USER'S MANUAL

TFGN II

Original Instructions
M-GN2-12-E
(2017.06)

Foreword

This user's manual describes about the correct using method and instructions for use of this product. Please use this machine after understanding the contents of the manual.

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

We believe that "BASICS TAJIMA EMBROIDERY MACHINES" and "MACHINE SETUP INSTRUCTIONS" are useful to deepen your knowledge about this product. Please also read those booklets.

Regarding how to handle the products related, refer to the user's manual exclusive for them included in the manual CD.

Tokai Industrial Sewing Machine Co., Ltd.

SAFETY PRECAUTIONS

To prevent any harm or damage to the person who use this product or other person, we describe items that must be surely followed as below.

Indicates that there is a lot of danger of death or serious injuries [*1] if handled by mistake.

Indicates that there is a likelihood of death or serious injuries [*1] if handled by mistake.

Indicates a potentially hazardous situation which may result in minor or moderate injury [*2] or property damage if handled by mistake.

*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

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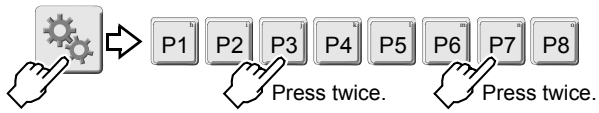

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Chapter 1

Warning and caution

Be sure to observe the contents.

1. Warning

WARNING

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

[Before Starting the Machine]

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

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

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

Do not have children access to vicinity of the machine.

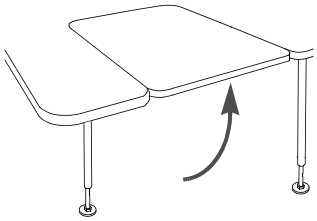
The rear of the machine is not a working area. If you have to move to the rear of the machine, make sure to turn off the main switch.

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

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

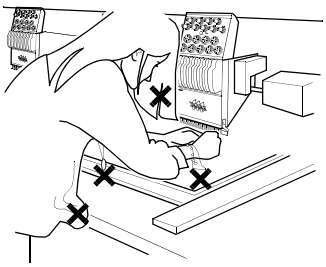
Do not stand on the machine.

After threading and/or adjusting the machine, lift up and fix the sub table securely (Some models only).



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 plural operators are working together, make sure that no one is working near the moving units of the machine before starting the machine.



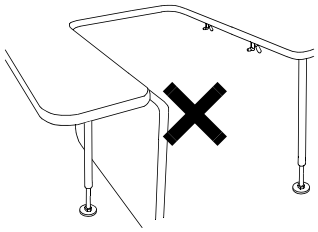
Do not damage, modify or heat the power or other cables. Do not exert undue force to them, either. Otherwise the cables will be damaged causing fire and electric shock.

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

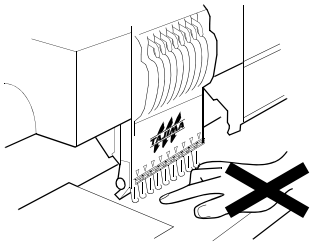
WARNING

[During the Machine Operation]

During operation, fix the sub table securely in the state of being lifted (Some models only).
Unexpected movement of the embroidery frame could injure you.



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 have your hands, etc. access to the vicinity of needle during operation. Sticking of needle could injure you.

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

Keep away electrical units from water and chemicals. Entry or splashing of them into control units leads to short circuits, causing fire, electric shock and other troubles. If water or other chemicals enter the unit, shut off the power at the primary power source of the machine and contact your local distributor.

[When Adjusting the Machine]

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.

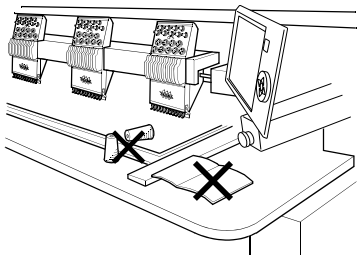
2. Caution

CAUTION

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

[When Operating the Machine]

Do not use bent needles or needles that are not suitable for the material.

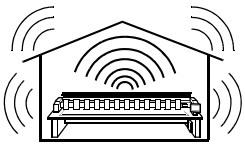


After the completion of work, shut off the power supply switch of the machine and also the primary power supply switch of power distributor panel.

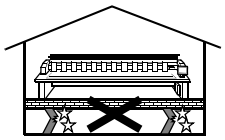
Do not put things on the table.

[Installation environment]

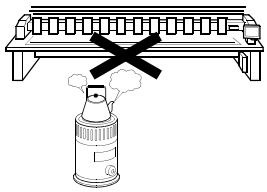
Prevent the operation noise in the environment.
This machine is designed to reduce noise during operation. To improve the sound insulation performance in a factory still more, use the interior finish materials which show high sound insulating performance for the walls, ceiling, and floor of the factory.



Install the machine on a sturdy floor.
The floor structure must be strong enough to bear the machine weight (indicated on the spec. plate).

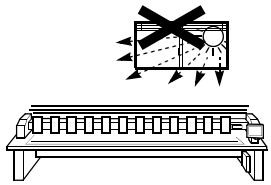


Avoid dust and moisture.
Since dust and moisture lead to dirt and rust on the machine, use the machine in an environment of facility of air conditioner, and clean the working place periodically. Use caution not to expose the machine to direct wind from the air conditioner so that embroidery threads do not become disheveled.

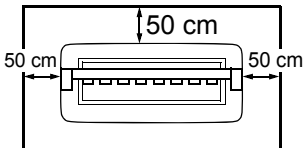


Humidity: 30 to 95%RH (relative humidity) without condensation
Ambient temperature: 5 to 40°C (during operation), -10 to 60°C (during storage)

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

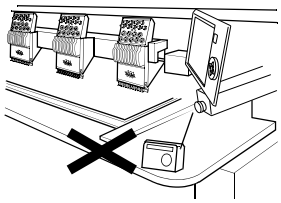


Provide enough space for maintenance.
Taking account of workability when maintaining and inspecting the machine, provide 50 cm or more working area to right, left and rear directions of the machine against obstacles such as walls.



⚠ CAUTION

Pay attention to interference of radio wave.
Although the machine is designed not to apply radio wave to other equipment, there could be cases where it causes interference depending on operation environment and type of equipment. If such problems arise, install the equipment as apart from the machine as possible.



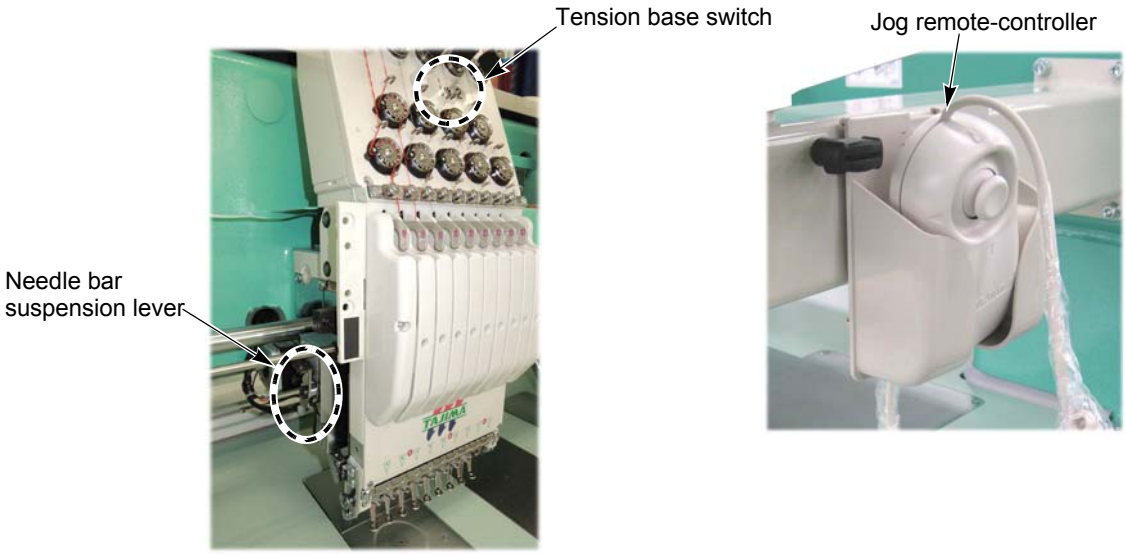
Do not transport, store, and operate the machine in the area of which altitude exceeds 1,000m.

3. Inspection before starting work

Before starting work, execute inspection (including cleaning, lubrication) of each part.

Place	Checking
Covers	Are covers attached correctly?
Upper thread	Is thread passed to each part correctly? Is tension adequate? Does thread entwine around frame/drive system?
Under thread	Is under thread (bobbin case) set to shuttle hook correctly? Is tension adequate?
Needle	Is needle bent? Is direction of needle correct? Is needle broken?
Rotary/shuttle hook	Is cleaning/lubrication performed in adequate frequency?
Tension base switch	Is the switch of head to use turned ON? Is the switch of unused head turned OFF?
Needle bar suspension lever	Is the lever of head to use set to ON? Is the lever of unused head set to OFF?
Middle thread guide adjusting lever	Is position correct?
Jog remote-controller[*A]	Is it contained in the pocket?

*A It is a standard equipment or option depending on model.



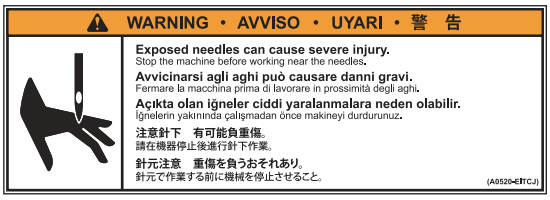
4. Warning labels

The machine has warning labels that bear instructions for safe operation. Machine operators must follow the instructions shown on the warning labels.

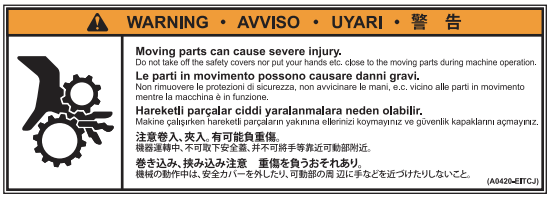
Do not detach the warning labels nor make them illegible by painting, etc.

If a warning label is missed or damaged, please consult your local distributor.

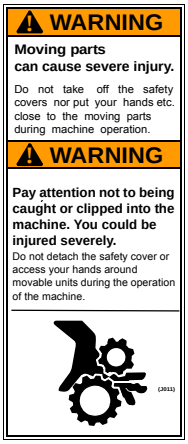
[a] Pay attention around needle.



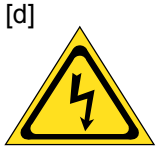
[b] Pay attention not to being caught into the machine.



[c] Pay attention not to being caught into the machine.



[d]



There could be danger of electric shock, burning, or death. Persons except service personnel designated by Tajima should not open covers.

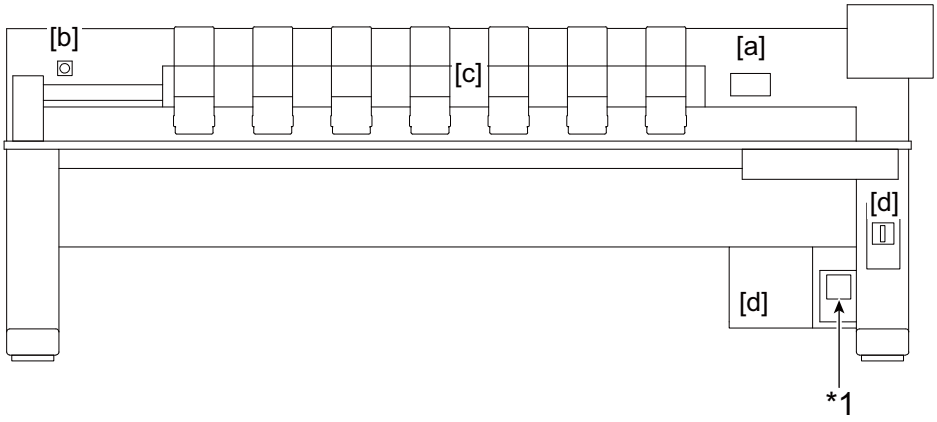
When you open the cover, turn OFF the power switch and wait for four minutes.

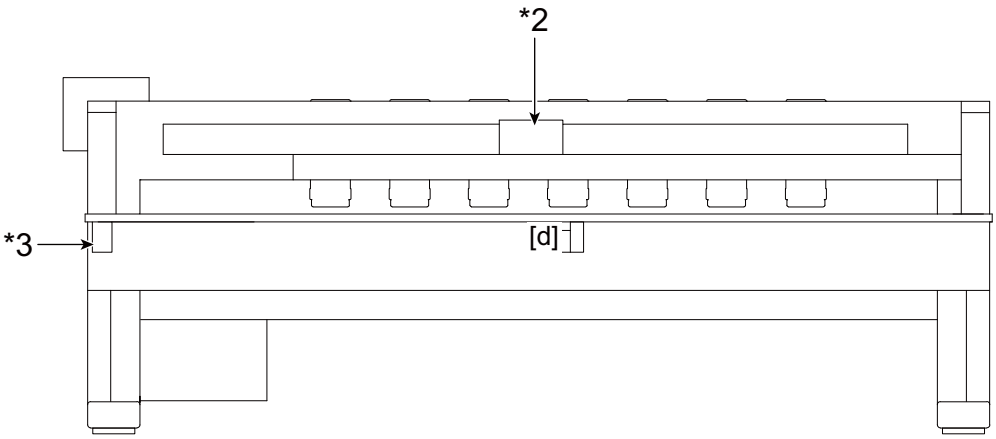
[e]

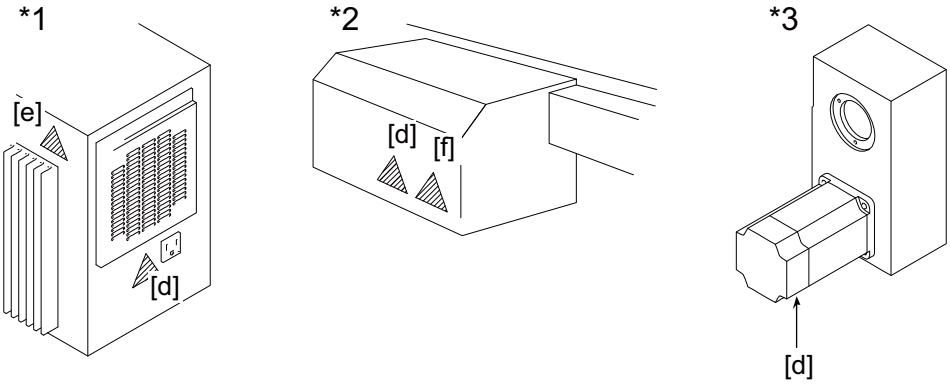
You could be burnt by high temperature. Do not touch carelessly.

[f]

There could be danger of being caught or clipped. Other persons than the service personnel certified by TAJIMA should not open the cover.


[b]
[c]
[a]
[d]
[d]
*1


*2
*3
[d]

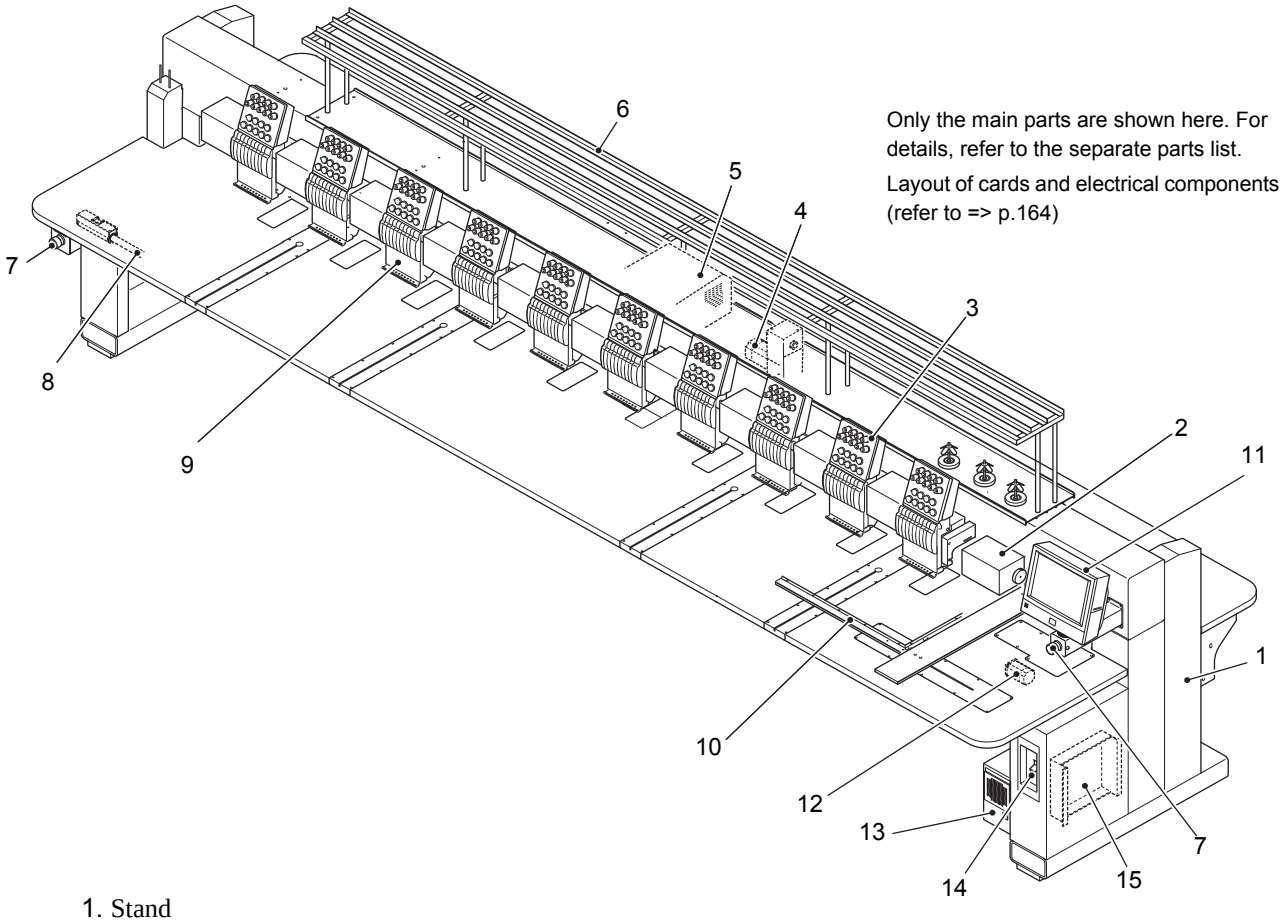

*1
[e]
[d]
*2
[d]
[f]
*3
[d]

Chapter 2

Name of each part and equipment

Name of each part and how to use equipment

1. Name of each part



Only the main parts are shown here. For details, refer to the separate parts list.

Layout of cards and electrical components (refer to => p.164)

1. Stand
2. Color change box (Refer to p.19)
3. Tension base (Refer to p.21)
4. Y-axis motor
5. Main shaft motor
6. Thread guide system
7. Emergency stop switch (Refer to p.12)
8. Bar switch (Refer to p.13)
9. Head (Refer to p.21)
10. Border frame (Refer to p.20)
11. Operation panel (Refer to p.16)
12. X-axis motor
13. Control box
14. Power switch (Refer to p.11)
15. Power supply unit

2. Equipment

2-1. Power switch

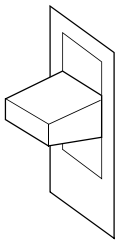
CAUTION

Do not turn ON the machine power in the state that the USB memory is connected to the operation panel. The system sometimes may not start up.

ON

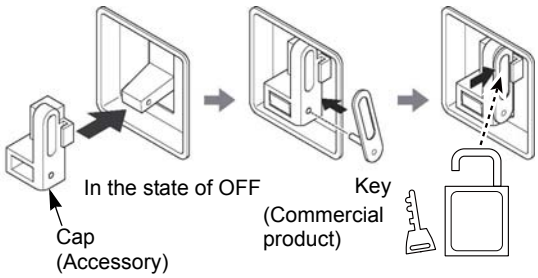
To turn ON the power again, wait for 15 seconds or more.

OFF



Middle position

To lock the power switch, attach a cap.



It is possible to continue embroidery as it is even after interrupting operation (power OFF) and turning ON the power due to intermission.

Power shut off during operation

In the following conditions, the switch will be positioned at the middle.

Lightning strike or pulling out of power cord
Stop by emergency stop switch

To reset the machine, turn OFF the switch once and turn it ON. After that, the screen of "Power Resume" will appear automatically. Press "YES".).

*Power resume (Design-displacement-preventive function) (Refer to p.53)

2-2. Emergency stop switch

Emergency switch is equipped to the machine for safety measure. Pressing this switch will turn OFF the power after stopping the machine.

It is also equipped under the table (excluding some models).

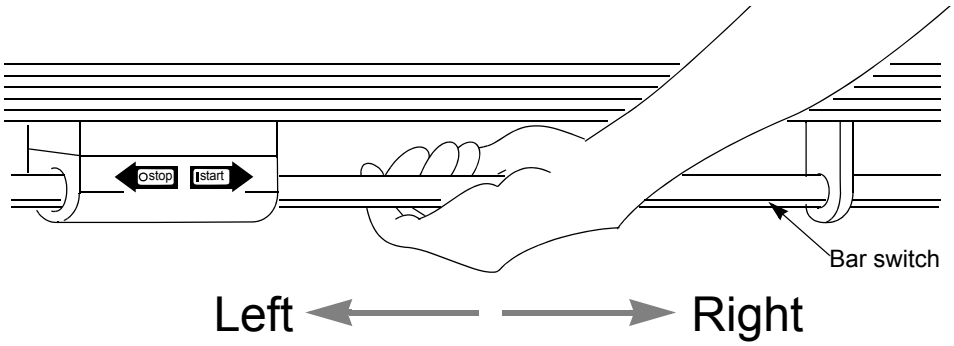
To reset the machine

1. Turn the switch to the direction indicated by the arrow (clockwise) (Lock will be released).
2. Turn OFF/ON the power switch (middle position).
   *Wait for 15 or more seconds.
3. Since code No.2E3 will be displayed, press  .
4. The screen of “Power Resume” will appear. Follow the screen and perform execution.
   *Power resume (Design-displacement-preventive function) (Refer to p.53)

2-3. Bar switch

CAUTION

Pay enough attention to surrounding safety before you start the machine. Moving needle bar and/or frame could injure you.



Frame Back (FB):

To move the frame to the direction where stitches return with needle bar stopped

Frame forward (FF):

To move the frame to the direction where stitches advance with needle bar stopped

● During stop

Move it to the right and release it immediately.	Operation starts.
Move it to the right and hold it at that position.	Inching operation starts. When released, the machine will run normally.
Move it to the left and release it (up to 10 stitches).	The machine will perform FB/FF by 1-stitch unit.
Move it to the left and hold it at that position. (11 stitches or more)	The machine will continue FB/FF (Even if you release it, the machine will not stop). It is possible to select a frame feed amount among 1, 3 and 5 stitches (Refer to p.111). Moving it to the left again will cause the machine to stop FB/FF.

● During operation

Move it to the left and release it.	Operation stops.
Move it to the right and release it. Move it to the right and hold it at that position.	Invalid

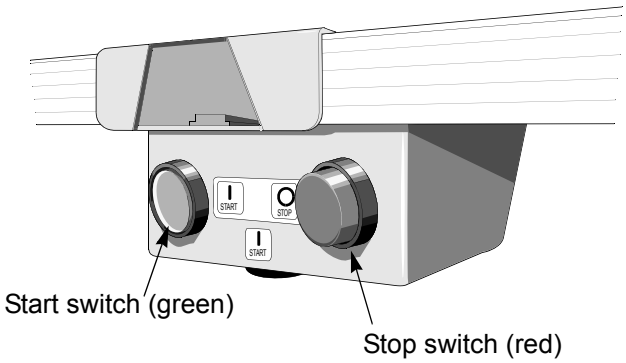
Switching of frame back/forward (Refer to p.49)
To perform frame back/forward by operation on the panel (Refer to p.49)
To perform frame back automatically at thread breakage (Refer to p.111)

2-4. Start/stop switch

CAUTION

Pay enough attention to surrounding safety before you start the machine. Moving needle bar and/or frame could injure you.

Some models only



● During stop

Start switch (green)

Press it and release it immediately.	Operation starts.
Keep on pressing.	Inching operation starts. When released, the machine will run normally.

Stop switch (red)

Press it and release it (up to 10 stitches).	The machine will perform FB/FF by 1-stitch unit.
Keep on pressing. (For 11 stitches or more)	The machine will continue FB/FF (Even if you release it, the machine will not stop). It is possible to select a frame feed amount among 1, 3 and 5 stitches (Refer to p.111). Pressing it again will stop FB/FF.

● During operation

Stop switch (red)

Press	Operation stops.

Start switch (green)

Press, keep on pressing.	Invalid

Switching of frame back/forward (Refer to p.49)
To perform frame back/forward by operation on the panel (Refer to p.49)
To perform frame back automatically at thread breakage (Refer to p.111)

2-5. Frame retracting switch (Table offset switch)

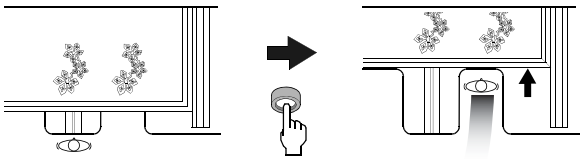
*It applies to some models only.

This operation facilitates threading by moving the frame to the rear (frame retracting position) at thread breakage.

(1) Occurrence of thread breakage

a. An example of operation No.1

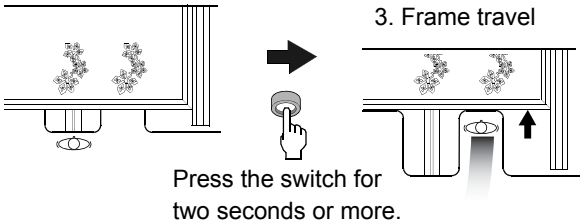
1. The frame will stop.
2. Frame travel



Press the switch and release it immediately.

b. An example of operation No.2

1. The frame will stop.
2. ATH will work.
3. Frame travel

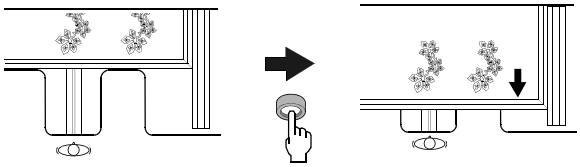


Press the switch for two seconds or more.

(2) After threading

a. An example of operation No.1

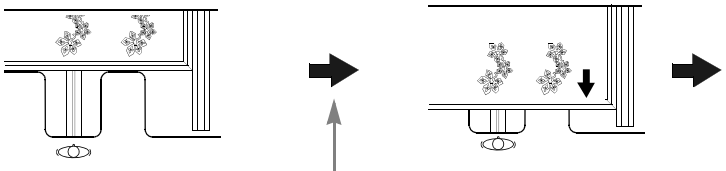
1. Completion of threading
2. Original frame position



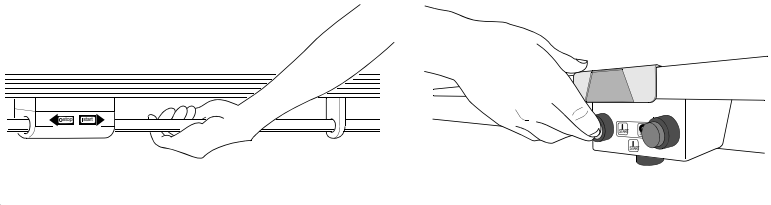
Press the switch and release it immediately.

b. An example of operation No.2

1. Completion of threading
2. Original frame position
3. Start (Restart of embroidery), or FB/FF



Perform start by bar switch or operation of start/stop switch.



CAUTION

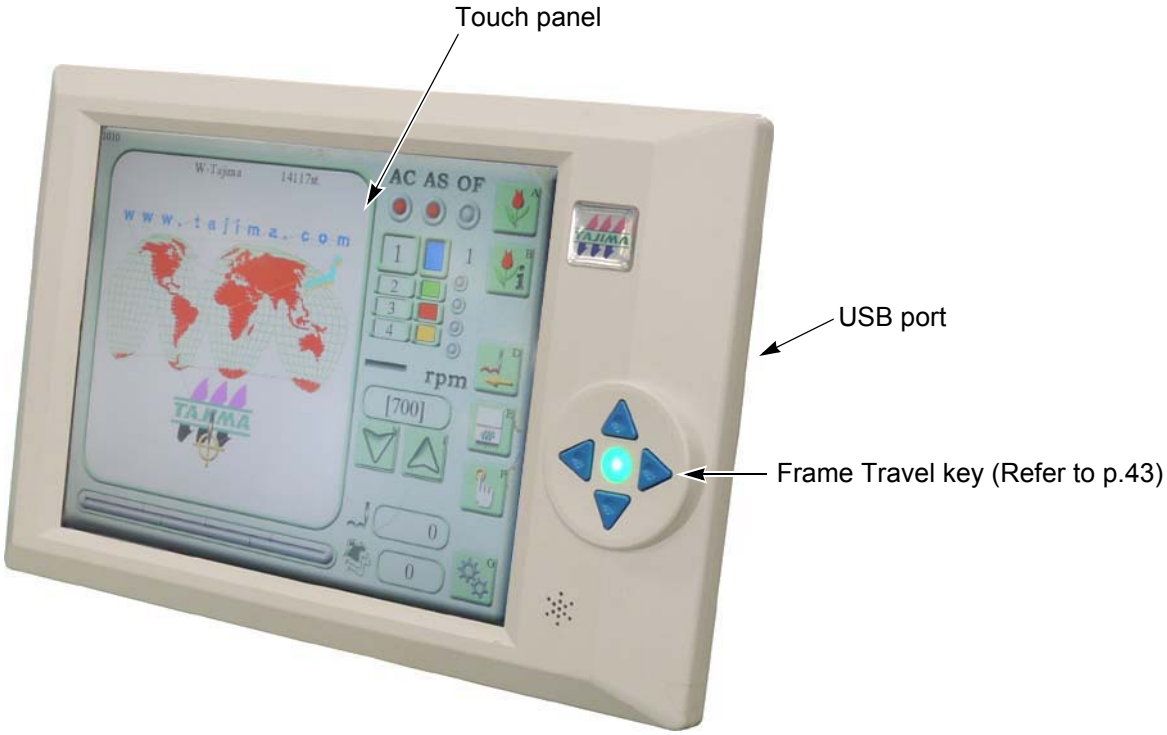
When performing this operation, do not put your hands, etc. on the machine table. You could be injured by moving frame.

Frame retracting switch
(Table offset switch)

Setting for frame retracting position (Table offset position) (Refer to p.118)

If the current frame position is farther from the front than the frame retracting position, the machine will not move.

2-6. Operation panel



It is possible to insert/take it out even when the power is turned on.

(1) Connection of USB memory

CAUTION

- Do not insert the USB memory in the state that dirt and dust are attached to the inside of the connector.
- Some kind and capacity of the USB memory may not be used for this machine. In this case, please buy other the USB memory.
- Do not push / pull the USB memory during operation of the machine.
- Insert the USB memory slowly and gently. If the USB memory is inserted impetuously, it could be damaged.
- Insert a USB memory upright against the port (insert slot). Oblique insertion could damage to inside card due to interference of connector with the card.
- Start operation after inserting the USB memory for five or more seconds.

(2) Jog remote-controller (It is a standard equipment or option depending on model.)

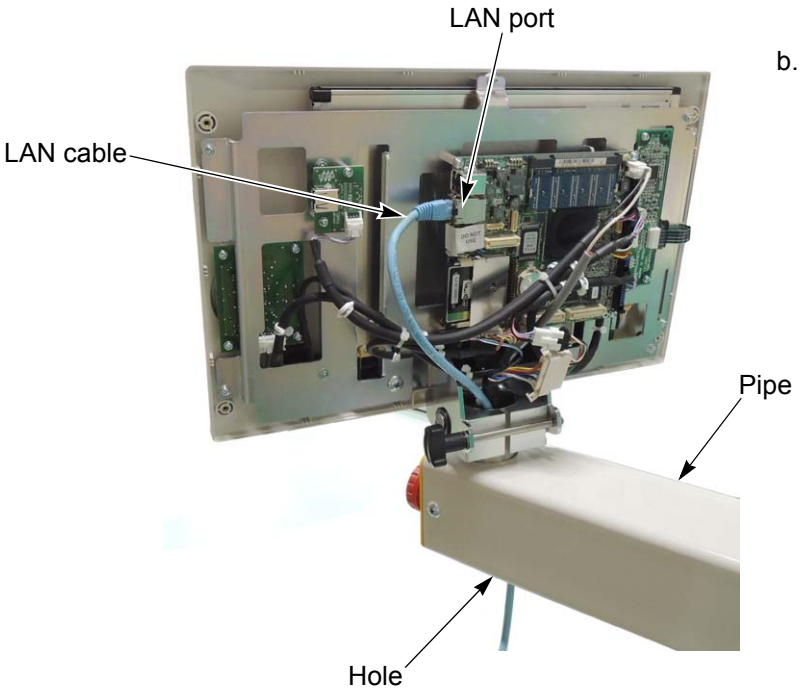
It is possible to use only when screen is 6030 screen. (Refer to p.43)

When not using

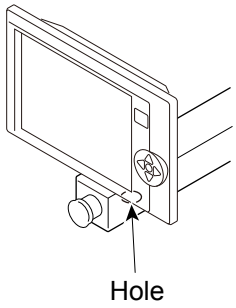
Put it in the remote-controller pocket (to prevent malfunctioning of the frame).

(3) Connection of LAN cable

a. Loosen the screw to detach the cover.



b. Insert the LAN cable into the LAN port and pull it out from the hole under the pipe.



(4) Connection of bar code reader

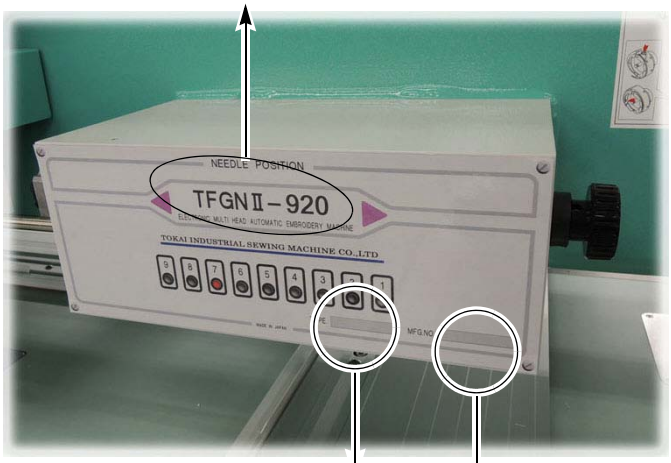
Connect it to the USB port.

Buy a product which is applicable to USB. We do not sell it.

2-7. Color change box

This device slides needle bar case to perform color change.

Model name



Type
Example: 1-1B

Machine (manufacturing) number
Example: G2920017

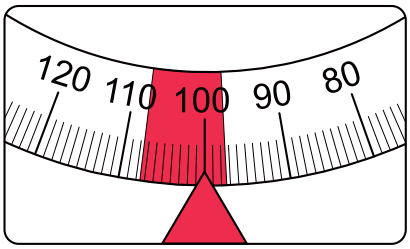
Model name, type and machine number may be necessary for communicating with the distributor (maintenance, order for parts, etc.).

2-8. Left-side box

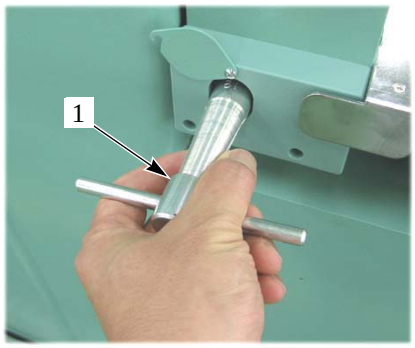
Except some settings, this machine (main shaft motor) stops at the fixed position. You can check the main shaft angle referring to the angle pointer plate at the left-side box.

Fixed position: Angle of main shaft between 97.5 to 107.5°

Angle pointer plate



When the machine stops with main shaft angle deviating from the fixed position due to some kind of factor, code number 211 will be displayed (Refer to p.172). To recover the machine, turn OFF the power and adjust the main shaft angle to the fixed position using the accessory T-wrench 1.



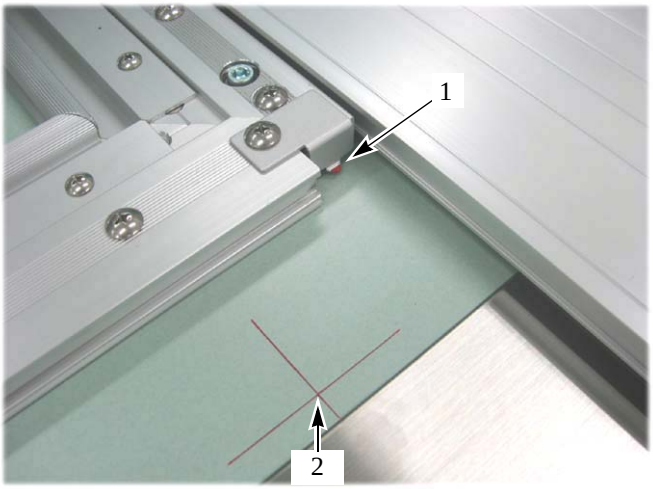
2-9. Border frame

The pointer 1 that indicates the current frame position is attached to the frame. Coordinates from an anchoring point to the indicator pointer 1 are referred as frame position and are displayed on the operation panel (Refer to p.50).

There are following two types of frame coordinates.

(1) Absolute coordinates (Xa, Ya)

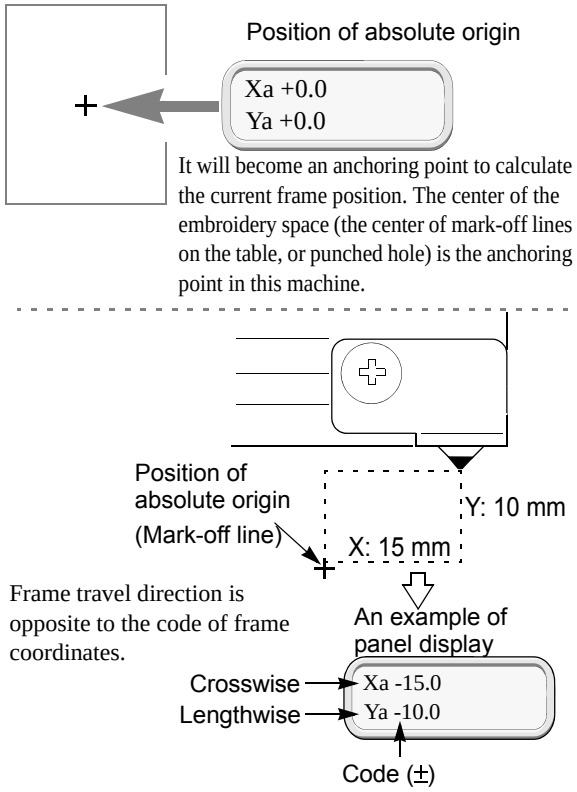
Coordinates based on position of absolute origin 2



It indicates relationship of position by coordinates between the indicator pointer 1 and the position of absolute origin 2.

Xa -125.0
Ya -241.0

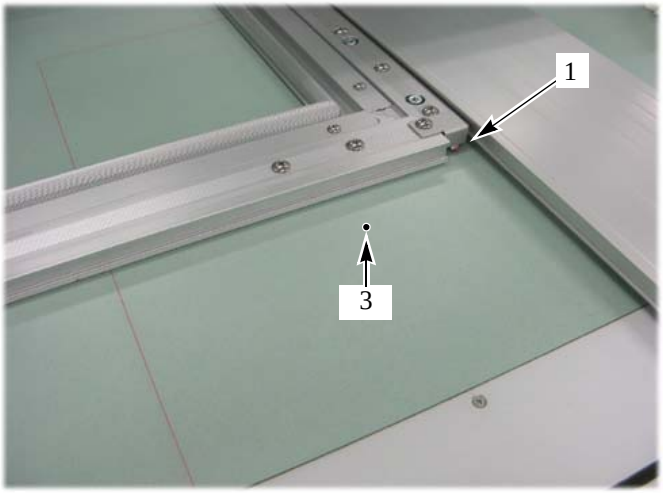
To display a frame position correctly, it is subject to registration of the absolute origin to this machine. Be sure to register the absolute origin at setup by executing “Absolute origin search” (Refer to p.54).



It will become an anchoring point to calculate the current frame position. The center of the embroidery space (the center of mark-off lines on the table, or punched hole) is the anchoring point in this machine.

(2) Relative coordinates (Xr, Yr)

The coordinate based on the start position 3 (example) of the design that is registered in data set designs

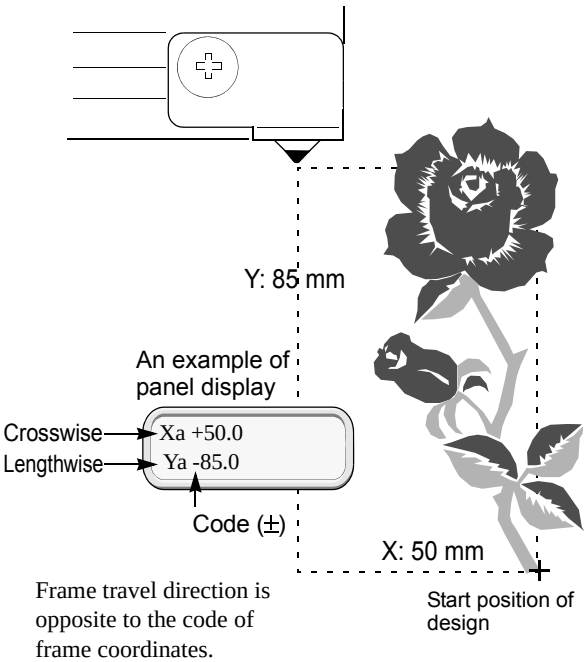


It indicates relationship of position by coordinates between the indicator pointer 1 and the start position of design 3.

Xr -52.0
Yr -25.0

Start position of design

The machine memorizes start position of embroidered design data by each design.



2-10. Head

(1) Tension base

Adjust thread tension. For details, read the separate volume “BASICS TAJIMA EMBROIDERY MACHINE”.

ON (head works), OFF (head suspended)
Regarding how to use, refer to the description below.

◆ Thread breakage indicator lamp

Lit in green	Possible to perform embroidery
Blinking in green	Frame back section excluding head of thread breakage
Lit in red	Upper thread breakage
Blinking in red	Under thread breakage
Unlit	In the state of suspension of needle bar (Needle bar OFF)

[When the machine stopped due to detection of thread breakage]

Starting the machine after frame back will cause only the head where thread breakage was detected to restart embroidery from the position after frame back.

Frame back/frame forward (=> p.13, p.14)

Automatic frame back function at thread breakage:

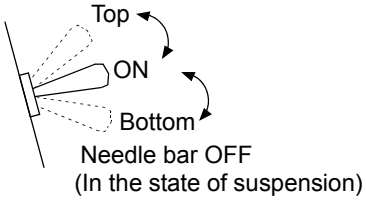
When the machine stops due to detection of thread breakage, it is possible to perform frame back automatically (Refer to p.111).

◆ Tension base switch

[To make head that did not detect thread breakage perform embroidery from the position after frame back]

Set the tension base switch to “Top” position once after frame back. When it is released, the switch will return to “Middle” position automatically.

Set it to the “ON” position in normal usage.

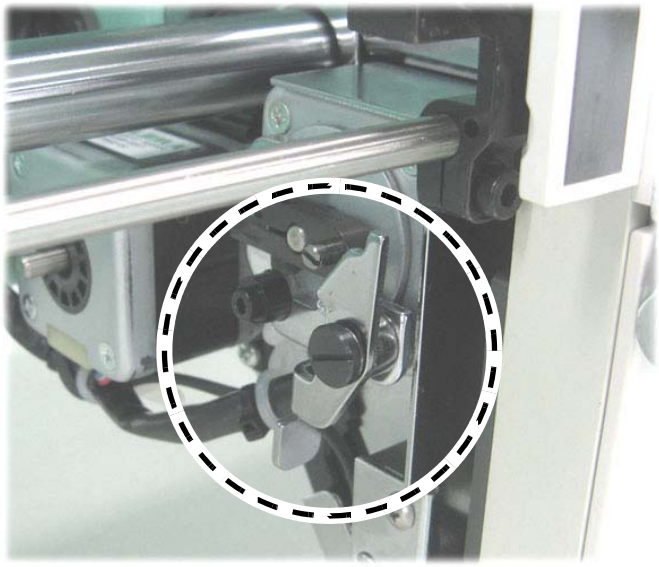


[To suspend head]

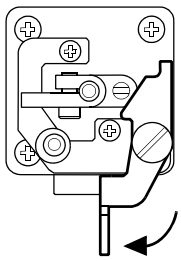
Setting tension base switch to “Bottom” position will not cause needle bar to move (It will be turned OFF electrically, and thread breakage indicator lamp will be unlit).

(2) Needle bar suspension lever

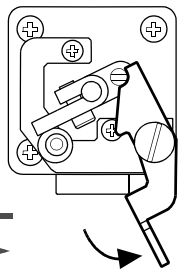
This lever suspends needle bar of the head that is not used.



•In the state of operation possible (ON)



•In the state of suspension (OFF)



Switching

Needle bar suspension lever: It suspends needle bar mechanically.

Tension base switch: it makes the needle bar suspended electrically.

When either of them is set to "OFF", needle bar will not move down (In the state of suspension).

Chapter 3

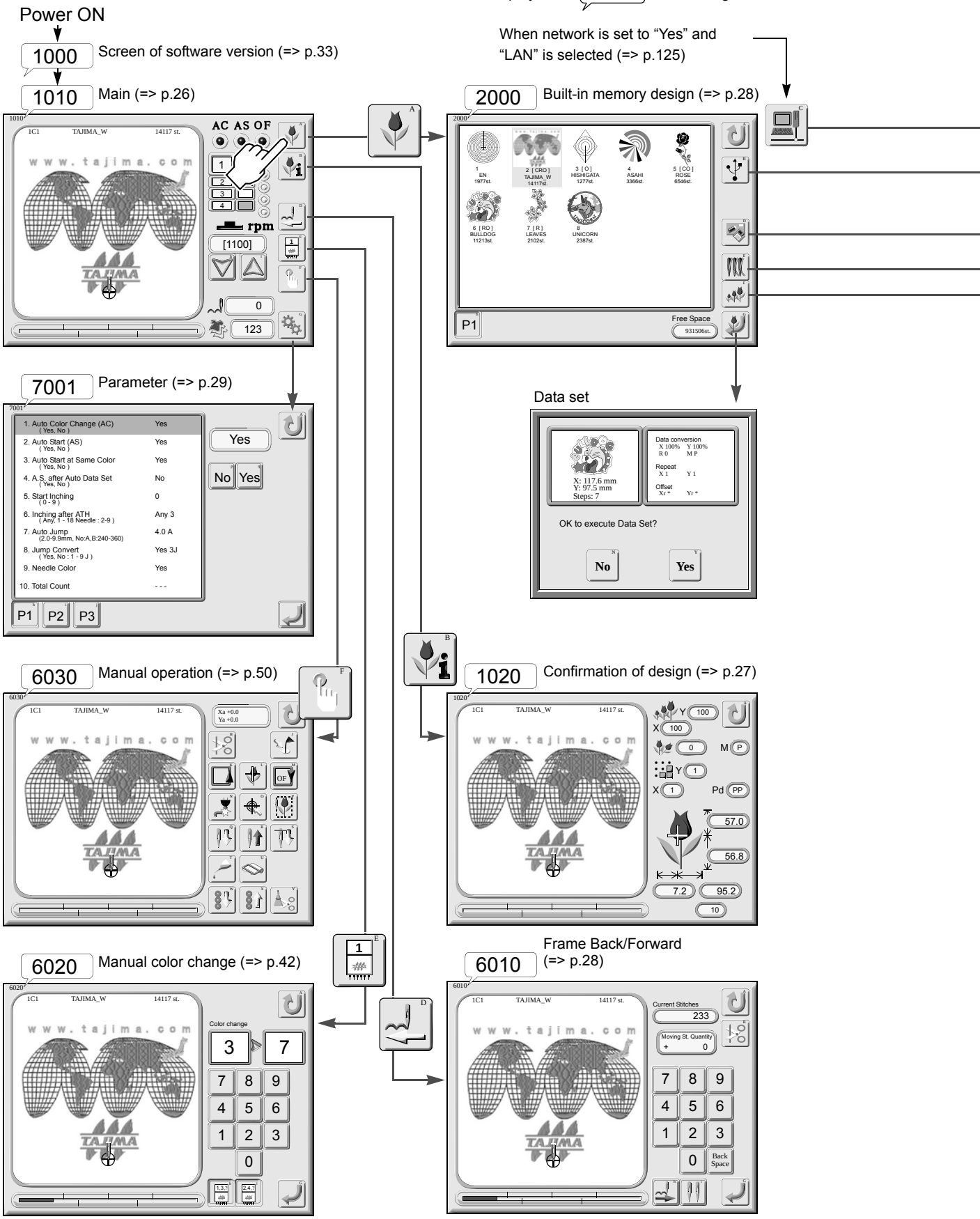
Screen

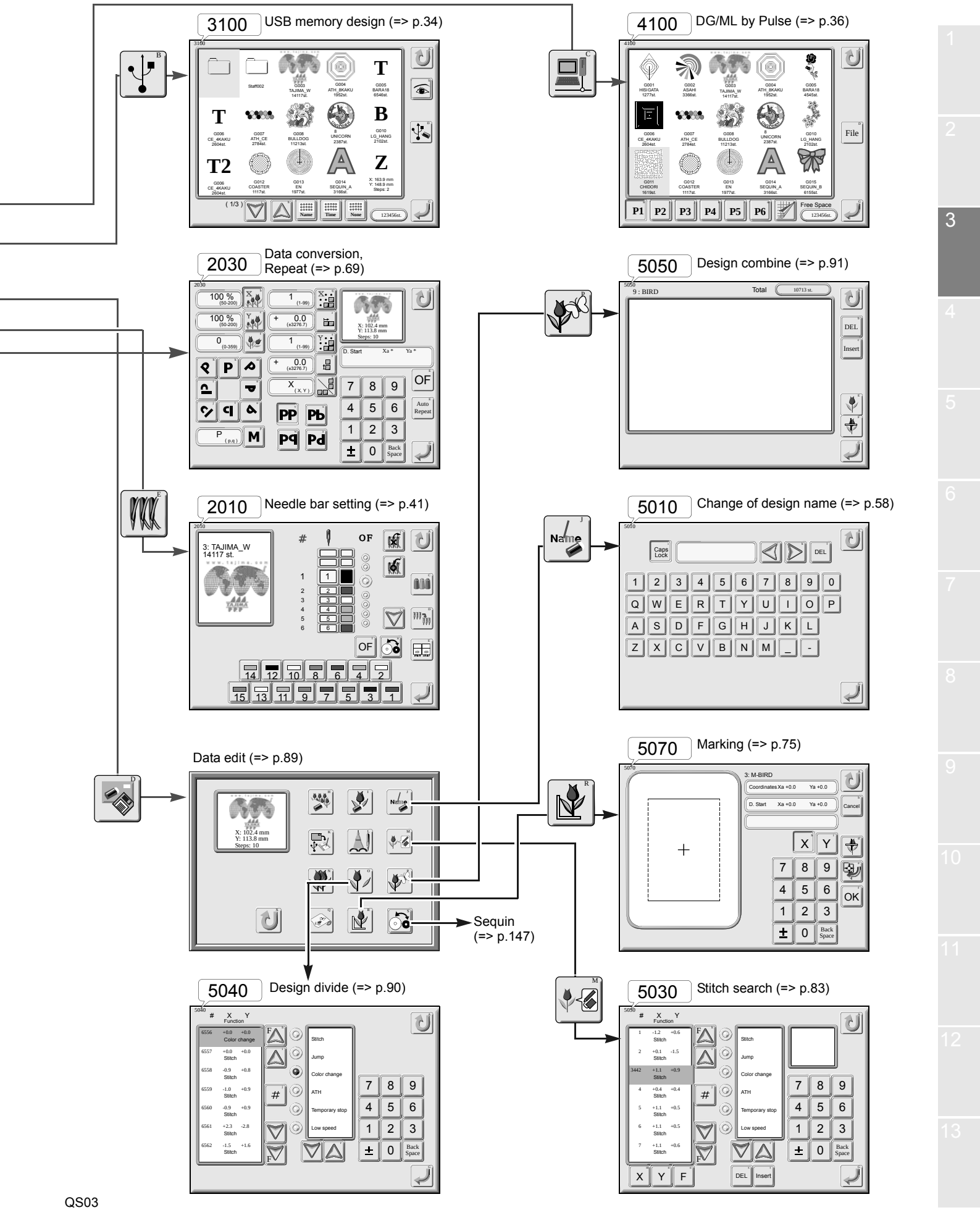
About screen and icon

1. Flow of screens

Touching an icon (pattern and design) on the panel will cause the screen to change into switch to specified setting • operation screen.

From this page and after, the number displayed at left top of the screen is displayed as [ ] and it is regarded as screen number.



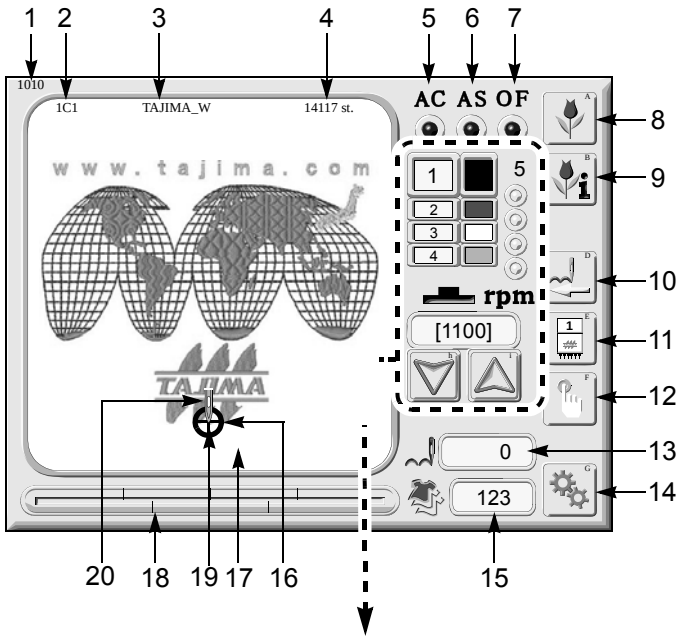

3100 USB memory design (=> p.34)
4100 DG/ML by Pulse (=> p.36)
2030 Data conversion, Repeat (=> p.69)
5050 Design combine (=> p.91)
2010 Needle bar setting (=> p.41)
5010 Change of design name (=> p.58)
Data edit (=> p.89)
5070 Marking (=> p.75)
Sequin (=> p.147)
5040 Design divide (=> p.90)
5030 Stitch search (=> p.83)

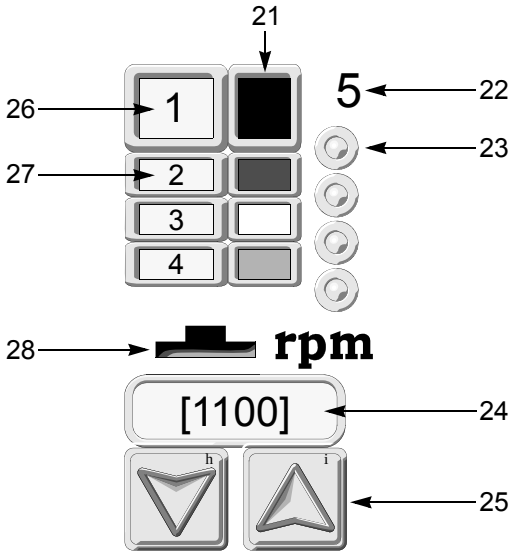
2. Screens that are frequently used

Screens that are frequently used are taken as examples for explanation here (=> p.24).

2-1. Screen 1010 (Main)

When the power is turned ON, the following screen will appear.
From this screen, setting • operation will start.



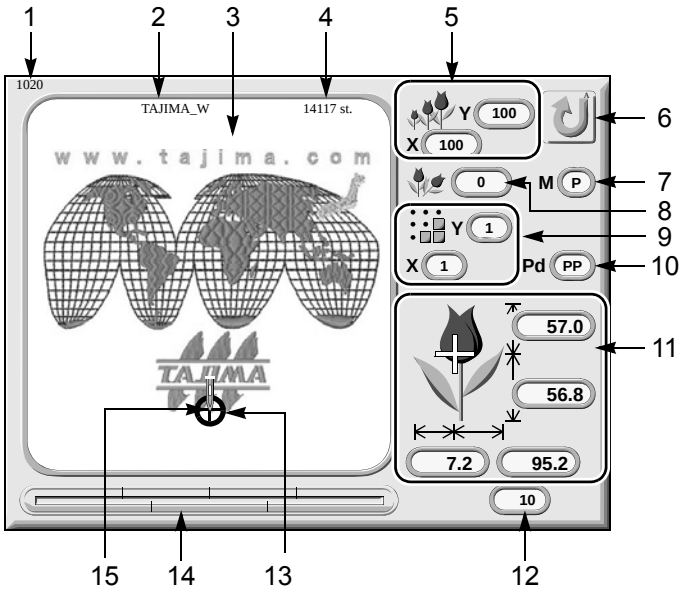


1. Screen number
2. Stop factor (It will be displayed during stop.)
3. Design name
4. The number of stitches of this design
5. Setting for automatic color change (=> p.109) With / Without
6. Setting for automatic start (=> p.109)
7. Setting for automatic offset (=> p.65)
8. Data set screen (=> p.28)
9. Detailed information of this design (=> p.27)
10. Frame back (FB)/ Frame forward (FF) (=> p.48)
11. Manual color change (=> p.42)
12. Manual operation (=> p.50)
13. The current number of stitches
14. Setting items to activate the machine (=> p.107)
15. The number of times of embroideries that have been done up to now
    Even if the power is turned OFF/ON, counting will continue.
16. End point of design
17. Data set design (Design of which data is set)
18. It indicates progressing condition of embroidery.
19. Start position of design
20. The current needle position
21. Needle bar color of step 1 (=> p.79)
22. The current needle bar step No.
23. Setting for offsetting at automatic color change (=> p.68)
    With / Without
24. High speed rpm (=> p.44)
    During stop: High speed rpm currently set
    During operation:
    The number of revolutions will increase/decrease according to stitch length of design data (actual rpm).
25. Change of high speed rpm (=> p.44)
26. Needle bar No. of step 1
27. Needle bar No. of step 2
28. Stop condition of main shaft motor

▬	Fixed position (Normal)
▬	Pseudo-fixed position (normal)(=> p.120)
▬	Other than fixed position (Abnormal)

2-2. Screen 1020 (Checking of design)

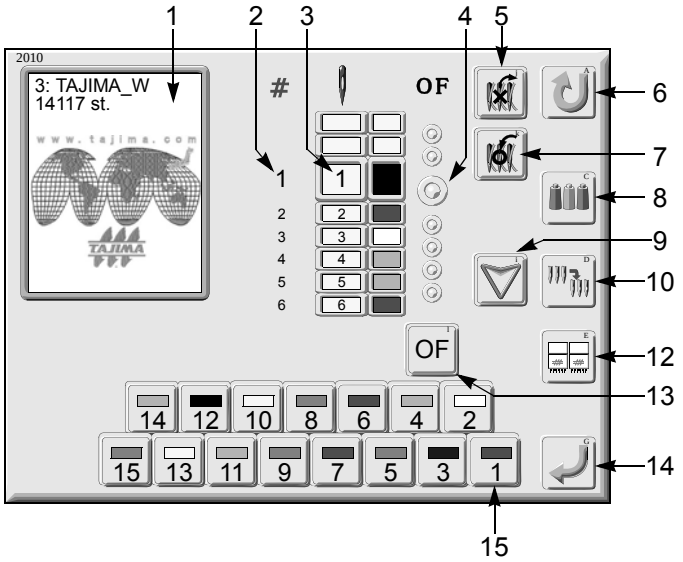
Check setting conditions such as scale ratio of data set design, repeat etc.



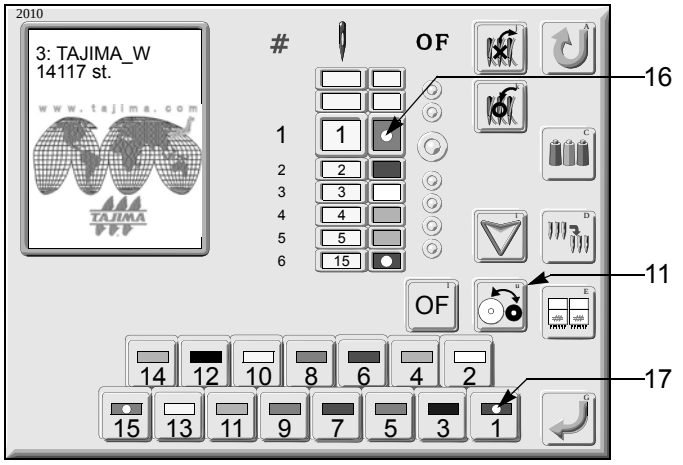
1. Screen number
2. Design name
3. Data set design (Design of which data is set)
4. The number of stitches of this design
5. Y (lengthwise)/X (crosswise) scale ratio (=> p.70)
6. To return to screen 1010
7. Mirror image reversion (=> p.70)
8. Rotating angle (=> p.70)
9. Y (lengthwise)/X (crosswise) the number of repeating times (=> p.71)
10. Repeat mode (=> p.69)
11. A distance from start position of design (⊕), or design size
12. The number of steps
13. End point of design
14. It indicates progressing condition of embroidery.
15. Start position of design

2-3. Screen 2010 (Needle bar setting)

Perform general settings and changes about needle bar.



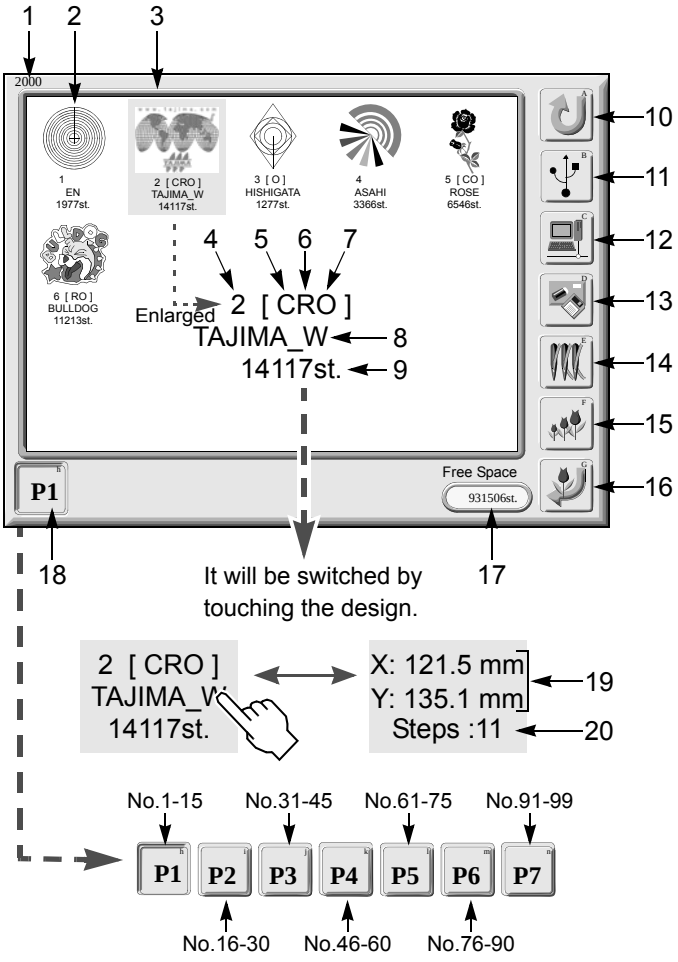
<When sequin device is equipped (type III only)]



1. Design being selected
   The blinking part is the current needle bar step.
2. Needle bar step
   The large-sized number indicated the current needle bar step.
3. Needle bar No.
4. Setting condition of offsetting at automatic color change (=> p.68)
5. Deletion of needle bar step (=> p.79)
6. To return to screen 2000
7. Insertion of needle bar step (=> p.80)
8. Setting for needle bar color (=> p.79)
9. Selection of needle bar step
10. Needle bar conversion (=> p.81)
11. Sequin reversion:
    To replace the first color with the second color or vice versa of sequin (=> p.145)
12. Head group (=> p.95)
13. Setting for offsetting at automatic color change (=> p.68)
14. Register
15. Change of needle bar (=> p.41)
16. In the state of the first and second colors reversed (=> p.146)
17. Sequin reversion (needle bar unit)(=> p.146)

2-4. Screen 2000 (Data set)

Perform basic settings from input of design data to start of embroidery so that it becomes possible to perform embroidery (data set).



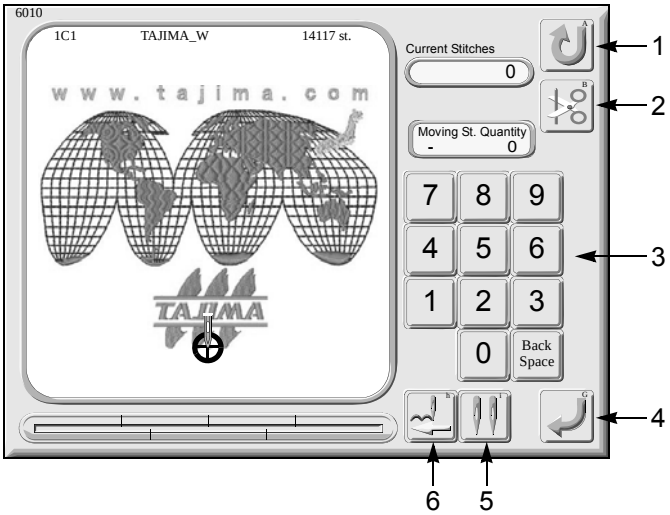
When there is no design in the memory, icons 13, 14, 15 and 16 will not be displayed.

1. Screen number
2. Design data registered in the memory of the machine
3. Data set design
4. Memory No.
5. With data conversion
6. With repeat
7. With automatic offset
8. Design name
9. The number of stitches
10. To return to screen 1010
11. Reading USB
12. This is the icon when network is set to “Yes” and “LAN” is selected. When “Serial” is selected, the icon below is applied.

13. Data edit (=> p.56)
14. Needle bar setting (=> p.41)
15. Data conversion, repeat (=> p.69)
16. Data set (=> p.39)
17. Remaining capacity of memory
18. Page numbers (P1 to P7)
    Up to 15 memory designs are displayed on one page. It is possible to register up to 99 designs (P1 to P7) at the maximum.
19. Design size (embroidery space)
20. The number of steps

2-5. Screen 6010 (Frame back/forward)

Switch frame back/forward and execute (specified by the number of stitches, color change unit).



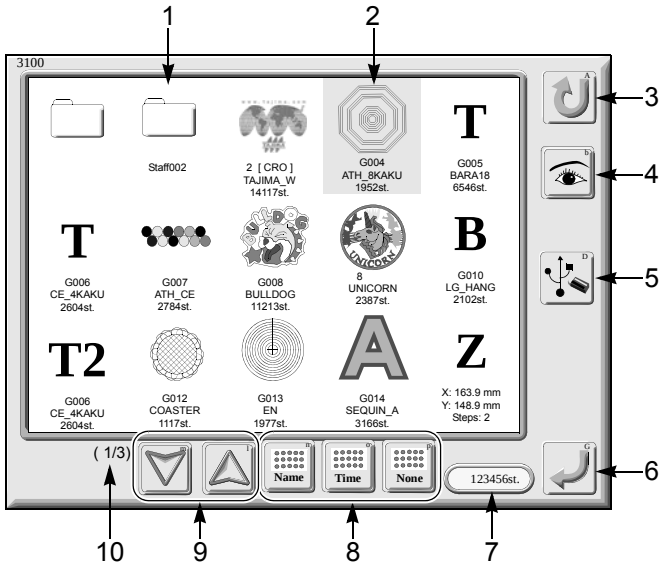
It is possible to execute frame back/forward only in the middle of embroidery.

To perform frame back/forward by 1-stitch unit, use the bar switch or stop switch.

1. To return to screen 1010
2. Manual ATH
3. Input the number of stitches.
4. Set
5. Search a color change code.
6. Switching of frame back/forward

2-6. Screen 3100 (USB memory design)

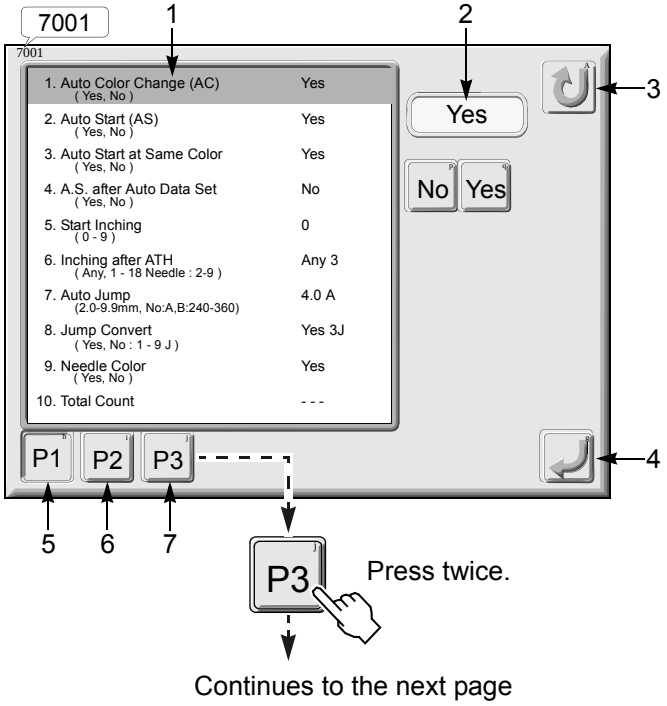
Input design data stored in a USB memory to the built-in memory of the machine.



1. Folder
   Up to the third layer directory can be displayed.
2. Selecting design data that is being selected again will switch information of design data (=> p.59).
3. To return to screen 2000
4. When T or T2 is selected, pressing this icon will display the image of design (Only when image data is attached (=> p.61).
5. Deletion of design data (=> p.61)
   It will be displayed only when design data is selected.
6. Input the selected design data to the built-in memory (=> p.34). When a folder is selected, the screen will move to the lower directory.
7. The number of stitches that can be registered in the built-in memory
8. Sort of design data (folders are precluded)
   None: Registering order
   Time: Updating order
   Name: Alphabetical file name order
9. Page switching (Only when the second page or after exist)
10. The number of pages of screen

2-7. Screen 70** (Parameter)

Set various kinds of conditions (parameters) that are necessary to activate the machine.



1. Cursor (An example when automatic color change is selected)
2. Setting value
3. To return to screen 1010
4. Set
5. Page switching (P1: first page)
6. Page switching (P2: second page)

Parameter values are already set at shipment of the machine from the factory as “Setting values at shipment from the factory”. However, check each item after installing the machine. In addition, change value(s) according to finishing conditions of design or running conditions of the machine.

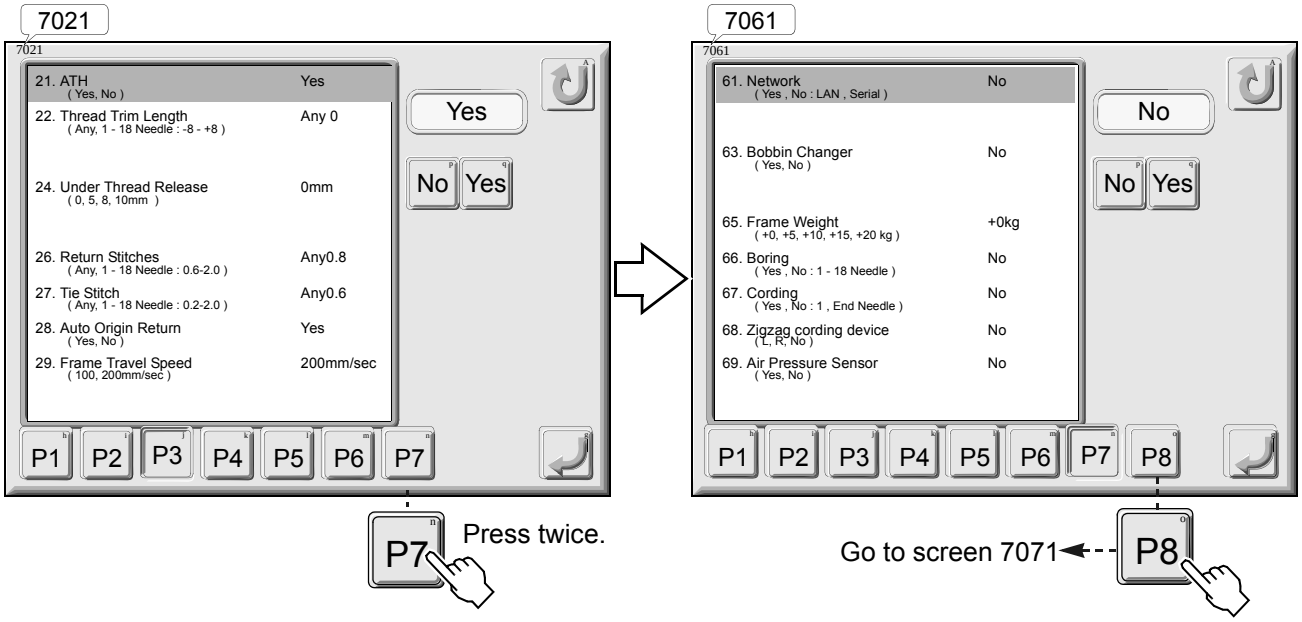
[An example of value at shipment from the factory]

1. Auto Color Change (AC) (Yes, No)	No

Setting items that are frequently used are collected up in P1 to P3.

P1 P2 P3

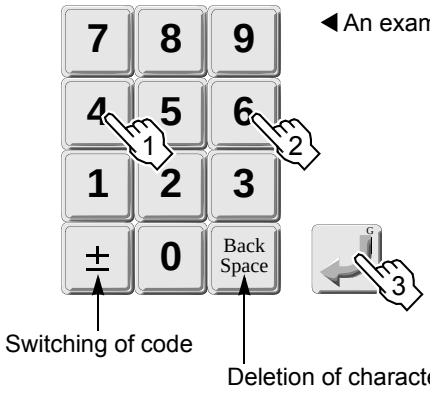
Change of parameter value and detailed explanation (=> p.107)



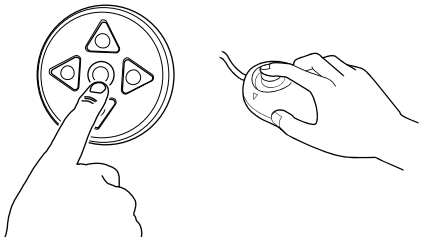
3. Input operation

3-1. Input a value.

Select a value to input and press  .

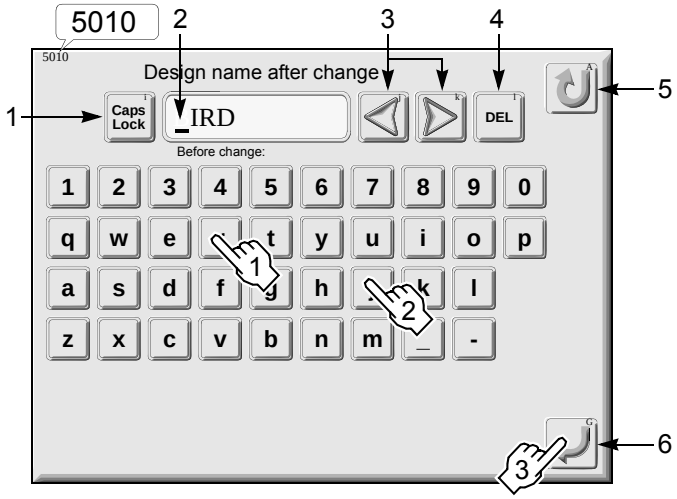


When the frame is moved by frame travel key or jog remote-controller, that position of coordinates will be displayed as values (=> p.43).



3-2. To input a character

Select a character to input and press  .



1. Switching of the letter
2. Cursor position (selected part) is displayed with white character.
3. Movement of cursor
4. Delete
5. To return to screen 2000
6. Set

Chapter 4

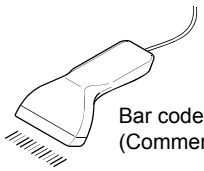
Basic operation procedure

Procedure from power ON to start of the machine

Procedure from power ON to start of the machine

Primary power supply ON

When you input data from a personal computer (DG/ML by Pulse), connect the LAN cable.
When you use a bar code reader, connect the bar code reader.



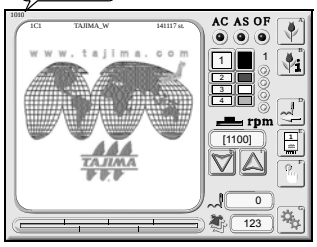
Bar code reader
(Commercial product)

Power switch ON

When inputting data from USB memory

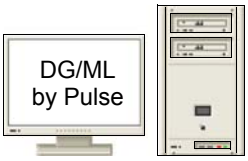
Set the USB memory.

1010



Screen 1010 (Main screen)

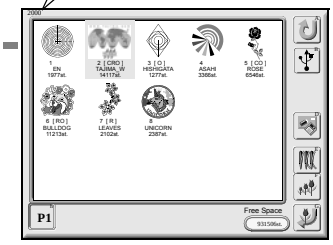
When inputting data from a personal computer (DG/ML by Pulse)



DG/ML by Pulse

Setting for network (Refer to p.125.)

2000



Screen 2000

In case of input from USB memory (Refer to p.34.)

When inputting data from DG/ML by Pulse (Refer to p.36.)

Set data of design (Refer to p.39.).

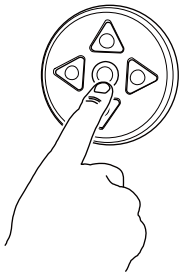
Automatic color change, automatic start (Refer to p.40.)

Needle bar setting (Refer to p.41.)

Enlargement/reduction, repeat of design (Refer to p.69.)

Manual color change (Refer to p.42.)

To perform frame travel



Trace (Refer to p.43.)

Setting for high speed rpm (Refer to p.44.)

Bar switch ON/start switch ON

Start

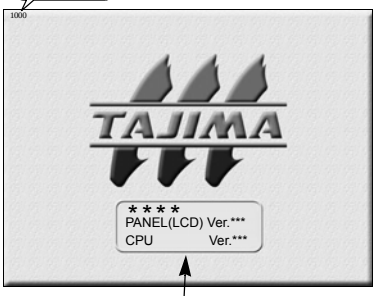
1. Power switch ON

CAUTION

Do not turn ON the machine power in the state that the USB memory is connected to the operation panel. The system sometimes may not start up.

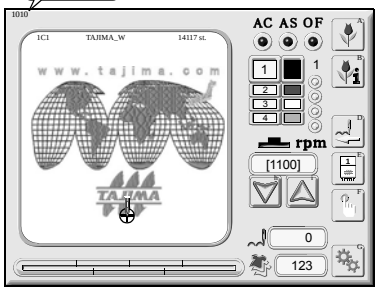
It takes a while until the power starts up.

1000 Screen of software version



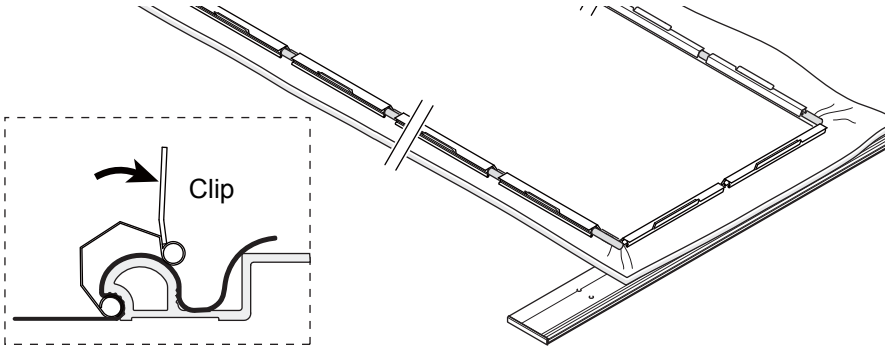
Software version being installed at present

1010 Main screen



Setting • operation starts from this screen.

2. To pass thread, to set fabric



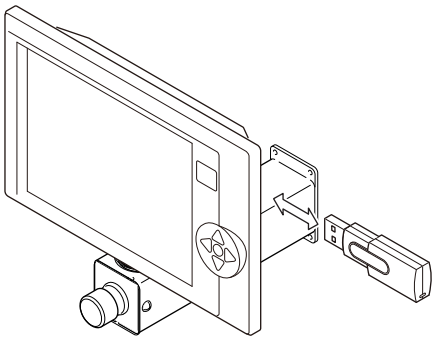
Regarding how to pass thread, refer to the separate manual “BASICS”.

3. To input design data to the memory of the machine

3-1. In case of input from USB memory

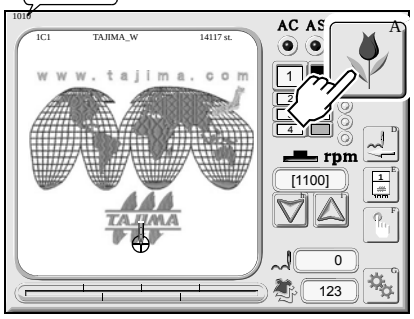
Input design data stored in the USB memory to the memory of the machine.

(1) Set the USB memory.

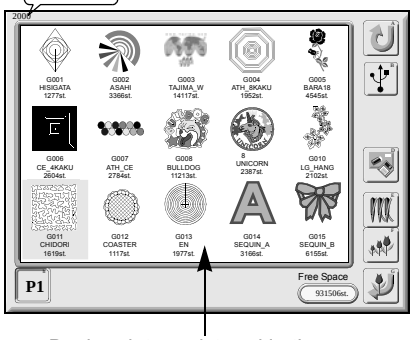


(2) Select icon A

1010



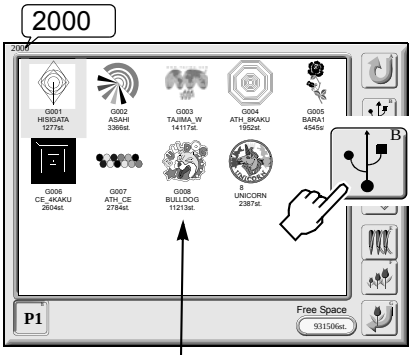
2000



Design data registered in the memory of the machine

(3) Icon B

2000



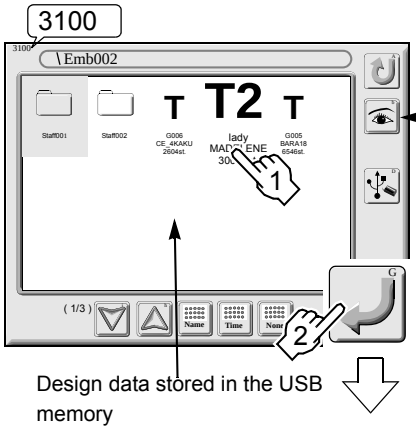
Design data registered in the memory of the machine

Icon
From this page and after, icons are referred to as icon A, icon B, icon D etc. indicating an alphabet positioned at top right of each icon respectively.

Icon A

2000
When remaining capacity of the memory becomes 0st. or up to 99 designs are registered, icon B will not be displayed.

(4) Select design data or folder, setting



Select T, T2 or thumbnail. Selecting this icon will switch to image display of design.

When is selected, down to the third layer directory can be displayed.

Design data stored in the USB memory

● When selected design data is “T”: Data input is completed.

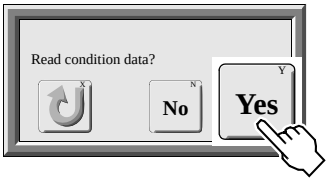
➔When performing data set after that (Refer to p.39.)

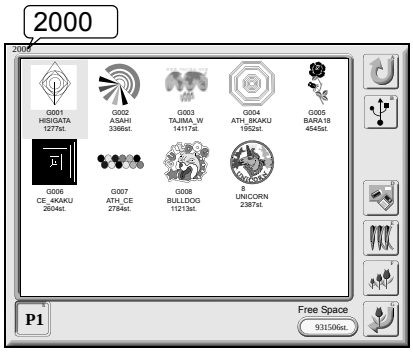
● When selected design data is “T2” or “Thumbnail”:
Proceed to the next operation (5) (The following message will be displayed only when condition data is registered in design data).

*Condition data (Refer to p.46.)

(5) Yes

Reading of condition data





This completes inputting of design data.

➔When performing data set after that (Refer to p.39.)

Condition data means the following embroidery conditions (Refer to p.46.).

- ◆Needle bar setting
- ◆Start position of design

3100
Thumbnail (T3): TAJIMA integrated file (TCF)
T2: TAJIMA binary format (TBF)
T: TAJIMA format (DST)

T2

lady ←1
MADELENE ←2
30034st. ←3

1. File name
2. Design name
3. The number of stitches

Selecting design again will switch design information.(Refer to p.28.).

3-2. When inputting data from DG/ML by Pulse

Input design data stored in the personal computer (DG/ML by Pulse) to the memory of the machine.

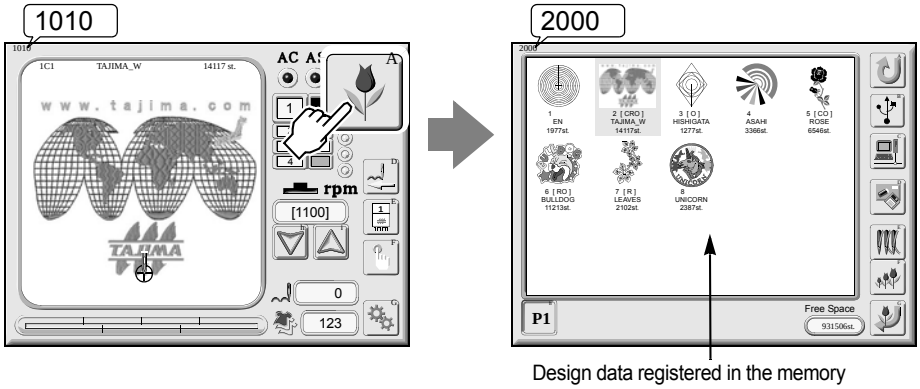
(1) Power switch OFF

(2) Connect the LAN cable.

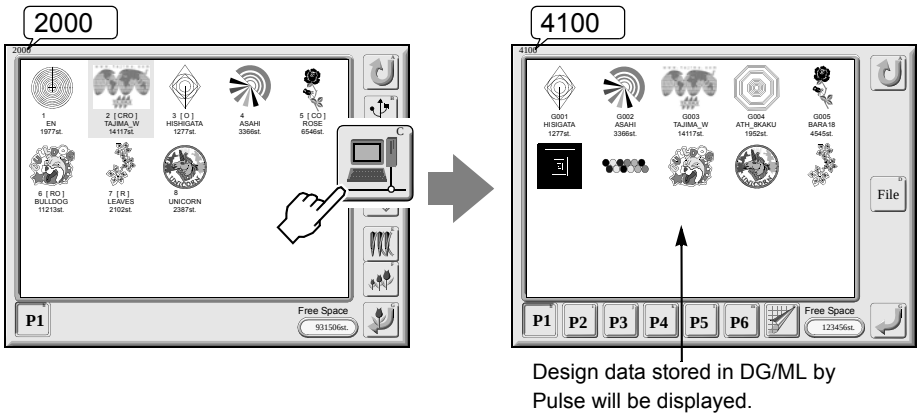
(3) Power switch ON

(4) Set “Yes” to network and select “LAN” (Refer to p.125.).

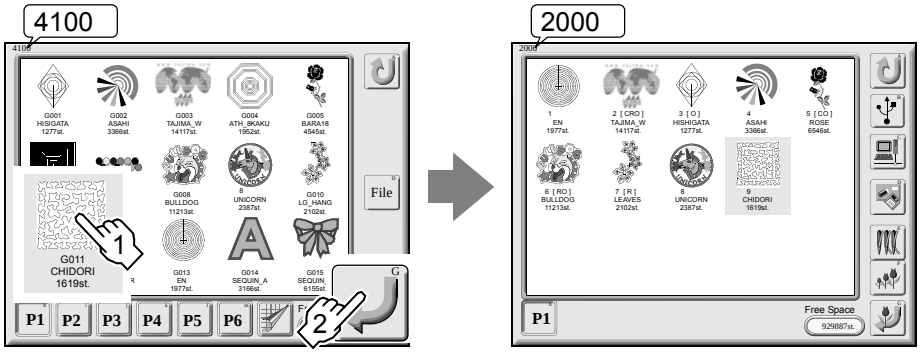
(5) Icon A



(6) Icon C



(7) Select design data, setting



➨When performing data set after that (Refer to p.39.)

It is also possible to select design data by using a bar code reader (commercial item) (Refer to p.38.).

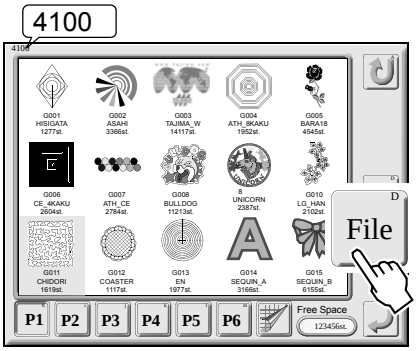
2000
When remaining capacity of the memory becomes 0st. or up to 99 designs are registered, icon B and C will not be displayed.

4100
Selecting design again will switch design information (Refer to p.28.).

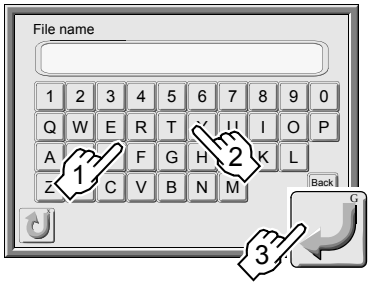
2000
The input design data will be registered to the first memory No. which is unoccupied.

■When executing by file name.....

(8) Icon D



(9) Input design name



After that, the screen will switch to the screen that enables selection of design data in (7). Then, set the data.

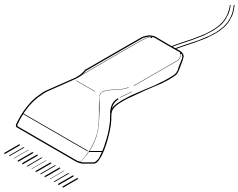
➨When the design does not exist, code No. “BC1” will be displayed (Refer to p.39.)

➨When performing data set after that (Refer to p.39.)

Up to 16 characters can be input.

3-3. When inputting data from DG/ML by Pulse (using a bar code reader)

Select design data stored in DG/ML by Pulse using a bar code reader to input to the memory of the machine.



Bar code reader (commercial item)

(1) Power switch OFF

(2) Connect the LAN cable.

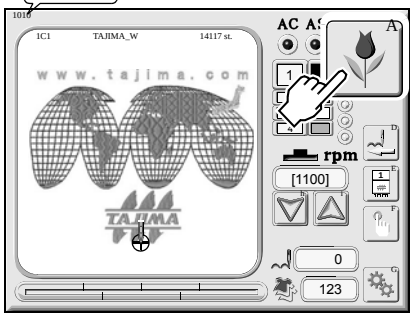
(3) Connect the bar code reader.

(4) Power switch ON

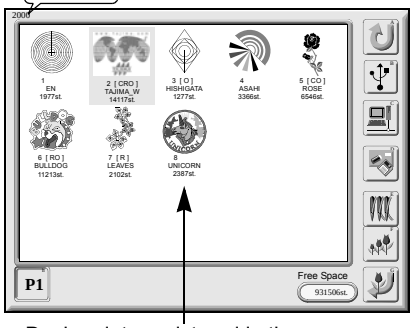
(5) Set “Yes” to network and select “LAN” (Refer to p.125.).

(6) Icon A

1010



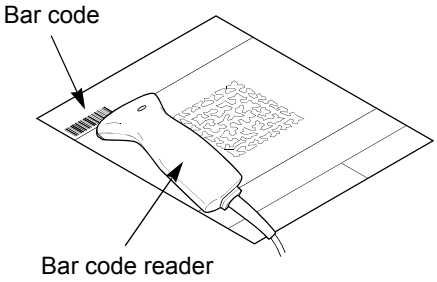
2000



Design data registered in the memory of the machine

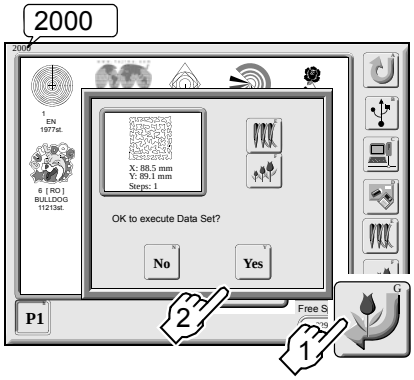
2000
When remaining capacity of the memory becomes 0st. or up to 99 designs are registered, icon B and C will not be displayed.

(7) To read bar code using a bar code reader



(8) Data set

2000

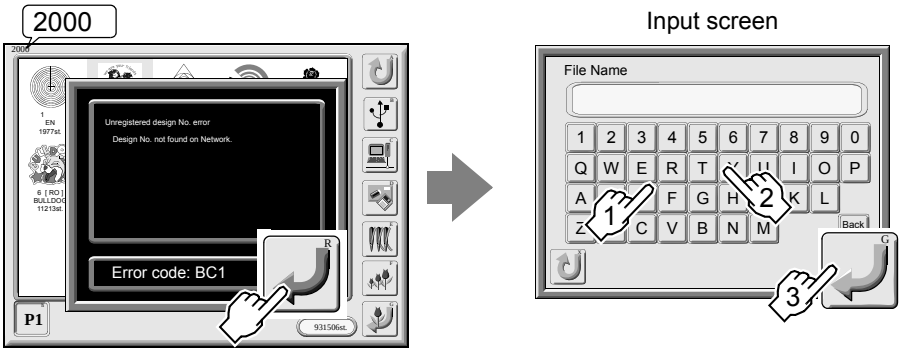


Selecting “NO” will perform data input only.

This completes data set.

When misreading occurred

When misreading occurs, code No. “BC1” will be displayed. When you reset the machine, the screen will switch to input screen. Input the file name and perform setting.



Up to 16 characters can be input.

4. Set data of design

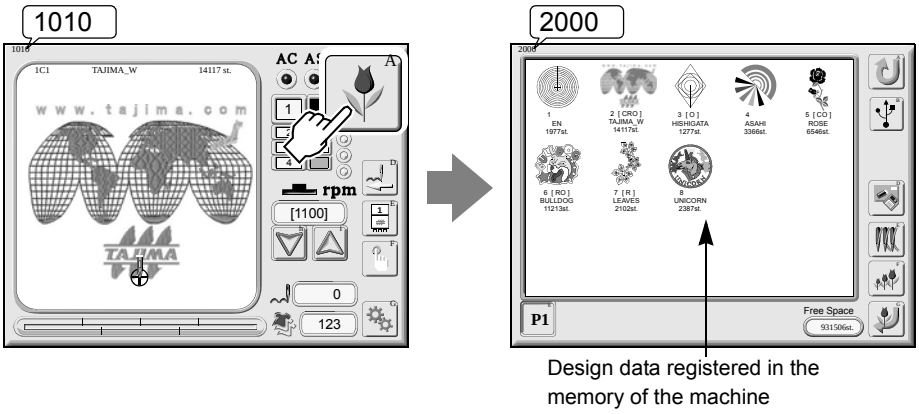
Call design data to be ready for embroidery.

CAUTION

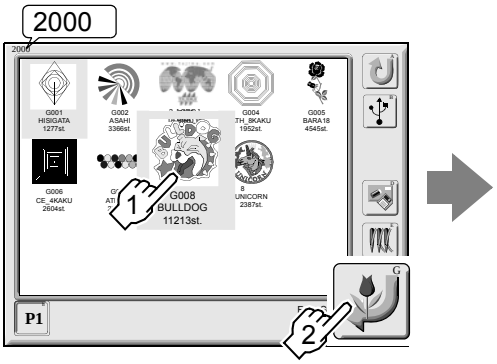
When performing this operation, do not put your hands etc. on the machine table. Moving frame may injure you.

2000
Detail of data set screen (Refer to p.28.)

(1) Icon A

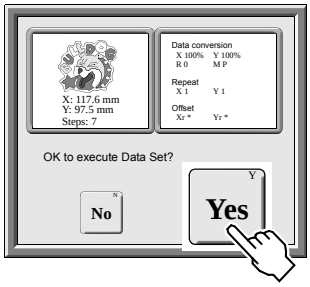


(2) Select design



(3) Yes

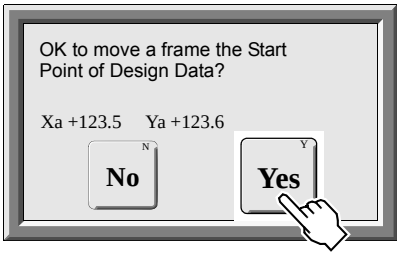
Completion of data set



When “Start position of design” or “Offset position” is set to data set design, the following message will appear. Proceed to the next operation (3). When the message does not appear, the frame is already positioned at the setting position (completion of data set).

(4) To perform/not to perform Frame travel

Completion of data set



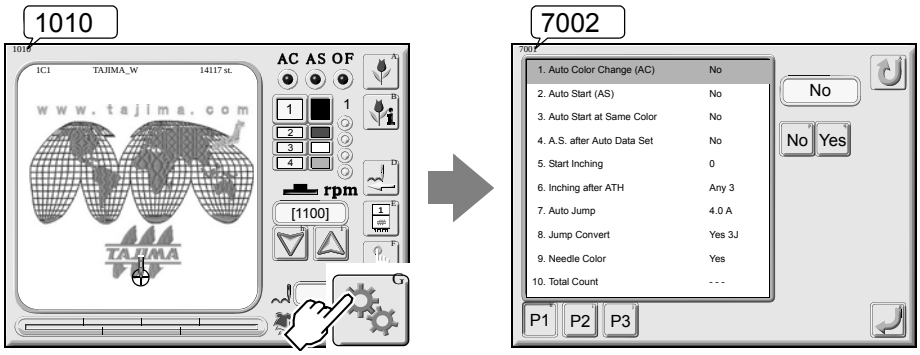
This completes data set.

5. Automatic color change, automatic start

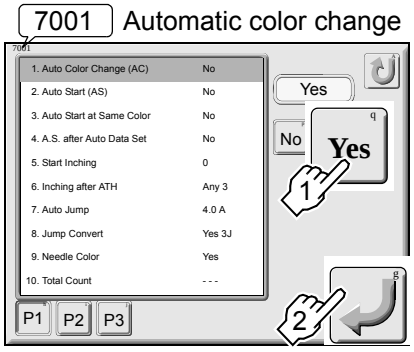
This setting performs color change automatically by every step and makes the machine start automatically after color change.

7001
To perform sewing with single color regardless of needle bar setting, set Automatic Color Change to “No”.
Selecting “No” in Automatic Color Change will disable setting for Automatic Start.

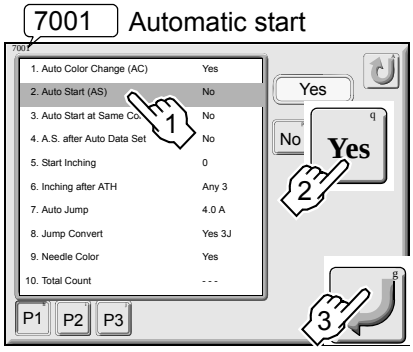
(1) Icon G



(2) Yes, set (To perform automatic color change)



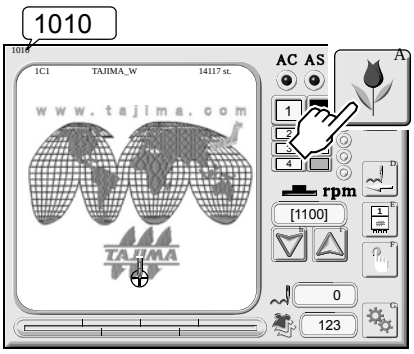
(3) Select automatic start, Yes, set (To perform automatic start)



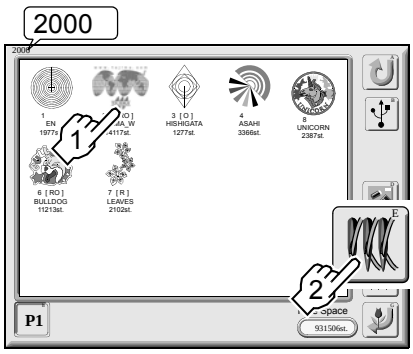
6. To perform needle bar setting

Set order of needle bars (steps) to use by every color change.

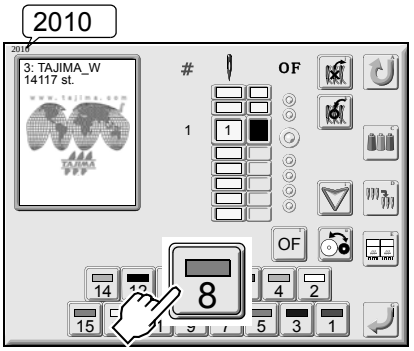
(1) Icon A



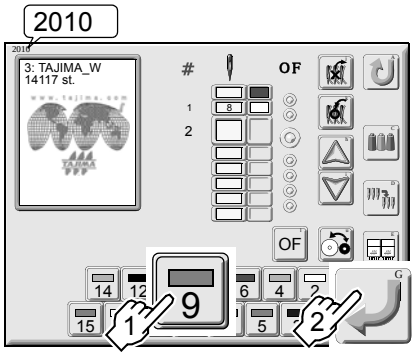
(2) Design data, icon E



(3) Step 1
Select needle bar number 8 (example)

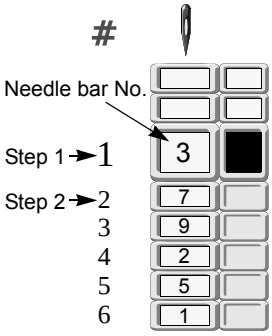


(4) Step 2
Select needle bar number 9 (example)



"Needle bar setting" will become effective only when automatic color change is set to "Yes".

Step
The machine will perform color change between step 1 and step 2.



2010
Detail of setting screen of needle bar (Refer to p.27.)

7. When setting enlargement/reduction, repeat of design

(Refer to p.70.).

Original design data is not affected.

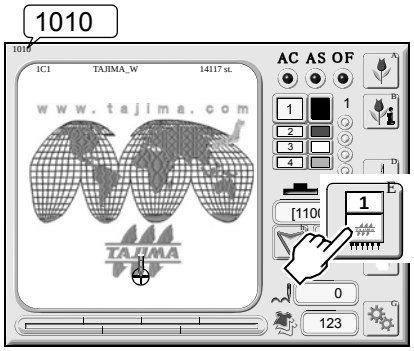
8. When performing color change manually

This function performs color change by manual operation.

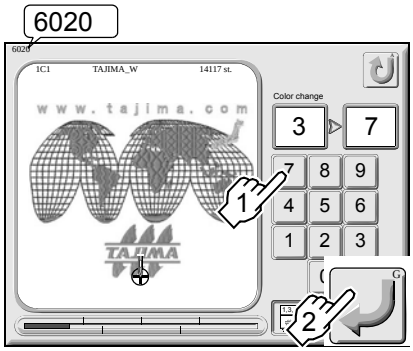
CAUTION

When performing this operation, do not access your hands etc. to around needle bar case. Moving needle bar case may injure you.

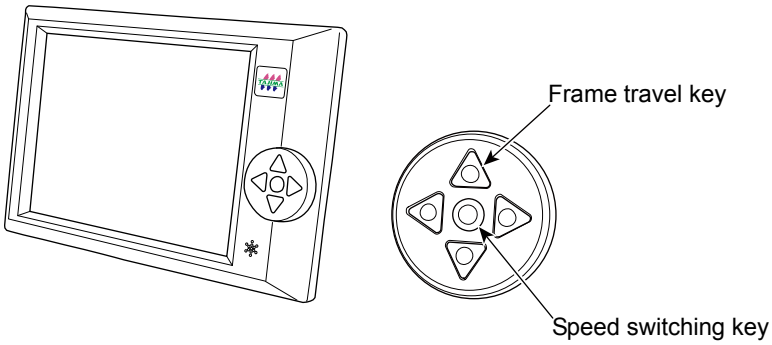
(1) Icon E



(2) Needle bar No. you desire



9. To perform frame travel operation



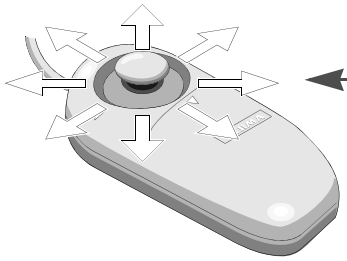
Pressing the speed switching key will change the frame travel speed.

Low speed: The key will be unlit.

Middle speed: The key will be lit.

High speed: Press the frame travel key while pressing the speed switching key.

Jog remote-controller



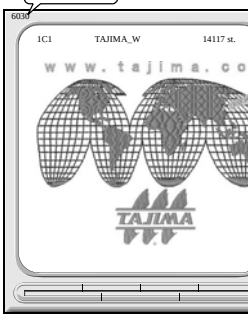
Make the embroidery frame move to all directions.

Frame travel speed can be changed by angle of inclination of the stick.

It is possible to use a jog remote-controller only in the case of screen 6030.

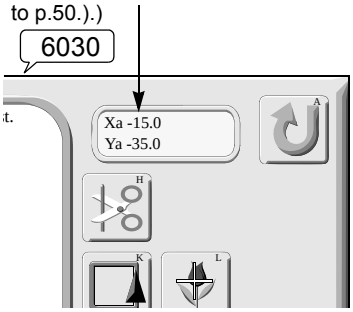
1010
Main screen

6030

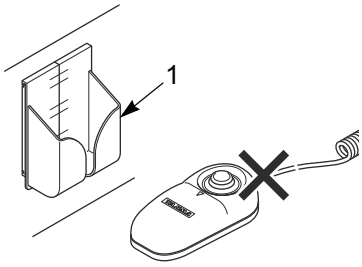


You can check the current frame position (coordinates) on the screen 6030 (Select on the main screen).

The current frame position ((Refer to p.50.).)



When you do not use a jog remote-controller, contain it to the jog remote-controller pocket 1 (To prevent malfunctioning of the frame).



10. Trace

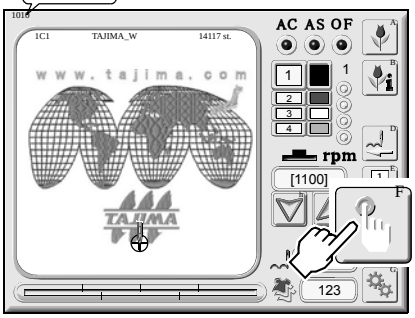
It makes the frame move along embroidery range of design data.

CAUTION

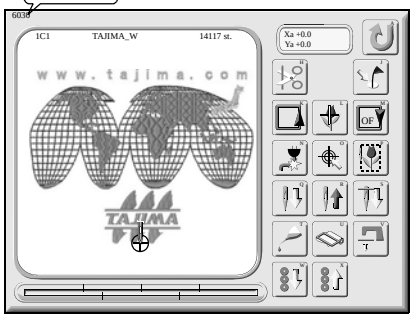
When performing this operation, do not put your hands etc. on the machine table. Moving frame may injure you.

(1) Icon F

1010



6030

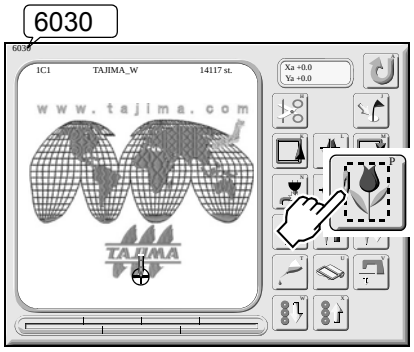


Before starting embroidery, it is possible to confirm size and embroidery space of design data.

Outline of trace ((Refer to p.161.).)

It is not possible to trace the design if it is set to “H.OF Frame” in head group setting ((Refer to p.95.).).

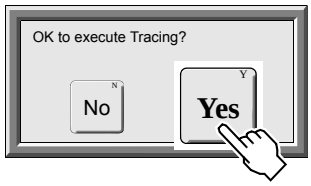
(2) Icon P



Icon will be displayed only from data set to start of embroidery.

(3) Yes (Frame will move)

The frame will move

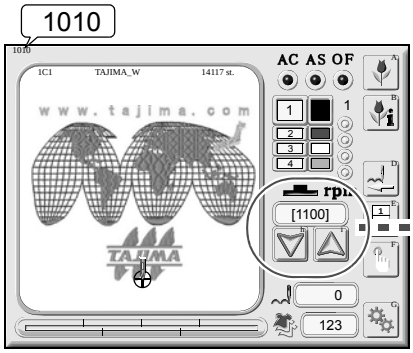


To abort
It is possible to abort frame travel by bar switch/stop switch. To restart, follow the operation screen.

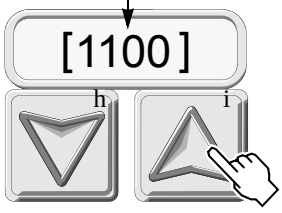
11. Setting for high speed rpm

Set high speed rpm suitable for design data to be embroidered.

It is automatically increased/decreased depending on stitch length with the value of “Maximum RPM” as the upper limit in operation (actual rpm).



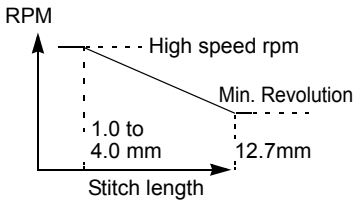
During stop of the machine, high speed rpm will be displayed in brackets [ ].



To lower To raise

Keeping on pressing it will cause value to switch quickly.

High speed rpm and stitch length

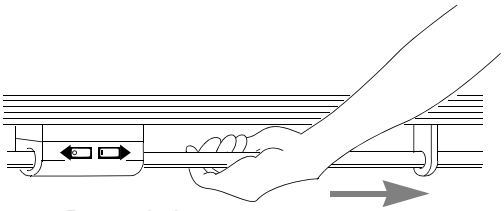


Setting for other rpm

Min. Revolution, low speed rpm
(Refer to p.112.)

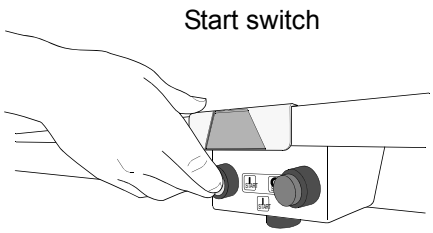
R.P.M. Limit by Needle Position
(Refer to p.113.)

12. Start



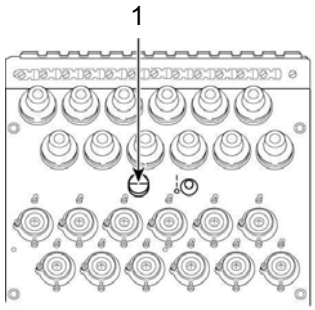
Bar switch

Start switch



13. When thread is broken

The machine will stop automatically. The lamp (figure 1 below) of the head with thread breakage will switch to red color (lit or blinking), and an error code (number indicating the stop factor) will be displayed on the operation panel.

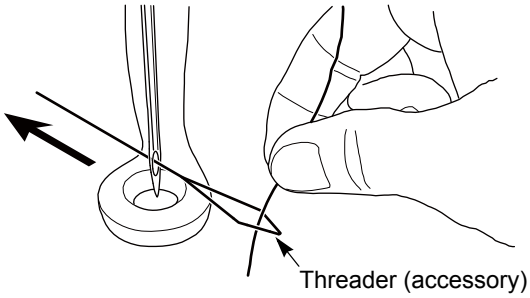


Condition of lamp

Lit: Upper thread breakage
Blinking: Under thread breakage

Start the embroidery again by the following procedure.

(1) Pass the upper thread, or change the under thread (bobbin).

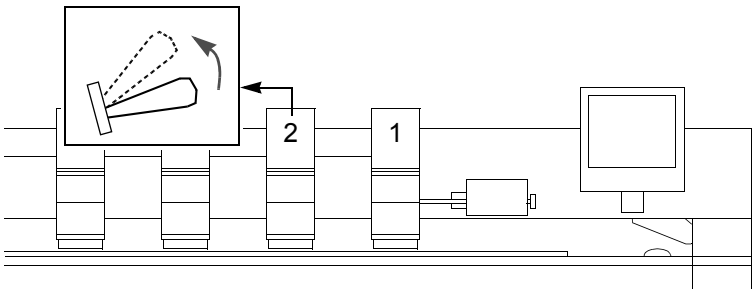


(2) Perform frame back by a few stitches for mending.

(3) When you start the machine, only the head 1 with thread breakage will start embroidery again from the position after frame back.

[When making the head 2 that does not detect thread breakage perform embroidery from the position after frame back]

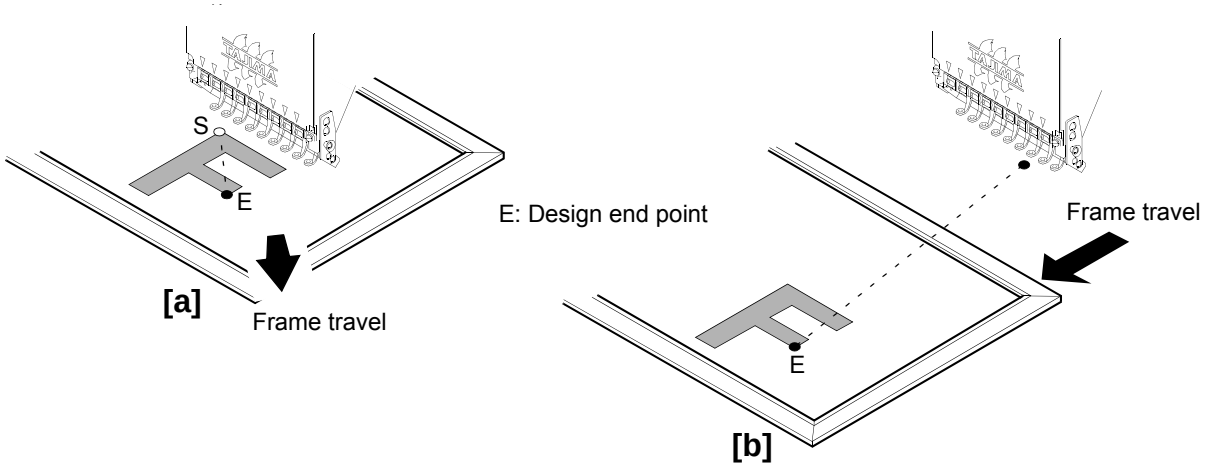
Move up the switch of head 2 to “Top” once (when you release the switch, it will return to the original position).



14. Completion of embroidery

Destination to move of the frame differs depending on setting of the machine (chart below).

		Automatic offset (=> p.65)	
		Without	With
Auto Origin Return (=> p.115)	Without	Not to move	Offset position Figure below [b]
	With	Start position of design (S) Figure below [a]	



Supplementary explanation

About condition data

Condition data means embroidery conditions included in design data (chart described below, needle bar setting to repeat). It is possible to store condition data to the built-in memory or USB memory by each design data (refer to the chart below).

○ : It is possible to store — : It is not possible to store

Condition data	Built-in memory	Storing to a USB memory ((Refer to p.59.).)	
		T3, T2 code	T code
Needle bar setting	○	○	—
Scale up/down, rotation, reversion	○	—	—
Start position of design	○	○	—
Automatic offset	○	—	—
Repeat	○	—	—

Chapter 5

Functions that are frequently used

These operations are frequently used.

1. Frame Back (FB)/Forward (FF)

There are following three measures of frame travel by frame back/forward.

(1) Frame travel by 1-stitch unit

Perform by using the bar switch or start/stop switch.

(2) Frame travel by specifying the number of stitches (Frame travel by the number of stitches)

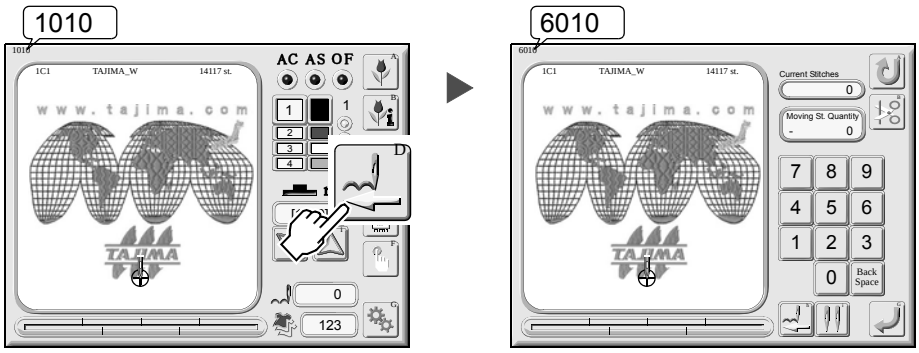
Perform on the operation panel.(refer to p.49).

(3) Frame travel to color change code

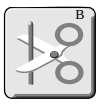
Perform on the operation panel.(refer to p.49).

Explanation for frame back/forward by operation on the operation panel is given here.

Calling frame back/forward screen (Screen 6010)



Explanation for icons on screen 6010

	A: To return to screen 1010		B: Automatic thread trimming (ATH)
	G: Execute		i: Searching of color change code (refer to p.49)
	h: Frame Back		h: Frame forward

Frame back:

This function returns only the frame to the direction to which stitches return to perform mending stitching at thread breakage.

Frame forward:

It makes only the frame move in the direction to which stitches advance and performs embroidery from that position.

Automatic frame back function at thread breakage:

When the machine stops due to detection of thread breakage, it is possible to perform frame back automatically.
(refer to p.111).

1010

Icon D: the current setting value

FB 

FF 

When the machine is started, setting will automatically switch to FB.

Icon i

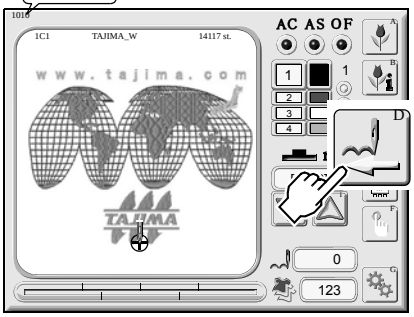
It is not possible to search color change code(s) in design data containing repeat setting.

1-1. Switching of frame back/forward

Switch frame back/forward.

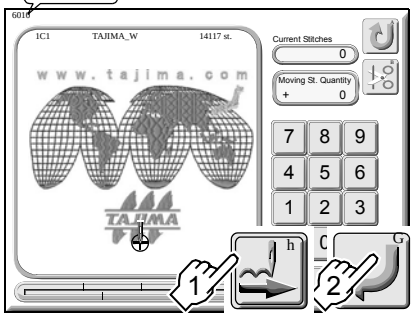
(1) Icon D

1010

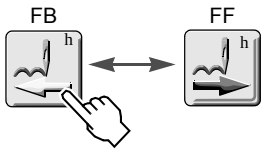


(2) Icon h

6010



6010
Pressing icon h every time will switch the current value.



1-2. Execution of frame back/forward

CAUTION

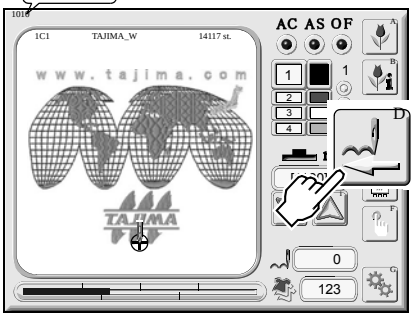
When performing this operation, do not put your hands, etc. on the machine table. You could be injured by moving frame.

It is possible to execute frame back/forward only in the middle of embroidery.

■When performing execution by specifying the number of stitches

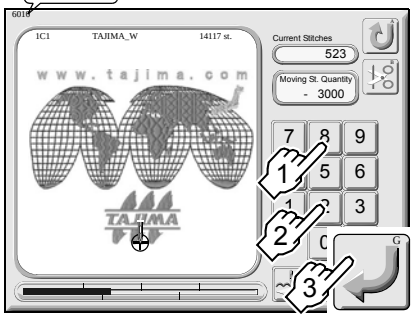
(1) Iicon D

1010



(2) Number of stitches, setting

6010



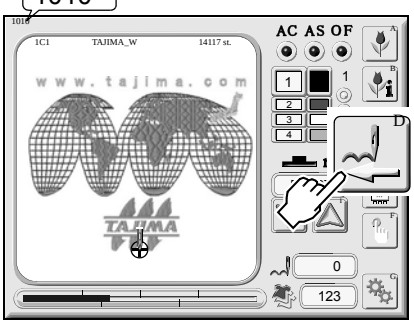
6010
Code of moving stitch quantity (±)
Frame back:−
Frame forward:+

6010
Every time selecting the icon i will search the next color change code.
If a design data contains repeat setting, it is not possible to search color change code only once.

■When executing by color change code unit .....

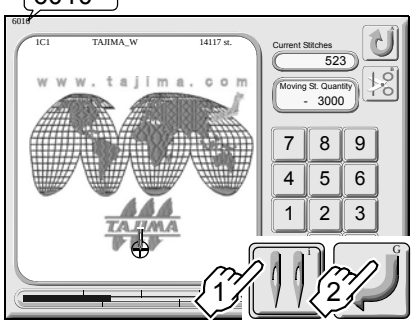
(3) Icon D

1010

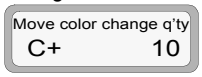


(4) Icon i, setting

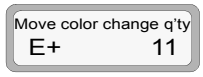
6010



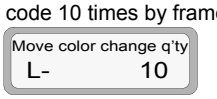
An example when searching the color change code 10 times



An example when searching the end code 11 times

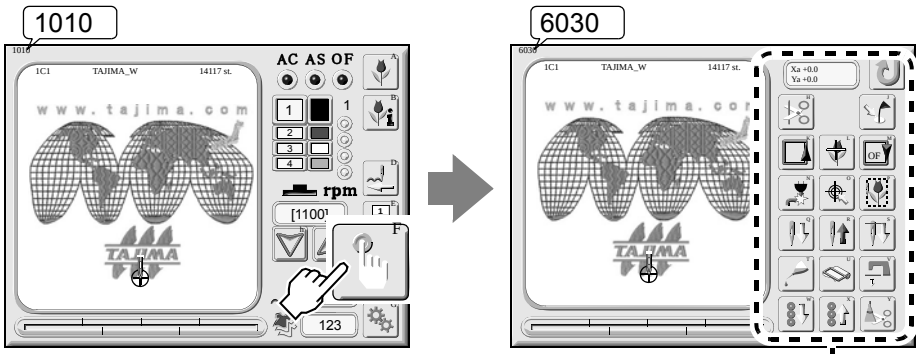


An example when searching the laser code 10 times by frame back



2. Manual operation

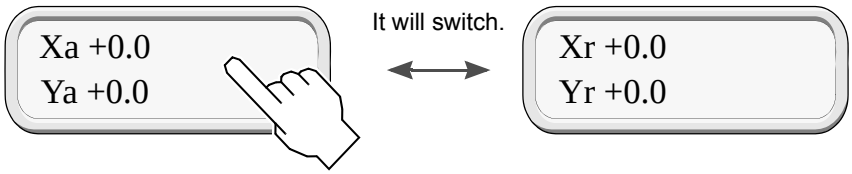
Calling manual operation screen (Screen 6030)



6030
Icons of options are also displayed.

Explanation for icons on screen 6030

The current frame position



Coordinates based on the position of absolute origin

Coordinates based on start position of design registered in design data (data set design)

Frame position
Xa, Ya: Absolute coordinates
Xr, Yr: Relative coordinates
(a is abbreviation of absolute, r is abbreviation of relative)

A	A: Return	J	J: Frame travel to an optional position (refer to p.51)
K	K: Manual offset (refer to p.52)	L	L: Start position of design (refer to p.52)
M	M: Offset return (refer to p.53)	N	N: Power resume (restore) (refer to p.53)
O	O: Absolute origin search (refer to p.54)	P	P: Trace (refer to p.43)
Q	Q: Lowering of needle bar (refer to p.54)	R	R: Raising of needle bar (refer to p.55)
S	S: Stop at the lower dead point (pseudo-fixed position) (refer to p.140)	Y	Y: To ATH manual feed screen (Motor type ATH) (refer to p.178)
H	H: Automatic thread trimming (ATH) (refer to p.51)		

The following icons are for options.

T: Automatic lubrication (refer to p.148)

U: AFC valve (refer to p.14

W: Moving down of sequin device (refer to p.144)

X: Moving up of sequin device (refer to p.144)

2-1. Execution of ATH

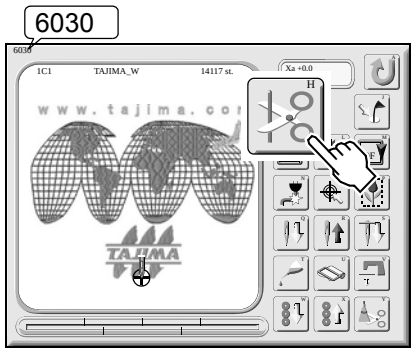
This function trims thread by manual operation.

Trimming of under thread or upper/under threads can be selected by this function.

CAUTION

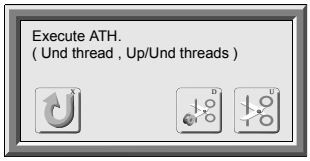
When performing this operation, do not put your hands, etc. near needle or on the machine table. Since needle bar will move up/down, you could be injured.

(1) Icon H



(2) Icon U, or D

Needle bar will move up and down,and ATH will work.
Select needle to cut



To trim under thread

To trim upper/under threads

2-2. Frame travel to an optional position

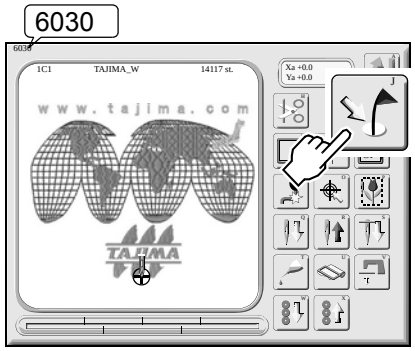
Move the frame to the position registered by parameter “32. Optional Position”.

Parameter “32. Optional Position” (refer to p.116)

CAUTION

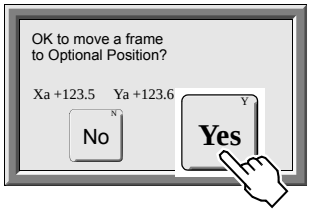
When performing this operation, do not put your hands, etc. on the machine table. You could be injured by moving frame.

(1) Icon J



(2) Yes

The frame will move



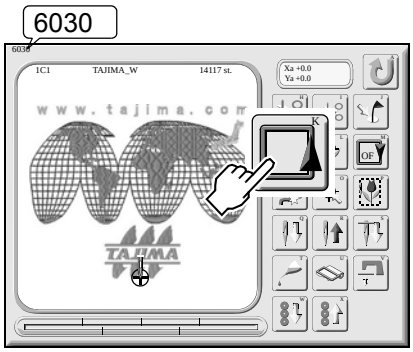
2-3. Manual offset

Return the frame that was moved in the middle of embroidery to the original position.

CAUTION

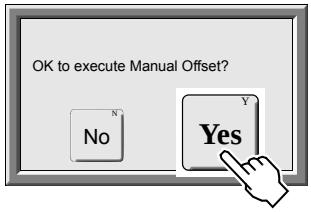
When performing this operation, do not put your hands, etc. on the machine table. You could be injured by moving frame.

(1) Icon K



(2) Yes

The frame will move



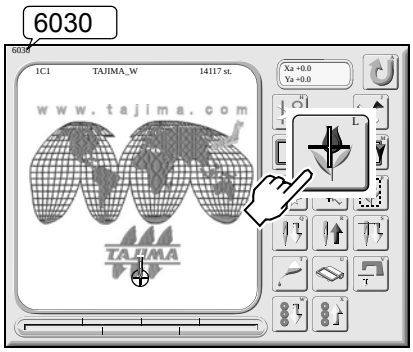
2-4. Start position return of design

Move the frame to the start position (cross mark on the screen) of design.

CAUTION

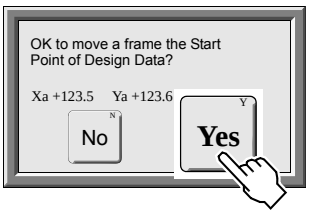
When performing this operation, do not put your hands, etc. on the machine table. You could be injured by moving frame.

(1) Icon L

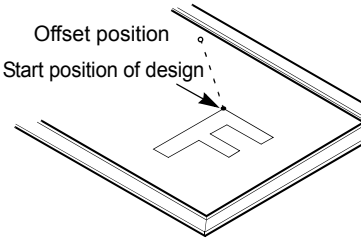


(2) Yes

The frame will move



An example when an offset position is set



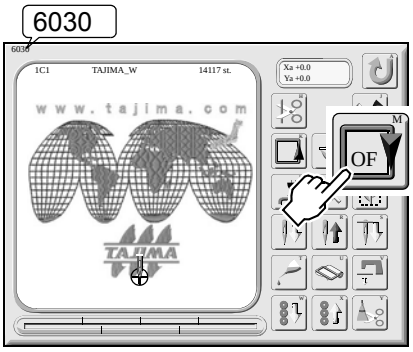
2-5. Offset return

Move the frame to the offset position set by “Offset”.

CAUTION

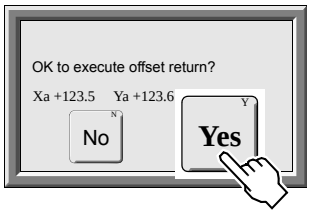
When performing this operation, do not put your hands, etc. on the machine table. You could be injured by moving frame.

(1) Icon M



(2) Yes

The frame will move



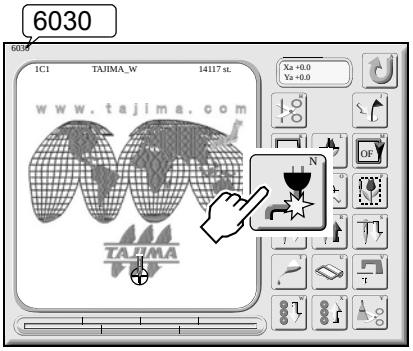
2-6. Power resume (restore)

This function makes the frame return to the position where the power was shut off (function for preventing displacement of design). Or, when you turned OFF the power in the middle of embroidery and moved the frame manually, this function makes the fame return to the original position.

CAUTION

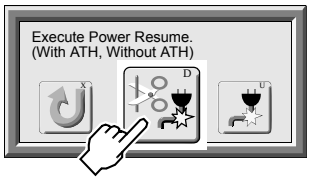
When performing this operation, do not put your hands, etc. on the machine table. You could be injured by moving frame.

(1) Icon N



(2) Icon D, or U

The frame will move to the original position



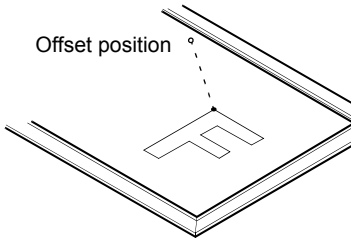
To perform power resume after thread trimming

To perform power resume without thread trimming

When an offset position is not registered, the icon will not be displayed.

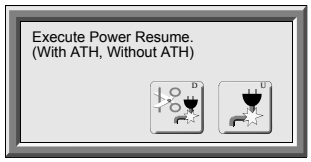
Offset (refer to p.65)

Offset position



Flow from power shut-off to power resume

1. Emergency stop switch was pushed during operation (displaying code No.2CF).
2. Release the lock of emergency stop switch.
3. Turn ON the power again. (Middle position ➔ OFF ➔ ON)
4. Code No. 2E3 ➔ Reset
5. Operation of power resume



After power resume, the frame may move forward by some stitches from the original position. Check the frame position, and restart embroidery after performing frame back.

2-7. Absolute origin search

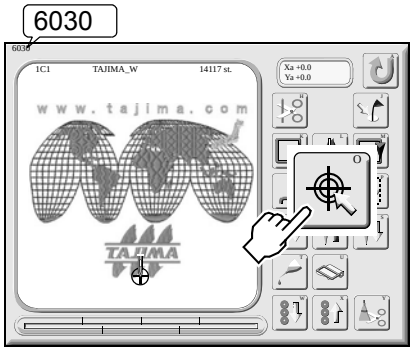
This function makes the machine memorize the absolute origin of embroidery frame. Perform this operation under the following conditions.

◆After installation of software
◆When the frame was moved by hand with the power turned OFF

⚠ CAUTION

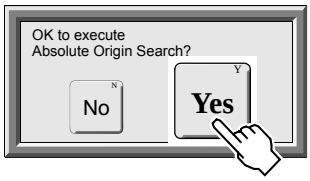
When performing this operation, do not put your hands, etc. on the machine table. You could be injured by moving frame.

(1) Icon O



(2) Yes

The frame will move to the absolute origin



Absolute origin

When a memorized position of absolute origin is wrong, the following problems will occur.

1. Frame coordinates are not displayed correctly.
2. The frame does not return to the interrupted position even if “Power Resume” is performed.

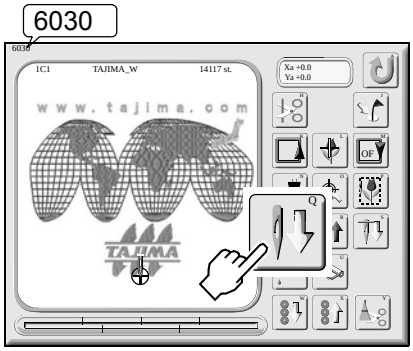
2-8. Lowering of needle bar

This function lowers needle bar to the height where it does not stick to the fabric.

⚠ CAUTION

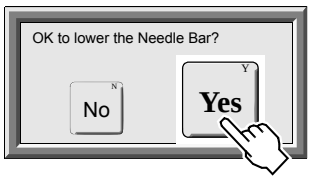
When performing this operation, do not put your hands etc. near needle or on the machine table. Moving needle bar may injure you.

(1) Icon Q



(2) Yes

Needle bar will move down



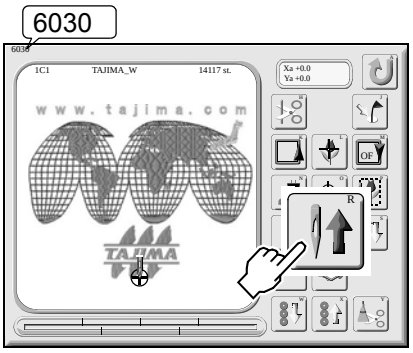
2-9. Raising of needle bar

Return the needle bar that was moved down to the original position.

CAUTION

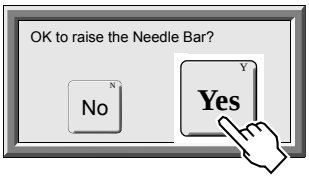
When performing this operation, do not put your hands etc. near needle or on the machine table. Moving up/down needle bar may injure you.

(1) Icon R



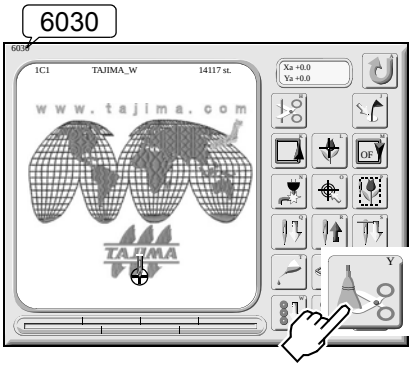
(2) Yes

Needle bar will move up



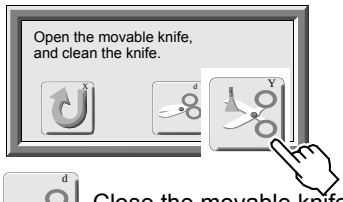
2-10. Cleaning of ATH (Motor type ATH)

(1) Icon Y



(2) Icon d, or u

Open the movable knife



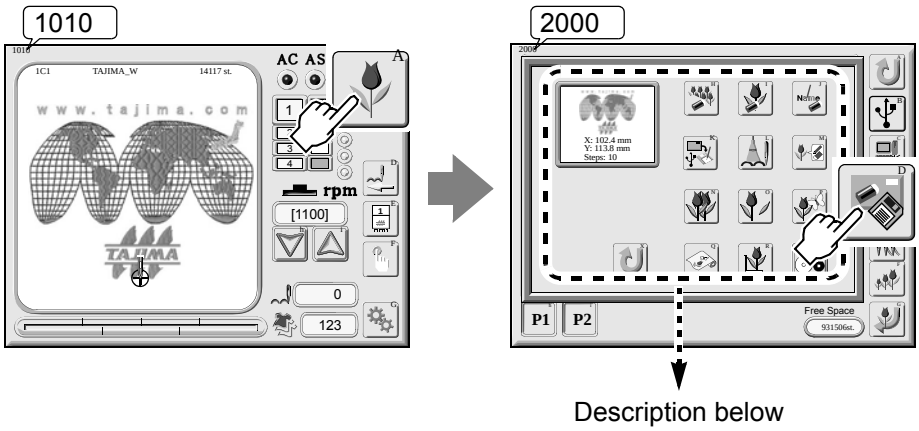
Close the movable knife.

Open the movable knife.

It is possible to open the movable knife while stopping to facilitate cleaning dust collected around the movable knife (refer to p.178).

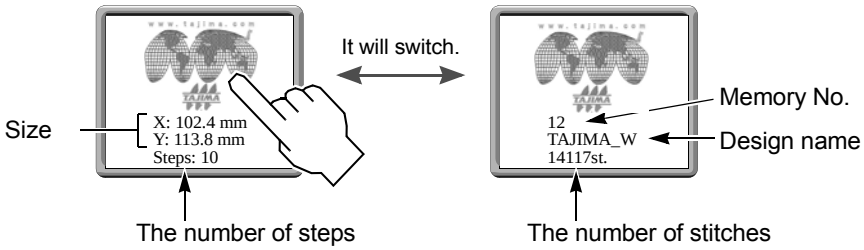
3. Design data edit

Calling design data edit screen (Screen 2000)



Explanation for icons on screen 2000

Design of which data is set



H	H: Deletion of all designs (refer to p.57)	I	I: Deletion of single design (refer to p.57)
J	J: Change of design name (refer to p.58)	K	K: Writing design data to a USB memory (refer to p.60)
L	L: Cleanup (refer to p.88)	M	M: Stitch edit (refer to p.82)
N	N: Copy of design (refer to p.89)	O	O: Design divide (refer to p.90)
P	P: Design combine (refer to p.91)	R	R: Marking (refer to p.75)
S	S: Sequin reversion (refer to p.147)	Q	Q: AFC D. Combine (refer to p.137) (Option)
X	X: Return		

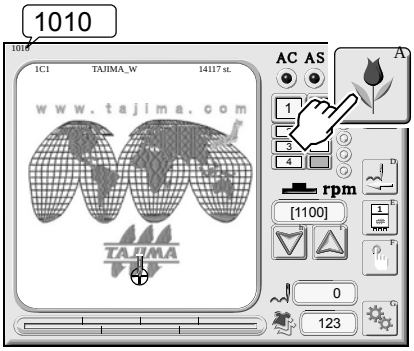
Editing design of which data is set will cancel data set.

When remaining capacity of memory becomes 0st. or up to 99 designs are registered in the memory, the following icon will not be displayed.

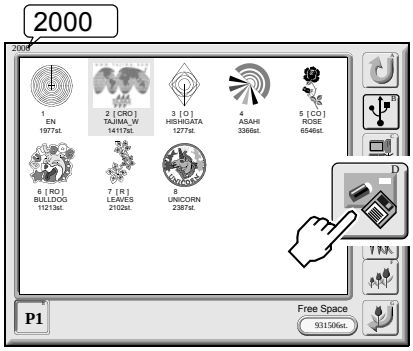
When the number of stitches of the edited design data exceeds 1,000,000 stitches, it is not possible to register that design into the memory of the machine.

3-1. Deletion of all designs

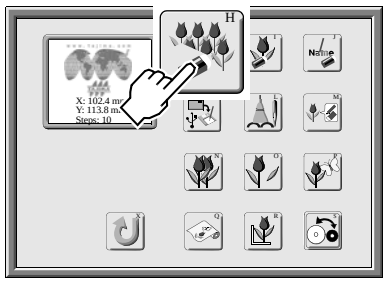
(1) Icon A



(2) Icon D

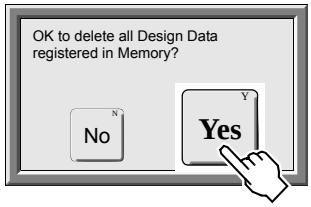


(3) Icon H



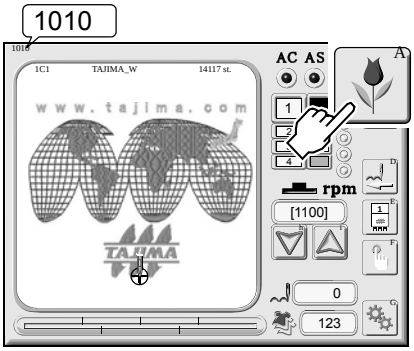
(4) Yes

Delete all designs

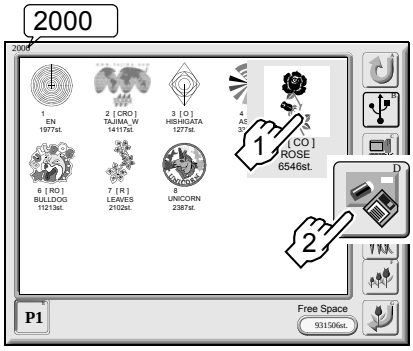


3-2. To delete a design

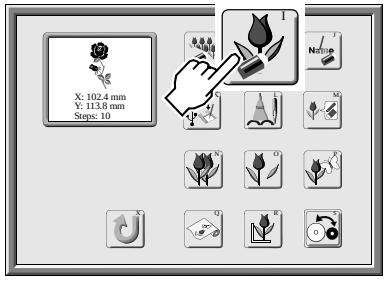
(1) Icon A



(2) Design data, icon D



(3) Icon I



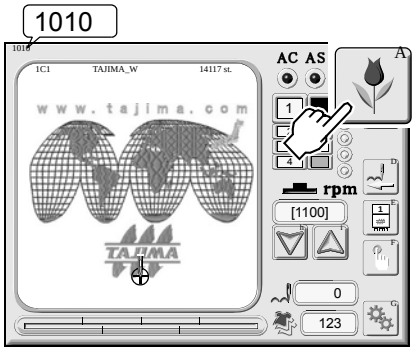
(4) Yes

Deletion of the design selected

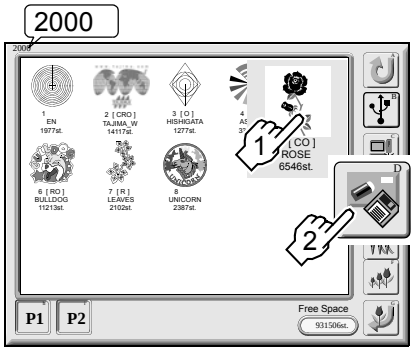
3-3. To change design name of design data

How to input characters (refer to p.30)

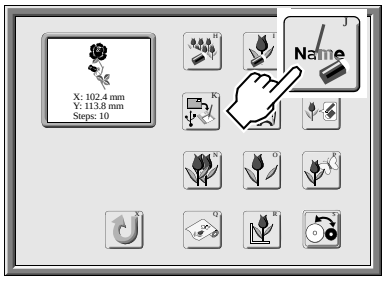
(1) Icon A



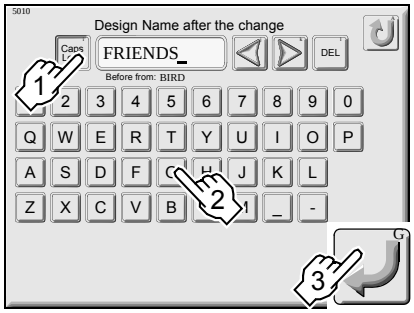
(2) Design data, icon D



(3) Icon J

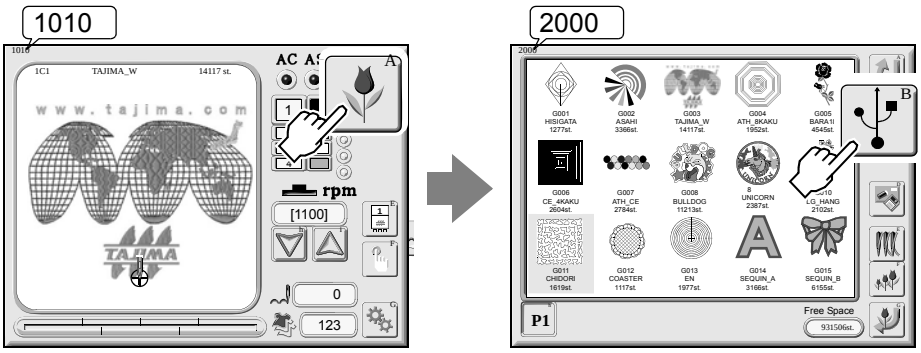


(4) Change of design name, setting



4. To use USB memory

Calling USB memory design screen (Screen 3100)



The following screen display is the screen after setting USB memory.

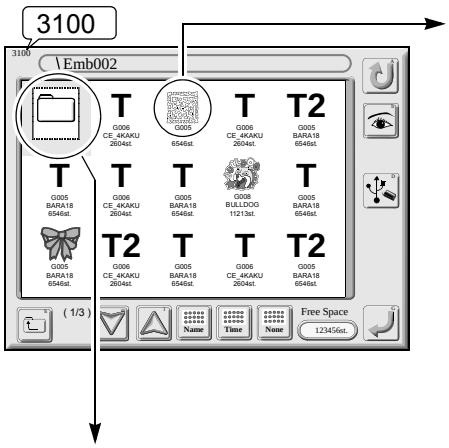
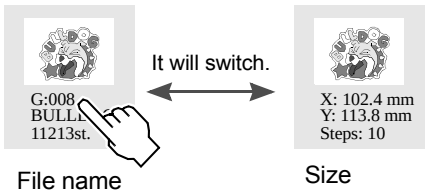


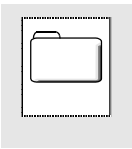
Image of design will be displayed only when design data includes “Image data (extension DGF or DGT)” (refer to p.61).

Selecting a design will switch information of design data.



File name
Design name
The number of stitches

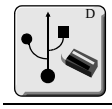
Size
The number of color change



This icon will be displayed when holder(s) exist in a USB memory. Selecting this icon and pressing  will enable lower layer directories to be opened (down to three layer directories).

3100
T3: TAJIMA integrated file
T2: TAJIMA binary format
T: TAJIMA format
(refer to p.35)

Explanation for icons on screen 3100

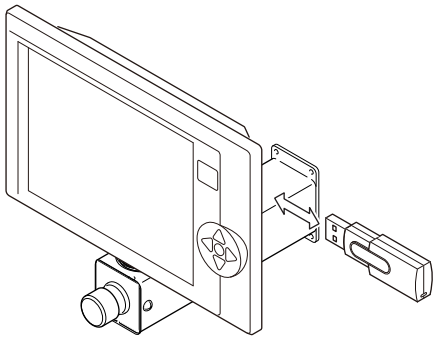
	A: To return to screen 2000		b: To display image of the selected design
	D: Deletion of USB memory design (refer to p.61)		G: Data input (When design is selected)
	p: Rearrangement of designs (sequenced by registration)		o: Rearrangement of designs (sequenced by updated date)
	n: Rearrangement of designs (Ordering by file name alphabetically)		m / l: To switch page
	h: To display the upper layer directory		

Icon h
It will be displayed when file(s) of the lower layer directory are displayed.

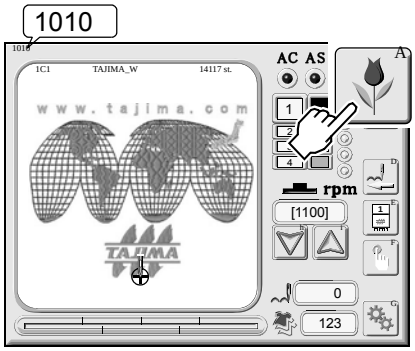
4-1. To write design data to USB memory

This function cannot be used depending on the setting, or this function requires input of password to be usable. For details, consult the distributor.

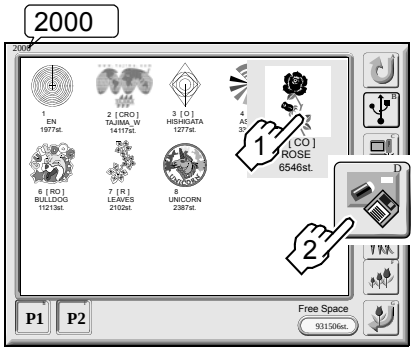
(1) Set the USB memory



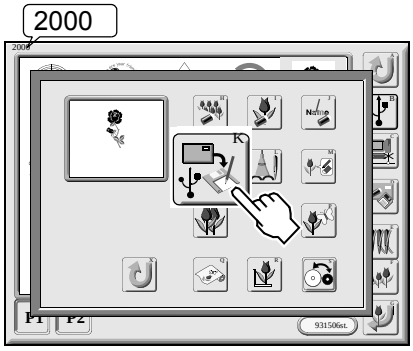
(2) Icon A



(3) Design data, icon D

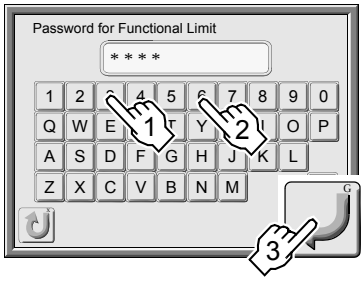


(4) Icon K

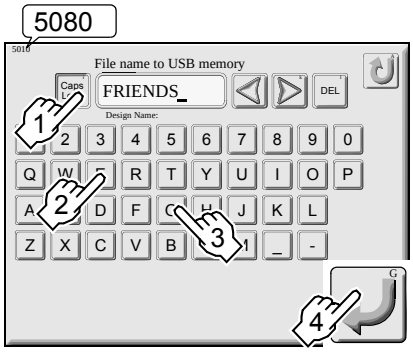


(5) Input of a password, setting

Up to 8 characters are available to input



(6) Input of a file name, setting

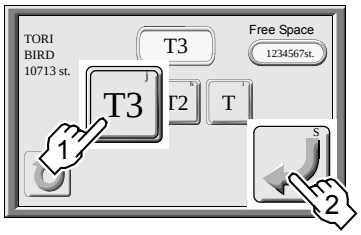


5080
How to input characters (refer to p.30)

Up to 8 characters are available for a file name.

Characters inputted here will become a file name on a personal computer.

(7) Select storing mode (T3/T2/T).
*Usually, select “T3”.



Storing condition of design data

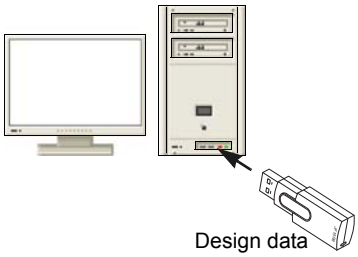
In case of T3	T2	T
***.TCF←4	***.TBF←1	***.DST←1
	***.CT0←2	—
	***.DGF←3	***.DGT←3

*** shows a file name.

1. Stitch data
2. Condition data (Needle bar setting, start position of design)
3. Image data
4. Data integrating 1 to 3 of “T2”

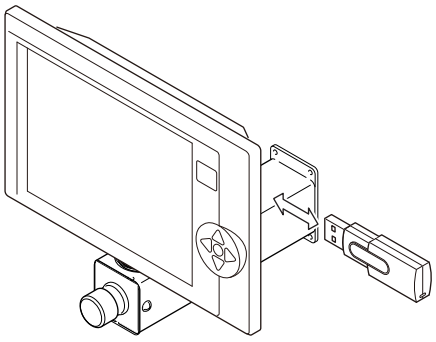
[In case of selecting T2 or T]

When you store or move or copy the design data using a personal computer, set T2 or T shown above.

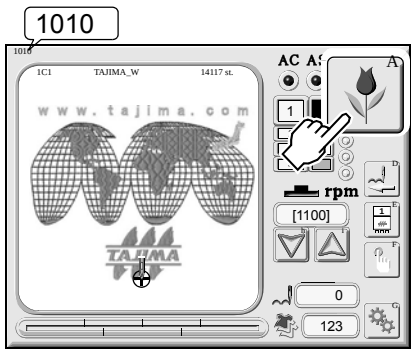


4-2. To delete design data

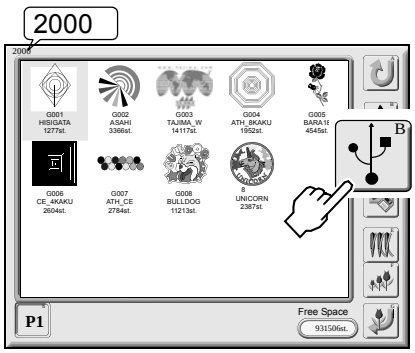
(1) Set the USB memory.



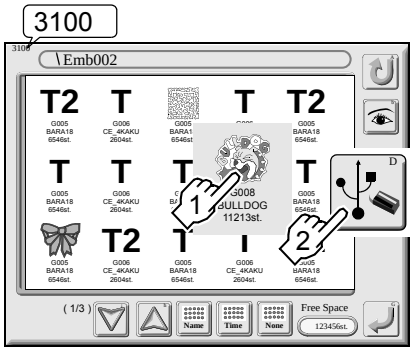
(2) Icon A



(3) Icon B

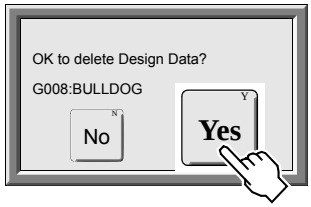


(4) Design data, icon D



(5) Yes

The selected design data will be deleted



Chapter 6

Convenient functions

This chapter describes about convenient functions.

1. Offset frame travel

To move the frame to the position you desire (Offset position) automatically or manually subject to returning frame to the original position is called offset frame travel.

The following two types (Manual, Automatic) are classified broadly into offset frame travel. How to set "(2) To move the frame automatically" is explained here.

Offset position:
A position where the frame is retracted for easy changing of frame and/or fabric

Outline of offset (refer to p.154)

(1) To move the frame manually

a. Manual offset (refer to p.52)

It returns the frame that was moved in the middle of embroidery to the original position.

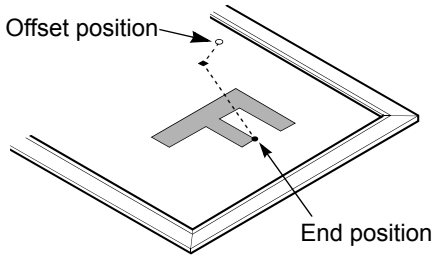
b. Offset return (refer to p.53)

Move the frame to the offset position that is already registered.

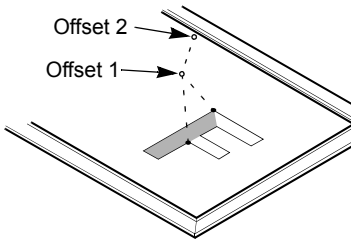
(2) To move the frame automatically

a. Automatic offset (refer to p.65)

This function registers an offset position, and makes the frame move to the offset position automatically after completion of embroidery.

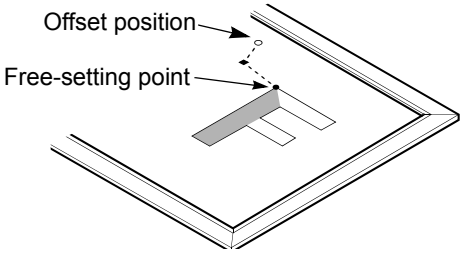


It is possible to set an offset position by design unit. Offset position includes offset 1 and offset 2. When you do not set offset 1, offset 2 will become an offset position.



b. Automatic free-setting offset (refer to p.67)

This function makes the frame move to an offset position automatically in the middle of embroidery (specified stitches) and after finishing embroidery.

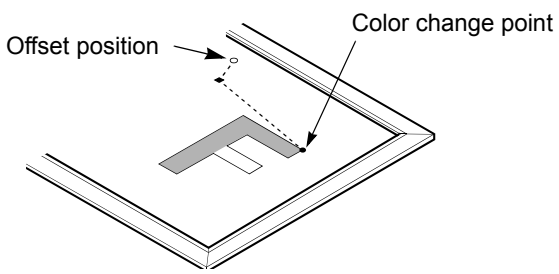


The position registered by "Automatic offset" is applied as an offset position.

When automatic offset is not set, the frame will return to the start position of design.

c. Offsetting at automatic color change (refer to p.68)

This function makes the frame move to an offset position automatically in the middle of embroidery (specified color change code) and after finishing embroidery.



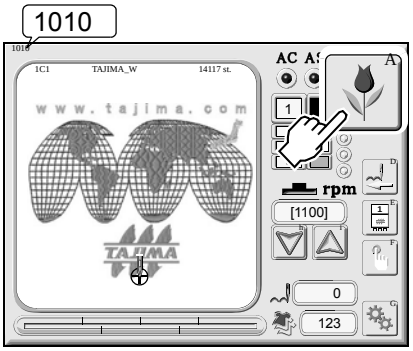
The position registered by "Automatic offset" is applied as an offset position.

When automatic offset is not set, the frame will return to the start position of design.

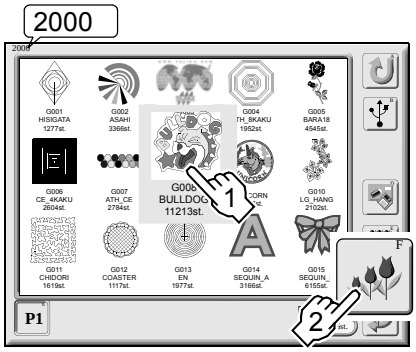
1-1. Automatic offset

This function sets an offset position, and makes the frame move to the offset position automatically after completion of embroidery.

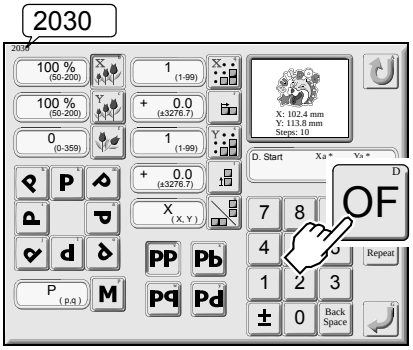
(1) Icon A



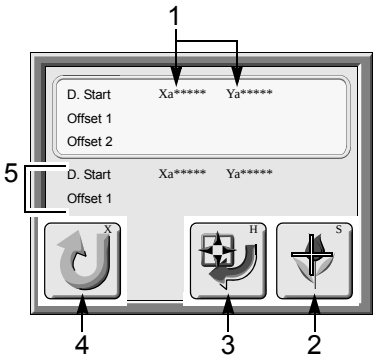
(2) Design data, icon F



(3) Icon D



Setting screen of offset position



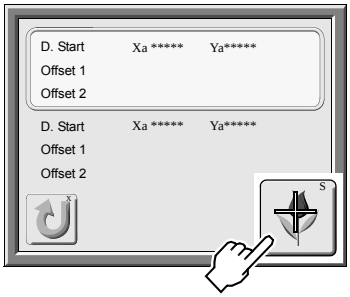
(4) Register of design start position

Move the frame.

A jog remote-controller is also available for use.

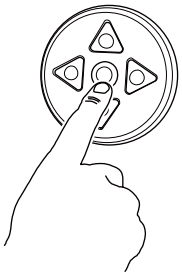
(5) Icon S

Setting screen of offset position



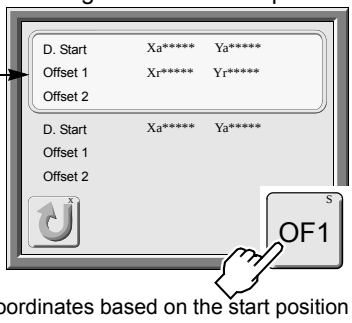
(6) Register of offset 1

Move the frame.



(7) Icon S

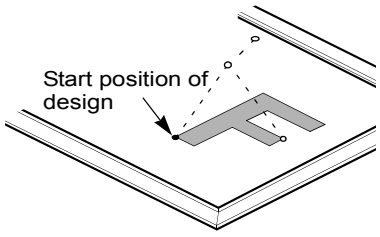
Setting screen of offset position

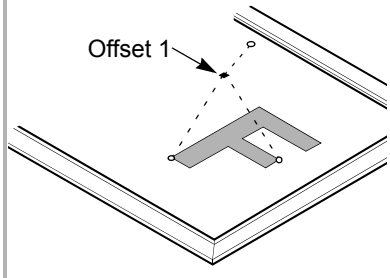


Coordinates based on the start position of design (Absolute coordinates)

1. The current frame position
2. Registration of start position of design
3. The frame will move to the start position of design that is already registered.
4. Return
5. The current setting value

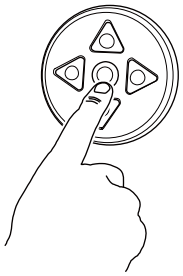
To move the frame to the start position of design that is already registered, select (The frame will move).





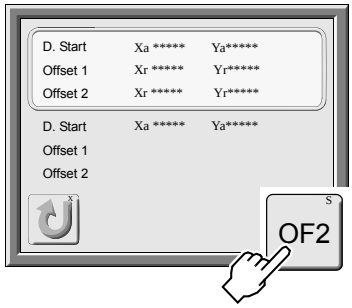
(8) Register of offset 2

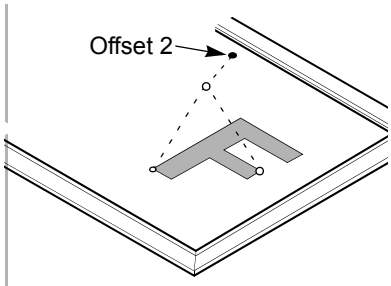
Move the frame.



(9) Icon S (When not performing registration)

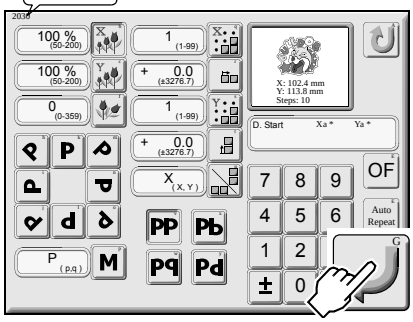
Setting screen of offset position





(10) To set

2030



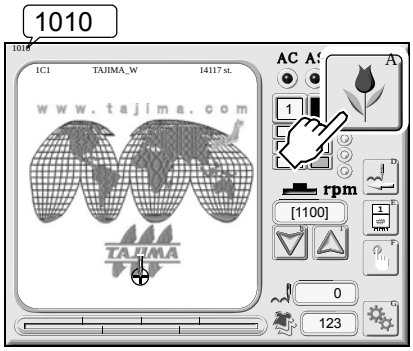
To perform automatic thread trimming at frame travel in offsetting, set “Yes” to parameter “21. ATH” (refer to p.114).

1-2. Cancellation of automatic offset

Cancel the registered offset position.

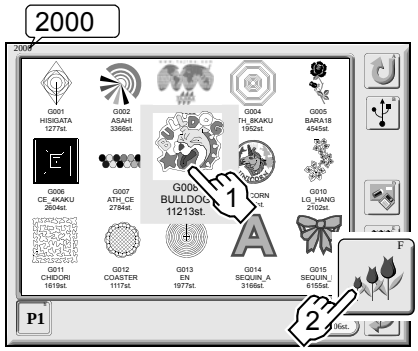
(1) Icon A

1010



(2) Design data, icon F

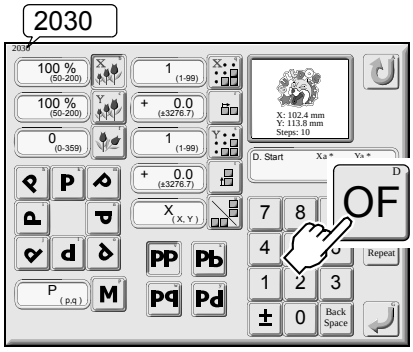
2000



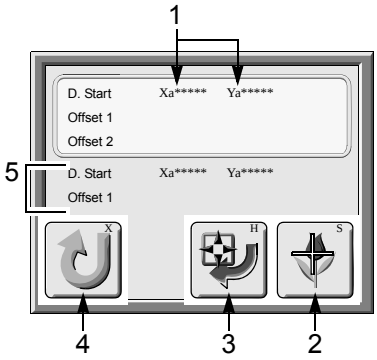
1. The current frame position
2. Registration of start position of design
3. The frame will move to the start position of design that is already registered.
4. Return
5. The current setting value

(3) Icon D

2030

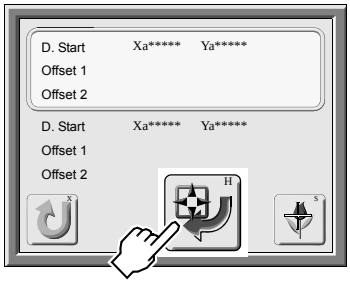


Setting screen of offset position



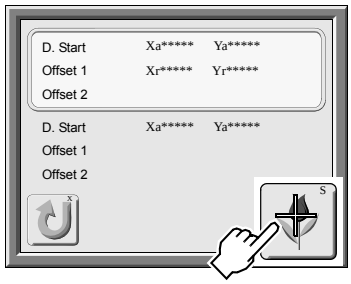
(4) Icon H

The frame will move to design start position.



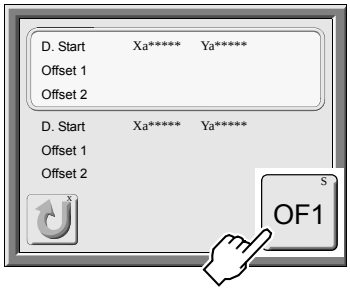
(5) Icon S

Register

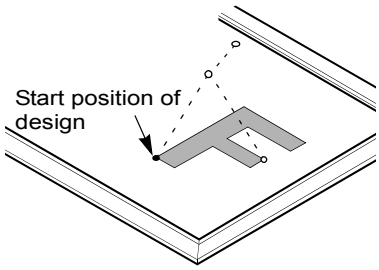


(6) To set

Offset will be canceled.



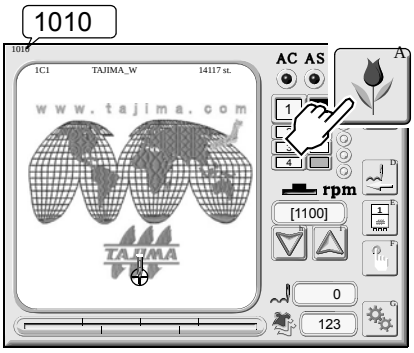
Start position of design



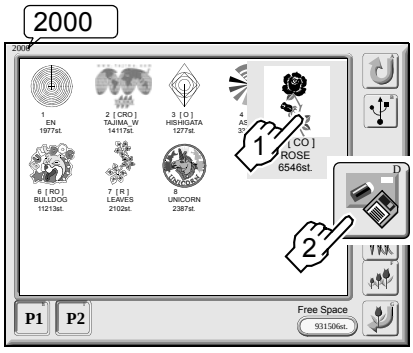
1-3. Automatic free-setting offset

This function moves the frame to a position you desire in the middle of embroidery (the number of stitches) and moves the frame to an offset position automatically after finishing embroidery.

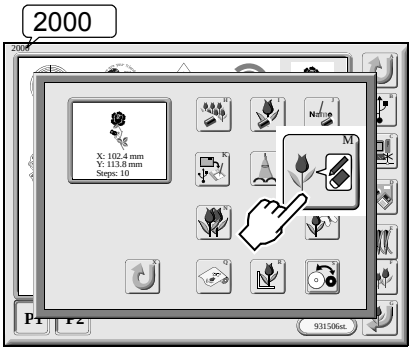
(1) Icon A



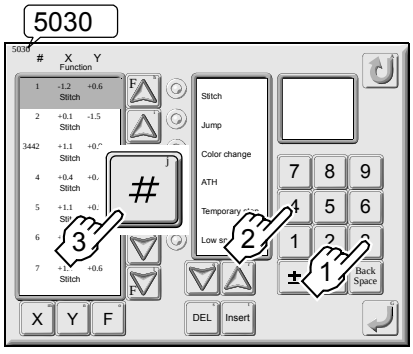
(2) Design data, icon D



(3) Icon M

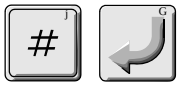


(4) Number of stitch (Example: 3440)



5030

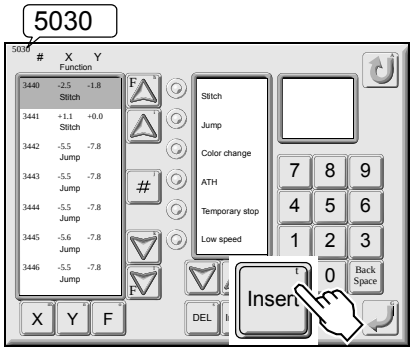
Either icon J or G is acceptable.。



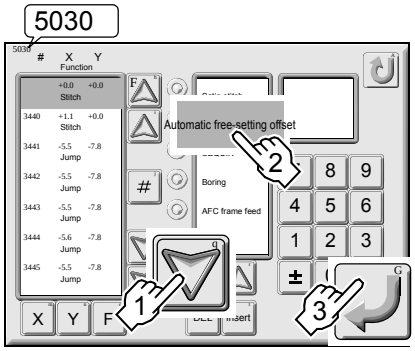
It is also possible to specify the stitch by using search function.(refer to p.83).

The position registered by “Automatic offset” is applied as an offset position (refer to p.65).

(5) Icon t (Insertion of stitch)



(6) Switch of the function code, setting



5030
A stitch will be inserted before the 3440th stitch.

To cancel offset, delete the 3440th stitch by the following procedure.

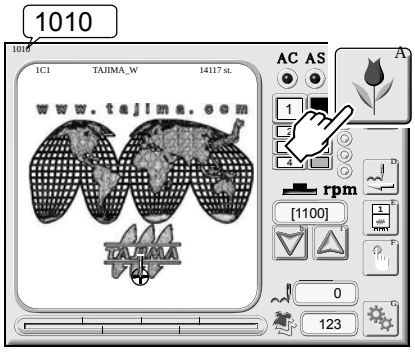
1. Select the 3440th stitch.
2. After deleting the stitch by the icon S (DEL), perform setting using the icon G.

1-4. Offsetting at automatic color change

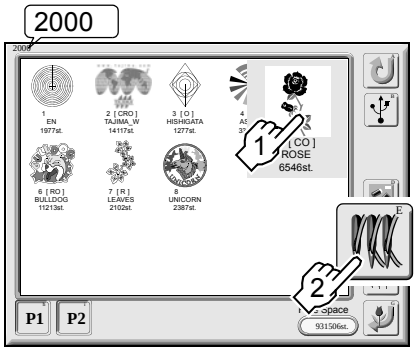
This function makes the frame move to an offset position automatically at a color change code in the middle of embroidery and after finishing embroidery.

The position registered by “Automatic offset” is applied as an offset position (refer to p.65).

(1) Icon A

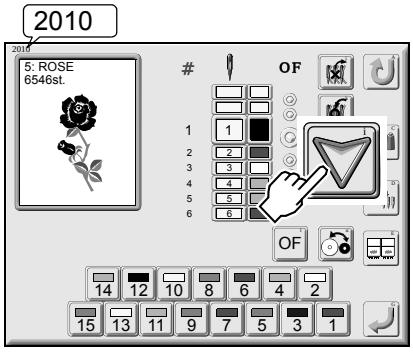


(2) Design data, icon E

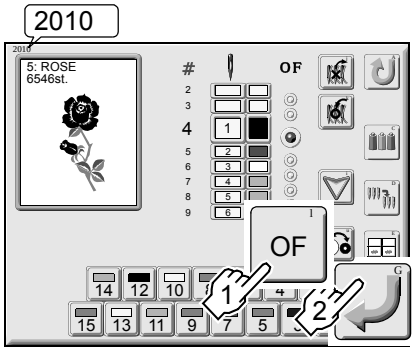


2010
Selecting the icon I (OF) will cause an offset mark ( ) to be shown (In this example, the mark is shown between steps 4 and 5).

(3) Select a step.



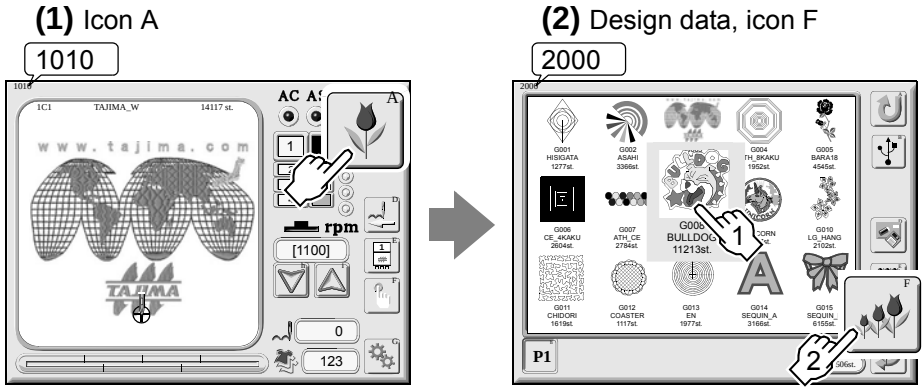
(4) Icon I, setting

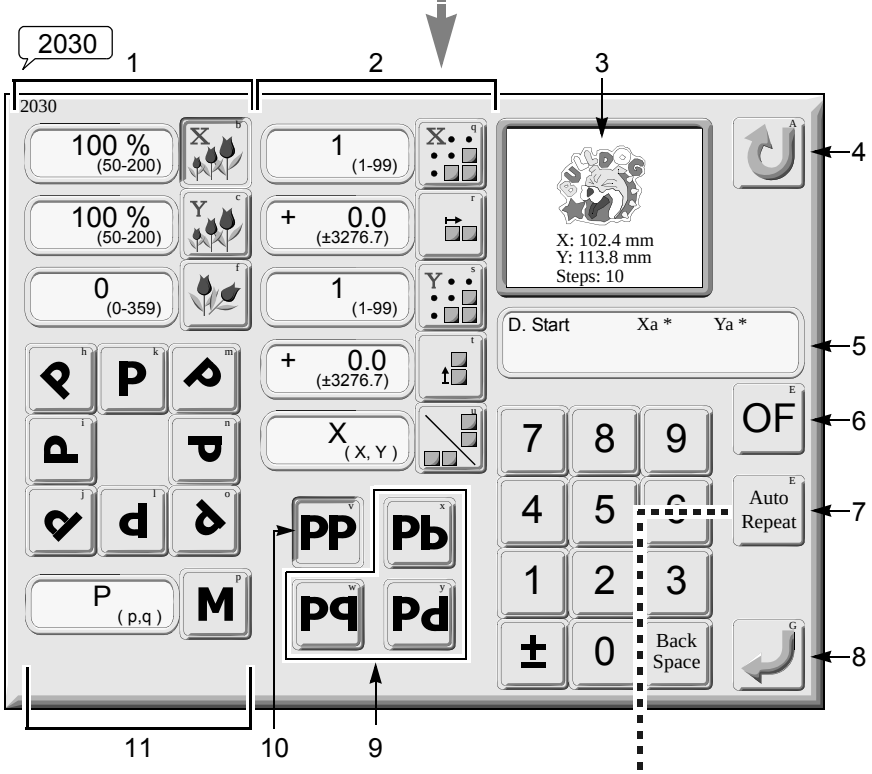


To cancel offset, delete the offset code by the following procedure.

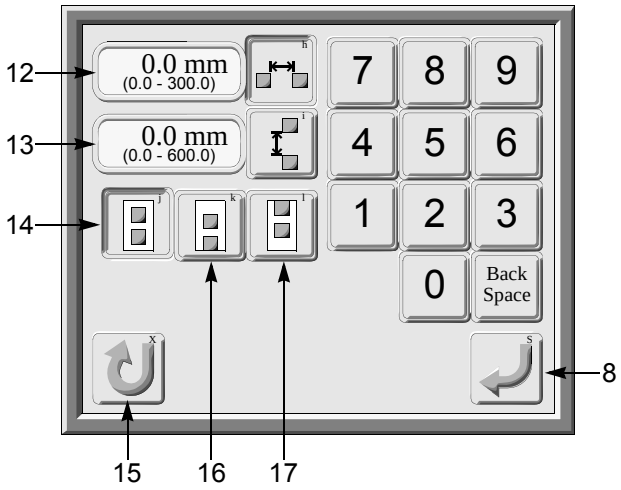
1. Select the step including an offset code using the icon i.
2. Delete the offset mark using the icon I (OF).
3. Perform setting using icon G.

2. Data conversion and repeat





Automatic arranging screen of repeat



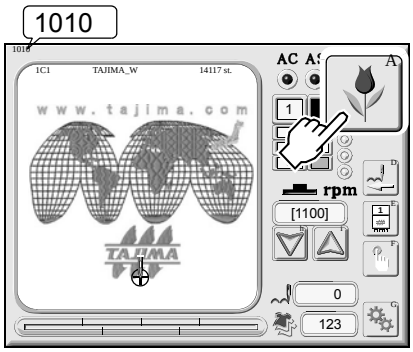
Data conversion
Scale up/down, rotation, mirror image reversion of design

1. Scale up/down (refer to p.70)
2. Repeat (refer to p.71)
3. Data-set design
4. To return to screen 2000
5. Start position of design (of which data is set)
6. Automatic offset (refer to p.65)
7. Automatic arrangement (refer to p.72)
8. Set
9. Irregular repeat (refer to p.73)
10. Usual repeat (refer to p.71)
11. Rotation, mirror image reversion (refer to p.70)
12. Crosswise direction, design interval amount (Clearance)
13. Lengthwise direction, design interval amount (Clearance)
14. To arrange designs at the center against the embroidery space
15. To return to the screen 2030
16. To arrange designs from the front side against the embroidery space
17. To arrange designs from the rear side against the embroidery space

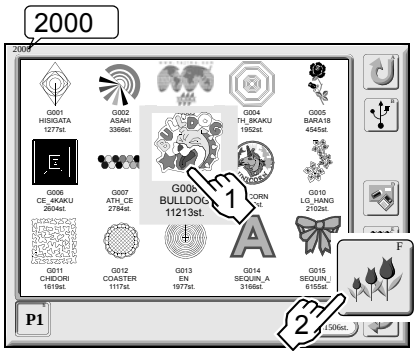
2-1. Scale up/down of design

It does not affect the original design data.

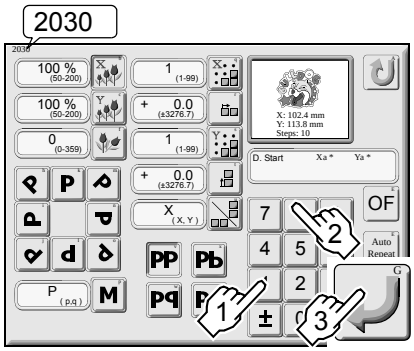
(1) Icon A



(2) Design data, icon F



(3) Input a crosswise (X) scale ratio, setting.

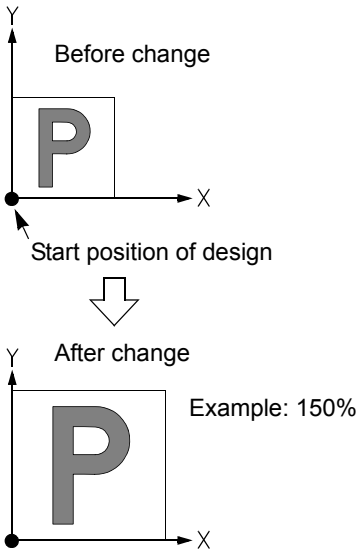


When the same scale ratio is applied to lengthwise and crosswise directions, this completes the setting.

When setting scale ratio individually:

After that, select the icon c (Y) to input a scale factor and perform setting using the icon G.

Scale up/down of design



2-2. Rotation/mirror image reversion of design

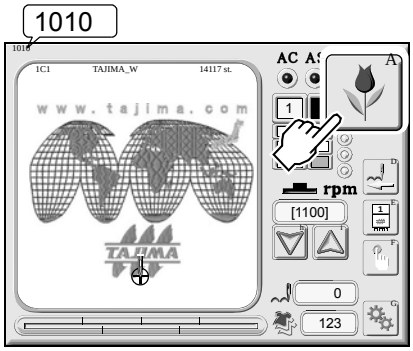
*Mirror image reversion: It reverses right and left directions of design.

Before reversion

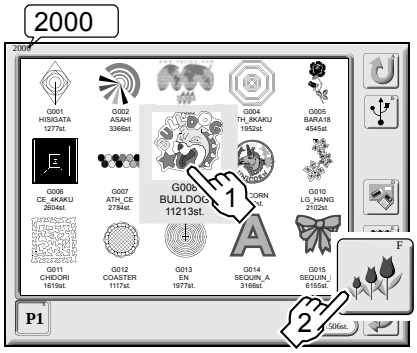
After reversion

It does not affect the original design data.

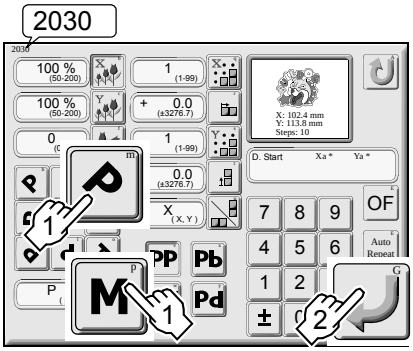
(1) Icon A



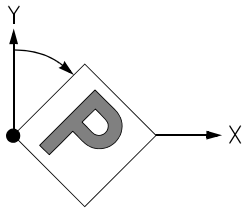
(2) Design data, icon F



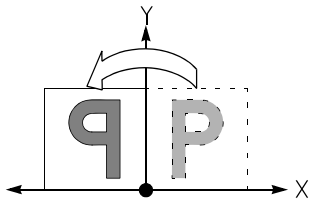
(3) Rotation by 45° or mirror image reversion



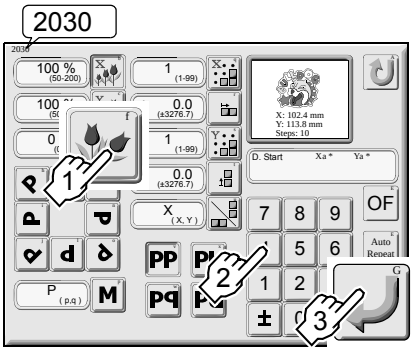
45° unit:



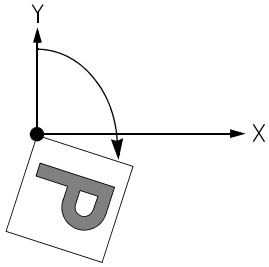
Mirror image reversion:

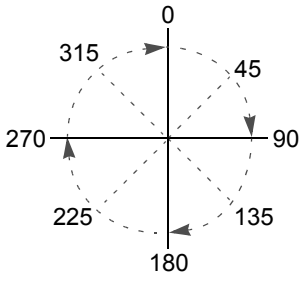


(4) Input a value of rotating angle



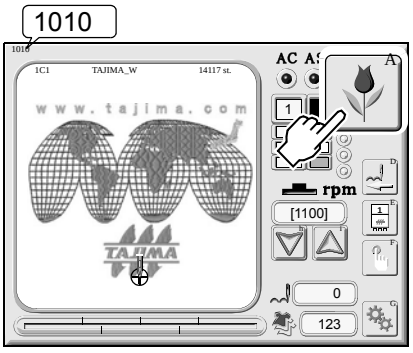
Value input (1° unit)



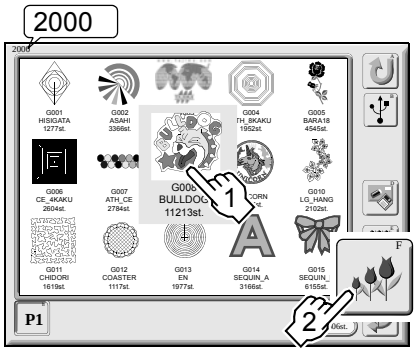


2-3. Repeat of design

(1) Icon A



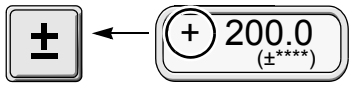
(2) Design data, icon F



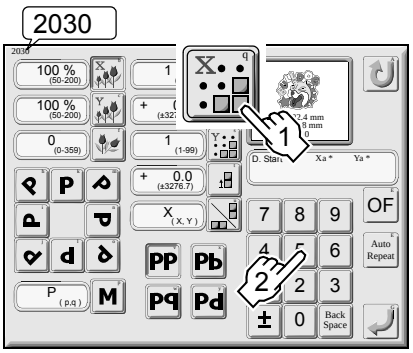
It does not affect the original design data.

The number of repeats (three times)

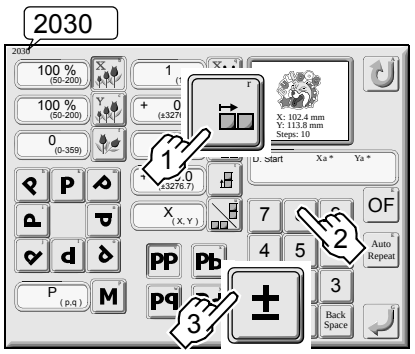
Select repeating direction by using code icon.



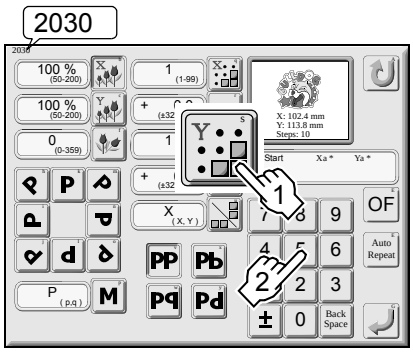
(3) Input the number of repeats in crosswise (X) direction.



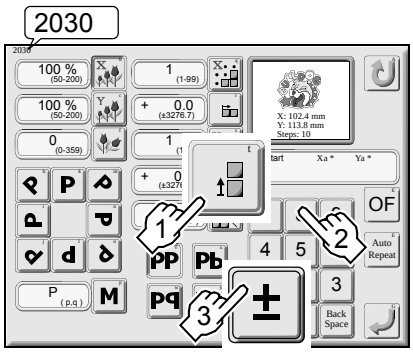
(4) Input a design interval amount (clearance between designs)



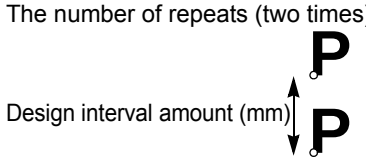
(5) Input the number of repeats in lengthwise (Y) direction.



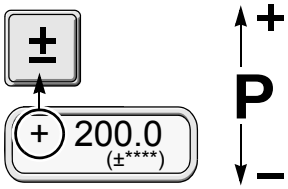
(6) Input a design interval amount (clearance between designs)



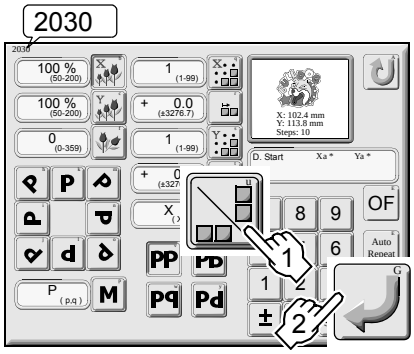
The number of repeats (two times)



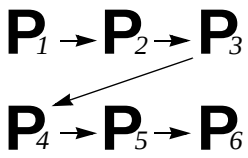
Select repeating direction by using code icon.



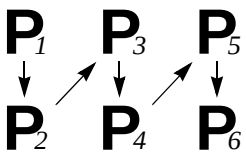
(7) Icon U (select priority direction of lengthwise or crosswise), setting



Priority to crosswise (X)



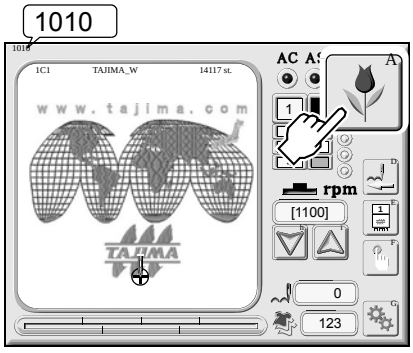
Priority to lengthwise (Y)



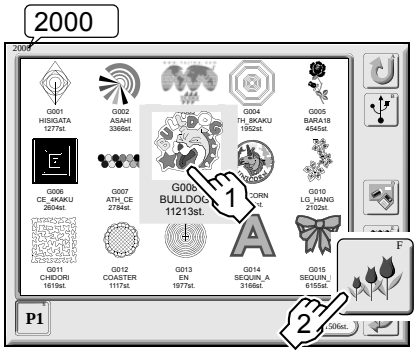
2-4. Repeat (to arrange designs automatically)

The machine will automatically calculate the number of designs that can be arranged within the embroidery space, and then will perform embroidery (Automatic arrangement)..

(1) Icon A

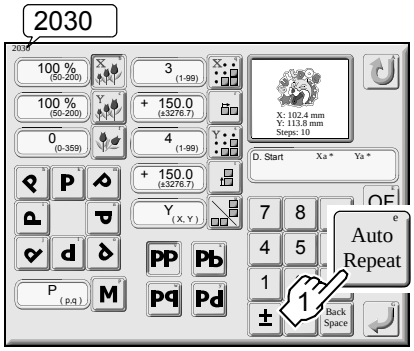


(2) Design data, icon F



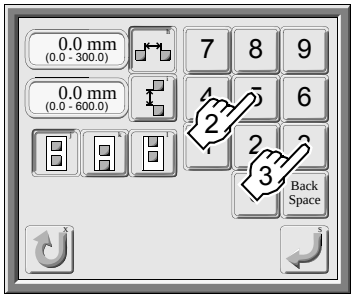
It does not affect the original design data.

(3) Icon e



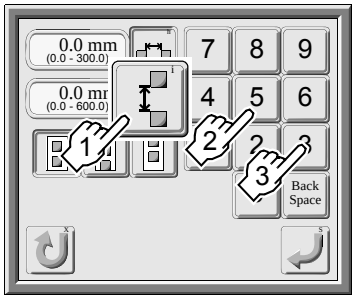
(4) Input a design interval amount (clearance between designs)

Automatic arranging screen



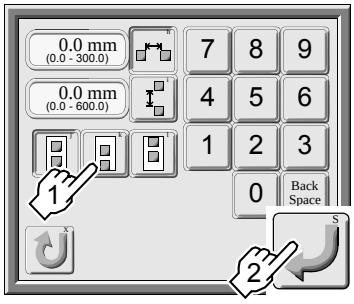
Automatic arranging screen (refer to p.69)

(5) Icon i, input a design interval amount in lengthwise direction.



(6) Select an arranging mode, set

Automatic arranging screen



These are arranging methods in embroidery space.

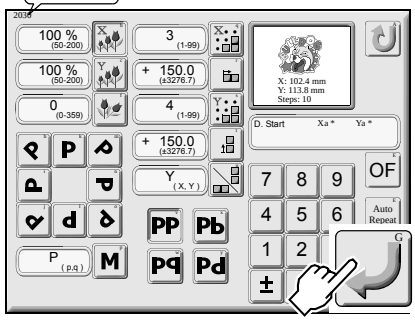
: To arrange at the center

: To arrange from the front side

: To arrange from the rear side

(7) To set

2030



The number of repeats of X/Y and start position of design will be registered.

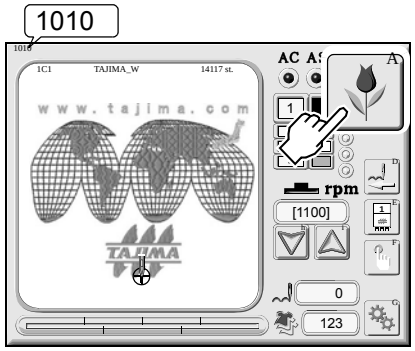
2-5. Repeat (to reverse designs alternately)

Embroider the design to which repeat is set by reversing the design alternately at odd-numbered times and even-numbered times (Irregular repeat).

It does not affect the original design data.

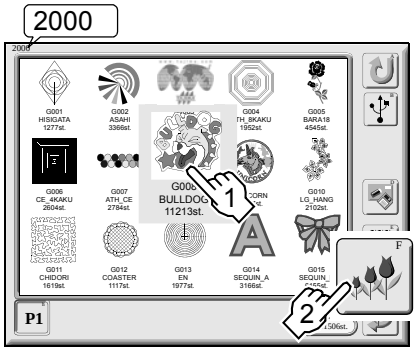
(1) Icon A

1010



(2) Design data, icon F

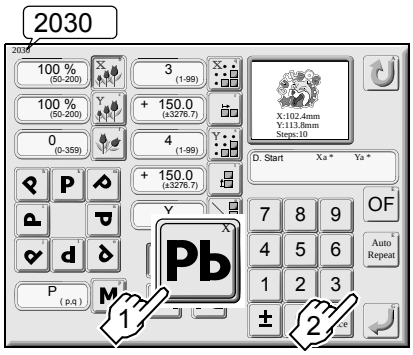
2000



(3) Setting for repeat (refer to p.71)
(The number of crosswise/lengthwise repeats, design interval amount, priority direction)

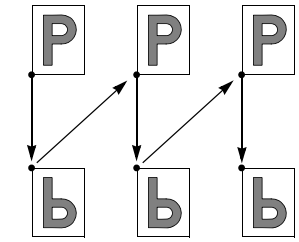
(4) Setting for irregular repeat

a. To perform reversion based on X-axis: Pb

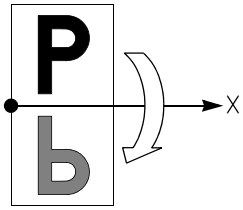


Example: Priority to Y

Odd-numbered times



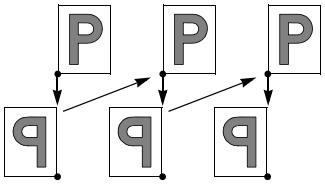
Even-numbered times



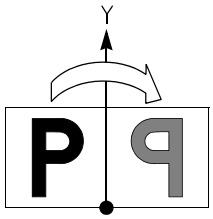
b. To perform reversion based on Y-axis: Pq

Example: Priority to Y

Odd-numbered times



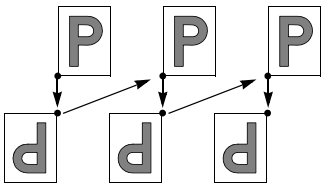
Even-numbered times



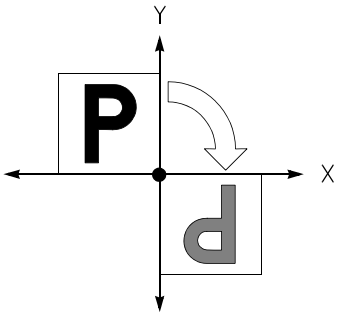
c. When rotating by 180°: Pd

Example: Priority to Y

Odd-numbered times



Even-numbered times

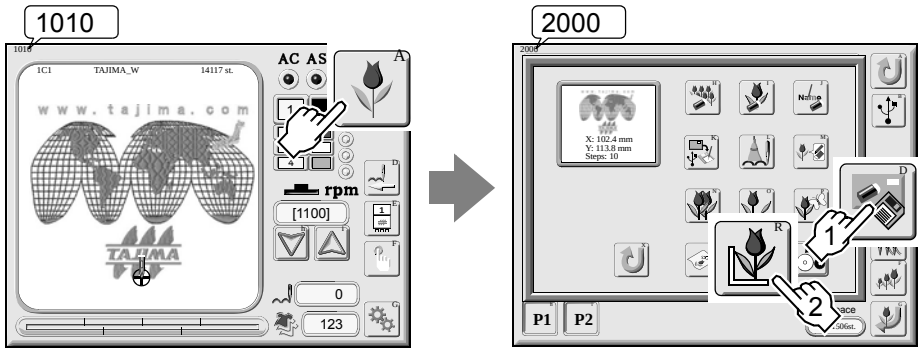


3. Marking

This function makes positioning data for material (Marking design) by design unit in applique and/or placing embroidery, and registers the data into the memory.

The marking design registered in the memory will be registered automatically into a vacant number of the memory design screen (Screen 2000) as “M-Design name”.

Calling marking setting screen (Screen 5070)



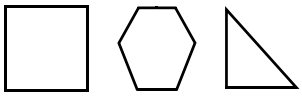
Marking design includes point design and contour design. Select either of them according to shape of material and/or application for embroidery works.

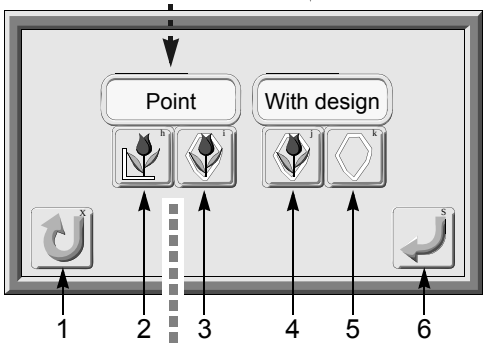
Point design

Example

Contour design

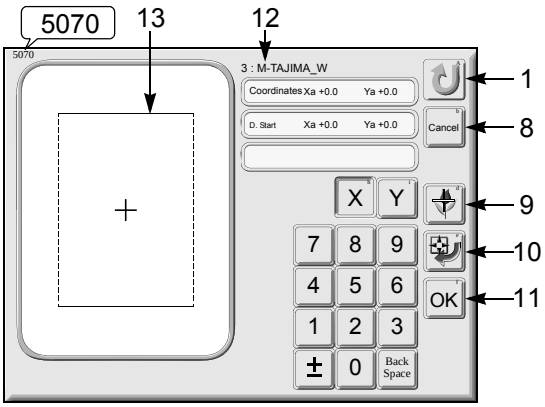
Example



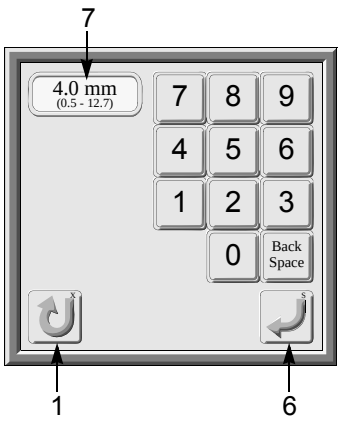


Setting screen

In case of point design

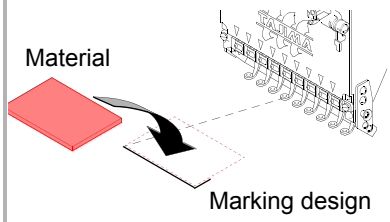


In case of contour design



Outline (refer to p.160)

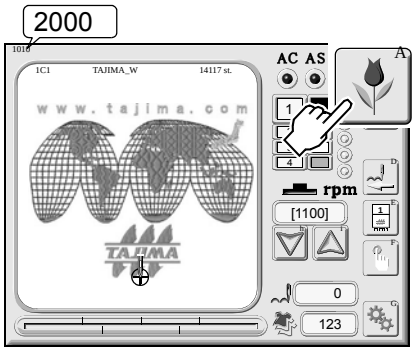
An example of marking



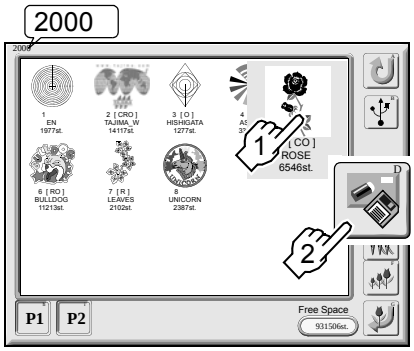
It puts a mark (marking) of running stitches to the position where material is put.

1. Return
2. Point design
3. Contour design
4. With design
   To register marking design with design data to embroider into the memory
5. Without design
   To register marking design into the memory independently
6. Set
7. Length of one stitch
8. To return by one point
9. Displaying the start position of design (When it is registered)
10. Selecting this icon after input of numerical keys will cause the frame to move the input position.
11. Set
12. Marking design name
    3 : M - TAJIMA_W
    ↑
    Memory No.
13. Embroidery space (Lengthwise direction only)

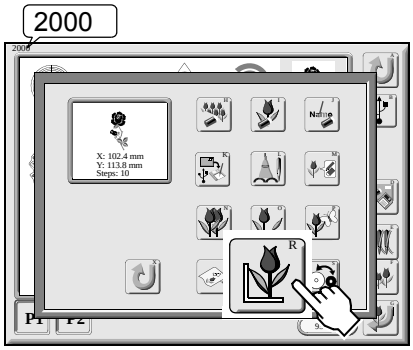
(1) Icon A



(2) Design data, icon D

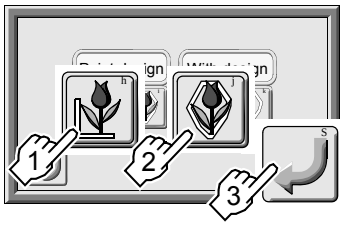


(3) Icon R



(4) Icon h, icon j, setting

Selecting screen of marking



An example when selecting point design with design

*When you select a contour design, the screen will become stitch length selecting screen (refer to p.77).

[Point], [With design]

To register point design with design data into the memory

[Point], [Without design]

To register point design into the memory independently

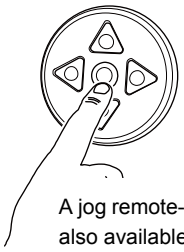
[Contour], [With design]

To register a contour design with design data into the memory

[Contour], [Without design]

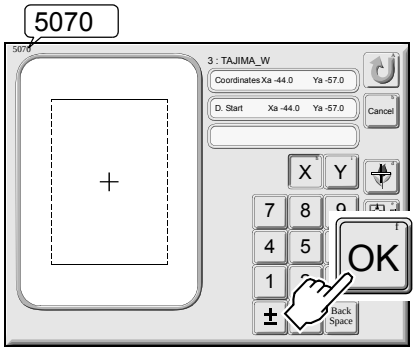
To register a contour design into the memory independently

(5) Move the frame to the start position of design.



A jog remote-controller is also available for use.

(6) Icon f (OK)



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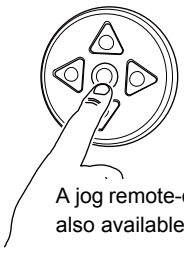
It is also possible to input coordinates by using numerical keys.

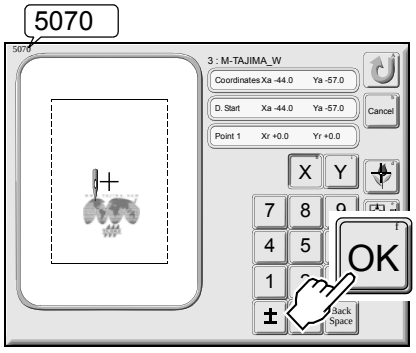
Select “X” and input a value. Select “Y” and input a value. Press “OK” to register these values.

(7) Move the frame to point 1



A jog remote-controller is also available for use.

(8) Icon f (OK)



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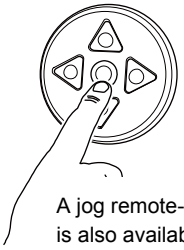
Point 1 (Example)

• Point 1

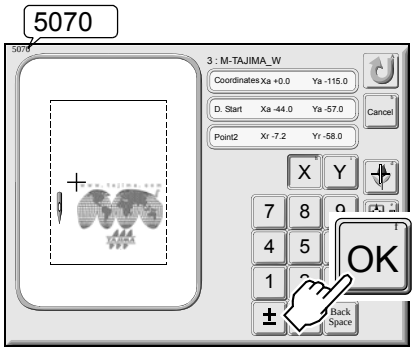
It is also possible to input coordinates by using numerical keys.

(9) Move the frame to point 2

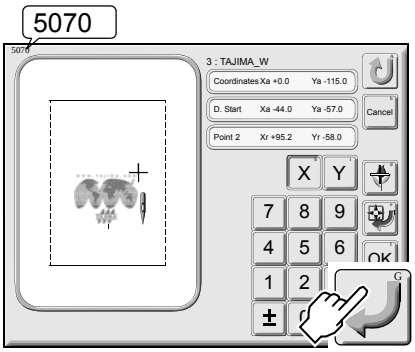


A jog remote-controller is also available for use.

(10) Icon f (OK)

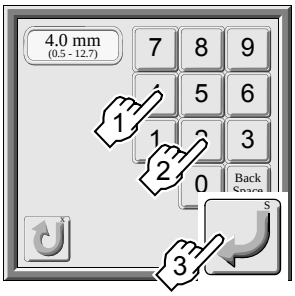


(11) Store the marking data.



(12) Select a stitch length (length of one stitch), setting.

Selecting screen of stitch length



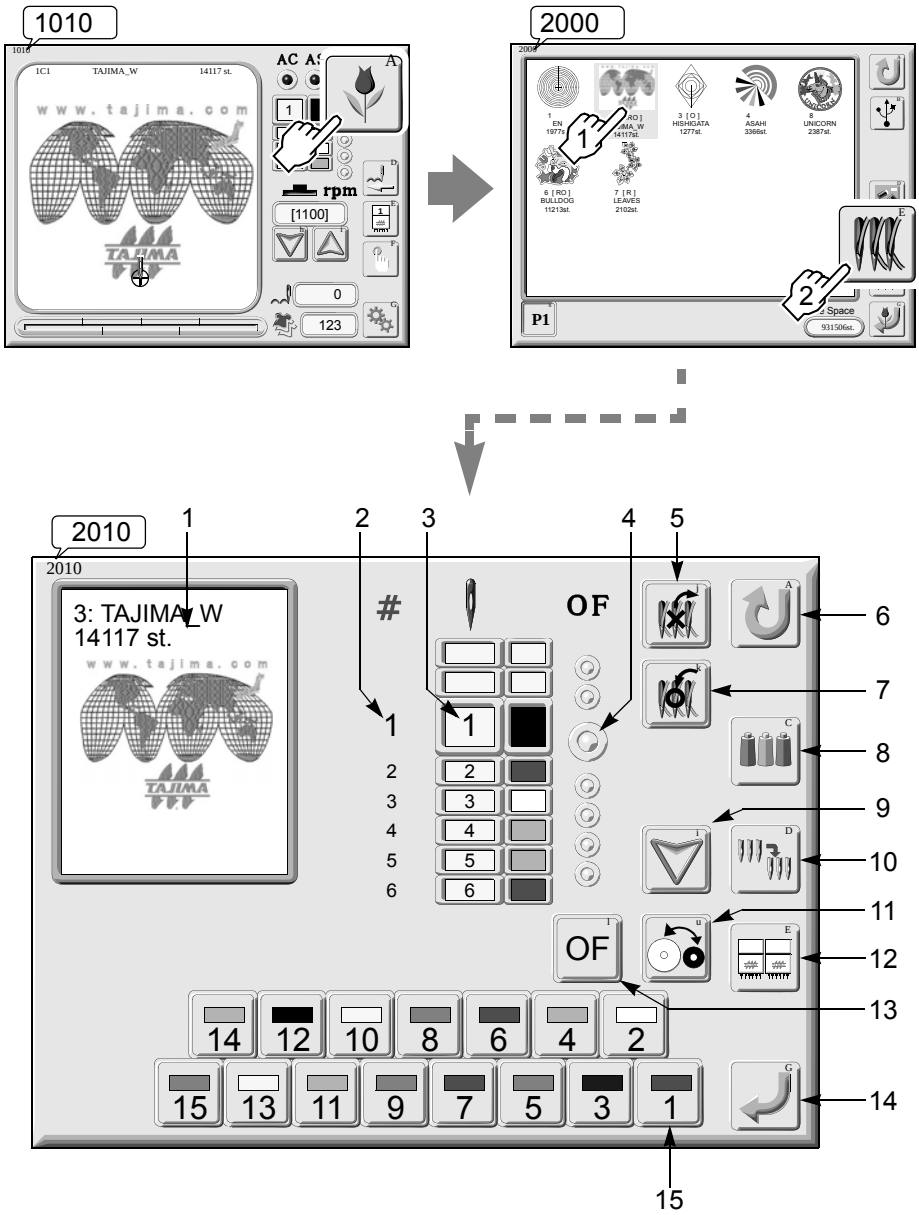
Design name of marking will be registered as “M-Design name” on the screen 2000.
In case of marking data only, it will be registered as “M-”.

5070
Point 2 (Example)

It will become possible to store marking data when registering 2 or more points. Up to 10 points can be registered.

4. Needle bar setting

Calling needle bar setting screen (Screen 2010)

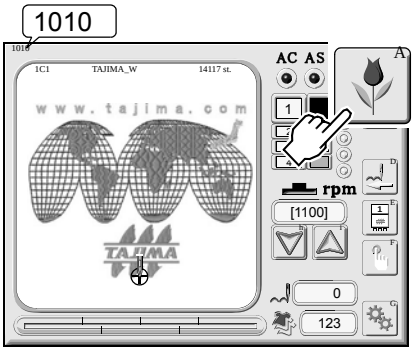


1. Design being selected
   The blinking part is the current needle bar step.
2. Needle bar step
   The large-sized number indicated the current needle bar step.
3. Needle bar No.
4. Setting condition of offsetting at automatic color change (refer to p.68)
5. Deletion of needle bar step
6. To return to screen 2000
7. Insertion of needle bar step (refer to p.80)
8. Setting for needle bar color (refer to p.79)
9. Selection of needle bar step
10. Needle bar conversion (refer to p.81)
11. Sequin reversion: to replace the first color with the second color of sequin or vice versa (refer to p.145)
12. Head group (refer to p.95)
13. Setting for offsetting at automatic color change (refer to p.68)
14. Set
15. Needle bar No.

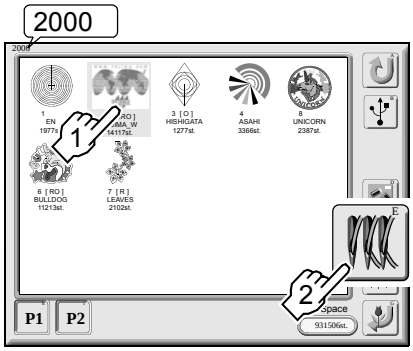
4-1. Needle bar color

This function allocates color you desire to each needle bar. This function displays color image of design data. It is possbile to check the image of sewn finishing.

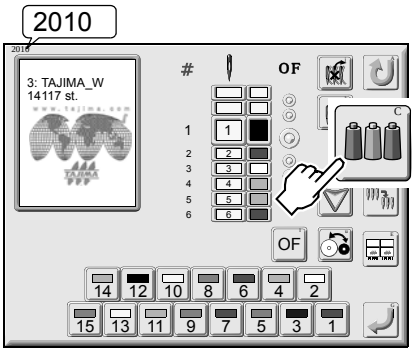
(1) Icon A



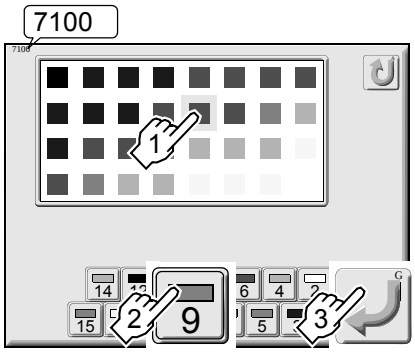
(2) Design data, icon E



(3) Icon C



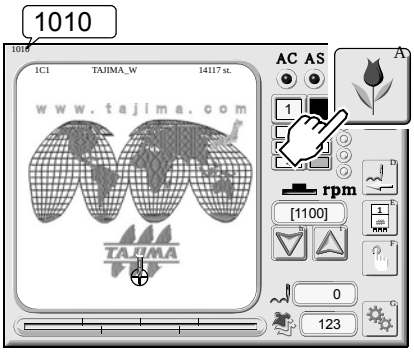
(4) Select color and needle bar No. you desire, setting



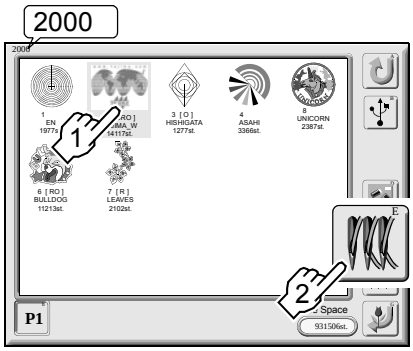
7100
Selecting order of your requested color and needle bar does not matter (Reversed order is available for setting).

4-2. Deletion of needle bar step

(1) Icon A



(2) Design data, icon E

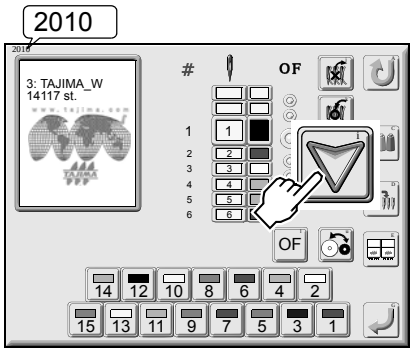


Even if the step is deleted, it does not affect the original design data.
The following is an example when deleting step 3

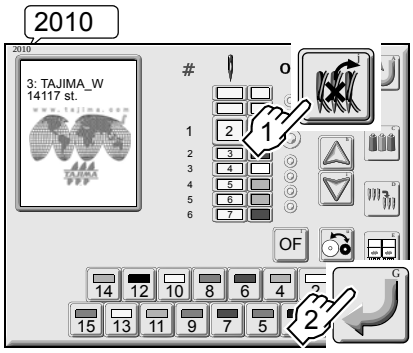
Before deletion		After deletion	
1	5 (Red)	1	5 (Red)
2	4 (White)	2	4 (White)
3	3 (Yellow)	3	2 (Green)
4	2 (Green)	4	1 (Blue)
5	1 (Blue)	5	5 (Red)

Step
Needle bar No.
Needle bar No. of step 1 will be applied.

(3) Select the step to delete

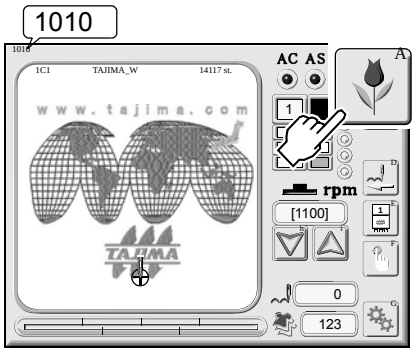


(4) Icon j, setting

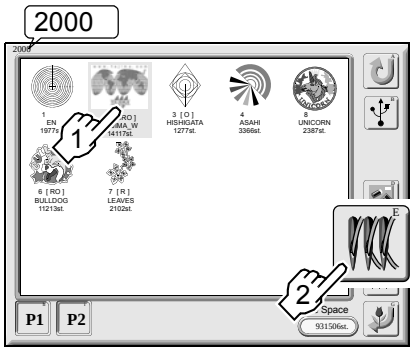


4-3. Insertion of needle bar step

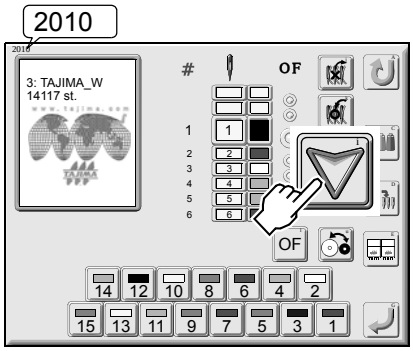
(1) Icon A



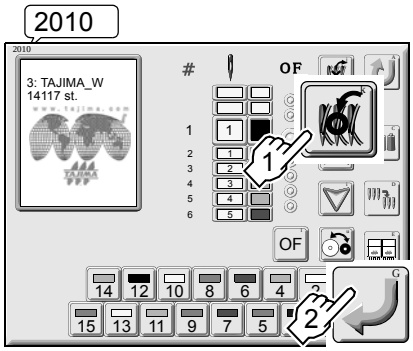
(2) Design data, icon E



(3) To select step

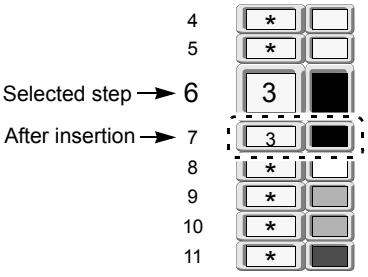


(4) Icon k, setting



Even if a step is inserted, it does not affect the original design data.

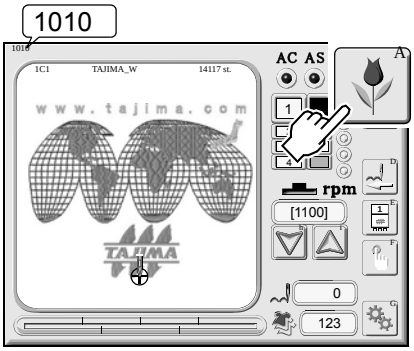
The selected step will be copied and will be inserted to the next step.



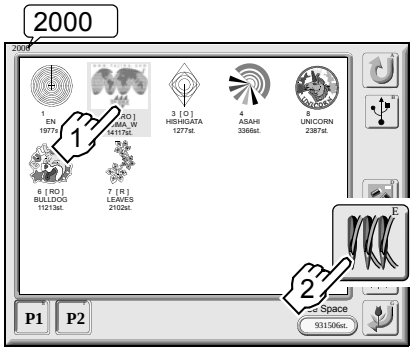
4-4. Needle bar conversion

Replace needle bar No. set by “Needle Bar Selection” collectively by needle bar unit.

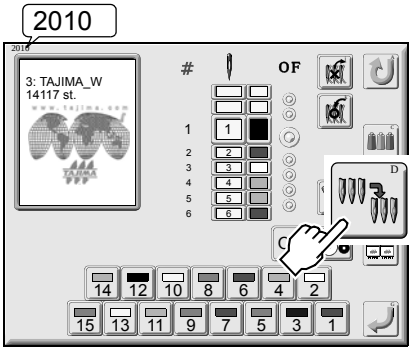
(1) Icon A



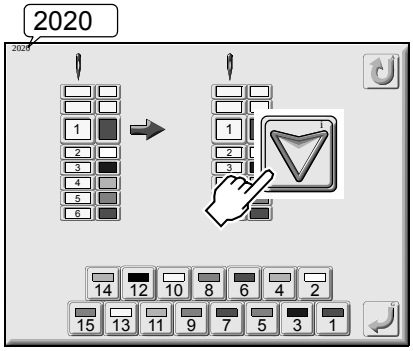
(2) Design data, icon E



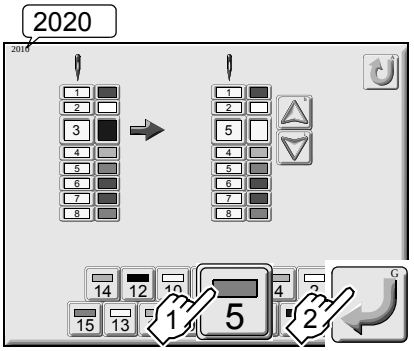
(3) Icon D



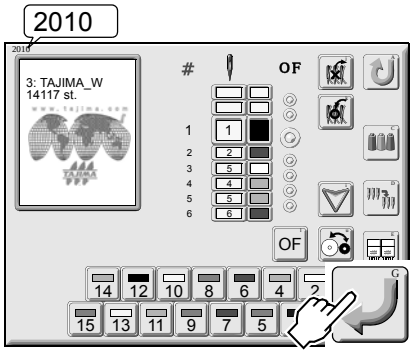
(4) Select the needle bar No. before replacement



(5) Select the needle bar No. after replacement, setting



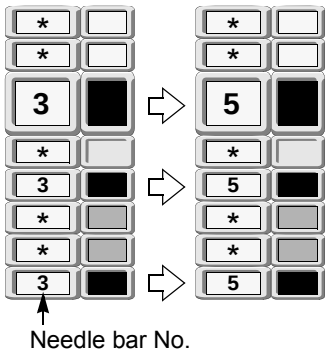
(6) To set



An example when replacing needle bar No.3 with No.5

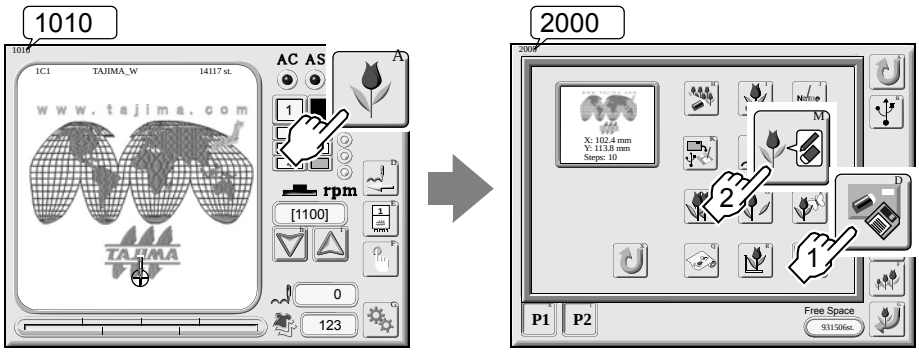
It is possible to replace specified needle bar No. with other needle bar No. collectively. Therefore, you can save more labor of operation than in the case when you change needle bar No. by “Needle Bar Selection” one by one.

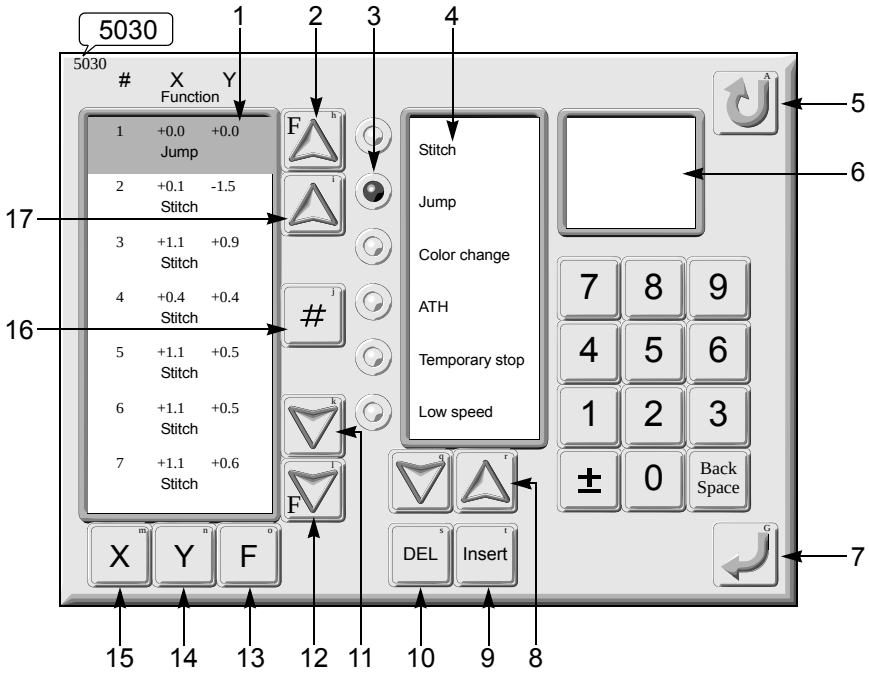
The following is an example when replacing needle bar No.3 with No.5 collectively.



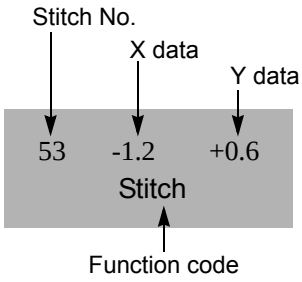
5. Stitch edit

Calling stitch editing screen (Screen 5030)





1. Selecting stitch



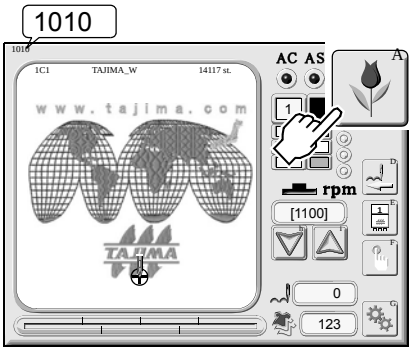
2. Function search
   It searches previous function codes.
3. Selecting lamp
   An example when jump is selected
4. Function code (refer to p.84)
5. Return
6. Detailed setting (refer to p.87)
7. Set or stitch search
8. Switching of display of function code
9. Insertion of stitch (refer to p.85)
10. Deletion of stitch (refer to p.85)
11. Displaying the next seven stitches
12. Function search
    Searching the next function code
13. Selection of function code (refer to p.87)
14. Selection of Y data (refer to p.87)
15. Selection of X data (refer to p.87)
16. Stitch search (refer to p.83)
17. Displaying the previous seven stitches

5-1. Stitch search (Stitch number search)

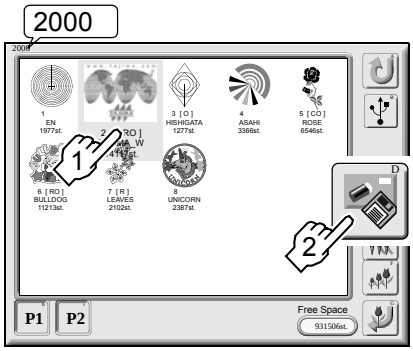
This function specifies the stitch No. in design data and searches the stitch.

5030
Either icon J or G is acceptable.

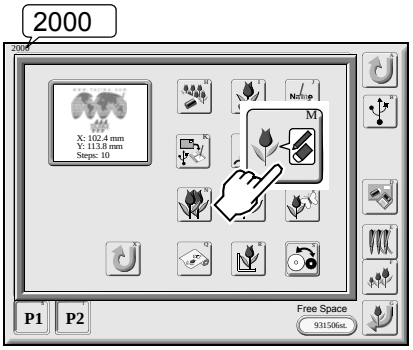
(1) Icon A



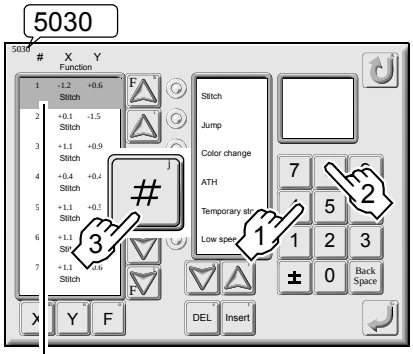
(2) Design data, icon D



(3) Icon M



(4) Input a stitch number (Example: 480), icon J



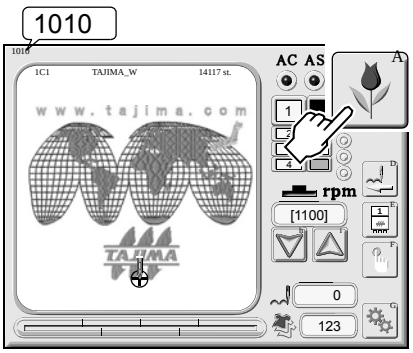
In this example, the 480th stitch has been searched.

5-2. Stitch search (Function code search)

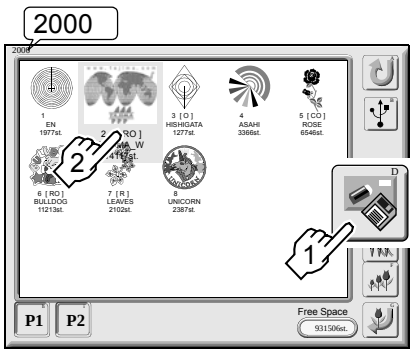
This function specifies the type of function code and searches the stitch to delete or modify the stitch including the function code.

Function code (refer to p.84)

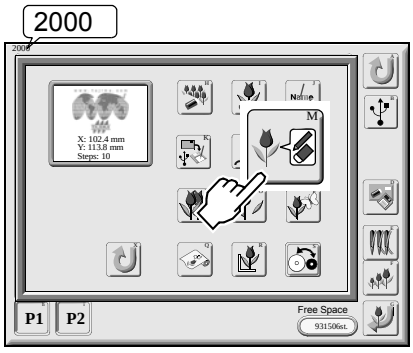
(1) Icon A



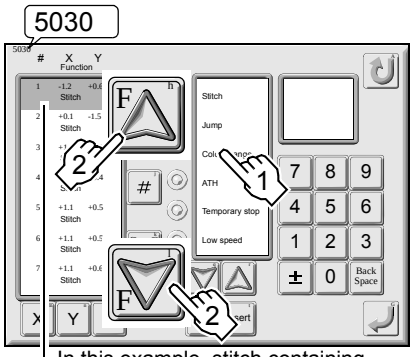
(2) Design data, icon D



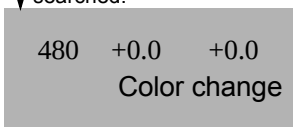
(3) Icon M



(4) Select a function code, icon h or l



In this example, stitch containing color change code has been searched.



Function codes and those movements correspondent to the machine are as shown in the chart below.

Function code	Machine movement
Stitch	To sew stitches
Jump	To perform jumping
Color change	To stop color change
ATH	To trim upper/under threads automatically Even if only “Upper thread” is selected, the machine trims upper/under threads. (When the machine does not have the mechanism of trimming the upper thread only, even if “Upper thread” is selected, upper/under threads are trimmed.)
Temporary stop	To stop temporary at Stitch or Jump
Low speed	To perform low speed operation in a Stitch section specified
	To perform low speed operation in a Jump section specified
Satin stitch	To perform satin stitch conversion in a section specified
Automatic free-setting offset	To perform offset frame travel
Sequin	To move the sequin device in a section specified
Boring	To perform boring in a section specified
AFC frame feed	To feed AFC frame automatically

5030

It is also possible to search a stitch by selecting plural function codes.

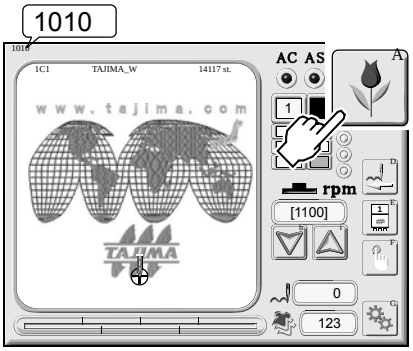
Every time selecting the icon h or l will search the next stitch.

Stitches before the selected stitch will be searched.

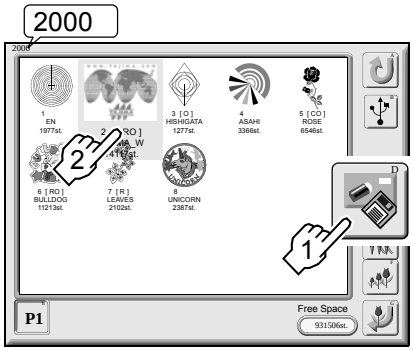
Stitches after the selected stitch will be searched.

5-3. To insert a stitch

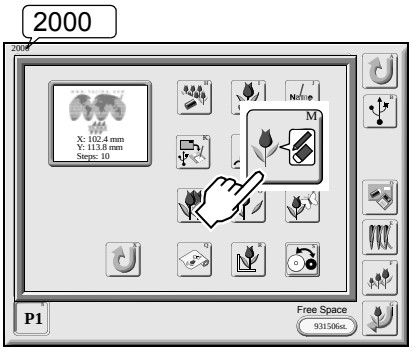
(1) Icon A



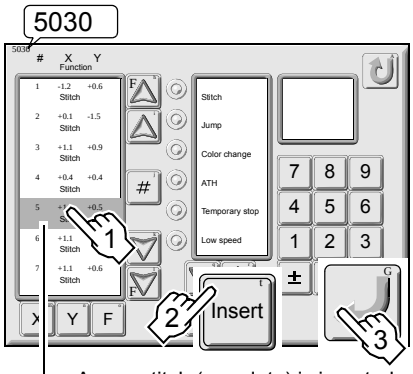
(2) Design data, icon D



(3) Icon M



(4) Select icon t after selecting a stitch, setting



A new stitch (non data) is inserted.

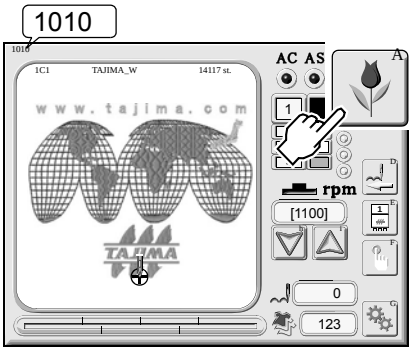
It is also possible to select a stitch by “Stitch searching” (refer to p.83). A new stitch will be inserted before the selected stitch.

When modifying the contents of stitch after that (refer to p.87)

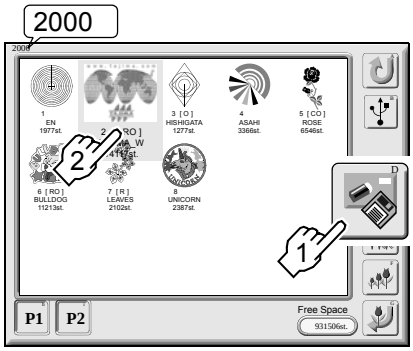
5-4. To delete a stitch

Delete a stitch.

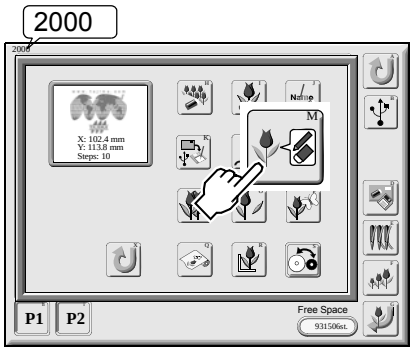
(1) Icon A



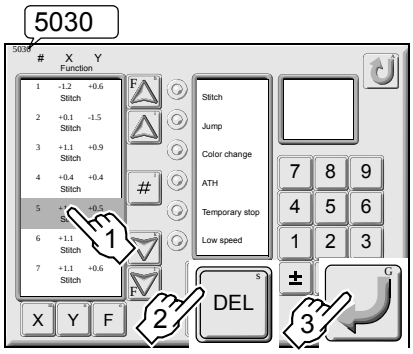
(2) Design data, icon D



(3) Icon M



(4) Select a stitch and delete it

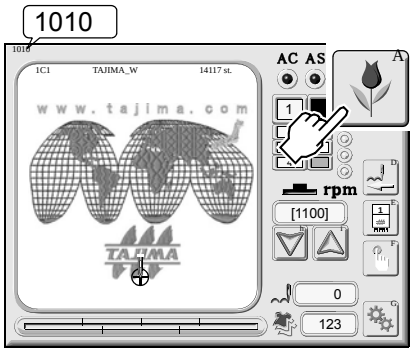


It is also possible to select a stitch by “Stitch searching” (refer to p.83).

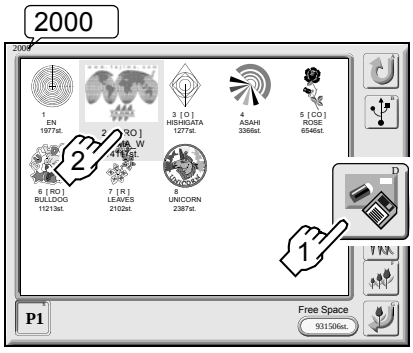
5-5. Modification of stitch

Modify the contents of stitch data (X/Y data, function code).

(1) Icon A

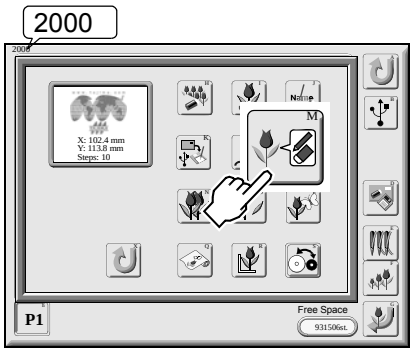


(2) Design data, icon D

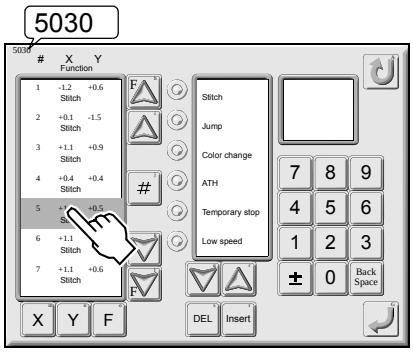


It is also possible to select a stitch by “Stitch searching” (refer to p.83).

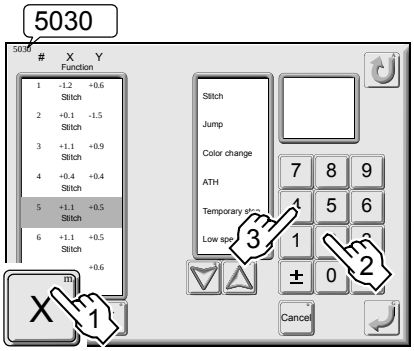
(3) Icon M



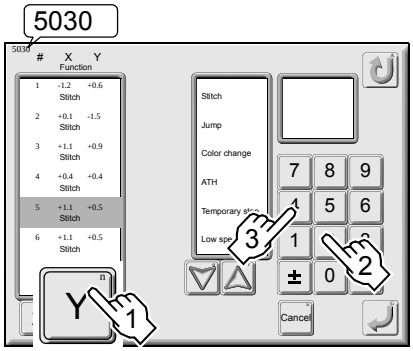
(4) Select the stitch to modify



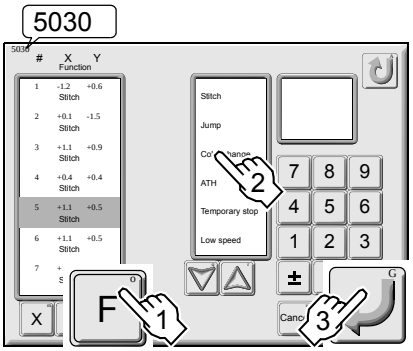
(5) Modification of numeric value in X data



(6) Modification of numeric value in Y data



(7) Select a function code, setting

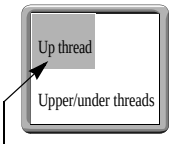


Although it is possible to change without selecting Icon o (F), the icon to be displayed after setting is different (refer to the right figure).

It is possible to change the contents of movements or the stitch of the section depending on the type of the function code (refer to p.84).

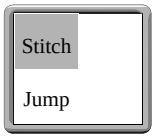
*: These are examples of function codes possible to change the setting of the movement contents (refer to p.82). When selecting one of them, changeable item will be displayed on the detailed setting screen as the figure below.

ATH



Even if “Upper thread” only is selected, the machine trims upper/under threads. (When the machine does not have the mechanism of trimming the upper thread only, even if “Upper thread” is selected, upper/under threads are trimmed.)

Temporary stop

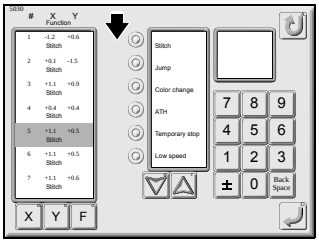


When any of the following icons is selected, it is possible to change the setting.

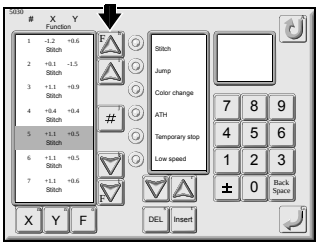
5030
Setting range of X, Y data:
-12.7 to +12.7 (mm)

5030
When finishing operation only with change of X or Y data:
Icon displayed on the screen differs depending on the following operation procedure ( ).

After inputting a numerical value



After inputting a numerical value F →



5-6. Cleanup

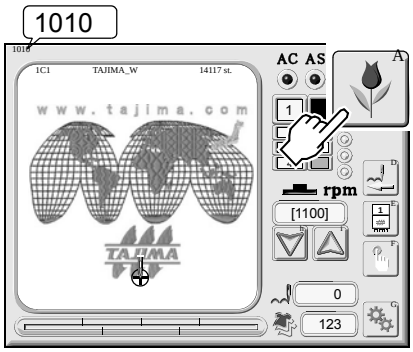
This function removes fine stitch(es) in data.

CAUTION

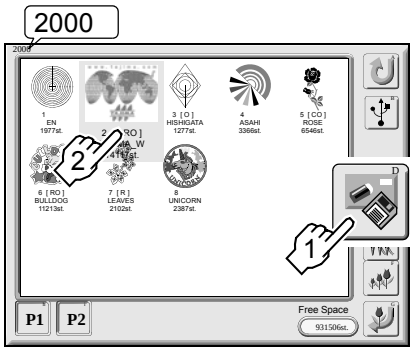
The original design data will be overwritten to design data after cleanup by this operation. Copy the original design data according to need. (refer to p.89).

This function is effective to reduce thread cast-off and/or thread breakage by shifting a fine stitch to the neighbor (prior or later) stitch.

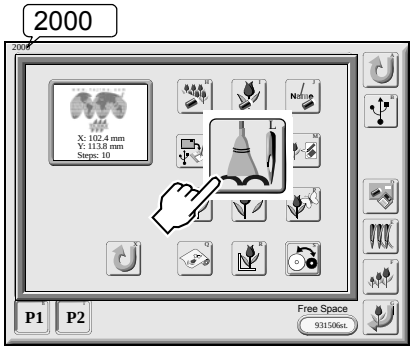
(1) Icon A



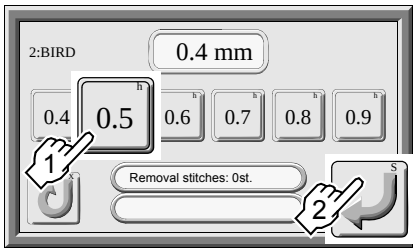
(2) Design data, icon D



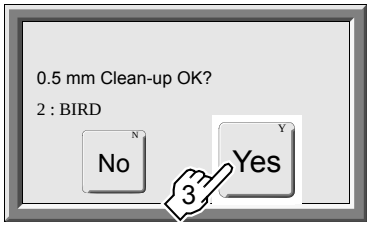
(3) Icon L



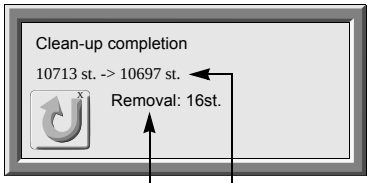
(4) A value of stitch to remove



In this example, stitches of 0.5 mm or less will be removed.



After removal

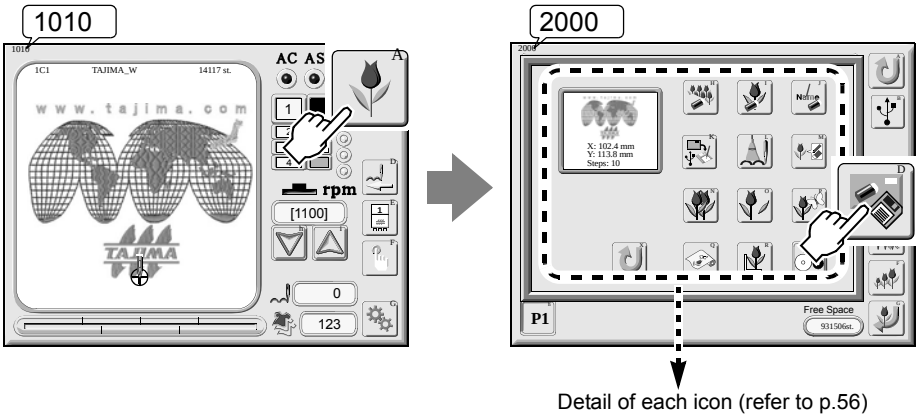


The number of removed stitches

The number of design stitches after removal

6. Design data edit

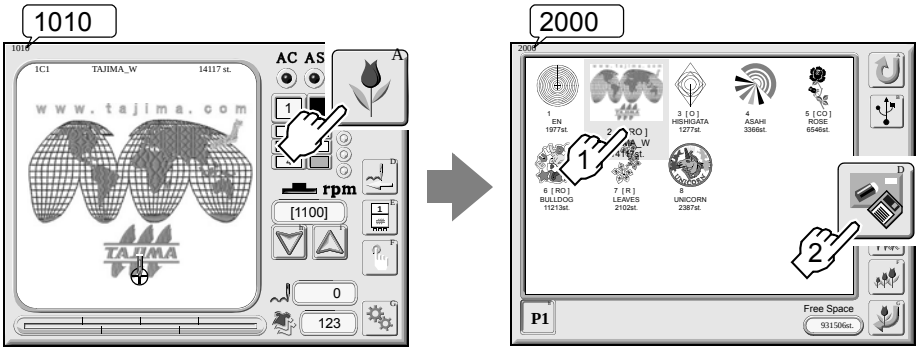
Calling design data edit screen (Screen 2000)



6-1. Copy of design

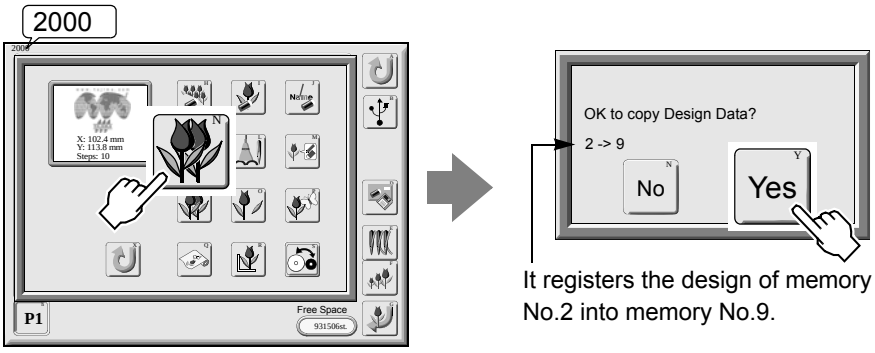
(1) Icon A

(2) Design data, icon D



(3) Icon N, setting

(4) Yes

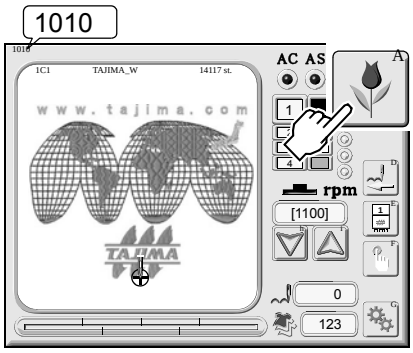


6-2. Design divide

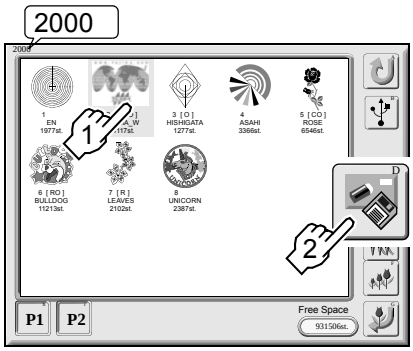
CAUTION

The original design data will be divided. Copy the original design data according to need (refer to p.89).

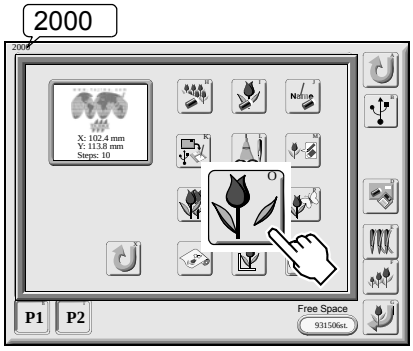
(1) Icon A

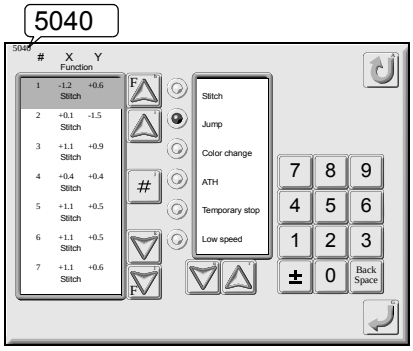


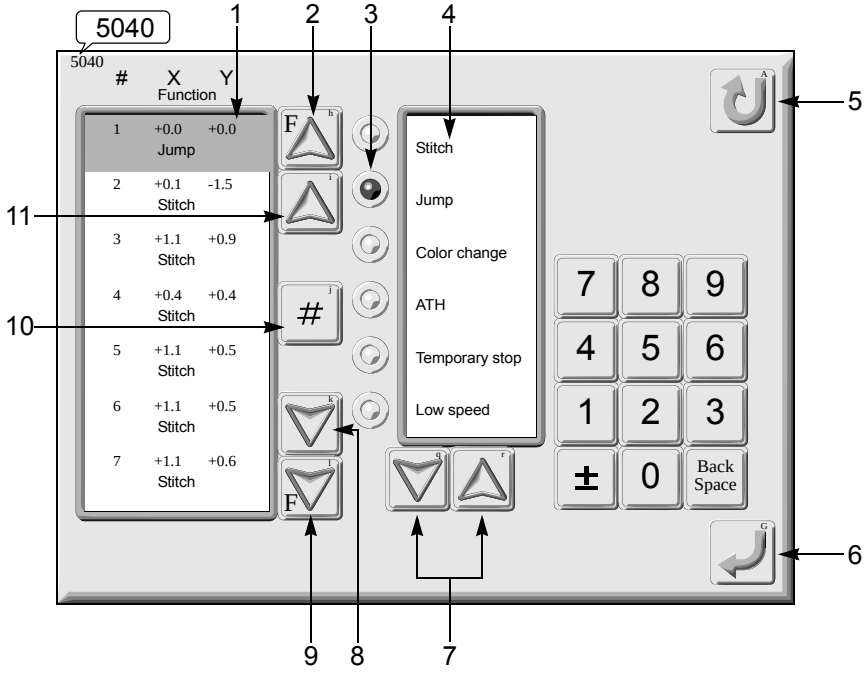
(2) Design data, icon D



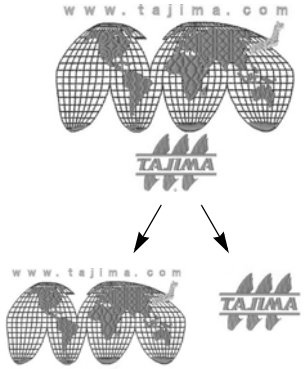
(3) Icon o





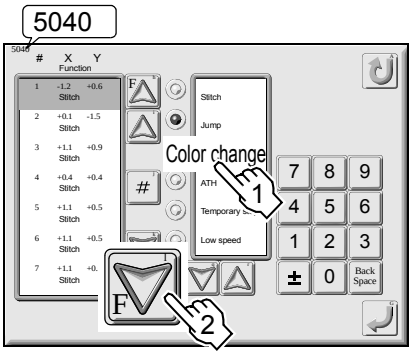


The specified color change code will become the dividing point.

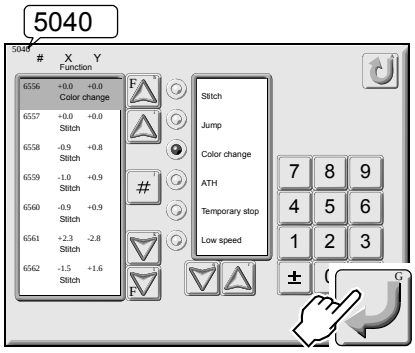


1. Selecting stitch
2. Function search
   It searches previous function codes.
3. Selecting lamp
   An example when jump is selected
4. Function code
5. Return
6. Register or stitch search
7. Switching of display of function code
8. Displaying the next seven stitches
9. Function search
   Searching the next function code
10. Stitch search (refer to p.83)
11. Displaying the previous seven stitches

(4) Search a color change code (dividing point)

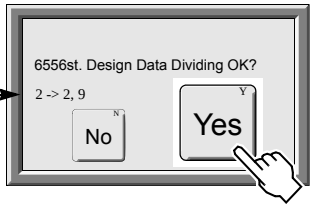


(5) To set (divide)

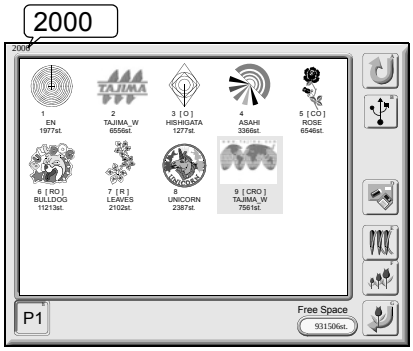


(6) Yes

An example when deviding into memory No.2 and No.9



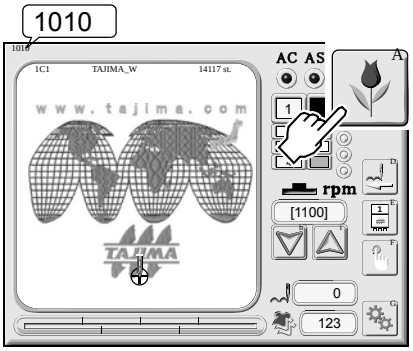
It divides the design of memory No.2 into memory No.2 and No.9 and store these designs.



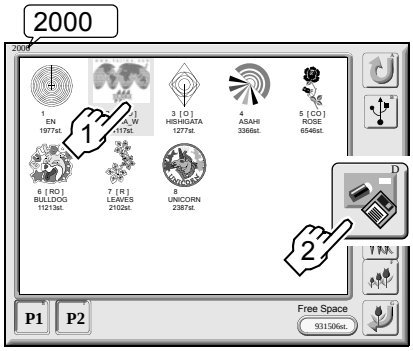
6-3. Design combine

This function combines plural designs and registers these designs as one design into the memory.

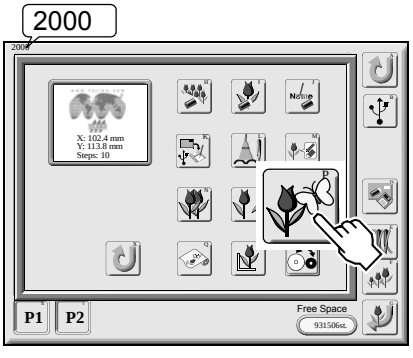
(1) Icon A

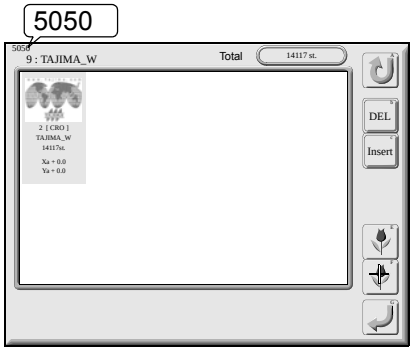


(2) Design data, icon D

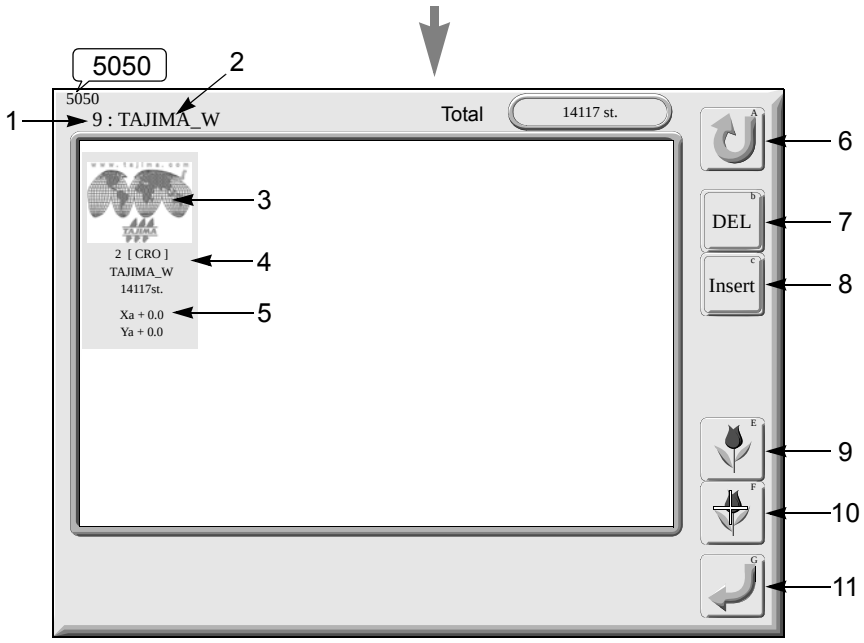


(3) Icon p



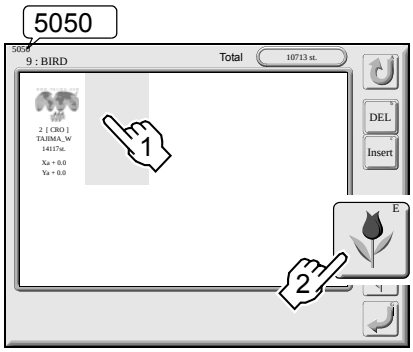


It is not possible to register the combined design exceeding 1,000,000 stitches into the memory of the machine.

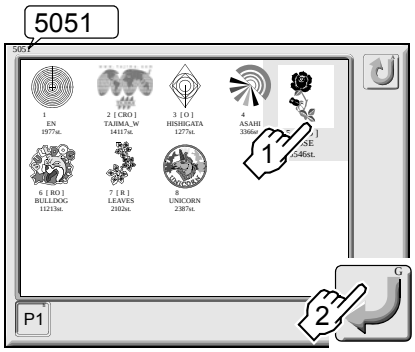


1. Memory No. registered in the memory (Screen 2000)
2. Combined design name
3. First design
4. In the state of being selected
5. Start position of design
6. Return
7. To delete design
   Only the second design and after can be deleted.
8. To copy the design being selected
9. View of designs available for combination (Screen 5051)
10. Setting for the start position of design
11. Set

(4) Keep a storing place for the second design, icon E

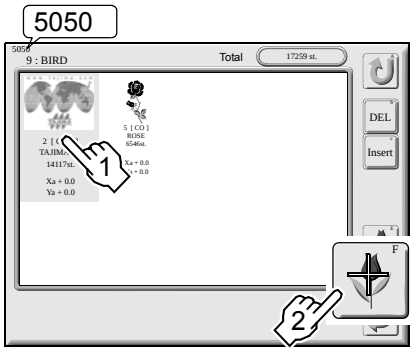


(5) Select the second design, setting

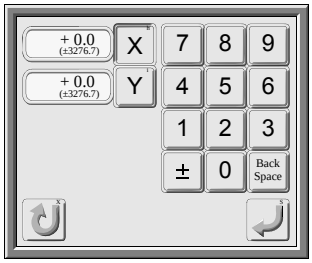


5051
This is a view of designs that can be combined.

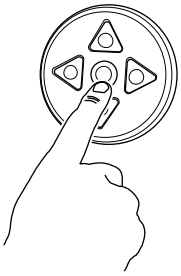
(6) Select the first design, icon F



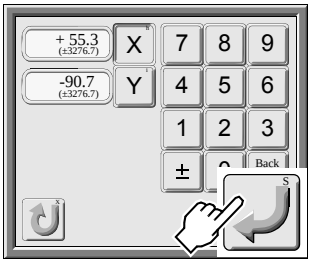
Inputting screen of the start position of design



(7) Move the frame to the start position of design by using frame travel keys



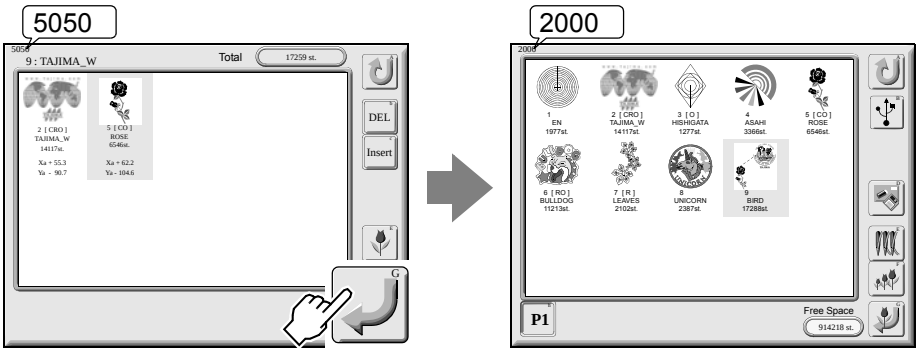
(8) To set



(9) Set the start position of the second design.

Set the start position of the second design and after in the same procedure.

(10) To set (combine)



It is also possible to input frame coordinates by using numerical keys.

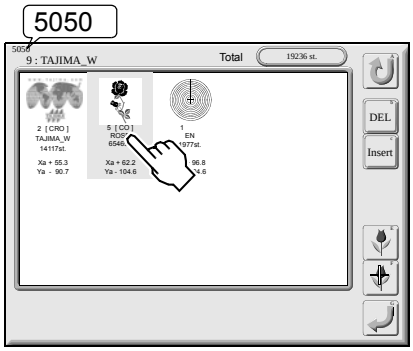
2000
The combined design has been registered in memory No.9.

6-4. Deletion and copying of combined design

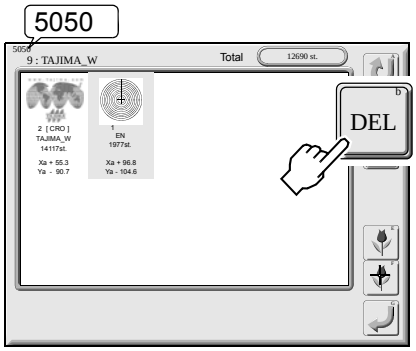
Delete, copy or change (replace) a combined design in the middle of operation of design combining.

To delete :

(1) Select the design to delete

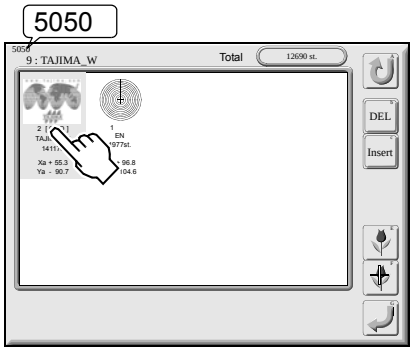


(2) Icon b

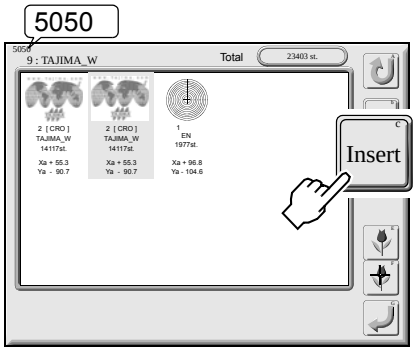


To copy:

(1) Select the design to copy

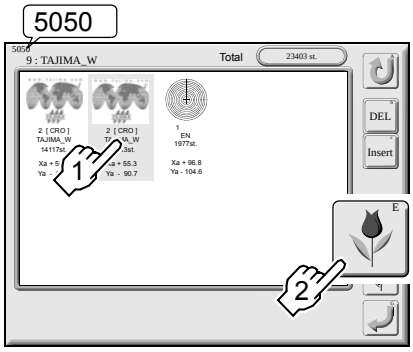


(2) Icon C

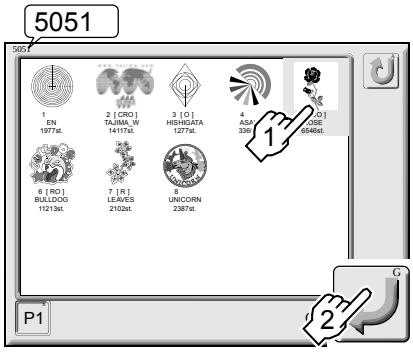


To change: replace the selected design with another design

(1) Select the design to change, Icon E



(2) Select the design to replace, setting

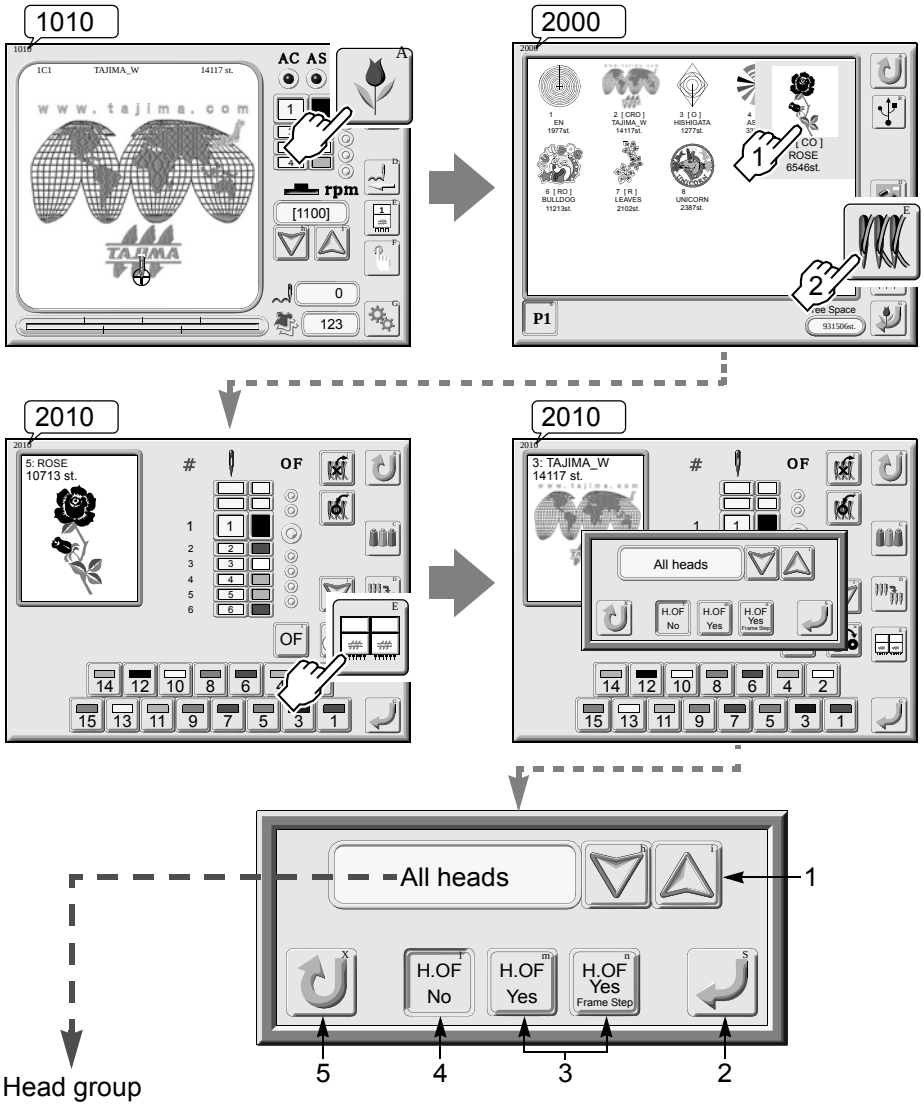


5050
Switching procedure of screen
(refer to p.91)

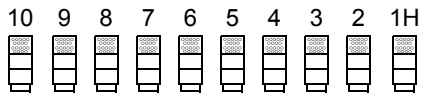
7. Embroidery by head group

This function groups plural heads (2 to 4 heads) and performs embroidery.

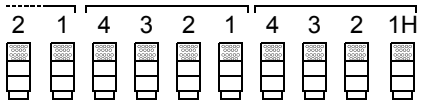
Calling head group screen (Screen 2010)



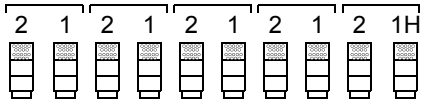
All heads (Usual embroidery)



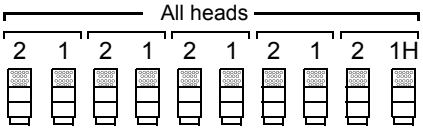
4H



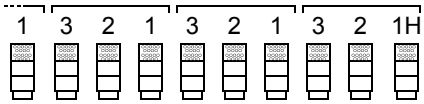
2H



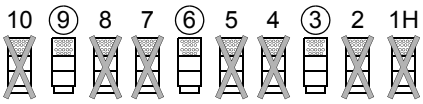
WJ2H (All heads+two heads)



3H



Selected heads



Thanks to this function, it becomes possible to embroider big sized design or to allocate colors exceeding the original number of needles (refer to p.96).

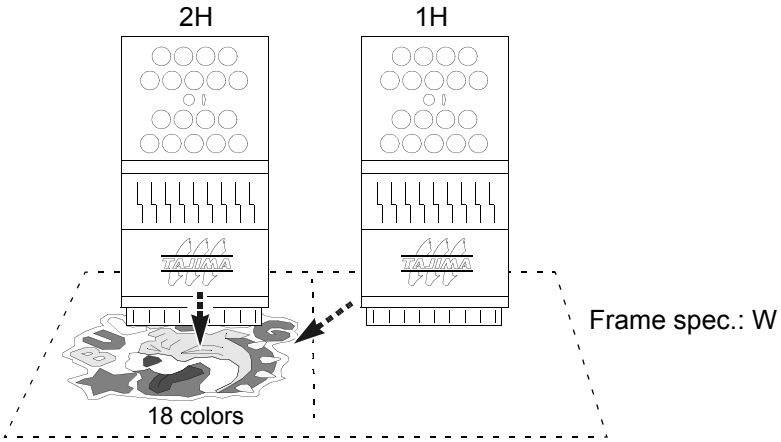
1. Head group will switch.
2. Set
3. To perform/not to perform head offset (moving between heads) (refer to p.158)

   H.OF Yes Frame Step :When sewing head changes, the machine will perform automatic frame travel and frame stepping by jump to the next head position at the same time (recommended).

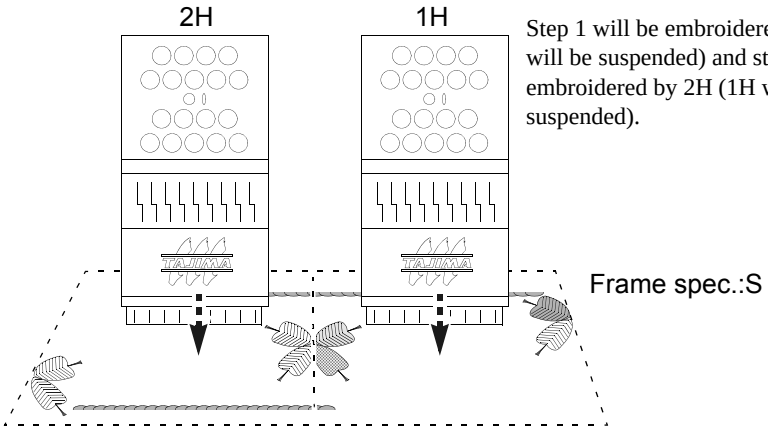
   H.OF Yes :When sewing head changes, the frame will move automatically to the next head position.
4. Not to perform head offset
5. Return

■An example when using “2H”:

When performing embroidery of 18 colors by using 9-needle machine

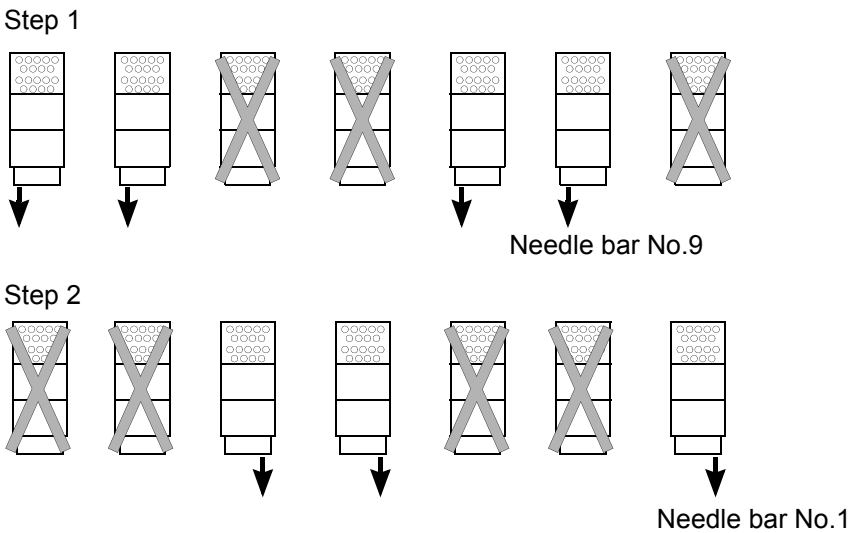


When embroidering one design in an embroidery space of two heads



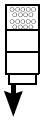
Step 1 will be embroidered by 1H (2H will be suspended) and step 2 will be embroidered by 2H (1H will be suspended).

■An example when using “Selected heads”



It is possible to move head and needle bar No. you desire by every step.

mark in the left illustration indicates the needle bar to perform embroidery.



7-1. Spec. and difference of each head group

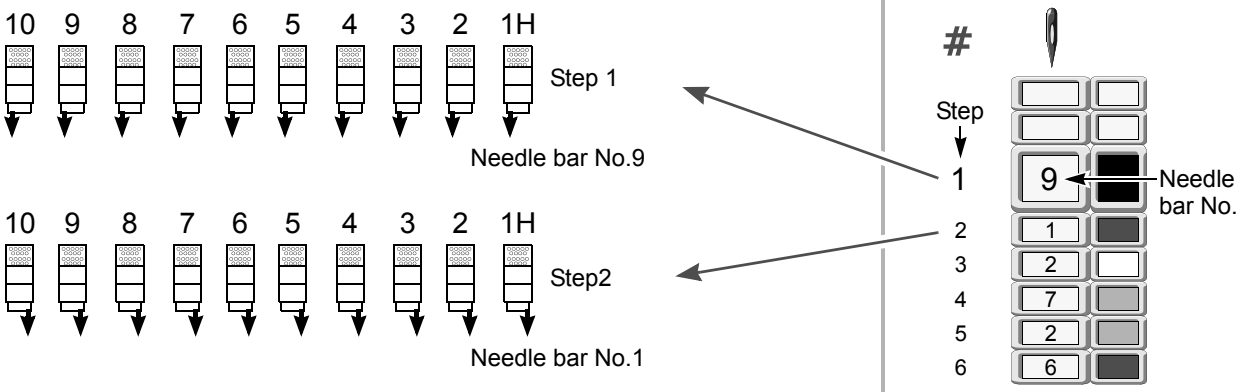
CAUTION

When you sew sequins, sequin devices at heads that do not perform sewing also move down. When frame spec. is S, sequin devices at all heads always move down. When frame spec. is W or any of W series (except S), sequin devices at either even-numbered heads or odd-numbered heads, or at all heads move down.

When this function does not apply to “Frame Spec.” of the machine, it is not possible to select head offset (H.OF No is the fixed value).

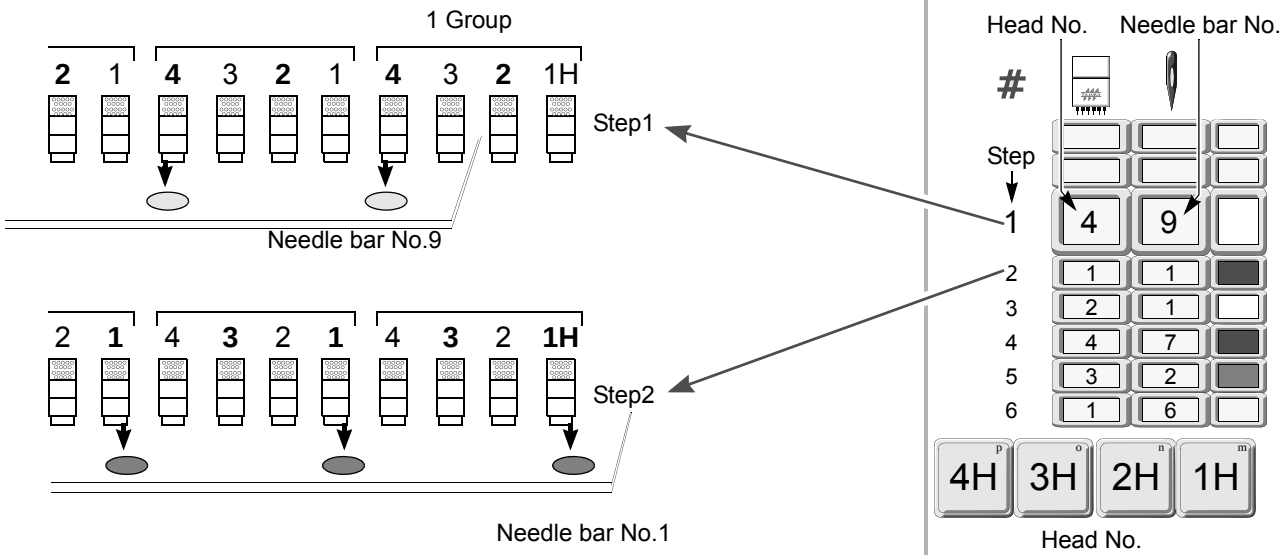
(1) When selecting “All heads”

The machine will perform all head sewing (Usual embroidery).



(2) When selecting “4H”

Four heads are regarded as one group (one head) and only one head in the group will perform sewing.



When the selected heads are different at before-and-after steps, the frame will move right and left (When head offset is set to “YES”).

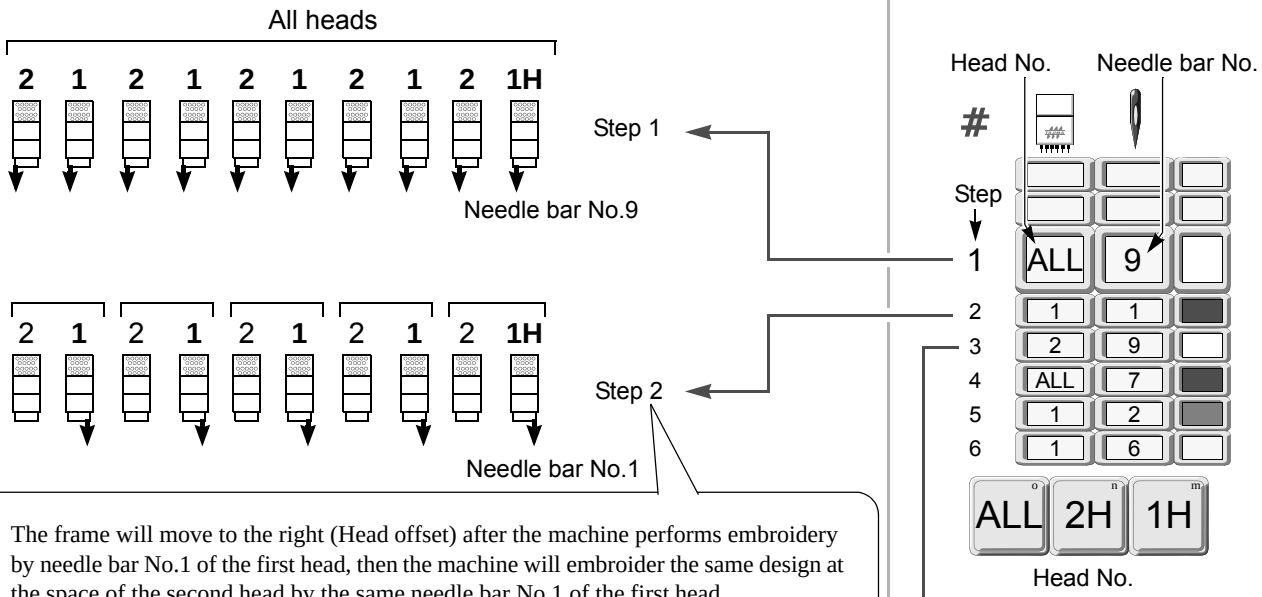
The frame will move to the right (space of the first head) after the machine embroiders step 1 by needle bar No.9 of the fourth head, then the machine will embroider step 2 by needle bar No.1 of the first head.

(3) When selecting “WJ2H”

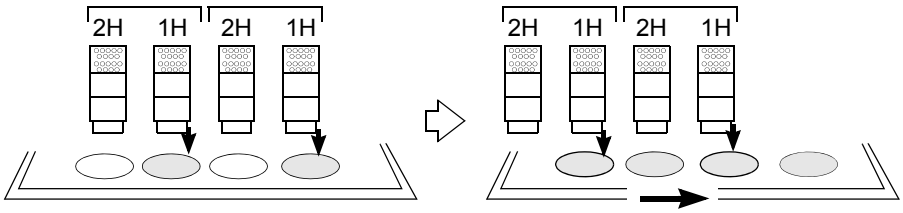
When selecting “ALL”, the machine will perform all head sewing. When selecting “1H” or “2H”, the machine will perform embroidery once at each embroidery space (repeated two times in total).

It is possible to set “WJ2H” only when frame spec. of this machine is 2W, 3W, WJ or 2WE. In addition, “H.OF YES” is the fixed value of head offset (it is not possible to change).

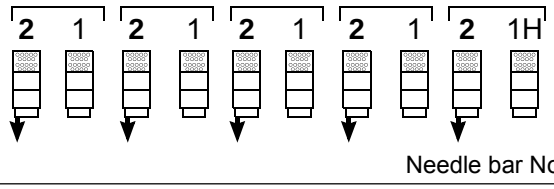
In case of 2W or 3W, the last some heads might not be able to perform embroidery (it differs depending on the number of heads).



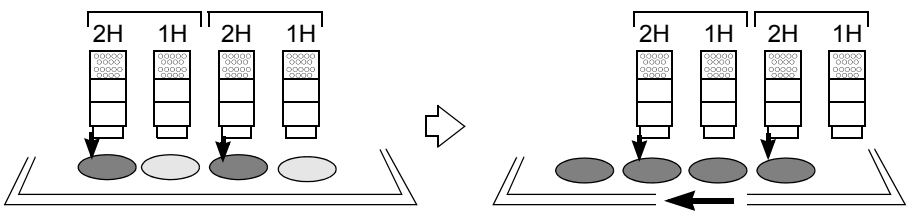
The frame will move to the right (Head offset) after the machine performs embroidery by needle bar No.1 of the first head, then the machine will embroider the same design at the space of the second head by the same needle bar No.1 of the first head.



The frame will move to the right.



The frame will move to the left (Head offset) after the machine performs embroidery by needle bar No.9 of the second head, then the machine will embroider the same design at the space of the first head by the same needle bar No.9 of the second head.



The frame will move to the left.

(4) Selected heads

It is possible to perform embroidery by selecting only head(s) to work only. It is possible to register up to 20 patterns regarding the selected heads as one pattern (refer to p.101).

CAUTION

Starting the machine after setting data of design of “Selected heads” in the state of setting “No” to automatic color change will cause needle bars of all heads to move down.

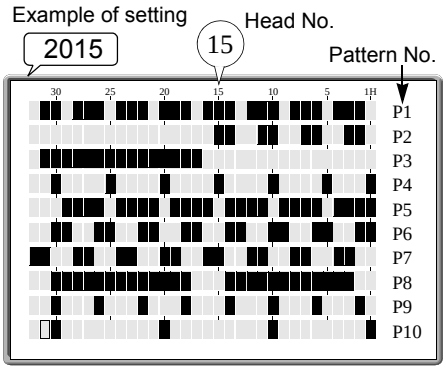
When “Selected head” is selected, “H.OF No” is the fixed value of head offset (It is not possible to change).

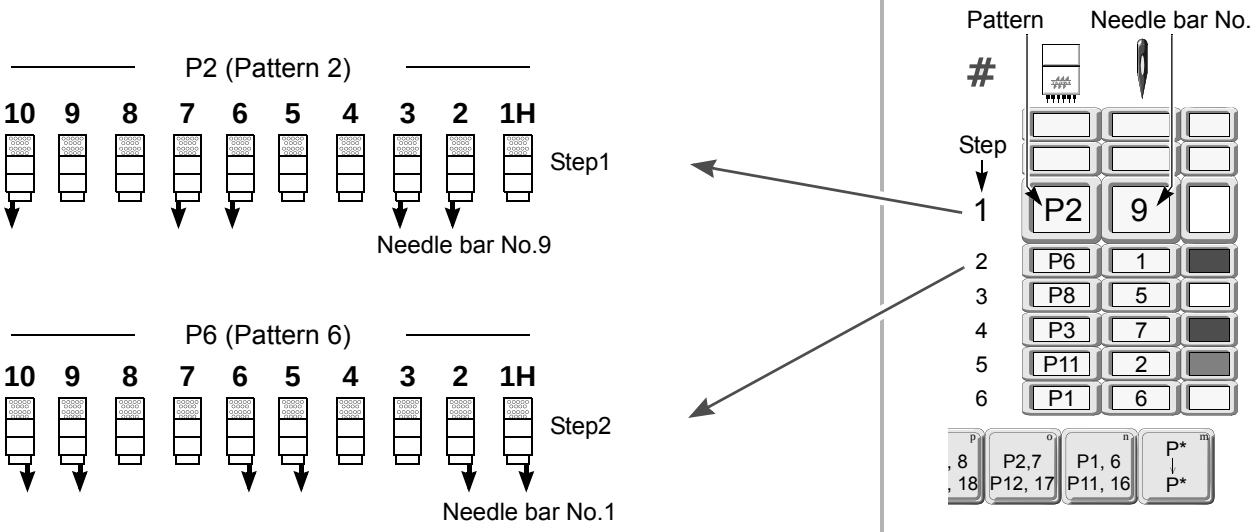
Working head will be displayed by ■.

■ indicates suspended head.

In P1, heads with ■ mark will work.

How to select head(s) in pattern (refer to p.101)





7-2. Embroidery by head group

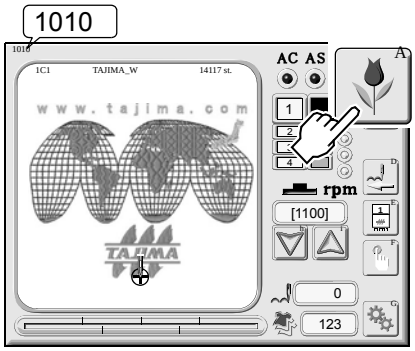
This function performs embroidery by set head group unit.

* Embroidery by head group will become effective only when automatic color change is set to “Yes” (refer to p.109).

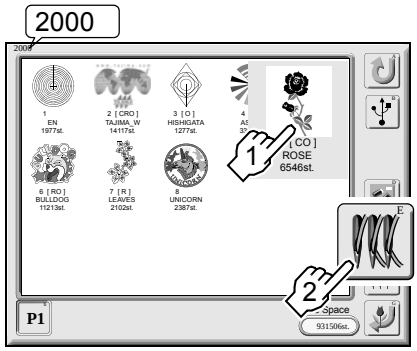
CAUTION

Starting the machine after setting data of design of “Selected heads” in the state of setting “No” to automatic color change will cause needle bars of all heads to move down.

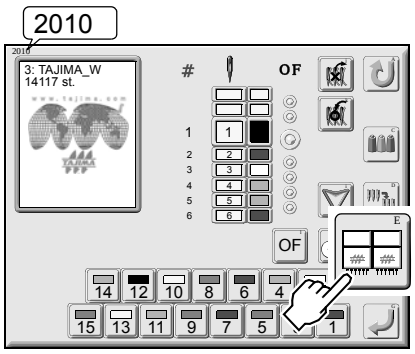
(1) Icon A



(2) Design data, icon E



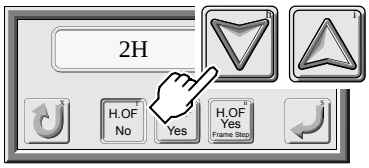
(3) Icon E



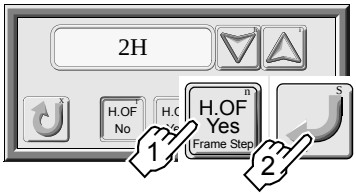
(4) Select the head group you desire

(Example: Select 2H group)

or

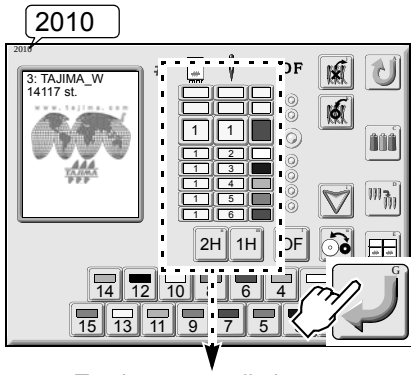


(5) Select to perform/not to perform head offset, setting



An example when selecting to perform head offset

(6) To set



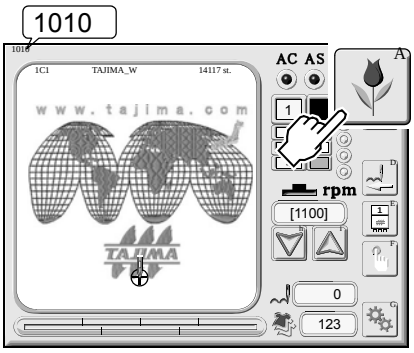
To change needle bar (refer to p.103)

When head group is not applied to “Frame Spec.” of the machine, it is not possible to select head offset.

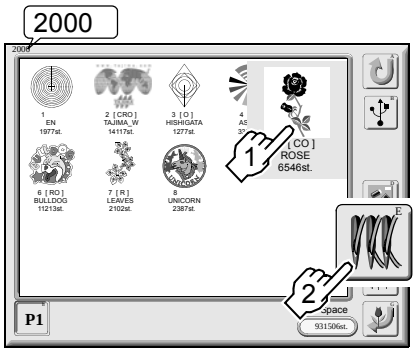
7-3. Selection of working heads (Selected heads)

This function selects head(s) to work at every step of design data and makes a pattern.

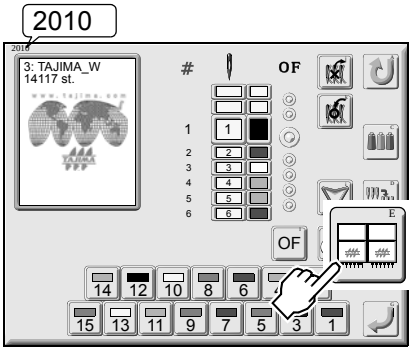
(1) Icon A



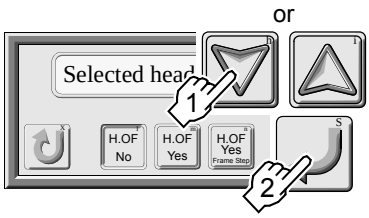
(2) Design data, icon E



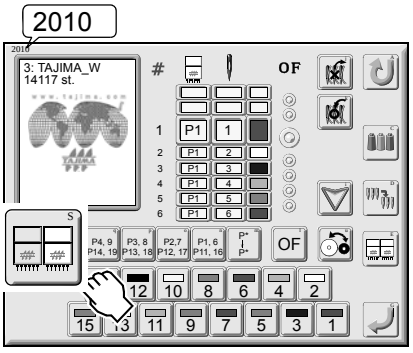
(3) Icon E



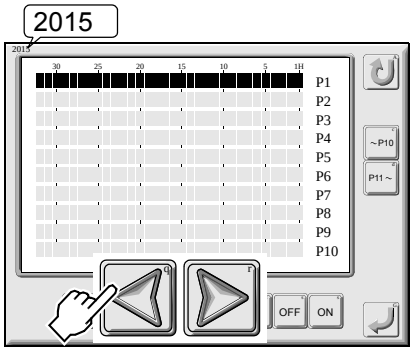
(4) Select "Selected heads", setting



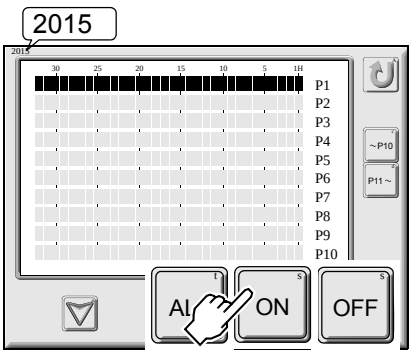
(5) Icon S



(6) Select working head(s) of pattern 1 (P1)



(7) Select to activate/not to activate



■: Working head

▒: Suspended head

ALL + ON :

Selecting ON after selecting ALL will select all heads.

ALL + OFF :

Selecting OFF after selecting ALL will release all heads.

Selected heads (refer to p.99)

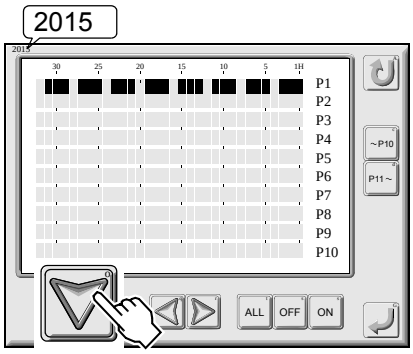
Regarding the selected heads as one pattern, it is possible to register up to 20 patterns.

When “Selected head” is selected, “H.OF No” is the fixed value of head offset (It is not possible to change).

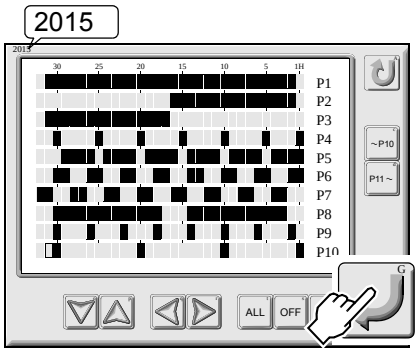
2015

It is also possible to select head(s) by touching the panel.

(8) Icon o



(9) To set

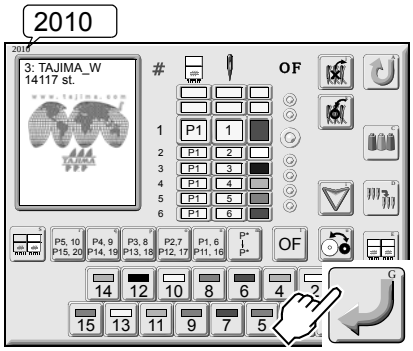


Switching of pattern screen

~P10 : P1 to P10

P11~ : P11 to P20

(10) To set



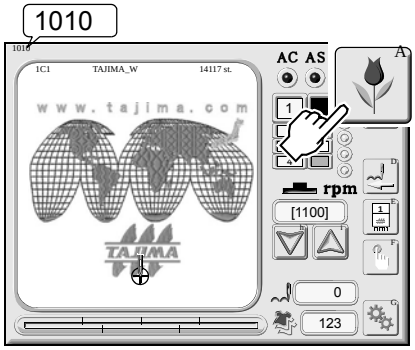
7-4. Pattern setting (Selected heads)

This function allocates a created pattern to a step of design data.

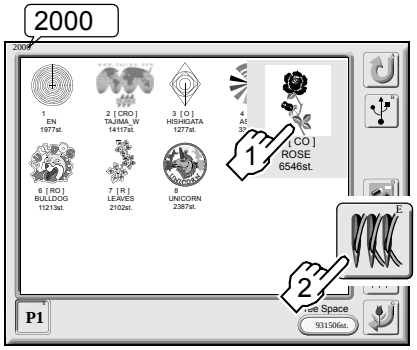
CAUTION

When you perform embroidery by “Selected heads”, set “Yes” to parameter “1. Auto Color Change (AC)”. In case of “No”, all heads will perform embroidery.

(1) Icon A



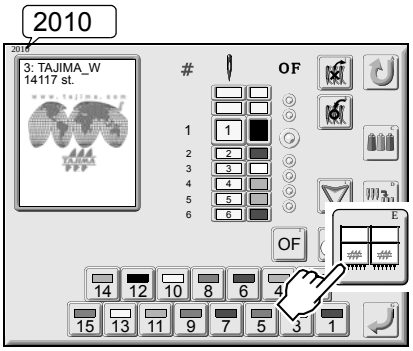
(2) Design data, icon E



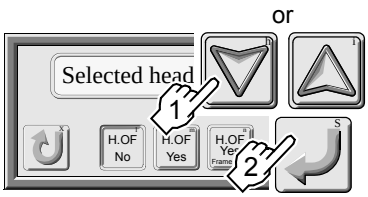
Selected heads (refer to p.99)

Regarding the selected heads as one pattern, it is possible to register up to 20 patterns.

(3) Icon E

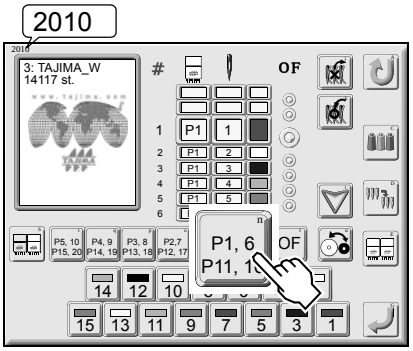


(4) Select “Selected heads”, setting



When “Selected head” is selected, “H.OF No” is the fixed value of head offset (It is not possible to change).

(5) Select a pattern of step 1 (Example:P6)



Every selecting icon will switch value.

P*, P* : To take over the previous pattern

P1, 6, P11, 16 : P1, 6, 11, 16

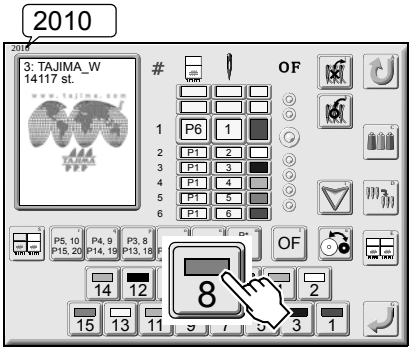
P4, 9, P14, 19 : P4, 9, 14, 19

P2,7, P12, 17 : P2, 7,12,17

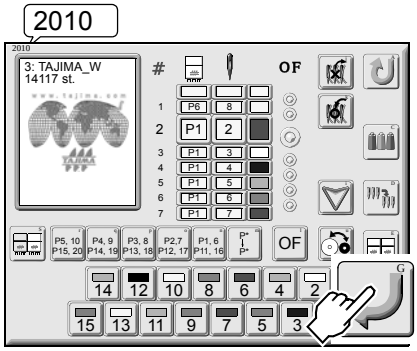
P5, 10, P15, 20 : P5, 10, 15, 20

P3, 8, P13, 18 : P3, 8,13,18

(6) Select a needle bar number of step 1 (Example: 8)



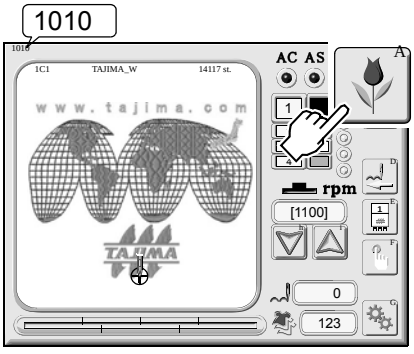
(7) Set pattern of step 2 and after in the same manner, setting



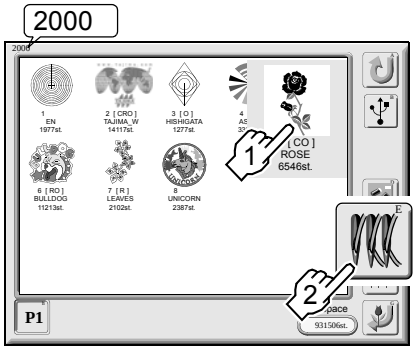
2010
In step 1, the machine will perform embroidery by pattern 6 and needle bar No.8.

7-5. Change of head or needle bar in head group

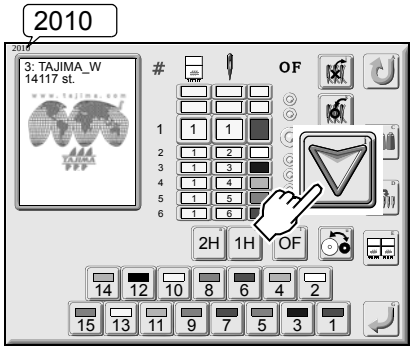
(1) Icon A



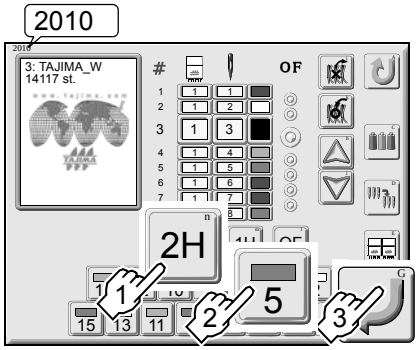
(2) Select design data and icon E



(3) Select needle bar step
(Example: step 3)

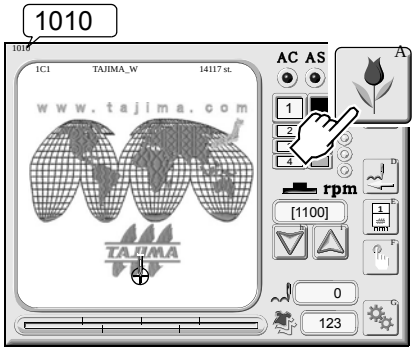


(4) Select the head and needle bar No. to change, setting.
(Example: 2H, Needle bar No.5)

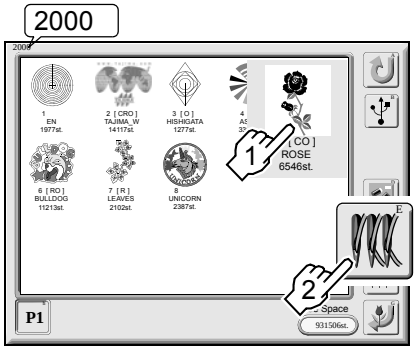


7-6. Change of needle bar color in head group

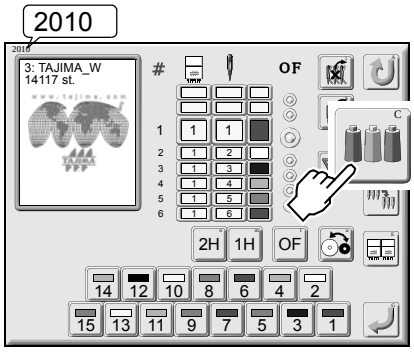
(1) Icon A



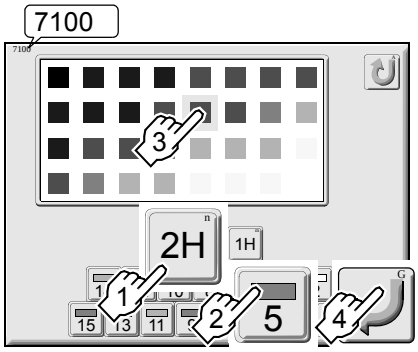
(2) Design data, icon E



(3) Icon C



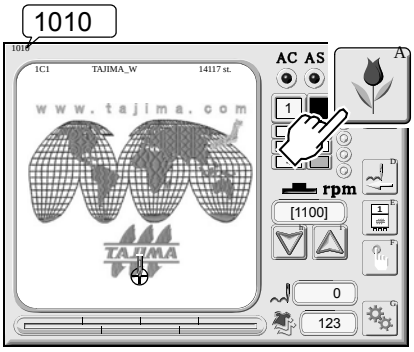
(4) Select the head, needle bar color and needle bar No. to change, setting



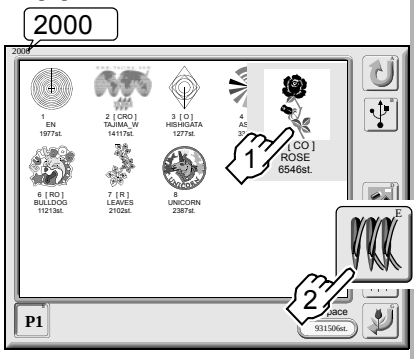
7100
Selecting order of your request color and needle bar does not matter (Reversed order is available for setting).

7-7. Deletion of needle bar step in head group

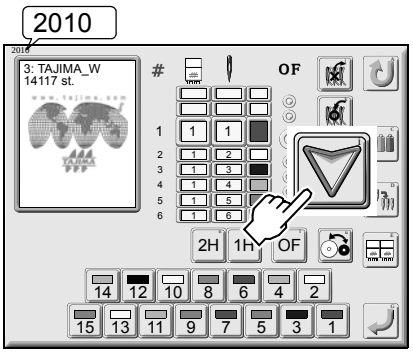
(1) Icon A



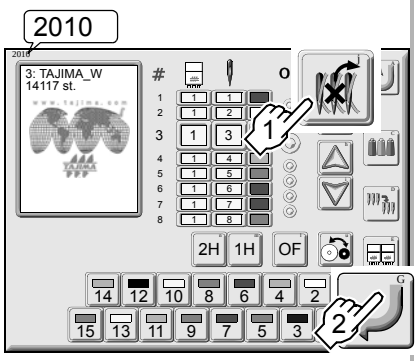
(2) Design data, icon E



(3) Select needle bar step



(4) Select icon j, setting



Even if the step is deleted, it does not affect the original design data.

The following is an example when deleting step 3

Before deletion		After deletion	
1	5 (Red)	1	5 (Red)
2	4 (White)	2	4 (White)
3	3 (Yellow)	3	2 (Green)
4	2 (Green)	4	1 (Blue)
5	1 (Blue)	5	5 (Red)

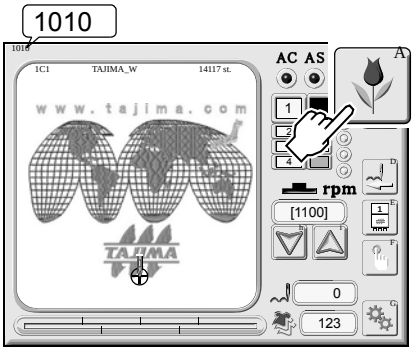
Step

Needle bar No.

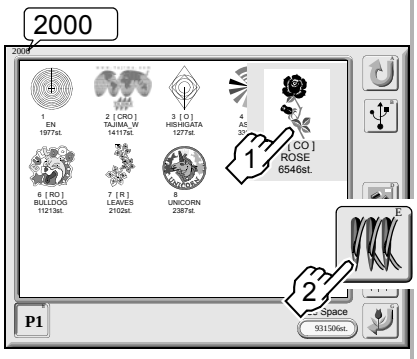
Needle bar No. of step 1 will be applied.

7-8. Insertion of needle bar step in head group

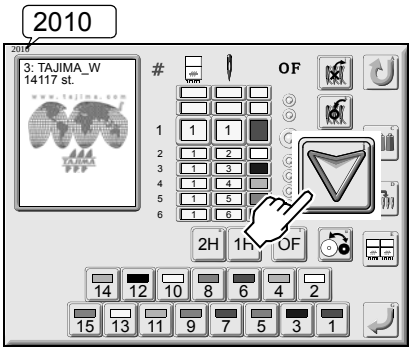
(1) Icon A



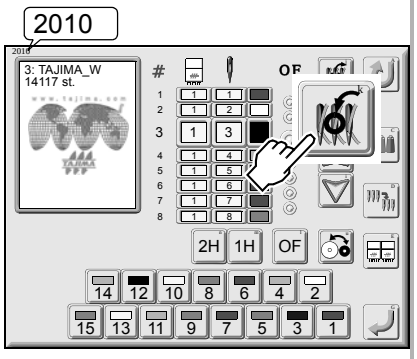
(2) Design data, icon E



(3) Select needle bar step

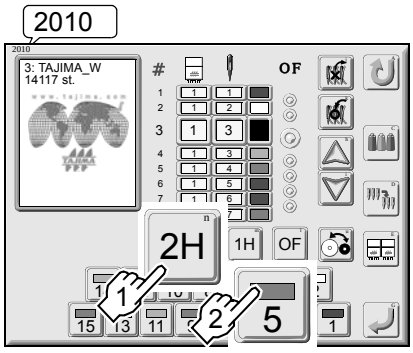


(4) Icon k

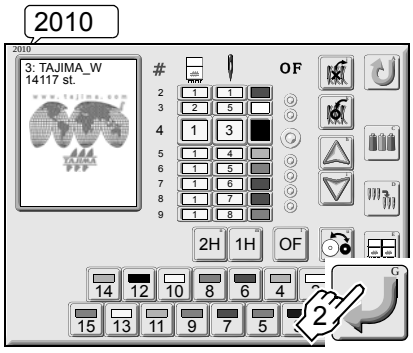


Even if a step is inserted, it does not affect the original design data.

(5) Select a head and needle bar No. to insert



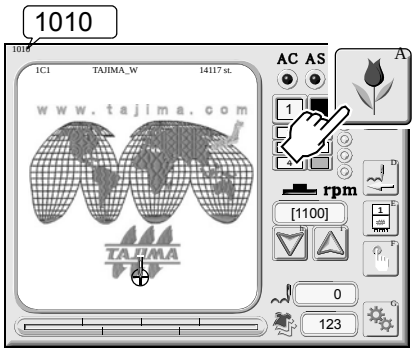
(6) To set



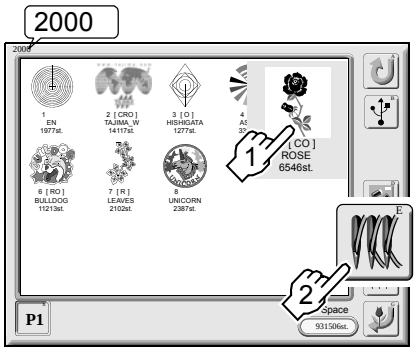
7-9. Needle bar conversion in head group

Replace head and needle bar No. set by "Change of needle bar" collectively.

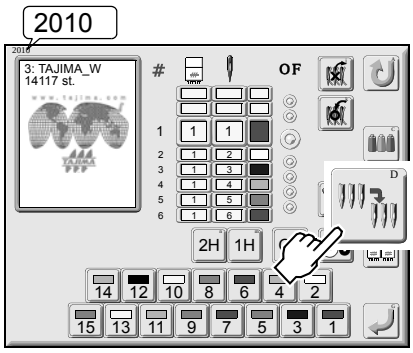
(1) Icon A



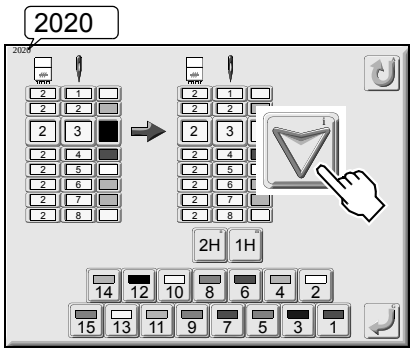
(2) Design data, icon E



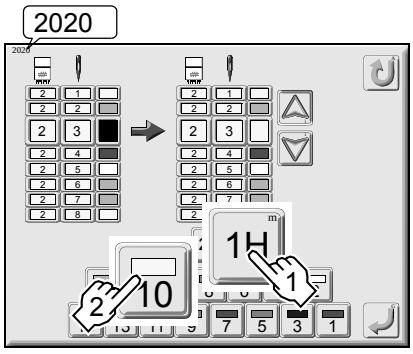
(3) Icon D



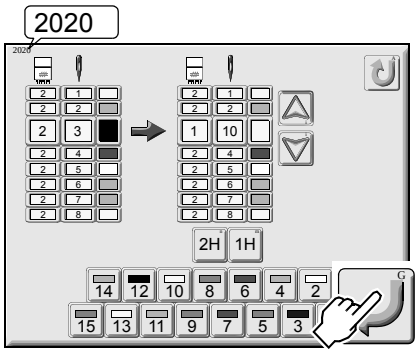
(4) Select needle bar step



(5) Select the head and needle bar No. after conversion



(6) To set



It is possible to replace specified needle bar No. with other needle bar No. collectively. Therefore, you can save more labor of operation than in the case when you change needle bar No. by “Needle Bar Change” one by one.

In this example, “2H” and “Needle bar No.3” will be converted to “1H” and “Needle bar No.10” collectively.

Chapter 7

Parameter setting

Set necessary conditions (parameters) to work the machine.

The following functions will not be displayed. For details, consult the distributor.

15.Speed Change Data

16. LowSpeed/L.S.Code R.P.M.

21. ATH

38. Frame Start Timing

41. Backlash (X)

42. Backlash (Y)

43. Satin Stitch (Area)

44. Satin Stitch (Density)

45. Satin Stitch (Expansion)

46. Stop at Lower D. Point

50. Return Frame at Lower D. Point

56. Insertion of jump at sequin

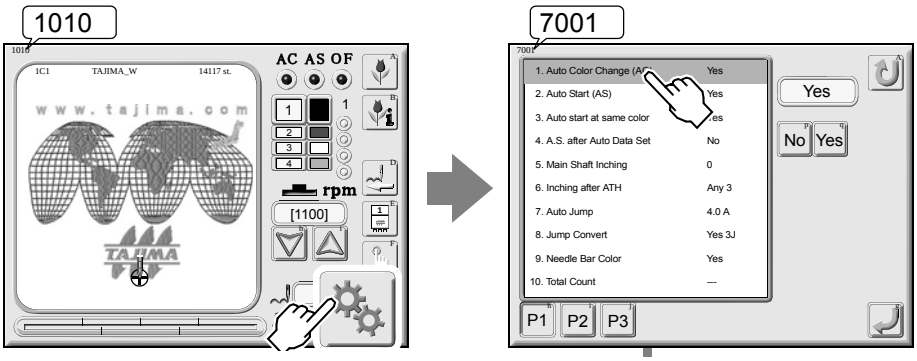
61. Network

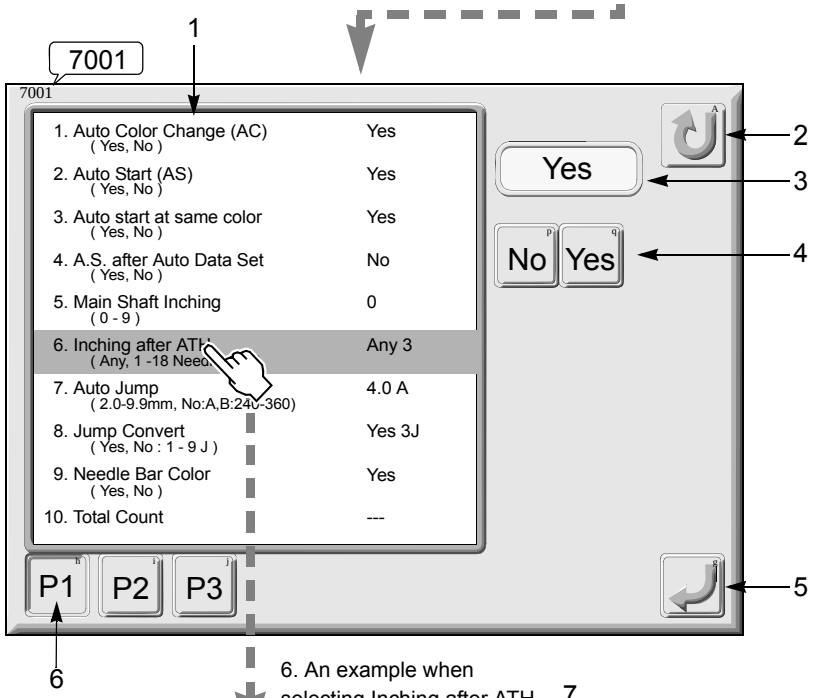
65. Frame Weight

Page P8 (Non-display of all functions at P8)

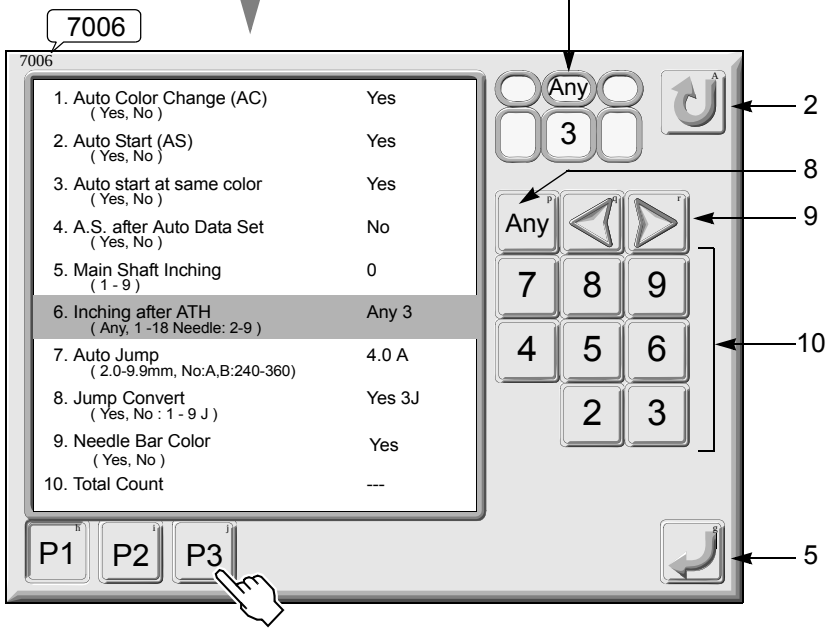
1. Outline

Calling of parameter setting screen (7001)





6. An example when selecting Inching after ATH



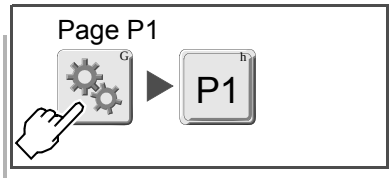
Press twice.
The screen will display "P1" to "P7". Pressing "P7" twice will display "P8".

parameter (several conditions necessary to activate the machine)(Refer to p.29)

1. Parameter selectable item
2. To return
3. Setting contents
4. Selection of Yes/No
5. Register
6. Page switching
7. Setting contents
8. Selection of all needle bars
9. Selection of needle bar unit
10. Numerical key

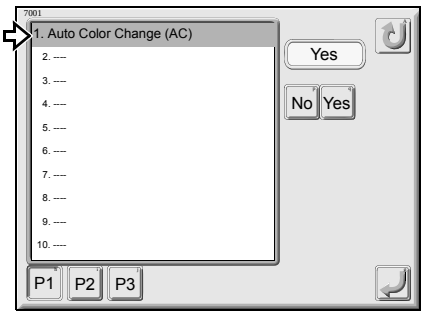
2. Parameter setting

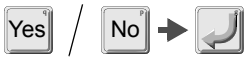
2-1. Page P1



1. Auto Color Change (AC)

This setting performs automatic color change according to "Needle bar setting".

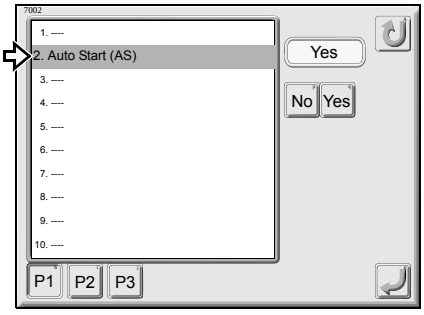


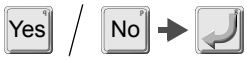


Setting to "Yes" will cause "AC" lamp of the main screen to be lit in red.(Refer to p.26)

2. Auto Start (AS)

The machine will start automatically after color change.

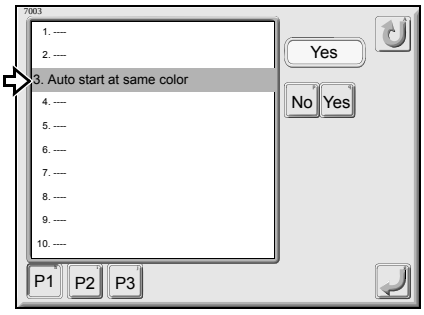


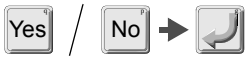


It is possible to perform setting when "1. Auto Color Change" is set to "Yes". Setting to "Yes" will cause "AS" lamp of the main screen to be lit in red. (Refer to p.26)

3. Auto start at same color

The machine will start automatically even if the same needle bar is selected before and after color change.



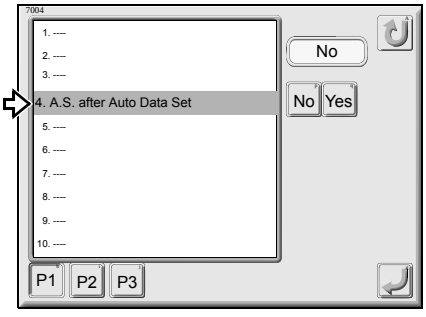


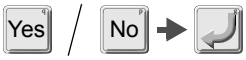
Selecting "NO" in this function makes it possible to stop the machine even when the same needle bar is selected in 2-consecutive steps. Therefore, it is effective for applique embroidery.

It is possible to perform setting when "1. Auto Color Change" and "2. Auto Start" are set to "Yes".

4. A.S. after Auto Data Set

This setting makes the machine start automatically after finishing embroidery and makes the machine embroider the same design repeatedly.





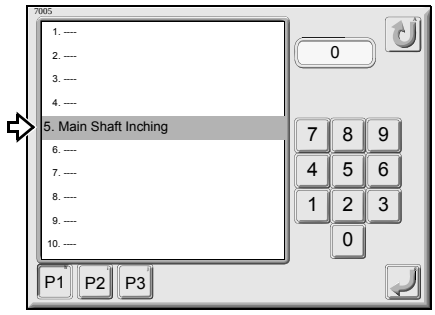
This function is effective in such a case as when changing frames in sequence like socks frame, etc.

Usually, select "NO" except for the description above (Because the machine will start automatically after embroidery is finished).

It is possible to perform setting when "1. Auto Color Change" and "2. Auto Start" are set to "Yes".

5. Main Shaft Inching

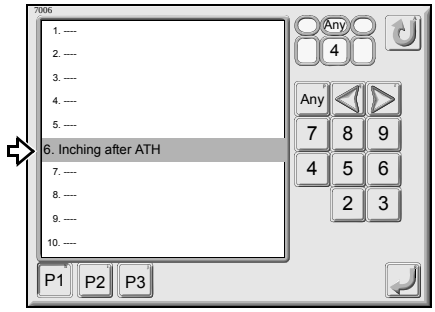
This is the number of inching times when the machine is restarted by switch operation after stopping the machine in the middle of embroidery.

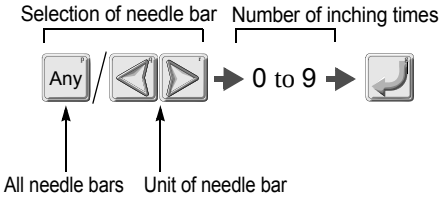


0 does not perform inching after start of the machine.

6. Inching after ATH

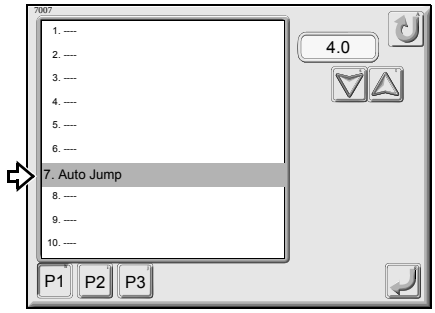
This is the number of inching times at start after data set or at start after thread trimming.





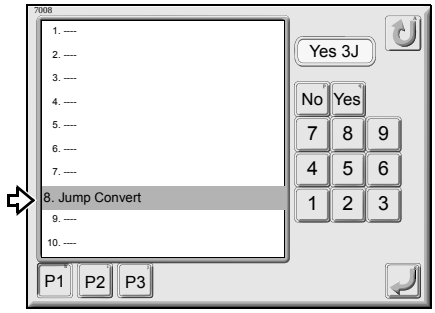
7. Auto Jump

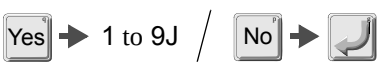
When stitch length (2.0 to 9.9 mm) is longer than the setting value, the machine will perform jumping automatically.



8. Jump Convert

When jump codes continue consecutively more times than the setting value, these jump codes will be converted to frame stepping.

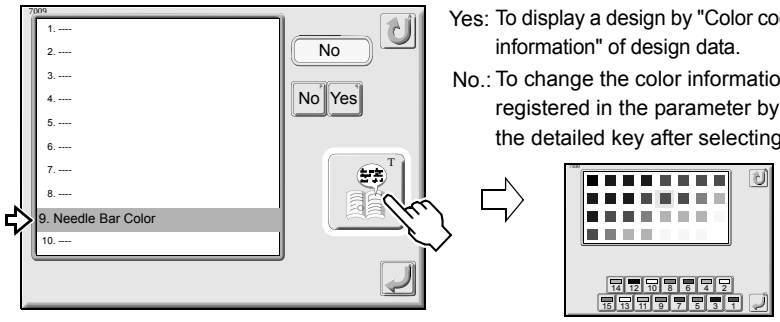




Registration with "No" will display no numerical keys.

9. Needle Bar Color

Adjust displaying colors on the operation panel by accommodating colors of threads to use actually.



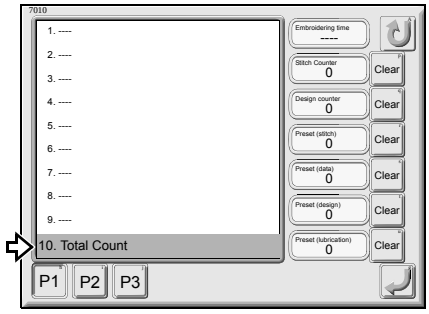
Yes: To display a design by "Color coordination information" of design data.

No.: To change the color information registered in the parameter by pressing the detailed key after selecting "No".

It is also possible to adjust from screen 2010.(Refer to p.79)

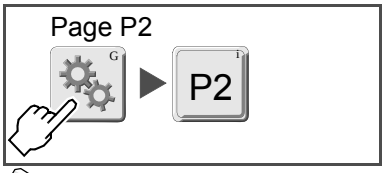
10. Total Count

It displays time spent for completion of one design, the number of embroidered stitches, the number of designs and remaining amount to preset halt.



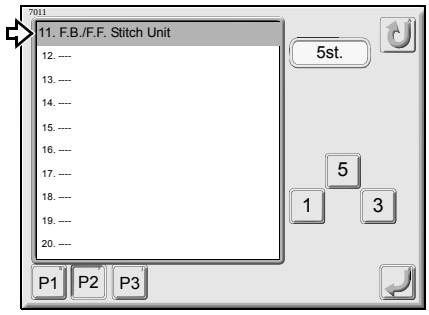
Return the value to 0

2-2. Page P2



11. F.B./F.F. Stitch Unit

This is a feed (stitch) unit when performing frame back/forward by 11 stitches or more.

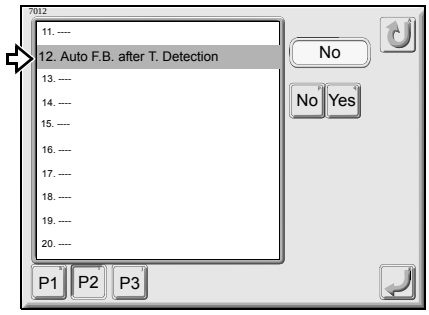


1 / 3 / 5 →

Up to 10 stitches, frame feed will be performed by 1-stitch (fixed).

12. Auto F.B. after T. Detection

The machine will perform frame back automatically at thread breakage.



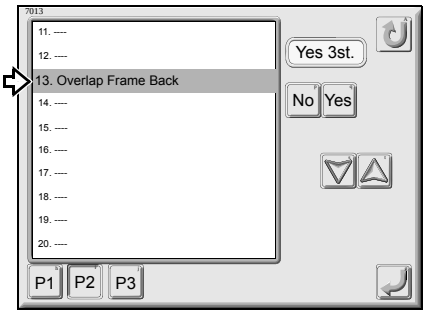
To perform frame back
Number of stitches

Yes → 0 to 9 / No →

The number of stitches of frame back is total stitches of this value and the value of "18. Upper T. Detection" or "19. Under T. Detection (Unit)" based on a stop point of the machine.

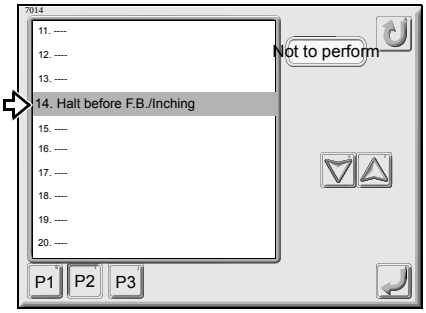
13. Overlap Frame Back

The machine will perform all head sewing from the previous point of frame back start point by the number of set stitches at start after frame back.



14. Halt before F.B./Inching

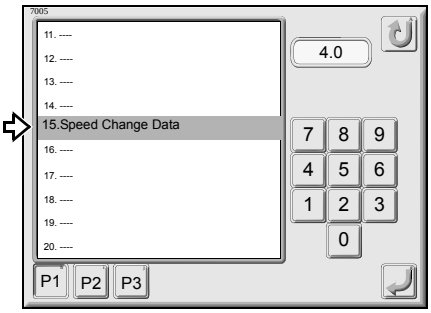
When the machine starts after frame back, select machine will stop/perform inching/perform nothing at start point of all head sewing.

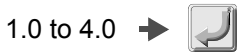


15.Speed Change Data

Set a stitch length that switches from high speed to low speed.

This function sometimes may not be displayed depending on the setting. For details, please consult the distributor.

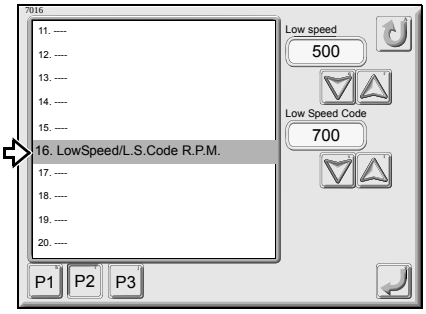


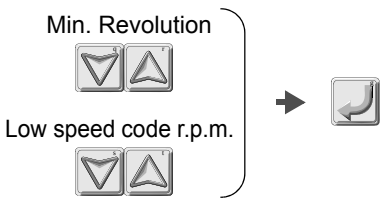


16. LowSpeed/L.S.Code R.P.M.

Set the number of the most decreased revolutions and the number of revolutions at a low speed code section.

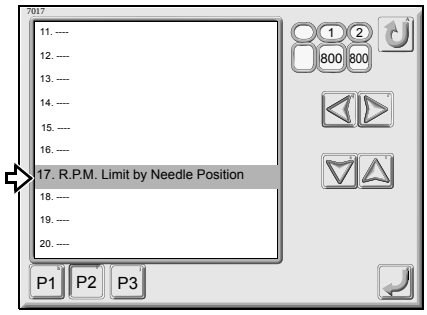
This function sometimes may not be displayed depending on the setting. For details, please consult the distributor.

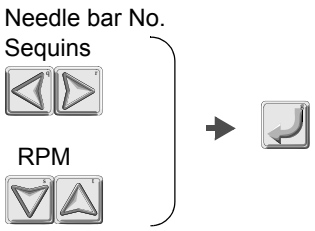




17. R.P.M. Limit by Needle Position

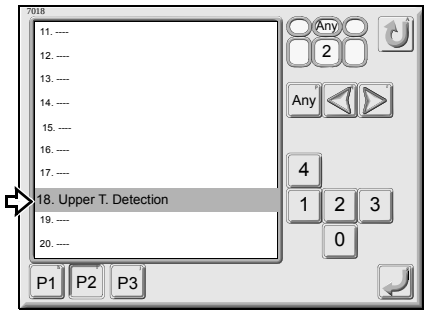
Set the maximum rpm by needle bar unit. It is also possible to set sequin device rpm individually.

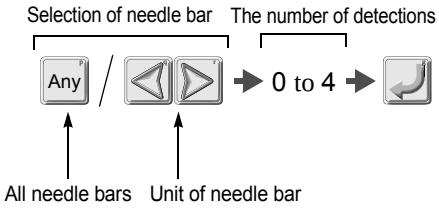




18. Upper T. Detection

Set sensitivity of upper thread breakage detection.

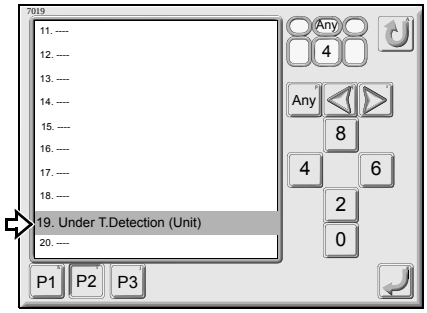


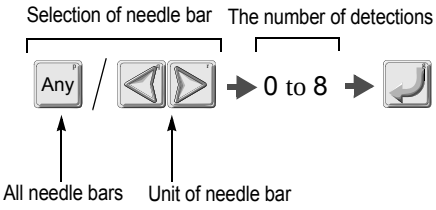


Smaller setting value will make sensitivity become higher.

19. Under T.Detection (Unit)

Set how many consecutive times of detection of "20. Under T.D. (Step Ratio)" are regarded as thread breakage.

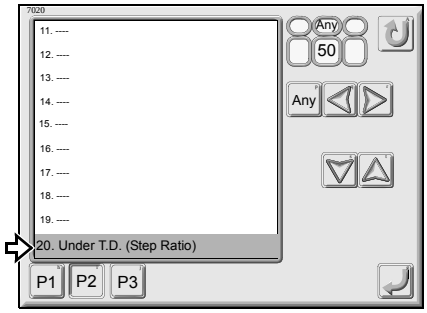


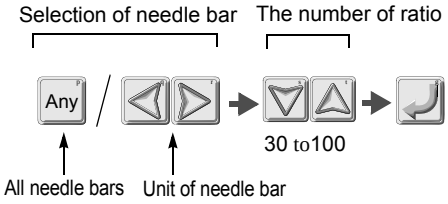


Smaller setting value will make sensitivity become higher.

20. Under T.D. (Step Ratio)

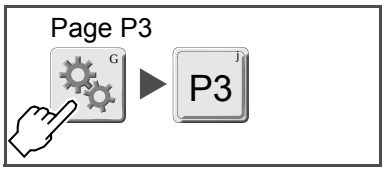
Set sensitivity of under thread breakage detection.





Larger setting value will make sensitivity become higher.

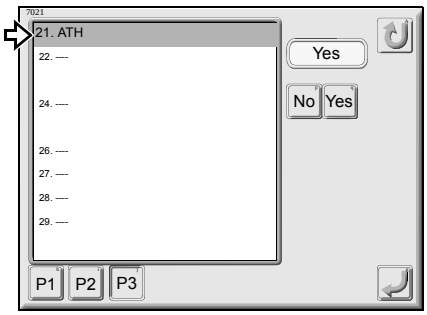
2-3. Page P3

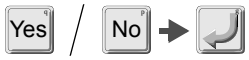


21. ATH

This setting performs automatic thread trimming at color change, frame stepping, end of embroidery etc.

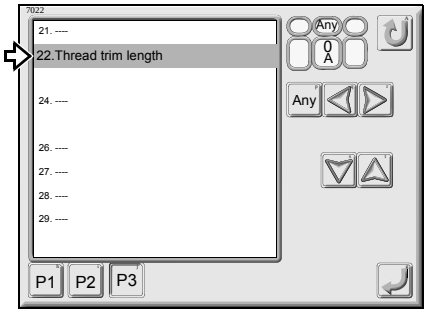
This function sometimes may not be displayed depending on the setting. For details, please consult the distributor.

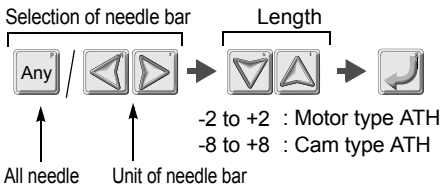




22.Thread trim length

Adjust stitch length of remaining upper thread at thread trimming

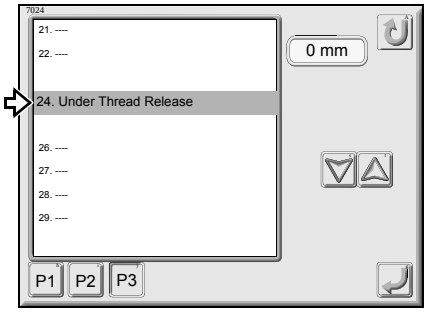




It is possible to perform setting when "21. ATH" is set to "Yes".

24. Under Thread Release

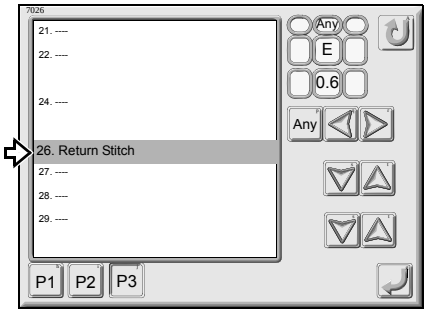
The frame will move to loosen under thread.

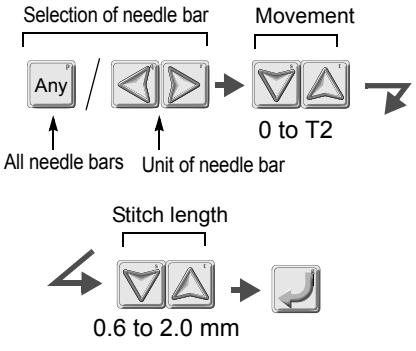


In case of motor type ATH or when "21 ATH" is set to "No", it will not be displayed.

26. Return Stitch

Set a length of return stitch (all needle bars collectively, or needle bar unit).

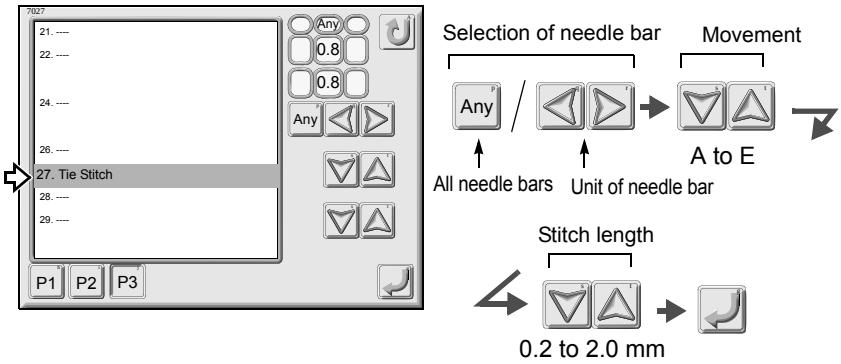




Selection of movement
0: Not to perform return stitching
1: 1 reciprocating to perform return stitching
2: 2 reciprocatings to perform return stitching
TO: To perform triangle stitching
T1: 2 reciprocatings to perform triangle stitching
T2: 3 reciprocatings to perform triangle stitching

27. Tie Stitch

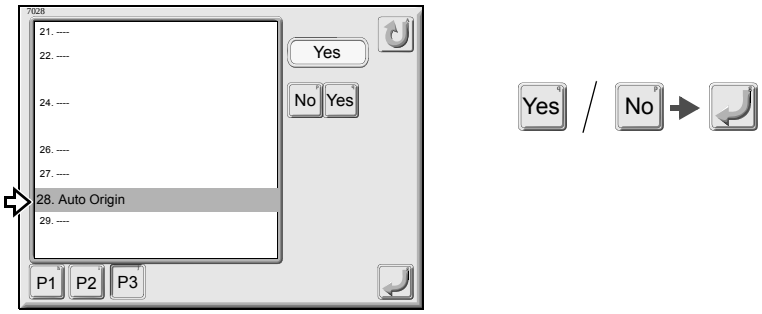
Set a length of tie stitch (all needle bars collectively, or needle bar unit).



Selection of movement
A: Not to perform tie stitching
B: Perform tie stitching
C: To perform tie stitching without deleting non-data
To perform tie stitching
D: 1 reciprocating to perform tie stitching
E: Switch between B and D depending on direction of tie stitching

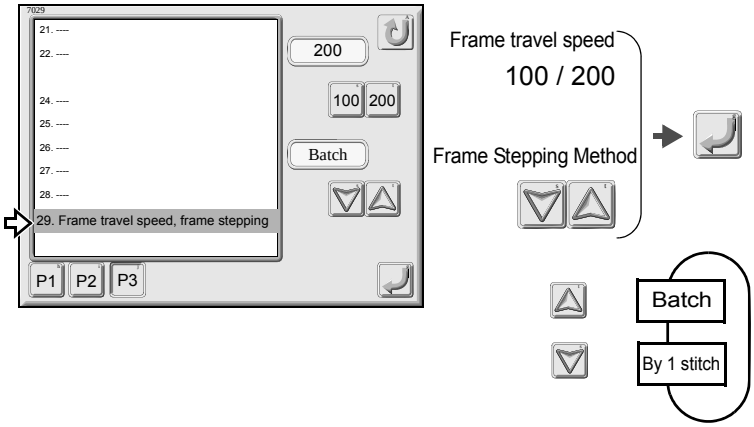
28. Auto Origin

The frame will move to the origin at end of embroidery.



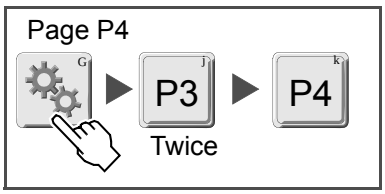
29. Frame travel speed, frame stepping method

Select frame travel speed and frame stepping method at frame stepping.



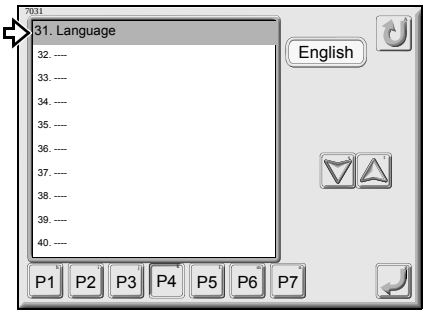
Select Frame Stepping Method
Batch: To perform frame travel directly to frame stepping point.
By 1 stitch: To perform frame travel stitch by stitch as design data.

2-4. Page P4



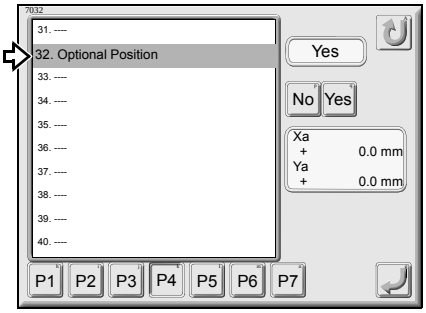
31. Language

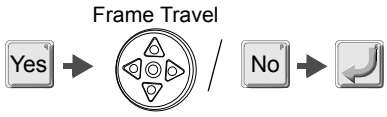
Switch display language of the screen.



32. Optional Position

The machine will memorize an optional position of manual frame travel.

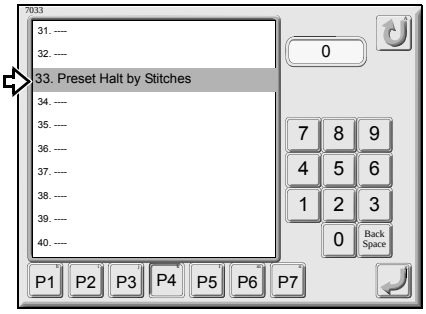




Selecting "Yes" will display X/Y coordinates.

33. Preset Halt by Stitches

When stitch counter reaches the setting value, the machine will stop automatically.

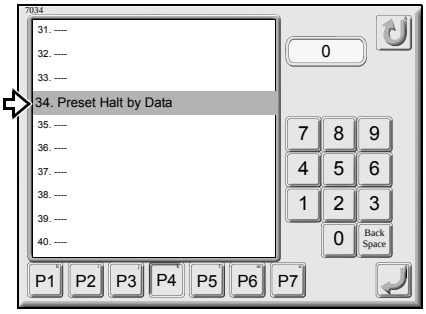


Code No. "1D2" will be displayed at stop of the machine.

0 makes no stop.

34. Preset Halt by Data

When accumulated frame travel amount (accumulated data length) reaches the setting value, the machine will stop automatically.

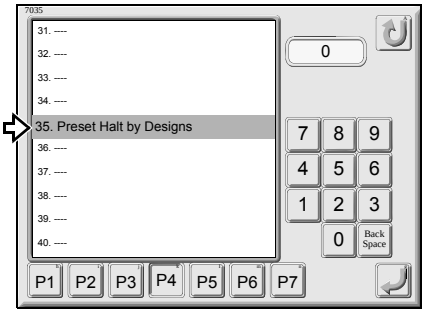


Code No. "1D2" will be displayed at stop of the machine.

0 makes no stop.

35. Preset Halt by Designs

When the number of embroidered design reaches the setting value, the machine will stop automatically.



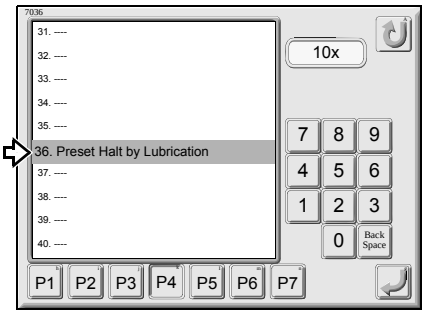
0 to 9 → 

Code No. "1D2" will be displayed at stop of the machine.

0 makes no stop.

36. Preset Halt by Lubrication

When stitch counter reaches the setting value, the machine will stop automatically.



0 to 9 → 

The setting value x 10,000 is the number of stitches to stop the machine automatically.

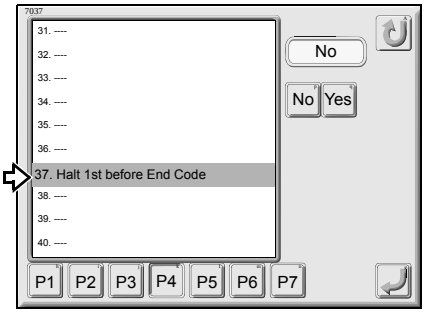
Code No. "OIL" will be displayed at stop of the machine.

0 makes no stop.

It is effective when "51. Lubrication" is set to "No".

37. Halt 1st before End Code

The machine will stop automatically short of one stitch just before end of embroidery.



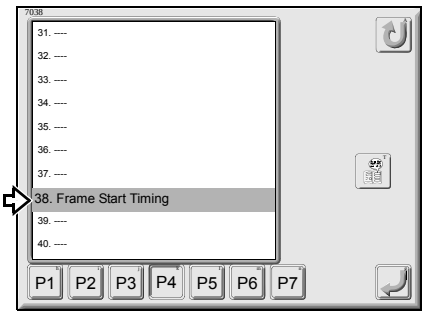
Yes / No → 

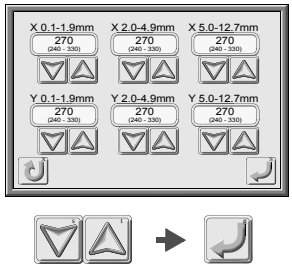
It is possible to perform frame back after stop of the machine.

38. Frame Start Timing

Select start timing of frame drive (main shaft angle) according to X/Y moving amount of stitch data.

This function sometimes may not be displayed depending on the setting. For details, please consult the distributor.





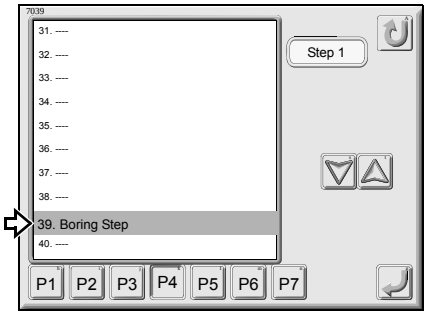
Do not set to 300° or more in usual embroidery.

240° ← Fast (Thread tension: loose)

330° → Slow (Thread tension: tight) (Stitch length: short)

39. Boring Step

Change stitch data when boring device is equipped.



Step 1	Not to process data
Step 2	It deletes an offset amount from data and adds mechanical offset amount 12 mm.
Step 3	Adds mechanical offset 12 mm
No	Not to perform boring

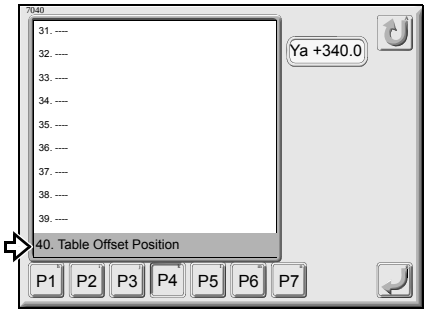
Do not perform scale up/down, rotation and reversion of design at step 1.

When design data includes offset data for boring, select step1 or step 2.

When design data does not include offset data for boring, select step 3.

40. Table Offset Position

The position of manual frame travel will be memorized as a table offset position.



Frame Travel

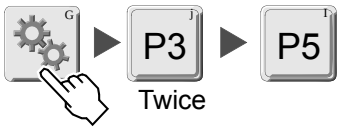
Set "Table offset position" so that the frame moves to the position where it is easy to pass upper thread to needle at upper thread breakage. In case of usual machine with large table size in vertical direction, set "Table offset position" to the rear side of the table. In case of AFC machine, set "Table offset position" to the front side of the machine.

Setting range is 1/2 of Y-axis embroidery space.

When "58. AFC" is set to "Yes", pressing "Frame retracting switch" will cause AFC to move to +Y (table front direction) only.
In case of "No" (usual machine), pressing "Frame retracting switch" will cause the frame to move to -Y (table rear direction) only.

2-5. Page P5

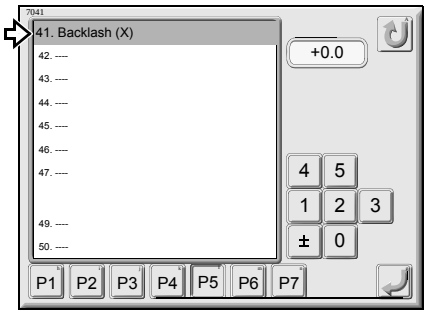
Page P5



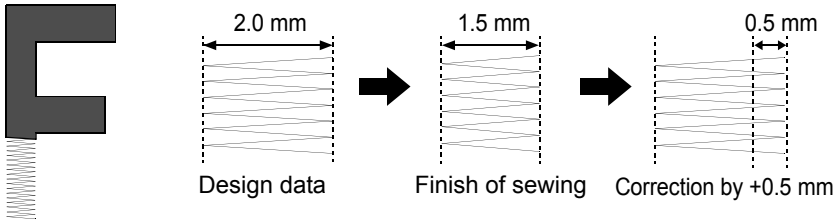
41. Backlash (X)

It corrects mechanical error generated when X-axis drive reverses with setting value.

This function sometimes may not be displayed depending on the setting. For details, please consult the distributor.



0 to 5



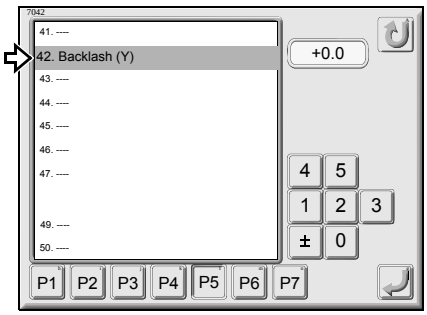
0 does not perform correction.

When correction is performed, setting for satin stitch will become invalid.

42. Backlash (Y)

It corrects mechanical error generated when Y-axis drive reverses with setting value.

This function sometimes may not be displayed depending on the setting. For details, please consult the distributor.



0 to 5 → ↵

For details, refer to Backlash (X).

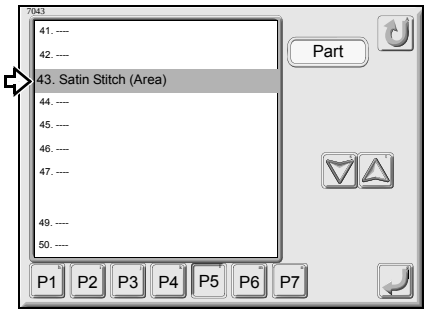
0 does not perform correction.

When correction is performed, setting for satin stitch will become invalid.

43. Satin Stitch (Area)

This function sometimes may not be displayed depending on the setting. For details, please consult the distributor.

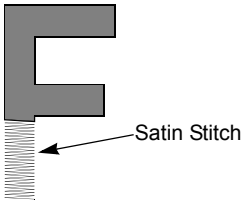
Select a range of target of satin stitch (Expansion).



▽△ → ↵

Whole	All design data
Part	Applies to function code "Satin Stitch"
Not to perform	Not to add

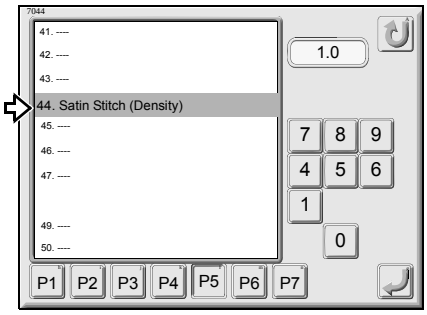
This function increases/decreases stitch length data of satin stitch (common to No.43, 44, 45).



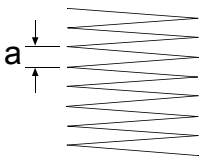
44. Satin Stitch (Density)

Stitch of which size a (illustration below) is the setting value or less is regarded as satin stitch.

This function sometimes may not be displayed depending on the setting. For details, please consult the distributor.



0 to 9 → ↵

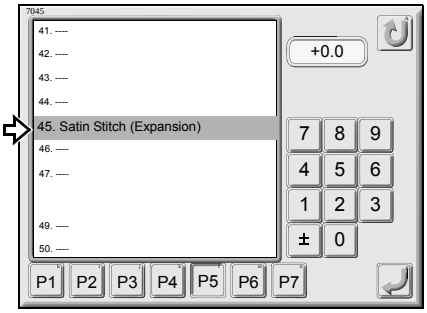


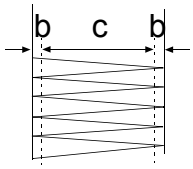
It is effective when "43. Satin Stitch (Area)" is set to "Whole" or "Part".

45. Satin Stitch (Expansion)

This setting sets up adding amount to stitch that was judged as satin stitch in Satin Stitch (Density). 1/2 of the set value (b) will be added to both sides of stitch length (c) respectively.

This function sometimes may not be displayed depending on the setting. For details, please consult the distributor.

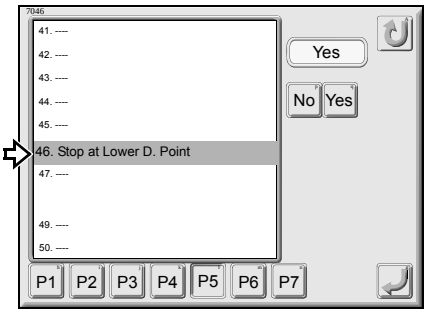


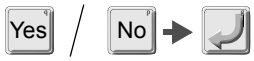


46. Stop at Lower D. Point

The machine will stop with needle bar stuck in the fabric at end of design (stop at lower dead point).

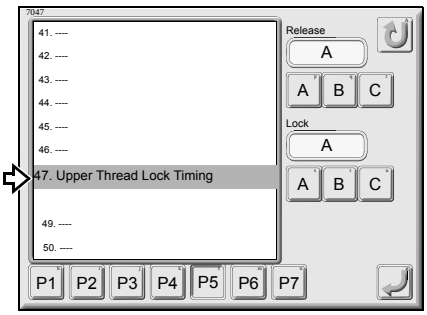
This function sometimes may not be displayed depending on the setting. For details, please consult the distributor.

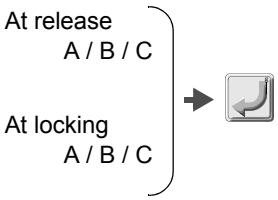




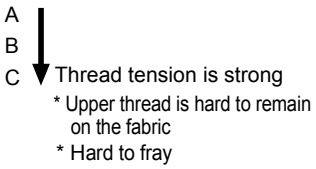
47. Upper Thread Lock Timing

Set upper thread lock timing at start of sewing (release) and at thread trimming (lock).



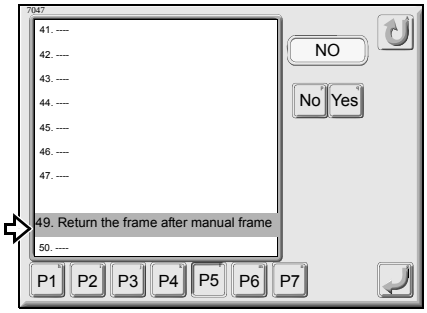


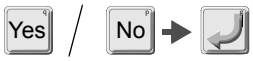
Perform adjustment of thread tension at start of sewing, thread trimming



49. Return the frame after manual frame travel

When the machine is started/stopped by bar switch after moving the frame manually in the middle of embroidery, this setting returns the frame automatically to the position before manual frame travel.

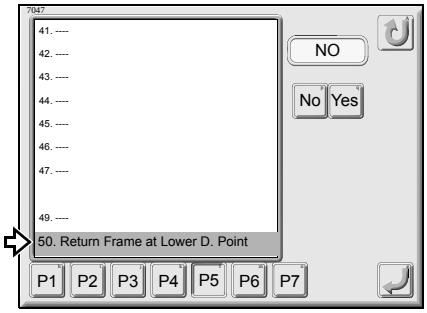


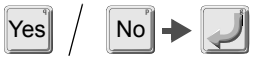


50. Return Frame at Lower D. Point

This setting returns the frame by manual offset even if the frame has moved while the machine was stopped at lower dead point.

This function sometimes may not be displayed depending on the setting. For details, please consult the distributor.

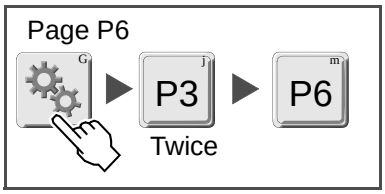




Yes: The frame will return by manual offset.

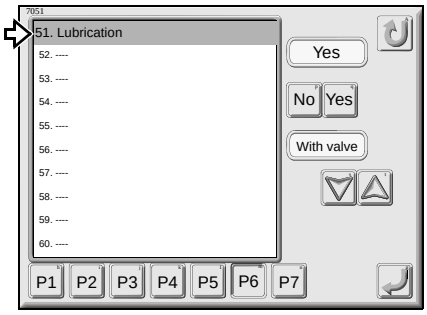
No.: The frame will return by manual offset, however it will not return by the amount of frame moving during lower dead point.

2-6. P6 page (option)



51. Lubrication

Select whether automatic lubrication system is equipped/or not.

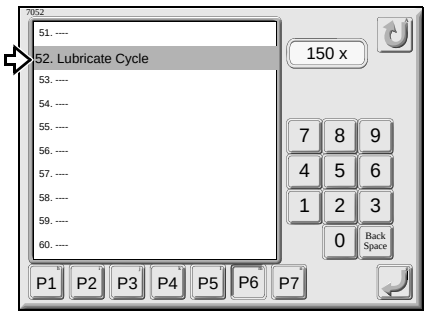


Without valve: Lubricate only to heads
With valve: Lubricate to heads and rotary hooks

For details, please refer to the separate user$s manual of "Automatic lubrication system".

52. Lubricate Cycle

When stitch counter reaches the set value, automatic lubrication system will work to lubricate to head.

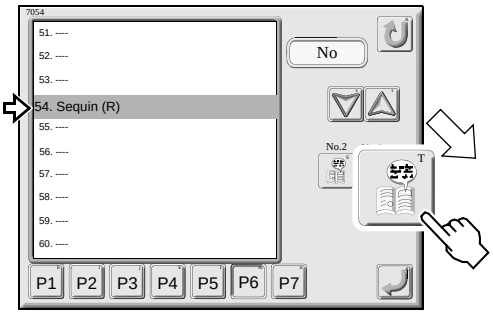


Automatic lubrication system will work at the setting value x 1,000 stitches.
Example: When a setting value is set to "150", automatic lubrication system will work at 150x1,000=150,000th stitch.

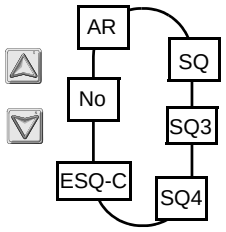
The value at shipment from the factory is "150".

54. Sequin (R)

Select whether you use sequin device (right side) or not.

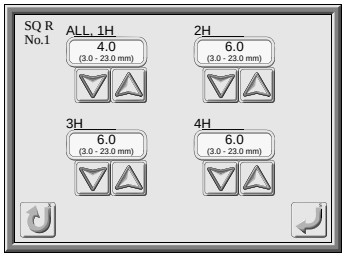


Selection of method



No.1
When you select SQ4, one piece of detailed key will be displayed. When you select SQ3 or ESQ-C, two pieces (No.1, No.2) of detailed key will be displayed. Set sequin feed amount at the first color and the second color respectively.

No.1
This is a detailed example of No.1 when head group is set, and SQ3 or ESQ-C is selected. It is possible to set sequin feed amount by selected head individually.



AR: non-use
SQ: Not used
SQ3: Sequin device III
SQ4: Sequin device IV
ESQ-C: ESQ-C
No: Without sequin device

Rough standard of sequin feed amount is +1.0 mm to sequin size.

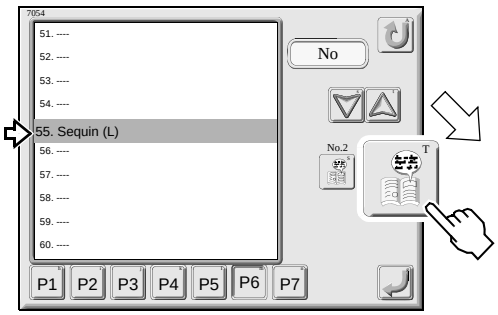
When head group is set, set the second head and after.

When "66. Boring" is set to "Yes 1" or "67. Cording" is set to "Yes 1", it is not possible to set.

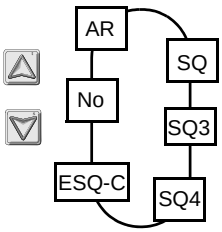
When sequin feed amount is set, Maximum R.P.M. will become as described below.
Setting value: 3.0 to 8.5 mm/1,000 rpm (from 9.0 to 19.5 mm, it will be decreased in stages.) 20.0 to 23.0 mm/600 rpm

55. Sequin (L)

Select whether you use sequin device (left side) or not.

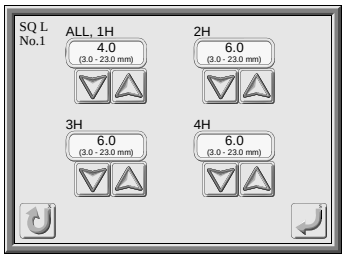


Selection of method



No.1

This is a detailed example of No.1 when head group is set, and SQ3 or ESQ-C is selected. It is possible to set sequin feed amount by selected head individually.



AR: non-use

SQ: Not used

SQ3: Sequin device III

SQ4: Sequin device IV

ESQ-C: ESQ-C

No: Without sequin device

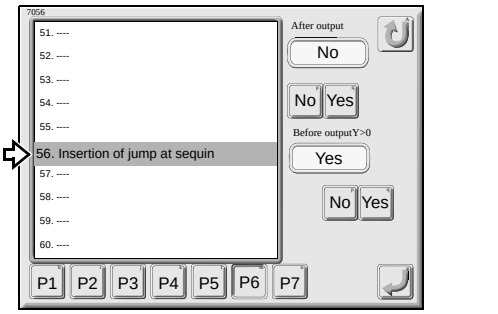
When sequin feed amount is set, Maximum R.P.M. will become as described below.

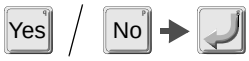
Setting value: 3.0 to 8.5 mm/1,000 rpm (from 9.0 to 19.5 mm, it will be decreased in stages.) 20.0 to 23.0 mm/600 rpm

56. Insertion of jump at sequin

Select whether you insert non-data jump by one stitch before/after sequin output or not.

This function sometimes may not be displayed depending on the setting. For details, please consult the distributor.





No.1

When you select SQ4, one piece of detailed key will be displayed. When you select SQ3 or ESQ-C, two pieces (No.1, No.2) of detailed key will be displayed. Set sequin feed amount at the first color and the second color respectively.

Rough standard of sequin feed amount is +1.0 mm to sequin size.

When head group is set, set the second head and after.

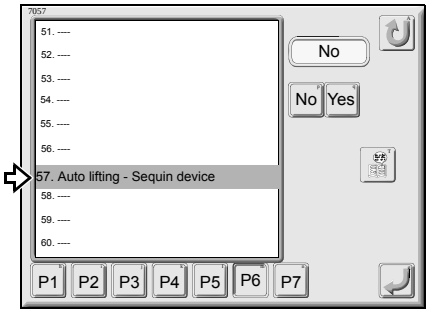
When "66. Boring" or "67. Cording" is set to the last needle, it is not possible to set.

When sequin device IV is set, insertion of non-data jump before sequin output cannot be selected.

When sequin output Y data is +0.1 or more and sequin color change is performed before sequin output, insertion of non-data jump before sequin output is selectable.

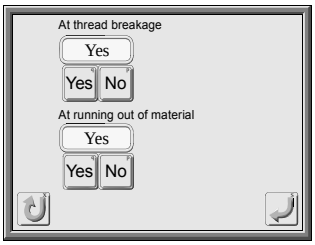
57. Auto lifting - Sequin device

Select whether sequin device moves up or not at working of ATH by frame stepping.
Select whether sequin device moves up automatically or not when thread breaks or sequin material breaks. (In case of sequin device III)



Yes / No →

Pressing the detailed key will display the pop-up window.



When selecting "Yes", press the detailed key so that you select in which case sequin device moves up automatically.

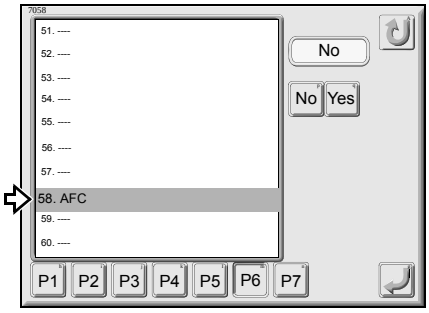
At thread breakage

At running out of material

It is possible to select either of them, or both of them.

58. AFC

Select whether AFC is equipped/not equipped.

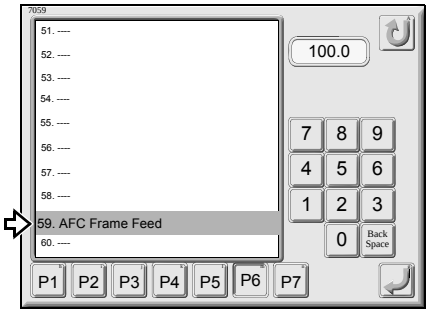


Yes / No →

When AFC is equipped after installation of the machine, it is necessary to set frame weight level. For details of setting, please ask the distributor for information.

59. AFC Frame Feed

Set a feed amount of AFC frame. Input a value between 100 mm and Y axis embroidery space of AFC frame.

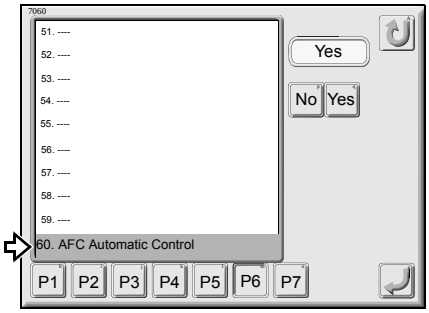


0 to 9 →

It is effective when "AFC" is set to "Yes".

60. AFC Automatic Control

This function performs automatic control of AFC (AFC valve automatic sequence movement after end of embroidery and automatic start).



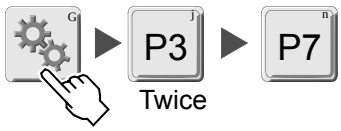
Yes / No →

It is effective when "AFC" is set to "Yes".

Setting to "No" will not perform AFC valve sequence movement after end of embroidery and automatic start.

2-7. P7 page (option, others)

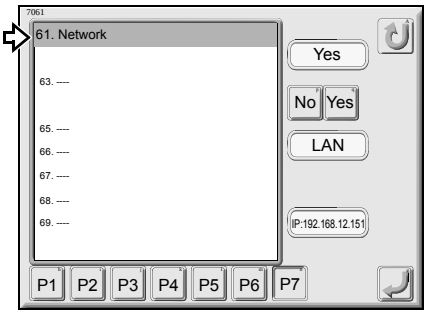
Page P7

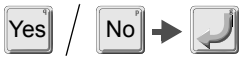


61. Network

Select whether network is connected or not.

This function sometimes may not be displayed depending on the setting. For details, please consult the distributor.

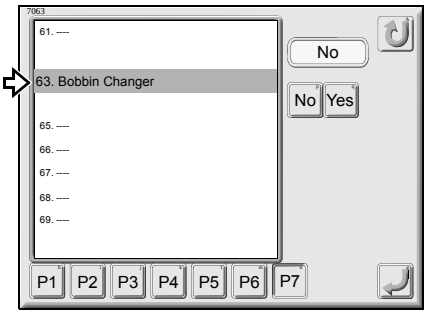


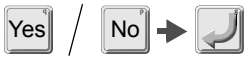


It is applicable to LAN connection only. IP address will be displayed at LAN setting.

63. Bobbin Changer

Select whether bobbin change is equipped or not.

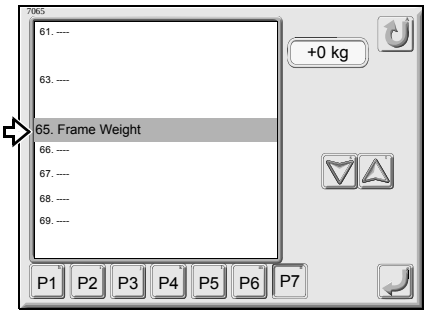




65. Frame Weight

Select weight to be added to the frame.

This function sometimes may not be displayed depending on the setting. For details, please consult the distributor.

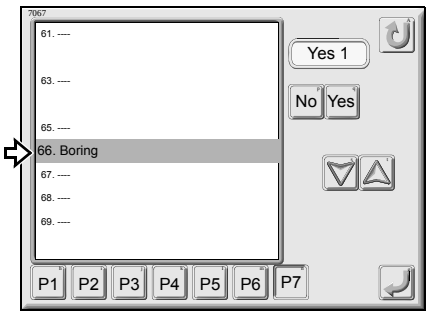


+0 to +20 kg

When frame weight becomes heavier, stitch length in X-axis direction may become larger. When stitch length becomes larger, perform adjustment.

66. Boring

Select whether boring device is equipped/or not and attaching position.

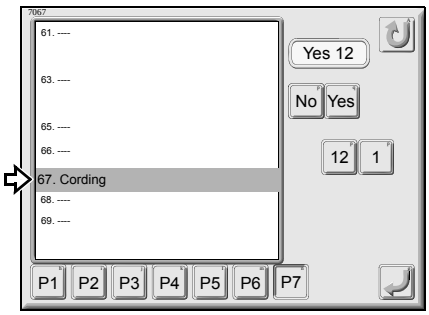


Yes 1: 1st needle
Yes 2: 2nd needle
Yes 15: 15-needle
(in case of 15-needle machine)

It is not possible to select the needle bar equipped with "Sequin device " or "Cording device".

67. Cording

Select whether cording device is equipped/or not and attaching position.



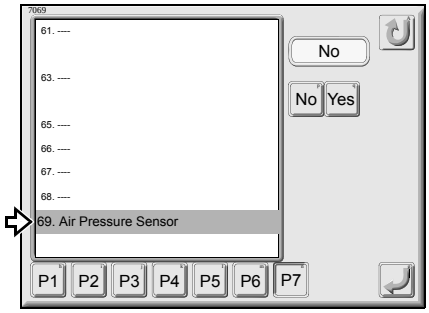
When attaching to the last needle of 12-needle machine

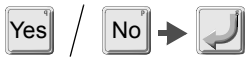
(When attaching it to the 1st needle, select 1.)

It is not possible to select the needle bar equipped with "Sequin device " or "Boring device".

69. Air Pressure Sensor

Select whether air compressor is equipped/or not.





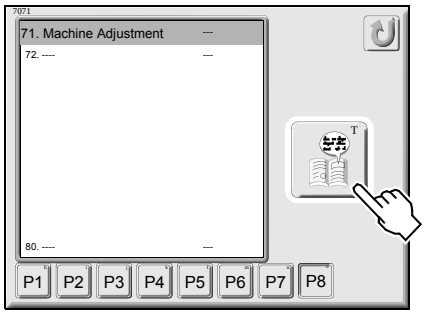
It will be displayed when any of Sequin device IV, AFC or Bobbin changer is equipped.

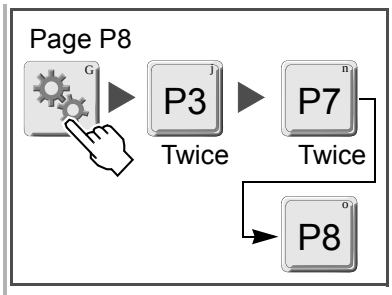
When only UBC II is equipped, select "No".

2-8. Page P8

[71. Machine Adjustment]

Perform setting for each part of the machine and adjustment.

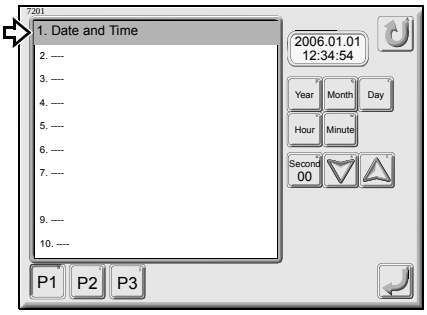


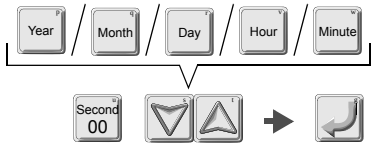


1. Date and Time

Adjust the current date and time.

This function sometimes may not be displayed depending on the setting. For details, please consult the distributor.

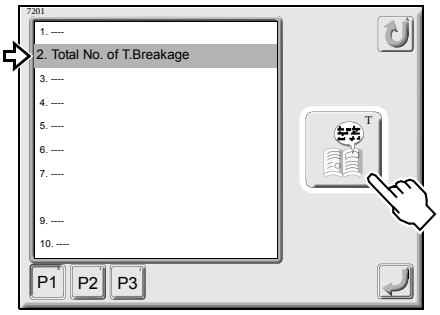


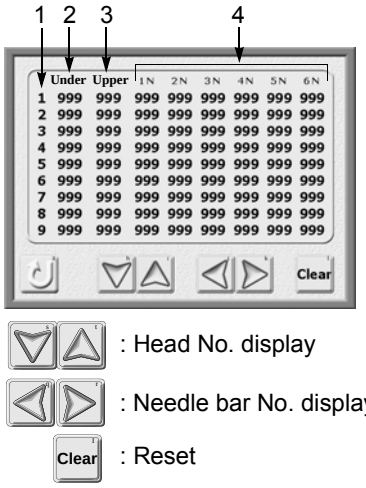


2. Total No. of T.Breakage

It displays the number of upper/under thread breakage by head unit.

This function sometimes may not be displayed depending on the setting. For details, please consult the distributor.





: Head No. display

: Needle bar No. display

Clear : Reset

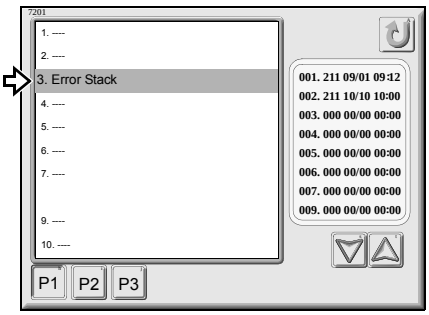
Leader number of the left pop-up screen

1. Head No.
2. Number of under thread breakage
3. Number of upper thread breakage
4. Number of upper thread breakage by needle bar unit

3. Error Stack

It displays code numbers occurred up to now, and month/date/time of occurrence.

This function sometimes may not be displayed depending on the setting. For details, please consult the distributor.



Example: 001. 211 09/01 09:12
The latest code number occurred on September 1, 211, at 9 o clock 12 minutes.

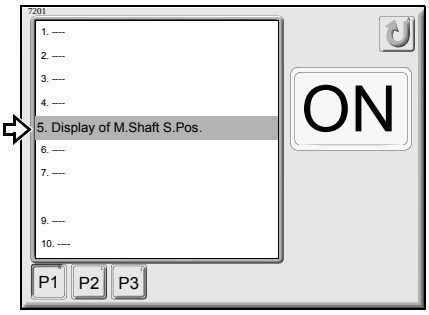
It moves up and down one by one row.

It is possible to display up to 49 code numbers at the maximum and 001 is the latest code No.

5. Display of M.Shaft S.Pos.

It displays whether the current main shaft angle is within the range of fixed position or not.

This function sometimes may not be displayed depending on the setting. For details, please consult the distributor.



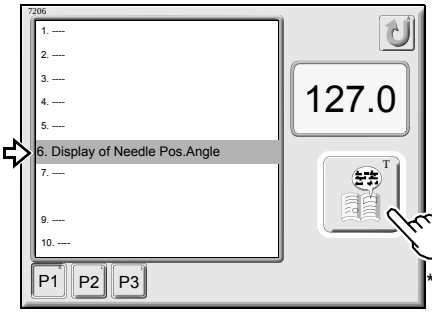
ON: Within the range of the fixed position

Without display: Outside of the range of the fixed position

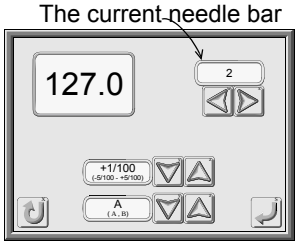
6. Display of Needle Pos.Angle

It displays the potentiometer value of the current needle position.

This function sometimes may not be displayed depending on the setting. For details, please consult the distributor.



The current needle bar



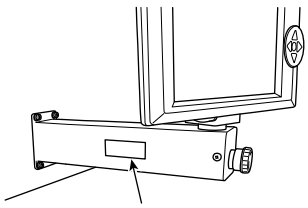
*Fine adjustment of color change moving amount

-5/100 to +5/100

*Change of color change speed

A(Standard) / B(Slow)

When the memory is initialized, set the value of "Correction of Color Interval" that is indicated on the label of operation panel stand.



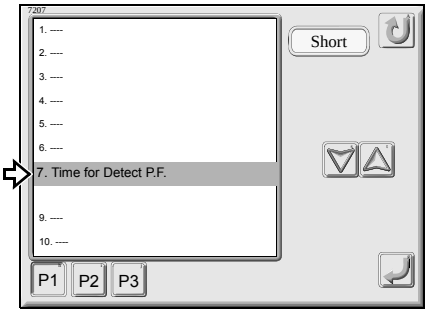
Correction of Color Interval

In case the setting was changed, turn ON the power again.

7. Time for Detect P.F.

This setting makes the machine stop even at momentary power failure.

This function sometimes may not be displayed depending on the setting. For details, please consult the distributor.



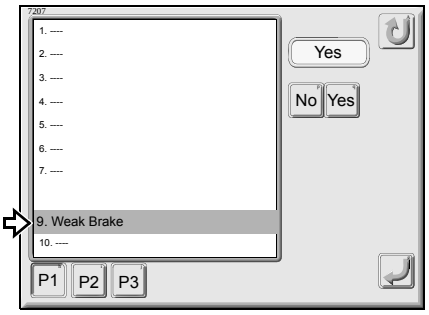
When setting to "Short": the machine will stop at momentary power failure.

When setting to "Long", the machine will continue operation even at momentary power failure.

9. Weak Brake

It is the setting to release the brake of the main shaft motor temporarily while the main shaft stops.

This function sometimes may not be displayed depending on the setting. For details, please consult the distributor.



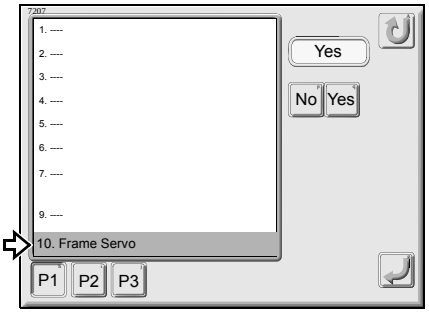
YES: To apply main shaft brake

NO: Not to apply main shaft brake

10. Frame Servo

It is the setting to lock/not to lock X/Y-axis motor.

This function sometimes may not be displayed depending on the setting. For details, please consult the distributor.



YES: To lock X/Y-axis motor

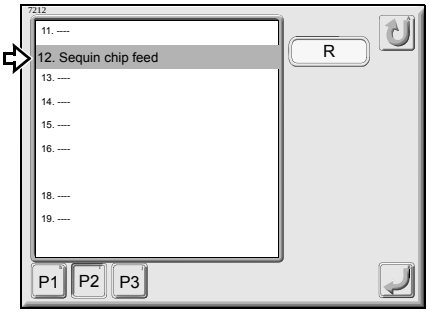
NO: Not to lock X/Y-axis motor

X/Y-axis motor will be locked at stop of the machine by setting to "Yes". Therefore, it will become impossible to move the frame by hands, etc.

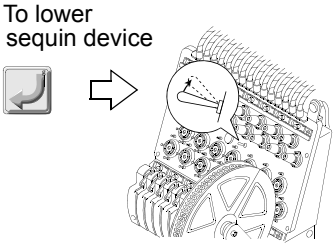
12. Sequin chip feed

It is possible to feed sequin chips by tension base switch.

This function sometimes may not be displayed depending on the setting. For details, please consult the distributor.



To lower sequin device



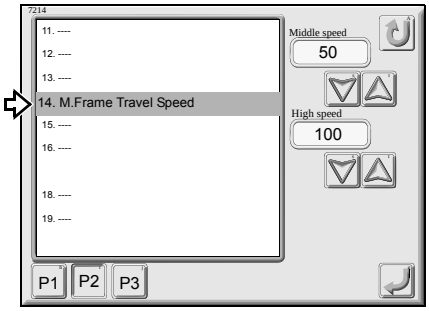
It is not possible to perform operation when you do not select needle bar equipped with sequin device. In case of R, select the first needle. In case of L, select the last needle.

Changing the screen will cause sequin device to move up and finish feeding.

14. M.Frame Travel Speed

This is a speed setting when performing manual frame travel.

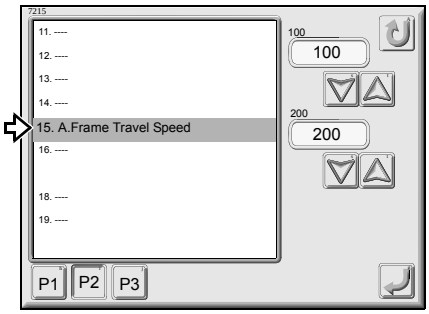
This function sometimes may not be displayed depending on the setting. For details, please consult the distributor.



15. A.Frame Travel Speed

Set frame travel speed at offset frame travel.

This function sometimes may not be displayed depending on the setting. For details, please consult the distributor.

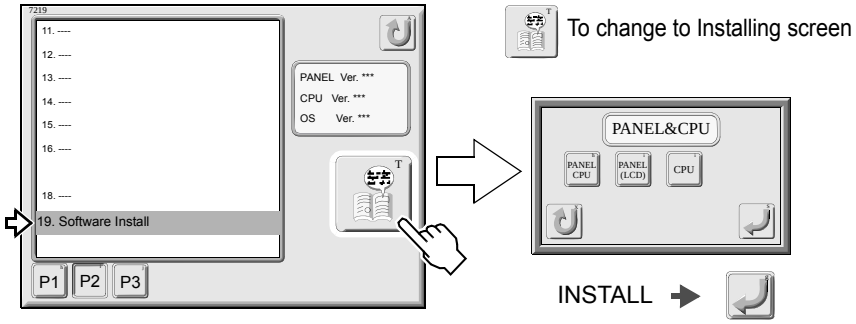


The value here will be reflected to "29. Frame Travel Speed".(Refer to p.115)

19. Software Install

Install the PANEL software and/or CPU software.

This function sometimes may not be displayed depending on the setting. For details, please consult the distributor.

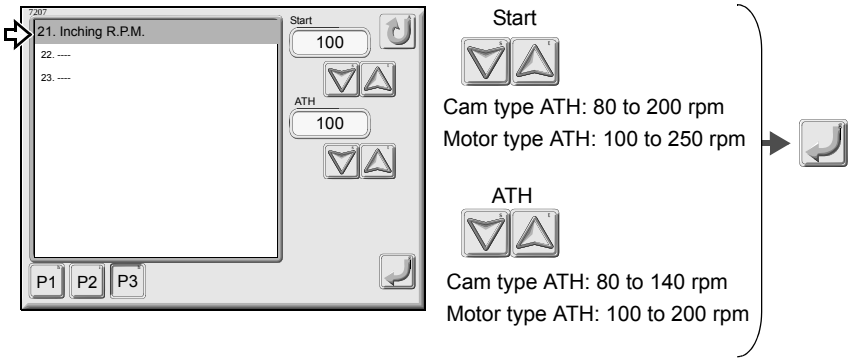


Software installation(Refer to p.150)

21. Inching R.P.M.

Set start inching and R.P.M. of inching at ATH.

This function sometimes may not be displayed depending on the setting. For details, please consult the distributor.

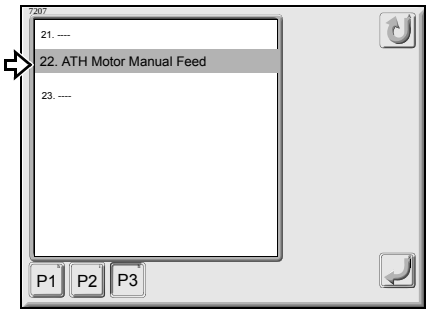


Select "80", "100" etc. according to sewing condition.

22. ATH Motor Manual Feed

It is used when motor type ATH is adjusted.

This function sometimes may not be displayed depending on the setting. For details, please consult the distributor.



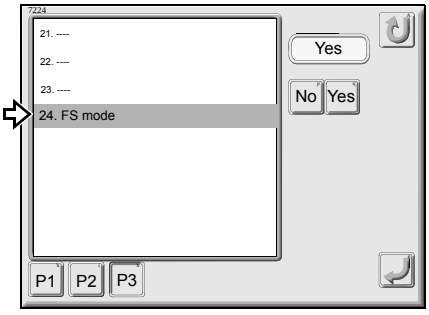
For details, please ask the distributor for information.

In case of cam type ATH, the machine does not display.

24. FS mode

Set to embroider or not by using FS mode.

This function sometimes may not be displayed depending on the setting. For details, please consult the distributor.



Yes FS mode

No Standard mode

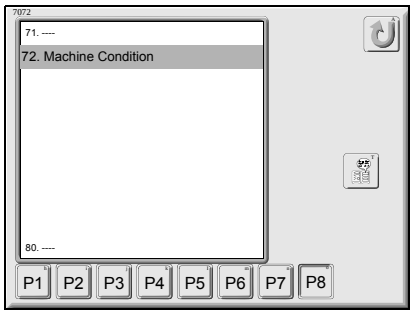
For details, refer to the separate volume "FS mode".

[72. Machine Condition]

CAUTION

The following settings are set by the manufacturer at shipment of the machine. Except some setting, customer should not change settings of the machine.

This sets spec. of the machine.



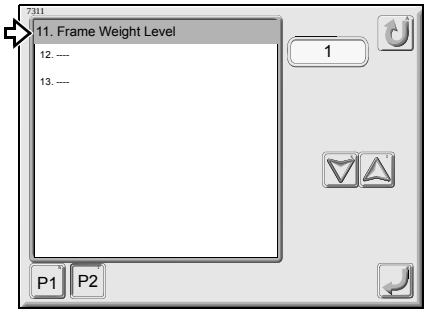
To switch the screen to items of machine condition

The following items are omitted.
1. Machine Type
2. Machine Number
3. Head Interval
4. Y axis Frame Size
5. Frame Spec
6. Overlap

11. Frame Weight Level

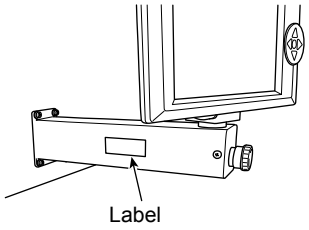
Set frame weight level. Data of stitch length adjusted by frame weight level will be registered.

This function sometimes may not be displayed depending on the setting. For details, please consult the distributor.



To perform fine adjustment, set the frame weight level, and then change "12. X axis Width Adjustment" and "13. Y axis Width Adjustment".

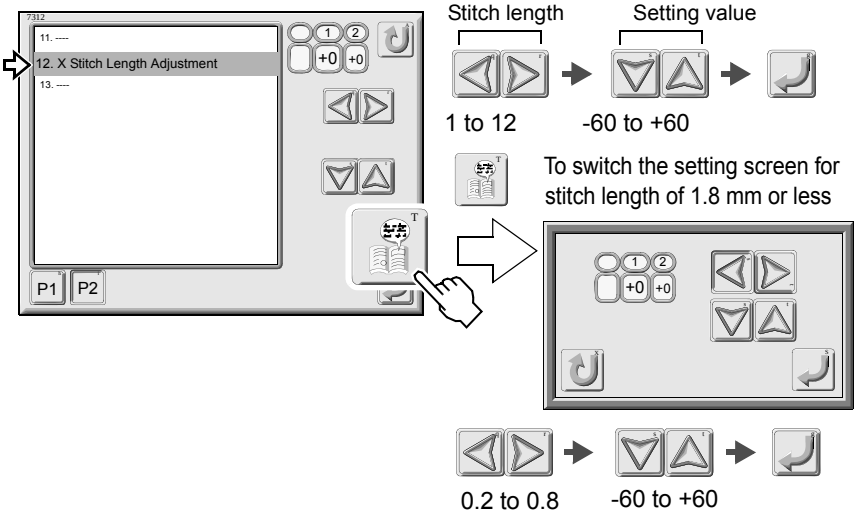
To return a value to the initial setting value, refer to the label of frame weight level stuck on the operation panel stand.



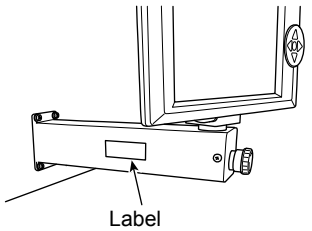
12. X Stitch Length Adjustment

Perform fine adjustment of each stitch length by the setting frame weight level.

This function sometimes may not be displayed depending on the setting. For details, please consult the distributor.



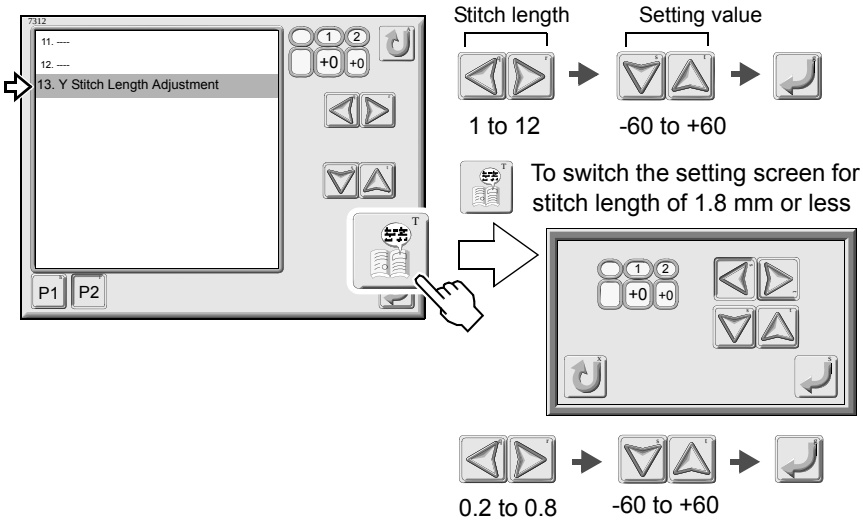
To return a value to the initial setting value, refer to the label of frame weight level stuck on the operation panel stand.



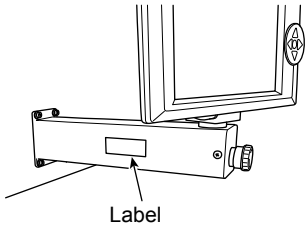
13. Y Stitch Length Adjustment

Perform fine adjustment of each stitch length by the setting frame weight level..

This function sometimes may not be displayed depending on the setting. For details, please consult the distributor.



To return a value to the initial setting value, refer to the label of frame weight level stuck on the operation panel stand.



Chapter 8

Options

About optional devices available for use on the machine

1. AFC

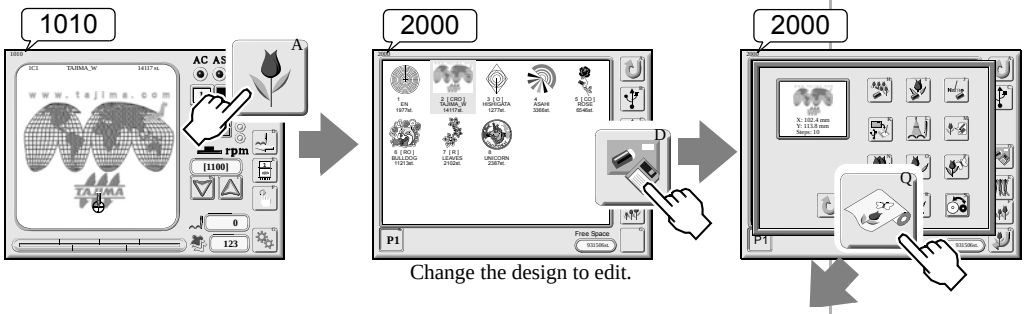
1-1. When AFC is equipped

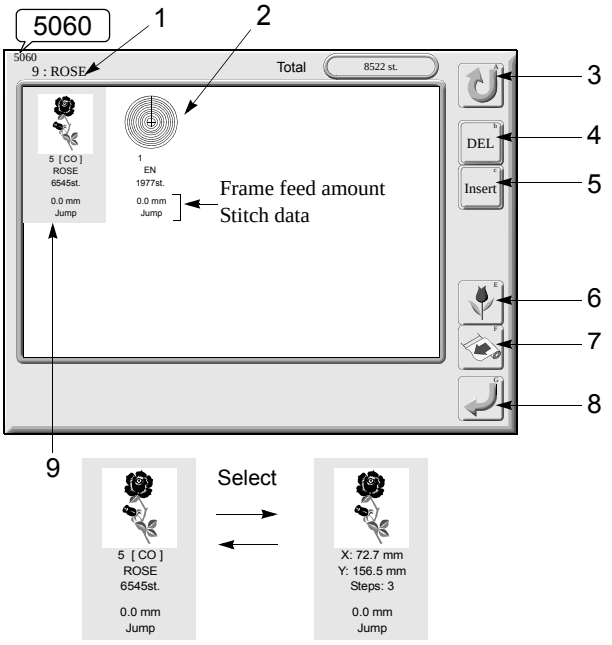
When AFC is equipped, check if parameter “58. AFC” is set to “Yes” and the setting value of “11. Frame Weight Level” is “For AFC Frame”

(=> p.124, p.133).

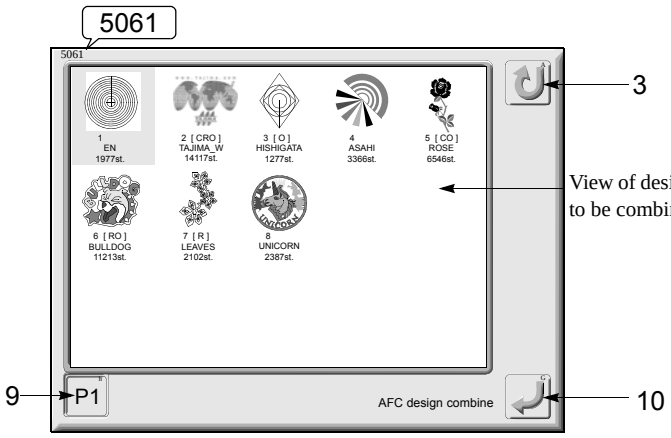
1-2. Screen of AFC design combine

Combine plural designs and register these designs as one AFC design.





Every pressing the selecting design will switch information display.

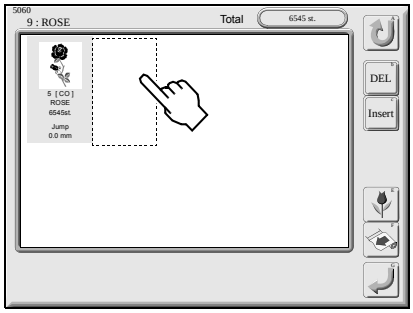


When combining AFC designs, X value of start position of all designs will become the same.

1. Name of combined design
2. Design to combine
3. Return
4. To delete design
5. To insert design
   It will copy the selecting design and insert this design as the next design.
6. View of designs to combine
7. Setting for start position of combined design
8. To combine designs for AFC and store
9. Select
10. Decide the design to combine.

1-3. AFC D. Combine

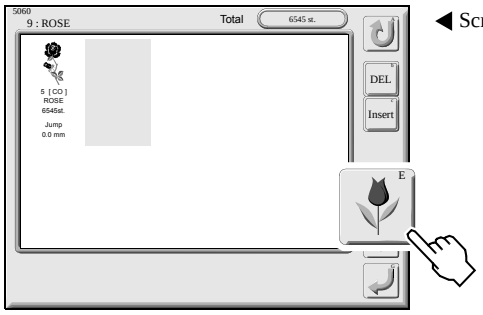
(1) Select the position to be combined next.



◀ Screen 5060

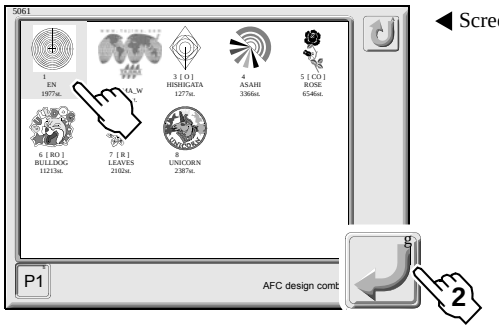
To combine the same design, press “Insert” to copy the same design to be inserted. When insertion is completed, proceed to “(4) Setting for frame feed amount”.

(2) Display view of designs to combine.



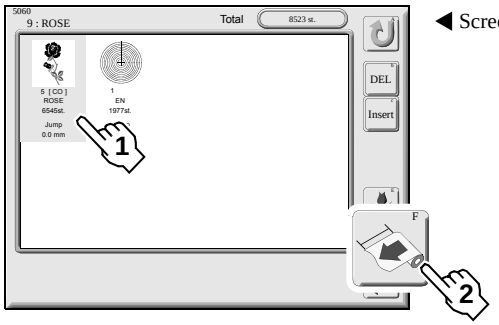
◀ Screen 5060

(3) Select a design to combine and decide it.

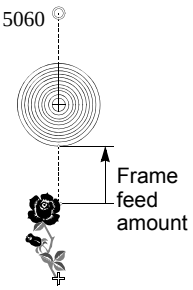


◀ Screen 5061

(4) Setting for frame feed amount

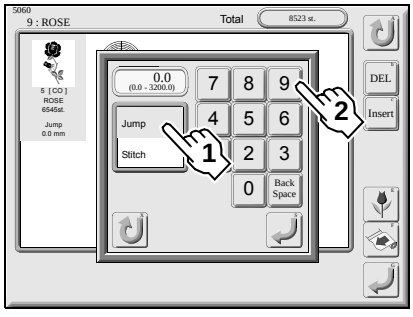


◀ Screen 5060



Set an interval (frame feed amount) from the end position of design to the start position of the next design.

(5) Input a frame feed amount.

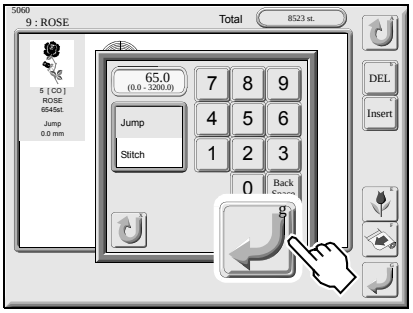


◀ Screen 5060

Selecting Stitch will perform frame travel by stitching. Selecting Jump will perform frame travel by jumping.

Input a frame travel amount in Y direction.

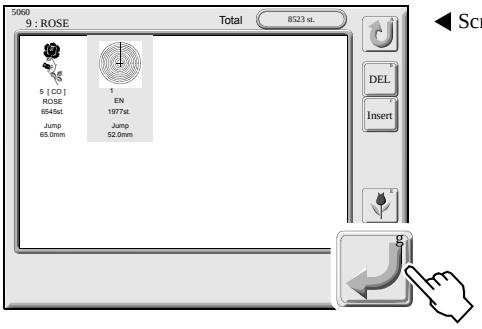
(6) Decide the frame feed amount.



◀ Screen 5060

Repeat operations from (4) to (6) to decide a frame feed amount of other design, too.

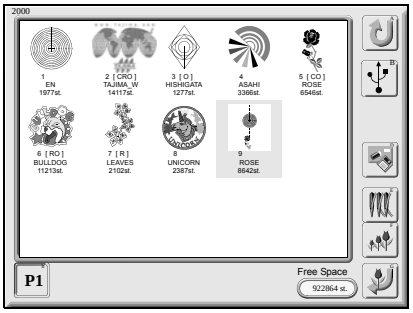
(7) To combine designs



◀ Screen 5060

When the edited design exceeds 1,000,000 stitches, it is not possible to register it to the memory.

(8) Completion of design combine



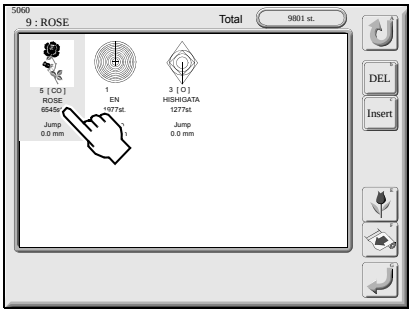
◀ Screen 2000

The combined design will be registered in screen 2000. Since it is registered with the design name of the first design, change the design name according to need.
Overwriting of design name (=> p.58)

1-4. Deletion of AFC combined design

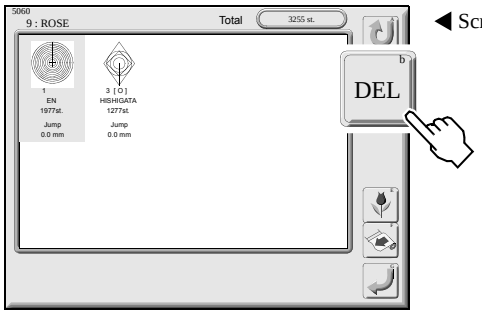
The followings are operations when deleting design to combine in the middle of operation of AFC design combine.

(1) Select the design to delete.



◀ Screen 5060

(2) Deletion

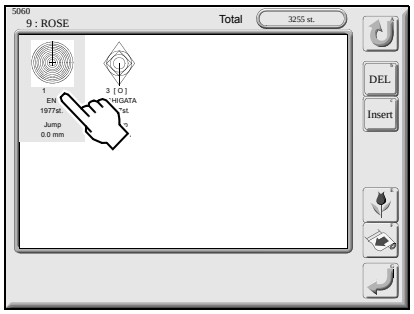


◀ Screen 5060

1-5. Insertion of AFC combined design

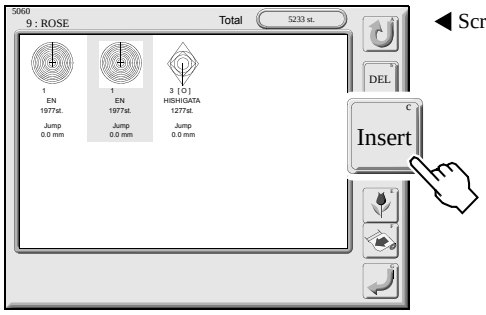
The followings are operations when inserting design to combine in the middle of operation of AFC design combine.

(1) Select a position to insert.



◀ Screen 5060

(2) Insert



◀ Screen 5060

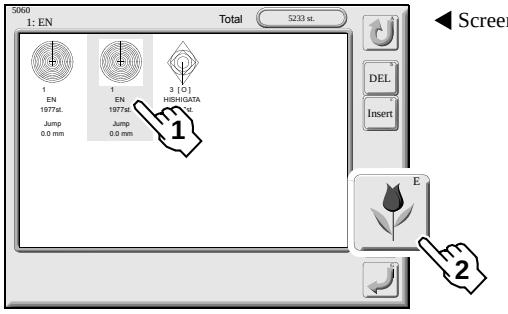
Pressing “Insert” will cause the selecting design to be copied and inserted.

To change the inserted design, refer to “Change of design to be combined for AFC”.

1-6. Change of design to be combined for AFC

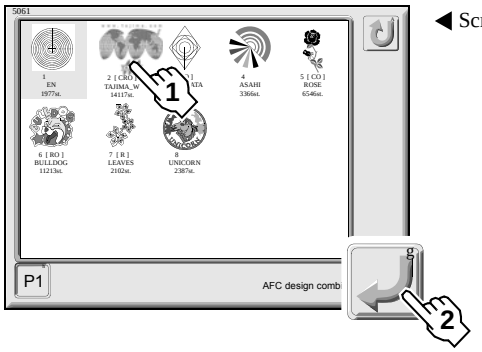
The followings are operations when changing design(s) to combine or inserted design in the middle of operation of design combine

(1) Select the design to change and display view of designs.



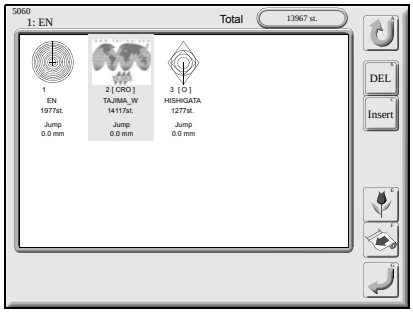
◀ Screen 5060

(2) Select the design and decide.



◀ Screen 5061

(3) Result of change



◀ Screen 5060

To continue operation, set frame feed of each design to perform combination.

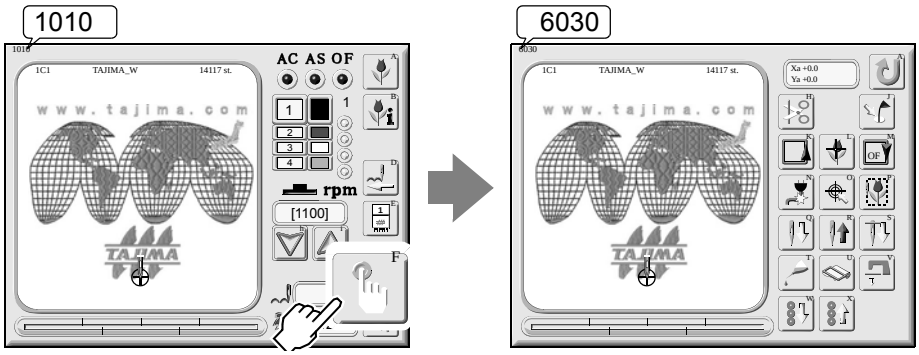
1-7. AFC valve•Stop at Lower Dead Point•Raising of Needle Bar

It is possible to open a valve of AFC frame manually.

Lower dead point is a position where needle bar moves down at the maximum (lower dead point). When performing frame travel in continuous design using AFC, it is possible to minimize misalignment of design

After finishing each work at the lower dead point, raise needle bar to start embroidery.

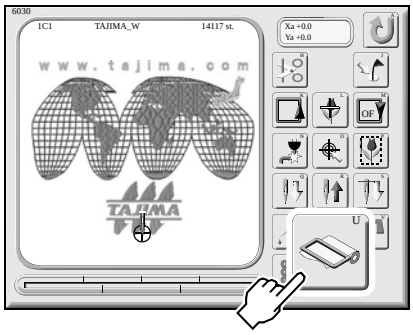
Calling manual operation screen (Screen 6030)



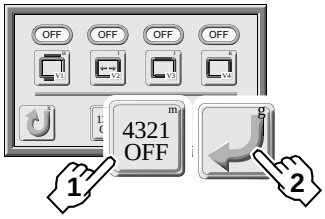
CAUTION

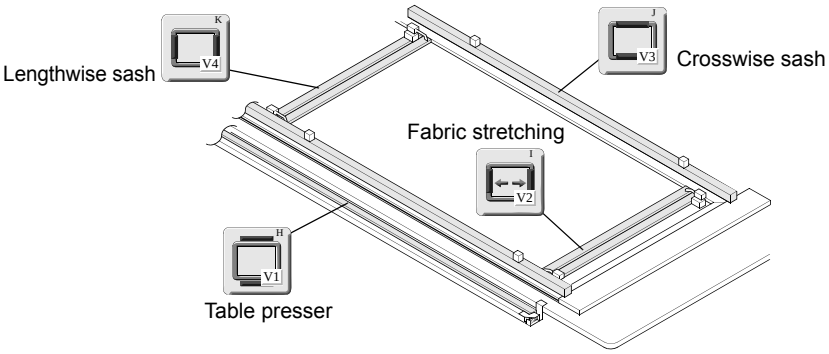
When performing this operation, do not access needle bar case or machine table with your hands or face. Moving frame or needle could injure you.

(1) AFC valve



◀ 6030 screen





1234 ON
Valves will open in the order from 1 to 4 to enable frame travel.

4321 OFF
Valves will close in the order from 4 to 1 to enable embroidery.

[In case of operating individual fabric presser]

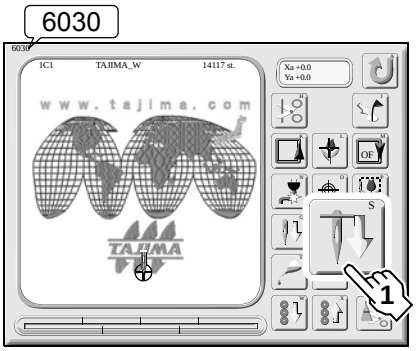
V1
ON: Fix fabric to the table
OFF: To release the fabric

V2
ON: To release the fabric
OFF: To stretch the fabric

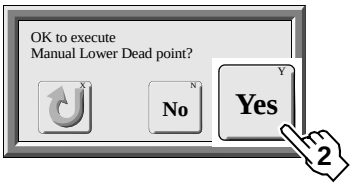
V3
ON: To release the fabric
OFF: Fix fabric to the frame

V4
ON: To release the fabric
OFF: Fix fabric to the frame

(2) Stop at Lower D. Point, icon S

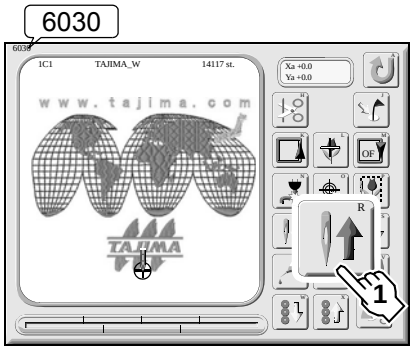


(3) Yes

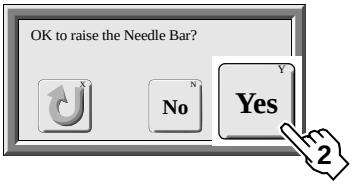


Needle bar will move down.

(4) Raising of needle bar, icon R



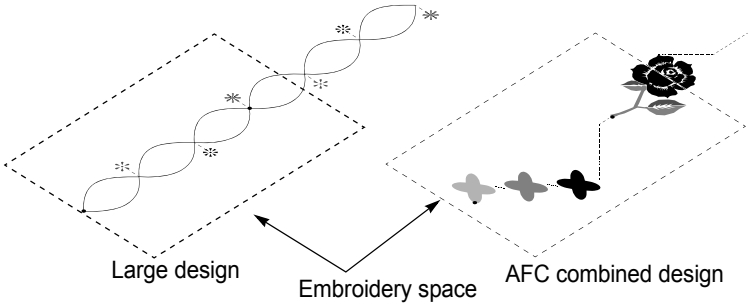
(5) Yes



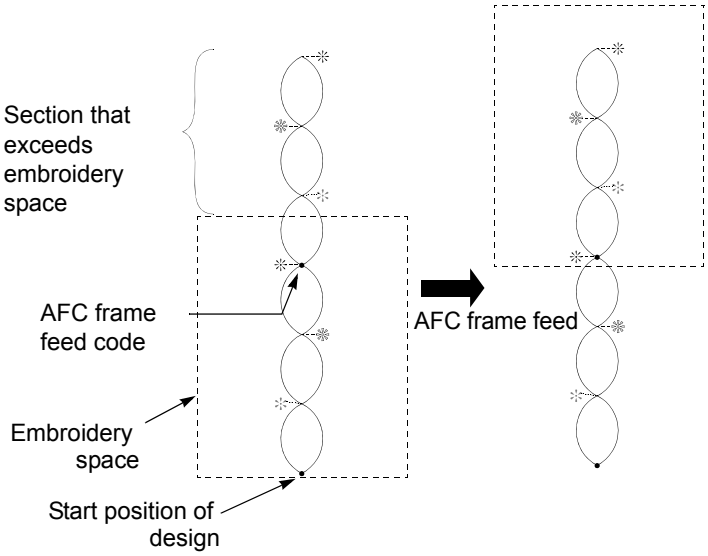
Return the needle bar that moved down to the original position.

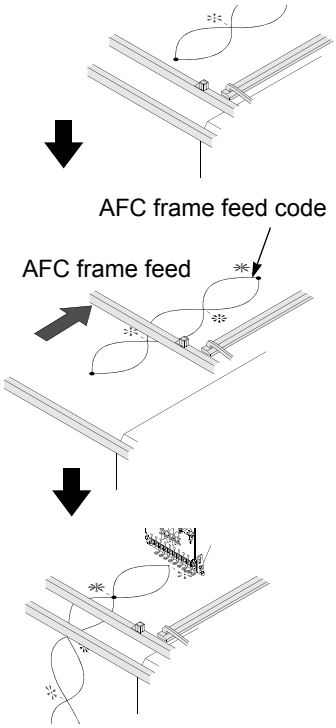
1-8. A usage example of AFC

The machine equipped with AFC can perform embroidery repeatedly by moving the AFC frame to the origin when embroidery is finished.



(1) An example of embroidery of large design

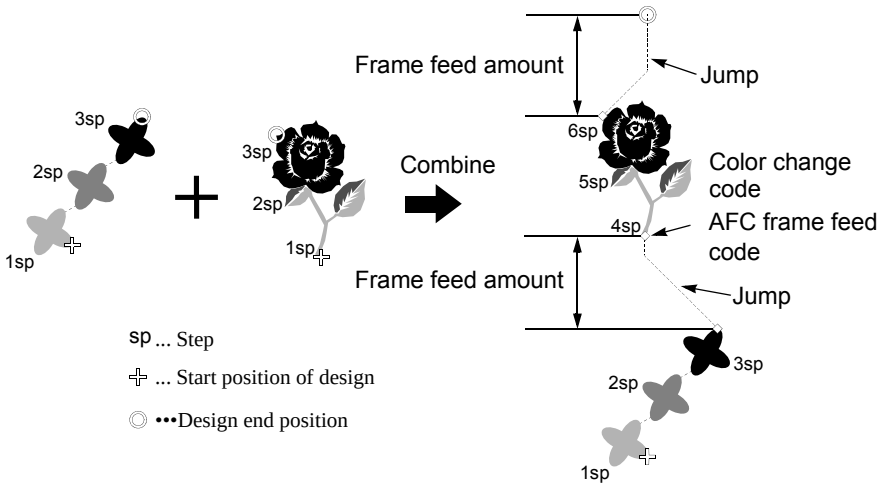




In case of a large design exceeding the embroidery space, perform data edit to insert an AFC frame feed code so that it is possible to embroider the whole design.

AFC frame feed code is a function code to execute a series of movements from release of fabric to stretching fabric again by frame travel to the next embroidery space.

(2) An embroidery example of AFC combined design

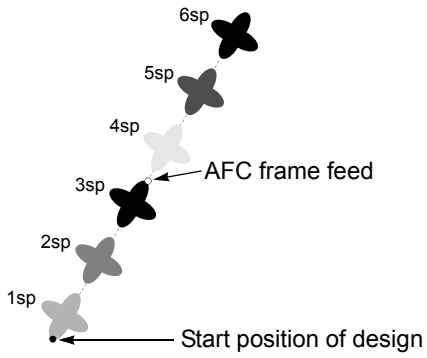


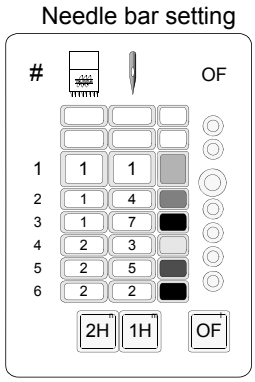
Set a frame feed amount of design in AFC design combine, and select either jump or stitch data for the frame feed amount. Start position and end position of design will be set to the same X value and the frame will not move to X direction at AFC frame feed.

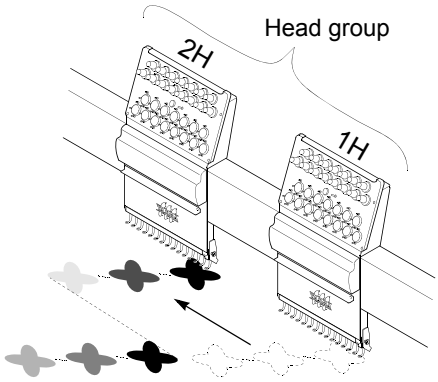
When combining AFC designs, a color change code and an AFC frame feed code will be added to the start position of the next design. Start position of each design combined will be set to the same X value.

(3) An example when using head group

It is possible to convert an embroidery position of AFC combined design by setting head group and head offset on needle bar setting screen.





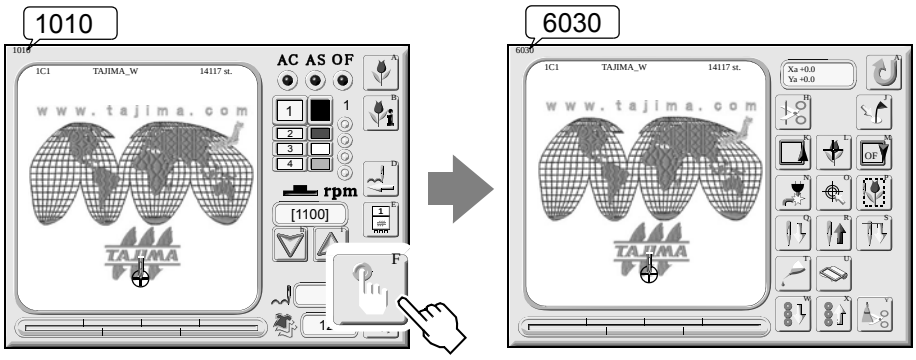


Set the whole first needles to the first design and set the whole second needles to the second design in head group. After setting head group, set head offset to "No". Setting to "Yes" will cause the frame to move to X direction resulting in misaligning of fabric and/or the frame will not be able to press the fabric.

2. Sequin device

2-1. When lowering devices all at once

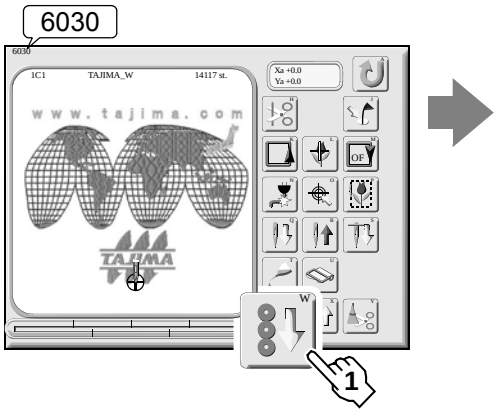
Calling manual operation screen (Screen 6030)



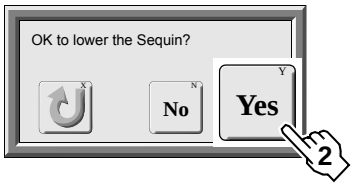
CAUTION

- When performing this operation, do not access needle bar case or machine table with your hands or face. Moving sequin device could injure you.
- Do not move up/down air cylinder and relative parts by hand. The device could be damaged.

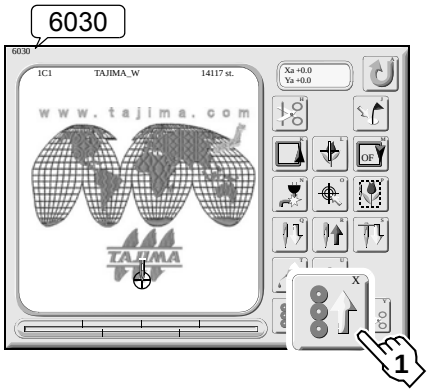
(1) Moving down of device, icon W



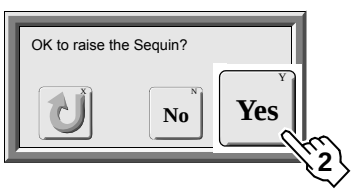
(2) Yes



(3) Moving up of device, icon X

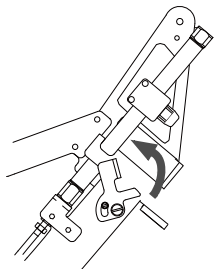


(4) Yes



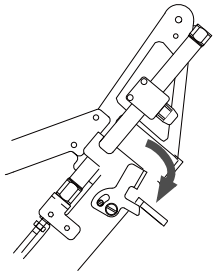
It is possible to operate only when selecting needle bar equipped with device.

To use the device, raise the clutch lever(In case of sequin device IV).



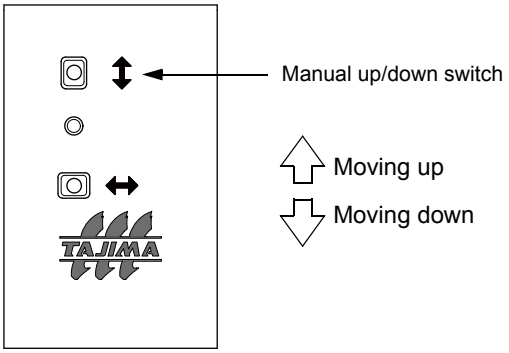
At thread trimming, color change or end of embroidery, the device will move up automatically.

To turn OFF the power with the device raised, lift the clutch lever. (In case of sequin device IV)



2-2. When moving up/down independently

* Corresponding only to sequin device III

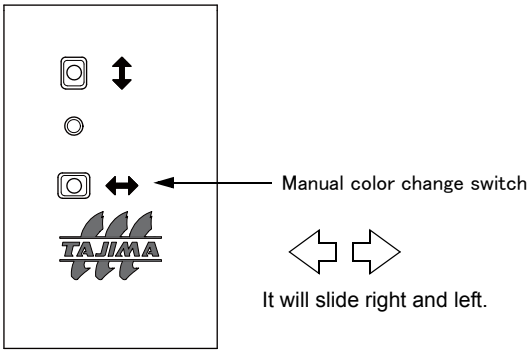


Turning over the switch in the middle of moving up/down will cause the device to stop.

The machine does not accept operation of manual up/down switch during operation of the machine.

2-3. When changing color manually

* Corresponding only to sequin device III



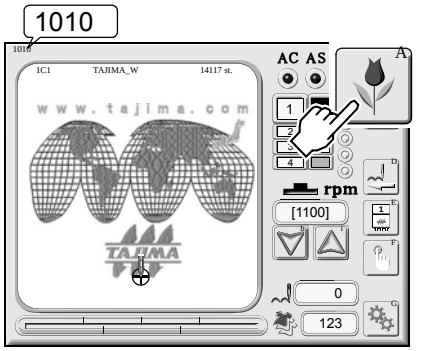
The machine does not accept operation of manual color change switch during operation of the machine.

2-4. To replace the 1st color with the 2nd color or vice versa (needle bar step unit)

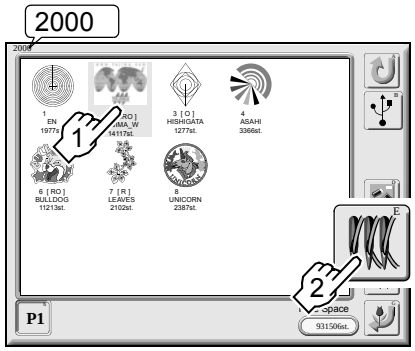
* Corresponding only to sequin device III

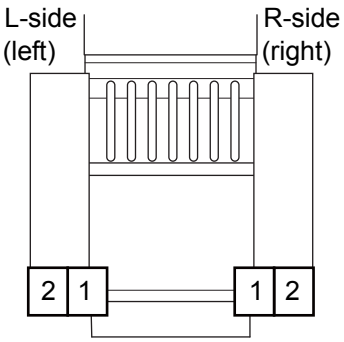
Invert (reverse) the 1st color and 2nd color of device.

(1) Icon A



(2) Design data, icon E

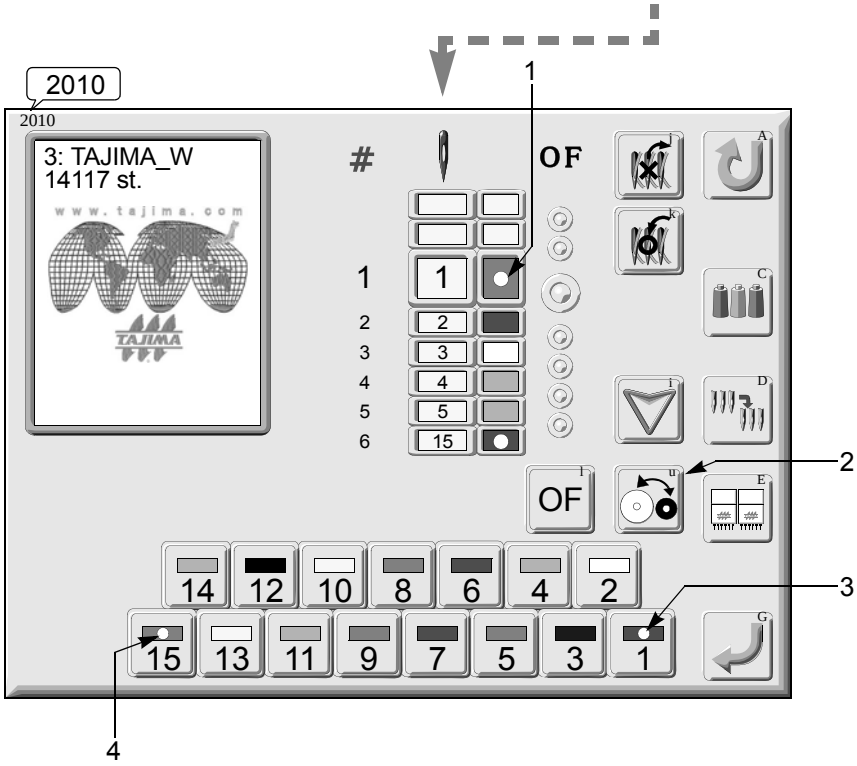




1st needle: Sequin output
2nd color: Sequin output 2

This function inverts function codes (sequin output and sequin output 2) in the target needle bar step.

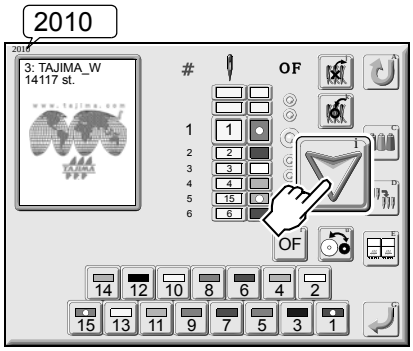
It is effective only when setting for sequin device is “SQ3” (=> p.122).



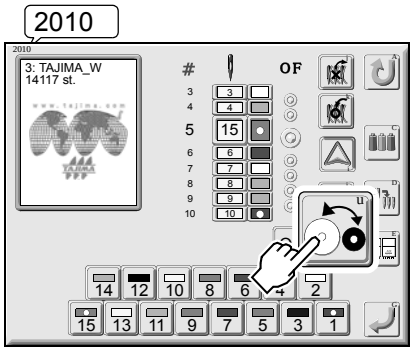
This function targets sequin needle (1st needle or last needle).

1. In the state of the first and second colors reversed
   ○ : Not to perform
   ● : To perform
2. Sequin reverse key
   The following reversed display of 3 and 4 will switch.
3. 1st needle: R-side of device
4. Last needle: L-side of device

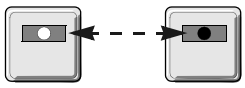
(3) Select needle bar step.



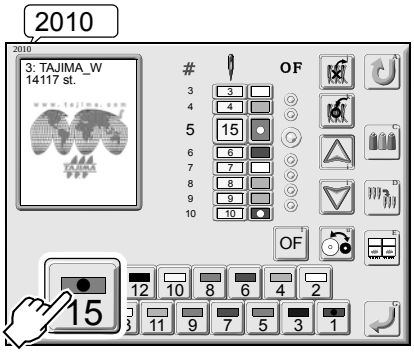
(4) Icon u, switch of reverse display



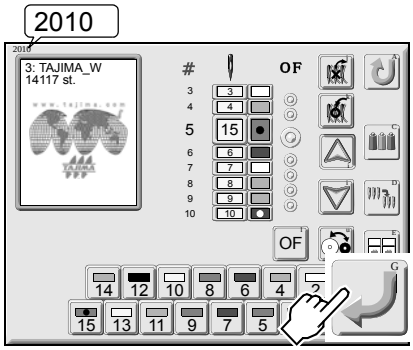
Reverse display



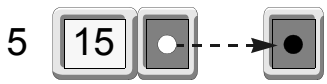
(5) Select needle bar icon, switch reverse display.



(6) To set



Selecting needle bar icon will switch reverse display of needle bar selection.

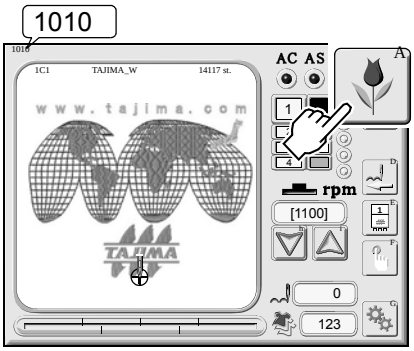


2-5. To replace the 1st color with the 2nd color or vice versa

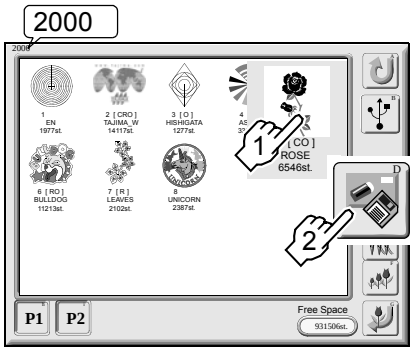
* Corresponding only to sequin device III

Invert (reverse) the first color and second color of device against the setting contents of “2-4. Needle bar step unit”.
* After the replacement, design data will be overwritten.

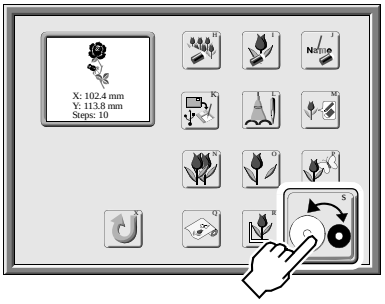
(1) Icon A



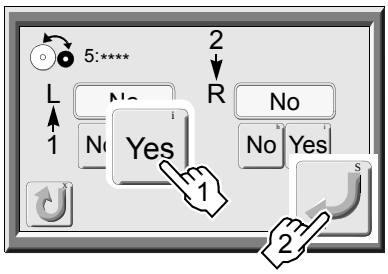
(2) Design data, icon D



(3) Icon S



(4) Icon i, setting



(5) After that, select this design and set the data.

1. Left side of device
2. Right side of device

Screen 5030

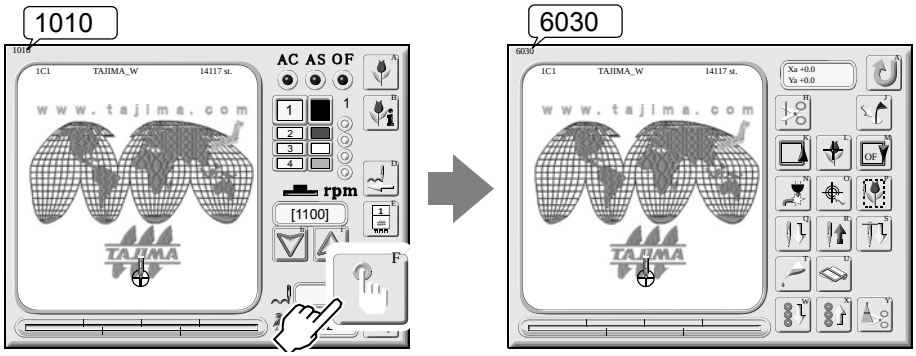
#	X	Y	Function	
47	-1.5	+3.0	Sequin Output	← First color
48	+1.5	-3.0	Stitch	
49	-1.5	+3.0	Sequin Output 2	← Second color
50	+1.6	-3.0	Stitch	
51	+3.2	-1.0	Stitch	
52	-3.2	+0.9	Sequin Output 2	← Second color
53	+3.2	-0.9	Stitch	

3. Automatic lubrication system

3-1. Manual Lubrication

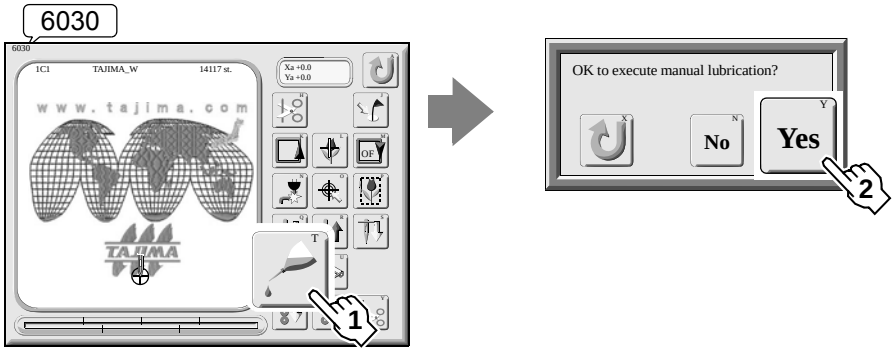
Activate automatic lubrication system manually.

Calling manual operation screen (Screen 6030)



(1) Icon T

(2) Yes



4. Boring device

When boring device is equipped to the machine or retrofitted at user's site, check setting of parameter "39. Boring Step" and "66. Boring" (=> p.118, p.126).

5. Cording device

When cording device is equipped to the machine or retrofitted at user's site, check setting of parameter "67. Cording" (=> p.126).

6. Bobbin changer

When bobbin change is equipped to the machine, check setting of parameter "63. Bobbin Changer" (=> p.125).

Chapter 9

Software installation

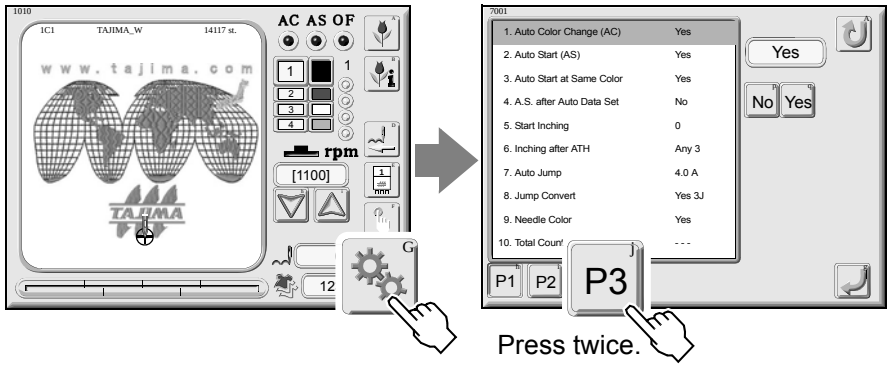
To install software, please consult the distributor.

1. How to install software

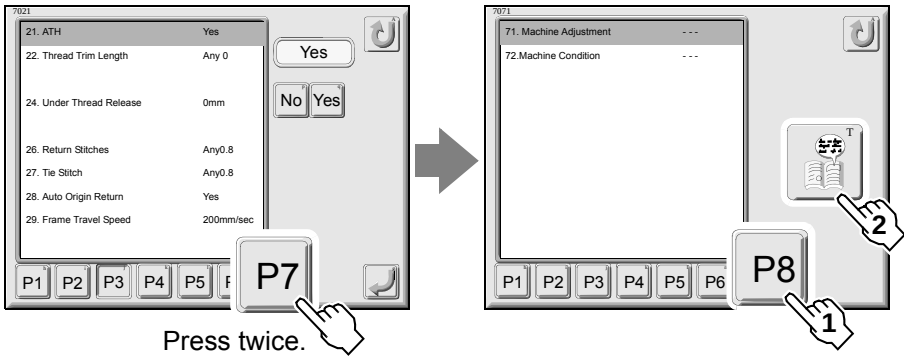
The latest software at shipment is installed to the machine. When upgrading of software is necessary, however, install the software according to the following procedure.

Regarding the latest version at present and how to obtain it, please ask the distributor for information.

(1) Switching of screen

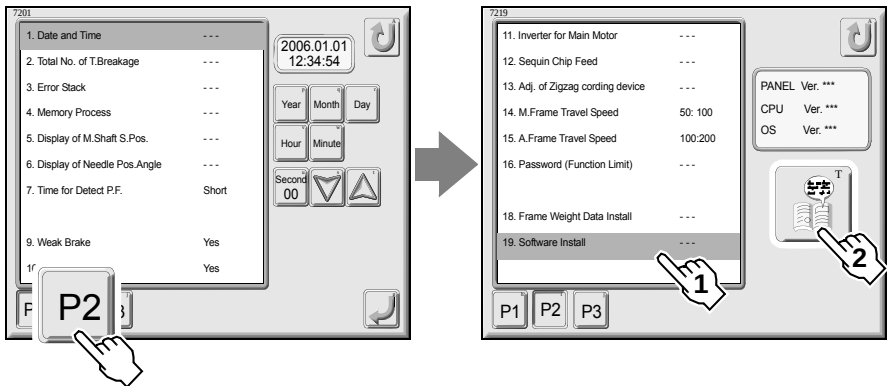


(2) Switching of screen



Switch to the screen of machine adjustment.

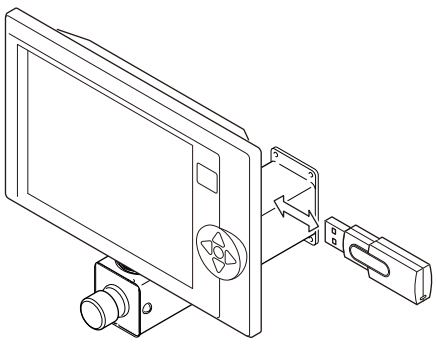
(3) Switching of screen



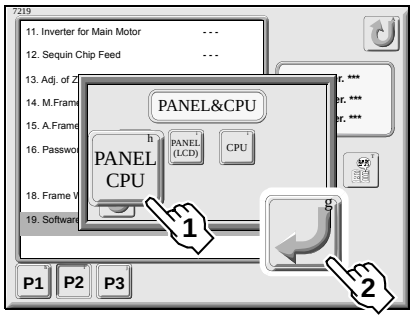
Press “P2” to select “Software Install”.

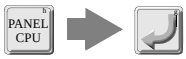
Switch to the screen of installation of software.

(4) Set the USB memory containing the software.

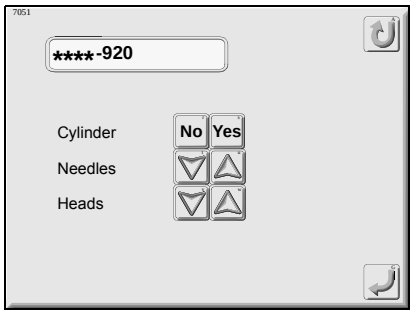


(5) Execute “PANEL & CPU”. When installing PANEL software or CPU software only, press the individual icon.

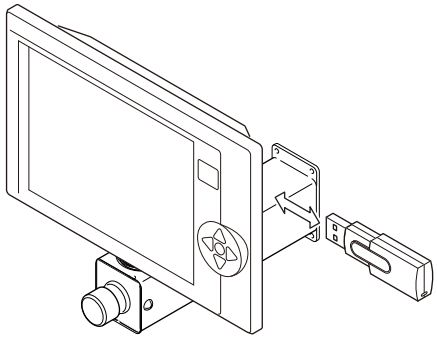




(6) Check spec. of the machine. If there is no error, turn OFF the power. When machine spec. is different, press each key to perform setting again.



(7) Take out the USB memory.



The software will be updated automatically after turning ON the power again.

2. Absolute origin search

After installing the software, execute absolute origin search (=> p.54).

Chapter 10

Outline of functions

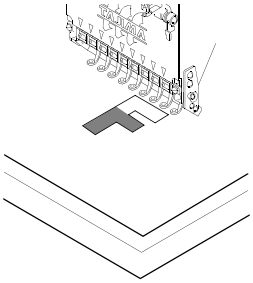
This chapter explains outline of main functions.

1. Offset

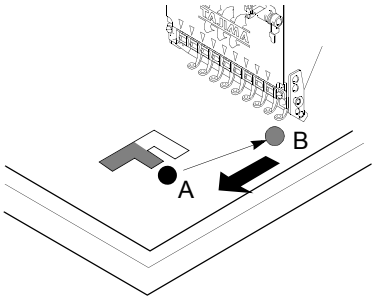
1-1. Manual offset

This function makes the embroidery frame return to the original position when the machine was stopped at an optional position in the middle of embroidery and the embroidery frame was moved to an optional position by manual frame travel.

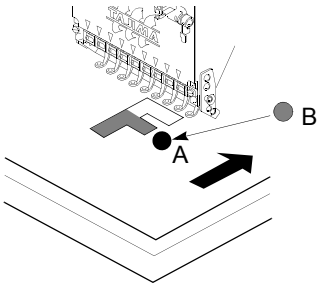
(1) Stop the machine at the optional point (A) and perform manual thread trimming.



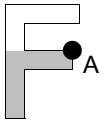
(2) Move the embroidery frame to the front side (B) by manual frame travel to perform checking of embroidery design etc.

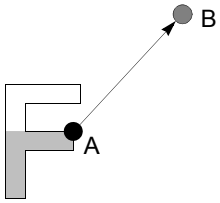


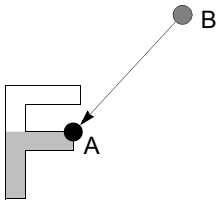
(3) Execution will make the frame return to the optional point (A).



A: Optional point B: Frame travel position



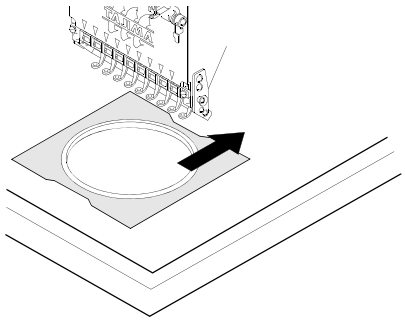




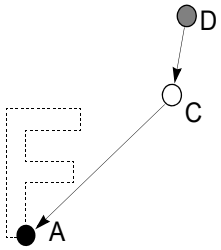
1-2. Automatic offset

This function makes the embroidery frame move to an offset position automatically at end of design.
The description below is an example when parameters "ATH" are set to "Yes".

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

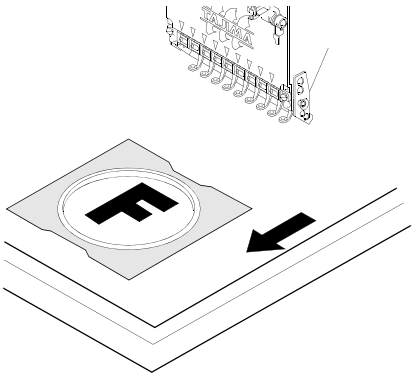


A: Start position of design
C: Middle position
D: Offset position

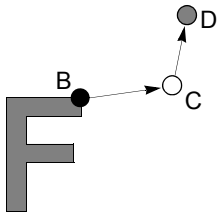


When there is no middle position (C), the frame will move to the start position of design (A).

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

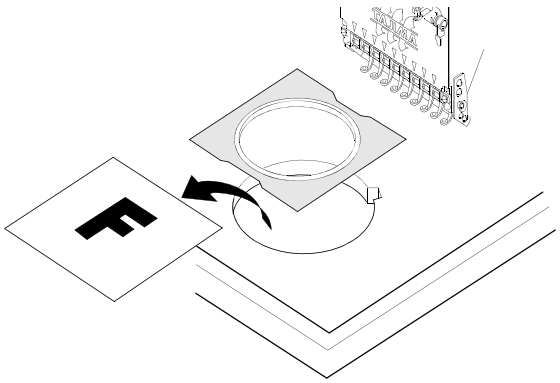


B: End position of design
C: Middle position
D: Offset position



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

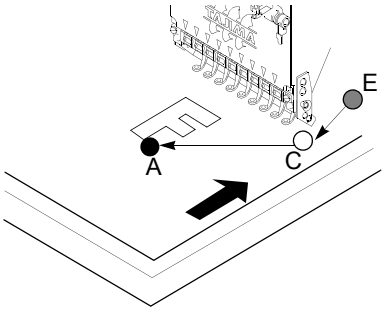
(3) Change the fabric or frame.



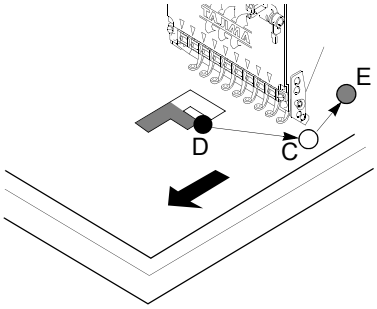
1-3. Automatic free-setting offset

This function makes the machine stop at an optional point in the middle of embroidery and makes the embroidery frame move to an offset position.

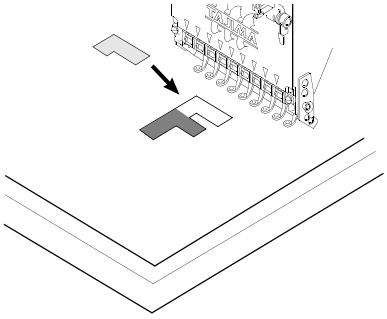
(1) When the machine is started after changing fabric etc., the embroidery frame will move to the start position of design (A) through the middle position (C) and the machine will start embroidery.



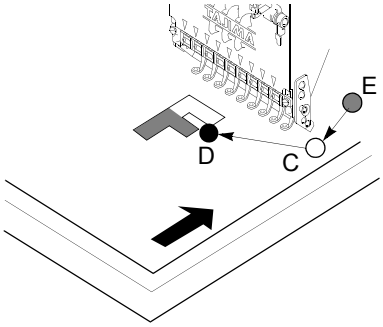
(2) The machine will stop at the optional point (D) to perform thread trimming, and the embroidery frame will move to the offset position (E) through the middle position (C).



(3) Place an applique.

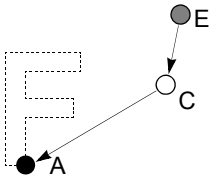


(4) When the machine is started, the embroidery frame will move to the optional point (D) through the middle position (C) and the machine will continue embroidery.



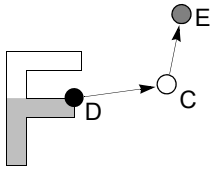
Design data should have an auto-free set offset code and parameter “ATH” should be set to “Yes”.

A: Start position of design
C: Middle position
E: Offset position



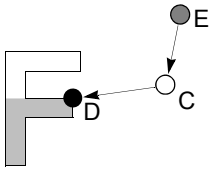
When there is no middle position (C), the frame will directly move to the design start position (A).

C: Middle position
D: Optional point
E: Offset position



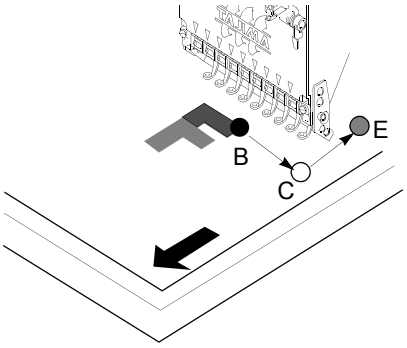
When there is no middle position (C), the frame will move directly to the free setting point (E).

C: Middle position
D: Optional point
E: Offset position

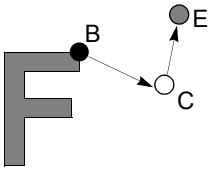


When there is no middle position (C), the frame will move directly to the optional point (D).

(5) The machine will stop at the end position of design (B), and the frame will move to the offset position (E) through the middle position (C).



B: End position of design
C: Middle position
E: Offset position

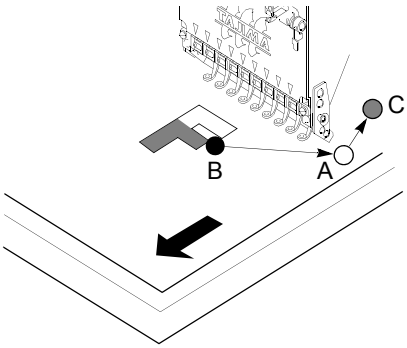


When there is no middle position (C), the frame will directly move to the offset position (E).

1-4. Offsetting at automatic color change

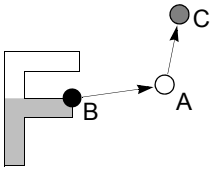
This function makes the embroidery frame move to an offset position at color change in the middle of embroidery.

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



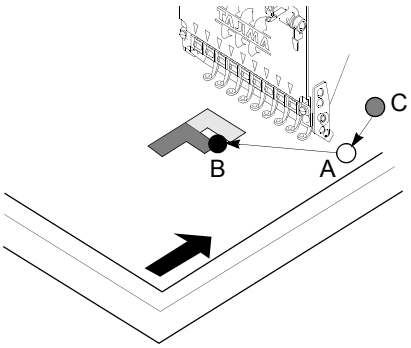
Parameters “Auto Color Change (AC)” and “ATH” should be set to "Yes".

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

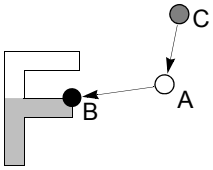


When there is no middle position (A), the frame will directly move to the offset position (C).

(2) When the machine is started, the embroidery frame will move to the color change point (B) through the middle position (A) and the machine will continue embroidery.



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



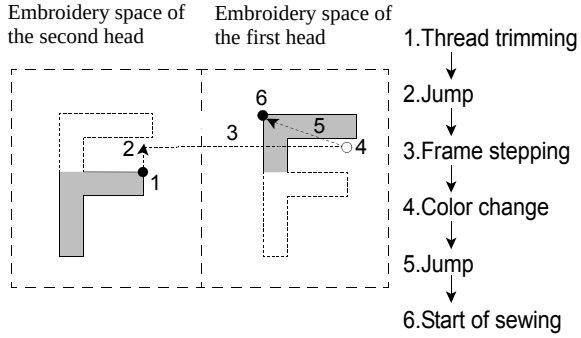
When there is no middle position (A), the frame will directly move to the color change point (B).

1-5. Head offset

(1) Head offset

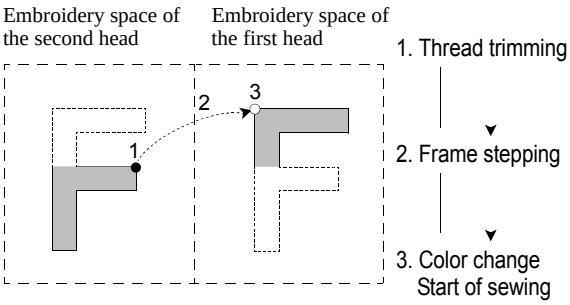
When head to embroider changes from the second head to the first head, the frame will move to the next head position automatically.

(Jump => frame stepping from embroidery space => jump)



(2) Head offset (frame stepping)

When head to embroider changes from the second head to the first head and the frame moves by head offset, the frame will move at a blast from the thread trimming position to the start position of the next design.



a. Set head group on the needle bar setting screen so that each head fits into the area where it is possible to embroider.

b. When a design starts from consecutive jump data and position of head to start sewing changes, it is necessary to change head by color change code.

c. It is necessary to make the head at the end of design the same as the head at the start of the design.
Add a color change code before the end of design if needed.

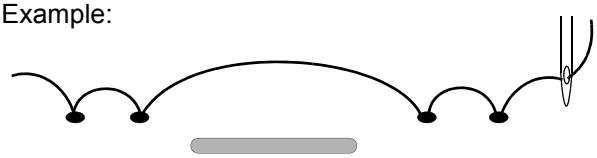
Travel amount of head offset is the head interval of the machine.

2. Auto jump

This function divides a long stitch into jump data.

The description below is an explanation when the machine performs auto jump by using a stitch data of 12 mm.

Example:

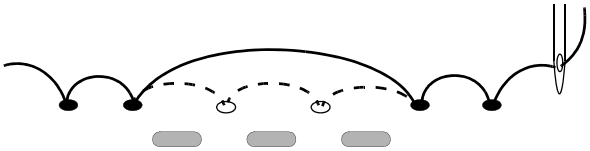


Frame travel by stitch data of 12 mm

: Frame travel

The example shows R.P.M. in low speed.

Setting: In case a stitch data is splited to 4 mm of jump data

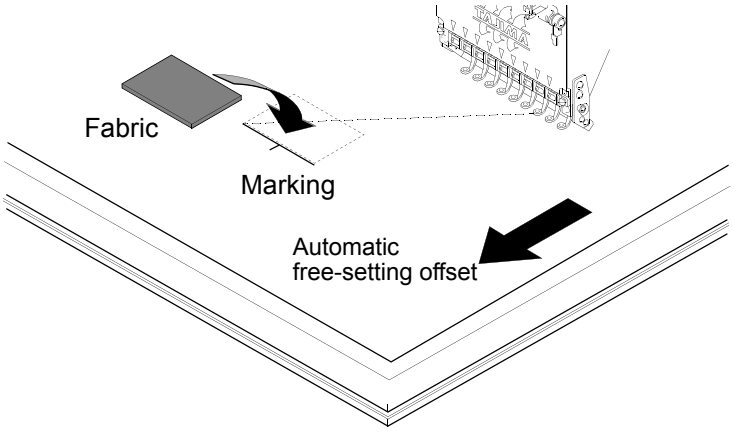


Frame travel by split jump of 4.0 mm

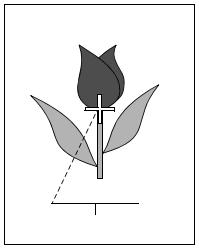
R.P.M. remains as high speed, and the stitch data will be divided into three jump stitches for frame travel data.

3. Marking

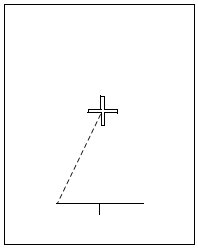
This function performs basting of mark or contour for positioning. Marking includes point and contour, and it is possible to set whether design data is included or not respectively.



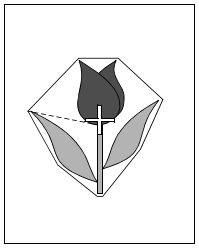
◆ Point + design



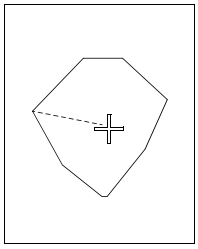
◆ Point only



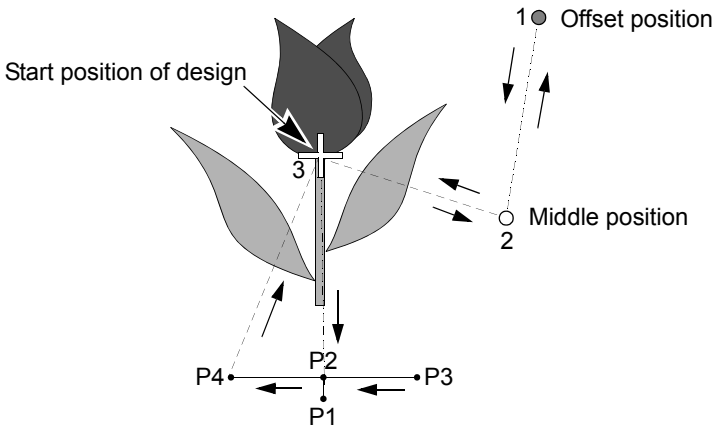
◆ Contour + design



◆ Contour only



Marking data including automatic offset



When setting marking points at 2 to 10 spots, it will be automatically converted to stitch data.

In case of marking including design, automatic free-setting offset will be automatically set after marking.
In case of marking data only, automatic free-setting offset will not be set.

It is possible to perform setting of fabric easily by using automatic free-setting offset after marking.

When stitch length is set after creating marking (point/contour), marking data will be created automatically. The created marking data will be registered with a name of “M-design name/without” to a vacant number of the design management screen as design data.

When automatic offset is included:

1→2→3→P1→P2→P3→P4→3→2→1

Start: 1→2→3 (Embroidery starts)

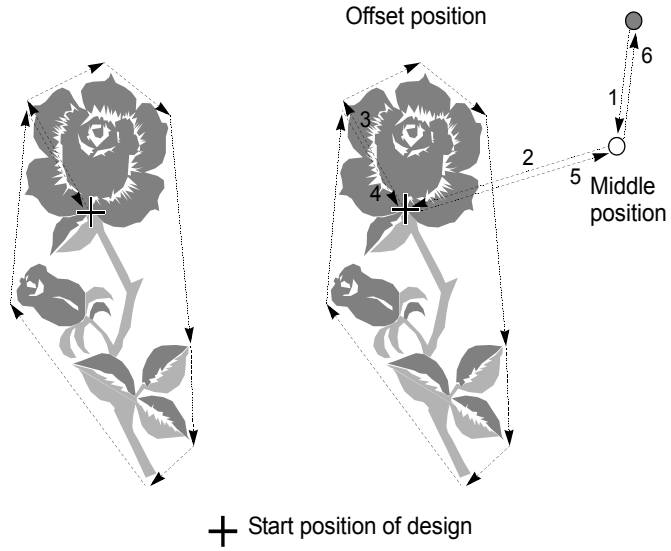
When automatic offset is not included:

3→P1→P2→P3→P4→3

Start: Embroidery starts

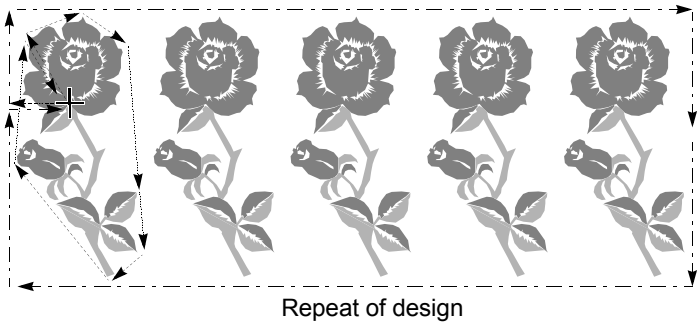
4. Trace

This function makes the frame move along a peripheral of design.



As shown in the left illustration, the frame will move along a peripheral of design.

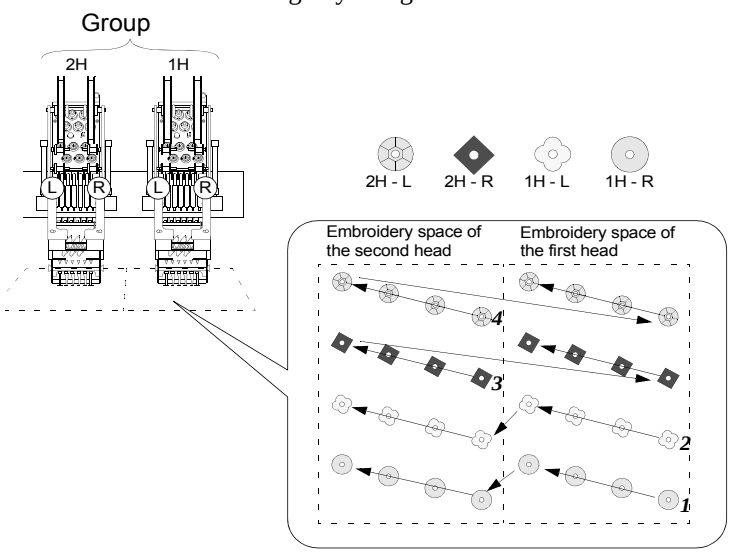
When a position of offset exists, the frame will move to offset position => middle position => start position of design => periphery => start position of design => middle position => offset position.



When repeat is set, the machine will trace the first design at first. After that, the machine will trace the whole designs.

5. WJ frame (An example when using 2H group)

Since WJ frame spec. has triple frame travel amount of S spec., it is possible to embroider a design of the number of double colors and double embroidery space by using head group. As shown in an example below, when sequin device is II/III type LR spec., it is possible to sew eight kinds of sequins at the maximum to one design by using two heads.



An example of sequin embroidery using WJ frame and 2H head group

The left illustration shows that after the machine sews sequins at R-side of the first head to the embroidery space of the first head, the frame will move and the machine will also sew sequins to the embroidery space of the second head. Next, the machine will sew sequins at L-side of the first head in the same manner. After the machine sews sequins at R-side of the second head, the frame will move and the machine will also sew sequins to the embroidery space of the first head. Next, the machine will sew sequins at L-side of the second head in the same manner.

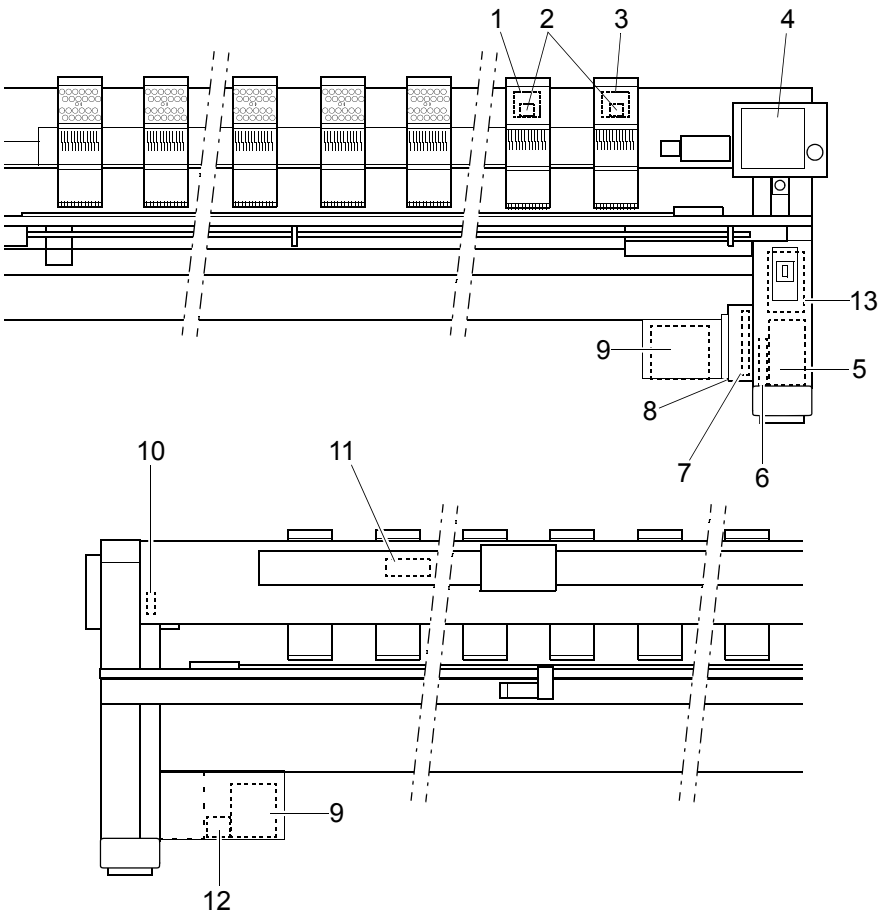
It is also possible to perform embroidery at all heads.

Chapter 11

Related to electrical component

About cards and switches

1. Layout of electrical components



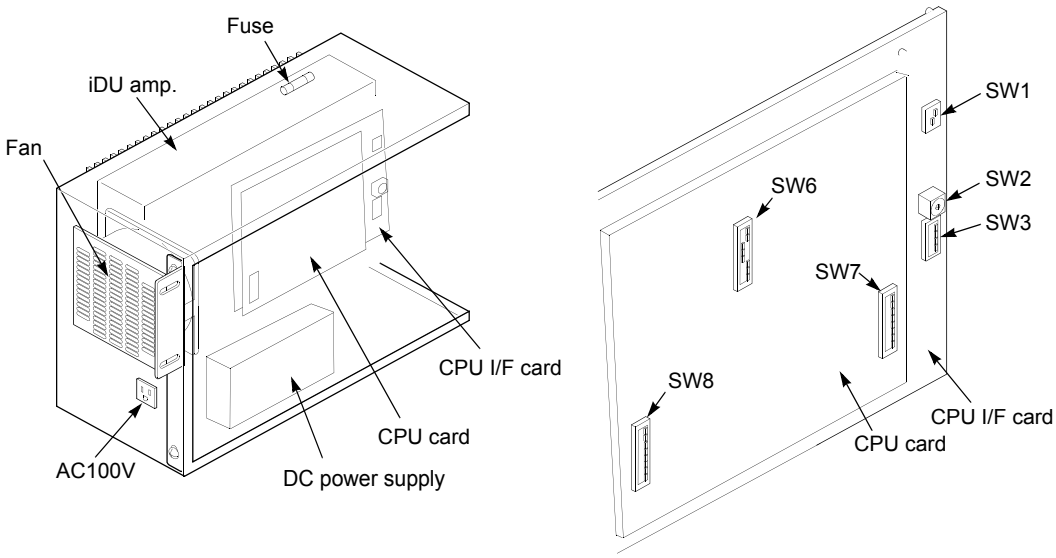
1. TCS card (even-numbered head)
2. TC sensor card
3. TCM card (odd-numbered head)
4. Operation panel
5. Power supply unit
6. Joint card
7. CPU I/F card, CPU card
8. Controller
9. Transformer
10. 12 V DC power supply
11. Head card
12. 24 DC power supply
13. Inverter

2. Controller

Three kinds of card and fuses are equipped in the controller.

CAUTION

Improper changing switch position could cause malfunctioning or trouble of the machine. Do not change the position.



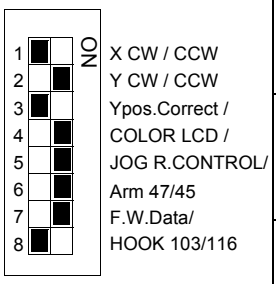
SW1

1 2 ON Terminator / ——	1	Terminator ON: To set OFF: Not to set
	2	OFF

SW3

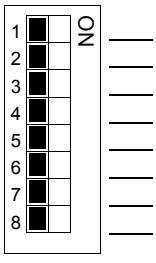
1 2 3 4 ON Slit D. 50/100 Belt / Screw Ext. Control / ——	1	Slit disk ON: 50 OFF: 100
	2	X-axis drive mode (Change according to model) ON: Timing belt OFF: Ball screw
	3	Stop signal input of safety device (Change according to model) ON: To set OFF: Not to set
	4	OFF

SW6



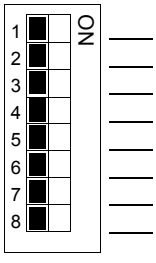
1	Rotating direction of X-axis shaft (Change according to model) ON: Clockwise OFF: Counterclockwise
2	Rotating direction of Y-axis shaft (Change according to model) ON: Clockwise OFF: Counterclockwise
3	Correction of stitch length in X direction based on Y-axis position ON: To perform OFF: not to perform
4	Color LCD panel ON: To equip (Should be turned ON) OFF: Not equipped
5	Jog remote-controller ON: To equip (Should be turned ON) OFF: Not equipped
6	Arm ON: 47mm (should be turned ON) OFF: 45mm
7	Keeping of frame weight level data ON: To hold (should be turned ON) OFF: Not to hold
8	Thread holding hook ON: 103° (Short) OFF: 116° (Long)

SW7



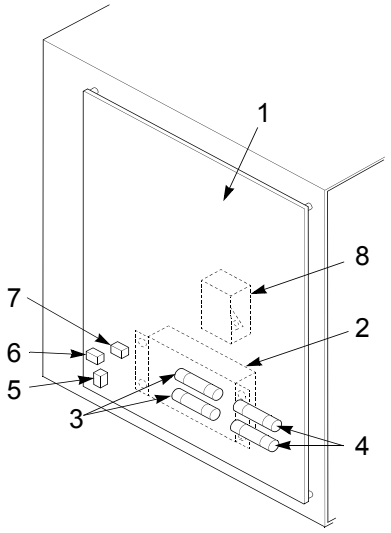
1	All OFF
2	
3	
4	
5	
6	
7	
8	

SW8



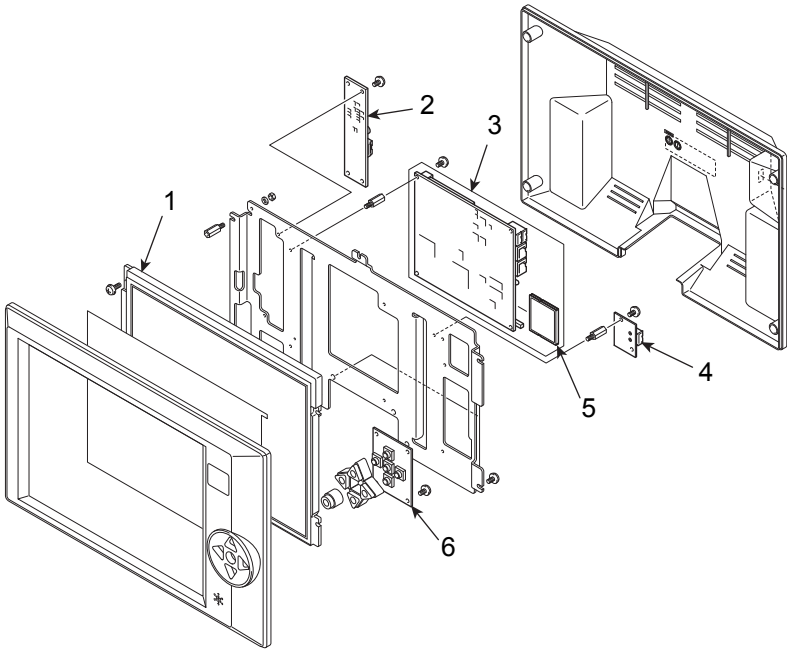
1	All OFF
2	
3	
4	
5	
6	
7	
8	

3. Power supply unit



1	Joint card
2	Noise filter
3	Glass tube fuse (10A: each circuit)
4	Glass tube fuse (15A: DC 24 V system)
5	Fuse (2A: power outlet)
6	Fuse (5A: lubrication motor)
7	Fuse (5A: fan motor, bobbin changer)
8	Surge protector

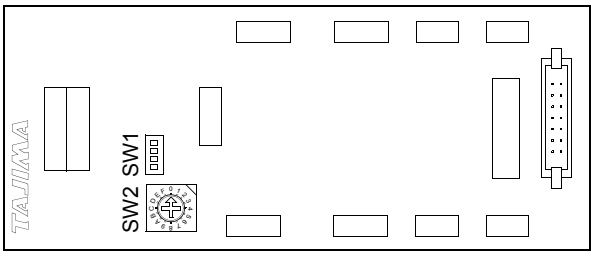
4. Operation panel



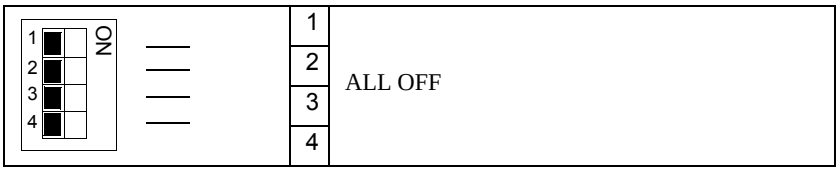
1	12.1 inch LCD panel
2	Touch panel control card
3	CPU card
4	USB card
5	CF card
6	SW card

5. Head card

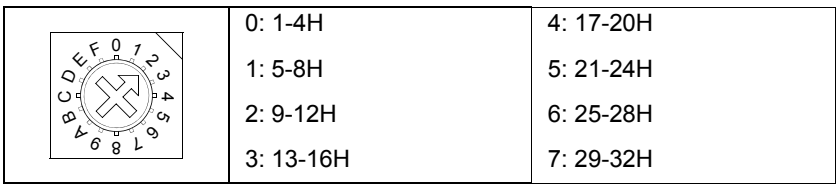
[Head-A card]



SW1



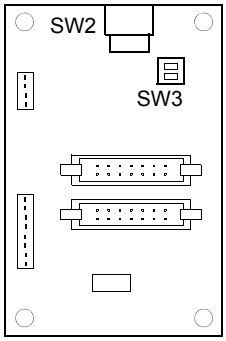
SW2:



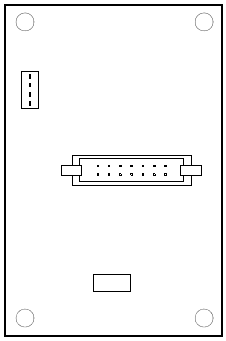
6. Tension base card

There are two kinds of tension base card. One is TCM card attached to an odd-numbered head. Another is TCS card attached to an even-numbered head.

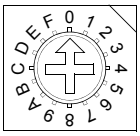
[TCM card] (Back side)



[TCS card] (Back side)

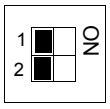


SW2



0: 1-2H	8: 17-18H
1: 3-4H	9: 19-20H
2: 5-6H	A: 21-22H
3: 7-8H	B: 23-24H
4: 9-10H	C: 25-26H
5: 11-12H	D: 27-28H
6: 13-14H	E: 29-30H
7: 15-16H	F: 31-32H

SW3



1	Switching of card function ON: Even-numbered head OFF: Odd-numbered head
2	OFF

Chapter 12

Troubleshooting and maintenance

This chapter describes about troubleshooting and maintenance.

1. Troubleshooting

1-1. When the machine stopped

When the machine stops, a code No. will be displayed on the screen. There are following two types of stop factor.

"Usual stop"

"Stop by occurrence of error"

There are two types of display of code No. One is displayed at left top of the screen (Fig. 1) and another is displayed at the center of screen as a message (Fig. 2) (differs depending on stop factor).

An example of display of code No.291

Fig. 1

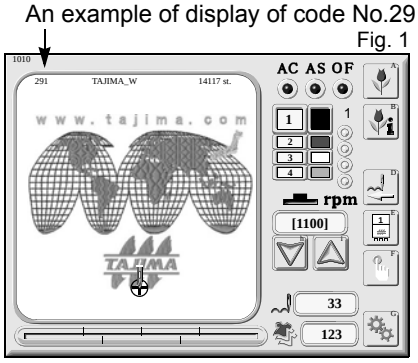


Fig. 2

When the machine stops during operation and a code No. is displayed on the screen, cope with the trouble according to the code chart described below.

(1) Usual stop

Stop by the code numbers described below is not caused by occurrence of error.

Code No.	Stop Factor	Corrective Action
1B2	Stop by color change code	In this case, it is not a stop by abnormality.
1B3	Stop due to stop code.	Perform "Start operation" or "Frame back/forward operation", or press any operation key (excluding manual frame travel key) to continue operation of the machine.
1B6	Stop by automatic arbitrary offset code	
1B8	Stop by temporary stop code	
1C1	Stop by the bar switch/stop switch	Perform "Start operation" or "Frame back/forward operation".
1C4	Stop due to setting position of tension base switch from bottom to top during operation	Start the machine to continue embroidery.
1D1	Stop at the start of all-head embroidery due to the stop setting.	Start the machine and continue embroidery.
1D2	Stop by preset halt (except lubrication)	Reset. Total Count (=> refer to p.111)
OIL	Preset halt (lubrication)	Lubricate the necessary spots and reset the machine. Total Count (=> refer to p.111)

(2) Stop by occurrence of error

When a code No. of 300 series is displayed, please make contact with the distributor.

Code No.	Stop Factor	Corrective Action
211	The main shaft has stopped deviating from the fixed position	Return the main shaft to the fixed position. Check encoder signal.
212	Operations like Trace, Offset, etc. are performed in the state of needle bar lowered.	Raise needle bar.

Code No.	Stop Factor	Corrective Action
221	The embroidery frame moved to the travel limit position (left) (+X direction).	Move the frame manually so that it is possible to perform embroidery within the set embroidery space.
222	The embroidery frame moved to the travel limit position (right) (-X direction).	
223	The embroidery frame moved to the travel limit position (front) (+Y direction).	
224	The embroidery frame moved to the travel limit position (rear) (-Y direction).	
228	Operation of table up/down was performed when the frame was positioned to the front.	Move the frame to the rearmost.
251	Oil of lubricating pump is lacking.	Lubricate to the lubrication tank.
258	Upper dead point sensor error (Sequin device III)	Check/replace the upper dead point sensor.
259	Lower dead point sensor error (Sequin device III)	Check/replace the lower dead point sensor.
25A	Sequin color change sensor error (Sequin device III)	Check/replace the sequin color change sensor.
281	The target needle position is not detected even after eight seconds from start of color change.	Return the needle position so that it becomes the correct display. Adjust or replace the potentiometer (needle position sensor).
291	Upper thread breakage is detected.	Check upper/under threads.
293	Under thread breakage was detected.	Check under thread.
294	The machine detects breakage of sequin material (Sequin device III).	Set the sequin tape again.
2A1	Adjusting time for thread trimming position was exceeded.	Return the ATH movable knife to the correct position. Replace the thread trimming motor and/or encoder.
2B2	Tajima code complement data error (The same + and - numbers exist in one stitch data).	Correct design data.
2B3	Data exists in an end code.	
2B4	Function code error	
2B7	Data is not set.	Set data.
2B8	The pre-reading buffer has become empty and no data is output.	During operation: Decrease rpm. During frame forward: Wait until the machine reads all design data.
2B9	Writing error of memory	Check CPU card or panel card. Replace the card if necessary.
2BB	Available range to perform frame back was exceeded.	Do not perform frame back any more.
2BE	Start and end codes are not set as a pair in satin conversion and boring.	Set again so that start and end codes become as a pair.
2C1	The machine was started during the operation of design edit or auto color change etc.	Cancel program setting mode.
2C6	The machine was operated during working of bobbin changer.	Do not operate the machine during working of bobbin changer.
2C7	Wrong password is input.	Input password again.
2CE	Stop by safety device	Press the return key.
2E2	Air pressure of the regulator has become lower than the rated value.	Check air pressure.
2E3	The power supply was shut off during operation (including power shut off by the emergency switch).	Execute power resume operation.

Code No.	Stop Factor	Corrective Action
311	Encoder A signal does not change for 5 seconds.	Check the encoder or encoder signal lines. Check the main shaft driver for excitation.
	Abnormality of motor, motor belt	Check the motor or motor belt.
312	Encoder Z signal status does not change.	Check the encoder or encoder signal lines.
316	Main shaft driver error	Replace the main shaft driver and/or main shaft motor.
321	Abnormal signal of frame driver has been detected.	Replace the iDU amp.
322	Abnormality of X-axis driver	
323	Abnormality of Y-axis driver	
331	Abnormal signal of bobbin changer has been detected.	Operate the bobbin changer manually after resetting the error, and check/adjust the place where motion error occurred.
353	An error occurred in up/down color change driver (Sequin device III).	Check the up/down color change driver card.
382	Needle position signal does not change for one second or more at color changing.	Check the color change motor and power supply circuit. Check the potentiometer (needle position sensor).
383	There was no needle position signal during rotation of the main shaft.	Check the potentiometer (needle position sensor).
384	There was no 1-rotation signal for color change during rotation of the main shaft.	Check the photo-interrupter (One-turn sensor).
386	Color change and thread trimming worked at the same time.	Check the JOINT card.
3A1	Thread trimming driver has abnormality.	
3A6	ATH movable knife retractable position has become nonuniform.	Check the position of ATH movable knife.
3AA	Malfunctioning of ATH motor	Check the load of ATH movable knife.
3AB	Failure of thread trimming occured due to mis-thread separating	Set the upper thread hook to normal position and raise the tension base switch. Press reset key on the operation panel after the thread breakage indicator lamp lights in green
3AC	Failure of thread trimming occured due to stitch skipping	
3B3	Communication error between CPU and Main Shaft Inverter	Turn off the power once, and then turn it on again. "3B*" is still displayed even after that, check each harness between individual cards.
3B4	Communication error between CPU and CPU (Slave side)	
3B5	Communication error between PANEL and CPU	
3B6	Communication error between CPU and frame driver	
3B7	Communication error between PANEL and JOINT PANEL	
3B8	Impossible communication with sequin device III	Check the sequin controller card. Check connection of the sequin controller card.
3B9	No response from up/down color change driver (Sequin device III).	Check the up/down color change driver card.
3BA	Communication error with sequin device III	Check connection of the sequin controller card.
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/switch assembly.
3C2	The power switch was turned ON with frame travel key pressed.	Turn ON the power again.
	Frame travel key has abnormality.	Replace the FSW card.
3D2	Voltage of backup battery has dropped.	Turn ON the power of the machine to charge the battery. When this code No. is displayed, parameter setting and design data are deleted. Perform registration again.

Code No.	Stop Factor	Corrective Action
3D3	DC 5 V power supply has abnormality.	Check wire connection. When there is no problem, replace DC 5 V power supply.
3D4	There is an error in checksum of data.	Replace CPU card.
3D5	Abnormality of memory	Execute system installation. If the problem is not solved, replace the panel card.
3DA	Permanent counter does not work.	Check the connector of the counter.
5B1	Information of design data has abnormality (T3 code).	Correct design data.
5C2	The machine was started during moving up/down of sequin device (Sequin device III).	Do not start the machine during up/down of the device.
5C3	Sequin device III setting error	Check if parameter setting etc. are performed correctly.
B01	There is abnormality in formatting of USB memory.	Format the USB memory.
	Reading/writing error occurred.	Copy the designs to a new USB memory, and do not use the USB memory that has the error.
B02	Information management error of USB memory	After copying the contents, do not use the USB memory with abnormality.
B04	USB memory is not inserted.	Insert.
BC2	The same file name exists in USB memory.	Change the file name.
BC4	File was not written correctly at backup of memory processing.	Perform writing again.
BC5	Remaining capacity of USB memory is not enough.	Replace with the USB memory disk that has enough remaining capacity.

1-2. When the machine does not sew well

(1) Case to be conducted by the customer

a. Thread breakage

Cause	Corrective Action
Bad thread tension	Adjust tension. Upper thread (120 to 140 g), under thread (20 to 30 g)
Quality of thread is bad. Poor thread flow	Use good quality thread. Use silicone.
Direction of needle is bad. Bent	Adjust to face to the front or to the right a bit. Replace.
Applique glue is stuck on needle.	Remove adhered glue.
Contamination, run-out of oil of rotary hook	Perform cleaning and lubrication (=> refer to p.177).
Many fine stitches of 0.5 mm or less in design data	Remove fine stitch(es) (=> refer to p.88).
The fabric is lifted too much against the needle plate. The fabric touches the needle plate too much.	Stretch the fabric again so that it touches needle plate lightly.
Run-out of oil of needle bar	Lubricate (=> refer to p.180).
There is a scratch on the thread course.	Grind it with sandpaper etc. Replace.
Bad height of presser foot	Perform adjustment so that height fits to fabric/ material.
Frame drive timing does not fit to embroidery condition.	To change setting (=> refer to p.117).

b. Needle breakage

Cause	Corrective Action
Bad thread tension	Adjust tension. Upper thread (120 to 140 g), under thread (20 to 30 g)
Density of design data is very high.	Correct data. Delete unnecessary underlay stitching.
The material is too thick or hard.	Use material suitable for embroidery.
Bobbin is deformed and it touches the needle.	Replace the bobbin.
Quality of needle is bad. It does not fit to embroidery condition.	Use good quality needle. Use needle that fits to embroidery condition.
Vibration of the machine is big.	Center support is too much touched to the table. Tighten the support by hand. Adjust leveling.
Frame drive timing does not fit to embroidery condition.	To change setting (=> refer to p.117).

c. Bad finishing of sewing

Cause	Corrective Action
Bad thread tension	Adjust tension. Upper thread (120 to 140 g), under thread (20 to 30 g)
Quality of thread is bad. Poor thread flow	Use good quality thread. Use silicone.
Density of design data does not match with material and/or thread.	Correct data.
Bad frame attaching and fixing of the fabric	Attach the frame correctly. Fix the fabric firmly.
Thread, needle and/or size of needle plate do not match with embroidery.	Make combination that fits to design data/material.
R.P.M. is too high.	Decrease R.P.M.
Frame drive timing does not fit to embroidery condition.	To change setting (=> refer to p.117).

(2) Case to be conducted by the distributor

CAUTION

The following works should be performed by technical personnel of the distributor. Customer should not cope with these works.

a. Thread breakage

Cause	Corrective Action
Scratch, abrasion of rotary hook	Grind it with sandpaper etc. Replace.
A clearance between needle and hook point of rotary hook is not suitable.	Perform adjustment so that a clearance becomes 0.1 to 0.3 mm.
A clearance between rotary hook and rotary hook support is narrow.	Perform adjustment so that a clearance becomes about 0.5 mm.
Timing between needle and rotary hook is too early or too late.	Adjust main shaft angle between 198 to 203° (Reference value is 200°).
Bad adjustment of lower dead point and/or upper dead point of needle bar	Adjust to the standard value using the lower dead point gauge.
The play of rotary hook shaft is big in back and forth direction.	Adjust the play.
There is a play on the fringe of frame	Adjust the play. Replace the part.
Rotation of the main shaft is not smooth.	Perform alignment of the shaft.
Abrasion/breakage of neighboring parts of take-up lever drive and/or needle bar drive	Replace the part.
Play of needle bar case (in right and left direction) is big.	Adjust.

Cause	Corrective Action
Bad take-up lever timing	Adjust start-up timing.
Tension of upper/lower shaft connecting belt is weak.	Adjust.
Main shaft timing belt is loose.	Adjust.
Set screw of the main shaft timing pulley is loose.	Tighten again.

b. Needle breakage

Cause	Corrective Action
A clearance between needle and hook point of rotary hook is not suitable.	Perform adjustment so that a clearance becomes 0.1 to 0.3 mm.
Bad needle location	Perform adjustment so that needle is located to the center of needle hole of needle plate.
Play of needle bar case (in right and left direction) is big.	Adjust.
Abrasion of needle catcher of rotary hook	Replace the rotary hook.
The floor vibrates.	Change installation site of the machine.
There is a play on the fringe of frame	Adjust the play. Replace the part.

c. Bad finishing of sewing

Cause	Corrective Action
There is a play on the fringe of frame	Adjust the play. Replace the part.
Abrasion/breakage of neighboring parts of take-up lever drive and/or needle bar drive	Replace the part.
Bad take-up lever timing	Adjust start-up timing.
Belt tension of drive system is too strong or too weak.	Adjust.

2. Maintenance

WARNING

- Daily maintenance (cleaning, lubrication, greasing, inspection) should be performed by personnel who has been trained properly.
- 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.)
- When starting operation again, attach all the detached covers as they originally were.

CAUTION

- Perform daily maintenance.
  Neglect of daily maintenance could cause troubles. Damage due to neglect of daily maintenance may be judged as “Outside the scope of warranty”.
- If the machine is not used for a long period, turn the power switch ON in regular intervals.
  Although each card of the machine has a backup battery, data may be lost for about one month because voltage of the battery will come down gradually due to discharge when the power switch is turned off.
- Assure enough illumination.
  Assure 300 lux or more for working areas including underneath part of the machine table when changing under threads or performing daily maintenance.

2-1. Cleaning

⚠ WARNING

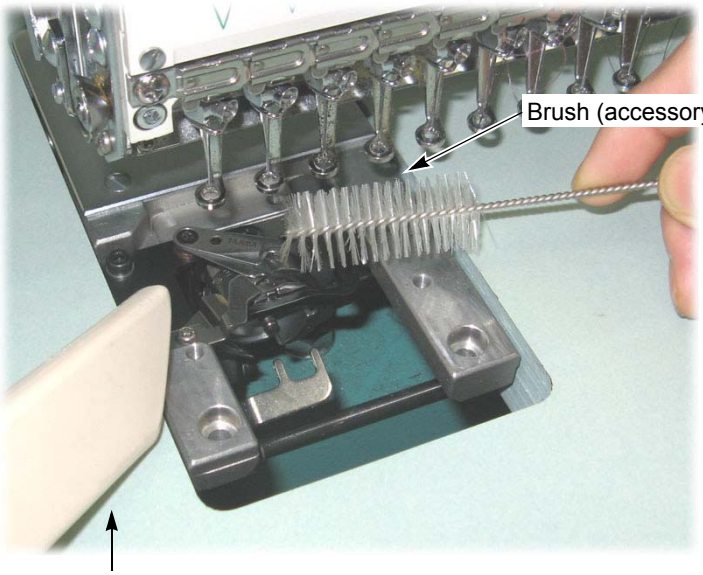
When you clean the machine, turn OFF the power switch. The machine could catch you up resulting in severe injury.

⚠ CAUTION

When filters of the controller and the main shaft motor are clogged, inside temperature will become higher and could cause malfunctioning (Refer to the next page).

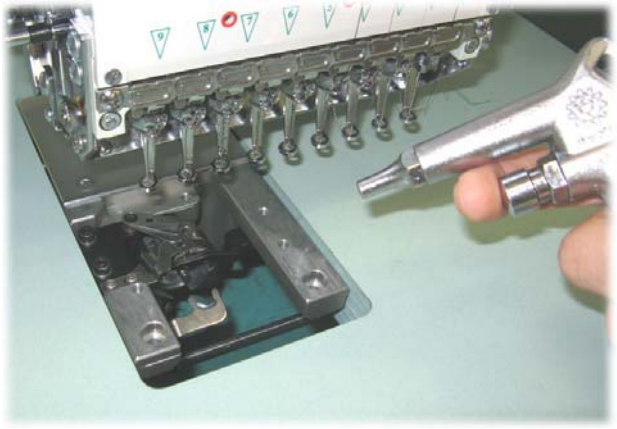
Clean filter periodically by the fixed cycle.

In case of motor type ATH, open the movable knife by manual operation on the operation panel (=> refer to p.51). After that, turn off the power and clean each part by using cleaning things offered commercially or an air compressor.



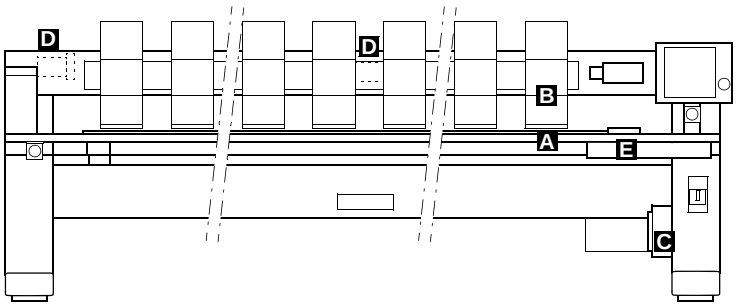
◀ An example when using a cleaner

An example when using an air compressor ▼



Hereafter, the paragraph numbers in the chart below accord with the leader numbers in the right illustration.

Cleaning area	Cycle
1. Rotary hook, ATH section	Every day
2. Tension disk 3. Thread presser 4. Upper thread lock 5. Presser foot 6. Linear way 7. Side face of the jump motor 8. Drive lever 9. Filter (Controller) 10. Filter (Main shaft motor)	Once/week
11. X/Y-axis drive system	Once/2 weeks

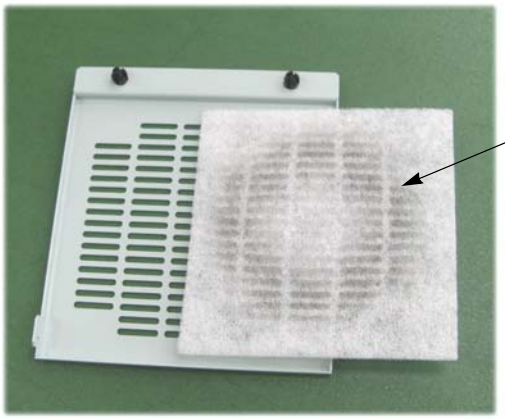


C Controller

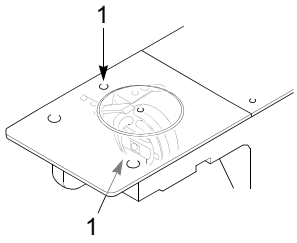
⚠ CAUTION

When you neglect to clean filter, inside temperature could become higher due to clogging to cause malfunctioning.
Regarding cleaning of filter, usually use a cleaner to vacuum up dust. When the filter is contaminated too much (by oil spots, powder dust etc.), it is also possible to perform water washing using neutral detergent. However, dry the filter thoroughly after washing.

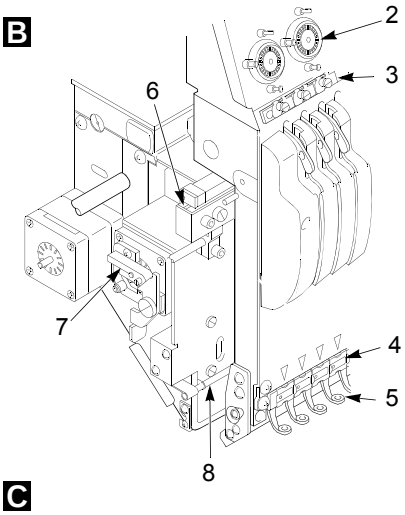
Since filter is a consumable, replace it periodically.



A

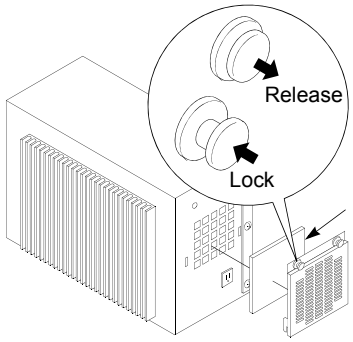


B

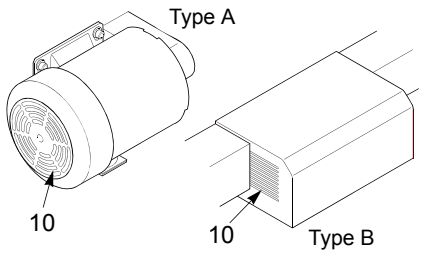


C

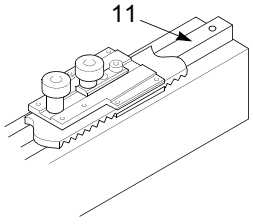
Release the lock to detach the cover to clean filter.



D Main shaft motor
(Type A or Type B)



E



2-2. Lubrication (Excluding model equipped with automatic lubrication system)

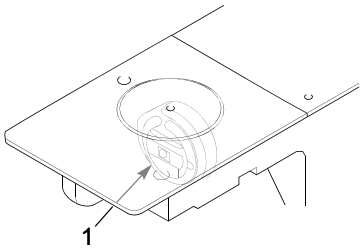
WARNING

When you lubricate the machine, turn OFF the power switch. The machine could catch you up resulting in severe injury.

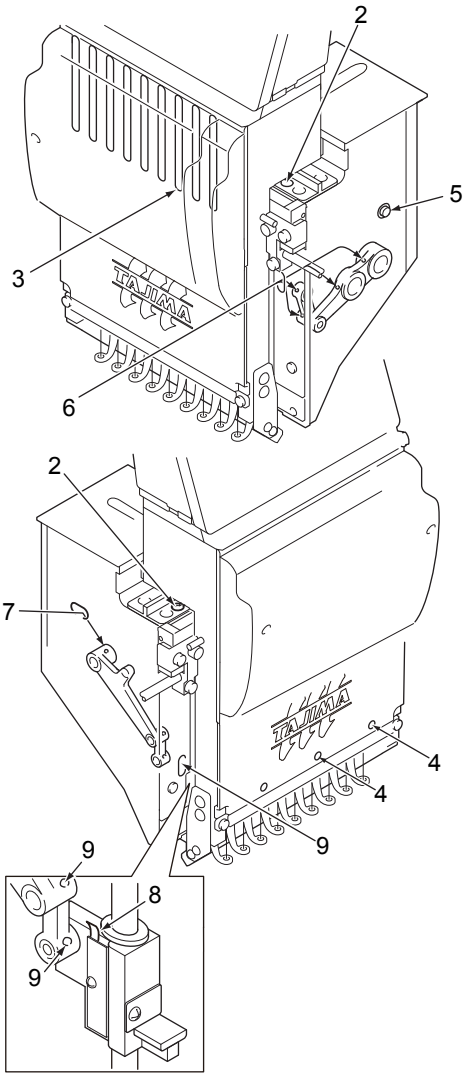
CAUTION

When performing lubrication, use only Tajima's genuine TF oil or equivalent (Viscosity grade = VG20).

Lubricating spot	Cycle
1. Rotary hook (refer to the figure below)	Once/5 to 6 hours
2. Needle bar drive shaft (either one spot is OK)	Once/week
3. Needle bar (all needles)	
4. Needle bar (spot indicated by red mark)	
5. Wick	
6. Lubrication hole of needle bar lever	
7. Lubrication hole of presser foot lever	
8. Felt of needle bar reciprocator	
9. Lubrication hole of connecting part	

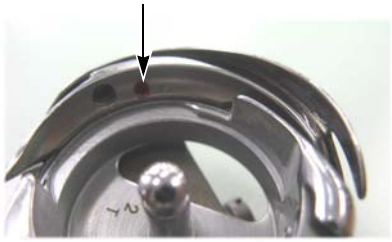


Inside of the arm

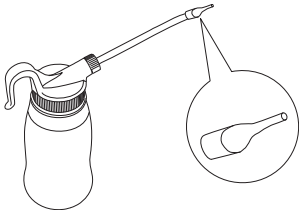


Nozzle (accessory)

Lubrication hole (Red mark)



When lubricating the lubrication hole (Red mark), attach the nozzle to the tip of the oiler. Cut the tip of the nozzle according to necessary length.



Oiler (accessory)

Lubricating spot

2-3. Greasing.

WARNING

When you grease the machine, turn OFF the power switch. The machine could catch you up resulting in severe injury.

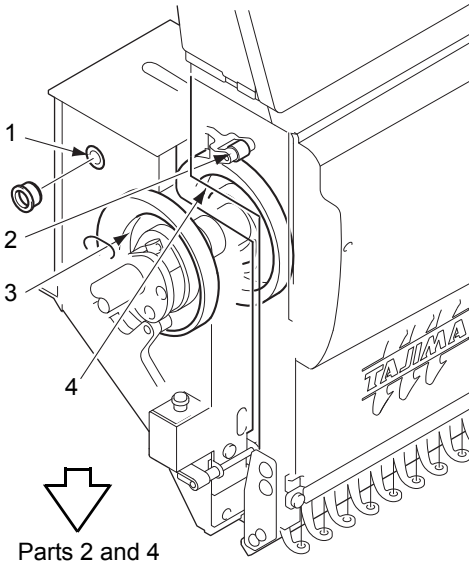
CAUTION

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

Greasing spot	Recommended grease	Cycle
1. Take-up lever shaft holder (Use syringe, etc.)	SPRAY GREASE :NIG LUBE PG :300ML	Once per 3 months
2. Take-up lever roller		
3. Presser foot cam		
4. Take-up lever drive cam		
5. Gear	GREASE :KING STAR EP NO.2 :400G	

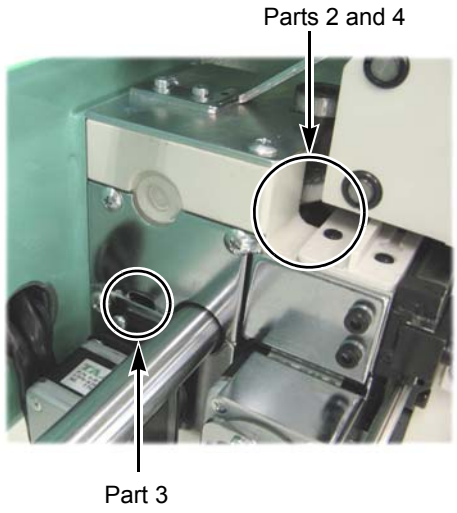
[Components and item number of each grease]

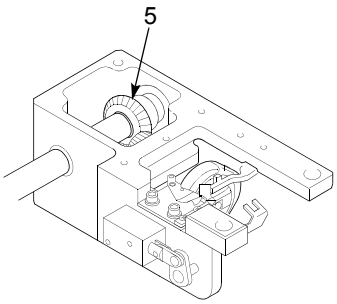
Part name and Part No.	Base oil	Thickener
GREASE :KING STAR EP NO.2 :400G 750103004000	Refined mineral oil (about 75%)	Lithium soap (about 15%)
SPRAY GREASE :NIG LUBE PG :300ML 750104001000	Olefinic synthetic oil	Lithium soap



Parts 2 and 4

Slide needle bar case to the last needle.





2-4. Inspection

WARNING

Turn OFF the primary power supply before you start working. Even if the primary power supply is turned OFF, some circuits are supplied with voltage. Wait until they are discharged completely (four minutes), and then start working.

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

2-5. Repair

WARNING

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.

Turn OFF the primary power supply before you start working. Even if the primary power supply is turned OFF, some circuits are supplied with voltage. Wait until they are discharged completely (four minutes), and then start working.

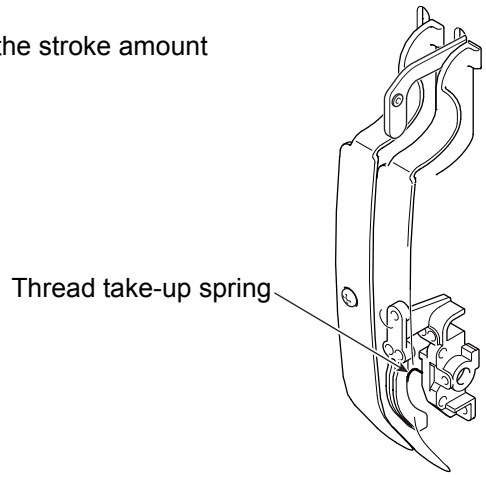
When restarting the machine after repairs, attach all covers etc. which were removed for repair operation.

CAUTION

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

3. Adjustment of One-touch middle thread guide

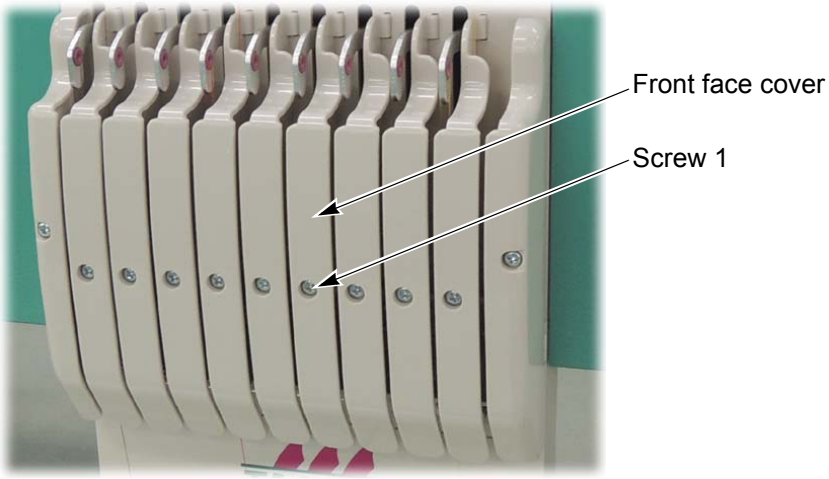
When you want to tighten or loosen the thread tension, adjust the stroke amount of the thread take-up spring in One-touch middle thread guide.



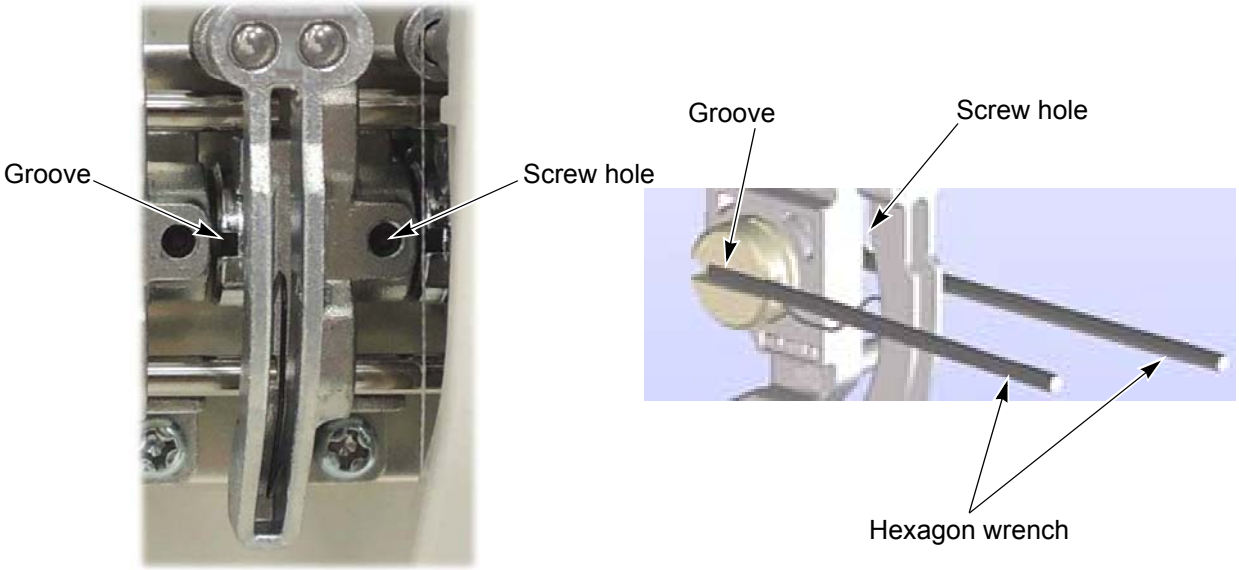
[How to adjust]

The following is an example when the stroke amount of the thread take-up spring at 4th needle is adjusted.

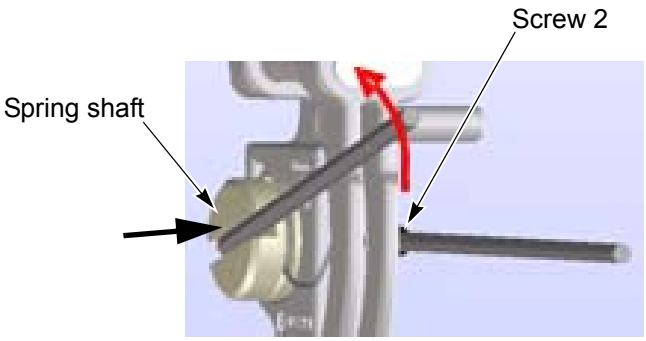
(1) Remove the screw 1 to detach the front face cover.



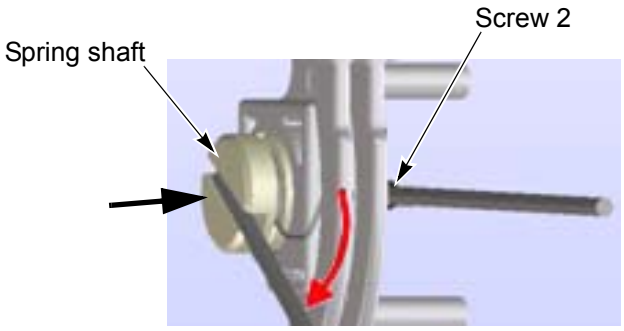
(2) Insert the hexagon wrench (1.5 mm) into the groove and the screw hole.



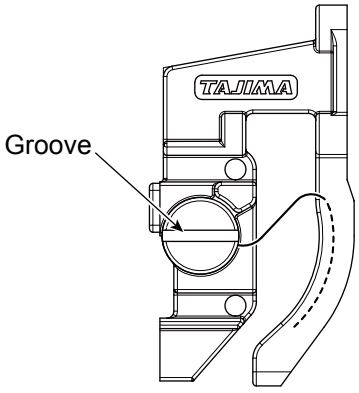
(3) When you want to loosen the thread tension, loosen the screw 2 and turn up the spring shaft.
Tighten the screw 2 while pressing the spring shaft to the right direction (indicated by an arrow).



(4) When you want to tighten the thread tension, loosen the screw 2 and turn the spring shaft to below.
Tighten the screw 2 while pressing the spring shaft to the right direction (indicated by an arrow).



(5) When you want to return the thread tension to the standard value (the value at shipment from the factory), turn the groove of the spring shaft horizontally.



Chapter 13

Appendix at the back of the manual

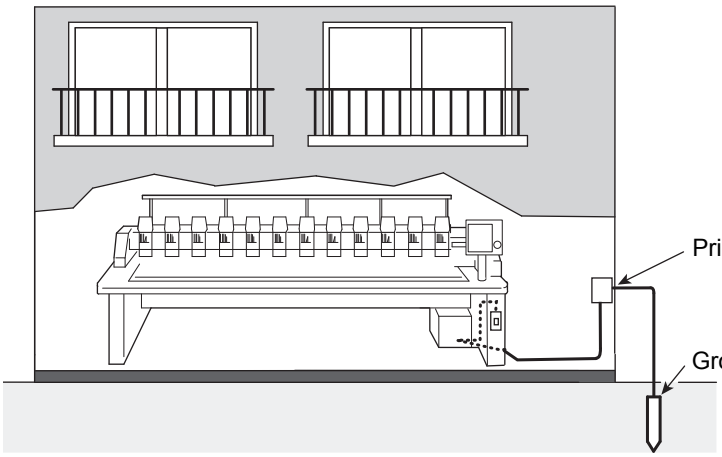
This chapter describes about electrical spec., wiring diagram, explanation for terminology etc.

1. Electrical spec.

1-1. Specification

Allowable voltage range	Within ± 10% of the rated voltage
Frequency	50/60 Hz
Apparent power	2.7 kVA (Maximum)
Active power	1.8 kw (maximum)
Fluorescent lamp	624VA/286W
Insulated resistor	10M ohms or more (500 megger insulating-resistance tester)

1-2. Grounding



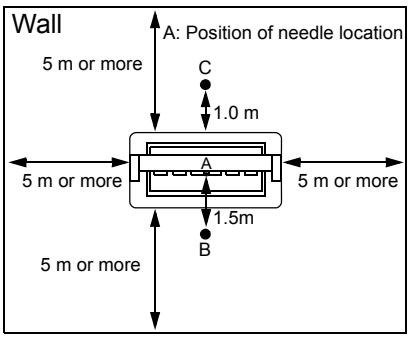
WARNING

Since there is the danger of electric shock due to leak current, be sure to connect the grounding wire. In addition, degree of grounding should be type D or higher (grounding resistance 100 ohms or less).

2. Ambient noise level

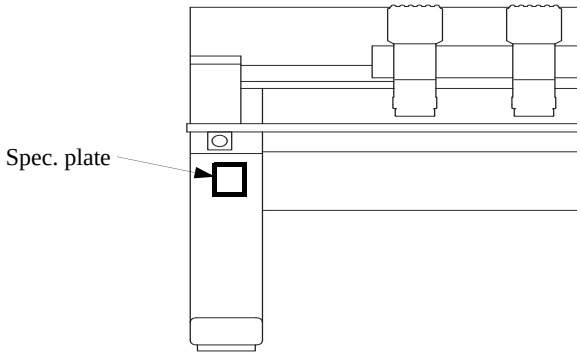
The ambient noise level of the machine is less than 85 dB.
Measuring conditions are as follows:

Measuring ambiance	Refer to the right illustration.
Measuring position	Measured at B and C of 1.6 m high from the floor *Higher value is applied
Working condition of the machine	Fabric is stretched on the border frame and satin stitch sewing of stitch length 4 mm is executed.
RPM	The maximum number of revolutions of the machine
Measuring instrument	Conformity to IEC61672-1: 2002 Class 1

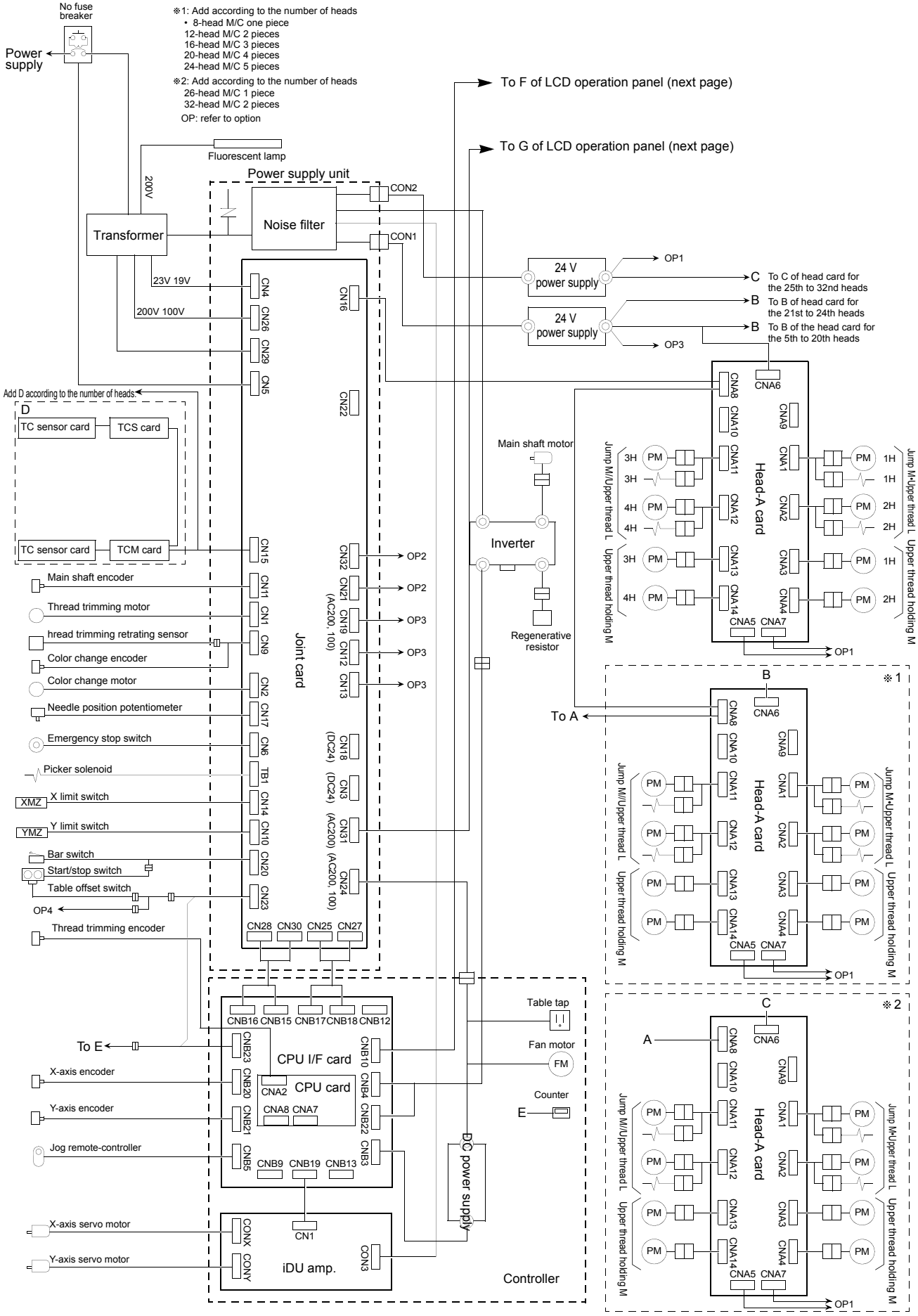


3. Machine weight

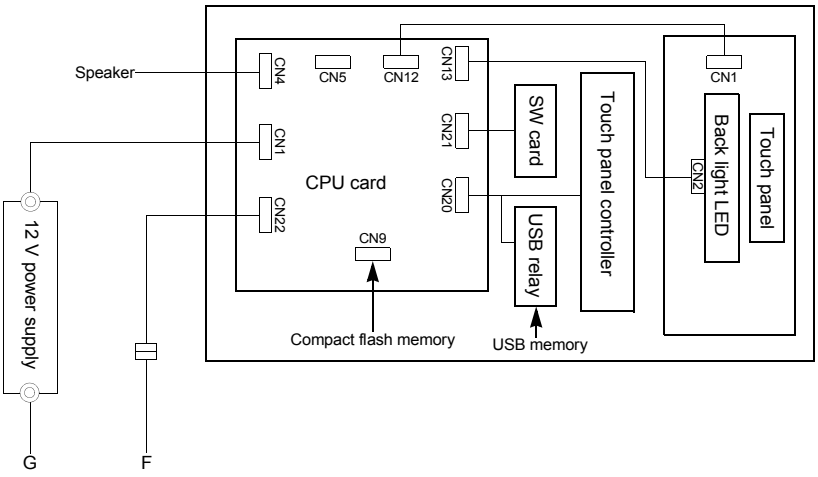
Please refer to the spec. plate.



4. Electrical system diagram

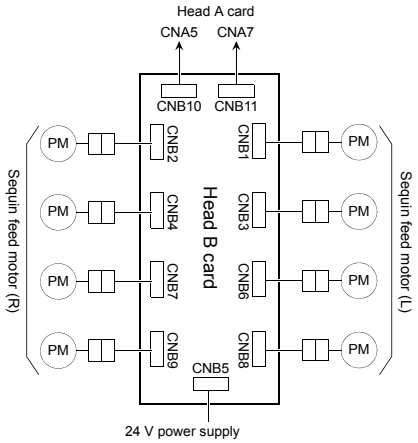


LCD operation panel

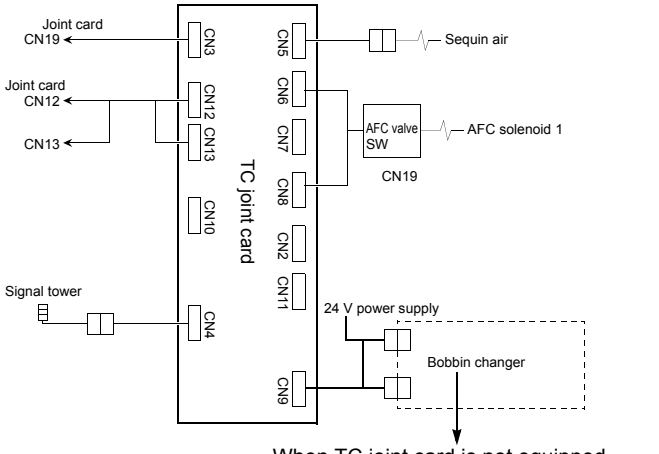


Optional device

[Option 1 (OP1)]

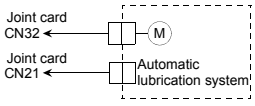


[Option 3 (OP3)]

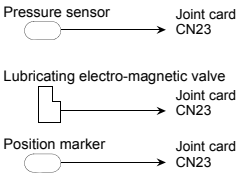


When TC joint card is not equipped, connect to CN12 of Joint card instead of CN9.

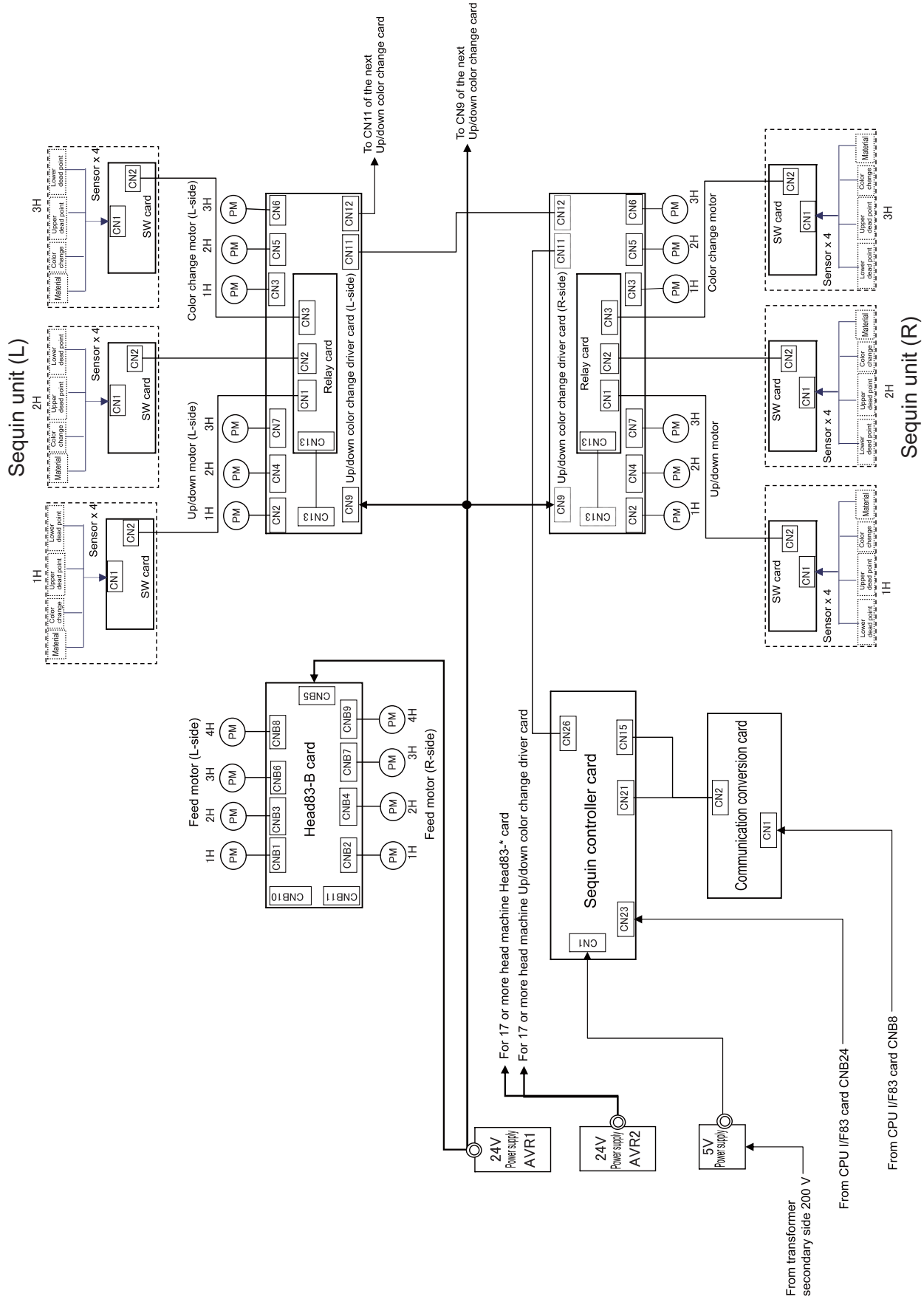
[Option 2 (OP2)]



[Option 4 (OP4)]



Sequin device type Ⅲ



5. Terminology

The following terms apply to all models in common. There might be a case that it does not correspond depending on model.

<A>

Absolute origin
An anchoring point to calculate the current frame position (X: 0.0, Y: 0.0).

ATH
Abbreviation of Automatic Thread Trimming and Holding Device.

Auto Jump
To make a stitch divided into stitches of the setting value or less when its stitch length exceeds the setting value.

<B>

Backlash
A play (gap) generated by shock at drive system or around the frame when a stitch returns (when frame drive is reversed). It may affect finish of sewing.

<C>

Cleanup
To remove a fine stitch included in design data and to assign it to the stitches before and after. It is effective to reduce thread breakage.

Condition data
Embroidery condition included in design data (needle bar selection, data conversion, repeat, start position, automatic offset).

CT0
File including information of needle bar selection and start position. It is necessary to handle TBF, CT0 and DBF as a set on a personal computer.

<D>

Data mode
Saving mode of design data (T, T2, T3).

Data set
To input design data to the built-in memory to start the machine.

D-axis
Drive axis to make sewing needle or nipple rotate (TCMX series).

Design start position
Start position on design data (0th stitch).

DGF
File that indicates design image. It is necessary to handle TBF, CT0 and DGF as a set on a personal computer.

Driver
Control card to make the frame or main shaft drive. X-axis driver, Y-axis driver, main shaft driver etc. are included.

DST
Stitch data of TAJIMA ternary format. Data mode is T.

<E>

Excitation
To keep frame motor drive. It is not possible to move the frame by hand during excitation.

<F>

Fixed pitch movement
Horizontal frame travel to the neighboring head by head interval.

Fixed position
Angle of the main shaft at which the main shaft motor stops (stop position).

Frame Back
To move the embroidery frame only to the returning direction of stitches with the needle bar(s) stopped.

Frame coordinates
Frame position in embroidery space. It is indicated such as “X: -153.2, Y: +120.4”.

Frame forward
To move the embroidery frame only to the advancing direction of stitches with the needle bar(s) stopped.

Frame limit
Limit position that the frame can move (it is indicated by mark-off line on the table).

Frame origin
An anchoring point to calculate the current frame position (X: 0.0, Y: 0.0).

Frame stepping
To move only the embroidery frame with the main shaft of the machine kept stopped during embroidery.

Function code
Command code that controls general movements of the machine. All design data consists of function codes.

<H>

Head group
Function that assumes plural heads as one head by grouping them. This enables large design embroidery or multi-colored embroidery of more colors than the number of needles.

<I>

Inching
Movement to stabilize start of sewing by moving needle bar slowly before the main shaft starts usual operation. It is executed before thread trimming to stabilize thread trimming.

<J>

Jump
To make only the frame move in the state that needle bar does not move down during operation. It is possible to make a longer stitch than one stitch of the maximum length.

<M>

M-axis
Driving axis that makes nipple or bobbin rotate (TLMX series).

<O>

Offset start position
A frame travel start position set by operation of automatic offset. A position to make the machine stand by to facilitate changing of frame and/or fabric by moving the frame to the front automatically in the middle of sewing or at the end of sewing.

<P>

Parameter
Setting item that decides working condition of the machine.

<R>

Return Stitch
Fastening stitch to be executed at start of sewing (stitch to prevent misstitching).

Running stitch
Decorative stitch of straight line or curved line only.

<S>

Satin stitch
Repeated zigzag stitches. It is mainly used for hem of applique, logo, mark, flower design etc.

Sequin needle
Needle that sews sequins in sequin device. It indicates the first needle or the last needle.

Sewing start point
The point where the first stitch data exists in design data (It differs from design start position).

Start position
The position where embroidery is started (indicated by X/Y coordinates) by the bar switch (or start switch) after data set. When automatic offset is set, the position after offset frame travel becomes a start position.

Step
Break point of color change.

Stop at the lower dead 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>

Table offset
To move the frame to the rear direction temporarily to facilitate threading. It is mainly effective when the frame is positioned at table cut section.

Tatami stitch
Stitch to be filled in a certain amount of area. It is mainly used for big logo, background, underlay etc.

TBF
Stitch data of TAJIMA binary format. Data mode is T2. It can correspond much more function codes compared with DST. It is necessary to handle TBF, CT0 and DBF as a set on a personal computer.

TCF
Data integrating TBF, CT0 and DFG. Integration facilitates handling of design data. Data mode is T3.

Tie Stitches
Fastening stitch to be executed before thread trimming (stitch to prevent fray).

<W>

Weak brake (Main shaft motor brake)

To fix the main shaft by brake of the main shaft motor so that the main shaft does not rotate when it is stopped.

<X>

X-axis drive system

Drive system to make the embroidery frame move in crosswise (X) direction.

X data

Data to make the embroidery frame move in crosswise (X) direction. It is indicated by moving direction (code: +/-) and value (mm).

<Y>

Y-axis drive system

Drive system to make the embroidery frame move in lengthwise (Y) direction.

Y data

Data to make the embroidery frame move in lengthwise (Y) direction. It is indicated by moving direction (code: +/-) and value (mm).

<Z>

Z-axis

Drive axis to change needle height (TCMX series).

N

O

P

R

S

T

U

W

X

Y

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12th Edition June, 2017

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