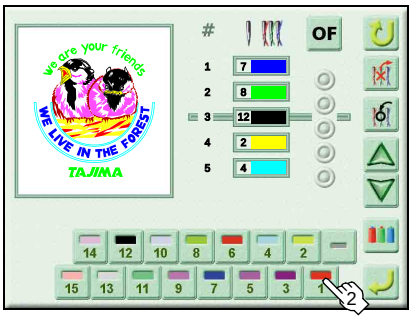
1. Select the needle bar step



◀ Screen 5000

📖 Selecting a needle bar step will cause the design display of the step being selected will blink.

2. Select the target needle bar number to be changed

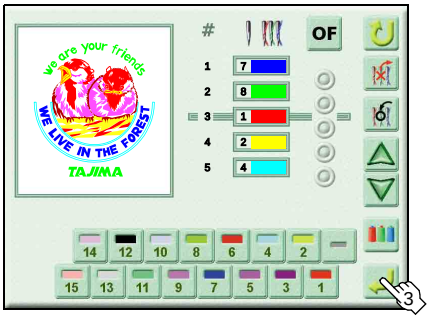


◀ Screen 5000

📖 It is also possible to change other needle bars as the same way.

📖 Selecting the target needle bar number will also change color of design display.

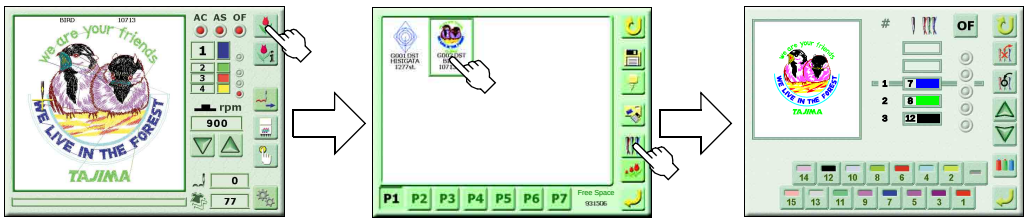
3. Register



◀ Screen 5000

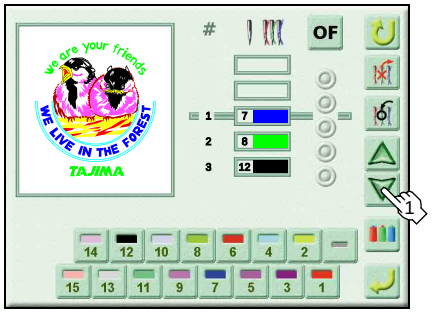
3. DELETION OF NEEDLE BAR STEP

<How to call the screen>



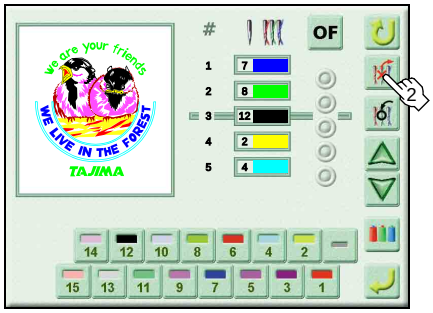
Select the design to be set

1. Select the needle bar step



◀ Screen 5000

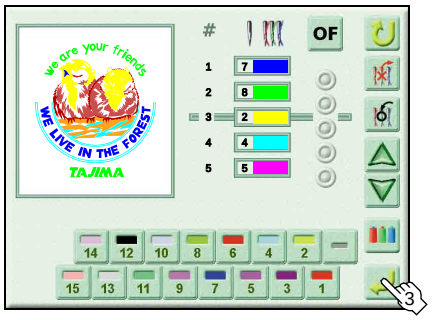
2. Delete the needle bar step



◀ Screen 5000

When it is deleted, the following needle bar steps will be moved up.

3. Register

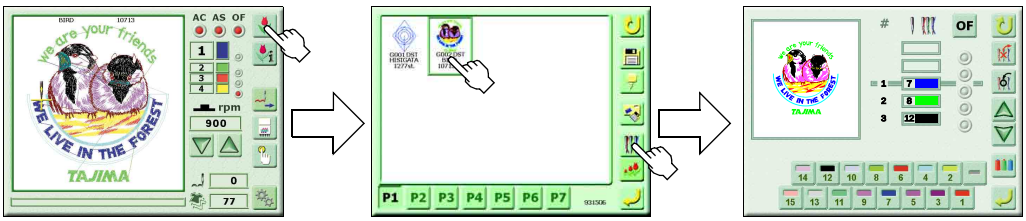


◀ Screen 5000

Since the needle bar steps will be deleted by 1 step, the machine will embroider the last step with the first step.

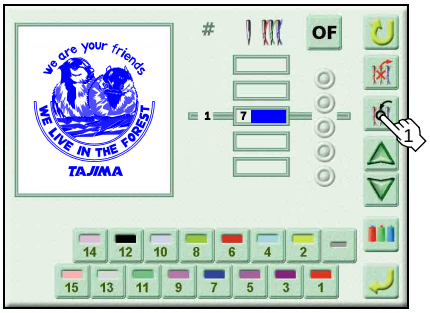
4. INSERTION OF NEEDLE BAR STEP

<How to call the screen>



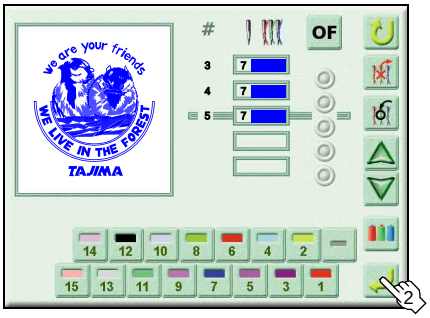
Select the design to be set

1. Insert the needle bar step



◀ Screen 5000

2. Register



◀ Screen 5000

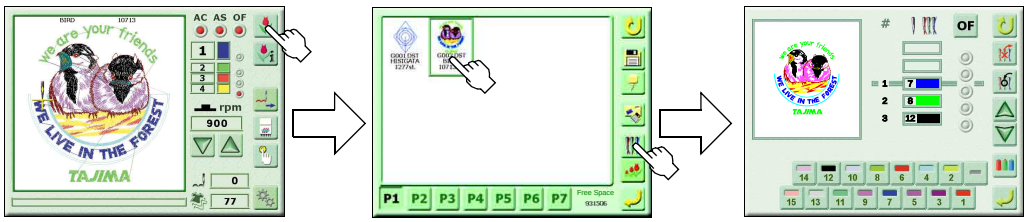
Insertion will copy the needle bar step being selected to insert.

It is possible to perform insertion up to the number of steps set in the stitch data.

Change the inserted needle bar step to the needle number you desire.
Change of needle bar p.35

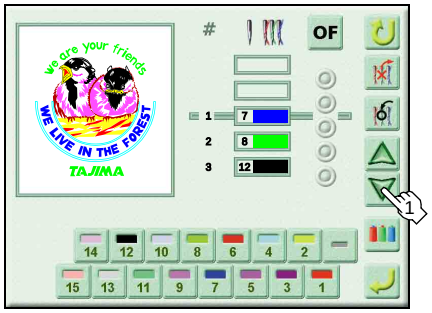
5. REPEAT OF NEEDLE BAR SETTING

<How to call the screen>



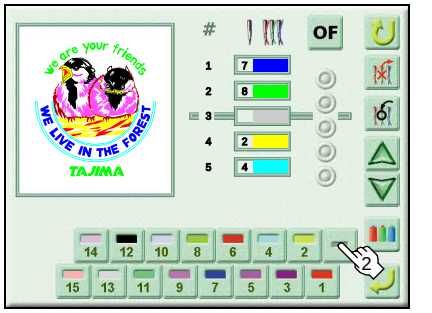
Select the design to be set

1. Select the needle bar step



◀ Screen 5000

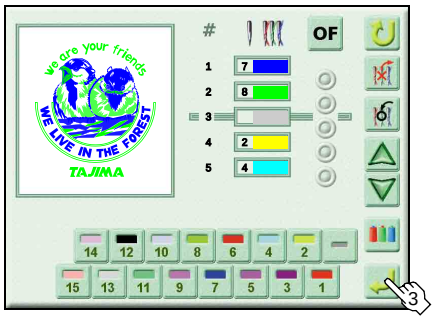
2. Setting for repeat of needle bar steps



◀ Screen 5000

📖 Setting repeat of needle bar steps will cause the following steps to be invalid, and the machine will repeat steps before repeat in order.

3. Register

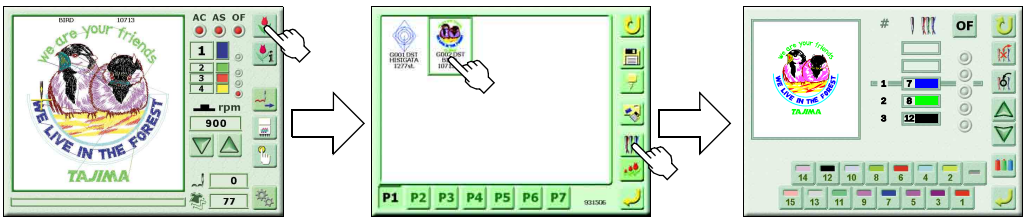


◀ Screen 5000

📖 To cancel repeat of needle bar steps, set a needle number to the step where repeat was set.

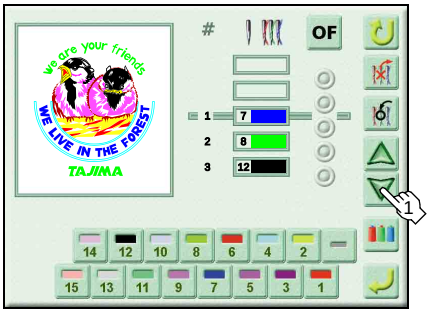
6. OFFSETTING AT AUTOMATIC COLOR CHANGE

<How to call the screen>



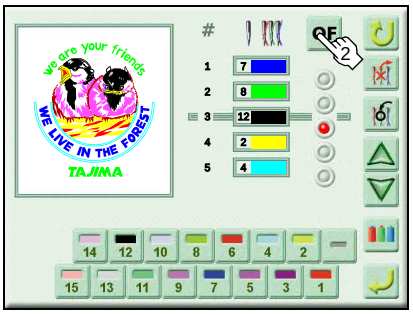
Select the design to be set

1. Select the needle bar step



◀ Screen 5000

2. Set offsetting at automatic color change



◀ Screen 5000

3. Register

◀ Screen 5000

Offsetting at automatic color change is a setting that makes the frame move to the position set by the automatic offset when the machine performs color change.
When automatic offset is not registered, the frame will not move.
Automatic offset p.47

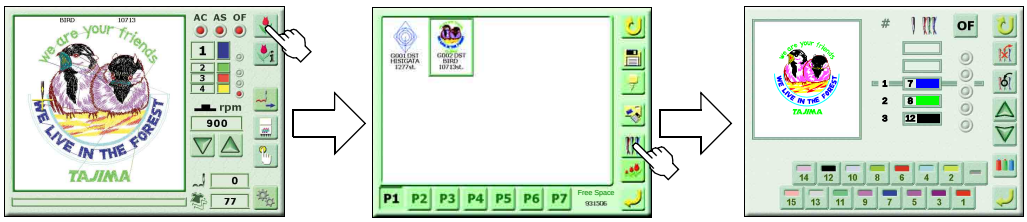
Setting offsetting at automatic color change will cause the frame to move to the setting position of automatic offset when the set step ends.

It is also possible to set other needle steps as the same way.

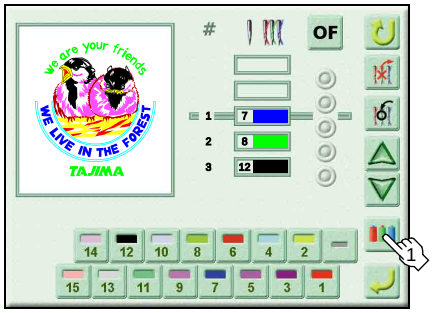
To cancel offsetting at automatic color change, select the step being selected, and then press “OF”.

7. NEEDLE BAR COLOR

<How to call the screen>

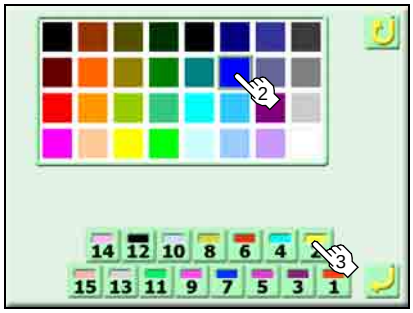


1. Select the setting of needle bar color



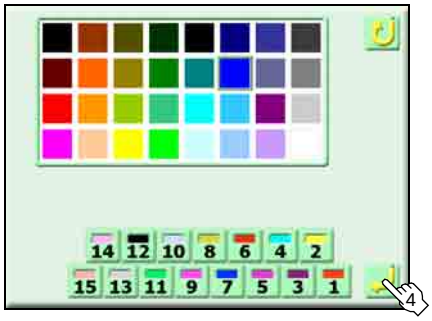
◀ Screen 5000

2. Select needle bar color and needle bar number key



◀ Screen 7000

3. Register

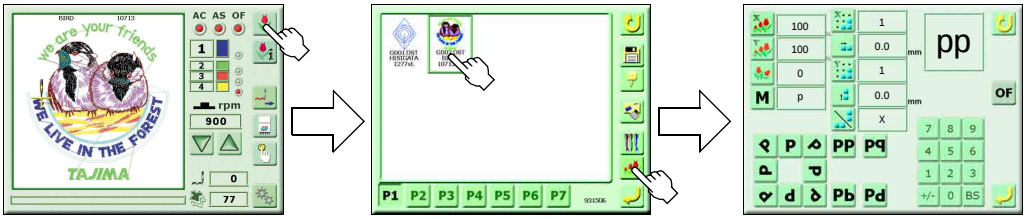


◀ Screen 7000

📖 It is also possible to change other needle bars as the same way.
In addition, it is possible to perform setting in reversed order of needle bar color and needle bar number key.

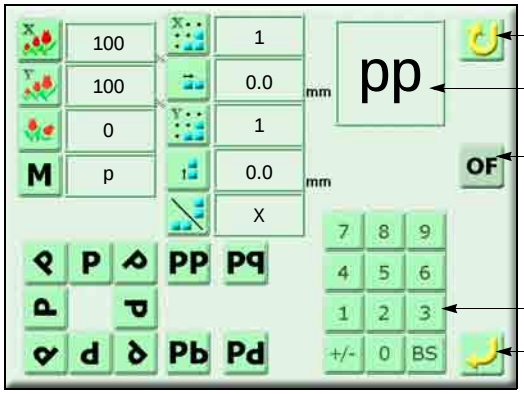
8. EXPLANATION ON THE SCREEN (SCREEN 6000)

<How to call the screen>



Select the design to be set

Data conversion screen



To return to the screen 2000

Repeat information

Automatic offset

Numerical key

Register

Scale ratio in X direction

Scale ratio in Y direction

Rotation

45° rotation

Mirror image reversion

The number of repeats in X direction

Design interval in X direction

The number of repeats in Y direction

Design interval in Y direction

Priority direction in repeat

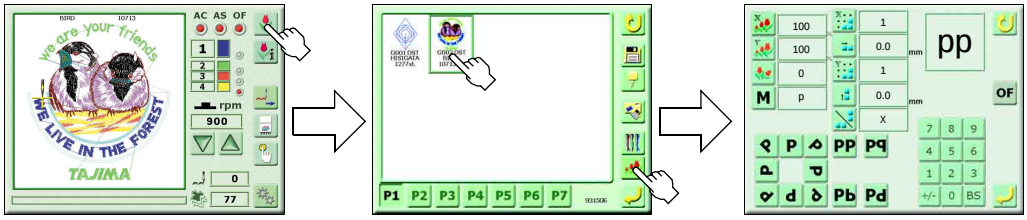
Repeat arrangement

📖 Changing the design data that has been set will cause the data set to be canceled.

📖 Registration will cause the screen to return to the screen 2000.

9. DESIGN SCALE UP/DOWN

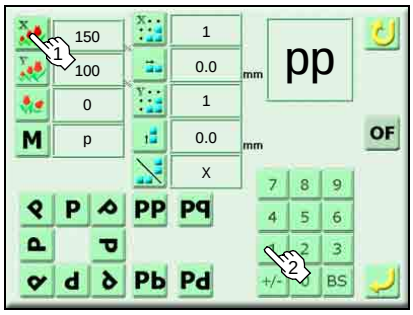
<How to call the screen>



Select the design to be set

Design scale up/down p.96

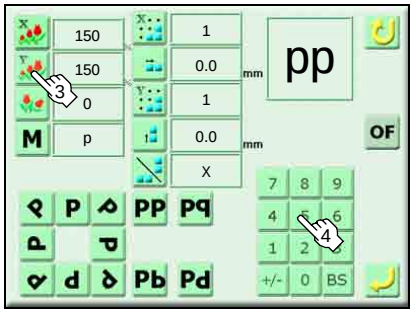
1. Change of scale ratio in X direction



◀ Screen 6000

Setting value: 50 to 200%

2. Change of scale ratio in Y direction

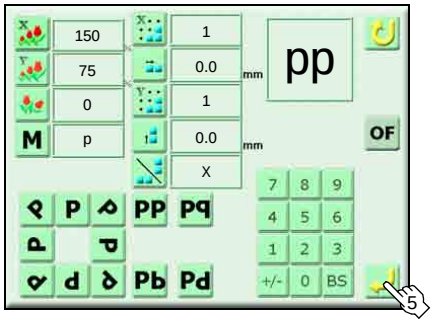


◀ Screen 6000

Setting value: 50 to 200%

Pressing scale ratio of the Y direction will become the same value as the scale ratio of the X direction. It is possible to change the scale ratio by inputting a value as it is.

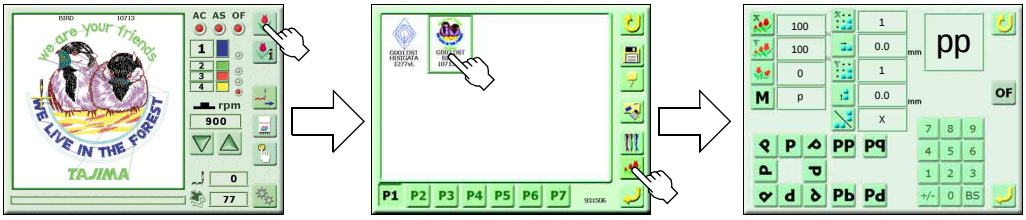
3. Register



◀ Screen 6000

10. ROTATION/MIRROR IMAGE REVERSION

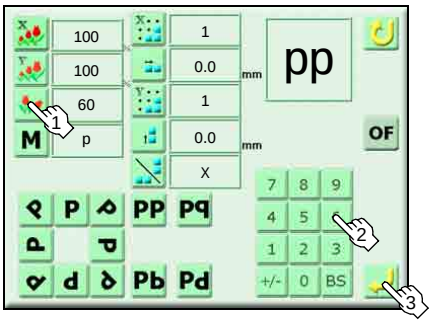
<How to call the screen>



Select the design to be set

Rotation/mirror image reversion p.96

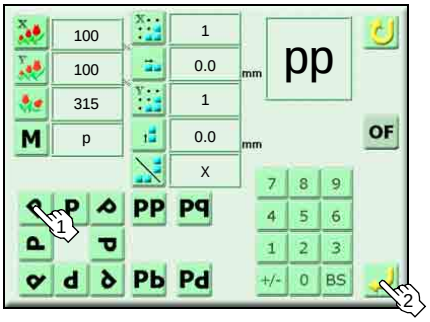
Rotation by input of value



◀ Screen 6000

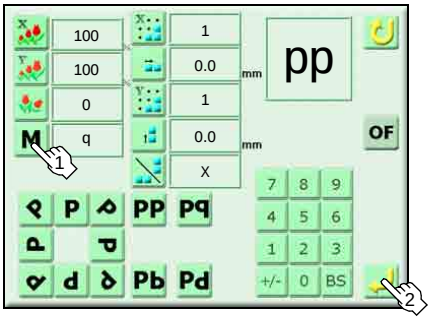
It is possible to input value by 1 degree unit.

Rotation by 45° unit



◀ Screen 6000

Mirror image (reversion)

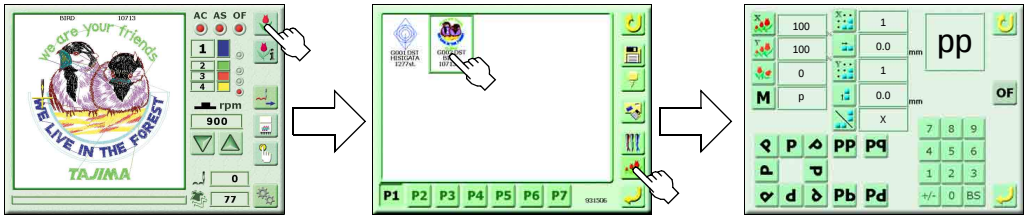


◀ Screen 6000

Every pressing “M” will switch direction.

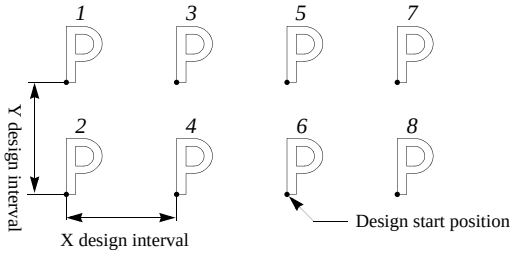
11. REPEAT

<How to call the screen>

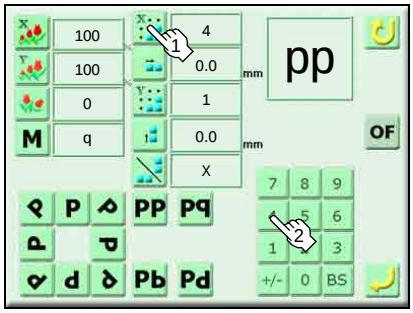


Select the design to be set

Repeat

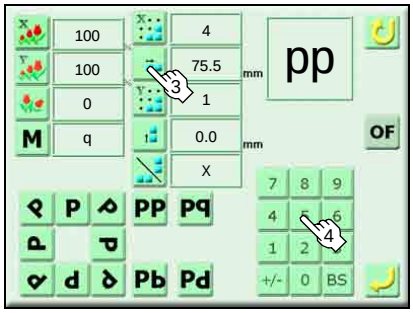


1. The number of designs to be arranged to X direction



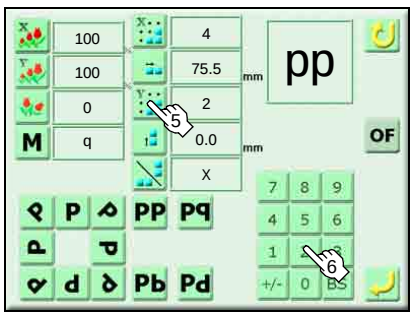
◀ Screen 6000

2. Design interval to X direction



◀ Screen 6000

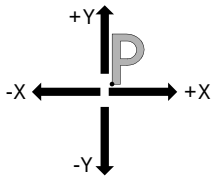
3. The number of designs to be arranged to Y direction



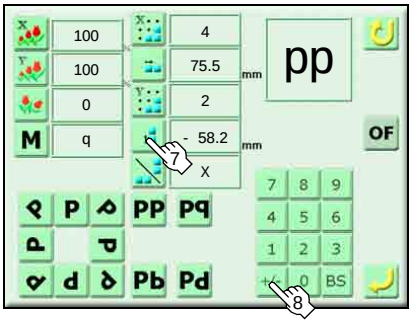
◀ Screen 6000

Repeat p.97

Arranging direction will be decided by the symbol of amount of design interval.
Unit of design interval: mm

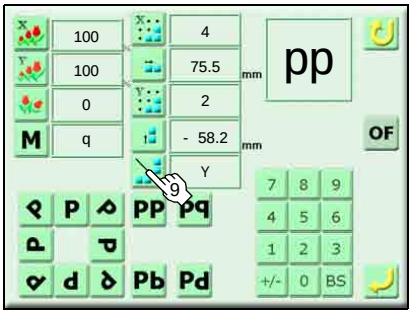


4. Design interval in Y direction



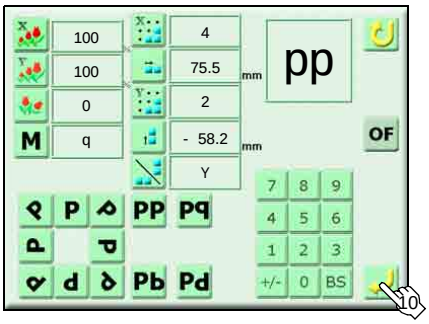
◀ Screen 6000

5. Priority direction



◀ Screen 6000

6. Register



◀ Screen 6000

Every pressing the icon will switch direction of priority (X/Y).

X priority

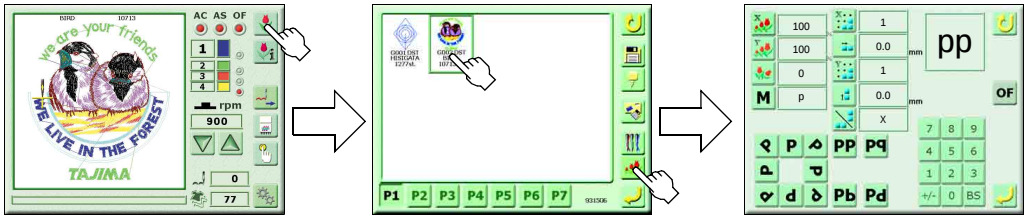
1	2	3	4	5
P	P	P	P	P
6	7	8	9	10
P	P	P	P	P

Y priority

1	3	5	7	9
P	P	P	P	P
2	4	6	8	10
P	P	P	P	P

12. REPEAT (CONVERTED ARRANGEMENT)

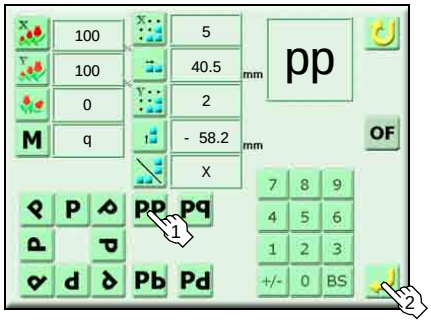
<How to call the screen>



Select the design to be set

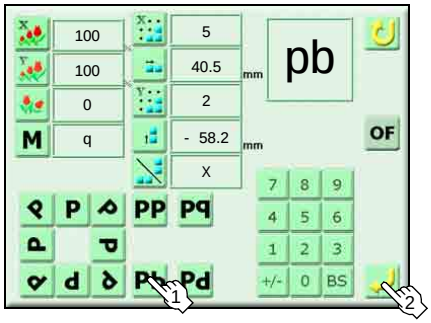
Converted arrangement p.97
Set “repeat”.

PP No conversion

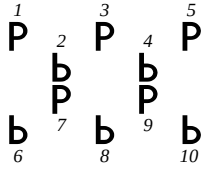


◀ Screen 6000

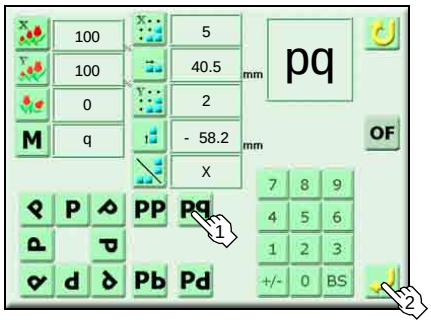
Pb X-axis mirror image conversion



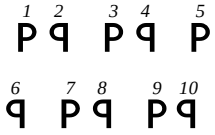
◀ Screen 6000



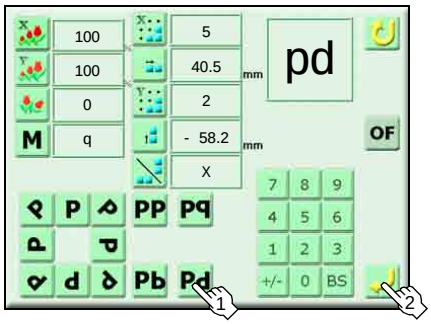
Pq Y-axis mirror image conversion



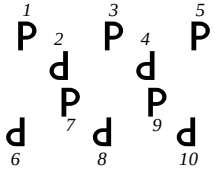
◀ Screen 6000



Pd 180° rotation



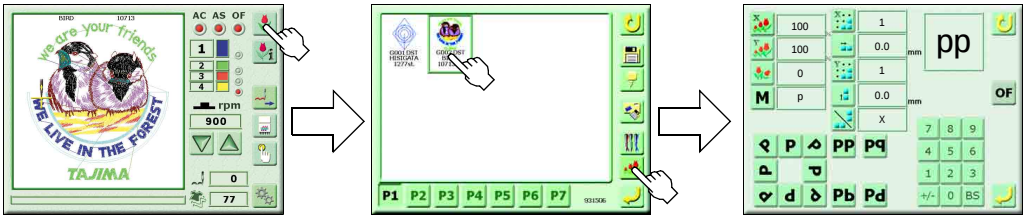
◀ Screen 6000



(GC02)

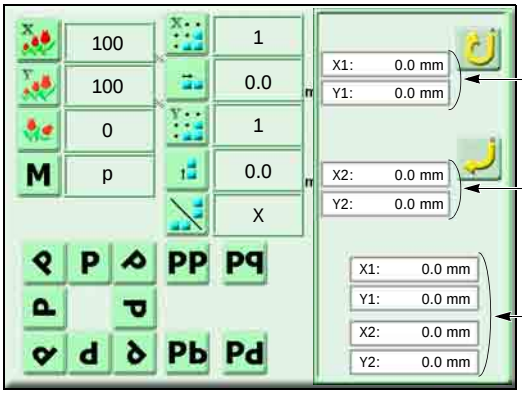
13. EXPLANATION ON THE SCREEN (AUTOMATIC OFFSET)

<How to call the screen>



Select the design to be set

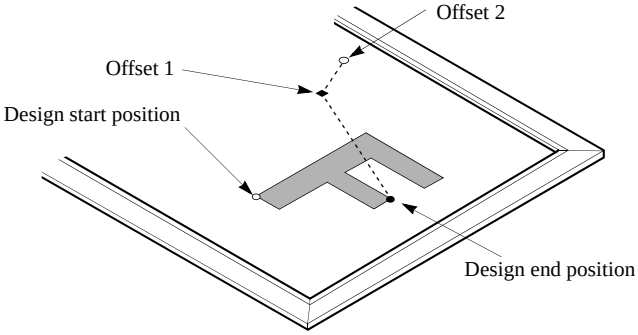
Setting screen for automatic offset



Setting position of offset 1

Setting position of offset 2

Offset position set in the last time

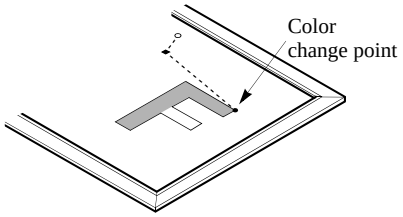


Automatic offset p.98

Automatic offset
This function makes the frame move to offset 1, or offset 2 through offset 2.

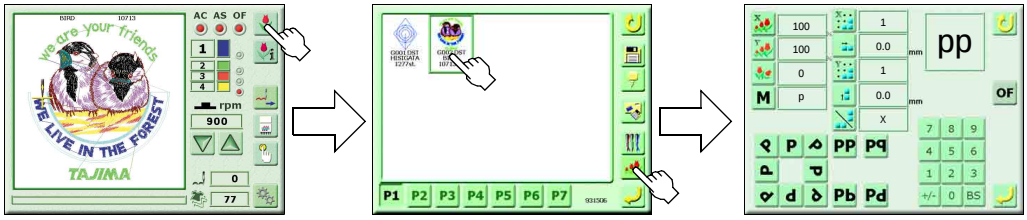
The offset position set in the last time will be stored until a new position is registered. When frame type is changed, the current setting will be reset.

Offsetting at automatic color change p.39
It makes the frame move to the offset position at color change points when the machine performs embroidery.



14. AUTOMATIC OFFSET

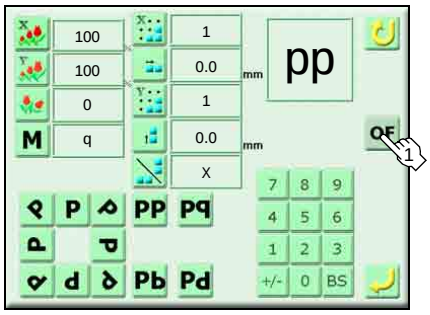
<How to call the screen>



Select the design to be set

Automatic offset p.98

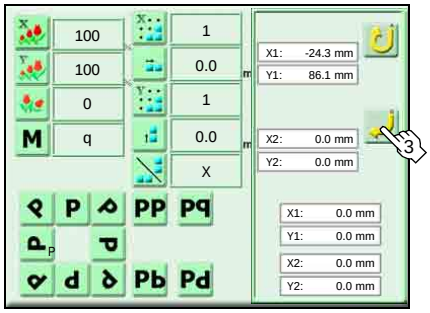
1. Select the automatic offset



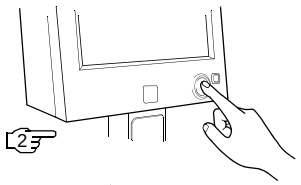
◀ Screen 6000

When registering offset 1 or offset 2 of automatic offset, automatic offset will be automatically set at that moment.

2. Input and registration of offset 1



◀ Screen 6100

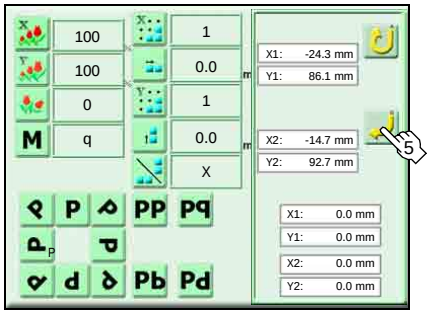


▲ Manual frame travel

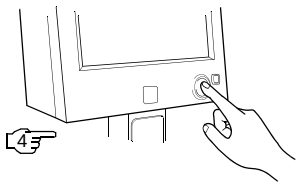
The position where the frame was moved manually is input as the coordinate value.

: Register the coordinate position.
To end a registration only with offset 1, perform registration once more without frame travel.

3. Input and registration of offset 2



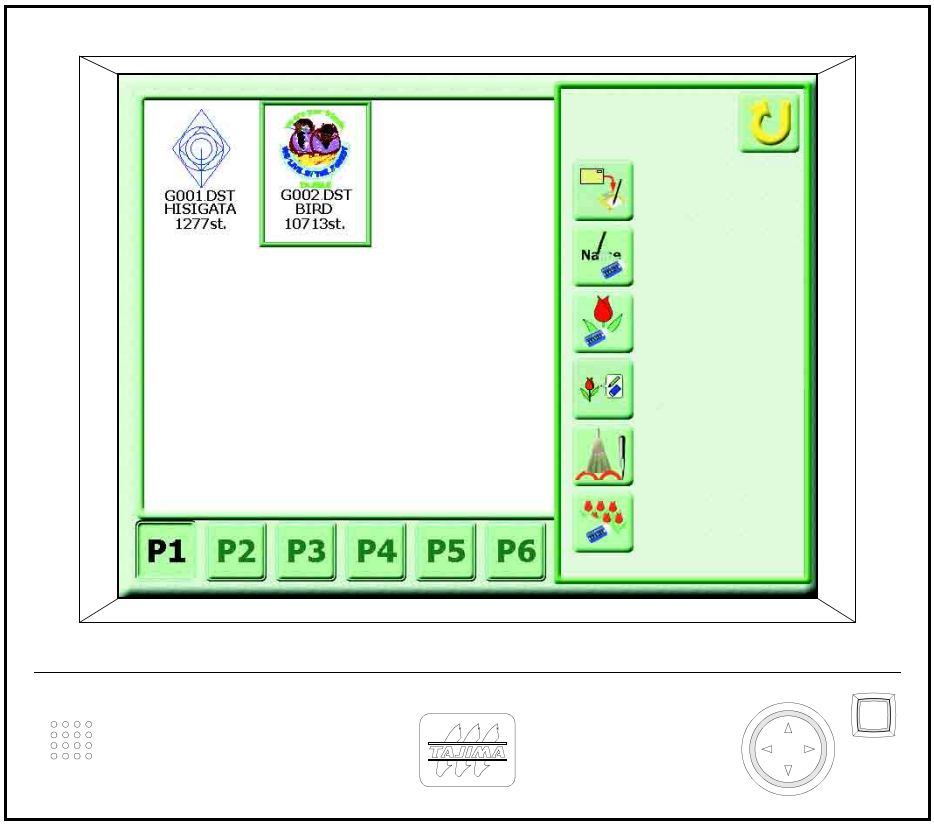
◀ Screen 6100



▲ Manual frame travel

Registration of offset 2 will cause offset 1 become a middle position at frame travel. Registration of offset 2 will end offset setting.

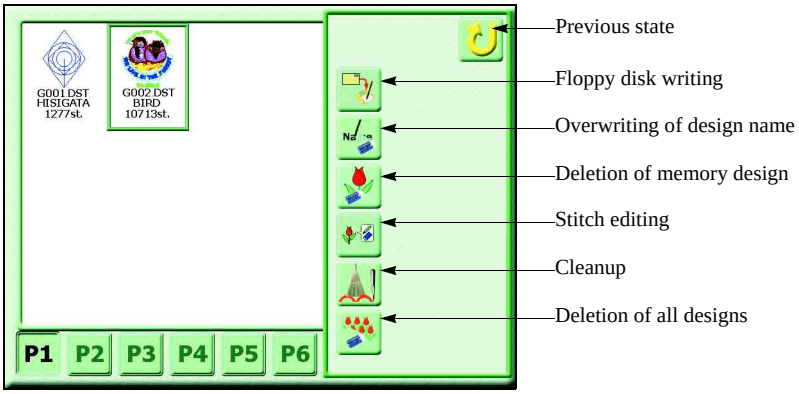
CHAPTER 6 DESIGN DATA MANAGEMENT



1. EXPLANATION ON THE SCREEN (SCREEN 2200)

<How to call the screen>

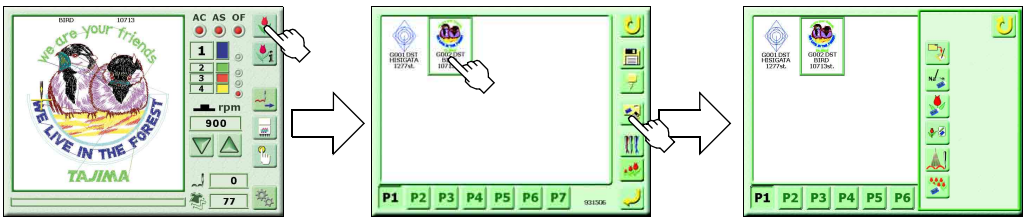
Design data management screen



Editing the design data that has been set, the data set will be canceled.

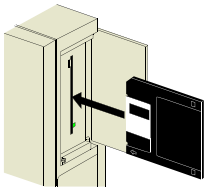
2. FLOPPY DISK WRITING

<How to call the screen>

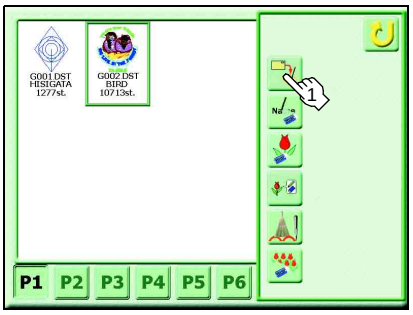


Select the design to edit

1. Insert the floppy disk.

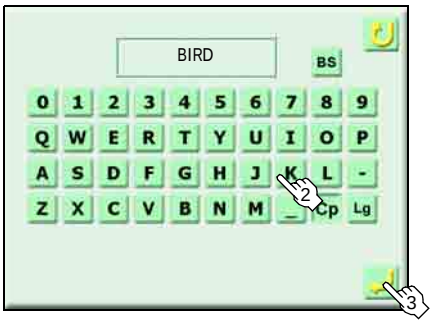


2. Select the floppy disk writing



◀ Screen 2200

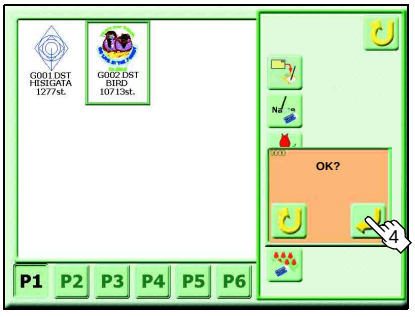
3. Input a file name



◀ Screen A000

Input of characters p.23

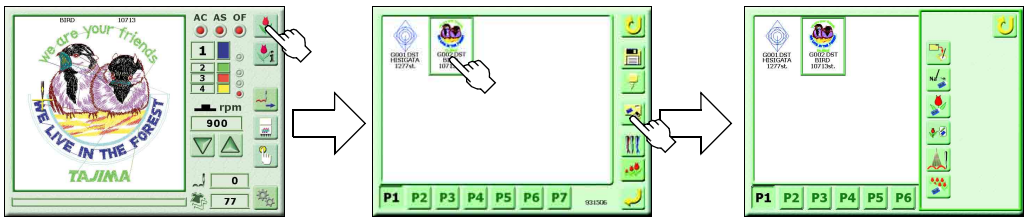
4. Confirm



◀ Screen 2200

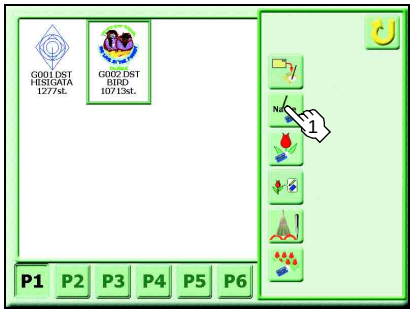
3. OVERWRITING OF DESIGN NAME

<How to call the screen>



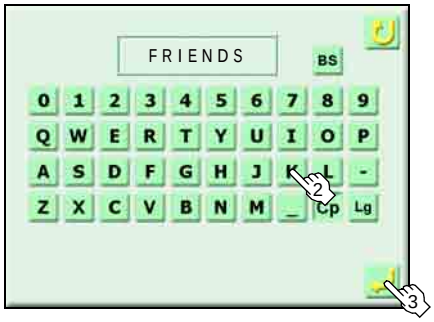
Select the design to edit

1. Select the overwriting of design name



◀ Screen 2200

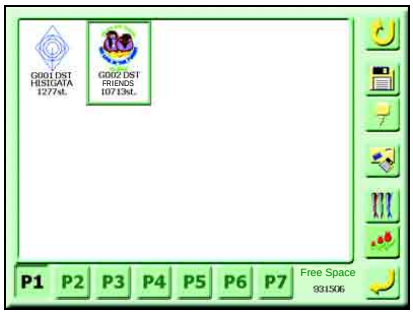
2. Overwriting of design name



◀ Screen A000

Input of characters p.23

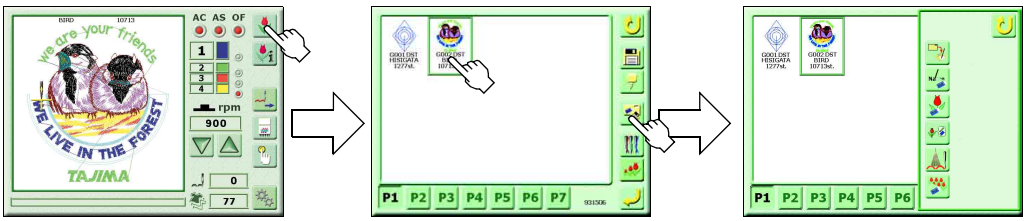
3. Completion



◀ Screen 2000

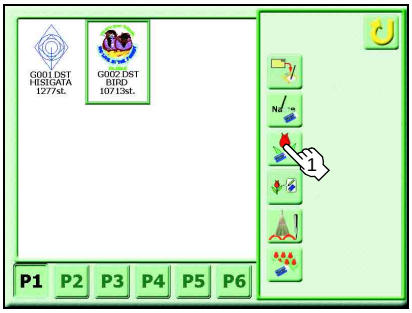
4. DELETION OF MEMORY DESIGN

<How to call the screen>



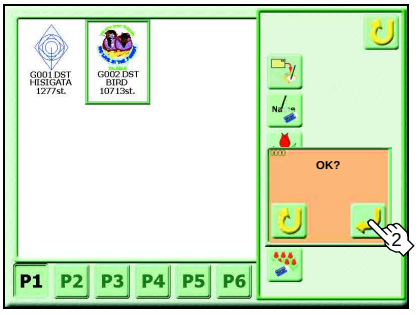
Selecting the design to delete

1. Select deletion of design



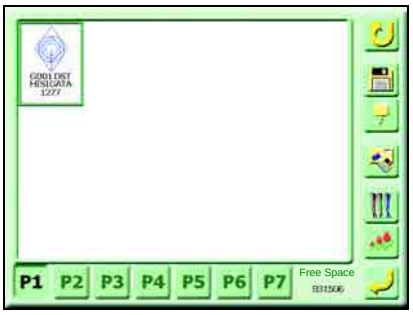
◀ Screen 2200

2. Confirm



◀ Screen 2200

3. Completion

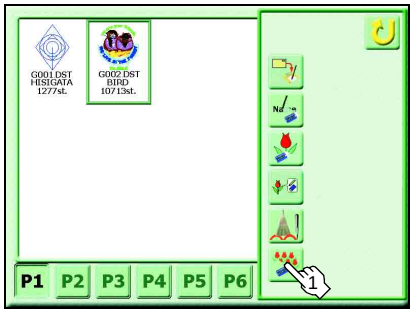


◀ Screen 2000

5. DELETION OF ALL DESIGNS

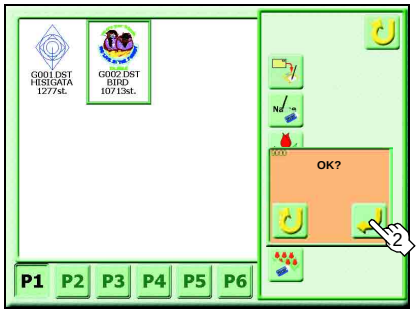
<How to call the screen>

1. Select the deletion of all designs



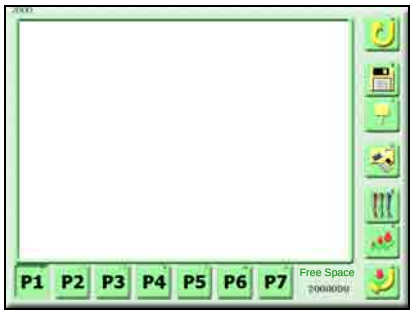
◀ Screen 2200

2. Confirm



◀ Screen 2200

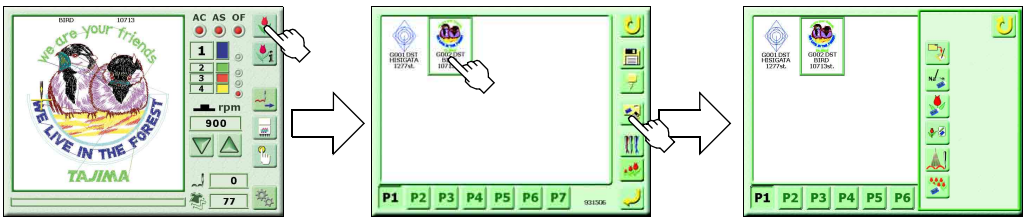
3. Completion



◀ Screen 2000

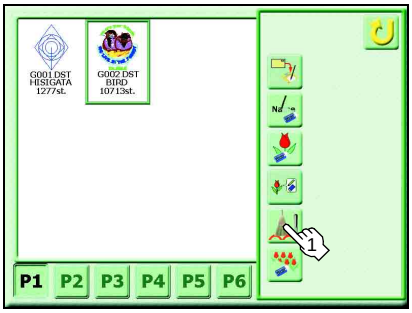
6. CLEANUP

<How to call the screen>



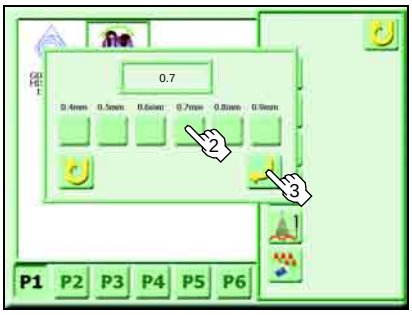
Select the design to edit

1. Select the cleanup



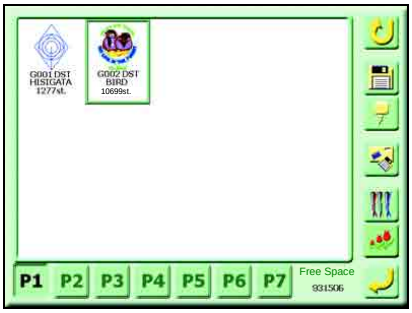
◀ Screen 2200

2. Cleanup processing



◀ Screen 2200

3. Completion



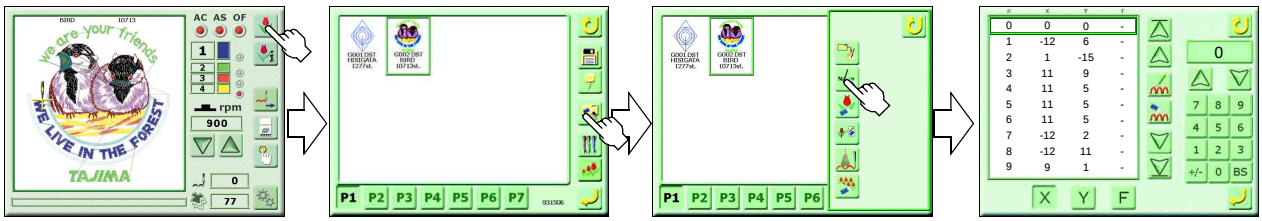
◀ Screen 2000

Cleanup is a function that makes the preceding and the succeeding stitches absorb a fine stitch to be removed to prevent thread coming off or thread breakage.

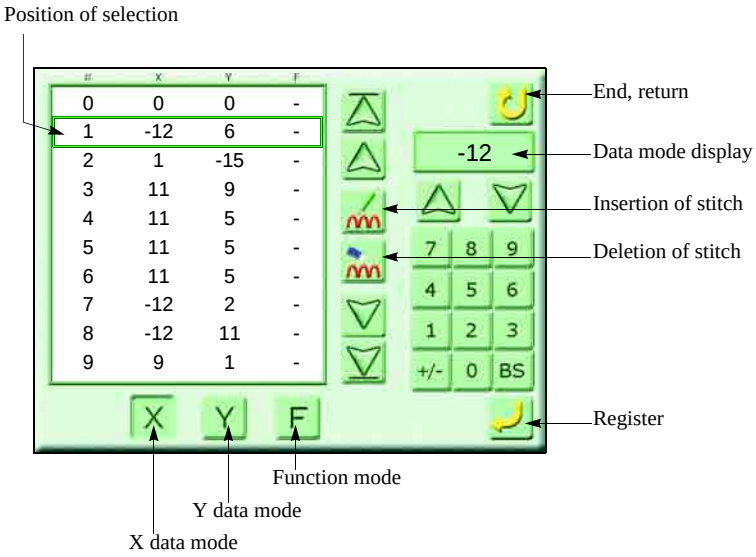
Applicable cleanup stitch lengths are 0.4 to 0.9 mm. As this function searches a corresponding stitch and makes the preceding and the succeeding stitches absorb it, the design will be somehow changed.

7. EXPLANATION ON THE SCREEN (SCREEN 8000)

<How to call the screen>

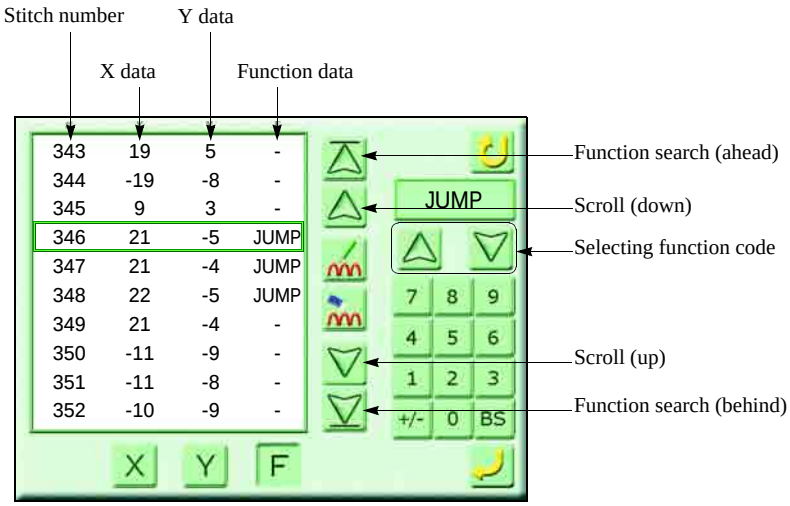


Stitch editing screen



Stitch data
Unit of X, Y stitch data is 0.1 mm. Each stitch data is displayed with relative coordinates assuming the coordinates prior to one stitch are (0, 0).

Data mode display
Selecting either X or Y function mode will display data that exists at the mode of the selecting position.

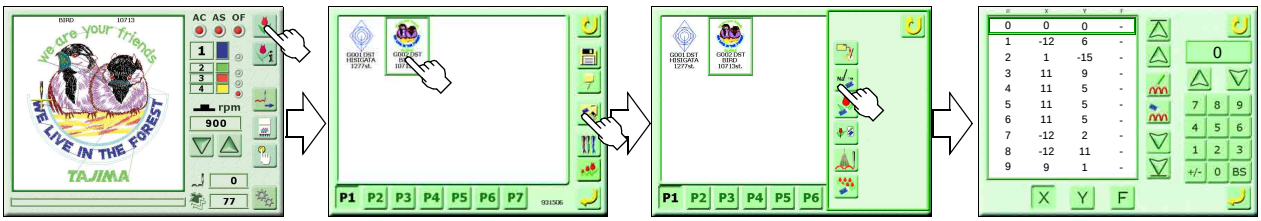


Function search
When performing searching after selecting the function mode and the function code, the machine will search data existing near forward or backward of the function code to display.

Scroll
Data by 10 stitches of forward/backward will be displayed.

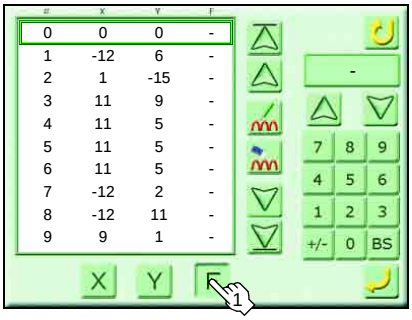
8. FUNCTION SEARCH

<How to call the screen>



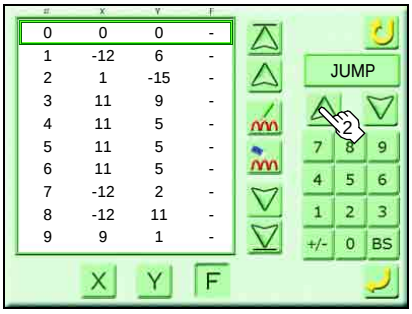
Select the design to edit

1. Select the function mode



◀ Screen 8000

2. Select the function code

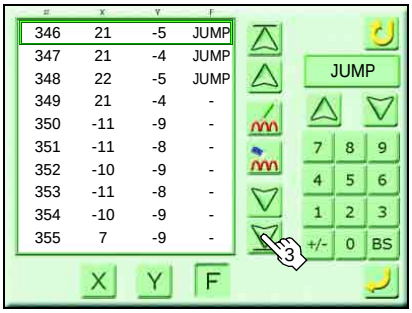


◀ Screen 8000

📖 Function code

END	End
SEQ	Sequin
ATH	Automatic thread trimming (ATH)
LOW	Low speed revolution
HIGH	High speed revolution
JUMP	Jump
STOP	Stop (color change)
-	Stitch

3. Function search

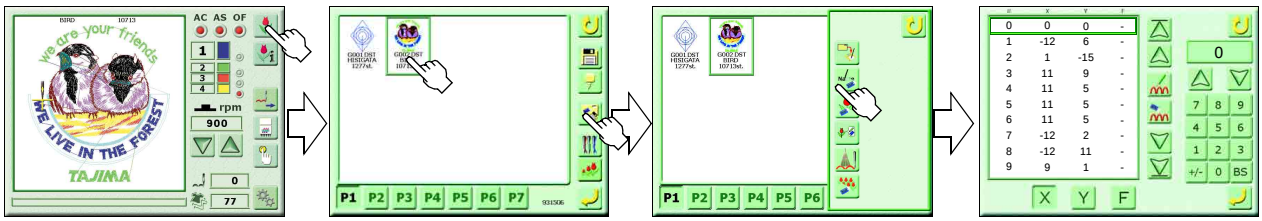


◀ Screen 8000

📖 It is possible to search other function codes with the same operation.

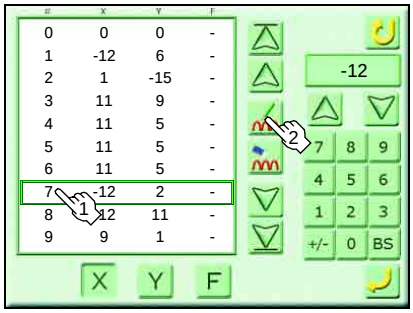
9. INSERTION OF STITCH

<How to call the screen>



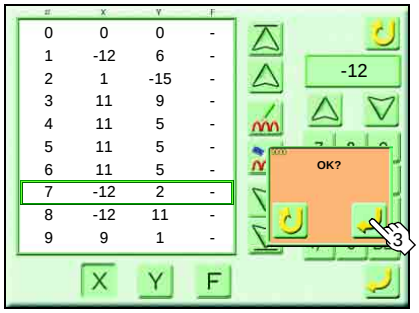
Select the design to edit

1. Selection and insertion of stitch



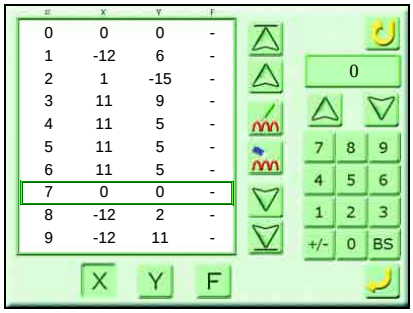
◀ Screen 8000

2. Confirm



◀ Screen 8000

3. Completion

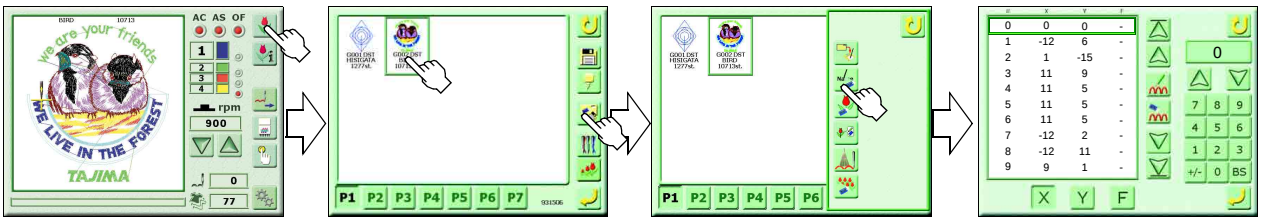


◀ Screen 8000

📖 When performing insertion, stitch of (X, Y) = (0, 0) will be inserted.

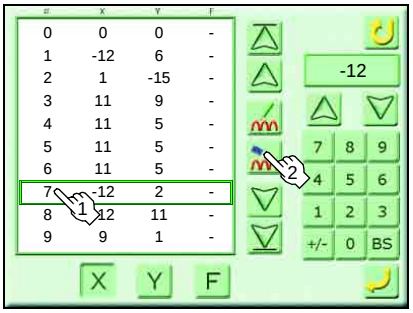
10. DELETION OF STITCH

<How to call the screen>



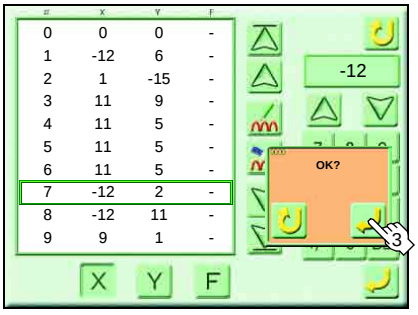
Select the design to edit

1. Selection and deletion of stitch



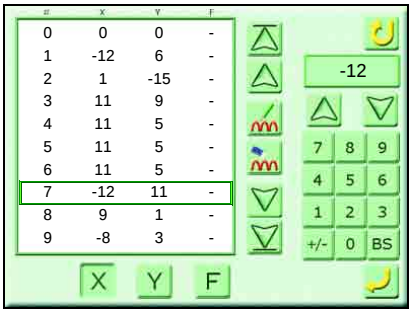
◀ Screen 8000

2. Confirm



◀ Screen 8000

3. Completion

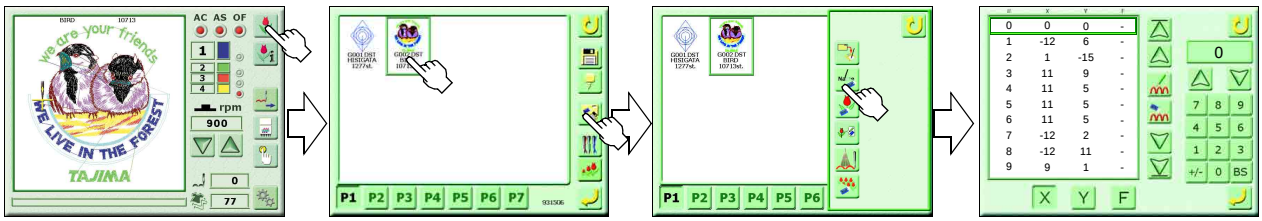


◀ Screen 8000

📖 When performing deletion, the stitch being selected and the following ones will be moved up.

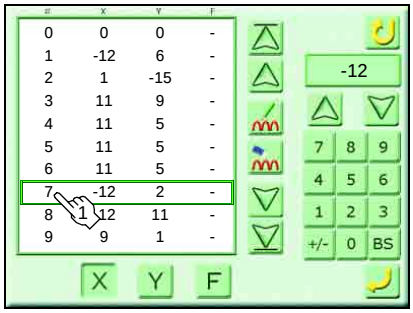
11. MODIFICATION OF STITCH DATA

<How to call the screen>



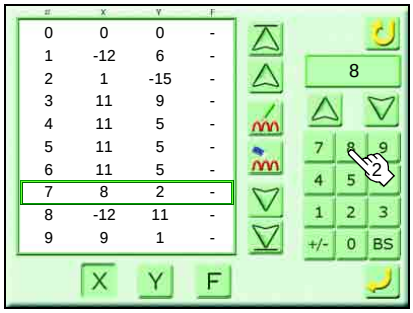
Select the design to edit

1. Select a stitch



◀ Screen 8000

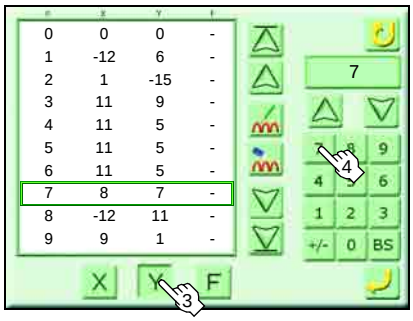
2. Modify the X data



◀ Screen 8000

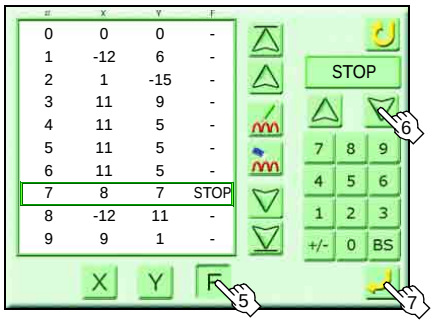
📖 XY setting range: -12.7 to +12.7 (mm)

3. Selection and modification of Y data

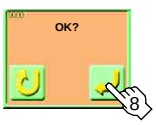


◀ Screen 8000

4. Selection, modification, and registration of function code



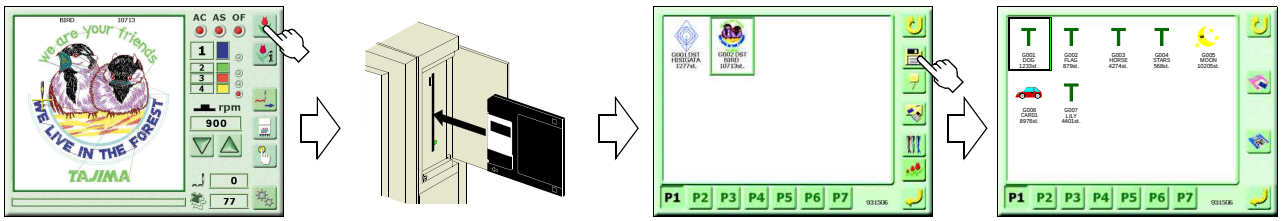
◀ Screen 8000



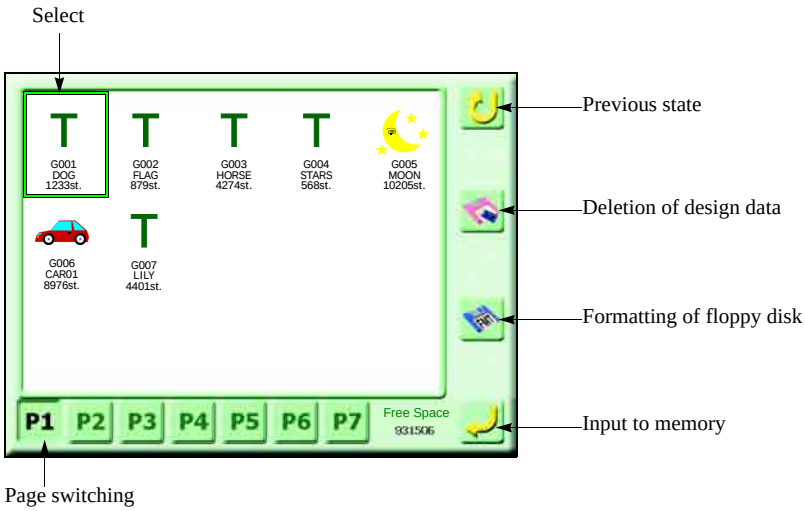
📖 Function code p.57

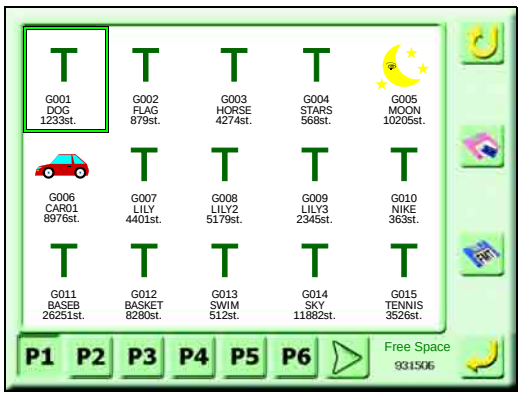
12. EXPLANATION ON THE SCREEN (SCREEN 3000)

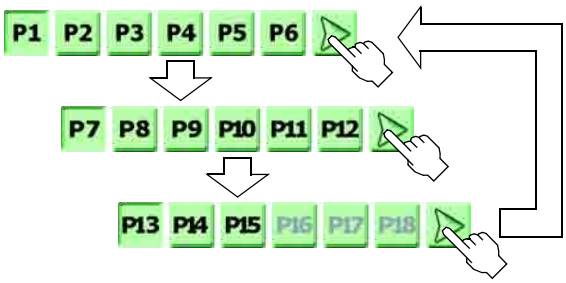
<How to call the screen>



Floppy disk edit screen





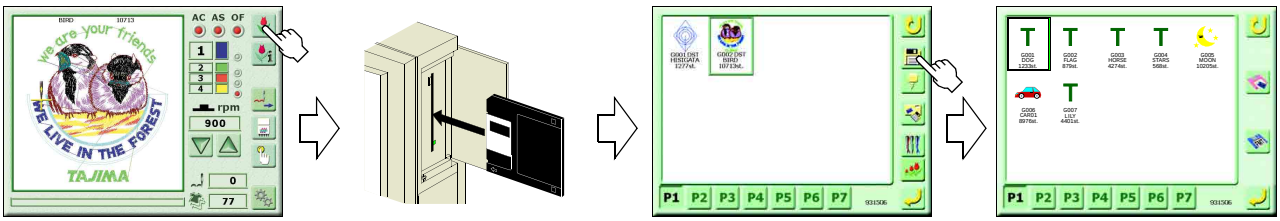


Thumbnail
Pressing the design data being selected once more will display the thumbnail.

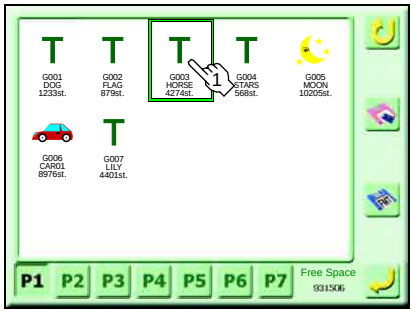
Design data stored in a floppy disk will be displayed by 15 designs.
When design data is stored in “P7” or upper ones, switch the screen as shown in the left illustration.

13. DELETION OF DESIGN DATA IN FLOPPY DISK

<How to call the screen>

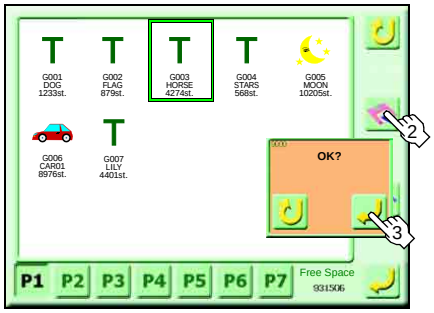


1. Select the design data



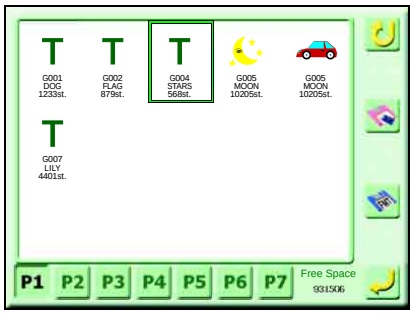
◀ Screen 4000

2. Delete the design data



◀ Screen 4000

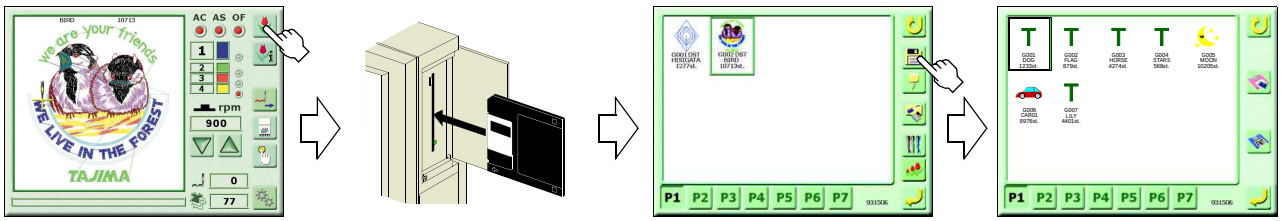
3. Result



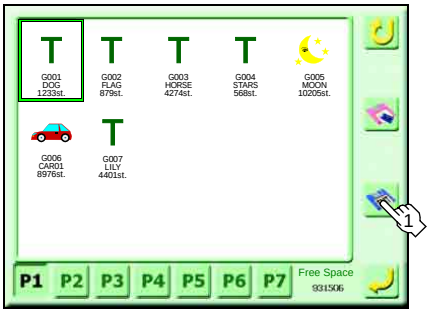
◀ Screen 4000

14. FORMATTING OF FLOPPY DISK

<How to call the screen>

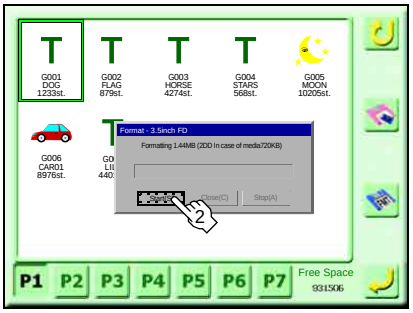


1. Select formatting

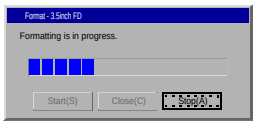


◀ Screen 4000

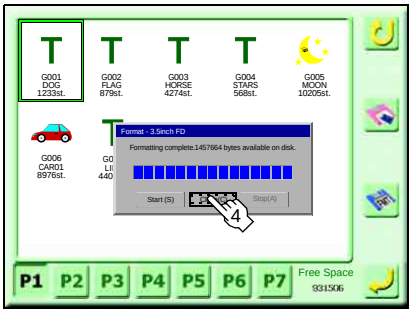
2. Start formatting



◀ Screen 4000



3. Completion



◀ Screen 4000

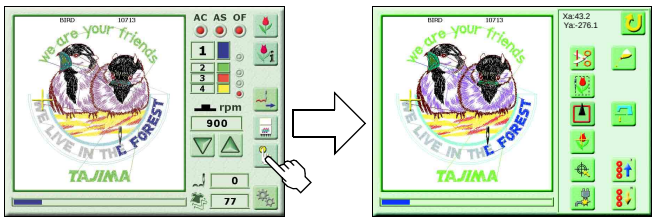
Setting an unformatted floppy disk will display the message. Press “OK” to follow the procedure.

[BC1]
It will be displayed if a floppy disk without design data is set.
Cancel the setting to continue the operation.

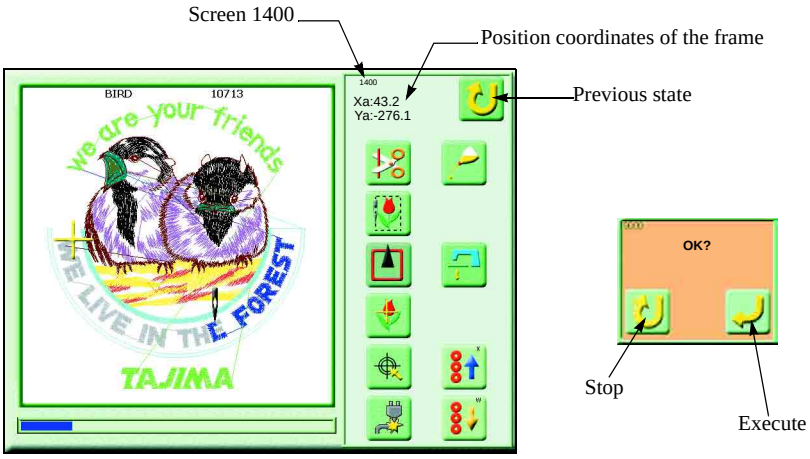
CHAPTER 7 MANUAL OPERATION

1. EXPLANATION ON THE SCREEN (SCREEN 1400)

<How to call the screen>



Design data management screen

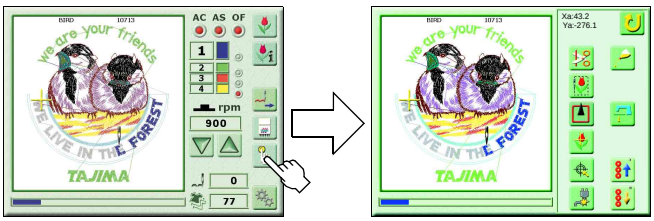


- Thread trimming
- Trace
- Manual offset
- Design start position
- Frame origin memory
- Power resume
- Automatic lubrication (option)
- Table up/down (TEHX-C multi head machine)
- Sequin device raising
- Sequin device lowering

Some icons are not displayed depending on models and specifications.

2. THREAD TRIMMING/TRACE

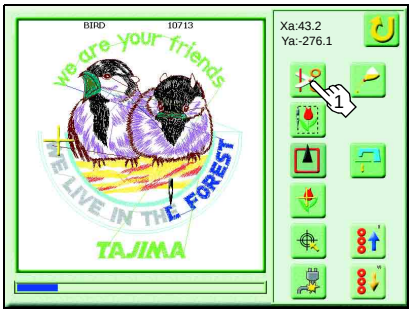
<How to call the screen>



WARNING

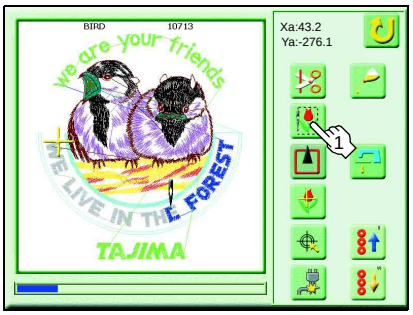
When performing this operation, do not put your hands under the needle or on the machine table. If your hands are under the needle or on the machine table, you may be injured by the needle or the moving frame.

Thread trimming

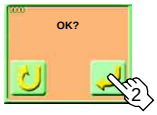


◀ Screen 1400

Trace



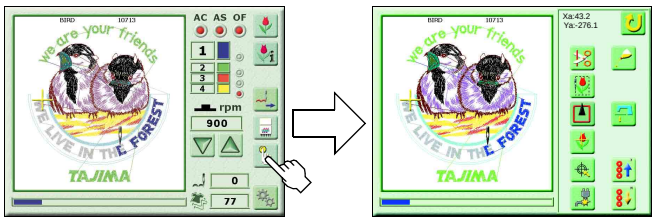
◀ Screen 1400



Trace p.100

3. MANUAL OFFSET/DESIGN START POSITION

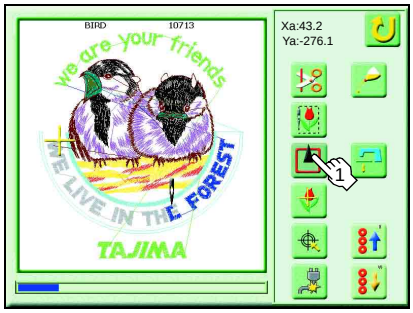
<How to call the screen>



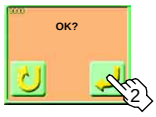
WARNING

When performing this operation, do not put your hands under the needle or on the machine table. If your hands are under the needle or on the machine table, you may be injured by the needle or the moving frame.

Manual offset

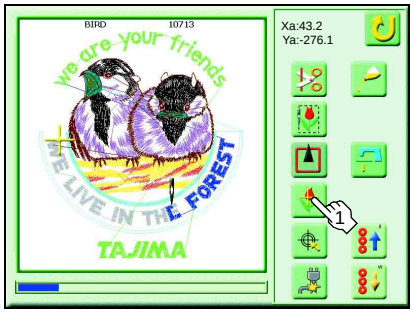


◀ Screen 1400



Return the frame that was moved to the original position.
Manual offset p.98

Design start position

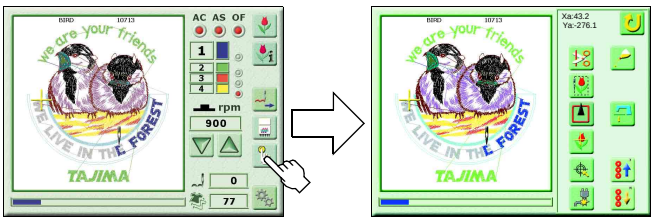


◀ Screen 1400

The frame will move to start position of design.

4. FRAME ORIGIN MEMORY (TFHX-II, TFHX-IIC)

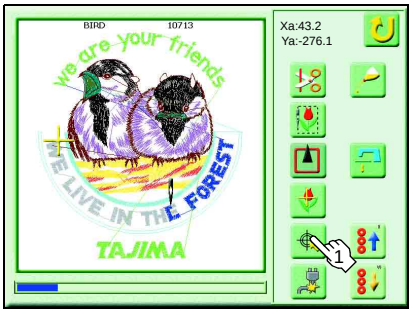
<How to call the screen>



WARNING

When performing this operation, do not put your hands under the needle or on the machine table. If your hands are under the needle or on the machine table, you may be injured by the needle or the moving frame.

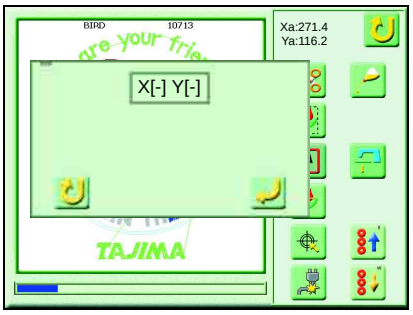
1. Select frame origin memory



◀ Screen 1400

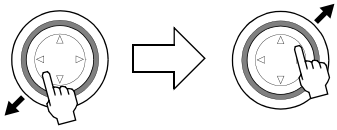
Move the frame by frame travel key to make the machine memorize the origin of the embroidery frame.
Perform this operation after the software was installed or when the frame was moved during turning off the power.

2. Search the origin



◀ Screen 1400

Frame travel key

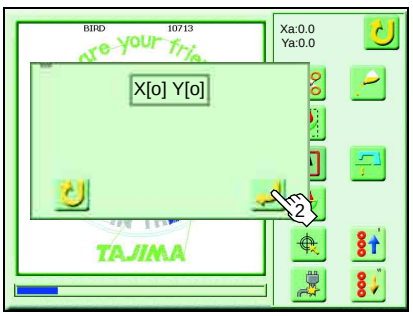


Move the frame by frame travel key to the left of the front. When the frame comes not to move, move the frame to the rear right direction.

Set the frame travel keys to 8-direction travel. p.92

It is not possible to use jog remote-controller.

3. Memorize the origin



◀ Screen 1400

X[-] Y[-] No detection

X[o] Y[-] Detection of X-axis only

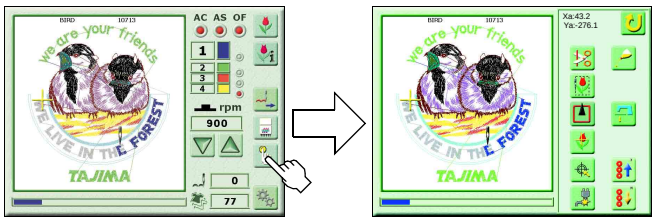
X[o] Y[o] Detection of the origins of both axes

When the position of the origin is searched, [-] will switch to [o]. When the origins of both axes are searched, make the machine memorize the positions.

When the machine memorizes the origin, the frame will return to the original position.

5. FRAME ORIGIN MEMORY (TEHX-C, TFHX, TFHX-C)

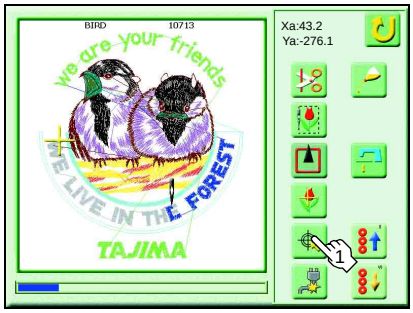
<How to call the screen>



WARNING

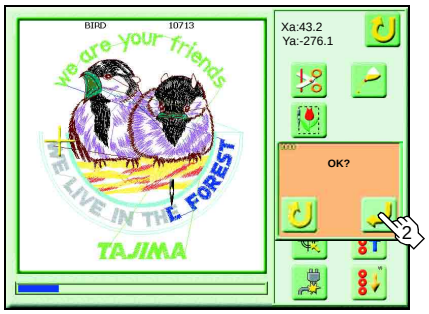
When performing this operation, do not put your hands under the needle or on the machine table. If your hands are under the needle or on the machine table, you may be injured by the needle or the moving frame.

1. Select frame origin memory



◀ Screen 1400

2. Execute



◀ Screen 1400

The machine will perform frame travel automatically, and memorize the origin of the embroidery frame.
Perform this operation after the software was installed or when the frame was moved during turning off the power.

Execution of frame origin memory will cause the frame to move automatically to search the origin.

When the machine memorizes the origin, the frame will return to the original position.

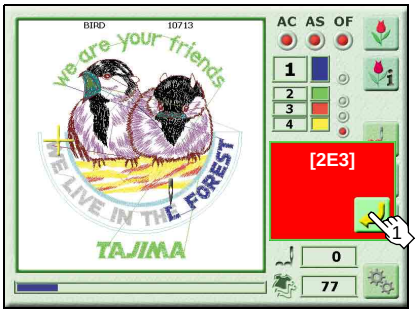
6. POWER RESUME (TFHX-II, TFHX-II)

WARNING

When performing this operation, do not put your hands under the needle or on the machine table. If your hands are under the needle or on the machine table, you may be injured by the needle or the moving frame.

Turning on the power again
In case of power shut off by emergency stop, turn “ON” the power to start operation.
In case of power shut off by power failure, turn “OFF” the power and then turn it “ON” to start operation.

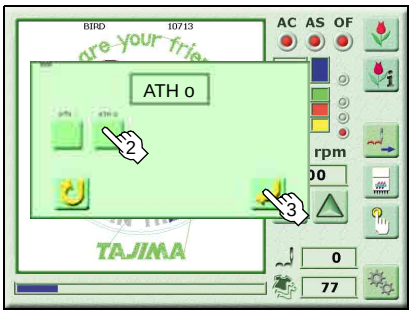
1. Machine stop code



◀ Screen 1000

Power resume function moves the frame to the position where the power was shut off during embroidery to prevent displacement of design.

2. Selecting the thread trimming

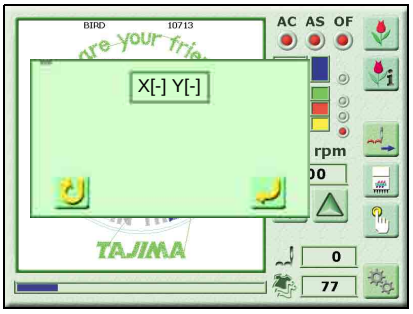


◀ Screen 1000

Automatic thread trimming (ATH)

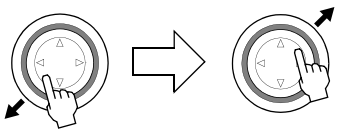
ATH -	Not to perform thread trimming
ATH o	To perform thread trimming

3. Search the origin



◀ Screen 1000

Frame travel key

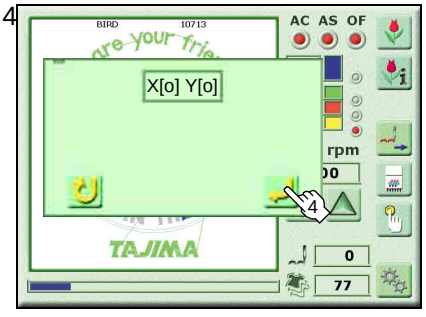


Move the frame by frame travel key to the left of the front. When the frame comes not to move, move the frame to the rear right direction.

Set the frame travel keys to 8-direction travel. p.92

It is not possible to use jog remote-controller.

4



◀ Screen 1000

X[-] Y[-]	No detection
X[o] Y[-]	Detection of X-axis only
X[o] Y[o]	Detection of the origins of both axes

When the position of the origin is searched, [-] will switch to [o]. When the origins of both axes are searched, make the machine memorize the positions.

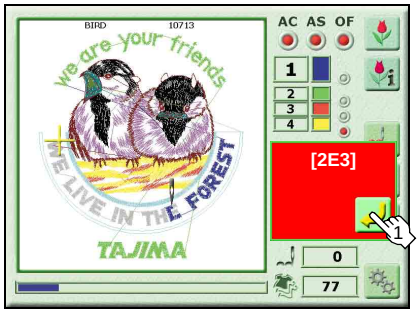
When the machine memorizes the origin, the frame will return to the position where the power was shut off.

7. POWER RESUME (TEHX-C, TFHX, TFHX-C)

WARNING

When performing this operation, do not put your hands under the needle or on the machine table. If your hands are under the needle or on the machine table, you may be injured by the needle or the moving frame.

1. Machine stop code

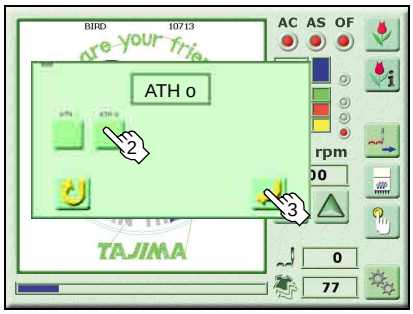


◀ Screen 1000

Turning on the power again
In case of power shut off by emergency stop, turn “ON” the power to start operation.
In case of power shut off by power failure, turn “OFF” the power and then turn it “ON” to start operation.

Power resume function moves the frame to the position where the power was shut off during embroidery to prevent displacement of design.

2. Selecting the thread trimming



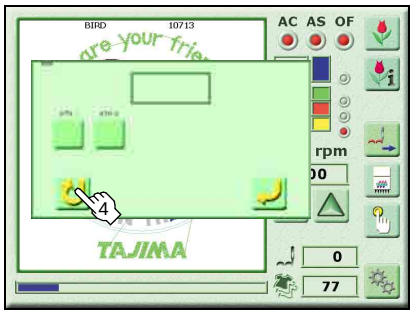
◀ Screen 1000

Automatic thread trimming (ATH)

ATH -	Not to perform thread trimming
ATH o	To perform thread trimming

Selection and execution of thread trimming will cause the frame to move automatically after thread trimming to search the origin.

3. End

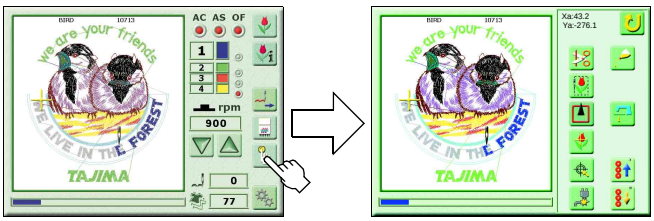


◀ Screen 1000

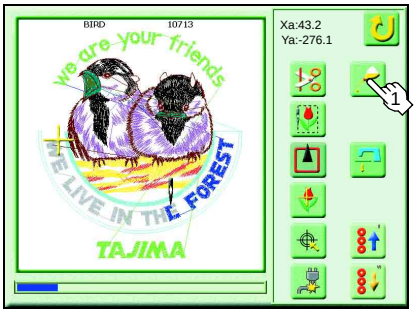
When the origin is searched, the frame will return to the position where the power was shut off and power resume operation will finish.

8. AUTOMATIC LUBRICATION SYSTEM (OPTION)

<How to call the screen>

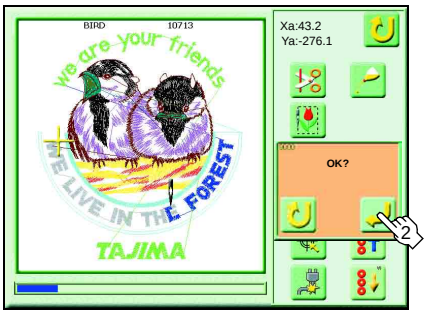


1. Select automatic lubrication system



◀ Screen 1400

2. Execute

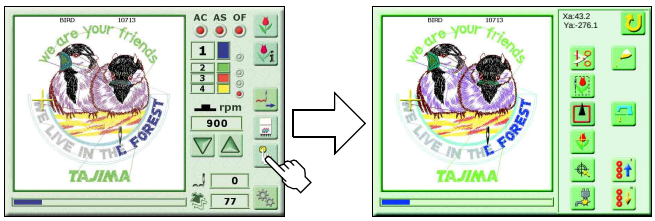


◀ Screen 1400

📖 It activates the automatic lubrication system to supply oil to the machine.

9. TABLE UP/DOWN DEVICE (TEHX-C)

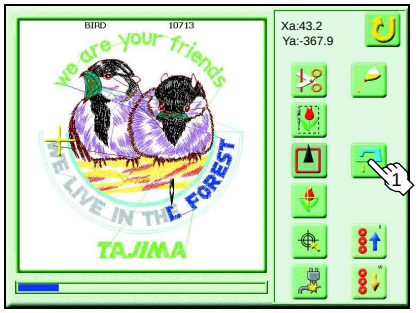
<How to call the screen>



WARNING

When performing this operation, do not put your hands under the needle or on the machine table. If your hands are under the needle or on the machine table, you may be injured by the needle or the moving frame.

1. Select table up/down device

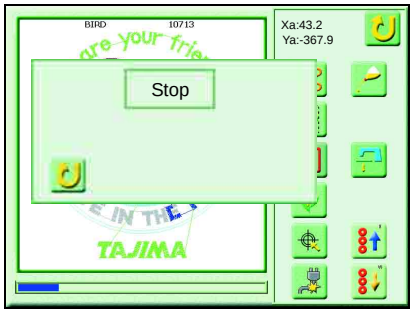


◀ Screen 1400

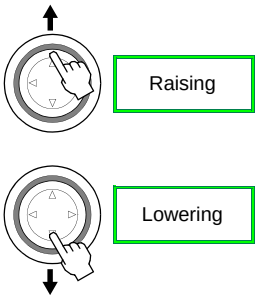
📖 It activates the table up/down device to adjust table height.

📖 When performing this operation, move the frame to the rearmost.
When the frame is positioned at the front, error code “228” will be displayed. p.106

2. Up/down operation



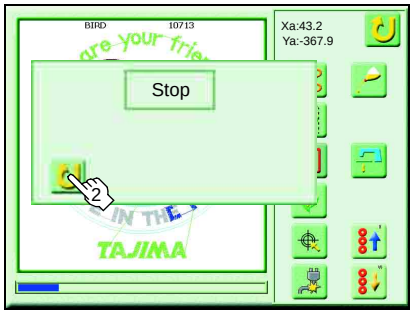
◀ Screen 1400



📖 Move up/down the table using frame travel key.

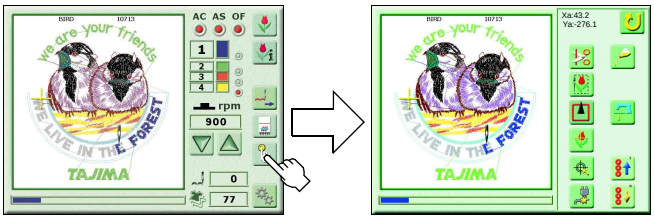
📖 It is not possible to use jog remote-controller.

3. End



◀ Screen 1400

10. SEQUIN DEVICE

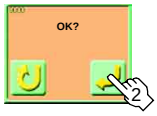


WARNING

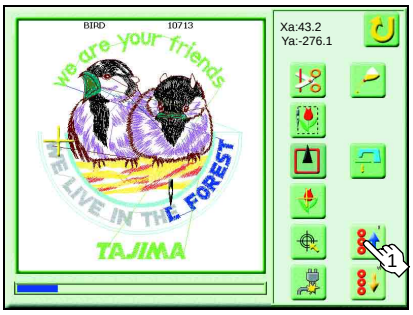
When performing this operation, do not put your hands under the needle or on the machine table. If your hands are under the needle or on the machine table, you may be injured by the needle or the moving frame.

Sequin device lowering

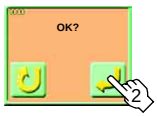
◀ Screen 1400



Sequin device raising

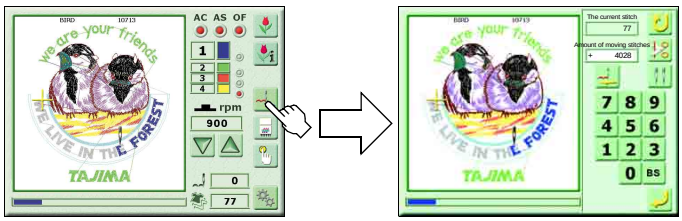


◀ Screen 1400

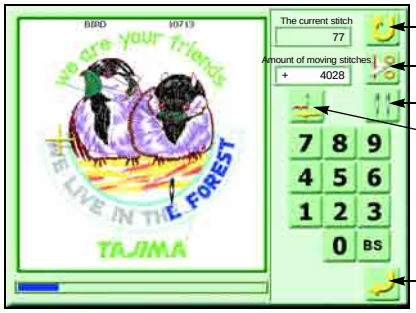


11. FRAME BACK/FORWARD

<How to call the screen>



Explanation on the screen (screen 1200)



Frame back breaks embroidery and moves only the frame to the direction where stitches return.
Frame forward breaks the embroidery and causes only the frame to move to the direction where stitch(es) advance.

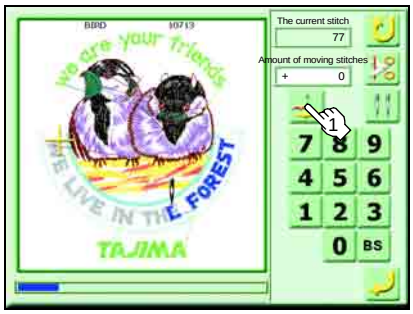
+/- of amount of moving stitches changes to frame back "-", or frame forward "+".

Every pressing switches frame back/forward.

CAUTION

When performing this operation, do not put your hands, etc. on the machine table. Moving embroidery frame will cause you injured.

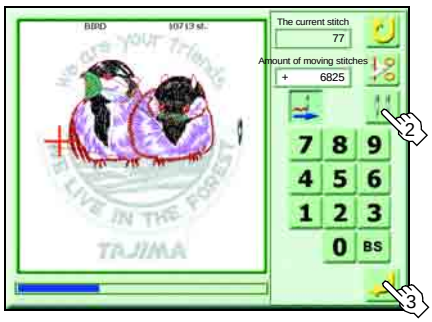
1. Select frame back/forward



◀ Screen 1200

Perform thread trimming if necessary.

2. Input and execution of amount of moving stitches



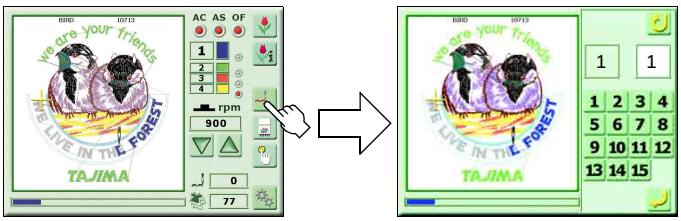
◀ Screen 1200

Every pressing of stop code searching will search the next stop code.
It is also possible to input the number of stitches by numerical keys.

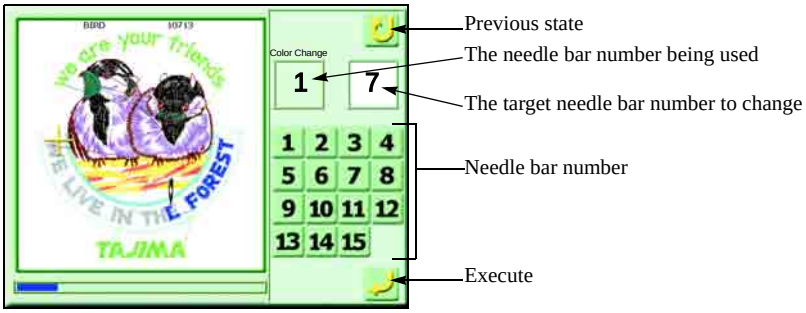
Execution will perform frame back/forward by the specified stitches.

12. MANUAL COLOR CHANGE (SCREEN 1300)

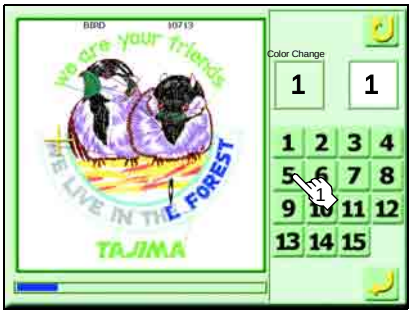
<How to call the screen>



EXPLANATION ON THE SCREEN



1. Select the needle bar to change



◀ Screen 1200

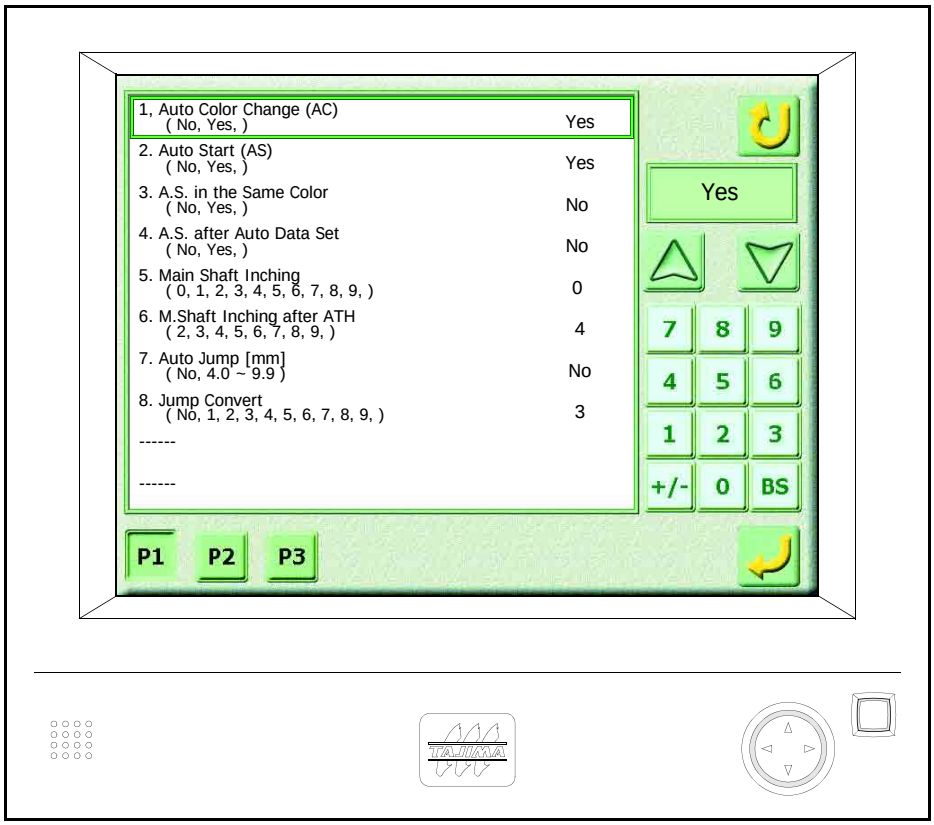
2. Execute

◀ Screen 1200

Manual color change can change needle bar at embroidering without changing needle bar setting.

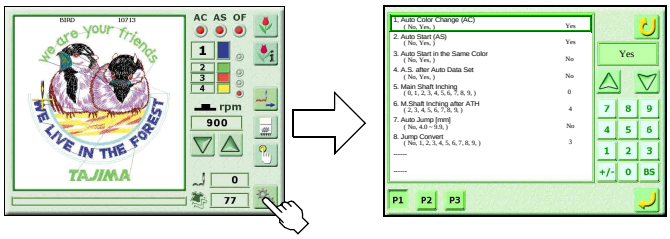
When performing manual color change, set the parameter “1. Auto Color Change” to “No”. When “Yes” is set, needle bar will return to the original needle bar at start of embroidery even if performing manual color change. p.81

CHAPTER 8 PARAMETER SETTING

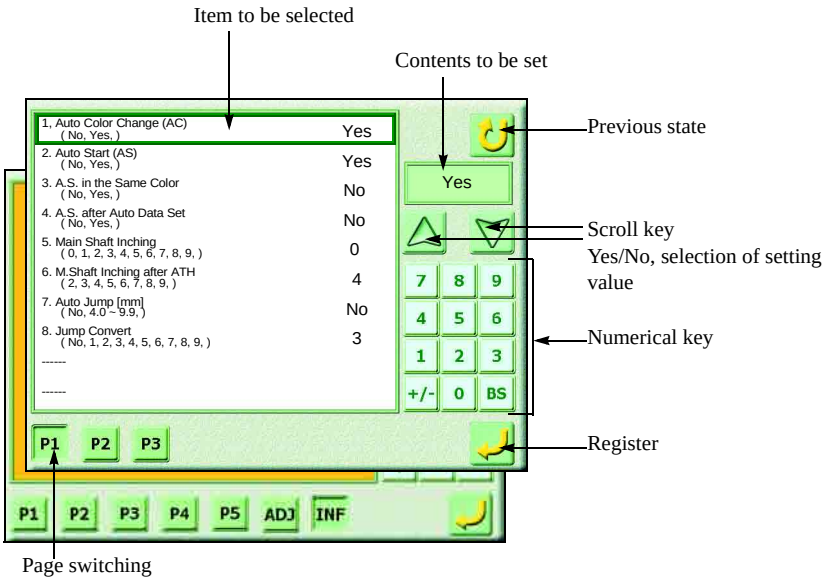


EXPLANATION ON THE SCREEN

<How to call the screen>



Parameter setting screen



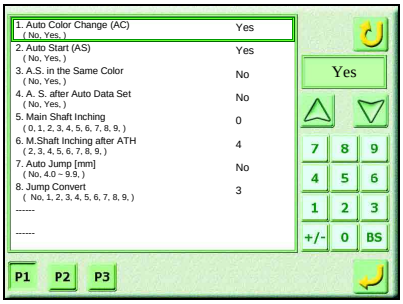
📖 Setting items of parameter may not be displayed depending on machine specification. Setting items of parameter may be different from this manual due to research and development.

📖 It is possible to input all setting values by using the scroll key.

📖 Input of setting value by numerical key
In case of inputting value only, it is also possible to perform input by numerical key.
Perform input after deleting value by “BS key”.
It is not possible to register values outside the setting range.

📖 Page switching
Pressing “P3” twice will display “P4, P5”.
Pressing “P5” twice will “ADJ”.
pressing “ADJ” twice will display “INF”.

1. Auto Color Change (AC)

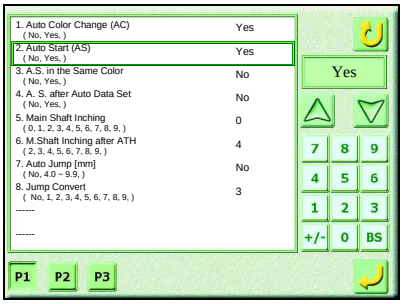


(Yes/No)

When needle bar step switches, automatic color change will be performed.

Yes	To perform automatic color change automatically "AC" lamp of the screen 1000 lights in red
No	Not to perform automatic color change automatically

2. Auto Start (AS)



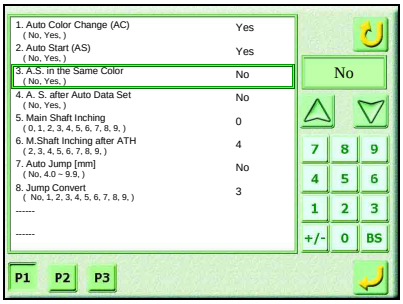
(Yes/No)

When needle bar step changes, automatic start will be performed.

Yes	Automatic start is performed "AS" lamp of the screen 1000 lights in red
No	Automatic start is not performed

It is possible to make setting when "Yes" is set to "1. Auto Color Change".

3. A.S. in the Same Color



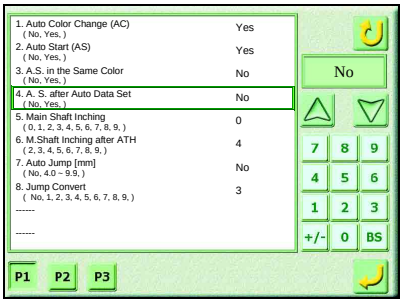
(Yes/No)

Even if the same needle bar is selected before and after color change, automatic start will be performed.

Yes	Automatic start is performed
No	Automatic start is not performed

It is possible to make setting when "Yes" is set to "2. Auto Start".

4. A. S. after Auto Data Set



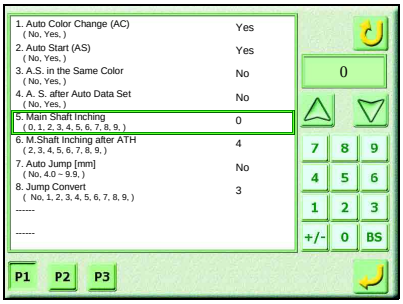
(Yes/No)

It makes the machine start automatically to perform embroidery repeatedly at the same position after finishing the same design.

Yes	Automatic start is performed
No	Automatic start is not performed

It is possible to make setting when "Yes" is set to "2. Auto Start".

5. Main Shaft Inching

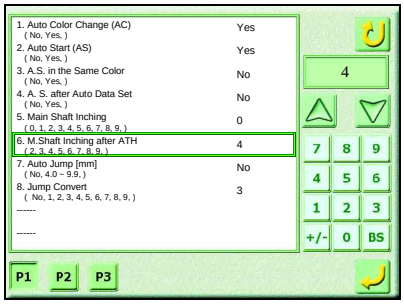


(0 ~ 9)

It makes the machine perform inching when the machine starts.

"0" does not perform inching after start of the machine.

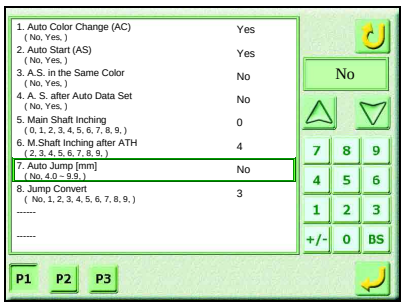
6. M.Shaft Inching after ATH



(2 ~ 9)

It makes the machine perform inching the number of set times at machine start after thread trimming.

7. Auto Jump [mm]

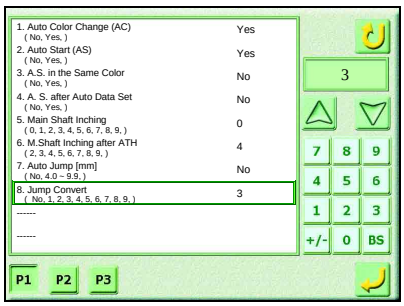


(No/ 4.0~9.9)

When a stitch length is longer than the auto jump length being set, it will make the stitch perform auto jump.

- 🕮 "No" does not make auto jump.

8. Jump Convert

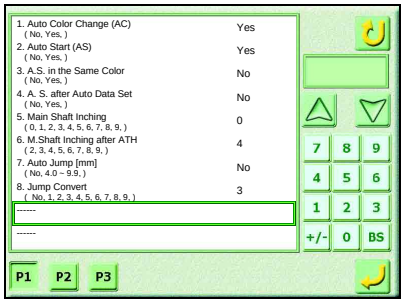


(No/ 1~9)

When jump codes continue the number of set times and more consecutively, it converts the consecutive jump codes to frame stepping.

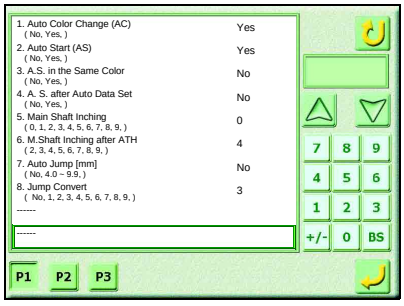
- 🕮 Frame stepping moves the frame with the main shaft kept stopping.
- 🕮 "No" does not make jump conversion.
- 🕮 It is not possible to convert automatic jump.

9. ------



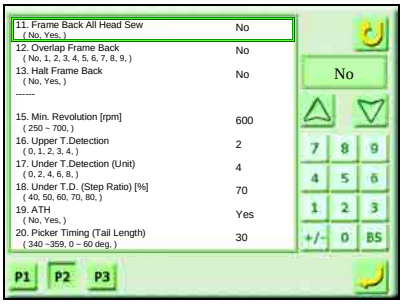
It is not applied.

10. ------



It is not applied.

11. Frame Back All Head Sew

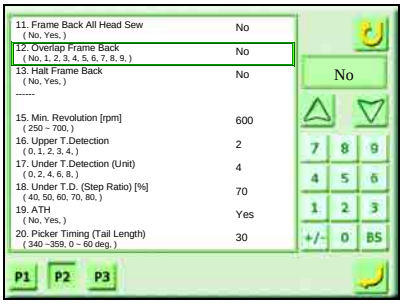


(Yes/No)

Make the machine perform embroidery with all heads when the machine starts after frame back.

Yes	To perform embroidery with all heads
No	Only the head where thread breakage occurred performs embroidery

12. Overlap Frame Back

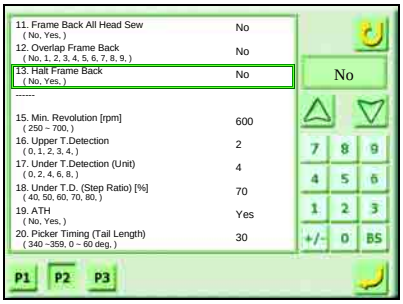


(No/ 1~9)

It makes all-head sewing from set number of stitches prior to the detecting point of thread breakage when the machine starts after frame back.

- It is effective when “11. F.B. All Head Sew” is set to “No”.
- “No” performs all head embroidery from thread breakage detecting point

13. Halt Frame Back

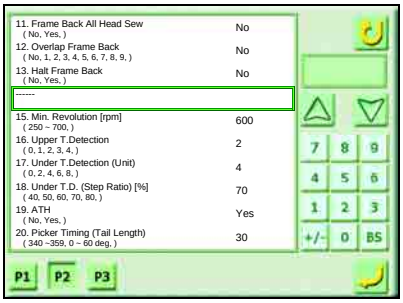


(Yes/No)

When starting the machine after frame back, make the machine stop at all head sewing start point.

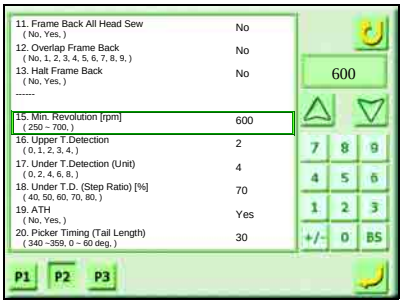
Yes	To stop
No	No to stop

14. ------



It is not applied.

15. Min. Revolution [rpm]

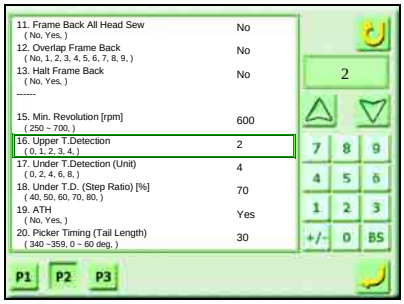


(250 ~ 700)

Lower limit of operating r.p.m.

- Inching is not included.

16. Upper T.Detection

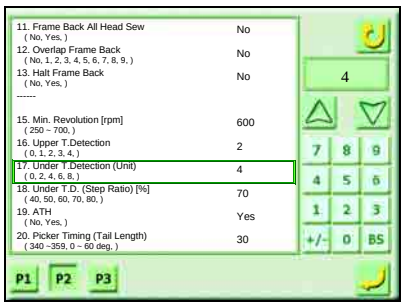


(0, 1, 2, 3, 4)

When the machine detects upper thread breakage information more than the set number of times, make the machine recognizes that it is a state of upper thread breakage.

- When the setting value becomes smaller, the sensitivity will become higher.
- "0" does not make detection.

17. Under T.Detection (Unit)

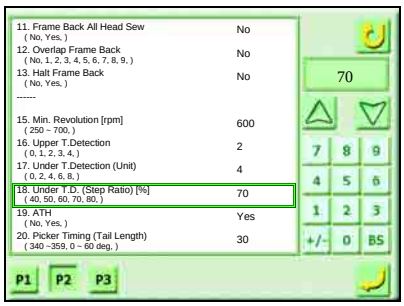


(0, 2, 4, 6, 8)

When information of under thread breakage is detected the number of set times and more consecutively, it is regarded as a state of under thread breakage.

- When the setting value becomes smaller, the sensitivity will become higher.
- "0" does not make detection.

18. Under T.D. (Step Ratio) [%]

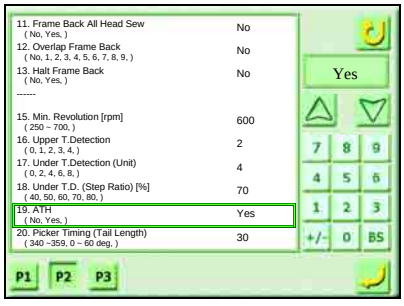


(40, 50, 60, 70, 80%)

It adjusts sensitivity of thread breakage detection.

- When the setting value becomes bigger, the sensitivity will become higher.

19. ATH

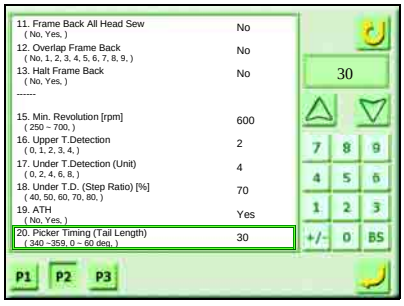


(Yes/No)

It makes the machine to perform automatic thread trimming at color change, end of embroidery, etc.

Yes	To perform thread trimming
No	Not to perform thread trimming

20. Picker Timing (Tail Length)



(340 ~ 359, 0 ~ 60 deg.)

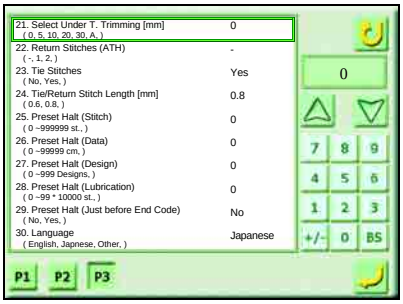
It adjusts the remaining thread length at thread trimming.

340 ⟵ 20 ⟶ 60
Short Long

- It is possible to make setting when “19. ATH” is set to “Yes”

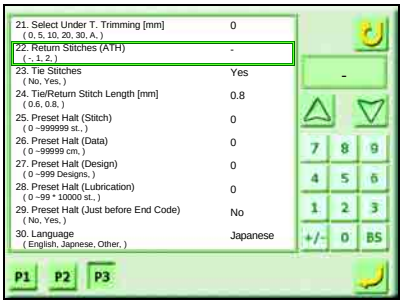
(GC02)

21. Select Under T. Trimming [mm]



It is not available at present.

22. Return Stitches (ATH)

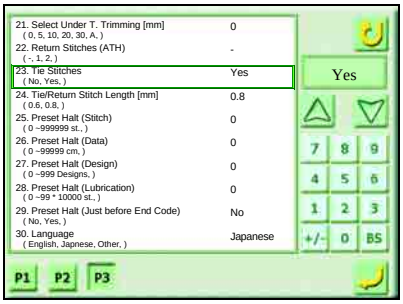


(-, 1, 2)

It makes the machine perform return stitching when the machine starts to sew after thread trimming.

📖 "-" makes no return stitching.

23. Tie Stitches



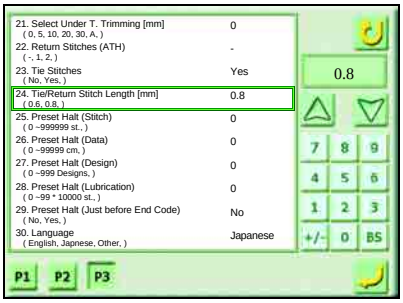
(Yes/No)

It makes the machine perform tie stitching before thread trimming.

📖

Yes	To perform tie stitching
No	Not to perform tie stitching

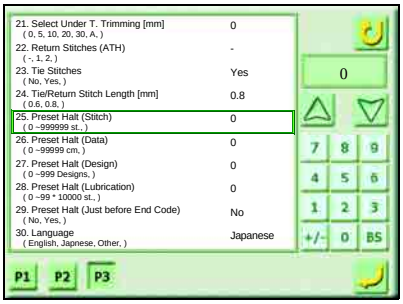
24. Tie/Return Stitch Length [mm]



(0.6 / 0.8)

Select stitch length to perform tie stitching/return stitching.

25. Preset Halt (Stitch)



Numerical key

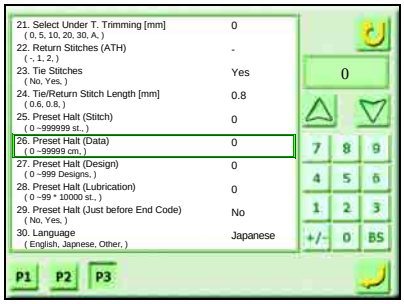
(0 ~ 999999 st.)

When the stitch counter reaches the set value, it will make the machine stop automatically.

📖 Code number "1D2" will be displayed at stop of the machine.

📖 "0" makes no stop.

26. Preset Halt (Data)



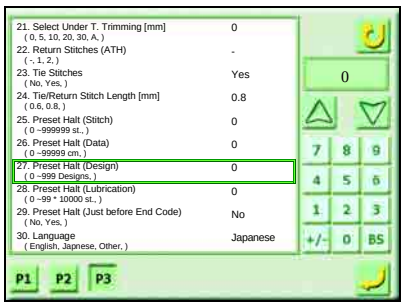
Numerical key + ↵

(0 ~ 99999 cm)

When frame moving amount reaches the set value, it will make the machine stop automatically.

- 🕮 Code number “1D2” will be displayed at stop of the machine.
- 🕮 "0" makes no stop.

27. Preset Halt (Design)



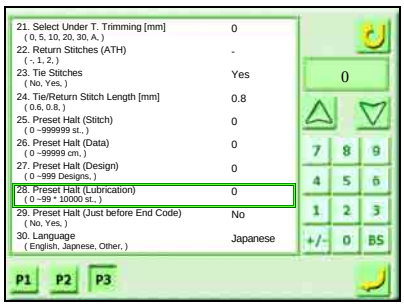
Numerical key + ↵

(0 ~ 999 Designs)

When embroidered designs reach the set value, it makes the machine stop automatically.

- 🕮 Code number “1D2” will be displayed at stop of the machine.
- 🕮 "0" makes no stop.

28. Preset Halt (Lubrication)



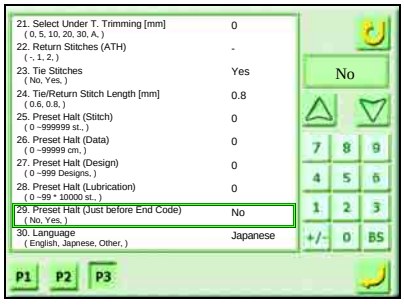
Numerical key + ↵

(0 ~ 99 * 10000st.)

When the stitch counter reaches the set value, it will make the machine stop automatically.

- 🕮 Setting value multiplied by 10000 stitches
- 🕮 Code number “OIL” will be displayed at stop of the machine.
- 🕮 "0" makes no stop.
- 🕮 It is effective when “36. Lubrication” is set to “No”.

29. Preset Halt (Just before End Code)



△▽ + ↵

(Yes/No)

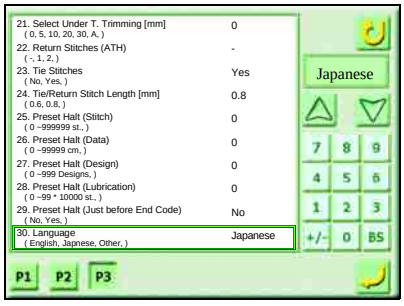
It makes the machine stop automatically just before end of embroidery.

🕮

Yes	To perform automatic stop
No	Not to perform automatic stop

- 🕮 It is possible to perform frame back after stop of the machine.

30. Language



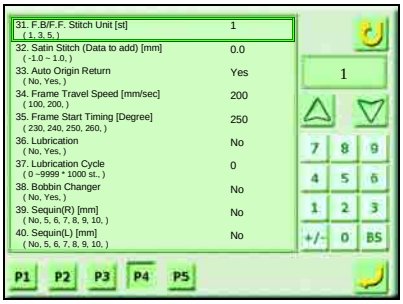
△▽ + ↵

(English, Japanese, Other)

Select display language of the screen.

- 🕮 “Other” becomes different language depending on specification.
- 🕮 When setting was switched to “Other”, turn on the power again.

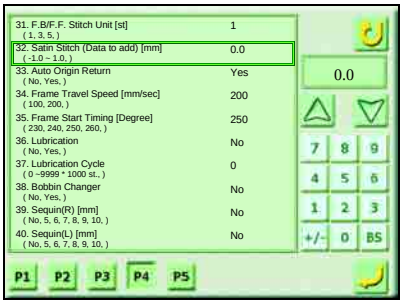
31. F.B/F.F. Stitch Unit [st]



(1, 3, 5)

Select frame feed unit at frame back/forward.

32. Satin Stitch (Data to add) [mm]



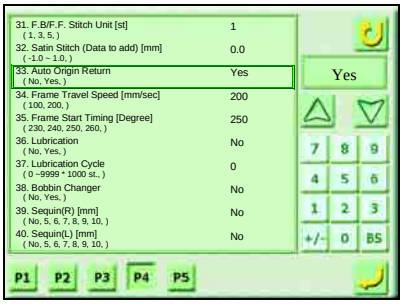
(-1.0 ~ 1.0)

It adds the setting value to satin stitch to adjust the satin stitch.

"0" does not make addition.

Satin stitch p.100

33. Auto Origin Return

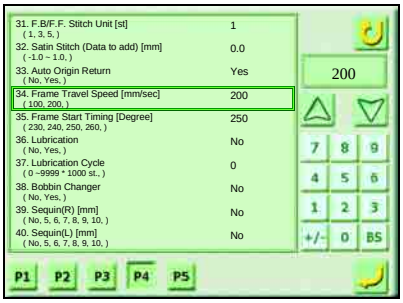


(Yes/No)

It moves the frame to the origin at the end of embroidery.

Yes	To move
No	Not to move

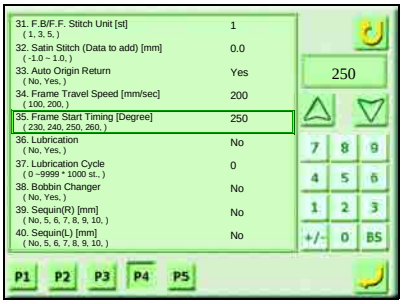
34. Frame Travel Speed [mm/sec]



(100, 200)

Select the origin return, frame travel speed at off-setting.

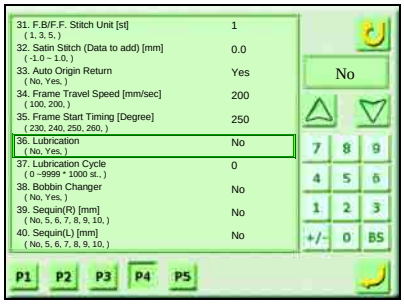
35. Frame Start Timing [Degree]



(230, 240, 250, 260 deg.)

Select start timing (main shaft angle) of frame drive.

36. Lubrication

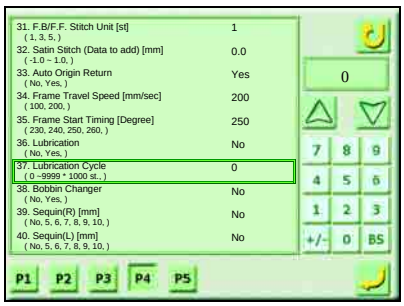


(Yes/No)

Select whether automatic lubrication system is equipped with the machine or not.

Yes	Equipped
No	Not equipped

37. Lubrication Cycle



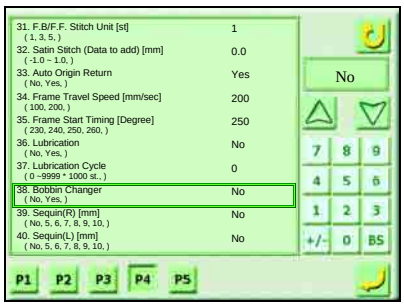
Numerical key

(0 ~ 9999 * 1000st.)

When the stitch count reaches the set value, it will make automatic lubrication system activate.

- Setting value multiplied by 1000 stitches
- It is possible to make setting when “36. Lubrication” is set to “Yes”

38. Bobbin Changer



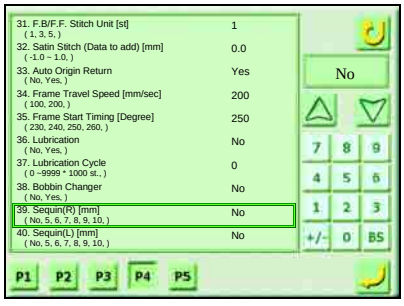
(Yes/No)

Select whether bobbin changer is equipped with the machine or not.

- It is not displayed in TFHX-C, TFHX-2C, and TEHX-C.

Yes	Equipped
No	Not equipped

39. Sequin(R) [mm]

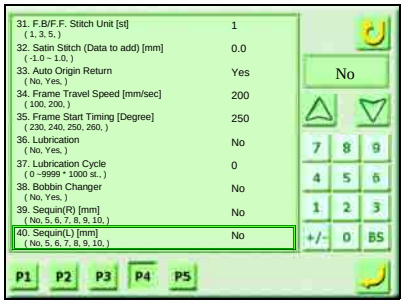


(No, 5, 6, 7, 8, 9, 10)

Select equipment/feed amount of sequin device (R)

5 to 10	Feed amount of chip
No	Not equipped

40. Sequin(L) [mm]

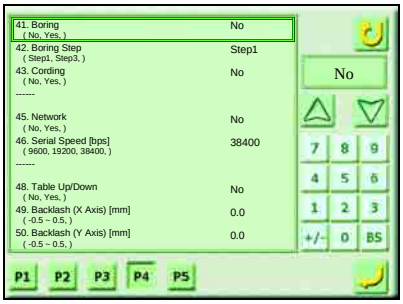


(No, 5, 6, 7, 8, 9, 10)

Select equipment/feed amount of sequin device (L)

5 to 10	Feed amount of chip
No	Not equipped

41. Boring

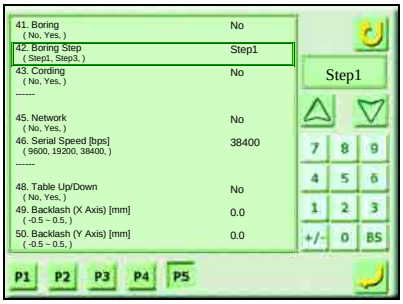


(Yes/No)

Select whether boring device is equipped with the machine or not.

Yes	Equipped
No	Not equipped

42. Boring Step

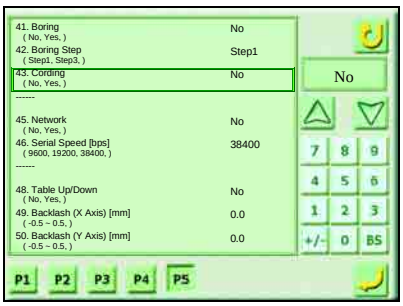


(Step1, Step3)

It processes stitch data when boring is performed.

Step1	Not to perform data processing
Step3	To add mechanical offset amount 12 mm

43. Cording

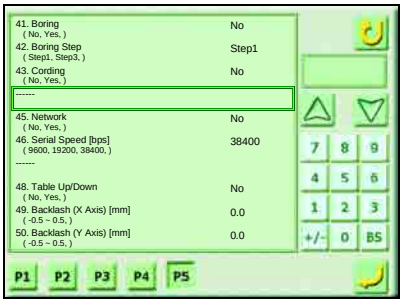


(Yes/No)

Select whether cording device is equipped with the machine or not.

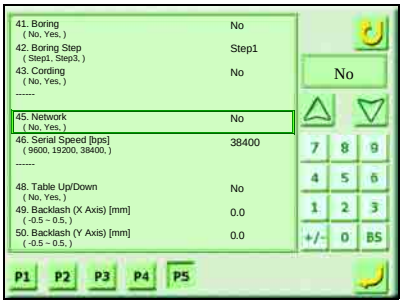
Yes	Equipped
No	Not equipped

44. ------



It is not applied.

45. Network

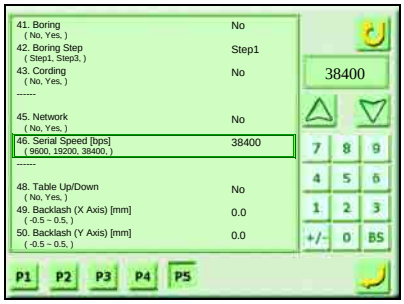


(Yes/No)

Select the state of network.

Yes	Connected
No	Not connected

46. Serial Speed [bps]

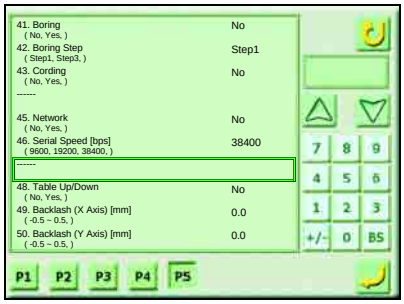


(9600, 19200, 38400)

Select transfer speed of serial connector.

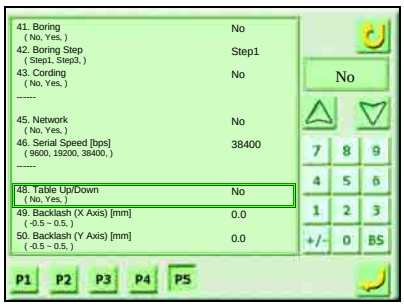
🕮 It is possible to make setting when “Yes” is set to “45. Network”.

47. ------



It is not applied.

48. Table Up/Down



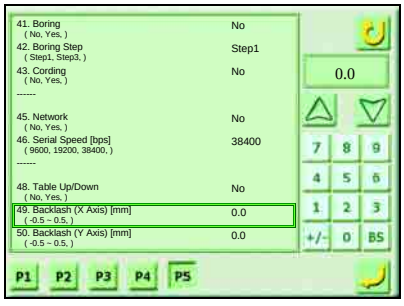
(Yes/No)

Select whether auto sub-table lifter is equipped with the machine or not.

🕮 Setting is applied to TEHX-C only

Yes	Equipped
No	Not equipped

49. Backlash (X Axis) [mm]



(-0.5 ~ 0.5 mm)

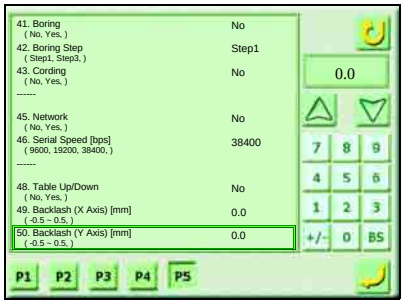
It corrects mechanical error generated when movement of the X-axis drive system reverses.

🕮 "0" does not make correction.

🕮 When correction is made, “32. Satin Stitch (Data to add)” will become invalid.

🕮 Backlash p.99

50. Backlash (Y Axis) [mm]



(-0.5 ~ 0.5 mm)

It corrects mechanical error generated when movement of the Y-axis drive system reverses.

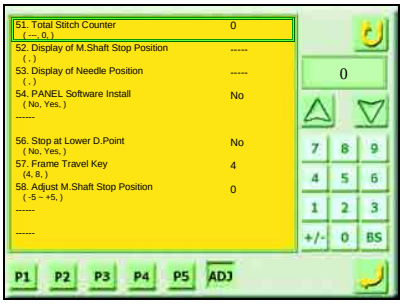
🕮 "0" does not make correction.

🕮 When correction is made, “32. Satin Stitch (Data to add)” will become invalid.

🕮 Backlash p.99

(GC07)

51. Total Stitch Counter

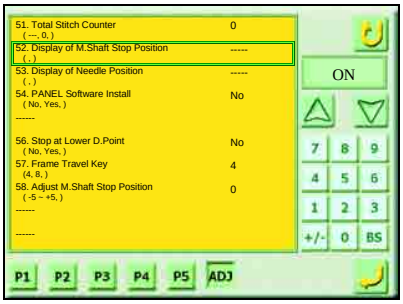


(---, 0)

It displays the number of embroidered stitches until now since the counter is reset.

- 0: Reset
- ---: To display the counter

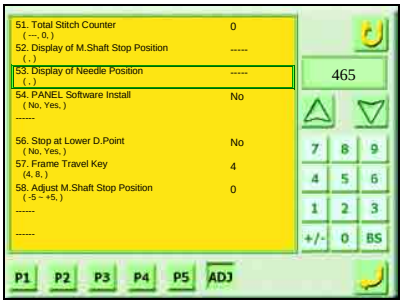
52. Display of M.Shaft Stop Position



Display the stop position of the main shaft.

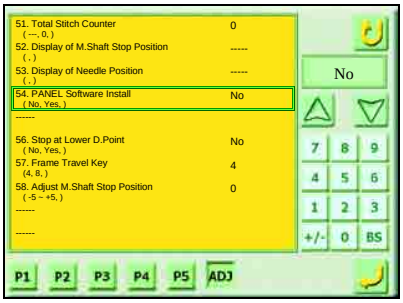
- ON: within the range of the fixed position
  OFF: Outside of the range of the fixed position

53. Display of Needle Position



Display the needle position.

54. PANEL Software Install

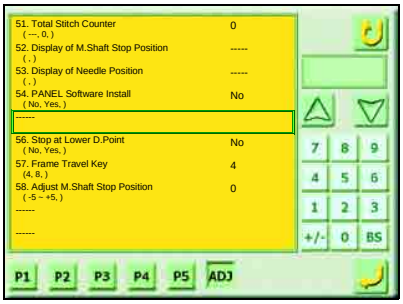


(Yes/No)

Install the PANEL software.

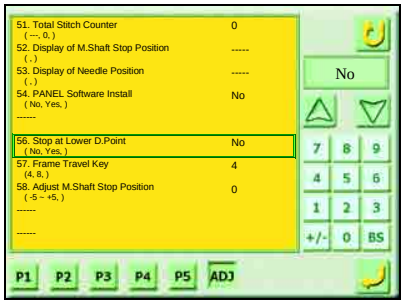
- Installation p.20

55. ------



It is not applied.

56. Stop at Lower D.Point

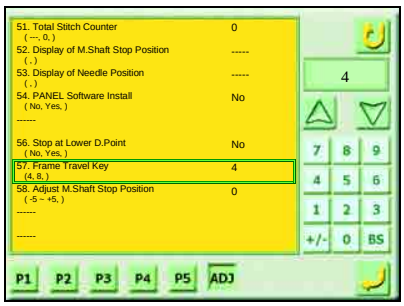


(Yes/No)

When the machine stops at end code 2 (end of embroidery), make the machine stop at the pseudo-fixed position.

Yes	To perform stop at the lower dead point
No	Not to perform stop at the lower dead point

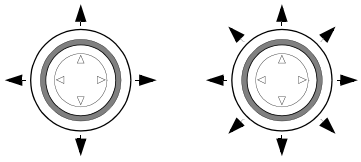
57. Frame Travel Key



(4, 8)

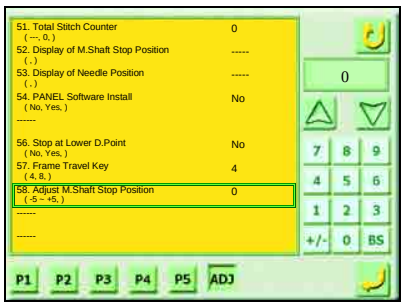
When performing manual frame travel, frame origin memory, manual offset during

Effective direction of frame travel keys



4 directions 8 directions

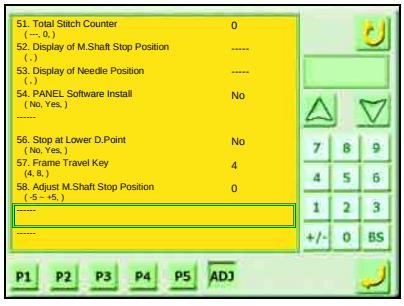
58. Adjust M.Shaft Stop Position



(-5 ~ +5)

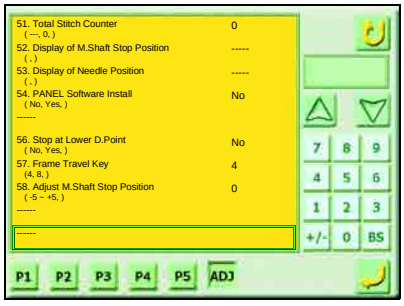
Perform adjustment when stop position of the main shaft is misaligned.

59. ------



It is not applied.

60. ------

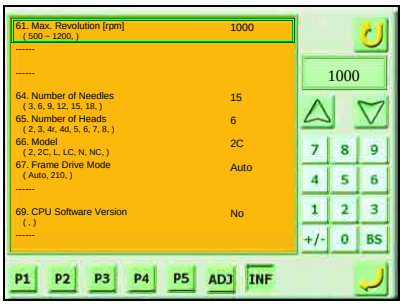


It is not applied.

CAUTION

This setting is set by the manufacturer at shipment of the machine. The customer should not change the setting.

61. Max. Revolution [rpm]

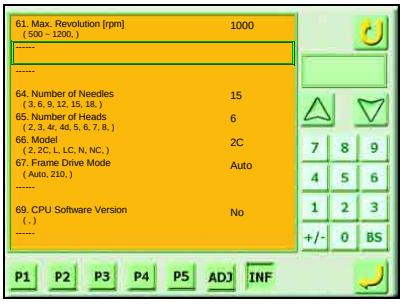


(500 ~ 1200)

Upper limit of maximum revolution.

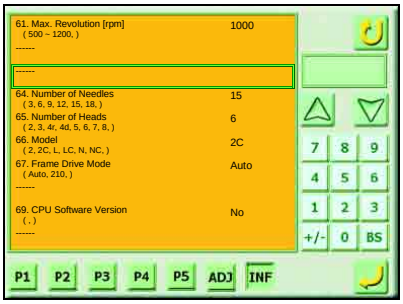
Upper limit of 3 and more head machine is 1000rpm

62. ------



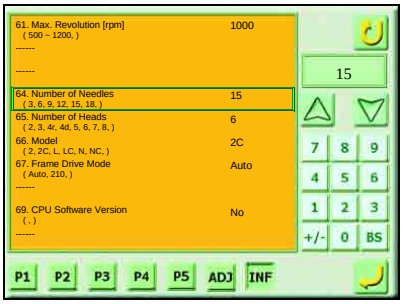
It is not applied.

63. ------



It is not applied.

64. Number of Needles

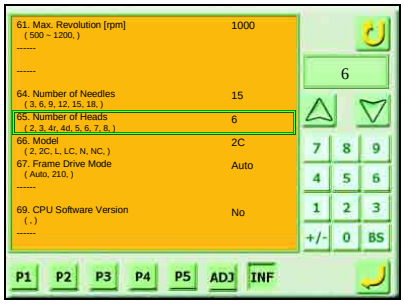


(3, 6, 9, 12, 15, 18)

Select the number of needles.

18 needle machine is option

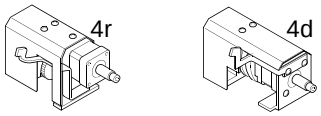
65. Number of Heads



(2, 3, 4r, 4d, 5, 6, 7, 8,)

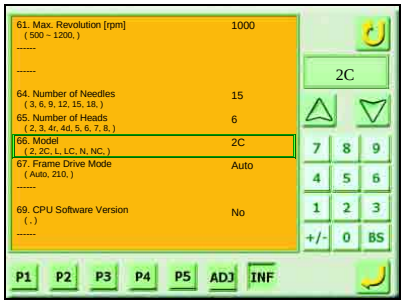
Select the number of heads.

In case of 4-head machine equipped with sequin device, select head according to type of color change motor.



Up to 20 are applied to the number of heads in TEHX-C.

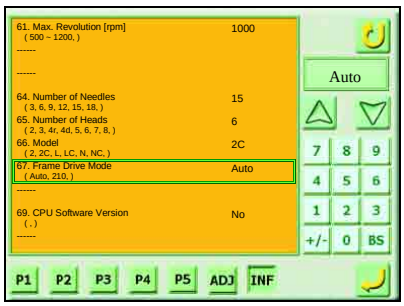
66. Model



(2, 2C, L, LC, N, NC)

Select the model.

67. Frame Drive Mode



(Auto, 210/200,)

200	TFHX, TFHX-C
210	TFHX-2, TFHX-2C

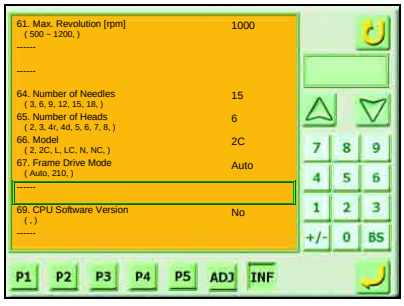
This is a selection of usual frame drive mode and type to reduce looping.

It is not possible to perform setting in

Auto	Usual frame drive mode
210/200	Frame drive mode to reduce looping

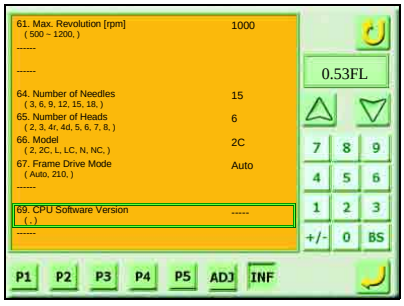
200	Max 850rpm	Upper limit to low speed rpm550rpm
210	Max 800rpm	Upper limit to low speed rpm450rpm
	Max 700rpm	

68. ------



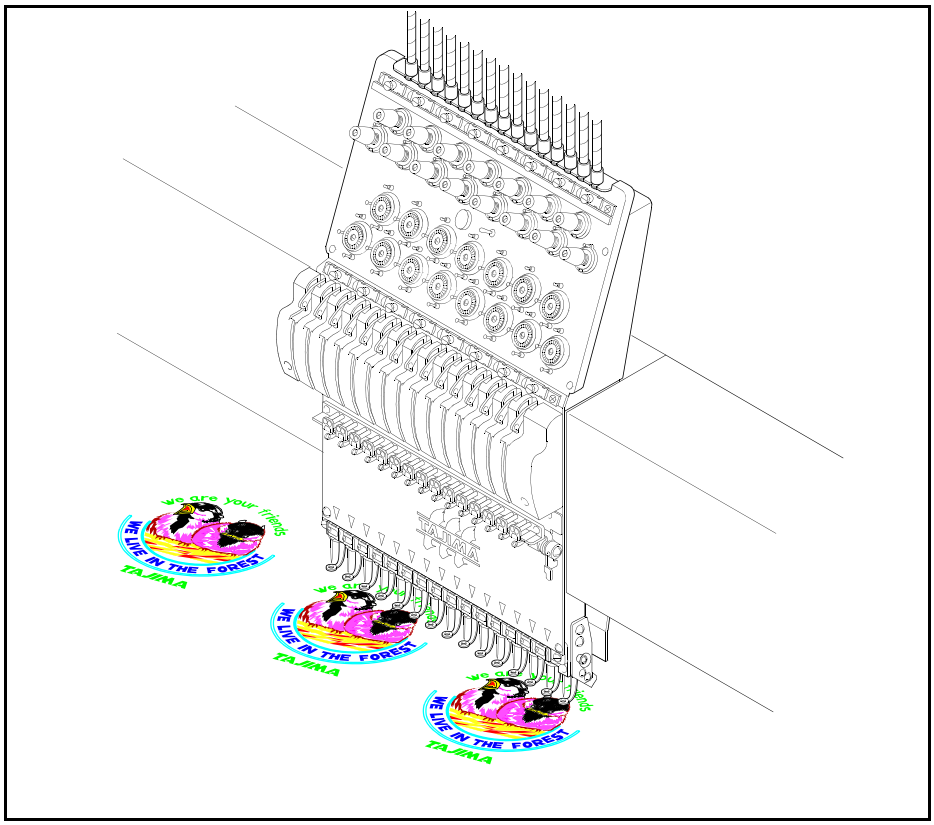
It is not applied.

69. CPU Software Version



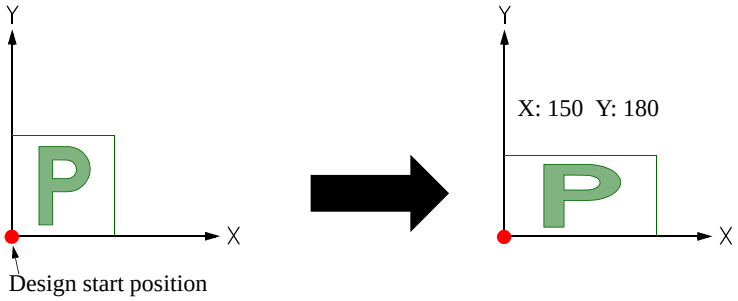
Display the version of CPU software.

CHAPTER 9 OUTLINE OF FUNCTIONS



1. DESIGN SCALE UP/DOWN

It is possible to perform enlargement/reduction in 50 to 200% in X/Y direction.

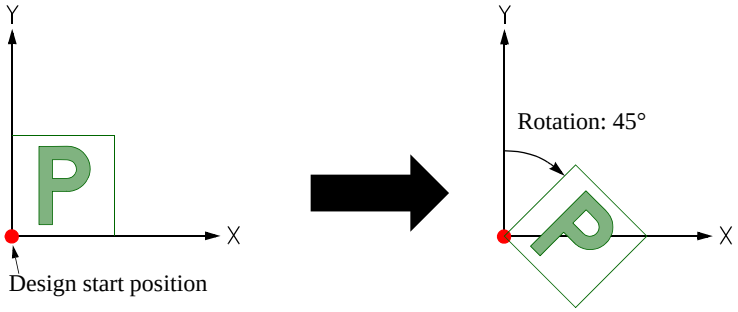


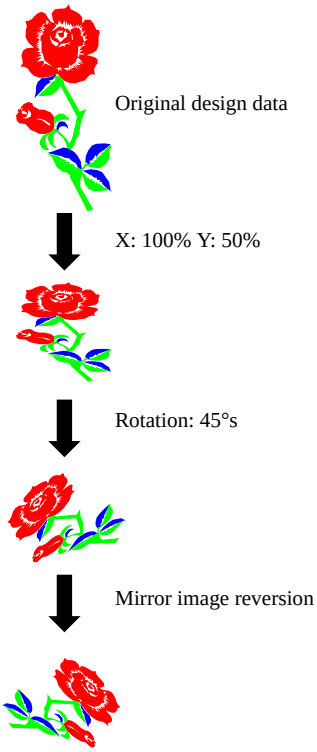
When all of enlargement/reduction, rotation, and mirror image reversion are set, the data processing will have ranking of priority.
Enlargement/reduction --

Example: X 100%, Y: 50%
45° rotation
Mirror image reversion

2. ROTATION

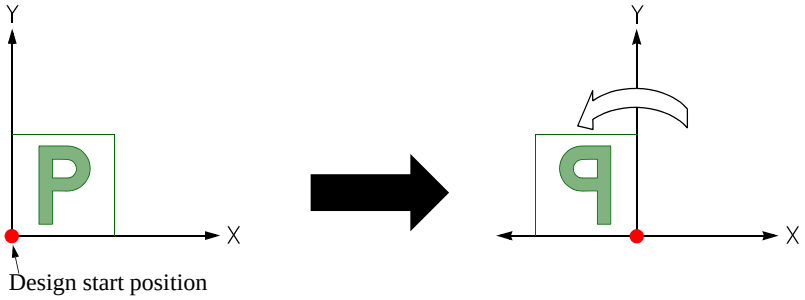
It is possible to rotate a design up to 359° in increments of 1°.



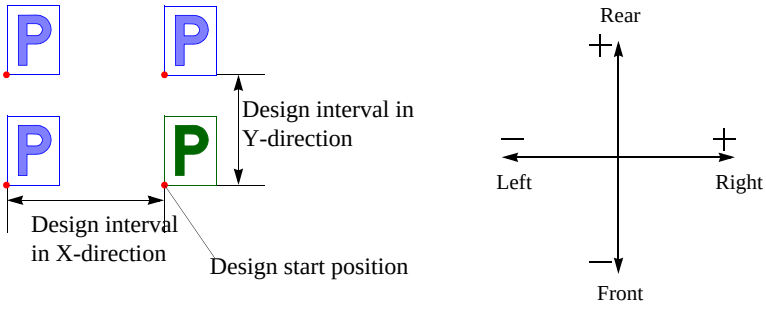


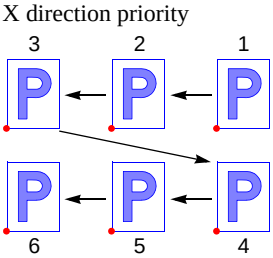
3. MIRROR IMAGE REVERSION

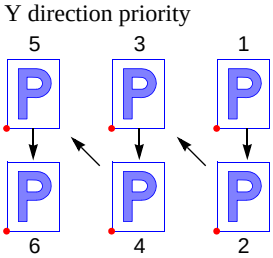
It is possible to make reversion based on Y-axis.



4. REPEAT







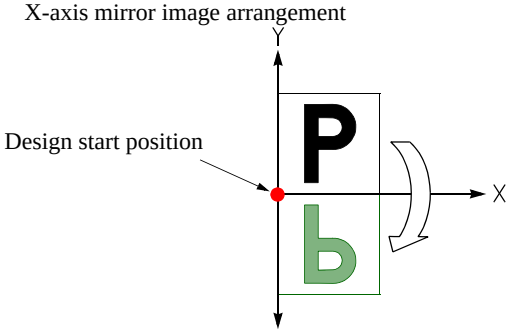
The repeat direction will be decided by +/- of amount of design interval.

Embroidering order differs depending on priority direction.

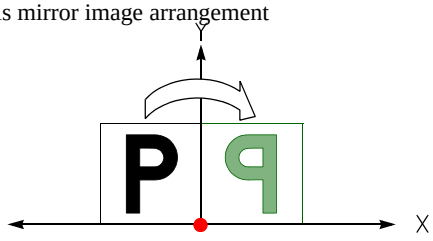
The XY design interval in the left illustration is minus direction.

5. CONVERTED ARRANGEMENT

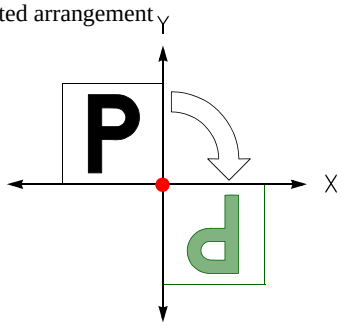
X-axis mirror image arrangement



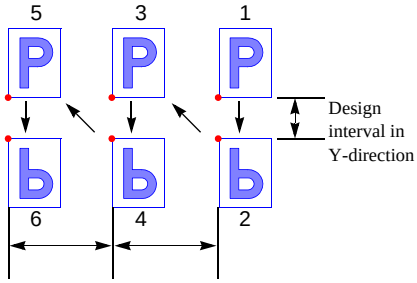
Y-axis mirror image arrangement



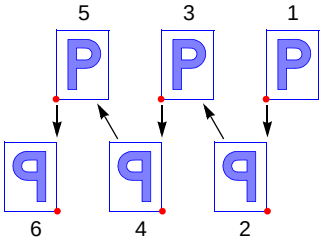
180° rotated arrangement



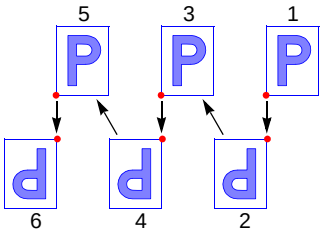
Converted arrangement arranges and repeats the design as it is set as the initial setting in odd-numbered times, and design arranged by mirror/rotation in even-numbered times



X: -, Y: -, Y priority



X: -, Y: -, Y priority



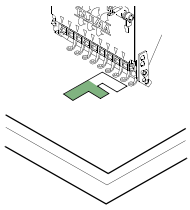
X: -, Y: -, Y priority

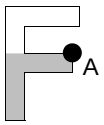
6. MANUAL OFFSET

This function returns the frame to the original position when the machine was stopped in the middle of embroidery and the frame was moved to a free setting point manually.

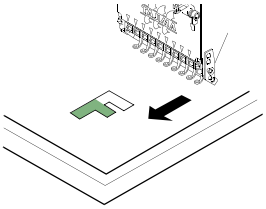
A: Free setting point B: Frame travel position

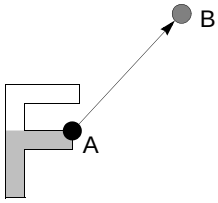
1. It performs manual thread trimming after it makes the machine stop at the free setting point (A).



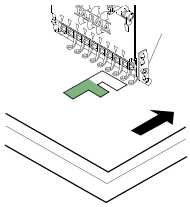


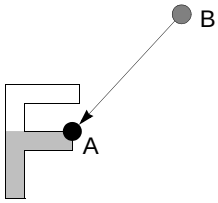
2. Move the embroidery frame by manual frame travel to B to check embroidery design, etc.





3. When executing manual offset, the frame will move to the free setting position (A).



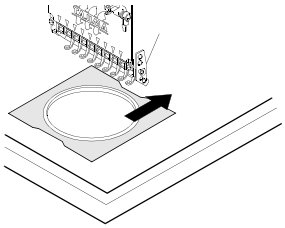


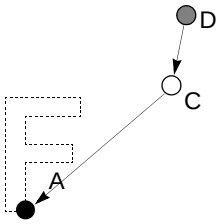
7. AUTOMATIC OFFSET

This function moves the embroidery frame forward automatically at the end position of design.

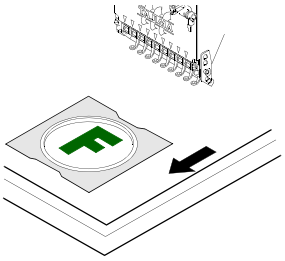
A: Design start position
B: End position of design
C: Middle position
D: Offset start position

1. When starting the machine, the embroidery frame will move to the design start position (A) through the middle position (C) and embroidery will start.



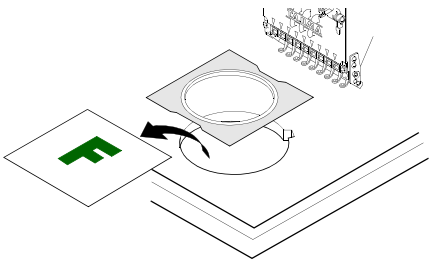


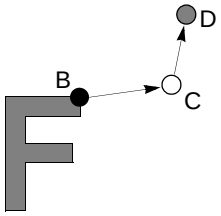
2. The machine will stop at the end position of design (B) to perform thread trimming, and the embroidery frame will move to the offset start position (D) through the middle position (C).



When there is no middle position (C), the frame will move to the design start position (A).

3. Change fabric or frame.





When there is no middle position (C), the frame will move directly to the offset start position (D).

(GC07)

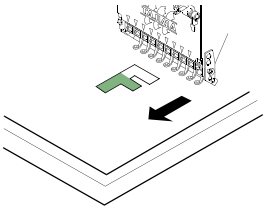
8. OFFSETTING AT AUTOMATIC COLOR CHANGE

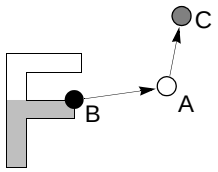
This function makes the embroidery frame move forward automatically at color change.

Condition: Offsetting at automatic color change is set, automatic offset is set, “Yes” is set to “Automatic color change (AC), automatic start (AS), and ATH” of parameter.

A: Middle position
B: Color change point
C: Offset start position

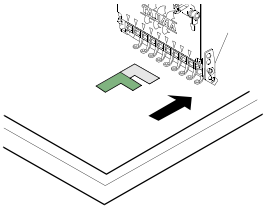
1. The machine stops at the color change point (B) to perform thread trimming, and the embroidery frame moves to the offset start position (C) through the middle position (A).

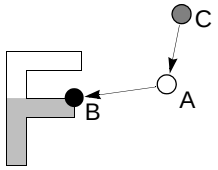




When there is no middle position (A), the frame will move directly to the offset start position (C).

2. When starting the machine, the embroidery frame will move to the color change point (B) through the middle position (A), and the embroidery will be continued.

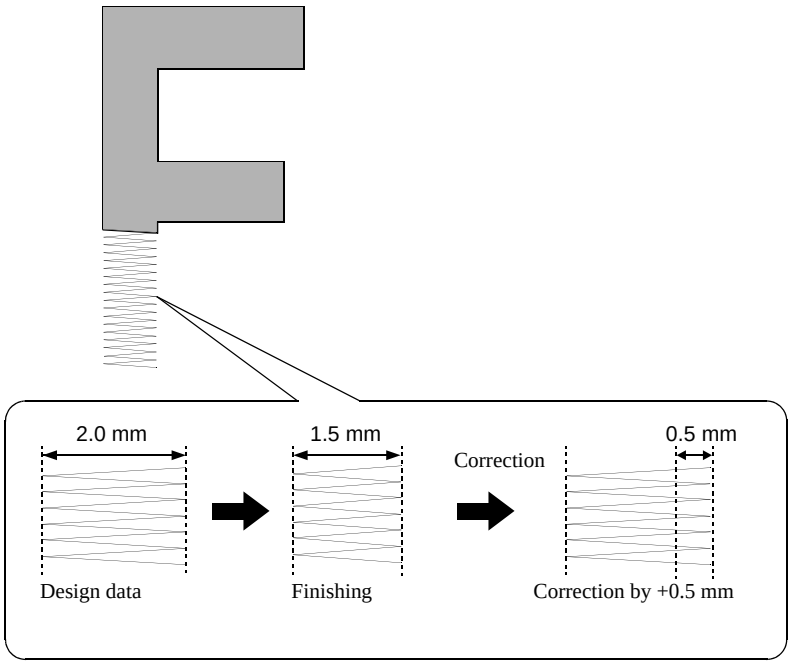




When there is no middle position (A), the frame will move directly to the free setting point (B).

9. BACKLASH

This function corrects drive error generated when direction of stitch data reverses (reversion of polarity).

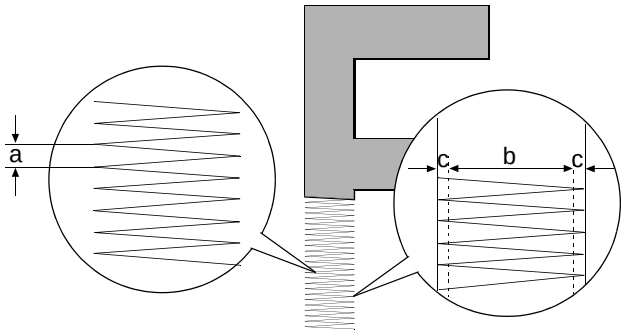


It is possible to correct stitch of each X direction and Y direction by -0.5 to +0.5 mm.

10. SATIN STITCH

This function expands satin stitch length.

a: Distance b: Stitch width c: 1/2 of the setting value

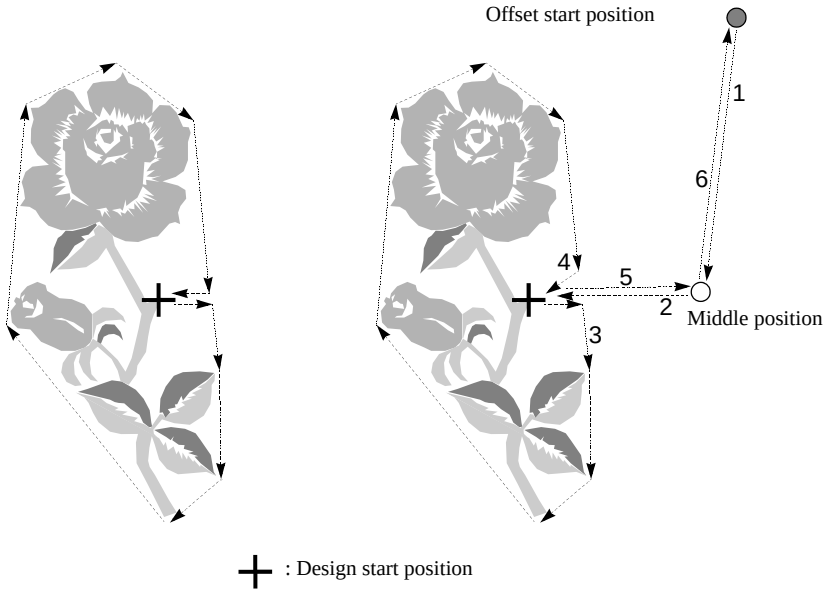


📖 Density for distinction
When a distance (a) is 1 mm or less, the machine recognizes it as a satin stitch.

📖 Data to be added
A half (c) of the set value in parameter “32. Satin Stitch (Data to add) [mm]” is added both sides of stitch (b).

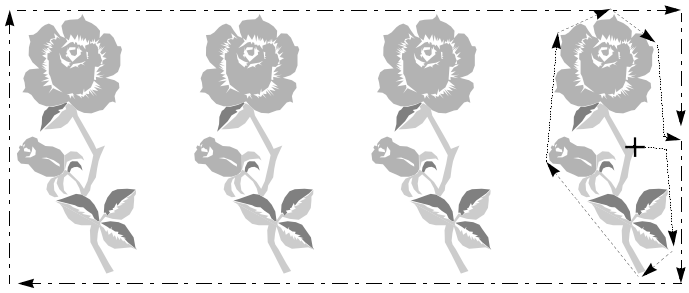
11. TRACE

This function makes the frame move along the outer circumference of the design that has been set.



📖 Trace makes the frame move to each apex of the outer circumference of the design as if a rubber ring was hanged at each apex.

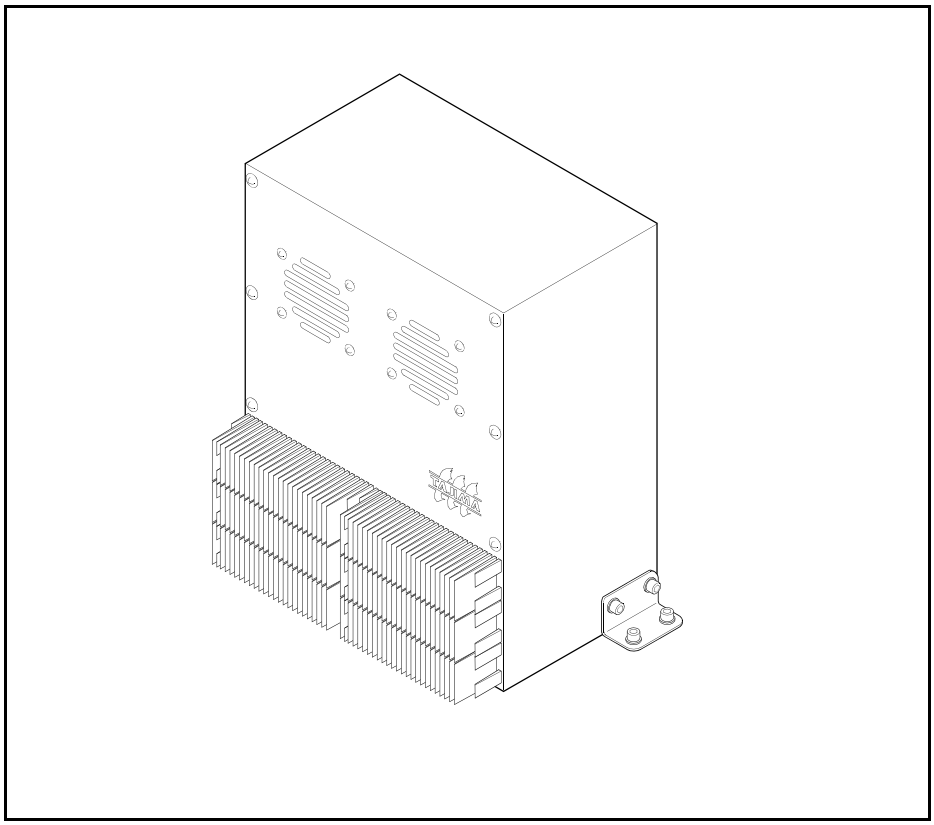
📖 When there is an offset position, the frame will move to offset start position --



Repeat of design

📖 When repeat setting is made, whole designs will be traced after tracing the first design only.

CHAPTER 10 ELECTRO-COMPONENT PARTS



1. POWER SUPPLY/DRIVER BOX

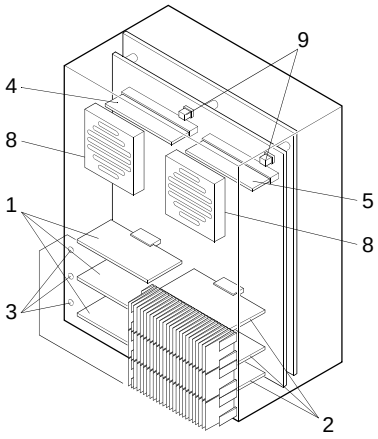
WARNING

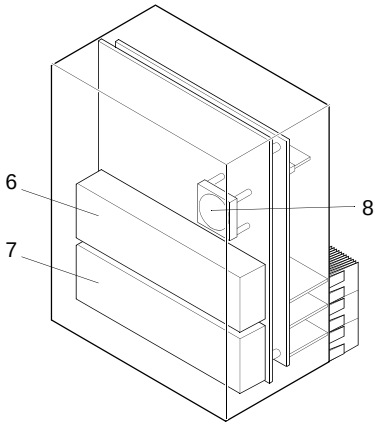
To prevent electric shock, be sure to use non-electrical-induced bar, etc. to press the excitation ON/OFF switch to turn ON/OFF excitation.

CAUTION

Do not put an object that blocks wind flow of the cooling fan. Inside of the box will get overheat to cause the machine to malfunction.

1	Y-axis driver: Driver card 3 pieces (LED on each card)
2	X-axis driver: Driver card 3 pieces (LED on each card)
3	LED A lamp that indicates condition of the driver Lights in green: Excitation ON (normal) Lights in orange: Excitation OFF Lights in red: Abnormal (overcurrent)
4	Driver CPU card (for Y-axis driver)
5	Driver CPU card (for X-axis driver)
6	Power supply card (5 V)
7	Power supply card (24 V)
8	Cooling fan
9	Excitation switch Every pressing of the switch will switch ON/OFF.





2. SWITCHING OF POWER SUPPLY SPECIFICATION

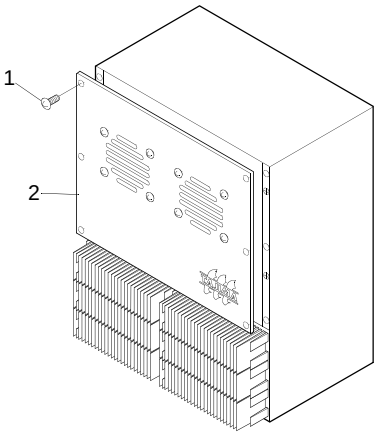
WARNING

To prevent electric shock, be sure to turn off the primary power supply. Turn off the power switch before turning off the primary power supply.

CAUTION

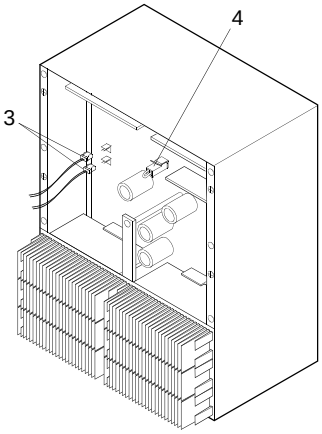
Regarding standard/M-spec. machine of TFHX/TFHX-C, and 7 to 20 head machine of TEHX-C, fix the power supply to 200 V system.

It is possible to change power supply specification by changing connecting method of the short connector in the power supply/driver box. This, however, excludes standard/M-spec. machine of TFHX/TFHX-C, and 7 to 20 head machine of TEHX-C.



1. Box cover

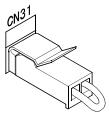
   Remove the attaching screws (1) (6 spots), and take out the front cover (2) of the power supply/driver box.
   Remove the connector (3) of the fan motor located at the box cover.

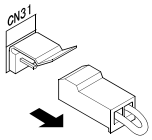


2. Short connector

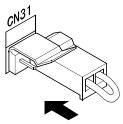
   Slide the position of the short connector CN31A (4) for re-insertion.

100 V system





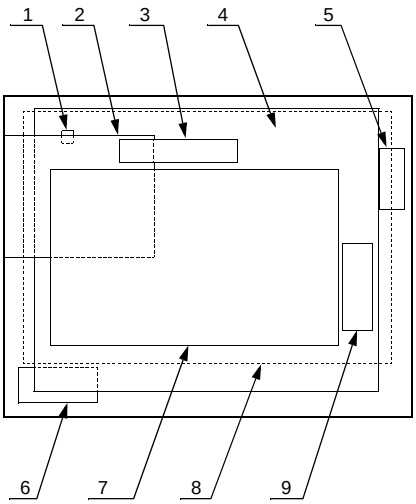
200 V system



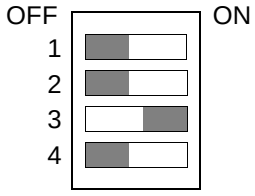
3. OPERATION PANEL BOX

1	DIP switch (SW1)
2	FDD
3	Backlight inverter
4	CPU-E card
5	Touch panel cable extension card
6	Frame travel switch card
7	RISC card
8	Touch panel
9	Regulator card

[Rear view]

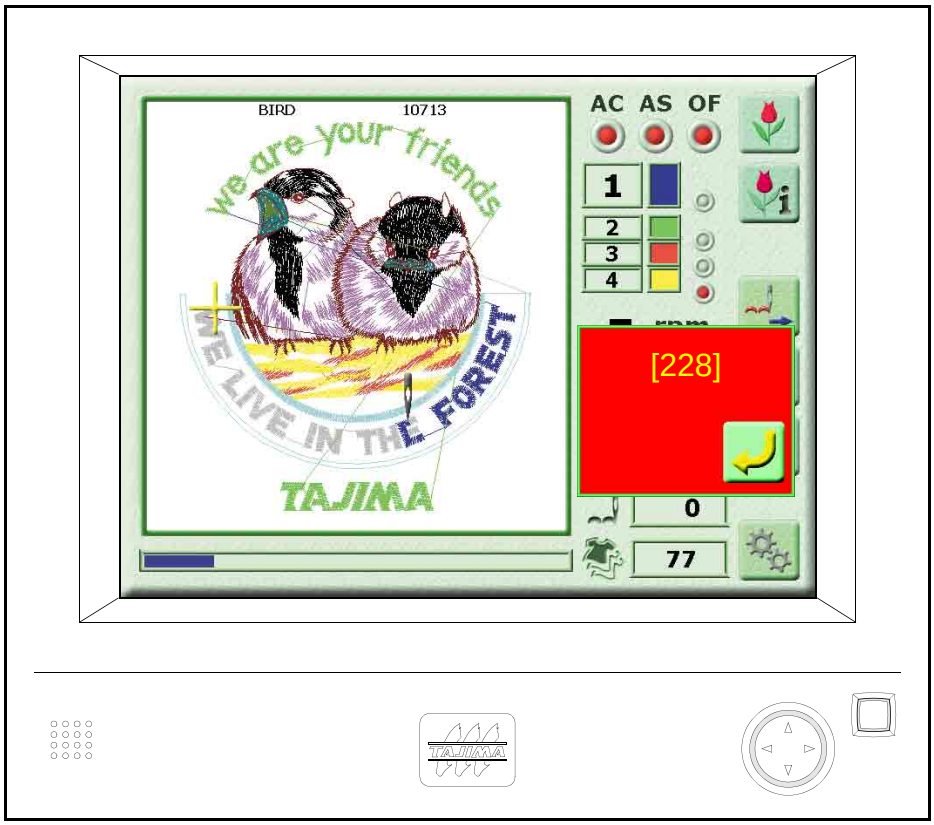


Do not change setting of the DIP switch.

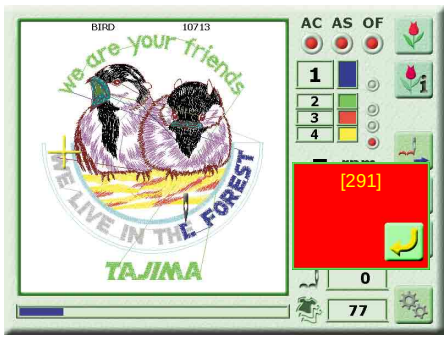


DIP switch [SW1]

CHAPTER 11 TROUBLESHOOTING



1. WHEN THE MACHINE STOPPED DURING OPERATION



There are two main machine stop factors: one is stop by occurrence of error and another is stop by normal stop factor. When the machine operation is interrupted with code number displayed on the screen, carry out the troubleshooting referring to the code chart below.

Stop by occurrence of error

If a code number of 300 series is displayed, contact your local distributor.

Code No.	Stop Factor	Corrective Action
211	The fixed position signal (main shaft Z signal) is not detected.	Return the main shaft to the fixed position. Check the encoder signal.
221	The frame has traveled exceeding the travel limit position. (Left direction)	Move the frame manually so that the design fits in the embroidery area.
222	The frame has traveled exceeding the travel limit position. (Right direction)	
223	The frame has traveled exceeding the travel limit position. (Front direction)	
224	The frame has traveled exceeding the travel limit position. (Rear direction)	
225	Stitching has exceeded the embroidery space. (In case of cap frame spec.)	
228	Table up/down operation was performed when the frame was positioned forward.	Move the frame to the rearmost.
251	Lubrication pump oil is insufficient.	Supply oil to the tank.
281	The target needle position is not detected even after 15 seconds after start of color change.	Return the needle position to make the correct display. Check or replace the potentiometer (needle position sensor).
291	The machine detected thread breakage.	Check upper and under threads.
	Tension base card is bad	Replacement of tension base card To continue embroidery tentatively, cut off the head where trouble occurred from control. p.110
293	Under thread breakage has been detected.	Check the under thread.
2B1	No response is received for 5 seconds since the operation was started using a serial interface. (A device is not connected to the serial interface.)	Check connection of the device. Correct the design data.
2B2	Tajima code complement data error (The same + and - numbers exist in one stitch data).	Correct the design data.
2B3	Data exists in an end code.	
2B4	Function code error	
2B5	There is abnormality in sequin data.	
2B7	Data is not set.	Perform data setting.
2B8	The pre-reading buffer has become empty and no data is output.	During operation: Lower the r.p.m. During frame forward operation: Wait until the design data is all read.
2B9	Memory write error	CPU card or Panel card Check. Replace if necessary.
2BA	Memory capacity over	Delete unnecessary designs registered in memory.

(GC02)

Code No.	Stop Factor	Corrective Action
2BB	Available range to perform frame back was exceeded.	Do not perform frame back any more.
2BC	No design is registered in the memory.	Register designs in the memory.
2C2	Incorrect option setting	Set correctly.
2C6	Machine operation was attempted although the bobbin changer was running.	Do not operate the machine during working of the bobbin changer.
2CB	The design data is too big to be put in the set embroidery space.	Change to smaller design data.
2CC	A floppy disk was inserted during operation.	Take out the floppy disk.
2CE	Stop by safety device	Check safety, and remove the obstacle.
2E3	The power supply was shut off during operation (including power shut off by the emergency switch).	Execute power resume operation.
311	Encoder A signal does not change for 5 seconds. Abnormality of motor, motor belt	Check encoder or encoder signal lines. Check the motor or motor belt. Check the main shaft driver for excitation.
312	Encoder Z signal status does not change.	Check the encoder or encoder signal lines.
316	A main shaft driver error signal has been detected.	Replace the main shaft driver unit or main shaft motor.
322	An X-axis motor driver error signal is detected.	Replace the X-axis driver.
323	An Y-axis motor driver error signal is detected.	Replace the Y-axis driver.
331	Bobbin changer error	Operate the bobbin changer manually to check the place where movements are bad, and adjust it.
382	The needle position signal status during color change does not change for 1 second or more.	Check the color change motor and power supply circuit. Check the potentiometer (needle position sensor).
383	There was no needle position signal during rotation of the main shaft.	Check the potentiometer (needle position sensor).
3A1	There is abnormality in thread trimming driver.	Check the joint card.
3A6	ATH knife retractable position has become nonuniform.	Check the position of ATH movable knife.
3A8	Error signal of thread holding driver was detected.	Replace the head card.
3B1	No input signal is given when performing serial input	Check the output of the external device. Check the cable connection.
3C1	Contact error of the bar switch or start/stop switch, breakage of the switch harness, or bad connection of the connector	Check the connector and the connecting terminal. Replace the limit switch or switch assembly.
3D1	Backup battery voltage has decreased.	Turn on the power supply of the machine and charge the battery. Set parameters and input designs again.
3D3	There is abnormality in power supply.	Check the wiring. If there is no abnormality, replace the transformer.
B01	Floppy disk format has an error.	Format the floppy disk. Use a new formatted floppy disk.
	Read/write error occurred.	Copy other designs to a new floppy disk and dispose of the old floppy disk.
B02	Floppy disk management information has an error.	Copy the floppy disk, and do not use the floppy disk in which error occurs.
B03	The write protect window of the floppy disk is open.	Close the write protect window.
B04	No floppy disk has been inserted.	Insert a floppy disk.
BC1	Selected design is not found on the floppy disk. No design is registered on the floppy disk.	Select other design.
BC2	The set file name has already been used for the design registered in the floppy disk.	Change the file name.
BC4	Design was not written from the memory to floppy disk correctly.	Retry writing.

Stop by usual stop factor

Stop by the code numbers (100-series) described below is not caused by occurrence of error.

Code No.	Stop Factor	Corrective Action
1B1	Stop due to a frame stepping code.	In this case, it is not stop by abnormality. Perform “Start operation” or “Frame back/forward operation”, or press any operation key (excluding manual frame travel key) to continue operation of the machine.
1B2	Stop due to a stop code.	
1B3	Stop due to stop code 1.	
1B4	Stop due to thread trimming code.	
1B6	Stop due to an automatic free setting offset code.	
1C1	Stop due to the bar switch/stop switch.	Perform “start operation” or “frame back/forward operation”.
1C2	Stop by manual ATH or operation of needle bar	
1D1	Stop at the start of all-head embroidery due to the stop setting.	Start the machine and continue embroidery.
1D2	Stop by preset halt (except lubrication)	Reset. Total counter p.85, p.86
OIL	Preset halt (lubrication)	Perform lubrication to the corresponding spots, and reset the machine. Total counter p.86

2. IF TROUBLE OCCURS

CAUTION

Adjustment includes some complicated works. Consult your local distributor before working.

Cause of troubles and adjustments

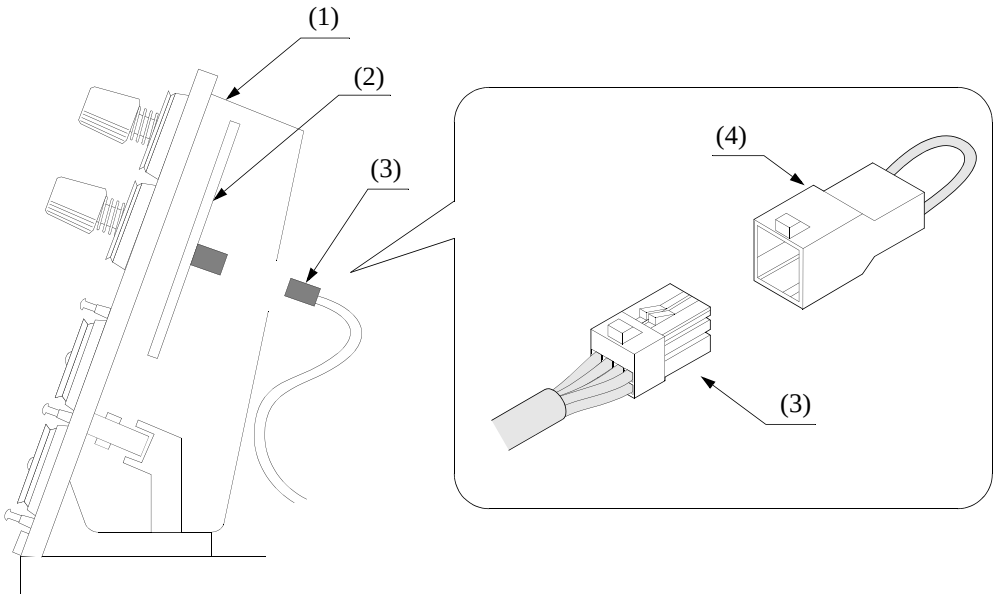
	Cause	Adjust
Machine cannot start	Loose or broken belts	Adjust the belt tension or replace the belt.
	Needle position signal, NOT detected.	Adjust the needle position so that needle position is properly indicated in the manual color change section on the operation panel.
	Alarm lamp on the driver box (unit) is ON.	Switch the power from OFF to ON.
	Poor connection of power supply box connectors.	Securely connect the connectors.
Stop position error	Loose or soiled belt	Adjust the belt tension or clean the belt.
	Galling of driving parts	Replace the driving parts for needle bar/rotary hook. or make adjustment.
Incorrect color changing	Stop position is incorrect.	Adjust the position.
	Position of take-up lever is wrong.	Adjust the position of the take-up lever at the stop position so that its position is the same as others.
	Needle position NOT detected.	Adjust the needle position so that needle position is properly indicated in the manual color change section on the operation panel.
Jump error	Incorrect positioning of parts related to needle bar drive system	Adjust the attaching position of the needle bar reciprocator set with the upper dead point stopper.
Design displaced	Incorrect positioning of frame drive belt	Adjust the belt tension.
	Malfunctioning of frame drive system	Replace/adjust the parts.
	Overall frame weight is excessive.	Lower the r.p.m. of the main shaft.
	Drive unit (X, Y-axes) defective	Replace the drive unit.
		Replace the X-axis/Y-axis drivers.
Thread breakage	Wrong needle-rotary hook timing or improper gap	Adjust the timing or gap.
	Wrong needle bar lower dead point	Readjust the lower dead point.
	Scratches on rotary hook, presser foot, or thread passing course	Remove the scratches.
	Incorrect upper/lower thread tension	Adjust the tension.
	Repeated stitching at the same point	Correct the data.
	Incorrect take-up lever timing	Readjust the take-up lever driving cam timing.
Matters related to ATH	Thread is not trimmed.	Adjust the ATH knife position.
	Thread comes off at start of sewing.	“Picker timing”(p.84)Adjust the thread trimming length by setting.
	Poor tensioning of upper thread	Adjust the tension.
Needle bar activates even if the tension base switch is set to the “bottom” position.	Tension base card is faulty.	Replace the tension base card.
	Defect in sensor card	
	Poor adjustment for jumping	

CONTROL CUT OFF OF HEAD WHERE TROUBLE OCCURRED

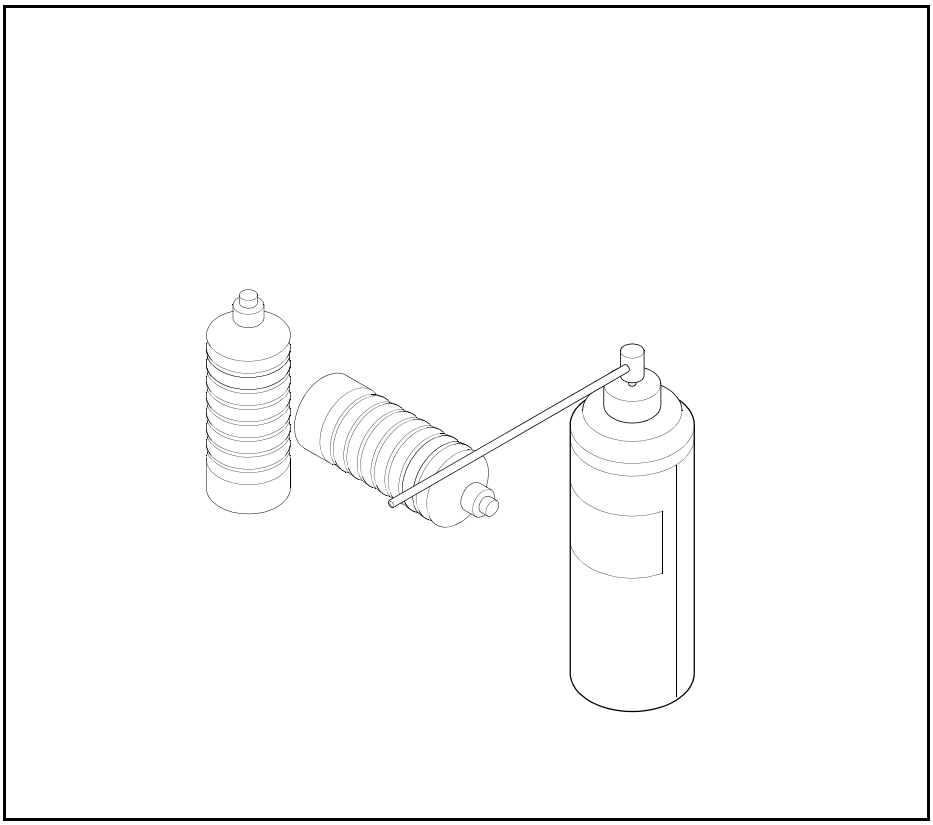
This work cuts off head where trouble occurred as a temporary measure.

◆Procedure of works

1. Remove the tension base cover (1).
2. Remove the connector (3) from the tension base card (2).
3. Connect the accessory jumper connector to the connector (3).



CHAPTER 12 MAINTENANCE



1. WARNINGS AND CAUTIONS

WARNING

To prevent accidents resulting in injury or death and physical damage, the following must be observed when performing daily maintenance (cleaning, lubrication, greasing, and/or inspection).

- **The maintenance operations must be performed by properly trained personnel.**
- **When restarting the machine after maintenance operation, attach all covers etc. which were removed for maintenance operation.**

CAUTION

- **Perform daily maintenance in the specified schedule.**
  If the daily maintenance is not observed, the machine may fail to operate correctly. Since the loss incurred by ignoring the daily maintenance instructions can be judged “not covered by guarantee”.
- **If the machine is not used for a long period, turn the power switch ON in regular intervals.**
  Although each card of the machine has a backup battery, data may be lost for about one month because voltage of the battery will come down gradually due to discharge when the power switch is turned off.

2. CLEANING

WARNING

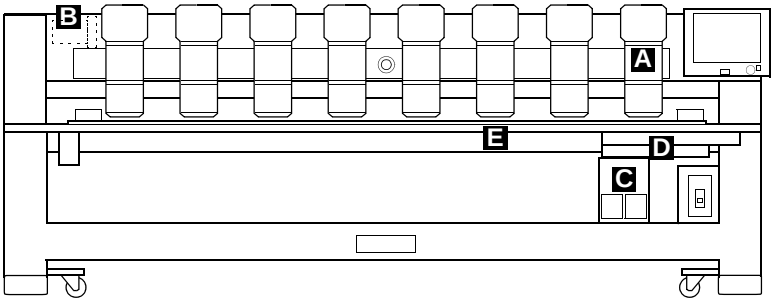
During machine cleaning, you could sustain severe injuries due to electric shock or being entangled by moving machine units. Therefore, observe the following items when you clean the machine.

- **Even if the primary power supply is turned off, some circuits are still charged. Wait (4 minutes) until these circuits are completely discharged and then start cleaning.**
- **The maintenance operations must be performed by properly trained personnel.**
- **When restarting the machine after maintenance operation, attach all covers etc. which were removed for maintenance operation.**

CAUTION

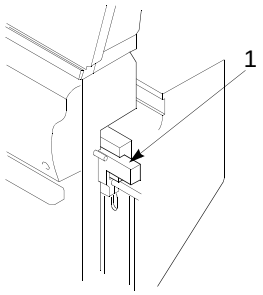
If the slits of the power supply/driver box and/or the filter of the main shaft motor is clogged, temperature inside the boxes or the main shaft motor increases, which could cause malfunctioning of the machine.

- **Clean the slits and filters at the specified intervals.**



Cleaning area	Cleaning cycle
(1) Case linear section (2) Filter section of main shaft motor (3) Filter section of power supply/driver box	Once/week
Åi4Åj X-axis drive system, Y-axis drive system	Once/2 weeks
Åi5Åj ATH section	Everyday

A



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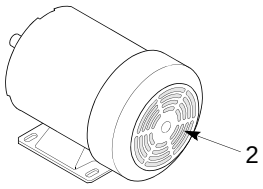
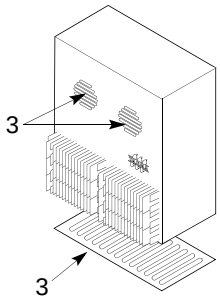


Attaching position of the main shaft motor (B) differs depending on machine specifications.

C



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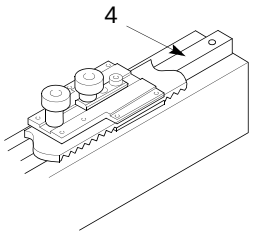

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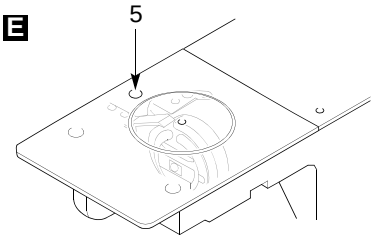
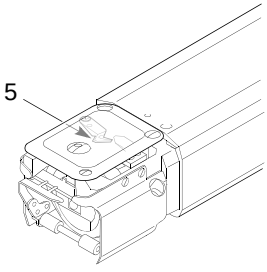




3. LUBRICATION

WARNING

During machine lubrication, turn off the power switch. You may sustain severe injuries due to being entangled by moving machine units.

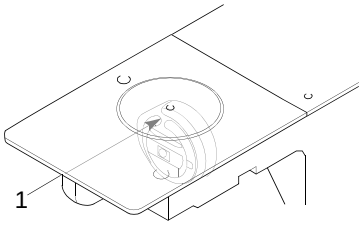
CAUTION

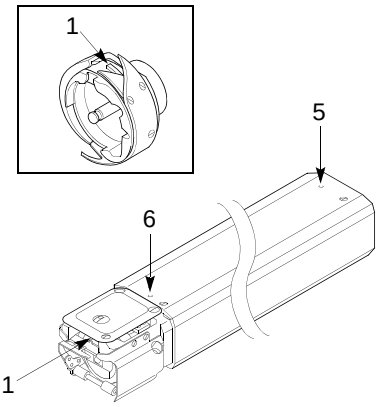
Keep the lubrication cycle as shown below. Deviated lubrication cycles may cause thread breakage.

When performing lubrication, use only Tajima's genuine SF oil or equivalent (#150 spindle oil: ISO viscosity grade = VG18).

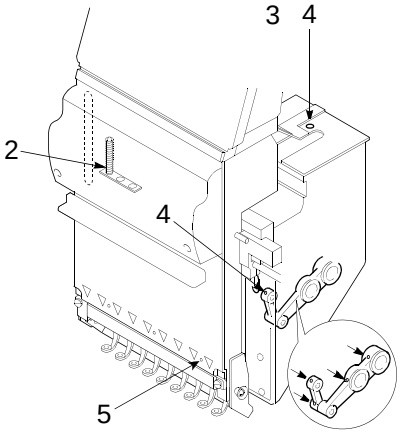
Lubrication Points	Lubricating Cycle
(1) Rail section of rotary hook	Every 3 to 4 hours of operation
(2) Needle bar (Perform lubrication from the slit section of top cover) (3) Needle bar drive shaft (4) Inside the arm (5) Felt packing (6) Presser foot reciprocator (wick)	Once/week
(7) Inside of cylinder bed (rear)	Once/2 to 3 weeks
(8) Inside of cylinder bed (front)	Once/3 months

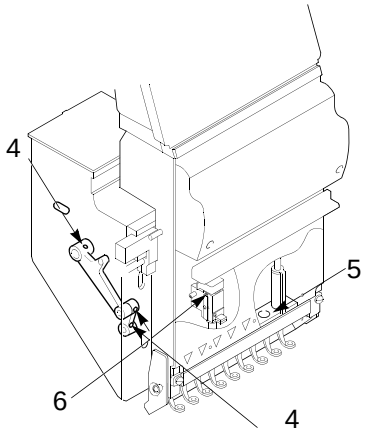
[TEHX,TFHX-Ⅱ]





[TEHX-C, TFHX-C, TFHX-ⅡC]





(GC07)

4. GREASING

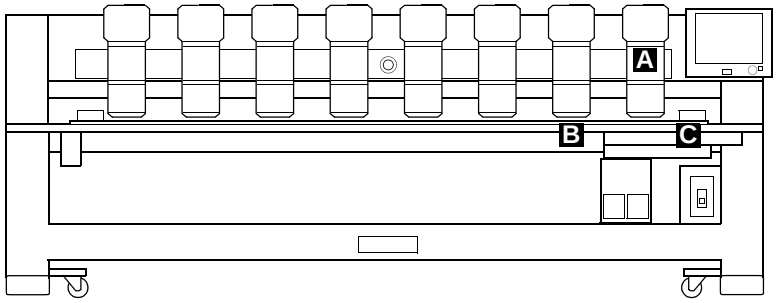
WARNING

During machine greasing, turn off the power switch. You may sustain severe injuries due to being entangled by moving machine units.

CAUTION

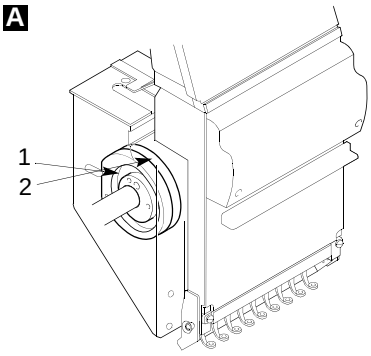
When performing greasing, consult the distributor.

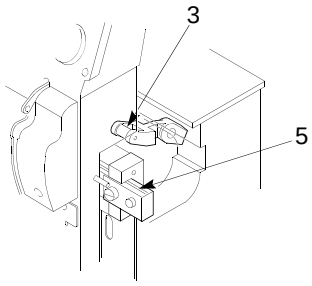
Use the recommended goods (mineral oil-based lithium grease) or equivalent.



Greasing spot	Greasing cycle
(1) Presser foot cam (2) Take-up lever drive cam (3) Roller of take-up lever (4) Bevel gear	Once/3 months
(5) Case linear section (6) X/Y drive system	Once/6 months

A





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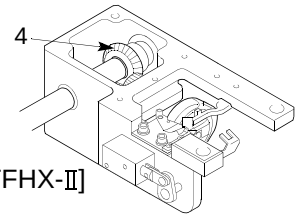
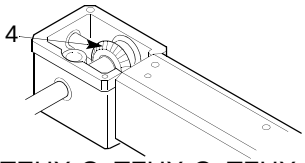
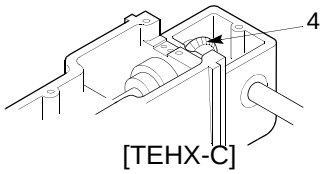


[TFHX, TFHX-Ⅱ]

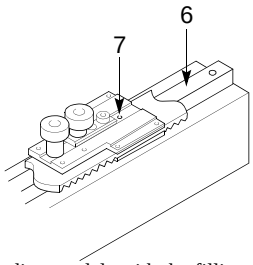


[TEHX-C, TFHX-C, TFHX-ⅡC]



[TEHX-C]

C



Regarding models with the filling opening for grease (7), fill grease from the filling opening (7) using greasing gun, etc.

5. INSPECTION

WARNING

During machine inspection, turn off the primary power supply. (Before turning off the primary power supply, turn OFF the power switch.) You may sustain severe injuries due to being entangled by moving machine units.

Inspection Point	Contents of inspection	Inspection Cycle
(1) Each belt of main shaft drive system	Tension of belt, degree of wear, existence of crack	Once/3 months
(2) Each belt of X/Y drive system	Tension of belt, degree of wear, existence of crack	
(3) Rotating and sliding sections	Degree of wear	

6. REPAIR

WARNING

To prevent accidents resulting in injury or death and physical damage, the following must be observed when performing the repairs of the machine.

Before starting the work, be sure to disconnect the primary power supply to the machine (Before disconnecting the primary power supply, turn OFF the power switch.). Even if the primary power supply is turned off, some circuits are still charged. Wait (4 minutes) until these circuits are completely discharged and then start the work.

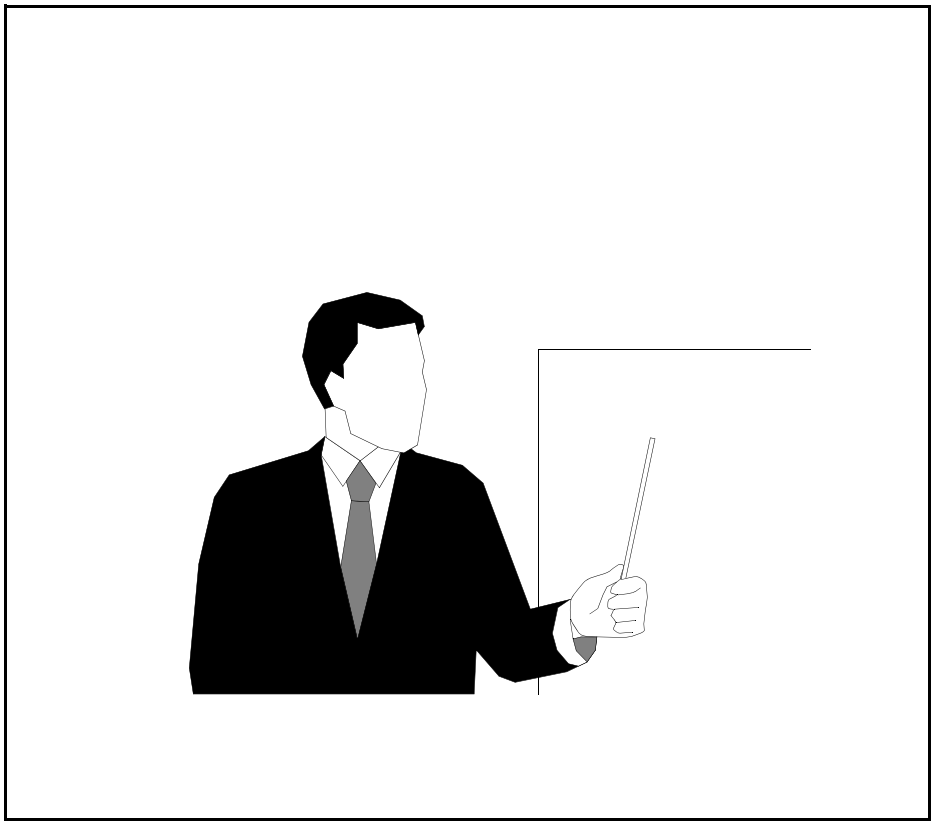
If the machine needs repairs, the repairs must be done only by the service personnel assigned and trained by Tajima or qualified technician. (Consult your distributor.)
Do not change the specification nor modify the parts of the machine without due consultation with Tajima. Such modification may risk the operational safety.

When restarting the machine after repairs, attach all covers etc. which were removed for repair operation.

CAUTION

For the machine repairs, use TAJIMA genuine parts for replacement.

TERMINOLOGY



Terminology

AFC
The abbreviation of Automatic Frame Changer. The device performs automatic embroidery continuously on roll material to be sewn.

ABSOLUTE ORIGIN
The mechanical origin that detects the absolute position of the embroidery frame

AFC VALVE
Air valve that activates AFC.

APPLIQUE
The method to sew colored clothes, etc. that are cut to various shapes on the material.

ATH
The abbreviation of Automatic Thread Trimming and Holding Device

AUTOMATIC FRAME TRAVEL
Automatic frame travel by inner processing in such an occasion as at the end of embroidery or during set of offset

AUTOMATIC JUMP
To make jump automatically when a stitch length exceeds the setting value.

AUTOMATIC LUBRICATION SYSTEM
An optional device to lubricate to each factor of the machine head

BORDER FRAME
A kind of embroidery frames. It holds cut cloth (material) of some extent of size to be stretched

BORING DEVICE
A device that makes hole(s) on the cloth (material) by knife attached to the needle bar to add values to embroidery

BUFFER (BUFFER MEMORY)
Buffer memory media to smooth input/output of data

CAP FRAME
A kind of embroidery frames for embroidery on cap. There are two types of cap frame. One is wide cap frame, another is semi-wide cap frame. The wide cap frame can embroider wider area of circumference directions compared with the semi-wide cap frame

CHECK SUM
A kind of measures to detect error of data transfer or saved (memory) contents

CLEANUP
To remove a fine stitch of design data by absorbing it with preceding and succeeding stitches

CODE FORMAT
Data type (tape code) for data input

COILING
To coil cord-shaped material around core thread to be sewn on the material to be embroidered

CORDING DEVICE
The device that sews cord-shaped material on the material to be embroidered

CURSOR
A mark that indicates the position where character or letter is to be input/displayed on the screen. Some of marks blink or reverse letter

DATA CONVERSION
To reduce/enlarge, rotate, or reverse the original design data

DATA INPUT
To set design data that corresponds to design to sew

DATA SET
Operation to decide a series of setting contents in data input

DESIGN DATA
Data for embroidering design. It consists of design, stitching mode, etc.

DESIGN INTERVAL
Amount of movement (mm) when one design moves to the next design in repeat embroidery of the same design

DESIGN INTERVAL FUNCTION
Method of movement when one design moves to the next design in repeat embroidery of the same design

DIP SWITCH
A small slide switch to change conditions of machine movements

DSW
The abbreviation of Dual in Package Switch. Refer to the DIP switch.

EMBROIDERY FRAME
A general term of frames that hold material to be embroidered such as cloth, leather, etc.

END CODE
There are the code that indicates the end point of embroidery (end code 2) and the code that indicates the pause in designs to be repeated (end code 1)

EXCITATION
To generate magnetic power by sending electric current into coil such as electric magnet, etc.

FDD
The abbreviation of Floppy Disk Drive. Refer to floppy disk drive.

FIXED PITCH MOVEMENT
To move the frame right/left direction (X-axis direction) by preset head pitch

FIXED POSITION
It is the regular stop position, and is indicated by angle of the main shaft of the machine

FLOPPY DISK
An external memory device of which round shaped polyester surface is pasted with magnetic powder. It is used for storing design data, etc.

FLOPPY DISK DRIVE
A device to write or read data or program of floppy disk

FRAME
Refer to embroidery frame

FRAME BACK
To move the embroidery frame only to the returning direction of stitches with the needle bar(s) stopped

FRAME FORWARD
To move the embroidery frame only to the advancing direction of stitches with the needle bar(s) stopped

FRAME LIMIT
The embroidery space limited by the frame limit switches

FRAME LIMIT SWITCH
Switch to limit the embroidery range

FRAME STEPPING
To move the embroidery frame only with the main shaft of the machine kept stopped during embroidery

FRAME TRAVEL SPEED
Speed when automatic frame travel is performed

FUNCTION CODE
A control code to specify function or action of the machine

HALF CUT
To cut only the upper material of piled materials (usually two pieces) by laser irradiation

IDM2 CARD
The abbreviation of Intelligent Data Management 2 card. It mainly controls data processing.

IMM2 CARD
The abbreviation of Intelligent Machine Management 2 card. It mainly controls movements of the machine

INCHING
Very slow rotation of the main shaft when the machine starts or before it stops

JUMP
Not to activate needle bar by cutting off the driving force from needle bar driving mechanism. It is possible to generate a longer stitch than the maximum length of one stitch (12.7 mm) by jumping during operation. When the machine stops, it is always in a state of jumping.

LCD
The abbreviation of Liquid Crystal Display.

LED
The abbreviation of Light Emitting Diode.

MANUAL FRAME TRAVEL
To move the embroidery frame to a free setting position by key switch operation.

MANUAL THREAD TRIMMING
To activate the ATH by key switch operation to trim thread(s).

MARKING
To draw illustrations or letters by scorching the surface of the material by laser irradiation (only when laser processing)
To make the basting data (marking design) for positioning the material to be embroidered in applique embroidery or placing embroidery.

M-AXIS
Driving shaft to rotate nipple or bobbin

MEMORY
Internal memory device

MEMORY DESIGN
Design data written in memory

MEMORY REGISTRATION
To write to memory (memory writing)

MEMORY WRITING
To write to memory (memory registration)

MODE
Contents of setting, operation

NEEDLE BAR SELECTION
To set orders of needle bars to be used

NIPPLE
The parts that presses the material to be sewn in LH head. Attachment that fits to goods to be sewn such as cord, tape, etc.

NIPPLE STROKE
Stroke of nipple in up and down directions

NMI
The abbreviation of Non-Maskable Interrupt. The interrupt factor that cannot be inhibited and is used when computer input signal is input.

NUMERICAL KEYS
Numerical keys of 0 to 9

OFFSET START POSITION
A free setting position that makes the embroidery frame wait temporarily in offset setting.

ORIGIN
The position where start or frame forward was made at the beginning after data set
*When automatic free setting offset is set, the offset start position will become the start position.

PMD
The abbreviation of Pulse Motor Driver. The controller of pulse motor drive.

POLARITY
Posture of a design when embroidering

PTR
The abbreviation of Paper Tape Reader.

RAM
The abbreviation of Random Access Memory. It can be freely read/written.

RESET
To return the control system of the machine that stopped movement by stop factor to the previous condition to its stop

RETURN STITCHING
It prevents misstitching or fraying, and is executed when the machine starts to sew

ROM
The abbreviation of Read Only Memory.

RS232C CONNECTOR
Connector for data communication

SEQUIN
A kind of decorative materials to be sewn on clothes, etc. Thin round plate(s) that have hole at the center to be sewn

SOLENOID
A drive device that activates when the power is turned on, and it is a kind of products for which electric magnet is applied

SPEED CODE
Design data code to switch setting for embroidery speed (high speed/low speed)

STEP
Sequence of color changes for one design, To advance value one by one

STITCH DATA
Data set for every stitch. It consists of X/Y data, function code, and speed code

STOP AT LOWER D. POINT
To stop the machine with the needles stuck into cloth at the end of embroidery (end code 2)

TAJIMA COMPLEMENT ERROR
Error related to composition of X and Y data(10 values: +/-1, +/-3, +/-, +/-27, +/-81) of design data for Tajima embroidery machine. It means two values that are complemental each other (for example, +27 and -27) exist on X or Y data at the same time

TAJIMA TWO-WAY NETWORK SYSTEM
System that performs centralized control of plural machines using a personal computer. It can transmit design data or receive running condition of each machine

TAPE CODE
Data type (code format) for data input

THE NUMBER OF STITCHES
The number of needle sticks when embroidering

TUBULAR GOODS FRAME
A kind of embroidery frames. It mainly holds trainer, T-shirt, etc. to be stretched

UNDER THREAD RELEASE
Action that makes the frame perform slight reciprocating movement to pull out under thread for loosening its tension before thread trimming not to trim under thread by other sections than the thread trimming section

UNDER THREAD TRIMMING SELECTABLE ATH, UNDER THREAD TRIMMING RETRACTABLE ATH
An automatic thread trimming device that can select to set not to trim under thread. When under thread is not trimmed, its mechanism retracts under thread from being trimmed

VERSION NUMBER
The number that shows developing order of software or hardware of the machine

WEAK BRAKE
A weak brake to hold the main shaft at the fixed position when the machine stops normally with power turned ON

WRITE DESIGN NUMBER

Memory registration number to set for data management when design data is written (memorized)

X DATA

The data that makes the embroidery frame move right/left direction (X direction) by the X-axis drive system. The value displayed as X data indicates movement amount (mm), and the symbol indicates movement direction (+: left, -: right).

X-AXIS DRIVE SYSTEM

The drive system that makes the embroidery frame move to right and left directions against the front of the embroidery machine

Y DATA

The data that makes the embroidery frame move front/rear direction (Y direction) by the Y-axis drive system. The value displayed as Y data indicates movement amount (mm), and the symbol indicates movement direction (+: front, -: rear).

Y-AXIS DRIVE SYSTEM

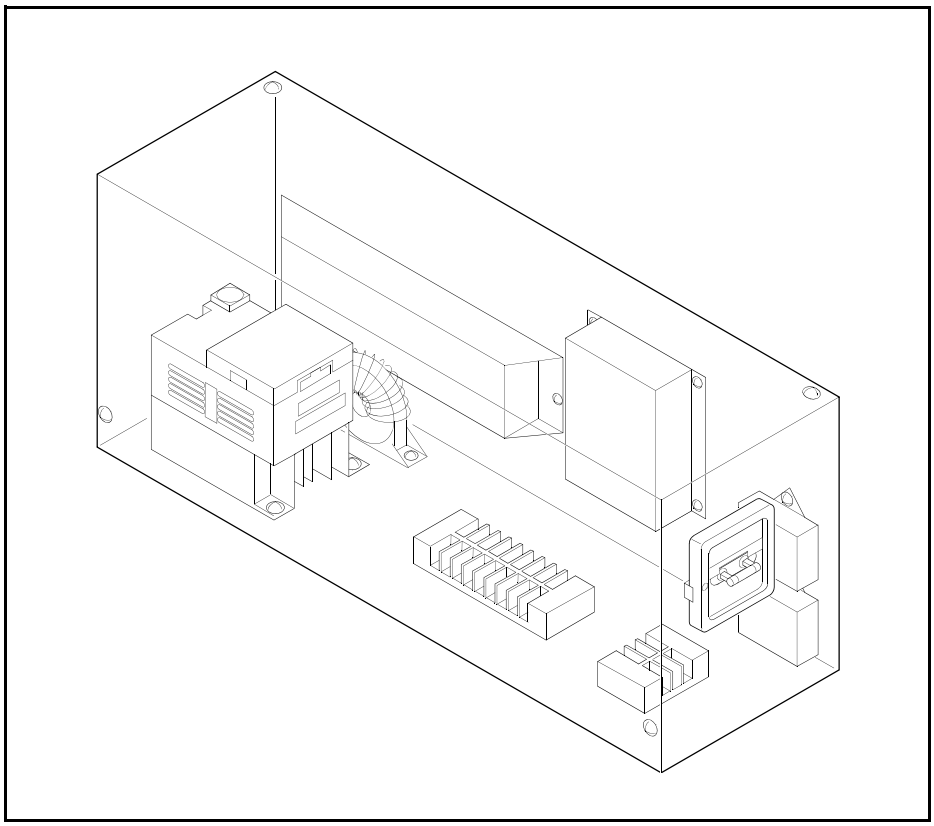
The drive system that makes the embroidery frame move to front and rear directions against the front of the embroidery machine

ZIGZAG SWING EMBROIDERY

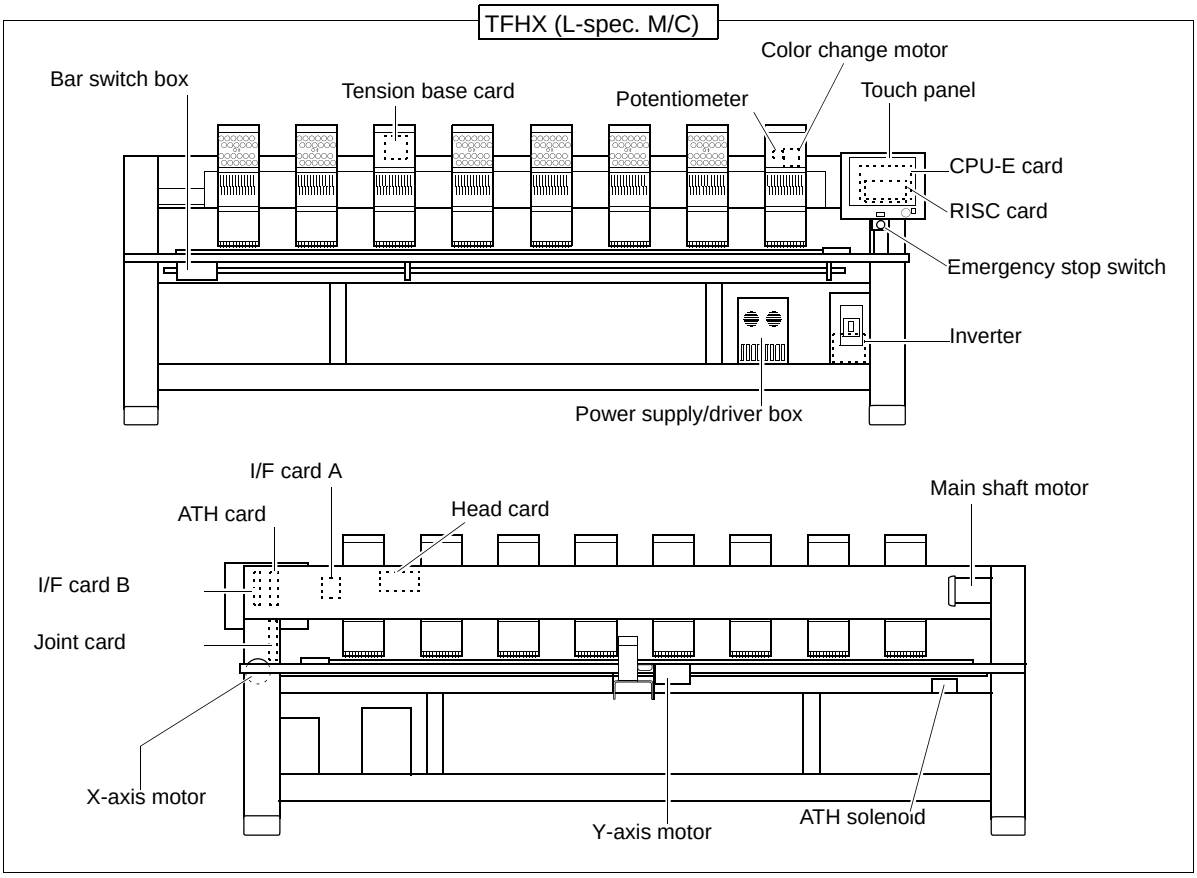
To sew cord-shaped material by zigzag swing.

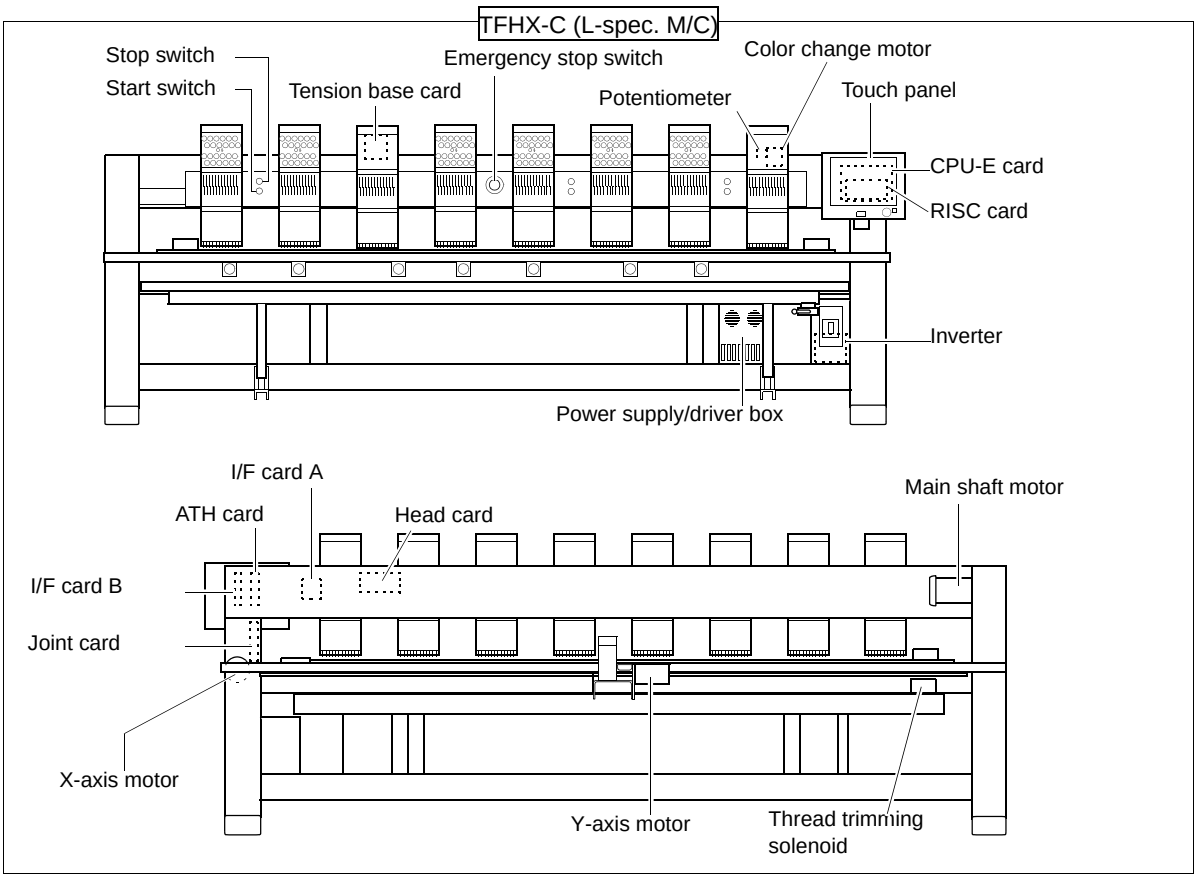
* Needle does not locate to cord-shaped material generally.

ELECTRO-RELATIVE DRAWING

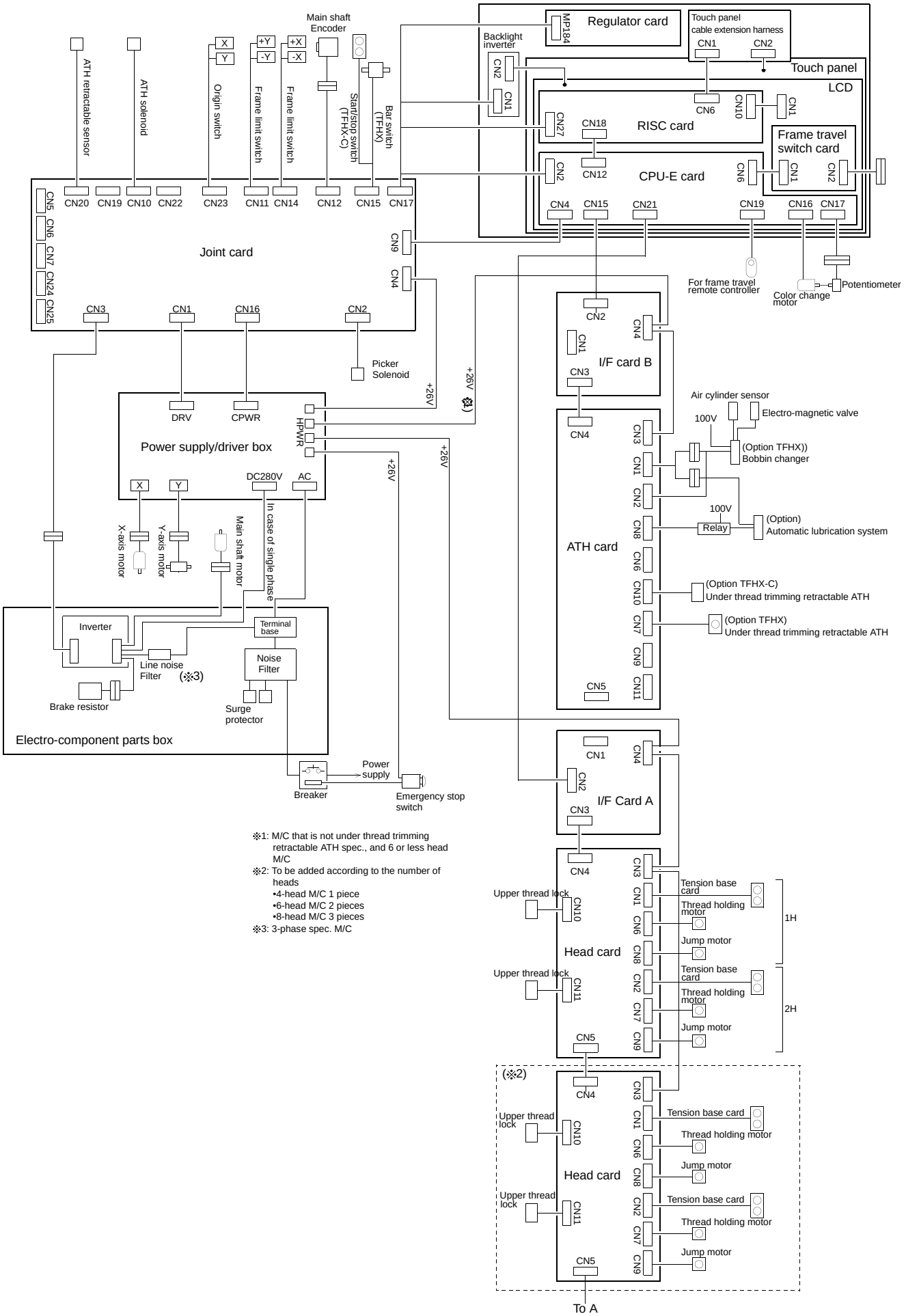


TFHX (L-spec. M/C), TFHX-C (L-spec. M/C)





TFHX (L-spec. M/C), TFHX-C (L-spec. M/C)

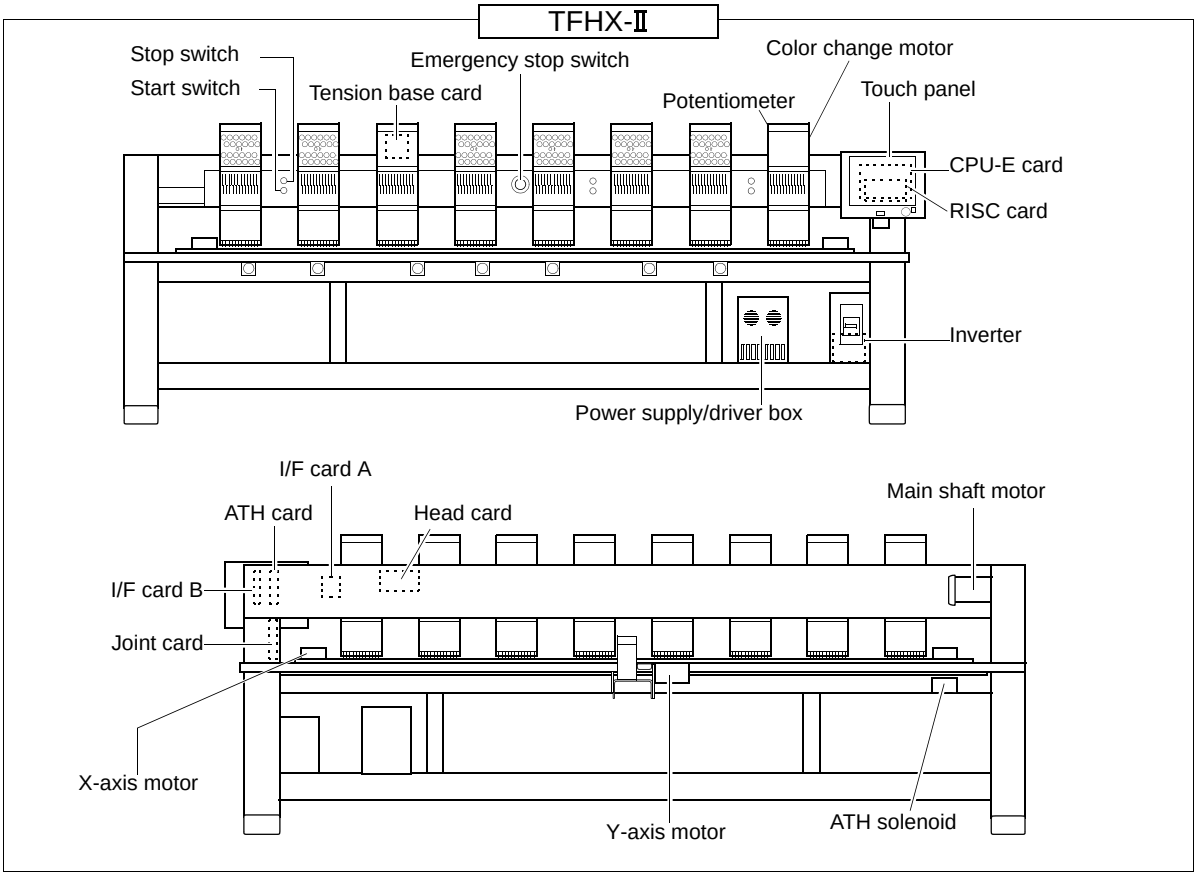


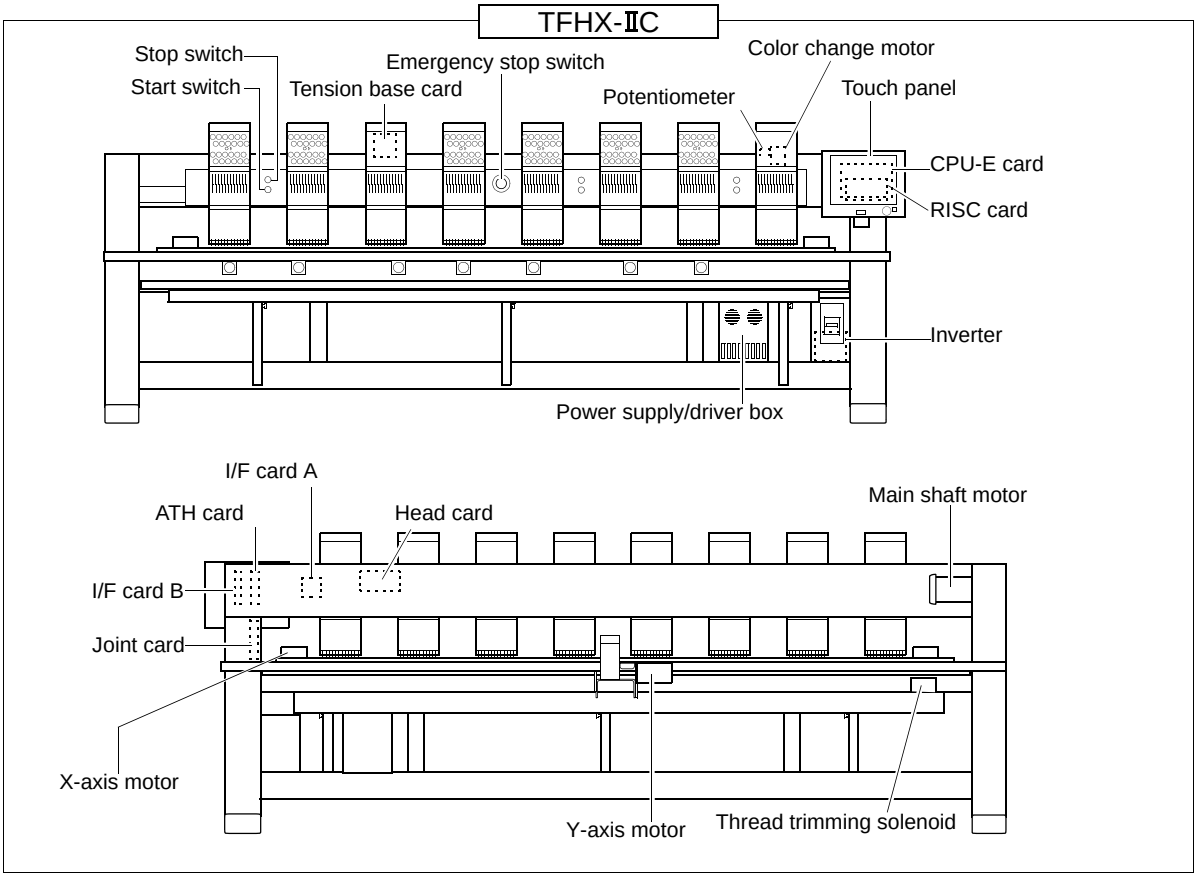
※1: M/C that is not under thread trimming retractable ATH spec., and 6 or less head M/C

※2: To be added according to the number of heads
- 4-head M/C 1 piece
- 6-head M/C 2 pieces
- 8-head M/C 3 pieces

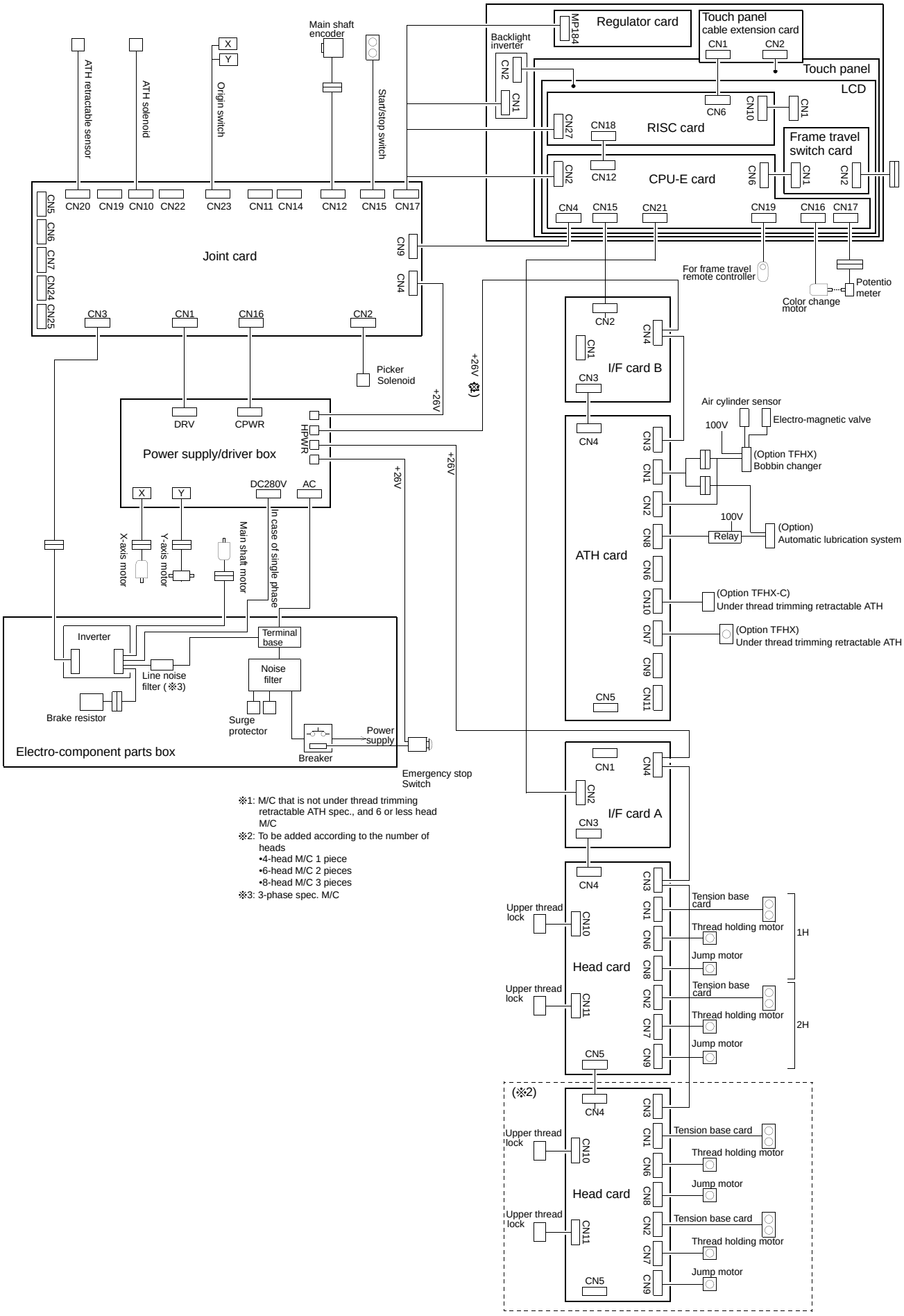
※3: 3-phase spec. M/C

TFHX-II, TFHX-IIC





TFHX-II, TFHX-IIC

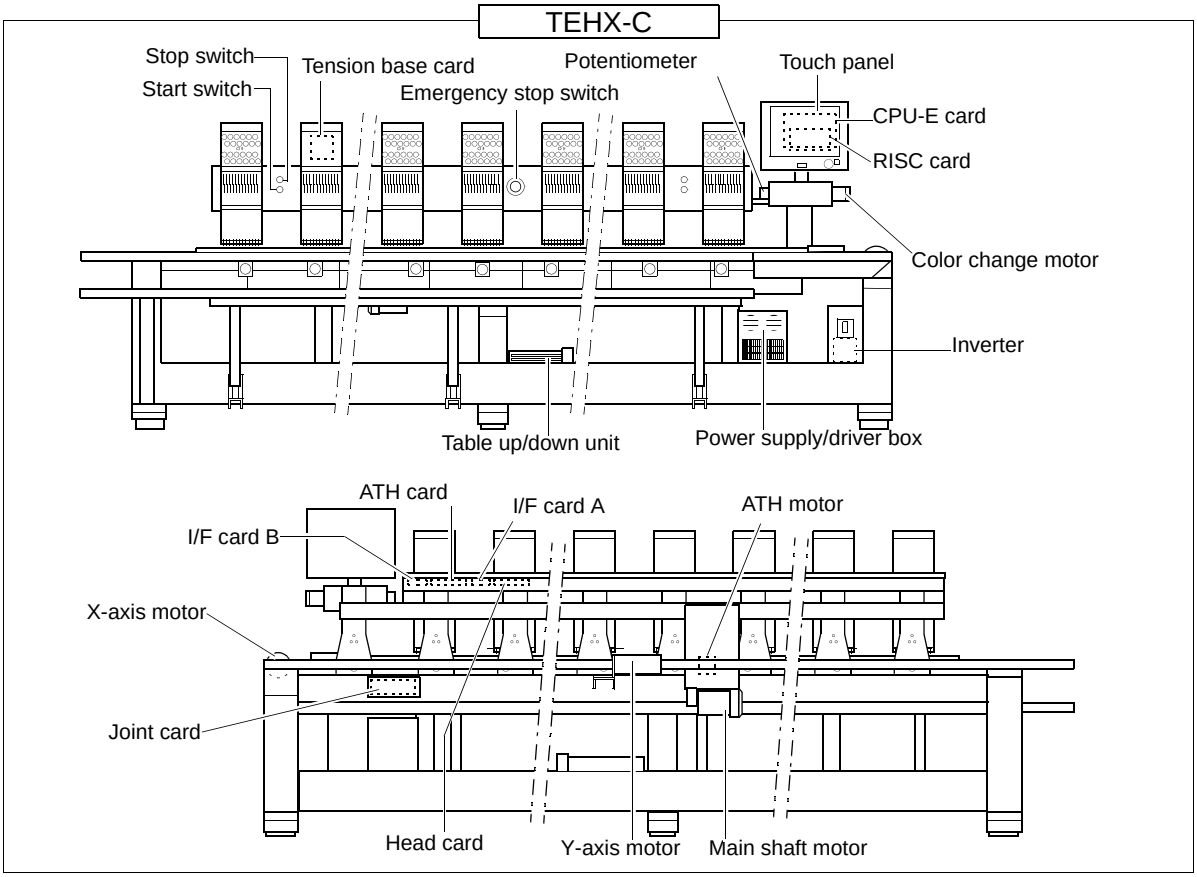


※1: M/C that is not under thread trimming retractable ATH spec., and 6 or less head M/C

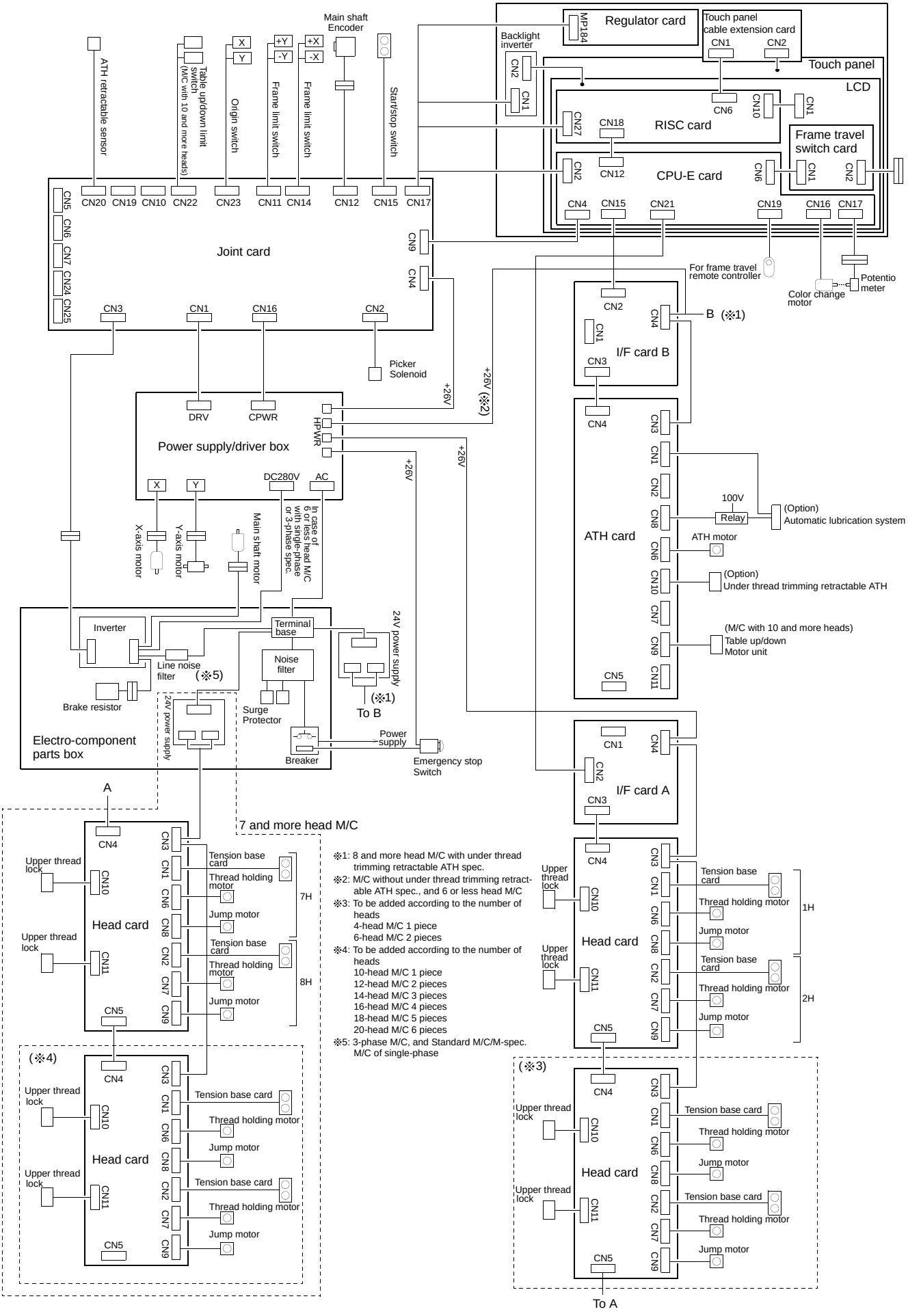
※2: To be added according to the number of heads
- •4-head M/C 1 piece
- •6-head M/C 2 pieces
- •8-head M/C 3 pieces

※3: 3-phase spec. M/C

TEHX-C


TEHX-C
Stop switch
Start switch
Tension base card
Emergency stop switch
Potentiometer
Touch panel
CPU-E card
RISC card
Color change motor
Inverter
Table up/down unit
Power supply/driver box
ATH card
I/F card A
ATH motor
I/F card B
X-axis motor
Joint card
Head card
Y-axis motor
Main shaft motor

TEHX-C



※1: 8 and more head M/C with under thread trimming retractable ATH spec.
※2: M/C without under thread trimming retractable ATH spec., and 6 or less head M/C
※3: To be added according to the number of heads
4-head M/C 1 piece
6-head M/C 2 pieces
※4: To be added according to the number of heads
10-head M/C 1 piece
12-head M/C 2 pieces
14-head M/C 3 pieces
16-head M/C 4 pieces
18-head M/C 5 pieces
20-head M/C 6 pieces
※5: 3-phase M/C, and Standard M/C/M-spec. M/C of single-phase

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3rd Edition February, 2003
4th Edition July, 2003

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