OPERATION MANUAL
Automatic Embroidery Machine
for model IB-C1201/IB-TU1204/IB-TU1206
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1. Introduction

1. Safety Instructions

To operate the machine correctly, understand the important safety instructions in this book and then operate the machine.

Do not operate the machine before you completely understand the contents in these instructions.

EXPLOSION HAZARDS
To avoid explosion, do not operate this embroidery machine in an explosive atmosphere unless it has been specifically certified for such operation.

THERMAL HAZARDS
Surface temperature of main motor may be up to 70 °C. To avoid thermal hazard, do not touch the surface of main motor. Allow to cool it down before servicing.

HEARING LOSS HAZARDS
The measured airborne noise level is exceeding 85dB(A). To avoid hearing loss hazard, ear protection must be worn when operating this machine.

STABBING OR PUNCTURE HAZARDS
Injury may be caused by moving needle. Ensure that the machine is in a stop condition (lockout/tagout of a supply disconnection device and/or unplugged) before changing, threading or rethreading of needle or changing of needles.

LOCAL LIGHTING
Due to the feature of the machine, you should operate the machine at the working place being set the lighting fixtures.
II. Warning Symbol

The content required a user’s special caution when operating the machine is specified as the warning symbols below.

⚠️ DANGER

This mark means dangerous consequences will arise, with the possibility of death or serious injury to the user, if the embroidery machine is handled incorrectly.

⚠️ WARNING

This mark means dangerous consequences could arise, with the possibility of death or serious injury to the user and/or damage to the embroidery machine and facilities, if the embroidery machine is handled incorrectly.

⚠️ CAUTION

This mark means dangerous consequences may arise, with the possibility of somewhat serious injury to the user and/or damage to the embroidery machine and facilities, if the embroidery machine is handled incorrectly.
2. Features, Functions

I. Descriptions

1. Power
   Input Power : 1Φ AC 100/110/120/200/220/240
   Consumption of electricity: 1kw

2. System
   Memory : 200 designs (capable of storing up to about 2,000,000 stitches)
   Subsidiary storage unit : 3.5 inch floppy disk drive
   display screen : 640 * 480 color LCD monitor

3. Motor
   Main motor : Servo Motor/ Induction Motor
   Frame motor : Stepping Motor

4. Other devices
   The number of needles : 6, 9, 12
   A automatic trim device
   Wiper device
   A device sensing upper thread break and under thread break

5. Installation environment
   Grounding : more than 10MΩ (measured by 500V insulation tester)
   Humidity : 30~95 %RH (relative humidity) without condensation
   Temperature: 0 to 40 C° (during operation)
   -10 to 60 C° (during storage)
II. Features

- Embroidery handling is simple and convenient. Built-in operating system of the embroidery machine makes handling of keys convenient and shows all procedure on the screen to make handling easier.

- A lot of embroidery designs can be stored. Up to 200 designs and about 2,000,000 stitches can be saved.

- Adopting the color LCD monitor makes users more convenient. Users can see the screen provided by operating panel with 640 * 480 color LCD monitor, in which there is information about working, at a glance. It promotes efficiency of the work.

- Transforming the design (rotation, mirror, reduction, magnification) are possible. Embroidery design can be rotated from 0° to 359° by 1° and mirror transformation is possible. Also, reduction & enlargement of the design in 1% in seals is possible from 50% to 200% in X & Y axis.

- Offset function makes appliqué and changing embroidery frame convenient. Using functions of manual offset and automatic offset, several convenient works can be done.

- Embroidery speed control
  Embroidery speed can be controlled freely and indicated by unit of [RPM] on the screen.

- The function of the embroidery frame origin
  Sensing the limit of the embroidery frame will be origin automatically, and this will center the design on the frame.
3. Preparation (Before getting started)

I. Operation panel function

- The picture below is the Inbro embroidery machine operating box appearance.
- Functions are as follows.
① **Screen**
Color LCD monitor it shows all necessary information.

② **Main motor speed keys**
It is used when changing the embroidery speed during working.

- 🚀: speed up
- ⬇️: speed down

③ **Frame speed key**
It is used to change the frame speed to low, medium and high speed for manual frame moving.

④ **Frame movement keys**
It is used to moves the frame in four directions, upper, lower, right and left.

⑤ **Function keys**
It is used to select functions at bottom round of the screen.

⑥ **Number keys**
It is used to input a number when setting the parameters.

- 🔄 key is used as a shortcut to embroidery screen from any other screen.

⑦ **Start key**
It is used to start embroidery.

⑧ **Stop key**
It is used to stop working.
II. Composition and contents of the embroidery screen

- The picture below is the initial screen of the operating system of the machine.
- The format of the screen consists of four parts.

1. Embroidery screen
   This shows embroidery design in buffer. If there is no design in buffer, Inbro logo is displayed.

2. Design information window
   This window shows information about the embroidery file of the design in buffer.

<table>
<thead>
<tr>
<th>DESIGN</th>
<th>The window on the left hand shows information about the embroidery design</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAME</td>
<td>The name of the selected design</td>
</tr>
<tr>
<td>STITCH</td>
<td>The total stitch count of the selected design</td>
</tr>
<tr>
<td>COLOR</td>
<td>The color count of the selected design</td>
</tr>
<tr>
<td>JUMP</td>
<td>The number of jump of the selected design</td>
</tr>
<tr>
<td>SIZE X[mm]</td>
<td>The X length of the selected design (in mm)</td>
</tr>
</tbody>
</table>
DESIGN

The window on the left hand shows information about the embroidery design.

SIZE Y[mm]
The Y length of the selected design (in mm)

NEEDLE A.B,C
A : Previous needle  B : Present  needle  C : Next needle

FIX POS
It shows the stop position of the main axis. If it does not stop at 100°, the background color turns red and an error message appears. *Warning: Color change must be at 100° position only.

Processed stitch count
Shows the actual stitch count

Processing degree
Shows job done in %

Embroidery speed
The speed of the main axis in rpm.

③ Machine information window (right hand at the screen)
This window shows the setting of the machine for the design in buffer.

MACHINE
It is located on the right hand and shows the machine parameters.

M. TYPE
Frame setting cap/flats

SCALE X
X scale set in %

SCALE Y
Y scale set in %

MIRROR
Shows mirror state

ANGLE
Shows angle of inclination set

MAX RPM
Shows max embroidery speed set

ORIGIN
Shows auto set to origin (yes/no)

W. COUNT
Shows actual stitch count

REPEAT
X: repeat number in X
Y: repeat number in Y
PRIO : It indicates embroidery priority.

④ Main menu bar
It is a bar related to the operation of the embroidery and consists of six equal divisions. Below bar, there are function keys correspondent to each menu. Pushing these keys select the menu and use several functions related to embroidery work.
There are 3 different main menu bars, these are; initial screen – the menu bar before loading a design in buffer after calling the design main menu.
Ⅲ. Composition of the main menu and menu bar

1. Initial screen menu before calling a design

- After turning on the main switch, the screen seen is the screen that set the origin of the embroidery frame. The screen is as follows.

- The first thing is set up embroidery frame origin press **F1** to set origin or **F2** to bypass. After origin is set, the screen shows initial screen as follows.

- The Inbro logo is shown in this screen and the main menu bar.
<table>
<thead>
<tr>
<th><strong>F1</strong> DESIGN CALL</th>
<th>Used when loading the design from memory</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>F2</strong> IN/OUT</td>
<td>Used to input/output, copying or deleting designs from floppy, memory &amp; external input/output</td>
</tr>
<tr>
<td><strong>F3</strong> SET MACH</td>
<td>Used to set machine parameters</td>
</tr>
<tr>
<td><strong>F4</strong> MANU. OPER</td>
<td>Used to test some devices manually and to edit designs in memory disk, design name &amp; insert color change codes</td>
</tr>
<tr>
<td><strong>F5</strong> REPEAT</td>
<td>Used to set repetition of work</td>
</tr>
<tr>
<td><strong>F6</strong> NEXT PAGE</td>
<td>Opens more main menu functions</td>
</tr>
</tbody>
</table>

- **Submenu of DESIGN CALL** is as follows:

  - **F1** DESIGN CALL
  - **F2**
  - **F3**
  - **F4**
  - **F5** SELECT
  - **F6** PREVIOUS

  - **F1** ← : This key moves the cursor to the left.
  - **F2** ↑ : This key moves the cursor up.
  - **F3** ↓ : This key moves the cursor down.
  - **F4** → : This key moves the cursor to the right.
  - **F5** SELECT : This key is used when selecting the design.
  - **F6** PREVIOUS : It cancels the call to design and returns to the initial screen.

- **Submenu of IN/OUT** is as follows.
FDD IN : FDD functions select and delete.

Cursor movement key ↑: Moves the cursor up.
Cursor movement key ↓: Moves the cursor down.

DELETE: Deletes the design pointed by the cursor.
DEL ALL: Deletes all designs in floppy
SELECT: Selects design pointed by the cursor. After selecting the design to memorize, use the arrow functions and the select functions to assign the location in memory you want to use to save the file.
PREVIOUS: Goes to previous screen

TAPE IN: Inputs design through the punch tape port
NETWORK: Inputs a design through the network connection.
FDD FORMAT: Formats the floppy diskette inserted in the floppy disc.
DESIGN OUT: Copies the design from the embroidery memory to floppy diskette.
(It can be copied as INBRO format or TAJIMA format)

INBRO : Makes the format of the file INBRO when copying to floppy diskette.
TAJIMA: Makes the format of the file TAJIMA when copying to floppy diskette.
PREVIOUS: Goes to previous screen

PREVIOUS: Goes to previous screen
The Submenu of **SET MACH** is as follows:

- **F3** SET MACHINE
  - **F1** EMB SET
  - **F2** PARAM SET
  - **F3** NEEDLE
  - **F4** COLOR ORDER
    - **F1** ←
    - **F2** ↑
    - **F3** ↓
    - **F4** →
  - **F5** COLOR SET
    - **F1** ←
    - **F2** →
    - **F3** ←
    - **F4** →
  - **F6** PREVIOUS

- **F2** PREVIOUS
  - **F1** START POS
  - **F2** OFFSET POS
  - **F3** STITCH
    - **F1** STITCH VALUE
    - **F2** STITCH (-100)
    - **F3** STITCH (100)
    - **F4** NEXT COLOR
    - **F5** NEXT PAGE
    - **F6** PREVIOUS

- **F5** OFFSET
  - **F1** NUMERIC KEY
  - **F2** OFFSET (100)
  - **F3** OFFSET (1000)

**F1** EMB SET: Used when setting the parameters such as magnification, reduction, angle setting, etc.

**F2** PARAM SET: Used when setting machine parameters

**F3** NEEDLE: Sets up the automatic color change

- **F1** COLOR ORDER: Used to change color change order through the methods of change, insertion and deletion.
- **F2** COLOR SET: This function makes information easy to understand by matching display & thread colors.

**F5** OFFSET: Sets up start point, Offset position, Offset stitch count and so on.
**F6** NEXT PAGE : Opens next menu page

- **F4** Submenu of **MANU. OPER** is as follows.
  - **F1** SENSOR
    - **F2** ORIGIN SET
    - **F3** TRIM
    - **F4** WIPER
    - **F5** NEXTPAGE
    - **F6** PREVIOUS
  - **F1** SENSOR : It checks the input signals of all sorts of sensors used in the embroidery machine
  - **F2** ORIGIN SET : It goes to the origin of an embroidery machine
  - **F3** TRIM : It tests trim solenoid
  - **F4** WIPER : It tests the wiper motor
  - **F5** NEXT PAGE : It goes to the next menu page.
  - **F6** PREVIOUS : It returns to the initial screen.

- **F6** Submenu of **NEXT PAGE** is as follows.
  - **F1** DESIGN NAME
    - **F2** NEXT stitch
    - **F3** PREV stitch
    - **F4** CHANGE
    - **F5** PREVIOUS
    - **F6** PREVIOUS
    - **F1** CHANGE
    - **F2** NEXT color
    - **F3** PREV color
    - **F4** PREVIOUS
DESIGN NAME: It changes the name of a design.
COLOR CODE: It adds or deletes color code arbitrarily.

NEXT STITCH: Used to advance any amount of stitches set by the key pad
NEXT COLOR: Used to go to the color change code
PREV. STITCH: Used to move back any amount of stitches set by the key pad
PREV. COLOR: Used to go to the previous color change code
CHANGE: Used to set or delete a color change code.
   If the present stitch count by toggling set/delete, deleted or set color code message will show up.
PREVIOUS: If there is a color code changed by user, saving message will show up, but if not, it will return to the previous screen.

PREVIOUS: It returns to the initial screen.

Function menu after calling a design

When a design is loaded, it will show up at the center of the screen instead of Inbro logo like the picture below.

<table>
<thead>
<tr>
<th>F1</th>
<th>DESIGN CALL</th>
<th>Used when loading the design from memory</th>
</tr>
</thead>
<tbody>
<tr>
<td>F2</td>
<td>IN/OUT</td>
<td>Used to input/output, copying or deleting designs from floppy, memory &amp; external input/output</td>
</tr>
<tr>
<td>F3</td>
<td>SET MACH</td>
<td>Used to set machine parameters</td>
</tr>
</tbody>
</table>
The function menu that shows up at this time is the same as that of initial screen but Submenu shown by selecting [NEXT PAGE] have a lot of differences. Please refer to pages 12 to 17 for the first menu page (initial menu).

Submenu of [NEXT PAGE] is as follows.

- **CHG NEEDLE**: Used for manual color change
- **MANU.TRIM**: Used for manual trimming at present position
- **FLOAT**: Used to float the design to a different stitch point without embroidery
- **LIMIT SET**: It sets the limits of frame.
- **END OF WORK**: Used to abort embroidery
- **PREVIOUS**: It returns to the initial screen.

Submenu of [MANU. OPER]

- **Used to test some devices manually and to edit designs in memory disk, design name & insert color change codes**
- **Used to set repetition of work**
- **Opens more main menu functions**
3 Menu state of stop during embroidery

This screen shows up when pushing the red stop switch or the `STOP` key during embroidery.

- **CHG NEEDLE**: Used for manual color change
- **MANU.TRIM**: Used for manual trimming at present position
- **FLOAT**: Used to float the design to a different stitch point without embroidery
- **OFFSET**: Sets up start point, offset position, offset stitch count and so on
- **END OF WORK**: Used to abort embroidery
- **NEXT PAGE**: It goes to the next menu page

Submenu of **CHG NEEDLE** is as follows.
1 : Manual change to needle No. 1
2 : Manual change to needle No. 2
3 : Manual change to needle No. 3
4 : Manual change to needle No. 4
NEXT PAGE : It goes to the next page.
PREVIOUS : It returns to the previous step.

Submenu of FLOAT is as follows.
NUMERIC KEY : Floats any amount of stitches forward as enter in the key pad & pressing set

STITCH(100) : Floats 100 stitches forward

STITCH(1000) : Floats 1000 stitches forward

NEXT COLOR : Floats to the next color change code in the design

NEXT PAGE : It goes to the next menu page.

NUMERIC KEY : Floats any amount of stitches back as enter in the keypad and pressing set

STITCH(-100) : Floats 100 stitches backward

STITCH(-1000) : Floats 1000 stitches backward

PREV.COLOR : Floats back to the previous color change code in the design.

PREVIOUS : It goes to the previous screen.

Submenu of OFFSET is as follows.

NEXT-MOVE : Used to move back to the last stitch point after moving the frame manually for application

START-MOVE : Goes to the start point of a design

OFFSET-MOVE : Move the frame to the position preset by offset

PREVIOUS : Return to the previous step.
Submenu of **F6** **NEXT PAGE** is as follows.

**F6** **NEXT PAGE**

- **F1**
- **F2**
- **F3** **SET MACHINE**
- **F4**
- **F5**
- **F6** **PREVIOUS**

**F3** **SET MACH** : Used to set parameters

- **F1** **EMB SET** : Used to set design parameters as reduction, enlargement, angle, etc.
- **F2** **PARAM SET** : Used to set the machine parameters.
- **F3** **NEEDLE** : Sets up automatic color change order.
- **F4** **OFFSET** : It sets up start point, offset position, offset stitch and so on.
- **F5** **PREVIOUS** : It returns to the previous step.

**F6** **PREVIOUS** : It returns to the previous step.
IV. How to use start push button (green) and stop push button (red)

The picture below shows the switches used in this embroidery machine and these do the same function as the start/stop keypad buttons on the control box.

Switch operation is as follows

1. Embroidery start and stop function

<table>
<thead>
<tr>
<th>Switch operation</th>
<th>Machine function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Push start button one time.</td>
<td>The machine runs and the embroidery starts.</td>
</tr>
<tr>
<td>Push start button continuously.</td>
<td>The machine starts including (low speed) until switch is released.</td>
</tr>
<tr>
<td>Push stop button one time.</td>
<td>The machine stops.</td>
</tr>
</tbody>
</table>

2. Backward operation

<table>
<thead>
<tr>
<th>Operation of a switch</th>
<th>Work of a machine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Push stop button several times</td>
<td>The frame goes backward by the moving unit that is set.</td>
</tr>
<tr>
<td>Push stop button continuously.</td>
<td>The frame starts to go backward. The machine immediately halts if the switch is released before the frame moves 10 times as much as the moving unit that is set. (The frame goes backward by the moving unit that is set.) It keeps going backward if the switch is released after the frame goes backward repeatedly more than 10 times as much as the moving unit that is set. At this time if pushing start button to stop going backward. Moving backward stops.</td>
</tr>
<tr>
<td>Push start button one time.</td>
<td>The machine comes to a halt.</td>
</tr>
</tbody>
</table>
V. Head switch & thread break led

1 Switch function

- For normal operation, place the switch at center to turn Head On/Off (LED on).
- For mending – after thread break go back using the stop switch or floating the machine back to the point you decide to order sewing and push the head button up at the head you want it to sew, then press start.
- For supplementing – the machine will sew only that head until it reads the beginning of the backing point
- For off position place the switch down (led off)

2 Thread break led function

- When sensing under thread break and upper thread break, LED of that head blinks. At this time, on, off operations of the switch prevent LED from turning on and turning off.
VI. Embroidery operation basics

Turn on the main power switch on the machine.

Will set up the origin of the frame?
  Yes
  Detect the origin of the frame and move to the origin.
  No

Is there a design being worked previously?
  Yes
  Move frame to next stitch.
  No

Is there a design in memory?
  Yes
  Input a design through a floppy disk or a tape
  No

Call a design
  Set machine parameters.
  Select a needle bar.

Need repeat operation?
  Yes
  Set X, Y repeat.
  No

Move frame to desired stitching point.

Need offset set up?
  Yes
  Set up the frame off-set function.
  No

Start operation by pushing start switch.
4. Basics (Getting started)

1. Embroidery origin setting

- The screen below shows up first after turning on the switch.

⚠️ **CAUTION**

When performing this operation, do not place your hands or fingers on the machine table.

- Here it is asked if setting up the origin of the frame.

< Turn on the main switch of the embroidery machine >

---

![Embroidery Machine Display](image)

Selection of [YES] or [NO]
When **F1** [YES] is pressed if there is an incomplete job in memory, the display will ask if go to next stitch point. If **F1** [YES] is pressed again, the frame will move to the next stitching point and if **F2** [NO] is pressed the frame will move to the origin of the machine that is the top left corner of the embroidery area. If there is not design work in memory the frame will directly move to the origin.

When **F2** [NO] is pressed, the initial screen will show without the process of setting the origin.

Before pressing the **F1** [YES] key, be aware that noting is in the path of the frame crashing the trim can damage the machine or cause body injuries.
II. Design input/output

- To do embroidery, the design to be sewed should be selected. There are several methods to call a design.

1. Calling an unfinished embroidery job

- If there is an unfinished design and you want to keep working on it, push the [SET] key from the initial screen, this will call the previous design and will set the trim to the next move position.

   < Setting up the origin of a frame >

   The screen that shows up right after setting the origin of the embroidery (same as above) is called the initial screen.

   After the initial screen shows up, push the key below the number key.
<Completion of calling the design being worked previously>

 завод

 If there is no design being used previously or you want to select another design, please follow the next.

2 Calling a design from memory

< Method 1>

<Setting up the origin of a frame>
Selection of [DESIGN CALL] on the initial screen of the embroidery

Moving to the design you want using direction keys,

, If you want to cancel calling a design,
it is possible to return back using the [PREVIOUS] key)

To call a design not to cancel, push the [SELECT] key.
<Completion of the first method that calls a design in memory>

<Method 2>

<Setting up the origin of a frame>

Selection of \texttt{DESIGN CALL} on the initial screen of the embroidery.
Input of design number you want using the number key.

Press the [SET] key below the keypad new bars.
<Completion of the second method that calls a design in memory>

3 Deleting a design from memory

After selecting a design on the screen above, push the CLR key.
A message will show up asking if you want to delete the design.

If you want to delete the selected design, push the [SET] key to delete.
If you want to cancel deletion, push the [PREVIOUS].

< Completion of deleting a design in memory >

4 Formatting a floppy disk

It formats the floppy diskette inserted in the floppy disc drive.
How to format a floppy diskette is as follows.

<Setting up the origin of a frame>
Selecting the [IN/OUT] on the initial screen

< Inserting the floppy diskette to be formatted >

Selecting the [FDD FORMAT]
A message will show up asking if you want to format the diskette.

If you want to continue format, push the [SET], If you want to cancel format, push the [PREVIOUS] and move to previous step.

Process for formatting the floppy diskette shows up on the screen. Please wait till 100% completed.

<Completion of formatting the floppy diskette>
When power supply is intercepted or electricity failure occurs or the floppy diskette is removed from the disk drive by force, partial or whole design data in the floppy diskette may be damaged.

5 Calling a design from floppy

< Setting up the origin of a frame >

Selection of [IN/OUT] on the initial screen

< Insert the floppy diskette that contain the design in the floppy drive. >
Selection of [FDD IN]

If (FDD IN) is selected before a diskette is inserted or if there are no embroidery files in diskette 2-error message will show up.

 Designs lists in diskette will show up on the screen.
Let us see the composition of screen

- **No.**: Design number is assigned according to the number of the designs stored in floppy.
- **NAME OF DESIGN**: It indicates the name of a design stored in floppy.
- **INFORMATION**: It indicates the date when the design was created and stitch count of a design stored in floppy.
- **FORMAT**: It indicates the format of a design.

In case of selecting only one design, move the cursor to the design you want, by using the cursor move key. The above screen shows up the case of selecting no. 3 design.

If you try to copy more than two designs in a lump, move the cursor to the design you want and push the key below the keypad numbers.
The above screen show up the case of selecting no 2, 3, 4, 8, 9 & 10 designs by using the [SET] key.

After the designs are selected, push the [SELECT] key.
If you want to cancel, push the [PREVIOUS] key.

Rooms that remain in memory are indicated. Place the cursor on the room you want using cursor moving key (on the picture above room number 9) is selected.

If the cursor is placed on the room you want, push the [SELECT] key.

Please check out memory space that is indicated on the bottom of the screen before storing the design. If the design of the embroidery is larger than memory space available, the error message shows up and storing will not be completed.
The procedure that reads a design from floppy diskette and then stores the design in memory shows up on the screen.

Please wait for the copy procedure to finish.

< Completion of calling a design in floppy>

6 Deleting a design from floppy

Move the cursor to the design you want to delete using cursor moving key. If you try to move several designs in a lump, select the SET key.
Push the [DELETE] key.

The message that asks if executing deletion or not shows up.

If you want to complete deletion, push the [SET] key and if you want to cancel, push the [PREVIOUS] key.
<Completion of deleting a design in floppy>

7 Copy from memory to floppy

- It is used to copy a design in memory to floppy
- For example, in the case of copying a design in the design memory of room 2 to floppy diskette by INBRO format.

<Setting up the origin of a frame>
Selection of [IN/OUT] on the initial screen

Selection of [DESIGN OUT]

Selecting the design you want using keys,

< Inserting floppy diskette into floppy drive >
At this time, storage space in diskette should be much more than the design that is selected.

Selection of the [SELECT] key

The screen that asks for output format shows up. (It is possible to copy out in TAJIMA design format or INBRO design format)

<Output format type is set by pushing one of them, \[F1\] [TAJIMA], \[F2\] [INBRO]>
The procedure of storing in floppy disk shows up.

⚠️ CAUTION

If diskette is removed during storing, information can be erased or diskette can break down.

↓

<Completion of the output of a design>

### 8 Renaming the design

- It is used to change the name of a stored design.
- How to change the name of design is as follows.

↓

<Setting up the origin of a frame>
Selecting the [NEXT PAGE]

Selecting the [Design RENAME]

Move the cursor to the character you want and push the [select].
Using the same method, select the rest of the characters in the new name and notice that the
new name is being written at the upper-left side on the screen.

To change the name, push the [SET] key and if you want to cancel it, push the [PREVIOUS] key.

<Completion of renaming the design>
III. Automatic needle change & display color setting

- After a design is selected the needle order should be set to match the thread colors with the design colors.

- If a needle should not be changed, the work will be done according to the order of color code that is set on design. If color change is not set the design will sew with the original order in the digitizing file.

- When a user wants to change the design with the hue a user want, the procedure of the change of a needle should be gone through.

- The change of a needle has to be made right after the call to a design, if the change of a needle is made on the initial screen before calling the design to be worked with, the needle order of the design being worked previously is going to be changed.

- There are two changes of needles that are manual change and automatic change. Manual change is to change present needle with another needle and automatic change is the function that moves to the needle that is set if the color change code is encountered as changing the needle table that is set corresponding to the hue code of the design of the embroidery.

1. Replacing a needle change

- It is used when changing the specific needle of the needle table with another needle. The usage is as follows.

  < Setting up the origin of the frame >

  ↓

  <Calling a design after selecting>
Each needle is assigned a specific number in the Inbro embroidery machine. Because the table in the menu of “SET THE NEEDLE CHANGE ORDER” in the picture above is corresponding to a needle number on the head of the Inbro embroidery machine, when color change code is encountered in the design, the needle will be changed according to the order of the number in the table.
Selection of [COLOR ORDER]

Move the cursor to the place you want to change using the keys F1, F2, F3, F4.

Selection of [CHANGE]
Selection of [EXCHANGE]

Selected table space is deleted and will standby for input of a numeric key.

At this time, input the number of the desired needle using the number key. If you try to change to number 5, pushing 5.

If you continue to change, push [SET]. Then it moves to the next color order.
If you want to end color change set up, push [PREVIOUS] to exit.

2 Inserting a needle change

- Insertion function is used when inserting a needle number to be added in the middle of needle selection numbers that is input already.
- Let us see how to insert. The procedure is similar to the method of changing a needle that is described previously.
- As the fore part is same as the method of changing a needle, please refer to the method.

< After moving the cursor to the place you want, select [CHANGE] >
Select the [INSERT] key.

A blank space is inserted as the picture below

Insert the needle number using the number key. If you want to insert the needle 7 in the foremost part, push [SET] key after pushing the key.
If you want to continue inserting, push the [SET] key to continue and if you want to end, push [PREVIOUS].

<Completion of inserting a needle>

### 3 Deleting a needle change

- Deletion function is used when partly deleting a needle number in the middle of needle selection numbers that are input already.
- As the fore part is same as the method of changing a needle, please refer to the method.

< After moving the cursor to the place you want, select [CHANGE] >

Select the [DELETE] key

The appropriate needle is deleted and the next needle will be drawn forward as the picture below
If you want to continue modifying, push the \[DELETE\] key to continue and if you want to end, push \[PREVIOUS\].

<Completion of deleting a needle>

4 Setting the display color of each

- It is possible to set up hue depending on each needle, this function matches the drawing color to the thread color making the picture on the screen looks like embroidery.
- How to use is as follows.

<Calling a design by selecting \(\Rightarrow\) selecting \(\text{F3} \) \{SET MACHINE\} \(\Rightarrow\) selecting \(\text{F3} \) \{NEEDLE\}>

↓
Selection of [COLOR SET]

The top row indicates the needle number, the bottom row shows blocks of colors that can be selected.
The [BG] block located at the first upper box is used for setting the background color when the embroidery design shows up on the screen.

Move the cursor to the needle of which color you want to change using F1, F2 on the box below.
Push the [CHANGE] key.

The message shows up on the bottom of the screen and the cursor will move to the box below like the picture below.

Move the cursor to the color you want to change using \[F1\], \[F2\] on the box below.

When pushing the [CHANGE] key, the color assigned to each needle shows up simply on the screen.

The picture below is the screen where the needle of number 1 is set to deep blue.
59

<Completion of setting a needle color>

5 Inserting & deleting color change code

It is used to modify the color change code being set up previously to the embroidery design. Using this function, a user is able to modify the color order.

How to modify the color change code is as follows.

Before calling a design, a user can modify the color code of the design being worked previously on the initial screw. When calling a new design, move to the initial screen by pushing the CLR key and then you can modify the color code according to the process below.
The menus shown up on the screen are as follows.

**F1**  NEXT STITCH : It is used when moving the cursor forward to the chosen design by using a number key.

**F2**  NEXT COLOR : It is used when moving the cursor forward to the next color code unit being set up previously.
It is used when moving the cursor backward to the chosen stitch by using a number key.

PREV. COLOR : It is used when moving the cursor backward to the previous color code unit being set up previously.

CHANGE : It is used when changing the color code at present cursor position. If color code at the present cursor position has not been set previously, inserting color code message shows up but if so, deleting color code message shows up.

PREVIOUS : If there is a color code changed by a user, saving message shows up but if not, it returns to the previous screen.

Let us look into a brief process of inputting the color code.

Selecting the [NEXT STITCH]

Input the color code as many as stitches a user wants (using the number key).
Input the number key and if you want to move the cursor to that position, push the [SET] and if you want to cancel it, push the [PREVIOUS].

When the cursor is located at the accurate position you want to input the color code, select the [CHANGE], if you try to cancel it, select the [PREVIOUS].

Selecting the [NEXT STITCH]
At this time, if the color code at the present cursor position has been set previously, deleting message shows up but if not, inserting message shows up.

If you want to input the code, push the [SET] and if you want to cancel it, push the [PREVIOUS].

If you added or deleted the color change code at all position you want to modify, select the [PREVIOUS] and store up it.
When storing up a design, select the [SAVE] if you want to modify the design being called previously, and select the [SAVE AS] if you want to save the design separately.

In case of selecting [SAVE AS], you will go through the process of setting the design room and storing it up.
<Completion of converting the color change code>
IV. Manual frame moving

Frame moving key is used in order to place a frame to the place you want before starting the embroidery and in order to stop the work and then move a frame during the embroidery. Also it is used when setting up offset for appliqué work.

1. Frame speed control

- Push the speed control key in order to control the moving speed in moving a frame.
- It has three steps of variations, lower speed (L), medium speed (M), high speed (H) and present state of frame speed is indicated on the right bottom of the screen.

When performing this operation, do not place your hands or fingers on the machine table. If you put them on the machine table, you may be injured due to the moving frame.

2. Moving the frame (up, down, left, right)

- If control of a frame speed was completed, let us move a frame to the position you want.
  - : move a frame up.
  - : move a frame down.
  - : move a frame right.
  - : move a frame left.

- If the frame limit is being set up, the following message will wink when it reaches the superior limit. It means that it is not able to move to that direction anymore. Exit pushing the [PREVIOUS] and move the key to the opposite direction.
V. Frame limits setting

- Setting up the frame limit is the function that fixes the working range that a user wants and conducts embroidery operation within the appointed scope.

- Using this function, prevent several accidents like needle breakage caused by chopping a needle at the frame and conduct embroidery operation at the specific position accurately.

- Follow the procedure below and make yourself familiar with the usage.

  <Turn on the power of the machine>

  ↓

  <If the screen for setting up the origin of a frame show up, press the [Yes].>

  ! CAUTION

- To use the frame limit function [LIMIT SET], select the [YES] on the screen for setting up the origin of the frame, it appears as soon as you turn on the power.

- If you want to use this function with selecting [NO] (if don’t set up the origin), Following one of the following below.

  1. Initial screen -> MANU. OPER -> If push the ORIGIN SET, the frame is moving and storing up the origin at the same screen as the first.

  2. Initial screen -> SET MACHINE -> PARAM SET -> NEXT PAGE –> NEXT PAGE → Set up the FRAME LIMIT to ON.

  ↓

  <If you set up the origin of a frame, call a design you want.>

  ↓

  <After calling a design, call the next menu selecting the NEXT PAGE.>
Select the [LIMIT SET]

The necessary menus for setting up the frame limit show up.

◊ The sub menus shown up at this time are as follows.

◊ [MANU. TRAVEL] : It is the function that decides the embroidery position of a design within the limit being set previously.

◊ [MANUAL SET] : It is the function that sets the limit of a frame.
1. Frame limits setting by manual moving

- Moving the frame directly using the direction key, you can input the limit value.

**CAUTION**

The initial limit value of the frame is being set suitable for a big frame. If a user want to use a smaller frame than that one, make sure to set the limit to prevent the accident like chopping a needle at the frame.

- Follow the procedure below and make yourself familiar with the usage.

Select the [MANUAL SET].

The yellow cursor shows up.
Moving the frame by using the moving key of the frame, you will see the yellow cursor is moving at the same time. Doing this process, you can move the start point that will set the frame limit, to the position you want.

If the frame has being moved to the position you want, set up the start point pushing the [SET]. If you want to cancel it, come out pushing the [PREVIOUS].

If you move the frame after setting up the start point, you can see that a square is being created standardizing the start point as shown in the illustration.

Continue moving the frame and set up the size you want.
After the scope is selected as much as you want, store up the setting pushing the [SET]. If you want to cancel it, come out pushing the [PREVIOUS].

Check the value of setting at the menu of [MENU. TRAVEL].

2 The relative position between the limit of a frame and the embroidery design

- You can see the relative position between the limit range of the embroidery being set previously and the design on the screen and conduct embroidery operation at the position you want.
- Let us see the usage.
Select the [MANU. TRAVEL].

The three square-outlines show up.

Let us look into the meaning of the squares.

1. Big white square: It is the size of a big frame being set up as initial value. (If the origin of a frame is not set, it will not show up).
2. Yellow square: It is the size of a frame being set up by a user at the menu of [SET MENU].
3. Small white square: It is the relative size against the frame of the design called.

Move the white small square (design) of number three to the position you want using the manual frame key. When using limit-set up, lay the white design inside of the yellow square not to make it get out of the frame limit during embroidery working. If you move it by using the manual key, the frame is moved within the frame limit.

Come out pushing the [PREVIOUS] and start to work embroidery.
CAUTION, REFERENCE

If start to work embroidery with getting out of the limit as below, the following error of the frame will arise.

1. In case the embroidery limit touches the limit position during embroidery working even though the start point is in the limit.

   ![Design](image)

   In this case, you can start embroidery working as the picture above however, if it reaches to the limit being set before, embroidering working will stop showing the error as below.

   - **X+ Frame Limit ERROR No = 02**: When the left side of the design reaches to the frame limit
   - **X- Frame Limit ERROR No = 03**: When the right side of the design reaches to the frame limit
   - **Y+ Frame Limit ERROR No = 04**: When the upper side of the design reaches to the frame limit
   - **Y- Frame Limit ERROR No = 05**: When the lower side for the design reaches to the frame limit

2. In case the start point is located out of the limit position
If you push the start button even though you confirm the position is getting out of the frame limit as the picture above, embroidery working will not start with showing the following message as shown the picture below.

If you try to continue embroidery working outside of the limit position being set up before, you can do that modifying the limit position or making OFF the limit setting up.
VI. Getting started

After the design to be worked with is selected and selection of a needle is completed and the frame is moved to the place you want, let us get the embroidery started.

Do not put your hands or face near the moving parts of the machine. Especially, the areas near moving needles, rotary hooks, take-up levers, pulleys, and speed reducing box are very dangerous.

How to start is simple. Pushing the key in the operation box or pushing the START switch (green) hung on the embroidery machine gets the embroidery started.

When getting the embroidery started, the embroidery is progressing with the embroidery speed that is set after several float operations. And all sorts of procedure, the procedure of stitch process, present embroidery speed, present needle, embroidery progress rate and so on, shows up on LCD monitor.

The embroidery is progressing now with the speed of 822[rpm] and 168(1%) stitches over total design stitches of 10,675 stitches are progressed on the screen above.
1 Embroidery speed setting

If you want to gain or reduce the embroidery speed a little more, the control key of the embroidery speed is used. The embroidery speed is indicated by [rpm] on the left bottom of the screen.

Gaining the speed
It is used when you want to gain embroidery speed. Whenever it is pushed a time, the speed is gained by 3[rpm] and if it is being pushed continuously, the speed is gained continuously.

Reducing the speed
It is used when you want to reduce embroidery speed. Whenever it is pushed a time, the speed is reduced by 3[rpm] and if it is being pushed continuously, the speed is reduced continuously.

- The speed of the main frame can be changed within the range of the value of setting of r.p.m parameter.
- The maximum speed can be affected by the design, raw material and so on.

Caution
If embroidery speed is changed excessively during the embroidery, the embroidery machine can be overworked.

2 Stopping during embroidery

- If you want to stop during the embroidery due to the some situations, use the key in the operation box or push the STOP switch hung on the embroidery machine (red).
The screen above is the screen that gets the embroidery stopped.

3 Manual trim

- Manual trim function is used to make a trim arbitrarily other than automatic trim by design code during the embroidery.

**WARNING**

When make a manual trim, be careful not to put the hands under the needle or table of the machine. In case of putting a hand under the needle or the machine during making a trim, injury may occur by the needle or the frame under operation.

- The procedure of making trim is as follows.

<Make a stop during the embroidery>
Select the [MANU. TRIM] key.

The message, “Press 'SET' Key”, shows up.

Select the [SET] key.

<Select [F6] [PREVIOUS] if you try to cancel a trim>

<Completion of manual trim>

4 Float operation

- Float is the function that lets the frame position to be changed by the design of the embroidery without the rotation of main axis, that is, without getting a needle down.
- It can be used if you select [F3] [FLOAT] on the stop screen during the embroidery or select [F6] [NEXT PAGE] [F3] [FLOAT] on the screen before starting the embroidery.
- When selecting float operation function, menus like the below exist.
NUMERIC KEY : Without the embroidery work, go forward as many as stitches a user wants. (Using the number key and SET' key)

STITCH(100) : Without the embroidery work, go forward as many as one hundred stitches.

STITCH(1000) : Without the embroidery work, go forward as many as one thousand stitches.

NEXT COLOR : Without the embroidery work, go forward to the next color code.

NEXT PAGE : It is used when you want to float backward.

NUMERIC KEY : Without the embroidery work, go backward as many as stitches a user wants. (Using the number key and SET' key).

STITCH(-100) : Without the embroidery work, go backward as many as one hundred stitches.

STITCH(-1000) : Without the embroidery work, go backward as many as one thousand stitches.

PREV.COLOR : Without the embroidery work, go backward to the previous color code.

PREVIOUS : It is used when removing to the previous step.

PREVIOUS : It is used when moving to the previous step.

How to use is as follows.

<The screen below shows up if selecting [FLOAT] before starting the embroidery or during the embroidery>.

If you try to go 1281 stitches forward without the actual embroidery.
Using the number key input stitches you want. If you try to go 1281 stitches forward, push one by one.

After checking out the number that shows up on the bottom of the screen.
It can be possible to see the exact progress of 1281 stitches.

If float operation is needed more, please use after reading the description of menus carefully. For example, if you want to go 100 stitches forward, select [STITCH(100)] and if want to get float operation to go forward to the next color code, select [NEXT COLOR].

If you want end the float, select [PREVIOUS].

<Completion of getting the float to go forward>

But if you want to cancel the float progressed already.
If you want to go 100 stitches backward

Select [STITCH(-100)]

It can be possible to see the exact going of 1281 stitches backward.

<Completion of getting the float to go backward>
5 Stitch back

- It can be possible to push the number of stitches progressed by the operation of start or stop back when the embroidery machine is at stop state during the embroidery.

**WARNING**

- Do not put your hands or face near the moving parts of the machine. Especially, the areas near moving needles, rotary hooks, take-up levers, pulleys, and speed reducing box are very dangerous.

<table>
<thead>
<tr>
<th>Push stop button one time</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Stop button" /> or <img src="image" alt="Start button" /></td>
</tr>
<tr>
<td>MODE</td>
</tr>
</tbody>
</table>

- The frame goes backward by a unit of transfer that is set on the screen.
- A unit of transfer is set on [SET MACHINE] ➔ [PARAM SET] ➔ UNIT OF BACK STITCH. (Refer to the application section)

<table>
<thead>
<tr>
<th>Push the stop button continuously</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Stop button" /> or <img src="image" alt="Start button" /></td>
</tr>
<tr>
<td>MODE</td>
</tr>
</tbody>
</table>

- The frame starts going backward.
- If the switch is released before the frame progresses as much 10 times as a unit of transfer of the embroidery set, the machine stops immediately. (The frame goes backward by a unit of transfer that is set)
- If the switch is released after the frame goes backward over 10 times repeatedly, it continues to go backward.
- At this time, stop button is pushed in order to stop going backward, going backward stops.
6 Manual color change (needle)

- It can be possible to change a needle by hand when a stop during the embroidery. (It can be also possible to change a needle through selecting [NEXT PAGE] - [CHG NEEDLE] on the screen before the embroidery begins).

- When changing the color by hand, be careful not to put the hands or other physical part in the interval between a head of number one (right side) and change box. Otherwise, the hands may be cut in the interval-between the No.1 head and the change box.

- The procedure of change is as follows.

  <Push the STOP key or the stop switch during the embroidery>
Select [CHG NEEDLE] if the menu of a stop state shows up

If there is the needle number you want, push that function key and if not, after selecting the [NEXT PAGE] to get the needle number that you want to show up, the change will be immediately made if that key is pushed.

[Reference] : It is possible to make a change at one time by pushing the key after input of the needle number you want.

<If you want to change a needle with that of number 5>
Operate keys as the order of [CHG NEEDLE] → [NEXT PAGE] → [5] or [CHG NEEDLE] → [OFFSET] → [SET] key.

If you do not want to change, push [PREVIOUS].

<Completion of the change of manual needle>
5. Application (Using more conveniently)

I. Offset function use

- Offset function is the function that places the frame automatically to the point that is set. This function makes it more convenient that the work of the exchange of frames, a trim, appliqué embroidery and so on.

- When conducting this operation, do not put the hands or fingers on the table. If you put the hands or fingers on the table when the frame is moving, injury may arise by driving the frame.

- Offset function in the Inbro embroidery machine consists of manual offset function and automatic offset function.
  
  **Manual offset**: Manual offset is used when a user moves the frame to the point set after stopping it arbitrarily or when go back to the place where the embroidery has been doing and continue the work after moving the frame by hand.
  
  **Automatic offset**: Automatic offset is the function that makes a trim at the point which is preset, if a offset preset is encountered during the embroidery the machine will trim and move to the preset position.

II. Offset position setting

- In the manual offset, the offset point should be set in order to make use of [OFFSET MOVE] or automatic offset function.

- How to set is as follows.
Select [SET MACHINE]

Select [OFFSET].
Submenu of offset setting screen is as follows.

**F1** [START POS] : It is the function that assigns the start position of the frame of the design called. If the start point is set, the frame moves automatically to the start position that is set wherever the frame is when the frame starts the work.

**F2** [OFFSET POS] : It sets up the offset position to the design called. If the offset setting stitch is reached on the work of the design called, it moves to the position that is set already after trim. After this, if the key is pushed after appliqué work and so on, it moves to the next stitch to work and continues the work.

**F3** [STITCH] : It sets up the stitch that is going to move to the offset position at the design called. It is used conveniently when appliqué work and so forth.

**F4** [STIT. VALUE] : It can be possible to check out the offset position that is set and delete the position that is set. Also, it can be possible to set up the offset position by setting up the stitch position using the number key.

---

**CAUTION**

1. If OFFSET in [EMB SET] of [SET MACHINE] should not be set up to “YES”, though the offset point is set up, it does not execute during the embroidery.
2. If the origin of a frame was not set up, it is difficult to search for offset coordinate.

---

1. How to use START POS

Push [START POS].
The menu disappears like the picture below and the message, “Setting the OFFSET Position”, shows up.

Using the frame moving key move a frame to the position you want.

If the frame is moved to the position you want, push the [SET] key to set up. If you want to cancel, push [PREVIOUS].

② How to use OFFSET POS
Select [OFFSET POS].

The menu disappears like the picture below and the message, “Setting the OFFSET Position”, shows up.

Using frame moving key move a frame to the position you want.

If the frame is moved to the position you want, push the [SET] key to set up. If you want to cancel, push [PREVIOUS].

③ How to use STITCH

This fixed offset function is the function that moves automatically a frame to the offset position and then stops after making trim when the stitch position, which is set previously during the embroidery, is reached. It can be possible to set up offset position of each design to the maximum 10 positions.
Select [STITCH].

[F1] [NUMERIC KEY] : [NUMERIC KEY] : It indicates the position of going forward as many as stitches a user wants.

[F2] STITCH(100) : It indicates the position of going forward as many as one hundred stitches.

[F3] STITCH(1000) : It indicates the position of going forward as many as one thousand stitches.

[F4] NEXT COLOR : It indicates the position of going forward to the next color code.

[F5] NEXT PAGE : It is selected if you want to go backward.
NUMERIC KEY: It indicates the position of going backward as many as stitches a user wants. (Using the number key and ‘SET’)

STITCH(-100): It indicates the position of going backward as many as one hundred stitches.

STITCH(-1000): It indicates the position of going backward as many as one thousand stitches.

PREV.COLOR: It indicates the position of going backward to the next color code.

PREVIOUS: It is used when removing to the previous step.

The method of setting is as follows.

If the first offset is set to the point of the 123rd stitch and the second offset is set to the position where the color is changed and the third offset is set to the point where the next color code is changed.

Select the [NUMERIC KEY]

Push number keys, one by one in order to go 123 stitches forward.
Select [SET]

The cursor is going to stop after exact going of 123 stitches forward.

After that, push the key to set up the first offset.
If [NEXT COLOR] is pushed in order to set up the second offset, the cursor is going to stop after going forward to the next color like the picture below.

Also, push the SET key to set up the second offset.

The third offset is the repetition of the same procedure as the second offset. The result screen is as follows.

If the setting up offset point is finished, push [PREVIOUS] to exit.

<Completion of setting up offset point>
4. How to use STIT. VALUE

- This function makes it possible to check out all offset positions, which are set previously.
- Simultaneously with checking out, new offset point can be set and offset point, which is set, can be deleted.
- Please use by referring to the next procedure carefully.

Select [STIT. VALUE]

[It can be possible to see that all offset points, which was set previously, shows up]
Let us see submenu.

Cursor moving key ↑: It is used when removing a cursor to the offset point you want.
Cursor moving key ↓: It is used when removing a cursor to the offset point you want.
DELETE: It is used when deleting the offset point on which the cursor is now.
DEL ALL: It is used when deleting all offset points stored now.
INSERT NUM: It is used when inserting an offset point.
PREVIOUS: It is used when moving to the previous step.

Now let us see each usage.

<1. Deleting an offset point>

Placing the cursor to the offset point to be deleted using F1, F2.

Select [DELETE]
The message, asking if executing the deletion or not, shows up on the bottom of screen.

\[\downarrow\]

If you want to delete, select \(\text{F5} [\text{SET}]\) and if you want to cancel select \(\text{F6} [\text{PREVIOUS}]\)

\[\downarrow\]

If [SET] is selected

\[\downarrow\]

Completion of deletion can be seen.

\[\downarrow\]

<Completion of deletion>
<2. Deleting all offset points>

If you want to delete all offset points that are set, it can be possible by selecting [DEL ALL]. As the method is similar to the method deleting an offset point above, please refer to the above method.

<3. Inserting an offset point>

This function is the function that a user can set up the specific stitch position of a design directly using the number key.

How to use is as follows.

Select [INSERT.NUM]
Set up the position of stitch count you want using the number key. For example, if trying to insert an offset point at the 123\textsuperscript{rd} stitch, it is as follows.

Push \(1 \rightarrow 2 \rightarrow 3\) in order and push the \(\text{F5}\) [SET] key to finish setting.

It can be seen that one more offset point is inserted at the 123\textsuperscript{rd} stitch of a design.

Completion of inserting an offset point>
2 Using manual offset

- If you use [OFFSET] function on the screen of a stop during the embroidery, it is useful when trying to move a frame to the specific position or when trying to move a frame arbitrarily and continue the embroidery work.

⚠️ CAUTION

When performing this operation, do not place your hands or fingers on the machine table. If you put them on the machine table, you may be injured due to the moving frame.

- Let us see how to use.

  <Push stop button during the embroidery>

  

  If a user moved a frame arbitrarily using frame moving key in order to check out the embroidery state or for the specific work (Example, arrange of appliqué material etc.) or if want to move a frame from the place where the embroidery stops to the specific place,

  

  Select [OFFSET].

  

  "STOP" SWITCH STOP

  

  F1 F2 F3 [OFFSET] F4 F5 F6

  Select [OFFSET].
When selecting offset function, the menu below shows up.

[F1] [NEXT-Move]: It moves to the frame position of the next stitch right after work is done. It is used when trying to continue working after removing a frame arbitrarily.

[F2] [START-Move]: It moves the frame to the start point of the embroidery of a design.

[F3] [OFFSET-Move]: It moves a frame to the position where offset is set. (Refer to the section of setting offset)

3 Using automatic offset

To use automatic offset, in the menu before starting the embroidery “OFFSET” parameter on the screen, [SET MACHINE] ➔ [EMB SET], should be assigned “YES” and an offset point should have been set up.

Please assign ‘YES’ to “OFFSET” parameter as referring to the application section and setting an offset point follows the method of setting above carefully.

If setting is finished, let us try.

Start the embroidery by pushing the [START] key or start button on the screen before starting the embroidery.

After it halts automatically if the stitch count set is encountered during the embroidery, it can be seen to make trim and exit to the place set.

After the work, arrange of appliqué material etc., is done if pushing [START] again, the frame moves to the end point of the embroidery and continues the embroidery work.

When performing this operation, do not place your hands or fingers on the machine table. If you put them on the machine table, you may be injured due to the moving frame.
II. Doing embroidery X, Y repeat

- Repetition work function is the function that is useful when imprinting the same design several times repeatedly or when you want to combine different designs and then work with it several times repeatedly.

- Let us see about each item as referring to the picture below.

1. **NORMAL REPEAT**: It indicates the value of setting about if doing repetition work. Default value is “OFF” and it can be possible to set up “ON” by pushing.

2. **USER INPUT REPEAT**: It indicates the value of setting about if doing a user’s input consecutive work. Default value is ‘OFF’ and it can be possible to set up ‘ON’ by pushing.

3. **REPEAT X COUNT**: It inputs the repetition amount to the X-direction using the number key. The range of setting depends on the size of the X-direction of a design. For example, in the case that the width of a design is 849 like the picture above, it can be possible to 52 times.

4. **REPEAT Y COUNT**: It inputs the repetition amount to the Y-direction using the number key. The range of setting depends on the size of the Y-direction of a design. For example, in the case that the height of a design is 994 like the picture above, it can be possible to 36 times.

5. **INTERVAL-X**: It sets up the distance between designs by an interval of X-direction. The unit is 0.1mm.
⑥ INTERVAL-Y: It sets up the distance between designs by an interval of Y-direction. The unit is 0.1mm.
⑦ PRIORITY(X/Y) : It indicates the priority of X-direction and Y-direction.

- When selecting the priority of X-direction:
  - The inside: 4 → 5 → 6
  - The outside: 1 → 2 → 3

- When selecting the priority of Y-direction:
  - The inside: 2 → 4 → 6
  - The outside: 1 → 3 → 5

1. Single design repeat

- Let us see about the method that does several embroideries with one design depending on the value of setting.
- The procedure is as follows. Please try with careful reference.

Select [REPEAT] after calling a design. (On the initial screen of the embroidery this menu exists but this case it is assigned to the design being worked previously.)
If the screen of setting repetition work is called, input the value of setting in turn.

For example, the procedure that is set up, 3 times to the X-direction, 3 times to the Y-direction, the distance is assigned 11mm to both of X, Y and the priority of X, is as follows.

After first placing the cursor on the item of the number 1 and push the key to set up into ‘ON’, push [SET].

After removing the cursor to the below item of the number 2 using the [↓] key, push 3 key and push the [SET] key.

Such a method set up the items to number 7 as you want like the picture below.

If setting is finished, push [PREVIOUS] to exit.
On the right bottom of the screen, information of repetition work turns red and the value of setting can be seen.

<Completion of setting repetition work>

2 Multiple design repeat

If making ‘ON’ of user’s input consecutive operation, the menu above show up.

At this time, store the coming procedure selecting Init process.
Refer to the following procedures.

※ For example, let us combine the No.1 design and No.5 design.

※ Call a first design and start embroidery work at the position you want.
Call a second design and move the frame and start embroidery work at the position you want. You can repeat this operation by calling other design continuously or using the frame.

If you want to store up the procedures till now, push the REPEAT again and move the consecutive operation setting up screen.

Select the save on the screen above and store up the procedures till now.
If you want to store up the stored procedures as a design file, push the F5 SET and conduct only this operation, come out selecting PREVIOUS.

In case of storing up the design pushing F5 SET.

the screen of selecting a memory room shows up. If you set up the room for inputting this design and then select F5 SET,
You can use a new name. After setting up the new name, come out pushing the [SET] key.

Then, you can repeat the procedures till now after drawing the new design on the screen. Like general consecutive operation, make the NORMAL REPEAT function become ON to repeat the new design.
III. Parameters change

- It sets up reduction, magnification, rotation and so on or several operating conditions can be changed. Change of several operating conditions can be set up on all screens, on the initial screen of the embroidery or on the screen after calling a design or on the screen of a stop during the embroidery.

- On all three screens let us see the procedure calling the screen of setting up parameters. Let us follow the next procedure.

① <Calling the screen of setting up parameters on the initial screen of the embroidery>

Select [SET MACHINE]

If [SET MACHINE] is selected before calling a design, parameters of the design, which is being worked previously, is going to be set up.
② < Calling the screen of setting up parameters on the initial screen after calling a design >

Select [SET MACHINE]

③ < Calling the screen of setting up parameters on a stop screen during the embroidery >
Select [NEXT PAGE]

Select [SET MACHINE]
Because we did see methods that call [SET MACHINE] menu on all three screens, now let us see about the submenu.

- EMB SET: It is used when setting parameters such as magnification, reduction and setting of the angle etc.
- PARAM SET: It sets all sorts of parameters of the machine
- NEEDLE: It sets up the order of change of a needle.
- OFFSET: It sets up start point, offset position, offset stitch and so on.
- PREVIOUS: It is used when moving to the previous stop.

Design parameters change

- If you want to change the operating conditions of a design, select [SET MACHINE] ➔ [EMB SET] on the initial screen of the embroidery or on the screen after calling a design.
- Then the screen below shows up. Here set up all sorts of operating conditions about a design.
How to set up

Let us see how to set up. Using \( F_1 \) and \( F_2 \), turn the item to be set up reversibly.

Using the number key input the value you want. (Input \( F_1 \) when selecting ON/OFF)

Select [SET]. Then the value of setting is stored automatically.

<Completion of changing the value of setting of a design>
② Contents of items of setting of a design

1. **X-SCALE**
   It sets up the scale of reduction or magnification of a design to the X-direction.

   Default value is 100% and the range of setting is from 50% to 200%

   ![X-SCALE Diagram](image1)

2. **Y-SCALE**
   It sets up the scale of reduction or magnification of a design to the Y-direction.

   Default value is 100% and the range of setting is from 50% to 200%

   ![Y-SCALE Diagram](image2)

< When magnifying all of X, Y >

Default value is 100% and the range of setting is from 50% to 200%

![Magnifying All Diagram](image3)
3. **ANGLE**
   It sets up the angle of rotation when trying to rotate a design.

   Default value is 0° and the range of setting is from 0° to 359° by the unit of 1°

4. **MIRROR**
   It is the value of setting whether turning a design over X-axis.

   Default value is “OFF” and in order to use the effect of MIRROR input to set up to “ON”.

7. **OFFSET**
   It is the parameter of deciding whether using offset function or not when using the offset function that assigned automatically. Default value is “OFF” and “ON” can be selected by the key.

8. **TOTAL STITCH COUNT CLEAR**
   This function is used when initializing the function that indicates total stitch count up to now (after initializing) as being added by 1 each stitch and the value of setting. (It accepts the number key of only 0)

9. **TOTAL WORK COUNT CLEAR**
   This function indicates total work count up to now (after initializing) as being added by 1 each work count (the number of finishing the work one time about arbitrary design). (It accepts the number key of only 0)

10. **FLOAT STITCH AT START**
    It is the function that sets up the start position of the work to be done, that is, the function that omits stitch count you want during the embroidery and then can do the embroidery.
Machine parameters change

If you want to change the operating conditions of a machine, select [SET MACHINE] → F3 [PARAM SET] on the initial screen of the embroidery or on the screen after calling a design.

The screen below, on which all kinds of operating conditions of a machine about a design are set up, shows up. The screen of setting the operating conditions of a machine shows up over total 3 pages.

How to set up is same as the method of changing the operating conditions of a design, please refer to the method.

The item of the first page

If you select [SET MACHINE] → F3 [PARAM SET], the first page shows up immediately.

1-1. SENSING UPPER THREAD BREAK
It is the value of setting whether the sensor sensing upper thread break works.
Default value is “ON” and it can be possible to select “OFF” by the \( \text{key.} \)

1-2. SENSING UNDER THREAD BREAK
It is the value of setting whether the sensor sensing under thread break works.
Default value is “OFF” and it can be possible to select “ON” by the \( \text{key.} \)

1-3. JUMP CONVERSION STITCH
It is the function that moves a frame after once making trim if doing a serious of jump more than the value of setting when executing a serious of jump function. For example, it is the function that does not make trim until 4 stitches and works
by jump stitch when a series of jump code is met if the value of setting is assigned 5, but that starts the embroidery after first of all making trim and moving by 5 stitches when a series of jump code more than 5 stitches is met. Default value is 3 stitch and it can be possible set up from 0~10 by the unit of 1 stitch.

1-4. **JUMP CONVERSION**  
It is the value of setting the auto jump stitch length. Default value is ‘OFF’ and it can be possible set up ‘ON’ by pushing 🌴.

1-5. **AUTO JUMP STITCH LENGTH**  
It is the value of setting the stitch length, which makes general code into jump code. Default value is 10[mm] and it can be possible set up from 50~127[mm] by the unit of 10[mm]. That is, this value is changed to jump stitch if the length between two stitches is longer than the value of setting as a frame moving from one stitch to another stitch.

1-6. **F. B. ALL HEAD START POINT**  
It is the function that can set up the relative position of total needles starting to move to a stop point within the range of 1~20 stitch when sewing can be executed to modify on the undesirable shape which can occur because of under thread being pulled if after the embroidery trying to get whole needles to work ahead of the position where a mistake occurs by operating just needles having something wrong after executing back-stitch in order to modify the part where the embroidery is not done when the machine halts due to detecting an abnormality of a certain needle (ex. thread break) lately during the progress of working with whole or several needles at the same time. Default value is 3.

1-7. **AUTO BACK STITCH**  
It is the value of setting stitch count of the embroidery going backward after detecting the thread break. Default value is 3 stitch and it can be possible set up from 0~5 by the unit of 1 stitch.

1-8. **AUTO START**  
It is the value of setting about whether the next part of the embroidery starts automatically after jump code and trim and executing trim by stop code. Default value is “ON” and input 🎁 to set up “OFF” if you do not want automatic start.

1-9. **INTERVAL BETWEEN OUTLINE**  
It is called a gauge that does the embroidery with running switch at the position away regular interval from the outline of a design and as the value, which sets up the interval between the outline of a design, default value is 10[mm] and has the range of 5~30[mm].

1-10. **UNIT OF BACK STITCH**  
This function sets up stitch count depending on one operation of a bar switch when getting a frame to go forward or backward by a bar switch. Default value is 1 stitch and it can be possible set up from 0 to 10 stitches by the unit of 1 stitch.

1-11. **AUTO BACK-TACK**  
It is the value of setting about whether executing back-tack function for a stitch formation (protection of thread getting loose) on starting the embroidery. Default value is “OFF”.

1-12. **COUNT OF UPPER THREAD BREAK**
The machine is going to stop for the first time when a sense detecting upper thread break as much as this value of setting. It prevents a sensor from useless detection by wrong operation. Default value is 1 stitch and it can be possible set up from 1 to 5 stitches.

1-13. COUNT OF UNDER THREAD BREAK
The machine is going to stop for the first time when a sense detecting under thread break as much as this value of setting. It prevents a sensor from useless detection by wrong operation. Default value is 1 stitch and it can be possible set up from 1 to 5 stitches.

② The item of the second page

If you select [SET MACHINE] ➔ [PARAM SET] ➔ [NEXT PAGE], the second page shows up.

2-1. MAX SPEED LIMIT
It is the value of setting the maximum speed limit of a machine. Default value depends on kinds of machine and selection of kinds of working material and the range of setting is as follows.

<table>
<thead>
<tr>
<th>Working material</th>
<th>4 Heads</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLAT</td>
<td>850rpm</td>
</tr>
<tr>
<td>CAP</td>
<td>800rpm</td>
</tr>
</tbody>
</table>

2-2. MIN SPEED LIMIT
It is the value of setting minimum speed limit. Default value is 300[rpm] and the value of setting is set up from 300[rpm] to maximum speed by the unit of 10[rpm].

2-3. EMB SPEED
It is the value of setting embroidery speed during the embroidery. Default value is 850[rpm] and it is set up within the range between minimum speed and maximum speed by the unit of 1[rpm].
2-4. INCHING SPEED
It is the value of setting low sewing speed on beginning the embroidery. Default value is that one head is 185[rpm] and four heads is 100[rpm]. It is set up from 50[rpm] to 200[rpm] by the unit of 10[rpm].

2-5. ORIGIN RETURN
It indicates whether the function, which moves a frame to the original start point on embroidery halting, is set. Default value is "ON" and input when "OFF"

CAUTION

It can be possible that a needle breaks or the mechanism of needle overworks if jump speed is raised up higher than 750[rpm].

2-6. START INCHING COUNT
When the embroidery beginning, the machine works at inching speed slowly and at this time, as the value of setting stitch count for the operation of low speed, default value is 3 stitch and it can be set up from 0 stitch to 10 stitch by the unit of 1 stitch.

2-7. INCHING COUNT AFTER TRIM
If the signal of color change is met or the embroidery about a design is completed during the work, the finish is going to be done and at this time, as the value of setting stitch count for the operation of low speed, default value is 3 stitch and it can be set up from 2 stitch to 10 stitch by the unit of 1 stitch.

2-8. AUTO TRIM
The value of setting whether the function of automatic trim works. Default value is "ON" and when the function of automatic trim is set up "OFF", selecting can be possible by the key.

2-9. AUTO COLOR CHANGE
The value of setting whether the function of automatic color change executes. Default value is "ON" and when the function of automatic color change is set up "OFF", selecting can be possible by the key.

2-10. THREAD TRIMMING LENGTH
It is the value of setting the length of upper thread left on a needle when automatic trim was made. Default value is "M" (medium) and if getting the length short, input to be set up "S" and if getting the length long, input to be set up "L".

③ The item of the third page

If you select [SET MACHINE]→ [PARAM SET] → [NEXT PAGE] → [NEXT PAGE], the third page shows up.
3-1. FRAME START
It is the value of setting the rotation angle of main axis where a frame starts to operate. Default value is 240° and it is set up from 230° to 250° by the unit of 1°

3-2. EACH HEAD AT BACK STITCH START
It is the function that makes doing the embroidery detecting thread break when back stitch starts. Default value is “ON” and if it is not used, input to be set up “OFF”.

3-3. BOTTOM STOP AFTER EMB
It is the value of setting that makes needle to stop at bottom stop point. Default value is “OFF” and if you are doing bottom stop of needle, input to be set up “ON”.

When a machine did bottom stop, never change a needle by hand.

3-4. FRAME LIMIT
Because there is no mechanical limit switch, try to build limit of software. If you input two points on the frame, limit is built like below.

3-5. MACHINE TYPE
It is the item that sets up kinds of working material. Default is “FLAT(0)” and when CAP is set up, input.

3-6. AUTO LUBRICATION
It is the function that makes auto lubrication function ON/OFF. Default value is “OFF” and ON” can be selected by inputting.

3-7. FRAME SPEED
It is the item that selects the speed of a manual frame. The initial value of frame speed is decided by selecting one of three steps, which are low speed, medium speed and high speed. Default value is medium speed and it can be possible to change to low speed or high speed by selecting.

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3-8. MOVING DIRECTION AFTER TRIM
   It selects moving direction in order to draw a thread after trim. Default value is "Y"
   and it can be possible to select "X" by inputting .

3-9. X, Y Driver TYPE(NEW/OLD)
IV. Upgrading the embroidery operating program

Let us introduce how to upgrade the program when operating program of the embroidery has something wrong and new version is released. Please follow the procedure below.

<Inputting whether setting up the origin on the screen where the origin of a frame is set up>

The initial screen of the embroidery shows up.

Insert diskette in which there is operating program of the embroidery provided by INBRO into floppy drive.

Push key in turn.

Check out the message below shows up.

INBRO Co.
Main Software Version UP Routine.
If the **SET** key is pushed, main program starts to set up.
(If you want to cancel, push the **CLR** key.)

If the setting is finished, short beep sound is heard continuously.

If beep sound is heard, turn power off and then turn on again.

<Completion of upgrading program>
V. Initializing the program

If operating program of the embroidery was upgraded or installed due to abnormality, the procedure that initializes the program is required. Initializing is executed only one time right after upgrading program and how to initialize is as follows. Please follow the procedure below carefully.

< Inputting whether setting up the origin on the screen where the origin of a frame is set up >

The initial screen of the embroidery shows up

Push MODE → 7 → 0 → SET in turn

<Completion of initializing program of the embroidery>
## 6. The others

### 1. Error code

<table>
<thead>
<tr>
<th>No.</th>
<th>Name of error</th>
<th>Contents of error</th>
<th>How to handle</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Stop Position ERROR</td>
<td>Main axis does not stop at 100° when a stop.</td>
<td>Set up the angle of main axis to 100° and operate again by pushing CLR.</td>
</tr>
<tr>
<td>02</td>
<td>X+ Frame Limit ERROR</td>
<td>The system of removing a frame reaches +X limit.</td>
<td>Move a frame to the +X direction.</td>
</tr>
<tr>
<td>03</td>
<td>X- Frame Limit ERROR</td>
<td>The system of removing a frame reaches -X limit.</td>
<td>Move a frame to the -X direction.</td>
</tr>
<tr>
<td>04</td>
<td>Y+ Frame Limit ERROR</td>
<td>The system of removing a frame reaches +Y limit.</td>
<td>Move a frame to the +Y direction.</td>
</tr>
<tr>
<td>05</td>
<td>Y- Frame Limit ERROR</td>
<td>The system of removing a frame reaches +Y limit.</td>
<td>Move a frame to the -Y direction.</td>
</tr>
<tr>
<td>06</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>07</td>
<td>X-Driver Ready ERROR</td>
<td>Abnormality occurs at X-direction driver.</td>
<td>Turn the main switch off and then turn on.</td>
</tr>
<tr>
<td>08</td>
<td>Y-Driver Ready ERROR</td>
<td>Abnormality occurs at Y-direction driver.</td>
<td>Turn the main switch off and then turn on.</td>
</tr>
<tr>
<td>09</td>
<td>Half-C Position ERROR</td>
<td>When a needle does not reach at the correct position on changing needle</td>
<td>Check out the overload by turning needle by hand and place the needle to the correct position.</td>
</tr>
<tr>
<td>10</td>
<td>Encode A signal ERROR</td>
<td>When abnormality occurs on the encoder A signal of main axis</td>
<td>After checking out connecting state of encoder cable, turn main the switch off and then turn on.</td>
</tr>
<tr>
<td>11</td>
<td>Encode Z signal ERROR</td>
<td>When abnormality occurs on the encoder Z signal of main axis</td>
<td>After checking out connecting state of encoder cable, turn the main switch off and then turn on.</td>
</tr>
<tr>
<td>12</td>
<td>UP-THREAD Cut ERROR</td>
<td>When an upper thread breaks</td>
<td>Get an upper thread hung on again and keep working by pushing the START key.</td>
</tr>
<tr>
<td></td>
<td>UNDER THREAD ERROR</td>
<td>When an under thread breaks</td>
<td>Get an under thread hung on again and keep working by pushing the key.</td>
</tr>
<tr>
<td>---</td>
<td>-------------------</td>
<td>-----------------------------</td>
<td>------------------------------------------------------------------</td>
</tr>
<tr>
<td>14</td>
<td>Timeover(Main) ERROR</td>
<td>When foreign matter is inserted in the main axis on stopping or it does not reach to the correct position because the load gets big.</td>
<td>Remove foreign matter by looking around main axis and after setting up the angle of main axis to 100° operate again by pushing .</td>
</tr>
<tr>
<td>15</td>
<td>Timeover(Color) ERROR</td>
<td>When foreign matter is inserted in the needle motor on changing a needle or it does not reach to the correct position because the load gets big.</td>
<td>Remove foreign matter and after placing a needle to the correct position operate again by pushing .</td>
</tr>
</tbody>
</table>
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