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# [PTCS—7S OPERATION MANUAL]

RCM-1201TC-7S / RCM-1501TC-7S

# Table of Contents

|                                                                                 |          |
|---------------------------------------------------------------------------------|----------|
| <b>PART 1 CONTROL SYSTEM.....</b>                                               | <b>1</b> |
| 1.1 SYSTEM OVERVIEW .....                                                       | 1        |
| 1.2 PRECAUTIONS .....                                                           | 1        |
| 1.3 WORKING ENVIRONMENT.....                                                    | 2        |
| 1.4 SYSTEM POWER SUPPLY AND GROUNDING.....                                      | 2        |
| 1.5 OPERATION PANEL AND KEY FUNCTION .....                                      | 2        |
| 1.5-1 Key Function Introduction.....                                            | 2        |
| 1.5-2 Icons Description of Touch Keys.....                                      | 2        |
| 1.5-3 Function .....                                                            | 4        |
| <b>PART 2 EMBROIDERY DESIGN INPUT OPERATION.....</b>                            | <b>5</b> |
| 2.1 INPUT USB DRIVE DESIGN TO MEMORY .....                                      | 5        |
| 2.2 DELETE DESIGNS IN EMBROIDERY DESIGN MANAGEMENT .....                        | 6        |
| <b>PART 3 SELECTING DESIGN IN EMBROIDERY DESIGN</b>                             |          |
| <b>MANAGEMENT .....</b>                                                         | <b>7</b> |
| 3.1 SELECT EMBROIDERY DESIGN FOR EMBROIDERING.....                              | 7        |
| 3.2 DELETE SINGLE EMBROIDERY DESIGN.....                                        | 8        |
| 3.2 OUTPUT EMBROIDERY DESIGN TO USB DRIVE .....                                 | 8        |
| <b>PART 4 EMBROIDERY DESIGN .....</b>                                           | <b>9</b> |
| 4.1 EMBROIDERY STATUS MODE.....                                                 | 9        |
| 4.2 PREPARATION STATUS .....                                                    | 10       |
| 4.2-1 Set Embroidery Design Parameters.....                                     | 10       |
| 4.2-2 Switching Hoops .....                                                     | 11       |
| 4.3 OPERATION STATUS.....                                                       | 12       |
| 4.3-1 Embroidery Design Origin Setting (Starting Point).....                    | 12       |
| 4.3-2 Offset Point Setting (Highest Point of Hoop Center) .....                 | 12       |
| 4.3-3 Return to Origin (Starting Point) .....                                   | 12       |
| 4.3-4 Offset Operation.....                                                     | 13       |
| 4.3-5 Return to Stop Point .....                                                | 13       |
| 4.3-6 Set Color Changing Setting .....                                          | 13       |
| 4.3-6-1 Set Color Changing Sequence .....                                       | 14       |
| 4.3-6-2 Appliqué Offset, Low Speed Embroidering and Needle Bar Replacement..... | 14       |
| 4.3-6-3 Sequin Design .....                                                     | 15       |
| 4.3-7 Change Color Sequence Mode .....                                          | 15       |
| 4.3-8 Embroidering Float Mode Switching .....                                   | 16       |
| 4.3-9 Embroidery Design Trace Operation.....                                    | 17       |
| 4.3-10 Returning to Embroidery Origin Point after Power Failure .....           | 17       |
| 4.4 EMBROIDERY OPERATION STATUS .....                                           | 18       |

|                                                                |           |
|----------------------------------------------------------------|-----------|
| 4.5 EMBROIDERY START/STOP OPERATION .....                      | 18        |
| 4.6 SWITCH CONTROL AND INDICATORS OF SEQUIN MACHINE HEAD ..... | 18        |
| <b>PART 5 HOOP MOVING TO GENERATE EMBROIDERY FILE .....</b>    | <b>20</b> |
| <b>PART 6 LETTERS TO GENERATE EMBROIDERY FILE .....</b>        | <b>21</b> |
| <b>PART V7 MANUAL OPERATION FOR COLOR CHANGING .....</b>       | <b>23</b> |
| <b>PART 8 MANUAL TRIMMING .....</b>                            | <b>24</b> |
| <b>PART 9 HOOP ORIGIN OPERATION.....</b>                       | <b>25</b> |
| 9.1 MANUAL HOOP ORIGIN SETTING.....                            | 25        |
| 9.2 AUTOMATIC SEARCHING FOR ABSOLUTE ORIGIN OF HOOP.....       | 25        |
| 9.3 SET SOFTWARE LIMITS .....                                  | 26        |
| <b>PART 10 HOOP SETTING .....</b>                              | <b>27</b> |
| <b>PART 11 PRODUCTION STATISTICS .....</b>                     | <b>28</b> |
| <b>PART 12 MAIN AXIS ORIGIN OPERATION .....</b>                | <b>29</b> |
| <b>PART 13 LANGUAGE SWITCHING .....</b>                        | <b>30</b> |
| <b>PART 14 EMBROIDERY PARAMETERS SETTINGS.....</b>             | <b>31</b> |
| <b>PART 15 MACHINE PARAMETERS SETTING.....</b>                 | <b>32</b> |
| <b>PART 16 USER MANAGEMENT .....</b>                           | <b>33</b> |
| <b>PART 17 RESTRICTION RELEASING.....</b>                      | <b>34</b> |
| 17.1 LOCK REMOVING.....                                        | 34        |
| <b>PART 18 SYSTEM TEST .....</b>                               | <b>35</b> |
| 18.1 INPUT TEST .....                                          | 35        |
| 18.2 OUTPUT TEST.....                                          | 35        |
| 18.3 MAIN AXIS TEST .....                                      | 36        |
| 18.4 MACHINE HEAD TEST.....                                    | 36        |
| <b>PART 19 SYSTEM INFORMATION .....</b>                        | <b>37</b> |
| 19.1 SYSTEM NUMBER AND VERSION INFORMATION CHECKING.....       | 37        |
| 19.2 SYSTEM UPDATE .....                                       | 37        |
| <b>PART 20 IP SETTING .....</b>                                | <b>38</b> |
| <b>PART 21 SYSTEM INITIALIZATION .....</b>                     | <b>39</b> |
| <b>PART 22 APPENDIX .....</b>                                  | <b>40</b> |
| 22. 1 PARAMETER TABLE .....                                    | 40        |
| 22. 2 SYSTEM ERRORS AND COUNTERMEASURES LIST .....             | 43        |



## Part 1 Control System

### 1.1 System Overview

Before using the machine, please read the operation manual carefully to ensure correct usage of the system.

Please keep the operation manual readily available for easy reference.

As configuration varies, some machines might not have all listed functions in the manual.

### 1.2 Precautions

Only Qualified technicians should be doing repair and trouble-shooting on the mechanical and electrical systems, doing otherwise may reduce the safety of the equipment, and yourself by increasing the potential for accident, or even cause personnel injury and property loss.

Some parts in the case may have high voltage on them. After powering on the system, please don't open the case cover to avoid accidental injury.

The power switch of this product has an over-current protection function. If over-current protection switch is activated, it will reset again after 3 minutes.

Please don't pile up debris around the control box during operation. Clean the surface of control box and vents regularly to ensure good ventilation and proper cooling of the machine.

Without authorization from the company, please do not modify this product. Otherwise, the company undertakes no liability for any damages and your warranty could be voided.

#### **Warning**

Do not open the case cover and touch any electrical part, unless under the guidance of professional personnel and after the power has been turned off for over 5 minutes.

#### **Prohibition**

When the machine is in operation, do not touch any moving part or open any control boxes. Otherwise, it may cause personal injury or cause abnormal operation of the machine.

Do not operate electrical equipment in working environment with moisture, dust, corrosive gases and flammable and explosive gases. Otherwise, it may cause electric shock or fire.

## 1.3 Working Environment

Good ventilation, healthy environment, less dust;

Working space temperature: 5-40 °C; 41-104 °F

Working Space Relative Humidity: 30% - 90% non-condensing.

## 1.4 System Power Supply and Grounding

The electric control system can use the following power:

Single phase AC100-220V/50-60HZ

Depending on the machines configurations, power consumption is between 0.1-0.4KW.

**To prevent electrical equipment from causing electric shock or fire accidents due to electric leakage, over-current or insulation and other causes, please ground the electrical control system.**

Grounding resistance shall be less than 100 ohm, wire length shall be within 20 m and wire cross-section shall be greater than 1.0 mm<sup>2</sup>.

## 1.5 Operation Panel and Key Function

### 1.5-1 Key Function Introduction



Manual trimming key: You can do manual trimming in operation status and preparation status.



Main shaft origin key: Press the key and main shaft returns to 100 degree.

### 1.5-2 Icons Description of Touch Keys



Frame speed key: Used to select hoop movement speed, from fast to slow.



Directional keys: Move hoops in operation status and preparation status.



Main axis speed key: - key for deceleration, and + key for acceleration.



Set start point and trace design, also changes the preparation status to operation status.



Origin point key.



Offset point key.



Color changing mode key (automatic color changing, semi-automatic, and manual)



Manual color changing key, left side displays current needle position and right side displays main axis degree.



Color order key, left side displays current color needle bar and additional settings, and right side displays next needle bar and additional settings.



Embroidery mode key (normally embroidery)



Embroidery status key (operation mode)



Returning to stop point key.



Back key.



Select design and input design.



Set design related parameters, and it can only be operated under embroidery preparation status i.e. Design Set.



Embroidery parameter settings i.e. Emb Param.



Machine parameter setting i.e. Menu.



Connected network



Disconnected network

AX/AY: Display relative origin coordinates of embroidery design.

PX/PY: Display absolute origin coordinates of embroidery design.

### 1.5-3 Function

The system has a friendly HMI operation mode that is easy to operate and learn. The system has powerful functions and is convenient for user operation.

With multilingual support, it can switch the operation system language based on the user's needs at any time.

With a large memory capacity, the system can store 20 million stitches. With multiple embroidery design input paths, you can choose input methods, such as USB, network (PC software required).

The system support multiple embroidery design file formats and can identify Tajima DST and Barudan DSB and so on.

The powerful parameter adjustment function can adjust various parameters according to the customer's requirements in order to meet the required system control performance.

Automatic embroidery recovery function in case of power failure can recover to the previous several stitches and continue embroidering automatically after there is a sudden power failure in embroidering process without having to worry about displacement of the embroidery design.

The equipment's self-test function can make testing of the state of electrical equipment and parameters easy for convenient adjustment and maintenance.

With the main axis stop position adjustment function, the user can make system parameter adjustments according to the features of the respective embroidery machine to achieve an accurate stop position.

The automatic embroidery design parameter memory function will automatically save the preset embroidery parameters or related data of embroidered designs, including color changing, origin, offset point, embroidery parameter, repetition, and other information when using the same embroidery design.

The appliqué offset function can set any color changing bar and take appliqué out of frame for convenient appliqué operation.

The accurate design surrounding embroidery function can meet the requirements of design positioning embroidery.



The system supports reading both Tajima DST and Barudan DSB formats of embroidery design files.

After USB drive is inserted, press  key to enter into embroidery design management interface. It will read the contents in USB drive, as in the following Fig. 1.



Once it enters into subdirectory of input operation, press  key to return to

previous interface.

Press  key to return to main interface.

## 2.2 Delete Designs in Embroidery Design Management

In embroidery design management operation interface, click the embroidery design to delete.

Press  key to delete design.

## Part 3 Selecting Designs in Embroidery Design Management

In the main interface, press  key to enter into the embroidery designs management interface, as in the following Fig. 2.

If an USB drive is connected, press  key to enter into the memory of the machine.

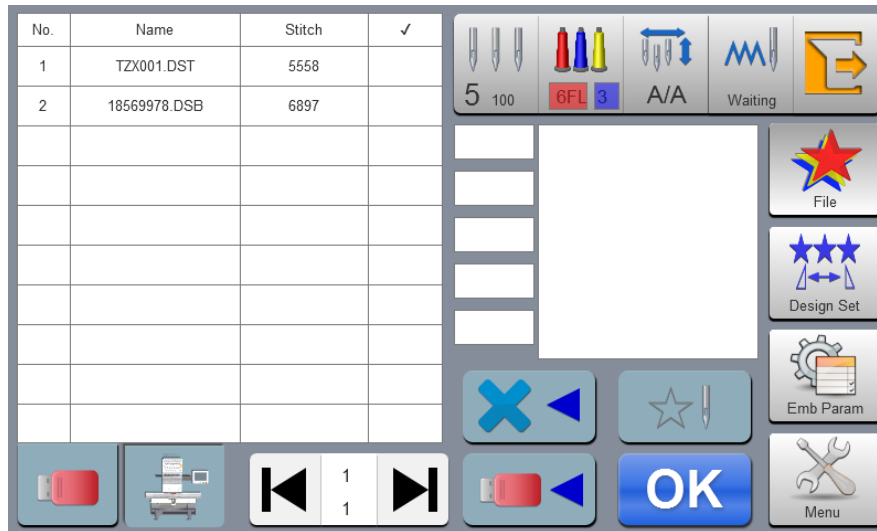


Figure 2

If there is no USB drive connected into the machine, press  key to enter into embroidery designs management interface, and it will automatically read the memory of the machine.

### 3.1 Select Embroidery Design for Embroidering

Select the design you wish to embroider. Design stitch number, how many job orders, size and other related information and thumbnail are displayed on the right side of the screen. Press  key, a text box that reads “Reading” pops up automatically. After reading the design, it returns to the main interface.

If it is still in the operation status, it cannot select an embroidery design, and related prompt information pops out “Embroidery status, not available”

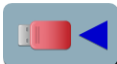
Press  key to return to the main interface. And change the operation status to preparation status by pressing  key.

## 3.2 Delete Single Embroidery Design

In the embroidery design management interface, select the design to delete, and press key to delete design.



## 3.2 Output Embroidery Design to USB Drive

In the embroidery design management interface, select the embroidery design to output. Press  key to output into USB drive.

Upper value in   $\frac{1}{1}$   means current page and the lower value mean total numbers of pages of current embroidery design numbers. Left and right keys turn pages. However, total page turning value cannot be larger than total pages of current embroidery design.

## Part 4 Embroidery Design

### 4.1 Embroidery Status Mode

The machine has 2 embroidery statuses, i.e. preparation status, operation status. Switching between statuses can be done via pressing  key on main interface. As in the following Fig. 3

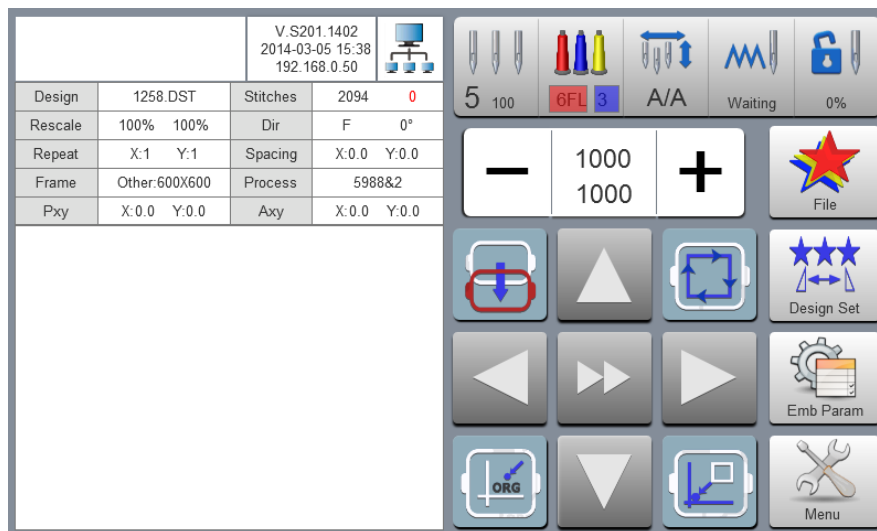


Figure 3 Preparation Status

In the preparation status, press  key, and a pop up appears “Enter Embroidering Status”. Press  key to enter into operation status, as in the following Fig. 4

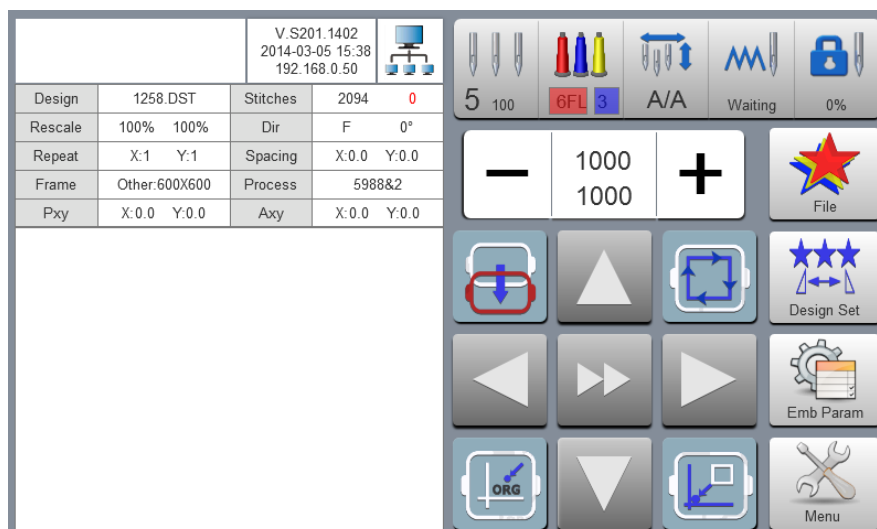


Figure 4 Working Status

In operation status, press



key and a pop up appears “Remove embroidery status”.

Press



key to enter into preparation status, as in figure 3.

## 4.2 Preparation Status

In preparation status, it can do main axis origin return, trimming, hoop switching, manual color changing, embroidery design parameter setting and embroidery design selection and other operations.

### 4.2-1 Set Embroidery Design Parameters

In preparation status, press



key to enter embroidery design parameter setting

operation i.e. Design Set, as in the following Fig. 5

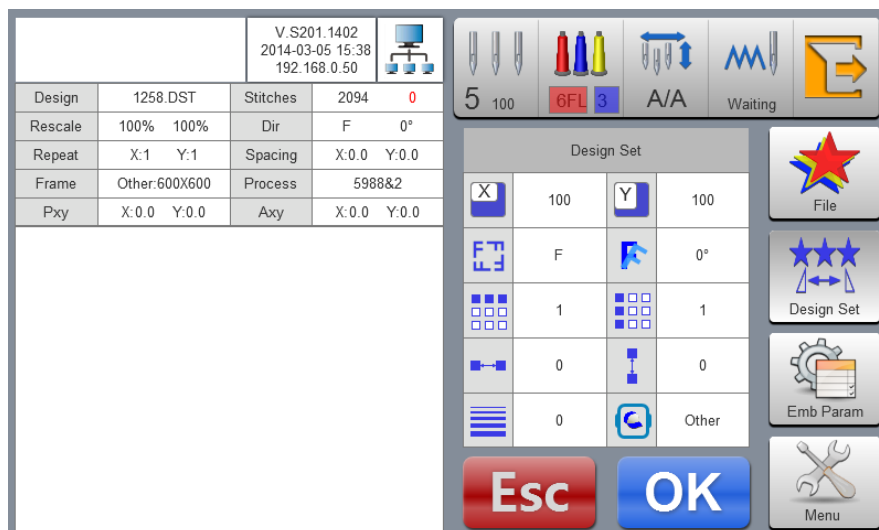


Figure 5 Design Set

Modify values according to the embroidery design. After modification is completed, press



key to save modification. Press



key to return to main interface.

Parameter Range Description:

X/Y direction magnification power: 50%-200%



Rotation directions: total of 8 type of directions, i.e. default 0°, 90°, 180°, 270°, 0°mirror,

90°mirror, 180°mirror and 270°mirror



Rotation angle: 0-89° (the angle is calculated after rotation direction)



X/Y repetition number: 1-99



X/Y direction space: 0-±999.9mm



The control system takes mm as unit. Its numeric input value is 0.1mm

(0.1 mm = 1 mm) when inputting digits, i.e. if 100 mm space is needed, the input value would be 1000 mm.

X/Y compensation (satin stitch): 0-±0.3



## 4.2-2 Switching Hoops

In design set interface, press  key. The parameters from the design set box will change into the different sizes of hoops, just as Fig. 6

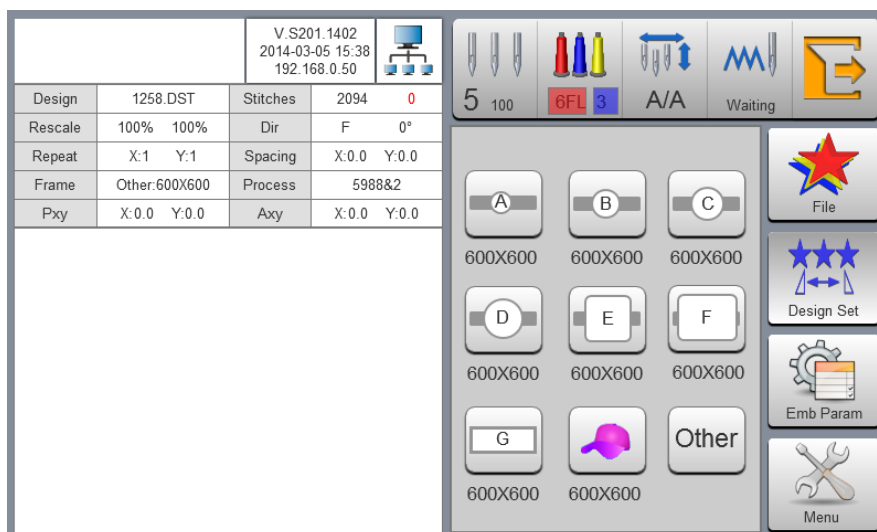


Figure 6 Hoops Selection Box

Select current embroidery hoop type. When cap hoop or A-G hoops are selected, the machine will search absolute origin (center) automatically, and stop at center of selected hoop. Please pay attention to the hoop movement.

See **Hoop Setting** on embroidery range of cap hoop and A-G hoops. When using the “other” hoop button the hoop **will not** automatically center. The embroidery range is also confirmed by the software limits setting (See **Software Limits Setting** on detailed operation).

After selecting a hoop size, the screen goes back to “Design Set” interface automatically. If a hoop type is not selected, the system will continue to use previously used hoop type automatically.

After the cap hoop is selected, the currently selected embroidery design will be rotated 180°

automatically. In all other hoops, the design doesn't rotate 180°.

## 4.3 Operation Status

In the operation status, you can set the embroidery design origin (starting point) setting, embroidery design origin return, offset point return, stop point return, color changing sequences setting, main axis origin return, manual trimming, operation mode changing, embroidering mode switching, embroidery design contour, embroidery range checking and embroidering point return after a power failure.

### 4.3-1 Embroidery Design Origin Setting (Starting Point)

In the operation status, move the hoop to the required embroidery design origin (starting point). Press  key to set origin setting. The hoop walks along the max range of embroidery design. If the position is insufficient, move the embroidery design origin (starting point) until satisfied. After the origin (starting point) is positioned, AX/AY coordinates are clear.

If current embroidery design is in embroidering process, it will pop up a prompt box. Operate according to the message requirements.

### 4.3-2 Offset Point Setting (Highest Point of Hoop Center)

The offset point is mainly for conveniently embroidering material drawing and releasing and appliqué placement.

Offset out of the hoop depends on the set dimensions of that hoop, and it is moved to the highest position of the currently selected hoop automatically.

### 4.3-3 Return to Origin (Starting Point)

In the embroidery process, if it is necessary to return to the origin or re-start the embroidery.

Press  key and the system will pop up "Terminate embroidering and return to the origin?"

Press  key and the hoop is moved to the embroidery design origin and stop. AX/AY coordinates are cleared.



### 4.3-4 Offset Operation

In the embroidery process, if it is required to return to the offset point. Press  key once and the hoop is moved to the offset point and will stop. Press the key gain, the hoop is moved from the offset point to the starting point and stops, and then it can continue embroidering.

### 4.3-5 Return to Stop Point

In the embroidery process, after the hoop is moved manually, if it is required to return to the stop position of embroidery machine. Press  key to move the hoop to the stopping point. After the key is pressed, it is moved to the stopping position automatically and stopped.

### 4.3-6 Set Color Changing Setting

The color changing setting includes color changing sequences and needle bar replacement. In operation interface, press  key to enter into color changing interface. Fig. 7



Figure 7 Color Changing Setting

### 4.3-6-1 Set Color Changing Sequence

In the color changing sequence to set the interface, press the number key to enter the color changing sequence. Change the colors from 1-30 from the 1<sup>st</sup> page (the system supports a max of 200 colors change sequences). When the interface is opened for the first time with a new design, the will start with color 1 and allow entry of the number of colors to match the design. Press the number key and input the corresponding needle bar number of the color changing sequence for the design. The cursor is moved to next color selection box automatically.

In the setting process, if a needle bar number has an error, click the selected number to reset the value.

If there is no color changing sequence set, it uses the current needle bar to embroider.

If the color changing selection is not set, all colors will default to the last color sequence that was input.

Upper value   $\frac{1}{1}$   means current page, and lower value means max pages of current embroidery design number. Left and right keys turn pages. However, max page turning value cannot be larger than max pages of current embroidery design.

When the interface is opened for a design that has been previously setup, the cursor is started from the last value position of needle bar automatically. Press the top left white box, in order to move the cursor to the first color sequence and input the corresponding needle bar number of the new color changing sequence. The cursor is moved to next color selection changing sequence automatically. Press  key to return to main interface.

### 4.3-6-2 Appliqué Offset, Low Speed Embroidering and Needle Bar

#### Replacement

If in a certain color change sequence, the offset mode is required or out of hoop (appliqué) at the end of embroidery, press  key once the letter “F” is displayed on the right hand side of current needle bar number. Press  key to cancel offset, out of hoop setting.

If a certain color change sequence requires deceleration for embroidery at the beginning of embroidery (slow speed is set at “low embroidering speed” in “speed parameters” of embroidery

parameters, press  key once before the letter “L” is displayed on the right hand side of current needle bar number. Press  key to cancel low embroidering speed setting.

If all color change sequence of a certain set needle bar shall be replaced by another needle bar for embroidering, press  key, then click the needle bar for replacement, all identical needle bars are selected, Replace needle bar values according to requirements. Press  key once to exit replacement operation.

After the setting is completed, press  key to save current setting. Press  key to return to main interface.

### 4.3-6-3 Sequin Design

If the current color changing sequence is sequin embroidery, press  key to make a free combination design of sequin (mechanical part must is required). If the current color changing is not sequin embroidery, press the key and it cannot enter into the operation.

After entering into setting interface,   displays the max sequin number of the current color change. Select the application method: A/B/AB according to requirements of the design. Selected background has color change options. Input current output number in the input box after the option. It can use a max of 9 different combinations.

When the combined sequin number is not set completely, the remaining boxes will be output with automatic cycling according to current setting sequences.

The size of A/B sequin is determined by embroidery parameters.

Max sequin diameter of machine cannot be larger than the sequin size of embroidery design.

### 4.3-7 Change Color Sequence Mode

In the operation status interface, press  key to change the color sequence mode. Change one mode to another by pressing the key once (cycle changing) and the key display is changed along with it. This  means automatic changing color and automatic start mode,  automatic color changing and manual start mode,  manual color changing and manual starting mode.

In the manual color changing and manual starting mode, set color changing sequences are not available.

### 4.3-8 Embroidering Float Mode Switching

Embroidering mode switching is mainly to skip certain section on your design. The user can move the embroidery needle to specified location via float embroidering.

In operation status interface, press  key to change embroidering mode. Change one mode to another by pressing the key once (cycle changing) and the key display is changed along with it. The embroidering modes are  normal embroidering,  low speed float mode embroidering,  high speed float mode embroidering and  manual position float mode.

Low speed floats embroidering (low speed fast forwarding):



In the stop status, press the start key and the main axis will not move. The hoop moves along as if it were embroidering. Press stop key to stop low speed forwarding.

In stop status, press stop key (low speed backing), and main axis will not move. The hoop is backed along the embroidering stitches. Press stop key again to stop low speed backing.

High speed floats embroidering (high speed forwarding):



In stop status, press start key, the main axis and the hoop will not move. On the screen the cross section which indicates needle position will move as if it were embroidering. Press stop key, the hoop is moved forward towards that position directly.

In stop status, press stop key (high speed backing), main axis and the hoop will not move. On the screen the cross section which indicates needle position will move as if it were embroidering. Press stop key again, and the hoop is moved backward towards that position directly.

Manual positioned float embroidering:



In stop status, the key on right side is switched to the manual position operation interface.

Forward position: After pressing  key, a keyboard pops out. Press number key to input required forward position in stitch count. Press  key and the hoop is moved to specified stitch and stopped automatically.

Backward position: After pressing  key, a keyboard pops out. Press number key to input required backward position in stitch count. Press  key and the hoop is moved to specified stitches and stopped automatically.

Going forward one color: After pressing  key, the cross section is moved to the start position of following color and stops automatically.

Backing one color: After pressing  key, the cross section is moved to start position of previous color and stops automatically.

### 4.3-9 Embroidery Design Trace Operation

The embroidery Design Trace Operation is use to check the location of the design. After the embroidery design origin is set, press  key to initialize the trace function. A pop-up will appear saying “Enter Embroidery Status” press ok. If design location is not in the place needed, try again until satisfied.

#### Embroidery Design Trace Contour Operation

After setting start point and tracing the design, a new option will appear on the right side of the trace icon, press  key and the hoop will start to move slowly, outlining the design with more precision from start point along the contour (precise range). After the trace contour is finished, it returns to starting point automatically.

### 4.3-10 Returning to Embroidery Origin Point after Power Failure

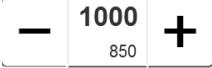
The operation is mainly applied when sudden power failure occurs in embroidering process and when the hoop appears out of place.

**When the hoop type is “Other”, this operation is only valid when absolute origin of hoop is searched before embroidering.**

In operation status, press  key to enter into machine menu interface. Press  key and the system prompts “Press OK to start searching absolute origin”. Press  key to start searching absolute origin. Then the hoop is moved to embroidering position before power failure and stops.

## 4.4 Embroidery Operation Status

In embroidering operation status, only the main axis speed operation is used.

Press  key to slow or accelerate the main axis speed.

## 4.5 Embroidery Start/Stop Operation

After setting embroidering related parameters, the embroidery machine can start embroidering by pressing start key.

**Start/Stop embroidery status:** press the start key once to start embroidering. Press stop key once to stop embroidery.

**Back stitching status:** press stop key one more time after the machine is in the stop mode to start backing up.

**Start embroidery in low speed:** Press and hold the start key for more than 3 seconds and the main axis will start embroidering at min speed, once you let go the machine will resume the preset speed.

## 4.6 Switch Control and Indicators of Sequin Machine

When sequin embroidery is used, must ensure “sequin using needle bar” of the embroidering parameters has been set correspondingly with mechanical installation (Off, Left, Right and Left & Right). Sequin type is set as “Motor”.

The output and lifting motor can use the dial switch to adjust the motor rotation direction. When the motor is rotated reversely, dial the 3<sup>rd</sup> digit of dial switch SW1/SW2 to make adjustment.

Select whether to install the landing chassis on the left of machine head or right. Dial the 4<sup>th</sup> digit of dial switch SW1/SW2 to take switching. ON (0) direction is left machine head and OFF (1) direction is right head.

Sequin size and lifting speed are set in the embroidery parameters.

When the sequin machine head switch is on upper position and the indicator is off, the landing chassis is shut off.

When the switch is in middle position, the upper indicator is in green before entering into sequin embroidery. The landing chassis is in the upper position and waiting for automatic control. When entering sequin embroidering mode, the landing chassis lands automatically and the lower indicator is in green. The upper and lower indicators are all on.

When the switch is in the lower position from middle position, the upper indicator is off and lower indicator is in green, and the landing chassis is at lower position. Press red button dial switch and the output motor outputs once.

## **Part 5 Hoop Moving to Generate Embroidery File**

This key is not currently available for US model machines.



## Part 6 On Board Lettering

In the machine operation interface, press  key to enter into letter interface, as in the following Fig 8:



Figure 8 On Board Lettering

Press any letter key to select required letters or other signs. Press  key to switch upper-case and lower-case letters. Press  key to clear letter. After entering is completed, press  key to see the lettering setting interface (operation cannot be continued if embroidery is operation mode), as in the following Fig 9.

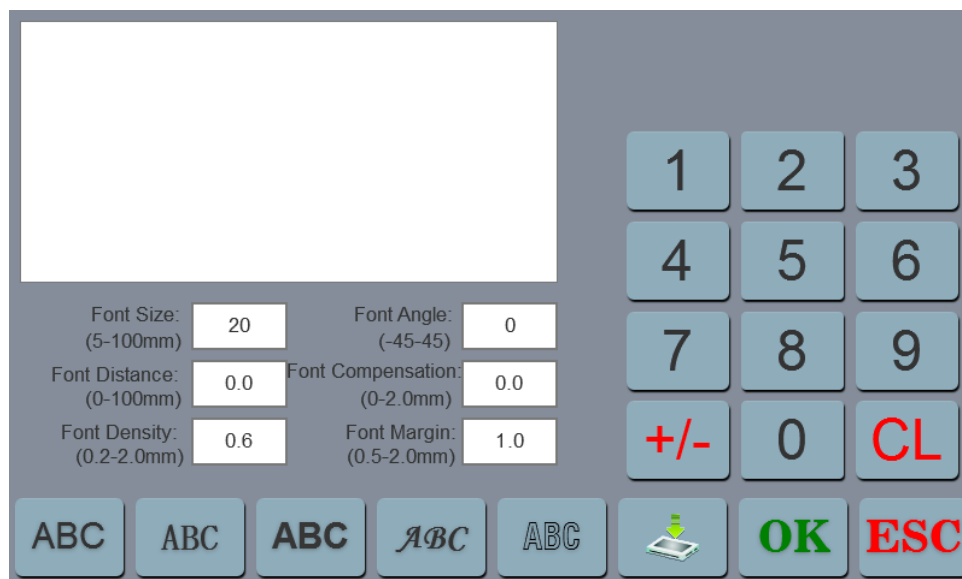


Figure 9 Lettering Parameters Settings

Set the letter related parameters. After setting is completed, press key below to select required letter type (5 types). Press  key to generate letter pattern. On the left upper corner, you can see the generated embroidery file. Press  key to save embroidery file in the machine memory.

## Part 7 Manual Operation for Color Changing

In operation or preparation interface, press  key to take manual color changing operation. The interface will change with the numbers of needle on the machine. Press corresponding needle number according to switch color to specified needle bar.

## Part 8 Manual Trimming

Either in embroidery preparation or operation status, trimming operation can be done.

Press



key on panel to make a manual trimming operation.

## Part 9 Hoop Origin Operation

The hoop origin operation includes manual origin setting and absolute origin searching and software limits setting.

In machine operation interface, press  key to enter into origin operation interface, as in the following Fig 10.

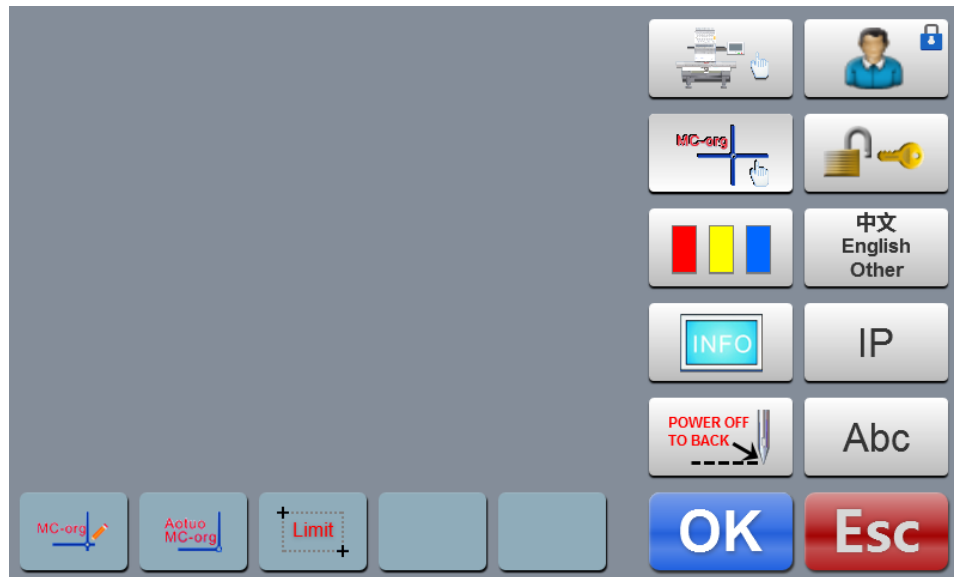


Figure 10 MC-org Menu

### 9.1 Manual Hoop Origin Setting

In hoop origin interface, press  key to select operation. The interface will pop a dialogue “Set the current point as hoop origin or not?” Press  key to complete setting. The current PX/PY coordinates are changed into 0.0 (origin).

### 9.2 Automatic Searching for Absolute Origin of Hoop

The absolute origin uses hoop limits to detect absolute position of hoop, so as to ensure using embroidery recovery in power failure to make accurate embroidery continuation when power fails during embroidering process.

**The function is automatic searching of the system. It must confirm whether the limit sensor can be used effectively or not. Otherwise, it may cause damage to mechanical part.**

In the hoop origin interface, press  key to select operation. The interface will pop up a dialogue “Please confirm the limit switch is in normal operation.” Press  key to start absolute origin searching. After searching is completed, the hoop will return to the stop point before searching automatically.

After the absolute point is searched, the operation is always valid if the hoop has not moved after power failure.

### 9.3 Set Software Limits

This function is only valid when the hoop setting is set in “Other”.

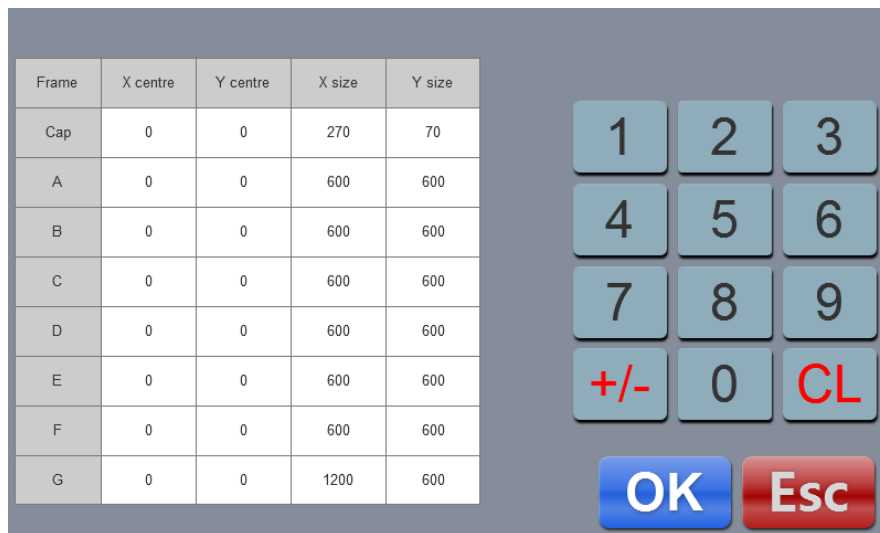
In hoop origin interface, press  key to select operation. The interface pops up a dialogue “Move hoop to left top” According to the prompt move hoop to left upper corner, press  key. The interface pops up another dialogue “Move hoop to right bottom” According to the prompt move hoop to right bottom corner, press  key and the setting is completed.

**Cancel software limit: after entering to software limit interface, don’t move the hoop and press key twice continuously. It will cancel the software limit.**

## Part 10 Hoop Setting

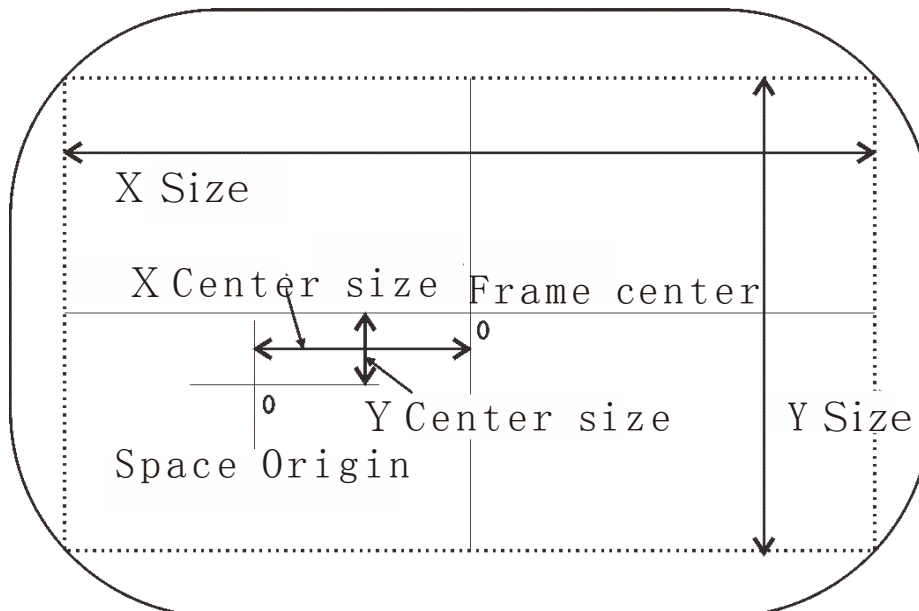
The function is only used to set cap frame and A-F hoop size and dimension from absolute origin of hoop to hoop center.

In embroidery parameter interface, press “hoop setting” key, as in the following Fig.



Set hoop related parameters according to the requirements of the job. After setting is completed, press **OK** key to save setting.

### Hoop Setting Diagram:



## **Part 11 Production Statistics**

The function is only used to generate statistics and clearing statistics operation.

Check the process information on main interface. The first is production quantity of current embroidery file and the latter one is total stitches of the current embroidery file.

Click statistics once to check the number of thread breaks.



## Part 12 Main Axis Origin Operation

This function is only used for main axis position stops. It can be operated as one of the two panel button.

According to requirements it can be operated as by following.

Press  key to reset main axis to 100 degree (zero position).

## Part 13 Language Switching

In the main menu interface, press  key to enter machine parameter settings. To make language switching operation, press  key, menu will change to show all the different language the machine has, click and select required language. The system is switched to the selected language automatically.

## Part 14 Embroidery Parameters Settings

According to different machine configuration and embroidery processing requirements, it is possible to modify some commonly used parameters to meet the operation requirements.

In the main menu interface, press  key to enter into embroidery parameter interface. Click parameter content to be modified, and press  or  key to make modifications. After modifications are completed, press  key to save modifications and return to main menu interface automatically.

See Attached List I on related definitions of embroidery parameter and value ranges.

## **Part 15 Machine Parameters Setting**

The machine parameters should be used by professional technicians only. Don't make modification without permission from a certified technician in order to avoid causing damage to the machine and abnormal operation.

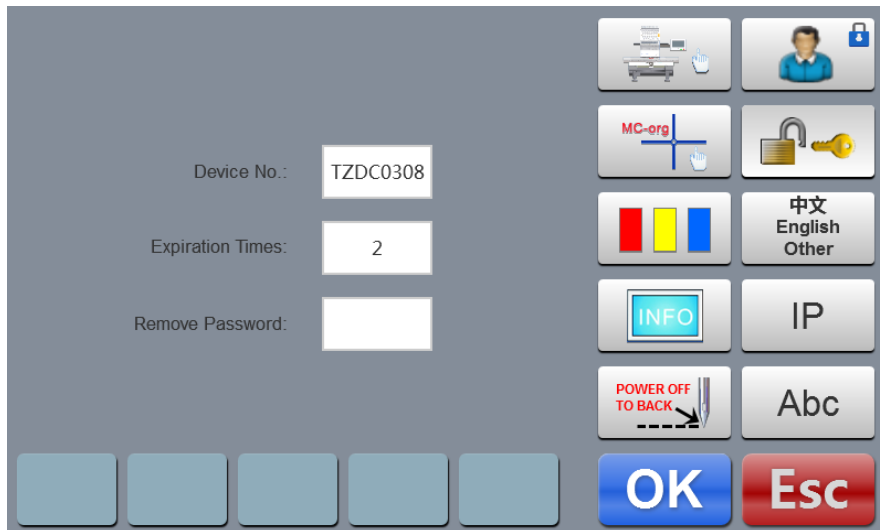
## **Part 16 User Management**

The user management is should only be used by professional technicians. Don't make modification without permission by a certified technician in order to avoid causing damage to the machine and abnormal operation.

## Part 17 Restriction Releasing

### 17.1 Lock Removal

If any restriction of use is expired, the system is locked automatically and prompts to release restriction by inputting passwords, as in the following Fig.



Click Remove Passwords box, and a figure keyboard is popped up. Press the keys and input passwords (8 digits) obtained from the supplier to remove lock. Press  key to remove restriction and continue usage.

## Part 18 System Test

This operation is mainly for maintenance technicians, and is used to test whether the operation of machine is normal.

In machine parameter settings interface, press  key to enter into test interface menu.

### 18.1 Input Test

In the test interface menu, press  key to enter into input test mode. Check whether each item is changed along with the variation of status changing. If it is not changed, the current input signal may have a fault. Please check and make adjustments.

### 18.2 Output Test

In the test interface menu, press  key to enter into output test mode. Press  key corresponding to every test item, check whether the output is valid. If the corresponding equipment output has no action, the current output may have a fault. Please check and make adjustments.

Hook test: Press the key once, and the hook takes alternative action between extracting and retracting. Press once for extracting, one more time for retracting to its original position.

Trimming test: Press the key once, trimming motor is taking alternative action between half circle rotations to a stop and press one more time to make another half circle rotation to return in same direction to its original position.

Picker solenoid test: Press the key once, and the picker electromagnet is actuated for 2 seconds and returns back automatically to its original position.

Left sequin test: Press the key once, and the sequin landing chassis executes descending, output for 3 times and lift back up.

Right sequin test: Same as above.

## 18.3 Main Axis Test

In the test interface menu, press  key to enter into the main axis test. Press  key corresponding to every test item, check whether the output is valid. If corresponding equipment output has no action, the current output may have a fault. Please check and make adjustments.

XY axis test: Press Up and Down keys to modify the mobile pulse number (1-127) of motor. The default value is 12 pulses. Press  key to start back and forth movement.

Main axis test: Press  key to start rotation in speed of 100 rev / min. Press Up and Down keys to modify the main axis speed and check whether the current rotation speed is consistent with actual rotation speed. (Within 5 rev difference for 1000 rev).

QEP test: press  key to test main axis encoder line number and zero position.

## 18.4 Machine Head Test

In the test interface menu, press  key to enter into machine head breakage test. Press figure button to test corresponding needle bar. Check whether breakage detection is valid. If the pre-out has a fault, Please check and make repairs.



## Part 19 System Information

In the main menu interface, press  key to enter into system information interface menu.

### 19.1 System Number and Version Information Checking

It is used to check the system number and version information of the control system.

In the system information interface, press  key to check.

### 18.2 System Update

It is used to update the software version of control system.

In the system information interface menu, press  key to start update operation.

Make the update operation according to prompts. **During the update process do not power off.**

The update is completed in about 3 minutes, and the system is advanced to the main operation interface automatically.

Updates may clear current embroidery file. Please complete current embroidery before you update.

Shortcuts to update program. After the machine is powered up and displays “1.INIT USB OK”, press  key twice and press  key twice immediately. The upper part of display displays a prompt dialogue: “Update software, Start Key Update, Stop Key Exit.” Press “start” key to update and “stop” key to exit.

Shortcut updates map depot operation after the machine powered on and displays “1.INIT USB OK” press  key for three times immediately. The upper part of display displays a prompt dialogue: “Update picture, Start Key Update, Stop Key Exit.” Press “start” key to update and “stop” key to exit.

## Part 20 IP Setting

In the machine parameter setting menu interface, press  key to enter into IP setting interface.

The IP set for the machine must set with the same number segment as the LAN IP, otherwise, it cannot be linked, i.e. the first 3 number segments shall be identical and the last address cannot have a conflict.

## Part 21 System Initialization

After the machine is powered up and displays **“1.INIT USB OK”**, press  key 3 times, the system will re-initialize. After the system initialization is completed, a buzzer will sound “tick, tick, and tick” three times continuously, the system will enter into the embroidery preparation interface.

This is used for conditions where the system cannot be operated due to accidental self-locking or default setting recovery.

## Part 22 Appendix

### 22. 1 Parameter Table

| Parameter Name          | Parameter Function                                                                                                                                           | Default | Range                  |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|------------------------|
|                         | Embroidery Parameters 1                                                                                                                                      |         |                        |
| Jump to Trim:           | Start trimming or not trimming when there are several skip stitches.                                                                                         | 3       | 1-9, No trim           |
| Trim Top Thread Length: | Lock stitch shall be large when embroidering thin material                                                                                                   | 0.6mm   | 0.5-1.0mm              |
| Length After Trim:      | Top thread length after trimming. The larger the figure is, the longer the residual is.                                                                      | 3       | 1-7                    |
| L.S Times while Trim:   | Lock several stitches in trimming to prevent run out of thread of embroidery after trimming.                                                                 | 1       | 1-3                    |
| L.S Number after Trim:  | Lock several stitches after trimming to prevent run out.                                                                                                     | 1       | 1-3                    |
| Moving Frame After Trim | Move hoop or don't move after trimming.                                                                                                                      | Yes     | Yes, No                |
| Hook Motor Speed:       | Hook stepper motor speed adjustment. The larger the value is, the faster the speed is.                                                                       | 5*      | 1-5                    |
| Trim Function;          | Use trimming function or not                                                                                                                                 | Yes     | Yes, No                |
|                         | Embroidery Parameters 2                                                                                                                                      |         |                        |
| Needles in a Head:      | Current embroidery machine used needle bar number                                                                                                            | N*      | 1-15                   |
| Sequin Needle:          | Sequin embroidery uses left side, right side or both left and right side. If sequin function of mechanical parameters is shut off, the parameter is invalid. | Close*  | Close, Left, Right, LR |
| Break Thread Up:        | Lift landing chassis or not in breakage.                                                                                                                     | Yes     | Yes, No                |
| Needle Of Boring:       | Stitch position using boring needle (thread break detection off)                                                                                             | 0       | 0-N*                   |
| Needle Of Cord:         | Stitch position using cording embroidery (automatic deceleration)                                                                                            | 0       | 0-N*                   |

|                           |                                                                                                           |            |                     |
|---------------------------|-----------------------------------------------------------------------------------------------------------|------------|---------------------|
| Tread Broken Sensitivity: | Thread break detection sensitivity                                                                        | 5 stitches | 3-9 stitches, No    |
| T.B Detect at Jump:       | Take break detection or not in skipping stitch embroidery.                                                | Yes        | Yes, No             |
| Auto Back When T.B.:      | Automatic backing stitches after breakage. Breakage machine head shall compensate embroidery in advance   | 9          | 0-9                 |
|                           | Embroidery Parameters 3                                                                                   |            |                     |
| Main Axis Max Speed:      | Max rotation speed setting of main axis (limited by mechanical parameters)                                | 1200       | 550-1200            |
| Main Axis Start Speed:    | Main axis rotation speed at starting                                                                      | 100        | 60-200              |
| Long Sti. EMB Mode:       | Large stitch used embroidering method                                                                     | Slow speed | Slow speed, jumping |
| Auto Jump Stitches:       | When large stitch embroidery is skipping, the stitch to be divided into two stitches to take embroidering | 6.5mm      | 6.5-8.5mm           |
| Auto Speed Down ST:       | The stitch to take deceleration embroidering                                                              | 2.0mm      | 2.0-9.0mm           |
| Stitches Value:           | The number of stitches to take stitch variation adjustment                                                | 5*         | 5-20                |
| Speed Down at Jump:       | Decelerate current speed in continuous jumping                                                            | 70%        | 60%-90%             |
| Sequin Max Speed:         | Max rotation speed in sequin embroidery                                                                   | 500        | 300-1000            |
|                           | Embroidery Parameters 4                                                                                   |            |                     |
| Piece Speed:              | Lifting stepper motor speed adjustment. The greater the value is, the faster it is.                       | 3*         | 1-4                 |
| Max Speed Of Cord:        | Max rotation speed in rope embroidery                                                                     | 500        | 300-600             |
| Max Frame Move Speed      | Set high hoop moving speed. The greater the value is, the faster it is.                                   | 3          | 1-9                 |
| Color Change Motor Speed  | Color changing speed when using stepper motor for color changing                                          | 3          | 0-9                 |
| Frame Control Type:       | Moving method of hoop, adjustable according to actual embroidery effect                                   | F1*        | F1-F5               |

|                                     |                                                                                                                                                                      |       |                 |
|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-----------------|
| Frame Move Angle:                   | Moving start angle of hoop motor. The larger load the hoop is, the smaller the moving angle is. It take appropriate adjustment according to actual embroidery effect | 250*  | 220-270°        |
| Move Frame Repay Times:             | Positive compensation for thin material. It take appropriate adjustment according to actual embroidery effect                                                        | 0*    | 5%、0、-5%、-10%   |
| Low speed embroidery rotation speed | Low embroidering speed limit set for color changing                                                                                                                  | 300   | 450-800         |
| Embroidery Parameters 5             |                                                                                                                                                                      |       |                 |
| Automatic start for the same color  | Whether it is started automatically when continuous 2 color changing settings are for the same needle bar                                                            | Yes   | Yes, No         |
| Auto origin position setting        | Set as “Yes” when taking embroidery design, head and tail continuous embroidering                                                                                    | Yes   | Yes, No         |
| Auto Back to origin position        | Return to start point or not after embroidery design is completed. Set as “No” when taking embroidery design head and tail continuous embroidering                   | Yes   | Yes, No         |
| Repeat Embroidery:                  | Continue embroidering or not after embroidery design is completed                                                                                                    | No    | Yes, No         |
| Back Steps of L.S:                  | Start automatic backing stitching after several slow movement when drawing needle bar                                                                                | 0     | 0-9             |
| Filter 0 Stitch Data:               | Filter 0 stitch trace or not n embroidering                                                                                                                          | Yes   | Yes, No         |
| Reset Frame:                        | Search absolute origin of hoop for every time, the machine power on                                                                                                  | No    | Yes, No         |
| Main Axis Brake Delay:              | The larger the value, the earlier the stop position angle                                                                                                            | 8*    | 1-20            |
| Embroidery Parameters 6             |                                                                                                                                                                      |       |                 |
| Lifting Arm:                        | Sequin landing chassis using method                                                                                                                                  | Motor | Motors, Voltage |
| Left Sequin Size:                   | Left sequin output size                                                                                                                                              | 5*    | 3-9             |
| Right Sequin Size:                  | Right sequin output size                                                                                                                                             | 5*    | 3-9             |

|                             |                                                                                         |     |         |
|-----------------------------|-----------------------------------------------------------------------------------------|-----|---------|
| Stop Frame of Moving:       | Allow drawing bar stop or not when beyond the hoop                                      | Yes | Yes, No |
| Return offset automatically | Deliver to highest position of hoop automatically or not after embroidery is completed. | No  | Yes, No |

N\* Embroidery machine using needle bar number (no default value)

\* Set according to requirements (no default value)

## 22. 2 System Errors and Countermeasures List

| Errors                       | Fault Causes                                                                                                                                                             | Countermeasures                                                                                                                              |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| Spindle is not at 100 degree | Spindle is not stopped at 100 degree                                                                                                                                     | Jogging or manually rotated spindle to 100 degree                                                                                            |
| Spindle is not rotated       | 1.Spindle controller has no signal or power input<br>2. Spindle motor has no signal or power input<br>3.Controller or spindle motor damage<br>4.Encoder is not connected | 1.Check spindle controller or power wire<br>2.Check spindle motor input power<br>3.Replace controller or motor<br>4.Connect encoder properly |
| Reverse rotation of spindle  | 1.Reverse connection or encoder A/B                                                                                                                                      | 1.Adjust phase wire of encoder A/B                                                                                                           |
| Over time for color changing | 1.Color changing motor does not rotate<br>2.Mechanical part seizing of color changing<br>3.Wiring cable fault from color changing motor to power panel                   | 1.Check color changing machine or connection cable<br>2. Repair or replace seized mechanical part<br>3. Check or replace connection cable    |
| No stitch                    | 1.stict detection sensing wheel position error<br>2. Stitch detection board damage                                                                                       | 1.Adjust stitch sensing wheel position<br>2. Replace detection board                                                                         |
| XY motor driver error        | 1.Over-voltage or over current protection of driver                                                                                                                      | 1.Check driver input power and re-powering on                                                                                                |

|                             |                                                                                 |                                                                                               |
|-----------------------------|---------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
|                             | 2. Drive damage                                                                 | 2. Replace driver                                                                             |
| Trimming is not in position | 1. Approaching switch detection is not in place<br>2. Approaching switch damage | 1. Manual adjustment for trimming connecting rod to in place<br>2. Replace approaching switch |
| Tinsel needle error         | Tinsel needle bar setting error                                                 | Re-set color changing sequences                                                               |
| +X limit error              | +X direction limit                                                              | Manually moving hoop on contrary direction                                                    |
| -X limit error              | -X direction limit                                                              | Manually moving hoop on contrary direction                                                    |
| +Y limit error              | +Y direction limit                                                              | Manually moving hoop on contrary direction                                                    |
| -Y limit error              | -Y direction limit                                                              | Manually moving hoop on contrary direction                                                    |



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RiCOMA International Corporation

3450 NW 114 Avenue

Miami, FL 33178

Tel: (305) 418-4421 Fax: (305) 418-5036

e-mail: [info@ricoma.us](mailto:info@ricoma.us) [www.ricoma.us](http://www.ricoma.us)

Toll Free: 1-888-292-6282