CONTENTS

Part 1 Control System Introduction

1.1 System Overview

Thank you for using computer embroidery machine control system of our company!

The system can be collaborated with various kinds of embroidery machines for using to satisfy different requirements of embroidery. It has satisfactory effects for thin material, thick material and three-dimensional embroidery!

Advanced DSP control technology enables the system speed faster. Furthermore, the system has friendly man-machine interface and has improved the production efficiency effectively. The control system adopts smooth curve speed, and enables the mechanical operation more stabled. Additionally, it reduces noise of complete machine and prolongs mechanical service life!

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

Please keep the operation manual properly for easy reference.

As configuration varies, some machines do not have partial function listed in the manual. Details of corresponding operation function shall prevail.

1.2 Precautions

Please don’t take maintenance and commissioning for electrical system by non-professional personnel, which may reduce safety performance f equipments, enlarge accident, or even cause personnel injury and property loss.

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

Please replace protective tube according to the product identification requirements strictly to ensure personnel and property safety.

Power switch of the product has over-current protection function. If over-current protection switch is actuated, it must be closed again after 3 minutes.

Please don't pile up debris around the control cabinet. During using process, clean the surface of control cabinet and dust on filter regularly to ensure good ventilation of system and be conductive for heat radiation.

Without authorization of the company, please don't modify the products. Otherwise, the company undertakes no liability for the caused results!

Warning

When it is necessary to open the case cover, it can only permit to touch the parts in the electrical cabinet under the guidance of professional personnel after 5 minutes.

Prohibition

When the machine is in operation, it is prohibit touching any moving part or opening control equipment. Otherwise, it may cause personnel injury or cause abnormal operation of machine.

It is prohibit operating electrical equipments 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 °;

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

1.4 System Power Supply and Earthing

The electric control system can use the following power:

Single phase AC100-220V/50-60HZ

According to different machine configuration, 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, insulation and other causes, please earth the electric control reliably.

Earthing resistance shall be less than 100 ohm, conductor length shall be within 20m and conductor cross-section shall be greater than 1.0 mm2.

1.5 Operation Panel and Key Function Introduction

1.5-1 Key Function Introduction

 Manual trimming key: take manual trimming in operation status and preparation status.

Spindle jogging key: Press the key and job the spindle to 100 degree.

1.5-2 Icons Description of Touch Keys

 Selection key: Used to select frameshift and lifting spindle speed.


Up, down, left and right keys: Move tabouret in embroidery card and preparation status.

Lifting spindle speed key: - key for deceleration, and + key for acceleration.

 Set the start point and walk the surrounding of pattern.

Origin operation key

 Offset point operation key

Working mode switching key (automatic color changing, automatically starting embroidering way)

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

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

Embroidering way switching key (normally embroidering)

Embroidery status swithcing key


Returning to stop point key


Back key

Select pattern embroidery and input embroidery card

Set related parameters of patterns, and it can only operate embroidery under embroidery preparation status.

Comprehensive Setting

Embroidery Parameters Setting


Connected network 
Discnnected network

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

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

1.5-3 Function Introduction

The system has a friendly HMI operation mode. It is easy to be operated and learned. The system has powerful functions and is greatly convenient for user using. It has improved operational performance and efficiency.

With multilingual support, it can switch the operation system language based on the user’s needs at all times.

With large memory capacity, the system can store 20 million stitches and 200 embroidery cards.

With multiple embroidery card input paths, it is extremely convenient for client's selection and using, such as Mobile U disk, network (PC software required).

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

Powerful parameter adjustment function can adjust various parameters according to the requirements in order to meet the required system control performance.

Automatic embroidery recovery function in power failure can recover to previous several stitches and continue embroidering automatically after there is a sudden power failure in embroidering process without having to worry about misplacement of embroidery card, to be free from complex re-alignment operation.

Equipment self-test function can take detection for the state of electrical equipment and parameters for convenient adjustment and maintenance.

For spindle stop position adjustment function, the user can take system parameter adjustment according to the features of respective embroidery machine to achieve accurate stop position.

Automatic embroidery card parameter memory function may take automatic saving for the set embroidery parameters or related data of embroidered card, including color changing, origin, offset point, embroidery parameter, repetition and other information for the convenience of using the same embroidery card.

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

Accurate card surrounding embroidery function can meet the requirements of card positioning embroidery.

Part 2 Embroidery Card Input Operation

Embroidery card input operation is to input embroidery card in U disk into memory. It can be operated at embroidery preparation status and embroidery card status.

Embroidery card input is to input files on external storage medium into system memory for convenient embroidery selection. If there is no embroidery card in memory, it will enter into the interface when the system is started.

The system supports reading Tajima DST and Behringer DSB formats of embroidery card files.

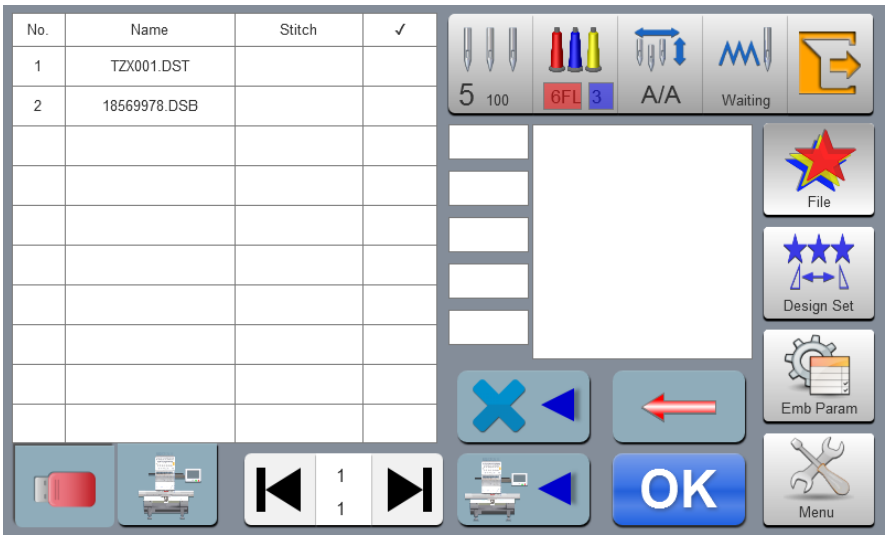
Before reading the embroider card, insert the U disk into USB interface, and then take operation panel key operation.

2.1 Input U-disk Embroidery Card to Memory

After U disk us inserted, press 

key to enter into embroidery card management interface. It will read the contents in U disk, as in the following Fig.

When embroidery card interface is selected, pres  key to switch to U disk interface.



Click embroidery card to input. Multi-option is available (which requires software

support.) Press 

key to preview currently selected file. Currently selected stitch number, color, size and other related information and thumbnail are displayed on the right side. Press  key to save in the memory. Input speed is popped up automatically to display memory number and input speed. After input is completed, it returns to U-disk operation interface automatically and it can continue taking input operation.

If it enters into subdirectory of U disk, press  key to return to previous interface.

Press  key to return to main interface.

2.2 Delete U-disk Embroidery Card

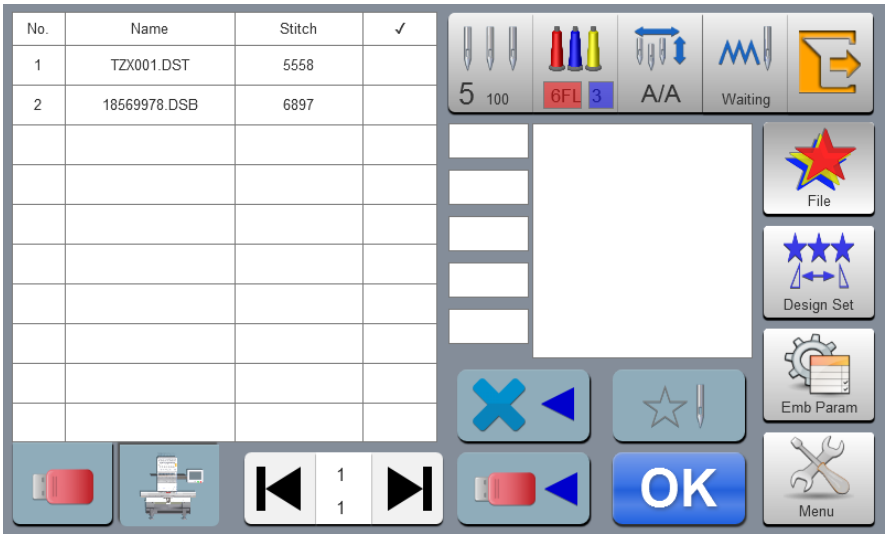
In U disk operation disk, click the embroidery card to delete in the U disk. Press  key to take deletion operation.

Part 3 Embroidery Card Management

In main interface, press 

key to enter into embroidery card management interface, as in the following Fig:

If it is in U disk interface, press  key to enter into embroidery card management interface.



3.1 Select Embroidery Card for Embroidering

Click embroidery card for embroidery. Currently selected stitch number, color, size and other related information and thumbnail are displayed on the right side. Press 

key to skip to embroidery card parameter setting interface automatically.

If it is still in embroidery card status, it cannot select embroidery card, and related prompt information is popped out.

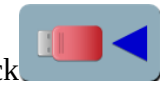
Press  key to return to main interface.

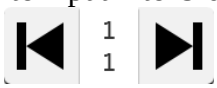
3.2 Delete Single Embroidery Card

In embroidery card management interface, press  key to enter into single

deletion operation.

3.2 Output Embroidery Card to U-disk

In embroidery card management interface, select embroidery card to input. Click  key to input into U disk.

Upper value in 

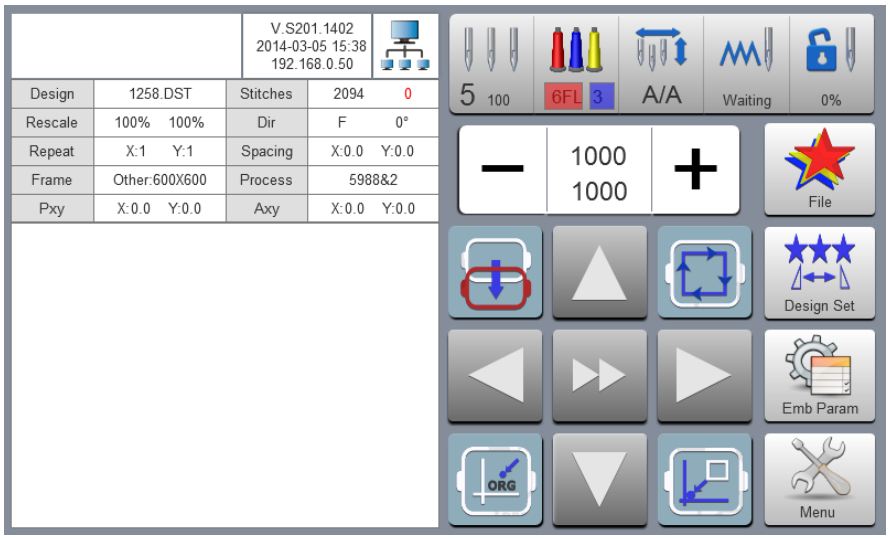
means current page, and lower value measn max pages of current embroidery card number. Left and right keys can take page turning. However, max page turning value cannot be larger than max pages of currebt embroidery card.

Part 4 Embroidery Card

4.1 Embroidery Status Switching

It has 3 embroidery statuses, i.e. preparation status, working status and running status. It can take status switching via keys on interface. It enters into running status after drawing the rod to start embroidering, as in the following Fig.

Preparation Status

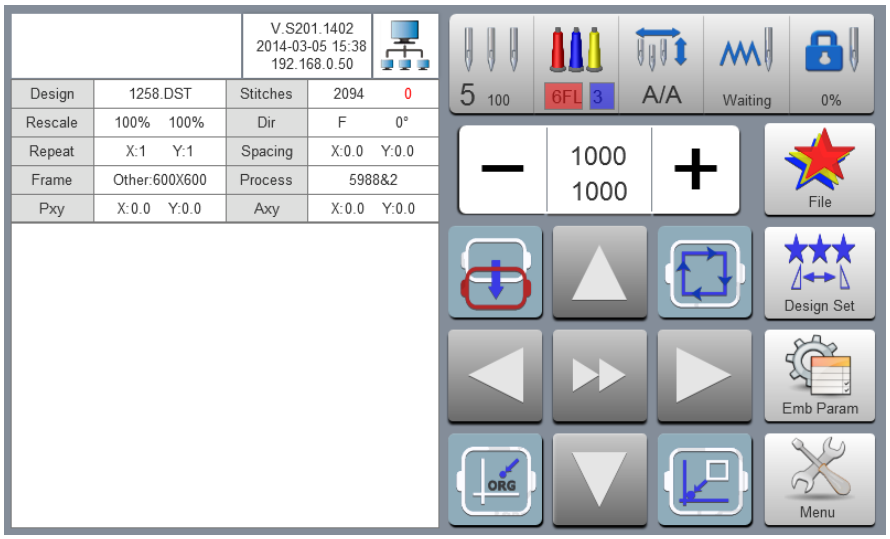


In preparation status, press 

key, and pop up “Into Embroidering Status or Not”. Press 

key to enter into working status, as in the following Fig.

Working Status



In working status, press 

key and pop up “Release embroidery status or not”. Press 

key to enter into preparation status.

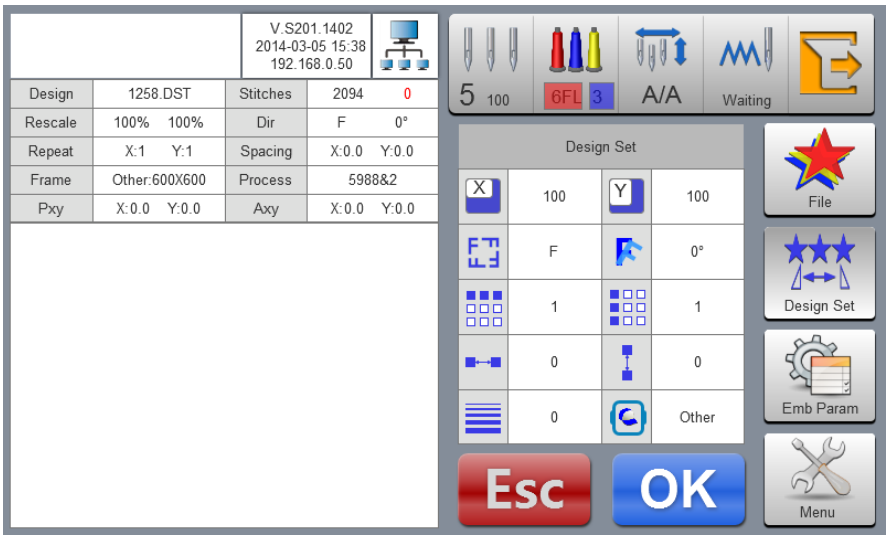
4.2 Preparation Status

In preparation status, it can take spindle jogging, trimming, tabouret switching, manual color changing, embroidery card parameter setting and embroidery card selection and other operation.

4.2-1 Set Embroidery Card Parameters

In preparation status, press 

key and take embroidery card parameter setting operation, as in the following Fig.



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

key to save modification. Press 

key to return to main interface.

Parameter Range Description:

Rotation directions: totally 8, 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 direction multiplying power: 50%-200%

X/Y replication number: 1-99

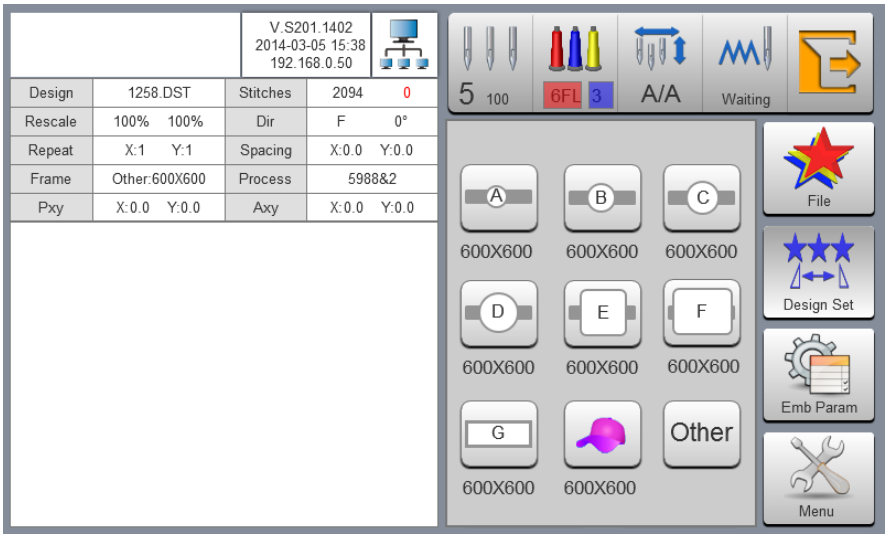
X/Y direction space: 0-±999.9mm

The control system takes mm as unit. It is input in 0.1mm when inputting digits, i.e. it shall input 1000 when inputting 100mm.

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

4.2-2 Switch Tabouret

In embroidery card parameter setting interface, press the input box behind  to enter into tabouret switching operation, as in the following Fig.



Select current embroidery used taboure type. When hat frame and A-G taboures are selected, the taboure will search absolute origin automatically, and stop at center of selected taboure. Please pay attention to the taboure movement.

See **Taboure Setting** on embroidery range of hat frame and A-G taboures

Other taboures don't take absolute origin searching. Embroidery range is also confirmed by software limits setting (See **Software Limits Setting** on detailed operation).

Select interface behind taboure and return to preparation status automatically. If taboure type is not selected, the system will continue to use previously used taboure type automatically.

After hat frame is selected for using, currently selected embroidery card will be rotated

180° automatically, and other taboures are not changed.

4.3 Working Status

In working status, it can take embroidery card origin (starting point) setting, embroidery card origin returning, offset point returning, stop point returning, color changing sequences setting, spindle jogging, manual trimming, working mode changing, embroidering mode switching, embroidery card contour, embroidery range checking and embroidering point returning operation in power failure.

4.3-1 Embroidery Card Origin (Starting Point) Setting

In working status, move the taboure to required embroidery card origin (starting point). Press  key to take origin setting. The taboure walks along the max range of embroidery card. If the position is insufficient, it modifies the origin (starting point) automatically. After being modified, it prompts error if the position is still insufficient. After the origin (starting point) is positioned, AX/AY coordinates are clear.

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

4.3-2 Offset Point (Highest Point of Tabouret Center) Setting

Offset point is mainly for conveniently embroidery material drawing and releasing and applique placement.

In “Other Parameters” of “Embroidery Parameters”, set “Automatic offset out of taboure’ as “Yes”. After it is set properly, the taboure returns to embroidery card origin to start embroidering after start-up every time. After the embroidery is completed, it is out of the taboure and stops at the offset point.

Offset out of the taboure depends on the set dimensions of taboure, and it is deviated to the highest position of currently selected taboure automatically.

4.3-3 Return to Origin (Starting Point)

In the embroidering process, if it is required returning to the origin to re-start the embroidering, it can take the operation.

Pres 

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

key and the taboure is moved to the embroidery card origin and stop. AX/AY coordinates are cleared.

4.3-4 In and Out Tabouret Operation

In the embroidering process, if is required returning to the offset point, it can take the operation.

Press  key once and the taboure is moved to the offset point and stop. Press the key gain, the taboure is moved to stop point and stop and it can continue embroidering.

4.3-5 Return to Stop Point

In the embroidering process, after taboure is moved manually, when it is required returning to the stop position of embroidery machine, it can take the operation.

Press  key to take operation of returning to the stop point. After the key is pressed, it is moved to the manual frameshift position automatically and stopped.

4.3-6 Set Color Changing

Color changing setting includes color changing sequences setting and needle bar replacement.

In working interface, press 

key to enter into color changing interface. It defaults to enter into color changing sequences operation, as in the following Fig.

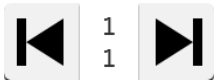
4.3-6-1 Set Color Changing Sequences

In color changing sequences setting interface, press number key to enter into color changing sequences setting. Change color 1-200 times from the 1st page (the system supports max 200 times of color changing sequences). When the interface is opened, the cursor is started from the last value position with needle bar automatically. Press the number key and input corresponding needle bar number of current color changing sequence. The cursor is moved to next color changing sequences automatically.

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

If there is no color changing sequence setting, it uses current needle bar to take embroidering.

If color changing times are not set as the max color changing number of current embroidery card, use currently set color changing number to take cycle orders.

Upper value in 

means current page, and lower value measn max pages of current embroidery card number. Left and right keys can take page turning. However, max page turning value cannot be larger than max pages of currebt embroidery card.

4.3-6-2 Applique Offset, Low Speed Embroidering and Needle Bar Replacement

If a certain color changing sequence that the cursor is located requires offset out of taboure (appliqué) at the end of embroidery, press 

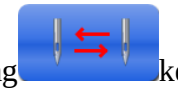
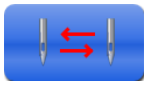
key once before No Input needle bar and "F" is displayed behind current needle bar number. If to cancel offset out of taboure setting, press 

once again.

If a certain color changing sequence that the cursor is located requires deceleration for embroidery at the end of embroidery (slowed speed is set at "low embroidering speed" in "speed parameters" of embroidery parameters, press 

key once before No Input needle bar and "F" is displayed behind current needle bar number. If to cancel low embroidering speed setting, press 

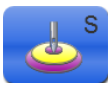
once again.

If all color changing sequences of a certain set needle bar shall be replaced by another needle bar for embroidering, after pressing 
key, click the needle bar for replacement, all identical needle bars are selected, Replace needle bar values according to requirements. Press 
key once again to exit replacement operation.

After the setting is completed, press 

key to save current setting.

4.3-6-3 Multi-tinsel Design

If current color changing sequence is tinsel embroidery, press 

key to take free combination design of multi-tinsel (mechanical part must be supported). If current color changing is not tinsel embroidery, press the key and it cannot enter into operation.

After entering into setting interface, 

displays max tinssel number of current color changing. Select the application method: A/B/AB according to requirments. Selected background has color hcnaging. Input current output number in the input box after the option. It can use max 9 kinds of combinations.

When combined tinsel number is not set completely, the residual shall be output with automatic cycling according to current setting sequences.

The size of A/B tinsel is determined by embrordery parameters.

Max tinsel diamter of machine cannot be larger than the tinsel size of embroidery card.

4.3-7 Change Working Mode

In working status interface, press 

key to change working mode. Change one mode when processing the key once (cycle changing) and the key display is changed along with it. The working modes are 

automatic color changing and automatic lifting mode, 

automatic color changing and manual lifting mode and 

manual color changing and manual lifting mode successively.

In manual color changing and manual lifting mode, set color changing seuqnces are invalid.

It still is modified mode after the machine is shut off and powered on again.

4.3-8 Embroidering Mode Switching

Embroidering mode switching is mainly to achieve compensation operation. The user can move the embroidery needle to specified location via air embroidering.

In working status interface, press 

key to change embroidering mode. Change one mode when processing the key once (cycle changing) and the key display is changed along with it. The embroidering modes are 

normal embrordering, 

low speed empty stitch embroidering, 

high speed empty stitch embroidering and 

positioned

emptying successively.

Low speed empty stitch embroidering:

In stop status, press start key (low speed empty forwarding) once and the spindle is not moved. The taboure is forwarded along the embroidering stitches. Press stop key again and stop low speed forwarding.

In stop status, press stop key (low speed empty backing) once, and the spindle is not moved. The taboure is backed along the embroidering stitches. Press stop key again and stop low speed backing.

High speed empty stitch embroidering:

In stop status, press start key (high speed empty forwarding) once and the spindle and the taboure are not moved. Embroidering stitches are increased. Press stop key again, and the taboure is moved to stitch forwarding position directly.

In stop status, press stop key (high speed empty backing) once and the spindle and the taboure are not moved. Embroidering stitches are decreased. Press stop key again, and the taboure is moved to stitch backing position directly.

Positioned emptying:

In stop status, key on right side is switched to the positioned emptying operation interface.


adding specied stitches: After pressing the key, a figure keyboard is poped out. Press figure key to input required stiches. Press  key and the taboure is moved to specified stitches and stopped automatically.


reducing specified stitches: After pressing the key, a figure keyboard is poped out. Press figure key to input required stiches. Press  key and the taboure is moved to specified stitches and stopped automatically.


Fowarding one color: After pressing the key, it is moved to start position of

following color and stopped automatically.

 backing one color: After pressing the key, it is moved to start position of previous color and stopped automatically.

4.3-9 Embroidery Card Contour Operation

After the embroidery card origin is set, if empty stitches embroidery card contour and embroidering embroidery card contour are required, it can use the operation.

The operation is only operated after setting embroidery card origin and before taking bar drawing. It cannot be operated after the bar drawing.

Empty stitches embroidery card contour

After setting start point and searching embroidery card contour, press  key and the tabouret is started idling from start point along the contour (precise range). After idling is finished, it returns to start point automatically.

Embroidering embroidery card contour

After setting start point and searching embroidery card contour, press  key and the tabouret is started embroidering contour from the start point and along the pattern surrounding. After embroidering is finished, it returns to start point automatically.

4.3-10 Operation of Returning to Embroidering Point in Power Failure

The operation is mainly applied for sudden power failure in embroidering process and when the tabouret appears blocking. It takes operation after powering on.

When the tabouret type is "Other", the operation is only valid when absolute origin of tabouret is searched before embroidering.

In working status, press 

key to enter into machine operation interface. Press 

key and the system prompts "Press OK to start searching absolute origin". Press

key to start searching absolute origin. Then it is moved to embroidering position before power failure and stopped. Draw the bar and it can continue embroidering.

4.4 Embroidery Running Status

In embroidering running status, it can only take spindle lifting speed operation.

Press 

key to slow or accelerate the spindle speed. Press  key to selet lifting speed.

4.5 Bar Drawing Operation

After various embroidering related parameters are finished setting, it can start embroidering by pressing start key.

Stop at embroidery card status: press start key once to start embroidering. Press stop key once to start back stitching.

Back stitching at embroidery card status: Press stop key once to stop back stitching.

In embroidery card running status: Press start key for more than 3s, the spindle takes embroidering in min speed. Press stop key once and it stops embroidering.

4.6 Switch Control and Indicators of Tinsel Machine Head

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

Output and lifting motor can use dial switch to adjust the motor rotation direction. When the motor is rotated reversely, dial the 3rd digit of dial switch SW1/SW2 to take adjustment.

It can select whether the installed landing chassis is on left machine head or right head. Dial the 4th digit of dial switch SW1/SW2 to take switching. ON(0）direction is left machine head and OFF(1）direction is right head.

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

When the tinsel 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, upper indicator is in green before entering into tinsel embroidery. The landing chassis is on upper position and waiting for automatic control. When it enters into tinsel embroider, the landing chassis is landed automatically and the lower indicator is in green. The upper and lower indicators are all on.

When the switch is switched to 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 once and the output motor outputs once.

Part 5 Tabouret Moving to Generate Embroidery Card

The function is mainly for convenient embroidery material positioning.

In embroidery card selection interface, press 

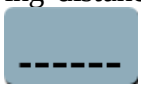
key and the interface is switched to main interface. Take cpllection operation according to requirents.

Description to generate embroidery card stitch trace: 

embroider in stitch trace method (default using). 

embroider in slipping stich method. Selected method key is invert display.

Press  key to move tabouret to next position. Press 

key. During operation process, if current moving distance requires transition in skipping stitch method. Before moving tabouret, press 

key once to select skipping transition function. After tabouret is moved, press 

key. Repeat above operation until the operation is ended. Press 

key to save.

Embroidery card No. saved in memory is generated by the system automatically for export and following using.

Part 6 Letters to Generate Embroidery Card

In the machine operation interface, press 

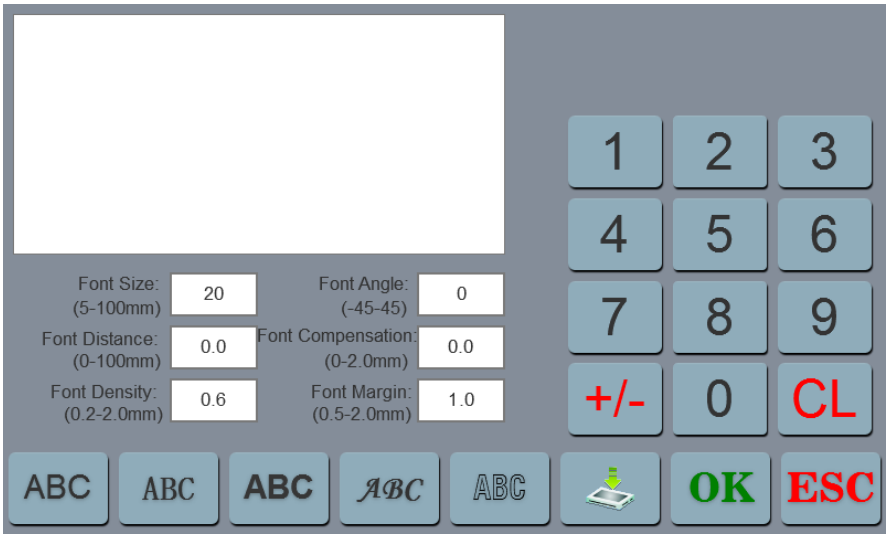
key to enter into letter interface, as in the following Fig:

Press key to select required letters or other signs. Press 

key to switchupper-case and lower-case letters. Press 

key to clear letter. After entering is completed, press 

key to skip to setting interface (operation cannot be continued if embroidery is not released), as in the following Fig.



Set 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, it can see the generated enbroidery card. Press  key to save embroidery card in memory.

Part V7 Manual Operation for Color Changing

In working or preparation interface, press 

key to take manual color changing operation. The interface will pop up the figure leeboard. Press corresponding figures according to requirements to switch color to specified needle bar.

Part 8 Manual Trimming

Either in embroidery preparation or working status, it can take trimming operation.

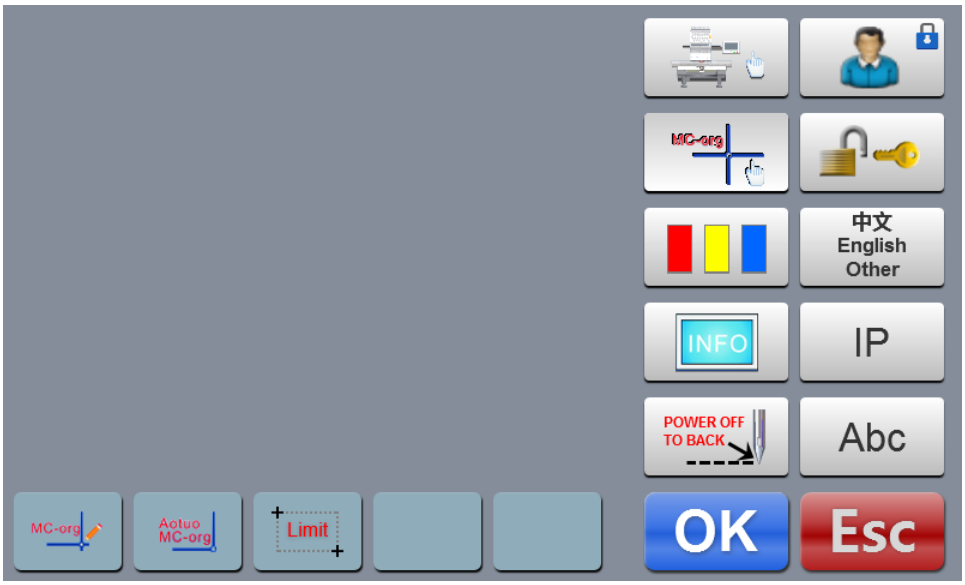
Press  key on panel to take bottom facial suture trimming operation.

Part 9 Tabouret Origin Operation

Tabouret 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.



9.1 Manual Tabouret Origin Setting

In tabouret origin interface, press 

key to select operation. The interface will pop up a dialogue “Set the current point as tabouret origin or not?” Press 

key to complete setting. PX/PY coordinates are changed into0.0.

9.2 Automatic Searching for Absolute Origin of Tabouret

Absolute origin is to use tabouret limits to detect absolute position of tabouret, so as to ensure using embroidery recovery in power failure to take accurate embroidery continuation when accident appears during embroidering process.

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

part.

In tabouret 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 seraching. After seraching is completed, the tabouret will return to the stop point before searching automatically.

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

9.3 Set Software Limits

The function is only valid when tabouret setting is “Other”.

In tabouret origin interface, press 

key to select operation. The interface pops up a dialogue “Move tabouret to left upper corner and press OK key.” According to the prompt of moving tabouret to left upper corner, press 

key. The interface pops up a dialogue “Move tabouret to right upper corner and press OK key.” According to the prompt of moving tabouret to right upper corner, press，press 

key and the setting is completed.

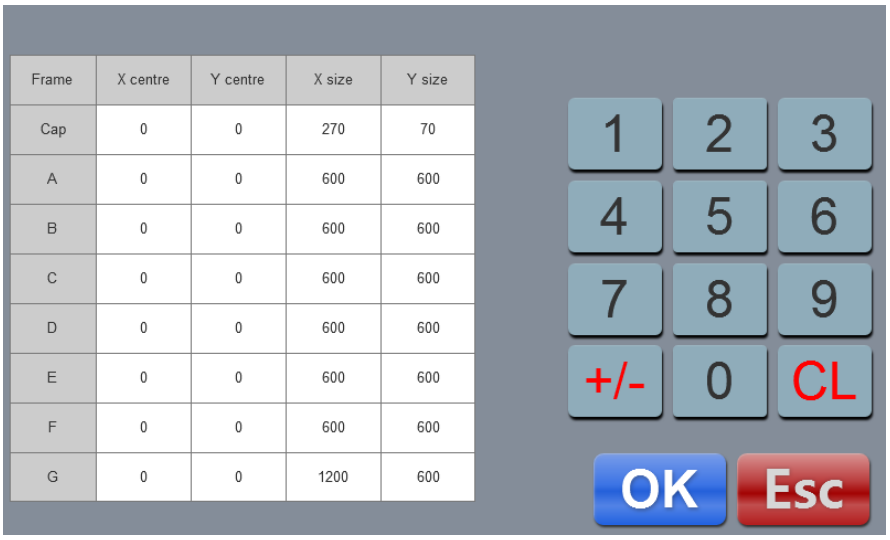
Cancel software limit: after entering to software limit interface, don’t move the tabouret and press 

key twice continuously. It will cancel software limit.

Part 10 Tabouret Setting

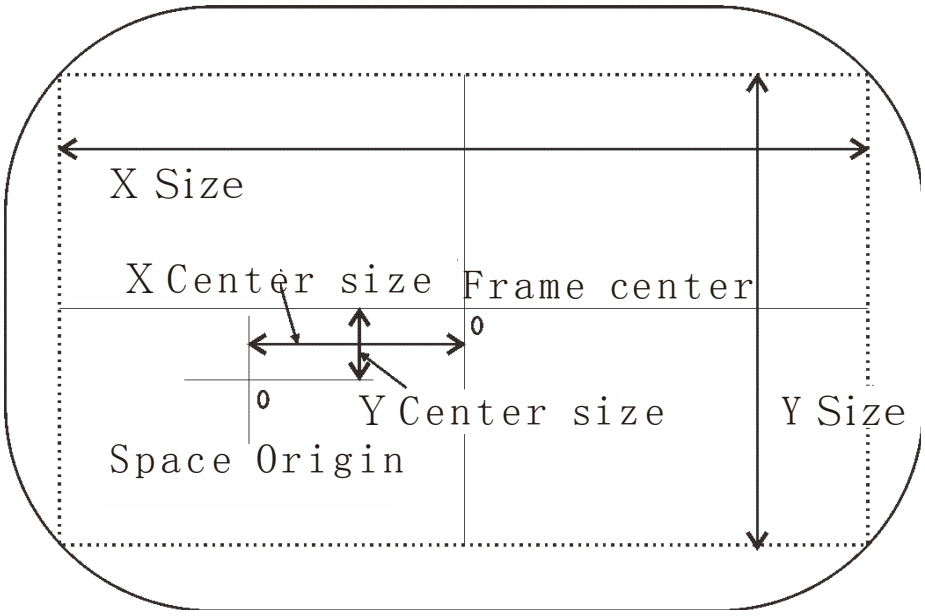
The function is only used to set hat frame and A-E tabourets size and dimension from absolute origin of tabouret to tabouret center.

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



Set tabouret related parameters according to the requirements. After setting is completed, press  key to save setting.

Tabouret Setting Diagram:



Part 11 Production Statistics

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

Check the processing information on main interface. The front is production quantity of current embroidery card and the latter one is total stitches of current embroidery.

Click statistics once to check the breakage times.

Part 12 Spindle Jogging Operation

The function is only used for spindle positioning and stop. It can be operated on interfaces with leys.

Take jogging operation according to requirements.

Press 

key to jog spindle to 100 degree (zero position).

Part 13 Language Switching

In main menu interface, press 

key to take language switching operation.

Click and select required language. The system is switched to the selected language automatically.

Part 14 Embroidery Parameters

According to different machine configuration and embroidery processing requirements, it shall 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 take modification. After modification is completed, press 

key to save modigfication and return to main menu inteface automatically.

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

Part 15 Machine Parameters Setting

The parameter is only used for professional technician of assembly plant. Don’t make modification without permission by other persons to avoid causing damage to the machine and abnormal operation.

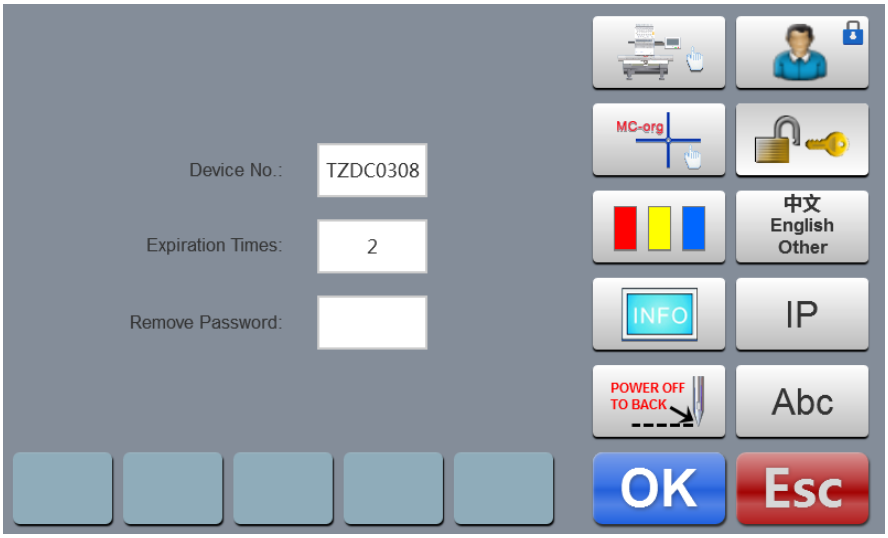
Part 16 User Management

The parameter is only used for professional technician. Don’t make modification without permission by other persons to avoid causing abnormal operation of machine.

Part 17 Restriction Releasing

17.1 Locking Removing

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



Click releasing passwords box, and a figure keyboard is popped up. Press the keys and input passwords (8 digits) obtained from the supplier to take release operation. Press  key to release restriction and continue using.

It can obtain passwords advance to release for multiple times.

Part 18 System Test

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

In machine operation interface, press  key to enter into test interface.

18.1 Input Test

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

18.2 Output Test

In test interface, pres  key to enter into output 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 fault. Please check and make maintenance.

Crocheting test: Press the key once, and the crocheting cutter is taken alternative action between stretching and reverse returning.

Trimming test: Press the key once, and trimming motor is taken alternative action between half circle rotation to stop and another half circle rotation on the same direction to in place.

Buckling test: Press the key once, and the buckling electromagnet is actuated for 2s and disconnected automatically.

Left tinsel test: Press the key once, and the tinsel landing chassis executes descending, output for 3 times and lifting.

Right tinsel test: Ditto

18.3 Spindle Test

In the test interface, press  key to enter into spindle 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 fault. Please check and make maintenance.

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.

Spindle test: Press 

key to start rotation in speed of 100rev / min. Press Up and Down keys to modify the spindle 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 spindle coder line number and zero position width.

18.4 Machine Head Test

In the test interface, pres 

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 fault, Please check and make maintenance.

Facial suture test: When facial suture test spring is closed, red indicator is normally on. It is changed into green when it is separated.

Bottom suture test: Toggle the test wheel. The indicator is flashing along with the toggle speed.

Select facial suture and bottom suture according to the requirements.

Part 19 System Information

In main menu interface, press 

key to enter into system information interface.

19.1 System Number and Version Information Checking

It is used to check the code of control system.

In system information interface, press 

key to check.

18.2 System Update

It is used to update software version of control system.

In system information interface, press 

key to start update operation. Take update operation according to prompts. **It cannot appear power failure during update process.** Update is completed for about 3 minutes, and the system is skipped to working interface automatically.

Update may clear current embroidery file. Please complete current embroidery before update.

Shortcut updates program operation. After the machine powered in and displayed LOGO for 5s, press 

key twice and 
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 in and displayed LOGO for 5s, 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 main menu interface, press 

key to enter into IP setting interface.

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

Part 21 System Initialization

After the machine powered in and displayed **LOGO for 5s,** press  key for 3 times then, the system. After the system initialization is completed, the buzzer sounds “tick, tick, tick” three times continuously, the system will enter into embroidery preparation interface.

It is used for the condition the system cannot be operated due to accidental self-locking or default setting recovery is required.

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 skipping 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:	Facial suture length after trimming. The larger the figure is, the longer the residual is.	5	1-7
L.S Times while Trim:	Lock several stitches in trimming to prevent off-line of embroidery after trimming.	1	1-3
L.S Number after Trim:	Lock several stitches after trimming to prevent off-line.	1	1-3
Moving Frame After Trim	Move tabouret or not after trimming.	No	Yes, No
Hook Motor Speed:	Crocheting 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:	Tinsel embroidery uses left side, right side or both left and right side. If the tinsel function of mechanical parameters is shut off, the parameter is invalid.	Off*	Off, Left, Right, L or R
Break Thread Up:	Lift landing chassis or not in breakage.	Yes	Yes, No
Needle Of Boring:	Stitch position using carving cutter (not	0	0-n

	take breakage detection)		
Needle Of Cord:	Stitch position using rope embroidery (automatic deceleration)	0	0-n
Tread Broken Sensitivity:	Facial suture breakage detection sensitivity	5 stitches	3-9 stitches, No
T.B Detect at Jump:	Take breakage detection or not in skipping stitch embroidery.	No	Yes, No
Auto Back When T.B.:	Automatic backing stitches after breakage. Breakage machine head shall compensate embroidery in advance	4	0-9
Same ST Auto Startup:	Take automatic lifting or not when encountering the same color changing needle bar.	Yes	Yes, No
	Embroidery Parameters 3		
Main Axis Max Speed:	Max rotation speed setting of spindle (limited by mechanical parameters)	750	550-1200
Main Axis Start Speed:	Spindle rotation speed at starting	100	60-200
Long Sti. EMB Mode:	Large stitch used embroidering method	Slow speed	Slow speed, jumping
Auto Jump Stitchs:	When large stitch embroidery is skipping, what's the stitch to be divided into two stitches to take embroidering	6.5mm	6.5-8.5mm
Auto Speed Down ST:	What's the stitch to take deceleration embroidering	2.0mm	2.0-9.0mm
Stitches Value:	What's the number of stitches to take stitch variation adjustment	20*	5-20
Speed Down at Jump:	Decelerated current speed in continuous skipping	80%	60%-90%
Sequin Max Speed:	Max rotation speed in tinsel embroidery	700	300-1000
	Embroidery Parameters 4		
Piece Speed:	Lifting stepper motor speed adjustment. The	3*	1-4

	greater the value is, the faster it is.		
Max Speed Of Cord:	Max rotation speed in rope embroidery	300	300-600
Max Frame Move Speed	Set high tabouret moving speed. The greater the value is, the faster it is.	5	1-9
Color Change Motor Speed	Color changing speed when using stepper motor for color changing	5	0-9
Frame Control Type:	Moving method of tabouret, adjustable according to actual embroidery effect	F1*	F1-F5
Frame Move Angle:	Moving start angle of tabouret motor. The larger load the tabouret 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 using. 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	500	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 card head and tail continuous embroidering	Yes	Yes, No
Auto Back to origin position	Return to start point or not after embroidery card embroidering is completed. Set as “No’ when taking embroidery card head and tail continuous embroidering	Yes	Yes, No
Repeat Embroidery:	Continue embroidering or not after embroidery card is completed	No	Yes, No
Back Steps of L.S:	Start automatic backing stitching after	0	0-9

	several slow movement when drawing needle bar		
Filter 0 Stitch Data:	Filter 0 stitch trace or not n embroidering	Yes	Yes, No
Reset Frame:	Search absolute origin of tabouret for every time of powering on	No	Yes, No
Main Axis Brake Delay:	The larger the value is, the earlier the stop position angle is	8*	1-20
	Embroidery Parameters 6		
Lifting Arm:	Tinsel landing chassis using method	Motor	Motors, Voltage
Left Sequin Size:	Left tinsel output size	3*	3-9
Right Sequin Size:	Right tinsel output size	3*	3-9
Stop Frame of Moving:	Allow drawing bar stop or not when beyond the tabouret	Yes	Yes, No
Return offset automatically	Deliver to highest position of tabouret 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 2. Spindle motor has no signal or power input 3.Controller or spindle motor damage	1.Check spindle controller or power wire 2.Check spindle motor input power 3.Replace controller or motor 4.Connect encoder properly

	4.Encoder is not connected	
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 2.Mechnical part seizing of color changing 3.Wiring cable fault from color changing motor to power panel	1.Check color changing machine or connection cable 2. Repair or replace seized mechanical part 3. Check or replace connection cable
No stitch	1.stict detection sensing wheel position error 2. Stitch detection board damage	1.Adjust stitch sensing wheel position 2. Replace detection board
XY motor driver error	1.Over-voltage or over current protection of driver 2. Drive damage	1.Check driver input power and re-powering on 2.Replace driver
Trimming is not in position	1.Approaching switch detection is not in place l 2. Approaching switch damage	1.Manual adjustment for trimming connecting rod to in place 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 tabouret on contrary direction
-X limit error	-X direction limit	Manually moving tabouret on contrary direction
+Y limit error	+Y direction limit	Manually moving tabouret on contrary direction
-Y limit error	-Y direction limit	Manually moving tabouret on contrary direction