USER'S MANUAL

SINGLE HEAD
LCD CONTROLLER TYPE
TEHX-C

M-EHXC-SLCD-04-E
(2003.10)

FOREWORD

This manual is a guidebook for using TAJIMA automatic embroidery machine TEHX-C (referred to as machine hereafter) correctly. Items to notice when using the machine are described. Please read this manual thoroughly, understand the contents, and then use 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

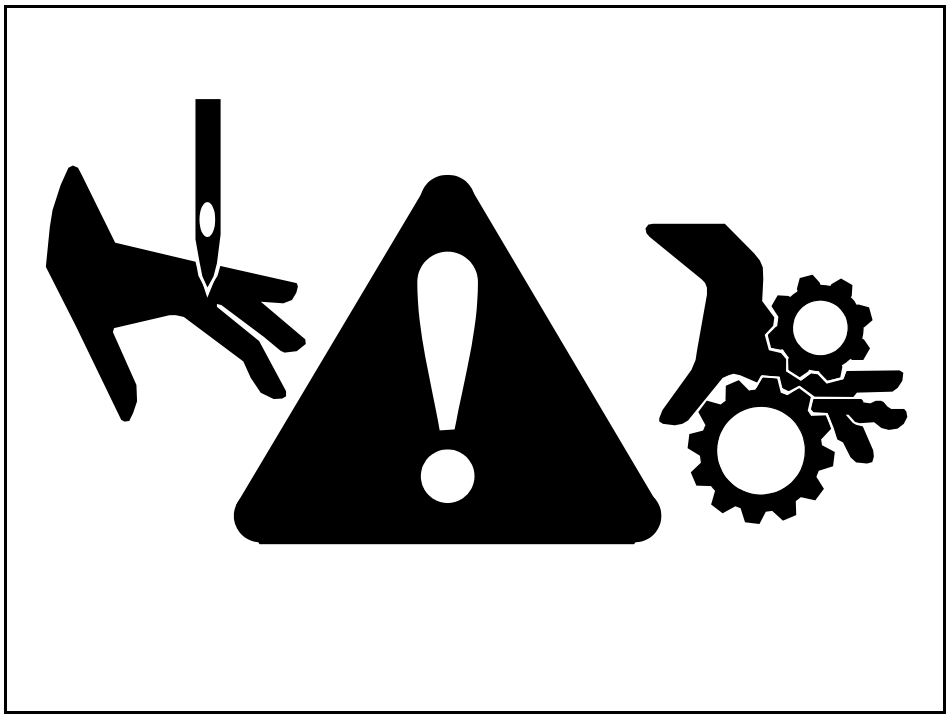
: Items that explain the contents of sentences in detail and items that complement the contents.

CHAPTER 7
MANUAL OPERATION

CHAPTER 8
PARAMETER SETTING

CHAPTER 1

IMPORTANT WARNING ITEMS FOR SAFE OPERATION

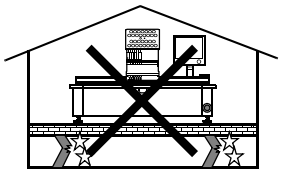


1. INSTALLATION ENVIRONMENT

CAUTION

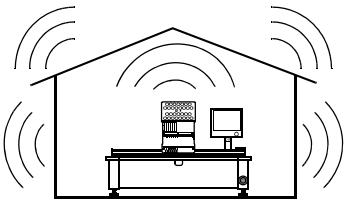
Install the machine on a sturdy floor.

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.



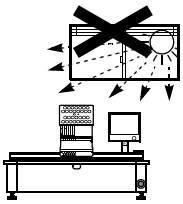
Prevent the operation noise in the environment.

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.



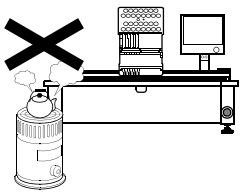
Avoid dust and moisture.

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° (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>

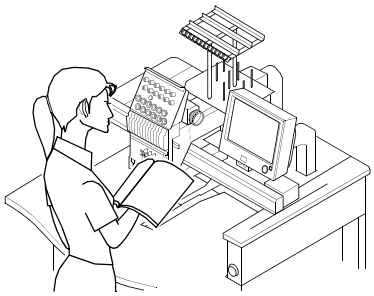
The machine is designed and built as an industrial embroidery machine for semi- or finished textile products and similar materials. Using the machine for other purposes must be avoided.

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.

Sufficient care must be exercised so that a child will not enter the area near 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.

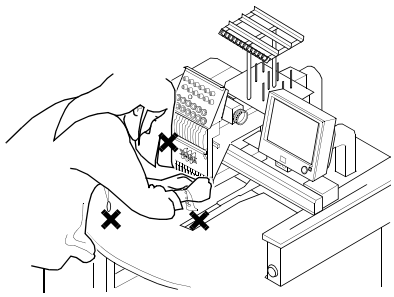


Do not stand on the machine. Using the bar switch as a grip to support yourself is strictly prohibited.

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.

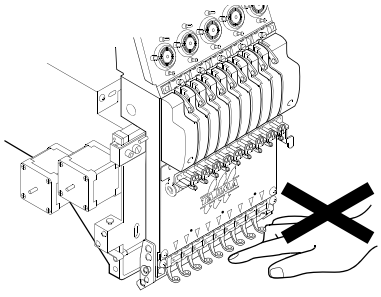
WARNING

<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, the areas near moving needles, rotary hooks, take-up levers, pulleys, and speed reducing 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.

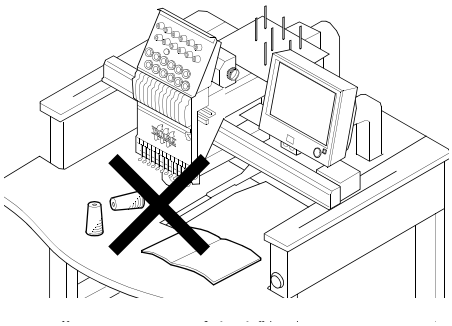
CAUTION

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.



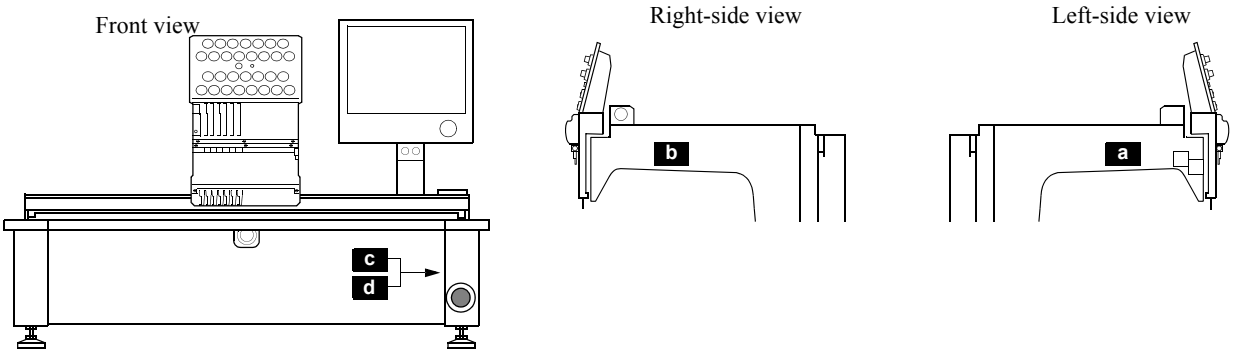
3. WARNING LABELS

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.



Type of warning labels

DANGER

The spots where warning labels c and d are attached should be opened only by the service persons authorized by TAJIMA.
It could cause a burn, electric shock, or death.

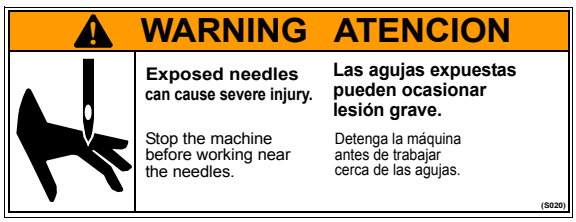
When opening cover, wait for four minutes after turning off the power switch.
You may receive an electric shock by remaining current.

a

Regarding warning content of warning label (a), “safety cover” aims at all covers attached circumference of movable parts of the machine.

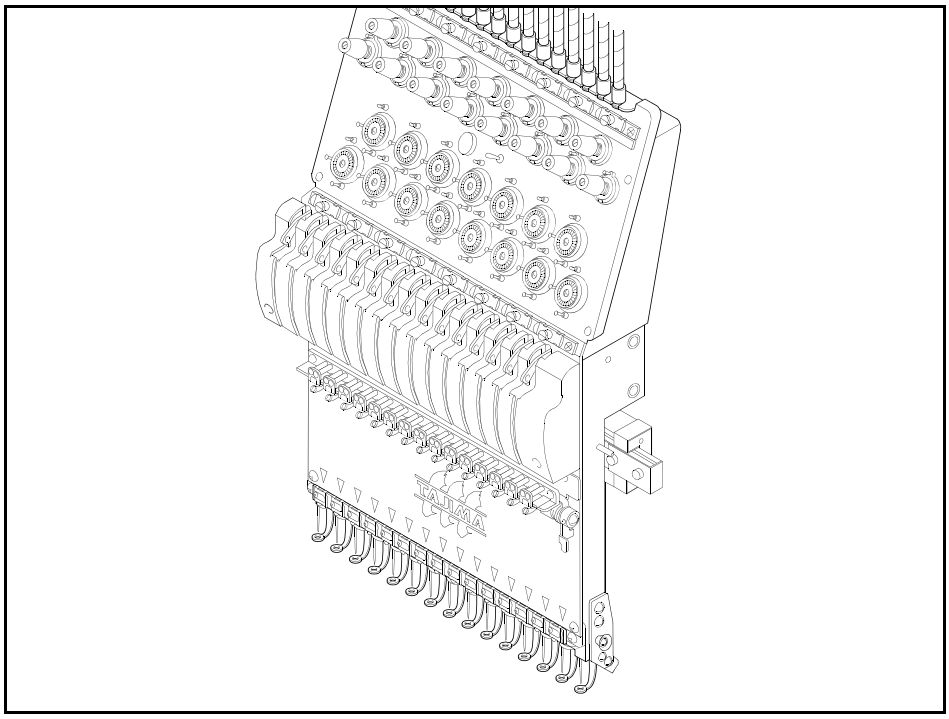
c

b



d

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 degree.

◆AUTOMATIC REPEAT OPERATION
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
The machine trims thread automatically by command of design data. In addition, it is possible to activate automatic thread trimming and holding device manually to trim thread.

◆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.

◆QUIET OPERATION
Variety of noise-reduction mechanism keeps working environment comfortable.

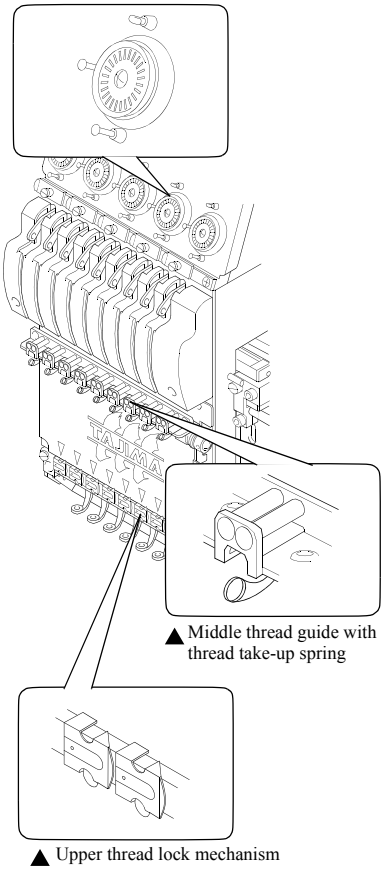
◆ORIGIN RETURN
A return to the design origin (design start position/offset start position) can be made during embroidery operation, even if the design origin does not coincide with the design end point.

▲Operation panel

Jog remote-controller ▶

▲Design drawing during embroidery

▼Rotary type thread breakage detection mechanism

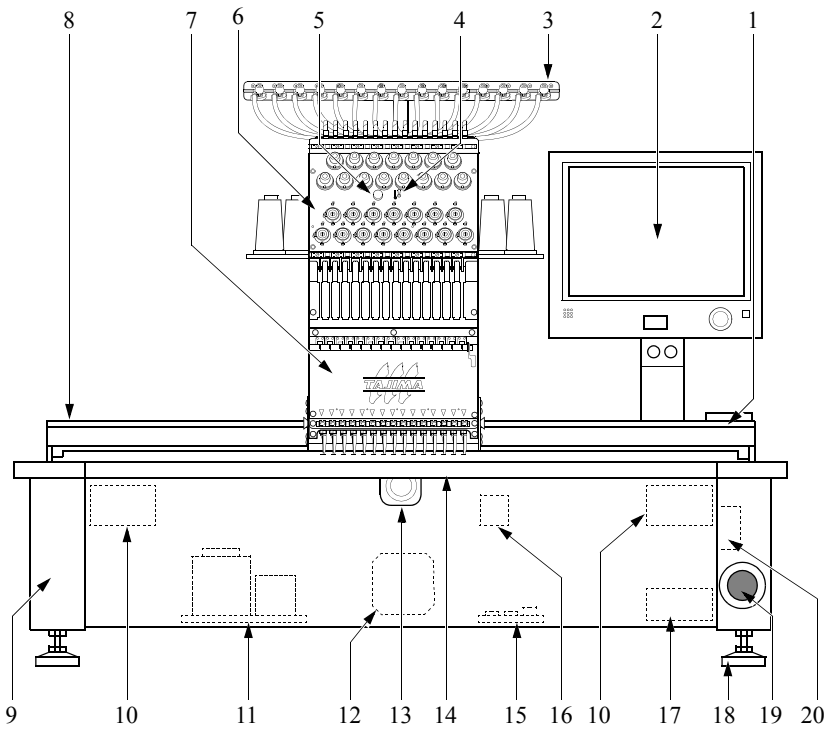


▲Middle thread guide with thread take-up spring

▲Upper thread lock mechanism

(GC10)

2. NAME OF EACH PART



1. X-axis motor
2. Operation panel box
3. Thread guide system
4. Tension base switch
5. Thread breakage indicator lamp
6. Individual tension base
7. Needle bar case
8. Z-spec.frame
9. Stand
10. Y-axis motor
11. Power supply/Driver unit
12. Main shaft motor
13. Thread trimming cam box
14. Table
15. Joint card
16. ATH motor
17. Noise filter
18. Leveling adjuster
19. Emergency stop switch
20. Power switch

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

Electricity	330W (470VA)
Voltage	Single phase 100 - 120 V/200 - 240 V
Allowable voltage range	Within ±10% of the rated voltage
Frequency	50/60Hz

Insulating resistor

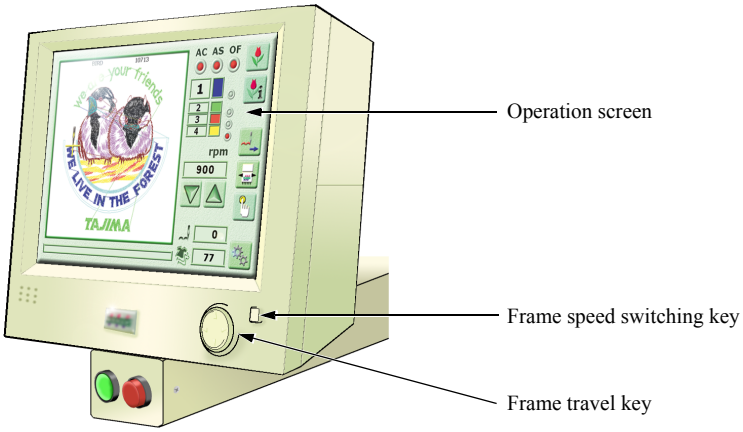
10M ohms or larger (measured with a 500 V insulation tester)

WARNING

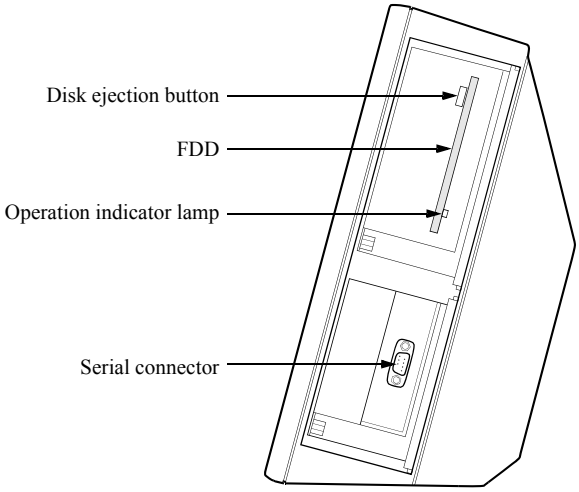
Since there is possibility of electric shock due to leak current, be sure to connect the grounding wire of the machine to the ground. Grounding resistance must be 100 ohms or less.

4. OPERATION PANEL BOX

Operation screen (Touch panel)



<Right side of the panel>



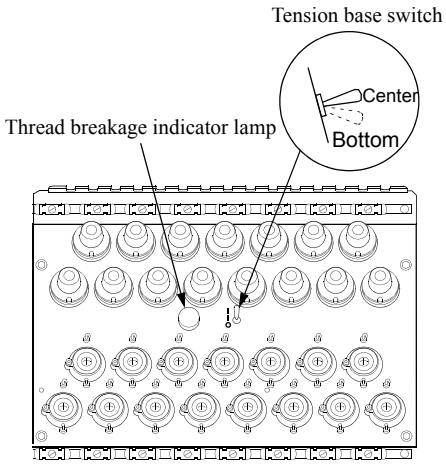
For the protection of the screen, use the touch panel screen with protection film stuck.

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

Frame travel key
It moves the embroidery frame to 4 directions/8 directions. P.80

Frame travel speed switching key
It switches manual frame travel speed to low speed/high speed.

5. TENSION BASE

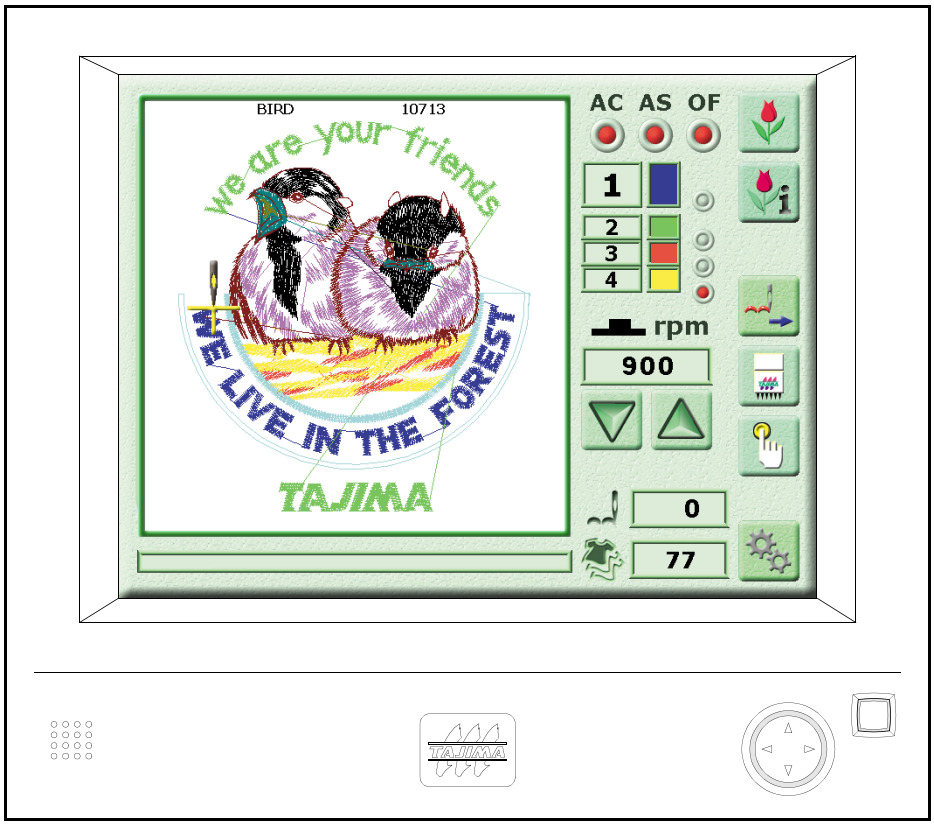


Switch at the center: Usually, set the switch to “center” position.

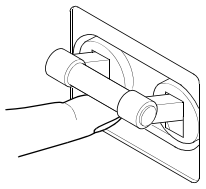
Switch at the bottom: The needle bar does not move. (Embroidery is not performed.)

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)

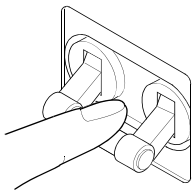
CHAPTER 3
OPERATION BASICS



1. POWER SWITCH



Turning "ON" the power"

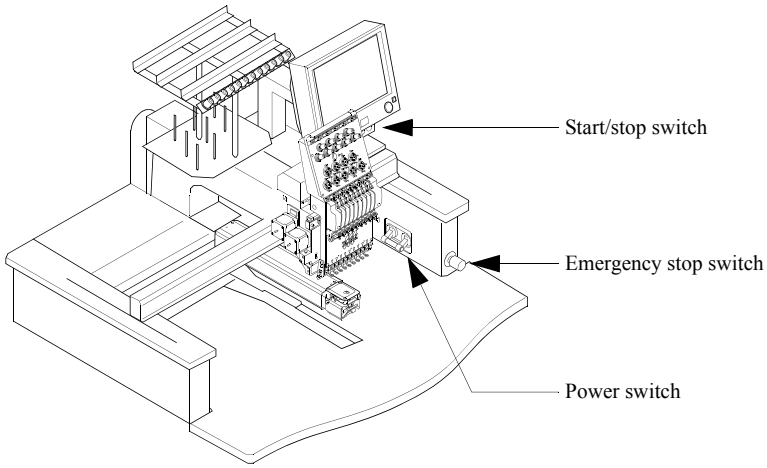


Turning "OFF" the power"

When turning on the power again, turn "OFF" the switch and turn it "ON" after about 2 to 3 seconds.

When the power is shut off such as power failure, the switch will be turned "OFF".

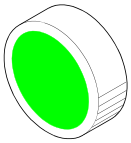
2. EMERGENCY STOP SWITCH



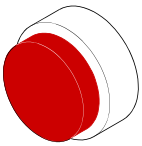
Pressing the emergency stop switch will cause the machine to stop at the fixed position to turn OFF the power.

To release the lock, turn the switch knob to the direction indicated by the arrow.

3. START/STOP SWITCH



Start switch (green)



Stop switch (red)

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

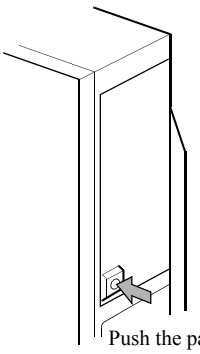
During operation
Stop switch: stop
Start switch: invalid

4. FLOPPY DISK AND FDD

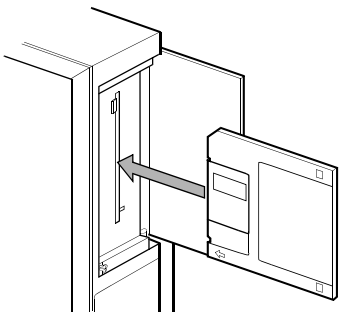
CAUTION

Observe the items indicated below when handling floppy disks.

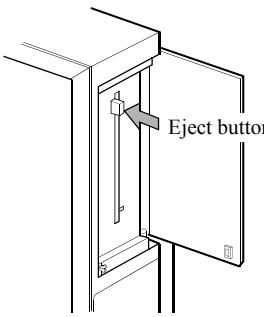
- **Do not put the floppy disk near magnets or a TV.**
- **Do not expose it to excessive heat, humidity, or direct sunlight.**
- **Do not place heavy objects on the floppy disk.**
- **Floppy disks do not last eternally. Data must be copied to backup floppy disks for storage.**
- **Do not use damaged or deformed floppy disk, otherwise the floppy disk drive could be damaged.**
- **Clean the head of floppy disk drive regularly (about once a month) using a cleaning disk on the market, otherwise read/write could be faulty.**
- **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.**



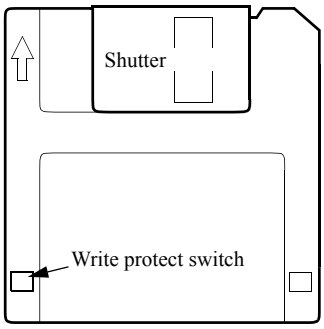
Push the part indicated by the arrow to open the cover.



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.

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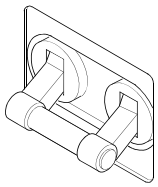
5. CPU SOFTWARE INSTALLATION

CAUTION

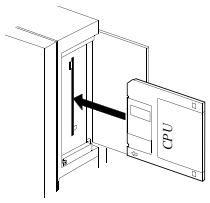
Before installing the CPU software, save the design data currently registered in the memory to a floppy disk. Design data may be damaged by unexpected causes during installation.

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

1. Set the CPU software with the power turned OFF.

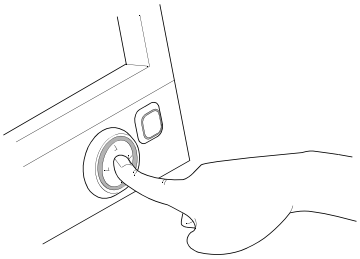


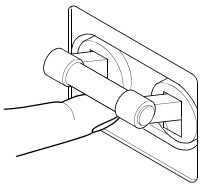
Turning "OFF" the power"



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 pushing the center of the frame travel key



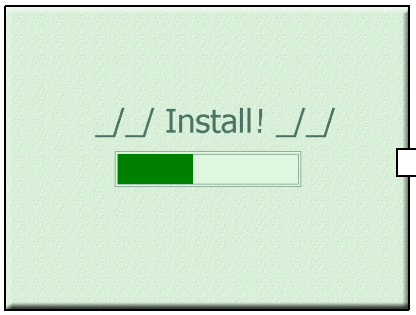


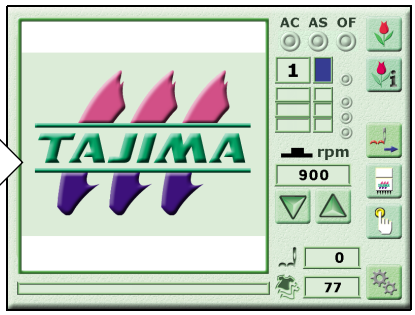
Turning "ON" the power"

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, release the finger from the frame travel key.

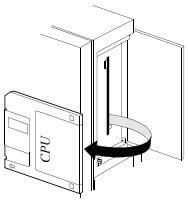
3. Installation

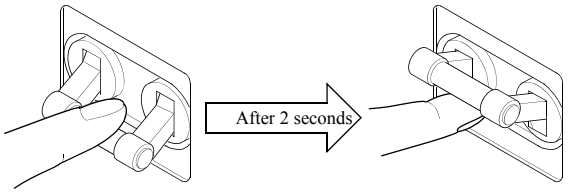




Installation will start automatically, and the screen for installation will appear.
When installation is completed, it will switch to the screen for operation.

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.63

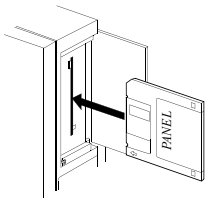
6. PANEL SOFTWARE INSTALLATION

CAUTION

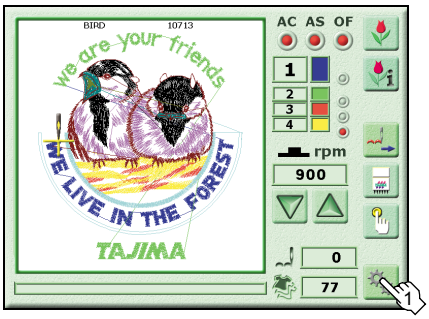
Before installing the PANEL software, save the design data currently registered in the memory to a floppy disk. Design data may be damaged by unexpected causes during installation.

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

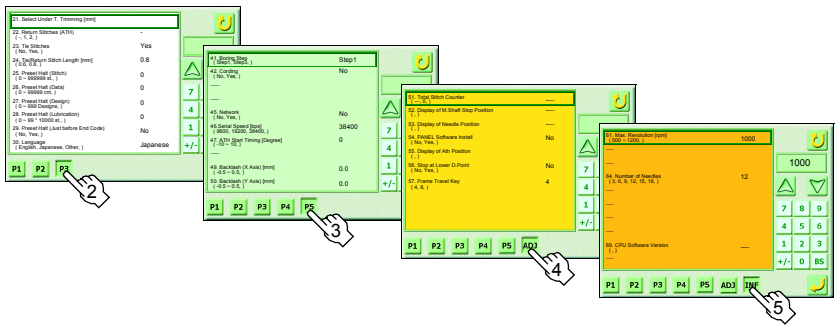


2. Switch to the screen 3000



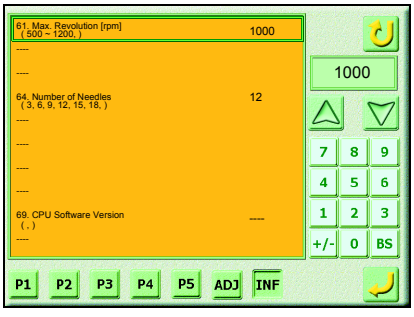
◀ Screen 1000

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

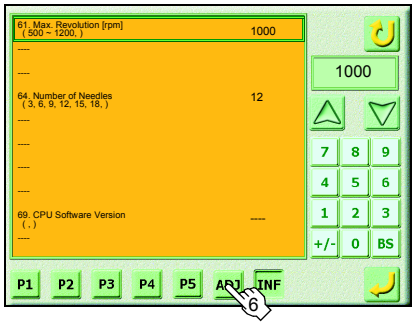


◀ Screen 3000

Take note of the contents of the following parameter setting.
61. Max. Revolution [rpm]
64. Number of Needles

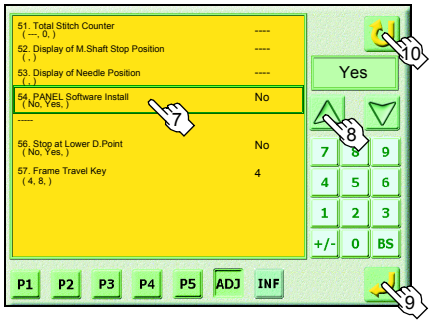
It will become necessary to set parameters as described above when confirming them after installation of the software.

5. Switching to the ADJ screen



◀ Screen 3000

6. Install the PANEL software



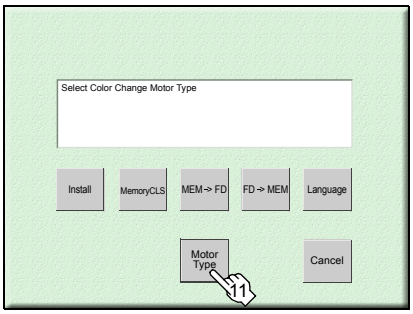
◀ Screen 3000

📖 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

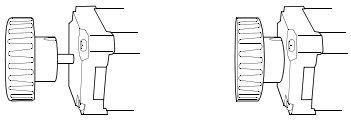
During reading of floppy disk, the operation panel will be in a state as if it stopped for a few seconds. Do not operate the panel in this moment. Otherwise, installation may not be performed normally.

7. PANEL software installation



Motor Type	Selection of color change motor (Type 1/Type 2)
MemoryCLS	Delete all memories
MEM -> FD	Backup memory contents to floppy disk
FD -> MEM	Restore backup memory of floppy disk
Language	Switching of language display
Install	Install the PANEL software
Cancel	Cancel the installation

COLOR CHANGE MOTOR



Type1 Type2

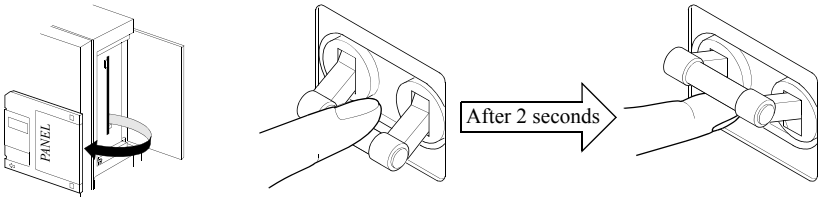
Motor shaft length of Type1 is different from that of Type 2.

📖 Pressing “Motor Type” will cause “Type 1/ Type 2” to be switched and “Install” button to be displayed.
After selecting motor type, press the “Install” button to start installation.

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

📖 When cancel was made, turn on the power again.

8. Turn on the power again



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

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

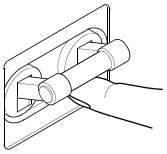
📖 Check the following parameters.
61. Max. Revolution [rpm]
64. Number of Needles

7. OPERATION FLOW

Primary power supply ON

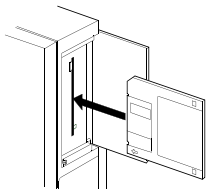
When inputting data from an external device

Set the serial cable.



Power switch ON

Screen 1000



When inputting data from a floppy disk

Set a floppy disk.

Screen 2000

Data input from floppy disk (p.23)

Data input from serial connection (p.24)

Select the memory design.

Data set

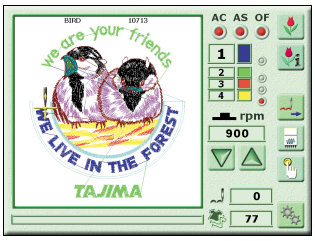
Needle bar selection (p.34)

Data conversion/repeat/offset (p.41)

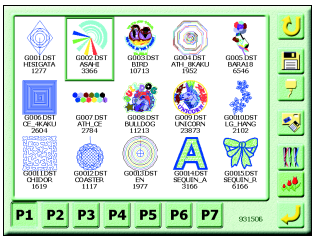
Frame travel (automatic/manual)

Bar switch ON/start switch ON

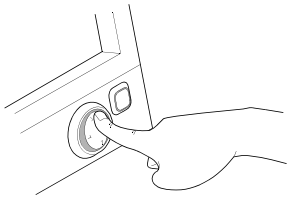
Embroidery starts.



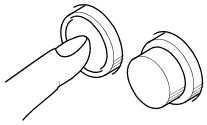
▲Screen 1000



▲Screen 2000



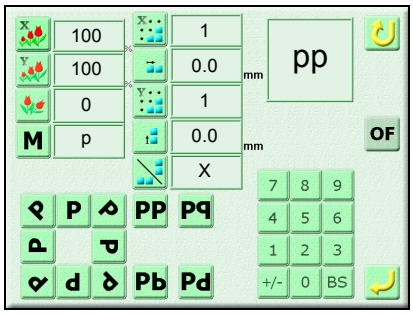
▲Frame travel key



▲Start switch

8. VALUE INPUT

1. Inputting by numerical keys



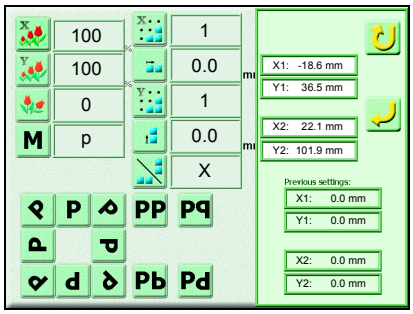
◀ Screen 6000

Numerical keys ▶

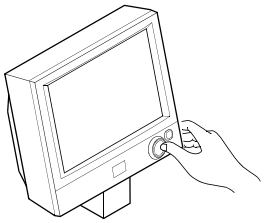
📖 Select the input column, and input the value with numerical keys.
To make correction, press “BS” to delete the value, and input value again.

Press this icon to register all input values.

2. Value input by frame travel

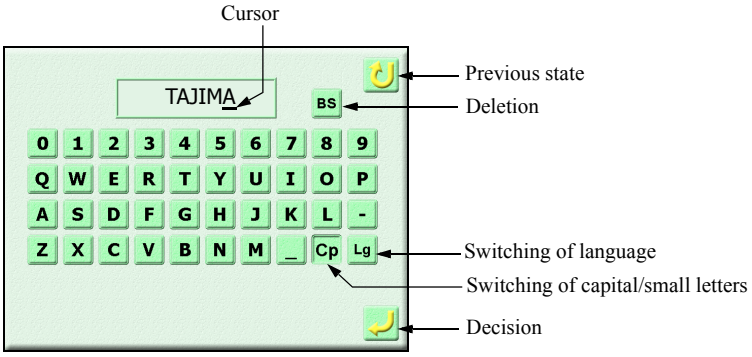


◀ Screen 6010



📖 When moving the embroidery frame to a free setting position by the frame travel keys or the jog remote-controller, the position will be displayed with coordinate values.

9. INPUT OF CHARACTERS



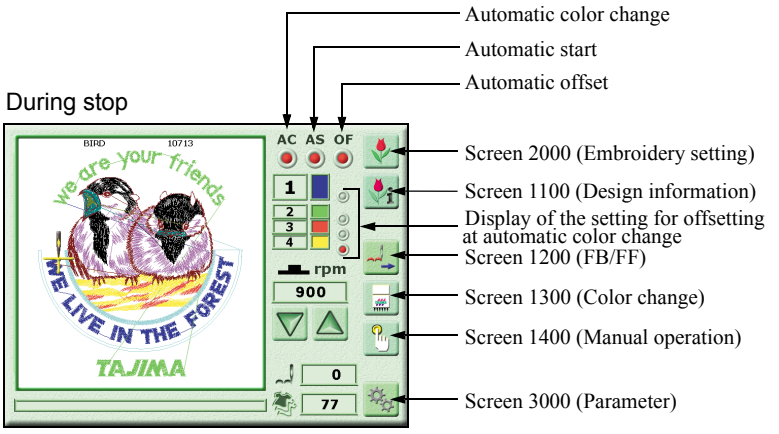
▲Screen A000

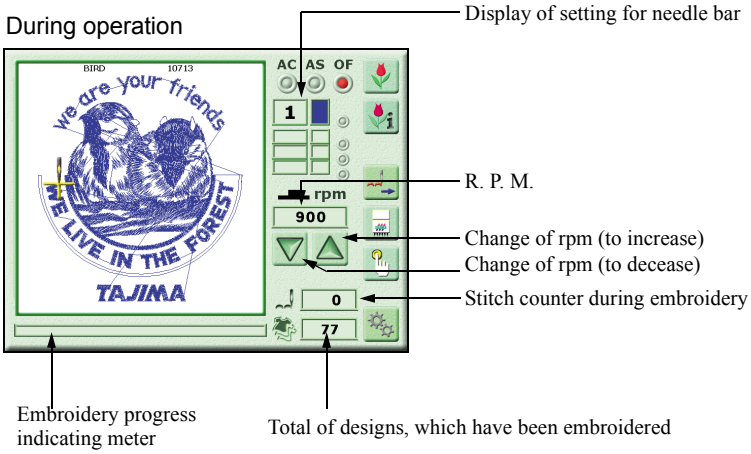
📖 Treat it the same as the keyboard.

Press this icon to register the input characters.

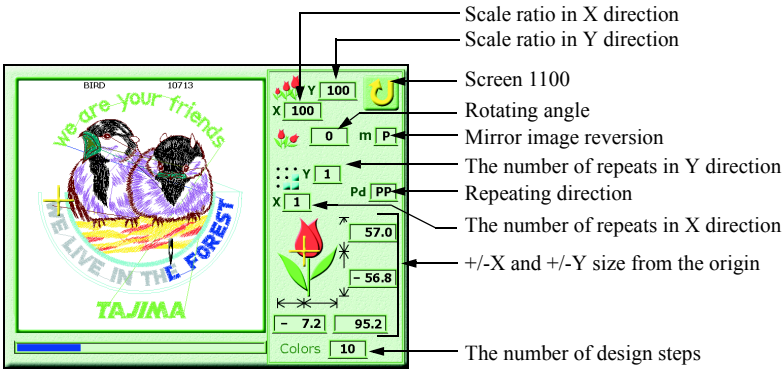
📖 It is not possible to input space.

10. EXPLANATION ON THE SCREEN (SCREEN 1000)





11. EXPLANATION ON THE SCREEN (SCREEN 1100)



📖 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.

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

📖 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.

📖 It display the information of design of which data was converted.
Data conversion p.35

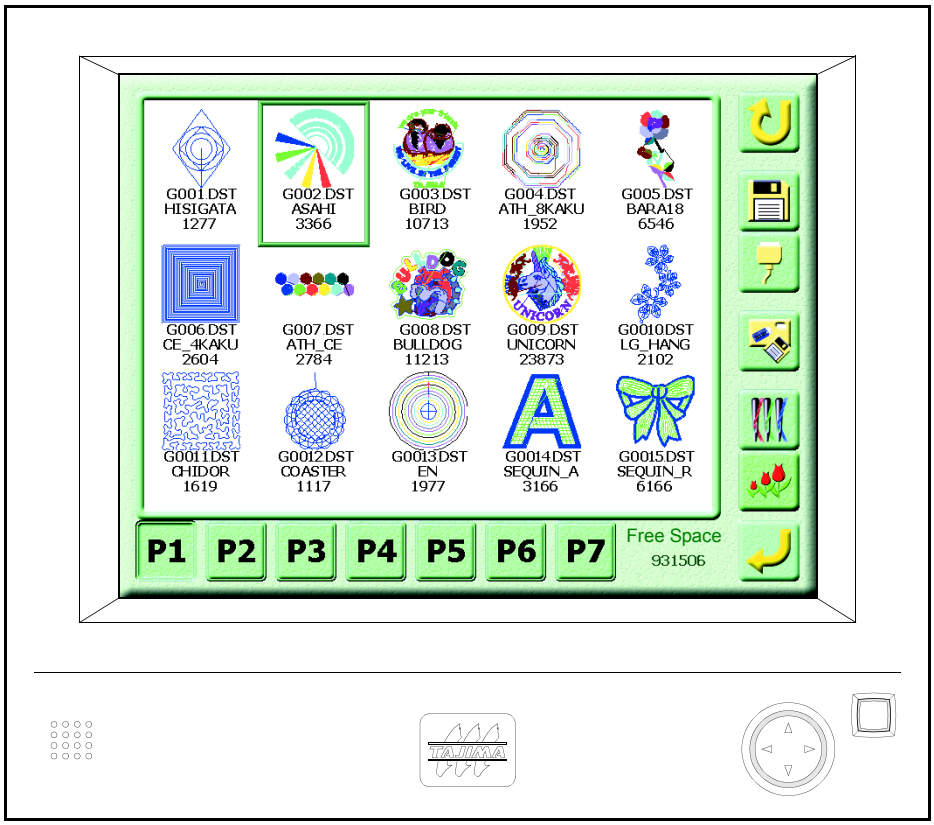
12. INSPECTION BEFORE STARTING EMBROIDERY

WARNING

When performing inspection before starting embroidery, turn OFF the power.
You may be caught by the machine or sticking needle may cause severe injury.

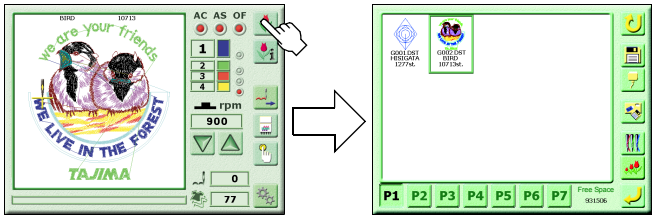
Inspecting item	Condition	Action to take
Cover	Cover(s) depart from the machine.	Attach the cover to the machine.
Thread	Thread(s) depart from the original position.	Set thread(s).
	Thread(s) are broken.	
Needle	Needle(s) are bent.	Change the needle(s).
	Needle(s) are broken.	
Rail on rotary hook	Appropriate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

CHAPTER 4
DATA SET

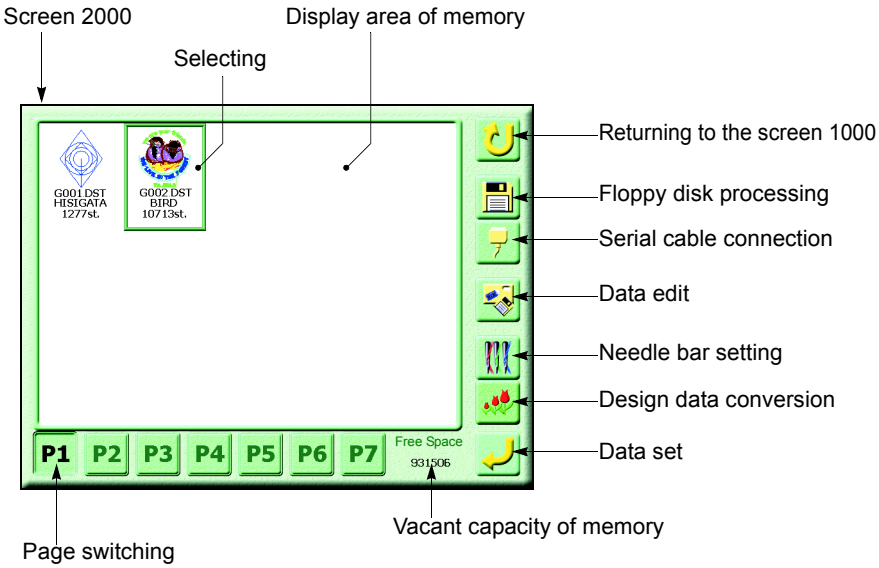


1. EXPLANATION ON THE SCREEN (SCREEN 2000)

<How to call the screen>



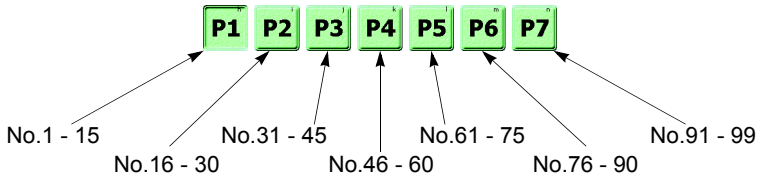
Embroidery setting screen



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.

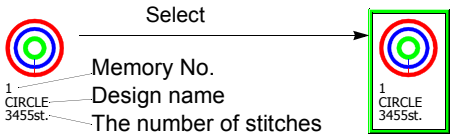
Vacant capacity of the memory displays the number of remaining stitches of design data that can be registered in the memory.
When the memory has no vacant capacity, the icons that enable data input of "floppy disk processing, serial cable connection" will disappear.

Page switching



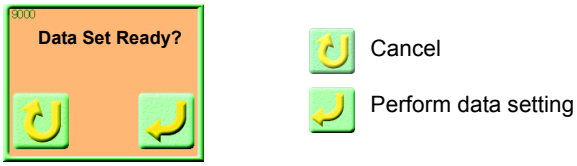
Up to 15 designs are displayed at the display area of memory designs, and 16 and after designs are displayed at the next page.
16 and after designs are stored at "P2". Page switching icons will be added by the number of designs stored in memory.
It is possible to register up to 99 designs in the memory.

Design data information



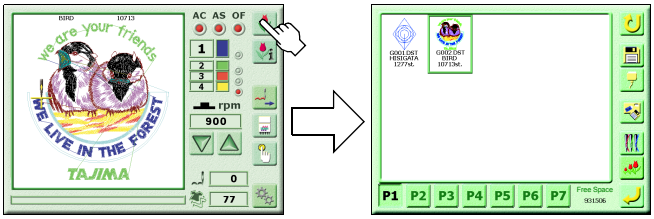
The selected design will be surrounded by a frame.

Pop-up window

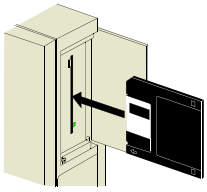


2. DATA INPUT FROM FLOPPY DISK

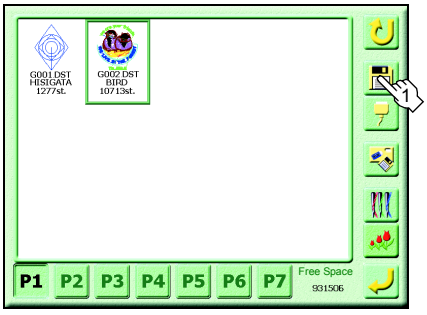
<How to call the screen>



1. Insert the floppy disk.

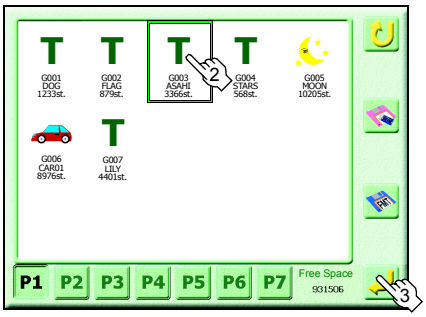


2. Reading the floppy disk



◀ Screen 2000

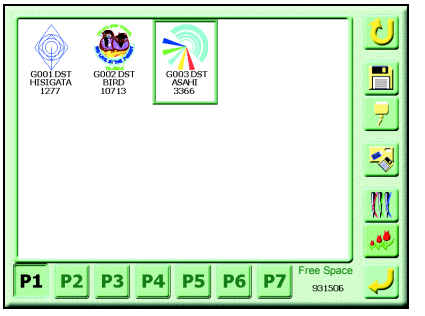
3. Selection of design and input



◀ Screen 4000

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

4. Completion of input

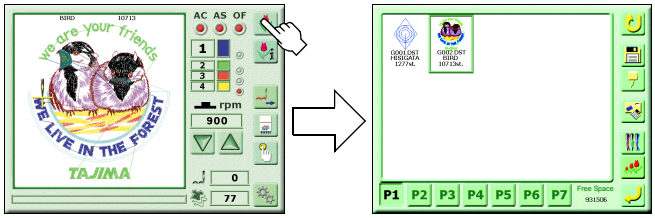


◀ Screen 2000

📖 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

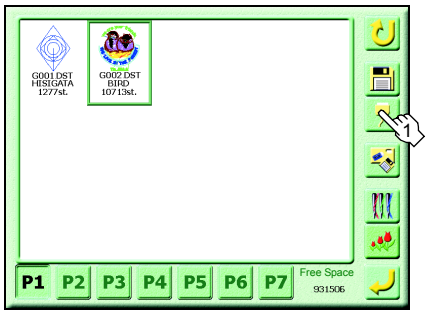
<How to call the screen>



CAUTION

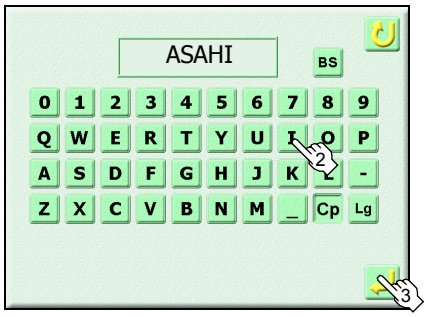
Turn ON the switch of the external device before turning ON the switch of the machine.

1. Start serial connection



◀ Screen 2000

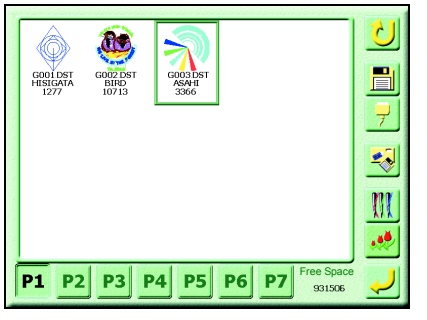
2. Inputting design name



◀ Screen 4000

Input of characters p.18

3. Completion of input

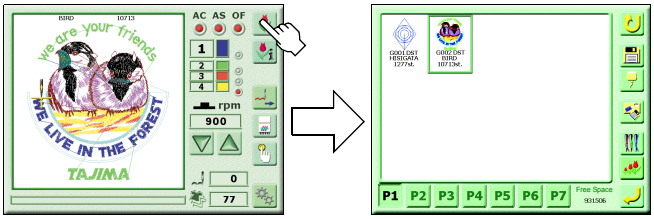


◀ Screen 2000

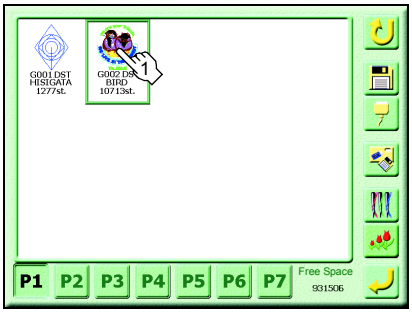
After the input, the data will be stored in the smallest value among vacant memory numbers of the screen 2000.

4. DATA SET

<How to call the screen>



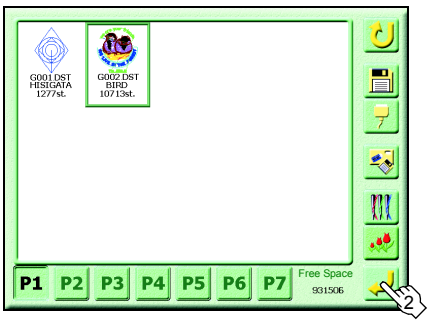
1. Selection of design



◀ Screen 2000

When setting embroidery conditions, press needle bar setting and data conversion to make setting.
Needle bar setting p.28
Data conversion p.35

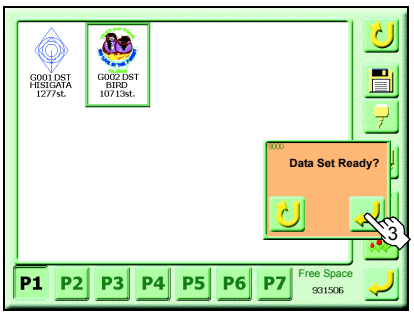
2. Data set



◀ Screen 2000

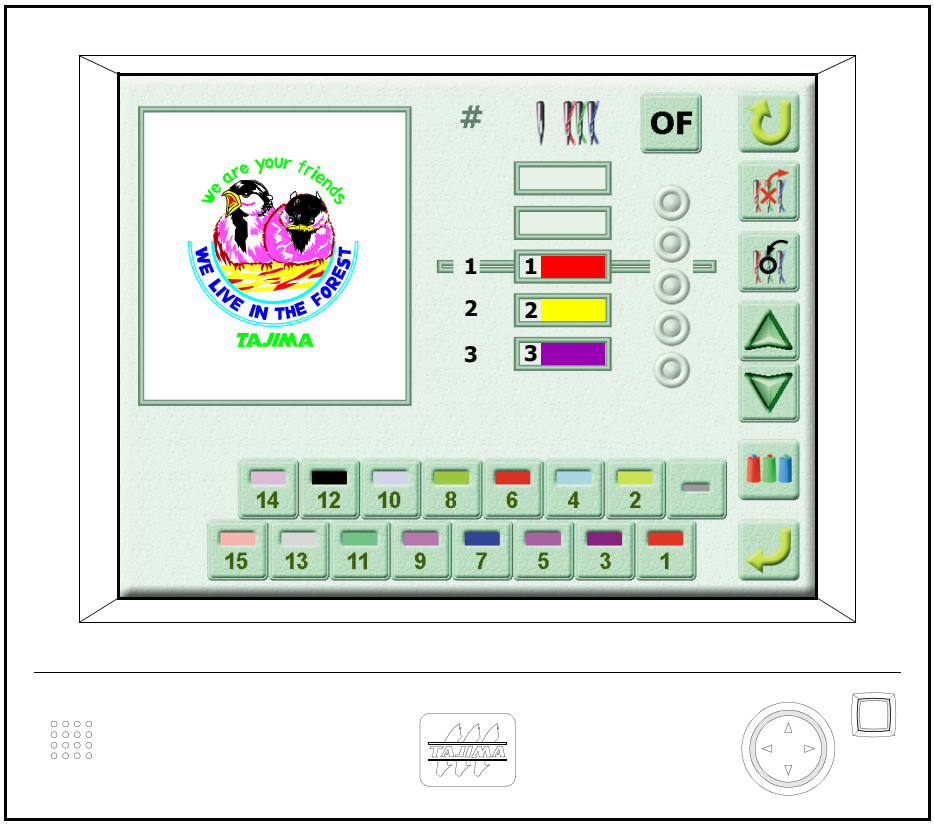
Setting for automatic offset position must be performed after data set.
Automatic offset p.42

3. Confirm



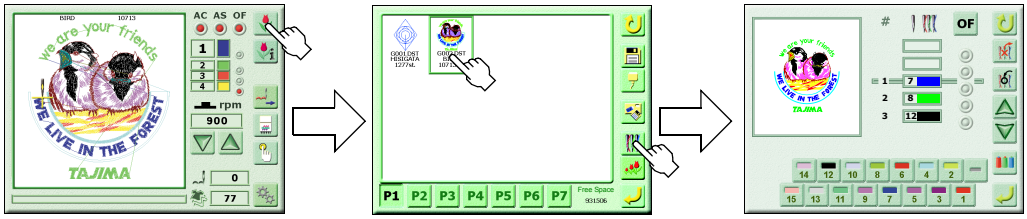
◀ Screen 2000

CHAPTER 5
EMBROIDERY SETTING

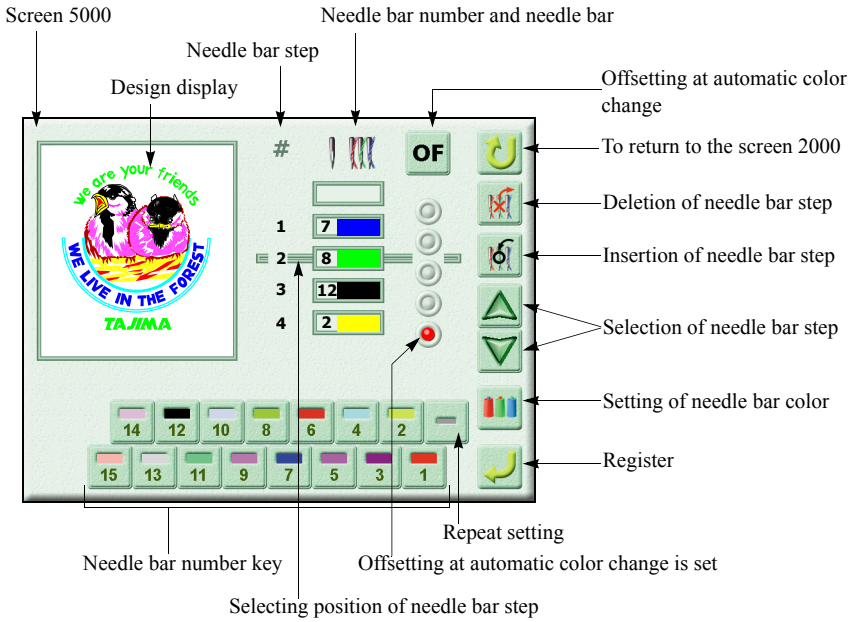


1. EXPLANATION ON THE SCREEN (SCREEN 5000)

<How to call the screen>



Needle bar setting screen

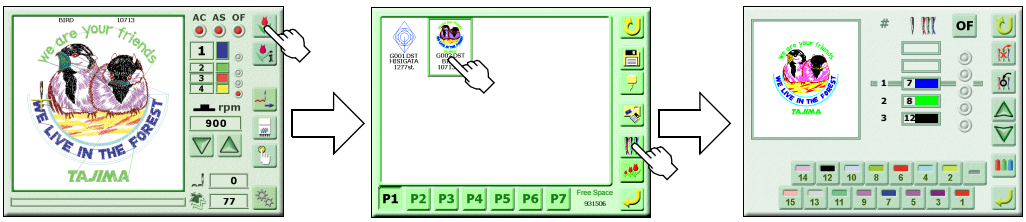


Changing the needle bar will also cause color of design display to be changed.

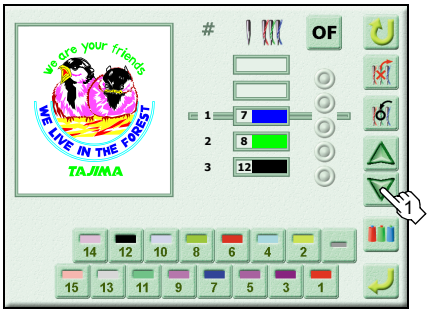
Registering the setting for needle bars will cause the screen to return to the screen 2000.

2. CHANGE OF NEEDLE BAR

<How to call the screen>



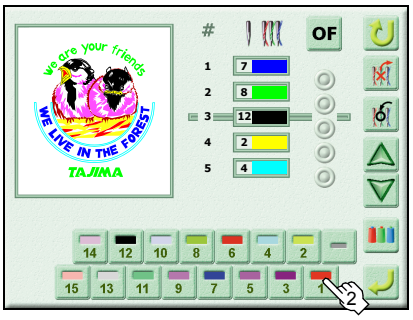
1. Select the needle bar step



◀ 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

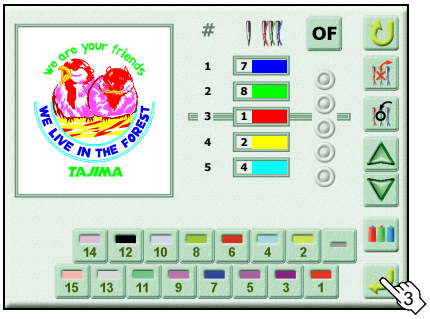


◀ Screen 5000

📖 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.

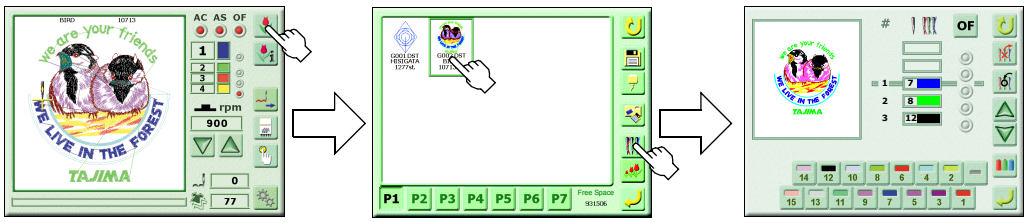
3. Register



◀ Screen 5000

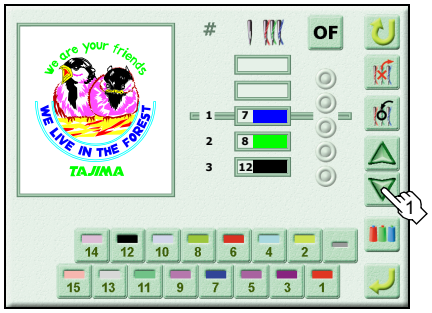
3. DELETION OF NEEDLE BAR STEP

<How to call the screen>



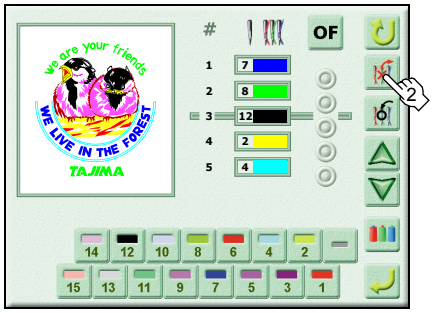
Select the design to be set

1. Select the needle bar step



◀ Screen 5000

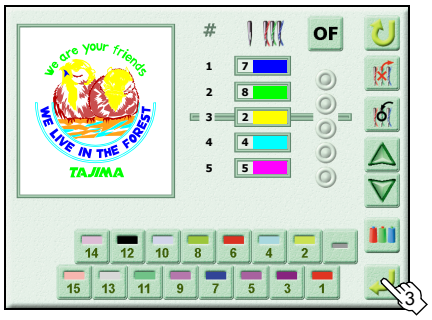
2. Delete the needle bar step



◀ Screen 5000

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

3. Register

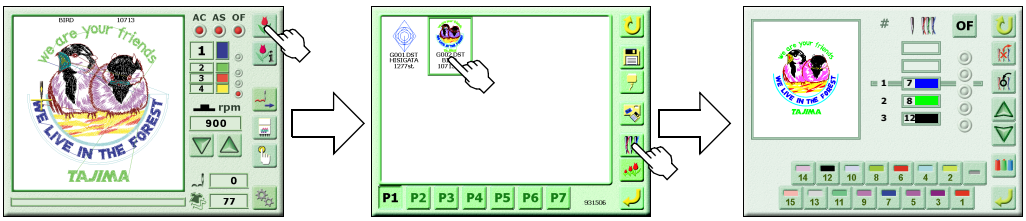


◀ Screen 5000

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

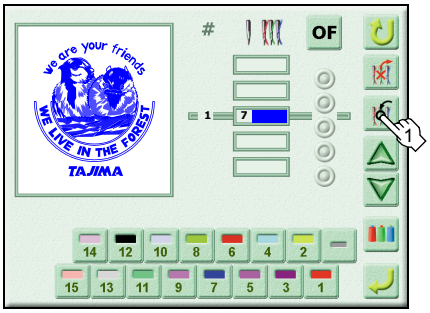
4. INSERTION OF NEEDLE BAR STEP

<How to call the screen>



Select the design to be set

1. Insert the needle bar step

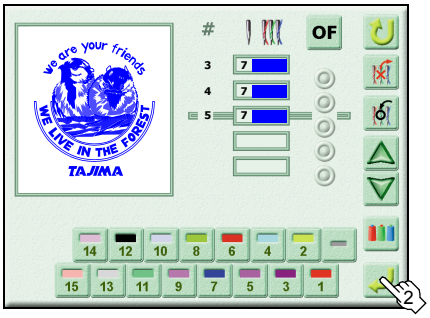


◀ Screen 5000

📖 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.

2. Register

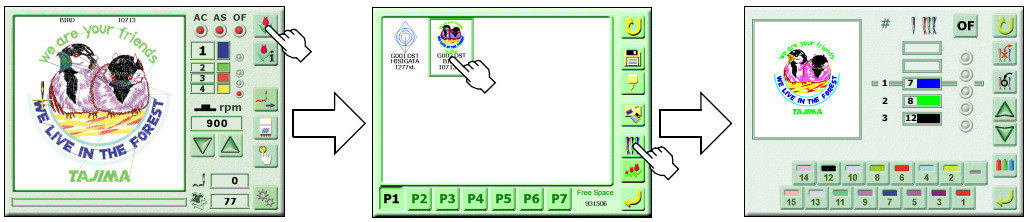


◀ Screen 5000

📖 Change the inserted needle bar step to the needle number you desire.
Change of needle bar p.29

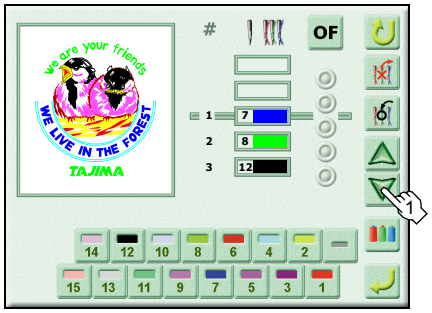
5. REPEAT OF NEEDLE BAR SETTING

<How to call the screen>



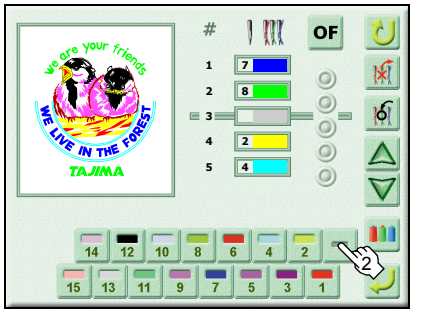
Select the design to be set

1. Select the needle bar step



◀ Screen 5000

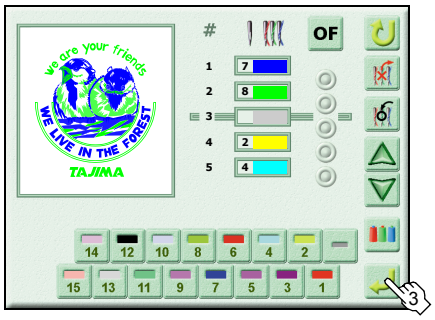
2. Setting for repeat of needle bar steps



◀ 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

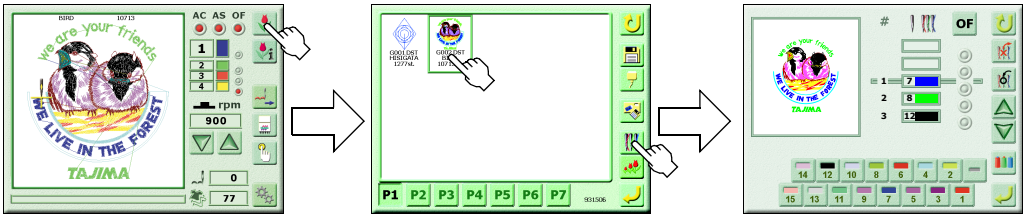


◀ Screen 5000

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

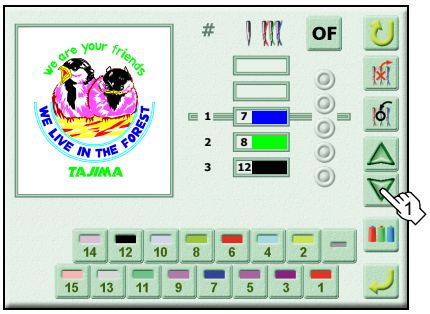
6. OFFSETTING AT AUTOMATIC COLOR CHANGE

<How to call the screen>



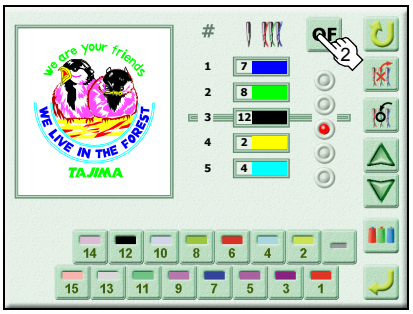
Select the design to be set

1. Select the needle bar step



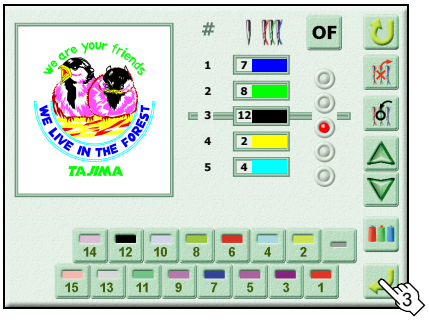
◀ Screen 5000

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.41

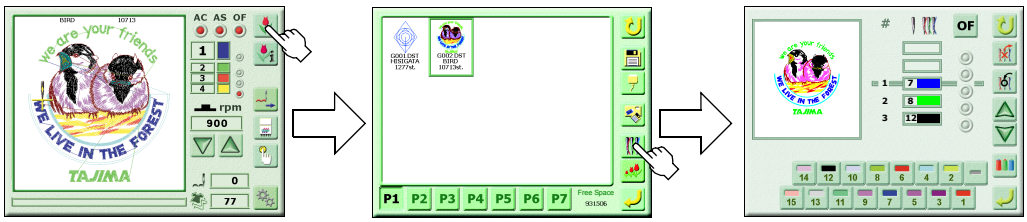
Setting offsetting at automatic color change will cause the frame to move to the setting position of automatic offset when the set step ends.

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

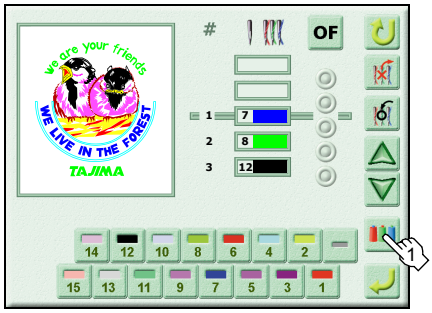
To cancel offsetting at automatic color change, select the step being selected, and then press “OF”.

7. NEEDLE BAR COLOR

<How to call the screen>

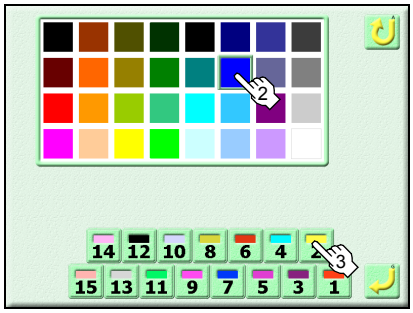


1. Select the setting of needle bar color



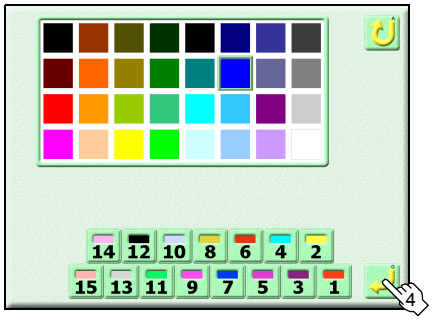
◀ Screen 5000

2. Select the needle bar color and needle bar number key



◀ Screen 7000

3. Register

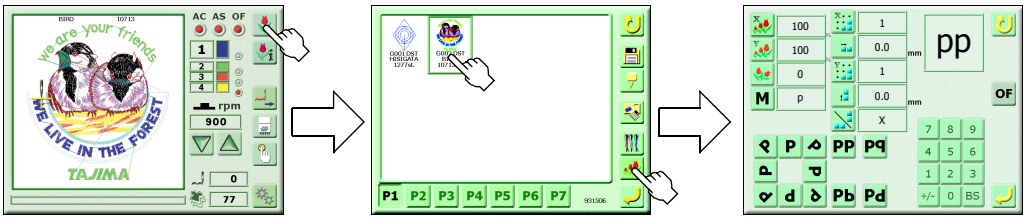


◀ Screen 7000

📖 It is also possible to change other needle bars as the same way.
It is possible to make setting even if needle bar color and needle number key are pressed in reversed order.

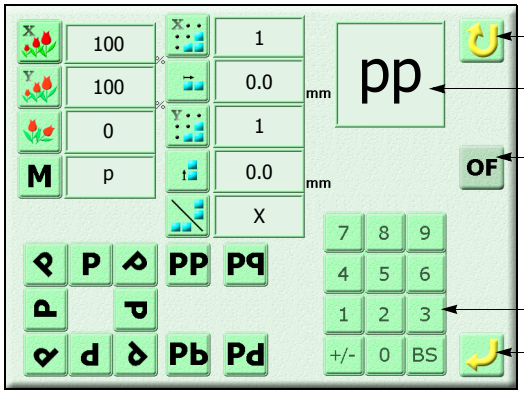
8. EXPLANATION ON THE SCREEN (SCREEN 6000)

<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 keys

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

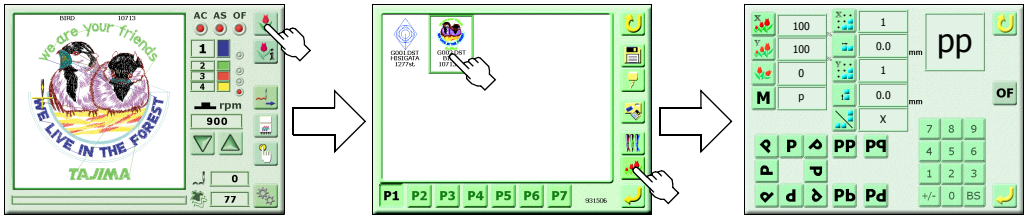
Repeat arrangement

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

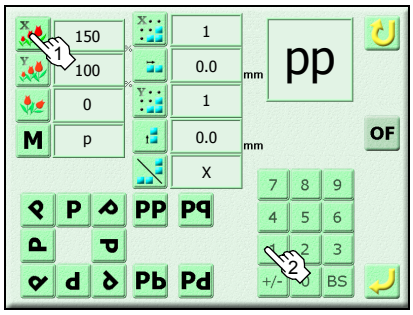
<How to call the screen>



Select the design to be set

Design scale up/down p.84

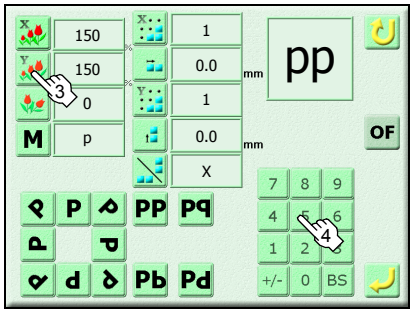
1. Change of scale ratio in X direction



◀ Screen 6000

Setting value: 50 to 200%

2. Change of scale ratio in Y direction

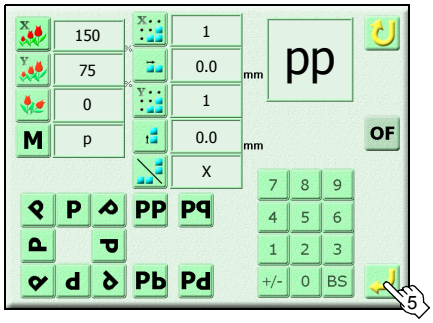


◀ Screen 6000

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.

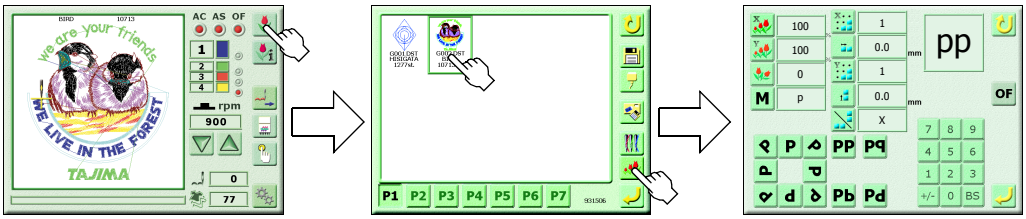
3. Register



◀ Screen 6000

10. ROTATION/MIRROR IMAGE REVERSION

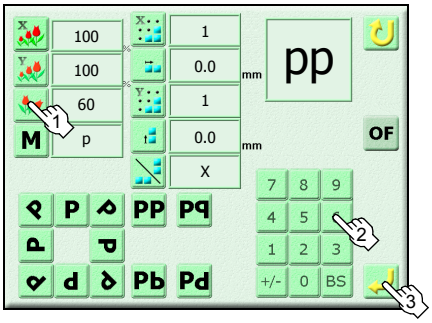
<How to call the screen>



Select the design to be set

Rotation/mirror image reversion p.84

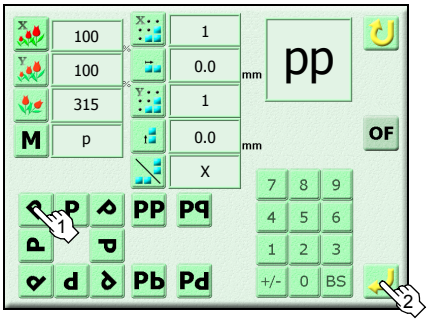
Rotation by input of value



◀ Screen 6000

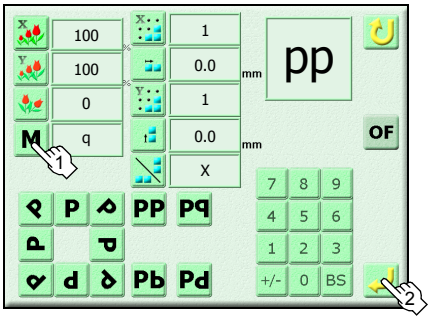
It is possible to input value by 1° unit.

Rotation by 45° unit



◀ Screen 6000

Mirror image (reversion)

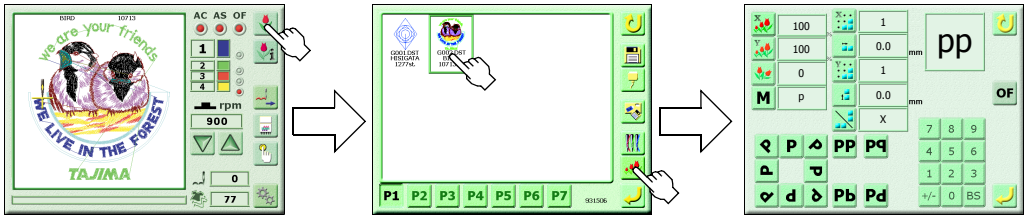


◀ Screen 6000

Every pressing “M” will switch direction.

11. REPEAT

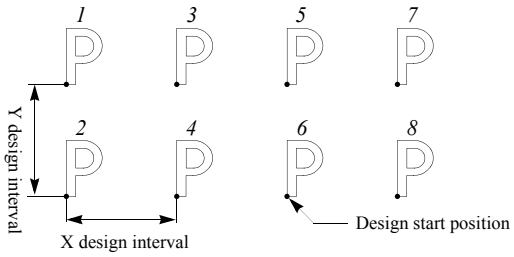
<How to call the screen>



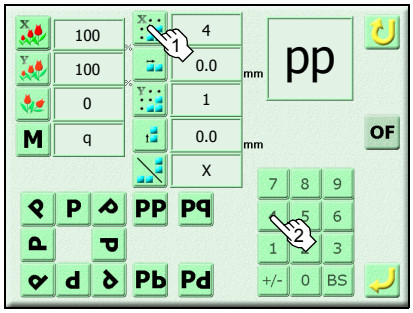
Select the design to be set

Repeat p.85

Repeat

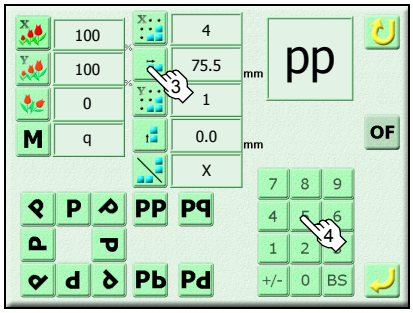


1. The number of designs to be arranged in X direction



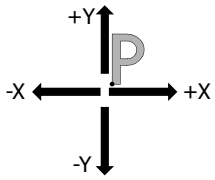
◀ Screen 6000

2. Design interval in X direction

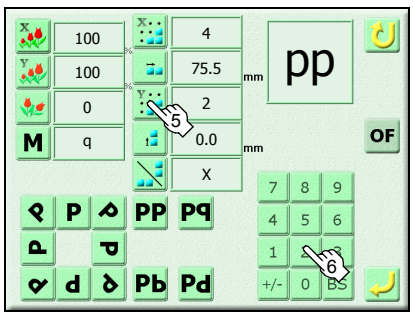


◀ Screen 6000

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

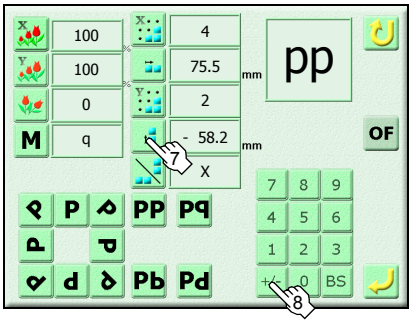


3. The number of designs to be arranged in Y direction



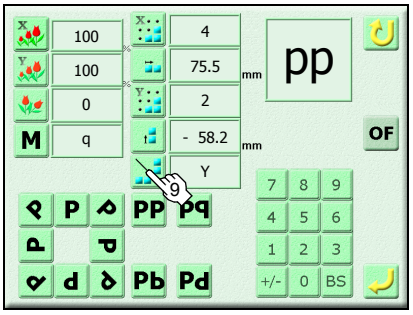
◀ Screen 6000

4. Design interval in Y direction



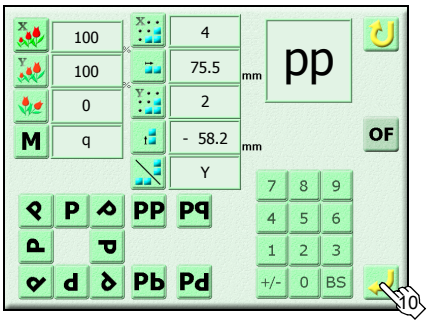
◀ Screen 6000

5. Priority direction



◀ Screen 6000

6. Register



◀ Screen 6000

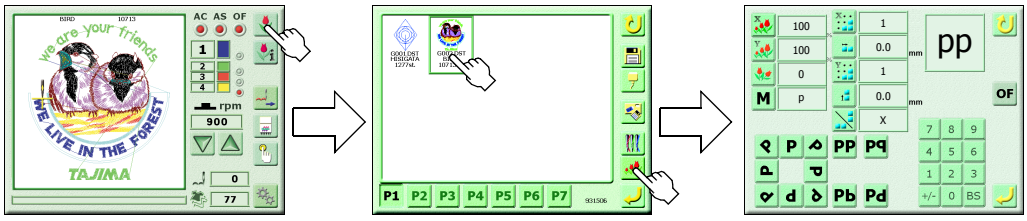
The direction of priority (X/Y) will be switched every time the icon is pressed.

X priority

Y priority

12. REPEAT (CONVERTED ARRANGEMENT)

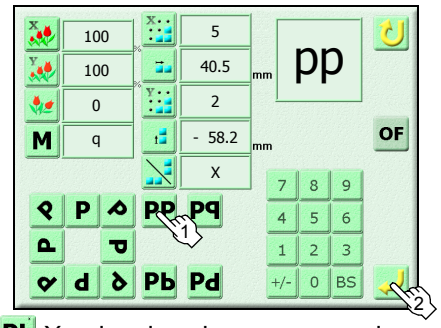
<How to call the screen>



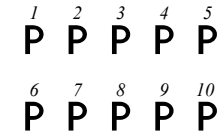
Select the design to be set

Converted arrangement p.85
Set “repeat”.

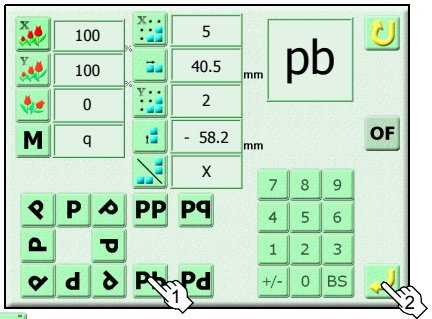
PP No conversion



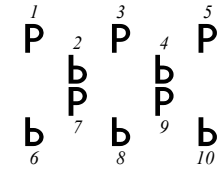
◀ Screen 6000



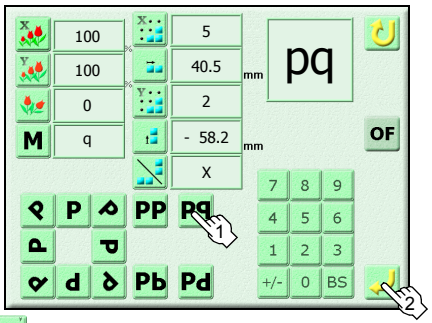
Pb X-axis mirror image conversion



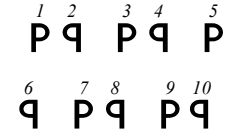
◀ Screen 6000



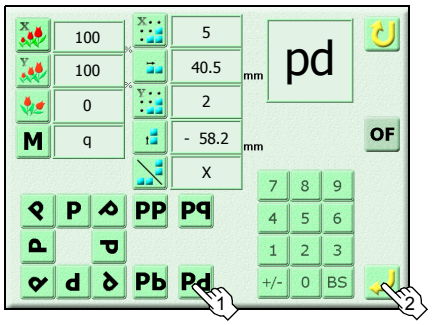
Pq Y-axis mirror image conversion



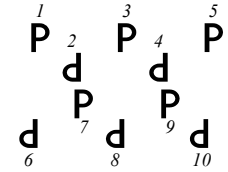
◀ Screen 6000



Pd 180° rotation

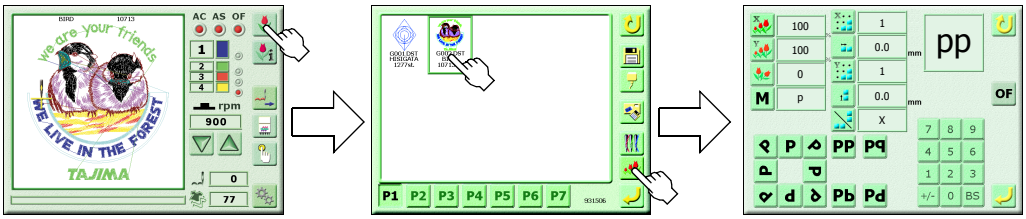


◀ Screen 6000



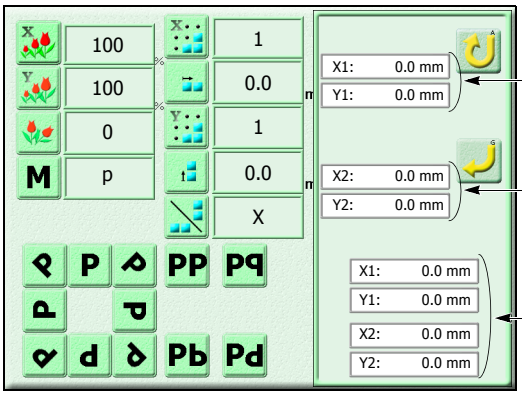
13. EXPLANATION ON THE SCREEN (AUTOMATIC OFFSET)

<How to call the screen>



Select the design to be set

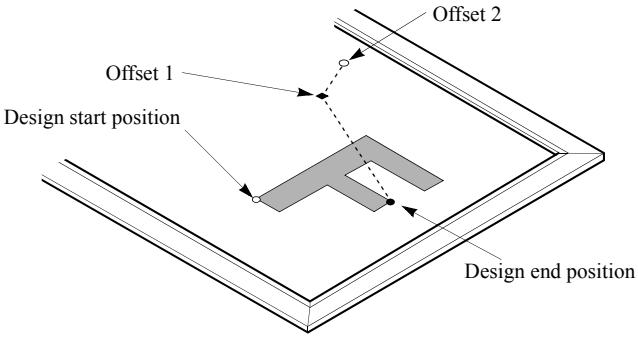
Setting screen for automatic offset



Setting position of offset 1

Setting position of offset 2

Offset position set in the last time

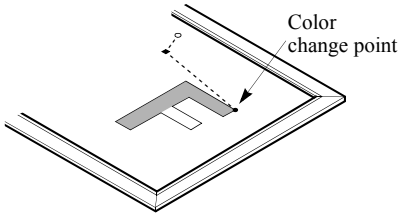


Automatic offset p.86

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

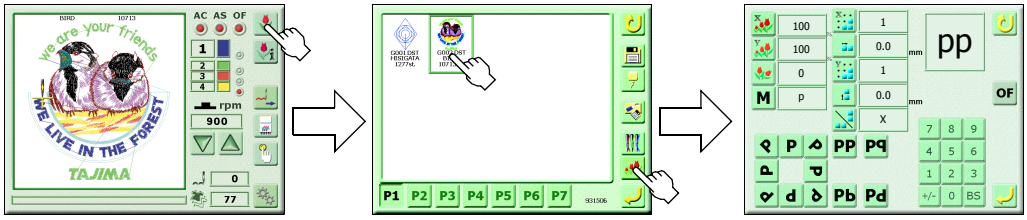
The offset position set in the last time will be stored until a new position is registered. When frame type is changed, the current setting will be reset.

Offsetting at automatic color change p.33
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>

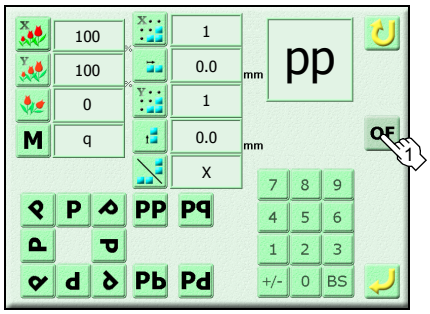


Select the design to be set

Automatic offset p.86

Setting for automatic offset must be performed after data set.

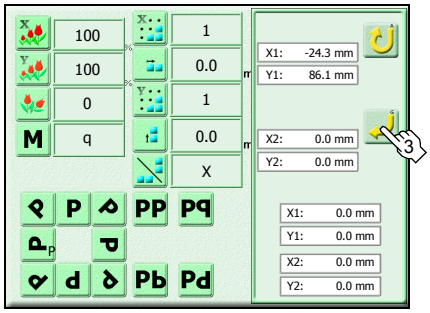
1. Select the automatic offset



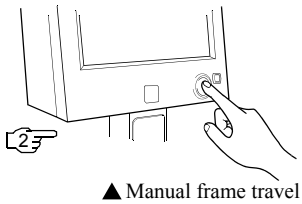
◀ Screen 6000

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

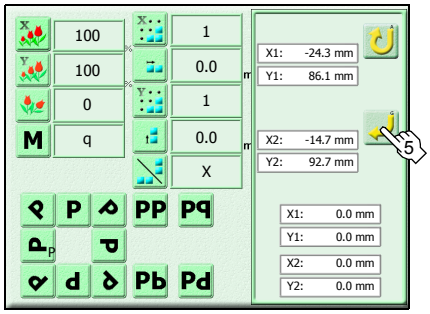


▲ Manual frame travel

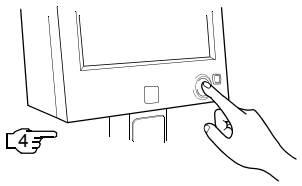
The position where the frame was moved manually is input as the coordinate value.

: 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



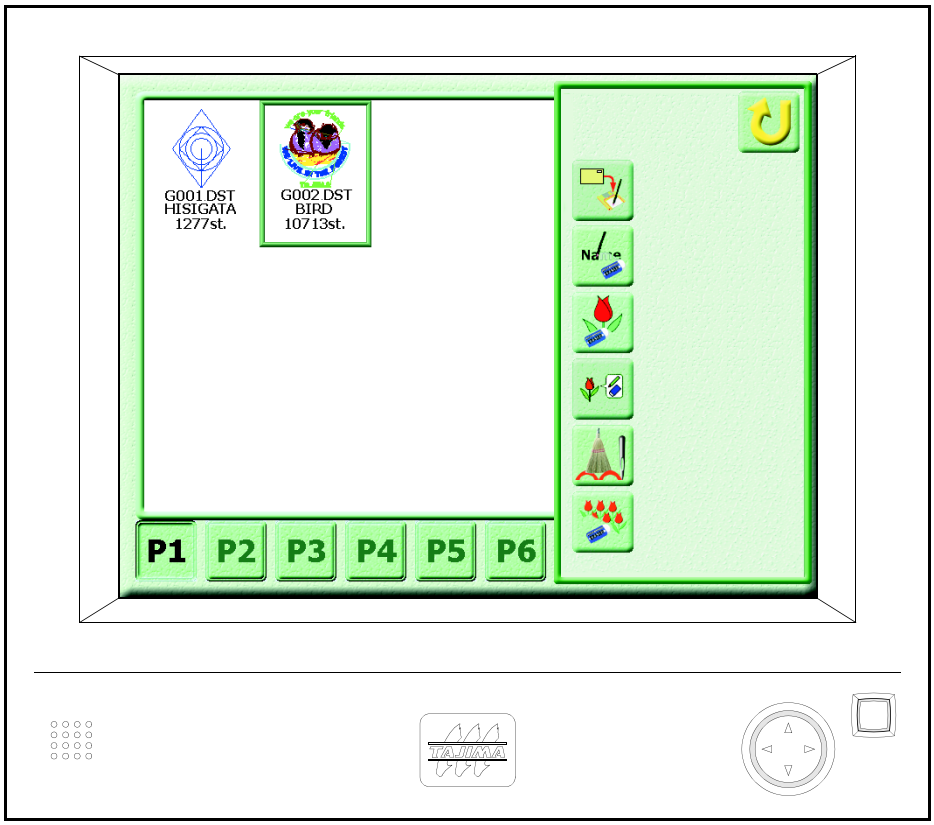
◀ Screen 6100



▲ Manual frame travel

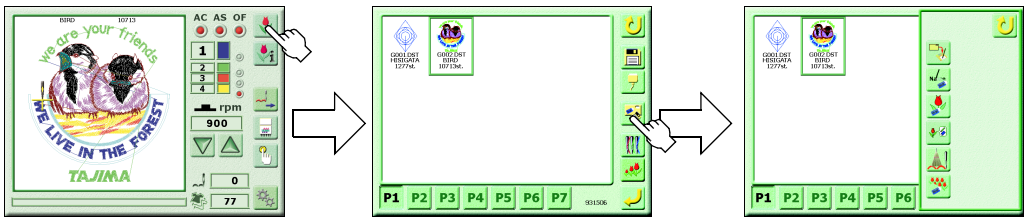
Registration of offset 2 will cause offset 1 become a middle position at frame travel. Registration of offset 2 will end offset setting.

CHAPTER 6
DESIGN DATA MANAGEMENT

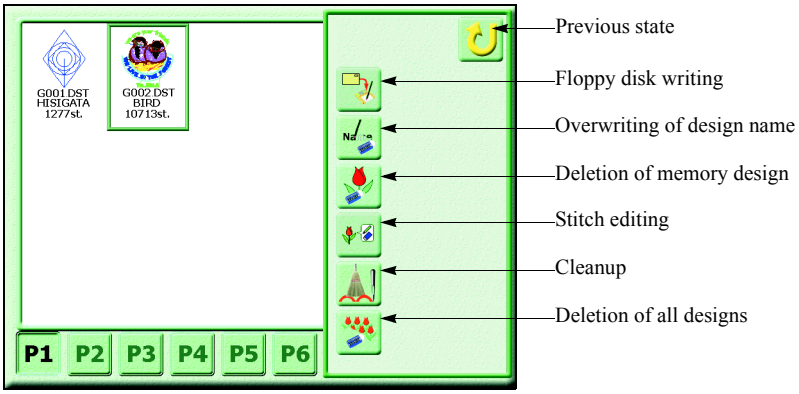


1. EXPLANATION ON THE SCREEN (SCREEN 2200)

<How to call the screen>



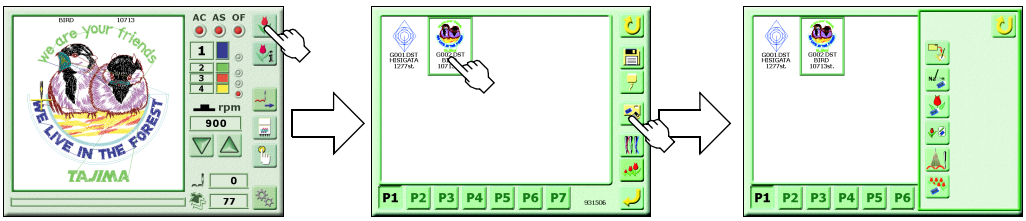
Design data management screen



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

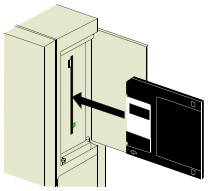
2. FLOPPY DISK WRITING

<How to call the screen>

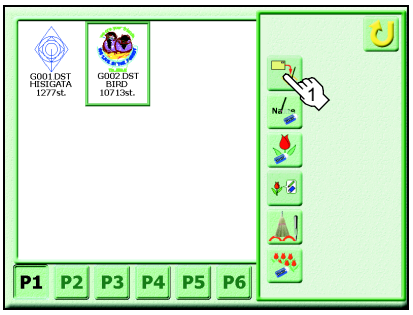


Select the design to edit

1. Insert the floppy disk.



2. Select the floppy disk writing



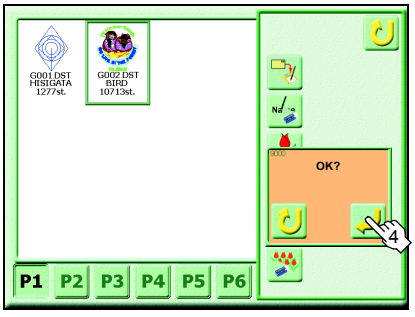
◀ Screen 2200

3. Input a file name

◀ Screen A000

Input of characters p.18

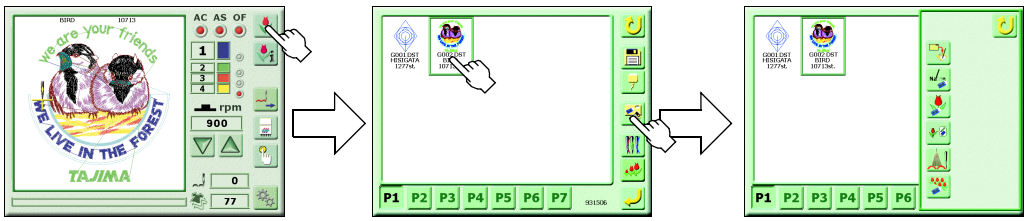
4. Confirm



◀ Screen 2200

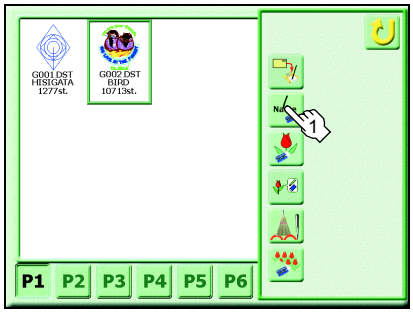
3. OVERWRITING OF DESIGN NAME

<How to call the screen>



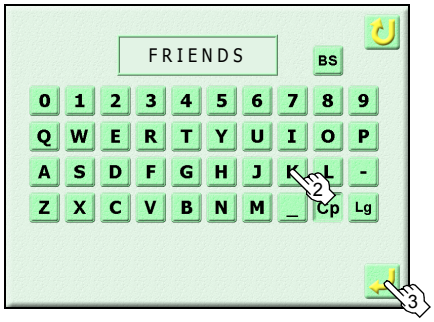
Select the design to edit

1. Select the overwriting of design name



◀ Screen 2200

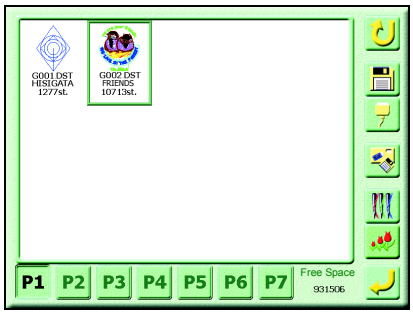
2. Overwriting of design name



◀ Screen A000

Input of characters p.18

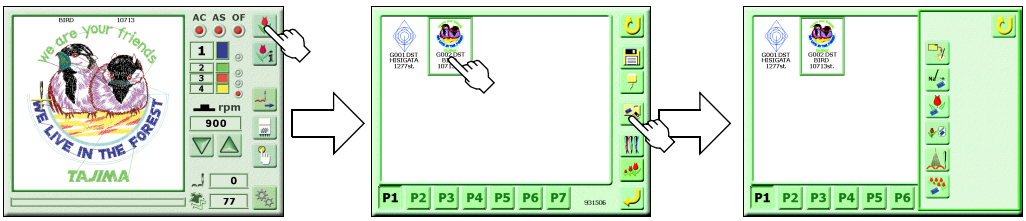
3. Completion



◀ Screen 2000

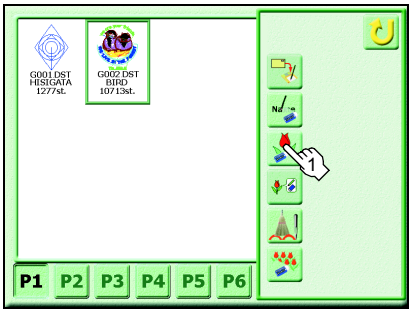
4. DELETION OF MEMORY DESIGN

<How to call the screen>



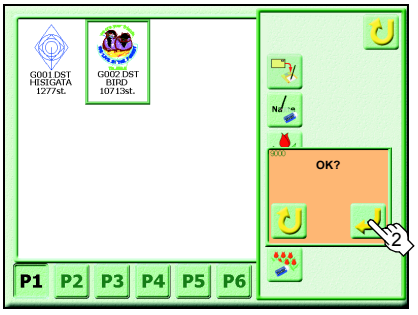
Selecting the design to delete

1. Select deletion of design



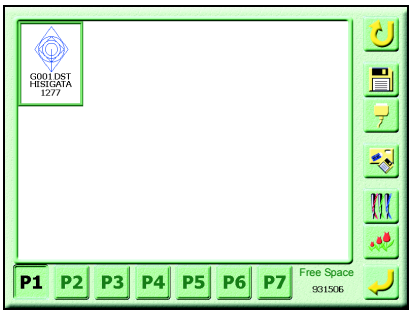
◀ Screen 2200

2. Confirm



◀ Screen 2200

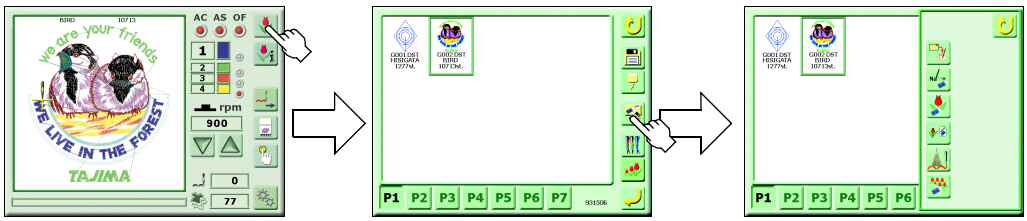
3. Completion



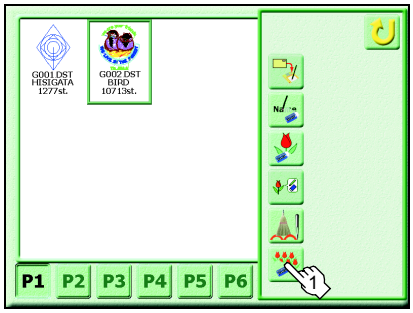
◀ Screen 2000

5. DELETION OF ALL DESIGNS

<How to call the screen>

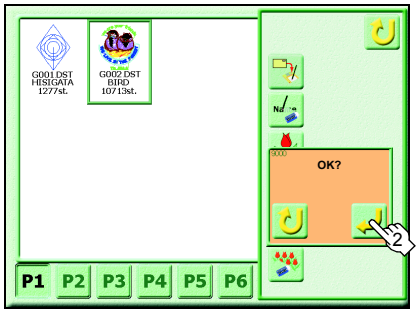


1. Select the deletion of all designs



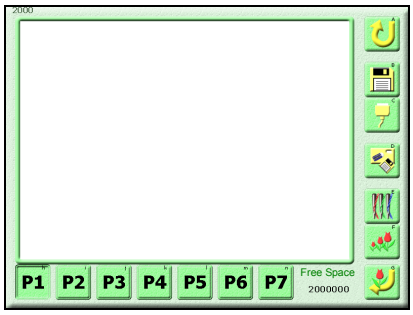
◀ Screen 2200

2. Confirm



◀ Screen 2200

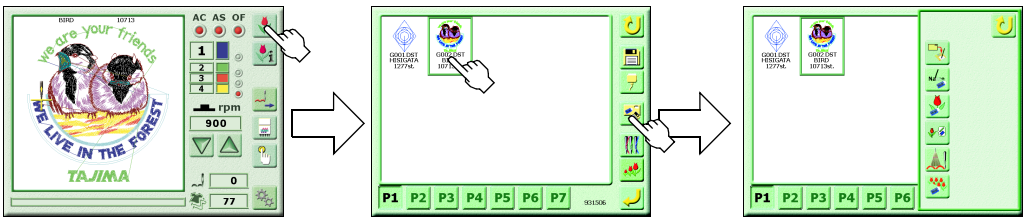
3. Completion



◀ Screen 2000

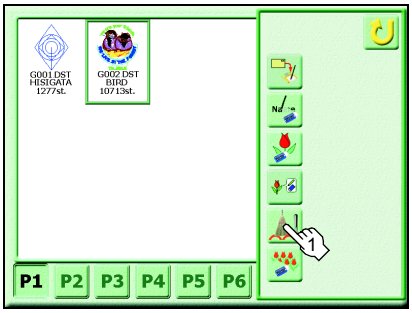
6. CLEANUP

<How to call the screen>



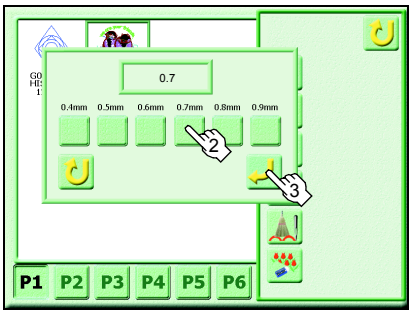
Select the design to edit

1. Select the cleanup



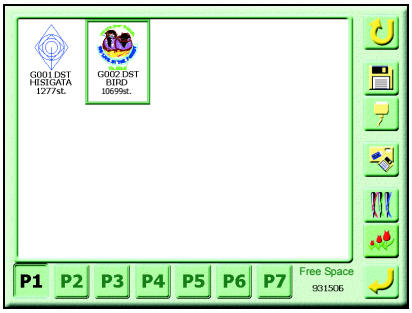
◀ Screen 2200

2. Cleanup processing



◀ Screen 2200

3. Completion



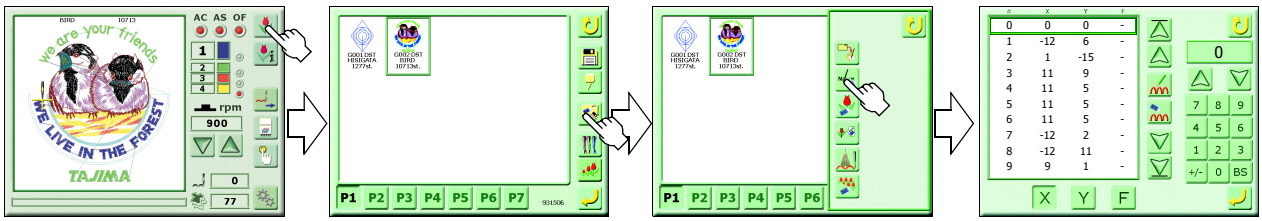
◀ Screen 2000

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.

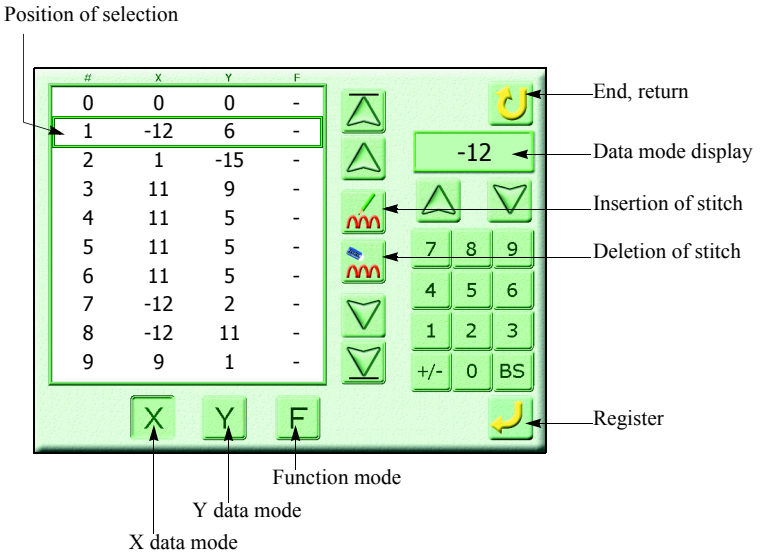
Applicable cleanup stitch lengths are 0.4 to 0.9 mm. As this function searches a corresponding stitch and makes the preceding and the succeeding stitches absorb it, the design will be somehow changed.

7. EXPLANATION ON THE SCREEN (SCREEN 8000)

<How to call the screen>

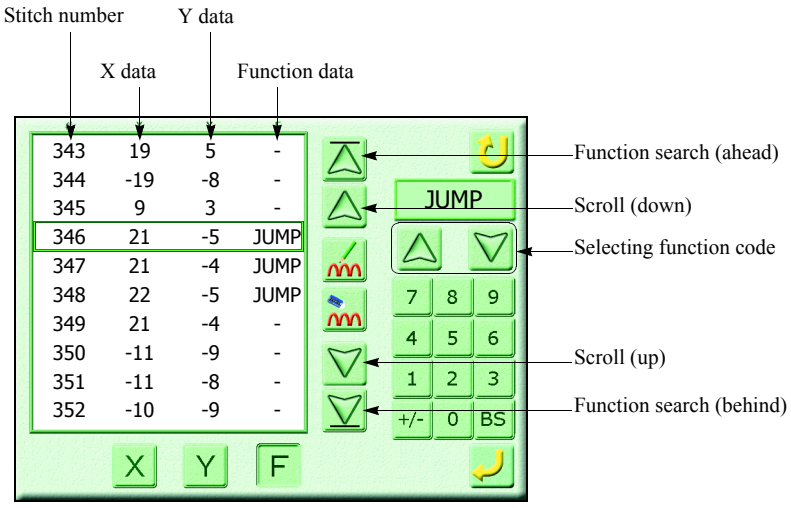


Stitch editing screen



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.

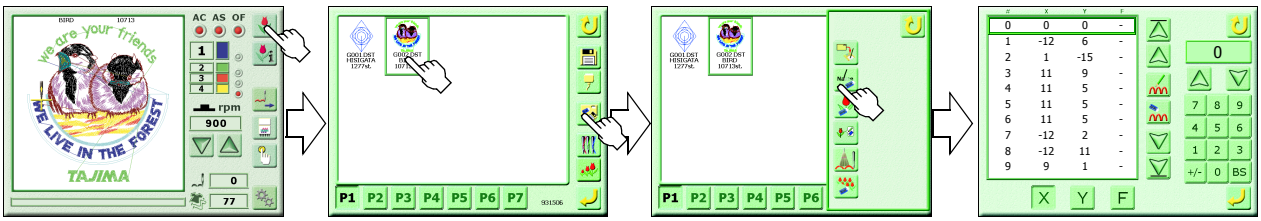


Function search
When performing searching after selecting the function mode and the function code, the machine will search data existing near forward or backward of the function code to display.

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

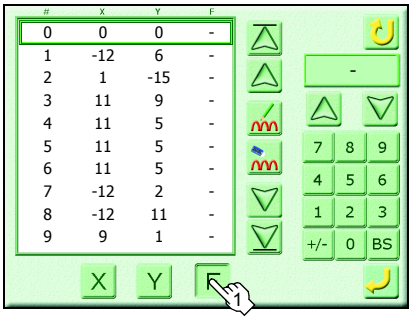
8. FUNCTION SEARCH

<How to call the screen>



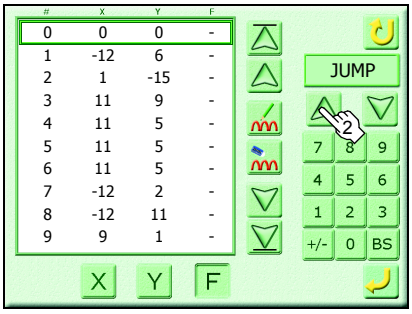
Select the design to edit

1. Select the function mode



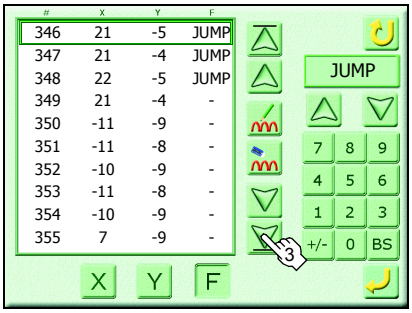
◀ Screen 8000

2. Select the function code



◀ Screen 8000

3. Function search



◀ Screen 8000

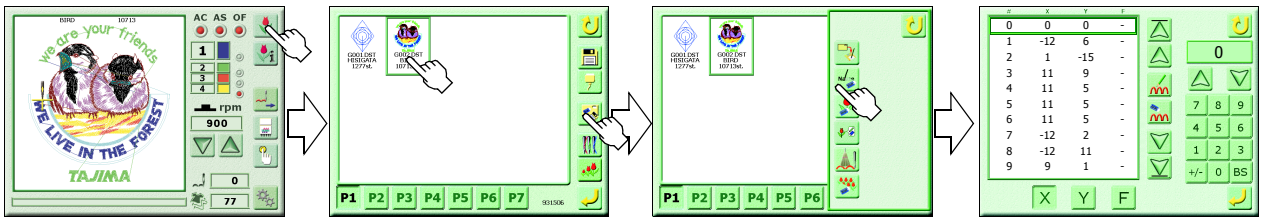
Function code

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

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

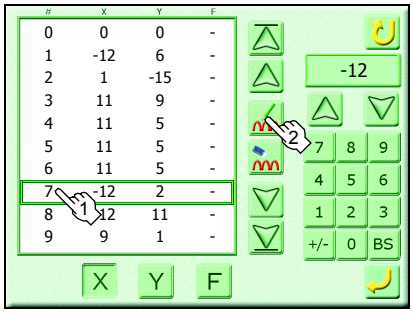
9. INSERTION OF STITCH

<How to call the screen>



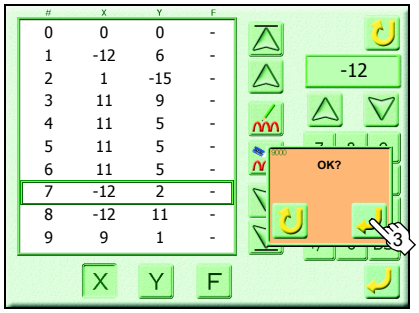
Select the design to edit

1. Selection and insertion of stitch



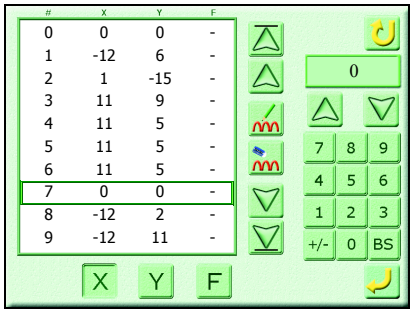
◀ Screen 8000

2. Confirm



◀ Screen 8000

3. Completion

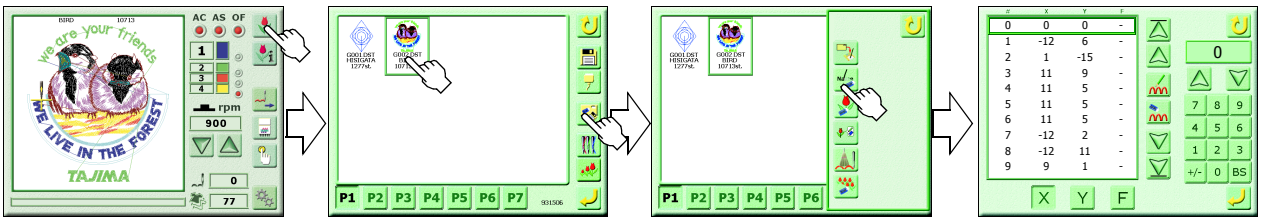


◀ Screen 8000

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

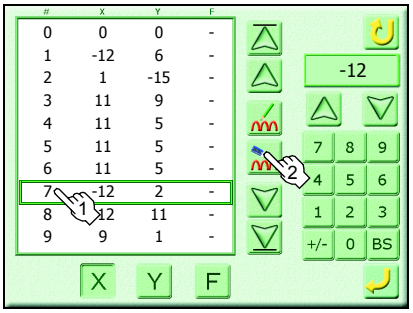
10. DELETION OF STITCH

<How to call the screen>



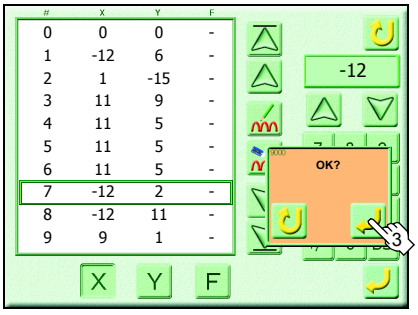
Select the design to edit

1. Selection and deletion of stitch



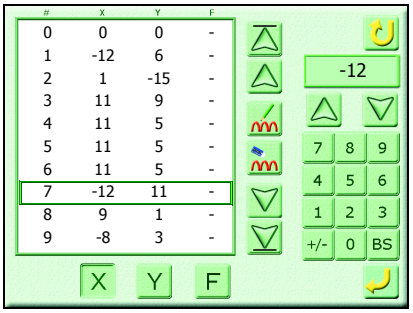
◀ Screen 8000

2. Confirm



◀ Screen 8000

3. Completion

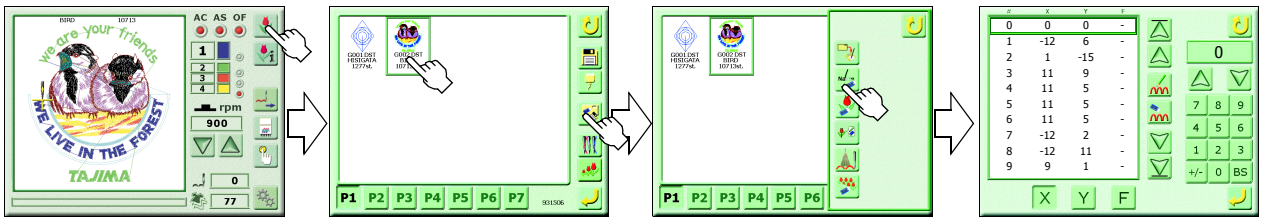


◀ Screen 8000

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

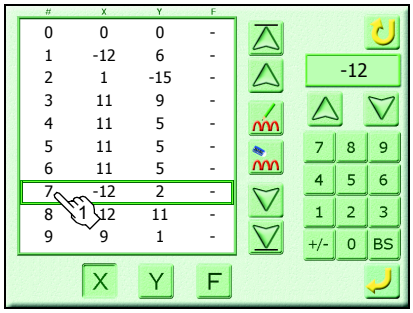
11. MODIFICATION OF STITCH DATA

<How to call the screen>



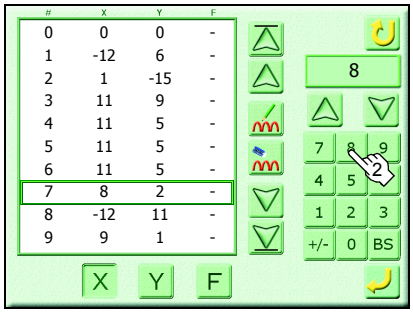
Select the design to edit

1. Select a stitch



◀ Screen 8000

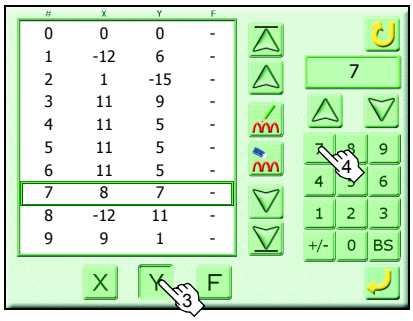
2. Modify the X data



◀ Screen 8000

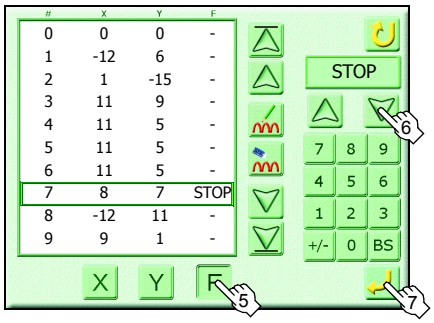
📖 XY setting range: -12.7 to +12.7 (mm)

3. Selection and modification of Y data

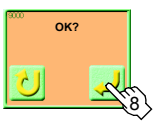


◀ Screen 8000

4. Selection, modification, and registration of function code



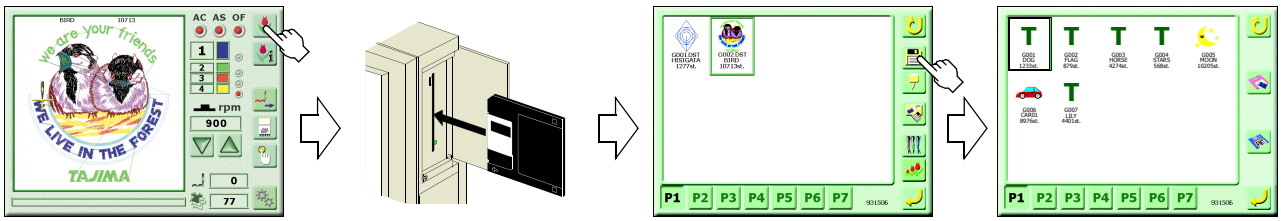
◀ Screen 8000



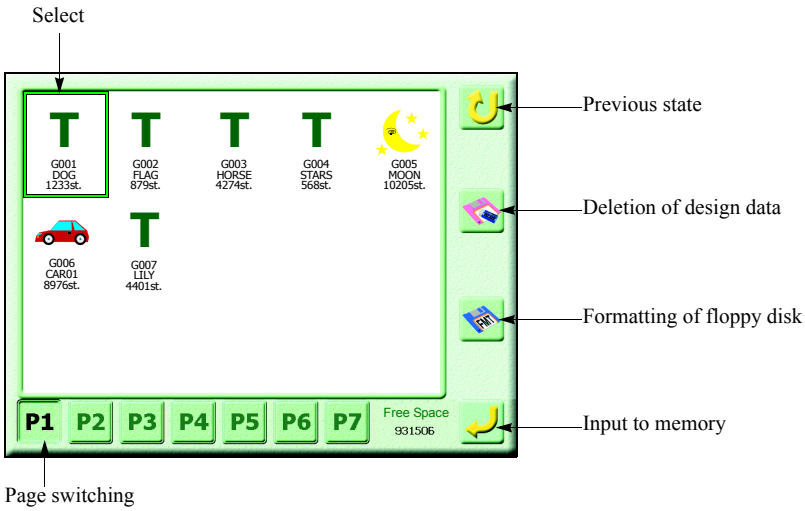
📖 Function code p.51

12. EXPLANATION ON THE SCREEN (SCREEN 3000)

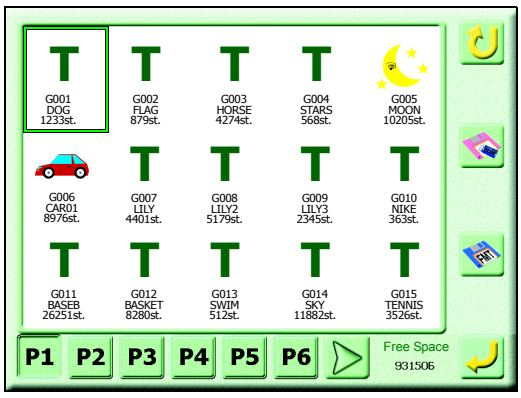
<How to call the screen>

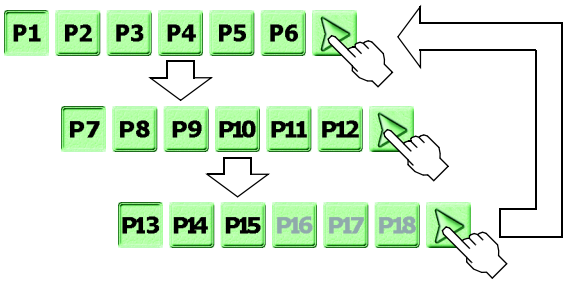


Floppy disk edit screen



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

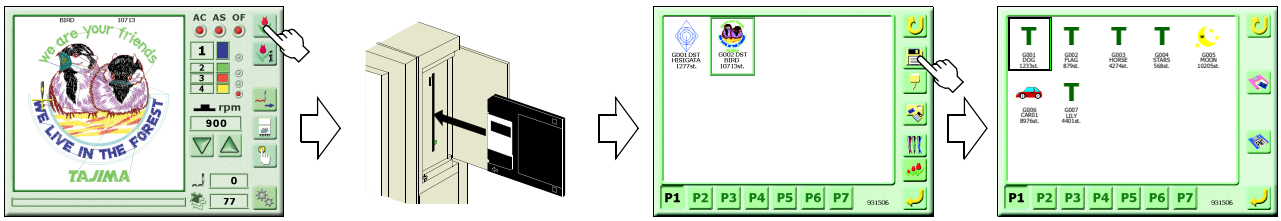




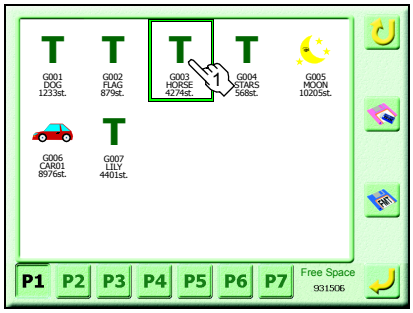
Design data stored in a floppy disk will be displayed by 15 designs.
When design data is stored in “P7” or upper ones, switch the screen as shown in the left illustration.

13. DELETION OF DESIGN DATA IN FLOPPY DISK

<How to call the screen>

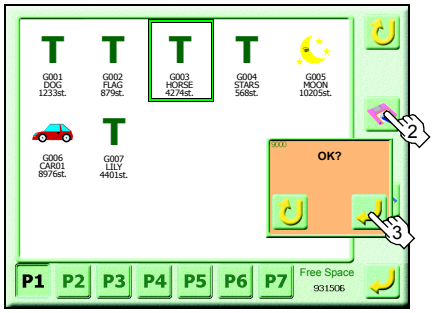


1. Select the design data



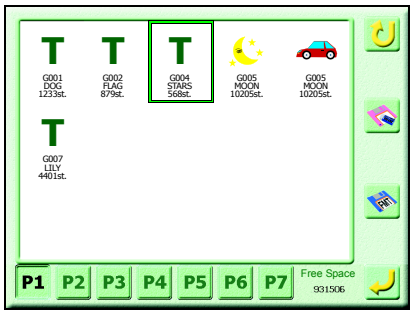
◀ Screen 4000

2. Delete the design data



◀ Screen 4000

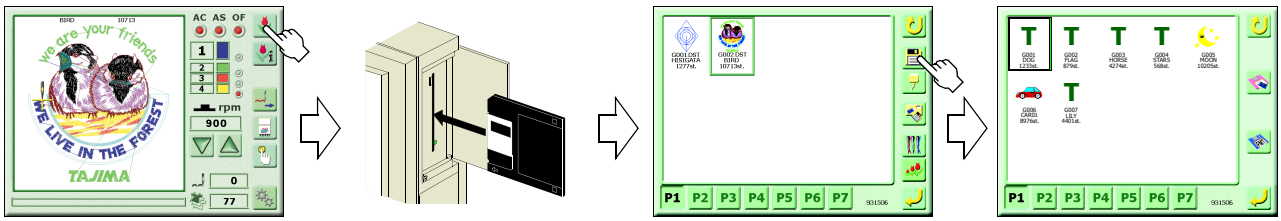
3. Result



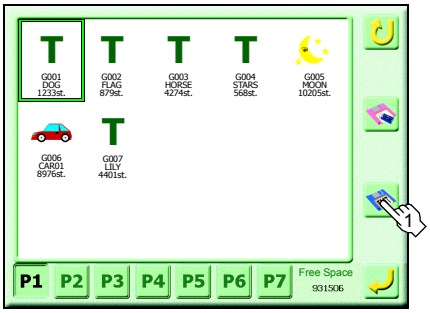
◀ Screen 4000

14. FORMATTING OF FLOPPY DISK

<How to call the screen>

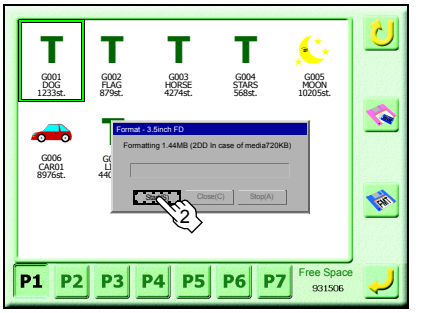


1. Select the formatting

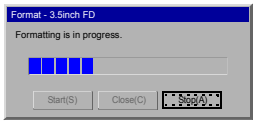


◀ Screen 4000

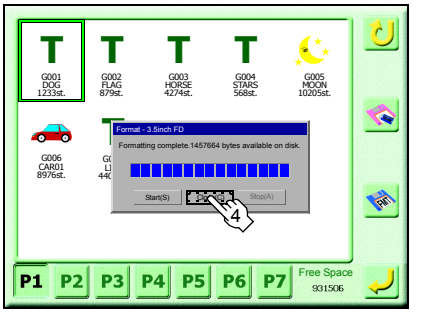
2. Start the formatting



◀ Screen 4000



3. Completion



◀ Screen 4000

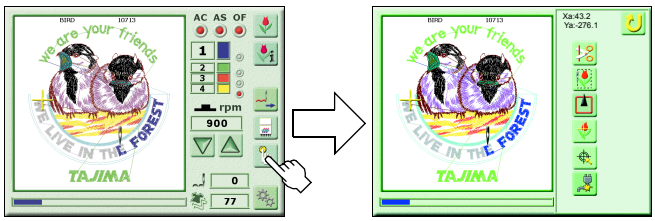
Setting an unformatted floppy disk will display the message. Press “OK” to follow the procedure.

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

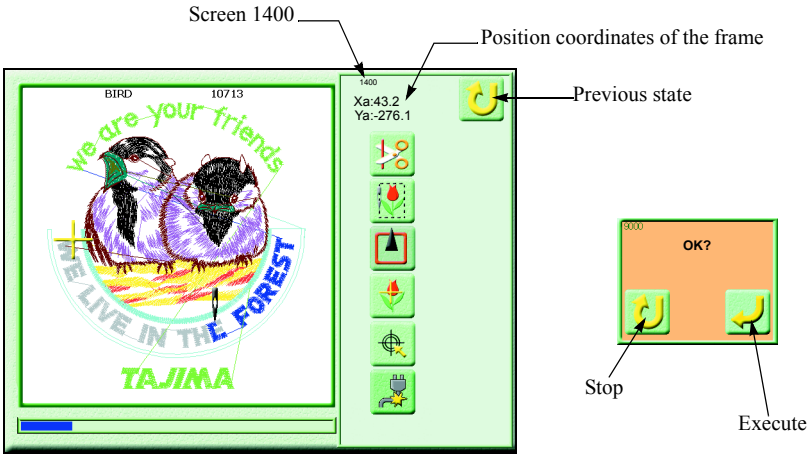
CHAPTER 7
MANUAL OPERATION

1. EXPLANATION ON THE SCREEN (SCREEN 1400)

<How to call the screen>



Design data management screen



 Thread trimming

 Trace

 Manual offset

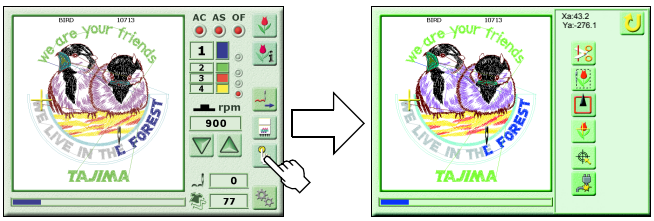
 Design start position

 Frame origin memory

 Power resume

2. THREAD TRIMMING/TRACE

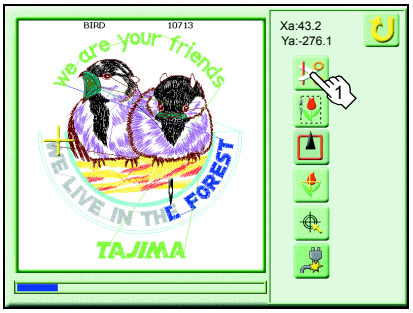
<How to call the screen>



WARNING

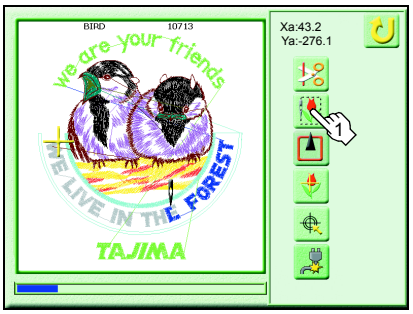
When performing this operation, do not put your hands under the needle or on the machine table. If your hands are under the needle or on the machine table, you may be injured by the needle or the moving frame.

Thread trimming



◀ Screen 1400

Trace

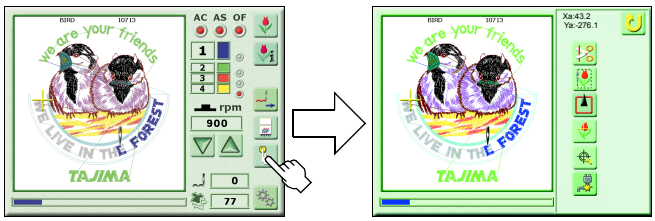


◀ Screen 1400

Trace p.88

3. MANUAL OFFSET/DESIGN START POSITION

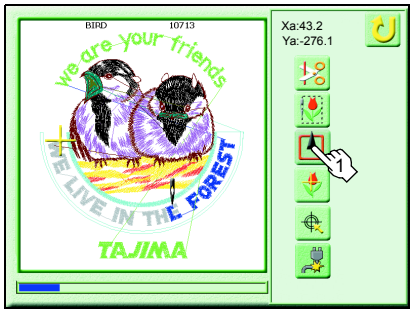
<How to call the screen>



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.

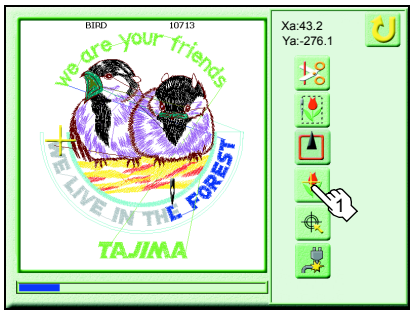
Manual offset



◀ Screen 1400

Return the frame that was moved to the original position.
Manual offset p.86

Design start position

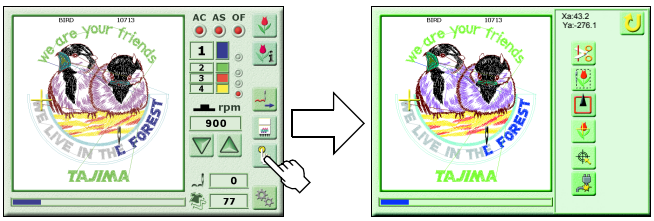


◀ Screen 1400

The frame moves to the design start position.

4. FRAME ORIGIN MEMORY

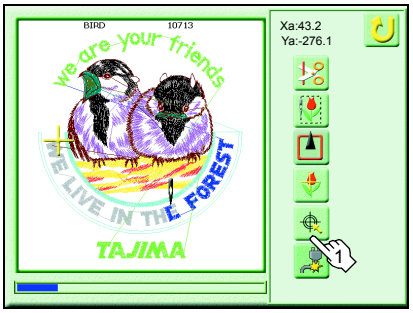
<How to call the screen>



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.

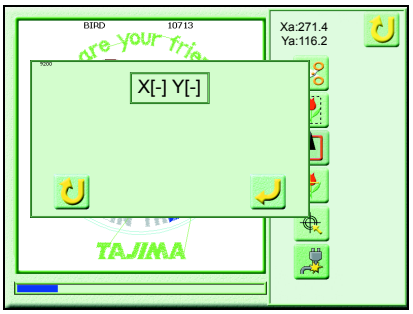
1. Select frame origin memory



◀ Screen 1400

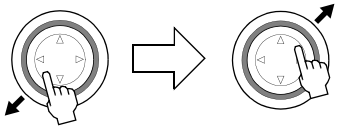
Move the frame with the frame travel key to make the machine memorize the origin of the embroidery frame.
Perform this operation after the software was installed or when the frame was moved during turning off the power.

2. Search the origin



◀ Screen 1400

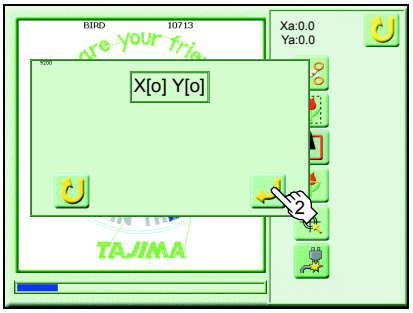
Frame travel key



Move the frame to the front left with the frame travel key. After moving the frame to the position until it does not move, move the frame to the rear right direction.

Jog remote-controller is not available for use.

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.

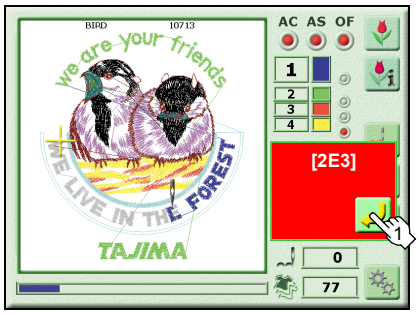
5. POWER RESUME

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.

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

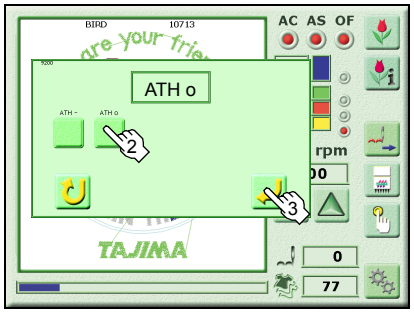
1. Machine stop code



◀ 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

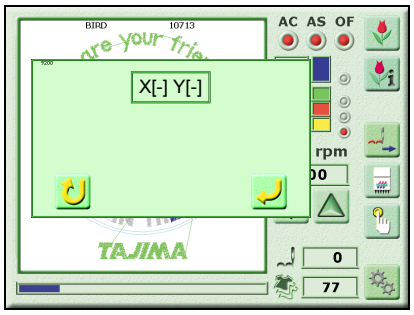


◀ Screen 1400

Automatic thread trimming (ATH)

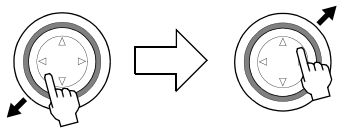
ATH -	Not to perform thread trimming
ATH o	To perform thread trimming

3. Search the origin



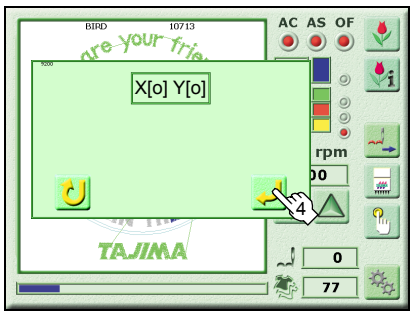
◀ Screen 1400

Frame travel key



Move the frame to the front left with the frame travel key. After moving the frame to the position until it does not move, move the frame to the rear right direction.

4. 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

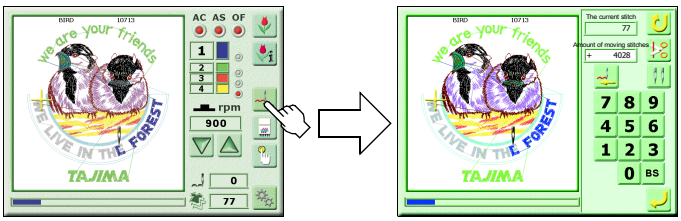
When the position of the origin is searched, [-] will switch to [o]. When the origins of both axes are searched, make the machine memorize the positions.

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

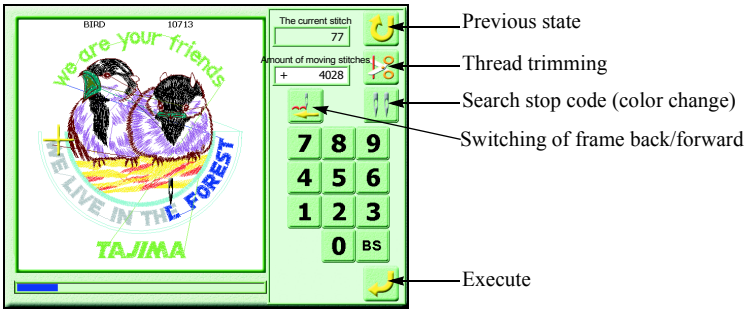
(FD11)

6. FRAME BACK/FORWARD

<How to call the screen>



Explanation on the screen (screen 1200)



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

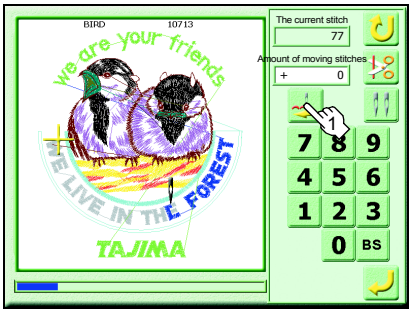
+/- of amount of moving stitches changes to frame back "-", or frame forward "+".

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.

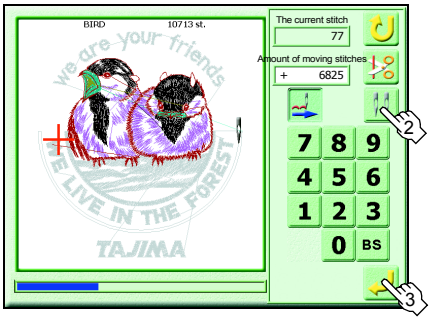
1. Select the frame back/forward



◀ Screen 1200

Perform thread trimming if necessary.

2. Input and execution of amount of moving stitches



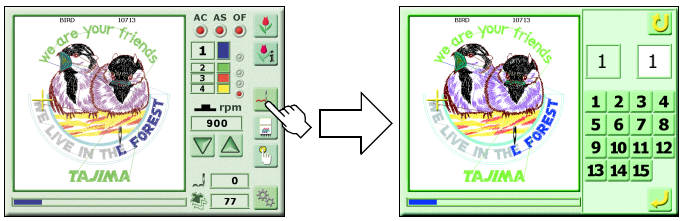
◀ Screen 1200

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.

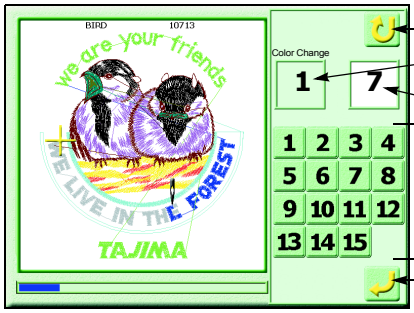
Execution will perform frame back/forward by the specified stitches.

7. COLOR CHANGE (SCREEN 1300)

<How to call the screen>

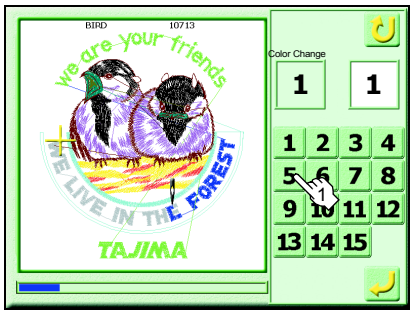


Explanation on the screen



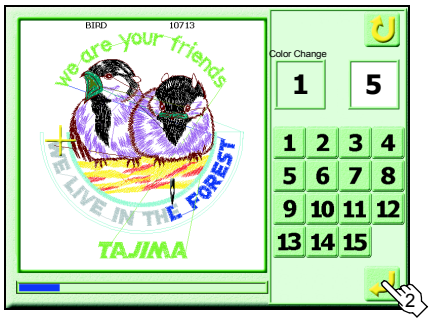
- Previous state
- The needle bar number being used
- The target needle bar number to change
- Needle bar number
- Execute

1. Select the needle bar to change



◀ Screen 1200

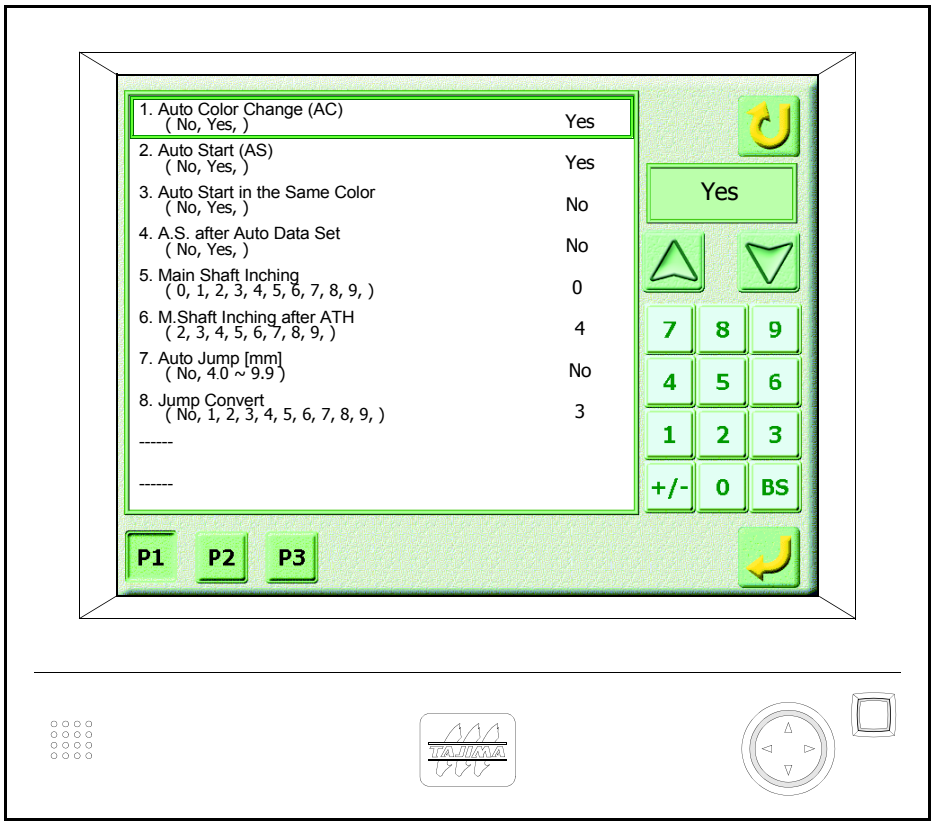
2. Execute



◀ Screen 1200

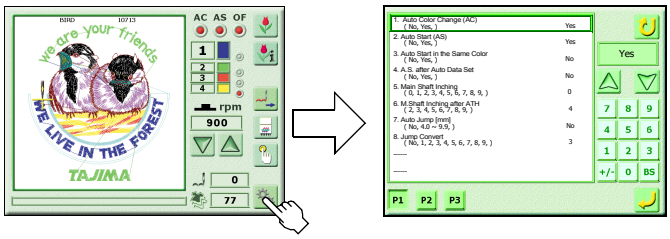
📖 Color change only changes needle bars that you desire to change without changing needle bar setting at embroidering.

CHAPTER 8
PARAMETER SETTING

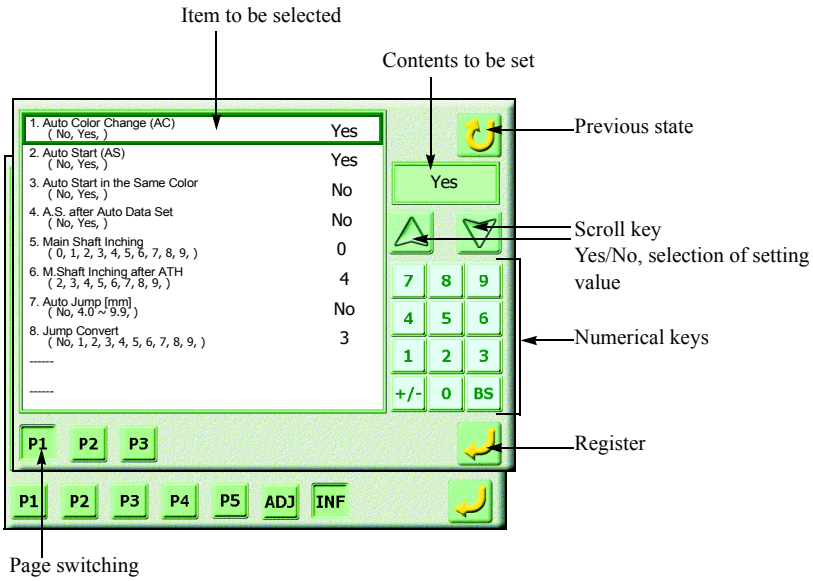


EXPLANATION ON THE SCREEN

<How to call the screen>



Parameter setting screen



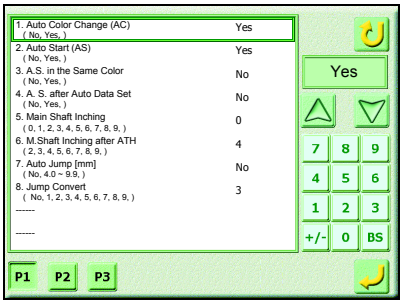
Setting items of parameter may not be displayed depending on machine specification. Setting items of parameter may be different from this manual due to research and development.

It is possible to input all setting values using the scroll keys.

Input of setting value using numerical keys
When inputting values only, it is also possible to input them using the numerical keys. To perform inputting, delete the value by the "BS key" and then input a value.
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)

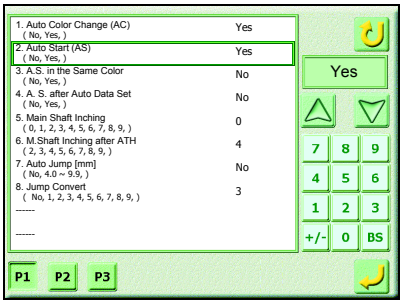


(Yes/No)

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)



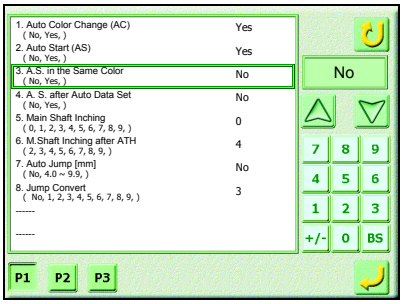
(Yes/No)

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



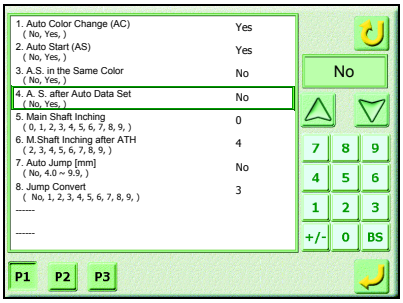
(Yes/No)

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



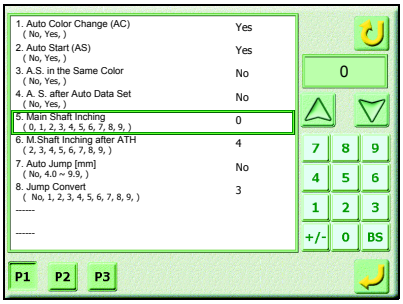
(Yes/No)

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

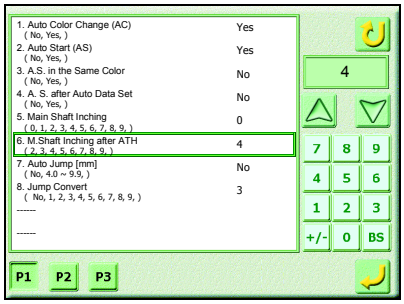


(0 ~ 9)

It makes the machine perform inching when the machine starts.

“0” does not perform inching after start of the machine.

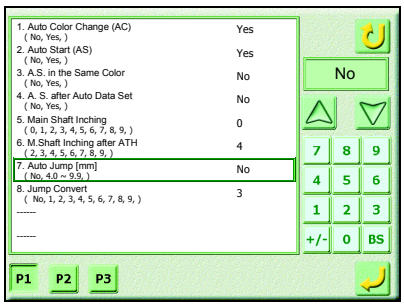
6. M.Shaft Inching after ATH



(2 ~ 9)

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

7. Auto Jump [mm]

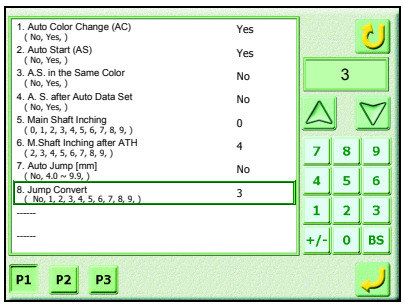


(No/ 4.0~9.9)

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)

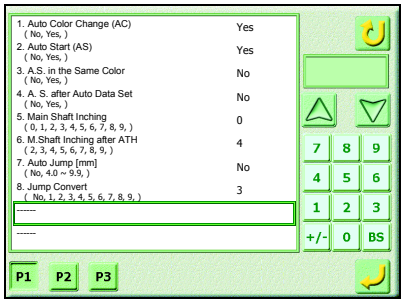
When jump codes continue the number of set times and more consecutively, it converts the consecutive jump codes to frame stepping.

📖 Frame stepping moves the frame with the main shaft kept stopping.

📖 "No" does not make jump conversion.

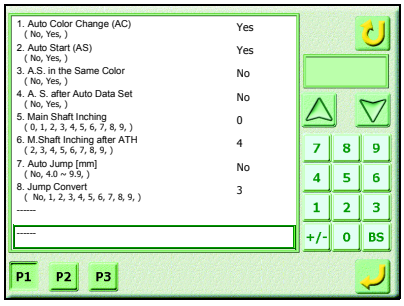
📖 It is not possible to convert automatic jump.

9. ------



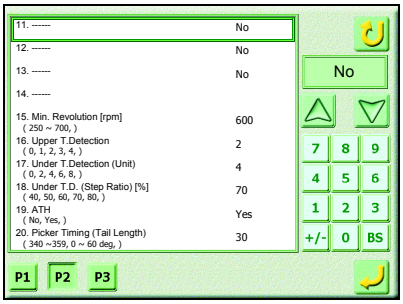
It is not applied.

10. ------



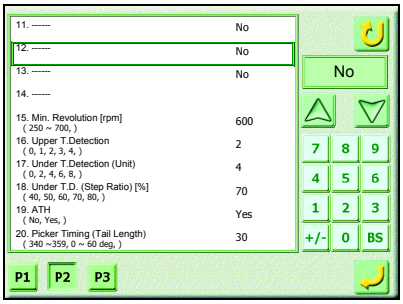
It is not applied.

11. ------



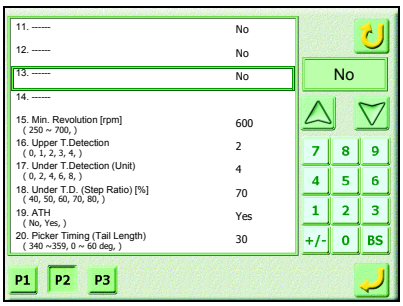
It is not applied.

12. ------



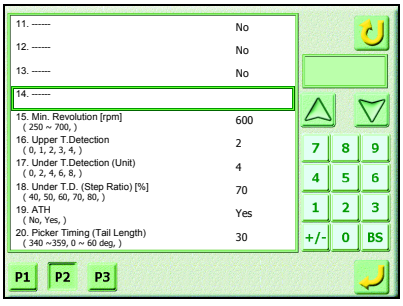
It is not applied.

13. ------



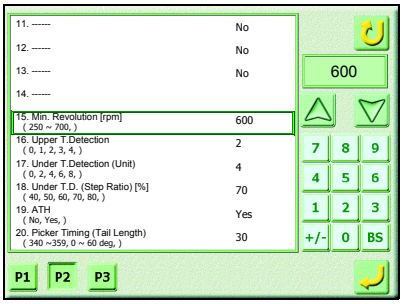
It is not applied.

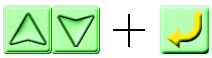
14. ------



It is not applied.

15. Min. Revolution [rpm]



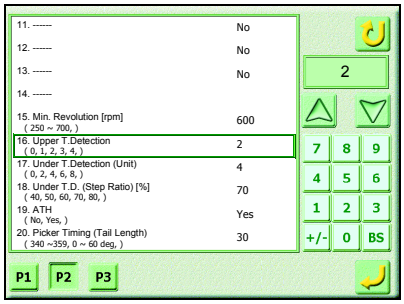


(250 ~ 700)

Lower limit of running revolution

📖 Inching is not included.

16. Upper T.Detection

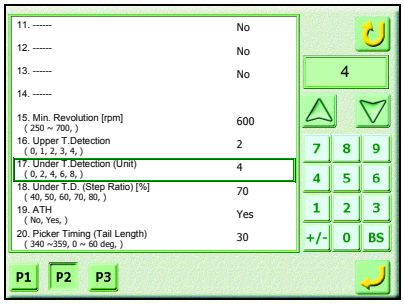


(0, 1, 2, 3, 4)

When information of upper thread breakage is detected with the number of setting times and more consecutively, it will be regarded as 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)

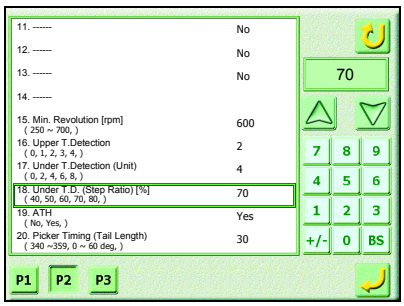


(0, 2, 4, 6, 8)

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) [%]

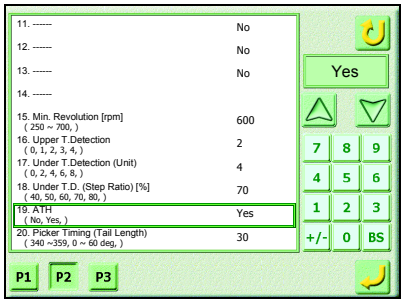


(40, 50, 60, 70, 80%)

It adjusts sensitivity of thread breakage detection.

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

19. ATH

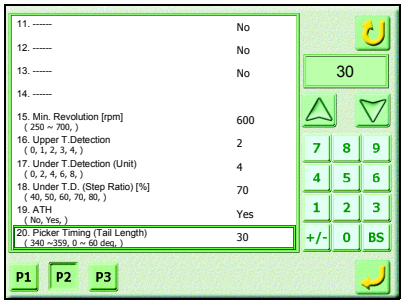


(Yes/No)

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.)

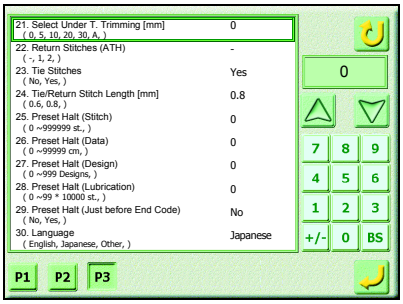
It adjusts the remaining thread length at thread trimming.

340 ⟸ 20 ⟹ 60
Short Long

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

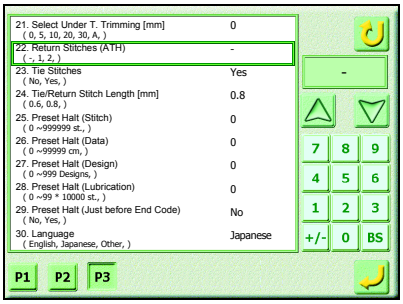
(GC02)

21. Select Under T. Trimming [mm]



It is not available at present.

22. Return Stitches (ATH)

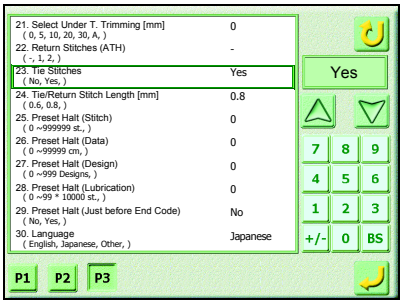


(-, 1, 2)

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

📖 "-" does not perform return stitching.

23. Tie Stitches



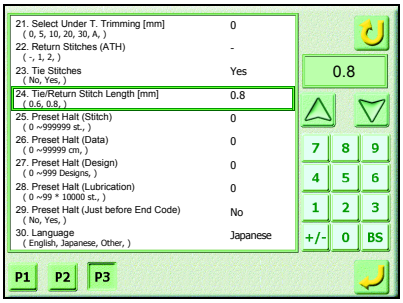
(Yes/No)

It makes the machine perform tie stitching before thread trimming.

📖

Yes	To perform tie stitching
No	Not to perform tie stitching

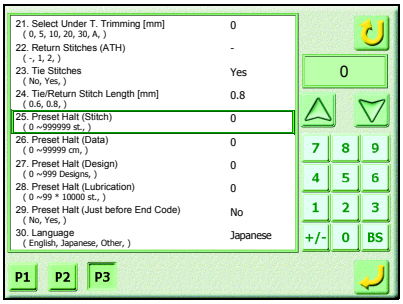
24. Tie/Return Stitch Length [mm]



(0.6 / 0.8)

Select stitch length to perform tie stitching/return stitching.

25. Preset Halt (Stitch)



Numerical keys

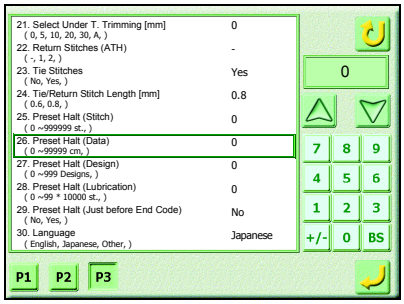
(0 ~ 999999 st.)

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)



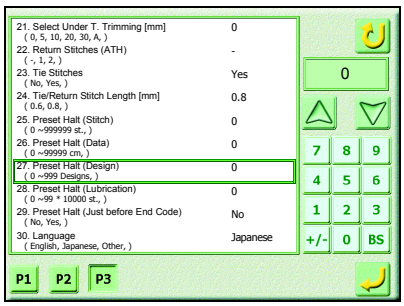
Numerical keys + ↵

(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)



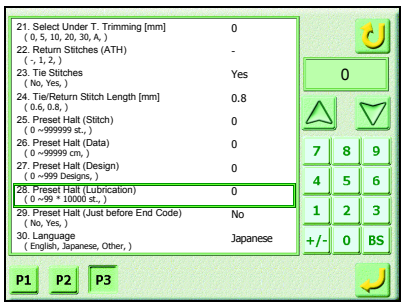
Numerical keys + ↵

(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)



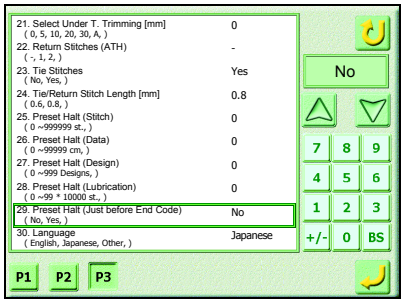
Numerical keys + ↵

(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)



△▽ + ↵

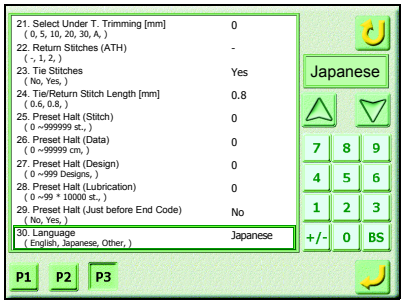
(Yes/No)

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



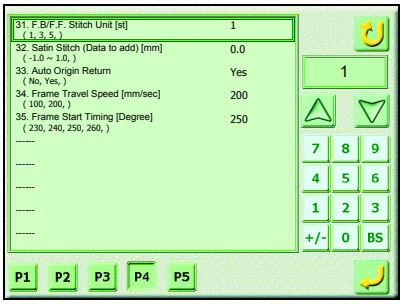
△▽ + ↵

(English, Japanese, Other)

Select display language of the screen.

- “Other” becomes different language depending on specification.

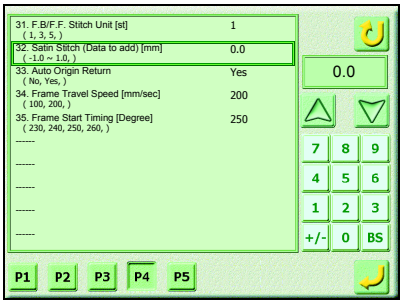
31. F.B/F.F. Stitch Unit [st]



(1, 3, 5)

Select frame feed unit at frame back/forward.

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

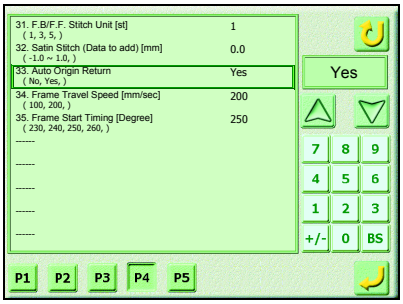


(-1.0 ~ 1.0)

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

- 📖 "0" does not make addition.
- 📖 Satin stitch p.88

33. Auto Origin Return



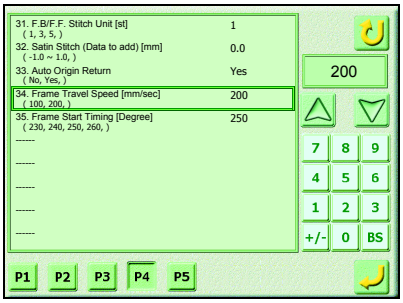
(Yes/No)

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

📖

Yes	To move
No	Not to move

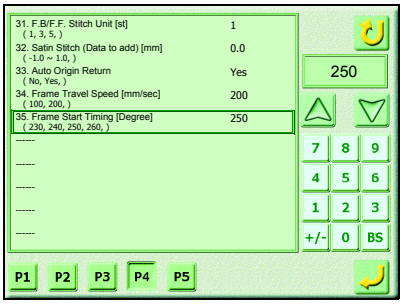
34. Frame Travel Speed [mm/sec]



(100, 200)

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

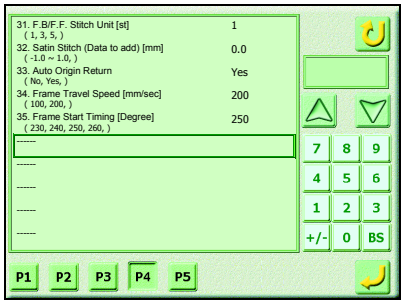
35. Frame Start Timing [Degree]



(230, 240, 250, 260 deg.)

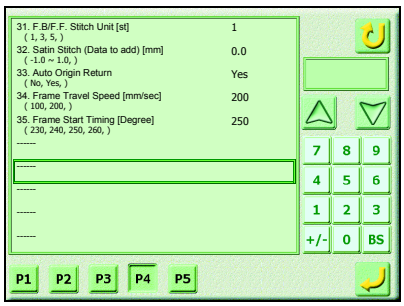
Select start timing (main shaft angle) of frame drive.

36. ------



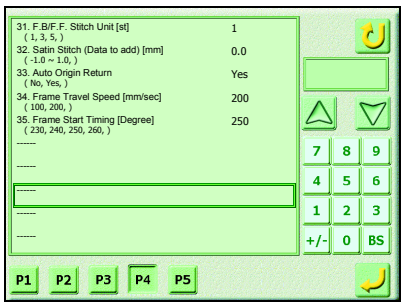
It is not applied.

37. ------



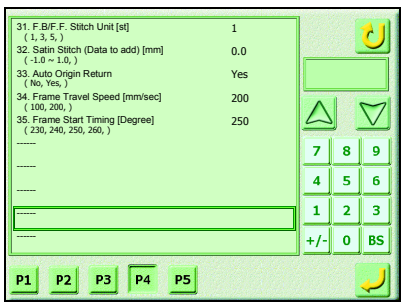
It is not applied.

38. ------



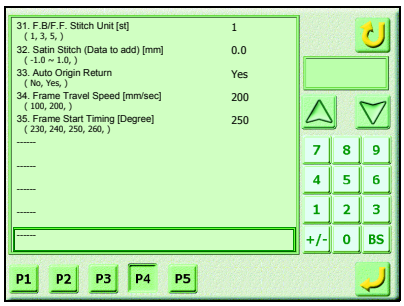
It is not applied.

39. ------



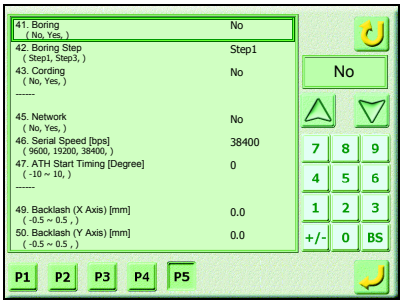
It is not applied.

40. ------



It is not applied.

41. Boring

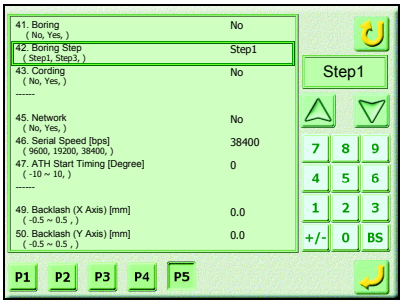


(Yes/No)

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

Yes	Equipped
No	Not equipped

42. Boring Step

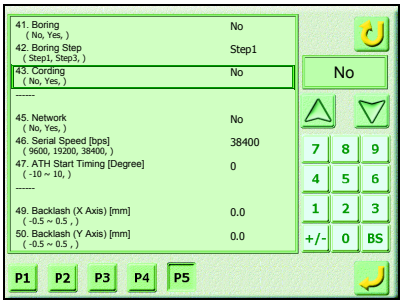


(Step1, Step3)

It processes stitch data when boring is performed.

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

43. Cording

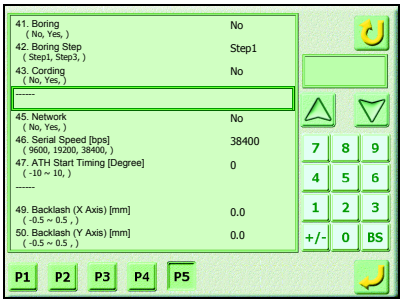


(Yes/No)

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

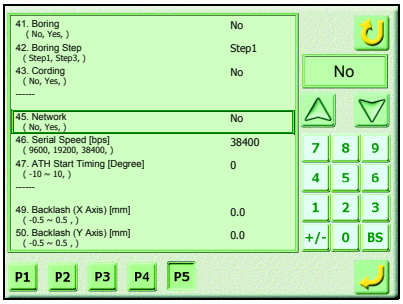
Yes	Equipped
No	Not equipped

44. ------



It is not applied.

45. Network

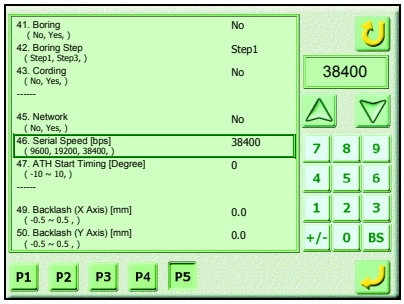


(Yes/No)

Select the state of network.

Yes	Connected
No	Not connected

46. Serial Speed [bps]

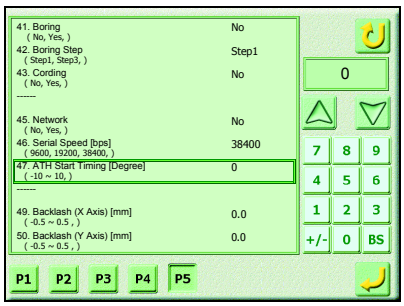


(9600, 19200, 38400)

Select transfer speed of serial connector.

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

47. ATH Start Timing [Degree]

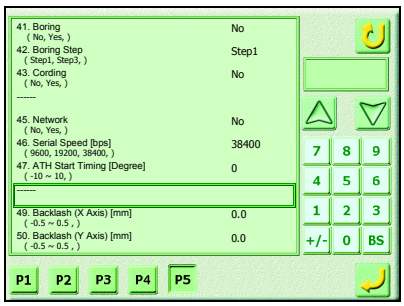


(-10 ~ 10)

Select drive start timing of the thread trimming motor.

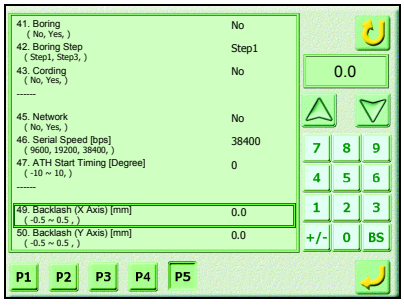
📖 When thread trimming is poor, make adjustment by changing setting value by ±1.

48. ------



It is not applied.

49. Backlash (X Axis) [mm]



(-0.5 ~ 0.5 mm)

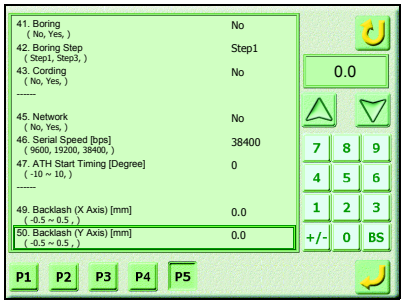
It corrects mechanical error generated when movement of the X-axis drive system reverses.

📖 “0” does not make correction.

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

📖 Backlash p.87

50. Backlash (Y Axis) [mm]



(-0.5 ~ 0.5 mm)

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

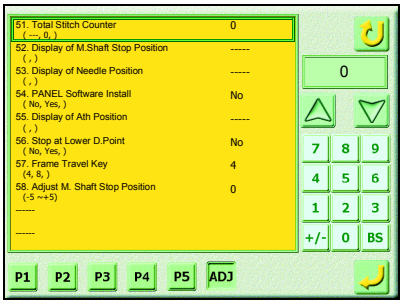
📖 “0” does not make correction.

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

📖 Backlash p.87

(GC03)

51. Total Stitch Counter

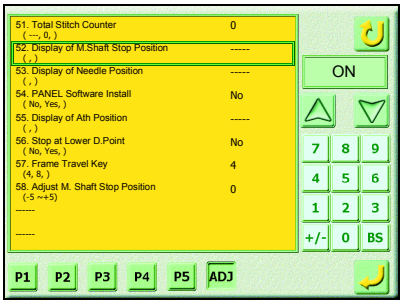


(---, 0)

It displays the number of stitches from its resetting until now.

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

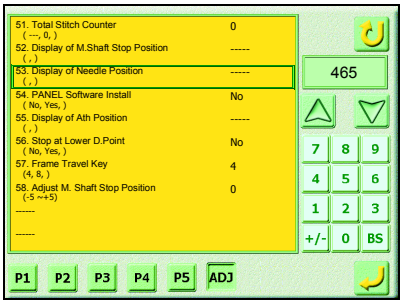
52. Display of M.Shaft Stop Position



Display the stop position of the main shaft.

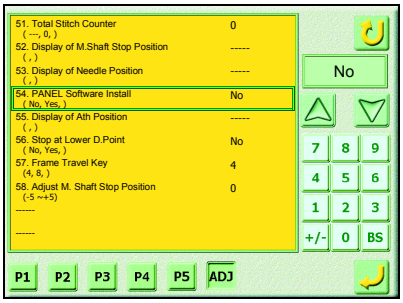
- ON: within the range of the fixed position
  OFF: Outside of the range of the fixed position

53. Display of Needle Position



Display the needle position.

54. PANEL Software Install

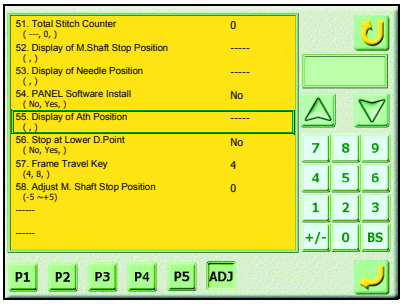


(Yes/No)

Install the PANEL software.

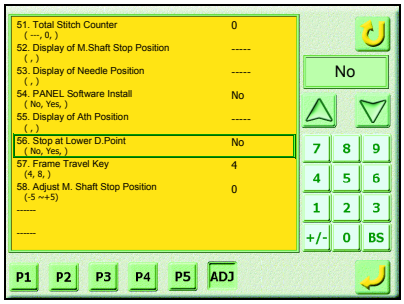
- Installation p.15

55. Display of Ath Position



It is not applied.

56. Stop at Lower D.Point



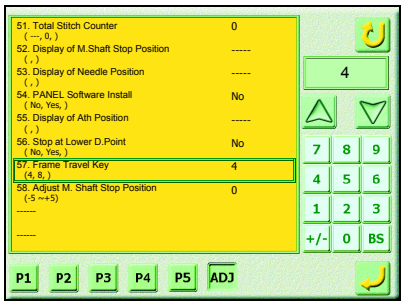
(Yes/No)

When stopping the machine with end code 2 (end of embroidery), it makes the machine stop at the lower dead point (pseudo-fixed position stop).

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

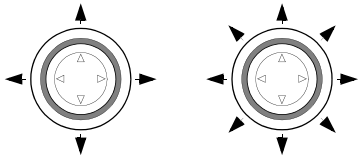
When performing manual frame travel, frame origin memory, manual offset during stop of the machine, operate the machine after detaching border frame clips.

57. Frame Travel Key



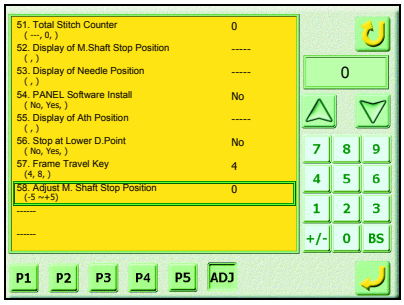
(4, 8)

Effective directions of the frame travel key



4 directions 8 directions

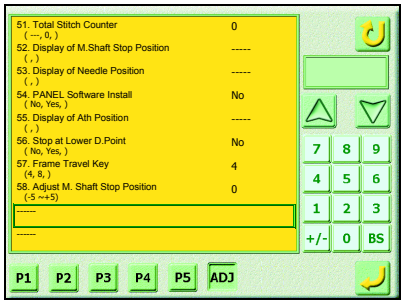
58. Adjust M. Shaft Stop Position



(-5 to +5)

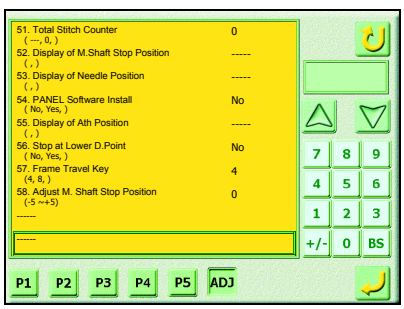
Adjust stop position of the main shaft when it is misaligned.

59. ------



It is not applied.

60. ------

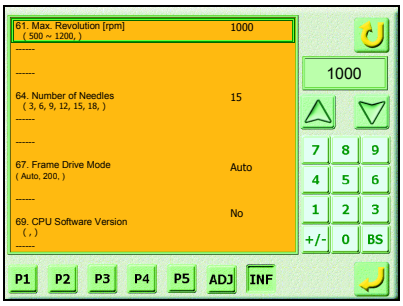


It is not applied.

CAUTION

This setting is the item set by the manufacturer at shipment of the machine. Customer should not change the setting.

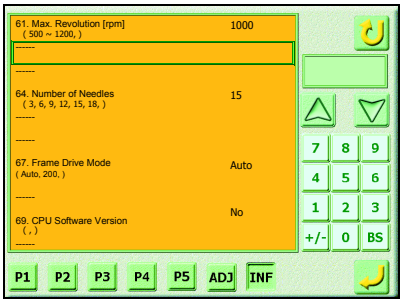
61. Max. Revolution [rpm]



(500 ~ 1200)

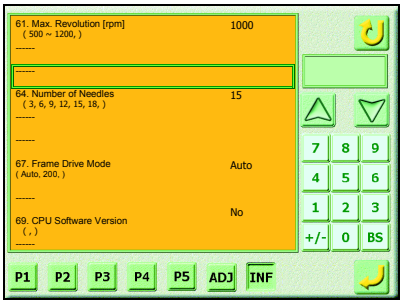
Upper limit of maximum revolution.

62. ------



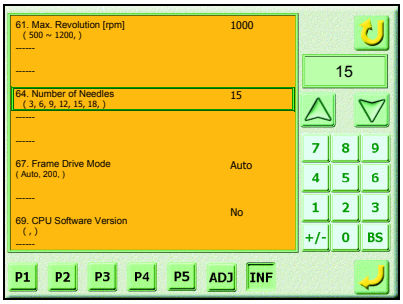
It is not applied.

63. ------



It is not applied.

64. Number of Needles

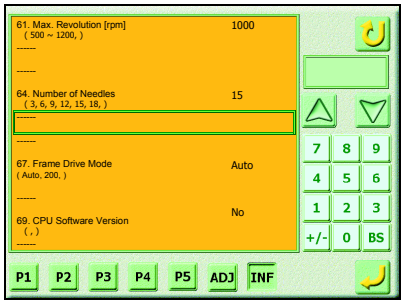


(3, 6, 9, 12, 15, 18)

Select the number of needles.

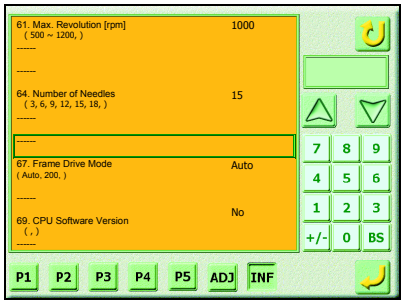
18 needle machine is to be specially ordered.

65. ------



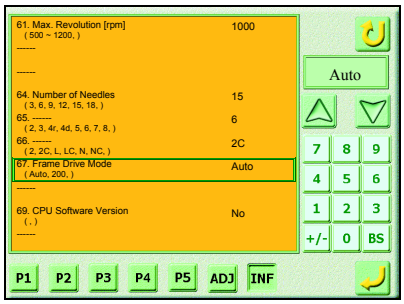
It is not applied.

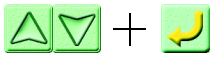
66. ------



It is not applied.

67. Frame Drive Mode





(Auto, 200,)

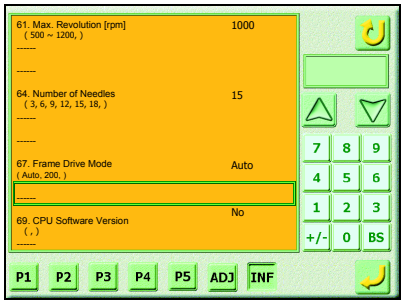
This is a selection of usual frame drive mode or the mode to reduce looping.

It is not possible to perform setting in .

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

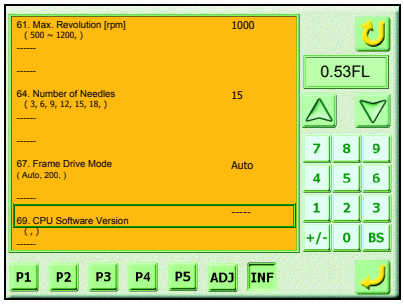
200	Max 850rpm	Upper limit to low speed rpm550rpm

68. ------



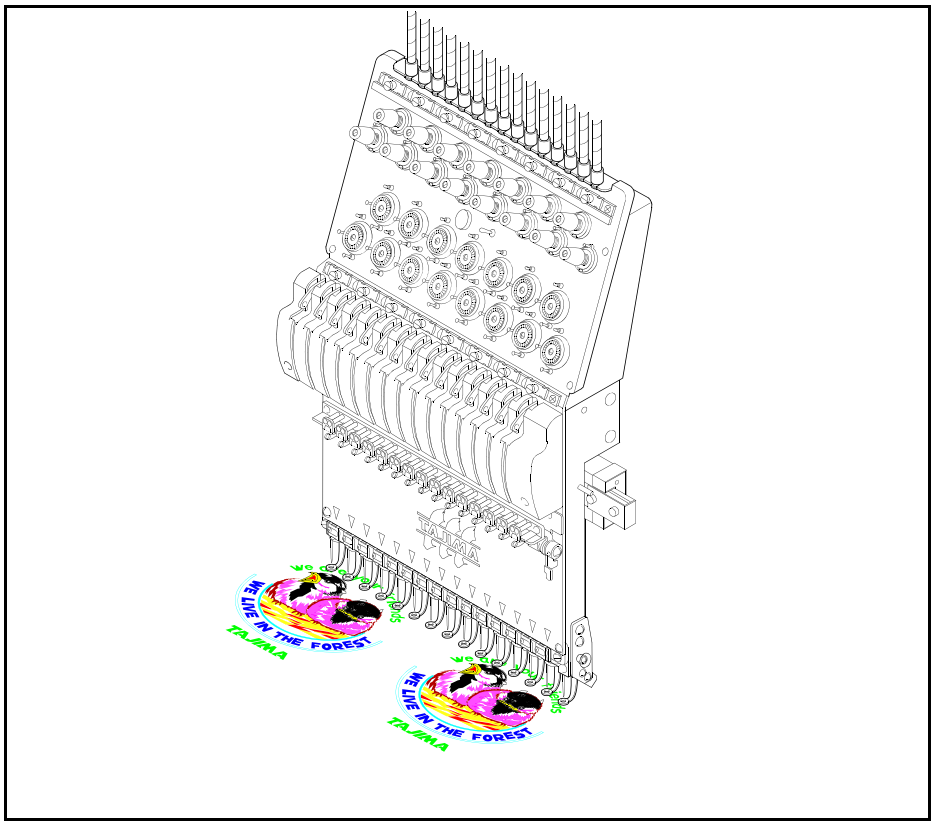
It is not applied.

69. CPU Software Version



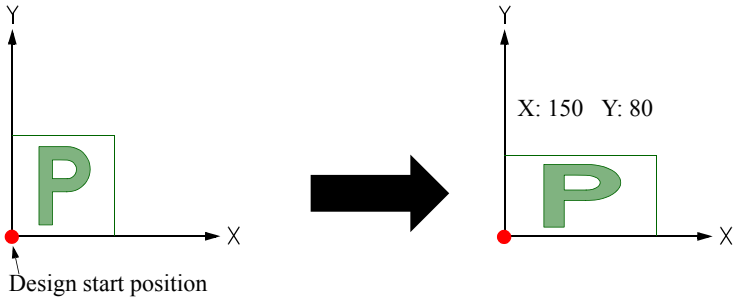
Display the version of CPU software.

CHAPTER 9
OUTLINE OF FUNCTIONS



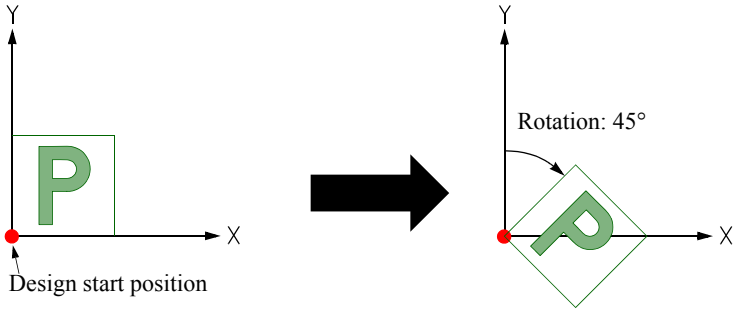
1. DESIGN SCALE UP/DOWN

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



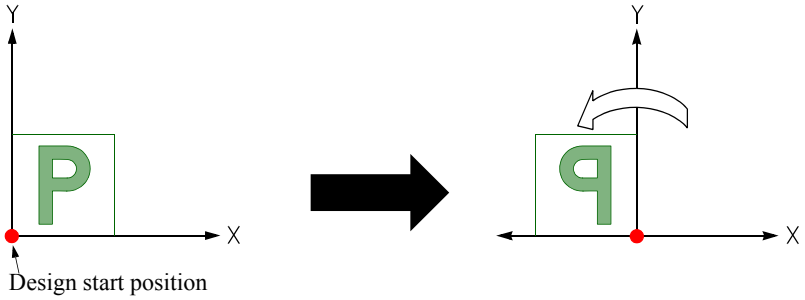
2. ROTATION

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



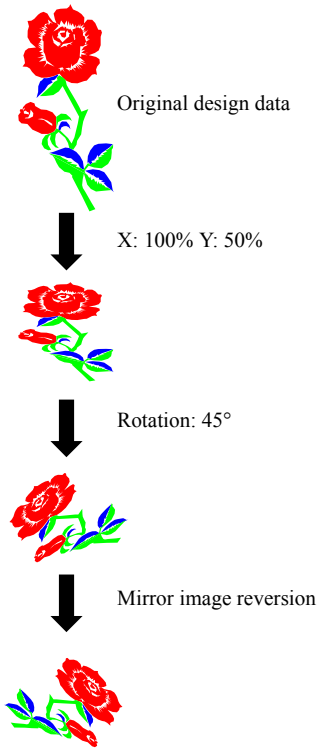
3. MIRROR IMAGE REVERSION

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

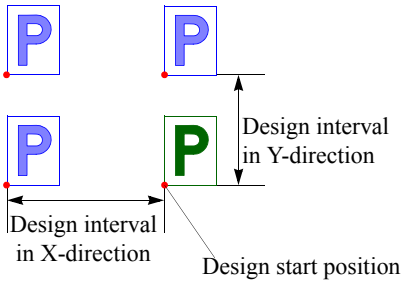


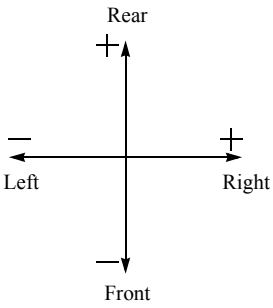
When all of enlargement/reduction, rotation, and mirror image reversion are set, the data processing will have ranking of priority.
Enlargement/reduction → rotation → mirror image reversion
These are processed in this order.

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

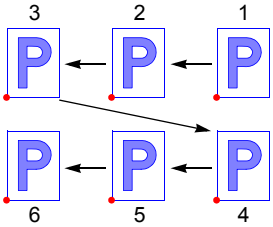


4. REPEAT

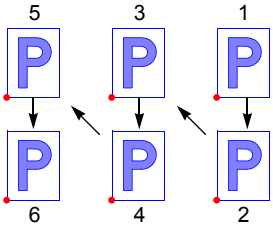




X direction priority



Y direction priority



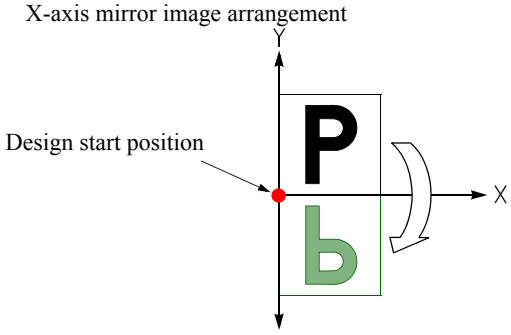
📖 The repeat direction will be decided by +/- of amount of design interval.

📖 Embroidering order differs depending on priority direction.

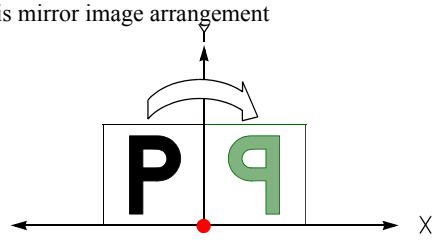
📖 The XY design interval in the left illustration is minus direction.

5. CONVERTED ARRANGEMENT

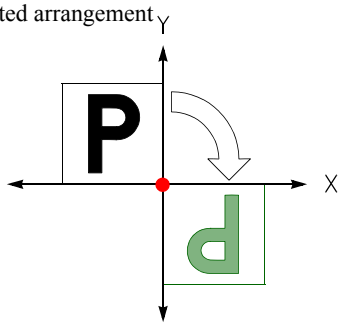
Pb X-axis mirror image arrangement



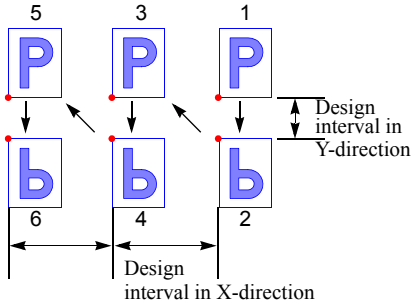
Pq Y-axis mirror image arrangement



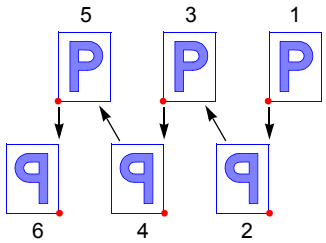
Pd 180° rotated arrangement



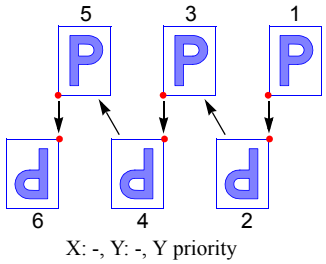
📖 Converted arrangement arranges and repeats the design as it is set as the initial setting in odd-numbered times, and design arranged by mirror/rotation in even-numbered times in order.



X: -, Y: -, Y priority



X: -, Y: -, Y priority



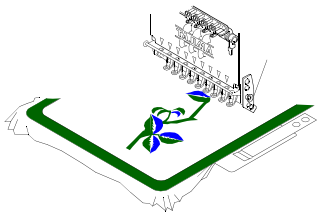
X: -, Y: -, Y priority

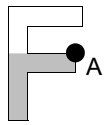
6. MANUAL OFFSET

This function returns the embroidery frame to the original position after stopping the machine at a free setting point and moving the embroidery frame forward from the free setting point by manual frame travel.

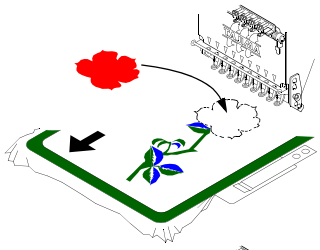
A: Free setting point B: Frame travel position

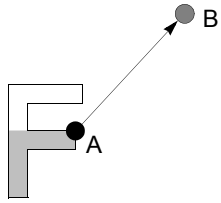
1. It performs manual thread trimming after it makes the machine stop at the free setting point (A).



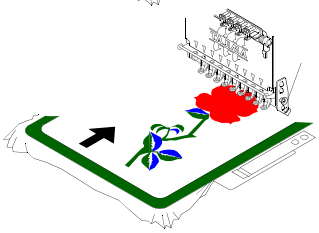


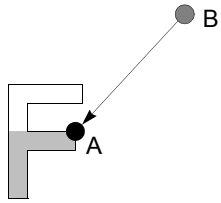
2. Move the embroidery frame forward (B) by manual frame travel for confirming the embroidery design, etc.





3. When starting the machine, it will move to the free setting point (A), and the embroidery will be continued.



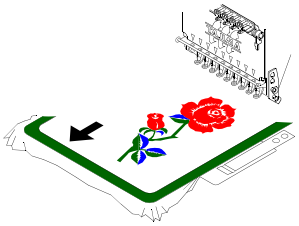


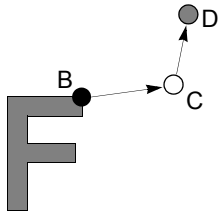
7. AUTOMATIC OFFSET

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

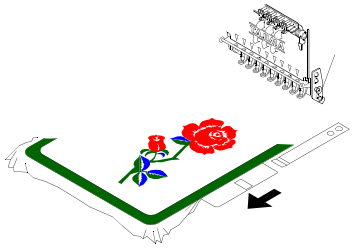
A: Design start position
B: End position of design
C: Middle position
D: Offset start position

1. The machine stops at the end position of the frame (B) to perform thread trimming, and the embroidery frame moves to the offset start position (D) through the middle position (C).



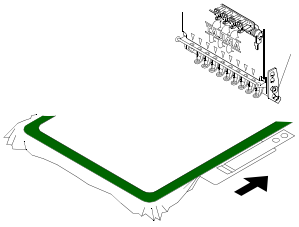


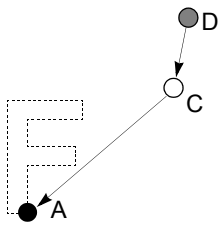
2. Exchange the cloth or frame.



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

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





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

(GC02)

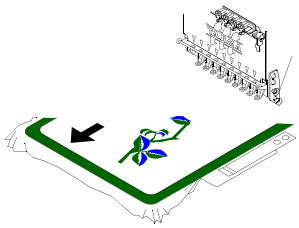
8. OFFSETTING AT AUTOMATIC COLOR CHANGE

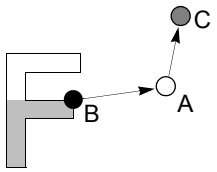
This function makes the embroidery frame move forward automatically at color change.

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

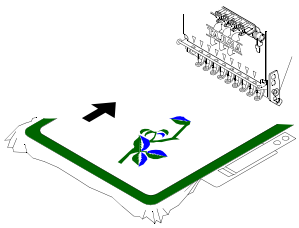
1. The machine stops at the color change point (B) to perform thread trimming, and the embroidery frame moves to the offset start position (C) through the middle position (A).

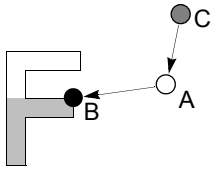




When there is no middle position (A), the frame will move directly to the offset start position (C).

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.

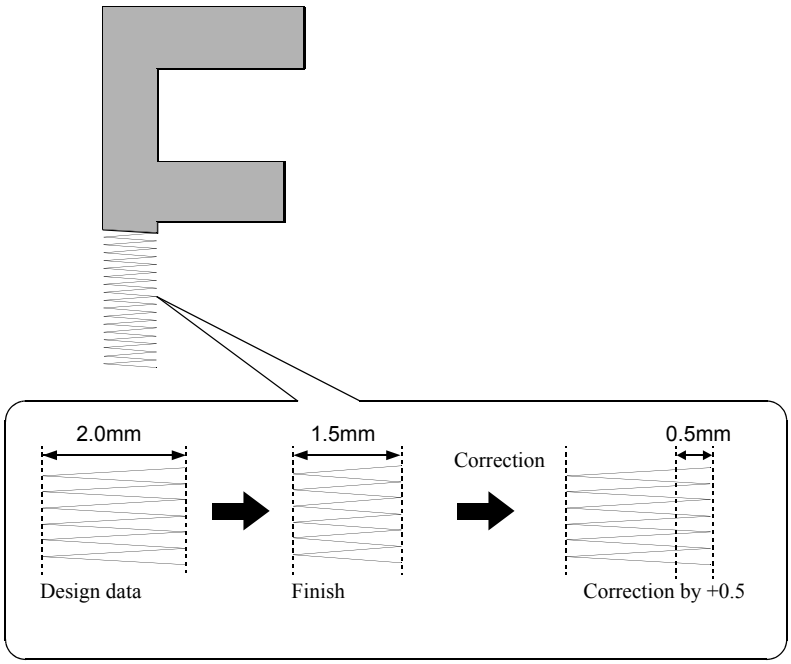




When there is no middle position (A), the frame will move directly to the free setting point (B).

9. BACKLASH

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

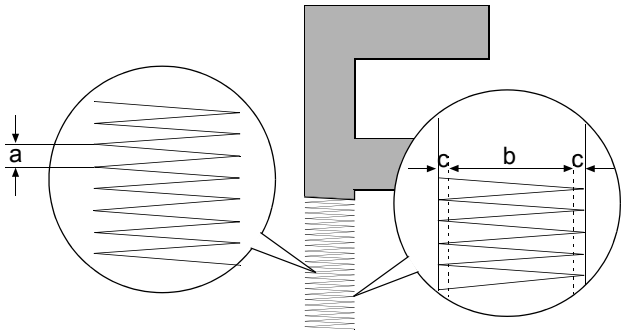


It is possible to correct stitch of each X direction and Y direction by -0.5 to +0.5 mm.

10. SATIN STITCH

This function expands satin stitch length.

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

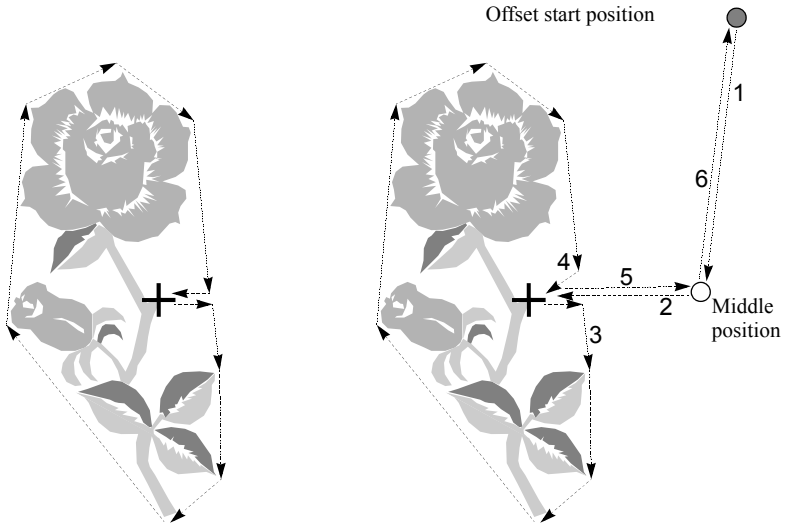


Density for distinction
When a distance (a) is 1 mm or less, the machine recognizes it as a satin stitch.

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

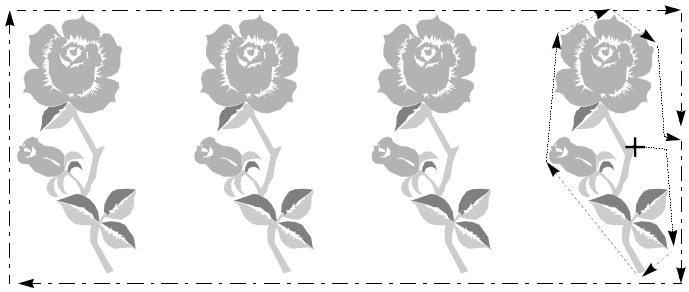
This function makes the frame move along the outer circumference of the design that has been set.



: Design start position

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 → middle position → design start position → outer circumference → design start position → middle position → offset start position.

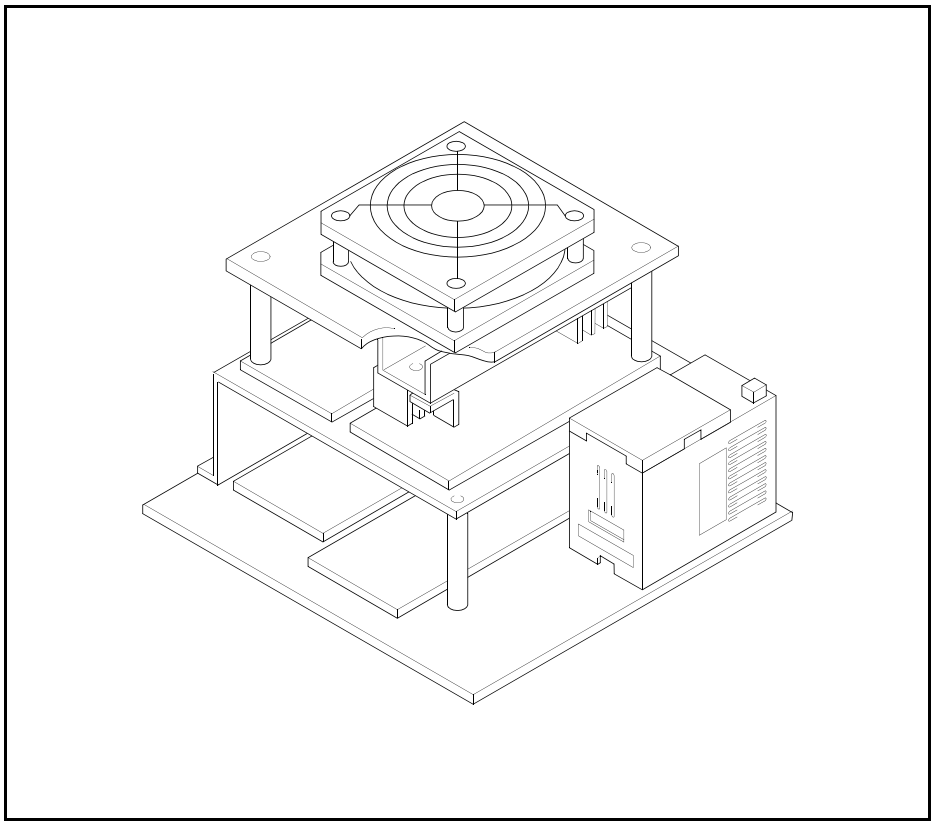


Repeat of design

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

CHAPTER 10

ELECTRO-COMPONENT PARTS

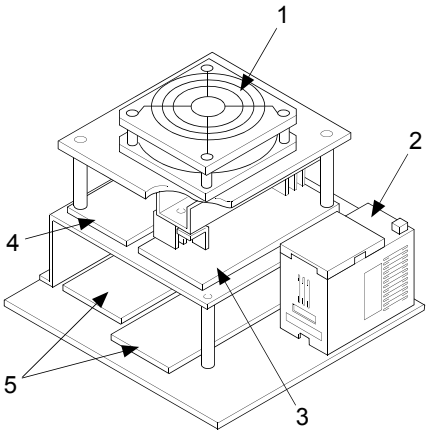


1. POWER SUPPLY/DRIVER UNIT

CAUTION

Do not put an object that blocks wind flow of the cooling fan. Inside of the box will overheat to cause the machine to malfunction, which will become a cause of trouble.

1	Cooling fan
2	Inverter
3	X/Y-axis driver
4	Head card
5	DC power supply

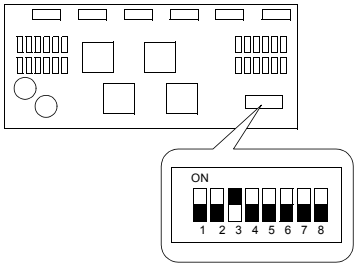


2. DIP SWITCH

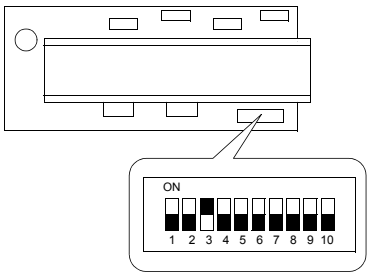
CAUTION

Do not change switch setting of the DIP switch.
The machine will malfunction, which will become a cause of trouble.

[Head card]



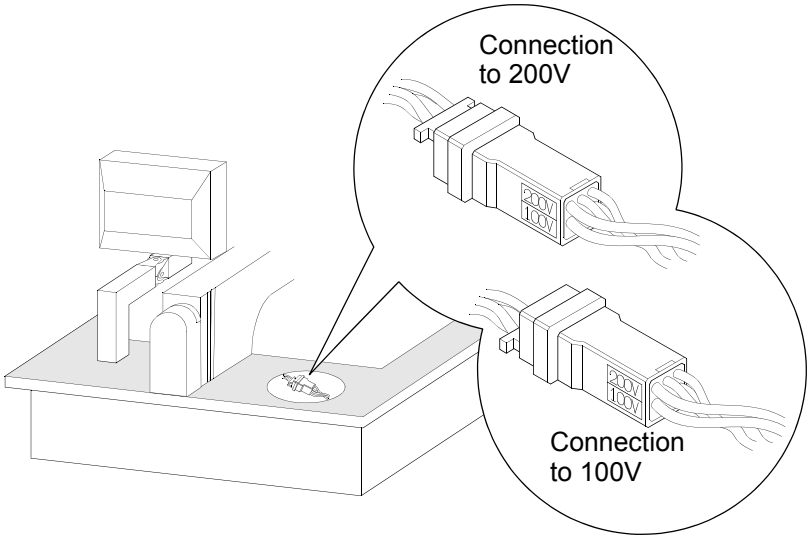
[X/Y-axis driver]



3. SWITCHING OF POWER SUPPLY SPECIFICATION

WARNING

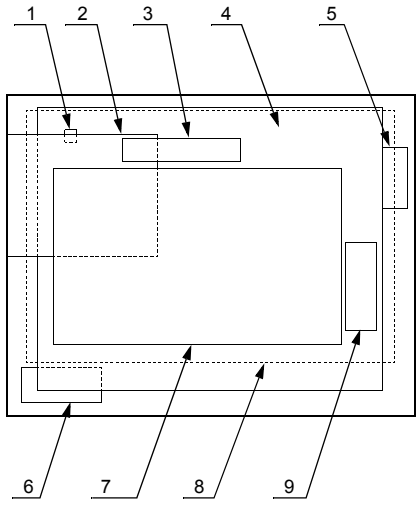
To prevent electric shock, be sure to turn off the primary power supply. Turn off the power switch before turning off the primary power supply.

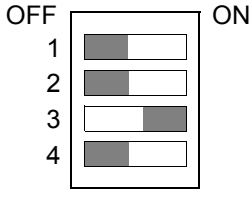


4. OPERATION PANEL BOX

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]

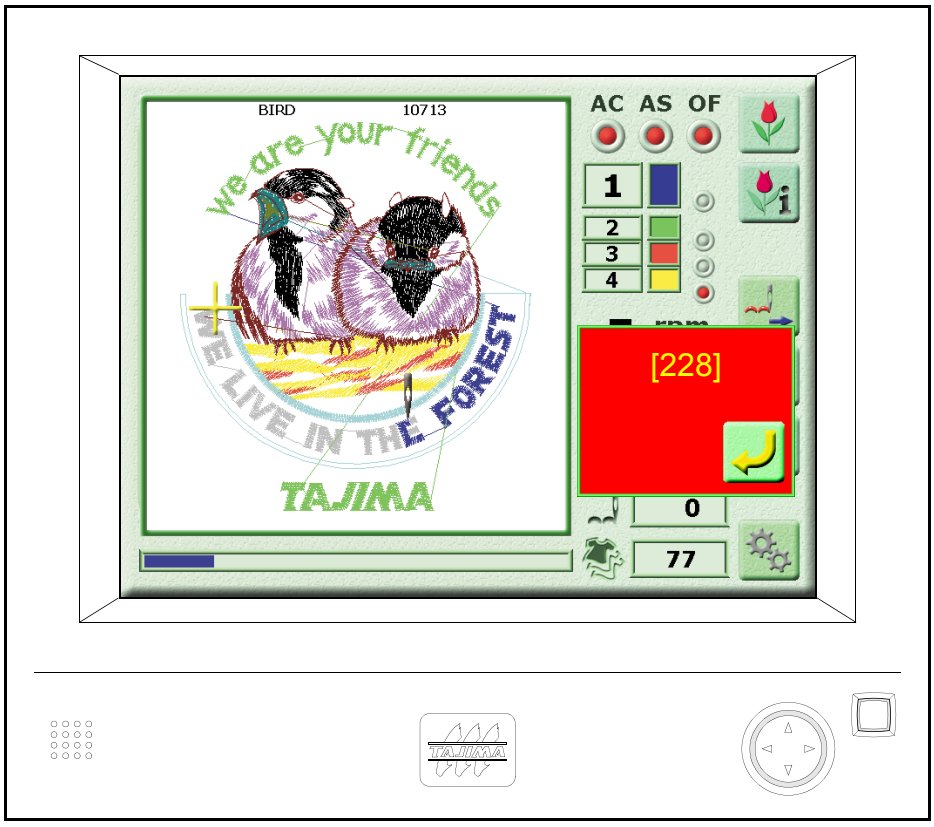




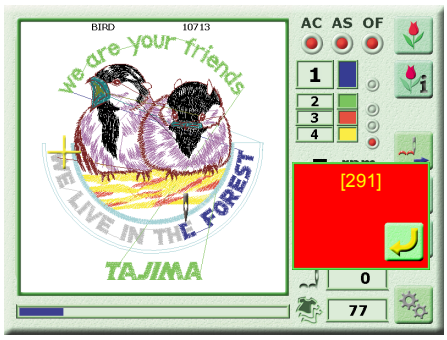
DIP switch[SW1]

Do not change setting of the DIP switch.

CHAPTER 11
TROUBLESHOOTING



1. IF MACHINE OPERATION IS INTERRUPTED



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.
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 has detected thread breakage.	Check upper and under threads.
	Tension base card is bad	Replacement of tension base card
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	
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	Check CPU card or Panel card. Replace it if necessary.
2BA	Memory capacity over	Delete unnecessary designs registered in memory.
2BB	Frame back movement exceeded the allowable range.	Do not perform further frame back.
2BC	No design is registered in the memory.	Register designs in the memory.
2C2	Incorrect option setting	Set correctly.

(GC02)

Code No.	Stop Factor	Corrective Action
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 is 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.
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	No needle position signal is detected during rotation of the main shaft.	Check the potentiometer (needle position sensor).
3A6	ATH knife retractable position has become nonuniform.	Check the position of ATH movable knife.
3A8	Thread holding driver error signal is 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 data was not correctly written from the memory to the floppy disk.	Retry writing.

Stop due to Normal Stop Factors

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.	These stops are not caused by abnormality or failure. Perform “start operation” or “frame back/forward operation”. Alternatively, press any operation key (excluding manual frame travel key) to continue the machine operation.
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 due to the manual ATH or needle bar operation.	
1D2	Stop by preset halt (except lubrication)	Reset. Total counter p.73, p.74
OIL	Preset halt (lubrication)	Perform lubrication to the corresponding spots, and reset the machine. Total counter p.74

2. IF TROUBLE OCCURS

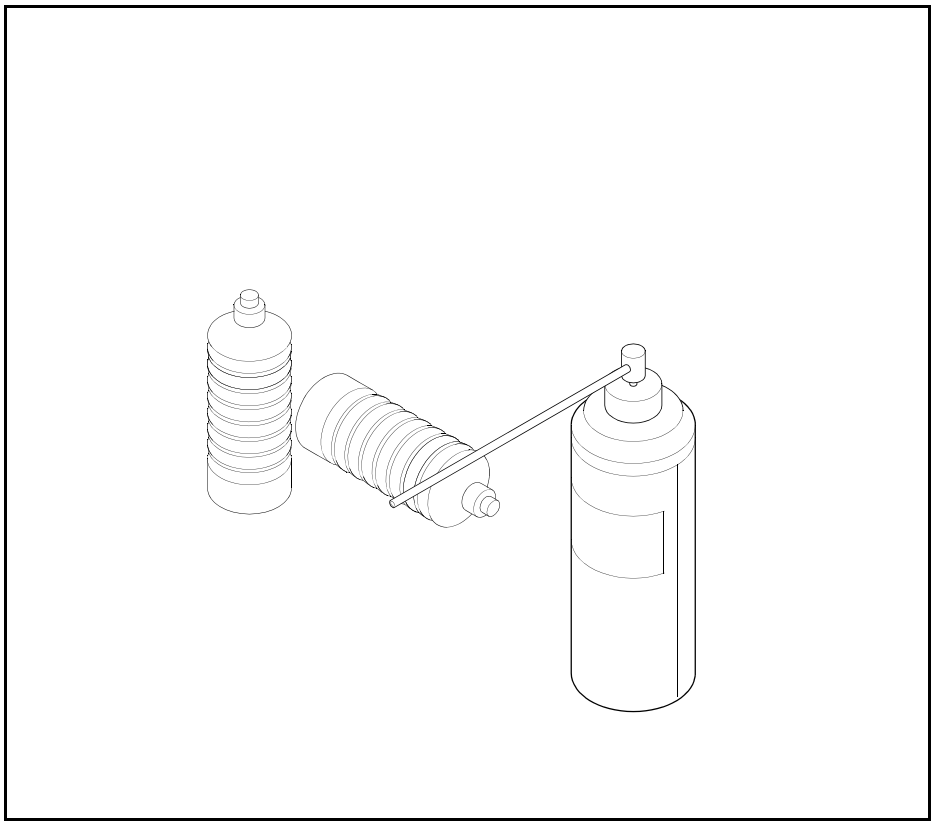
CAUTION

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.
	Drive unit (X, Y-axes) defective	Replace the drive unit.
		Replace the X-axis/Y-axis drivers.
Thread breaks	Wrong needle-rotary hook timing or improper gap	Adjust the timing or gap.
	Wrong needle bar lower dead point	Adjust the lower dead point.
	Scratches on rotary hooks, presser feet, or on thread passage areas	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.
ATH	Thread is not trimmed.	Adjust the ATH knife position.
	Thread frayed at the beginning of embroidery	Picker timing(p.72)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.
	Poor adjustment for jumping	

CHAPTER 12
MAINTENANCE



1. WARNINGS AND PRECAUTIONS

WARNING

To prevent accidents resulting in injury or death, 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

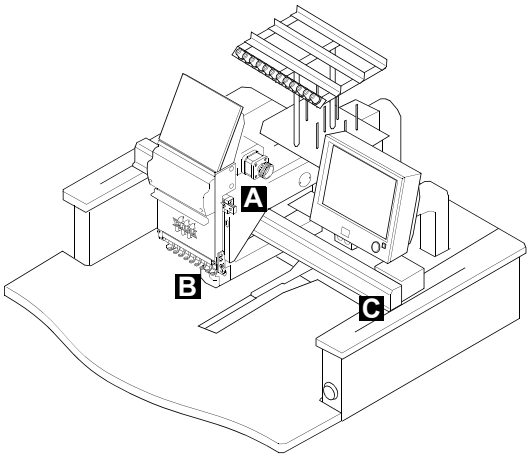
- **Perform daily maintenance in the specified schedule. If the daily maintenance is not observed, the machine may fail to operate correctly. Since the loss incurred by ignoring the daily maintenance instructions could be judged “not covered by guarantee”.**
- **If the machine is not used for a long period, turn the power switch ON in regular intervals.**
  The PCBs used in the machine have backup battery for retaining the data and if the machine is left with the power switch OFF for approximately one month, the data will be lost due to discharging of the battery.

2. CLEANING

WARNING

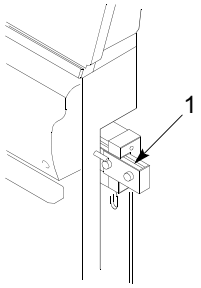
During machine cleaning, you may sustain severe injuries due to electric shock or being entangled by moving machine units. Therefore, observe the following items when you clean the machine.

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

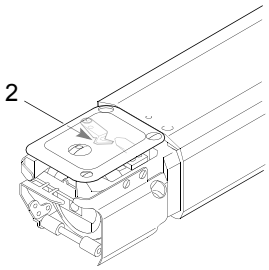


Cleaning area	Cleaning cycle
(1) Case linear section	Once/week
(2) ATH section	Everyday
(3) X-axis drive system, Y-axis drive system	Once/2 weeks

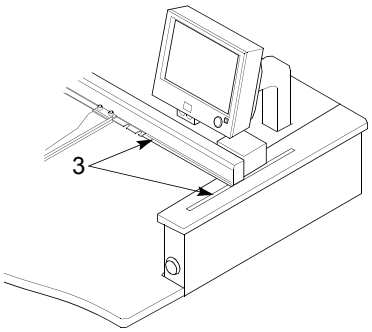
A



B



C



3. LUBRICATION

WARNING

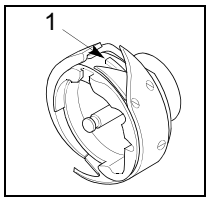
During machine lubricant, turn off the power switch. You may sustain severe injuries due to being entangled by moving machine units.

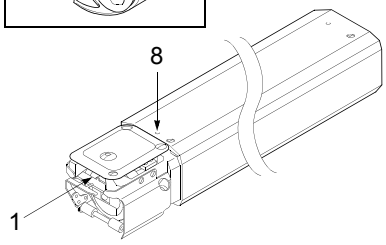
CAUTION

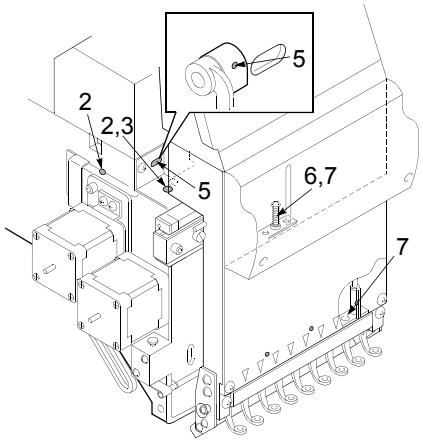
Keep the lubrication cycles as shown below. Deviated lubrication cycles may cause thread breakage.

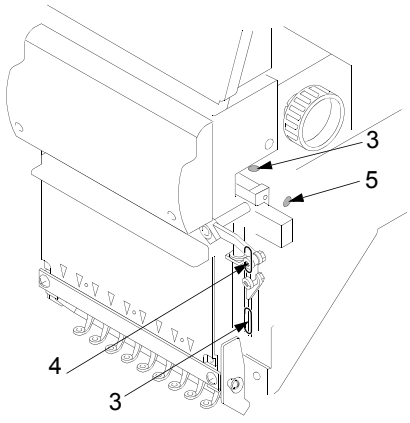
When supplying lubricating oil, use only Tajima's genuine SF oil or equivalent (#150 spindle oil: ISO viscosity grade= VG 18).

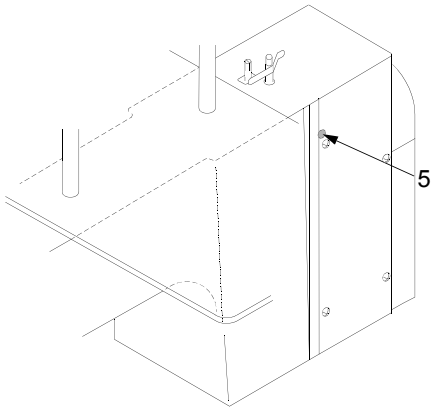
Lubrication points	Lubrication cycle
(1) Rail on rotary hook	Every 3 to 4 hours of operation
(2) Presser foot reciprocator (3) Needle bar drive shaft	Once/day
(4) Presser foot drive shaft (5) Inside of the arm (6) Needle bar (lubricate from the slit of the upper cover) (7) Felt packing	Once/week
(8) Inside of the cylinder bed	Once/3 months











(GC10)

4. GREASING

WARNING

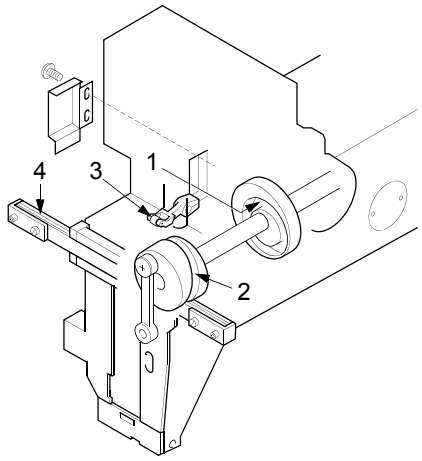
During machine greasing, turn off the power switch. You may sustain severe injuries due to being entangled by moving machine units.

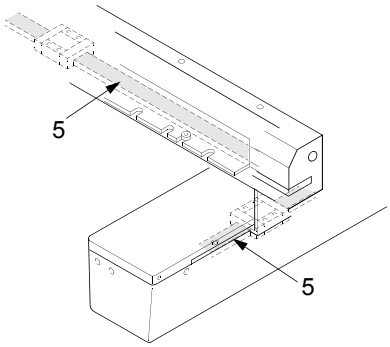
CAUTION

Please consult your local distributor for further information about greasing.

When greasing, use only high quality mineral oil-based lithium grease or equivalent.

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





5. INSPECTIONS

WARNING

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

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

6. REPAIR

WARNING

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

Before starting repair of the machine, be sure to disconnect the main power to the machine and wait for 4 minutes. (Before disconnecting the main power, turn off the power switch.) It takes 4 minutes until the machine becomes completely discharged.

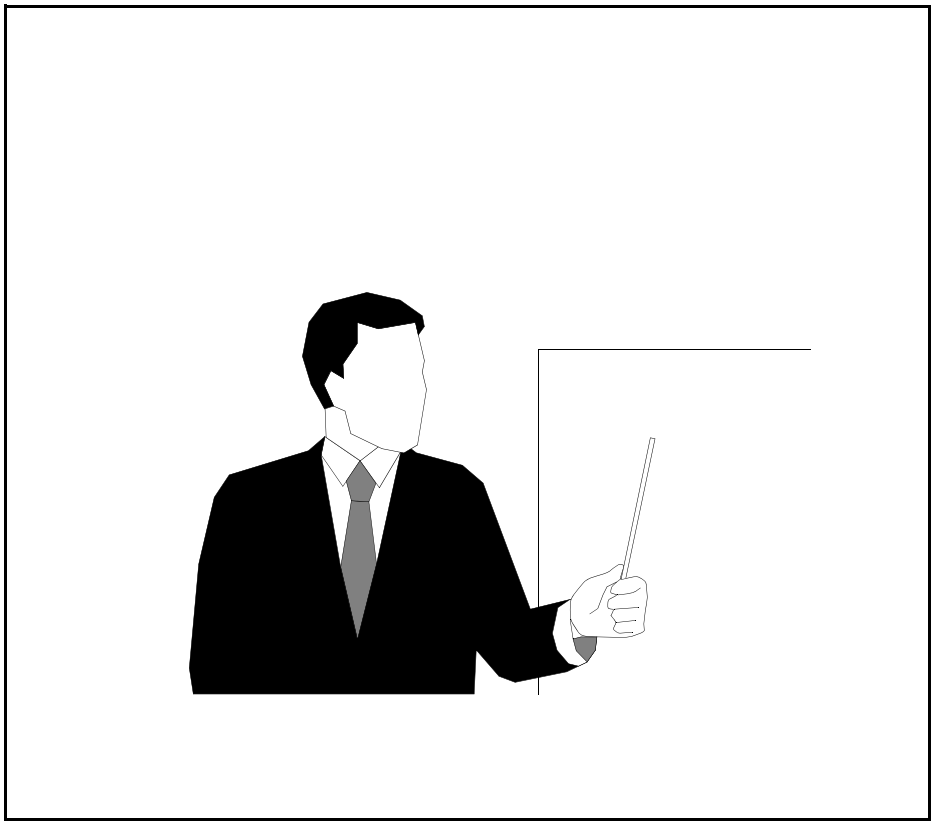
If the machine needs repairs, the repairs must be done only by the service personnel assigned and trained by Tajima or qualified technician. (Consult your distributor.)
Do not change the specification nor modify the parts of the machine without due consultation with Tajima. Such modification may risk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

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

CAUTION

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

TERMINOLOGY



A

ABSOLUTE ORIGIN
A mechanical origin to detect the absolute origin of embroidery frame

AFC
Abbreviation of Automatic Frame Changer. Device for performing automatic embroidery continuously against piece goods fabric to be embroidered

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
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
Device to lubricate to each section of machine head automatically (option).

B

BOBBIN CHANGER
A device attached to under face of table to change bobbins automatically (option)

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

C

CAP FRAME
A kind of embroidery frame for embroidery on cap (option). There are two types: one is wide cap frame and another is semi-wide cap frame. Wide cap frame enables embroidery on wider range in circumference direction compared with semi-wide cap frame

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

CLEANUP
To make preceding and seceding stitches absorb to remove fine stitch of design data.

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
Device to sew corded material to material to be embroidered (option).

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

D

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

D-AXIS
Driving shaft to rotate sewing needle or nipple (TMCE series)

DESIGN DATA
Data to embroider design It consists of design and data such as embroidery mode.

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

DESIGN INTERVAL FUNCTION
Moving method when moving one design to the next design in embroidering the same design repeatedly. Moving method includes by stitch and by frame stepping (frame stepping only for TMLH series)

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

DSW
Abbreviation of Dual in Package Switch. Refer to DIP switch.

E

EMBROIDERY FRAME
A general term of frames that hold material to be embroidered such as cloth, leather, etc. 3

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.

F

FDD
Abbreviation of Floppy Disk Drive Refer to Floppy Disk Drive

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

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 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 SWITCH
Switch to limit the embroidery range

FRAME LIMIT
The embroidery space limited by the frame limit switches

FRAME
Refer to embroidery frame

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

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

H

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

I

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

J

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 by jumping during operation. When the machine stops, it is always in a state of jumping.

L

LCD
Abbreviation of Liquid Crystal Display

LED
Abbreviation of Light Emitting Diode

LOOPING
In a state of remaining upper thread on fabric with incomplete tightening due to poor pulling of upper thread by take-up lever.

M

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

M-AXIS
Drive shaft to rotate nipple or bobbin (TMLH series)

MEMORY DESIGN
Design data written in the memory

MEMORY
Internal memory device

MEMORY REGISTRATION
To write to the memory (memory writing)

MEMORY WRITING
To write to the memory (memory registration)

MODE
Contents of setting, operation

N

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

NIPPLE
Part to press material to be embroidered in LH head. Attachment suitable for material to be sewn such as cord, tape. etc. is attached

NIPPLE STROKE
Stroke of nipple in up and down directions

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

NUMERICAL KEYS
Numerical key switches of 0 to 9

O

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

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

P

POLARITY
Posture of a design when embroidering.

R

RAM
Abbreviation of Random Access memory

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
Abbreviation of Read Only Memory

RS232C CONNECTOR
Connector for data communication

S

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 kind of drive devices 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 embroider speed (high speed/low speed)

STEP
Sequence of color changes for one design

STEP
To advance value one by one

STITCH DATA
Data set for each one stitch, which consists of X•Y data, function code, and speed code (D series, TLFDII).

STOP AT LOWER D. POINT (PSEUDO-FIXED POSITION)
To stop the machine with needle stuck in cloth at end of embroidery (end code 2) (Stop at the lower dead point).

T

TAJIMA COMPLEMENT ERROR

Error related to composition of X and Y data (It is composed of 10 values of +/-1, +/-3, +/-9, +/27, +/-81). 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 (OPTION)

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

U

UBC

Abbreviation of Under thread bobbin changer. Refer to bobbin changer.

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.

V

VERSION NUMBER

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

W

WRITE DESIGN NUMBER

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

X

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. 2

Y

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.

Z

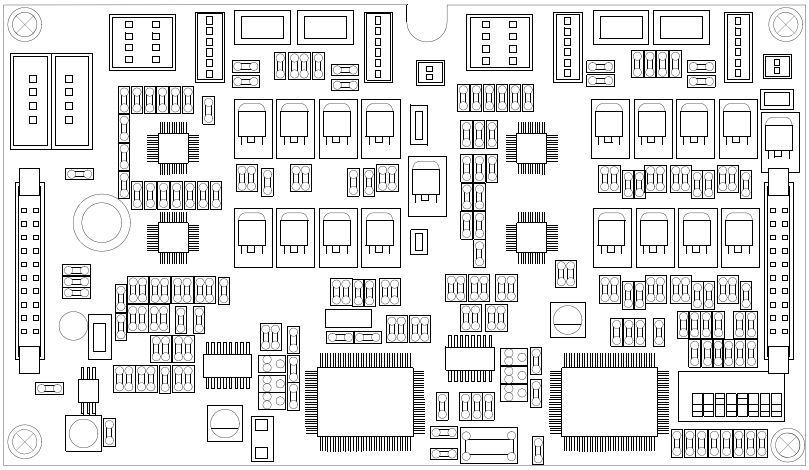
Z-AXIS

Drive shaft to change needle height (TMCE series)

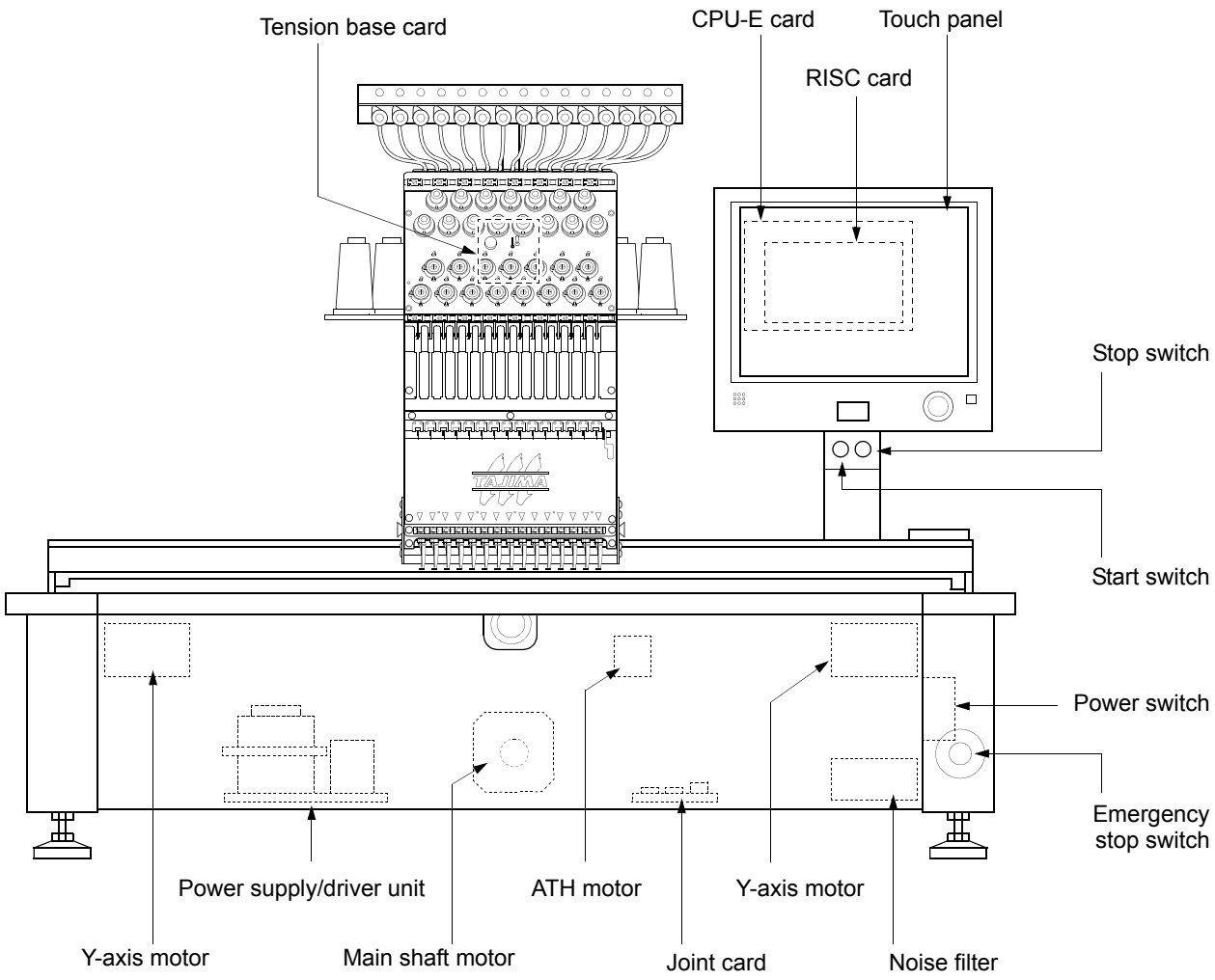
ZIGZAG SWING EMBROIDERY

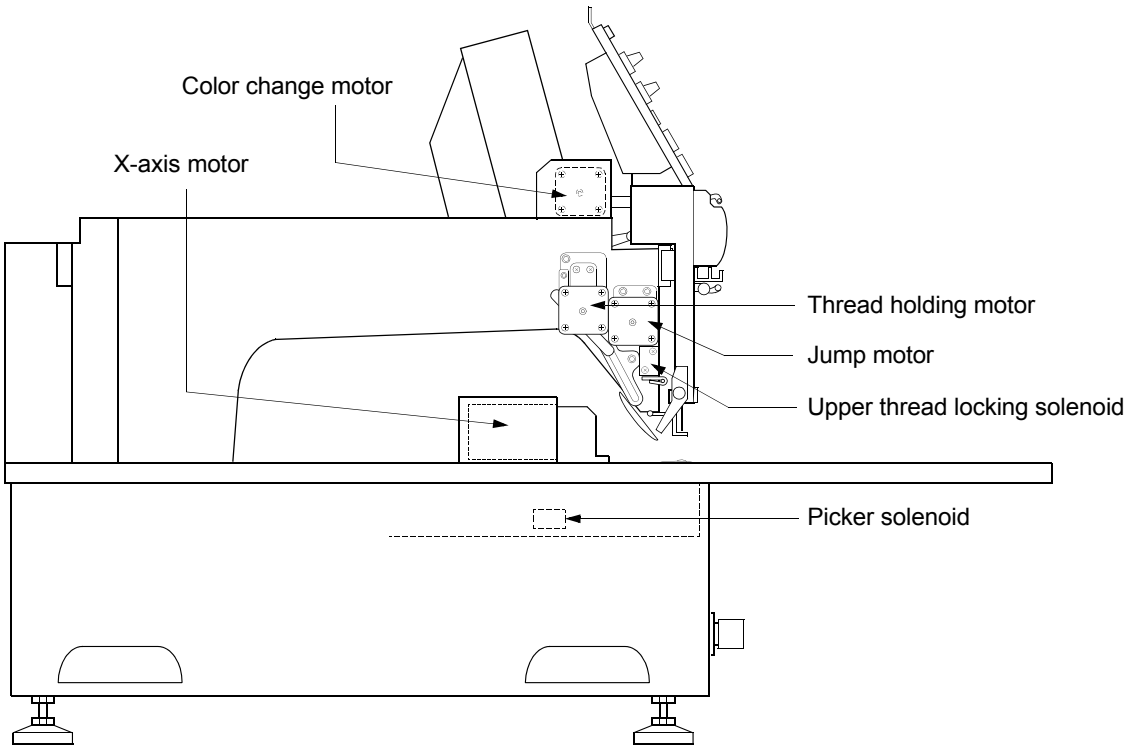
To sew cord-shaped material by zigzag swing. * Needle are not located to cord-shaped material generally.

ELECTRO-RELATIVE DRAWING

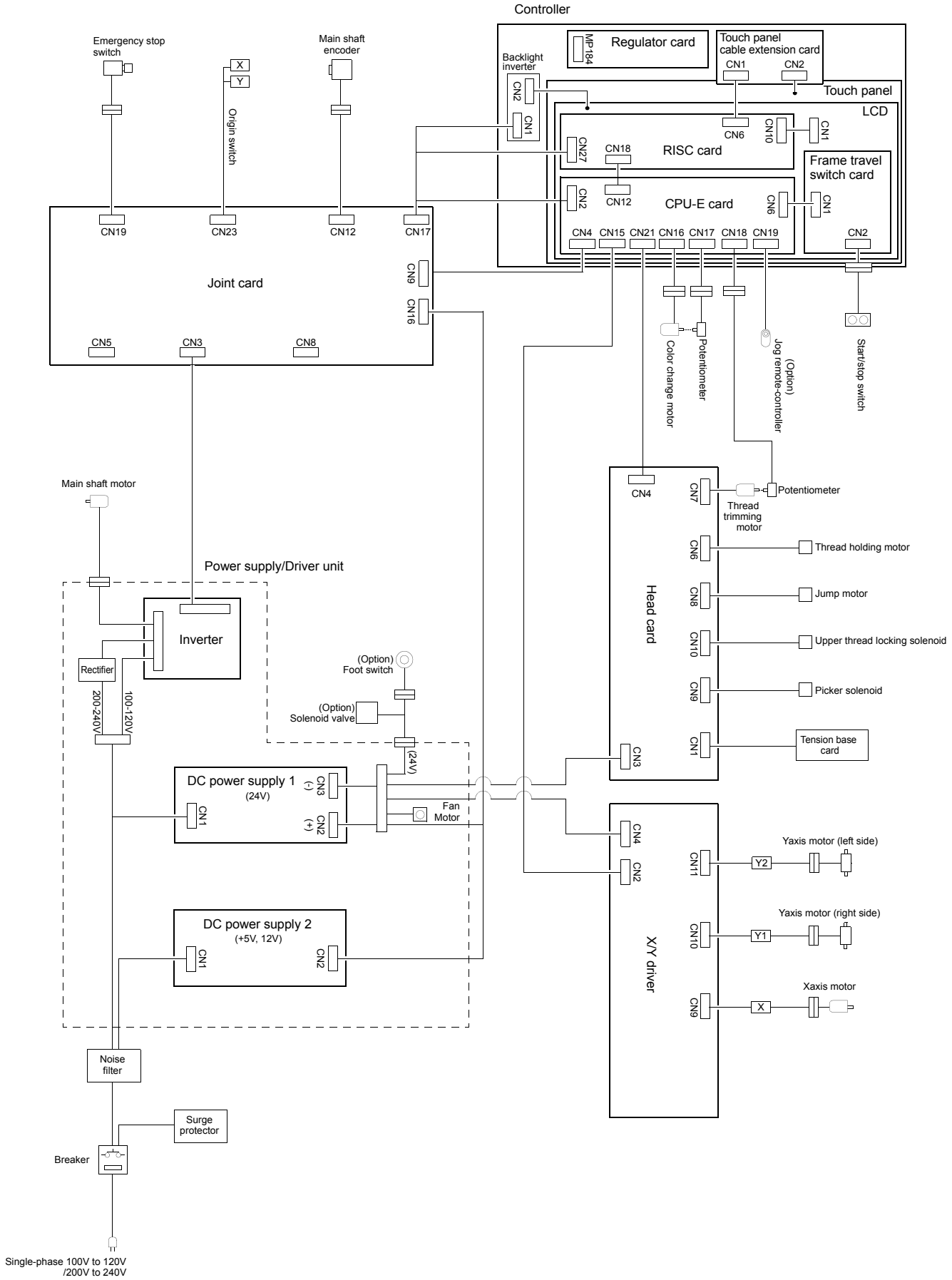


Layout of electrical parts





Electric system diagram



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4th Edition **October, 2003**

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