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Chapter 1 General Information

Please read this manual carefully to assist with operating the machine correctly and effectively. Besides that, you should keep this manual properly for future use.

1.1 Warnings and Cautions

In order to avoid fire, electrical shock or unpredicted injuries, you should follow the listed safety rules.

<table>
<thead>
<tr>
<th>Matters for Attention on Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Danger</strong></td>
</tr>
<tr>
<td><strong>Forbidden</strong></td>
</tr>
<tr>
<td><strong>Forbidden</strong></td>
</tr>
<tr>
<td><strong>Attention</strong></td>
</tr>
<tr>
<td><strong>Attention</strong></td>
</tr>
<tr>
<td><strong>Attention</strong></td>
</tr>
<tr>
<td><strong>Attention</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Matters for Attention on Transportation and Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Attention</strong></td>
</tr>
<tr>
<td><strong>Attention</strong></td>
</tr>
<tr>
<td><strong>Compulsory Requirements</strong></td>
</tr>
</tbody>
</table>
### Matters for Attention on Installation

<table>
<thead>
<tr>
<th>Attention</th>
<th>Don't jam the vent on the device. Don’t insert other items into the machine, or it may get fire.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attention</td>
<td>Make sure the installation direction is correct.</td>
</tr>
<tr>
<td>Attention</td>
<td>Don't expose the machine to humidity gas, corrosive gas, water, and other flammable material.</td>
</tr>
</tbody>
</table>

### Matters for Attention on Cable Connection

<table>
<thead>
<tr>
<th>Forbidden</th>
<th>Don't test the insulation of the circuit loop.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forbidden</td>
<td>Never try to connect the overloaded electronic device on the connectors (like sockets or terminals).</td>
</tr>
<tr>
<td>Attention</td>
<td>The insulation condition of each cable (no matter signal cable or power cable) should be ensured.</td>
</tr>
<tr>
<td>Attention</td>
<td>The signal cables and power cables should be separated. Never tie them together.</td>
</tr>
<tr>
<td>Attention</td>
<td>All the cables should be well fixed. Don’t put any strength on cables. Make sure each turning point of cable is well protected. Add shelter pipes to increase insulating capability if necessary.</td>
</tr>
<tr>
<td>Attention</td>
<td>must be grounded. The equipment-grounding conductor should use the wire with insulation having an outer surface that is green, with or without yellow stripes. the cross-sectional area of the wire shall not be less than 2mm², and the grounding resistance should be less than 10Ω. The equipment-grounding conductor must be pressed crimping to the circular pre-insulated terminal and connected to the position where the grounding mark of the machine case is.</td>
</tr>
</tbody>
</table>

### Matters for Attention on Operation

<table>
<thead>
<tr>
<th>Danger</th>
<th>Don't operate the machine when there is any damage on the shelter of the running parts.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forbidden</td>
<td>When machine is running, do not touch any running part.</td>
</tr>
<tr>
<td>Attention</td>
<td>Make sure the configuration of power supply is in normal. Use stabilized voltage power supply when the change of voltage is beyond the range of -10%~10%.</td>
</tr>
<tr>
<td>Attention</td>
<td>In case of warning, please check out the problem. Operation can only be carried out again when problem is solved.</td>
</tr>
</tbody>
</table>
1.2 Main Features

1. User-friendly Interface on Touching Panel
   The adoption of the touching panel technology offers user the delightful operation and easy learning. The beautiful screen display turns everyday work into joyful experiences.

2. Huge Memory Capacity
   The memory capacity reaches 100 million stitches, which can meet demands of different customers.

3. Maximum Stitch Amount of One Pattern Reaches Two Million
   At present, a single pattern in the system has the maximum of 2 million stitches and 1,000 times of automatic color changing.

4. Multi-Task Parallel Operation and Free Shift among Tasks
   During the embroidery, actions like pattern input & output, preparation for the following patterns and modification of parameters can be carried out.

5. Storage of Frequently Used Parameters and Color-Changing Order for Each Pattern
   Pattern will be saved along with its parameters, color-changing orders and needle bar colors. System can save the operational details for each pattern. Users can set parameters for a pattern during the embroidery process of the previous pattern, which will save time and improve efficiency. Moreover, it is one basis to realize network management.
6. **Pattern Input/Output via USB**
Customers can use USB disk for data transfer. USB disk supports DIR operation, which is easy for pattern management. For each directory, system supports operation of 400 patterns or sub-directory. There is no limitation of directory levels. Patterns in the formats of Binary, Ternary and Z-nary can be loaded.

7. **Patch Embroidery**
This function can set a patch point at the position of color code or stop code, and when the machine embroiders to the patch point, it will halt and move out frame for patching. After sticking a patch, user would press the start key to return the frame and continue embroidering.

8. **Brake Adjustment**
User can adjust the parameter of brake to let the main shaft stop at the correct position according to the characters of his own machines.

9. **Save Start Point**
This function can save the start point of each pattern, which saves the work of user to search the start point manually at embroidering the identical pattern.

10. **Mechanical Maintenance and Debugging**
This function is to easily judge the malfunctions at maintaining and debugging the machine, such as encoder testing, main shaft speed testing, machine parts testing and the main shaft stopping at any position, etc.

11. **Multi-Language Support**
Currently, the system supports the display in Chinese, English, Spanish and Turkish, Russian, French and many other languages.

12. **Pattern Output**
Patterns can be output and saved into USB disk. Adoption of TAJIMA’s binary format enjoys the advantage of data transmitting through the World Wide Web (other formats may not be transmitted directly).

13. **Repetition Embroidery**
The user can increase embroidery productivity by using the function of repetition embroidery, which can also be used with cyclic embroidery.

14. **Cyclic Embroidery**
With this function, the machine can automatically return to the origin and start the same embroidery again when finishing the pattern one time. User also can increase productivity rapidly by combining this function with special pattern-making function or repetition embroidery function.

15. **Pattern Compiling**
(1) **Compiling the Data of Selected Pattern to Generate New Pattern**
Users can compile any pattern according to zoom ratio, rotate angle, normal repetition or partial repetition to generate a new pattern and save it to memory. The newly generated pattern can be used for embroidering, output or other operations.
(2) **Compiling the Combined Pattern**
After setting the combined pattern, the system can compile that pattern to generate a new one and save it to memory. The newly generated pattern can be used for embroidering, output or other operations.
16. Letter Pattern
There are 28 built-in font libraries. Users can make letter groups and change letter orders according to different tasks. This operation is vivid, simple and easy managing.

17. Pattern Edit (under developing)

18. Speed Adjustment
The highest speed for embroidery can be preset. During embroidery, speed may change automatically along with the change of needle interval.

19. Thread-trimming
Thread-trimming can be manually operated. The machine can trim the thread automatically at the end of embroidery process or at color changing.

20. Thread-breakage Detection
In case of thread breakage or running-out of bobbin thread, the machine will stop and give warning by indicator.

21. Color-changing
At the color-changing point, user can either perform the color-changing manually or let the system do it automatically according to the preset order.

1.3 Technical Specifications

1. Maximum number of patterns saved in memory: 800

2. Memory capacity: 100 million stitches

3. Screen resolution ratio: 1280*800

4. Network port speed: 100Mbps

5. Supported method for data exchange: USB disk, network (temporarily unavailable)

6. Control precision: Minimum controllable stitch interval is 0.1mm

7. Stitch range: 0.1mm~12.7mm
Chapter 2 Embroidery Guide

2.1 Structure and Usage Instruction of Control Panel

I. Structure of Control Panel

1. Touching Panel
   • It adopts high-luminance LCD displayer and touching screen man-machine interaction interface.

2. Buttons
   • Press the keys to start the embroidery, pause the embroidery.

3. Main USB Port
   • USB disk can be plugged for data input/output.

II. Instructions on Touching Panel
   • This machine uses the touching panel as its input device. In order to extend the service life of the panel and to maintain its performance, please don’t apply too much pressure on the screen during operation. Do not press with sharp or hard tools to click the screen.

III. Instructions on USB Disk
   • Pay attention to the direction of the USB disk at plug-in. Don’t pull out the USB disk when system loads data from or write data to it. If the USB disk is pulled out or the power is cut off during the data input/output, the data could be lost. In that case, please check the integrity of data in the USB disk and repair it before using.
   • Attention: During the process of initialization, if the power is cut off or the USB disk is pulled out, the USB disk may be damaged permanently.
2.2 Instruction of the Main Interface
<table>
<thead>
<tr>
<th>No.</th>
<th>Icon</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><img src="image" alt="Network Connection Failure Status Icon" /></td>
<td>Network Connection Failure Status</td>
<td>Network Status (disconnected ✗, connected ✰, successful registration ✅)</td>
</tr>
<tr>
<td>1</td>
<td><img src="image" alt="Cyclic Embroidery Icon" /></td>
<td>Cyclic Embroidery</td>
<td>Cyclic embroidery is currently available. Press user parameter or specialist parameter to enter the parameter setting interface, where user can change the setting of cyclic embroidery.</td>
</tr>
<tr>
<td>1</td>
<td><img src="image" alt="Thread Breakage Icon" /></td>
<td>Thread Breakage</td>
<td>This figure will appear when the machine stops due to the thread-breakage.</td>
</tr>
<tr>
<td>2</td>
<td><img src="image" alt="Pattern Management Icon" /></td>
<td>Pattern Management</td>
<td>Interface for pattern management</td>
</tr>
<tr>
<td>2</td>
<td><img src="image" alt="Parameter Setting Icon" /></td>
<td>Parameter Setting</td>
<td>Interface for parameter setting</td>
</tr>
<tr>
<td>2</td>
<td><img src="image" alt="Color-changing Order Setting Icon" /></td>
<td>Color-changing Order Setting</td>
<td>Interface for color-changing order setting</td>
</tr>
<tr>
<td>2</td>
<td><img src="image" alt="Main Interface Icon" /></td>
<td>Main Interface</td>
<td>Main interface</td>
</tr>
<tr>
<td>3</td>
<td><img src="image" alt="Pattern Display Area Icon" /></td>
<td>Pattern Display Area</td>
<td>The pattern for embroidery will be displayed in this area.</td>
</tr>
<tr>
<td>4</td>
<td><img src="image" alt="Basic Pattern Data Icon" /></td>
<td>Basic Pattern Data</td>
<td>Basic data of the current pattern will be displayed here.</td>
</tr>
<tr>
<td>4</td>
<td><img src="image" alt="Clear X/Y Displacement Icon" /></td>
<td>Clear X/Y Displacement</td>
<td>Clear the current value of X/Y displacement</td>
</tr>
<tr>
<td>No.</td>
<td>Icon</td>
<td>Name</td>
<td>Description</td>
</tr>
<tr>
<td>-----</td>
<td>------</td>
<td>------</td>
<td>-------------</td>
</tr>
<tr>
<td>5</td>
<td><img src="image1.png" alt="Icon" /></td>
<td>Manual Thread-trimming</td>
<td>After machine stop, user can click this key for the operation of manual thread-trimming (including bobbin thread trimming).</td>
</tr>
<tr>
<td></td>
<td><img src="image2.png" alt="Icon" /></td>
<td>Main Shaft Manual Adjustment</td>
<td>After stop, if the main shaft is not at the proper position, press this key to adjust the main shaft to the right position.</td>
</tr>
<tr>
<td></td>
<td><img src="image3.png" alt="Icon" /></td>
<td>Frame Selection and Position</td>
<td>Frame selection and position</td>
</tr>
<tr>
<td></td>
<td><img src="image4.png" alt="Icon" /></td>
<td>Auto Color-changing, Auto Start</td>
<td>If the machine is set at Auto Color-changing, user should set the color-changing order in advance. When user presses the start key for embroidery, no matter where the current needle rod locates, the machine will change the needle according to the set color-changing order and perform the embroidery. When encountering color-changing code, the machine will stop automatically and shift to the pointed needle position according to the auto color-changing order. If</td>
</tr>
<tr>
<td>No.</td>
<td>Icon</td>
<td>Name</td>
<td>Description</td>
</tr>
<tr>
<td>-----</td>
<td>------</td>
<td>-------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>5</td>
<td><img src="image1.png" alt="Icon" /></td>
<td>Manual Color-changing, Manual Start</td>
<td>the machine is set at auto start, the machine will begin the embroidery automatically; if it is set at manual start, the user needs to press the start key for embroidery.</td>
</tr>
<tr>
<td></td>
<td><img src="image2.png" alt="Icon" /></td>
<td>Return</td>
<td>Return to the previous interface</td>
</tr>
<tr>
<td></td>
<td><img src="image3.png" alt="Icon" /></td>
<td>Main Shaft Acceleration, Main Shaft Deceleration</td>
<td>In this status, select the needle position with manual color-changing ( <img src="image4.png" alt="Icon" /> ) to select the needle position and then press start key for embroidery. When encountering color-changing code, the machine will stop automatically. Icon <img src="image5.png" alt="Icon" /> appears, and the system awaits the manual color-changing. At this moment, user needs to perform manual color-changing ( <img src="image6.png" alt="Icon" /> ) to shift to the needed needle position, and press the start key for embroidery. For setting the main shaft acceleration/deceleration. When the main shaft reaches the highest/lowest speed, this key will be unavailable.</td>
</tr>
<tr>
<td></td>
<td><img src="image7.png" alt="Icon" /></td>
<td>Idling</td>
<td>Used to move the frame to appointed position without embroidery</td>
</tr>
<tr>
<td>No.</td>
<td>Icon</td>
<td>Name</td>
<td>Description</td>
</tr>
<tr>
<td>-----</td>
<td>------</td>
<td>------</td>
<td>-------------</td>
</tr>
<tr>
<td>6</td>
<td><img src="image1.png" alt="Icon" /></td>
<td>Embroidery Ready Status, Confirm the Embroidery</td>
<td>When the machine is in Ready Status, user can carry out preparation work of the embroidery, such as pattern selection, setting scale parameter, setting repetition parameters and so on. Click this key to confirm, and the machine will turn from Embroidery Ready Status into Embroidery Confirmation Status.</td>
</tr>
<tr>
<td>6</td>
<td><img src="image2.png" alt="Icon" /></td>
<td>Embroidery Confirmation Status, Cancel the Embroidery</td>
<td>Currently, the machine is under Embroidery Confirmation Status, and user can start embroidery at any time. When the machine stops, user can click this key and confirm the cancelling of Embroidery Confirmation Status. And the machine will return to Embroidery Ready Status from Embroidery Confirmation Status.</td>
</tr>
<tr>
<td>6</td>
<td><img src="image3.png" alt="Icon" /></td>
<td>Other Function Operations</td>
<td>Press it to enter the interface for other function operations, such as statistic inquiry, frame origin setting, power-off recovery, soft limitation setting, machine authority management, touch screen calibration, and time management.</td>
</tr>
<tr>
<td>6</td>
<td><img src="image4.png" alt="Icon" /></td>
<td>Manual Color-changing</td>
<td>When machine stops at correct position , the operation is valid; press it to enter manual color-changing interface, where user can click corresponding needle position number to make color-changing.</td>
</tr>
<tr>
<td>No.</td>
<td>Icon</td>
<td>Name</td>
<td>Description</td>
</tr>
<tr>
<td>-----</td>
<td>------</td>
<td>-----------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>7</td>
<td><img src="image" alt="Icon" /></td>
<td>Current Needle Position</td>
<td>This figure is for the actual needle position at present. 0 is for the invalid needle position.</td>
</tr>
<tr>
<td></td>
<td><img src="image" alt="Icon" /></td>
<td>Current Color-changing Times</td>
<td>The initial value is 1. After the embroidery starts, this value will add 1 at each finish of successful color-changing.</td>
</tr>
<tr>
<td></td>
<td><img src="image" alt="Icon" /></td>
<td>Color-changing Order</td>
<td>This order is the sequence of the needle rods for changing color. The 3D figure is for the current needle position.</td>
</tr>
<tr>
<td></td>
<td><img src="image" alt="Icon" /></td>
<td>Scale Up Pattern</td>
<td>Scale up pattern in the pattern display area. Hold pressing for 2s to shift to 🔍.</td>
</tr>
<tr>
<td>8</td>
<td><img src="image" alt="Icon" /></td>
<td>Manual Frame-moving</td>
<td>The frame will move along with the direction keys.</td>
</tr>
<tr>
<td>No.</td>
<td>Icon</td>
<td>Name</td>
<td>Description</td>
</tr>
<tr>
<td>-----</td>
<td>------</td>
<td>--------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>9</td>
<td></td>
<td>Pattern List</td>
<td>Display patterns by figures for users to select</td>
</tr>
<tr>
<td>10</td>
<td>🔄,  🎁</td>
<td>Previous/Next Page</td>
<td>Display patterns in different pages</td>
</tr>
<tr>
<td></td>
<td>📷</td>
<td>Memory Pattern Preview</td>
<td>Used to check pattern details, scale up/down pattern, move or make analog display of pattern</td>
</tr>
<tr>
<td></td>
<td>📃</td>
<td>Letter Pattern</td>
<td>Letter pattern and its parameter setting</td>
</tr>
<tr>
<td>11</td>
<td>🍊</td>
<td>Pattern Deletion</td>
<td>Used to delete selected patterns</td>
</tr>
<tr>
<td></td>
<td>🍊</td>
<td>Pattern Output</td>
<td>Used to transfer memory patterns to USB disk</td>
</tr>
<tr>
<td></td>
<td>🏡</td>
<td>Home</td>
<td></td>
</tr>
<tr>
<td></td>
<td>📋</td>
<td>U Disk Management</td>
<td>Press it to enter the U disk management interface for operations related to U disk.</td>
</tr>
<tr>
<td>11</td>
<td>🍊</td>
<td>Other Functions</td>
<td>Used to open other operation interfaces for memory patterns, such as pattern copy, deletion, combination, edit, etc.</td>
</tr>
<tr>
<td></td>
<td>🍊</td>
<td>Single/Multiple Selection</td>
<td>Shift between single selection mode and multiple selection mode</td>
</tr>
<tr>
<td>No.</td>
<td>Icon</td>
<td>Name</td>
<td>Description</td>
</tr>
<tr>
<td>-----</td>
<td>------</td>
<td>--------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>![Icon]</td>
<td>Next</td>
<td>Enter the next operation interface</td>
</tr>
<tr>
<td></td>
<td>![Icon]</td>
<td>Common Parameter Setting</td>
<td>User can adjust these parameters to control the final embroidery effect of the pattern.</td>
</tr>
<tr>
<td>12</td>
<td>![Icon]</td>
<td>Pattern Preview</td>
<td>Load the selected pattern, display the pattern data and draw up the pattern shape.</td>
</tr>
<tr>
<td>No.</td>
<td>Icon</td>
<td>Name</td>
<td>Description</td>
</tr>
<tr>
<td>-----</td>
<td>------</td>
<td>-------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>13</td>
<td><img src="image1" alt="Icon" /></td>
<td>Current Operation Position</td>
<td>Set, insert or delete needle bar number here.</td>
</tr>
<tr>
<td></td>
<td><img src="image2" alt="Icon" /></td>
<td>Color Lump Number List</td>
<td>Display the color lump number of the pattern</td>
</tr>
<tr>
<td></td>
<td><img src="image3" alt="Icon" /></td>
<td>Needle Bar Number and Color</td>
<td>Display the needle bar number and needle bar thread color of the corresponding color lump</td>
</tr>
<tr>
<td></td>
<td><img src="image4" alt="Icon" /></td>
<td>Move Up</td>
<td>Move up the color-changing list in order to select the color lump to be set</td>
</tr>
</tbody>
</table>
2.3 Basic Procedure of Embroidery

The machine carries out embroidery based on the patterns saved in memory. The following figure is the basic procedure of the embroidery:

I. Input Patterns

User can input patterns through network or USB disk. Only with (successful registration) displayed, can it be possible to transmit patterns by network. For U disk operation, in pattern management interface, press to enter U disk management interface.

II. Select Pattern

In pattern management interface, user can select needed pattern for embroidery.

III. Assistant Operations

After selecting the pattern for embroidery, user can make assistant operations according to need before embroidery.

1. Set repetition, rotation and scaling —— press to enter parameter management interface.

2. Set color-changing order —— press to enter color-changing setting interface.
3. Set patch embroidery —— press 🔄 to enter color-changing setting interface and set patch embroidery of the pattern according to hints.

4. For border inquiry, border idling, pattern outline —— press 🖼️ to enter frame selection and position operation.

5. Locate pattern at frame center —— press to enter frame selection and position operation. Please note this function is to locate pattern at the frame center set by soft limitation.

6. Set cyclic embroidery —— press 🕒 to enter other function operation. Press 🕒 to enter parameter management interface. Then press “Embroidery Assistant Parameters” and set cyclic embroidery according to hints.

IV. Confirm Embroidery

1. After assistant operations, press 🔄 to display a hint window, where user can select ✅ to confirm and turn ✖️ (cancel embroidery) to ✅ (confirm embroidery), which indicates the machine has entered Embroidery Ready Status.

If user selects ✖️, the machine will stay at Embroidery Cancel Status. At this time, the machine will not work even when user presses the start key. A hint window will display on the screen for user to confirm the embroidery.

2. Set Color-changing and Start Mode

User can shift between ✅ (auto color-changing and auto start) and ✅ (manual color-changing and manual start).

V. Manual Operation

1. Manual Thread-trimming:

   • When the machine stops, press 🛍️ in the main interface to display a hint window, where user can press “Trim Upper&Bobbin Thread” to trim threads, or click “Trim Bobbin Thread” to trim the bobbin thread only. Press 🛍️ to quit the thread-trimming operation.
2. Manual Frame-Moving:
   - When the machine stops, press direction keys (LEFT/RIGHT/UP/DOWN) to move frame along the corresponding direction. Press the two neighboring keys at the same time to move the frame in the direction of the angle bisector. is the speed key for manual frame-moving. Press to shift between (high speed) and (low speed).

3. Clear the Frame Coordinates
   - When the machine stops, press to clear the XY displacements displayed in the main interface. The function can be used with manual frame-moving.

   - When the machine stops, press in the main interface to enter manual color-changing interface. Then click the needle number for color-changing, and the machine head will automatically move to the corresponding needle position.
   - Please note: if the user wants to automatically save the order of the manual color-changing, user should operate it in the manual color-changing interface on the touch screen.

5. Adjust Main Shaft Manually
   - Usually, the main shaft needs to stop at 100° at needle/color-changing, frame-moving and beginning embroidery. User can manually turn the main shaft to 100° when it hasn’t reached there. Press in the main interface to carry out this function.
   - After the operation, (not in position) will changing into (in position).

6. Back to Origin
   - Press in the main interface to enter idling interface, where user can press to return the frame to origin.

7. Back to Stop Point
   - Press in the main interface to enter idling interface, where user can press to return the frame to stop point.

8. Positioned Idling
   - Use this function after embroidery confirmation. Positioned idling enables the machine to move to the appointed position without embroidering according to the user’s requests. Press to set idling backward or forward at the color-changing code or stop code by one stitch or continuously.
VI. **Cancel Embroidery**

When the machine stops, press 🔄 to display a hint window, where user can select ✅ to turn (embroidery confirmation) to ✖️ (cancel embroidery confirmation).

![Question](image)

**Make sure cancel Confirm?**

✅ ✖️

---

### 2.4 Normal Embroidery, Returning and Patching

In embroidery confirmation status (.getFullYear is displayed), press 🔄 to start normal embroidery, and during embroidery, press 🔄 to stop embroidery.

When the machine stops, press ⬅️ to return the frame back along with the original embroidery path; one press, one stitch back; hold pressing for 2s to return continuously, even without holding ⬅️; press ⬅️ again to stop.

The purpose of returning is for patching, and when the machine stops returning, press 🔄 to start normal embroidery.

### 2.5 Embroidery Operation

When the machine stops, press 🔄 to start embroidery;

When the machine is embroidering, press 🔄 to stop embroidery.

### 2.6 Working Status

There are three working statuses:

1. Embroidery Ready Status 🔄 ---- preset parameters, choose embroidery patterns and make other preparation work for embroidery.
2. Embroidery Confirmation status 🔄 ---- confirm the parameter settings to enter the quasi-running status.
3. Embroidery Running Status ⏯️ ---- embroidery.
Shift among these three working statuses:

In embroidery ready status (is displayed in the main interface), if users have selected pattern and related parameters, press and then press to confirm, and the system will enter embroidery confirmation status (is displayed in the main interface). At this time, press start key to start embroidery, when the machine is under embroidery running status (is displayed in the main interface).

In embroidery running status (is displayed in the main interface), press stop key to stop embroidery and return to embroidery confirmation status, where user can press start key again to enter embroidery running status.

In embroidery confirmation status (is displayed in the main interface), press and then press to confirm, user can release the confirmation status and return to embroidery ready status (is displayed in the main interface).
Chapter 3 U Disk Management

In U disk management interface, user can input patterns from U disk to machine, and vice versa; meanwhile, user can undertake some common U disk managements, like erasing file or directory, initializing the disk, etc. User can save patterns data under different directories of the U disk based on different types. Patterns formats like DSB, DST and DSZ can be read by the system. For data output, patterns will be saved in the U disk as DSB format.

3.1 Select U Disk

Since the system supports several storage devices, user need select the U disk for operation.

1. Press in pattern management interface.

2. System will display “Select U Disk” window, where user need select U disk by pressing corresponding icon.

In this window all the storage devices will be displayed. Their information includes the icon, words and numbers. The icon is the device type. Icon indicates U disk. The words are the label of the U disk (if the U disk has no label, the default letter will be used), and the number refers to the U disk’s digital symbol.
3. Enter U disk operation interface.

![Image of U disk interface]

<table>
<thead>
<tr>
<th>No.</th>
<th>Icon</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>File List</td>
<td>Display the pattern files and file folders within the U disk in icons. It’s used to select files.</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>Page Information</td>
<td>The current page number and total page number</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Back to Upper Level</td>
<td>Return to upper level</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>Basic Pattern Data</td>
<td>Display the basic data of current pattern</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>Pattern Preview</td>
<td>Load the selected pattern. Check its details, scale up/down the pattern, and move or make analog display of the pattern.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Create Directory</td>
<td>Create new file folder</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Deletion</td>
<td>Delete the file or file folder</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Formatting U Disk</td>
<td>Formatting the U disk</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pattern Input</td>
<td>Import the patterns in the U disk to memory</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Exit</td>
<td>Exit U disk management</td>
</tr>
</tbody>
</table>
3.2 Pattern Preview

1. In the U disk management interface, press the pattern for preview.

Pattern files and directories are shown in figure in the list. One page of the list contains 8 items. If the amount of the object within the current directory is more than 8, the object list will be displayed in many pages. Click the key to turn page and look for patterns in another page. The selected object has a different frame and background color.

2. Press

The system loads the data from the U disk and user can check details of the pattern, scale up/down the pattern, move or make analog display of the pattern.
### 3.3 Pattern Input

To input patterns within the U disk to the machine’s memory, user need select the pattern files to be inputted, and then input the number and name for the patterns to be saved in memory.

1. Select pattern files of the U disk;
2. Press and the system will require input of pattern number and name;
3. Input the pattern number and name to be saved in memory;
The system provides the minimum available pattern number as the default value. User can use the keypad below to change the number.

4. Press \(\checkmark\) to confirm;

5. The system will save the pattern data from the U disk to the memory.

3.4 Directory Operation

1. Enter directory:

Double click the icon of the object directory to enter it, and the system will load the item list of the directory and refresh the display interface.

2. Return to Upper Level:

Press \(\leftarrow\) to return to the upper level of directory and refresh the display interface.

3.5 Formatting U Disk

1. Select the U disk for formatting;

2. Press \(\ast\) to start formatting;

3. Press \(\checkmark\) to confirm

System will begin to format the disk and return automatically to U disk management interface after finishing formatting.

Note: system will format the U disk according to DOS format.
3.6 Delete Objects from U Disk (including pattern file and directory)

1. Select objects to be deleted;

2. Press to delete;

3. System will ask user to confirm the deletion.

Note:

If the user wants to delete a directory, the system will delete all the files and sub-directories within this directory. In case of “Read Only” or “U Disk Write Protection”, the file will be unable to delete.
3.7 Create a New Directory in the Current Directory

1. Press 

2. Input the new directory name

3. Press 

   System will create the corresponding directory in the U disk and refresh the current object list.
Chapter 4 Common Parameters and Color-Changing Order

In this system each pattern has its own settings of the normal parameters (like scale and repetition) and color-changing order. When a new pattern is selected, the corresponding settings of normal parameters and color-changing order will become effective.

In this chapter, we will discuss the setting of the most frequently used parameters and color-changing order, in parameter setting interface ( ) and needle bar color-changing order setting interface ( ).

Since this system supports multi-task operation, user can set and modify the normal parameters and color-changing order of the patterns that are not embroidered at present. User can enter these operations via other operation interface under pattern management (see Chapter 6).

4.1 Settings of Common Parameters


Press ( ) to enter parameter setting interface:

The way for setting the parameter is similar to each other. This chapter will explain how to set the “X/Y Scale” as an example and give the definitions of other parameters (refer to 4.1.1 for setting method).
4.1.1. Settings of X-Y Scale

This parameter controls the scaling percentages on X (horizontal) and Y (vertical) direction, so as to scale up/down the patterns.

1. Press the function item of “Scale X/Y”

System will display independently the modification windows for X Scale and Y Scale for users to set respectively.
2. Adjusting X-Y Scales

User can press number pad to modify the scaling rate at X direction, press \( \text{Backspace} \) to cancel the last input digit and press \( \text{Clear} \) to clear the input number.

![Number Pad](image)

3. Press \( \text{Done} \) to save the modification

The modification method of Y Scale is the same with that of X Scale.

4.1.2. Settings of Rotate Angle

User can rotate patterns to a certain angle by this parameter.

![Rotate Angle](image)

4.1.3. Pattern Direction

![Pattern Direction](image)
4.1.4. Prior Mode

There are two modes: “rotation prior to scaling” and “scaling prior to rotation”. When user has set the parameters “Scale X/Y” and “Rotate Angle”, the patterns will rotate first and then scale up/down, if “rotation prior to scaling” mode is selected. Otherwise it will scale up/down first and then rotate.

4.1.5. Rep. Mode

There are two repetition modes: normal and partial.

4.1.6. Rep. Order

There are two modes: X first and Y first.

4.1.7. X-Y Rep. Times

X repetition times represent the number of columns, while Y repetition times the number of lines; as shown in the above picture, X repetition times are 3 and Y repetition times is 2. The largest set value is 99*99.

4.1.8. X-Y Rep. Interval

The above picture has explained the meaning.
### 4.2 Settings of Color-changing Order

#### 4.2.1. Color-changing Interface

![Color-changing Interface Diagram](image)

<table>
<thead>
<tr>
<th>No.</th>
<th>Icon</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><img src="image" alt="Pattern Display Area Icon" /></td>
<td>Pattern Display Area</td>
<td>Display the pattern according to real-time setting of color-changing order, for the preview of the result of color-changing.</td>
</tr>
<tr>
<td>2</td>
<td><img src="image" alt="Basic Pattern Data Icon" /></td>
<td>Basic Pattern Data</td>
<td>Display the basic data of the pattern</td>
</tr>
<tr>
<td>3</td>
<td><img src="image" alt="Current Operation Position Icon" /></td>
<td>Current Operation Position</td>
<td>User can set, insert or delete needle bar number in current position.</td>
</tr>
</tbody>
</table>


The pattern display area displays the pattern under color-changing setting. After changing the color-changing order, the display will be renewed at the same time to show the modification effect.

Color-changing order display area shows color lump numbers, needle bar numbers and needle bar colors.

Pattern display can be in parallel with the setting, insertion and deletion of needle bar number, which means that users can set and change the color-changing order along with the display.
4.2.2. Settings of Color-Changing Order

1. Press to enter color-changing setting interface.

2. Input the needle bar numbers in order in the needle bar number selection area. The pattern display and the color list will be refreshed after each input.

3. Press to check whether the inputted color-changing order is correct. Or press to “Color Index” interface, input the color block number you want to view, and then press to jump to the color block.

4. To change a certain needle bar number, press to move to the item to be modified and then press the new needle bar number.

5. To insert a new needle bar number, press to move to the position below the position to be inserted, and then to insert the needle bar number.

6. Press to delete a needle bar number.

4.2.3. Set Needle Bar Color

To make the display effect close to the actual embroidery effect, this system allows settings of color for each needle bar and such settings can be saved together with the color-changing order of the pattern.

1. Press to enter color-changing setting interface.

2. Press to enter needle bar color setting interface.
45 default colors for selection in the setting interface

3. To set the needle bar color, select the needle bar first and then select the color from the 45 default color lumps. The corresponding color of the needle bar button will be refreshed.

4. Press \( \text{save} \) to save the settings and return to the color-changing order setting interface; or press \( \text{quit} \) to quit setting without saving and return to color-changing order setting interface.
Chapter 5 Memory Pattern Management

Memory pattern management includes selection of embroidery patterns, settings of patterns, change of patterns and operations for creating patterns.

5.1 Memory Pattern Management Interface and Other Memory Pattern Operation Interfaces

Press to enter memory pattern management interface.

The memory patterns management interface contains: Patterns image display area, navigation and pagination area, information area and management operation area. The patterns image display area can show 8 patterns at most. If the total number of the patterns is beyond 8, more pages will be needed. Navigation and pagination area can help switch to the patternsated page. The management operation area is to preview patterns and set their order.

<table>
<thead>
<tr>
<th>No.</th>
<th>Icon</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>Pattern Display Area</td>
<td>Display the pattern files in memory by icons. It’s mainly for selection.</td>
</tr>
<tr>
<td>No.</td>
<td>Icon</td>
<td>Name</td>
<td>Description</td>
</tr>
<tr>
<td>-----</td>
<td>------</td>
<td>-----------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>2</td>
<td><img src="image" alt="Previous/Next Page icon" /></td>
<td>Previous/Next Page</td>
<td>Used to shift to appointed page number</td>
</tr>
<tr>
<td>3</td>
<td><img src="image" alt="Information Area icon" /></td>
<td>Information Area</td>
<td>Display the detailed information of the selected pattern and the memory information.</td>
</tr>
<tr>
<td>4</td>
<td><img src="image" alt="Pattern Preview icon" /></td>
<td>Pattern Preview</td>
<td>Check the details of the pattern; scale up/down, move or simulate the pattern.</td>
</tr>
<tr>
<td>4</td>
<td><img src="image" alt="Letter Pattern icon" /></td>
<td>Letter Pattern</td>
<td>Set letter embroidery and its parameters</td>
</tr>
<tr>
<td>4</td>
<td><img src="image" alt="Delete Pattern icon" /></td>
<td>Delete Pattern</td>
<td>Delete the selected pattern</td>
</tr>
<tr>
<td>4</td>
<td><img src="image" alt="Pattern Output icon" /></td>
<td>Pattern Output</td>
<td>Save the memory pattern to U disk</td>
</tr>
<tr>
<td>4</td>
<td><img src="image" alt="Home icon" /></td>
<td>Home</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td><img src="image" alt="U Disk Management icon" /></td>
<td>U Disk Management</td>
<td>Press it to enter U disk management interface to make related operations.</td>
</tr>
<tr>
<td>4</td>
<td><img src="image" alt="Other Operations icon" /></td>
<td>Other Operations</td>
<td>Click to open the other operation interface, where user can perform copy, deletion, combination, edition and other operations.</td>
</tr>
<tr>
<td>4</td>
<td><img src="image" alt="Single/Multiple Selection Shift icon" /></td>
<td>Single/Multiple Selection Shift</td>
<td>Shift between single selection and multiple selections.</td>
</tr>
<tr>
<td>4</td>
<td><img src="image" alt="Next icon" /></td>
<td>Next</td>
<td>Enter the next operation interface</td>
</tr>
</tbody>
</table>

Press 🚭 to enter the interface for other operations of memory pattern (to deal with any single pattern, user need select the pattern first).
In this interface, press each operation to enter the corresponding interface. Please read the following paragraphs for detailed explanation. Press  or  to turn page and press  to return to memory pattern management interface.

5.2 Select Pattern for Embroidery

1. Press  to enter memory pattern management interface.

2. Select the pattern in the memory pattern image display area.

5.3 Memory Pattern Preview

The selected pattern can be previewed in the memory pattern preview interface to check more details.
<table>
<thead>
<tr>
<th>No.</th>
<th>Icon</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>Pattern Preview Area</td>
<td>Display the pattern in the appointed method and speed</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>Draw/Pause Switch</td>
<td>Shift between drawing pattern and pausing display</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Move up</td>
<td>Move the pattern upwards</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Single Step Display</td>
<td>Draw the pattern by drawing single steps</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Scale up</td>
<td>Enlarge the pattern in the preview area</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Scale down</td>
<td>Reduce the pattern in the preview area</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Actual Display</td>
<td>Display the pattern in the actual size. So the size of the pattern on the screen is the actual size of the pattern after embroidery.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Display to the Size of the Window</td>
<td>Display the pattern according to the size of the pattern preview area.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Move left</td>
<td>Move the pattern leftward</td>
</tr>
</tbody>
</table>
1. Press 📦 to enter memory pattern management interface.

2. Select a pattern in the memory pattern image display area.

3. Press 🌯 to open memory pattern preview interface.

4. Press 📡 to control the size of the pattern display. Press 🧐 to control the display position. Press 🤟 to control display speed. Press 🎨 to shift to the pause status, where the single step of pattern can be displayed. Press 🧚 to redisplay the selected pattern.

### 5.4 Pattern Output

User can transfer the pattern data in memory to U disk.

1. Press 📦 to enter memory pattern management interface

2. Select the memory patterns to be outputted

3. Press 🍎
4. System will display the window to “Select U disk” and press to make the selection.

5. Input the pattern name saved in the U disk.

The system provides the minimum available pattern number as the default value. User can use the keypad below to change the number.
6. Press of the completion hint.

7. Press to return to pattern management interface.

5.5 Copy the Memory Pattern

1. Press to enter memory pattern management interface.

2. Select a pattern in the memory pattern image display area.

3. Press to enter memory operation selection interface.

4. Click “Copy Pattern” to enter its operation interface. The system will automatically provide the smallest available pattern number and default pattern name. If the user doesn’t want to change them, please press .

5. To input a new pattern number, click “New Pattern number” and input the new number in the pop-up window.
6. To change the new pattern name, click “New Pattern name” and input the new name in the pop-up window.

7. Press \( \text{Copy Pattern} \) to copy the pattern and return to pattern operation selection interface. Press \( \text{Cancel Pattern copy} \) to cancel the copy operation and return to pattern operation selection interface.
5.6 Create Outline Pattern

This operation can generate a new pattern based on the outline of the designated pattern.

1. Press to enter memory pattern management interface.
2. Select a pattern in the memory pattern image display area.
3. Press to enter memory operation selection interface.
4. Press “Create Outline Pattern” to enter the operation interface.
5. User can press to input new pattern number and name instead of default ones.
6. Press to create the outline pattern and return to pattern operation selection interface. Press to quit the creating operation and return to pattern operation selection interface.

5.7 Create High-speed Pattern

This function can be used to divide long stitch into short ones, so as to prevent speed reduction due to long stitches.

1. Press to enter memory pattern management interface.
2. Select a pattern in the memory pattern image display area.
3. Press to enter memory operation selection interface.
4. Press “Create High-speed Pattern” to enter the operation interface.
5. User can press to input new pattern number and name instead of default ones.
6. Press to create the high-speed pattern and return to pattern operation selection interface. Press to quit the creating operation and return to pattern operation selection interface.
5.8 Divide Pattern

This operation is to divide one pattern into two new patterns.

1. Press  to enter memory pattern management interface.

2. Select a pattern in the memory pattern image display area.

3. Press  to enter memory operation selection interface.

4. Press “Divide Pattern” to enter the operation interface.

5. User can press to input new pattern number and name instead of default ones.

6. Press “Divide Stitch” to input the stitch number of the division position.

7. Press  to divide the pattern into two new patterns and return to pattern operation selection interface. Press  to quit the dividing operation and return to pattern operation selection interface.
5.9 Create Parameter Pattern

This operation is to create a new pattern from the selected pattern together with the settings of its common parameters and color-changing order.

1. Press \( \text{ } \) to enter memory pattern management interface.

2. Select a pattern in the memory pattern image display area.

3. Press \( \text{ } \) to enter memory operation selection interface.

4. Press “Create Parameter Pattern” to enter the operation interface.

![Image of pattern creation interface]

5. User can press to input new pattern number and name instead of default ones.

6. Press \( \text{ } \) to create the parameter pattern and return to pattern operation selection interface. Press \( \text{ } \) to quit the creating operation and return to pattern operation selection interface.

5.10 Mosaic Pattern

This operation is to combine two patterns into one new pattern. The interval of patterns refers to the distance between the end of the first pattern and the start of the second pattern.

1. Press \( \text{ } \) to enter memory pattern management interface.
2. Select the two patterns to be combined and record their pattern numbers.

3. Press 📁 to enter memory operation selection interface.

4. Press “Mosaic Pattern” to enter the operation interface.

5. User can press to input new pattern number and name instead of default ones.

6. Press “X Interval” to input the value. Press “Y Interval” to input the value.

7. Press ☑ to combine patterns and return to pattern operation selection interface. Press ❌ to quit the combining operation and return to pattern operation selection interface.

5.11 Create Combined Pattern

The combined pattern means a pattern group combined from several certain (less than 99) memory patterns after setting their parameters. The combined pattern is set as automatic continuous embroidery. To embroider a combined pattern, user need return to the memory pattern management interface after creating or editing the combined pattern, where user can select the combined pattern, and then after embroidery confirmation, press start to embroider.

1. Press 📁 to enter memory pattern management interface.

2. To edit existing combined patterns, select a combined pattern; to create a new combined pattern, just follow the instructions below.
3. Press 📀 to enter memory operation selection interface.

4. Press “Create Combined Pattern” to enter the operation interface.

The combined ID shows the current pattern number and how many patterns the combined pattern is composed of. Display form is “pattern number (the total amount of patterns)”.

5. Set the parameters of the first pattern, including pattern number, scaling ratio, rotating angle, pattern direction and priority mode. Please refer to Chapter 4 for details of the settings.

6. Press 🎁 to set several patterns for packing. And press 🛡️ to go back to change the parameters of combined patterns.

If the current pattern is not the first of the combined pattern, user need set the interval between it and the first pattern. Please refer to Chapter 4 for details of inputting parameters.
7. Press \( \checkmark \) to enter the operation interface.

The system will hint user to input the new pattern number and the new pattern name.

8. Press \( \checkmark \) to save the combined pattern and return to pattern operation selection interface. Press \( \times \) to quit saving and return to pattern operation selection interface.
5.12 Satin Stitch Adjustment

This operation is to adjust the satin width in the design according to the need.

1. Press to enter memory pattern management interface.
2. Select a pattern in the memory pattern image display area.
3. Press to enter memory operation selection interface.
4. Press “Satin Stitch Adjustment” to enter the operation interface.

5. User can press to input new pattern number and name instead of default ones.
6. Press “X Adjust Value” and “Y Adjust Value” to input the value respectively.
7. Press to make the satin stitch adjustment and return to pattern operation selection interface.

Press to quit the adjusting operation and return to pattern operation selection interface.
Chapter 6 Letter Pattern Operation

System can generate letter pattern based on the built-in font libraries.

6.1 Enter Main Interface for Letter Embroidery

Press in the pattern management interface to enter the main interface for letter embroidery.
6.2 Input Letter String for Embroidery

Press in the main interface for letter embroidery to enter letter string input interface.

The upside of the window is the display area and the downside is the operation area. After inputting the letter string, press to save.
6.3 Adjust Letter Pattern

1. Letter Pattern Adjustment Interface
There are 4 rows of operation keys in the interface, the first two rows are the file and view functions keys, the third row are keys for adjusting letter arrangement, and the fourth row are keys for adjusting letter string. In the middle of the interface is the letter pattern display area.

Generally, user should set the parameters, such as whole arrangement method, rotate angle and letter interval of the letter string; then select certain letter to adjust the its arrangement parameters.

Letter pattern display window: the crosses in the center are the coordinates and the intersection represents the origin (0, 0). The letter will be arranged around the origin automatically.

2. Keys for Adjusting Selected Letters


“Change Font”: change the font of selected letters. Press this key to display a dialog box, where user can select a desired font and confirm it.

“Color-changing Shift”: set or cancel color-changing before the selected letter.

“Selection Shift”: shift among selected letters. A letter must be selected before any edit. If a red “+” appears on a letter, it means the letter is selected, such as . The system will select all letters as default. Press this key to select the first letter, and press it again to select the second one, and so on. After selecting the last letter, press this key again to select all letters.

“Increase Width”: increase width of selected letter.

“Reduce Width”: reduce width of selected letter.

“Increase Height”: increase height of selected letter.

“Reduce Height”: reduce height of selected letter.

“Horizontal Overturn”: overturn the selected letter horizontally.
“Vertical Overturn”: overturn the selected letter vertically.

“Clockwise Rotation”: use the letter as center (“+” in the center of letter) and rotate the selected letter clockwise.

3. View and File Operation

“Letter Density”: adjust the density of the letter string. Press this key to display the density dialog box, where user can set stitch form, increase or decrease density.

“Stitch Form”: show/hide the stitch form. Hiding the stitch form can improve operation speed.

“Increase Density”: increase the satin stitch density of the created letter pattern.

“Reduce Density”: reduce satin stitch density of the created letter pattern.

“Left”, “Right”, “Up” and “Down”: move letter pattern toward each direction.

“Reduce”: reduce to the display window of letter pattern.
“Enlarge”: enlarge to show the detailed part of the letter pattern.

“Actual”: show the letter pattern in the actual size. At this time, the size of pattern in interface is equal to actual size.

“Center”: scale up/down the view, so as to show the whole pattern for checking.

“Save”: it is used for saving the edited letter pattern. After pressing this key, the system will display the window for user to input the pattern number and name. According to need, change the pattern name and number (the number is not recommended to be changed), then press confirmation key to start saving.

“Exit”: quit from “Create Letter Pattern”.

4. Keys for Adjusting Whole Arrangement

If you adjust the parameters for whole rank after the edition of the individual letter, the edition of the individual letter will be probably replaced.

“Horizontal”: rank the letters horizontally

Press this key to shift among “horizontal”, “vertical”, “up arc”, and “down arc”. Only in case of “up arc” and “down arc” can “fix letter direction”, “increase radian” and “decrease radian” be adjusted.

“Vertical”: rank letters vertically

“Up Arc”: rank letters in arc bending upwards

“Down Arc”: rank letters in arc bending downwards
“Fix Letter Direction”: when user ranks the letters in arc, the letter angle will not change along with the position of arc, but fix at a certain angle.

“Increase Radian”: when user ranks the letters in arc, this key can enlarge the radian of the reference arc.

“Reduce Radian”: when user ranks the letters in arc, this key can reduce the radian of the reference arc.

“Whole Clockwise Rotate”: rotate the whole letter string clockwise.

“Enlarge Letter Interval”: increase the interval between letters.

“Reduce Letter Interval”: reduce the interval between letters.

6.4 Save Letter Pattern

After finishing the letter pattern edit, user can press [ ] to display a window for user to input pattern number and name, and then press [ ] again to save.
After saving, system will return to the main interface for letter embroidery.

If there is no need to edit letter pattern, press to quit and the following hint will be displayed.

Press to save or press to cancel saving, and return to the pattern management interface.
Chapter 7 Assistant Operation

User can perform some common assistant operations by pressing keys.

7.1 Frame Selection

User can press  to enter the interface for frame selection and position.

<table>
<thead>
<tr>
<th>No.</th>
<th>Icon</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><img src="image" alt="Pattern Range Display" /></td>
<td>Pattern Range Display</td>
</tr>
<tr>
<td>2</td>
<td><img src="image" alt="Frame Type Selection" /></td>
<td>Frame Type Selection</td>
</tr>
<tr>
<td></td>
<td><img src="image" alt="Position Pattern to the Center of the Frame" /></td>
<td>Position Pattern to the Center of the Frame</td>
</tr>
<tr>
<td></td>
<td><img src="image" alt="Frame Parameter Setting" /></td>
<td>Frame Parameter Setting</td>
</tr>
<tr>
<td></td>
<td><img src="image" alt="Move Frame along Pattern Outside" /></td>
<td>Move Frame along Pattern Outside</td>
</tr>
<tr>
<td></td>
<td><img src="image" alt="Move Frame along Pattern Outline" /></td>
<td>Move Frame along Pattern Outline</td>
</tr>
<tr>
<td></td>
<td><img src="image" alt="Memory of Pattern Origin" /></td>
<td>Memory of Pattern Origin</td>
</tr>
</tbody>
</table>
### 7.2 Clear XY Displacement

This function is to clear the X and Y displacements.

1. In the main interface, press the icon.

2. System will set current X/Y value to 0.

User can check the current X/Y value on the main interface.

### 7.3 Positioning Idling

This operation can only be undertaken under embroidery confirmation status.

This function can move the frame to certain position without embroidering according to user’s need. User can select color-changing code or stop code as reference to idle forward (or backward).

#### 7.3.1. Low Speed Idling Forward

1. In the main interface, press the icon.

2. Press the icon.
(1) Press  once to idle forward by one stitch

(2) Hold pressing  for 2s to idle forward continuously

7.3.2. Low Speed Idling Backward

1. In the main interface , press 

2. Press 

(1) Press  once to idle backward by one stitch

(2) Hold pressing  for 2s to idle backward continuously

7.3.3. High Speed Idling Forward

1. In the main interface , press 

2. Press  to idle forward at high speed

Note: the operation method of high-speed idling backward is the same with here.

7.3.4. Go to Next Color

1. In the main interface , press 

2. Press  to idle to the next color-changing code

Note: the operation method of “go to previous color” is the same with here.